MiTek®

59TH Edition | 2018

ONLINE USP®

PRODUCT CATALOG

SHEAR WALL SYSTEMS | STRUCTURAL CONNECTORS | SOFTWARE | ANCHORING SOLUTIONS | EPOXY | FASTENERS

1-800-328-5934 | MiTek-US.com

INTRODUCING THE NEW STANDARD IN **STRUCTURAL WOOD SCREWS**

MiTek® PRO SERIES

CODE COMPLIANT. REDUCES LABOR. PRO QUALITY.

- Cut point feature offers fast start and reduces torque during installation
- Interior and Exterior finishes
- Lengths from 1-½" to 10" long
- Technical bulletins available for Deck Ledger and Multi Ply EWP connections

Call **800-328-5934** to learn more.

MiTek®

THE NEW STANDARD

NEW PRODUCTS

Fasteners

WSWH Washer Head Structural Wood Screws

MiTek PRO SERIES

The WSWH comes in two finishes: EXT (exterior grade) and Yellow Zinc (interior grade). Both are easy to install and reduce labor on the job site. The large, flat Washer Head maximizes bearing area and allows for less interference after installation. The EXT finish is an ideal alternative for the Pro or DIYer to traditional Lag screws and through bolts in many wood-to-wood connections including deck ledgers. The Yellow Zinc finish is commonly used in Multi-Ply EWP and Dimensional wood connections.

See **Page 29** for more information.

WSBH Bugle Head Structural Wood Screws

The WSBH is the ideal structural wood screw for a low profile appearance. This structural wood screw allows the Pro Contractor or DIYer to drive the head flush or countersink it below the wood surface. The WSBH is easy to install and high strength alternative to traditional lags, bolts and pole barn nails.

See **Page 28** for more information.

Concrete & Masonry

Adhesive Anchoring Systems

IB-9 INCREDI-BOND® Epoxy

INCREDI-BOND® is a high strength two-component epoxy specifically designed to be a bonding agent for almost all household materials including wood, steel, concrete, brick, stone and CMU block.

See **Page 32** for more information.

Caps & Bases

BCS Post Caps

One-piece design for connecting 2-ply (BCS22-4) or 3-ply (BCS23-6) beams to the tops of 4x4 or 6x6 respectively. Slant nailing reduces the amount of nails required for the connector.

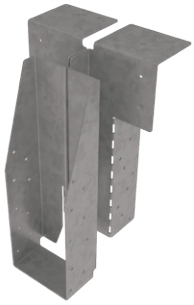
See **Page 75** for more information.

RPB Retrofit Post Base

RPB-TZ post base attaches 4x4 or larger wood post to concrete or wood surfaces after the post is in place. Can be installed with 1 or 2 RPB-TZ's (single or double). Post may also be installed on our CPB composite post base product which provides a 1-inch stand off as required in untreated wood installations. Installs with concrete screws, so no more mis-installed, mis-located anchor bolts!

See **Page 64** for more information.

Hangers



FWHBP Fire Wall Hangers, Beam and Purlin

MiTek has expanded the FWH Fire Wall Hanger series to include the higher load carrying capacity FWHBP, the Fire Wall Hanger for Beams and Purlins. The FWHBP transfers the load into the supporting wall thru bearing on the top plates and directly attaching to the stud pack or post below. As with the FWH hanger, the advanced design allows you to install the hangers before the drywall is attached, allowing your project to be completely framed-up and weather-tight before the drywall sheathing shows up on site.

See **Page 134** for more information.

NEW PRODUCTS

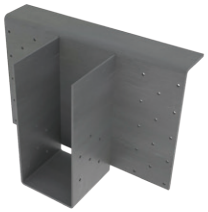
Hangers

LGUM / HGUM Masonry Girder Hangers

LGUM and HGUM Masonry Girder Hangers are high-capacity beam/girder hangers designed for installation to masonry or concrete walls. The LGUM and HGUM hangers use USP's WS screws (supplied) to attach the beam to hanger and Power's Wedge Bolt+ anchors (supplied) to attach to the masonry or concrete wall. These hangers eliminate the need for constructing beam pockets.

See **Page 144** for more information.

Glulam Beam Connectors



KEGQ

WS Wood Screw fastening, heavy steel construction, and a continuous top flange allow the KEGQ products to have high load capacities.

See **Page 178** for more information.

Truss & Rafter

DHTA Embedded Truss Anchors

Two-strap design with moisture barrier seat provides uplift and lateral load resistance for single-ply and two-ply truss applications.

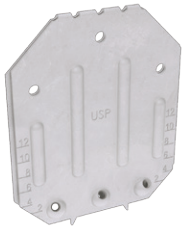
See **Page 189** for more information.

HHTA Embedded Truss Anchors

HHTA embedded truss anchors provide an engineered method to properly attach roof trusses to concrete and masonry. These 14 gauge anchors are perfect for applications requiring higher uplift.

See **Pages 187 – 188** for more information.

Plated Truss



VTT Valley Truss Tie

The VTT is a Valley Truss Tie designed to transfer loads from a valley truss into the supporting structure below. It also resists the sliding forces from downward loads when the valley truss is set upon a sloped lower roof. The ability to resist the sliding force eliminates the need for support wedges under the valley truss bottom chord or special order valley roof trusses with a bevel-cut bottom chord.

See **Page 226** for more information.

Deck & Fences

ADTT-TZ Adjustable Deck Tension Tie

Adjustable Deck Tension Tie designed to effectively transfer the out of plane lateral loads of the deck to the house structure.

See **Page 230** for more information.

Patent #9,809,974

Directory of Products

MiTek®

WARRANTY

MiTek USA, Inc. ("MiTek") warrants its USP catalog Products to be free from material defects in manufacture and design, and further warrants that they will perform within the design limitations of its published building code approvals for the applications described, when properly installed and maintained. These warranties do not cover Product deterioration due to environmental conditions, Products that have be modified or damaged, improperly installed or used outside of published design limitations or for other applications. In the event any Product is shown to not conform to these warranties, USP's sole obligation, and Customer's sole and exclusive remedy, shall be, at USP's option, to replace the non-conforming product or refund the full purchase price paid by Customer to USP therefor. MITEK MAKES NO OTHER PRODUCT WARRANTIES, EXPRESS OR IMPLIED, OF ANY KIND, AND PARTICULARLY EXCLUDES ANY IMPLIED WARRANTY OR MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. IN NO EVENT SHALL USP BE LIABLE FOR INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES, REGARDLESS OF THE LEGAL THEORY OF RECOVERY, EVEN IF IT WAS AWARE OF THE POSSIBILITY OF SUCH DAMAGES. IN ANY CASE, USP's MAXIMUM LIABILITY SHALL NOT EXCEED THE PURCHASE PRICE PAID BY CUSTOMER FOR THE NON-CONFORMING PRODUCT. Some states restrict consequential or other liability damage limitations, so some of the above limitations may not apply to you. MiTek reserves the right to change this warranty periodically. Consult MiTek's website www.uspconnectors.com or contact MiTek for a current warranty statement.

USP Products Alphabetical Index

USP Products Alphabetical Index

Reference Number Index

MiTek®

About the Reference Numbers
Reference numbers shown throughout the charts in this catalog are part numbers which may be more familiar to customers in various regions of the United States. These are included for the convenience of our new customers who have recently switched from a competitor's product line to USP.

The reference numbers in this catalog are for general application comparison only and should not be used as a substitution tool. The user is responsible to compare specific load values, fastener schedules, material specifications, and other factors to determine suitability of use for any particular product.

Continued on next page

Reference Number Index

Code Evaluation Information

Code Evaluations

Most structural products shown in this catalog are listed in a current code evaluation report from the code evaluation agencies listed to the right.

The load values shown in this catalog were current at the time of printing but we are continually improving our products through better engineering design and development so some of the evaluation reports may have been updated with better load values after the catalog was printed.

In a few cases, we have submitted a formal independent test report from an approved lab to the code evaluation agency and are awaiting on an evaluation report.

We recommend visiting our web site: **USPconnectors.com/code-reports** or, the specified code evaluation agency's web site, shown below, to obtain the latest load values from the most current evaluation report.

Some code jurisdictions may require additional load reductions and/or use limitations for some products listed in this catalog. In those cases, the products may not be approved or may need further review for approval.

We recommend contacting the code jurisdiction having authority for your project to confirm they accept the evaluation reports shown to the right, or contact our Engineering Department for further assistance.

Code Watch

"Code Watch" items are included to highlight relevant sections of the 2012 IBC and 2012 IRC building codes that discuss the use of products contained in this catalog.

We strongly encourage you to consult with a qualified design professional to review the exact requirements of the relevant code references for your project.

Please note that not all code sections relating to the use of all products in this catalog are included. In addition, some states and local municipalities may have adopted amendments to the referenced code section.

Code references are for the 2012 International Residential Code (IRC) and 2012 International Building Code (IBC).

Code Reference Key Chart

Code Agency	Approval Listing	Code Ref.
ICC ES	ESR-2266	1
	ESR-3444	2
	ESR-1678	3
	ESR-1702	4
	ESR-3445	5
	ESR-3446	6
	ESR-1970	7
	ESR-3447	8
	ESR-2685	9
	ESR-3448	10
	ESR-3449	11
	ESR-2761	12
	ESR-2787	13
	ESR-3455	14
	ESR-3456	15
	ESR-2089	16
	ESR-2362	17
	ESR-2818	18
	ESR-2526	19
	ESR-3768	20
	ESR-3847	21
	ESR-3754	22
	ESR-2966	23
	ESR-3889	24
	ESR-4042	25
IAPMO-UES ER	ER-0200	30
	ER-0201	31
	ER-0311	32
	ER-0473	33
LA City - City of Los Angeles, California	RR 25993	R1
	RR 26017	R2
	RR 25992	R3
	RR 25991	R4
	RR 25843	R5
	RR 25759	R6
	RR 25753	R7
	RR 25976	R8
	RR 25745	R9
	RR 25972	R10
	RR 25971	R11
	RR 25749	R12
	RR 25779	R13
	RR 25836	R14
	RR 25850	R15
	RR 25954	R16
	RR 26048	R17
	RR 26107	R18

Code Agency	Approval Listing	Code Ref.
State of Florida Product Approvals	FL17241	F1
	FL17232	F2
	FL17243	F3
	FL17240	F4
	FL17236	F5
	FL17239	F6
	FL17244	F7
	FL17245	F8
	FL578	F9
	FL17247	F10
	FL17248	F11
	FL17249	F12
	FL22052	F13
	FL17324	F14
	FL17325	F15
	FL17680	F16
	FL17699	F17
	FL20872	F18
	FL10739	F19
	FL22053	F20
	FL1247	F22
	FL2033	F23
	FL5631	F25
	FL6223	F26
	FL17229	F28
	FL17231	F29
	FL17219	F31
	FL17227	F32
	FL17246	F35
Prescriptive Code	--	100
Pending for Code Evaluation	Contact us for test data	110
No Load Capacity	--	120
No Code Listing	Contact us for test data	130

New products or updated product information are designated in **blue font**.

Code Evaluation Agency websites

ICC-ES – ESR reports:
http://www.icc-es.org/Evaluation_Reports

IAPMO Uniform ES – ER reports:
www.iapmoes.org/EvaluationReports

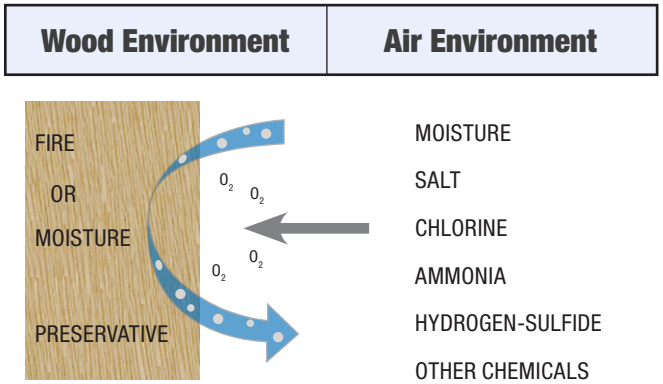
City of Los Angeles – LARR reports:
http://netinfo.ladbs.org/rreports.nsf

State of Florida – Product Approvals:
www.floridabuilding.org/pr

For the majority of applications, metal hangers and connectors are used in interior, above ground, dry service conditions. They are typically not being exposed to corrosive environments which can significantly reduce their strength and longevity.

What is Corrosion?

Corrosion is the destructive degradation of steel due to its interaction with the environment. Here the steel is the connector and the environment is whatever the connector interacts with, namely wood and air. Each environment may contain one or more corrodents (substances that cause corrosion) acting independently or in combination to degrade the strength of the connectors.



Electrochemical oxidation is the most common type of corrosion affecting metal connectors. It is a process in which iron (Fe) reacts with oxygen (O_2) in the presence of an electrolyte such as water (H_2O) to form iron oxide (Fe_2O_3), a brown and flaky by-product commonly known as rust.

$$\text{Iron} + \text{Oxygen} \xrightarrow[\text{(Electrolyte)}]{\text{Water}} \text{Rust}$$

Steel is an iron-based metal alloy which is susceptible to this type of corrosion, even when exposed to normal atmospheric air, since air contains oxygen and water as part of its normal composition. While steel is very strong, rust is not. Over time, the continuous formation of rust eats away the base metal and reduces the strength of the connector. The rate of oxidation generally increases with increasing moisture content, the presence of salt, or when galvanic corrosion is a contributing factor.

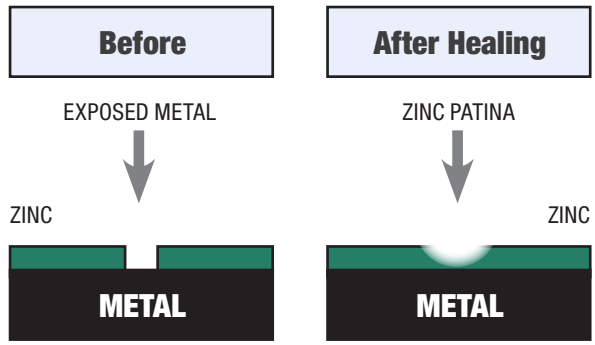
Galvanic Series (Abbreviated)
More Active (Anodic-)
Zinc
Aluminum
Steel
Brass
Copper Nickel
Stainless Steel - Type 304
Stainless Steel - Type 316
More Passive (Cathodic +)

Galvanic corrosion occurs when there is an interaction between dissimilar metals that are in contact with one another. The degree of corrosion depends on where the metals reside in the galvanic series, which is a compilation of known metals and their relative reactivity. The more active metal (anode) will corrode preferentially while shielding the more passive metal (cathode) from further degradation. For example, with galvanized steel, zinc is used as a coating on the steel because it sacrificially corrodes to protect the steel substrate underneath. The coupling between zinc and steel is said to have a lower galvanic potential than the coupling between zinc and stainless steel because zinc and steel are closer to each other in the galvanic series. In general, the coupling with a lower galvanic potential would result in a slower corrosion rate.

Corrosion Protection Options

Zinc Galvanizing:

Most connectors are manufactured from pre-galvanized sheet steel or coiled steel, which is typically made by the hot-dip process in accordance with ASTM-A653 and ASTM-A924 standards. Fasteners are galvanized in accordance with ASTM-A153. In the manufacturing of the connectors, the punching and shearing processes create exposed bare metal surfaces. Thankfully, zinc has an incredible ability to 'heal' itself; the zinc around the exposed metal corrodes and deposits a layer of zinc corrosion by-product called zinc patina (white powdery appearance) over the exposed metal to further protect it.



By being more reactive than steel, zinc sacrificially corrodes at a steady rate over time to shield the steel from the effect of corrosion. The protection ability of zinc is proportional to its thickness, which is proportional to the amount of zinc applied. Zinc coating is specified as the total weight on both sides of the sheet steel, measured in ounces per square foot (oz/ft2). For example, G90 means that there are 0.90 oz/ft2; G185 has 1.85 oz/ft2 and would last about two times longer than G90. G90 is the minimum protection for connectors and is standard in MiTek connectors.

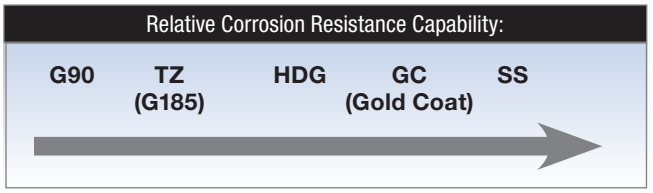
Design Guidelines:

Where there are governing national or local building code requirements, they should be used in the selection of the connectors and their protection against corrosion. In the absence of such requirements, the decision rests on the experience and judgment of the building designer/engineer. Design guidelines are presented in this section to aid the building designer/engineer in this selection process, but it is the responsibility of the building designer/engineer to determine the most viable solution based on an evaluation of the connectors to the specific corrosive environment(s). The guidelines consist of best practices, recommended protection levels for the connectors, and strength modification factors for the lumber/connectors.

Where there are multiple options suggested, do not automatically default to the lowest protection level. The lower protection level is intended to address less severe conditions while the higher protection level is meant to address more severe conditions. Select the option that eliminates or adequately reduces the vulnerability of the connectors to the corrodents. When in doubt, use a higher level of protection than anticipated or seek professional consultation.

Continued on next page

Relative Corrosion Resistance Capability:
The chart below ranks the available options in terms of their relative effectiveness against corrosion. As expected, the ability to resist corrosion increases with increasing zinc thickness, so G185 is the most durable pre-galvanized product available. Gold Coat offers enhanced protection compared to G185 while stainless steel offers the best protection for most applications.



Galvanic Corrosion:
The simplest and most practical solution to minimize galvanic corrosion is to make sure that the components that are in direct contact with each other are made of the same material or coating. Once this is achieved, there is no net galvanic potential between the components and galvanic corrosion is eliminated or significantly reduced. For example, use galvanized nails for galvanized connectors and stainless steel nails for stainless steel connectors.

Wet Service Condition:
For lumber, this refers to any service condition in which the average equilibrium moisture content is 15% or more over a year or may exceed 19% at any time. For lumber to get above 19% moisture, the relative humidity in the air needs to reach above 80%. Unfortunately, this is above the critical humidity level for the electrochemical oxidation of steel, which is around 70%. Beyond 70%, the rate of corrosion in the connectors increases rapidly due to the abundant availability of moisture.

G90 may not be suitable for use in wet service condition.

Preservative (Pressure) Treated Wood:
There are many preservative wood treatment formulations available on the market today. The element that is common to most of them is the presence of copper in the formulation which can contribute to the corrosion of steel connectors and fasteners.

Of the copper based preservatives, the two types are micronized copper and soluble copper. Micronized copper formulations MCA (micronized copper azole) and MCQ (micronized copper quat) are sold under different brand names and are the most predominant formulation in today's preservative treated wood industry. Soluble copper formulations CA (copper azole) and ACQ (alkaline copper quat) have also been very popular since they replaced CCA (chromated copper arsenate) which was phased out in 2004. Other "metal free" preservatives are still used for above ground and sill plate applications, but are not as common. One of the main criterion affecting the selection of one preservative treatment over another is the type of wood being treated and how well it can be penetrated by the treatment.

While many of the advanced wood treatment formulations containing copper used today have proven to be less corrosive to steel, especially micronized copper, MiTek recommends a higher level of corrosion protection for connectors in contact with copper based wood treatments.

Connectors and fasteners in contact with metal free wood preservatives do not require additional corrosion protection due to the preservative itself, however all factors that can create the corrosive environment should be considered when selecting the appropriate finish. If unsure as to whether a particular treatment is corrosive to steel fasteners, check with the supplier of the preservative treated wood product for their recommendation.

Fire Retardant Treated (FRT) Wood:
Although most common FRT products are not corrosive to metal connectors, not all products are non-corrosive. Additionally, they typically require proprietary strength reductions applied to the lumber in accordance with the manufacturer's specifications. Since the lumber strength is lower, the lateral and withdrawal resistance of nails must also be reduced accordingly. It is important to note that some fire retardants cause the wood to absorb more moisture from the air than untreated lumber. Consequently, the connector may be exposed to a higher level of moisture, resulting in more corrosion.

Swimming Pools:
This is one of the most hazardous environments for steel connectors due to continuous exposure to high temperature, high moisture content, and corrosive chemicals such as chlorine, bromine, and other disinfectants. The combination of all these factors can lead to accelerated corrosion and premature structural failure. This environment is so corrosive that all possible preventive measures should be employed to prevent the hanger from being exposed to the pool water. These include the use of a vapor barrier and a ventilation system that does not take the air from the pool environment.

Additionally, it has been known that certain grades of stainless steel (316 and others) are susceptible to a mode of structural failure known as stress corrosion cracking (SCC) when exposed to a swimming pool environment. SCC is usually localized near areas of high residual stress and small cracks can rapidly propagate and cause catastrophic failures. See warning below.

⚠ WARNING

Stainless steel connectors and fasteners shall not be used for metal hangers over swimming pools due to stress corrosion cracking. SCC has been known to occur under the following conditions:

- Use of certain grades of stainless steel (grades 316 and others).
- Structural members subjected to high tensile stress.
- Presence of certain chemicals, including chlorine and bromine.

Gold Coat may be the best choice in this environment.

Continued on next page

The **Structural Connectors Coating Recommendations** chart below was developed by reviewing field service performance and accelerated corrosion test results. They are offered as general guidelines and are not intended to cover all possible service conditions. Additional consideration may also be needed for:

wet service conditions
preservation treated lumber
fire retardant treated lumber
strength reducing chemicals
building near salt water coastal areas.

Additionally, the **Corrosion Protection Guidelines** to the right may also be used to assist in making the proper choice of corrosion protection.

The building designer/engineer has the ultimate responsibility of selecting the most viable protective coating based on knowledge of project specific corrosive environments and local building code requirements.

Corrosion Protection Guidelines:

- USP recommends stainless steel connectors for the highest level of corrosion protection. As an economical alternative to stainless steel our new Gold Coat connectors are specifically designed for exterior application when in contact with preservative treated wood.
- For connectors in contact with preservative treated wood, the Triple Zinc option provides the minimum G-185 coating thickness required by code and is an economical alternative for exterior applications.
- The use of correct fastener with the connector is critical. Stainless steel connectors require stainless steel fasteners. For exterior applications, hot-dip galvanized fasteners (HDG) or exterior coat (EXT) must be used with both Triple Zinc and hot-dip galvanized finishes. Gold Coat connectors require gold coat or hot-dip galvanized fasteners.
- USP's zinc dichromate WS Wood Screws are not recommended for use with preservative or fire-retardant treated wood. Some wood screws are available in Gold Coat or exterior coat.
- USP clearly differentiates standard interior G90 connectors from the corrosion resistant connectors. Gold Coat connectors are distinguishable from other connectors due to their gold color.

Structural Connectors Coating Recommendations

AWPA[9] Use Category	Service Conditions	Use Environment	Example Applications	Preservatives and Retentions[6,7,10]	Minimum Coating Requirements[1,2,3,4]
UC1 Interior/Dry	Interior construction, Above ground, Dry	Continuously protected from weather or other sources of moisture	General framing, interior construction	Untreated	G90
UC2 Interior/Damp	Interior construction, Above ground, Damp	Protected from weather, but may be subject to sources of moisture	Sill plates	SBX-DOT, Organic	G90
				ACQ-D (0.15), CA-B (0.10), CA-C (0.06), MCQ (0.06), µCA-C (0.05)	Triple Zinc (G-185)[8,9], HDG (post hot dipped), Exterior Coat[12]
UC3A Above Ground Protected	Exterior construction, Above ground, Rapid water runoff	Exposed to all weather cycles, not exposed to prolonged wetting	Exposed exterior beams or columns in an open, covered structure	ACQ-D (0.25), MCQ (0.15), CA-B (0.10), CA-C (0.06), µCA-C (0.05), Organic	Triple Zinc (G-185), HDG (post hot dipped), Exterior Coat[12] or USP Gold Coat
UC3B Above Ground Exposed	Exterior construction, Above ground, Poor water runoff	Exposed to all weather cycles, including prolonged wetting	Deck beams and joists	ACQ-D (0.25), MCQ (0.15), CA-B (0.10), CA-C (0.06), µCA-C (0.05), Organic	Triple Zinc (G-185), HDG (post hot dipped), or USP Gold Coat
UC4A Ground Contact General Use	Ground contact, Fresh water; includes above ground applications	Ground contact or fresh water exposed to all weather cycles, Normal exposure	Deck posts, beams and joists. Fresh water docks[11]	ACQ-D (0.40), MCQ (0.23), CA-B (0.21), CA-C (0.15), µCA-C (0.14)	Triple Zinc (G-185), HDG (post hot dipped), or USP Gold Coat[5]
UC4B Ground Contact Heavy Duty	Exterior construction, Ground contact, Critical components	Ground contact, fresh/salt water water splash exposed to all weather cycles	Permanent wood foundations, critical structural members	ACQ-D (0.60), MCQ (0.23), CA-B (0.31), CA-C (0.25), µCA-C (0.23)	Stainless Steel

1) G90 and G-185 refer to galvanization requirements for ASTM A653 material.
2) Connectors galvanized to ASTM A123 may be used in place of either G90 or G185 coatings.
3) Other coating may be suitable for a given environment if the conditions are known and predictable.
4) For G185 connectors use fasteners galvanized per ASTM A153. For Gold Coat connectors, use Gold Coat fasteners and for stainless steel connectors, use stainless steel fasteners.
5) If the enviroment has the potential to contain elements which may make it more corrosive, the use of stainless steel is recommended.
6) MCQ is a micronized copper treatment such as *Micro Pro* by Koppers. µCA-C is a dispersed copper treatment manufactured by Arch Treatment Technologies. Organic preservatives include L^3 from Arch Treatment Technologies and EcoLife II from Viance, LLC.
7) For wood treatments not shown, contact USP or the wood preservative manufacturer for recommended coatings.
8) Testing by USP has found that in interior applications where the treated wood will remain relatively dry during its service life the use of G90 connectors with MCQ or µCA-C treated wood is appropriate.
9) American Wood Protection Assocation Standard U1-16.
10) SBX/DOT= Sodium Borate; ACQ-D = Alkaline Copper Quat Type D; CA-B = Copper Azole Type B; CA-C = Copper Azole Type C; MCQ = Micronized Copper Quat; µCA-C = Dispersed Copper Azole Type C. The number listed in the parenthesis is the required retention level in pounds per cubic foot, or PCF.
11) Deck joists and beams must be treated to Use Category UCA4 when they are difficult to maintain, repair or replace and are critical to the performance and safety of the deck.
12) Users must perform periodic inspection and provide regular maintenance to ensure the satisfactory performance of the structure.

Continued on next page

Corrosion Information

MiTek®

Corrosion Resistant Finishes

USP offers several corrosion resistant finishes to cover a range of corrosion performance. For products available in corrosion resistant finishes, reference the "Corrosion Finish" column in the charts and Corrosion Key located by the chart footnotes or page 15-16 for a complete listing of corrosion resistant products.

Corrosion Protection Level	Finish / Material	Description	Required Fastener	Ordering
CONNECTORS				
	MiTek Primer	Primer paint is used to protect steel during shipping and installation but is not considered a corrosion protection method when installed in corrosive environments.	Bright fasteners	Stock number as listed in the chart
	G90 Galvanizing	Galvanizing provides a prefabrication coating of 0.90 ounces of zinc per square foot of surface area (both sides) measured in accordance with ASTM A 653.	Bright fasteners	Stock number as listed in the chart
	Triple Zinc (TZ) (G-185 Galvanizing)	TZ galvanizing provides a prefabrication coating of 1.85 (G-185) ounces of zinc per square foot of surface area (both sides) measured in accordance with ASTM A 653.	Hot-dip galvanized or **Exterior Coat** fasteners	To order, add TZ to stock number, as in C44-TZ
	Hot-Dip Galvanized (HDG)	HDG coating provides an after-fabrication hot-dipped zinc coating. The coating thickness is dependent on the connector material, but generally ranges from 1.2 to 2.3 ounces of zinc per square foot of surface area (both sides). Hot-dip products meet requirements set forth in ASTM A 123.	Hot-dip galvanized or **Exterior Coat** fasteners	To order, add HDG to stock number, as in KCC44-HDG
	Gold Coat (GC)	Gold Coat is a proprietary multi-layer protection system. It is comprised of an organic top coat barrier layer and a zinc layer placed over a steel substrate.	Gold Coat or Hot-dip galvanized fasteners	To order, add GC to stock number, as in AC7-GC
	Stainless Steel (SS)	Best option for corrosion protection. Quality stainless steel (316SS grade steel) is used to fabricate connectors. Although costs are higher, some applications may need the virtual corrosion proof quality of stainless steel.	Stainless Steel fasteners	To order, add SS to stock number, as in PBES44-SS
FASTENERS				
	Yellow Zinc	Zinc yellow chromate finish		Stock number as listed in the chart
	Hot-Dip Galvanized (HDG)	HDG coating provides an after-fabrication hot-dipped zinc coating. The coating thickness is dependent on the connector material, but generally ranges from 1.2 to 2.3 ounces of zinc per square foot of surface area (both sides). Hot-dip products meet requirements set forth in ASTM A 123.		Stock number as listed in the chart
	Exterior Coat (EXT)	EXT finish is a double barrier coating over zinc.		Stock number as listed in the chart
	Gold Coat (GC)	Gold Coat is a proprietary multi-layer protection system. It is comprised of an organic top coat barrier layer and a zinc layer placed over a steel substrate.		Stock number as listed in the chart
	Stainless Steel (SS)	Best option for corrosion protection.		Stock number as listed in the chart

Updated product information is designated in **blue font**.

DISCLAIMER - The general information and guidelines provided in this USP Product Catalog shall not be used as a substitute for competent professional examination and verification. It is the responsibility of the building designer/engineer to determine the applicability and suitability of the information provided. Anyone making use of this information assumes all responsibility and liability arising from such use.

Corrosion Resistant Product Offering

USP Stock No.	Triple Zinc G-185 (TZ)	Hot-Dip Galv. (HDG)	Exterior Coat (EXT)	Gold Coat (GC)	Stain-less Steel (SS)
Fasteners / Anchors					
AB1212-HDG					
AB126-HDG					
AB128-HDG					
AB5812-HDG					
BP12					
BP583					
HBPS12					
HBPS58					
LBP12-TZ					
LBP58-TZ					
LBPS12-TZ					
LBPS58-TZ					
LL915					
LL930					
N10C					
N10-GC					
N16C					
N8-GC					
NA11					
NA16D					
NA20D					
NA9D					
NA8DHDGPT					
N8CHDGPT					
NA10DHDGPT					
N10CHDGPT					
NA16DHDGPT					
SSN10C					
SSN16C					
SSN8C					
SSNA10D					
SSNA8D					
THR1218-HDG					
THR1224-HDG					
THR1236-HDG					
THR125-HDG					
THR126-HDG					
THR128-HDG					
THR5812-HDG					
THR5816-HDG					
THR588-HDG					
WS15					
WS2					
WS25					
WS3					
WS35					
WS45					
WS6					
WS8					
WSBH25-EXT					
WSBH4-EXT					
WSBH6-EXT					
WSBH8-EXT					
WSBH10-EXT					
WSWH278					
WSWH358-EXT					
WSWH45					
WSWH5					
WSWH6					
WSWH8-EXT					
Holdowns / Foundation Anchors					
FA3					
FA4					
FWAN-TZ					
LTS19-TZ					
PA18					
PA23					
PA28					
RP6					
ST1-TZ					
ST2-TZ					
STB16					

USP Stock No.	Triple Zinc G-185 (TZ)	Hot-Dip Galv. (HDG)	Gold Coat (GC)	Stain-less Steel (SS)
Holdowns / Foundation Anchors				
STB20				
STB24				
STB28				
STB34				
STB36				
STBL24				
STBL28				
TA51				
TA71				
TDL5				
TDX2-TZ				
Column / Post Caps				
BC400-TZ				
BCS22-4				
BCS23-6				
C44				
C46				
C46R				
C66				
C66R				
EPCM4416				
EPCM4616				
EPCM6616				
EPCM66				
KCC325-4				
KCC325-6				
KCC44				
KCC46				
KCC48				
KCC525-4				
KCC525-6				
KCC64				
KCC66				
KCC68				
KCC88				
KCCQ325-4				
KCCQ325-6				
KCCQ44				
KCCQ46				
KCCQ48				
KCCQ525-4				
KCCQ525-6				
KCCQ525-8				
KCCQ64				
KCCQ66				
KCCQ71-4				
KCCQ71-6				
KCCQ74				
KECC325-4				
KECC325-6				
KECC44				
KECC46				
KECC525-4				
KECC525-6				
KECC64				
KECC66				
KECC68				
KECC88				
KECCQ325-4				
KECCQ325-6				
KECCQ44				
KECCQ46				
KECCQ48				
KECCQ525-4				
KECCQ525-6				
KECCQ525-8				
KECCQ64				
KECCQ66				
KECCQ71-4				
KECCQ71-6				
KECCQ74				

USP Stock No.	Triple Zinc G-185 (TZ)	Hot-Dip Galv. (HDG)	Gold Coat (GC)	Stain-less Steel (SS)
Column / Post Caps				
KECCQ76				
PB44-6TZ				
PB66-6TZ				
PBC44-TZ				
PBC66-TZ				
PBES44				
PBES66				
PBS44				
PBS66				
PBS66R				
PCM44				
PCM4416				
PCM46				
PCM4616				
PCM4816				
PCM66				
PCM6616				
Column / Post Bases				
CBSQ44-TZ				
CBSQ46-TZ				
CBSQ66-TZ				
D44-TZ				
D46				
D46R-TZ				
D66				
D66R				
EBG44-TZ				
EBP44T-TZ				
EPB4408				
EPB4608				
EPB6608				
EPBH44				
EPBH46R				
EPBH66				
EPBH66R				
KCB44				
KCB46				
KCB48				
KCB66				
KCB68				
KCB88				
KCB1010				
KCB1212				
KCBQ44				
KCBQ46				
KCBQ66				
KCBQ88				
PA44E				
PA44				
PA46E				
PA46				
PA66E				
PA66ER-TZ				
PA66R				
PA66				
PAU44				
PAU46				
PAU66				
PAU88				
RPB-TZ				
WAS44				
WAS46				
WAS66				
WE44				
WE46				
WE66				
Framing Plates & Angles				
A3				
AC5				
AC7				
AC9				
ANJ44S-HDG				

Corrosion Finish
- Stainless Steel
- Gold Coat
- Exterior Coat
- HDG
- Triple Zinc

Continued on next page

Corrosion Information

MiTek®

Corrosion Resistant Product Offering

USP Stock No.	Triple Zinc G-185 (TZ)	Hot-Dip Galv. (HDG)	Gold Coat (GC)	Stain-less Steel (SS)
Framing Plates & Angles				
CDA-HDG		■		
JA1	■			
KHL33		■		
KHL35		■		
KHL37		■		
KHL43		■		
KHL46		■		
KHL55		■		
KHL57		■		
KHL76		■		
ML24-TZ	■			■
ML26-TZ	■			■
MP3	■			
MP34	■			■
MP4F	■			
MP5	■			■
MP6F				■
MP7	■		■	■
MP9	■		■	
MPA1	■		■	■
Stud Plate Ties				
RSPT6	■			
RSPT6-2	■			
SPT22	■			
SPT24	■			
SPT4	■			
SPT6	■			
SPT8	■			
SPTH4	■			
SPTH6	■			
SPTH8	■			
Lateral Joist Connectors				
LJC-TZ	■			
LJQ15-TZ	■			
LJQ17-TZ	■			
LJQ20-TZ	■			
LJQ23-TZ	■			
LJQ25-TZ	■			
LJQ35-TZ	■			
Twist Straps				
HTW20	■			
LTW12				■
LTW18				■
MTW12	■			
MTW16	■			
MTW20	■			■
MTW30	■			
Straps				
HRS416-TZ	■			
HTP37-TZ	■			
KHST2		■		
KHST3		■		
KRPS22	■			
KRPS28	■			
KST227		■		
KST237		■		
KST248		■		
KST260		■		
L6	■			
LH12		■		
LSTA36				■
MSTA12	■			■
MSTA15	■			
MSTA18	■			■
MSTA21	■			
MSTA24	■			■
MSTA30	■			
MSTA36	■			■
MSTA9	■			
MSTAM24	■			
MSTAM36	■			
PS218-HDG		■		

USP Stock No.	Triple Zinc G-185 (TZ)	Hot-Dip Galv. (HDG)	Gold Coat (GC)	Stain-less Steel (SS)
Straps				
PS418-HDG		■		
PS720-HDG		■		
RS150	■			■
RS16-R				■
T6	■			
TH12-HDG		■		
Hangers				
HD210-2IF	■	■		■
HD210-3IF	■	■		
HD28-2IF	■			
HD410	■			
HD410IF	■			
HD412	■			
HD412IF	■			
HD44IF	■			
HD46	■			
HD46IF	■			
HD48	■			
HD48IF	■			
HD610	■			
HD610IF	■			
HD612	■			
HD612IF	■			
HD68	■			
HD68IF	■			
HDQ210-2IF				■
HDQ210-3IF				■
HDQ310IF				■
HDQ410IF				■
HDQ412IF				■
HDQ610IF				■
HDQ612IF				■
HUS210	■			
HUS210-2IF	■			
HUS212-2				■
HUS26	■			
HUS28	■			
HUS28-2IF	■			
JL210IF-TZ	■			■
JL24IF-TZ	■			
JL26IF-TZ	■			■
JL28IF-TZ	■			
JPF24	■			
JPF26	■			
JUS210	■		■	■
JUS210-2	■		■	■
JUS210-3	■			■
JUS24	■		■	■
JUS24-2	■			
JUS26	■		■	■
JUS26-2	■		■	■
JUS28	■		■	■
JUS28-2	■			■
JUS28-3	■			
JUS36	■			
JUS410	■			
JUS44	■			
JUS46	■			
JUS48	■			
LSSH15-TZ	■			■
LSSH210	■			■
LSSH31	■			
MSH422	■			
SKH210L	■		■	■
SKH210L-2	■			
SKH210R	■		■	■
SKH210R-2	■			
SKH26L	■		■	■
SKH26R	■		■	■
SKH28L	■			
SKH28R	■			
SKHH210L-2	■			

USP Stock No.	Triple Zinc G-185 (TZ)	Hot-Dip Galv. (HDG)	Gold Coat (GC)	Stain-less Steel (SS)
Hangers				
SKHH210L-2IF	■			
SKHH210R-2	■			
SKHH210R-2IF	■			
SKHH410L	■			
SKHH410LIF	■			
SKHH410R	■			
SKHH410RIF	■			
SKHH414LIF	■			
SKHH414RIF	■			
SKHH46L	■			
SKHH46LIF	■			
SKHH46R	■			
SKHH46RIF	■			
SUH210	■			
SUH210-2		■		
SUH210-3		■		
THD28-2	■			
THD410	■			
THD46	■			
THD48	■			
THDH412	■			
THDH610	■			
Hurricane / Seismic Anchors				
HHCP2	■			
HHCP4-TZ	■			
LFTA6	■			
RT10	■			■
RT15	■		■	
RT16-2	■			■
RT16A	■			■
RT20	■			
RT3A	■			■
RT4	■			■
RT5	■			■
RT7	■			■
RT7A	■		■	■
RT8A	■			■
Embedded Truss Anchors				
HTA20	■			■
Deck & Fences				
ADTT-TZ	■			
CSH-TZ	■			
DC50-TZ	■			
DTB-TZ	■			■
ERB24-TZ	■			
FB14-TZ	■			
FB23-TZ	■			
FB24-TZ	■			
FB26-TZ	■			
FRB24-TZ	■			
PRT15-TZ	■			
PRT2H-TZ	■			
PRT2-TZ	■			
PRTIC2-TZ	■			
SCA10-TZ	■			■
SCA9-TZ	■		■	
SDJT14-TZ	■			
SDPT5-TZ	■			
SDPT7-TZ	■			
General Hardware				
ICPL516-TZ	■			
ICPL58	■			
TTA12-TZ	■			
TTA2-TZ	■			
TTB22-TZ	■			
TTC24-TZ	■			
TTC42-TZ	■			
TTF22-TZ	■			
TTR-TZ	■			
TTU2-TZ	■			
WT22				■

Corrosion Finish

- Stainless Steel
- Gold Coat
- Exterior Coat
- HDG
- Triple Zinc

U.S. Standard Steel Gauge Equivalents in Nominal Dimensions

Gauge	Approximate Dimensions		Decimals (inches)		
	Inches	Millimeters	Uncoated Steel	Galvanized Steel (G90)	Triple Zinc (G-185)
3	1/4	6.0	0.238	-- --	-- --
7	3/16	4.5	0.171	0.186	-- --
10	9/64	3.4	0.129	0.138	0.140
11	1/8	3.0	0.114	0.123	0.125
12	7/64	2.7	0.099	0.108	0.110
14	5/64	2.0	0.070	0.078	0.080
16	1/16	1.5	0.055	0.063	0.065
18	3/64	1.2	0.044	0.052	0.054
20	1/32	1.0	0.033	0.040	0.042
22	1/32	0.8	0.029	0.033	0.036

*Actual steel dimensions will vary from nominal dimensions according to industry tolerances.

Maximum Shear Capacity of Joist or Rafter

The table below indicates the calculated shear capacity of different dimensional lumber sizes for various wood species.

Wood Species	Allowable Shear on Bending Member[1,2,3] Joist or Rafter											
	2 x 4			2 x 6			2 x 8			2 x 10		
	100%	115%	125%	100%	115%	125%	100%	115%	125%	100%	115%	125%
DF	630	725	788	990	1139	1238	1305	1501	1631	1665	1915	2081
SP	613	704	766	963	1107	1203	1269	1459	1586	1619	1862	2023
S-P-F	473	544	590	743	854	928	979	1126	1223	1249	1436	1561
Hem Fir	525	604	656	825	949	1031	1088	1251	1359	1388	1596	1734

1) Applies to nominally dimensioned joists as listed, where moisture content < 19% and temperature <100° F.
2) Loads apply to: DF: Douglas Fir-Larch (G=0.50), Fv=180 psi; SP: Southern Pine (G=0.55), Fv=175psi; S-P-F: Spruce-Pine-Fir (G=0.42), Fv=135psi; Hem Fir (G=0.43), Fv=150psi.
3) 115% and 125% loads are increased for short-term loading in accordance to the code.

Roof Pitch

If common Rafter Roof Pitch is . . .

Rise / Run (inches)	Slope (degrees)
1/12	5
2/12	10
3/12	14
4/12	18
5/12	23
6/12	27
7/12	30
8/12	34
9/12	37
10/12	40
11/12	42
12/12	45

Then Hip/Valley Rafter Roof Pitch becomes . . .

Rise / Run (inches)	Slope (degrees)
1/17	3
2/17	7
3/17	10
4/17	13
5/17	16
6/17	19
7/17	22
8/17	25
9/17	28
10/17	30
11/17	33
12/17	35

Slope Conversion Table

Rise / Run (inches)	Slope (degrees)
0/12	Flat
1/12	5
2/12	10
3/12	14
4/12	18
5/12	23
6/12	27
7/12	30
8/12	34
9/12	37
10/12	40
11/12	42
12/12	45

1) Use this conversion table only for hip/valley rafters that are skewed 45° right or left. All other skews or dual pitch roofs will cause the slope to change from that listed above.

Special & Custom Connectors

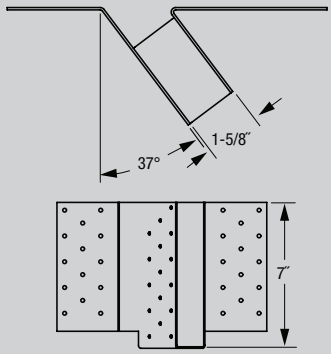
USP is committed to meeting every need you have and we understand that stock connectors will not meet all application or design requirements. Our Technical Assistance Representatives will work with you to develop and fabricate the Special or Custom connector you need.

What is the difference between a "Special" and a "Custom" connector?

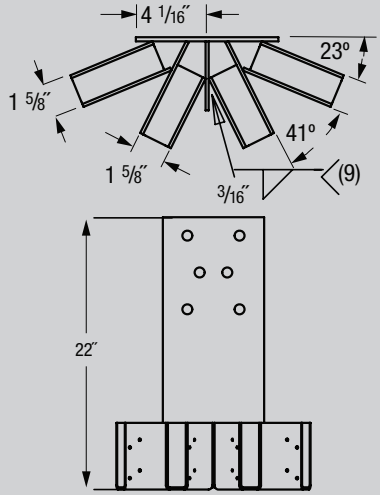
A "Special" is a stock USP connector that is modified within the limits listed in the Specialty Options chart for that connector. A summary of Specialty Options can be found on page 245 of this catalog.

A "Custom" is a connector that does not closely resemble a stock or special part offered in our catalog. Also, a "Custom" connector may be a stock connector that is modified outside of the limits listed in the Specialty Options charts or is not listed in the catalog as having a specialty option available. Product drawings must be provided by the customer and will be manufactured by USP in accordance to customer specifications.

See page 245–249 for additional information.



Special Order EXAMPLE: Skewed HD < 45°



Custom Order EXAMPLE: 4-Pocket Girder Truss Hanger

Product Notes

1) This catalog reflects the most current information available at the time of printing. However, we are continually improving our products through better engineering design and development and recommend visiting our website for the latest on-line version of the catalog. MiTek reserves the right to change specifications, designs, and models at any time without notice and liability for such changes. This catalog may not be reproduced in whole or in part without the prior written approval of MiTek .

2) This catalog reflects changes to product design and allowable loads to some USP products. The information presented in this publication supersedes all previously published Product Catalogs and is valid until June 30, 2018.

3) This Product Catalog was designed as a general reference for the USP Product Line. Various specialized publications have also been developed for design professionals, truss manufacturers, contractors, and building material distributors. Consequently, product information may vary from one publication to another due to product development testing and revisions to code evaluation report upgrades. We recommend visiting our website for the latest on-line version of these specialized publications.

4) The type and quantity of fasteners used to install USP products is critical to connector performance. To achieve the allowable loads presented in this catalog, all specified fasteners must be used and proper installation procedures observed (refer to footnotes under Allowable Loads tables in the product's ICC-ES ESR code evaluation report for possible substitution of TECO brand pneumatic nails). Verify that the dimensions of the supporting members are sufficient to receive the specified fasteners. All product modifications will void the warranty unless prior written consent from MiTek has been obtained.

5) Some connector models are listed more than once to indicate installation and/or fastener options.

6) New products or updated product information are designated in **blue**.

7) Throughout this catalog, dimensions are expressed in inches and loads in pounds unless specifically noted otherwise.

8) Some USP products show both nail fastening and bolt schedules. In those cases, specific loads for each has been identified. Nail and bolt values cannot be combined unless noted otherwise.

9) Load values for 8d, 10d, 16d, and 20d designations in the fastener schedules throughout this catalog refer to common wire nails unless noted otherwise. Nails shall conform to a recognized national standard, such as ASTM F1667, as prescribed by the model building codes.

10) Diamond holes are for optional nailing for maximum listed capacity or for temporary hanger fastening during installation.

11) Fastener installation may cause wood to split and reduce a fastener's ability to transfer loads into the supporting member. **If wood splitting occurs, consider pre-drilling holes not exceeding 75% of the nail diameter (per the National Design Specification for Wood Construction (NDS) Section 12.1.5.3).**

12) Bolts specified in this catalog are through-bolts and must conform to requirements for ASTM A 307 Grade A, or ASME SAE Grade 2, or better unless noted otherwise.

13) Anchor Bolts must conform to ASTM F 1554.

14) USP connectors listed in this catalog are manufactured for specific sizes of standard dimensional lumber, plated trusses, or structural composite lumber. **For applications involving unusual supporting conditions environments, contact MiTek. Wood shrinkage or expansion, caused by lack of moisture or excessive moisture, may adversely affect connector installation. Evaluate potential shrinkage or expansion to ensure proper connector installation and performance.**

15) The load values listed in this catalog are based on installation to wood with a moisture content of less than 19%, and used in dry service conditions. Load reductions, in accordance with the applicable local Building Code, shall be taken where wood moisture content is greater than 19% at the time of installation or where used in wet service conditions.

16) Unless otherwise noted, USP products may not be bent or cut for any reason unless prior written consent from MiTek has been obtained. **Field alterations may significantly reduce the published allowable load values in this catalog.**

1) Some products have allowable loads that can be applied in several directions (F1, F2, and uplift is a common example). When these products have F1, F2 and/or uplift loads applied simultaneously, it is necessary to make the following check:

$$\frac{F_1 \text{ applied}}{F_1 \text{ allowable}} + \frac{F_2 \text{ applied}}{F_2 \text{ allowable}} + \frac{\text{Uplift applied}}{\text{Uplift allowable}} \leq 1.0$$

Alternatively, for simultaneous loads in more than one direction for embedded truss anchors (pages 185-192), LUGT girder tiedowns (pages 194-198), hurricane angles and connectors (pages 196-197), and hurricane ties (pages 200-202); the applied load in each direction shall not exceed 75% of the listed allowable load.

2) Unless otherwise noted, the allowable loads shown in this catalog are based on Allowable Stress Design methodology. Contact MiTek Engineering for assistance in determining appropriate LRFD values.

3) Connector capacities may exceed the allowable capacity of the wood members involved in the connection. A qualified designer should verify that all wood members (supporting and supported) have been properly designed for the connector.

4) Verify that the size of the supporting member can accommodate the connector's specified fasteners.

5) Some illustrations in this catalog may not reflect additional mechanical reinforcements which may be required to reduce cross grain tension or wood member bending under loading. The design professional is responsible for determining if additional mechanical reinforcement is required during construction.

6) MiTek recommends the hanger height be 60% of the joist height for stability during construction.

2012 NDS® Standards

Unless otherwise noted, the allowable load values presented in this catalog reflect the calculation criteria set forth in the 2012 National Design Specification for Wood Construction (NDS®) published by the American Forest and Paper Association; with the methodology prescribed in ICC-ES AC13 or other relevant acceptance criteria applied.

Material

MiTek selects steel for its various products in accordance with application needs and steel properties, including tensile strength, ductility, corrosion resistance, gauge, and weldability. See specific code evaluation reports or consult MiTek for additional steel information on specific products. USP products are manufactured from steel which meets ASTM A 653, ASTM A 1011, or ASTM A 36, ASTM A1018 or ASTM A666 standards.

Testing and Product Design Loads

On all structurally-rated products, USP performs calculations and full-scale testing in accordance with ICC-ES AC13, ASTM D 1761, and other applicable ICC-ES acceptance criteria and standards recognized by model code agencies. All testing is conducted or verified by an approved LAS accredited third-party testing laboratory which generates an independent test report. In accordance to these standards the design loads for joist hangers and similar devices listed are the lowest results obtained from one of the following methods:

1) The lowest ultimate tested load divided by three.
2) Average load producing 1/8" deflection.
3) Calculations based 2012 NDS® and applicable Standards.

The allowable loads for some products have been increased in accordance with the NDS® by applying a Load Duration Factor, C_D for fasteners in wood. Stress increases have not been applied to steel components of the products.

Floor / Design Load ..... 100% (no increase).

Roof Snow ..... 115% of design load for 2-month duration of load

Roof Non-Snow ..... 125% of design load for 7-day duration of load.

Uplift ..... 160% of design load for wind/seismic loading

Spruce-Pine-Fir or Hem Fir Equivalent Capacity

Unless otherwise noted, the published design loads in this catalog apply to Douglas Fir-Larch or Southern Pine lumber. When Spruce-Pine-Fir or Hem Fir lumber is used with face mount hangers or straps, the allowable load capacity may be adjusted according to the chart below.

Allowable Load Adjustment Factor		
Wood Species	**Specific Gravity**	**Adjustment Factor**
Douglas Fir-Larch (DF)	0.50	1.00
Southern Pine (SP)	0.55	1.00
Douglas Fir (S) Hem Fir (N)	0.46	0.88
Spruce-Pine-Fir (S-P-F)	0.42	0.86

1) Allowable loads must be adjusted according to the applicable wood species.
2) When using structural composite lumber, verify wood species and use above listed adjustment factors.

Installation Notes

1) Use proper safety equipment during connector installations. Always wear gloves when handling connectors.

2) All welding should be done in accordance with the American Welding Society (AWS) Standard by a certified welder. **Caution: Welding galvanized steel may produce harmful fumes and should only be performed in well-ventilated environments.**

3) The proper type and quantity of fasteners must be used to install USP products. To achieve the published allowable loads, install with the fasteners specified for that particular product. Some products allow for alternate nail installations. Refer to the "Optional Nails for Face Mount Hangers" chart on page 22 of this catalog for load adjustments when using alternate nailing. All specified fasteners must be properly installed prior to applying load to the connection.

4) Drill bolt holes a minimum of 1⁄32" and a maximum of 1⁄16" larger than the diameter of the bolt to be installed (per the 2012 NDS®, Section 11.1.3).

5) Washers should always be used under the head or nut of a bolt when not in contact with the connector unless noted otherwise.

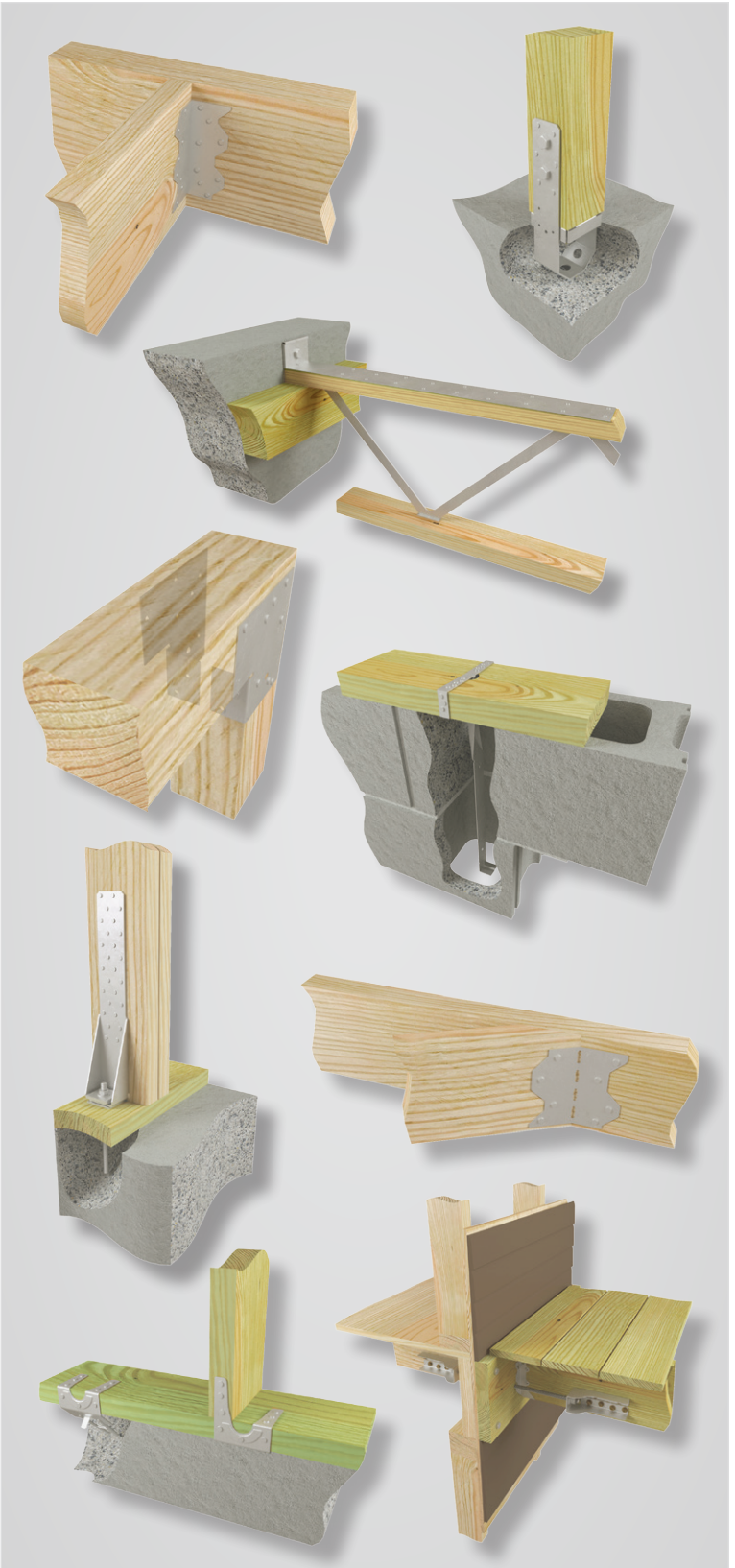
6) It may be permissible to install some connectors with TECO pneumatic nails provided the nail length and diameter are the same and are installed through all pre-punched nail holes. MiTek recommends the use of nail guns featuring hole-locating mechanisms. Please note that many nail guns use fasteners that are shorter than the common nail size and load reductions will result. Contact MiTek Engineering. **Caution: Always follow nail gun manufacturer's safety guidelines.**

7) Joists installed in hangers should bear fully on the connector seat and shall be cut to fit against the header with a gap no greater than 1⁄8" between the joist end and header face.

8) Multiple-ply members must be properly fastened together to distribute loads as a single member.

9) Top mount hangers shall be installed with the back of the hanger tight to the face of the header.

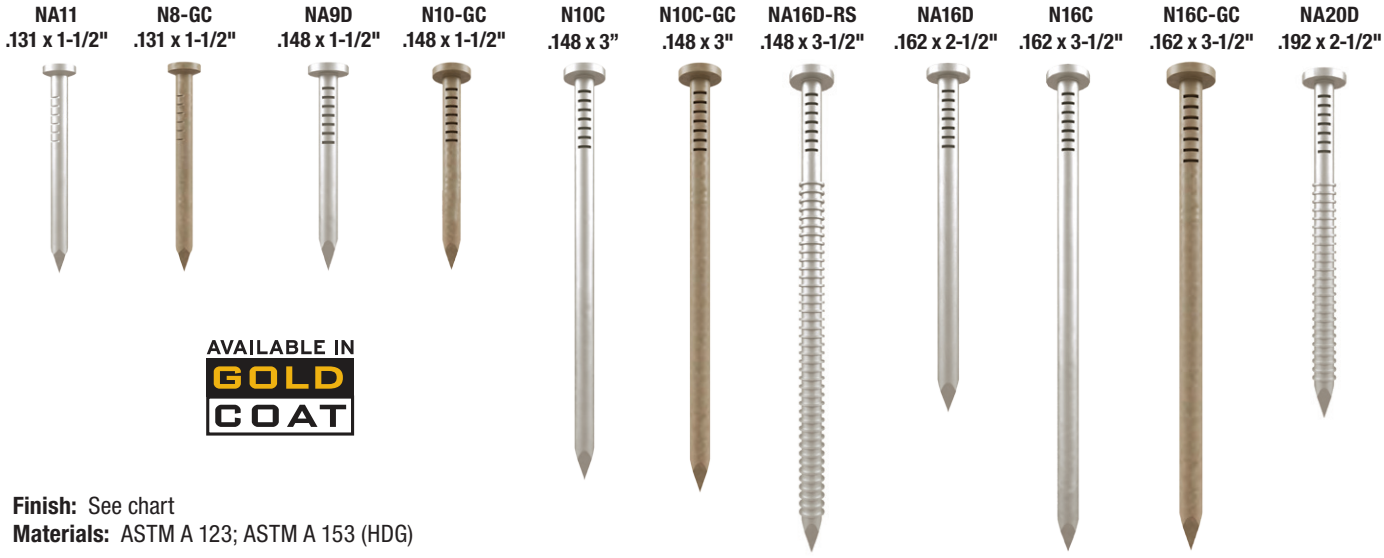
10) Top mount hangers installed in floor systems may produce unevenness. This will vary based on thickness of the top flange and nail heads. **If a problem is anticipated, the effects can be mitigated by dapping or notching the beam or cutting the subfloor at hanger locations. Face mount hangers will eliminate this problem.**



Example of Product Installation Illustrations

N / NA Nails

Proper fasteners are a critical component in a sound wood frame structure. To ensure successful installations of its connectors, USP offers a full range of structurally-rated nails. All galvanized nails supplied by USP are Hot-dipped for greater corrosion resistance. Any USP connector requiring a NA16D-RS or NA20D nail is shipped with the nails attached to the connector in convenient poly bags.



AVAILABLE IN GOLD COAT

Finish: See chart
Materials: ASTM A 123; ASTM A 153 (HDG)

Installation:

- Allowable shear values assume nail embedment into the wood of the entire nail or 10 nail diameters (whichever is less). Otherwise, the nail must be embedded at least 6 nail diameters, with the load reduced using the equation below:

$$\text{Reduced Load} = \frac{\text{Published Load x Actual Penetration}}{\text{Nail Diameter x 10}}$$

- Load reductions may occur if nails are used other than those specified. See the chart Optional Nails for Face Mount Hangers on page 22 for load reduction factors regarding nail substitutions.
- For pneumatic nail use, see Installation Notes on page 20 and reference USP's technical bulletins.

Nail Specification Table

Finish[3,7]	Size	USP Stock No.[7]	Ref. No.	Dimensions (in)		Nails Per Lb.	DF/SP Allowable Shear per Nail (Lbs.)[1,2,4,5]									Withdrawal Load[6]	Corrosion Finish
				Nail Diameter	Length		Steel Gauge										
							3	7	10	12	14	16	18	20	22		
HDG	8d x 1-1/2	NA11	N8	0.131	1-1/2	152	--	--	--	--	--	96	95	94	94	32	
	10d x 1-1/2	NA9D	N10	0.148	1-1/2	100	--	--	139	127	119	116	114	114	113	36	
	10d Common	N10C	10DHDG	0.148	3	70	--	158	139	127	119	116	114	114	113	36	
	16d x 2-1/2	NA16D	N16, N16EG	0.162	2-1/2	66	194	181	161	149	141	138	137	136	--	40	
	16d Common	N16C	16DHDG	0.162	3-1/2	48	194	181	161	149	141	138	137	136	--	40	
	20d x 2-1/2	NA20D	--	0.192	2-1/2	41	234	207	187	175	168	--	--	--	--	47	
GC	8d x 1-1/2	N8-GC	--	0.131	1-1/2	152	--	--	--	--	--	96	95	94	94	32	
	10d x 1-1/2	N10-GC	--	0.148	1-1/2	100	--	--	139	127	119	116	114	114	113	36	
	10d Common	N10C-GC	--	0.148	3	70	--	158	139	127	119	116	114	114	113	36	
	16d Common	N16C-GC	--	0.162	3-1/2	48	194	181	161	149	141	138	137	136	--	40	
SS	8d x 1-1/2	SSNA8D	SSN8	0.131	1-1/2	147	--	--	--	--	--	96	95	94	94	32	
	10d x 1-1/2	SSNA10D	SSN10	0.148	1-1/2	126	--	--	139	127	119	116	114	114	113	36	
	8d Common	SSN8C	SS8D	0.131	2-1/2	94	--	--	--	--	99	96	95	94	94	32	
	10d Common	SSN10C	SS10D	0.148	3	67	--	158	139	127	119	116	114	114	113	36	
	16d Common	SSN16C	SS16D	0.162	3-1/2	44	194	181	161	149	141	138	137	136	136	40	
Bright	8d Common	8d Common	--	0.131	2-1/2	126	--	--	--	--	99	96	95	94	94	32	
	10d Common	10d Common	--	0.148	3	70	--	158	139	127	119	116	114	114	113	36	
	16d Sinker	16d Sinker	--	0.148	3-1/4	60	162	158	139	127	119	116	114	114	--	36	
	16d Ring Shank	NA16D-RS	--	0.148	3-1/2	57	183	168	150	--	--	--	--	--	--	36	
	16d Common	16d Common	--	0.162	3-1/2	48	194	181	161	149	141	138	137	136	--	40	
	20d Common	20d Common	--	0.192	4	29	234	207	187	175	168	--	--	--	--	47	

Corrosion Finish
- Stainless Steel
- Gold Coat
- HDG
- Triple Zinc

1) Loads are calculated to specifications of Part 11 of the National Design Specifications for Wood Construction (NDS®), 2012 Edition.
2) Loads apply to Douglas Fir (G=0.50) and Southern Pine (G=0.55). For Spruce-Pine-Fir (G=0.42) multiply above values by 0.86, for other wood types refer to NDS® or consult USP.
3) HDG = Hot-Dip Galvanized; SS = Stainless Steel; GC = Gold Coat; Bright = No Finish.
4) For 3 gauge steel with Fu=58,000 psi and 7 gauge thru 22 gauge steel with Fu=45,000 psi. Shear values assumes full penetration of at least 10 nail diameters.
5) Fastener values may be increased for duration of load.
6) Withdrawal loads are in pounds (lbs) per linear inch of embedment into main member.
7) Bright finish common and sinker nails are listed in table for reference only. USP does not stock these type nails.

Continued on next page

Minimum Fastener Penetration Table

Nail Penny	Wire Gauge	Shank Diameter (inches)	Minimum Penetration for Full Shear Load (inches)	Minimum Penetration for Reduced Shear Load[2] (inches)
6d	11-1/2	.113	1.13	0.68
8d	10-1/4	.131	1.31	0.79
10d	9	.148	1.48	0.89
12d	9	.148	1.48	0.89
16d Sinker	9	.148	1.48	0.89
16d	8	.162	1.62	0.97
20d	6	.192	1.92	1.15

1) Less than the specified nail penetration shall be multiplied by the applicable adjustment factor.
2) For penetration less than this distance, the nail has no value.
3) Penetrations are derived according to the 2012 NDS®.

⚠ Reduced Fastener Penetration Example (See chart on left):

HD210 – listed load is 1690 lbs. @ 100% for 16d common nails.

Reduced HD210 capacity if using a 2x DF-L or SP header:

$$\frac{1690 \text{ lbs.} \times 1.5}{1.62} = 1565 \text{ lbs. @ } 100\%$$

Optional Nails for Face Mount Hangers

(excludes slant nail hangers)

Catalog Nail	Replacement Fastener[1]	Allowable Load Adjustment Factor		
		DF	SP	S-P-F
8d x 1-1/2 (0.131" x 1-1/2")	8d x 1-1/2 (0.131" x 1-1/2")	1.00	1.00	0.87
	No. 8 (0.164") x 1-1/2 Wood Screw	0.96	1.00	0.83
8d common (0.131" x 2-1/2")	8d Box (0.113" x 2-1/2")	0.77	0.83	0.67
	8d x 1-1/2 (0.131" x 1-1/2")	1.00	1.00	0.87
	No. 8 (0.164") x 1-1/2 Wood Screw	0.96	1.00	0.83
10d x 1-1/2 (0.148" x 1-1/2")	8d x 1-1/2 (0.131" x 1-1/2")	0.83	0.90	0.72
	No. 8 (0.164") x 1-1/2 Wood Screw	0.80	0.87	0.69
10d common (0.148" x 3")	8d Box (0.113" x 2-1/2")	0.64	0.69	0.55
	10d Sinker (0.120" x 2-7/8")	0.71	0.76	0.61
	8d common (0.131" x 2-1/2")	0.83	0.90	0.72
	10d Box (0.128" x 3")	0.80	0.87	0.69
	8d x 1-1/2 (0.131" x 1-1/2")	0.83	0.90	0.72
	10d x 1-1/2 (0.148" x 1-1/2")	1.00	1.00	0.87
	16d Sinker (0.148" x 3-1/4")	1.00	1.00	0.87
	No. 8 (0.164") x 1-1/2 Wood Screw	0.80	0.87	0.69
12d common (0.148" x 3-1/4")	10d x 1-1/2 (0.148" x 1-1/2")	1.00	1.00	0.87
	16d Sinker (0.148" x 3-1/4")	1.00	1.00	0.87
	No. 8 (0.164") x 1-1/2 Wood Screw	0.80	0.87	0.69
16d common (0.162" x 3-1/2")	8d common (0.131" x 2-1/2")	0.70	0.76	0.61
	10d Box (0.128" x 3")	0.67	0.73	0.58
	10d common (0.148" x 3")	0.84	0.91	0.73
	12d common (0.148" x 3-1/4")	0.84	0.91	0.73
	10d x 1-1/2 (0.148" x 1-1/2")	0.84	0.91	0.73
	10d Sinker (0.148" x 2-7/8")	0.60	0.65	0.52
	16d Box (0.135" x 3-1/2")	0.74	0.80	0.65
	16d Sinker (0.148" x 3-1/4")	0.84	0.91	0.73
	16d x 2-1/2 (0.162" x 2-1/2")	1.00	1.00	0.86
	No. 8 (0.164") x 1-1/2 Wood Screw	0.67	0.73	0.58

1) No. 8 x 1-1/2 Wood Screw shall conform to ANSI/ASME Standard B18.6.1-1981.
2) This chart does not apply to HUS, JDS, JH, JPF, JUS, MSH, MUS or THDH slant nail hangers.

How to Use:
The base value is the catalog listed nail in Douglas Fir-Larch and the adjustment factor is the multiplier for the applicable replacement nail and wood combination.

- Adjustment factors may vary with some custom hangers or steel thicker than 10 gauge. Contact USP for exceptions.
- Roofing nails shall not be substituted for any nail size or type.

⚠ Optional Nails Example:

JL210 – listed load is 1650 lbs. @ 100% for 10d common nails.

If substituting:
8d common nails with DF-L or LVL:
1650 lbs. x .83 = 1369 lbs.

8d common nails with SP:
1650 lbs. x .90 = 1485 lbs.

8d common nails with S-P-F:
1650 lbs. x .72 = 1188 lbs.

No further reductions are required.

Continued on next page

N / NA Nails

Fastening Identification / Features

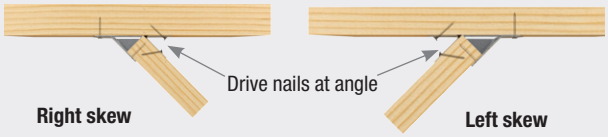
Round Holes:
Always fill all (normal-size) round nail holes, unless otherwise noted.

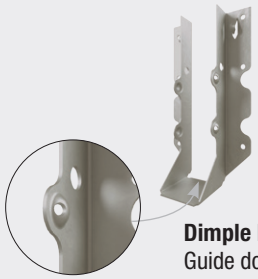
Diamond Holes:
Optional nailing for maximum listed capacity or for temporary hanger fastening during installation.

When there are **MIN** and **MAX** values:
MIN: fill all round nail holes
MAX: fill all round and diamond holes

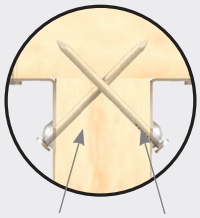
Large Round Holes:
For concrete/masonry installation; no need to be filled when connected to wood.

Obround Holes:
For ease of nailing at a tight location; always fill.



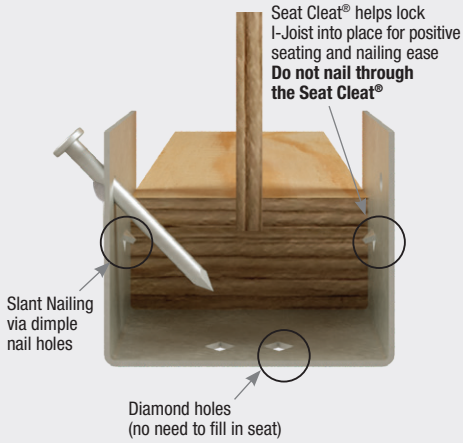


Dimple Holes:
Guide double shear nails into the joist and header at a 30° to 45° angle



Use specified standard length common nails. 16d common and 10d common nails are 3-1/2" and 3" long respectively.

Typical I-Joist Nailing



Common Nailing Errors

Wrong Angle
When a nail is driven into the bottom flange of the wood I-Joist parallel to the glue lines, separation of veneers can occur which substantially reduces the design loads of the connection.

Nail Too Long
When using nails longer than USP's recommended nails, bottom flange splitting may occur. Also, this can raise the wood I-Joist off the seat, resulting in uneven surfaces and squeaky floors along with reduced design load.

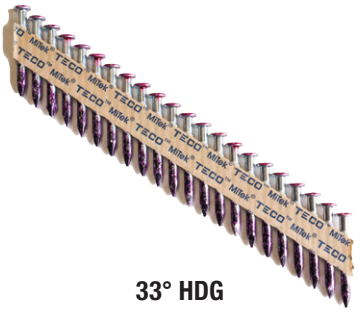
MiTek® TECO™ 33° Collated Nails

MiTek® TECO™ 33° collated pneumatically driven nails feature a color coded head-ID stamp system that makes it easy to verify the proper nail has been used. The 33° collated nails can serve as an alternate to hand-driven installation of the following nails and may be used with many USP products.

Materials: ASTM A580 (Bright) and ASTM A153 (HDG)
Finish: Bright, Hot-Dip galvanized
Codes: See page 10 for Code Reference Key Chart

Installation:
- Can be used in a wide variety of pneumatic nail guns with nail locating ability.
- Follow manufacturer's instructions for proper use of gun and proper safety equipment.
- Install all specified fasteners per catalog.
- Do not overdrive nails.

Available in packs of 250, 800 & Bulk Packs



33° HDG Collated Nails

33° Bright Collated Nails

Typical USP hanger installation using TECO 33° Collated Nails

Finish[1]	Size	USP Stock No.	Ref. No.	Head ID	Dimensions (in)		Code Ref.
					Nail Diameter	Length	
HDG	8d x 1-1/2	NA8DHDGPT	N8HDGPT	A3	0.131	1-1/2	20, F20
	8d Common	N8CHDGPT	--	E3	0.131	2-1/2	
	10d x 1-1/2	NA10DHDGPT	--	A4	0.148	1-1/2	
	10d Common	N10CHDGPT	N10DHDGPT	E4	0.148	2-1/2	
	16d x 2-1/2	NA16DHDGPT	N16HDGPT	E6	0.162	2-1/2	
Bright	8d x 1-1/2	NA8DRPT	--	3H	0.131	1-1/2	
	8d Common	N8CRPT	--	3H	0.131	2-1/2	
	10d x 1-1/2	NA10DRPT	--	4H	0.148	1-1/2	
	10d Common	N10CRPT	--	4H	0.148	2-1/2	
	16d x 2-1/2	NA16DRPT	--	6H	0.162	2-1/2	

1) HDG = Hot-Dip Galvanized; Bright = No Finish.
New products or updated product information are designated in **blue font**.

B Bolts

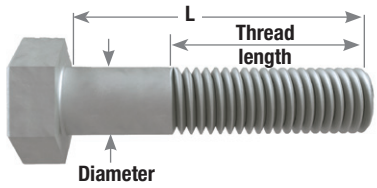
For customer convenience, we offer a wide range of bolts specified for the USP product line. Each bolt is shipped with two washers and one hex nut.

Materials: Bolts and nuts are standard hex head conforming to ASTM A 307 Grade A or SAE Grade 2 or better. Washers conform to American National Standard Type A plain steel, ANSI B.22.1.

Finish: Zinc plated

Installation:

- For installation into connectors in general, install with both washers unless otherwise directing in this catalog.



USP Stock No.	Description Dia. x L (in)	Thread Length (in)
B384	3/8 x 4	1
B125	1/2 x 5	1-1/4
B126	1/2 x 6	1-1/4
B127	1/2 x 7	1-1/2
B128	1/2 x 8	1-1/2
B583	5/8 x 3	1-1/2
B584	5/8 x 4	1-1/2
B585	5/8 x 5	1-1/2
B586	5/8 x 6	1-1/2
B587	5/8 x 7	1-3/4
B588	5/8 x 8	1-3/4
B589	5/8 x 9	1-3/4
B5810	5/8 x 10	1-3/4
B343	3/4 x 3	1-3/4
B344	3/4 x 4	1-3/4
B345	3/4 x 5	1-3/4
B346	3/4 x 6	1-3/4
B347	3/4 x 7	2
B348	3/4 x 8	2
B349	3/4 x 9	2
B3410	3/4 x 10	2
B3411	3/4 x 11	2
B785	7/8 x 5	2
B786	7/8 x 6	2
B787	7/8 x 7	2-1/4
B788	7/8 x 8	2-1/4
B7810	7/8 x 10	2-1/4
B103	1 x 3	2-1/4
B104	1 x 4	2-1/4
B105	1 x 5	2-1/4
B106	1 x 6	2-1/4
B107	1 x 7	2-1/2
B108	1 x 8	2-1/2

Metric Conversion

Bolt Diameter Conversion	
Inches	Millimeters
3/8	9.50
1/2	12.70
5/8	15.90
3/4	19.10
7/8	22.20
1	25.40
1-1/8	28.58
1-1/4	31.75

WS Hex Head Structural Wood Screws

MiTek®

The WS Wood Screw is a self-drilling screw used for numerous framing applications. This screw features a reverse locking serration on the bottom of the screw head to help prevent over tightening against a steel plate. The USP head stamp identifies screws for easy inspection.

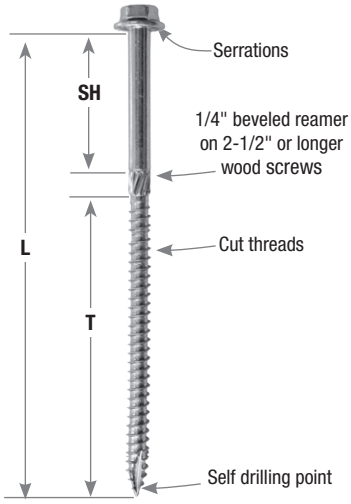
Screw shear capacities are based on a diameter of 0.242" when the shear plane is on the screw shank (SH) and 0.185" when the shear plane is on the knurl or threads (T). WS Wood Screws have a bending yield strength of 180,000 psi. For conditions not charted here, screw loads may be calculated as shown in the NDS® and increased for duration of load.

Materials: 1/4" diameter Grade 5 steel
Finish: See chart
Options: See chart for Corrosion Finish Options
Codes: See page 10 for Code Reference Key Chart

Installation:

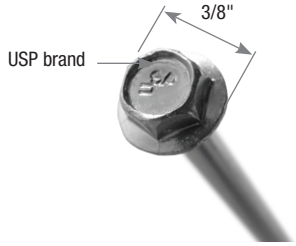
- Screws are self-drilling.
- Install using a low speed clutch drill with 3/8" hex head driver. The washer head should be flat to the surface and the serrations will oppose turning and release the clutch. Do not over-tighten the screws.
- Installing the screw at an angle may introduce additional bending and tension forces into the fastener if the screw head is not flat on the bearing surface. Care should be given to ensure the fastener is installed perpendicular to the plane of the side plate.
- For attaching multi-ply wood trusses or LVL or PSL members, or floor trusses, refer to Technical Bulletins at USPConnectors.com/resources/technical-bulletins.

WS
(Yellow Zinc finish)



WS5-EXT
(Exterior Coat Finish)

WS15-GC
(Gold Coat Finish)



Size (in)	USP Stock No.	Ref. No.	Dimensions (in) L	SH	T	Finish[1]	DF/SP Allowable Loads (Lbs.)[2,4,5] Shear (100%) Wood to Wood[3]	Steel to Wood[6] Gauge 14	10	7	3	Withdrawal Capacity (Lbs/in. of thread) 100%	Steel to Wood Withdrawal Capacity (Lbs.)[6] 100%	Corrosion Finish	Code Ref.
1/4 x 1-1/2	WS15	SDS25112	1-1/2	1/4	1-1/4	Zinc	--	230	261	259	266	164	206		12, F29, R15
1/4 x 2	WS2	SDS25200	2	1/4	1-3/4	Zinc	--	306	307	289	316	160	281		
1/4 x 2-1/2	WS25	SDS25212	2-1/2	1/4	2	Zinc	--	362	352	338	369	199	398		
1/4 x 3	WS3	SDS25300	3	3/4	2	Zinc	268	418	396	387	457	199	398		
1/4 x 3-1/2	WS35	SDS25312	3-1/2	3/4	2-1/2	Zinc	400	451	460	454	481	**311**	520		
1/4 x 4-1/2	WS45	SDS25412	4-1/2	1-1/4	3	Zinc	415	516	588	589	531	214	642		
1/4 x 5	WS5	SDS2500	5	1-3/4	3	Zinc	415	516	588	589	531	214	642		
1/4 x 6	WS6	SDS25600	6	1-3/4	4	Zinc	415	516	588	589	531	214	642		
1/4 x 8	WS8	SDS25800	8	4-3/4	3	Zinc	415	516	588	589	531	214	642		

Size (in)	USP Stock No.	Ref. No.	Dimensions (in) L	SH	T	Finish[1]	S-P-F Allowable Loads (Lbs.)[2,4,5] Shear (100%) Wood to Wood[3]	Steel to Wood[6] Gauge 14	10	7	3	Withdrawal Capacity (Lbs/in. of thread 100%	Steel to Wood Withdrawal Capacity (Lbs.)[6] 100%	Corrosion Finish	Code Ref.
1/4 x 1-1/2	WS15	SDS25112	1-1/2	1/4	1-1/4	Zinc	--	188	211	190	217	103	129		12, F29, R15
1/4 x 2	WS2	SDS25200	2	1/4	1-3/4	Zinc	--	215	244	249	248	117	204		
1/4 x 2-1/2	WS25	SDS25212	2-1/2	1/4	2	Zinc	--	256	292	286	294	141	281		
1/4 x 3	WS3	SDS25300	3	3/4	2	Zinc	227	297	340	322	365	141	281		
1/4 x 3-1/2	WS35	SDS25312	3-1/2	3/4	2-1/2	Zinc	311	338	380	356	370	154	385		
1/4 x 4-1/2	WS45	SDS25412	4-1/2	1-1/4	3	Zinc	364	421	460	425	379	163	489		
1/4 x 5	WS5	SDS2500	5	1-3/4	3	Zinc	364	421	460	425	379	163	489		
1/4 x 6	WS6	SDS25600	6	1-3/4	4	Zinc	364	421	460	425	379	163	489		
1/4 x 8	WS8	SDS25800	8	4-3/4	3	Zinc	364	421	460	425	379	163	489		

1) Zinc = Yellow Zinc Dichromate.
2) Allowable shear loads assume a side plate tensile strength of 45 ksi for 14 gauge and 10 gauge, 52 ksi for 7 gauge and 58 ksi for 3 gauge.
3) Shear loads for wood-to-wood connections assume a side member thickness of 1-1/2".
4) Loads are for 100% duration of load factors, and may be increased for other duration factors in accordance with the NDS.
5) Loads are for shear applications when used as described in this catalog. Please contact USP for applications and installations involving tension forces.
6) Withdrawal loads for steel-to-wood connections assume a side plate thickness of 1/4" or less.

New products or updated product information are designated in **blue font.**

Corrosion Finish
- Stainless Steel
- Gold Coat
- Exterior Coat
- Triple Zinc

Continued on next page

WS Hex Head Structural Wood Screws

MiTek® PRO SERIES

EXTENDED LIFE GOLD COAT

Gold Coat
(WS15-GC Shown)

YELLOW ZINC

Yellow Zinc
(WS25 & WS6 Shown)

Gold Coat & Yellow Zinc Packaging

Yellow Zinc & Gold Coat Screw Packaging Offering

Finish	Use	Size (in)	Retail Box Offering		Mini Bulk Offering		Bulk Offering	
			USP Stock No.	Box/Ctn Qty	USP Stock No.	Box/Ctn Qty	USP Stock No.	Box Qty
Yellow Zinc	Interior for wood-to-wood connections	1/4 x 1-1/2	WS15-R25	12-pack/25-ea	WS15-MB	3-box/300-ea	WS15-BP	1500-ea
		1/4 x 2	WS2-R25	12-pack/25-ea	WS2-MB	3-box/250-ea	WS2-BP	1300-ea
		1/4 x 2-1/2	WS25-R25	12-pack/25-ea	WS25-MB	3-box/200-ea	WS25-BP	1100-ea
		1/4 x 3	WS3-R25	12-pack/25-ea	WS3-MB	3-box/150-ea	WS3-BP	950-ea
		1/4 x 3-1/2	WS35-R10	12-pack/10-ea	WS35-MB	3-box/125-ea	WS35-BP	900-ea
		1/4 x 4-1/2	WS45-R10	12-pack/10-ea	WS45-MB	3-box/100-ea	WS45-BP	800-ea
		1/4 x 5	WS5-R10	12-pack/10-ea	WS5-MB	3-box/100-ea	WS5-BP	500-ea
		1/4 x 6	WS6-R10	12-pack/10-ea	WS6-MB	3-box/100-ea	WS6-BP	600-ea
		1/4 x 8	WS8-R10	12-pack/10-ea	--	--	WS8-BP	400-ea
Gold Coat (GC)	Exterior for Deck Ledgers & other wood-to-wood connections	1/4 x 1-1/2	WS15-GC	12-pack/1-lb box	--	--	--	--
			WS15-GCR25	12-pack/25-ea	--	--	--	--

EXTERIOR USE EXT

Exterior Coat
(WS2-EXT & WS45-EXT Shown)

MiTek Pro Series Packaging

MiTek® PRO SERIES **Packaging Offering**

Finish	Use	Size (in)	Retail Box Offering		50-count Pack		Mini Bulk Offering		Bulk Offering	
			USP Stock No.	Box/Ctn Qty	USP Stock No.	Box/Ctn Qty	USP Stock No.	Box/Ctn Qty	USP Stock No.	Box Qty
Exterior Coat (EXT)	Exterior for Deck Ledgers & other wood-to-wood connections	1/4 x 1-1/2	WS15-EXTR25	10-pack/25-ea	--	--	WS15-EXTMB	2-box/200-ea	WS15-EXTBP	1500-ea
		1/4 x 2	WS2-EXTR25	10-pack/25-ea	--	--	WS2-EXTMB	2-box/200-ea	WS2-EXTBP	1300-ea
		1/4 x 2-1/2	WS25-EXTR25	10-pack/25-ea	--	--	WS25-EXTMB	2-box/200-ea	WS25-EXTBP	1100-ea
		1/4 x 3	WS3-EXTR25	10-pack/25-ea	WS3-EXTR50	5-box/50-ea	WS3-EXTMB	200-ea	WS3-EXTBP	950-ea
		1/4 x 3-1/2	WS35-EXTR12	10-pack/12-ea	WS35-EXTR50	5-box/50-ea	WS35-EXTMB	200-ea	WS35-EXTBP	900-ea
		1/4 x 4-1/2	WS45-EXTR12	10-pack/12-ea	WS45-EXTR50	5-box/50-ea	WS45-EXTMB	200-ea	WS45-EXTBP	800-ea
		1/4 x 5	WS5-EXTR12	10-pack/12-ea	WS5-EXTR50	5-box/50-ea	WS5-EXTMB	200-ea	WS5-EXTBP	600-ea
		1/4 x 6	WS6-EXTR12	10-pack/12-ea	WS6-EXTR50	5-box/50-ea	WS6-EXTMB	200-ea	WS6-EXTBP	500-ea
		1/4 x 8	WS8-EXTR12	10-pack/12-ea	WS8-EXTR50	5-box/50-ea	WS8-EXTMB	200-ea	--	--

WSBH Bugle Head Structural Wood Screws

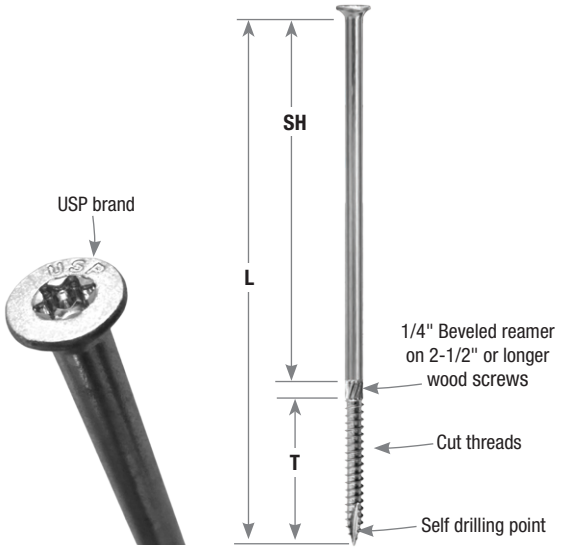
MiTek® PRO SERIES

The WSBH is the ideal structural wood screw for a low profile appearance for general purpose wood-to-wood connectors. This structural wood screw allows the Pro Contractor or DIYer to drive the head flush or countersink it below the wood surface. The WSBH is easy to install and high strength alternative to traditional lags, bolts and pole barn nails.

Materials: 1/4" diameter Grade 5 steel
Finish: Exterior Coat
Options: See chart for Corrosion Finish Options
Codes: See page 10 for Code Reference Key Chart

Installation:

- For best results, install the MiTek Pro Series Bugle Head using a high torque, ½" variable speed drill (minimum 18v if cordless). Bring the washer portion of head flush to the surface of the wood or countersink.



WSBH (Exterior Coat Finish)

Size (in)	USP Stock No.	Ref. No.	Dimensions (in) L	SH	T	Finish[1]	DF/SP Allowable Loads (Lbs.)[4] Wood to Wood Shear[2] 100%	DF/SP Withdrawal[3] 100%	SPF Allowable Loads (Lbs.)[4] Wood to Wood Shear[2] 100%	SPF Withdrawal[3] 100%	LVL Allowable Loads (Lbs.)[4] Wood to Wood Shear[2] 100%	LVL Withdrawal[3] 100%	Corrosion Finish	Code Ref.
1/4 x 2-1/2	WSBH25-EXT	--	2-1/2	1/4	2	EXT	179	199	151	141	--	--		
1/4 x 4	WSBH4-EXT	--	4	1-3/4	2	EXT	316	282	246	208	252	339		12.
1/4 x 6	WSBH6-EXT	--	6	3-3/4	2	EXT	328	282	288	208	283	339		F29,
1/4 x 8	WSBH8-EXT	--	8	5-3/4	2	EXT	328	282	288	208	283	339		R15
1/4 x 10	WSBH10-EXT	--	10	7-3/4	2	EXT	328	282	288	208	283	339		

1) EXT = Exterior Coat.
2) Shear load for wood-to-wood connections assume a side member thickness of 1-1/2" for DF/SP and SPF allowable loads and 1-3/4" for LVL Allowable Loads.
3) Withdrawal loads are derived from the minimum of head pull through tests and withdrawal capacity of threaded portion in main member.
4) Load are for 100% duration of load, and may be increased for the other duration factors in accordance the NDS.
New products or updated product information are designated in **blue font**.

Corrosion Finish
- Stainless Steel
- Gold Coat
- Exterior Coat
- Triple Zinc

EXTERIOR USE EXT

MiTek® PRO SERIES Packaging Table

Finish	Use	Size (in)	Retail Box Offering USP Stock No.	Retail Box Offering Box/Ctn Qty	50-count Pack USP Stock No.	50-count Pack Box/Ctn Qty	Mini Bulk Offering USP Stock No.	Mini Bulk Offering Box/Ctn Qty
Exterior Coat (EXT)	Exterior for General Purpose wood-to-wood connections	1/4 x 2-1/2	WSBH25-EXTR25	10-pack/25-ea	WSBH25-EXTR50	5-box/50-ea	WSBH25-EXTMB	2-box/200-ea
		1/4 x 4	WSBH4-EXTR12	10-pack/12-ea	WSBH4-EXTR50	5-box/50-ea	WSBH4-EXTMB	200-ea
		1/4 x 6	WSBH6-EXTR12	10-pack/12-ea	WSBH6-EXTR50	5-box/50-ea	WSBH6-EXTMB	200-ea
		1/4 x 8	WSBH8-EXTR12	10-pack/12-ea	WSBH8-EXTR50	5-box/50-ea	WSBH8-EXTMB	200-ea
		1/4 x 10	WSBH10-EXTR12	10-pack/12-ea	WSBH10-EXTR50	5-box/50-ea	WSBH10-EXTMB	200-ea

WSWH Washer Head Structural Wood Screws

MiTek® PRO SERIES

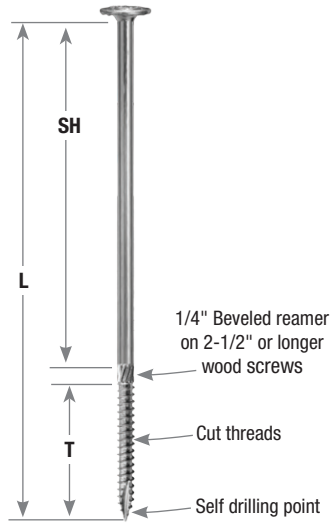
The WSWH comes in two finishes: EXT (exterior grade) and Yellow Zinc (interior grade). Both are easy to install and reduce labor on the job site. The large, flat Washer Head maximizes bearing area and allows for less interference after installation. The EXT finish is an ideal alternative for the Pro or DIYer to traditional Lag screws and through bolts in many wood-to-wood connections including deck ledgers. The Yellow Zinc finish is commonly used in Multi-Ply EWP and Dimensional wood connections.

Materials: 1/4" diameter Grade 5 steel
Finish: See chart
Options: See chart for Corrosion Finish Options
Codes: See page 10 for Code Reference Key Chart

Installation:

- For best results, install the MiTek Pro Series Hex Head using a high torque, ½" variable speed drill (minimum 18v if cordless). Bring the washer portion of head flush to the surface of the wood. Do not overdrive. Technical bulletins for specific applications can be found on the MiTek Pro Series product page at www.mitek-us.com.

WSWH (Yellow Zinc Finish)



WSWH (Exterior Coat Finish)

Size (in)	USP Stock No.	Ref. No.	Dimensions (in) L	SH	T	Finish[1]	DF/SP Allowable Loads (Lbs.)[4] Wood to Wood Shear[2] 100%	Withdrawal[3] 100%	SPF Allowable Loads (Lbs.)[4] Wood to Wood Shear[2] 100%	Withdrawal[3] 100%	LVL Allowable Loads (Lbs.)[4] Wood to Wood Shear[2] 100%	Withdrawal[3] 100%	Corrosion Finish	Code Ref.
Deck Ledger and Other Wood-to-Wood Connections														
1/4 x 2-7/8	WSWH278	SDW22300	2-7/8	5/8	2	Zinc	268	274	227	194	--	--		12, F29, R15
1/4 x 3-5/8	WSWH358-EXT	--	3-5/8	1-3/8	2	EXT	400	398	311	282	319	358		
1/4 x 4-1/2	WSWH45	SDW22458	4-1/2	2-1/4	2	Zinc	415	398	364	282	358	382		
1/4 x 5	WSWH5	SDW22500	5	2-1/4	2	Zinc	415	398	364	282	358	382		
1/4 x 6	WSWH6	SDW22600	6	2-1/4	2	Zinc	415	398	364	282	358	382		
1/4 x 8	WSWH8-EXT	SDWS22800	8	2-1/4	2	EXT	415	398	364	282	358	382		
Multi-Ply EWP Connections														
1/4 x 3-3/8	WSWH338	SDW22338	3-3/8	1-1/8	2	Zinc	268	373	227	264	319	310		12, F29, R15
1/4 x 5	WSWH5	SDW22500	5	2-1/4	2	Zinc	415	398	364	282	358	382		
1/4 x 6-3/4	WSWH634	SDW22634	6-3/4	2-1/4	2	Zinc	415	398	364	282	358	382		
Multi-Ply Dimensional Connections														
1/4 x 2-7/8	WSWH278	SDW22300	2-7/8	5/8	2	Zinc	268	274	227	194	--	--		12, F29, R15
1/4 x 4-1/2	WSWH45	SDW22458	4-1/2	2-1/4	2	Zinc	415	398	364	282	358	382		
1/4 x 6	WSWH6	SDW22600	6	2-1/4	2	Zinc	415	398	364	282	358	382		
1/4 x 6-3/8	WSWH638	SDW22638	6-3/8	2-1/4	2	Zinc	415	398	364	282	358	382		

Corrosion Finish
- Stainless Steel
- Gold Coat
- Exterior Coat
- Triple Zinc

1) Zinc = Yellow Dichromate; EXT = Exterior Coat.
2) Shear load for wood-to-wood connections assume a side member thickness of 1-1/2" for DF/SP and SPF allowable loads and 1-3/4" for LVL Allowable Loads.
3) Withdrawal loads are derived from the minimum of head pull through tests and withdrawal capacity of threaded portion in main member.
4) Load are for 100% duration of load, and may be increased for the other duration factors in accordance the NDS.

New products or updated product information are designated in **blue font**.

MiTek® PRO SERIES Packaging Table

Finish	Use	Size (in)	Retail Box Offering USP Stock No.	Box/Ctn Qty	50-count Pack USP Stock No.	Box/Ctn Qty	Mini Bulk Offering USP Stock No.	Box/Ctn Qty	Bulk Offering USP Stock No.	Box Qty
Yellow Zinc	Interior for Multi-Ply EWP & Multi-Ply Truss Girders	1/4 x 2-7/8	--	--	WSWH278-R50	5-box/50-ea	--	--	WSWH278-BP	500-ea
		1/4 x 3-3/8	--	--	WSWH338-R50	5-box/50-ea	WSWH338-MB	200-ea	--	--
		1/4 x 4-1/2	--	--	WSWH45-R50	5-box/50-ea	--	--	WSWH45-BP	400-ea
		1/4 x 5	--	--	WSWH5-R50	5-box/50-ea	WSWH5-MB	200-ea	--	--
		1/4 x 6	--	--	WSWH6-R50	5-box/50-ea	--	--	WSWH6-BP	300-ea
		1/4 x 6-3/8	--	--	WSWH638-R50	5-box/50-ea	--	--	WSWH638-BP	300-ea
		1/4 x 6-3/4	--	--	WSWH634-R50	5-box/50-ea	WSWH634-MB	200-ea	--	--
Exterior Coat (EXT)	Exterior for Deck Ledgers & other wood-to-wood connections	1/4 x 2-7/8	WSWH278-EXTR25	10-pack/25-ea	WSWH278-EXTR50	5-box/50-ea	WSWH278-EXTMB	200-ea	--	--
		1/4 x 3-5/8	WSWH358-EXTR12	10-pack/12-ea	WSWH358-EXTR50	5-box/50-ea	WSWH358-EXTMB	200-ea	--	--
		1/4 x 4-1/2	WSWH45-EXTR12	10-pack/12-ea	WSWH45-EXTR50	5-box/50-ea	WSWH45-EXTMB	200-ea	--	--
		1/4 x 5	WSWH5-EXTR12	10-pack/12-ea	WSWH5-EXTR50	5-box/50-ea	WSWH5-EXTMB	200-ea	--	--
		1/4 x 6	WSWH6-EXTR12	10-pack/12-ea	WSWH6-EXTR50	5-box/50-ea	WSWH6-EXTMB	200-ea	--	--
		1/4 x 8	WSWH8-EXTR12	10-pack/12-ea	WSWH8-EXTR50	5-box/50-ea	WSWH8-EXTMB	200-ea	--	--

LL LumberLok Structural Connector Screws

MiTek® PRO SERIES

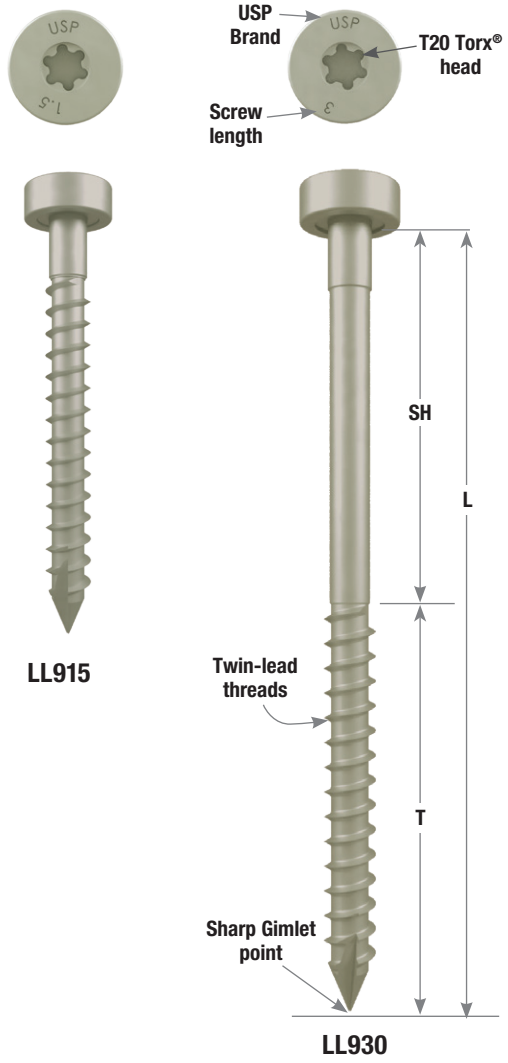
The LumberLok Structural Connector Screw is a self-drilling screw that can be used with a number of USP connectors and also for wood-to-wood applications. The screws feature a T20 Torx® head with integral washer and gimlet point for ease of installation. The twin-lead threads drive in twice as fast as the single lead threads significantly reducing installation time. The USP head stamp identifies the screw length for easy inspection.

Screw shear capacities are based on a diameter of 0.162" when the shear plane is on the screw shank (SH) and 0.109" when the shear plane is on the threads (T). USP LumberLok Structural Connector Screws have a bending yield strength of 180,000 psi.

Materials: Low carbon hardened steel.
Finish: Gold Coat
Codes: See page 10 for Code Reference Key Chart

Installation:

- Screws are self-drilling.
- Install using a low speed clutch drill with T20 Torx® bit (not included). The washer head should be flat to the surface. Do not over-tighten the screws.
- Installing the screw at an angle may introduce additional bending and tension forces into the fastener if the screw head is not flat to the bearing surface. Care should be given to ensure the fastener is installed perpendicular to the plane of the fastener hole.
- **Impact drills are not recommended for use with LumberLok Screws**
- Reference list of USP connectors compatible with LumberLok screws at uspconnectors.com/pdf/technical/2100_lumberlok.pdf.



Size	USP Stock No.	Ref. No.	Dimensions (in.) L	SH	T	Finish[1]	DF/SP Allowable Shear (Lbs.)[2,3,4,5] Wood-to-Wood	Steel-to-Wood Withdrawal Capacity	18 Ga	16 Ga	S-P-F Allowable Shear (Lbs.)[2,3,4,5] Wood-to-Wood	Steel-to-Wood Withdrawal Capacity	18 Ga	16 Ga	Code Ref.
#9 x 1-3/8	LL915	SD9112	1-3/8	1/4	1-1/8	GC	--	120	105	130	--	110	105	105	12, F29, R15
#9 x 2-7/8	LL930	SD9212	2-7/8	1-3/8	1-1/2	GC	105	150	165	165	100	150	140	140	

1) GC = Gold Coat over Clear Zinc Trivalent.
2) Allowable shear loads assume a side plate tensile strength of 45 ksi.
3) Withdrawal loads for steel-to-wood connections assume a side plate thickness of 1/4" or less.
4) Shear loads for wood-to-wood connections assume a side member thickness of 1-1/2".
5) Loads are for 100% duration of load factors and may be increased for other duration factors in accordance with the NDS.

New products or updated product information are designated in **blue font**.

MiTek®

CIA-GEL 7000-C Epoxy

IAPMO ER-0473 Complies with 2015 IBC & 2015 IRC

CIA-GEL 7000-C Epoxy is an adhesive designed to attach anchor rods into concrete that is, or may become, cracked due to cyclic loading from wind or earthquakes. It may also be used with fully grouted CMU construction. It is a low odor, solvent free, non-shrink, non-sag adhesive. The two-component (resin and hardener) epoxy is supplied in equal volume cartridges, which are combined in a 1:1 ratio when dispensed through the attached mixing nozzle. Either a hand powered or air-powered dispenser may be used. The cartridges are sealed with a D-plug which opens easily on the job-site and allows partially used cartridges to be saved for later use. The epoxy has a two year shelf life when stored in unopened containers at temperatures between 50ºF and 77ºF.

Applications:

- Anchors continuously threaded steel rod and deformed rebar into concrete.
- Holdowns into concrete for high seismic zones (SDC C-F)
- Horizontal and overhead anchoring applications (requires special inspection)

USP Adhesive Anchor Design software provides CIA-GEL 7000-C epoxy connection solutions for threaded anchors post-installed into concrete. See USPconnectors.com for more information.

Codes: ER-0473, FL17248, L.A. City RR 25991, NSF/ANSI Standard 61

Available in:
8.5 oz. – GEL7C-10
20.3 oz. – GEL7C-22
50.7 oz. – GEL7C-56

CIA-GEL 7000 Epoxy

ICC-ES ESR-1702 Complies with 2012 IBC & 2012 IRC

CIA-GEL 7000 Epoxy is a structural adhesive specifically designed to attach anchor rods into fully grouted concrete masonry units (CMU) and has recently been evaluated to ICC-ES AC58 for seismic, sustained load, elevated temperature and freeze-thaw suitability conditions. It can also be used to install anchor bolts into uncracked concrete and reinforced brick. It is a low odor, solvent free, non-shrink adhesive. The two-component (resin and hardener) epoxy is supplied in equal volume cartridges, which are combined in a 1:1 ratio when dispensed through the attached mixing nozzle. Either a hand powered or air-powered dispenser may be used. The cartridges are sealed with a D-plug which opens easily on the job-site and allows partially used cartridges to be saved for later use. The epoxy has a two year shelf life when stored in unopened containers at a temperature of 70ºF.

Applications:

- Anchors All-Thread rod and deformed rebar into fully grouted CMU
- Brick veneer anchoring
- Crack injection of medium to wide cracks
- Anchors rebar and threaded steel rod into uncracked concrete.

Codes: ESR-1702, FL17247, NSF/ANSI Standard 61

Available in:
8.6 oz. – GEL7-10
21.2 oz. – GEL7-22

CIA-GEL 6000-GP Epoxy

Tested to AC-58 standards - Compliant to ASTM C881-10

CIA-GEL 6000-GP is a superior epoxy specifically designed for general purpose structural applications that require quick load times and for doweling applications requiring state DOT approval. It is a two-component (1:1 ratio) adhesive epoxy with 100% solids and is solvent free, moisture insensitive, non-sag and has no odor. It provides exceptional strength in anchoring and doweling applications and can be used in temperatures between 35°F and 110°F. The epoxy has a two year shelf life when stored in unopened containers at temperatures between 40°F and 95°F.

Applications:

- Doweling applications for rebar and tie bars for full depth concrete pavement repairs
- Anchoring and bracing for short term tensile load where dynamic, vibratory, wind or intermittent loads exist
- Use in concrete, grout filled block and unreinforced masonry for general purpose anchoring and doweling applications
- Concrete doweling road repairs where DOT approval is required.

Codes: Multiple DOT listings

Available in:
21.2 oz. – GEL6GP-22

For more information on MiTek's Anchoring Epoxy, reference USP's Anchoring Solutions Guide USPconnectors.com.

Continued on next page

CIA-EA Epoxy Acrylate

IAPMO ER-0311, ICC-ES AC308, Complies with 2012 IBC and 2012 IRC

CIA-EA Adhesive Anchoring System is an epoxy acrylate specifically designed to be a high strength, fast cure structural adhesive for anchoring threaded rod and deformed rebar into uncracked concrete. It has the added advantage of being formulated to be used in colder temperatures (32°F) while maintaining excellent flowability. CIA-EA may also be used with fully grouted CMU and reinforced brick construction. It is a 2-component, 100% solids, moisture insensitive adhesive that is ideally suited for a wide range of applications. It is composed of a proprietary blend of solvent free epoxy acrylate resin and is backed by independent research and testing. The epoxy has a 15 month shelf life when stored in unopened containers at temperatures between 41°F to 77°F.

Applications:

- Anchors All-Thread rod into concrete
- May also be used to anchor rebar, starter bars and dowels
- Applications requiring fast cure times
- Cold weather applications
- Can be used in horizontal anchoring applications
- Can be used in overhead anchoring applications (requires special inspection)

Codes: ER-0311, NSF/ANSI Standard 61

Available in:
9.4 oz. – EA-10

IB-9 Incredi-Bond® Epoxy

Incredi-Bond® is a high strength two-component epoxy specifically designed to be a bonding agent for almost all household materials including wood, steel, concrete, brick, stone and CMU block. It is moisture insensitive and can also be used to fill cracks in concrete, block and stone. The epoxy has a 2 year shelf life when stored in unopened containers in dry conditions between 40°F to 95°F.

Applications:

- Bonding applications for:
  - Concrete
  - Brick
  - CMU block
  - Stone
  - Metal
  - Wood
- Repair vertical and overhead cracks in concrete (non-structural)
- Repair vertical and overhead spalls in concrete (5/8" deep & 3" diameter max)
- Non-sag consistency makes this ideal for corner repairs to concrete and block walls
- Repair and replace brick
- Replace pool tile (no need to empty pool)
- Fill holes and cracks
- Not recommended for structural applications

Available in:
8.6 oz. – IB-9

For more information on MiTek's Anchoring Epoxy, reference USP's Anchoring Solutions Guide USPconnectors.com.

DUC Ductile Undercut Anchors

MiTek®

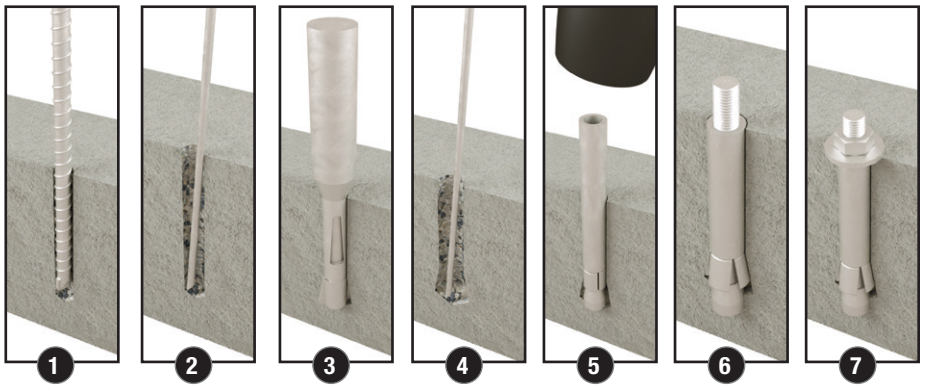
Mechanical anchor expanded into a hole that has been undercut at the bottom using an undercutting drill bit creating a true bearing type anchor that performs like a cast-in-place headed anchor. Load is transferred into the concrete through bearing, not friction like traditional expansion anchors. Excellent performance in seismic and dynamic loading conditions. Meets ACI 318-11 Appendix D (2012 IBC) requirements as a code anchor, including seismic loading, tension zone, and cracked concrete provisions.

Rod Materials: ASTM A36 (L Series), A193 Grade B7 (H Series), or AISI 316 Stainless Studs
Anchor Body Materials: ASTM A 513 Type 5, or AISI 316 Stainless
Codes: See page 10 for Code Reference Key Chart

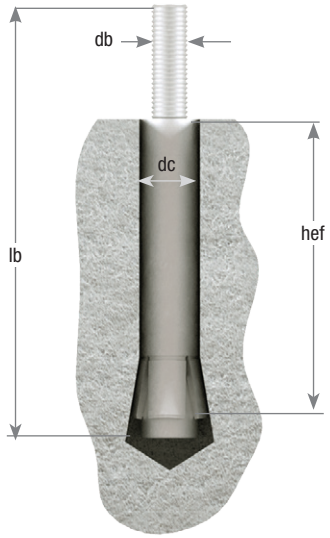
DUC Undercut Anchor

UCB Undercut Drill Bit

Installation



1. Drill the hole to proper depth and diameter per specifications using rotohammer and stop drill.
2. Clean the hole using a blow-out bulb or compressed air.
3. Insert the undercut bit and start rotohammer. Undercutting is complete when the stopper sleeve is fully compressed (gap closed).
4. Clean the hole again using a blow-out bulb or compressed air.
5. Insert anchor into hole. Place setting sleeve over anchor and drive the expansion sleeve over the expansion coupling.
6. Verify that the setting mark is visible on the threaded rod above the sleeve.
7. Apply proper torque.



Tension and shear capacities for DUC Anchors in f'c ≥ 2,500 psi concrete

USP Stock No.	Rod Dia. d_b (in)	Anchor Length l_b (in)	Expansion Coupling Dia. d_c (in)	Drilled Hole Depth of Stop Bit (in)	Effective Embedment h_{ef} (in)	Allowable Tensile Capacity (Lbs.)	Allowable Shear Capacity (Lbs.)	Code Ref.
DUC38-275L	3/8	5-1/2	5/8	3-1/8	2-3/4	2280	2245	7, F28, R7
DUC38-275LT								
DUC38-400H		6-3/4		4-3/8	4	4910	4855	
DUC38-400HT								
DUC12-400L	1/2	7	3/4	4-1/4	4	4170	4110	
DUC12-400LT								
DUC12-500H		8		5-1/4	5	7365	8855	
DUC12-500HT								
DUC12-675H		9-3/4		7	6-3/4	8990		
DUC12-675HT								
DUC58-450L	5/8	7-3/4	1	5	4-1/2	6290	6560	
DUC58-450LT								
DUC58-750H		10-3/4		8	7-1/2	13530	14110	
DUC58-750HT								
DUC58-900H		12-1/4		9-1/2	9	14315		
DUC58-900HT								
DUC34-500L	3/4	8-5/8	1-1/8	5-7/8	5	7365	9685	
DUC34-500LT								
DUC34-1000H		13-5/8		10-7/8	10	20830	20875	
DUC34-1000HT								

1) Allowable tensile and shear capacities are for anchors installed at standard edge distance and spacing in uncracked concrete in accordance with the **2015**, 2012, and 2009 IBC and referenced ACI documents.
2) See ICC-ES ESR-1970 for replacement parts.
New products or updated product information are designated in **blue font**.

Screw Anchors

MiTek®

Wedge-Bolt+ anchor – One-piece, heavy duty screw anchor with a finished hex head is marked with a blue tip and must be installed with a matched tolerance Wedge-Bit. **This series will be discontinued in 2018, recommended replacement is the Screw-Bolt+ series.**

Screw-Bolt+ anchor – One-piece, heavy duty screw anchor with a finished hex head. The patented thread design, designed for use with standard ANSI drill bits, reduces installation torque and enhances productivity. The steel threads along the anchor body tap into the hole during installation to provide keyed engagement and allow for reduced edge and spacing distances.

Finish: Zinc Plated or Mechanically Galvanized

Codes: See page 10 for Code Reference Key Chart

Wedge-Bolt+ ** Discontinuing, limited supply **					Screw-Bolt+ (Recommended Replacement for Wedge-Bolt+)							
Zinc Plated Finish	Galvanized Finish	Anchor Size (in)[1]	Hole Size (in)	Code Ref.	Zinc Plated Finish		Galvanized Finish		Anchor Size (in)[1]	Hole Size (in)	Socket Size (in)	Code Ref.
USP Stock No.[2]	USP Stock No.[2]				USP Stock No.[2]	Ref. No.	USP Stock No.[2]	Ref. No.				
--	--	1/4 x 1-1/4	1/4	3, 19	PFM1411000	THDB25178H	--	--	1/4 x 1-1/4	1/4	7/16	24, 25
7206SD	--	1/4 x 1-3/4			PFM1411020	THD25134H	--	--	1/4 x 1-3/4			
7208SD	--	1/4 x 2-1/4			PFM1411060	THD25214H	--	--	1/4 x 2-1/4			
7210SD	--	1/4 x 3			PFM1411100	THDB25300H	--	--	1/4 x 3			
--	--	--	3/4		PFM1411160	THD37134H	--	--	3/8 x 1-3/4	3/8	9/16	
7222SD	--	3/8 x 2-1/2			PFM1411220	THD37212H	--	--	3/8 x 2-1/2			
7224SD	--	3/8 x 3			PFM1411240	THD37300H	--	--	3/8 x 3			
7226SD	7726SD	3/8 x 4			PFM1411280	THD37400H	PFM1461280	THD37400HMG	3/8 x 4			
7228SD	7728SD	3/8 x 5			PFM1411300	THD37500H	PFM1461300	THD37500HMG	3/8 x 5			
7230SD	--	3/8 x 6			PFM1411320	THD37600H	PFM1461320	THD37600HMG	3/8 x 6			
--	--	--	1/2		PFM1411340	--	--	--	1/2 x 2	1/2	3/4	
--	--	1/2 x 2-1/2			PFM1411360	--	--	--	1/2 x 2-1/2			
7244SD	--	1/2 x 3			PFM1411380	THD50300H	--	--	1/2 x 3			
--	7746SD	1/2 x 4			PFM1411420	THD50400H	PFM1461420	THD50400HMG	1/2 x 4			
7248SD	7748SD	1/2 x 5			PFM1411460	THD50500H	PFM1461460	THD50500HMG	1/2 x 5			
--	7750SD	1/2 x 6			PFM1411480	THD50600H	PFM1461480	THD50600HMG	1/2 x 6			
7252SD	7752SD	1/2 x 8			PFM1411520	THD50800H	PFM1461520	THD50800HMG	1/2 x 8			
--	--	--	5/8		PFM1411540	--	--	--	5/8 x 3	5/8	15/16	
7262SD	--	5/8 x 4			PFM1411580	THD62400H	--	--	5/8 x 4			
--	7764SD	5/8 x 5			PFM1411600	THD62500H	PFM1461600	THD62500HMG	5/8 x 5			
7266SD	--	5/8 x 6			PFM1411640	THD62600H	PFM1461640	THD62600HMG	5/8 x 6			
7270SD	7770SD	5/8 x 8			PFM1411680	THD62800H	PFM1461680	THD62800HMG	5/8 x 8			
--	--	--	3/4		PFM1411700	--	--	--	3/4 x 3	3/4	1-1/8	
7282SD	--	3/4 x 4			PFM1411720	THD75400H	--	--	3/4 x 4			
7284SD	--	3/4 x 5			PFM1411760	THD75500H	--	--	3/4 x 5			
7286SD	7786SD	3/4 x 6			PFM1411800	THD75600H	PFM1461800	THD75600HMG	3/4 x 6			
7288SD	--	3/4 x 8			PFM1411840	THD75812H	--	--	3/4 x 8			
--	7789SD	3/4 x 8-1/2			--	--	PFM1461850	THD75812HMG	3/4 x 8-1/2			
7290SD	--	3/4 x 10			PFM1411880	THD75100H	--	--	3/4 x 10			

Wedge-Bolt®+ (mechanically galvanized)

Screw-Bolt®+ (zinc plated)

1) The anchor size includes the diameter and the overall length of the anchor.
2) Wedge-Bolt+ is marked with a blue tip and must be installed with a matched tolerance Wedge-Bit.

New products or updated product information are designated in **blue font.**

Wedge Bolt+ Anchor Wedge Bits

USP Stock No.	Description	Usable Length (in)
1314	SDS 1/4" x 6"	4
1318	SDS 3/8" x 8"	6
1384	HD Straight Shank 3/8" x 13"	4
1322	SDS 1/2" x 10"	8
1354	SDS-Max 1/2" x 13"	8
1394	HD Straight Shank 1/2" x 13"	11

USP Stock No.	Description	Usable Length (in)
1324	SDS 5/8" x 8"	6
1326	SDS 5/8" x 12"	10
1356	SDS-Max 5/8" x 13"	8
1396	HD Straight Shank 5/8" x 13"	11
1328	SDS 3/4" x 8"	6
1358	SDS-Max 3/4" x 13"	8

SDS-Max Wedge Bit

SDS-Plus Wedge Bit

Power-Stud® HD5 Wedge Expansion Anchors

The Power-Stud HD5 anchor is a fully threaded, torque-controlled, wedge expansion anchor. Suitable base materials include normal-weight concrete and structural sand-lightweight concrete. Nut and washer are included.

Materials: Anchor Body & Expansion Clip: Carbon Steel; Expansion Clip: Stainless Steel; Hex Nut: ASTM A 653; Washer: ASTM F 844

Finish: Hot-dip galvanized

Codes: See page 10 for Code Reference Key Chart

USP Stock No.[2]	Ref. No.	Anchor Size (in)[1]	Thread Length (in)	Code Ref.
7716HD5	WA37500MG	3/8 x 5	3-1/2	130
7720HD5	WA50234MG	1/2 x 2-3/4	1	
7723HD5	WA50414MG	1/2 x 4-1/2	2-3/4	
7724HD5	WA50512MG	1/2 x 5-1/2	3-3/4	
7726HD5	WA50700MG	1/2 x 7	5-1/4	
7733HD5	WA62500MG	5/8 x 5	3	
7734HD5	WA62600MG	5/8 x 6	4	
7738HD5	WA62100MG	5/8 x 8-1/2	6-1/2	

1) The anchor size includes the diameter and the overall length of the anchor.
2) All anchors are packaged with nuts and washers.

New products or updated product information are designated in **blue font.**

Power-Stud® HD5

Power-Stud+® SD1 Wedge Expansion Anchors

Power-Stud+ SD1 anchor is a fully threaded, torque-controlled, wedge expansion anchor which is designed for consistent performance in cracked and uncracked concrete. Suitable base materials include normal-weight concrete, structural sand-lightweight concrete and concrete over metal deck. Nut and washer are included.

Materials: Anchor Body & Expansion Clip: Carbon Steel; Hex Nut: ASTM A 563, Grade A; Washer: ASTM F 844

Finish: Zinc Plating

Codes: See page 10 for Code Reference Key Chart

USP Stock No.[2]	Ref. No.	Anchor Size (in)[1]	Thread Length (in)	Code Ref.
7413SD1	WA37300	3/8 x 3	1-5/8	18, 23
7416SD1	WA37500	3/8 x 5	3-5/8	
7424SD1	WA50512	1/2 x 5-1/2	3-3/4	
7426SD1	WA50700	1/2 x 7	5-1/4	
7427SD1	WA50812	1/2 x 8-1/2	6-3/4	
7433SD1	WA62500	5/8 x 5	3	
7434SD1	WA62600	5/8 x 6	4	
7436SD1	WA62700	5/8 x 7	5	
7438SD1	WA62812	5/8 x 8-1/2	6-1/2	
7439SD1	WA62100	5/8 x 10	8	
7442SD1	WA75512	3/4 x 5-1/2	3	

1) The anchor size includes the diameter and the overall length of the anchor.
2) All anchors are packaged with nuts and washers.
New products or updated product information are designated in **blue font.**

Power-Stud+ SD1 anchor

THR Threaded Rods

THR's support the new deck oriented code requirements for mechanically reinforced railing post and deck to house ledger board attachments.

Materials: ASTM A36 steel, also conforms to ASTM F1554, Grade 36

Finish: Hot-dip galvanized

Codes: See page 10 for Code Reference Key Chart

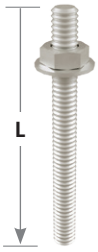
Installation:

- Install into wet concrete with nut embedded or drill minimum 1/16" – 1/8" oversized hole depending on rod size and secure with anchor epoxy.

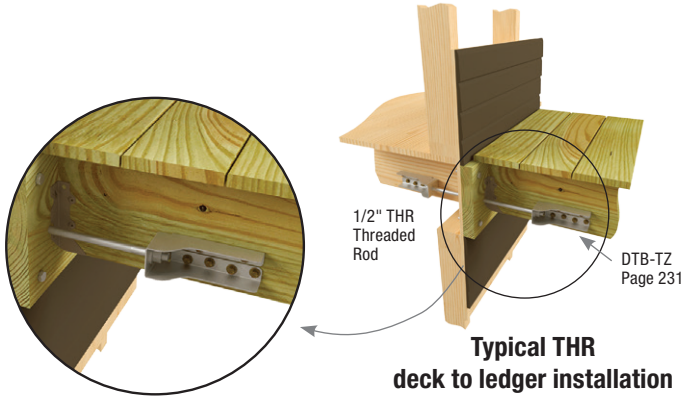
USP Stock No.	Ref. No.	Bolt Dia.	L (in)
THR125-HDG	RFB#4X5HDG	1/2	5
THR126-HDG	RFB#4X6HDG	1/2	6
THR128-HDG	RFB#4X8HDG	1/2	8
THR1218-HDG	--	1/2	18
THR1224-HDG	--	1/2	24
THR1236-HDG	--	1/2	36
THR588-HDG	RFB#5X8HDG	5/8	8
THR5812-HDG	RFB#5X12HDG	5/8	12
THR5816-HDG	RFB#5X16HDG	5/8	16

Corrosion Finish Stainless Steel Gold Coat HDG Triple Zinc

Typical THR installation



THR



Typical THR deck to ledger installation

STB / STBL Anchor Bolts

Embossed ends provide guides for embedment angle and depth. An embedment line is embossed on the shaft for easy installation. Features rolled threads for high tensile strength.

STB – For monolithic slabs and concrete stem walls.

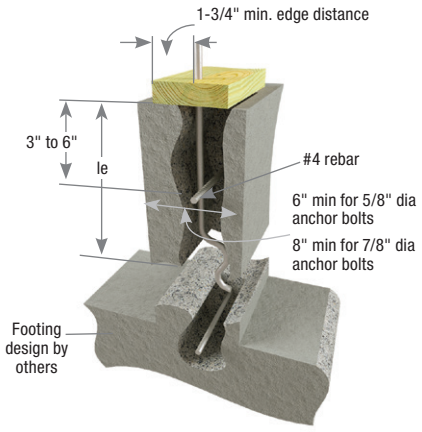
STBL – Designed for use with 3x sill plates. Excellent choice for use with taller holdown washers like those in the PHD series.

Materials: ASTM A 36 steel, also conforms to ASTM F1554 and ASTM A 307 Grade A requirements for bolts.

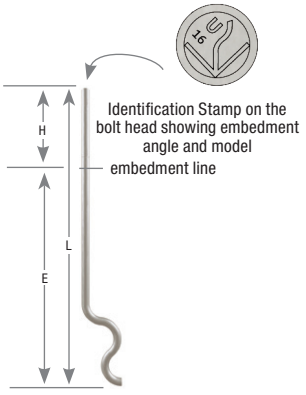
Finish: None

Options: See Chart for Corrosion Finish Options

Codes: See page 10 for Code Reference Key Chart



Typical STB Anchor Bolt installation



STB/STBL

Continued on next page

STB / STBL Anchor Bolts

Monolithic or Stem Wall Foundations – Prior to pour, install the STB or STBL in an upright position and at a 45° angle to the wall. Install one horizontal #4 rebar at a depth of 4" (minimum). (See illustrations.)

Concrete Block Applications – Prior to cell pour, install the STB or STBL in an upright position and at a 45° angle to the wall. (See illustrations.) Use the embossed angle guide on the end of the STB or STBL shaft as a guide. Install one horizontal #4 rebar at a depth of 4" and one vertical #4 rebar maximum 48" o.c. spacing. Fill all cells with concrete having a minimum 2,500 psi compressive strength.

Installation:

- Select appropriate STB or STBL Anchor Bolt.
- Use normal weight concrete with minimum compressive strength of 2,500 psi.
- Minimum center-to-center spacing between bolts is 3(E) for anchors acting simultaneously in tension.
- Match embedment depth with embedment line on the STB or STBL shaft.
- The STB or STBL does not need to be tied to the rebar.
- Nuts and washers are not included.

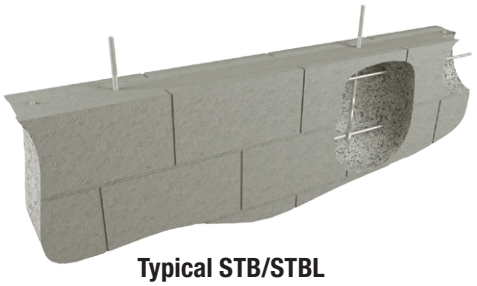
Anchor Bolt Selection Table

USP Stock No.	2x, 3x, (2) 2x Sill Plates[1] Mono Pour
PHD2A	STB16 STBL16
TDX2-TZ	
LTS20B	
HTT16	
HTT45	
PHD4A	STB20 STBL20
HTT45	
TD5	

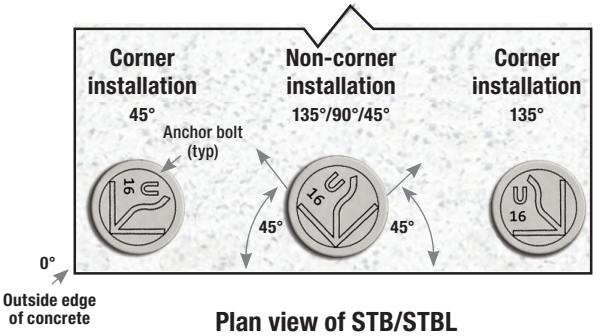
USP Stock No.	2x, 3x, (2) 2x Sill Plates[1] Mono Pour
HTT45	STB24 STBL24
PHD5A	STB28 STBL28
PHD8	
UPHD8	
TD7	
TD9	
TD12	

* Recommend installation of washer under nut of anchor bolt.

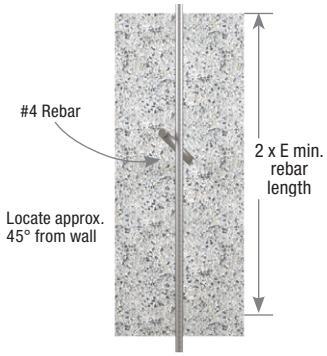
1) STBL model are recommended for use with PHD and UPHD8 holdowns on (2) 2x and 3x sill plates.



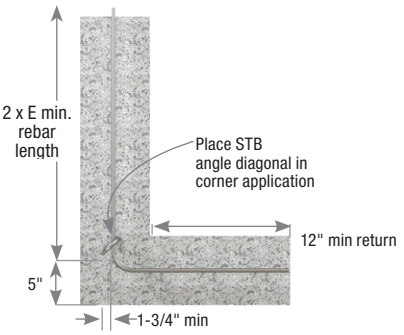
Typical STB/STBL concrete block installation



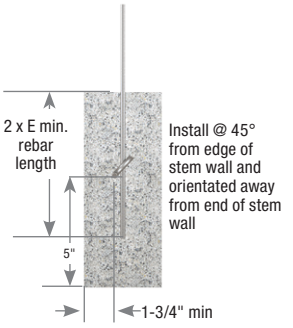
Plan view of STB/STBL placement in concrete stemwall



Plain view along continuous stem wall installation



Plain view of corner of stem wall installation



Plain view of End of Stem Wall installation

USP Stock No.	Ref. No.	Dimensions (in) Stemwall Width	Dia.	L	H	Min. Embed. (E)	Allowable Tension Loads (Lbs)[1,2,3] SDC A&B Midwall	SDC A&B Corner	SDC A&B End Wall	Wind Midwall	Wind Corner	Wind End Wall	SDC C - F Midwall	SDC C - F Corner	SDC C - F End Wall	Corrosion Finish	Code Ref.
STB16	SSTB16	6	5/8	17-13/16	5	12-13/16	4230	4230	4230	4230	4230	4230	3525	3525	3525		1, F35, R3
STB20	SSTB20	6	5/8	21-13/16	5	16-13/16	5120	4740	4740	5115	4230	4230	4265	3555	3555		
STB24	SSTB24	6	5/8	25-13/16	5	20-13/16	5990	5915	5915	5990	5570	5570	4990	4675	4675		
STB28	SSTB28	8	7/8	31	5	26	10100	9490	9490	9110	9110	9110	7650	7650	7650		
STB34	SSTB34	8	7/8	36	6	30	11415	10525	10250	11390	10525	9405	9515	8770	7900		
STB36	SSTB36	8	7/8	38	8	30	11415	10525	10250	11390	10525	9405	9515	8770	7900		
STBL16	SSTB16L	6	5/8	19-9/16	6-3/4	12-13/16	4230	4230	4230	4230	4230	4230	3525	3525	3525		
STBL20	SSTB20L	6	5/8	23-9/16	6-3/4	16-13/16	5120	4740	4740	5115	4230	4230	4265	3555	3555		
STBL24	SSTB24L	6	5/8	27-9/16	6-3/4	20-13/16	5990	5915	5915	5990	5570	5570	4990	4675	4675		
STBL28	SSTB28L	8	7/8	32-3/4	6-3/4	26	10100	9490	9490	9110	9110	9110	7650	7650	7650		

1) Design loads are based on the average ultimate, from a series of five tests, with a safety factor of three.

2) Loads may not be increased for short term loading.

3) Minimum center to center spacing between bolts is 3(E) for anchors acting in tension simultaneously.

4) Minimum edge distance is 1-3/4".

5) Concrete stemwall shall be a minimum of 6" thick for 5/8" anchor bolts and 8" for 7/8" anchor bolts. 6) End distance shall be no less than 5".

7) Connection is limited by lowest of bolt or holdown capacity.

8) Concrete block shall be minimum 10" block.

9) See ESR-2266 for additional information.

Corrosion Finish

- Stainless Steel
- Gold Coat
- HDG
- Triple Zinc

AB Anchor Bolts

The AB anchor bolt provides an economical way to meet the prescriptive requirements of the 2012 IRC for securing mudsill plates to a concrete or masonry foundation. The bolt is manufactured from ASTM 1554 steel and has a hot-dip galvanized finish. A nut (ASTM A 563) and washer (ASTM F 844) are included. In some jurisdictions, a plate washer may be required. Check with your local Building Official.

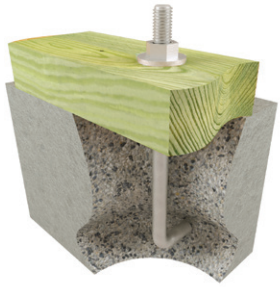
Materials: Bolt: ASTM F 1554, Nut: ASTM A 563, Washers: ASTM F 844

Finish: Hot-dip galvanized

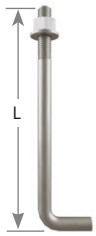
Codes: See page 10 for Code Reference Key Chart. See IRC R403.1.6, IBC 2308.6, 2308.12.8, 2308.12.9 for minimum diameter and embedment into masonry or concrete.

Installation:

- Select appropriate AB Anchor Bolt.
- Use concrete with minimum compressive strength of 2,500 psi at 28 days.
- Nuts and washers are included.
- Anchor bolts intended for use to satisfy code prescribed anchoring of mudsill plates, and shall be installed as defined in the code.
- Allowable loads shall be derived in accordance with the code.
- Plate washers may be required in some regions.



Typical AB128-HDG installation



AB128-HDG

USP Stock No.	Ref. No.	Bolt Dia.	L (in)	Corrosion Finish	Code Ref.
AB126-HDG	-- --	1/2	6		100
AB128-HDG	-- --	1/2	8		
AB1212-HDG	-- --	1/2	12		
AB5812-HDG	-- --	5/8	12		

Corrosion Finish
- Stainless Steel
- Gold Coat
- HDG
- Triple Zinc

BP / HBPS / LBP / LBPS Bearing Plates

BP / LBP – Designed to meet code requirements for mudsill-to-foundation.

HBPS / LBPS – Offers anchor bolt adjustment slots.

Materials: See chart

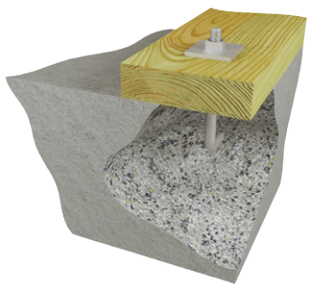
Finish: BP / HBPS – none; LBP / LBPS – G-185 galvanizing

Options: See Chart for Corrosion Finish Options

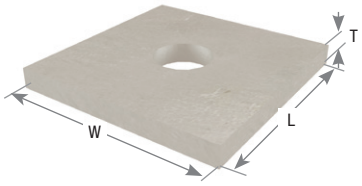
Codes: See page 10 for Code Reference Key Chart. See IRC R602.11.1, IBC 2308.12.8 for minimum plate size requirements.

Installation:

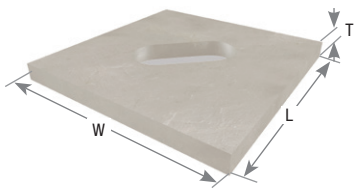
- Bolt holes are sized 1/16" larger than Bolt Dia. shown in chart.



Typical Bearing Plate installation



BP/LBP Standard Bearing Plate



HBPS/LBPS Slotted Bearing Plate

USP Stock No.	Ref. No.	Plate Thickness (T)		Dimensions (in) W	Dimensions (in) L	Bolt Dia.	Corrosion Finish	Code Ref.
LBP12-TZ	LBP1/2, LBP1/2Z	10 Ga	9/64	2	2	1/2		120
LBP58-TZ	LBP5/8, LBP5/8Z	10 Ga	9/64	2	2	5/8		100
LBPS12-TZ	LBPS1/2, LBPS1/2Z	10 Ga	9/64	3	3	1/2		120
LBPS58-TZ	LBPS5/8, LBPS5/8Z	10 Ga	9/64	3	3	5/8		
HBPS12	BPS1/2-3	3 Ga	1/4	3	3	1/2		100
HBPS34	BPS3/4-3	3 Ga	1/4	3	3	3/4		
HBPS58	BPS5/8-3	3 Ga	1/4	3	3	5/8		
BP12	BP1/2	7 Ga	3/16	2	2	1/2		
BP582	BP5/8-2	7 Ga	3/16	2	2	5/8		
BP583	BP5/8, BP5/8-3	3 Ga	1/4	3	3	5/8		
BP343	BP3/4-3	3 Ga	1/4	3	3	3/4		

Corrosion Finish
- Stainless Steel
- Gold Coat
- HDG
- Triple Zinc

ATR All Thread Rods

MiTek

ATR All Thread Rod is a continuously threaded low carbon steel rod that may be used for anchoring USP's holdowns, tension ties and wood structural panel shear walls to concrete. They can also be used for many other general purpose tension transfer fastening needs. 1-1/8" ATR's may be used with Hardy Frame panels. ATR is manufactured from ASTM A307 Grade A steel with a minimum Tensile Strength of 60 ksi.

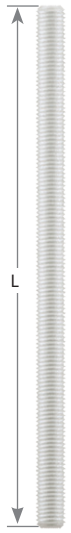
Materials: ASTM A307 Grade A

Finish: None or Zinc Plated (See Chart)

Codes: See page 10 for Code Reference Key Chart

Installation:

- ATR All Thread Rod can be cast-in-place or epoxied into concrete. Use USP's CIA-EA epoxy acrylate or CIA-GEL 7000-C epoxy when installed as a post installed application and follow the published installation instructions to obtain maximum strength. Use CIA-GEL 7000 when installing into fully grouted CMU block wall. Reference USP's Anchoring Solutions Guide, USPconnectors.com/us/products/anchoring-solutions/anchoring-epoxy.



ATR

Size (in)	Finish				
	None		Zinc Plated		
Dia. x L	USP Stock No.	Ref. No.	USP Stock No.	Ref. No.	Code Ref.
3/8 x 5	ATR385	--	ATR385-ZP	--	120
3/8 x 8	ATR388	--	ATR388-ZP	--	
3/8 x 10	ATR3810	--	ATR3810-ZP	--	
3/8 x 12	ATR3812	ATR3/8X12	ATR3812-ZP	--	
3/8 x 16	ATR3816	--	ATR3816-ZP	--	
3/8 x 18	ATR3818	--	ATR3818-ZP	--	
3/8 x 24	ATR3824	ATR3/8X24	ATR3824-ZP	--	
3/8 x 36	ATR3836	ATR3/8X36	ATR3836-ZP	--	
3/8 x 48	ATR3848	ATR3/8X48	ATR3848-ZP	ATR3/8X48ZP	
3/8 x 72	ATR3872	ATR3/8X72	--	--	
1/2 x 5	ATR125	--	ATR125-ZP	--	
1/2 x 8	ATR128	--	ATR128-ZP	--	
1/2 x 10	ATR1210	--	ATR1210-ZP	--	
1/2 x 12	ATR1212	ATR1/2X12	ATR1212-ZP	--	
1/2 x 16	ATR1216	--	ATR1216-ZP	--	
1/2 x 18	ATR1218	ATR1/2X18	ATR1218-ZP	--	
1/2 x 24	ATR1224	ATR1/2X24	ATR1224-ZP	--	
1/2 x 36	ATR1236	ATR1/2X36	ATR1236-ZP	--	
1/2 x 48	ATR1248	ATR1/2X48	ATR1248-ZP	--	
1/2 x 72	ATR1272	ATR1/2X72	--	--	
5/8 x 5	ATR585	--	ATR585-ZP	--	
5/8 x 8	ATR588	ATR5/8X8	ATR588-ZP	ATR5/8X8ZP	
5/8 x 10	ATR5810	--	ATR5810-ZP	--	
5/8 x 12	ATR5812	ATR5/8X12	ATR5812-ZP	ATR5/8X12ZP	
5/8 x 16	ATR5816	--	ATR5816-ZP	--	
5/8 x 18	ATR5818	ATR5/8X18	ATR5818-ZP	ATR5/8X18ZP	
5/8 x 24	ATR5824	ATR5/8X24	ATR5824-ZP	ATR5/8X24ZP	
5/8 x 36	ATR5836	ATR5/8X36	ATR5836-ZP	ATR5/8X36ZP	
5/8 x 48	ATR5848	ATR5/8X48	ATR5848-ZP	--	
5/8 x 72	ATR5872	ATR5/8X72	--	--	
3/4 x 5	ATR345	--	ATR345-ZP	--	
3/4 x 8	ATR348	ATR3/4X8	ATR348-ZP	ATR3/4X8ZP	
3/4 x 10	ATR3410	--	ATR3410-ZP	--	
3/4 x 12	ATR3412	ATR3/4X12	ATR3412-ZP	ATR3/4X12ZP	
3/4 x 16	ATR3416	--	ATR3416-ZP	--	
3/4 x 18	ATR3418	ATR3/4X18	ATR3418-ZP	ATR3/4X18ZP	
3/4 x 24	ATR3424	ATR3/4X24	ATR3424-ZP	ATR3/4X24ZP	
3/4 x 36	ATR3436	ATR3/4X36	ATR3436-ZP	ATR3/4X36ZP	
3/4 x 48	ATR3448	ATR3/4X48	ATR3448-ZP	ATR3/4X48ZP	
3/4 x 72	ATR3472	ATR3/4X72	--	--	

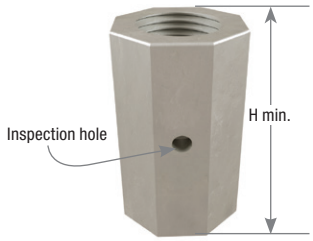
Size (in)	Finish				
	None		Zinc Plated		
Dia. x L	USP Stock No.	Ref. No.	USP Stock No.	Ref. No.	Code Ref.
3/4 x 5	ATR345	--	ATR345-ZP	--	120
3/4 x 8	ATR348	ATR3/4X8	ATR348-ZP	ATR3/4X8ZP	
3/4 x 10	ATR3410	--	ATR3410-ZP	--	
3/4 x 12	ATR3412	ATR3/4X12	ATR3412-ZP	ATR3/4X12ZP	
3/4 x 16	ATR3416	--	ATR3416-ZP	--	
3/4 x 18	ATR3418	ATR3/4X18	ATR3418-ZP	ATR3/4X18ZP	
3/4 x 24	ATR3424	ATR3/4X24	ATR3424-ZP	ATR3/4X24ZP	
3/4 x 36	ATR3436	ATR3/4X36	ATR3436-ZP	ATR3/4X36ZP	
3/4 x 48	ATR3448	ATR3/4X48	ATR3448-ZP	ATR3/4X48ZP	
3/4 x 72	ATR3472	ATR3/4X72	--	--	
7/8 x 5	ATR785	--	ATR785-ZP	--	
7/8 x 8	ATR788	--	ATR788-ZP	--	
7/8 x 10	ATR7810	--	ATR7810-ZP	--	
7/8 x 12	ATR7812	ATR7/8X12	ATR7812-ZP	ATR7/8X12ZP	
7/8 x 16	ATR7816	--	ATR7816-ZP	--	
7/8 x 18	ATR7818	--	ATR7818-ZP	--	
7/8 x 24	ATR7824	ATR7/8X24	ATR7824-ZP	ATR7/8X24ZP	
7/8 x 36	ATR7836	ATR7/8X36	ATR7836-ZP	ATR7/8X36ZP	
7/8 x 48	ATR7848	ATR7/8X48	ATR7848-ZP	--	
7/8 x 72	ATR7872	ATR7/8X72	--	--	
1 x 5	ATR15	--	ATR15-ZP	--	
1 x 8	ATR18	--	ATR18-ZP	--	
1 x 10	ATR110	--	ATR110-ZP	--	
1 x 12	ATR112	ATR1X12	ATR112-ZP	ATR1/2X12ZP	
1 x 16	ATR116	--	ATR116-ZP	--	
1 x 18	ATR118	--	ATR118-ZP	--	
1 x 24	ATR124	ATR1X24	ATR124-ZP	ATR1/2X24ZP	
1 x 36	ATR136	ATR1X36	ATR136-ZP	ATR1X36ZP	
1 x 48	ATR148	ATR1X48	ATR148-ZP	--	
1 x 72	ATR172	ATR1X72	--	--	
1-1/8 x 5	ATR1185	--	ATR1185-ZP	--	
1-1/8 x 8	ATR1188	--	ATR1188-ZP	--	
1-1/8 x 10	ATR11810	--	ATR11810-ZP	--	
1-1/8 x 12	ATR11812	--	ATR11812-ZP	--	
1-1/8 x 16	ATR11816	--	ATR11816-ZP	--	
1-1/8 x 18	ATR11818	--	ATR11818-ZP	--	
1-1/8 x 24	ATR11824	--	ATR11824-ZP	--	
1-1/8 x 36	ATR11836	--	ATR11836-ZP	--	
1-1/8 x 48	ATR11848	ATR1-1/8X48	ATR11848-ZP	--	
1-1/8 x 72	ATR11872	--	--	--	

CNW Coupler Nuts

The USP CNW coupler nut is designed to join threaded rods to embedded anchor rods. They are also used in the Z4 Tie Down system to attach Z-Rods together (See Z4 Product Catalog). The coupler nut has an inspection hole with an internal positive stop that allows easy verification that the ends of both rods have been fully threaded. The CNW coupler is made from low carbon ASTM A563 Grade A steel (Proof Load = 90 ksi) which makes it applicable for many common ASTM steel threaded rods of equivalent or lower strength.

Materials: ASTM A563 Grade A
Finish: Zinc plated
Codes: See page 10 for Code Reference Key Chart

Installation:
- Witness hole is provided to assure easy inspection.
- Tighten rods until they are visible in the inspection hole.
- Works with all thread rods of specified diameter except hot-dip galvanized.



CNW

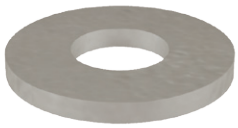
USP Stock No.	Ref. No.	Dimensions (in) Rod Diameter	Dimensions (in) H Min	Allowable Tension (Lbs.) 100%	Code Ref.
CNW38-ZP	--	0.375	1-1/8	2400	130
CNW12-ZP	CNW1/2	0.500	1-1/4	4265	
CNW58-ZP	CNW5/8	0.625	2-1/8	6675	
CNW34-ZP	CNW3/4	0.750	2-1/4	9610	
CNW78-ZP	CNW7/8	0.875	2-1/2	13080	
CNW1-ZP	CNW1	1.000	2-3/4	17080	
CNW118-ZP	--	1.125	3	**21620**	

New products or updated product information are designated in **blue font**.

RW Round Washers

Washers are an important component of a threaded rod assembly and should be properly sized for the intended application. They distribute load from the tightened nut and reduce bearing stresses to prevent crushing of the supporting material. This is especially important when tightening over wood.

Materials: ASTM/ANSI B18.22
Finish: None or Zinc Plated (See Chart)
Codes: See page 10 for Code Reference Key Chart



RW

Finish	USP Stock No.	Ref. No.	Dia. (in)	Code Ref.
None	RW38	--	0.375	120
	RW12	--	0.500	
	RW58	--	0.625	
	RW34	--	0.750	
	RW78	--	0.875	
	RW1	--	1.000	
	RW118	--	1.125	
Zinc Plated	RW38-ZP	--	0.375	
	RW12-ZP	WASHER1/2-ZP	0.500	
	RW58-ZP	WASHER5/8-ZP	0.625	
	RW34-ZP	WASHER3/4-ZP	0.750	
	RW78-ZP	WASHER7/8-ZP	0.875	
	RW1-ZP	WASHER1-ZP	1.000	
	RW118-ZP	WASHER1-1/8-ZP	1.125	

HN Hex Nuts

The USP HN nut is a standard hex nut manufactured from low carbon ASTM A563 Grade A steel (Proof Load = 90 ksi) which makes it applicable for many common ASTM steel threaded rods of equivalent or lower strength.

Materials: ASTM A563 Grade A
Finish: See chart
Codes: See page 10 for Code Reference Key Chart

Finish	USP Stock No.	Ref. No.	Dia. (in)	Code Ref.
Plain	HN38	--	0.375	120
	HN12	--	0.500	
	HN58	--	0.625	
	HN34	--	0.750	
	HN78	--	0.875	
	HN1	--	1.000	
	HN118	--	1.125	
Zinc Plated	HN38-ZP	NUT3/8	0.375	
	HN12-ZP	NUT1/2	0.500	
	HN58-ZP	NUT5/8	0.625	
	HN34-ZP	NUT3/4	0.750	
	HN78-ZP	NUT7/8	0.875	
	HN1-ZP	NUT1	1.000	
	HN118-ZP	NUT1-1/8	1.125	

HN

FT / WG Concrete Form Ties & Wedge

The FT form tie and WG wedge system allows concrete wall forms to be made from 2x nominal form lumber by accurately securing them in place while the concrete is poured. This product is intended for a maximum wall height of 4 feet.

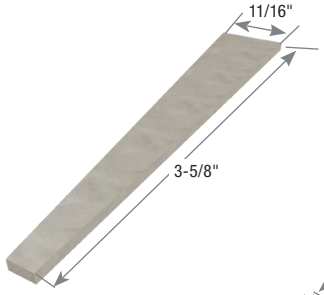
FT – Connect 1x and 2x nominal form lumber in low foundation walls up to 4 feet high.
WG – V-shaped wedge assures rigidity and consistent form spacing.

Materials: FT – 18 gauge, WG – 14 gauge
Finish: G90 galvanizing
Codes: See page 10 for Code Reference Key Chart

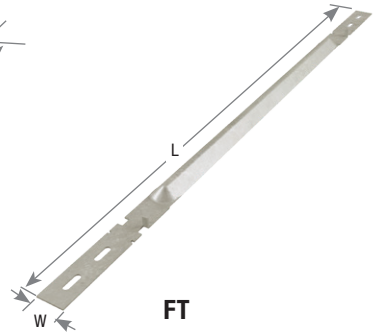
Typical FT/WG installation

Installation:

- Use the Spacing Guide chart to determine spacing between FT units. Each level in chart assumes 12" form boards. Wall thickness from 6" to 12".
- Install with "V" facing up.
- Use (2) WG wedges for each tie. Insert wedge into inside slots for 1x nominal forms and outside slots for 2x nominal forms.
- No walers or stiff-backs are used.
- Vertical ties to keep forms from separating are not included.
- Form deflection may be substantial. Check deflection, if it is critical, and move ties to compensate.
- Forming lumber is assumed to have fb of 1,000 psi.
- **Not recommended for pours greater than 4 feet in height.**



WG Wedge
must order separately



FT

Spacing Guide chart

Concrete Lift Height	Level 1		Level 2		Level 3		Level 4	
	1x	2x	1x	2x	1x	2x	1x	2x
12" or Less	2' 6"	4' 0"	--	--	--	--	--	--
12" – 24"	1' 6"	3' 0"	2' 6"	4' 0"	--	--	--	--
24" – 36"	1' 0"	2' 0"	1' 6"	3' 0"	2' 6"	4' 0"	--	--
36" – 48"	0' 9"	1' 6"	1' 0"	2' 0"	1' 6"	3' 0"	2' 6"	4' 0"

1) Factor of safety against tensile failure of tie is 1.5 or more.

USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in)		Wedge	Footing Width or Wall Thickness	Code Ref.
			W	L	Qty		
FT6	WT6	18	5/8	10-5/8	2	6	120
FT8	WT8	18	5/8	12-5/8	2	8	
FT10	WT10	18	5/8	14-5/8	2	10	
FT12	WT12	18	5/8	16-5/8	2	12	
WG	W1	14	11/16	3-5/8	--	--	

1) May be used with either 3/4" or 1-1/2" forming materials.
2) Breaking strength is approximately 775 pounds. Space as necessary to prevent form blow-out.

FA Foundation Anchor

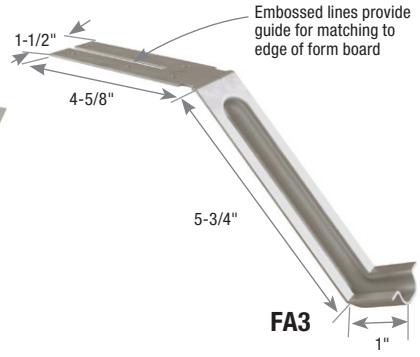
MiTek®

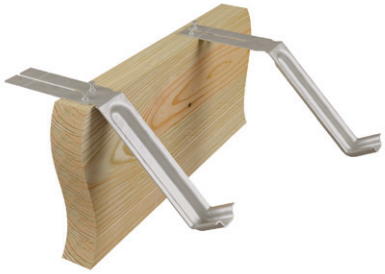
For installation into concrete slabs. The FA3 features a split flange for nailing to both mudsill and stud for greater framing versatility.

Materials: 16 gauge
Finish: G90 galvanizing
Options: See chart for Corrosion Finish Options
Codes: See page 10 for Code Reference Key Chart

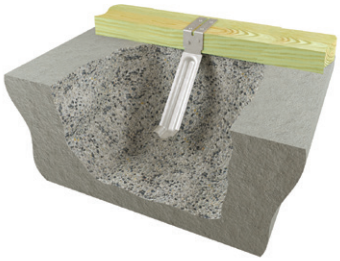
Installation:
- Use all specified fasteners. See Product Notes, page 18.
- Use a minimum of two anchors per mudsill. An anchor should always be within 12" of the end of each mudsill section.
- Do not rely on these anchors to secure concrete sections together between cold joints.
- Insert into wet concrete (minimum strength of 2,500 psi). Place mudsill after concrete cures. Secure flanges to sill (and stud, if applicable), bending flanges as needed to achieve a tight fit. Fasten as directed in chart.
- Do not use in red clay brick.

Typical FA3 installation to mudsill and stud

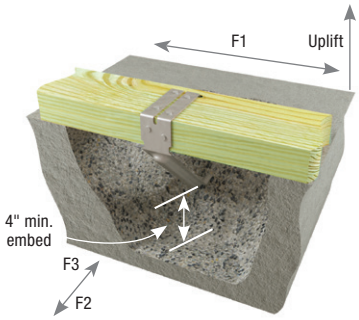




Typical FA3 Form board installation



Alternate FA3 installation



Typical FA3 installation in concrete

Plate Size	USP Stock No.	Ref. No.	Steel Ga.	Fastener Schedule[1,9] Sill Plate Side Qty	Sill Plate Top Qty	Stud Qty	Stud Type	Min Stemwall Thickness (in)	Installation Type	Concrete[8]	DF/SP Allowable Loads (Lbs.)[2,3,5,6,7] Uplift 160%	Uplift Δ_{ASD} (in)[8]	F1 160%	F1 Δ_{ASD} (in)[8]	F2 160%	F2 Δ_{ASD} (in)[8]	Corrosion Finish	Code Ref.
Wind and SDC A & B																		
2 x 4 or 2 x 6	FA3	--	16	2	4	--	10d x 1-1/2	6	Mudsill Only	Uncracked	1410	0.066	780	0.090	1080	0.097		13, R2, F12
										Cracked	985		545		755			
				2	2	2		6	Mudsill & Stud	Uncracked	1410	0.015	780	0.023	1080	0.058		
										Cracked	985		545		755			
SDC C-F																		
2 x 4 or 2 x 6	FA3	--	16	2	4	--	10d x 1-1/2	6	Mudsill Only	Uncracked	1205	0.066	625	0.090	925	0.097		13, R2, F12
										Cracked	845		470		645			
				2	2	2		6	Mudsill & Stud	Uncracked	1205	0.015	625	0.023	925	0.058		
										Cracked	845		470		645			

1) Predrilled holes are not required.
2) Allowable Stress Design (ASD) values have been adjusted for a load duration factor, CD, of 1.6 corresponding to a ten-minute load duration (i.e. wind or earthquake loading) in accordance with the NDS. The ASD loads do not apply to loads of other durations.
3) FA3 capacities are based on using a single-ply 2x sill plate.
4) Minimum distance of 6-inches is required to obtain the listed capacity.
5) Minimum anchor spacing for full capacity is 8-inches. For spacing less than that reduce capacity proportionally.
6) The allowable loads are based on lumber with a specific gravity of 0.50 and a moisture content of 19% or less.
7) Uplift deformation based on wood connection strength.
8) Minimum concrete strength f'c = 2,500 psi.
9) **NAILS:** 10d x 1-1/2" nails are 0.148" dia. x 1-1/2" long.
New products or updated product information are designated in **blue font**.

Corrosion Finish
- Stainless Steel
- Gold Coat
- HDG
- Triple Zinc

FA Foundation Anchor

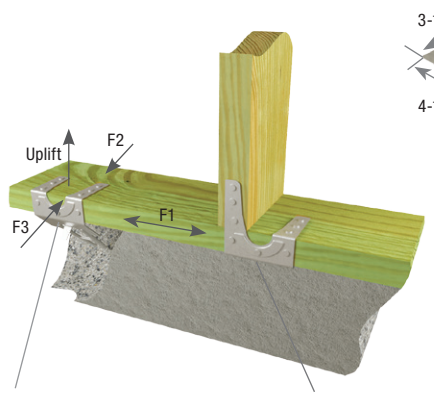
Changes to the international Building Code (IBC) and International Residential Code (IRC) have resulting in 5/8" diameter anchor bolts being more commonly specified on design plans for anchoring the structure to the concrete foundation. The FA4 foundation anchors can be installed as a replacement for these anchor bolts while achieving the same load capacity. They can also be used to replace 1/2" diameter anchor bolts.

There are two FA4 Foundation Anchor design tables below. The first table list the allowable load capacity of the FA4. The second table list the equivalent spacing required to meet the prescriptive code requirement for 5/8" and 1/2" diameter anchor bolts that are called out on the plan as being spaced at 4'-0" or 6'-0" O.C.

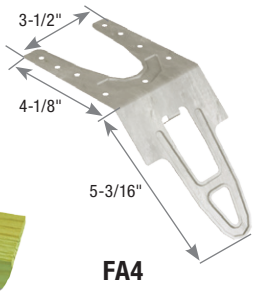
Materials: 16 gauge
Finish: G90 galvanizing
Options: See chart for Corrosion Finish Options
Codes: See page 10 for Code Reference Key Chart

Installation:

- The FA4 can be mounted to the form board before placing the concrete or inserted into the wet concrete after it is poured. See Detail A installation.
- Place the mudsill in position after the concrete cures. Secure the FA4 to the mudsill (and stud, if applicable) by bending the flanges as needed for a tight fit and nailing into place with the size and quantity of fasteners specified in the chart.

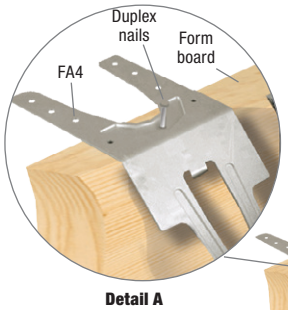


Typical FA4 Mudsill only installation

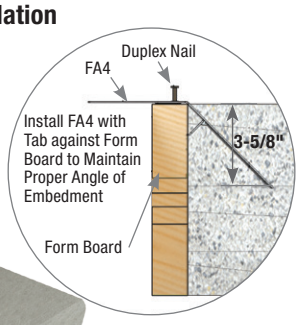


FA4

Typical FA4 Mudsill & Stud installation



Detail A



Detail B

Typical FA4 form board installation

Plate Size	USP Stock No.	Ref. No.	Steel Ga.	Fastener Schedule[6] Sill Plate Side Qty	Sill Plate Top Qty	Stud Qty	Stud Type	Installation Type	Concrete[5]	DF/SP Allowable Loads (Lbs.)[1,2,3] Uplift 160%	Uplift Δ_{ASD} (in)[4]	F1 160%	F1 Δ_{ASD} (in)[4]	F2 160%	F2 Δ_{ASD} (in)[4]	F3 160%	F3 Δ_{ASD} (in)[4]	Corrosion Finish	Code Ref.
Wind and SDC A & B																			
2 x4 or 2 x 6	FA4	MASA	16	3	6	--	10d x 1-1/2	Mudsill Only	Uncracked	905	0.033	1460	0.020	1115	0.132	655	0.130		13, F12, R2
									Cracked	780		1280		780		610			
				3	3	3		Mudsill & Stud	Uncracked	780	0.041	955	0.008	1115	0.130	515	0.122		
									Cracked	780		955		780		515			
SDC C-F																			
2 x4 or 2 x 6	FA4	MASA	16	3	6	--	10d x 1-1/2	Mudsill Only	Uncracked	875	0.033	1460	0.020	875	0.132	655	0.130		13, F12, R2
									Cracked	670		1095		670		520			
				3	3	3		Mudsill & Stud	Uncracked	780	0.041	955	0.008	875	0.130	515	0.122		
									Cracked	670		955		670		515			

1) Allowable loads have been increased 60% for wind and seismic loads; no further increase shall be permitted.
2) Allowable loads are based on a minimum stemwall thickness of 6", minimum distance from the end of the concrete wall of 4" and minimum anchor spacing of 8".
3) Allowable loads are based on a single-ply 2x mudsill with a minimum specific gravity of 0.50 and a moisture content of 19% or less.
4) Deflections are derived from static, monotonic load tests of FA4 connected to DF wood members with the specified fasteners.
5) Minimum concrete strength f'c = 2500 psi.
6) **NAILS:** 10d x 1-1/2" nails are 0.148" dia. x 1-1/2" long.
New products or updated product information are designated in **blue font**.

Corrosion Finish
Stainless Steel Gold Coat
HDG Triple Zinc

Prescriptive Spacing to Replace 1/2" or 5/8" Diameter Bolts

Anchor Bolt Diameter	Anchor Bolt Spacing	DF/SP 2x Mudsill O.C. Spacing Wind	DF/SP SDC A & B	DF/SP SDC C-E	Hem-Fir 2x Mudsill O.C. Spacing Wind	Hem-Fir SDC A & B	Hem-Fir SDC C-E	Min End Distance	Min C-C Spacing
1/2"	6'-0"	6'-0"	6'-0"	6'-0"	6'-0"	6'-0"	6'-0"	5-1/2"	7-1/4"
	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"		
5/8"	6'-0"	5'-4"	5'-4"	5'-4"	5'-0"	5'-0"	5'-0"		
	4'-0"	3'-7"	3'-7"	3'-7"	3'-4"	3'-4"	3'-4"		

1) Place anchors not more than 1'-0" from end of each mudsill per code.
2) Spacing is based on parallel to mudsill load direction only.
3) Concrete shall have a minimum f'c = 2500 psi.
4) Spacing applies to a maximum of 1 in 4 FA4 Foundation Anchors being installed to mudsill and stud.
5) Spacing requirements are based on lateral load capacities of anchor bolts published in the 2012 National Design Specification.

ST Foundation Anchors

MiTek®

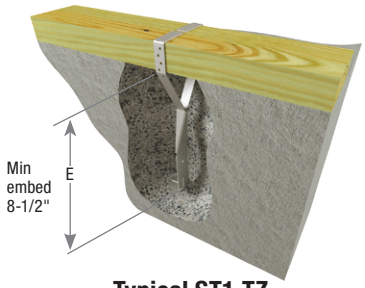
ST1-TZ – For installation into concrete slab or poured stemwalls. The ST1-TZ features a prebent base flange to assure proper anchoring into concrete.

ST2-TZ – For installation into concrete slab, poured stemwalls or concrete/masonry. The ST2-TZ features a prebent base flange to assure proper anchoring into concrete.

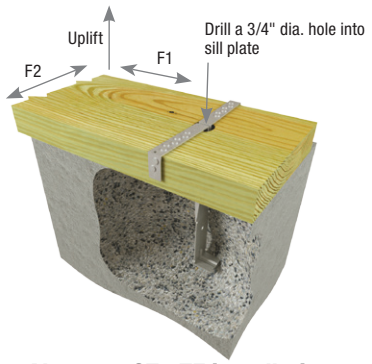
Materials: 18 gauge
Finish: G-185 galvanizing
Codes: See page 10 for Code Reference Key Chart

Installation:

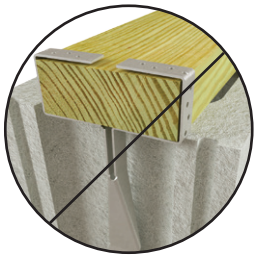
- Use all specified fasteners. See Product Notes, page 18.
- Use a minimum of two anchors per mudsill. An anchor should always be within 12" of the end of each mudsill section. Follow spacing guidelines in chart.
- Do not rely on these anchors to secure concrete sections together between cold joints.
- Spread sill flanges to mudsill width prior to insertion into wet concrete (minimum strength of 2,500 psi). Alternate installation is possible by inserting unbent flanges through 3/4" center hole pre-drilled in mudsill. Foundation anchors may also be attached to mudsill and then inserted into wet concrete. When installing ST2-TZ into concrete block, fill cells with grout with a minimum strength of 2,500 psi. Concrete block edges may need to be beveled to facilitate installation.
- ST2-TZ in masonry construction shall be installed in the core of the block and grouted with concrete grout designed for that purpose. In no case, shall they be installed in a mortar joint.
- Do not use in red clay brick.



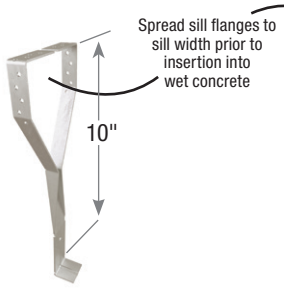
Typical ST1-TZ installation in concrete



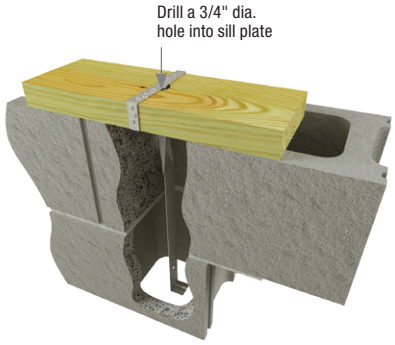
Alternate ST1-TZ installation with 3/4" center hole



DO NOT install ST1-TZ and ST2-TZ without pre-bending sill flanges in "Y" configuration



ST1-TZ **ST2-TZ**



Alternate ST2-TZ installation with 3/4" center hole in mudsill

Plate Size	USP Stock No.	Ref. No.	Steel Gauge	Fastener Schedule[4] Mudsill Top Qty	Mudsill Top Type	Mudsill Side Qty	Mudsill Side Type	Min. Embed.[3] (E)	Max. Spacing[2] (Feet)	DF/SP Allowable Loads (Lbs.)[1] Uplift 160%	F1 160%	F2 160%	Corrosion Finish	Code Ref.
2 x 4 - 6	ST1-TZ	MAB15, MAB15Z	18	4	8d x 1-1/2 HDG	4	8d x 1-1/2 HDG	8-1/2"	*3'-3"	825	565	745		130
	ST2-TZ	MAB23, MAB23Z	18	4	8d x 1-1/2 HDG	4	8d x 1-1/2 HDG	16-1/2"	*3'-3"	825	565	745		

1) Allowable loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) Anchor spacing and design loads assume treated Douglas Fir-Larch with Fc perpendicular @ 625 psi; replaces code prescribed 1/2" anchor bolt with standard washer, spaced 6 ft. on center.
3) If installed in the alternate configuration, the ST1-TZ shall be embedded 7-1/4" and ST2-TZ 15".
4) **NAILS:** 8d x 1-1/2" nails are 0.131" dia. x 1-1/2" long.
*When a 2 x 8 mudsill is used for ST1-TZ or ST2-TZ, maximum spacing is 3 feet unless alternate installation is used.
New products or updated product information are designated in **blue font.**

Corrosion Finish Stainless Steel Gold Coat HDG Triple Zinc

FWAN Foundation Wall Anchor

MiTek®

USP's FWAN-TZ Foundation Wall Anchor is designed to transfer in-plane and out-of-plane foundation wall loads imposed by soil through the joist/blocking into the floor diaphragm. The unique design allows for installations that straddle the joist/blocking eliminating bending stresses in the rim board that result from offset installations.

The FWAN-TZ offers two methods of installation:

1. Centered Installation

- Compatible with joist/blocking up to 3-1/2 inches wide
- Highest load capacities for transfer of out-of-plane loads into floor framing
- Rim board splices allowed anywhere along the wall

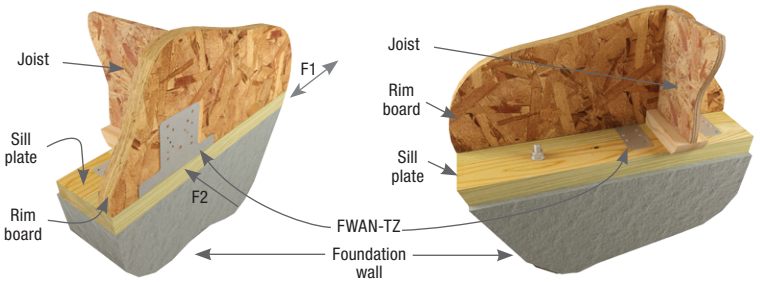
2. Offset Installation

- Installs in the space between the joists/blocking
- Out-of-plane loads are transferred thru the rim board into the floor framing
- Offsets up to 4 inches

Materials: 16 gauge
Finish: G-185 galvanizing
Codes: See page 10 for Code Reference Key Chart

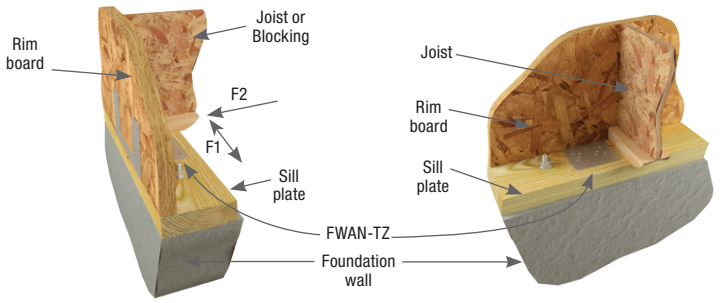
Installation:

- **Centered Installation** - Fill only triangle holes when nailing to the rim board.
- **Offset Installation -** Fill only diamond holes when nailing to the rim board.
- FWAN-TZ must be installed tight to the outside face of the rim board.
- Minimum sill plate thickness is 1-1/2 inches.
- Offset Installations require that the FWAN-TZ be installed within 4 inches of the joist/blocking.
- For Offset Installations, install with two narrow tabs against rim board. Splices in the rim board are not permitted in the space between the joist/blocking where the FWAN-TZ is installed.
- The designer must specify the anchor bolt size, spacing and embedment necessary to transfer the foundation loads into the sill plate. Stresses in the sill plate must be considered when determining the maximum spacing of the anchor bolts.



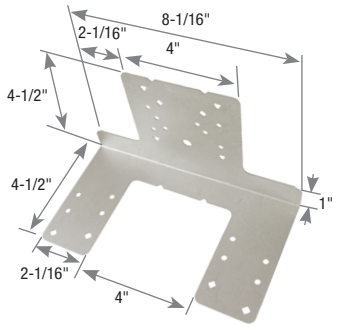
Centered Installation

Typical FWAN-TZ centered on joist/blocking



Offset Installation

Typical FWAN-TZ offset max 4" from joist/blocking



FWAN-TZ

USP Stock No.	Ref. No.	Sill Plate	Fastener Schedule[6] Sill Plate Qty	Sill Plate Type	Rim Board Qty	Rim Board Type	Rim Board Material	DF/SP Allowable Load (Lbs.)[1,2] F1[3,4] 90%	F1 100%	F1 160%	F2[3,4] 90%	F2 100%	F2 160%	Hem-Fir Allowable Load (Lbs.)[1,2] F1[3,4] 90%	F1 100%	F1 160%	F2[3,4] 90%	F2 100%	F2 160%	Corrosion Finish	Code Ref.
Centered on Joist/Blocking																					
FWAN-TZ	FWANZ	2x4, 2-2x4, 3x4, 4x4	8	10d x 1-1/2	4	10d x 1-1/2	1-1/8" OSB	455	465	465	915	1000	1200	410	410	410	800	870	1055		14, F7, R9
							2x Rim	455	500	585	915	1000	1480	455	500	515	800	870	1300		
							1-3/4" LVL	455	500	585	915	1000	1480	455	500	515	800	870	1300		
		2x6, 2-2x6, 3x6, 4x6	12	10d x 1-1/2	4	10d x 1-1/2	1-1/8" OSB	455	465	465	1370	1500	1610	410	410	410	1200	1310	1415		
							2x Rim	455	500	585	1370	1500	1825	455	500	515	1200	1310	1605		
							1-3/4" LVL	455	500	585	1370	1500	1825	455	500	515	1200	1310	1605		
Offset from Joist Blocking (Max Offset 4")																					
		2x4, 2-2x4, 3x4, 4x4	8	10d x 1-1/2	4	10d x 1-1/2	1-1/8" OSB	455	460	460	560	560	560	410	410	410	500	500	500		
							2x Rim	455	500	580	915	1000	1090	455	500	515	800	870	965		
							1-3/4" LVL	455	500	580	915	1000	1090	455	500	515	800	870	965		
		2x6, 2-2x6, 3x6, 4x6	12	10d x 1-1/2	4	10d x 1-1/2	1-1/8" OSB	455	460	460	560	560	560	410	410	410	500	500	500		
							2x Rim	455	500	580	1090	1090	1090	455	500	515	965	965	965		
							1-3/4" LVL	455	500	580	1090	1090	1090	455	500	515	965	965	965		

1) Allowable loads have been reduce 10% for permanent sustained loads, no further reduction is required.
2) Allowable loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
3) F1 loads are parallel to the sill plate.
4) F2 loads are perpendicular toward the sill plate.
5) The designer must specify the type, size and spacing of fasteners connecting the sill plate to the foundation wall.
6) **NAILS:** 10d x 1-1/2 nails are 0.148" dia. x 1-1/2" long.
New products or updated product information are designated in **blue font**.

Corrosion Finish
Stainless Steel · Gold Coat · HDG · Triple Zinc

SRCP Sill Retrofit Connector Plate

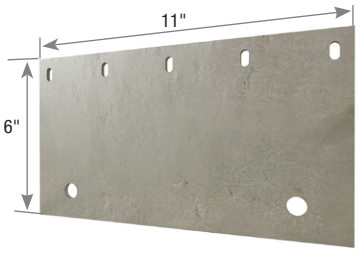
MiTek®

USP's SRCP Sill Retrofit Connector Plate is designed as a retrofit sill-to-foundation connection that can be installed where there is minimal space between the floor framing and top of the foundation wall. The economical design is targeted for use in seismic regions and yet is also suitable for use as a supplementary connection in high wind areas. The SRCP Sill Retrofit Connector Plate can be installed without shims anywhere the face of the sill plate is within 1/2" of the face of the foundation wall.

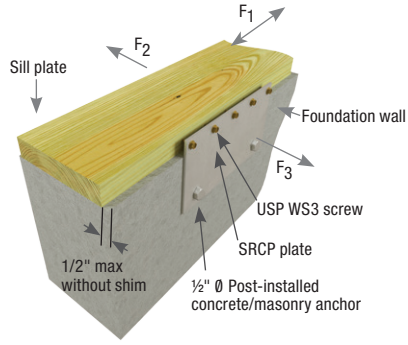
Materials: 10 gauge
Finish: G90 galvanizing
Codes: See page 10 for Code Reference Key Chart

Installation:

- For sill plate setbacks from 1/2" to 1-1/2", install a wood shim (a minimum of 15" long) tight against the sill plate and flush with the foundation wall. See Figure 3.
  Note: For any installations with a sill plate setback, a shim plate is required to transfer load in the F3 direction.
- Install the five WS3 screws (included) in the slotted holes of the SCRP plate, thru the shim (if applicable) and into the sill plate. The WS3 screws should be installed 3/4" above the bottom of the sill plate (i.e. centered in the narrow face for a 2x sill).
- Drill and install two 1/2" diameter Powers Power-Stud® anchors (or equivalent) into the foundation wall. See manufacturer's literature for proper installation of post-installed anchors.

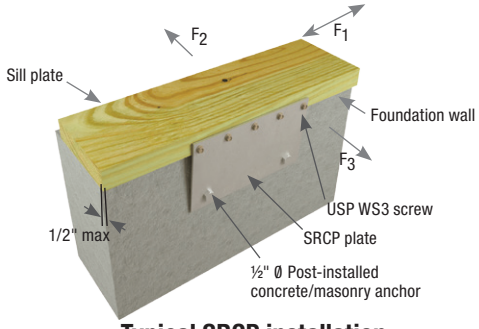


SRCP



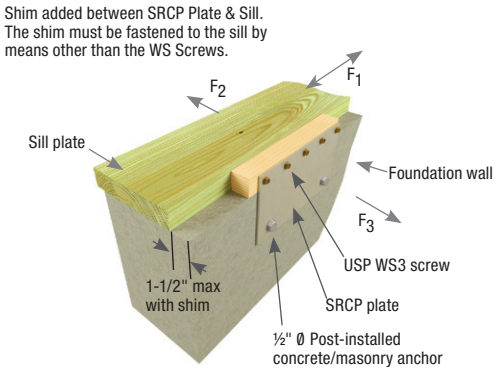
Typical SRCP installation without shim, 1/2" max setback

Figure 1



Typical SRCP installation without shim, 1/2" max overhang

Figure 2



Typical SRCP installation with shim, 1-1/2" max setback

Figure 3

USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in) W	Dimensions (in) H	Maximum Spacing to Replace 1/2" or 5/8" Anchor Bolt	Fastener Schedule: Concrete[3,4] Qty	Concrete Dia.	Sill Plate[2] Qty	Sill Plate Type	Installation Type	DF/SP Allowable Load (Lbs.)[1] F1 160%	F2 160%	F3 160%	Code Ref.
SRCP	FRFP	10	11	6	6'	2	1/2	5	WS3	Figure 1	1570	360	--	14, F7, R9
										Figure 2	1570	--	360	
										Figure 3 [5]	1570	360	360	

1) Allowable loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) WS3 wood screws are 1/4" x 3" and are included with each SRCP connector.
3) Use 1/2" diameter Powers Power-Stud® anchors with minimum 3" embedment or equivalent.
4) Minimum concrete strength f'c = 2,500 psi.
5) The shim must be fastened to the sill by means other than the WS3 wood screws.
New products or updated product information are designated in **blue font**.

SRC Sill Retrofit Connector

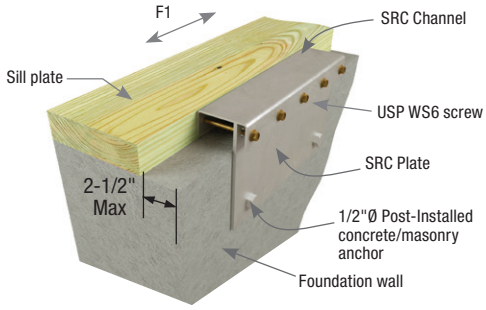
The SRC Sill Retrofit Connector has been engineered as a ductile retrofit for older buildings in high seismic zone regions that require additional reinforcement. It can be installed where there is minimal space between the floor framing and top of the foundation wall. The SRC can also be used to reinforce buildings in high velocity wind zones.

The two-piece design easily adjusts to foundations of varying thickness and can also be used where the sill plate may not be parallel to the face of the foundation wall.

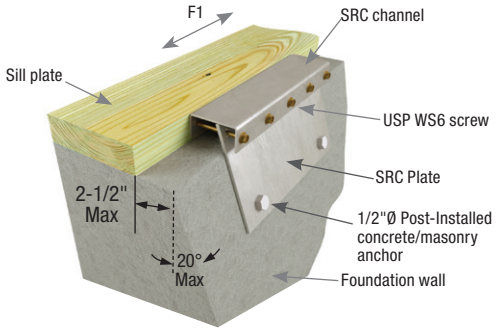
Materials: Channel - 12 gauge, Plate - 10 gauge
Finish: G90 galvanizing
Codes: See page 10 for Code Reference Key Chart

Installation:

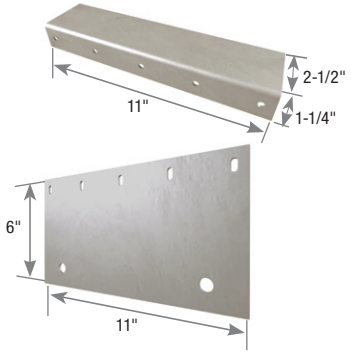
- Use all specified fasteners.
- USP WS6 wood screws are supplied with each SRC connector.
- **Contact Customer Service for offsets more than 2-1/2".**



Typical SRC installation on rectangular foundation

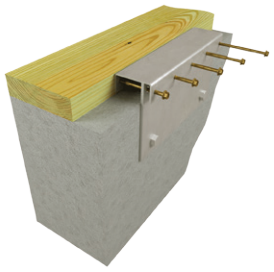


Typical SRC installation on trapezoidal foundation

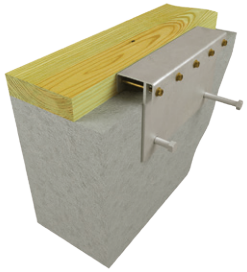


SRC components

Recommended Installation Sequence



1) Install 5 - WS6 screws



2) Drill and install concrete anchors

USP Stock No.	Ref. No.	Components	Steel Gauge	Dimensions (in) W	Dimensions (in) H	Maximum Spacing to Replace 1/2" or 5/8" Anchor Bolt	Fastener Schedule: Concrete[3,4] Qty	Fastener Schedule: Concrete[3,4] Dia.	Fastener Schedule: Sill Plate[2] Qty	Fastener Schedule: Sill Plate[2] Type	DF/SP Allowable Load (Lbs.)[1] F1 160%	Code Ref.
SRC	URFP	Channel	12	11	1-1/4	6'	2	1/2	5	WS6	1405	14, F7, R9
		Plate	10	11	6							

1) Allowable loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) WS6 wood screws are 1/4" x 6" and are included with each connector.
3) Use 1/2" diameter Powers Power-Stud® anchors with minimum 3" embedment or equivalent.
4) Minimum concrete strength f'c = 2,500 psi.
New products or updated product information are designated in **blue font**.

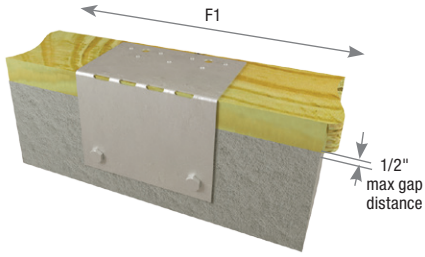
SFA / SFJA Foundation Anchors

SFA – Mudsill anchors for retrofit applications. Features a slotted bend line for easy adjustment when foundation walls are slanted.

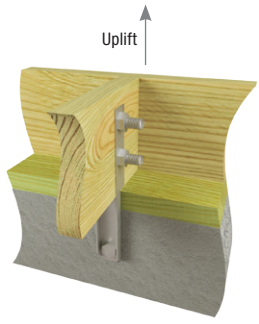
SFJA – Ties floor joists directly to foundations with bolt fastening.

Materials: 12 gauge
Finish: G90 galvanizing
Codes: See page 10 for Code Reference Key Chart

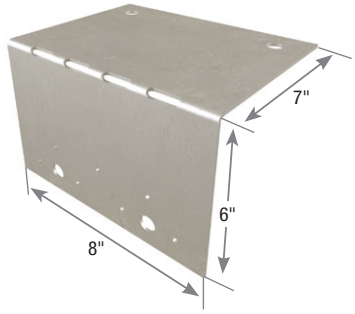
Installation:
- Use all specified fasteners. See Product Notes, page 18.
- A design professional must specify anchor bolt type, length, and embedment. Anchor bolts are laterally loaded. Follow installation instructions for epoxy adhesive.
- Allowable loads assume a minimum concrete compressive strength of 2,500 psi.
- Bolts must be ordered separately. See page 25 for available sizes.



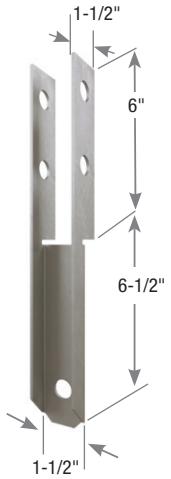
Typical SFA8 installation



Typical SFJA installation



SFA8



SFJA

USP Stock No.	Ref. No.	Steel Gauge	Fastener Schedule						DF/SP Allowable Loads (Lbs.)[1]		Code Ref.
			Anchor Bolts		Framing						
					Nails[3]		Bolts[2]		F1	Uplift	
			Qty	Dia.	Qty	Type	Qty	Dia.	160%	160%	
SFJA	FJA	12	1	5/8	--	--	2	5/8	--	1305	130
SFA8	--	12	2	1/2	7	10d x 1-1/2	--	--	875	--	

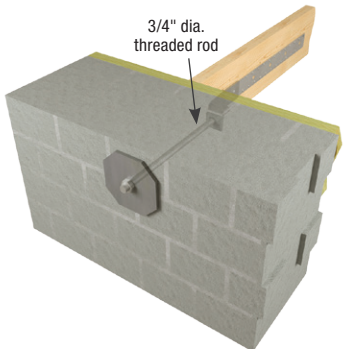
1) Allowable loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) All bolts shall meet or exceed the specifications of ASTM A 307.
3) **NAILS:** 10d x 1-1/2 nails are 0.148" diameter by 1-1/2" long.

RP Retro Plate

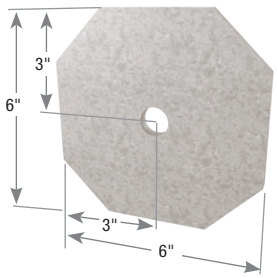
Uses heavy gauge HRPO steel and a large surface area to distribute seismic forces on masonry exteriors.

Materials: 3/8" plate
Finish: USP primer
Options: See Chart for Corrosion Finish Options
Codes: See page 10 for Code Reference Key Chart

Installation:
- Install with a 3/4" diameter steel threaded rod.



Typical RP6 installation



RP6

USP Stock No.	Ref. No.	Corrosion Finish	Code Ref.
RP6	RP6		120

Corrosion Finish Stainless Steel | Gold Coat | HDG | Triple Zinc

KGLB / KGLBT / KHGLB Laminated Beam Seats

KGLB – Single bolt, bearing only.

KGLBT – Double bolt with Structural Tee provides uplift and horizontal resistance.

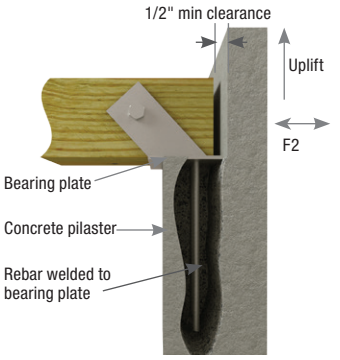
KHGLB – Double bolt design provides uplift and horizontal resistance.

Materials: Flanges – 1/4" steel
Bearing Plate – See chart for "T" dimension
Anchor dowels – 3/4" x 12" rebar

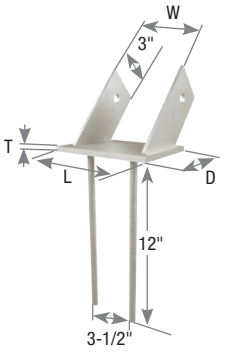
Finish: USP primer

Options: Consult USP for non-catalog variations.

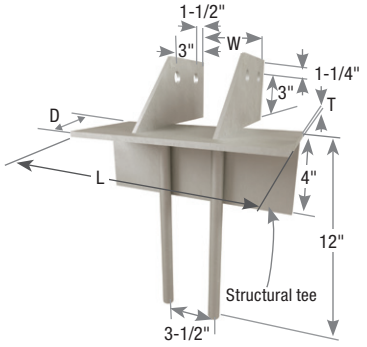
Codes: See page 10 for Code Reference Key Chart



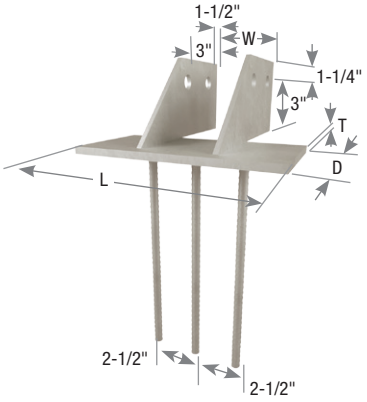
Typical KGLB installation



KGLB



KGLBT



KHGLB

Installation:

- Use all specified fasteners. See Product Notes, page 18.
- Bolt holes shall be a minimum of 1/32" to a maximum of 1/16" larger than the bolt diameter.
- Concrete or masonry walls must be checked by a design professional for adequacy to resist lateral or uplift loads transferred from the beam seat anchor.
- Bolts must be ordered separately. See page 25 for available sizes.

KGLB Load Table

USP Stock No.	Ref. No.	Dimensions (in) W	L	T	D	Bolt Schedule Qty	Dia.	Allowable Bearing Loads (Lbs.)[1,4,5] Masonry @ 375 psi[2]	Concrete[3]	Code Ref.
KGLB5A	GLB5A	5-1/4	7	1/4	5	1	5/8	11790	11790	130
KGLB5B	GLB5B	5-1/4	7	3/8	6	1	5/8	14145	14145	
KGLB5C	GLB5C	5-1/4	7	3/8	7	1	5/8	16505	16505	
KGLB5D	GLB5D	5-1/4	7	3/8	8	1	5/8	18860	18860	
KGLB7A	GLB7A	6-7/8	9	1/4	5	1	3/4	15525	15525	
KGLB7B	GLB7B	6-7/8	9	3/8	6	1	3/4	18630	18630	
KGLB7C	GLB7C	6-7/8	9	3/8	7	1	3/4	21735	21735	
KGLB7D	GLB7D	6-7/8	9	3/8	8	1	3/4	24840	24840	

1) Beams must fully bear on plates.
2) The loads are based on the bearing value listed times the bearing area equal to W x D. (Note that full bearing plate area is not used.) Bearing loads shall be reduced where limited by wood bearing on the plate.
3) The loads on concrete are based on allowable wood bearing stress perpendicular to the grain of 460 psi and actual beam width times beam bearing length.
4) Designer shall specify minimum edge and spacing requirements in masonry or concrete structure.
5) Concrete or masonry support structure is assumed adequate to support loads listed.

KHGLB / KGLBT Load Table

USP Stock No.	Ref. No.	Dimensions (in) Range W	D	L	T	Bolt Schedule Qty	Dia.	Allowable Bearing Loads (Lbs.)[1,5] Masonry @ 375 psi	On Concrete with Beam Width[2] 5-1/8	6-3/4	8-3/4	10-3/4	F2[3,4] 160%	Uplift 160[3] Min. 3-1/8 Beam Width (W)	Code Ref.
KHGLBA	HGLBA	3-1/4 to 9	5	10	3/8	2	3/4	18750	11790	15525	20125	-- --	9870	3905	130
KHGLBB	HGLBB	3-1/4 to 9	6	10	3/8	2	3/4	22500	14145	18630	24150	-- --	9870	3905	
KHGLBC	HGLBC	3-1/4 to 9	7	10	3/8	2	3/4	26250	16505	21735	28175	-- --	9870	3905	
KHGLBD	HGLBD	3-1/4 to 9	8	10	3/8	2	3/4	30000	18860	24840	32200	-- --	9870	3905	
KGLBT512	GLBT512	3-1/4 to 11	5-1/4	12	5/16	2	3/4	24750	12965	17080	22140	27200	9870	3905	
KGLBT612	GLBT612	3-1/4 to 11	6-1/2	12	3/8	2	3/4	29250	15325	20185	26165	32145	9870	3905	
KGLBT516	GLBT516	3-1/4 to 15	5-1/4	16	5/16	2	3/4	27200	12965	17080	22140	27200	9870	3905	
KGLBT616	GLBT616	3-1/4 to 15	6-1/2	16	3/8	2	3/4	32145	15325	20185	26165	32145	9870	3905	
KGLBT520	GLBT520	3-1/4 to 19	5-1/4	20	5/16	2	3/4	27200	12965	17080	22140	27200	9870	3905	
KGLBT620	GLBT620	3-1/4 to 19	6-1/2	20	3/8	2	3/4	32145	15325	20185	26165	32145	9870	3905	

1) Beams must fully bear on plates.
2) The loads on concrete are based on allowable wood bearing stress perpendicular to the grain of 460 psi and actual beam width times beam bearing length.
3) Allowable loads have been increased 60% for wind or seismic loads and are based on bolt in wood values only. Loads assume concrete or masonry structure is adequate to resist loads in those directions.
4) Loads must be be reduced if the allowable lateral load (F2) for masonry or concrete column governs.
5) Designer shall specify minimum edge and spacing requirements in masonry or concrete structure.

KGH Floor Girder Hangers

Connects girder beams to foundation walls and eliminates the need to block out pockets or inserts while forming foundation.

Materials: 12 gauge

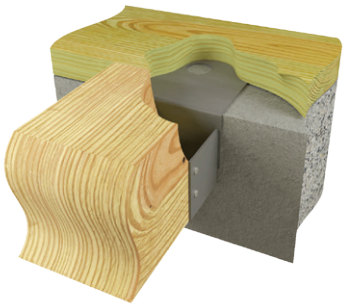
Finish: USP primer

Options: Consult USP for non-catalog design variations

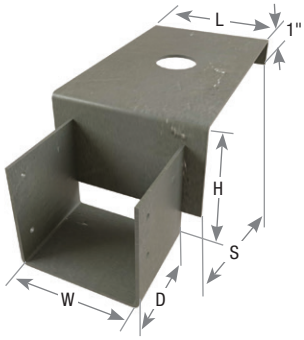
Codes: See page 10 for Code Reference Key Chart

Installation:

- Use all specified fasteners. See Product Notes, page 18.
- H dimension assumes 2x mudsill. For 3x or larger mudsill, please contact factory.
- The 1-1/2" hole, centered in the saddle, allows for installation over any protruding foundation bolts. This is not required.
- Placement of a wood sill over the top of the KGH top flange is required to achieve allowable loads.



Typical KGH installation



KGH

KGH saddle

Girder Size	USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in)					Fastener Schedule[1]		DF/SP Allowable Loads (Lbs.)		Code Ref.
				W	L	D	S	H	Qty	Type	100%	125%	
4 x 6	KGH46-6	GH46-6	12	3-9/16	5	3-1/4	6	4	4	16d	2050	2050	8, F4, R10
4 x 6	KGH46-8	GH46-8	12	3-9/16	5	3-1/4	8	4	4	16d	2050	2050	
4 x 8	KGH48-6	GH48-6	12	3-9/16	5	3	6	6	4	16d	2050	2050	
4 x 8	KGH48-8	GH48-8	12	3-9/16	5	3	8	6	4	16d	2050	2050	
6 x 6	KGH66-6	GH66-6	12	5-1/2	6-1/4	3	6	4	4	16d	2035	2035	
6 x 6	KGH66-8	GH66-8	12	5-1/2	6-1/4	3	8	4	4	16d	2035	2035	
6 x 8	KGH68-6	GH68-6	12	5-1/2	6-1/4	3	6	6	4	16d	2035	2035	
6 x 8	KGH68-8	GH68-8	12	5-1/2	6-1/4	3	8	6	4	16d	2035	2035	

1) **NAILS:** 16d nails are 0.162˝ dia. x 3-1/2˝ long.

Specialty Options Chart –

refer to Specialty Options pages 245 and 247-248 for additional details.

Option	Skewed[1,2]	Saddle
Range	1˚ to 45˚	--
Allowable Loads	100% of table load.	100% of table load per side.
Ordering	Add *SK*, angle required, right (*R*) or left (*L*), and square cut (*SQ*) or bevel cut (*BV*) to product number. Ex. KGH46-6_SK45R_BV	Add SA, and saddle width required to product number. Ex. KGH46-6_SA=5-1/2"

1) Skewed hangers with skews greater than 15° may have all joist nailing on outside flange.
2) For skewed hangers, the required cut type (square or bevel) of joist member may vary based on skew angle and width of hanger. Some square cut hangers will require custom pricing due to welded back plate.

PHD / PHDA Predeflected Holdowns

Reduces eccentricity in the studs/post with decreased centerline dimension. No thru-bolts to countersink.

Materials: See chart

Finish: G90 galvanizing

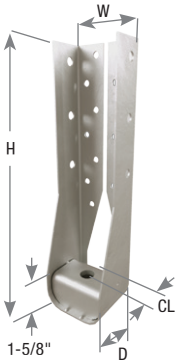
Codes: See page 10 for Code Reference Key Chart

Installation:

- Use all specified fasteners. See Product Notes, page 18.
- **Place the PHD/PHDA over the anchor bolt. No washer is required.**
- Install with USP's code evaluated WS3 (1/4" x 3") Wood Screws, which are provided with the holdown.
- Tighten anchor bolt nuts finger tight to base plus 1/3 to 1/2 additional turns with a wrench.
- **PHD/PHDA Predeflected Holdowns may be installed off sill plate with no load reduction.**
- The design engineer may specify any alternate anchorage calculated to resist the tension load for a specific application. Anchorage exposure length should take the bearing plate height of 1-5/8" into account, anchor bolt thread should visibly extend above nut.
- If used to anchor a built-up post, such as a double 2 x 4, the post component shall be designed to act as a single unit. Holdown fasteners specified shall not be considered to attach multiple plies together.
- For anchorage options see STBL Anchor Bolt section on pages 35-36.

Typical PHD5A installation

PHD8



PHD5A

USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in)				Fastener Schedule			Allowable Tension Loads (Lbs.)[1,4,7]			Code Ref.
			W	H	D	CL[8]	Anchor Bolts[2]		WS3 Wood Screws[6]	DF/SP 160%	S-P-F 160%	Deflection at Allowable Load Δ (in) at 160%[3,5]	
							Qty	Dia.	Qty				
PHD2A	HDU2-SDS2.5	14	3	7-3/4	2-5/8	1-3/8	1	5/8	6	3215	2700	0.155	30, F31, R16
PHD4A	HDU4-SDS2.5	14	3	9-3/4	2-5/8	1-3/8	1	5/8	10	5215	4380	0.137	
PHD5A	HDU5-SDS2.5	14	3	11-11/16	2-5/8	1-3/8	1	5/8	14	6525	5480	0.135	
PHD8	HDU8-SDS2.5	12	3-1/4	16-1/2	3	1-3/8	1	7/8	24	8185	6875	0.062	

1) Allowable loads have been increased 60% for wind and seismic loads; no further increase shall be permitted.
2) The designer must specify anchor bolt type, length, and embedment.
3) Deflections are derived from static, monotonic load tests of devices connected to DF-L wood members with specified fasteners.
4) The designer shall consider the effect of compression, bearing, tension, and combined bending due to device eccentricity when applicable.
5) The PHD/PHDA may be elevated off the sill.
6) WS3 wood screws are 1/4" x 3" and are included with PHD/PHDA models.
7) Minimum post thickness is 3". Consult USP for installations less than 3".
8) "CL" denotes the distance between the post and center of the anchor bolt.

LTS / LTTI Tension Ties

LTS series – The LTS19 is designed for nail-on installation to 2x joists or studs, and the LTS20B provides a nail or bolt fastening option. The LTS20B will accommodate wood I-Joists if 10d x 1-1/2" nails are used instead of the specified 16d nails.

LTTI31 – An open web joist tension tie designed for use with masonry or concrete construction.

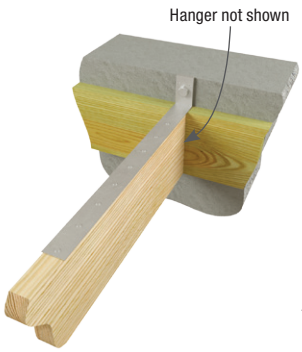
Materials: See chart

Finish: G90 galvanizing; LTS19-TZ — G-185 galvanizing

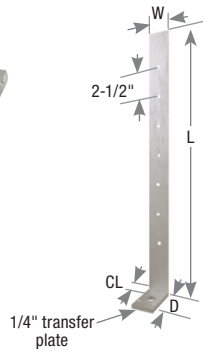
Codes: See page 10 for Code Reference Key Chart

Installation:

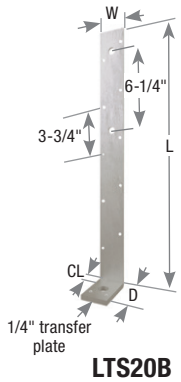
- Use all specified fasteners to attach the strap portion of the connector to the side of stud, post, joist, purlin, or beam. Secure the base to the concrete or masonry wall with specified anchor bolt. A design professional shall specify the type, length, and embedment of the anchor bolt. No washers required.
- Washers are not required on transfer plates that fit over the anchor bolt.
- LTTI31 and LTS connectors must be mounted flush to the surface of the mudsill.
- Allowable loads are based on either nail or bolt fastening; nail and bolt values cannot be combined.
- Tighten anchor bolt nuts finger tight to base plus 1/3 to 1/2 additional turns with a wrench.
- Bolts must be ordered separately. See page 25 for available sizes.



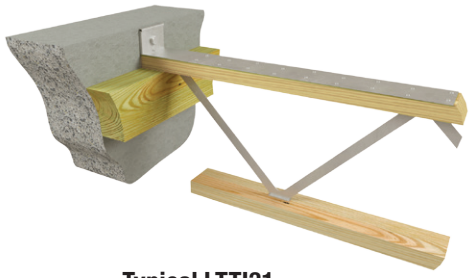
Typical LTS installation



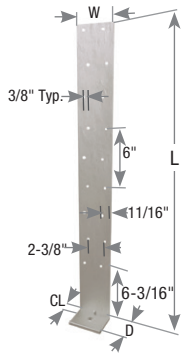
LTS19-TZ



LTS20B



Typical LTTI31 installation



LTTI31

USP Stock No.[6]	Ref. No.	Steel Gauge		Dimensions (in)				Nail Spacing	Fastener Schedule				DF/SPAllowable Tension Loads (Lbs.)[1]		Corrosion Finish	Code Ref.
									Anchor Bolt[4]		Strap[2,3,7]					
		Strap	Plate	W	L	D	CL		Qty	Dia.	Qty	Type	160%	Δ (in)[5]		
LTTI31	LTTI31	18	3	3-3/4	31	2-5/8	1-3/8	3	1	5/8	18	10d x 1-1/2	2805	0.175		30, F31
LTS19-TZ	LTT19	16	3	1-3/4	22-1/4	3	1-1/2	2-1/2	1	3/4	8	10d	1205	0.132		
LTS20B	LTT20B	12	3	2	20	3	1-1/2	3-3/4	1	3/4	10	10d x 1-1/2	1100	0.128		
											10	16d	1105	0.128		
											2	1/2	1175	0.128		

1) Allowable loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) Bolts require a minumum length of 1-1/2" in vertical member for the listed loads.
3) 16d sinkers may be substituted for the specified 10d common nails with no load reduction.
4) The designer must specify anchor bolt type, length and embedment depth.
5) Deflections are derived from static, monotonic load tests of devices connected to DF wood members with specified fasteners.
6) LTTI and LTS holdowns shall be installed tight to the sill plate.
7) **NAILS:** 10d x 1-1/2" nails are 0.148" dia. x 1-1/2" long, 10d nails are 0.148" dia. x 3" long, 16d nails are 0.162" dia. x 3-1/2" long.

Corrosion Finish Stainless Steel Gold Coat HDG Triple Zinc

HTT Tension Ties

Secures multi-ply studs or posts to mudsills or foundation. Nail fastening makes for a convenient connection to studs or posts in cramped retrofit installations.

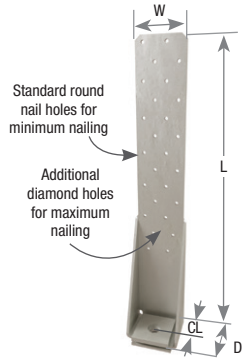
Materials: See chart
Finish: G90 galvanizing
Codes: See page 10 for Code Reference Key Chart

Installation:
- Use all specified fasteners to attach the strap portion of the connector to the side of stud, post, joist, purlin, or beam. Secure the base to the concrete or masonry wall with specified anchor bolt. A design professional shall specify the type, length, and embedment of the anchor bolt.
- HTT45 Max – Fill all round and diamond nail holes.
- Washers are not required on transfer plates that fit over the anchor bolt.
- Tighten anchor bolt nuts finger tight to base plus 1/3 to 1/2 additional turns with a wrench.
- LL930 LumberLok screws are included with HTT45KT.

Typical HTT16 installation

Typical HTT45 Max installation

HTT16



HTT45

USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in) W	L	D	CL	Nail Spacing	Fastener Schedule Min/ Max	Anchor Bolt[3] Qty	Dia.	Strap[2,3,7,8] Qty	Type	DF/SP Allowable Tension Loads (Lbs.)[1] 160%	Δ (in)[4,5]	Code Ref.
HTT16	HTT4	10	2-1/2	16	2	1-3/8	1-3/4	--	1	5/8	18	10d	3610	0.142	21, F14, R17
HTT45	HTT4, HTT5	10	2-1/2	16	2	1-3/8	1-3/4	Min	1	5/8	18	10d	4215	0.115	
												16d x 2-1/2	4160	0.108	
								Max	1	5/8	26	10d	5795	0.101	
												16d x 2-1/2	5005		
HTT45KT[6]	HTT5KT	10	2-1/2	16	2	1-3/8	1-3/4	--	1	5/8	26	LL930	5865	0.113	130

1) Allowable loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) 16d sinkers may be substituted for the specified 10d common nails with no load reduction.
3) The designer must specify anchor bolt type, length and embedment depth.
4) Deflections are derived from static, monotonic load tests of devices connected to DF wood members with specified fasteners.
5) HTT holdowns raised off of the sill plate may have higher deflection values.
6) HTT45KT is sold as a kit and includes (1) HTT45 and (26) LL930 screws.
7) LL930 LumberLok Screws are #9 x 2-7/8" long.
8) **NAILS:** 10d nails are 0.148" dia. x 3" long, 16d x 2-1/2" nails are 0.162" dia. x 2-1/2" long.
New products or updated product information are designated in **blue font**.

TD / TDX Holdowns

TD – Different welded configurations and sizes achieve a great deal of versatility within the TD series.

TDX – The TDX2 and TDX5 feature formed designs, all others are welded. All are self-jigging.

All models, except TD2, TD5, and TD7, feature a self-jigging design with code required end distances built in. (End distance = 7 bolt diameters from the top of the sill to the center of the first bolt hole in the studs or post.)

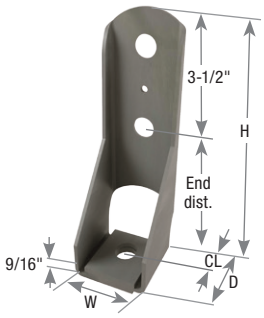
Materials: See chart
Finish: TDX2-TZ – G-185 galvanizing; All others – USP primer
Codes: See page 10 for Code Reference Key Chart
Patents: #5,092,097 — TDX2

Installation:

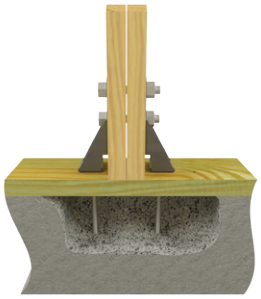
- Use all specified fasteners. See Product Notes, page 18.
- Do not use lag bolts. Washers are not required for anchor bolts or between holdown and bolt hex head, but standard washers should be used against stud or post under the nut. See page 37 for BP/LBP Bearing Plates.
- Bolt holes should be a minimum of 1⁄32" to a maximum of 1⁄16" larger than the bolt diameter (as per NDS® specifications).
- See pages 35-36 for STB Anchor Bolt section for anchorage options. A design professional may specify alternate anchorage with conventional anchor bolts.
- A design professional shall determine the adequacy of the stud to resist published loads. When installing to multi-ply 2x studs, the designer must specify the fasteners required to bind the plies together and resist splitting.
- Self-jigging models are designed to provide the required minimum end distance of 7 bolt diameters from the bottom of the stud or post to the centerline of the first bolt hole.
- Tighten anchor bolt nuts finger tight to base plus 1/3 to 1/2 additional turns with a wrench. Wood members may shrink over time; if possible, nut tightness should be checked periodically.
- If used to anchor a built-up post, such as a double 2 x 4, the post component shall be designed to act as a single unit. Holdown fasteners specified shall not be considered to attach multiple plies together.
- Bolts must be ordered separately. See page 25 for available sizes.

Typical TDX6 installation

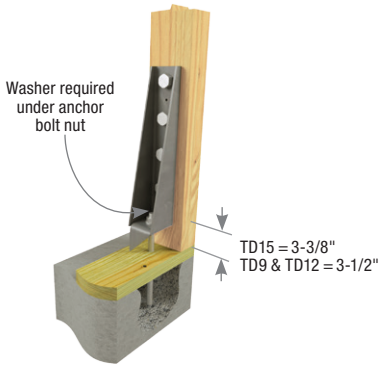
Typical TDX2-TZ installation



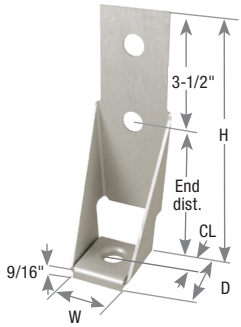
TDX6



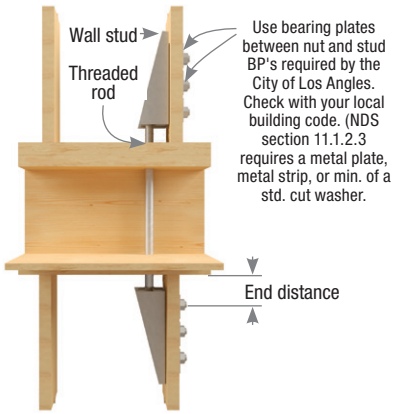
Typical TDX2-TZ back-to-back installation



Typical TD15 installation



TDX2-TZ



Holdown installation between floors

Continued on next page

TD / TDX Holdowns

MiTek®

USP Stock No.[11]	Ref. No.	Steel Gauge	Dimensions (in) W	H	D	CL	Fastener Schedule[4] Anchor Bolt Dia.	Bolts Qty	Bolts Dia.	Min. Required Bolt End Distance[5]	Length of Bolt in Vertical Member	DF/SP Allowable Tension Loads (Lbs.)[1,2,3] 160%	Δ (in)[8]	Corrosion Finish	Code Ref.
TD5	--	7	3	6-3/8	3-3/4	2-1/8	3/4	2	3/4	5-1/4	1-1/2"	2405	0.122 [6]		30, F31, R16
											3"	4040	0.140 [6]		
											3-1/2"	4040	0.140 [6]		
											5-1/2"	4040	0.140 [6]		
TD7	--	3	3-3/8	11-7/8	3-5/8	2-1/8	1-1/8	3	7/8	6-1/8	1-1/2"	4600	0.095 [6]		30, F31
											3"	8195	0.125 [6]		
											3-1/2"	9420	0.139 [6]		
											5-1/2"	10510	0.152 [6]		
TD9	--	3	3-3/8	16-1/2	4-1/4	2-1/8	1-1/8	3	1	7	3"	9330	0.146 [6]		
											3-1/2"	10715	0.160 [6]		
											4-1/2"	13370	0.169 [6]		
											5-1/2"	13500	0.170 [6]		
TD12	HD12	3	3-1/2	20-1/2	4-1/4	2-1/8	1-1/8	4	1	7	3"	12070	0.132 [6]		30, F31, R16
											3-1/2"	13960	0.142 [6]		
											4-1/2"	16550	0.185 [6]		
											5-1/2"	16550	0.185 [6]		
TD15	HD19	3	3-1/2	25	4-3/8	2-1/8	1-1/4	5	1	7	3"	14505	0.167 [6]		
											3-1/2"	16845	0.178 [6]		
											4-1/2"	**20710**	**0.155** [6]		
											5-1/2"	**20390**	**0.153** [6]		
TDX2-TZ	HD3B	12	2-1/16	8-1/8	2-3/4	1-1/2	5/8	2	5/8	4-1/2	1-1/2"	**1920**	0.150 [6]		**21, F14, R17**
											3"	**3295**	**0.169** [6]		
											3-1/2"	**3295**	**0.169** [6]		
											5-1/2"	**3295**	**0.169** [6]		
TDX5	--	10	2-1/2	9-3/8	3-7/8	2	3/4	2	3/4	5-1/4	1-1/2"	**2340**	**0.079** [6]		
											3"	**4515**	**0.151** [6]		
											3-1/2"	**4530**	**0.151** [6]		
											4-1/2"	**4530**	**0.151** [6]		
TDX6	HD5B	7	3-1/2	11-1/8	3-3/4	2	7/8	2	7/8	6-1/8	1-1/2"	**2835**	**0.093** [6]		
											3"	**5350**	**0.128** [6]		
											3-1/2"	**5805**	**0.138** [6]		
											4-1/2"	**5805**	**0.138** [6]		
TDX8	--	7	3-1/2	14-5/8	3-3/4	2	7/8	3	7/8	6-1/8	1-1/2"	**4160**	**0.060** [6]		
											3"	**7870**	**0.132** [6]		
											3-1/2"	**9125**	**0.172** [6]		
											4-1/2"	**9125**	**0.172** [6]		
TDX10	HD7B	7	3-1/2	18-1/8	3-3/4	2	7/8	4	7/8	6-1/8	3"	**10140**	**0.128** [6]		
											3-1/2"	**10570**	**0.137** [6]		
											4-1/2"	**10570**	**0.137** [6]		
											5-1/2"	**10570**	**0.137** [6]		
TDX14	HD9B	3	3-1/2	20-1/2	3-5/8	2-1/8	1	4	1	7	3"	11995	**0.117** [6]		
											3-1/2"	**13895**	**0.146** [6]		
											4-1/2"	**15015**	**0.166** [6]		
											5-1/2"	**15015**	**0.166** [6]		

1) Allowable loads shown are for single shear connections and may be doubled for back-to-back installations. The designer must verify post and anchor bolt capacities.
2) Allowable loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
3) The designer must specify stud or post to resist published load values.
4) The designer must specify anchor bolt type, length, and embedment.
5) All models may be installed with greater than the required anchor end distance with no chart load reduction.
6) Deflections are derived from static, monotonic load tests of devices connected to DF wood members and consider both the deflection of the holdown and cross grain crushing of the wood post.
7) The designer shall consider the effect of compression, bearing, tension, and combined bending due to device eccentricity when applicable.
8) Holdowns raised off of the sill plate may have higher deflection values.

New products or updated product information are designated in **blue font**.

Corrosion Finish Stainless Steel Gold Coat HDG Triple Zinc

Sources of Deflection at the Shearwall Holdown Connections

The following are some of the sources of deflection that should be evaluated by the designer. See the illustration, which applies to other holdown configurations.

A. Improperly-sized stud/post bolt holes – increased bolt slip can occur if stud/post bolt holes are oversized and exceed the NDS® recommended bolt hole diameter.

B. Stud/Post bolt holes – bolt slip can occur.

C. Wood crushing at stud/post bolt hole perimeters –the use of larger washers/bearing plates can reduce stress-induced wood crushing at bolt bearing locations.

D. Eccentricity in stud/post caused by holdown – holdowns installed on only one side of a stud or post result in an eccentricity which causes increased stresses and movement in a shearwall system.

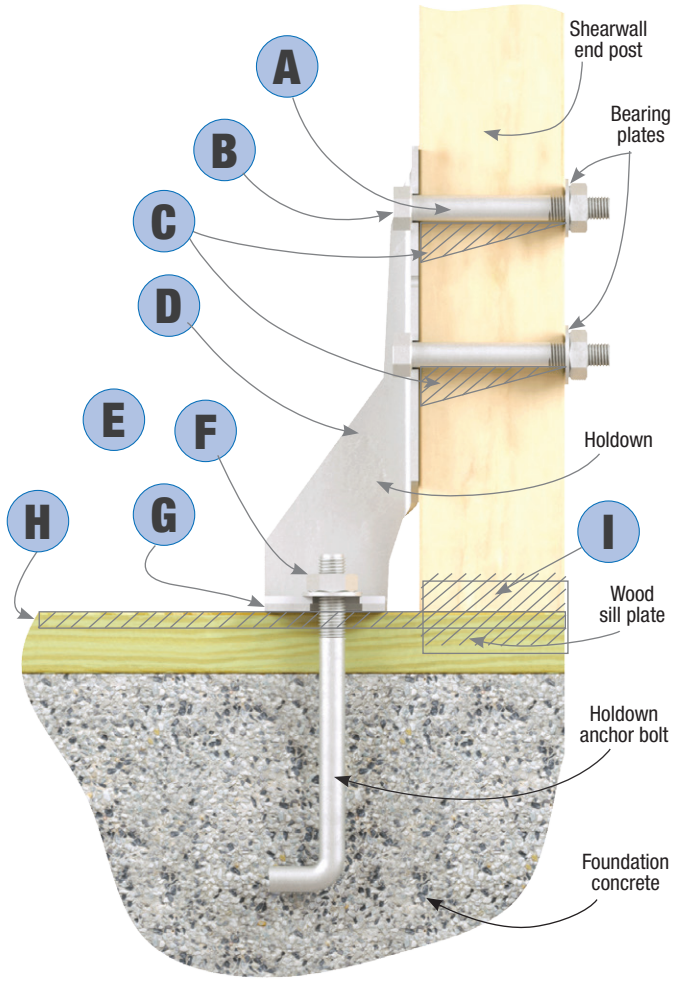
E. Nut spin – anchor bolt nuts that are not restrained can spin loose during cyclic loading, allowing movement; the use of steel nylon locking nuts or thread adhesive may prevent nut spin.

F. Loose nuts – increased movement can occur when nuts are not sufficiently tightened.

G. Holdown deflection – holdown deflection can occur when the shearwall system is subjected to cyclic stress from earthquakes or high wind.

H. Wood shrinkage – due to drying, wood may shrink and cause bolted connections to become loose; periodic retightening may be required.

I. Localized crushing at wood-bearing surfaces – excessive crushing at wood-bearing surfaces may result from compressive forces due to overturning during high wind or earthquake loading.



UPHD Holdowns

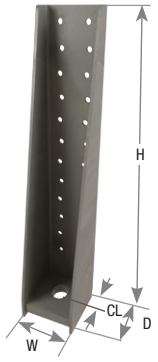
Engineered for high capacity with minimum deflection and low eccentricity.

Materials: See chart
Finish: USP primer
Codes: See page 10 for Code Reference Key Chart

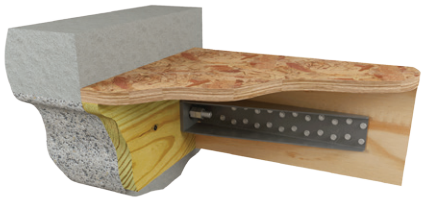
Installation:
- Use all specified fasteners. See Product Notes, page 18.
- Place holdown over anchor bolt and drive screws into post.
- Tighten anchor bolt nuts finger tight to base plus 1/3 to 1/2 additional turns with a wrench.
- Holdown may be installed off of the plate with no load reduction.
- Post may be shimmed provided the shim acts as a single unit with the post. Holdown fasteners specified shall not be considered to attach shim to post. Shim shall be a structural material equal or better than the post material. Consult a designer or an engineer of record for appropriate fastening of shim.

Alternate installations:
- Drill hole in concrete or masonry and insert retrofit anchor (i.e. epoxy anchor) capable of resisting uplift and lateral loading.
- Place holdown over anchor bolt and drive screws into post.
- Tighten anchor bolt nuts finger tight to base plus 2-3 additional turns with a wrench.
- Post may be shimmed provided the shim acts as a single unit with the post. Holdown fasteners specified shall not be considered to attach shim to post. Shim shall be a structural material equal or better than the post material. Consult a designer or an engineer of record for appropriate fastening of shim.

Typical UPHD installation



UPHD



Typical UPHD concrete wall installation

USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in) W	H	D	CL	Fastener Schedule Anchor Bolt Dia.[2]	WS3 Wood Screws[6] Qty	DF/SP Allowable Loads (Lbs.) Tension[1,5,7] 160%	Δ (in) at 160%[3,5]	S-P-F Allowable Loads (Lbs.) Tension[1,5,7] 160%	Code Ref.
UPHD8	HDQ8-SDS3	10	3-1/4	17-1/2	3-1/8	1-3/8	7/8	24	9165	0.075	7695	30, F31, R16
UPHD9	HDU11-SDS2.5	10	3-1/4	17-1/4	3-1/2	1-1/2	1	24	11270	0.057	9465	
UPHD11	HHDQ11-SDS2.5	7	3	15-1/8	3-1/2	1-1/2	1	24	14395	0.077	12090	
UPHD14	HDU14-SDS2.5, HHDQ14-SDS2.5	7	3	18-3/4	3-1/2	1-1/2	1	30	16695	0.082	14020	

1) Allowable loads have been increased 60% for wind and seismic loads; no further increase shall be permitted.
2) The designer must specify anchor bolt type, length, and embedment.
3) Deflections are derived from static, monotonic load tests of devices connected to DF-L wood members with specified fasteners.
4) The designer shall consider the effect of compression, bearing, tension, and combined bending due to device eccentricity when applicable.
5) The UPHD may be elevated off the sill.
6) WS3 wood screws are 1/4 " x 3" and are included with UPHD models.
7) Minimum post thickness is 3" or greater. Consult USP
New products or updated product information are designated in **blue font**.

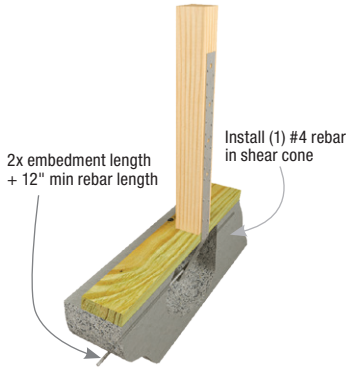
HPAHD / PAHD Foundation Straps

Designed to anchor wood framing to poured concrete foundations.

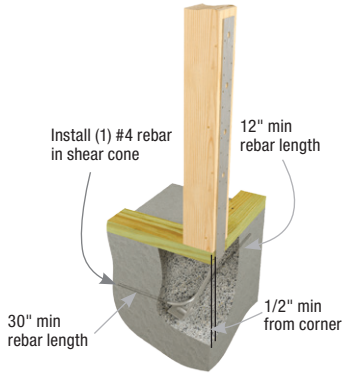
Materials: See chart
Finish: G90 galvanizing
Codes: See page 10 for Code Reference Key Chart

Installation:

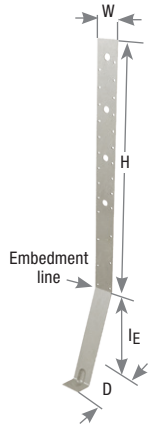
- Use all specified fasteners. See Product Notes, page 18.
- Bending the strap horizontally 90° to facilitate wall placement may cause concrete behind the embedded strap to break away at the top edge (spalling). If the spall is 1" or less from the top edge of the concrete, no load reduction is necessary. If the spall is between 1" and 4", the allowable load is 0.90 of the published chart load.
- When installing on lumber less than 3-1/2" wide, wood splitting may occur. To reduce splitting, use 10d x 1-1/2" nails or fill every other hole with 16d common nails. Reduce allowable loads in accordance with code requirements.
- Straps are to be installed at the edge of concrete. Install prior to pour by nailing to form. Drive temporary nails through lowest two nail holes into form. Concrete level should reach embedment line; minimum embedment depths are listed in chart.
- Do not rely on these straps to secure concrete sections together between cold joints; take other measures to transfer the load. If there is a cold joint between slab and foundation, the minimum embedment must be made into the foundation. Fastening opportunities may be reduced because the slab pour level may be higher than some nail holes. Using fewer fasteners will reduce allowable loads. Reduce allowable load by the code capacity for each fastener not installed.
- Allowable loads based on a minimum concrete compressive strength of 2,500 psi at 28 days, with one #4 horizontal rebar in the shear cone. Rebar should be a minimum length of 2x embedment depth plus 12" (see chart for exceptions in corner installations).
- Where fewer fasteners are used in the structural wood member, reduce loads according to the code.
- There may be an increase in the amount of deflection if the strap is installed on the outside of the sheathing, versus directly to the framing members.
- Strap may be bent one complete cycle to aid installation.



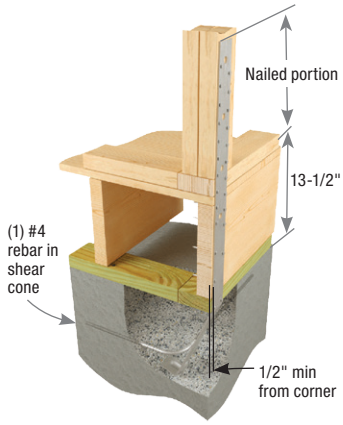
Typical HPAHD22 single pour edge installation



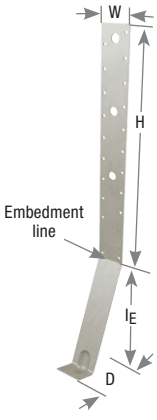
Typical HPAHD22 single pour corner and endwall installation



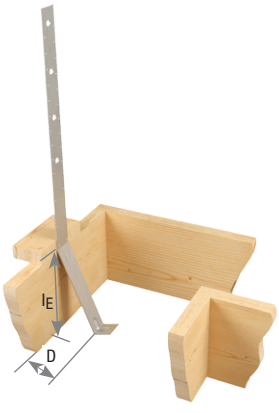
HPAHD



Typical HPAHD22 single pour rim joist installation



PAHD42



HPAHD22 form board installation

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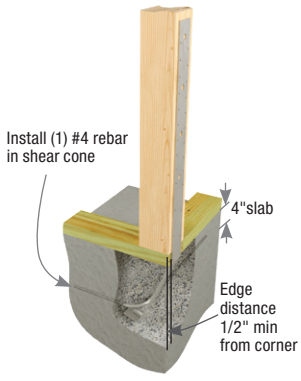
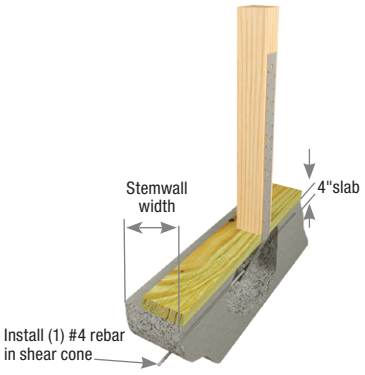
HPAHD / PAHD Foundation Straps

USP Stock No	Ref. No.	Steel Ga.	Fastener Schedule[1,12] Qty	Fastener Schedule[1,12] Type	Dimensions (in) W	H	l_E	D	Min Stemwall Thickness (in)	Edge Distance[3,4]	Concrete[9,10]	DF/SP Allowable Tension Loads (Lbs.)[2] Concrete Connection Strength	Wood Connection Strength CD = 1.6	Deflection at Allowable Load Based on Wood Connection Strength (in.)[8]	Code Ref.
Wind[5,6,7] and SDC A & B															
HPAHD22	--	10	23	16d	2-1/16	24-3/4	9-1/2	4-1/8	6	1/2"	Uncracked	3300	3830	0.118	13, R2, F12
											Cracked	2310			
										1.5 x l_E	Uncracked	3460	3830	0.118	
											Cracked	2425			
PAHD42	--	12	15	16d	2-1/16	16-5/8	8	5-3/4	6	1/2"	Uncracked	1225	2065	0.095	
											Cracked	855			
										1.5 x l_E	Uncracked	2610	2065	0.095	
											Cracked	1830			
SDC C-F															
HPAHD22	--	10	23	16d	2-1/16	24-3/4	9-1/2	4-1/8	6	1/2"	Uncracked	2635	3830	0.118	13, R2, F12
											Cracked	1980			
										1.5 x l_E	Uncracked	2965	3830	0.118	
											Cracked	2075			
PAHD42	--	12	15	16d	2-1/16	16-5/8	8	5-3/4	6	1/2"	Uncracked	1050	2065	0.095	
											Cracked	735			
										1.5 x l_E	Uncracked	2140	2065	0.095	
											Cracked	1565			

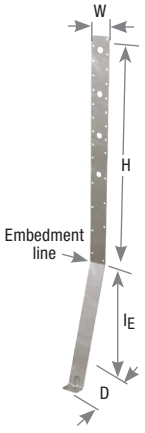
1) Predrilled holes are not required
2) The lesser of the allowable load based on anchorage to concrete or wood connection strength must be selected.
3) An edge distance of 1/2" implies that the distance from the corner of the wall to the edge of the strap is no less than 1/2".
4) An edge distance of 1.5 x l_E implies that the minimum distance from the corner of the wall to the centerline of the strap is no less than 1.5 times the embedment depth.
5) For edge distances between 1/2" and 1.5 x l_E calculate loads using straight line interpolation.
6) Minimum anchor spacing for full capacity is 2 x l_E. For spacing less than that reduce capacity proportionally.
7) The allowable loads are based on lumber with a specific gravity of 0.50 and a moisture content of 19% or less.
8) Deformation based on wood connection strength.
9) Minimum concrete strength f'c = 2500 psi
10) Minimum 1-#4 rebar shall be installed in the shear cone
11) **NAILS:** 16d nails are 0.162" dia. x 3-1/2" long.
New products or updated product information are designated in **blue font**.



Typical HPAHD22-2P double pour corner installation



Typical HPAHD22-2P double pour edge installation



HPAHD22-2P

USP Stock No.	Steel Gauge	Dimensions (in) W	H	l_E	D	Installation Type	Stemwall Width	Fastener Schedule[2,5] Min Qty[4]	Nail	DF/SP Allowable Tension Loads (Lbs.)[1] 160%	Code Ref.
EDGE INSTALLATION - 2500 psi Concrete											
Double Pour Edge Installation - 8" min from corner											
HPAHD22-2P	10	2-1/16	26-1/4	14	6-1/4	Figure 5	6	24	16d	5170	
							8				
CORNER INSTALLATION - 2500 psi Concrete											130
Double Pour Edge Installation - 1/2" min from corner											
HPAHD22-2P	10	2-1/16	26-1/4	14	6-1/4	Figure 4	6	24	16d	4095	
							8				

1) Allowable loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) 16d sinkers (0.148" dia. x 3-1/4" long) or 10d common (0.148" dia. x 3" long) nails may be substituted for the specified 16d common nails provided the listed allowable loads are reduced 15%.
3) Rim joist application; see Figure 3 for corner condition.
4) Minimum quantity of fasteners to be installed. Product may have additional nail holes not needed to meet published allowable load of product.
5) **NAILS:** 16d nails are 0.162" dia. x 3-1/2" long.
New products or updated product information are designated in **blue font**.

LSTAD / STAD Foundation Straps

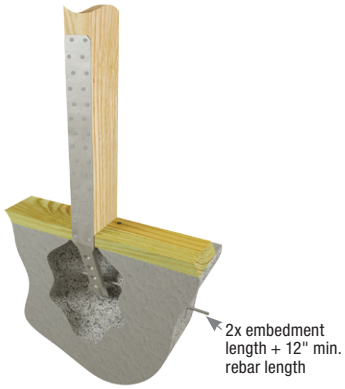
The coined dimples below the embedment line allow for increased concrete bonding. These holdowns retain high uplift capacity even when installed at corners of foundation stemwalls. Ideal for use with built up 2x end posts.

RJ after the model indicates LSTAD or STAD for rim joist applications as in **STAD8RJ**. Rim joist models provide for a 17" clear span without the loss of strap nailing.

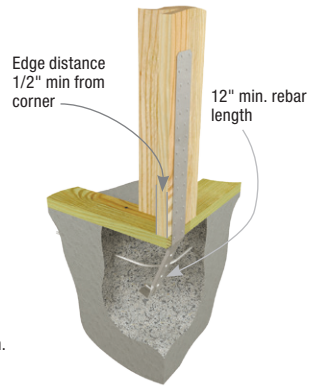
Materials: LSTAD-14 gauge; STAD-12 gauge
Finish: G90 galvanizing
Codes: See page 10 for Code Reference Key Chart

Installation:

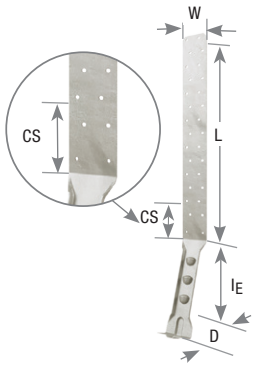
- Use all specified fasteners. See Product Notes, page 18. The bottom (2) nails are for form board attachment only and do not contribute to fastener schedule requirements.
- Embed holdown in concrete to the embedment line (bend line).
- See illustrations for requirements on rebar, edge distances, and clear spans.
- Bending the strap horizontally 90° to facilitate wall placement may cause concrete behind the embedded strap to break away at the top edge (spalling). If the spall is 1" or less from the top edge of the concrete, no load reduction is necessary. If the spall is between 1" and 4" the allowable load is 0.90 of the published chart load.
- When installing on lumber less than 3-1/2" wide, wood splitting may occur. To reduce splitting, use 10d x 1-1/2" nails or fill every other hole with 16d common nails. Reduce allowable loads per code requirements accordingly.
- These straps do not secure concrete sections together at cold joints; take other measures to transfer the load. If there is a cold joint between slab and foundation, the minimum embedment must be made into the foundation. Fastening opportunities may be reduced because the slab pour level may be higher than some nail holes. Using fewer fasteners will reduce allowable loads. Reduce allowable load by the code capacity for each fastener not installed.
- To achieve full table loads the minimum center-to-center spacing is twice the embedment depth (IE) when resisting tension loads at the same time.
- Where fewer fasteners are used in the structural wood member, reduce loads according to the code.
- There may be an increase in the amount of deflection if the strap is installed on the outside of the sheathing, versus directly to the framing members.
- Strap may be bent one complete cycle to aid installation.



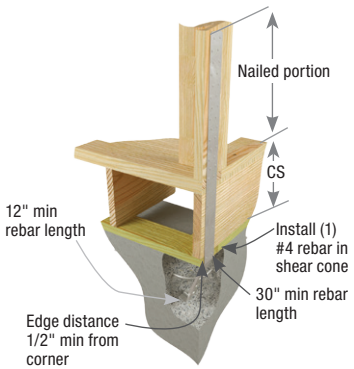
Typical STAD10 edge installation



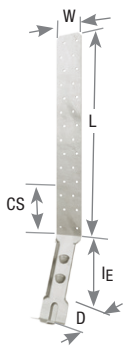
Typical STAD10 corner installation



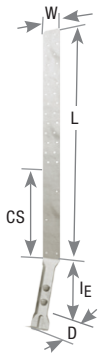
STAD



Typical STAD14RJ corner rim joist installation



LSTAD



STAD_RJ

USP Stock No.	Ref. No.	Steel Gauge	Fastener Schedule[1,6]		Dimensions (in)					Min. Stemwall (in)	DF/SP Allowable Tension Loads (160%)[2,3,4] Edge Distance - Concrete									Code Ref.
											2000 psi			2500 psi			3000 psi			
			Qty	Nail	W	L	L_E	D	CS[5]		1/2"	1-1/2"	I_E	1/2"	1-1/2"	I_E	1/2"	1-1/2"	I_E	
LSTAD8	LSTHD8	14	24	16d Sinker	3	21-5/8	8	5	4-5/8	6	2225	2225	3220	2225	2225	3220	2225	2225	3220	130
										8										
LSTAD8RJ	LSTHD8RJ	14	24	16d Sinker	3	35-1/8	8	5	18-1/8	6	2225	2225	3220	2225	2225	3220	2225	2225	3220	
										8										

1) Wood thickness shall be no less than 2".
2) Allowable tension loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
3) Interpolate allowable loads for edge distances between those listed. Nail quantities may be reduced for less than IE corner distance design loads- use the code allowable loads for fasteners in shear.
4) Where fewer fasteners are used in the structural wood member, reduce loads according to the code.
5) CS dimension is the maximum span distance between the embedment line and framing member edge nearest the first fastener location.
6) **NAILS:** 16d sinkers are 0.148" dia. x 3-1/4" long. 10d common (0.148" dia. x 3" long) nails may be substituted with no load reduction.
New products or updated product information are designated in **blue font**.

Continued on next page

LSTAD / STAD Foundation Straps

MiTek®

Wind and SDC A & B - Allowable Tension Loads (Lbs.)[10]

USP Stock No.	Ref. No.	Ga.	Dimensions (in) W	L	I_E	D	CS[13]	Min Stem Wall (in)	Fastener Schedule[1,14] Min / Max Nailing	Qty[7]	Type	Allowable Tension Loads (Lbs.)[6] Based on Anchorage to Concrete Strength[11] Uncracked Corner[3]	Uncracked Middle[4,5]	Cracked Corner[3]	Cracked Middle[4,5]	Wood Connection Strength CD = 1.6[2,7]	Deflection at Highest Allowable Load (in)[9]	Code Ref.[7]
STAD8	--	12	3	21-5/8	8	5	4-5/8	6	Min[8]	18	16d Sinker	2470	4035	2075	3460	3310	0.049	13, R2, F12
									Max	24						4415	0.051	
STAD8RJ	--	12	3	35-1/8	8	5	18-1/8	6	Min[8]	18	16d Sinker	2470	4035	2075	3460	3310	0.049	
									Max	24						4415	0.051	
STAD10	STHD10	12	3	21-5/8	10	5	1-5/8	6	Min[8]	22	16d Sinker	3265	5595	2645	4665	4050	0.055	
									Max	28						5150	0.055	
STAD10RJ	STHD10RJ	12	3	36	10	5	16-1/8	6	Min[8]	22	16d Sinker	3265	5595	2645	4665	4050	0.055	
									Max	28						5150	0.055	
STAD14	STHD14	12	3	32-1/8	14	5	4-5/8	6	Min[8]	28	16d Sinker	4945	5480	4945	5480	5150	0.082	
									Max	30						5520	0.084	
STAD14RJ	STHD14RJ	12	3	39-5/8	14	5	12-1/8	6	Min[8]	28	16d Sinker	4945	5480	4945	5480	5150	0.082	
									Max	30						5520	0.084	

SDC C thru F - Allowable Tension Loads (Lbs.)[10]

USP Stock No.	Ref. No.	Ga.	Dimensions (in) W	L	I_E	D	CS[13]	Min Stem Wall (in)	Fastener Schedule[1,14] Min / Max Nailing	Qty[7]	Type	Allowable Tension Loads (Lbs.)[6] Based on Anchorage to Concrete Strength[11] Uncracked Corner[3]	Uncracked Middle[4,5]	Cracked Corner[3]	Cracked Middle[4,5]	Wood Connection Strength CD = 1.6[2,7]	Deflection at Highest Allowable Load (in)[9]	Code Ref.[7]
STAD8	--	12	3	21-5/8	8	5	4-5/8	6	Min[8]	14	16d Sinker	2120	3145	1780	2965	2575	0.048	13, R2, F12
									Max	18						3310	0.049	
STAD8RJ	--	12	3	35-1/8	8	5	18-1/8	6	Min[8]	14	16d Sinker	2120	3145	1780	2965	2575	0.048	
									Max	18						3310	0.049	
STAD10	STHD10	12	3	21-5/8	10	5	1-5/8	6	Min[8]	16	16d Sinker	2800	4360	2265	4000	2945	0.055	
									Max	22						4050	0.055	
STAD10RJ	STHD10RJ	12	3	36	10	5	16-1/8	6	Min[8]	16	16d Sinker	2800	4360	2265	4000	2945	0.055	
									Max	22						4050	0.055	
STAD14	STHD14	12	3	32-1/8	14	5	4-5/8	6	Min[8]	20	16d Sinker	3960	4270	3960	4270	3680	0.077	
									Max	24						4415	0.079	
STAD14RJ	STHD14RJ	12	3	39-5/8	14	5	12-1/8	6	Min[8]	20	16d Sinker	3960	4270	3960	4270	3680	0.077	
									Max	24						4415	0.079	

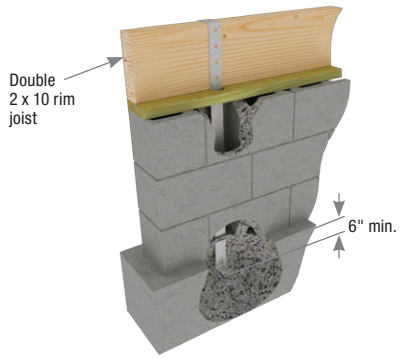
1) Predrilled holes are not required.
2) Wood thickness shall be no less than 3-inches (2 - 2x members).
3) Corner strap location implies that the distance from the corner of the wall to the edge of the strap is no less than 1/2-in.
4) Middle strap location implies that the minimum distance from the corner of the wall to the centerline of the strap is no less than 1.5 times the embedment depth.
5) For edge distances between 1/2-in and 1.5 x I_E calculate loads using straight line interpolation.
6) Minimum anchor spacing for full capacity is 2 x I_E. For spacing less than that reduce capacity proportionally.
7) Minimum Fastener Quantity and Wood Connection Strength is based on 2012 NDS nail calculations using the lesser assigned specific gravity for Spruce-Pine-Fir (SPF), Hem-Fir (HF), Southern Pine (SP) and Doug-Fir (DF) with a moisture content of 19% and based on the allowable loads listed in ICC-ES ESR-2787.
8) The strap should be fastened with nails starting from lowest pair of nail holes and working up towards the top of the strap. In many cases, not all nail holes are needed to be filled.
9) Deformation based on wood connection strength.
10) The lesser of the allowable load based on anchorage to concrete or wood connection strength must be selected.
11) Minimum concrete strength f'c = 2,500 psi.
12) Minimum 1-#4 rebar shall be installed in the shear cone.
13) CS dimension is the maximum span distance between the embedment line and framing member edge nearest the first fastener location.
14) **NAILS:** 16d sinkers are 0.148" dia. x 3-1/4" long. 10d common (0.148" dia. x 3" long) nails may be substituted with no load reduction.

Updated product information are designated in **blue font**.

TA Foundation Straps

Foundation Straps offer an economical, one-piece method of achieving a continuous load path from a 2 x 8, 2 x 10, 2 x 12, or 2 x 14 rim joist through concrete block to foundation. All models require a 6" embedment into concrete footings.

Materials: 12 gauge
Finish: G90 galvanizing
Options: See chart for Corrosion Finish Options
Codes: See page 10 for Code Reference Key Chart



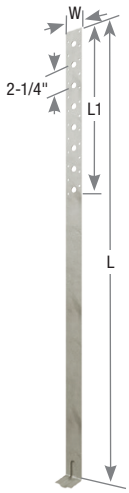
Typical TA stud to foundation installation

Continued on next page

TA Foundation Straps

Installation:

- Use all specified fasteners. See Product Notes, page 18.
- Allowable loads are based on either nail fastening or bolt fastening; nail and bolt values cannot be combined.
- Install by inserting product into footing's wet concrete. All models require a 6" embedment into concrete foundations. Courses of concrete block must be laid over connector. Notch mudsill at connector locations. Wrap strap over rim joist and fasten.
- Do not rely on these straps to secure concrete sections together between cold joints; take other measures to transfer the load. If there is a cold joint between block and foundation, the minimum embedment must be made into the foundation.
- Based on product embedment the exposed number of fastener holes may be reduced. Using fewer fasteners will reduce allowable loads. Reduce allowable loads by the code prescribed allowable load per fastener, for each fastener not installed.
- Allowable loads are based on a minimum concrete compressive strength of 2,500 psi at 28 days.
- Bolts must be ordered separately. See page 25 for available sizes.



TA

USP Stock No.	Ref. No.	Dimensions (in)			DF/SP Allowable Loads (Lbs.)												Corrosion Finish	Code Ref.
					2 x 8			2 x 10			2 x 12			2 x 14				
					Fastener Schedule[1,4]		Uplift[2] 160%	Fastener Schedule[1,4]		Uplift[2] 160%	Fastener Schedule[1,4]		Uplift[2] 160%	Fastener Schedule[1,4]		Uplift[2] 160%		
		W	L	L1	Qty	Type		Qty	Type		Qty	Type		Qty	Type			
TA51	PA51	2-1/16	48-1/4	17-5/8	2	1/2	1340	3	1/2	1950	4	1/2	2475	5	1/2	3230		130
					8	16d x 2-1/2	1905	10	16d x 2-1/2	2385	14	16d x 2-1/2	3230	16	16d x 2-1/2	3230		
TA71	PA68	2-1/16	68-1/4	22-1/8	2	1/2	1340	3	1/2	1950	4	1/2	2475	5	1/2	3230		
					8	16d x 2-1/2	1905	10	16d x 2-1/2	2385	14	16d x 2-1/2	3230	16	16d x 2-1/2	3230		

1) Bolt values are for 3" thick rim joist loaded perpendicular to grain.
2) Uplift loads have been increased 60% for wind and seismic loads; no further increase shall be permitted.
3) Minimum of (9) 16d nails per strap is required to meet IRC R 404.1.5.
4) **NAILS:** 16d x 2-1/2 nails are 0.162" dia. x 2-1/2" long.

Corrosion Finish
Stainless Steel | Gold Coat | HDG | Triple Zinc

HPA / PA / PAI Purlin Anchors

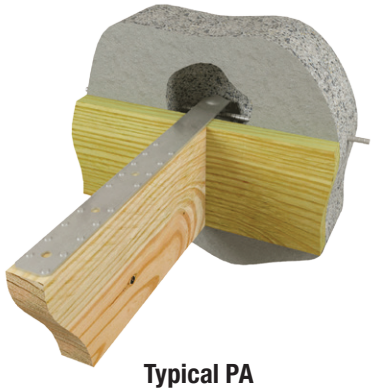
HPA series – For installation into poured concrete walls, foundations, or masonry. The HPA is the heavy-duty version of the PA anchor.

PA series – For installation into poured concrete or concrete block walls and foundations.

PAI series – For wood I-Joist applications. An expanded 3" on-center nail spacing reduces splitting along I-Joist flange.

Materials: HPA – 10 gauge; PA / PAI – 12 gauge
Finish: G90 galvanizing
Options: See chart for Corrosion Finish Options
Codes: See page 10 for Code Reference Key Chart
IBC 1620.2.1

Typical PA holdown installation



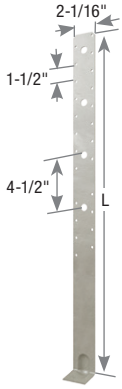
Typical PA purlin installation

Continued on next page

HPA / PA / PAI Purlin Anchors

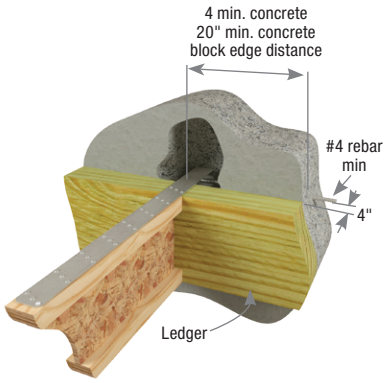
Installation:

- Use all specified fasteners. See Product Notes, page 18.
- Minimum concrete strength is 2,500 psi.
- The allowable loads for bolts are based on parallel to grain loading with a 3" minimum member thickness, except the HPA which requires a 3-1/2" thick wood member. Reduce load per code requirements when minimum member thickness is not achieved.
- Minimum concrete edge distance is 4" for PA & PAI series, and 6" for HPA series.
- Minimum concrete block edge distance is 20".
- Designer may specify alternate fastening schedules. Refer to Nail Specification Table on page 21 for nail shear values. Load values shall not exceed published allowable loads.
- No anchor bolts are needed for achieving efficient stress transfer from framing to concrete walls or foundations.
- Bolts must be ordered separately. See page 25 for available sizes.



PA / HPA

PAI



Typical PAI
I-Joist purlin face installation

USP Stock No.	Ref. No.	L (in)	Minimum Embedment: Concrete	Minimum Embedment: Masonry	Nailer Size	Fastener Schedule[5] Min Qty[6]: Nails[4,7] Qty	Nails Nail	Bolts Qty	Bolts Dia.	DF/SP Allowable Tension Loads (Lbs.)[1,3]: Concrete Nails 160%	Concrete Bolts[2] 160%	Masonry Nails 160%	Masonry Bolts[2] 160%	Corrosion	Finish	Code Ref.
PA18	PA18	18-1/2	4	6	Max Capacity 2x & 3x Ledger 4x Ledger	12	16d	2	1/2	3035	2260	3035	2260			130
PA23	PA23	23-3/4	4	6	Max Capacity 2x & 3x Ledger 4x Ledger	15	16d	3	1/2	3700	3265	3035	3035			
PA28	PA28	29	4	6	Max Capacity 2x & 3x Ledger 4x Ledger	15	16d	4	1/2	3700	3700	3035	3035			
PA35	PA35	35	4	6	Max Capacity 2x & 3x Ledger 4x Ledger	15	16d	4	1/2	3700	3700	3035	3035			
HPA28	HPA28	29	6	8	Max Capacity 2x & 3x Ledger 4x Ledger	23	16d	4	1/2	5055	4280	3035	3035			
HPA35	HPA35	35	6	8	Max Capacity 2x & 3x Ledger 4x Ledger	23	16d	4	1/2	5425	4280	3035	3035			
PAI18	PAI18	18-1/2	4	6	Max Capacity 2x & 3x Ledger 4x Ledger	12	10d x 1-1/2	--	--	2475 2475 2270	--	2475 1855 1855	--			
PAI23	PAI23	23-1/2	4	6	Max Capacity 2x & 3x Ledger 4x Ledger	18	10d x 1-1/2	--	--	3700 3510 3095	--	3035	--			
PAI28	PAI28	28-1/2	4	6	Max Capacity 2x & 3x Ledger 4x Ledger	24	10d x 1-1/2	--	--	3700	--	3035	--			
PAI35	PAI35	35-1/2	4	6	Max Capacity 2x & 3x Ledger 4x Ledger	26	10d x 1-1/2	--	--	3700	--	3035	--			

1) Allowable Loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) The allowable loads for bolts are based on parallel-to-grain loading with 3" minimum member thickness, except HPA which requires a 3-1/2" thick wood member.
3) Allowable loads are based on the use of either nails or bolts; nail and bolt values cannot be combined.
4) 16d sinkers or 10d common nails may be substituted for the specified 16d common nails at 0.85 of the table loads.
5) For alternate nail schedule and load values consult USP.
6) Minimum quantity of fasteners to be installed. Product may have additional fastener holes not needed to meet published allowable load of product.
7) **NAILS:** 10d x 1-1/2" nails are 0.148" dia. x 1-1/2" long, 16d nails are 0.162" dia. x 3-1/2" long.

Corrosion Finish Stainless Steel Gold Coat HDG Triple Zinc

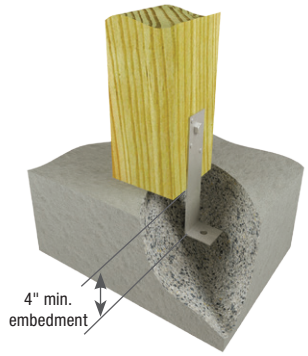
TDL Concrete Angles

These angles secure wood posts to concrete or wood floors in light-duty applications.

Materials: 12 gauge
Finish: G90 galvanizing
Options: See Chart for Corrosion Finish Options.
Codes: See page 10 for Code Reference Key Chart

Installation:
- Use all specified fasteners. See Product Notes, page 18.
- The TDL10 can be embedded into concrete. Minimum embedment depth is 4" to achieve allowable loads.
- **Moisture barrier may be required.**
- Bolts must be ordered separately. See page 25 for available sizes.

Typical TDL5 interior installation



Typical TDL10 embedded interior installation

TDL10

USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in) W	H	D	Fastener Schedule[4,5] Anchor Bolts Qty	Anchor Bolts Dia. (in)	Strap Nails Qty	Strap Nails Type	Strap Bolts Qty	Strap Bolts Dia. (in)	DF/SP Allowable Loads (Lbs.)[1,2,3] Uplift 160% Nails	Uplift 160% Bolts	Corrosion Finish	Code Ref.
TDL5	A24	12	2	5-3/16	2-1/4	1	1/2	4	16d	1	1/2	955	1105		130
TDL10	A311	12	2	9-3/4	2-1/4	1	1/2	4	16d	1	1/2				

1) Allowable loads are based on the use of either nails or bolts; nail and bolt values cannot be combined.
2) The bolt values are based on single shear with a minimum member thickness of 3-1/2".
3) Allowable loads have been increased in accordance with the code; no further increase shall be permitted.
4) Designer must specify anchor bolt type, length, and embedment.
5) **NAILS:** 16d nails are 0.162" dia. x 3-1/2" long.

Corrosion Finish Stainless Steel Gold Coat HDG Triple Zinc

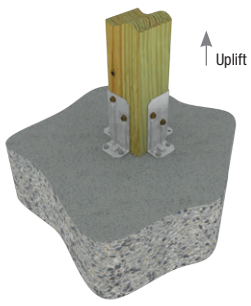
RPB Retrofit Post Base

RPB-TZ post base attaches 4x4 or larger wood post to concrete or wood surfaces and the key feature is the ability for installation after the post is in place. Can be installed with 1 or 2 RPB-TZ's (single or double). Post may also be installed on our CPB composite post base product which provides a 1-inch stand off as required in untreated wood installations. Installs with concrete screws, so no more mis-installed, mis-located, anchor bolts!

Materials: 12 gauge

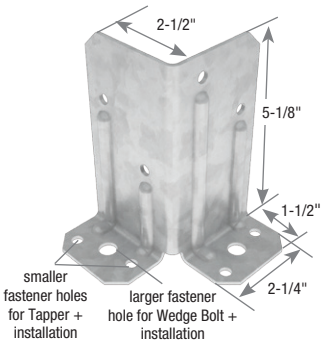
Finish: G-185 galvanizing

Codes: See page 10 for Code Reference Chart



Typical Double RPB-TZ concrete installation

Typical Double RPB-TZ wood-to wood installation

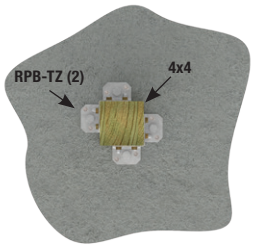


RPB-TZ

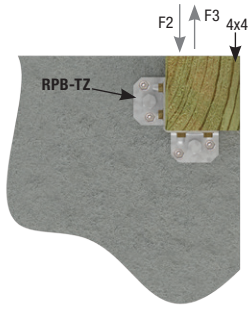
Installation:

- USP's WS-EXT wood screws and screw anchors are not included with RPB bases. Powers Wedge-Bolt+ anchors require Powers SDS Wedge-Bit drill bit. Wedge-Bits are not inluded and must be ordered seperately. Refer to page 34.
- **Not recommended for fence posts or other unrestrained (not fixed or fastened at top) applications. These anchors are not designed to resist overturning (moment) loads.**

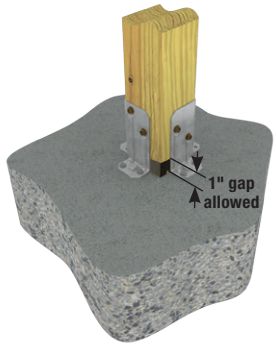
- **Concrete Installation:**
  1. Place RPB-TZ over one corner of post flush to both concrete and post surfaces and mark hole locations in concrete. Place aside.
  2. Drill holes for concrete screws using appropriate bit and hammer drill.
  3. Place RPB-TZ in position and install with specified screw anchors as listed in table below.
  4. Repeat for RPB-TZ on other side of post for double installations.



Typical Double RPB-TZ concrete installation Min 2-1/2" from any concrete edge (Top view)



Typical Single RPB-TZ installation at concrete corner, flush to edge (Top view)



Typical Double RPB-TZ installation with CPB composite post base (CPB ordered separately)

- **Wood-to-Wood Installation:**
  1. Place RPB-TZ over one corner of post flush to wood base and post surfaces.
  2. Install all specified WS wood screws as listed in the table below.
  3. Repeat for RPB-TZ on other side of post for double installations.

USP Stock No.	Ref. No.	Steel Gauge	Qty of RPB's	Fastener Schedule[4] Post Qty	Post Type	Base Qty	Base Type[2,3]	DF/SP Allowable Loads (Lbs.)[1,4,5] Uplift 160%	F2 160%	F3 160%	Corrosion Finish	Code Ref.
Concrete Base with Post Flush to Corner[6]												
RPB-TZ	RPBZ	12	1	4	WS3-EXT	2	3/8" x 2-1/2"	1525	710	495		130
						4	Tapper+	735	655			
			1	4	WS15-EXT	2	3/8" x 2-1/2"	1470	710	495		
						4	Tapper+	735	655			
Concrete Base with Post 2-1/2" from Concrete Edge[6]												
			1	4	WS15-EXT or WS3-EXT	2	3/8" x 2-1/2"	1470 [9]	710	495		
						4	Tapper+	865	655			
			2 [5]	8	WS15-EXT or WS3-EXT	4	3/8" x 2-1/2"	2295	990	990		
						8	Tapper+	1735				
LVL Base/SP Base[7,8]												
			1	4	WS15-EXT or WS3-EXT	4	WS15-EXT	1110	960	495		
			2	8	WS15-EXT or WS3-EXT	8		2220				

Corrosion Finish
- Stainless Steel
- Gold Coat
- HDG
- Triple Zinc

1) Allowable loads are for DF/SP 4x4, 6x6, or larger posts. For SPF/HF loads, multiply the allowable load by 0.86.
2) Use Powers 3/8" x 2-1/2" Wedge-Bolt+ or **DeWalt 3/8" x 2-1/2" Screw-Bolt+**; or equal, installed in accordance with manufacturer's specification. **Anchors are not supplied. See page 34 for anchor information.**
3) Use Powers 1/4" x 1-3/4" Tapper+ concrete screw anchor; or equal, installed in accordance with manufacturer's specification. **Tapper+ anchors are not supplied.**
4) When installing connectors in pairs, the post must be a minimum of 2-1/2" from the edge of the concrete.
5) Allowable loads have been increased 60% for wind and seiesmic loads; no futher increase shall be permitted.
6) Concrete compressive strength shall be 2,500 psi or greater at 28 days.
7) LVL framing base shall be at least 1-3/4" thick.
8) SYP framing base shall be at least 1-1/2" thick.
9) Allowable uplift for single RPB-TZ using WS3-EXT with Wedge-Bolt+ **or Screw-Bolt+** for concrete base with post 2-1/2" from concrete edge is 1,525 lbs.

New products or updated product information are designated in **blue font**.

PA / PAE / PAU Post Anchors

Post Anchors are used to secure wood posts to concrete footings. These post anchors also provide moisture damage protection and feature a 1" stand-off plate to elevate wood posts above concrete surfaces as required by building code.

PAE – 2-sided post anchors with high uplift and bearing capacity.

PA – High capacity utilizing 4-sided design.

PAU – Higher uplift resistance and optional bolt fastening to post.

Materials: See chart

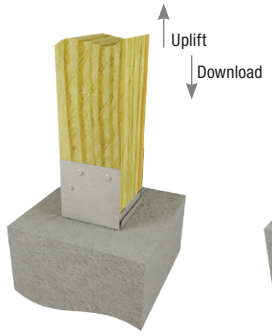
Finish: G90 galvanizing, PA66ER-TZ - G-185 galvanizing

Options: See chart for Corrosion Finish Options

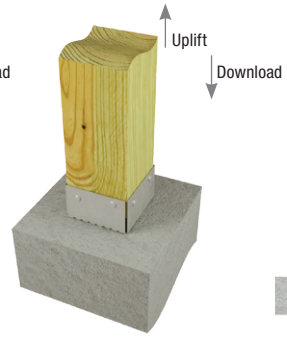
Codes: See page 10 for Code Reference Chart
IRC R317.1.4, IBC 2304.11.2.7,
IRC R407.3, IBC 2304.9.7.

Installation:

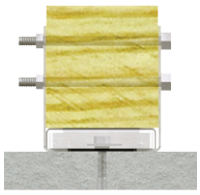
- Use all specified fasteners. Install with supplied washer. See Product Notes, page 18.
- Anchor bolts and nails are not furnished.
- **Not recommended for fence posts or other unrestrained (not fixed or fastened at top) applications. These anchors are not designed to resist overturning (moment) loads.**
- **Anchor bolt installation** – place specified diameter anchor bolt at desired location with minimum 4" embedment into minimum 2,500 psi concrete. A minimum 2" edge distance is required to achieve allowable loads.
- **For hardened concrete or retrofit installations** – use specified diameter threaded rod with USP's CIA-EA or CIA-GEL 7000-C adhesive epoxy, following installation instructions. Contact USP Engineering for further information on selecting the proper epoxy.
- Bolts must be ordered separately. See page 25 for available sizes.



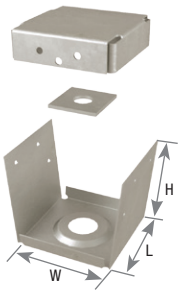
Typical PA44E installation



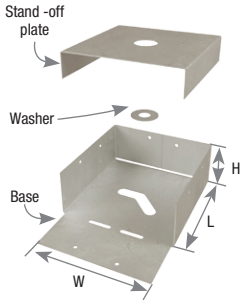
Typical PA installation



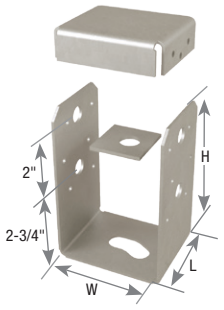
PAU cross-section



PAE

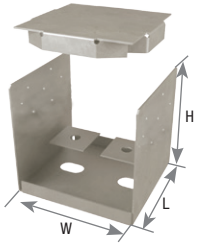


PA



PAU

AVAILABLE IN GOLD COAT



PAU88

Post/ Column Size	USP Stock No.	Ref. No.	Steel Gauge: Base	Steel Gauge: Stand-off Plate	Dimensions (in): W	Dimensions (in): H	Dimensions (in): L	Fastener Schedule[2,4]: Anchor Bolt Qty	Anchor Bolt Dia. (in)	Post: Nails Qty	Post: Nails Type	Post: Bolts Qty	Post: Bolts Dia. (in)	DF/SP Allowable Loads (Lbs.)[3]: Bearing 100%	Uplift[1]: Nails 160%	Uplift[1]: Bolts 160%	Corrosion Finish	Code Ref.
4 x 4	PA44	--	18	12	3-9/16	2-1/8	3-1/2	1	1/2	8	16d	--	--	5135	380	--		11, R13, F6
	PA44E	ABA44	18	16	3-9/16	3-1/2	3-1/2	1	1/2	6	16d	--	--	6775	990	--		
	PAU44	ABU44	12	16	3-9/16	5-7/16	3	1	5/8	12	16d	2	1/2	6775	2535	2265		
4 x 4 Rough	PA44R	--	18	12	4-1/16	3-1/2	4	1	1/2	12	16d	--	--	5135	380	--		
4 x 6	PA46	--	18	12	3-9/16	3-1/2	5-1/2	1	1/2	14	16d	--	--	6285	505	--		
	PA46E	ABA46	18	12	3-9/16	3-1/2	5-1/2	1	5/8	8	16d	--	--	13815	825	--		130
	PAU46	ABU46	10	12	3-9/16	6	5	1	5/8	12	16d	2	1/2	13815	2535	2265		11, R13, F6
4 x 6 Rough	PA46R	--	18	10	4-1/16	3-1/2	6	1	1/2	14	16d	--	--	6285	505	--		
6 x 6	PA66	--	18	12	5-1/2	2-7/8	5-1/2	1	1/2	16	16d	--	--	6950	470	--		
	PA66E	ABA66	14	12	5-1/2	3-1/2	5-1/2	1	5/8	8	16d	--	--	16005	1060	--		
	PAU66	ABU66	10	12	5-1/2	6	5	1	5/8	12	16d	2	1/2	16005	2380	2265		
6 x 6 Rough	PA66R	--	18	12	6-1/16	3-1/4	6-1/16	1	1/2	16	16d	--	--	6950	470	--		
	PA66ER-TZ	ABA66R	14	12	6	3-1/4	5-1/2	1	5/8	8	16d HDG	--	--	16005	1060	--		130
8 x 8	PAU88	ABU88	12	12	7-1/2	7-3/16	7-1/16	2	5/8	14	16d	--	--	24900	3185	--		11, R13, F6
8 x 8 Rough	PAU88R	ABU88R	12	12	8-1/16	6-15/16	7-1/16	2	5/8	14	16d	--	--	24900	3185	--		

1) Uplift loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) All bolts shall meet or exceed the specifications of ASTM A 307.
3) Allowable loads are based on the use of either nails or bolts; nail and bolt values cannot be combined.
4) **NAILS:** 16d nails are 0.162" dia. x 3-1/2" long.
New products or updated product information are designated in **blue font**.

Corrosion Finish
Stainless Steel | Gold Coat
HDG | Triple Zinc

WAS / WE Wet Post Anchors

WAS – A formed base providing a 1" stand-off with high bearing capacity.

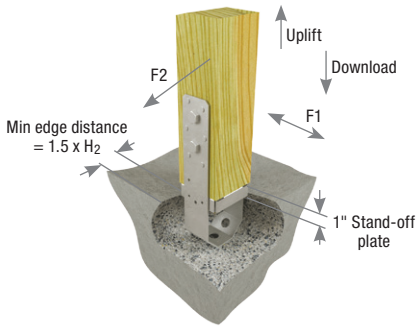
WE – A formed, one-piece design. Includes embossing for additional lateral strength.

Materials: See chart

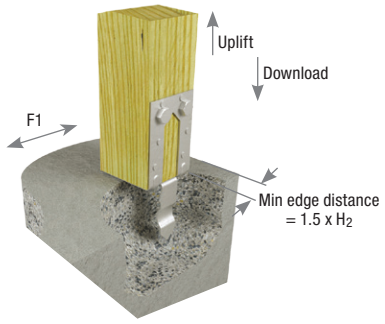
Finish: G90 galvanizing

Options: See chart for Corrosion Finish Options

Codes: See page 10 for Code Reference Chart
IRC R317.1.4, IBC 2304.11.2.7,
IRC R407.3, IBC 2304.9.7.



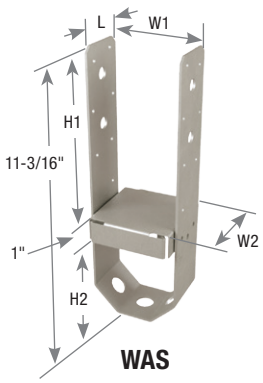
Typical WAS installation



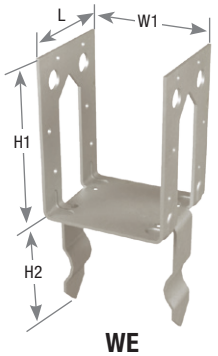
Typical WE installation

Installation:

- Use all specified fasteners. See Product Notes, page 18.
- Insert into wet concrete after the pour. For the **WE**, embed the anchor so that the base plate is flush with the surface of the concrete. For the **WAS**, embed the anchor until the concrete surface meets the bottom edge of the stand off base legs. This will provide a 1" stand-off where required. A 2" minimum edge distance is required to achieve allowable loads.
- **Not recommended for fence posts or other unrestrained (not fixed or fastened at top) applications. These anchors are not designed to resist overturning (moment) loads.**
- Bolts must be ordered separately. See page 25 for available sizes.



WAS



WE

Post Size	USP Stock No.	Ref. No.	Steel Gauge		Dimensions (in)					Fastener Schedule[5,6]		DF/SP Allowable Loads (Lbs.)[2,4]							Corrosion Finish	Code Ref.
													Uncracked Concrete			Cracked Concrete				
			Base	Strap	W1	W2	H1	H2[3]	L	Qty	Type	Download 100%	Uplift[1] 160%	F1 160%	F2 160%	Uplift[1] 160%	F1 160%	F2 160%		
SDC A & B																				
4 x 4	WE44	PB44	12	12	3-1/2	--	4-3/4	3-3/8	3-1/4	12	16d	--	1405	860	970	1245	600	680		22, F13, 18
										2	1/2		1430	860	970	1245	600	680		
	WAS44	PBS44A	16	14	3-9/16	3-1/2	6-3/4	3-1/2	2-1/4	14	16d	6775	3090	1365	1095	2165	955	770		
										2	1/2		3075	1365	1095	2165	955	770		
4 x 4 Rough	WE44R	PB44R	12	12	4	--	5	3-5/8	3-3/8	12	16d	--	1405	860	970	1245	600	680		
4 x 6	WE46	PB46	12	12	5-1/2	--	4-3/4	3-3/8	3-1/4	12	16d	--	1405	860	970	1245	600	680		
										2	1/2		1430	860	970	1245	600	680		
	WAS46	PBS46	12	14	3-9/16	5-1/2	6-3/4	3-1/2	2-1/4	14	16d	13815	3090	1365	1095	2165	955	770		
										2	1/2		3075	1365	1095	2165	955	770		
4 x 6 Rough	WE46R	--	12	12	6	--	5	3-5/8	3-3/8	12	16d	--	1405	860	970	1245	600	680		
6 x 6	WE66	PB66	12	12	5-1/2	--	5	3-5/8	5-3/8	12	16d	--	1405	860	970	1245	600	680		
	WAS66	PBS66	12	12	5-1/2	5-1/2	6-3/4	5	2-1/4	14	16d	16005	3365	1955	1685	2505	1370	1685		
										2	1/2		3575	1955	1685	2505	1370	1685		
6 x 6 Rough	WE66R	PB66R	12	12	6	--	5	3-5/8	5-3/8	12	16d	--	1405	860	970	1245	600	680		
SDC C-F																				
4 x 4	WE44	PB44	12	12	3-1/2	--	4-3/4	3-3/8	3-1/4	12	16d	--	1255	755	850	1090	525	595		22, F13, 18
										2	1/2		1255	755	850	1090	525	595		
	WAS44	PBS44A	16	14	3-9/16	3-1/2	6-3/4	3-1/2	2-1/4	14	16d	6775	2705	1195	960	1895	835	675		
										2	1/2		2705	1195	960	1895	835	675		
4 x 4 Rough	WE44R	PB44R	12	12	4	--	5	3-5/8	3-3/8	12	16d	--	1255	755	850	1090	525	595		
4 x 6	WE46	PB46	12	12	5-1/2	--	4-3/4	3-3/8	3-1/4	12	16d	--	1255	755	850	1090	525	595		
										2	1/2		1255	755	850	1090	525	595		
	WAS46	PBS46	12	14	3-9/16	5-1/2	6-3/4	3-1/2	2-1/4	14	16d	13815	2705	1195	960	1895	835	675		
										2	1/2		2705	1195	960	1895	835	675		
4 x 6 Rough	WE46R	--	12	12	6	--	5	3-5/8	3-3/8	12	16d	--	1255	755	850	1090	525	595		
6 x 6	WE66	PB66	12	12	5-1/2	--	5	3-5/8	5-3/8	12	16d	--	1255	755	850	1090	525	595		
	WAS66	PBS66	12	12	5-1/2	5-1/2	6-3/4	5	2-1/4	14	16d	16005	3135	1715	1685	2195	1200	1665		
										2	1/2		3135	1715	1685	2195	1200	1665		
6 x 6 Rough	WE66R	PB66R	12	12	6	--	5	3-5/8	5-3/8	12	16d	--	1255	755	850	1090	525	595		

1) Uplift loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) Allowable loads are based on the use of either nails or bolts; nail and bolt values cannot be combined.
3) H2 is mimimum embedment length of anchor into concrete.
4) Minimum concrete strength f'c = 2,500 psi.
5) All bolts shall meet or exceed the specifications of ASTM A 307.
6) **NAILS:** 16d nails are 0.162" dia. x 3-1/2" long.
New products or updated product information are designated in **blue font**.

Corrosion Finish
Stainless Steel Gold Coat
HDG Triple Zinc

EPB Elevated Post Bases

The EBP44T-TZ Elevated Post Base is an economical solution for supporting 4x4 posts at the minimum 1 inch above the concrete foundation as required by the building code. For applications where uplift loads are not present, the EPB44T-TZ can be installed directly into a hole predrilled in a pier block or concrete foundation as shown in Figure A below. To resist uplift loading, the EPB44T-TZ must be cast into concrete or epoxied into place as shown in Figure B below.

Materials: 12 gauge

Finish: G-185 galvanizing U-bracket; Hot-dip galvanized Threaded rod, nuts, washers

Codes: See page 10 for Code Reference Chart

Installation:

- Use all specified fasteners. See Product Notes, page 18.
- **Drilled Hole – No Uplift Resistance**
  - Drill 5/8" diameter hole into hardened concrete 4" deep.
  - Insert threaded rod of EPB44T-TZ into hole and adjust nut to desired height.
  - Install 4x4 post and fasten with (8) 10d common nails.
- **Embedded In Concrete – Uplift Resistance Installation**
  - Adjust nut for desired height.
  - Insert threaded rod with nut and washer into wet concrete.
  - Provide temporary support to post base (if needed) to maintain vertical and horizontal position.
  - After concrete has cured, install 4x4 post and fasten with (8) 10d common nails.
- **Epoxied Into Place – Uplift Resistance Installation**
  - Drill 3/4" diameter hole into hardened concrete 4" deep.
  - Clean hole as per USP's recommendations.
  - Adjust nut for desired height.
  - Fill the hole 3/4 full with USP Epoxy. Visit www.uspconnectors.com for proper installation procedures and injection of USP epoxy products.
  - Insert threaded rod with nut and washer into hole, pressing down until the washer is firmly seated on the concrete.
  - After epoxy has cured, install 4x4 post and fasten with (8) 10d common nails.
- **Not recommended for fence posts or other unrestrained (not fixed or fastened at top) applications. These anchors are not designed to resist overturning (moment) loads.**

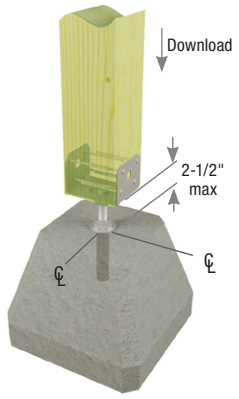
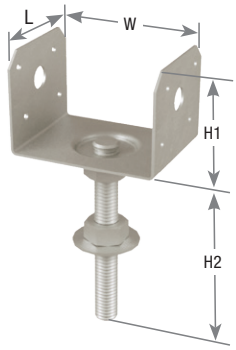


Figure A

Typical EPB44T-TZ pier block installation



EPB44T-TZ

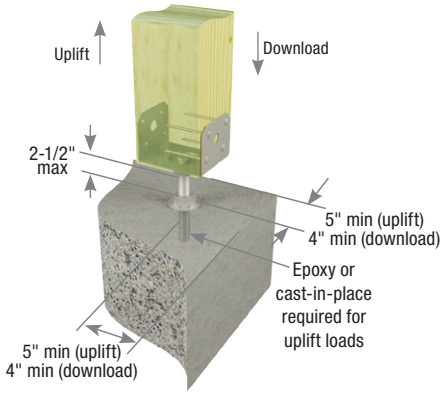


Figure B

Typical EPB44T-TZ installation with USP's Epoxy

Post Size	USP Stock No.	Ref. No.	Steel Gauge (U-bracket)	Dimensions (in) W	L	H1	H2	Wood Post Size	Fastener Schedule[8] Qty	Type	Installation Type[6,7]	DF/SP Allowable Loads (Lbs.)[1,5] Uncracked Concrete[5] SDC A & B Uplift 160%[2,3]	Cracked & Uncracked Concrete[5] SDC A & B Download 100%[4]	SDC C-F Download 100%[4]	Corrosion Finish	Code Ref.
4x4	EPB44T-TZ	EPB44T	12	3-9/16	2-7/8	2-7/16	4-7/8	4x4	8	10d	Pier Block	--	5525	5525		22, R18, F13
											Embedded	790	5525	5525		
											Epoxy	790	5525	5525		

1) Allowable loads are based on a maximum distance of 2-1/2" between the concrete foundation and the bottom of the post base.
2) Uplift loads have been increased 60% for wind and seismic loads; no further increase shall be permitted.
3) Uplift capacity requires the post base to be cast-in-place or epoxy post-installed in a concrete member capable of resisting the upward force.
4) Download is based on the bearing of the wood in the post base and the bearing of the washer on the concrete.
5) Minimum concrete strength f'c = 2,500 psi.
6) Pier Block installation, drill a 5/8" diameter hole a minimum of 4" deep.
7) Epoxy installation, drill a 3/4" diameter hole a minimum of 4" deep. Follow published epoxy installation instructions available at USPconnectors.com.
8) **NAILS:** 10d nails are 0.148" dia. x 3" long.

New products or updated product information are designated in **blue font**.

Corrosion Finish Stainless Steel Gold Coat HDG Triple Zinc

EBG / EPB / EPBH Elevated Post Bases

MiTek®

These post bases allow installers to pre-align posts and preset post heights above concrete floors or footings. By eliminating post-to-concrete contact, moisture damage is reduced. Elevated post bases are ideal for building carports, decks or porches. All series feature convenient nail fastening to post.

Materials: See chart

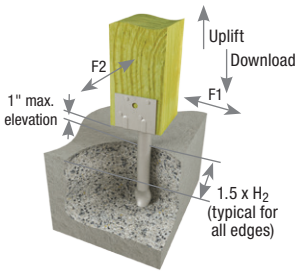
Finish: EPB – USP primer;
EBG44-TZ – G-185 galvanizing;
EPBH – Hot-dip galvaized

Options: See chart for Corrosion Finish Options

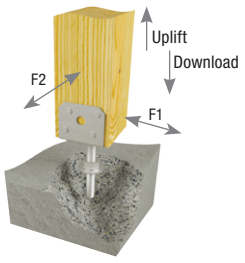
Codes: See page 10 for Code Reference Chart
IRC R317.1.4, IBC 2304.11.2.7, IRC R407.3, IBC 2304.9.7.

Installation:

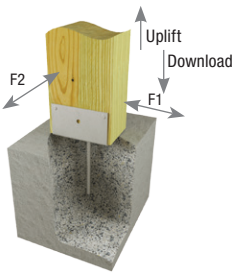
- Use all specified fasteners. See Product Notes, page 18.
- **Not recommended for fence post or other fixed post applications. These anchors are not designed to resist overturning (moment) loads.**
- Maintain 3" minimum edge distance between embedded tube and edge of concrete.



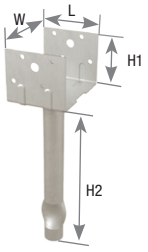
Typical EBG44-TZ installation



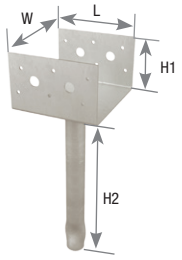
Typical EPB installation



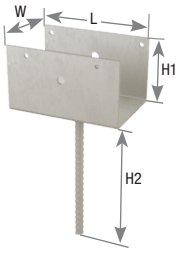
Typical EPBH installation



EBG44-TZ



EPB



EPBH

Post Size	USP Stock No.	Ref. No.	Steel Gauge Base	Steel Gauge Tube	Dimensions (in) W	L	H1	H2	Fastener Schedule[4] Qty	Nail	DF/SP Allowable Loads (Lbs.)[3] Download 100%	Uncracked Concrete Uplift[2] 160%	Uncracked Concrete F1[1] 160%	Uncracked Concrete F2[1] 160%	Cracked Concrete Uplift[2] 160%	Cracked Concrete F1[1] 160%	Cracked Concrete F2[1] 160%	Corrosion Finish	Code Ref.
SDC A & B																			
4 x 4	EBG44-TZ	EPB44A	14	16	3-9/16	2-3/4	2-3/8	7-1/2	8	16d HDG	4615	1085	1440	1295	800	1010	905		22, F13, R18
	EPB4408	EPB44, EPB44-12	12	--	3-9/16	3	3	8	8	16d	3045	1110	1440	1295	775	1010	905		
	EPBH44	--	12	--	3-1/2	3-3/8	2-3/4	7	4	16d HDG	2485	990	990	975	990	845	845		130
4 x 6	EPB4608	EPB46, EPB46-12	12	--	3-9/16	5	3	8	12	16d	3045	1110	1440	1295	775	1010	905		22, F13, R18
4 x 6 Rough	EPBH46R	--	12	--	4-1/8	5-3/8	3	130	4	16d HDG	4615	990	990	975	990	845	845		130
6 x 6	EPB6608	EPB66, EPB66-12	12	--	5-9/16	5	3-3/16	8	12	16d	4665	1110	1440	1295	775	1010	905		22, F13, R18
	EPBH66	--	12	--	5-1/2	5-3/8	3	7	4	16d HDG	4615	990	990	975	990	845	845		130
6 x 6 Rough	EPBH66R	--	12	--	6-1/8	5-3/8	3	7	4	16d HDG	4615	990	990	975	990	845	845		
SDC C-F																			
4 x 4	EBG44-TZ	EPB44A	14	16	3-9/16	2-3/4	2-3/8	7-1/2	8	16d HDG	4615	1000	1260	1135	700	885	795		22, F13, R18
	EPB4408	EPB44, EPB44-12	12	--	3-9/16	3	3	8	8	16d	3045	970	1260	1135	680	885	795		
	EPBH44	--	12	--	3-1/2	3-3/8	2-3/4	7	4	16d HDG	2485	990	990	975	990	725	725		130
4 x 6	EPB4608	EPB46, EPB46-12	12	--	3-9/16	5	3	8	12	16d	3045	970	1260	1135	680	885	795		22, F13, R18
4 x 6 Rough	EPBH46R	--	12	--	4-1/8	5-3/8	3	7	4	16d HDG	4615	990	990	975	990	725	725		130
6 x 6	EPB6608	EPB66, EPB66-12	12	--	5-9/16	5	3-3/16	8	12	16d	4665	970	1260	1135	680	885	795		22, F13, R18
	EPBH66	--	12	--	5-1/2	5-3/8	3	7	4	16d HDG	4615	990	990	975	990	725	725		130
6 x 6 Rough	EPBH66R	--	12	--	6-1/8	5-3/8	3	7	4	16d HDG	4615	990	990	975	990	725	725		

1) Lateral loads (F1 and F2) are for conditions where pipe extends no more than 1" above the concrete surface.
2) Uplift Loads have been increased 60% for wind and seismic loads; no further increase shall be permitted.
3) Concrete compressive strength shall be 2,500 psi or greater at 28 days.
4) **NAILS:** 16d nails are 0.162" dia. x 3-1/2" long.
New products or updated product information are designated in **blue font**.

Corrosion Finish
Stainless Steel Gold Coat
HDG Triple Zinc

KCBQ Column Bases

MiTek®

High capacity column base fastens to column with WS wood screws.

Materials: See chart

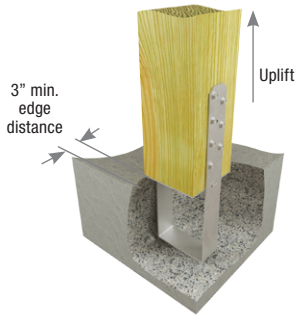
Finish: G90 galvanizing

Options: KCBQ models available in rough/full sizes
See chart for Corrosion Finish Options

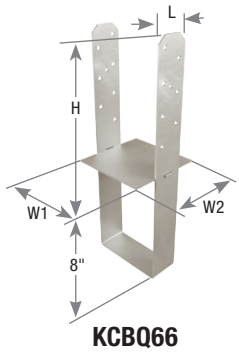
Codes: See page 10 for Code Reference Chart
IRC R407.3, IBC 2304.9.7.

Installation:

- Use all specified fasteners. See Product Notes, page 18.
- WS2 Wood Screws, 1/4" dia. x 2" long, are supplied with KCBQ Column Bases.
- **Not recommended for fence posts or other unrestrained (not fixed or fastened at top) applications. These bases are not designed to resist overturning (moment) loads.**
- All models require a minimum edge distance of 3".
- Embed column base with bottom of base plate flush to concrete.



Typical KCBQ66 installation



KCBQ66

Column Size	USP Stock No.	Ref. No.	Steel Gauge		Dimensions (in)				Fastener Schedule[2]		DF/SP AllowableLoads (Lbs.)[3]				Corrosion Finish	Code Ref.
											Uncracked Concrete		Cracked Concrete			
											Uplift 160%[1]		Uplift 160%[1]			
			Strap	Base	W1	W2[4]	H	L	Qty	Type	SDC A & B	SDC C-F	SDC A & B	SDC C-F		
4 x 4	KCBQ44	--	10	7	3-9/16	3-1/2	8-3/4	2-1/4	14	WS2	6870	6530	5330	4570		110
4 x 6	KCBQ46	--	10	7	3-9/16	5-1/2	8-3/4	2-1/4	14	WS2	6870	6530	5330	4570		
4 x 8	KCBQ48	--	10	7	3-9/16	7-1/2	8-3/4	2-1/4	14	WS2	6870	6530	5330	4570		
6 x 4	KCBQ64	--	10	7	5-1/2	3-1/2	8-3/4	2-1/4	14	WS2	6870	6530	5330	4570		
6 x 6	KCBQ66	--	10	7	5-1/2	5-1/2	8-3/4	2-1/4	14	WS2	6870	6530	5330	4570		
6 x 8	KCBQ68	--	10	7	5-1/2	7-1/2	8-3/4	2-1/4	14	WS2	6870	6530	5330	4570		
7-1/8 x 3-1/2	KCBQ71-4	--	10	7	7-1/8	3-1/2	8-3/4	2-1/4	14	WS2	6870	6530	5330	4570		
7-1/8 x 5-1/2	KCBQ71-6	--	10	7	7-1/8	5-1/2	8-3/4	2-1/4	14	WS2	6870	6530	5330	4570		
7-1/8 x 7-1/8	KCBQ71-7	--	10	7	7-1/8	7-1/8	8-3/4	2-1/4	14	WS2	6870	6530	5330	4570		
8 x 6	KCBQ86	--	10	7	7-1/2	5-1/2	8-3/4	2-1/4	14	WS2	6870	6530	5330	4570		
8 x 8	KCBQ88	--	10	7	7-1/2	7-1/2	8-3/4	2-1/4	14	WS2	6870	6530	5330	4570		
10 x 10	KCBQ1010	--	10	7	9-1/2	9-1/2	8-3/4	2-1/4	14	WS2	6870	6530	5330	4570		
10 x 12	KCBQ1012	--	10	7	9-1/2	11-1/2	8-3/4	2-1/4	14	WS2	6870	6530	5330	4570		
12 x 12	KCBQ1212	--	10	7	11-1/2	11-1/2	8-3/4	2-1/4	14	WS2	6870	6530	5330	4570		
Glulam Sizes																
5-1/8 glulam	KCBQ5	--	10	7	5-1/4	Specify	8-3/4	2	14	WS2	6870	6530	5330	4570		110
6-3/4 glulam	KCBQ7	--	10	7	6-7/8	Specify	8-3/4	2	14	WS2	6870	6530	5330	4570		
8-3/4 glulam	KCBQ9	--	10	7	8-7/8	Specify	8-3/4	2	14	WS2	6870	6530	5330	4570		

1) Uplift loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) WS2 Wood Screws are 1/4" dia. x 2" long and are included with KCBQ Column Bases.
3) Concrete compressive strength shall be 2,500 psi or greater at 28 days.
4) "Specify" denotes the required width that must be specified at the time of ordering.

Corrosion Finish
Stainless Steel Gold Coat
HDG Triple Zinc

KCB Column Bases

Provides high structural capacity and rugged performance.

Materials: See chart

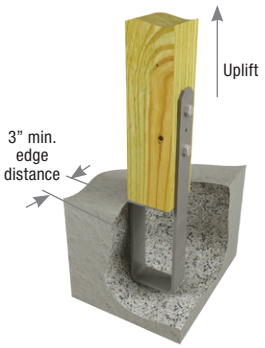
Finish: KCB (5/8" bolt models) – G90 galvanizing;
KCB (3/4" bolt models) – USP primer

Options: KCB models available in rough/full size.
See chart for Corrosion Finish Options

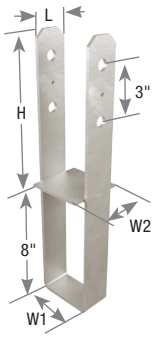
Codes: See page 10 for Code Reference Chart
IRC R407.3, IBC 2304.9.7

Installation:

- Use all specified fasteners. See Product Notes, page 18.
- **Not recommended for fence posts or other unrestrained (not fixed or fastened at top) applications. These bases are not designed to resist overturning (moment) loads.**
- All models require a minimum edge distance of 3".
- Bolted models feature diamond holes for temporary nail fastening to facilitate drilling and bolting.
- Embed column base with bottom of base plate flush to concrete.
- Bolts must be ordered separately. See page 25 for available sizes.



Typical KCB installation



KCB

Column Size	USP Stock No.	Ref. No.	Steel Gauge		Dimensions (in)				Fastener Schedule[2]		DF/SP Allowable Loads (Lbs.)[3]				Corrosion Finish	Code Ref.
											Uncracked Concrete		Cracked Concrete			
									Bolts		Uplift 160%[1]		Uplift 160%[1]			
			Strap	Base	W1	W2	H	L	Qty	Type	SDC A & B	SDC C-F	SDC A & B	SDC C-F		
4 x 4	KCB44	CB44	7	7	3-9/16	3-9/16	8-7/8	2	2	5/8	5525	5100	4165	3570		110
4 x 6	KCB46	CB46	7	7	3-9/16	5-1/2	8-7/8	2	2	5/8	5525	5100	4165	3570		
4 x 8	KCB48	CB48	7	7	3-9/16	7-1/2	8-7/8	2	2	5/8	5525	5100	4165	3570		
6 x 4	KCB64	CB64	7	7	5-1/2	3-1/2	8-7/8	3	2	5/8	6700	6465	5280	4525		
6 x 6	KCB66	CB66	7	7	5-1/2	5-1/2	8-7/8	3	2	5/8	6700	6465	5280	4525		
6 x 8	KCB68	CB68	7	7	5-1/2	7-1/2	8-7/8	3	2	5/8	6700	6465	5280	4525		
6 x 10	KCB610	CB610	7	7	5-1/2	9-1/2	8-7/8	3	2	5/8	6700	6465	5280	4525		
7 x 3-1/2	KCB74	CB7-1/8-4	3	7	7-1/8	3-1/2	9-3/4	3	2	3/4	6700	6465	5280	4525		
7 x 5-1/2	KCB76	CB7-1/8-6	3	7	7-1/8	5-1/2	9-3/4	3	2	3/4	6700	6465	5280	4525		
7 x 7	KCB77	CB7-1/8-7	3	7	7-1/8	7-1/8	9-3/4	3	2	3/4	6700	6465	5280	4525		
8 x 6	KCB86	CB86	3	7	7-1/2	5-1/2	9-3/4	3	2	3/4	6700	6465	5280	4525		
8 x 8	KCB88	CB88	3	7	7-1/2	7-1/2	9-3/4	3	2	3/4	6700	6465	5280	4525		
10 x 10	KCB1010	CB1010	3	7	9-1/2	9-1/2	9-3/4	3	2	3/4	6700	6465	5280	4525		
10 x 12	KCB1012	CB1012	3	7	9-1/2	11-1/2	9-3/4	3	2	3/4	6700	6465	5280	4525		
12 x 12	KCB1212	CB1212	3	7	11-1/2	11-1/2	9-3/4	3	2	3/4	6700	6465	5280	4525		
Glulam Sizes																
5-1/8 glulam	KCB5	CB5-4.5, CB5-6	3	7	5-1/4	specify	9-3/4	3	2	3/4	6700	6465	5280	4525		110
6-3/4 glulam	KCB7	CB7-6, CB7-7.5, CB7-9, CB7-10.5	3	7	6-7/8	specify	9-3/4	3	2	3/4	6700	6465	5280	4525		
8-3/4 glulam	KCB9	CB9-6, CB9-7.5, CB9-9, CB9-10.5	3	7	8-7/8	specify	9-3/4	3	2	3/4	6700	6465	5280	4525		

1) Uplift Loads have been increased 60% for wind and seismic loads, no further increase shall be permitted.
2) All bolts shall meet or exceed the specifications of ASTM A 307.
3) Concrete compressive strength shall be 2,500 psi or greater at 28 days.

Corrosion Finish
Stainless Steel Gold Coat
HDG Triple Zinc

CBE Column Bases

12 gauge base for carports, patios, or other residential framing.

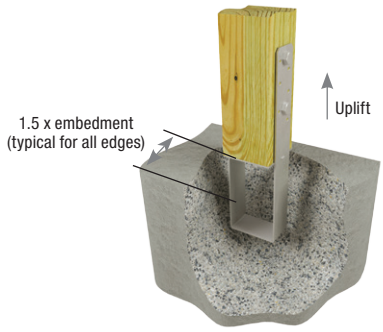
Materials: 12 gauge

Finish: G90 galvanizing

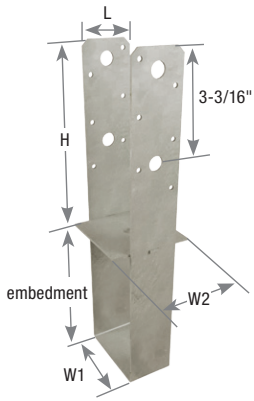
Codes: See page 10 for Code Reference Chart
IRC R407.3, IBC 2304.9.7

Installation:

- Use all specified fasteners. See Product Notes, page 18.
- **Not recommended for fence posts or other unrestrained (not fixed or fastened at top) applications. These bases are not designed to resist overturning (moment) loads.**
- All models require a minimum edge distance of 3".
- Bolted models feature diamond holes for temporary nail fastening to facilitate drilling and bolting.
- Embed column base with bottom of base plate flush to concrete.
- Bolts must be ordered separately. See page 25 for available sizes.



Typical CBE installation



CBE

Column Size	USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in)					Fastener Schedule[2,6]		DF/SP Allowable Loads (Lbs.)[3,4]				Code Ref.
											Uncracked Concrete		Cracked Concrete		
											Uplift 160%[1]		Uplift 160%[1]		
				W1	W2	H	L	Embedment[5]	Qty	Type	SDC A & B	SDC C-F	SDC A & B	SDC C-F	
4 x 4	CBE44	LCB44	12	3-9/16	3-1/2	7-1/2	2	6-1/2	12	16d	2975	2975	2975	2770	22, F13, R18
									2	1/2	4090	3605	3160	2770	
4 x 6	CBE46	LCB46	12	3-9/16	5-1/2	7-1/2	2	6-1/2	12	16d	2975	2975	2975	2770	
									2	1/2	4090	3605	3160	2770	
6 x 6	CBE66	LCB66	12	5-1/2	5-1/2	7-1/2	2	5-1/2	12	16d	2975	2975	2975	2770	
									2	1/2	4090	3605	3160	2770	

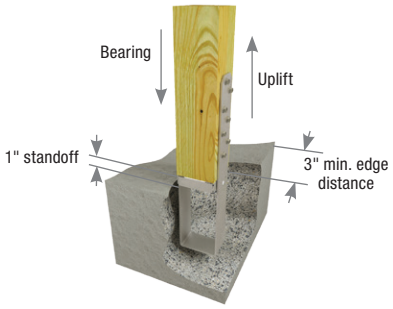
1) Uplift Loads have been increased 60% for wind and seismic loads, no further increase shall be permitted.
2) All bolts shall meet or exceed the specifications of ASTM A 307.
3) Concrete compressive strength shall be 2,500 psi or greater at 28 days.
4) Allowable loads are based on the use of either nails or bolts; nail and bolt values cannot be combined.
5) CBE column base shall be embedded into concrete up to this depth.
6) **NAILS:** 16d nails are 0.162" dia. x 3-1/2" long.
New products or updated product information are designated in **blue font**.

CBSQ Column Bases

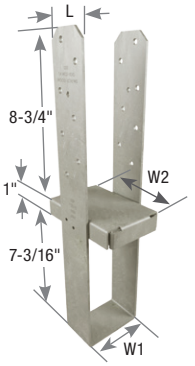
These column bases install using USP's WS2-EXT Wood Screws, reducing installation time and cost. Designed for high uplift in high wind or seismic applications. Includesa stand-off plate to protect the wood from ground contact moisture as required by building code.

Materials: See chart
Finish: G-185 galvanizing
Options: See chart for Corrosion Finish Options
Codes: See page 10 for Code Reference Chart
IRC R317.1.4, IBC 2304.11.2.7, IRC R407.3, IBC 2304.9.7

Installation:
- Use all specified fasteners. See Product Notes, page 18.
- WS2-EXT Wood Screws, 1/4" dia. x 2" long, are supplied with CBSQ Bases.
- Maintain 3" minimum edge distance between post and edge of concrete.
- Embed the column base until the concrete surface meets the bottom edge of the stand-off plate.
- **Not recommended for fence posts or other unrestrained (not fixed or fastened at top) applications. These bases are not designed to resist overturning (moment) loads.**



Typical CBSQ44-TZ installation



CBSQ46-TZ

Column Size	USP Stock No.	Ref. No.	Steel Gauge		Dimensions (in)				Fastener Schedule[2]		DF/SP Allowable Loads (Lbs.)[3]				Corrosion Finish	Code Ref.
											Uncracked Concrete		Cracked Concrete			
			Strap	Base	W1	W2	L	Embed[4]	Qty	Wood Screws	Download 100%	Uplift 160%[1]	Download 100%	Uplift 160%[1]		
SDC A & B																
4 x 4	CBSQ44-TZ	CBSQ44-SDS2	10	16	3-9/16	3-1/2	2-1/4	7-3/16	14	WS2-EXT	11950	5955	11950	4165		
4 x 6	CBSQ46-TZ	CBSQ46-SDS2	10	12	3-9/16	5-7/16	2-1/4	7-3/16	14	WS2-EXT	11955	5955	11955	4165		110
6 x 6	CBSQ66-TZ	CBSQ66-SDS2	10	12	5-1/2	5-7/16	3	7-3/16	14	WS2-EXT	11955	6870	11955	5280		
SDC C-F																
4 x 4	CBSQ44-TZ	CBSQ44-SDS2	10	16	3-9/16	3-1/2	2-1/4	7-3/16	14	WS2-EXT	11950	5100	11950	3570		
4 x 6	CBSQ46-TZ	CBSQ46-SDS2	10	12	3-9/16	5-7/16	2-1/4	7-3/16	14	WS2-EXT	11955	5100	11955	3570		110
6 x 6	CBSQ66-TZ	CBSQ66-SDS2	10	12	5-1/2	5-7/16	3	7-3/16	14	WS2-EXT	11955	6465	11955	4525		

1) Uplift Loads have been increased 60% for wind and seismic loads, no further increase shall be permitted.
2) WS2-EXT Wood Screws are 1/4" x 2" and are included with CBSQ Column Bases.
3) Concrete compressive strength shall be 2,500 psi or greater at 28 days.
4) The CBSQ shall be embedded into concrete up to specified depth. The minimum side cover is three inches.

Corrosion Finish
Stainless Steel Gold Coat
HDG Triple Zinc

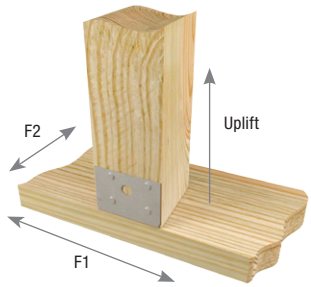
D Post Anchors

Secures nominal sized posts to wood surfaces for light-duty applications.

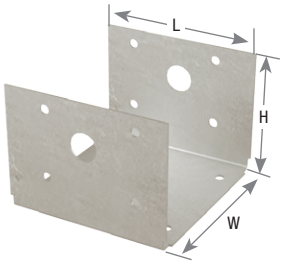
Materials: 18 gauge
Finish: G90 galvanizing; D44-TZ & D46R-TZ - G-185 galvanizing
Options: See chart for Corrosion Finish Options
Codes: See page 10 for Code Reference Chart

Installation:

- Use all specified fasteners. See Product Notes, page 18.
- **Not recommended for fence posts or other unrestrained (not fixed or fastened at top) applications. These anchors are not designed to resist overturning (moment) loads.**
- While D series post anchors offer some lateral and uplift resistance, they are not recommended as a primary means of anchorage for posts in railings.



Typical D installation



D

Post Size	USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in)			Fastener Schedule[2]				DF/SP Allowable Loads (Lbs.)[1]			S-P-F Allowable Loads (Lbs.)[1]			Corrosion Finish		Code Ref.
							Post		Beam										
				W	H	L	Qty	Nail	Qty	Nail	Uplift 160%	F1 160%	F2 160%	Uplift 160%	F1 160%	F2 160%			
4 x 4	D44-TZ	BC40, BC40Z	18	3-9/16	2-1/2	3-3/8	8	16d HDG	4	16d HDG	715	875	875	565	750	750			11, R13, F6
4 x 4 Rough	D44R	BC40R	18	4	3	3-3/4	8	16d	4	16d	715	875	875	565	750	750			
4 x 6	D46	BC460	18	3-9/16	3	5-3/8	10	16d	5	16d	715	1020	1095	600	855	920			
4 x 6 Rough	D46R-TZ	--	18	4	3	5-3/8	10	16d	5	16d	715	1020	1095	600	855	920			130
6 x 6	D66	BC60	18	5-1/2	3	5-3/8	10	16d	5	16d	715	1020	1095	600	855	920			11, R13, F6
6 x 6 Rough	D66R	BC60R	18	6	3	5-3/8	10	16d	5	16d	715	1020	1095	600	855	920			
8 x 8	D88	BC80	18	7-1/2	3	7-3/8	12	16d	5	16d	715	1020	1095	600	855	920			

1) Allowable loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) **NAILS:** 16d nails are 0.162" dia. x 3-1/2" long.

Corrosion Finish
Stainless Steel, Gold Coat, HDG, Triple Zinc

EPCM / PCM Post Caps

PCM – Provides a positive connection for medium-duty, post-to-beam applications.

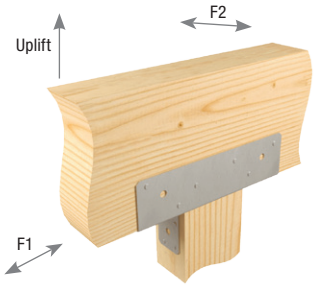
EPCM – End column caps.

Materials: See chart
Finish: G90 galvanizing
Options: See chart for Corrosion Finish Options
Codes: See page 10 for Code Reference Chart

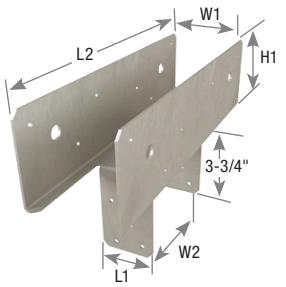
Installation:
- Use all specified fasteners. See Product Notes, page 18.
- PCM 16 gauge post caps should not be substituted for PCM 12 gauge post caps unless approved by the Engineer of Record.

USP Series	Steel Gauge	Fastener Schedule[1,2] Post Qty	Post Type	Beam Qty	Beam Type
PCM_16	16	8	16d	12	16d
PCM	12	8	16d	12	16d
EPCM_16	16	8	16d	8	16d
EPCM	12	8	16d	8	16d

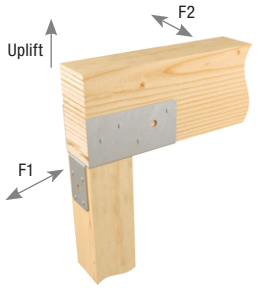
1) **NAILS:** 16d nails are 0.162" dia. x 3-1/2" long.



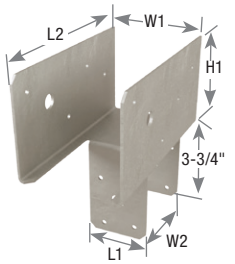
Typical PCM46 center cap installation



PCM



Typical EPCM end cap installation



EPCM

USP Stock No.	Ref. No.	Steel Gauge	Beam	Post	Dimensions (in) W1	W2	H1	L1	L2	Fastener Schedule[2] Post Qty	Post Type	Beam Qty	Beam Type	DF/SP Allowable Loads (Lbs.) Uplift[1] 160%	F1 160%	F2 160%	Corrosion Finish	Code Ref.
Center Column Caps																		
PCM4416	PC44-16	16	4x	4x	3-9/16	3-9/16	3-9/16	2-7/16	11	8	16d	12	16d	1100	1300	1480		
PCM44	PC44	12	4x	4x	3-9/16	3-9/16	3-9/16	2-7/16	11	8	16d	12	16d	1900	1545	1850		
PCM46	PC46	12	4x	6x	3-9/16	5-9/16	3-9/16	2-7/16	13	8	16d	12	16d	1900	1545	1850		
PCM4616	PC46-16	16	4x	6x	3-9/16	5-9/16	3-9/16	2-7/16	13	8	16d	12	16d	1100	1300	1480		
PCM4816	PC48-16	16	4x	8x	3-9/16	7-9/16	3-9/16	2-7/16	15	8	16d	12	16d	1100	1300	1480		
PCM48	PC48	12	4x	8x	3-9/16	7-9/16	3-9/16	2-7/16	15	8	16d	12	16d	1900	1545	1850		
PCM6416	PC64-16	16	6x	4x	5-1/2	3-9/16	3-1/2	3-13/16	11	8	16d	12	16d	1120	1765	1765		
PCM64	PC64	12	6x	4x	5-1/2	3-9/16	3-1/2	3-13/16	11	8	16d	12	16d	1795	2115	1905		
PCM6616	PC66-16	16	6x	6x	5-1/2	5-9/16	3-1/2	3-13/16	13	8	16d	12	16d	1120	1765	1765		
PCM66	PC66	12	6x	6x	5-1/2	5-9/16	3-1/2	3-13/16	13	8	16d	12	16d	1795	2115	1905		
PCM6816	-- --	16	6x	8x	5-1/2	7-9/16	3-1/2	3-13/16	15	8	16d	12	16d	1120	1765	1765		
PCM68	PC68	12	6x	8x	5-1/2	7-9/16	3-1/2	3-13/16	15	8	16d	12	16d	1795	2115	1905		
PCM77	--	12	7-1/8	7-1/8	7-1/8	7-1/8	3-11/16	5-5/8	14-9/16	8	16d	12	16d	1795	2115	1905		
PCM8416	--	16	8x	4x	7-1/2	3-9/16	3-1/2	5-5/8	11	8	16d	12	16d	1120	1765	1765		
PCM84	PC84	12	8x	4x	7-1/2	3-9/16	3-1/2	5-5/8	11	8	16d	12	16d	1795	2115	1905		
PCM8616	--	16	8x	6x	7-1/2	5-9/16	3-3/8	5-5/8	13	8	16d	12	16d	1120	1765	1765		
PCM86	PC86	12	8x	6x	7-1/2	5-9/16	3-1/2	5-5/8	13	8	16d	12	16d	1795	2115	1905		
PCM8816	--	16	8x	8x	7-1/2	7-9/16	3-1/2	5-5/8	15	8	16d	12	16d	1120	1765	1765		
PCM88	PC88	12	8x	8x	7-1/2	7-9/16	3-1/2	5-5/8	15	8	16d	12	16d	1795	2115	1905		11, R13, F6
End Column Caps																		
EPCM4416	EPC44-16	16	4x	4x	3-9/16	3-9/16	3-9/16	2-7/16	7-1/4	8	16d	8	16d	1100	1300	1480		
EPCM44	EPC44	12	4x	4x	3-9/16	3-9/16	3-9/16	2-7/16	7-1/4	8	16d	8	16d	1900	1545	1850		
EPCM46	EPC46	12	4x	6x	3-9/16	5-9/16	3-9/16	2-7/16	9-1/4	8	16d	8	16d	1900	1545	1850		
EPCM4616	EPC46-16	16	4x	6x	3-9/16	5-9/16	3-9/16	2-7/16	9-1/4	8	16d	8	16d	1100	1300	1480		
EPCM4816	EPC48-16	16	4x	8x	3-9/16	7-9/16	3-9/16	2-7/16	11-1/4	8	16d	8	16d	1100	1300	1480		
EPCM48	EPC48	12	4x	8x	3-9/16	7-9/16	3-9/16	2-7/16	11-1/4	8	16d	8	16d	1900	1545	1850		
EPCM6416	EPC64-16	16	6x	4x	5-1/2	3-9/16	3-1/2	3-13/16	7-1/4	8	16d	8	16d	1120	1765	1765		
EPCM64	EPC64	12	6x	4x	5-1/2	3-9/16	3-1/2	3-13/16	7-1/4	8	16d	8	16d	1795	1905	1905		
EPCM6616	EPC66-16	16	6x	6x	5-1/2	5-9/16	3-1/2	3-13/16	9-1/4	8	16d	8	16d	1120	1765	1765		
EPCM66	EPC66	12	6x	6x	5-1/2	5-9/16	3-1/2	3-13/16	9-1/4	8	16d	8	16d	1795	1905	1905		
EPCM6816	--	16	6x	8x	5-1/2	7-9/16	3-1/2	3-13/16	11-1/4	8	16d	8	16d	1120	1765	1765		
EPCM68	EPC68	12	6x	8x	5-1/2	7-9/16	3-1/2	3-13/16	11-1/4	8	16d	8	16d	1795	1905	1905		
EPCM77	--	12	7-1/8	7-1/8	7-1/8	7-1/8	3-11/16	5-5/8	10-13/16	8	16d	8	16d	1795	1905	1905		
EPCM8416	--	16	8x	4x	7-1/2	3-9/16	3-1/2	5-5/8	7-1/4	8	16d	8	16d	1120	1765	1765		
EPCM84	EPC84	12	8x	4x	7-1/2	3-9/16	3-1/2	5-5/8	7-1/4	8	16d	8	16d	1795	1905	1905		
EPCM8616	--	16	8x	6x	7-1/2	5-9/16	3-3/8	5-5/8	9-1/4	8	16d	8	16d	1120	1765	1765		
EPCM86	EPC86	12	8x	6x	7-1/2	5-9/16	3-1/2	5-5/8	9-1/4	8	16d	8	16d	1795	1905	1905		
EPCM8816	--	16	8x	8x	7-1/2	7-9/16	3-1/2	5-5/8	11-1/4	8	16d	8	16d	1120	1765	1765		
EPCM88	EPC88	12	8x	8x	7-1/2	7-9/16	3-1/2	5-5/8	11-1/4	8	16d	8	16d	1795	1905	1905		

1) Allowable loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.

2) **NAILS:** 16d nails are 0.162" dia. x 3-1/2" long.

Corrosion Finish
- Stainless Steel
- Gold Coat
- HDG
- Triple Zinc

BC / BCS / C Post Caps

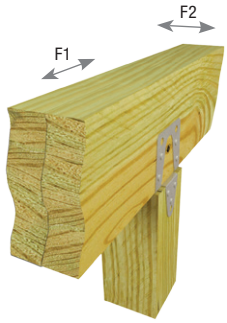
BC – One-piece design for double 2x's to a 4x post.

BCS – One-piece design connects 2-ply or 3-ply beams to the tops of 4x4 or 6x6 post. Slant nailing reduces the amount of nails required.

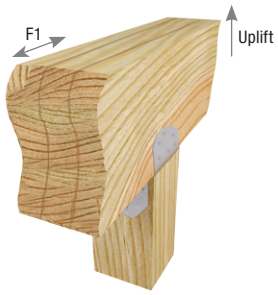
C – One-piece design.

Materials: 18 gauge
Finish: G90 galvanizing;
BC400-TZ – G-185 galvanizing
Options: See chart for Corrosion Finish Options
Codes: See page 10 for Code Reference Chart

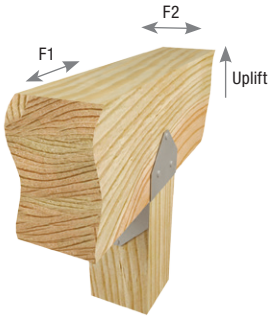
Installation:
- Place post cap on top of post and fasten cap to post using specified nails.
- Place beam between top flanges of the cap and install all specified nails into beam.
- **BCS** - Slant nails must be installed through dimple holes at a 30° to 45° angle through the beam into the post to achieve listed loads. **Standard length "common" nails must be used to achieve listed load values.**



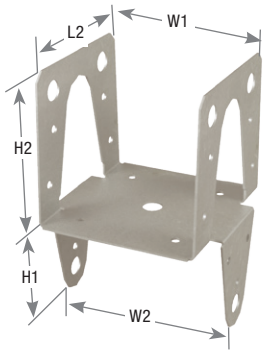
Typical BC400-TZ installation



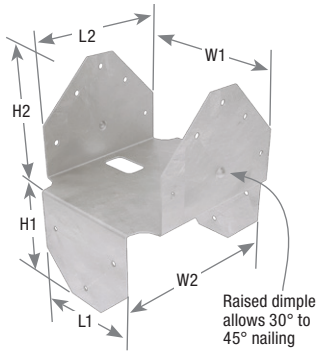
Typical BCS23-6 installation



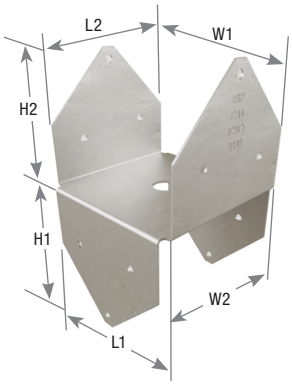
Typical C44 installation



BC400-TZ



BCS23-6



C44

Post Size	USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in)						Fastener Schedule[2]				DF/SP Allowable Loads (Lbs.)[1]			Corrosion	Finish	Code Ref.
										Post		Beam		Uplift	F1	F2			
				W1	W2	H1	H2	L1	L2	Qty	Type	Qty	Type	160%	160%	160%			
4 x 4	BCS22-4	BCS2-2/4	18	3-1/8	3-9/16	2-15/16	2-15/16	2-7/8	2-7/8	6	10d	8	10d	865	1065	--			130
	BC400-TZ	--	18	3-1/8	3-9/16	2-3/8	3	3-1/2	3-5/16	10	10d x 1-1/2 HDG	8	10d x 1-1/2 HDG	615	780	580			
	C44	BC4	18	3-9/16	3-9/16	2-7/8	2-7/8	3-1/4	3-1/4	6	16d	6	16d	1000	1225	1225			11, R13, F6
4 x 4 Rough	C44R	BC4R	18	4	4	2-5/8	2-5/8	3-1/4	3-1/4	8	16d	8	16d	1000	1225	1225			
4 x 6	C46	BC46	18	3-9/16	5-1/2	2-9/16	2-5/8	3-3/8	5-1/4	6	16d	10	16d	1000	1225	1225			
4 x 6 Rough	C46R	-- --	18	4	6	2-3/4	2-3/4	3-1/4	5-1/4	8	16d	10	16d	1000	1225	1225			
6 x 6	BCS23-6	BCS2-3/6	18	4-5/8	5-5/8	3	3-3/8	3-1/2	4-3/8	6	16d	12	16d	1120	1625	--			130
	C66	BC6	18	5-1/2	5-1/2	2-7/8	2-7/8	5-1/4	5-1/4	12	16d	12	16d	1295	2190	2190			11, R13, F6
6 x 6 Rough	C66R	BC6R	18	6	6	2-13/16	2-13/16	5-1/4	5-1/4	10	16d	10	16d	1090	2190	2190			
8 x 8	C88	BC8	18	7-1/2	7-1/2	5	5	7-3/8	7-3/8	16	16d	16	16d	1125	2525	2525			

1) Allowable loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) **NAILS:** 10d x 1-1/2 nails are 0.148" dia. x 1-1/2" long, 10d nails are 0.148" dia. x 3" long, 16d nails are 0.162" dia. x 3-1/2" long.
New products or updated product information are designated in **blue font**.

Corrosion Finish
Stainless Steel · Gold Coat · HDG · Triple Zinc

PB / PBES / PBS Post Caps

PB – Two-piece design.

PBES / PBS – Two-piece design with extended side plates and wrap around post design. Easy retrofit installations.

Materials: 18 gauge

Finish: G90 galvanizing; PB44-6TZ & PB66-6TZ – G-185 galvanizing

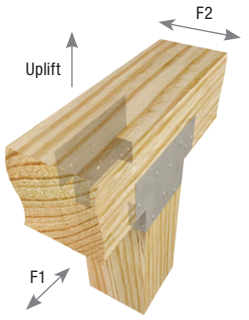
Options: See chart for Corrosion Finish Options

Codes: See page 10 for Code Reference Chart

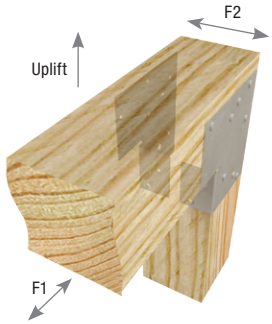
Installation:

- Use all specified fasteners. See Product Notes, page 18.
- These products are designed for single, solid-sawn beams with matching post width. Multi-ply beams must have same width as post. Use shims as required.
- **PB, PBES, PBS post caps are to be installed in pairs.**

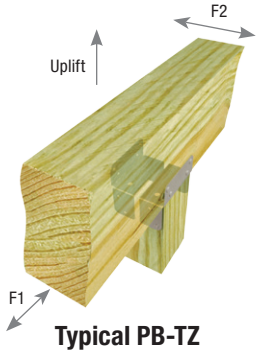
AVAILABLE IN GOLD COAT



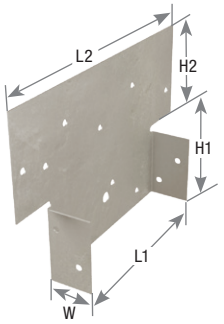
Typical PBS installation



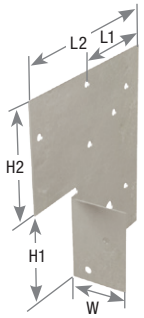
Typical PBES installation



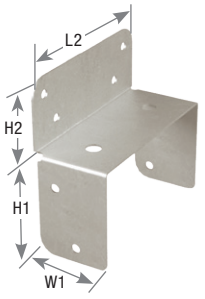
Typical PB-TZ installation



PBS



PBES



PB44-6TZ

Post Size	USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in) W	H1	H2	L1	L2	Fastener Schedule[2,3] Post Qty	Post Type	Beam Qty	Beam Type	DF/SP Allowable Loads (Lbs.)[1,2] Uplift 160%	F1 160%	F2 160%	Corrosion Finish	Code Ref.
4 x 4	PB44-6TZ	LPC4Z	18	1-1/2	2-1/8	1-1/2	--	3-5/8	8	16d HDG	8	16d HDG	640	1000	400		11, R13, F6
	PBES44	ACE4, LCE4	18	1-1/2	2-3/8	2-3/4	3-1/4	4-3/4	8	16d	8	16d	1755	1015	630		
	PBS44	AC4	18	1-7/16	2-5/16	2-13/16	3-9/16	6-1/2	12	16d	12	16d	2630	1730	1195		
4 x 4 Rough	PBS44R	AC4R	18	1-1/2	2-5/16	2-3/16	4	7	8	16d	8	16d	1755	1015	630		
6 x 6	PB66-6TZ	LPC6Z	18	1-1/2	2-1/2	3	--	5-9/16	8	16d HDG	8	16d HDG	640	1000	400		
	PBES66	ACE6	18	1-1/2	2-3/8	2-1/8	5-1/2	7	8	16d	8	16d	1755	1275	1010		
	PBS66	AC6	18	1-1/4	2-5/16	2-7/8	5-1/2	8	14	16d	12	16d	2280	1850	1310		
6 x 6 Rough	PBS66R	AC6R	18	1-1/4	2-5/16	2-3/16	6	8-1/2	10	16d	10	16d	1845	1275	1010		

1) Allowable loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) Load and nail schedules for two-piece models are per pair of post caps.
3) **NAILS:** 16d nails are 0.162" dia. x 3-1/2" long.

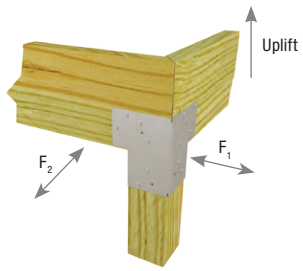
Corrosion Finish
Stainless Steel · Gold Coat · HDG · Triple Zinc

PBC Post Beam Corner Connectors

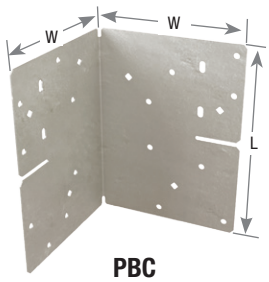
The PBC series is a one-piece connector designed to secure two mitered beams on a corner post while providing uplift capacity.

Materials: 18 gauge
Finish: G-185 galvanizing
Codes: See page 10 for Code Reference Chart

Installation:
- Use all specified fasteners. See Product Notes, page 18.
- Install PBC on outside corner of post forming tabs to inner side of post.
- Assumes beam members are bevel cut at corner.



Typical PBC installation



PBC

Post Size	USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in) W	Dimensions (in) L	Fastener Schedule[2] Post Qty	Post Type	Beam Qty	Beam Type	DF/SP Allowable Loads (Lbs.)[1] Uplift 160%	DF/SP F1 160%	DF/SP F2 160%	S-P-F Allowable Loads (Lbs.)[1] Uplift 160%	S-P-F F1 160%	S-P-F F2 160%	Corrosion Finish	Code Ref.
4 x 4	PBC44-TZ	-- --	18	4-15/16	6-1/2	8	16d HDG	8	16d HDG	1740	870	870	1500	750	750		130
6 x 6	PBC66-TZ	-- --	18	6-15/16	6-1/2	8	16d HDG	8	16d HDG	1740	870	870	1500	750	750		

1) Allowable loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) **NAILS:** 16d nails are 0.162" dia. x 3-1/2" long.

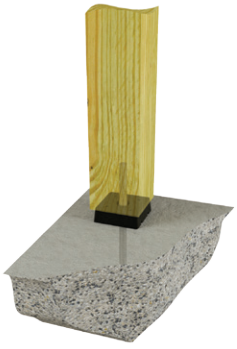
Corrosion Finish Stainless Steel Gold Coat HDG Triple Zinc

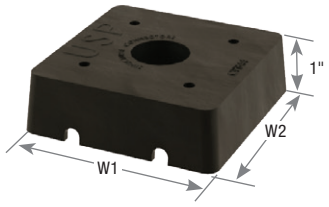
CPB Composite Post Bases

The CPB is made of corrosion resistant composite material compatible with preservative treated lumber. Provides code required 1" stand-off and can be used with rough lumber sizes.

Materials: High Strength composite
Codes: See page 10 for Code Reference Chart.
IRC R317.1.4, IBC 2304.11.2.7, IRC R407.3, IBC 2304.9.7

Installation:
- Attach base to post with (4) 10d HDG nails.
- Attach post to concrete using 1/2" diameter rod into concrete and extend into wood member.
- **Not recommended for fence posts or other unrestrained (not fixed or fastened at top) applications. These anchors are not designed to resist overturning (moment) loads.**


Typical CPB installation



CPB

Post Size	USP Stock No.	Ref. No.	Dimensions (in) W1	Dimensions (in) W2	Bottom Surface Bearing Area	Fastener Schedule[5] Qty	Fastener Schedule[5] Type	Post Base Allowable Capacity[1,2]	Concrete Design Bearing Strength[3,4]	Code Ref.
4 x 4	CPB44	CPS4	3-1/4	3-1/4	2.2	4	10d HDG	5235	6545	100
4 x 6	CPB46	CPS46	3-5/16	5-5/16	3.3	4	10d HDG	6810	9820	
5 x 5	CPB55	CPS5	4-1/8	4-1/8	3.0	4	10d HDG	6295	8925	
6 x 6	CPB66	CPS6	5-5/16	5-5/16	3.9	4	10d HDG	8570	11600	
8 x 8	CPB88	CPS7	7-1/4	7-1/4	6.4	4	10d HDG	12490	19040	

1) Loads shall not be increased for short-term loading.
2) Loads require a minimum 650 psi wood compressive strength.
3) Concrete Design Bearing Strength = Ø (0.85 $f'_C A_1$) with f'_C = 2,500 psi. ACI 318-02, Section 10.17.1.
4) Design Bearing Strength has been increased assuming $(A_2 / A_1)^{0.5}$ per ACI 318-02, Section 10.17.1.
5) **NAILS:** 10d nails are 0.148" dia. x 3" long.

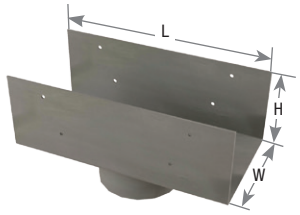
KLCC Lally Column Caps

Lally Column Caps connect lally columns to wood beams. Fits 3-1/2" and 4" diameter lally columns.

Materials: 12 gauge
Finish: USP primer
Codes: See page 10 for Code Reference Chart

Installation:
- Use all specified fasteners. See Product Notes, page 18.
- Fit KLCC onto lally column. Position wood beam in KLCC saddle and fasten.

Typical KLCC installation



KLCC

USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in)			Fastener Schedule			Column Outside Dia. (in)	DF/SP Allowable Loads (Lbs.)[1,2,3,4]	S-P-F Allowable Loads (Lbs.)[1,2,3,4]	LVL / PSL Allowable Loads (Lbs.)[1,2,3,4]	Code Ref.
						Girder	Nails[5]						
			W	H	L	Qty	Qty	Type					
KLCC45-35	LCC4.5-3.5	12	4-5/8	4	11-1/2	Triple 2x10/12	8	16d	3-1/2	16000	16000	--	130
KLCC45-4	LCC4.5-4	12	4-5/8	4	11-1/2	Triple 2x10/12	8	16d	4	21000	21000	--	
KLCC6-35	LCC6-3.5	12	6-1/8	4	11-1/2	Quad 2x10/12	8	16d	3-1/2	16000	16000	--	
KLCC6-4	LCC6-4	12	6-1/8	4	11-1/2	Quad 2x10/12	8	16d	4	21000	21000	--	
KLCC35-35	LCC3.5-3.5	12	3-5/8	4	11-1/2	3.5 LVL / PSL	8	16d	3-1/2	--	--	16000	
KLCC35-4	LCC3.5-4	12	3-5/8	4	11-1/2	3.5 LVL / PSL	8	16d	4	--	--	21000	
KLCC525-35	LCC5.25-3.5	12	5-3/8	4	11-1/2	5.25 LVL / PSL	8	16d	3-1/2	--	--	16000	
KLCC525-4	LCC5.25-4	12	5-3/8	4	11-1/2	5.25 LVL / PSL	8	16d	4	--	--	21000	
KLCC7-35	LCC7-3.5	12	7-1/8	4	11-1/2	7 LVL / PSL	8	16d	3-1/2	--	--	16000	
KLCC7-4	LCC7-4	12	7-1/8	4	11-1/2	7 LVL / PSL	8	16d	4	--	--	21000	

1) Loads may not be increased for short-term loading.
2) Loads are for a continuous beam.
3) Allowable loads are determined using the lowest of the bearing loads. Use Fc equal to 335 psi for SPF, 625 psi for DF and 650 psi for LVL/PSL, or the lally column capacity.
4) Spliced conditions must be detailed by the designer to transfer tension loads between spliced members by means other than the lally column. The splice condition load is 6750 lbs. per beam side and the lally cap must be evenly loaded.
5) **NAILS:** 16d nails are 0.162" dia. x 3-1/2" long.

KCCQ / KECCQ Column Caps

Designed to be installed without the need to drill bolt holes, simplifying installation and maintaining the wood cross section. Installs with WS Wood Screws offering high uplift capacity.

KCCQ – Standard column cap

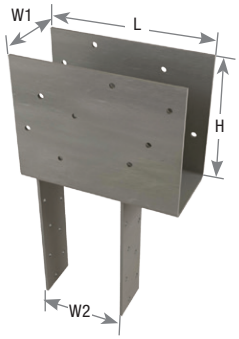
KECCQ – End column version

Materials: See chart
Finish: USP primer
Options: See chart for Corrosion Finish Options and Specialty Options on page 80.
Codes: See page 10 for Code Reference Chart

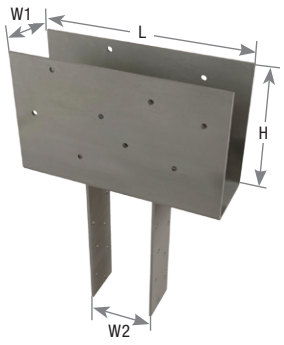
Installation:
- Use all specified fasteners. See Product Notes, page 18.
- WS3 Wood Screws, 1/4" dia. x 3" long, are supplied with Column Caps.
- Beams shall be designed to support the required loads. Beam shear may limit loads to less than listed loads for device. A design professional shall determine the adequacy of the stud to resist published loads.

Typical KECCQ44 end cap installation

Typical KCCQ44 center cap installation



KECCQ44



KCCQ44

Continued on next page

KCCQ / KECCQ Column Caps

MiTek®

USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in) W1	W2	H	L	Fastener Schedule[4] Beam Qty	Beam Type	Column or Post Qty	Column or Post Type	DF/SP Allowable Loads (Lbs.)[3] Bearing[1] 100%	Uplift[2,8] 160%	Corrosion Finish	Code Ref.
Center Column Caps														
KCCQ325-4	CCQ3-4SDS2.5	7	3-1/4	3-5/8	6-1/2	11	16	WS3	14	WS3	21485	7390		
KCCQ325-6	CCQ3-6SDS2.5	7	3-1/4	5-1/2	6-1/2	11	16	WS3	14	WS3	21485	7390		
KCCQ44	CCQ44SDS2.5	7	3-5/8	3-5/8	6-1/2	11	16	WS3	14	WS3	24065	7390		
KCCQ45	--	7	3-5/8	5-3/8	6-1/2	11	16	WS3	14	WS3	24065	7390		
KCCQ46	CCQ46SDS2.5	7	3-5/8	5-1/2	6-1/2	11	16	WS3	14	WS3	24065	7390		
KCCQ47	--	7	3-5/8	7-1/8	6-1/2	11	16	WS3	14	WS3	24065	7390		
KCCQ47X	--	7	3-5/8	7-1/8	6-1/2	13	16	WS3	14	WS3	28440	7390		
KCCQ48	CCQ48SDS2.5	7	3-5/8	7-1/2	6-1/2	11	16	WS3	14	WS3	24065	7390		
KCCQ525-4	CCQ5-4SDS2.5	3	5-1/4	3-5/8	8	13	16	WS3	14	WS3	41640	7390		
KCCQ525-6	CCQ5-6SDS2.5	3	5-1/4	5-1/2	8	13	16	WS3	14	WS3	41640	7390		
KCCQ525-8	CCQ5-8SDS2.5	3	5-1/4	7-1/2	8	13	16	WS3	14	WS3	41640	7390		
KCCQ57	--	7	5-3/8	7-1/8	6-1/2	11	16	WS3	14	WS3	36095	7390		
KCCQ64	CCQ64SDS2.5	7	5-1/2	3-5/8	6-1/2	11	16	WS3	14	WS3	37815	7390		
KCCQ66	CCQ66SDS2.5	7	5-1/2	5-1/2	6-1/2	11	16	WS3	14	WS3	37815	7390		
KCCQ67X	CCQ6-7.13SDS2.5	7	5-1/2	7-1/8	6-1/2	11	16	WS3	14	WS3	37815	7390		11,
KCCQ68	CCQ68SDS2.5	7	5-1/2	7-1/2	6-1/2	11	16	WS3	14	WS3	37815	7390		R13,
KCCQ74	CCQ74SDS2.5	3	6-7/8	3-5/8	6-1/2	11	16	WS3	14	WS3	46405	7390		F6
KCCQ76	CCQ76SDS2.5	3	6-7/8	5-1/2	6-1/2	11	16	WS3	14	WS3	46405	7390		
KCCQ77	CCQ77SDS2.5	3	6-7/8	6-7/8	6-1/2	11	16	WS3	14	WS3	46405	7390		
KCCQ78	CCQ78SDS2.5	3	6-7/8	7-1/2	6-1/2	11	16	WS3	14	WS3	46405	7390		
KCCQ71-4	CCQ7.1-4SDS2.5	3	7-1/8	3-5/8	6-1/2	11	16	WS3	14	WS3	48125	7390		
KCCQ71-6	CCQ7.1-6SDS2.5	3	7-1/8	5-1/2	6-1/2	11	16	WS3	14	WS3	48125	7390		
KCCQ71-71	CCQ7.1-7.1SDS2.5	3	7-1/8	7-1/8	6-1/2	11	16	WS3	14	WS3	48125	7390		
KCCQ71-8	CCQ7.1-8SDS2.5	3	7-1/8	7-1/2	6-1/2	11	16	WS3	14	WS3	48125	7390		
KCCQ84	--	7	7-1/2	3-5/8	6-1/2	11	16	WS3	14	WS3	51565	7390		
KCCQ86	CCQ86SDS2.5	7	7-1/2	5-1/2	6-1/2	11	16	WS3	14	WS3	51565	7390		
KCCQ88	CCQ88SDS2.5	7	7-1/2	7-1/2	6-1/2	11	16	WS3	14	WS3	51565	7390		
KCCQ94	--	7	8-7/8	3-5/8	6-1/2	11	16	WS3	14	WS3	60155	7390		
KCCQ96	CCQ96SDS2.5	7	8-7/8	5-1/2	6-1/2	11	16	WS3	14	WS3	60155	7390		
KCCQ98	CCQ98SDS2.5	7	8-7/8	7-1/2	6-1/2	11	16	WS3	14	WS3	60155	7390		
KCCQ106	CCQ106SDS2.5	7	9-1/2	5-1/2	6-1/2	11	16	WS3	14	WS3	65315	7390		
End Column Caps														
KECCQ325-4	ECCQ3-4SDS2.5	7	3-1/4	3-5/8	6-1/2	7-1/2	16	WS3	14	WS3	14650	7105		
KECCQ325-6	ECCQ3-6SDS2.5	7	3-1/4	5-1/2	6-1/2	7-1/2	16	WS3	14	WS3	14650	7105		
KECCQ44	ECCQ44SDS2.5	7	3-5/8	3-5/8	6-1/2	8-1/2	16	WS3	14	WS3	16965	7105		
KECCQ45	--	7	3-5/8	5-3/8	6-1/2	7-1/2	16	WS3	14	WS3	16405	7105		
KECCQ46	ECCQ46SDS2.5	7	3-5/8	5-1/2	6-1/2	8-1/2	16	WS3	14	WS3	18595	7105		
KECCQ47	--	7	3-5/8	7-1/8	6-1/2	9-1/2	16	WS3	14	WS3	20780	7105		
KECCQ47X	--	7	3-5/8	7-1/8	6-1/2	9-1/2	16	WS3	14	WS3	20780	7105		
KECCQ48	ECCQ48SDS2.5	7	3-5/8	7-1/2	6-1/2	8-1/2	16	WS3	14	WS3	18595	7105		
KECCQ525-4	ECCQ5-4SDS2.5	3	5-1/4	3-5/8	8	9-1/2	16	WS3	14	WS3	22330	7105		
KECCQ525-6	ECCQ5-6SDS2.5	3	5-1/4	5-1/2	8	9-1/2	16	WS3	14	WS3	27300	7105		
KECCQ525-8	ECCQ5-8SDS2.5	3	5-1/4	7-1/2	8	9-1/2	16	WS3	14	WS3	30430	7105		
KECCQ57	--	7	5-3/8	7-1/8	6-1/2	9-1/2	16	WS3	14	WS3	27890	7105		
KECCQ64	ECCQ64SDS2.5	7	5-1/2	3-5/8	6-1/2	8-1/2	16	WS3	14	WS3	23535	7105		
KECCQ66	ECCQ66SDS2.5	7	5-1/2	5-1/2	6-1/2	8-1/2	16	WS3	14	WS3	28910	7105		
KECCQ67X	ECCQ6-7.13SDS2.5	7	5-1/2	7-1/8	6-1/2	8-1/2	16	WS3	14	WS3	29220	7105		11,
KECCQ68	ECCQ68SDS2.5	7	5-1/2	7-1/2	6-1/2	8-1/2	16	WS3	14	WS3	29220	7105		R13,
KECCQ74	ECCQ74SDS2.5	3	6-7/8	3-5/8	6-1/2	8-1/2	16	WS3	14	WS3	27465	7105		F6
KECCQ76	ECCQ76SDS2.5	3	6-7/8	5-1/2	6-1/2	8-1/2	16	WS3	14	WS3	35860	7105		
KECCQ77	ECCQ77SDS2.5	3	6-7/8	6-7/8	6-1/2	8-1/2	16	WS3	14	WS3	35860	7105		
KECCQ78	ECCQ78SDS2.5	3	6-7/8	7-1/2	6-1/2	8-1/2	16	WS3	14	WS3	35860	7105		
KECCQ71-4	ECCQ7.1-4SDS2.5	3	7-1/8	3-5/8	6-1/2	8-1/2	16	WS3	14	WS3	28240	7105		
KECCQ71-6	ECCQ7.1-6SDS2.5	3	7-1/8	5-1/2	6-1/2	8-1/2	16	WS3	14	WS3	35285	7105		
KECCQ71-71	ECCQ7.1-7.1SDS2.5	3	7-1/8	7-1/8	6-1/2	8-1/2	16	WS3	14	WS3	37190	7105		
KECCQ71-8	ECCQ7.1-8SDS2.5	3	7-1/8	7-1/2	6-1/2	8-1/2	16	WS3	14	WS3	37190	7105		
KECCQ84	--	7	7-1/2	3-5/8	6-1/2	8-1/2	16	WS3	14	WS3	29785	7105		
KECCQ86	ECCQ86SDS2.5	7	7-1/2	5-1/2	6-1/2	8-1/2	16	WS3	14	WS3	37390	7105		
KECCQ88	ECCQ88SDS2.5	7	7-1/2	7-1/2	6-1/2	8-1/2	16	WS3	14	WS3	39845	7105		
KECCQ94	--	7	8-7/8	3-5/8	6-1/2	8-1/2	16	WS3	14	WS3	33595	7105		
KECCQ96	ECCQ96SDS2.5	7	8-7/8	5-1/2	6-1/2	8-1/2	16	WS3	14	WS3	42630	7105		
KECCQ98	ECCQ98SDS2.5	7	8-7/8	7-1/2	6-1/2	8-1/2	16	WS3	14	WS3	46485	7105		
KECCQ106	ECCQ106SDS2.5	7	9-1/2	5-1/2	6-1/2	8-1/2	16	WS3	14	WS3	45760	7105		

1) Bearing loads are based on 625 psi perpendicular to grain loading; no further increase for duration of load is permitted.
2) Uplift loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
3) Allowable loads are based on lumber with a specific gravity of 0.50 and a moisture content of 19% or less.
4) WS3 Wood Screws are 1/4" x 3" long and are included with KCCQ and KECCQ column caps.
5) Beams shall be designed to support the required loads. Beam shear may limit loads to less than listed loads for device.
6) The designer shall check post for required loads.
7) Spliced conditions must be detailed by the specifier to transfer tension loads between spliced members by means other than the column cap.
8) Uplift loads do not apply to splice conditions.

Corrosion Finish
Stainless Steel Gold Coat
HDG Triple Zinc

Continued on next page

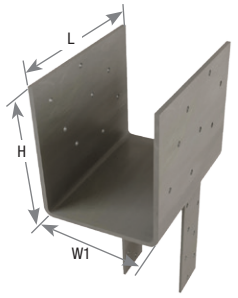
KCCQ / KECCQ Column Caps

Specialty Options:

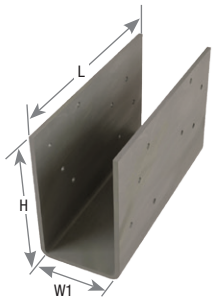
- **KECCQ** – Straps may be rotated 90° on special order where the W2 dimension is less than or equal to the W1 dimension.
- **KCCQO/KECCQO** – Cap only, no strap design for field welding to pipe or other columns.
- **KCCQOB** – For cross beam connections. Any two buckets can be welded together for a wide variety of applications. Allowable load shall be the lesser of the two components.
- **KCCQT** – For T beam intersections, consult USP. Specify beam/column conditions, dimensions, and loading requirements.
- **KCCQC** – For X beam intersections, consult USP. Specify beam/column conditions, dimensions, and loading requirements.
- **KECCQLL/R** – For L beam intersections, consult USP. Specify left (L) or right (R) beam/column conditions, dimensions, and loading requirements.

Dimension call-outs not shown in the table must be specified at time of ordering for specialty options, non-catalog, or rough/full size lumber sizes.

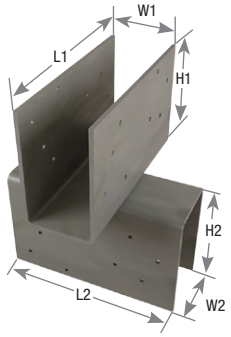
Refer to Options for Multiple-Beam Column Caps Special Order Worksheet for ordering instructions at www.uspconnectors.com/resources/technical-bulletins.



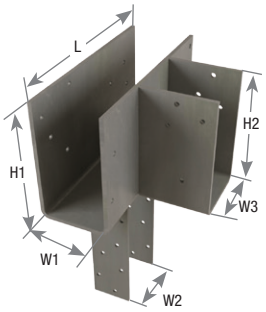
Optional KECCQ rotated straps 90°



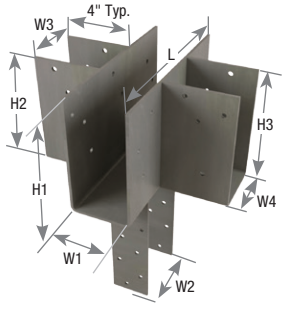
KCCQO



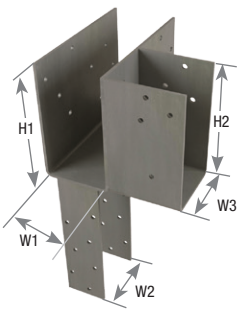
KCCQOB



KCCQT



KCCQC



KECCQLL left shown

Top View of Specialty Options Column Cap Configurations

KECCQLL rotated 90° left

KECCQLR rotated 90° right

KECCQ left

KECCQ right

KECCQ offset left

KECCQ offset right

KCCQ offset left

KCCQ offset right

KECCQ rotated 45° left

KECCQ rotated 45° right

KCC / KECC Column Caps

KCC – Standard column cap.

KECC – End column version.

Materials: See chart

Finish: USP primer

Options: See chart for Corrosion Finish Options. See page 83 for Specialty Options. All nominal lumber sizes are available for rough/full size lumber.

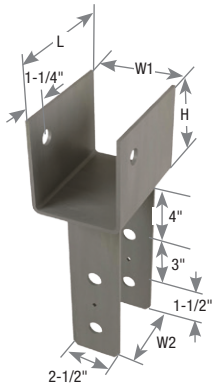
Codes: See page 10 for Code Reference Chart

Installation:

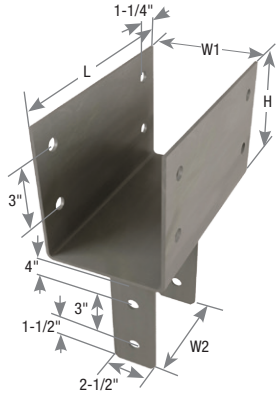
- Use all specified fasteners. See Product Notes, page 18.
- Bolt holes should be a minimum of 1/32" to a maximum of 1/16" larger than the bolt diameter.
- Beams shall be designed to support the required loads. Beam shear may limit loads to less than listed loads for device. A design professional shall determine the adequacy of the post and beam to resist published loads.
- Bolts must be ordered separately. See page 25 for available sizes.

Typical KECC44 end cap installation

Typical KCC center cap installation



KECC44



KCC

USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in) W1	W2	H	L	Fastener Schedule[4] Beam	Column or Post	DF/SP Allowable Loads (Lbs.)[3] Bearing[1] 100%	Uplift[2,8] 160%	Corrosion Finish	Code Ref.
Center Column Caps												
KCC325-4	CC31/4-4	7	3-1/4	3-5/8	6-1/2	11	(4) 5/8	(2) 5/8	21485	3505		11, R13, F6
KCC325-6	CC31/4-6	7	3-1/4	5-1/2	6-1/2	11	(4) 5/8	(2) 5/8	21485	3505		
KCC44	CC44	7	3-5/8	3-5/8	4	7	(2) 5/8	(2) 5/8	15315	3920		
KCC45	--	7	3-5/8	5-3/8	6-1/2	11	(4) 5/8	(2) 5/8	24065	3920		
KCC46	CC46	7	3-5/8	5-1/2	6-1/2	11	(4) 5/8	(2) 5/8	24065	3920		
KCC47	--	7	3-5/8	7-1/8	6-1/2	11	(4) 5/8	(2) 5/8	24065	3920		
KCC48	CC48	7	3-5/8	7-1/2	6-1/2	11	(4) 5/8	(2) 5/8	24065	3920		
KCC525-4	CC51/4-4	3	5-1/4	3-5/8	8	13	(4) 3/4	(2) 3/4	41640	8155		
KCC525-6	CC51/4-6	3	5-1/4	5-1/2	8	13	(4) 3/4	(2) 3/4	41640	8155		
KCC525-8	CC51/4-8	3	5-1/4	7-1/2	8	13	(4) 3/4	(2) 3/4	41640	8155		
KCC57	CC6-71/8	7	5-3/8	7-1/8	6-1/2	11	(4) 5/8	(2) 5/8	36095	4145		
KCC64	CC64	7	5-1/2	3-5/8	6-1/2	11	(4) 5/8	(2) 5/8	37815	4145		
KCC66	CC66	7	5-1/2	5-1/2	6-1/2	11	(4) 5/8	(2) 5/8	37815	4145		
KCC68	CC68	7	5-1/2	7-1/2	6-1/2	11	(4) 5/8	(2) 5/8	37815	4145		

1) Bearing loads are based on 625 psi perpendicular to grain loading; no further increase for duration of load is permitted.
2) Uplift loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
3) Allowable loads are based on lumber with a specific gravity of 0.50 and a moisture content of 19% or less.
4) All bolts shall meet or exceed the specifications of ASTM A 307.
5) Beams shall be designed to support the required loads. Beam shear may limit loads to less than listed loads for device.
6) The designer shall check post for required loads.
7) Spliced conditions must be detailed by the specifier to transfer tension loads between spliced members by means other than the column cap.
8) Uplift loads do not apply to splice conditions.

Corrosion Finish Stainless Steel Gold Coat HDG Triple Zinc

Continued on next page

KCC / KECC Column Caps

MiTek®

Installation:

- Use all specified fasteners. See Product Notes, page 18.
- Bolt holes should be a minimum of 1/32" to a maximum of 1/16" larger than the bolt diameter.
- Beams shall be designed to support the required loads. Beam shear may limit loads to less than listed loads for device. A design professional shall determine the adequacy of the post and beam to resist published loads.
- Bolts must be ordered separately. See page 25 for available sizes.

USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in)				Fastener Schedule[4]		DF/SP Allowable Loads (Lbs.)[3]		Corrosion Finish	Code Ref.
			W1	W2	H	L	Beam	Column or Post	Bearing[1] 100%	Uplift[2,8] 160%		
Center Column Caps												
KCC74	CC74	3	6-7/8	3-5/8	8	13	(4) 3/4	(2) 3/4	54845	8155		11, R13, F6
KCC76	CC76	3	6-7/8	5-1/2	8	13	(4) 3/4	(2) 3/4	54845	8155		
KCC77	CC77	3	6-7/8	6-7/8	8	13	(4) 3/4	(2) 3/4	54845	8155		
KCC78	CC78	3	6-7/8	7-1/2	8	13	(4) 3/4	(2) 3/4	54845	8155		
KCC75X	CC71/8-6	3	7-1/8	5-1/2	8	13	(4) 3/4	(2) 3/4	56875	8155		
KCC77X	CC71/8-71/8	3	7-1/8	7-1/8	8	13	(4) 3/4	(2) 3/4	56875	8155		
KCC84	CC84	3	7-1/2	3-5/8	8	13	(4) 3/4	(2) 3/4	60940	8155		
KCC86	CC86	3	7-1/2	5-1/2	8	13	(4) 3/4	(2) 3/4	60940	8155		
KCC88	CC88	3	7-1/2	7-1/2	8	13	(4) 3/4	(2) 3/4	60940	8155	■	
KCC94	CC94	3	8-7/8	3-5/8	8	13	(4) 3/4	(2) 3/4	71095	8155		
KCC96	CC96	3	8-7/8	5-1/2	8	13	(4) 3/4	(2) 3/4	71095	8155		
KCC98	CC98	3	8-7/8	7-1/2	8	13	(4) 3/4	(2) 3/4	71095	8155		
KCC106	CC106	3	9-5/8	5-1/2	8	13	(4) 3/4	(2) 3/4	77190	8155		
End Column Caps												
KECC325-4	ECC31/4-4	7	3-1/4	3-5/8	6-1/2	7-1/2	(2) 5/8	(2) 5/8	14650	1750	■	11, R13, F6
KECC325-6	ECC31/4-6	7	3-1/4	5-1/2	6-1/2	7-1/2	(2) 5/8	(2) 5/8	14650	1750	■	
KECC44	ECC44	7	3-5/8	3-5/8	4	5-1/2	(1) 5/8	(2) 5/8	12030	1960	■	
KECC45	--	7	3-5/8	5-3/8	6-1/2	7-1/2	(2) 5/8	(2) 5/8	16405	1960		
KECC46	ECC46	7	3-5/8	5-1/2	6-1/2	8-1/2	(2) 5/8	(2) 5/8	18595	1960	■	
KECC47	--	7	3-5/8	7-1/8	6-1/2	9-1/2	(2) 5/8	(2) 5/8	20780	1960		
KECC48	ECC48	7	3-5/8	7-1/2	6-1/2	9-1/2	(2) 5/8	(2) 5/8	20780	1960		
KECC525-4	ECC51/4-4	3	5-1/4	3-5/8	8	9-1/2	(2) 3/4	(2) 3/4	30430	5935	■	
KECC525-6	ECC51/4-6	3	5-1/4	5-1/2	8	9-1/2	(2) 3/4	(2) 3/4	30430	5935	■	
KECC525-8	ECC51/4-8	3	5-1/4	7-1/2	8	9-1/2	(2) 3/4	(2) 3/4	30430	5935		
KECC57	ECC6-71/8	7	5-3/8	7-1/8	6-1/2	9-1/2	(2) 5/8	(2) 5/8	31170	2070		
KECC64	ECC64	7	5-1/2	3-5/8	6-1/2	7-1/2	(2) 5/8	(2) 5/8	25780	2070	■	
KECC66	ECC66	7	5-1/2	5-1/2	6-1/2	7-1/2	(2) 5/8	(2) 5/8	25780	2070	■	
KECC68	ECC68	7	5-1/2	7-1/2	6-1/2	9-1/2	(2) 5/8	(2) 5/8	32655	2070	■	
KECC74	ECC74	3	6-7/8	3-5/8	8	10-1/2	(2) 3/4	(2) 3/4	44295	5935		
KECC76	ECC76	3	6-7/8	5-1/2	8	10-1/2	(2) 3/4	(2) 3/4	44295	5935		
KECC77	ECC77	3	6-7/8	6-7/8	8	10-1/2	(2) 3/4	(2) 3/4	44295	5935		
KECC78	ECC78	3	6-7/8	7-1/2	8	10-1/2	(2) 3/4	(2) 3/4	44295	5935		
KECC75X	ECC71/8-6	3	7-1/8	5-1/2	8	10-1/2	(2) 3/4	(2) 3/4	45940	5935		
KECC77X	ECC71/8-71/8	3	7-1/8	7-1/8	8	10-1/2	(2) 3/4	(2) 3/4	45940	5935		
KECC84	ECC84	3	7-1/2	3-5/8	8	10-1/2	(2) 3/4	(2) 3/4	49220	5935		
KECC86	ECC86	3	7-1/2	5-1/2	8	10-1/2	(2) 3/4	(2) 3/4	49220	5935		
KECC88	ECC88	3	7-1/2	7-1/2	8	10-1/2	(2) 3/4	(2) 3/4	49220	5935	■	
KECC94	ECC94	3	8-7/8	3-5/8	8	10-1/2	(2) 3/4	(2) 3/4	57420	5935		
KECC96	ECC96	3	8-7/8	5-1/2	8	10-1/2	(2) 3/4	(2) 3/4	57420	5935		
KECC98	ECC98	3	8-7/8	7-1/2	8	10-1/2	(2) 3/4	(2) 3/4	57420	5935		
KECC106	ECC106	3	9-5/8	5-1/2	8	10-1/2	(2) 3/4	(2) 3/4	62345	5935		

Corrosion Finish
- Stainless Steel
- Gold Coat
- HDG
- Triple Zinc

1) Bearing loads are based on 625 psi perpendicular to grain loading; no further increase for duration of load is permitted.
2) Uplift loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
3) Allowable loads are based on lumber with a specific gravity of 0.50 and a moisture content of 19% or less.
4) All bolts shall meet or exceed the specifications of ASTM A 307.
5) Beams shall be designed to support the required loads. Beam shear may limit loads to less than listed loads for device.
6) The designer shall check post for required loads.
7) Spliced conditions must be detailed by the specifier to transfer tension loads between spliced members by means other than the column cap.
8) Uplift loads do not apply to splice conditions.

Continued on next page

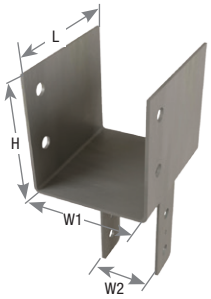
KCC / KECC Column Caps

Specialty Options:

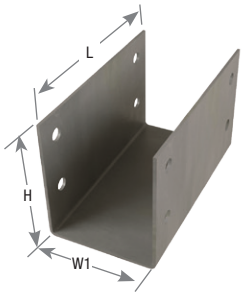
- **KECC** – Straps may be rotated 90° on special order where the W2 dimension is less than or equal to the W1 dimension. Unless specified W3 and W4 dimensions are equal to the W1 dimension, and H2 and H3 dimensions are equal to the H1 dimension.
- **KCCO/KECCO** – Cap only, no strap design for field welding to pipe or other columns.
- **KCCOB** – For cross beam connections. Any two buckets can be welded together for a wide variety of applications. Allowable load shall be the lesser of the two components.
- **KCCT** – For T beam intersections, consult USP. Specify beam/column conditions, dimensions, and loading requirements.
- **KCCC** – For X beam intersections, consult USP. Specify beam/column conditions, dimensions, and loading requirements.
- **KECCLL/R** – For L beam intersections, consult USP. Specify left (L) or right (R) beam/column conditions, dimensions, and loading requirements.

Dimension call-outs not shown in the table must be specified at time of ordering for specialty options, non-catalog, or rough/full size lumber sizes.

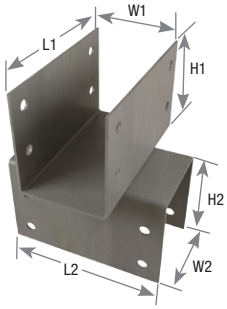
Refer to Options for Multiple-Beam Bolted Column Caps Special Order Worksheet for ordering instructions at www.uspconnectors.com/resources/technical-bulletins.



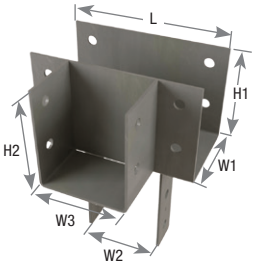
Optional KECC rotated straps 90°



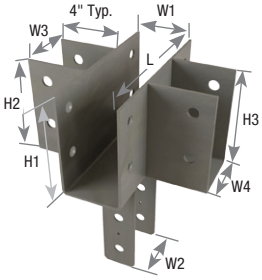
KCCO



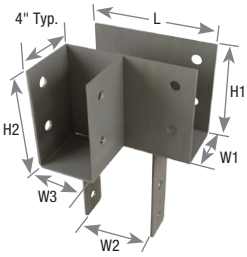
KCCOB



KCCT



KCCC

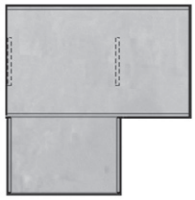


KECCLL left shown

Top View of Specialty Options Column Cap Configurations

KECCLL rotated 90° left

KECCLR rotated 90° right



KECC left

KECC right

KECC offset left

KECC offset right

KCC offset left

KCC offset right

KECC rotated 45° left

KECC rotated 45° right

A / AC / JA / MP Framing Angles

MiTek®

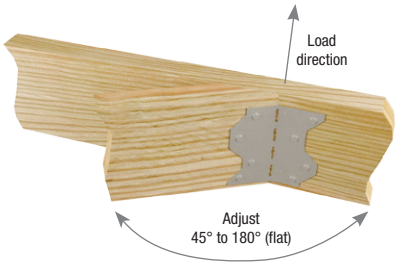
MP – 18 gauge. Field adjustable from 45° to 180° (flat).

A3 – 18 gauge. Eliminates toenailing and increases strength.

AC – 16 gauge. Features staggered nail patterns which reduces wood splitting and allows installation on both sides of the supported member.

JA – 14 or 16 gauge. Heavier capacity framing angle for joist support.

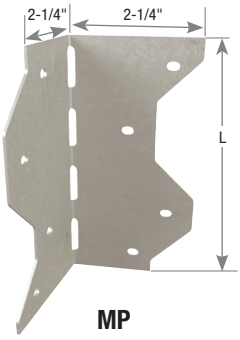
Materials: See chart
Finish: G90 galvanizing
Options: See chart for Corrosion Finish Options
Codes: See page 10 for Code Reference Chart



Typical MP installation

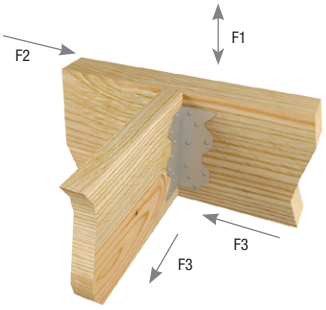
Typical MP rafter support installation

AVAILABLE IN GOLD COAT

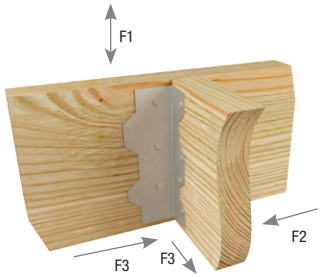


MP

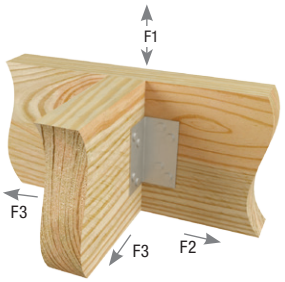
Typical JA1 installation



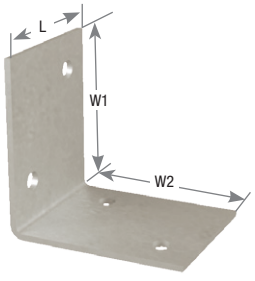
Typical JA7 installation



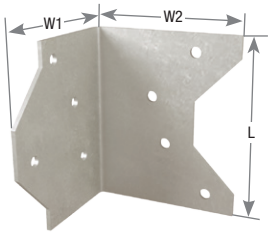
Typical AC installation



Typical A3 installation

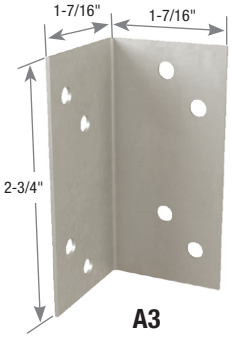


JA1



JA3

AC



A3

Continued on next page

A / AC / JA / MP Framing Angles

MiTek®

Installation:

- Use all specified fasteners. See Product Notes, page 18.
- MP Framing Angles are fabricated at 100° and may be field adjusted by hand from 45° to 180° (flat). Bend angle only once.

USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in)			Fastener Schedule[3,4]				Direction of Load	DF/SP Allowable Loads (Lbs.)[1,2]				S-P-F Allowable Loads (Lbs.)[1,2]				Corrosion Finish	Code Ref.
						Header		Joist												
			W1	W2	L	Qty	Type	Qty	Type		100%	115%	125%	160%	100%	115%	125%	160%		
A3	A23, GA1, GA2, L30	18	1-7/16	1-7/16	2-3/4	4	10d x 1-1/2	4	10d x 1-1/2	F1	450	515	560	590	390	445	485	495		
										F2	450	515	560	600	390	445	485	505		
										F3	210	240	260	335	135	155	170	215		
MP3	LS30	18	2-1/4	2-1/4	3-3/8	3	10d	3	10d	F1	340	395	430	485	295	340	370	470		
MP5	LS50	18	2-1/4	2-1/4	4-5/8	4	10d	4	10d	F1	455	525	570	730	390	450	490	625		
MP7	LS70	18	2-1/4	2-1/4	5-7/8	5	10d	5	10d	F1	570	655	715	910	490	565	615	785		
MP9	LS90	18	2-1/4	2-1/4	6-7/8	6	10d	6	10d	F1	685	785	855	1095	590	675	735	940		
AC5	L50	16	1-5/16	2-3/8	4-7/8	3	10d	3	10d	F1	340	390	425	540	290	335	365	465		
										F2	340	390	425	540	290	335	365	465		
										F3	155	180	195	250	100	115	125	160		
						3	16d	3	16d	F1	380	440	475	610	325	375	410	520		
										F2	380	440	475	610	325	375	410	525		
										F3	175	205	220	280	115	130	145	185		
AC7	L70	16	1-5/16	2-3/8	6-15/16	4	10d	4	10d	F1	450	520	565	725	390	445	485	620		
										F2	450	520	565	725	390	445	485	620		
										F3	210	240	260	335	135	155	170	215		
						4	16d	4	16d	F1	510	585	635	770	435	500	545	645		
										F2	510	585	635	815	435	500	545	700		
										F3	235	270	295	375	150	175	190	245		
AC9	L90	16	1-5/16	2-3/8	8-7/8	5	10d	5	10d	F1	565	650	705	905	485	560	605	775		14, F7, R9
										F2	565	650	705	905	485	560	605	775		
										F3	260	300	325	415	170	195	210	270		
						5	16d	5	16d	F1	635	730	795	1015	545	625	680	870		
										F2	635	730	795	920	545	625	680	775		
										F3	295	340	370	470	190	220	240	305		
JA1	A21	16	1-1/2	1-1/2	1-1/4	2	10d x 1-1/2	2	10d x 1-1/2	F1	245	255	255	255	190	215	215	215		
										F2	--	--	--	345	--	--	--	290		
										F3	--	--	--	165	--	--	--	140		
JA3	--	14	2-1/2	2-1/2	3	4	16d	4	10d x 1-1/2	F1	510	570	590	590	380	440	480	495		
										F2	--	--	--	535	--	--	--	450		
										F3	--	--	--	330	--	--	--	275		
JA5	--	14	2-1/2	2-1/2	5	6	16d	6	10d x 1-1/2	F1	760	855	925	950	575	660	720	800		
										F2	--	--	--	1015	--	--	--	855		
										F3	--	--	--	495	--	--	--	415		
JA7	--	14	2-1/2	2-1/2	7	8	16d	8	10d x 1-1/2	F1	1015	1140	1230	1525	765	880	960	1225		
										F2	--	--	--	1625	--	--	--	1365		
										F3	--	--	--	550	--	--	--	460		
JA9	--	14	2-1/2	2-1/2	9	10	16d	10	10d x 1-1/2	F1	1270	1425	1540	1905	960	1100	1195	1535		
										F2	--	--	--	1645	--	--	--	1380		
										F3	--	--	--	825	--	--	--	695		

1) Allowable loads have been increased 60% for wind and seismic loads; no further increase shall be permitted.
2) Loads are shown per angle, and may be doubled if installed in pairs. When using a single angle, joist must be constrained from rotation.
3) For 1-1/2" lumber, use 0.98 of table load for 10d nails and 0.92 for 16d nails.
4) **NAILS:** 10d x 1-1/2 nails are 0.148" dia. x 1-1/2" long, 10d nails are 0.148" dia. x 3" long, 16d nails are 0.162" dia. x 3-1/2" long.

Corrosion Finish
Stainless Steel Gold Coat
HDG Triple Zinc

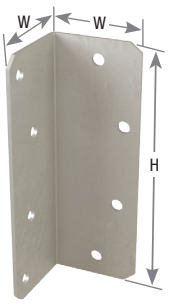
ML Angles

ML angles are multi-purpose angles that install easily with USP's WS15 wood screws. The staggered fastener pattern allows for back-to-back installations.

Materials: 12 gauge
Finish: G-185 galvanizing
Codes: See page 10 for Code Reference Chart

Installation:
- Use all specified fasteners. See Product Notes, page 18.
- USP WS15 (1/4" x 1-1/2") are not supplied with ML angles.

Typical ML26-TZ installation
(ML24-TZ similar)



ML26-TZ
(ML24-TZ similar)

USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in) W	Dimensions (in) H	Fastener Schedule[2,3] Header Qty	Fastener Schedule[2,3] Joist Qty	Fastener Schedule[2,3] Type	DF/SP Allowable Loads (Lbs.)[1] F1 100%	DF/SP F1 115%	DF/SP F1 125%	DF/SP F1 160%	S-P-F Allowable Loads (Lbs.)[1] F1 100%	S-P-F F1 115%	S-P-F F1 125%	S-P-F F1 160%	Corrosion	Finish	Code Ref.
ML24-TZ	ML24Z	12	2	4	3	3	WS15	615	615	615	615	520	520	520	520			14, F7, R9
ML26-TZ	ML26Z	12	2	6	4	4	WS15	920	1060	1060	1060	755	865	890	890			

Corrosion Finish
Stainless Steel · Gold Coat · HDG · Triple Zinc

1) Allowable loads have been increased 60% for wind and seismic loads; no further increase shall be permitted.
2) USP's WS15 Wood Screws are 1/4" diameter x 1-1/2" long and are not included with angles.
3) For exterior applications use WS15-EXT screws with exterior coat finish.
New products or updated product information are designated in **blue font**.

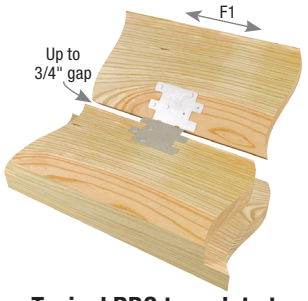
RBC Roof Boundary Clip

Framing plate designed to connect roof blocking to a wall top plate.

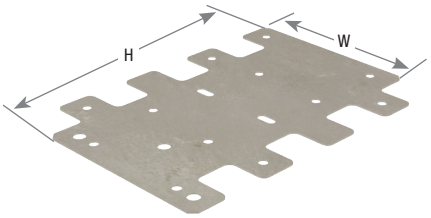
Materials: 20 gauge
Finish: G90 galvanizing
Codes: See page 10 for Code Reference Chart

Installation:
- Use all specified fasteners. See Product Notes, page 18.
- Field adjustable from 0º to 90º.
- **Bend angle only once.**

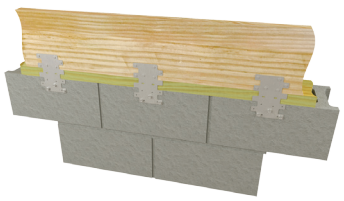
Typical RBC top-plate to outside of blocking installation



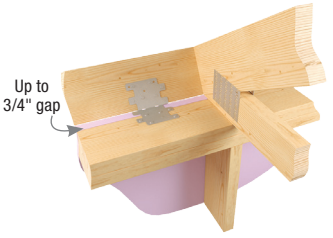
Typical RBC top-plate to inside of blocking installation



RBC



Typical RBC concrete block wall to blocking installation



Typical RBC 1" foamboard installation

USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in) W	Dimensions (in) H	Installation Type	Fastener Schedule[3,4] Top Plate Qty	Top Plate Type[2,3]	Blocking Qty	Blocking Type[2]	DF/SP Allowable Loads (Lbs.)[1,2] F1 160%	S-P-F Allowable Loads (Lbs.)[1,2] F1 160%	Code Ref.
RBC	RBC	20	4-1/4	6	Wood	6	10d x 1-1/2	6	10d x 1-1/2	510	430	31, F32, R1
					CMU	3	1/4" Tapcon	6	10d x 1-1/2	450	380	

1) Allowable loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) Loads shown are for a single roof boundary clip.
3) Use ITW-Buildex 1/4" x 1-1/2" Tapcons; or equal, installed in accordance with manufacturer's specifications.
4) **NAILS:** 10d x 1-1/2 nails are 0.148" diameter by 1-1/2" long.
New products or updated product information are designated in **blue font**.

MP / MPA / MPF Multi-Purpose Framing Angles

MP34 – Framing angle without tabs.

MPA1 – Tabs enable two and three-way connections.

MP4F – Connects 2x framing with floor sheathing up to 5/8".

MP6F – Connects 3x framing with floor sheathing up to 3/4". Better choice for connections where floor sheathing is between sole plate and rim board.

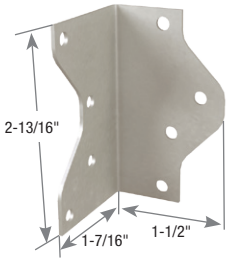
Materials: See chart
Finish: G90 galvanizing
Options: See chart for Corrosion Finish Options
Codes: See page 10 for Code Reference Chart

AVAILABLE IN GOLD COAT

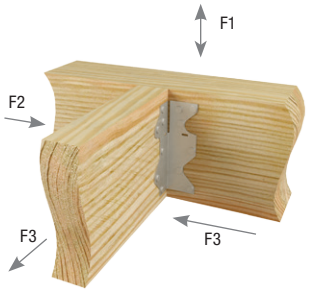
MPA1

Typical MP34 installation

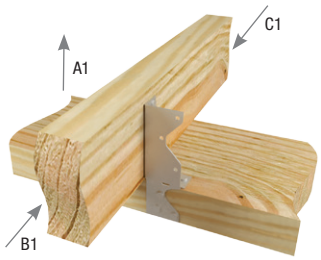
MPA1-GC



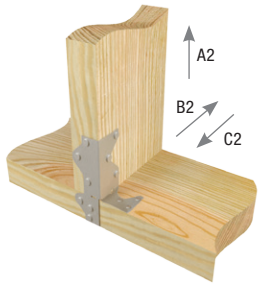
MP34



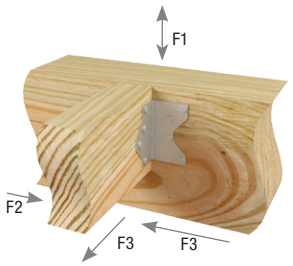
Typical MPA1
joist / header installation
Figure 1



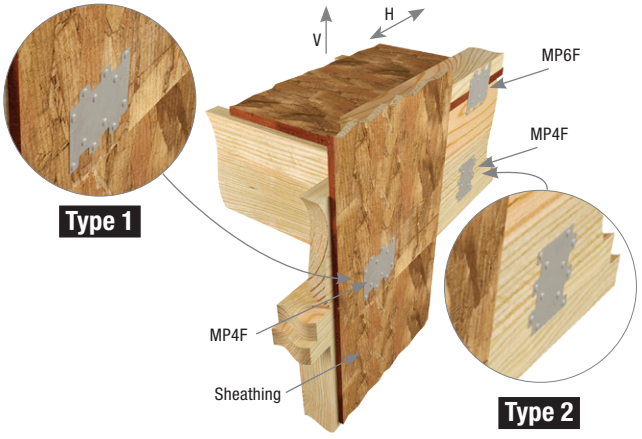
Typical MPA1
rafter / plate installation
Figure 2



Typical MPA1
stud / plate installation
Figure 3



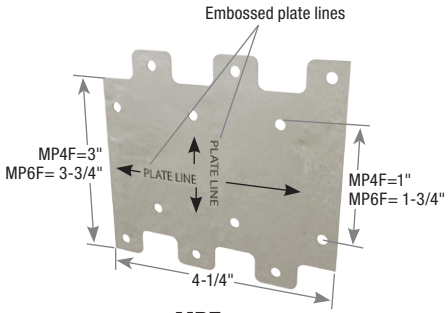
Typical MP34
joist / header installation
Figure 4



Type 1

Type 2

Typical MPF installation



MPF

Continued on next page

MP / MPA / MPF Multi-Purpose Framing Angles

Installation:

- Use all specified fasteners. See Product Notes, page 18.
- **Bend tabs only once.**
- MP4F connects 2x framing with floor sheathing up to 5⁄8".
- MP6F connects 3x framing with floor sheathing up to 3⁄4", and is a better choice for connections where floor sheathing is between sole plate and rim board.

USP Stock No.	Ref. No.	Steel Gauge	Installation Type[2,4]	Fastener Schedule[5]				Direction of Load[2]	DF/SP Allowable Loads (Lbs.)[1,3,4]				S-P-F Allowable Loads (Lbs.)[1,3,4]				Corrosion	Finish	Code Ref.
				Header or Stud		Joist or Plate													
				Qty	Type	Qty	Type		100%	115%	125%	160%	100%	115%	125%	160%			
MPA1	A35	18	Figure 1	6	8d x 1-1/2	6	8d x 1-1/2	F1	570	655	680	680	490	565	570	570			
				6	8d x 1-1/2	6	8d x 1-1/2	F2	570	655	715	795	490	565	615	670			
				6	8d x 1-1/2	6	8d x 1-1/2	F3	280	320	350	445	180	205	225	290			
			Figure 2	6	8d x 1-1/2	3	8d x 1-1/2	A1	285	330	355	415	245	285	310	350			
				6	8d x 1-1/2	3	8d x 1-1/2	B1	285	330	350	350	245	285	295	295			
				6	8d x 1-1/2	3	8d x 1-1/2	C1	285	330	355	355	245	285	300	300			
			Figure 3	6	8d x 1-1/2	6	8d x 1-1/2	A2	505	505	505	505	425	425	425	425			
				6	8d x 1-1/2	6	8d x 1-1/2	B2	280	280	280	280	235	235	235	235			
				6	8d x 1-1/2	6	8d x 1-1/2	C2	375	375	375	375	315	315	315	315			
MP34	A34	18	Figure 4	4	8d x 1-1/2	4	8d x 1-1/2	F1	380	435	475	525	330	375	410	450			
				4	8d x 1-1/2	4	8d x 1-1/2	F2	380	435	475	610	330	375	410	525			
				4	8d x 1-1/2	4	8d x 1-1/2	F3	185	215	230	295	120	140	150	190			
MP4F	LTP4	20	Type 1	6	8d x 1-1/2	6	8d x 1-1/2	V	565	650	705	845	485	560	610	710			14, R9, F7
				6	8d x 1-1/2	6	8d x 1-1/2	H	565	650	705	845	485	560	610	710			
			Type 2	6	8d x 1-1/2	6	8d x 1-1/2	V	565	650	705	845	485	560	610	710			
				6	8d x 1-1/2	6	8d x 1-1/2	H	565	650	660	660	485	555	555	555			
			Type 1	6	8d	6	8d	V	565	650	705	845	485	560	610	710			
				6	8d	6	8d	H	565	650	705	845	485	560	610	710			
			Type 2	6	8d	6	8d	V	565	650	705	845	485	560	610	710			
				6	8d	6	8d	H	565	650	660	660	485	555	555	555			
MP6F	LTP5	20	Type 1	6	8d x 1-1/2	6	8d x 1-1/2	V	565	605	605	605	485	510	510	510			
				6	8d x 1-1/2	6	8d x 1-1/2	H	565	605	605	605	485	510	510	510			
			Type 2	6	8d x 1-1/2	6	8d x 1-1/2	V	565	605	605	605	485	510	510	510			
				6	8d x 1-1/2	6	8d x 1-1/2	H	565	605	605	605	485	510	510	510			
			Type 1	6	8d	6	8d	V	565	605	605	605	485	510	510	510			
				6	8d	6	8d	H	565	605	605	605	485	510	510	510			
			Type 2	6	8d	6	8d	V	565	605	605	605	485	510	510	510			
				6	8d	6	8d	H	565	605	605	605	485	510	510	510			

1) Allowable loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) Refer to drawings for installation type and definition of the various load directions.
3) If installing MP4F or MP6F over plywood, use 8d common nails for 100% of table load.
4) Loads are shown per angle. When using a single anchor, joist must be constrained from rotation.
5) **NAILS:** 8d x 1-1/2" nails are 0.131" dia. x 1-1/2" long, 8d nails are 0.131" dia. x 2-1/2" long

Corrosion Finish
Stainless Steel | Gold Coat
HDG | Triple Zinc

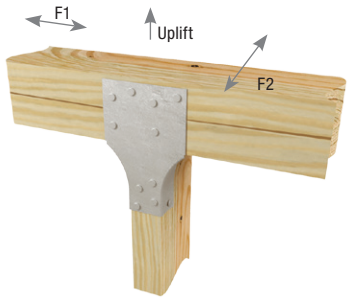
RSPT / SPT Stud Plate Ties

RSPT – 18 or 20 gauge. Connects stud to single or double plates.

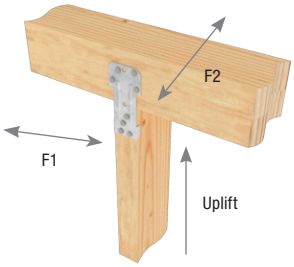
SPT – 20 gauge. Ties single and double plates to studs.

Materials: See chart
Finish: G90 galvanizing
Options: See chart for Corrosion Finish Options
Codes: See page 10 for Code Reference Chart

Installation:
• Use all specified fasteners. See Product Notes, page 18.



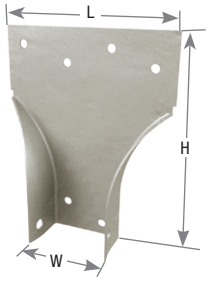
Typical SPT24 installation



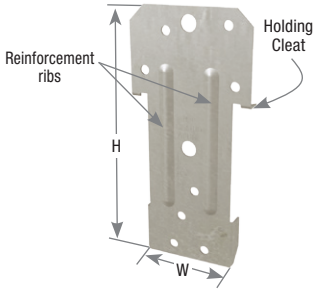
Typical RSPT4 double plate installation


Typical RSPT4 single plate installation

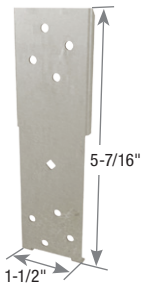

RSPT6-2 installation



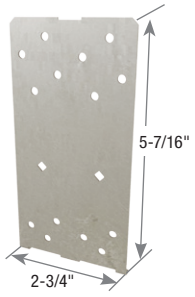
SPT22



RSPT4



RSPT6



RSPT6-2

Stud Size	USP Stock No.[2]	Ref. No.	Steel Gauge	Dimensions (in)			Fastener Schedule[3]				DF/SP Allowable Loads (Lbs.)			Corrosion Finish	Code Ref.
							Stud		Plate		F1	F2	Uplift[1]		
				W	H	L	Qty	Type	Qty	Type	160%	160%	160%		
2x	RSPT4	RSP4	20	1-1/2	4-1/8	--	4	8d x 1-1/2	4	8d x 1-1/2	230	300	470		14, R9, F7
	RSPT6	SSP	18	1-1/2	5-7/16	--	4	10d x 1-1/2	4	10d x 1-1/2	--	--	700		
	SPT22	SP1	20	1-9/16	4-3/8	3-1/2	4	10d	4	10d	560	260	685		
	SPT24	SP2	20	1-9/16	5-5/8	3-1/2	6	10d	6	10d	560	260	1030		
(2) 2x	RSPT6-2	DSP	18	2-3/4	5-7/16	--	8	10d x 1-1/2	6	10d x 1-1/2	--	--	955		
4x	SPT44	--	20	3-9/16	6-3/4	6-1/2	6	16d	6	16d	680	255	1305		

1) Uplift loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) SPT22, SPT24, and SPT44: the two nails fastened to the wide face of the stud must be driven 30° from the perpendicular on the horizontal plane.
3) **NAILS:** 8d x 1-1/2" nails are 0.131" dia. x 1-1/2" long, 10d x 1-1/2" nails are 0.148" dia. x 1-1/2" long, 10d nails are 0.148" dia. x 3" long, 16d nails are 0.162" dia. x 3-1/2" long.

Corrosion Finish Stainless Steel Gold Coat HDG Triple Zinc

SPT / SPTH / SPTHW Stud Plate Ties

SPT – 20 gauge. Ties single and double plates to studs.

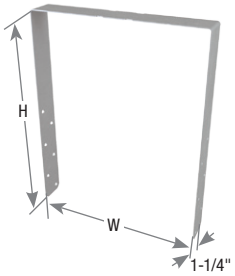
SPTH – Heavier 18 gauge version of SPT.

SPTHW – 18 gauge. Attaches plate to studs over 1/2" sheathing.

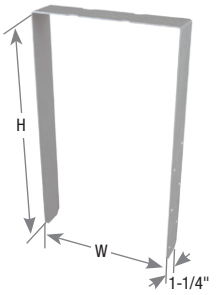
Materials: See chart
Finish: G90 galvanizing
Options: See chart for Corrosion Finish Options
Codes: See page 10 for Code Reference Chart

Installation:
• Use all specified fasteners. See Product Notes, page 18.

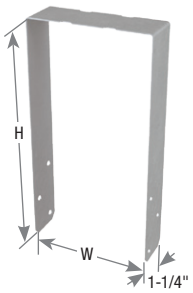
Typical SPT4 installation



SPTHW



SPTH



SPT

Stud Size	USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in) W	Dimensions (in) H	Fastener Schedule[2] Qty	Fastener Schedule[2] Type	DF/SP Allowable Loads (Lbs.) Uplift[1] 160%	Corrosion Finish	Code Ref.
4x	SPT4	SP4	20	3-9/16	6-7/8	6	10d x 1-1/2	945		14, R9, F7
	SPTH4	SPH4	18	3-9/16	8-5/8	12	10d x 1-1/2	1730		
	SPTHW4	SPH4R	18	4-1/16	8-3/8	12	10d x 1-1/2	1290		
6x	SPT6	SP6	20	5-9/16	7-5/8	6	10d x 1-1/2	945		
	SPTH6	SPH6	18	5-9/16	9-3/8	12	10d x 1-1/2	1730		
	SPTHW6	SPH6R	18	6-1/16	9-1/8	12	10d x 1-1/2	1290		
8x	SPT8	SP8	20	7-5/16	8-1/2	6	10d x 1-1/2	945		
	SPTH8	SPH8	18	7-5/16	8-1/2	12	10d x 1-1/2	1730		

1) Uplift loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) **NAILS:** 10d x 1-1/2" nails are 0.148" dia. x 1-1/2" long.

Corrosion Finish Stainless Steel Gold Coat HDG Triple Zinc

SFC Framing Clips

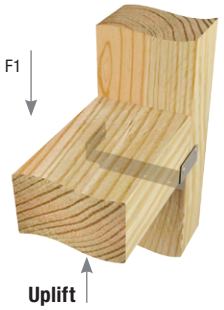
Framing clips replace end cripples under window sills.

Materials: 16 gauge
Finish: G90 galvanizing
Codes: See page 10 for Code Reference Chart

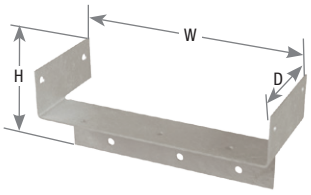
Installation:
• Use all specified fasteners. See Product Notes, page 18.

USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in)			Fastener Schedule[2]				DF/SP Allowable Loads (Lbs.)[1]				Code Ref.
						Sill		Stud		F1			Uplift	
			W	H	D	Qty	Type	Qty	Type	100%	115%	125%	160%	
SFC6	FC6	16	5-1/2	2-1/2	2-1/2	5	16d	5	16d	690	795	865	750	130

1) Allowable loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) **NAILS:** 16d nails are 0.162" dia. x 3-1/2" long.



Typical SFC6 installation



SFC6

HH Header Hangers

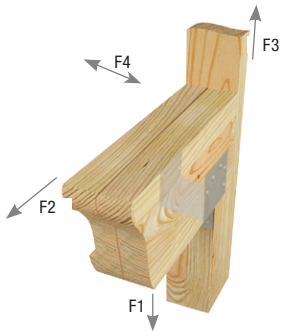
Header Hangers support headers in door and window framing and help eliminate cracks in drywall, plaster, or stucco over windows and doors. These products also provide anchorage and support for heavy fence rails, struts, or gate post cross brackets.

Materials: 16 gauge
Finish: G90 galvanizing
Codes: See page 10 for Code Reference Chart

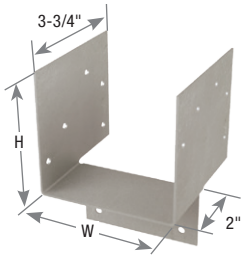
Installation:
• Use all specified fasteners. See Product Notes, page 18.

USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in)		Fastener Schedule[2]				DF/SP Allowable Loads (Lbs.)						Code Ref.
					Header		Stud		F1			F2[1]	F3[1]	F4[1]	
			W	H	Qty	Type	Qty	Type	100%	115%	125%	160%	160%	160%	
HH44	HH4	16	3-9/16	3-1/4	4	16d	9	16d	1240	1430	1500	885	685	1100	14, R9, F7
HH66	HH6	16	5-1/2	5-1/4	6	16d	12	16d	1655	1905	2070	1150	1325	1100	

1) Allowable loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) **NAILS:** 16d nails are 0.162" dia. x 3-1/2" long.



Typical HH44 installation



HH44

LJC / LJQ Lateral Joist Connectors

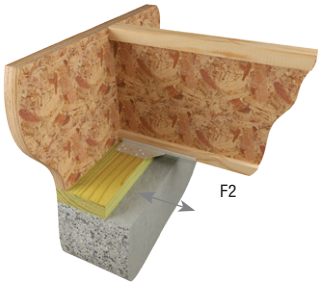
The LJC-TZ and LJQ-TZ Lateral Joist Connectors transfer lateral loads at the top foundation to the floor joists. The fastening patterns meet I-joist manufacturer recommendations.

LJC-TZ – fastens the top side of the sill plate to the underside of the floor joist preventing splitting of the bottom chord flanges, and can be installed after the floor system has been installed. The product is load rated for use with dimensional lumber floor joists as well as I-joist. It can also be used with cantilevered floor joists.

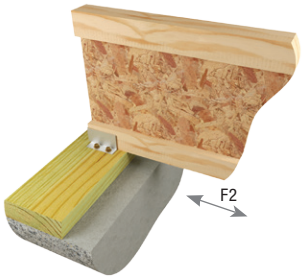
LJQ-TZ – is a higher capacity connector designed for higher loads. It is similar in design to a joist hanger with a seat for the floor joist to bear against and utilizes wood screws to fasten to the sill plate. USP's WS15-EXT Wood Screws (included) provide quick installation without the need to predrill holes.

Materials: See chart
Finish: G-185 galvanizing
Codes: See page 10 for Code Reference Chart

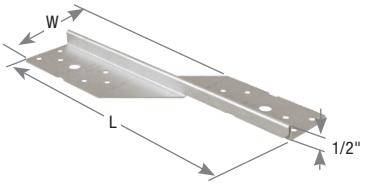
Installation:
- Use all specified fasteners. See Product Notes, page 18.
- **LJC-TZ** – Installs after the floor joist has been placed with a minimum of (12) 8d x 1-1/2" HDG nails.
- **LJQ-TZ** – Installs with (4) USP WS15-EXT Wood Screws. WS15-EXT Wood Screws are 1/4" diameter x 1-1/2" long and are included with LJQ-TZ connectors.



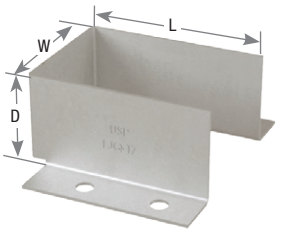
Typical LJC-TZ installation



Typical LJQ-TZ installation



LJC-TZ



LJQ-TZ

USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in) W	L	D	Fastener Schedule[1,2] Qty	Type	DF I-Joist Allowable Loads (Lbs.) F2 90%	F2 100%	F2 160%	SP Allowable Loads (Lbs.) F2 90%	F2 100%	F2 160%	Corrosion Finish	Code Ref.
LJC-TZ	--	18	3-3/16	8	--	12	8d x 1-1/2 HDG	515	570	670	--	--	--		
LJQ15-TZ	--	16	1-9/16	3	1-1/2	4	WS15-EXT	--	--	--	915	1015	1110		
LJQ17-TZ	--	16	1-13/16	3	1-1/2	4	WS15-EXT	--	--	--	915	1015	1110		31, R1, F32
LJQ20-TZ	--	16	2-1/8	3	1-1/2	4	WS15-EXT	--	--	--	915	1015	1110		
LJQ23-TZ	--	16	2-5/16	3	1-1/2	4	WS15-EXT	--	--	--	915	1015	1110		
LJQ25-TZ	--	16	2-9/16	3	1-1/2	4	WS15-EXT	--	--	--	915	1015	1110		
LJQ35-TZ	--	16	3-9/16	3	1-1/2	4	WS15-EXT	--	--	--	915	1015	1260		

1) WS15-EXT wood screws are 1/4" x 1/2" and are included with LJQ connectors.
2) **NAILS:** 8d x 1-1/2 nails are 0.131" dia. x 1-1/2" long.
New products or updated product information are designated in **blue font.**

Corrosion Finish
Stainless Steel | Gold Coat | HDG | Triple Zinc

SCA Stair Angles

Stair angles simplify stair construction. There is no need to calculate and notch stair stringers. Stronger and safer than wood blocking, and the angle and fasteners are hidden from view.

Materials: 12 gauge

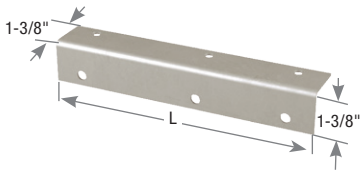
Finish: G-185 galvanizing

Codes: See page 10 for Code Reference Chart

Installation:

- Use all specified fasteners. See Product Notes, page 18.
- Use the SCA9-TZ for single 2x10 stair treads. Use the SCA10-TZ for double 2 x 6 stair treads.
- To calculate stair construction do the following:
  1. Find the number of steps needed by taking the vertical drop from the deck surface to grade. Divide by 7. Round off to the nearest whole number. (Ex: Vertical drop of 39" divided by 7 equals 5.57" rounded off is 6")
  2. Find the step rise by dividing the vertical drop by the number of steps (39" divided by 6 = 6.5")
  3. Find the step run by measuring the depth of your tread board (Ex: (2) 2x6s have a run of 11-1⁄4")
  4. Find the stairway span by multiplying the run by the number of treads minus one (Ex: 11-1/4" x 5 = 56-1/4")
- Using the above calculations, mark stair angle locations on each stringer. Attach a stair angle to the inside of each stringer at the marked locations. Attach stringers to deck rim joist and railing posts. Position treadboards on angles and fasten from below.

Typical SCA9-TZ installation



SCA9-TZ

Typical SCA10-TZ installation

AVAILABLE IN GOLD COAT

USP Stock No.	Ref. No.	Steel Gauge	L (in)	Fastener Schedule[2] Qty	Fastener Schedule[2] Lag Screws	DF/SP Allowable Download (Lbs.)[1] 100%	Corrosion	Finish	Code Ref.
SCA9-TZ	TA9Z-R	12	9	6	1/4" x 1-1/2" HDG	335			15, R14, F8
SCA10-TZ	TA10Z-R	12	10	8	1/4" x 1-1/2" HDG	450			

Corrosion Finish
- Stainless Steel
- Gold Coat
- HDG
- Triple Zinc

1) Loads assume rise over run of 7/11.

New products or updated product information are designated in **blue font**.

ANJ Heavy Angles

The ANJ44S is a 7 gauge heavy duty angle intended to securely attach a post and beam together. It is manufactured with ASTM A36 steel and has a hot-dip galvanized finish.

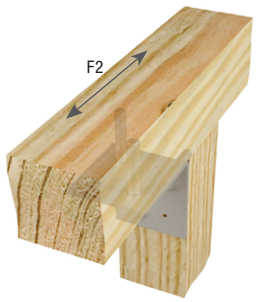
Materials: 7 gauge

Finish: Hot-dip galvanized

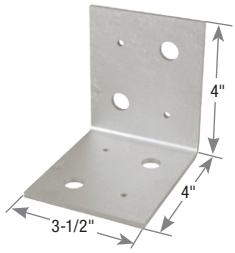
Codes: See page 10 for Code Reference Chart

Installation:

- Install with (2) 1/2" x 2-1/2" HDG lag screws into each leg.



Typical ANJ44S-HDG installation



ANJ44S-HDG

USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in) W	H	L	Fastener Schedule[1] Header Qty	Header Lag Screw	Joist Qty	Joist Lag Screw	DF/SP Allowable Loads (Lbs.) F2 100%	F2 115%	F2 125%	Corrosion	Finish	Code Ref.
ANJ44S-HDG	-- --	7	3-1/2	4	4	2	1/2" HDG	2	1/2" HDG	510	585	640			130

Corrosion Finish
- Stainless Steel
- Gold Coat
- HDG
- Triple Zinc

1) Loads based on use of (2) 1/2" x 2-1/2" lag screws, loaded parallel to grain, in Douglas Fir-Larch (G=0.50).

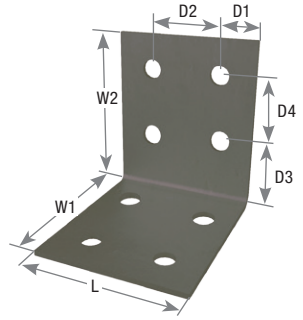
KHL Heavy Angles

Designed for heavy-duty reinforcement of 90° framing intersections.

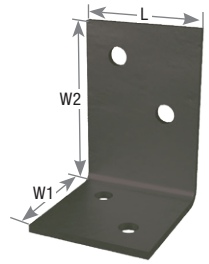
Materials: See chart
Finish: USP primer
Options: See chart for Corrosion Finish Options
Codes: See page 10 for Code Reference Chart

Installation:
- Use all specified fasteners. See Product Notes, page 18.
- **Connectors are not load rated.**
- Bolts must be ordered separately. See page 25 for available sizes.

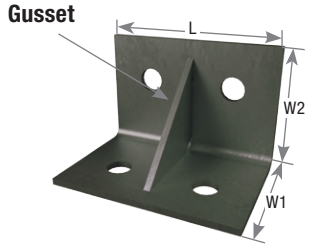
Typical KHL35 installation



KHL55



KHL335



KHL35G

USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in)							Fastener Schedule			Corrosion Finish	Code Ref.
			W1	W2	L	D1	D2	D3	D4	Bolts[1] Qty	Bolts[1] Dia.	Gussets		
KHL33	HL33	7	3-1/4	3-1/4	2-1/2	1-1/4	--	2	--	2	5/8	--		120
KHL35	HL35	7	3-1/4	3-1/4	5	1-1/4	2-1/2	2	--	4	5/8	--		
KHL35G	HL35G	7	3-1/4	3-1/4	5	1-1/4	2-1/2	2	--	4	5/8	1		
KHL37	HL37	7	3-1/4	3-1/4	7-1/2	1-1/4	2-1/2	2	--	6	5/8	--		
KHL335	SPECANGLE	3	3-1/2	5-1/4	3-1/2	--	--	--	--	4	1/2	--		
KHL43	HL43	3	4-1/4	4-1/4	3	1-1/2	--	2-3/4	--	2	3/4	--		
KHL46	HL46	3	4-1/4	4-1/4	6	1-1/2	3	2-3/4	--	4	3/4	--		
KHL49	HL49	3	4-1/4	4-1/4	9	1-1/2	3	2-3/4	--	6	3/4	--		
KHL53	HL53	7	5-3/4	5-3/4	2-1/2	1-1/4	--	2	2-1/2	4	5/8	--		
KHL55	HL55	7	5-3/4	5-3/4	5	1-1/4	2-1/2	2	2-1/2	8	5/8	--		
KHL57	HL57	7	5-3/4	5-3/4	7-1/2	1-1/4	2-1/2	2	2-1/2	12	5/8	--		
KHL73	HL73	3	7-1/4	7-1/4	3	1-1/2	--	2-3/4	3	4	3/4	3		
KHL76	HL76	3	7-1/4	7-1/4	6	1-1/2	3	2-3/4	3	8	3/4	3		
KHL79	HL79	3	7-1/4	7-1/4	9	1-1/2	3	2-3/4	3	12	3/4	3		

1) All bolts shall meet or exceed the specifications of ASTM A 307.

Corrosion Finish
Stainless Steel Gold Coat
HDG Triple Zinc

B / BL Corner Braces

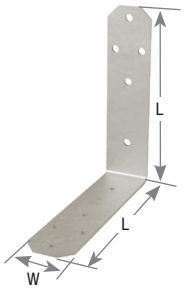
These multi-purpose braces are designed to provide reinforcement for 90° wood-to-wood connections.

Materials: 12 gauge
Finish: G90 galvanizing
Codes: See page 10 for Code Reference Chart

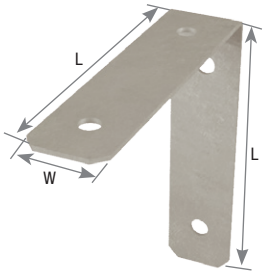
Some model designs may vary from illustration shown

Installation:
- Use all specified fasteners. See Product Notes, page 18.
- Bolts must be ordered separately. See page 25 for available sizes.

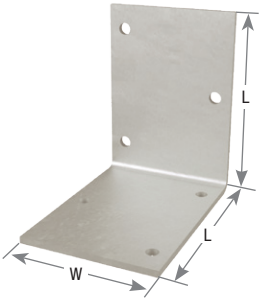
Typical B66 installation



BL4



B66



B23

USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in)		Fastener Schedule				Code Ref.
					Nails[2]		Bolts[1]		
			W	L	Qty	Type	Qty	Type	
B23	--	12	2	2-5/8	6	16d	--	--	120
B24	--	12	2	3-5/8	8	16d	--	--	
BL3	A33	12	1-1/4	3-1/16	8	16d	--	--	
BL4	A44	12	1-1/4	4-13/16	10	16d	--	--	
BL6	--	12	1-1/4	6-9/16	12	16d	--	--	
BL8	--	12	1-1/4	8-5/16	14	16d	--	--	
B66	A66	12	1-1/2	6	--	--	4	3/8	
B88	A88	12	2	8	--	--	6	3/8	

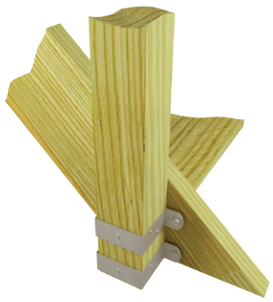
1) Bolts shall conform to ASTM A 307 or better.
2) **NAILS:** 16d nails are 0.162" dia. x 3-1/2" long.

SDPT Strap Post Ties

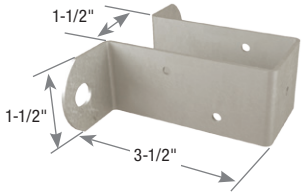
Connects 2 x 4 stair posts and 4 x 4 posts to deck rim joist or stair stringers.

Materials: 14 gauge
Finish: G-185 galvanizing
Codes: See page 10 for Code Reference Chart

Installation:
- Use all specified fasteners. See Product Notes, page 18.
- Install units in pairs on 2x4 (SDPT5-TZ) or 4x4 (SDPT7-TZ) post. Space the connectors 5" apart from center to center on the post. Use through bolts to fasten connectors to rim joist or stringer. Do not use lag bolts. Fasten to post with specified nails (see chart).



Typical SDPT7-TZ installation

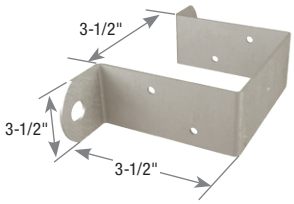


SDPT5-TZ

Post Size	USP Stock No.	Ref. No.	Steel Gauge	Fastener Schedule				Corrosion Finish	Code Ref.
				Nails[2]		Bolts[1]			
				Qty	Type	Qty	Dia.		
2 x 4	SDPT5-TZ	DPT5Z	14	5	10d x 1-1/2 HDG	2	3/8 HDG		120
4 x 4	SDPT7-TZ	DPT7Z	14	5	10d x 1-1/2 HDG	2	3/8 HDG		

1) Bolts shall conform to ASTM A 307 or better.
2) **NAILS:** 10d x 1-1/2" nails are 0.148" dia. x 1-1/2" long.

Corrosion Finish Stainless Steel Gold Coat HDG Triple Zinc



SDPT7-TZ

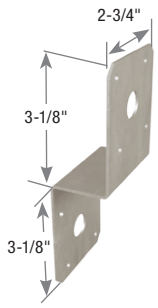
SDJT Joist Tie

Secures 2x joists to posts.

Materials: 14 gauge
Finish: G-185 galvanizing
Codes: See page 10 for Code Reference Chart

Installation:
- Use all specified fasteners. See Product Notes, page 18.
- Use with 2x lumber for joists (minimum height is 2x4). Install with either specified nails or through bolts. Do not use lag bolts. To ease installation, attach to 4x4 post first.

Typical SDJT14-TZ installation



SDJT14-TZ

Post Size	USP Stock No.	Ref. No.	Steel Gauge	Fastener Schedule				DF/SP Allowable Loads (Lbs.)						Corrosion Finish	Code Ref.
				Nails[2]		Bolts[1]		Nails			Bolts				
				Qty	Type	Qty	Dia.	100%	115%	125%	100%	115%	125%		
4 x 4	SDJT14-TZ	DJT14Z	14	8	16d HDG	2	3/8 HDG	1120	1290	1400	1400	1400	1400		130

1) Bolts shall conform to ASTM A 307 or better.
2) **NAILS:** 16d HDG nails are 0.162" dia. x 3-1/2" long.

Corrosion Finish Stainless Steel Gold Coat HDG Triple Zinc

L / LH / T / TH Straps

L / T – 14 gauge medium-capacity straps fasten with either nails or bolts.

LH / TH – 7 gauge heavy-capacity bolt-on strap.

Materials: See chart

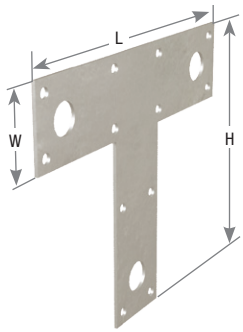
Finish: G90 galvanizing; LH / TH – USP primer; TH12-HDG – Hot-dip galvanized.

Options: See chart for Corrosion Finish Options. Available for special order in black primer coated finish.

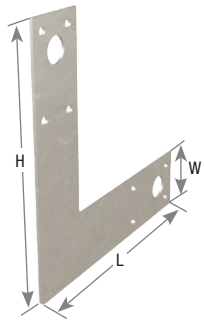
Codes: See page 10 for Code Reference Chart

Installation:

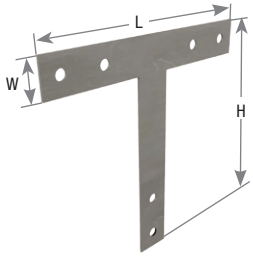
- Use all specified fasteners. See Product Notes, page 18.
- **Straps are not load rated.**
- Bolts must be ordered separately. See page 25 for available sizes.



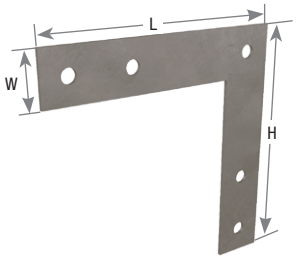
T6



L6



TH16



LH12

USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in) W	H	L	Fastener Schedule[1,2] Bolts Qty	Bolts Dia.	Nails Qty	Nails Type	Corrosion Finish	Code Ref.
T6	66T	14	1-1/2	5	6	3	1/2	12	16d		120
T8	--	14	2	8	8-1/2	3	1/2	12	16d		
T12	128T	14	2	8	12	3	1/2	12	16d		
T1212	1212T	14	2	12	12	3	1/2	12	16d		
L6	66L	14	1-1/2	6	6	2	1/2	8	16d		
L8	88L	14	2	8	8	2	1/2	8	16d		
L12	1212L	14	2	12	12	3	1/2	12	16d		
TH12-HDG	1212HT, 1212HTHDG	7	2-1/2	12	12	6	5/8	--	--		
TH16	1616HT	7	2-1/2	16	16-1/4	6	5/8	--	--		
LH12	1212HL	7	3	12	12	5	5/8	--	--		
LH16	1616HL	7	2-1/2	16	16	7	5/8	--	--		

1) All bolts shall meet or exceed the specifications of ASTM A 307.
2) **NAILS:** 16d nails are 0.162" dia. x 3-1/2" long.

Corrosion Finish
Stainless Steel Gold Coat
HDG Triple Zinc

Ornamental

Ornamental notching provides architectural appearance for exposed applications.

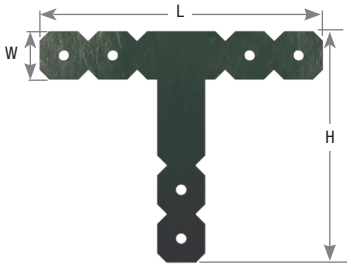
Materials: See chart

Finish: USP black primer

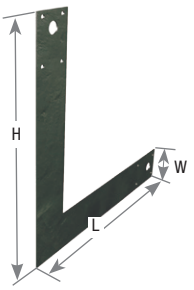
Codes: See page 10 for Code Reference Chart

Installation:

- Use all specified fasteners. See Product Notes, page 18.
- **Connectors are not load rated.**
- Bolts must be ordered separately. See page 25 for available sizes.



T1212-0

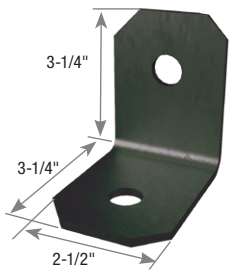


L12-0

USP Stock No.	Ref. No.	Steel Gauge	Description	Dimensions (in) W	H	L	Bolt Schedule[1] Qty	Bolt Schedule[1] Dia.	Code Ref.
KHL33-0	OHA33	7	Heavy Angle	3-1/4	-- --	2-1/2	2	5/8	120
KHL36-0	OHA36	7	Heavy Angle	3-1/4	-- --	6	4	5/8	
KHST64-0	OHS135	7	Strap Tie	6	-- --	13-1/2	4	3/4	
ST12-0	OS	12	Strap Tie	2	-- --	12	4	1/2	
L12-0	OL	12	'L' Strap	2-1/2	11-7/8	11-7/8	5	1/2	
LH12-0	OHL	7	'L' Strap	2-1/2	11-7/8	11-7/8	5	5/8	
T1212-0	OT	12	'T' Strap	2-1/2	11-7/8	14-1/2	6	1/2	
TH12-0	OHT	7	'T' Strap	2-1/2	11-7/8	11-1/8	4	5/8	
TH16-0	-- --	7	'T' Strap	2-1/2	11-7/8	16-1/8	6	5/8	

1) All bolts shall meet or exceed the specifications of ASTM A 307.

Some model designs may vary from illustration shown



KHL33-0

CMST / CMSTC / RS Coiled Strapping

Coiled strapping enables cut-to-length convenience for a variety of immediate job site needs.

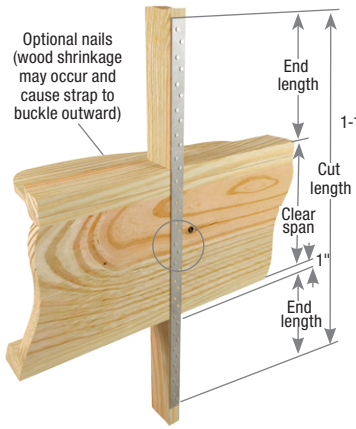
CMST – 3" wide strapping features diamond nail holes to provide nailing options and reduce wood splitting.

CMSTC – 3" wide strapping is designed for high load conditions. Engineered to reduce wood splitting.

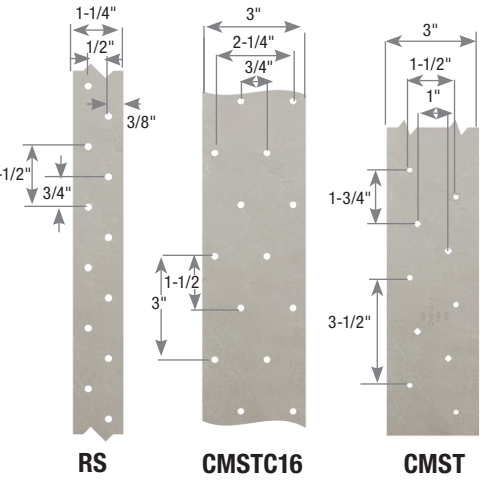
RS – 1-1/4" wide strapping packaged in cartons containing 25-foot or longer coils.

Materials: See chart
Finish: G90 galvanizing
Options: See chart for Corrosion Finish Options
Codes: See page 10 for Code Reference Chart

Installation:
- Use all specified fasteners. See Product Notes, page 18.
- For safety, always wear gloves when handling or cutting coiled strapping.
- **CMST** installations: Install to a minimum 2 ply 2x edge. Increase nail spacing if wood begins to split.
- Designer may specify alternate nailing schedules. Refer to **Nail Specification Table** on page 21 for nail shear values. Load values shall not exceed published allowable loads.



Typical RS rim joist installation CMST similar



USP Stock No.	Ref. No.	Steel Gauge	Coil Length	DF/SP Rim Joist Installation Cut Length	DF/SP Rim Joist Installation End Length	DF/SP Fastener Schedule[3,4] Min Qty.[2]	DF/SP Fastener Schedule[3,4] Type	DF/SP Nail Spacing O.C.	DF/SP Allowable Tension (Lbs.)[1] 160%	S-P-F / Hem Fir Rim Joist Installation Cut Length	S-P-F / Hem Fir Rim Joist Installation End Length	S-P-F / Hem Fir Fastener Schedule[3,4] Min Qty.[2]	S-P-F / Hem Fir Fastener Schedule[3,4] Type	S-P-F / Hem Fir Nail Spacing O.C.	S-P-F / Hem Fir Allowable Tension (Lbs.)[1] 160%	Corrosion Finish	Code Ref.
CMSTC16	CMSTC16	16	54'	Clear Span + 46"	23"	60	10d	1-1/2"	4715	Clear Span + 58"	29"	74	10d	1-1/2"	4715		14, R9, F7
				Clear Span + 90"	45"	60	10d	3"		Clear Span + 112"	56"	74	10d	3"			
				Clear Span + 40"	20"	50	16d	1-1/2"		Clear Span + 48"	24"	62	16d	1-1/2"			
				Clear Span + 76"	38"	50	16d	3"		Clear Span + 94"	47"	62	16d	3"			
CMST14	CMST14	14	52-1/2'	Clear Span + 58"	29"	64	16d	1-3/4"	6630	Clear Span + 72"	36"	80	16d	1-3/4"	6630		
				Clear Span + 130"	65"	74	10d	3-1/2"		Clear Span + 164"	82"	94	10d	3-1/2"			
				Clear Span + 256"	128"	74	10d	7"		Clear Span + 326"	163"	94	10d	7"			
CMST12	CMST12	12	40'	Clear Span + 74"	37"	82	16d	1-3/4"	9320	Clear Span + 90"	45"	102	16d	1-3/4"	9320		
				Clear Span + 168"	84"	96	10d	3-1/2"		Clear Span + 206"	103"	118	10d	3-1/2"			
				Clear Span + 332"	166"	96	10d	7"		Clear Span + 410"	205"	118	10d	7"			
RS300	CS22	22	300'	Clear Span + 12"	6"	12	10d	1-1/2"	925	Clear Span + 14"	7"	16	10d	1-1/2"	925		
						14	8d	1-1/2"		Clear Span + 16"	8"	18	8d	1-1/2"			
RS22-R	CS22-R		25'			12	10d	1-1/2"		Clear Span + 14"	7"	16	10d	1-1/2"			
						14	8d	1-1/2"		Clear Span + 16"	8"	18	8d	1-1/2"			
RS250	CS20	20	250'	Clear Span + 12"	6"	14	10d	1-1/2"	1045	Clear Span + 16"	8"	18	10d	1-1/2"	1045		
				Clear Span + 14"	7"	16	8d	1-1/2"		Clear Span + 18"	9"	20	8d	1-1/2"			
RS20-R	CS20-R		25'	Clear Span + 12"	6"	14	10d	1-1/2"		Clear Span + 16"	8"	18	10d	1-1/2"			
				Clear Span + 14"	7"	16	8d	1-1/2"		Clear Span + 18"	9"	20	8d	1-1/2"			
RS200	CS18	18	200'	Clear Span + 16"	8"	18	10d	1-1/2"	1375	Clear Span + 18"	9"	22	10d	1-1/2"	1375		
				Clear Span + 18"	9"	22	8d	1-1/2"		Clear Span + 22"	11"	26	8d	1-1/2"			
RS100	-- --		100'	Clear Span + 16"	8"	18	10d	1-1/2"		Clear Span + 18"	9"	22	10d	1-1/2"			
				Clear Span + 18"	9"	22	8d	1-1/2"		Clear Span + 22"	11"	26	8d	1-1/2"			
RS18-R	CS18-R		25'	Clear Span + 16"	8"	18	10d	1-1/2"		Clear Span + 18"	9"	22	10d	1-1/2"			
				Clear Span + 18"	9"	22	8d	1-1/2"		Clear Span + 22"	11"	26	8d	1-1/2"			
RS150	CS16	16	150'	Clear Span + 18"	9"	22	10d	1-1/2"	1730	Clear Span + 24"	12"	28	10d	1-1/2"	1730		
				Clear Span + 22"	11"	26	8d	1-1/2"		Clear Span + 26"	13"	32	8d	1-1/2"			
RS16-R	CS16-R		25'	Clear Span + 18"	9"	22	10d	1-1/2"		Clear Span + 24"	12"	28	10d	1-1/2"			
				Clear Span + 22"	11"	26	8d	1-1/2"		Clear Span + 26"	13"	32	8d	1-1/2"			
RS14-100	CS14	14	100'	Clear Span + 24"	12"	28	10d	1-1/2"	2610	Clear Span + 30"	15"	36	10d	1-1/2"	2610		
				Clear Span + 28"	14"	34	8d	1-1/2"		Clear Span + 34"	17"	42	8d	1-1/2"			
RS14-R	CS14-R		25'	Clear Span + 24"	12"	28	10d	1-1/2"		Clear Span + 30"	15"	36	10d	1-1/2"			
				Clear Span + 28"	14"	34	8d	1-1/2"		Clear Span + 34"	17"	42	8d	1-1/2"			

1) Allowable loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) Minimum quantity of fasteners to be installed with equal fasteners at each end of the connection. Product may have additional nail holes not needed to meet published allowable load of product.
3) 16d sinker nails may be substituted for 10d nails with no load reduction.
4) **NAILS:** 8d nails are 0.131" dia. x 2-1/2" long, 10d nails are 0.148" dia. x 3" long, 16d nails are 0.162" dia. x 3-1/2" long.

Corrosion Finish
Stainless Steel Gold Coat
HDG Triple Zinc

HRS / HTP / KST / KSTI / LSTA / LSTI / MSTA / MSTC / ST Strap Ties

HRS – 12 gauge, 1-3/8" or 3-1/4" wide strapping.

LSTA – 20 or 18 gauge, light-capacity 1-1/4" wide strapping.

LSTI – 3-3/4" wide strap ties provide tension load path for truss top chords. The nail pattern accommodates open web trusses with double top chord.

MSTA – 18 or 16 gauge, medium-capacity 1-1/4" wide strapping.

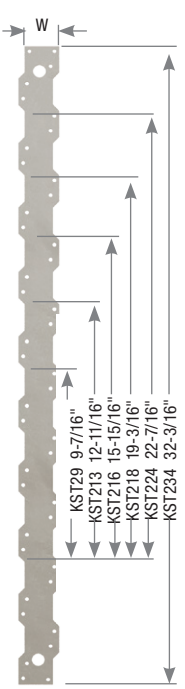
HTP – 16 gauge, medium-capacity 3" wide strapping.

ST – 16 gauge, medium-capacity 1-1/4" wide strapping.

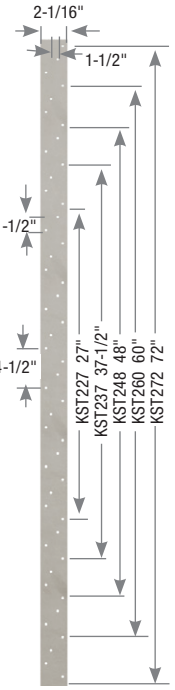
MSTC – 3" wide strapping. Slotted hole design allows for higher load capacities and reduces splitting of lumber when attached to multiple 2x members.

KST – 3/4", 1-3/4", or 2-1/16" wide strapping. Straps can be fastened using either nails or bolts. Some KST straps install only with nails.

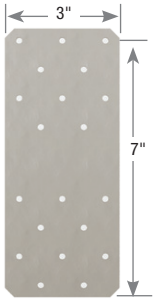
KSTI – 2-1/16" wide strapping. Straps are designed for installation to wood I-Joist flanges.



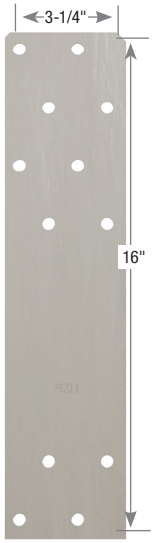
KST scalloped design



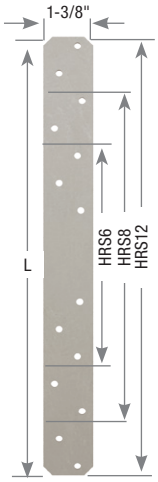
KST straight edge design



HTP37-TZ

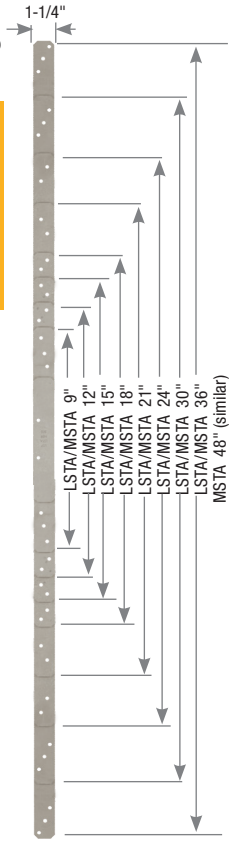


HRS416-TZ

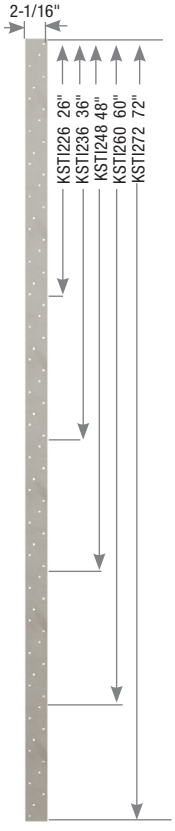


HRS

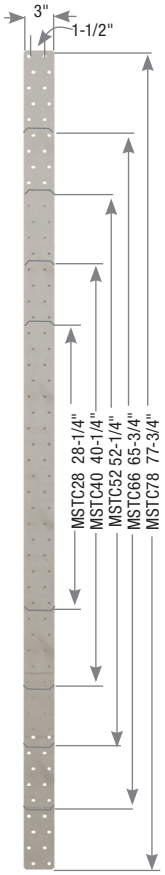
Some model designs may vary from illustration shown



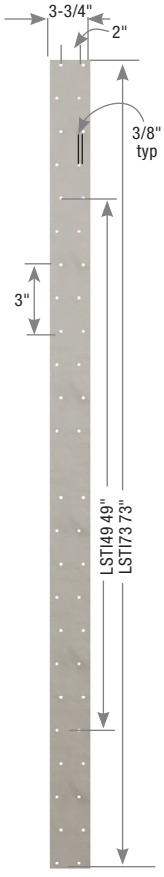
LSTA/MSTA



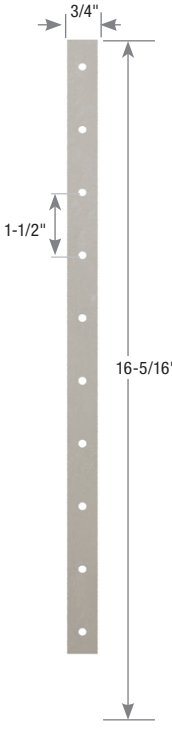
KSTI



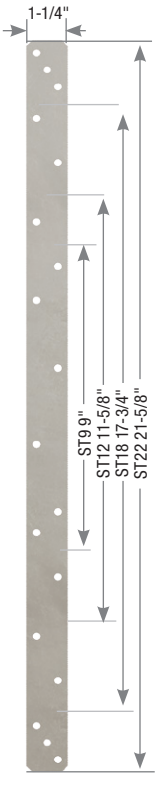
MSTC



LSTI



KST116



ST

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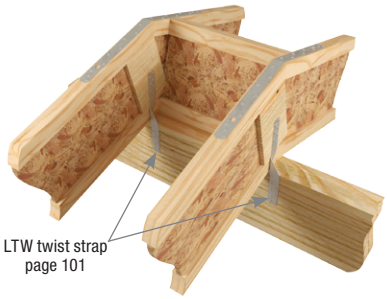
HRS / HTP / KST / KSTI / LSTA / LSTI / MSTA / MSTC / ST Strap Ties

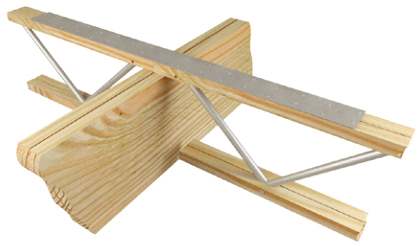
MiTek®

Materials: See chart
Finish: G90 galvanizing
Options: See chart for Corrosion Finish Options
Codes: See page 10 for Code Reference Chart

Installation:
- Use all specified fasteners. See Product Notes, page 18.
- Designer may specify alternate nailing schedules. Refer to **Nail Specification Table** on page 21 for nail shear values.
- The quantity of nails installed shall be equally distributed to both ends of the strap.
- Bolts must be ordered separately. See page 25 for available sizes.



Typical LSTA/MSTA I-Joist on ridge beam installation



Typical LSTI open web truss installation

USP Stock No.[4]	Ref. No.	Steel Gauge	Dimensions (in) W	Dimensions (in) L	Fastener Schedule[5] Total Qty[2]	Fastener Schedule[5] Min Qty[3]	Fastener Schedule[5] Type	DF/SP Allowable Tension Loads (Lbs.)[1] 160%	S-P-F/HF Allowable Tension Loads (Lbs.)[1] 160%	Corrosion Finish	Code Ref.
KST116	ST2115	20	3/4	16-5/16	10	8	16d	665	665		
LSTA9	LSTA9	20	1-1/4	9	8	8	10d	740	635		
LSTA12	LSTA12	20	1-1/4	12	10	10	10d	930	790		
LSTA15	LSTA15	20	1-1/4	15	12	12	10d	1115	950		
LSTA18	LSTA18	20	1-1/4	18	14	14	10d	1235	1110		
LSTA21	LSTA21	20	1-1/4	21	16	16	10d	1235	1235		
LSTA24	LSTA24	20	1-1/4	24	18	16	10d	1235	1235		
KST29	ST292	20	1-3/4	9-7/16	14	14	16d	1680	1320		
KST213	ST2122	20	1-3/4	12-11/16	18	18	16d	1785	1700		
KST216	ST2215	20	1-3/4	15-15/16	22	18	16d	1785	1700		
LSTA30	LSTA30	18	1-1/4	30	22	22	10d	1640	1640		
LSTA36	LSTA36	18	1-1/4	36	26	22	10d	1640	1640		
MSTA9	MSTA9	18	1-1/4	9	8	8	10d	750	645		
MSTA12	MSTA12	18	1-1/4	12	10	10	10d	935	810		14, R9, F7
MSTA15	MSTA15	18	1-1/4	15	12	12	10d	1125	970		
MSTA18	MSTA18	18	1-1/4	18	14	14	10d	1310	1130		
MSTA21	MSTA21	18	1-1/4	21	16	16	10d	1500	1295		
MSTA24	MSTA24	18	1-1/4	24	18	18	10d	1640	1455		
LSTI49	LSTI49	18	3-3/4	49	32	32	10d x 1-1/2	3150	2510		
LSTI73	LSTI73	18	3-3/4	73	48	48	10d x 1-1/2	4130	3765		
ST9	ST9	16	1-1/4	9	8	8	16d	885	760		
ST12	ST12	16	1-1/4	11-5/8	10	10	16d	1105	950		
ST18	ST18	16	1-1/4	17-3/4	14	14	16d	1395	1335		
ST22	ST22	16	1-1/4	21-5/8	18	18	16d	1395	1395		
MSTA30	MSTA30	16	1-1/4	30	22	22	10d	2065	1815		
MSTA36	MSTA36	16	1-1/4	36	26	26	10d	2065	2065		
MSTA48	MSTA49	16	1-1/4	48	32	26	10d	2045	2045		
KST218	ST6215	16	1-3/4	19-3/16	26	26	16d	2960	2540		
KST224	ST6224	16	1-3/4	22-7/16	30	30	16d	2960	2930		
HTP37-TZ	HTP37Z	16	3	7	20	20	10d x 1-1/2	1855	1600		130
MSTC28	MSTC28	16	3	28-1/4	36	36	10d	3455	2965		
					36	34	16d	3860	3320		
MSTC40	MSTC40	16	3	40-1/4	52	52	10d	4715	4285		
					52	46	16d	4715	4490		
MSTC52	MSTC52	16	3	52-1/4	70	60	10d	4715	4715		
					70	52	16d	4715	4715		14, R9, F7
KST234	ST6236	14	1-3/4	32-3/16	42	36	16d	3775	3660		
MSTC66	MSTC66	14	3	65-3/4	88	72	10d	6015	6015		
					88	62	16d	6015	6015		
MSTC78	MSTC78	14	3	77-3/4	104	76	10d	6015	6015		
					104	66	16d	6015	6015		

1) Allowable loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) Total number of nail and/or bolt holes provided in the strap.
3) Minimum quantity of fasteners to be installed with equal fasteners at each end of the connection. Product may have additional nail holes not needed to meet published allowable load of product.
4) For MSTC straps: 16d sinker nails may be substituted for 10d nails with no reduction in load.
5) **NAILS:** 10d x 1-1/2 nails are 0.148"dia. x 1-1/2"long, 10d nails are 0.148"dia. x 3"long, 16d nails are 0.162"dia. x 3-1/2"long.

Corrosion Finish
Stainless Steel | Gold Coat
HDG | Triple Zinc

Continued on next page

HRS / HTP / KST / KSTI / LSTA / LSTI / MSTA / MSTC / ST Strap Ties MiTek®

USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in) W	Dimensions (in) L	Fastener Schedule[6,7] Nails Total Qty[3]	Nails Min Qty[4]	Nails Type	Bolts Min Qty[4]	Bolts Dia.	DF/SP Allowable Tension Loads (Lbs.)[1,2] Nails 160%	DF/SP Allowable Tension Loads (Lbs.)[1,2] Bolts[5] 160%	S-P-F/HF Allowable Tension Loads (Lbs.)[1,2] Nails 160%	S-P-F/HF Allowable Tension Loads (Lbs.)[1,2] Bolts[5] 160%	Corrosion Finish	Code Ref.
HRS6	HRS6	12	1-3/8	6	6	6	10d	--	--	640	-- --	550	--		110
HRS8	HRS8	12	1-3/8	8	10	10	10d	--	--	1065	-- --	920	--		
HRS12	HRS12	12	1-3/8	12	14	14	10d	--	--	1490	-- --	1290	--		
KST227	MST27	12	2-1/16	27	34	34	16d	4	1/2	4540	2285	3645	2020		14, R9, F7
KST237	MST37	12	2-1/16	37-1/2	48	48	16d	6	1/2	5140	3240	5140	2875		
KST248	MST48	12	2-1/16	48	62	54	16d	8	1/2	5140	3845	5140	3555		
KSTI226	MSTI26	12	2-1/16	26	26	26	10d x 1-1/2	--	--	2810	--	2245	--		
KSTI236	MSTI36	12	2-1/16	36	36	36	10d x 1-1/2	--	--	3890	--	3110	--		
KSTI248	MSTI48	12	2-1/16	48	48	48	10d x 1-1/2	--	--	5140	--	4145	--		
KSTI260	MSTI60	12	2-1/16	60	60	60	10d x 1-1/2	--	--	5140	--	5140	--		
KSTI272	MSTI72	12	2-1/16	72	72	60	10d x 1-1/2	--	--	5140	--	5140	--		
HRS416-TZ	HRS416Z	12	3-1/4	16	16	16	WS15-EXT	--	--	2945	--	2410	--		110
KST260	MST60	10	2-1/16	60	72	64	16d	10	1/2	6720	4910	6720	4390		14, R9, F7
KST272	MST72	10	2-1/16	72	72	64	16d	10	1/2	6720	4910	6720	4390		

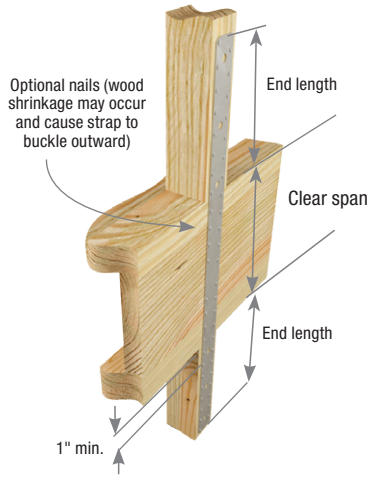
1) Allowable loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) Allowable loads are based on the use of either nails or bolts; nail and bolt values cannot be combined.
3) Total number of nail and/or bolt holes provided in the strap.
4) Minimum quantity of fasteners to be installed with equal fasteners at each end of the connection. Product may have additional nail holes not needed to meet published allowable load of product.
5) Allowable bolt loads are based on parallel-to-grain loading, minimum of 2-1/2" thick.
6) WS15-EXT Wood Screws are 1/4" dia. x 1-1/2" long.
7) **NAILS:** 10d x 1-1/2 nails are 0.148" dia. x 1-1/2" long, 10d nails are 0.148" dia. x 3" long, 16d nails are 0.162" dia. x 3-1/2" long.
New products or updated product information are designated in **blue font**.

Corrosion Finish Stainless Steel Gold Coat HDG Triple Zinc

Clear Span Chart

USP Stock No.	Ref. No.	Clear Span	10d x 1-1/2" Fasteners[3] Total[2] Qty	10d x 1-1/2" Fasteners[3] DF/SP Tension 160%[1]	10d Fasteners[3] Total[2] Qty	10d Fasteners[3] DF/SP Tension 160%[1]	16d Fasteners[3] Total[2] Qty	16d Fasteners[3] DF/SP Tension 160%[1]
MSTC28	MSTC28	18	--	--	12	1150	12	1365
		16			16	1535	14	1590
MSTC40	MSTC40	18			28	2690	24	2725
		16			32	3070	30	3410
MSTC52	MSTC52	18			44	4225	38	4315
		16			48	4610	42	4715
MSTC66	MSTC66	18			62	6015	54	6015
		16			64	6015	54	6015
MSTC78	MSTC78	18			64	6015	54	6015
		16			66	6015	56	6015
KST237	MST37	18	--	--	--	--	20	2480
		16					22	2730
KST248	MST48	18					32	3970
		16					34	4215
KST260	MST60	18					46	6255
		16					48	6530
KST272	MST72	18					46	6255
		16					48	6530
KSTI236	MSTI36	18	14	1410	--	--	--	--
		16	16	1615				
KSTI248	MSTI48	18	26	2620				
		16	28	2820				
KSTI260	MSTI60	18	38	3830				
		16	40	4030				
KSTI272	MSTI72	18	50	5040				
		16	52	5240				

1) Allowable loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) Total number of of nail holes provided in the strap.
3) **NAILS:** 10d x 1-1/2 nails are 0.148" dia. x 1-1/2" long, 10d nails are 0.148" dia. x 3" long, 16d nails are 0.162" dia. x 3-1/2" long.



Typical KST237 floor-to-floor installation

KHST / KRPS / PS Strap Ties

KRPS – Meets IBC, IRC, & L.A. City requirements for notched plates where plumbing, heating, or other pipes are placed in partitions.

PS – Piling Straps connect wood pilings to floor girders. Hot-dip galvanized for corrosion protection in coastal environments.

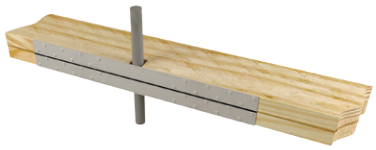
KHST – Heavy-capacity strap that utilizes bolts.

Materials: See chart

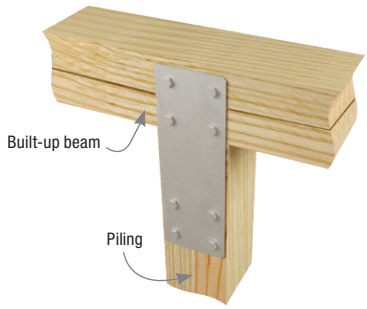
Finish: KHST – USP primer; KRPS – G90 galvanizing; PS – Hot-dip galvanized

Options: See chart for Corrosion Finish Options

Codes: See page 10 for Code Reference Chart
IRC R602.6.1, IBC 2308.9.8



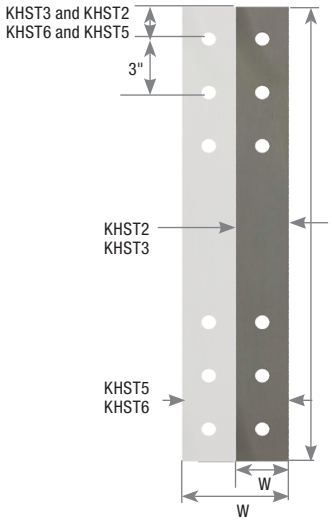
Typical KRPS installation



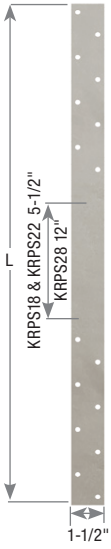
Typical PS720-HDG installation

Installation:

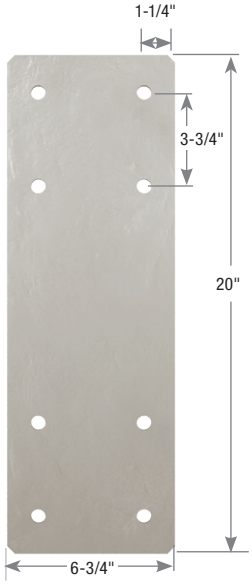
- Use all specified fasteners. See Product Notes, page 18.
- Install one strap tie for each 2x plate.
- Bolts must be ordered separately. See page 25 for available sizes.



KHST



KRPS



PS720-HDG

USP Stock No.[3]	Ref. No.	Steel Gauge	Dimensions (in) W	Dimensions (in) L	Notch Width (in)	Fastener Schedule[4] Nails Qty	Nails Type	Bolts Qty	Bolts Type	DF/SP Allowable Tension Loads (Lbs.)[1,2] 160%	Corrosion Finish	Code Ref.
KHST2	HST2	7	2-1/2	21-1/4	--	--	--	6	5/8	5250		14, R9, F7
KHST3	HST3	3	3	25-1/2	--	--	--	6	3/4	7920		
KHST5	HST5	7	5	21-1/4	--	--	--	12	5/8	10635		
KHST6	HST6	3	6	25-1/2	--	--	--	12	3/4	15935		
PS218-HDG	PS218	7	2	18	--	--	--	4	5/8	--		120
PS418-HDG	PS418	7	4	18	--	--	--	4	5/8	--		
PS720-HDG	PS720	7	6-3/4	20	--	--	--	8	5/8	--		
KRPS18	RPS18	16	1-1/2	18-5/16	≤ 5-1/2	12	16d	--	--	1345		14, R9, F7
KRPS22	RPS22	16	1-1/2	22-5/16	≤ 5-1/2	16	16d	--	--	1790		
KRPS28	RPS28	16	1-1/2	28-5/16	≤ 12	16	16d	--	--	1790		

1) Allowable loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) Allowable loads are based on single shear, parallel to grain loading with a 3-1/2" minimum member thickness for KHST2 and KHST5, and 4-1/2" minimum member thickness for KHST3 and KHST6.
3) PS piling strap design loads must be determined for each installation. Bolts are installed perpendicular and parallel-to-grain.
4) **NAILS:** 16d nails are 0.162" dia. x 3-1/2" long.
New products or updated product information are designated in **blue font**.
Corrosion Finish Stainless Steel Gold Coat HDG Triple Zinc

PS218-HDG
PS418-HDG similar

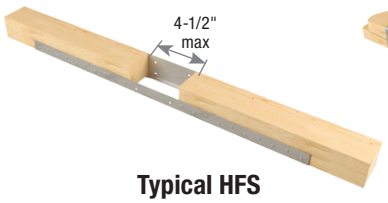
HFS Compression & Tension Straps

The HFS Hardy Frame® Saddle is a 14 gauge steel channel intended to be used as a splice at locations where plumbing or other vertical penetrations destroy the structural integrity of a wall's top plates.

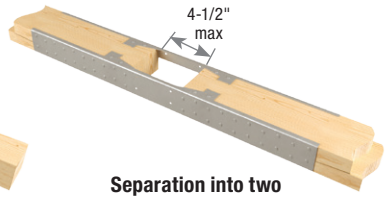
Materials: 14 gauge
Finish: G60 galvanizing
Codes: See page 10 for Code Reference Chart

Installation:

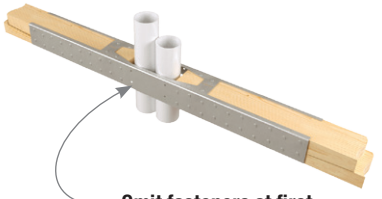
- Use all specified fasteners. See Product Notes, page 18.
- The Saddle can be installed over the top or from the underside of the top plates, and is capable of resisting both tension and compression loads in a clearspan of up to 4-1/2" inches.
- For wall depths greater than 3-1/2", or to install after plumbing lines have been run, the product can be separated into two "L" shapes by gripping the legs of the channel and flexing the top surface along the serration lines.



Typical HFS installation to underside of double top plates.



Separation into two "L" shapes at 6" and greater depths



Omit fasteners at first holes when the end distance is less than 1 inch

USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in) W	Dimensions (in) L	Notch Width	Fastener Schedule Qty[2]	Fastener Schedule Type[4]	DF/SP Allowable Loads (Lbs.)[1,3] Tension 100%	DF/SP Allowable Loads (Lbs.)[1,3] Compression 100%	S-P-F Allowable Loads (Lbs.)[1,3] Tension 100%	S-P-F Allowable Loads (Lbs.)[1,3] Compression 100%	Code Ref.
HFS24	--	14	3-5/8	24	≤ 4-1/2	24	16d	2950	2500	2537	2500	16, R6
HFS36	--	14	3-5/8	36	≤ 4-1/2	32	16d	4280	2500	3681	2500	

1) Allowable tension loads are for normal duration. The values may be adjusted for other durations, such as for seismic and wind loading in accordance with the AF&PA NDS.
2) Fastener quantity is the number of 16d common nails to be installed into each of the members to be joined. When the end distance from the joint to the first nail hole is less than 1-inch, omit the (2) nails in the 3-inch side-plate and the (1) nail in the 1-1/2 inch side-plate that are nearest the joint.
3) There is no reduction in double top plate capacity provided the HFS24 is installed with minimum (22) 16d common nails in each member being joined (44 total) and the HFS36 is installed with (31) 16d common nails in each member (62 total).
4) **NAILS:** 16d nails are 0.162" dia. x 3-1/2" long.

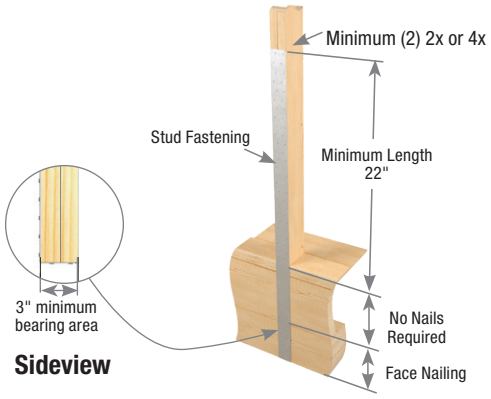
MSTCB Pre-Bent Straps

The MSTCB Pre-Bent Strap is designed to fasten vertical studs to a beam or ridge beam member below where the beam depth will not allow complete fastener attachments with a standard product.

Materials: 14 gauge
Finish: G90 galvanizing
Codes: See page 10 for Code Reference Chart

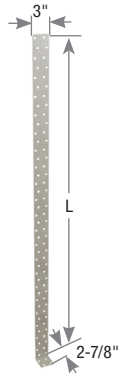
Installation:

- Use all specified fasteners. See Product Notes, page 18.



Sideview

Typical MSTC66B3 installation



MSTCB

USP Stock No.	Ref. No.	Ga	L (in)	Min. Beam Dimensions (in) W	Min. Beam Dimensions (in) D	Fastener Schedule[5] Beam Face Qty	Beam Bottom Qty	Beam Type	Stud/Post[2,3,4] Qty	Stud/Post[2,3,4] Type	DF/SP Allowable Loads (Lbs.)[1] Tension 160%	S-P-F Allowable Loads (Lbs.)[1] Tension 160%	Code Ref.
MSTC48B3	MSTC48B3	14	44-7/8	3	9-1/4	12	4	10d	24	10d	4800	3905	110
MSTC66B3	MSTC66B3	14	62-7/8	3	11-1/4	14	4	10d	28	10d	5375	4250	

1) Allowable loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) The 3" wide beam may be double for 2x members.
3) Fewer fasteners in the stud/post than listed will reduce the capacity of the connection.
4) Nails in the stud/post to be installed symmetrically in pairs starting a minimum of 1-1/2" from the end.
5) **NAILS:** 10d nails are 0.148" dia. x 3" long.

HTW / KTS / LFTA / LTW / MTW Twist Straps

Twist straps tie framing members to resist tension forces.

LFTA6 – 16 gauge.

LTW – 18 gauge, light-capacity.

MTW – 16 gauge, medium-capacity.

KTS – 16 gauge, medium-capacity with angled twist.

HTW – 14 gauge, heavy-capacity.

Materials: See chart
Finish: G90 galvanizing
Options: See chart for Corrosion Finish Options
Codes: See page 10 for Code Reference Chart

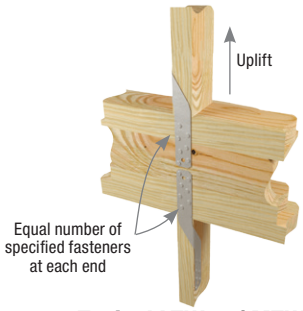
Typical LTW12 / MTW12 truss-to-top plate installation

Typical LFTA6 stud-to-top plate installation

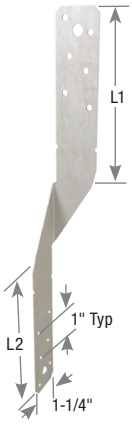
Typical LFTA6 truss-to-top plate installation

Installation:

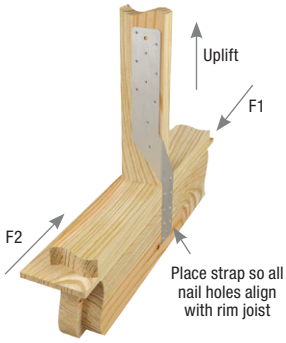
- Use all specified fasteners. See Product Notes, page 18.
- Consult I-Joist manufacturer for web stiffener requirements, and uplift limitations on joist and application.



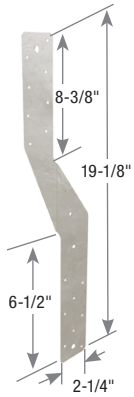
Typical LTW12 / MTW12 stud-to-rim joist installation



LTW12/MTW12

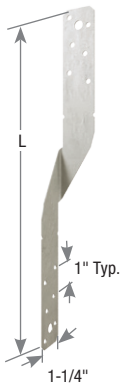


Typical LFTA6 stud-to-rim joist installation



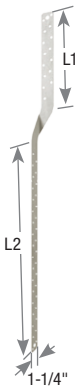
LFTA6

Typical MTW20 I-joist rafter installation

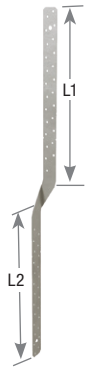


LTW18/MTW18 other models similar

Typical MTW30 installation



MTW30/ HTW30



MTW30C

KTS

Continued on next page

HTW / KTS / LFTA / LTW / MTW Twist Straps

MiTek®

USP Stock No.[5]	Ref. No.	Steel Gauge	Dimensions (in) W	L	L1	L2	Fastener Schedule[2,3,4,7] Qty	Type	DF/SP Allowable Uplift Loads (Lbs.)[1] 160%	S-P-F Allowable Uplift Loads (Lbs.)[1] 160%	Corrosion Finish	Code Ref.
LTW12	LTS12	18	1-1/4	12	4-1/2	4-1/2	12	10d x 1-1/2	775	650		14, R9, F7
							12	10d				
LTW16	LTS16	18	1-1/4	16	6-1/2	6-1/2	12	10d x 1-1/2	775	650		
							12	10d				
LTW18	LTS18	18	1-1/4	18	7-1/2	7-1/2	12	10d x 1-1/2	775	650		
							12	10d				
LTW20	LTS20	18	1-1/4	20	8-1/2	8-1/2	12	10d x 1-1/2	775	650		
							12	10d				
KTS9	TS9	16	1-1/4	9	--	--	8	16d	785	660		130
KTS12	TS12	16	1-1/4	11-1/2	--	--	10	16d	1065	895		
MTW12	MTS12	16	1-1/4	12	4-1/2	4-1/2	14	10d x 1-1/2	1195	1005		14, R9, F7
							14	10d				
MTW16	MTS16	16	1-1/4	16	6-1/2	6-1/2	14	10d x 1-1/2	1195	1005		
							14	10d				
KTS17	TS18	16	1-1/4	17-1/2	--	--	14	16d	1100	925		130
MTW18	MTS18	16	1-1/4	18	7-1/2	7-1/2	14	10d x 1-1/2	1195	1005		14, R9, F7
							14	10d				
LFTA6[6]	H6	16	2-1/4	19-1/8	8-3/8	6-1/2	16	8d	1210	1015		
							16	8d x1-1/2				
MTW20	MTS20	16	1-1/4	20	8-1/2	8-1/2	14	10d x 1-1/2	1195	1005		
							14	10d				
KTS24	TS22	16	1-1/4	21-3/4	--	--	18	16d	1650	1385		130
MTW24C	MTS24C	16	1-1/4	24	10-7/16	10-7/16	14	10d x 1-1/2	1195	1005		14, R9, F7
							14	10d				
MTW28C	--	16	1-1/4	28	12-7/16	12-7/16	14	10d x 1-1/2	1195	1005		
							14	10d				
MTW30	MTS30	16	1-1/4	30	8-5/16	18-9/16	14	10d x 1-1/2	1195	1005		
							14	10d				
MTW30C	MTS30C	16	1-1/4	30	13-7/16	13-7/16	14	10d x 1-1/2	1195	1005		
							14	10d				
HTW16	HTS16	14	1-1/4	16	5-1/8	5-1/8	16	10d x 1-1/2	1260	1060		
							16	10d				
HTW20	HTS20	14	1-1/4	20	7-1/8	7-1/8	24	10d x 1-1/2	1530	1285		
							20	10d				
HTW24	HTS24	14	1-1/4	24	9-1/8	9-1/8	24	10d x 1-1/2	1530	1285		
							20	10d				
HTW28	--	14	1-1/4	28	11-1/8	11-1/8	24	10d x 1-1/2	1530	1285		
							20	10d				
HTW30	HTS30	14	1-1/4	30	7	17-1/4	24	10d x 1-1/2	1530	1285		
							20	10d				
HTW30C	HTS30C	14	1-1/4	30	12-1/8	12-1/8	24	10d x 1-1/2	1530	1285		
							20	10d				

1) Allowable loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) 16d sinker nails may be substituted for 10d common nails with no reduction in load.
3) For 1-1/2" lumber, use 0.84 of table load for 10d nails and 0.77 for 16d nails.
4) Fasteners shall be distributed equally on each end of the connection.
5) C after the model number designates center twist as in MTW30C.
6) LFTA6: F1 is 700 lbs and F2 is 90 lbs. To achieve F1 lateral loads, three nails must be installed on each side on the strap located closest to the bend line. Lateral F1 and F2 load directions do not apply to roof truss-to-top plate installations.
7) **NAILS:** 8d x 1-1/2" nails are 0.131" dia. x 1-1/2" long, 8d nails are 0.131" dia. x 2-1/2" long, 10d x 1-1/2" nails are 0.148" dia. x 1-1/2" long, 10d nails are 0.148" dia. x 3" long, 16d nails are 0.162" dia. x 3-1/2" long.

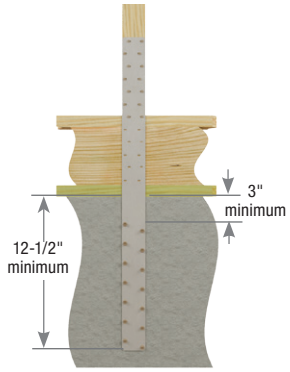
Corrosion Finish
- Stainless Steel
- Gold Coat
- HDG
- Triple Zinc

MSTAM / MSTCM Masonry Straps

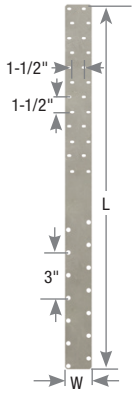
The MSTAM and MSTCM Strap Ties are designed to connect a wood structure above to a masonry wall below.

Materials: See chart
Finish: G90 galvanizing
Options: See chart for Corrosion Finish Options
Codes: See page 10 for Code Reference Chart

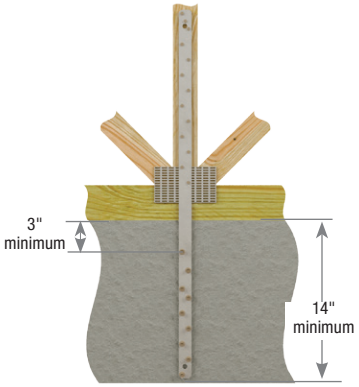
Installation:
• Use all specified fasteners. See Product Notes, page 18.



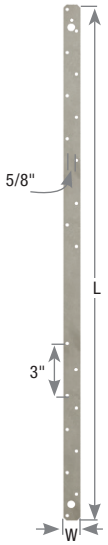
Typical MSTCM40 installation



MSTCM40



Typical MSTAM36 installation



MSTAM36

USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in) W	Dimensions (in) L	Fastener Schedule CMU[3] Qty	CMU[3] Type	Concrete[3] Qty	Concrete[3] Type	Nails[4] Qty	Nails[4] Type	DF/SP Allowable Tension Loads (Lbs.)[1,2] 160%	S-P-F Allowable Tension Loads (Lbs.)[1,2] 160%	Corrosion Finish	Code Ref.
MSTAM24	MSTAM24	18	1-1/4	24	5	1/4" Tapcon	5	1/4" Tapcon	9	10d	1545	1455		
MSTAM36	MSTAM36	16	1-1/4	36	8	1/4" Tapcon	8	1/4" Tapcon	13	10d	1945	1945		
MSTCM40	MSTCM40	16	3	40-1/4	14	1/4" Tapcon	14	1/4" Tapcon	24	10d	3665	3665		F15
									20	16d				
MSTCM60	MSTCM60	16	3	60	14	1/4" Tapcon	14	1/4" Tapcon	24	10d	3665	3665		
									20	16d				

1) Allowable loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) Allowable loads are derived from tests performed using hollow C90 concrete block.
3) Use ITW Buildex 1/4" x 2-1/4" Tapcon fasteners; or equal, installed in accordance with manufacturer's specification.
4) **NAILS:** 10d nails are 0.148" dia. x 3" long, 16d nails are 0.162" dia. x 3-1/2" long.
New products or updated product information are designated in **blue font.**

Corrosion Finish
- Stainless Steel
- Gold Coat
- HDG
- Triple Zinc

Clear Span Chart

USP Stock No.	Clear Span	Fastener Schedule CMU[1] Qty	CMU[1] Type	Concrete[1] Qty	Concrete[1] Type	Nails[3] Qty	Nails[3] Type	DF/SP Allowable Loads (Lbs.)[2] Tension 160%	S-P-F Allowable Loads (Lbs.)[2] Tension 160%
MSTAM36	16	5	1/4" Tapcon	5	1/4" Tapcon	8	10d	1305	1305
	18	5	1/4" Tapcon	5	1/4" Tapcon	7	10d	1305	1155
MSTCM40	16	12	1/4" Tapcon	12	1/4" Tapcon	16	16d	3135	3125
	18	12	1/4" Tapcon	12	1/4" Tapcon	14	16d	3135	2735
MSTCM60	16	14	1/4" Tapcon	12	1/4" Tapcon	20	16d	3660	3660
	18	14	1/4" Tapcon	12	1/4" Tapcon	20	16d	3660	3660

1) Use ITW Buildex 1/4" x 2-1/4" Tapcon fasteners; or equal, installed in accordance with manufacturer's specification.
2) Allowable loads are derived from tests performed using hollow C90 concrete block.
3) **NAILS:** 10d nails are 0.148" dia. x 3" long, 16d nails are 0.162" dia. x 3-1/2" long.

HTWM Masonry Twist Straps

The HTWM Twist Straps are designed for truss to concrete or masonry connections. Offer uplift resistance with variable heel height and positioning applications.

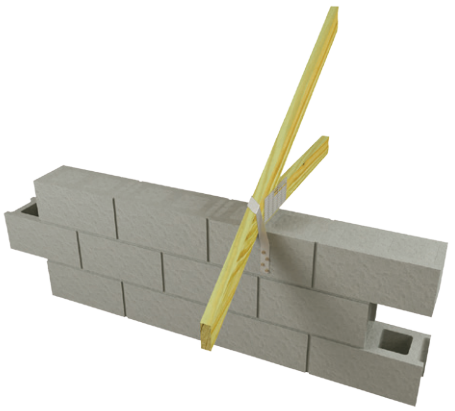
Materials: 14 gauge

Finish: G90 galvanizing

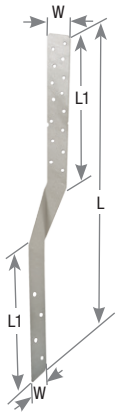
Codes: See page 10 for Code Reference Chart

Installation:

- Use all specified fasteners. See Product Notes pages 18.
- Strap may be attached to either side of grouted masonry or concrete wall with a minimum of (1) #5 horizontal rebar.
- Powers Wedge-Bolt+ screw anchors require Powers SDS Wedge-Bit drill bit. Wedge-Bits are not included and must be ordered seperately. Refer to page 34.
- Drill hole in concrete or masonry with manufacturer's prescribed 1/4" masonry drill. Install fasteners into concrete or masonry per manufacturer's specification.
- Twist straps do not have to be wrapped over the truss to achieve the allowable loads.
- **Moisture barrier may be required.**



Typical HTWM installation



HTWM

USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in)			Fastener Schedule				DF/SP Allowable Loads (Lbs.)	S-P-F Allowable Loads (Lbs.)	Code Ref.
						CMU/Concrete Wall[4]		Truss/Rafter				
			W	L	L1	Qty	Screw Anchor[2,3]	Qty	Type[5]	Uplift 160%[1]	Uplift 160%[1]	
HTWM16	HTSM16, MTSM16	14	1-1/4	16	5-3/4	4	1/4" x 1-3/4"	8	10d x 1-1/2	1225	1145	F26
HTWM20	HTSM20, MTSM20	14	1-1/4	20	7-3/4	4	1/4" x 1-3/4"	8	10d x 1-1/2	1225	1145	

1) Allowable loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) Use Powers 1/4" x 1-3/4" Wedge-Bolt+ **or DeWalt 1/4" x 1-3/4" Screw-Bolt+**; or equal, installed in accordance with manufacturer's specification.
3) **Powers 1/4" x 1-3/4" Wedge-Bolt+ or DeWalt 1/4" x 1-3/4" Screw-Bolt+ are not supplied with HTWM straps. See page 34 for anchor information.**
4) Grout or concrete compressive strength shall be 2,500 psi or greater at 28 days.
5) **NAILS:** 10d x 1-1/2 nails are 0.148" dia. x 1-1/2" long.

KHSA / KSA Connector Straps

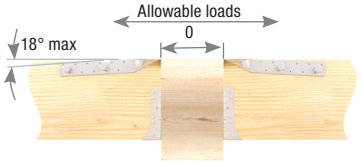
KSA – 12 gauge seismic horizontal tension tie.

KHSA – 3 gauge. Designed for installation with bolts only.

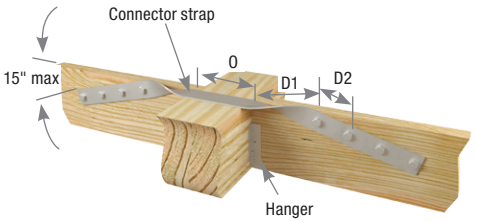
Materials: See chart

Finish: KSA – G90 galvanizing;
KHSA – USP primer

Codes: See page 10 for Code Reference Chart



Typical KSA installation

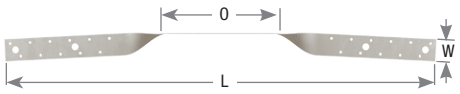


Typical KHSA4 installation

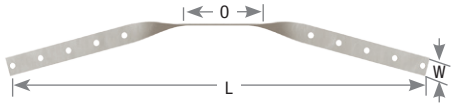
Typical KSA installation

Continued on next page

KHSA / KSA Connector Straps



KSA36



KHSA5

Installation:

- Use all specified fasteners. See Product Notes, page 18.
- KSA36 can be field adjusted for smaller beam widths.
- Bolts must be ordered separately. See page 25 for available sizes.

USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in)					Fastener Schedule[3,4]		DF/SP Allowable Tension Loads (Lbs.)[1,2]	Code Ref.
			W	L	O	D1	D2	Qty	Type	160%	
KSA36	SA36	12	2-1/16	37-7/8	9	6-11/16	4-1/2	22	16d	2620	14, R9, F7
								4	1/2	2015	
KHSA1	--	3	3	30	9	10	--	2	3/4	2435	
KHSA2	--	3	3	38-1/2	9	10	4-1/2	4	3/4	4810	
KHSA3	--	3	3	47	9	10	4-1/2	6	3/4	7005	
KHSA4	--	3	3	56	9	10	4-1/2	8	3/4	8920	
KHSA5	--	3	3-1/2	64-1/2	9	10	4-1/2	10	3/4	10785	

1) Allowable loads are based on the use of either nails or bolts; nail and bolt values cannot be combined.
2) Bolt values assume wood member thickness of 3-1/2" with bolts in single shear.
3) Bolts shall be loaded parallel to grain.
4) **NAILS:** 16d nails are 0.162" dia. x 3-1/2" long.

KVB / KVBI Knee Braces

KVB – Installs with WS3 wood screws for higher load capacity. It can be retrofit into existing framing.

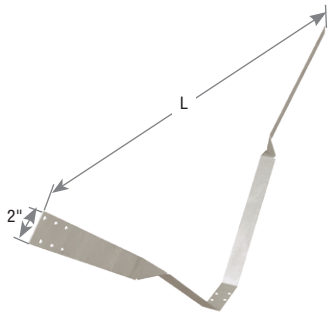
KVBI – Installs with common nails. Designed to be used with I-Joist purlins.

Materials: 12 gauge
Finish: G90 galvanizing
Codes: See page 10 for Code Reference Chart

Installation:

- Use all specified fasteners. See Product Notes, page 18.
- WS3 wood screws are included with KVB shipments.
- Install flanges at angles of 45° or more to the vertical plane to assure proper lateral resistance.

Typical KVB7 installation



KVB5

USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in)		Fastener Schedule[1,2]				DF/SP Allowable Tension Loads (Lbs.)			Code Ref.
					Beam		Joist					
			Beam Depth	L	Qty	Type	Qty	Type	100%	125%	160%	
KVB5	VB5	12	10 - 15	60	4	WS3	12	WS3	1800	1800	1800	14, R9, F7
KVB7	VB7	12	15 - 22-1/2	84	4	WS3	12	WS3	1800	1800	1800	
KVB8	VB8	12	22-1/2 - 28-1/2	96	4	WS3	12	WS3	1800	1800	1800	
KVB10	VB10	12	28-1/2 - 36	120	4	WS3	12	WS3	1800	1800	1800	
KVB12	VB12	12	36 - 42	144	4	WS3	12	WS3	1800	1800	1800	
KVBI5	--	12	10 - 15	60	4	10d	12	10d	760	955	1220	
KVBI7	--	12	15 - 22-1/2	84	6	10d	12	10d	760	955	1220	
KVBI8	--	12	22-1/2 - 28-1/2	96	6	10d	12	10d	760	955	1220	
KVBI10	--	12	28-1/2 - 36	120	6	10d	12	10d	760	955	1220	
KVBI12	--	12	36 - 42	144	6	10d	12	10d	760	955	1220	

1) WS3 Wood Screws are 1/4" x 3" long and are included with specified KVB models.
2) **NAILS:** 10d nails are 0.148" dia. x 3" long.

Hanger Selector Guide

Hanger Type	USP Series	Steel Gauge	Style					Supported / Joist Member								Supporting / Header Member						Allowable Loads (Lbs.) Range	
																						Header Material	
			Face Mount	Top Mount	Sloped / Skewed	Formed	Welded	Beam/Joist/Rafter (rect shapes)	I-Joist	Truss (2x)	Floor Truss 4x	Nailer	Glulam	Wall	Post	Rim Joist	Beam/Joist/Rafter (rect shapes)	I-Joist	Truss (2x)	Floor Truss 4x	Glulam	Stringer	Masonry 100%	DF/SP 100%
Face Mount	JL	20	•			•		•		•			•				•		•				--	470 - 1,960
	FB	18	•			•		•		•			•		•	•	•		•				--	330
	JUS	18	•			•		•		•			•				•	•	•	•			--	675 - 2,420
	CSH	18	•			•		•		•							•		•			•	--	890
	MUS	18	•			•		•		•			•			•	•	•	•	•	•		--	1,285 - 1,710
	JLIF	18	•			•		•		•					•		•		•				--	465 - 1,520
	SUH	16	•			•		•		•			•				•		•	•			--	500 - 2,645
	HUS	16	•			•		•		•			•			•	•		•		•		--	2,760 - 5,455
		14																					--	850 - 2,710
	HD	14	•			•		•		•			•			•	•	•	•	•	•		--	**615 - 5,195**
	ADTT	14	•			•								•	•	•	•		•				--	790 - 850
	DTB	14	•			•		•		•			•				•		•				--	1,835
	HDQIF	14	•			•		•		•			•		•	•	•	•	•	•	•		--	3,340 - 5,605
Top Mount	HL	18		•		•		•					•			•	•		•	•	•		--	1,270 - 1,590
	JH	18	•	•		•		•		•			•				•		•				--	1,900 - 2,540
	KLB	14		•		•		•					•				•		•		•		--	1,670 - 2,140
	FWH	14		•		•	•	•		•	•	•	•	•		•	•	•	•	•	•		--	**2,045 - 2,400**
	FWHBP	12		•		•	•				•			•			•	•	•	•	•		--	5,705
	KB	12		•		•		•					•				•		•	•	•		--	4,075 - 4,795
	HDO	12		•		•		•					•				•		•	•	•		--	2,170 - 5,715
	SW	12		•			•	•				•	•				•		•	•			--	2,315 - 2,520
	SWH	7 - Top Flange, 12 - Stirrup		•			•	•				•	•				•		•	•			--	3,305
	KHW	3 - Top Flange, 10 - Stirrup		•			•	•				•	•				•		•	•	•		--	5,295 - 5,535
Slope and Skew	RR	18		•	•	•		•		•	•		•				•		•				--	365
	LS	18	•		•	•		•		•			•				•		•				--	785 - 1,235
	LSSH	18	•		•	•		•	•								•		•				--	**720** - 1,180
		16																					--	1,825 - 2,590
	SKH	16	•		•	•		•		•			•				•		•	•			--	510 - **2,240**
		14																					--	1,410 - 3,100
	SKHH	14	•		•	•		•		•			•				•		•	•			--	**1,850 - 4,005**
Panel and Purlin	JPF	20		•		•		•		•			•				•		•				--	1,070 - 1,275
	DTUS	20				•		•		•							•		•				--	480 - 570
	TUS	20				•		•		•	•		•				•		•				--	480 - 570
	KF	18		•		•		•		•			•			•	•			•			--	695 - 810
	PHG	18		•		•		•		•			•			•	•		•				--	580 - 650
	FHD	18		•		•		•		•							•		•				--	960
	JDS	18		•		•		•		•			•			•	•		•				--	480 - 1,575
Masonry	MPH	12		•			•							•			•	•	•	•	•		2,585 - 4,280	--
	LGUM	12	•											•			•			•	•		6,065 - 9,905	--
	HGUM	7	•											•			•		•	•	•		16,680	--
	HWUH	1/4" - Top Flange, 7 - Stirrup		•			•	•			•		•	•			•		•	•	•		**3,060 - 5,265**	--
	UHM	1/4"	•				•							•			•		•	•	•		3,550 - 6,380	--
	NFM	3/8" - Top Flange, 7 - Stirrup		•			•							•			•		•	•	•		7,130 - 10,310	--

• Represents common applications and product configurations. Consult USP for additional applications and/or optional product configurations.
New products or updated product information are designated in **blue font**.

JL / JLIF / SUH Face Mount Joist Hangers

USP offers a wide variety of light-gauge face mount joist hangers to accommodate application and installation preferences.

JL series – 20 gauge, 2x joist hangers.

JLIF series – 18 gauge, 2x joist hangers.

SUH series – 16 gauge steel construction for more demanding applications and light truss support.

Materials: See chart

Finish: G90 galvanizing; JLIF–G-185 galvanizing

Options: See chart for Corrosion Finish Options. See SUH Specialty Options Chart.

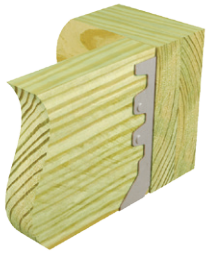
Codes: See page 10 for Code Reference Chart

Installation:

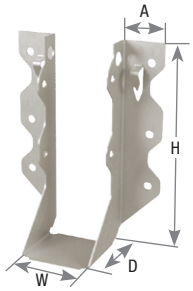
- Use all specified fasteners. See Product Notes, page 18.

Typical JL26 installation

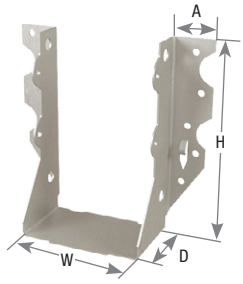
Typical SUH26-2 installation



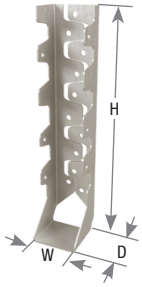
Typical JLIF installation



JL26



SUH26-2



JLIF

SUH Specialty Options Chart

Refer to Specialty Options pages 245-246 for additional details.

Option[4]	Skewed[1,3]	Sloped Seat[2,3]	Sloped / Skewed[1,2,3]
Range	1˚ to 67-1/2˚ when width is 1-3/4" or less. 1˚ to 50˚ on all others.	1˚ to 45˚	See Sloped Seat and Skewed
Allowable Loads	100% of table load. 75% of uplift load on skews greater than 15˚.	100% of table load	80% of table load. 75% of uplift load on skews greater than 15˚.
Ordering	Add *SK* angle required, right *(R)* or left *(L),* and square cut (*SQ*) or bevel cut (*BV*) to product number. Ex. SUH210_SK45R_SQ	Add *SL,* slope required, and up *(U)* or down *(D),* to product number. Ex. SUH210_SL30D	See Sloped Seat and Skewed. Ex. SUH210_SK45R_SQ_SL30D

1) Skewed hangers with skews greater than 15° may have all joist nailing on outside flange.
2) Sloped or sloped / skewed hangers with slopes greater than 15° may have additional joist nails.
3) For skewed hangers, the required cut type (square or bevel) of joist member may vary based on skew angle and width of hanger. Some square cut hangers will require custom pricing due to welded back plate.
4) SUH option hangers may be manufactured as welded products to achieve listed loads. Welded products have a primer finish.

HUS / JUS / MUS Slant Nail Face Mount Joist Hangers

The HUS, JUS & MUS hanger series offers double shear nailing. USP's dimple allows for 30° to 45° nailing through the joist into the header resulting in higher loads and less nailing. Slant nailing also eliminates the need for shorter joist nails in 2x applications.

Materials: JUS - 18 gauge; MUS - 18 gauge; HUS - 14 or 16 gauge

Finish: G90 galvanizing

Options: See Chart for Corrosion Finish Options. See HUS Specialty Options Chart.

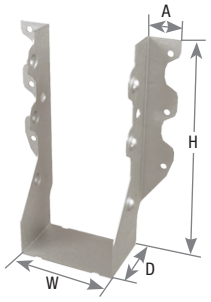
Codes: See page 10 for Code Reference Chart

Installation:

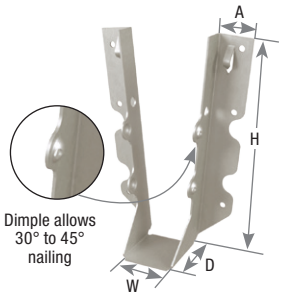
- Use all specified fasteners. See Product Notes, page 18.
- Joist nails must be driven at a 30° to 45° angle through the joist or truss into the header to achieve listed loads. **Standard length "double shear" nails must be used to achieve listed load values.**
- JUS & MUS - 16d sinkers (0.148" x 3-1⁄4") may be used where 10d commons are specified with no load reduction.

Typical HUS46 installation

Typical JUS26 installation

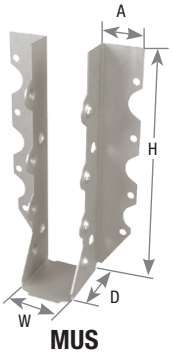


HUS28-2

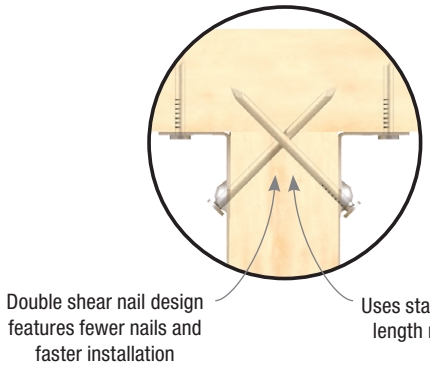


JUS28

AVAILABLE IN GOLD COAT



MUS



HUS Specialty Options Chart

Refer to Specialty Options pages 245-246 for additional details.

Option	Inverted Flange
Range	Not available in widths less than 2-1/4".
Allowable Loads	100% of table load. 65% of table load when nailing into the support members end grain.
Ordering	Add *IF* to product number. Ex. HUS410_IF

Typical HUS410IF inverted flange installation

HD Heavy-Duty Face Mount Hangers

HD hangers are heavy-duty face mount hangers that can be used to support headers, joists, and trusses.

Materials: 14 gauge

Finish: G90 galvanizing

Options: See chart for Corrosion Finish Options. All nominal lumber sizes are available rough/full size lumber. See Specialty Options Chart.

Codes: See page 10 for Code Reference Chart

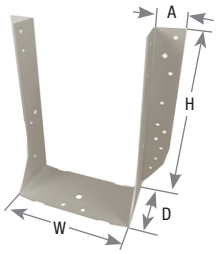
Typical HD610 installation

Typical HD210-2 installation

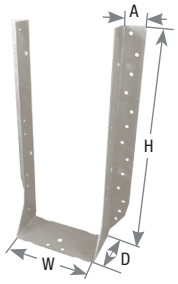
Typical HD3212 glulam installation

Installation:

- Use all specified fasteners. See Product Notes, page 18.
- **HD Min** – Fill all round nail holes.
- **HD Max** – Fill all round and diamond nail holes.



HD610



HD51135

Specialty Options Chart

Refer to Specialty Options pages 245-246 for additional details.

Option	Skewed[1,3]	Sloped Seat[2,3]	Sloped / Skewed[1,2,3]	Inverted Flange
Range	1˚ to 67-1/2˚ when width is 1-3/4" or less. 1˚ to 50˚ on all others.	1˚ to 45˚	See Sloped Seat and Skewed	2-1/4" widths or greater **(Widths < 2-1/4" may be available as a Custom, contact USP)**
Allowable Loads	100% of table load. 75% of uplift load on skews greater than 15˚.	100% of table load	80% of table load. 75% of uplift load on skews greater than 15˚.	100% of table load. 65% of table load when nailing into the support members end grain.
Ordering	Add *SK,* angle required, right *(R)* or left *(L),* and square cut *(SQ)* or bevel cut *(BV)* to product number. Example: HD410_SK45R_SQ	Add *SL,* slope required, and up *(U)* or down *(D),* to product number. Example: HD410_SL30D	See Sloped Seat and Skewed Example: HD410_SK45R_SQ_SL30D	Add *IF,* to product number. Example: HD410_IF

1) Skewed hangers with skews greater than 15° may have all joist nailing on outside flange.
2) Sloped or sloped / skewed hangers with slopes greater than 15° may have additional joist nails.
3) For skewed hangers, the required cut type (square or bevel) of joist member may vary based on skew angle and width of hanger. Some square cut hangers will require custom pricing due to welded back plate.
4) HD option hangers may be manufactured as welded products to achieve listed loads. Welded products have a primer finish.

New products or updated product information are designated in **blue font**.

Typical HD210-2IF inverted flange installation

HDQIF Inverted Flange Face Mount Hangers

HDQIF inverted flange hangers install with wood screws eliminating the need to drill bolt holes simplifying installation.

Materials: 14 gauge

Finish: G90 galvanizing

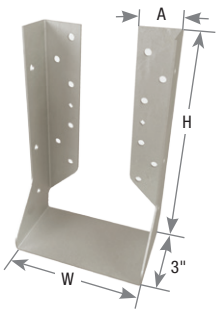
Options: See chart for Corrosion Finish Options

Codes: See page 10 for Code Reference Chart

Installation:

- Use all specified fasteners. See Product Notes, page 18.
- WS15 and WS3 Wood Screws are supplied with HDQIF hangers.

Typical HDQIF installation



HDQIF

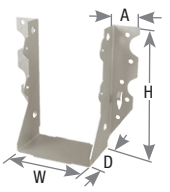
Face Mount Hanger Charts

MiTek®

Joist Size	USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in) W	H	D	A	Min/ Max	Fastener Schedule[2,4] Header Qty	Header Nail	Joist Qty	Joist Nail	DF/SP Allowable Loads (Lbs.)[3] Floor 100%	Roof 115%	Roof 125%	Uplift[1] 160%	Corrosion Finish	Code Ref.
2 x 4	JL24	LU24	20	1-9/16	3	1-1/2	15/16	--	4	10d	2	10d x 1-1/2	470	540	580	320		5, R5, F2
									4	16d	2	10d x 1-1/2	560	640	695	320		
	JL24IF-TZ	--	18	1-9/16	3-1/8	1-1/2	--	--	4	10d HDG	2	10d x 1-1/2 HDG	465	535	580	280		31, R1, F32
									4	16d HDG	2	10d x 1-1/2 HDG	550	615	615	280		
	JUS24	LUS24	18	1-9/16	3-1/8	1-3/4	1	--	4	10d	2	10d	675	775	835	510		
	SUH24	U24	16	1-9/16	3-1/4	2	1-3/16	--	4	10d	2	10d x 1-1/2	500	560	605	380		5, R5, F2
									4	16d	2	10d x 1-1/2	590	665	720	380		
	HD26	HU26	14	1-9/16	3-1/2	**2-1/2**	1-1/8	**Min**	**4**	**16d**	**2**	**10d x 1-1/2**	**615**	**695**	**745**	**365**		
								Max			**4**		**615**	**695**	**745**	**595**		
2 x 6	JL26	LU26	20	1-9/16	4-3/4	1-1/2	15/16	--	6	10d	4	10d x 1-1/2	710	805	870	650		
									6	16d	4	10d x 1-1/2	840	960	1045	650		
	JL26IF-TZ	LUC26Z	18	1-9/16	4-1/2	1-1/2	--	--	6	10d HDG	4	10d x 1-1/2 HDG	695	800	870	730		31, R1, F32
									6	16d HDG	4	10d x 1-1/2 HDG	830	950	1035	730		
	JUS26	LUS26	18	1-9/16	4-13/16	1-3/4	1	--	4	10d	4	10d	870	1000	1080	1115		5, R5, F2
	MUS26	MUS26	18	1-9/16	5-1/16	2	1	--	6	10d	6	10d	1285	1475	1605	865		31, R1, F32
	SUH26	U26	16	1-9/16	5-1/8	2	1-3/16	--	6	10d	4	10d x 1-1/2	750	840	910	755		5, R5, F2
									6	16d	4	10d x 1-1/2	880	1000	1080	755		
	HUS26	HUS26	16	1-5/8	5-7/16	3	2	--	14	16d	6	16d	2760	3140	3345	1925		
	HD26	HU26	14	1-9/16	3-1/2	**2-1/2**	1-1/8	**Min**	**4**	**16d**	**2**	**10d x 1-1/2**	**615**	**695**	**745**	**365**		
								Max			**4**		**615**	**695**	**745**	**595**		
	HD28	HU28	14	1-9/16	5-1/4	**2-1/2**	1-1/8	**Min**	**8**	**16d**	**4**	**10d x 1-1/2**	**1230**	**1390**	**1490**	**780**		
								Max			**6**		**1230**	**1390**	**1490**	**825**		
2 x 8	JL26	LU26	20	1-9/16	4-3/4	1-1/2	15/16	--	6	10d	4	10d x 1-1/2	710	805	870	650		
									6	16d	4	10d x 1-1/2	840	960	1045	650		
	JL26IF-TZ	LUC26Z	18	1-9/16	4-1/2	1-1/2	--	--	6	10d HDG	4	10d x 1-1/2 HDG	695	800	870	730		31, R1, F32
									6	16d HDG	4	10d x 1-1/2 HDG	830	950	1035	730		
	JL28	LU28	20	1-9/16	6-3/8	1-1/2	15/16	--	10	10d	6	10d x 1-1/2	1180	1295	1295	855		5, R5, F2
									10	16d	6	10d x 1-1/2	1400	1600	1740	855		
	JL28IF-TZ	--	18	1-9/16	6-1/8	1-1/2	--	--	8	10d HDG	4	10d x 1-1/2 HDG	930	1065	1160	730		31, R1, F32
									8	16d HDG	4	10d x 1-1/2 HDG	1105	1215	1215	730		
	JUS26	LUS26	18	1-9/16	4-13/16	1-3/4	1	--	4	10d	4	10d	870	1000	1080	1115		5, R5, F2
	JUS28	LUS28	18	1-9/16	6-5/8	1-3/4	1	--	6	10d	4	10d	1110	1270	1375	1115		
	MUS26	MUS26	18	1-9/16	5-1/16	2	1	--	6	10d	6	10d	1285	1475	1605	865		31, R1, F32
	MUS28	MUS28	18	1-9/16	7-1/16	2	1	--	8	10d	8	10d	1710	1970	2140	1230		
	SUH26	U26	16	1-9/16	5-1/8	2	1-3/16	--	6	10d	4	10d x 1-1/2	750	840	910	755		5, R5, F2
									6	16d	4	10d x 1-1/2	880	1000	1080	755		
	SUH28	--	16	1-9/16	6-5/8	2	1-3/16	--	8	10d	6	10d x 1-1/2	1000	1120	1210	800		
									8	16d	6	10d x 1-1/2	1175	1335	1440	800		
	HUS26	HUS26	16	1-5/8	5-7/16	3	2	--	14	16d	6	16d	2760	3140	3345	1925		
	HUS28	HUS28	16	1-5/8	7-3/16	3	2	--	22	16d	8	16d	4170	4345	4345	2570		
	HD28	HU28	14	1-9/16	5-1/4	**2-1/2**	1-1/8	**Min**	**8**	**16d**	**4**	**10d x 1-1/2**	**1230**	**1390**	**1490**	**780**		
								Max			**6**		**1230**	**1390**	**1490**	**825**		
	HD210	HU210	14	1-9/16	7-3/16	**2-1/2**	1-1/8	**Min**	**10**	**16d**	**4**	**10d x 1-1/2**	**1540**	**1735**	**1865**	**780**		
								Max	**14**		**6**		**2155**	**2430**	**2610**	**1170**		

1) Uplift loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) 16d sinkers (0.148 dia. x 3-1/4" long) may be used at 0.84 of the table load where 16d commons are specified. This does not apply to JUS, HUS, MUS slant nail hangers.
3) For JUS, HUS, and MUS hangers: Nails must be driven at a 30° to 45° angle through the joist or truss into the header to achieve the table loads.
4) **NAILS:** 10d x 1-1/2" nails are 0.148" dia. x 1-1/2" long, 10d nails are 0.148" dia. x 3" long, 16d nails are 0.162" dia. x 3-1/2" long.
New products or updated product information are designated in **blue font.**

Corrosion Finish Stainless Steel Gold Coat HDG Triple Zinc



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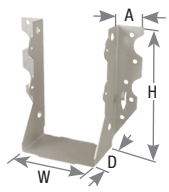
Face Mount Hanger Charts

MiTek®

Joist Size	USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in) W	H	D	A	Min/ Max	Fastener Schedule[2,4] Header Qty	Header Nail	Joist Qty	Joist Nail	DF/SP Allowable Loads (Lbs.)[3] Floor 100%	Roof 115%	Roof 125%	Uplift[1] 160%	Corrosion Finish	Code Ref.
2 x 10	JL28	LU28	20	1-9/16	6-3/8	1-1/2	15/16	--	10	10d	6	10d x 1-1/2	1180	1295	1295	855		5, R5, F2
									10	16d	6	10d x 1-1/2	1400	1600	1740	855		
	JL28IF-TZ	--	18	1-9/16	6-1/8	1-1/2	--	--	8	10d HDG	4	10d x 1-1/2 HDG	930	1065	1160	730		31, R1, F32
									8	16d HDG	4	10d x 1-1/2 HDG	1105	1215	1215	730		
	JL210	LU210	20	1-9/16	8-1/4	1-1/2	15/16	--	14	10d	8	10d x 1-1/2	1650	1875	1875	1100		5, R5, F2
									14	16d	8	10d x 1-1/2	1960	1965	1965	1100		
	JL210IF-TZ	LUC210Z	18	1-9/16	8-1/4	1-1/2	--	--	11	10d HDG	6	10d x 1-1/2 HDG	1275	1465	1595	1095		31, R1, F32
									11	16d HDG	6	10d x 1-1/2 HDG	1520	1745	1900	1095		
	JUS28	LUS28	18	1-9/16	6-5/8	1-3/4	1	--	6	10d	4	10d	1110	1270	1375	1115		5, R5, F2
	JUS210	LUS210	18	1-9/16	7-3/4	1-3/4	1	--	8	10d	4	10d	1350	1545	1670	1115		
	MUS28	MUS28	18	1-9/16	7-1/16	2	1	--	8	10d	8	10d	1710	1970	2140	1230		31, R1, F32
	SUH28	--	16	1-9/16	6-5/8	2	1-3/16	--	8	10d	6	10d x 1-1/2	1000	1120	1210	800		5, R5, F2
									8	16d	6	10d x 1-1/2	1175	1335	1440	800		
	SUH210	U210	16	1-9/16	8	2	1-3/16	--	10	10d	6	10d x 1-1/2	1250	1405	1515	1135		
									10	16d	6	10d x 1-1/2	1470	1670	1800	1135		
	HUS28	HUS28	16	1-5/8	7-3/16	3	2	--	22	16d	8	16d	4170	4345	4345	2570		
	HUS210	HUS210	16	1-5/8	9-3/16	3	2	--	30	16d	10	16d	5455	5510	5510	3205		
	HD210	HU210	14	1-9/16	7-3/16	2-1/2	1-1/8	Min	10	16d	4	10d x 1-1/2	1540	1735	1865	780		
								Max	14		6		2155	2430	2610	1170		
2 x 12	JL210	LU210	20	1-9/16	8-1/4	1-1/2	15/16	--	14	10d	8	10d x 1-1/2	1650	1875	1875	1100		5, R5, F2
									14	16d	8	10d x 1-1/2	1960	1965	1965	1100		
	JL210IF-TZ	LUC210Z	18	1-9/16	8-1/4	1-1/2	--	--	11	10d HDG	6	10d x 1-1/2 HDG	1275	1465	1595	1095		31, R1, F32
									11	16d HDG	6	10d x 1-1/2 HDG	1520	1745	1900	1095		
	JUS210	LUS210	18	1-9/16	7-3/4	1-3/4	1	--	8	10d	4	10d	1350	1545	1670	1115		
	SUH210	U210	16	1-9/16	8	2	1-3/16	--	10	10d	6	10d x 1-1/2	1250	1405	1515	1135		
									10	16d	6	10d x 1-1/2	1470	1670	1800	1135		
	HUS210	HUS210	16	1-5/8	9-3/16	3	2	--	30	16d	10	16d	5455	5510	5510	3205		
	HD210	HU210	14	1-9/16	7-3/16	2-1/2	1-1/8	Min	10	16d	4	10d x 1-1/2	1540	1735	1865	780		
								Max	14		6		2155	2430	2610	1170		
	HD212	HU212	14	1-9/16	9-1/4	2-1/2	1-1/8	Min	14	16d	6	10d x 1-1/2	2155	2430	2610	1170		
								Max	20		10		3080	3475	3725	1625		
	HD212IF	HUC212	14	1-9/16	9-1/4	2	--	--	16	16d	6	10d x 1-1/2	2255	2595	2730	1065		
2 x 14	SUH214	U214	16	1-9/16	10	2	1-1/8	--	12	10d	8	10d x 1-1/2	1500	1685	1815	1330		5, R5, F2
									12	16d	8	10d x 1-1/2	1765	2000	2160	1330		
	HD212	HU212	14	1-9/16	9-1/4	2-1/2	1-1/8	Min	14	16d	6	10d x 1-1/2	2155	2430	2610	1170		
								Max	20		10		3080	3475	3725	1625		
	HD212IF	HUC212	14	1-9/16	9-1/4	2	--	--	16	16d	6	10d x 1-1/2	2255	2595	2730	1065		
	HD214	HU214	14	1-9/16	10-13/16	2-1/2	1-1/8	Min	16	16d	6	10d x 1-1/2	2465	2780	2980	1170		
								Max	22		10		3390	3820	3930	1280		
2 x 16	SUH214	U214	16	1-9/16	10	2	1-1/8	--	12	10d	8	10d x 1-1/2	1500	1685	1815	1330		5, R5, F2
									12	16d	8	10d x 1-1/2	1765	2000	2160	1330		
	HD212	HU212	14	1-9/16	9-1/4	2-1/2	1-1/8	Min	14	16d	6	10d x 1-1/2	2155	2430	2610	1170		
								Max	20		10		3080	3475	3725	1625		
	HD212IF	HUC212	14	1-9/16	9-1/4	2	--	--	16	16d	6	10d x 1-1/2	2255	2595	2730	1065		
	HD214	HU214	14	1-9/16	10-13/16	2-1/2	1-1/8	Min	16	16d	6	10d x 1-1/2	2465	2780	2980	1170		
								Max	22		10		3390	3820	3930	1280		
	HD216	HU216	14	1-9/16	12-3/4	2-1/2	1-1/8	Min	18	16d	8	10d x 1-1/2	2770	3125	3355	1560		
								Max	26		12		3930	4125	4250	2045		

1) Uplift loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) 16d sinkers (0.148 dia. x 3-1/4" long) may be used at 0.84 of the table load where 16d commons are specified. This does not apply to JUS, HUS, MUS slant nail hangers.
3) For JUS, HUS, and MUS hangers: Nails must be driven at a 30° to 45° angle through the joist or truss into the header to achieve the table loads.
4) **NAILS:** 10d x 1-1/2" nails are 0.148" dia. x 1-1/2" long, 10d nails are 0.148" dia. x 3" long, 16d nails are 0.162" dia. x 3-1/2" long.
New products or updated product information are designated in **blue font.**

Corrosion Finish Stainless Steel Gold Coat HDG Triple Zinc



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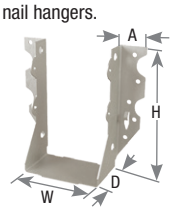
Face Mount Hanger Charts

MiTek®

Joist Size	USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in) W	H	D	A	Fastener Schedule[2,4,5] Min/ Max	Header Qty	Header Nail	Joist Qty	Joist Nail	DF/SP Allowable Loads (Lbs.)[3] Floor 100%	Roof 115%	Roof 125%	Uplift[1] 160%	Corrosion Finish	Code Ref.
(2) 2 x 4	JUS24-2	LUS24-2	18	3-1/8	3-7/16	2	1	--	4	16d	2	16d	805	920	965	325		
	SUH24-2	U24-2	16	3-1/8	3-1/8	2	1-1/8	--	6	10d	2	10d	750	840	910	380		
									6	16d	2	10d	880	1000	1080	380		
	HD24-2	HU24-2	14	3-1/8	3-1/2	2-1/2	1-1/8	--	4	16d	2	10d	**615**	**695**	**745**	**385**		
	HUS24-2	--	14	3-1/8	3-7/16	2	1	--	4	16d	2	16d	850	965	1040	495		
	HUS24-2IF	--	14	3-1/8	3-7/16	2	1	--	4	16d	2	16d	850	965	1040	495		
(2) 2 x 6	JUS26-2	LUS26-2	18	3-1/8	5-1/4	2	1	--	4	16d	4	16d	1040	1185	1220	1355		
	SUH26-2	U26-2	16	3-1/8	5-1/16	2	1-1/8	--	10	10d	4	10d	1250	1405	1515	755		
									10	16d	4	10d	1470	1670	1800	755		
	HD24-2	HU24-2	14	3-1/8	3-1/2	2-1/2	1-1/8	--	4	16d	2	10d	**615**	**695**	**745**	**385**		
	HUS26-2	HUS26-2	14	3-1/8	5-1/4	2	1	--	4	16d	4	16d	1085	1235	1300	1155		
	HUS26-2IF	HUSC26-2	14	3-1/8	5-1/4	2	1	--	4	16d	4	16d	1085	1235	1300	1155		
	HD26-2	HU26-2	14	3-1/8	**5-1/4**	2-1/2	1-1/8	**Min**	**8**	**16d**	**4**	**10d**	**1230**	**1390**	**1490**	**780**		
								Max	**12**		**6**		**1850**	**2085**	**2235**	**1170**		
	HD26-2IF	HUC26-2	14	3-1/8	**5-1/4**	2-1/2	--	**Min**	**8**	**16d**	**4**	**10d**	**1230**	**1390**	**1490**	**780**		
								Max	**12**		**6**		**1850**	**2085**	**2235**	**1170**		
(2) 2 x 8	JUS26-2	LUS26-2	18	3-1/8	5-1/4	2	1	--	4	16d	4	16d	1040	1185	1220	1355		
	JUS28-2	LUS28-2	18	3-1/8	7-1/8	2	1	--	6	16d	4	16d	1325	1510	1645	1355		
	SUH26-2	U26-2	16	3-1/8	5-1/16	2	1-1/8	--	10	10d	4	10d	1250	1405	1515	755		
									10	16d	4	10d	1470	1670	1800	755		
	SUH28-2	--	16	3-1/8	6-1/4	2	1-1/8	--	12	10d	4	10d	1500	1685	1815	755		
									12	16d	4	10d	1765	1915	1915	755		
	HUS26-2	HUS26-2	14	3-1/8	5-1/4	2	1	--	4	16d	4	16d	1085	1235	1300	1155		
	HUS26-2IF	HUSC26-2	14	3-1/8	5-1/4	2	1	--	4	16d	4	16d	1085	1235	1300	1155		
	HUS28-2	HUS28-2	14	3-1/8	7-1/8	2	1	--	6	16d	6	16d	1625	1850	1995	1810		
	HUS28-2IF	HUSC28-2	14	3-1/8	7-1/8	2	1	--	6	16d	6	16d	1625	1850	1995	1810		5, R5, F2
	HD26-2	HU26-2	14	3-1/8	**5-1/4**	2-1/2	1-1/8	**Min**	**8**	**16d**	**4**	**10d**	**1230**	**1390**	**1490**	**780**		
								Max	**12**		**6**		**1850**	**2085**	**2235**	**1170**		
	HD26-2IF	HUC26-2	14	3-1/8	**5-1/4**	2-1/2	--	**Min**	**8**	**16d**	**4**	**10d**	**1230**	**1390**	**1490**	**780**		
								Max	**12**		**6**		**1850**	**2085**	**2235**	**1170**		
	HD28-2	HU28-2	14	3-1/8	7-1/8	2-1/2	1-1/8	**Min**	**10**	**16d**	**4**	**10d**	**1540**	**1735**	**1865**	**780**		
								Max	**14**		**6**		**2155**	**2430**	**2610**	**1170**		
	HD28-2IF	HUC28-2	14	3-1/8	7-1/8	2-1/2	--	**Min**	**10**	**16d**	**4**	**10d**	**1540**	**1735**	**1865**	**780**		
								Max	**14**		**6**		**2155**	**2430**	**2610**	**1170**		
(2) 2 x 10	JUS28-2	LUS28-2	18	3-1/8	7-1/8	2	1	--	6	16d	4	16d	1325	1510	1645	1355		
	JUS210-2	LUS210-2	18	3-1/8	9-1/8	2	1	--	8	16d	6	16d	1845	2105	2290	1980		
	SUH28-2	--	16	3-1/8	6-1/4	2	1-1/8	--	12	10d	4	10d	1500	1685	1815	755		
									12	16d	4	10d	1765	1915	1915	755		
	SUH210-2	U210-2	16	3-1/8	8-9/16	2	1-1/8	--	16	10d	6	10d	2000	2245	2420	1135		
									16	16d	6	10d	2350	2670	2880	1135		
	HUS28-2	HUS28-2	14	3-1/8	7-1/8	2	1	--	6	16d	6	16d	1625	1850	1995	1810		
	HUS28-2IF	HUSC28-2	14	3-1/8	7-1/8	2	1	--	6	16d	6	16d	1625	1850	1995	1810		
	HD28-2	HU28-2	14	3-1/8	7-1/8	2-1/2	1-1/8	**Min**	**10**	**16d**	**4**	**10d**	**1540**	**1735**	**1865**	**780**		
								Max	**14**		**6**		**2155**	**2430**	**2610**	**1170**		
	HD28-2IF	HUC28-2	14	3-1/8	7-1/8	2-1/2	--	**Min**	**10**	**16d**	**4**	**10d**	**1540**	**1735**	**1865**	**780**		
								Max	**14**		**6**		**2155**	**2430**	**2610**	**1170**		
	HUS210-2	HUS210-2	14	3-1/8	9-1/8	2	1	--	8	16d	8	16d	2170	2465	2660	2210		
	HUS210-2IF	HUSC210-2	14	3-1/8	9-1/8	2	1	--	8	16d	8	16d	2170	2465	2660	2210		
	HD210-2	HU210-2	14	3-1/8	9	2-1/2	1-1/8	**Min**	**14**	**16d**	**6**	**10d**	**2155**	**2430**	**2610**	**1170**		
								Max	**20**		**10**		**3080**	**3475**	**3725**	**1950**		
	HD210-2IF	HUC210-2	14	3-1/8	9	2-1/2	--	**Min**	**14**	**16d**	**6**	**10d**	**2155**	**2430**	**2610**	**1170**		
								Max	**20**		**10**		**3080**	**3475**	**3725**	**1950**		
	HDQ210-2IF	HUCQ210-2	14	3-1/4	9	3	1-1/2	--	12	WS3	6	WS3	5015	5590	5590	2975		31, **R1**, F32

1) Uplift loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) 16d sinkers (0.148 dia. x 3-1/4" long) may be used at 0.84 of the table load where 16d commons are specified. This does not apply to JUS, HUS, MUS slant nail hangers.
3) For JUS and HUS hangers: Nails must be driven at a 30° to 45° angle through the joist or truss into the header to achieve the table loads.
4) WS3 Wood Screws are 1/4" x 3" long and are included with HDQ hangers.
5) **NAILS:** 10d nails are 0.148" dia. x 3" long, 16d are 0.162" dia. x 3-1/2" long.
New products or updated product information are designated in **blue font.**

Corrosion Finish Stainless Steel Gold Coat HDG Triple Zinc



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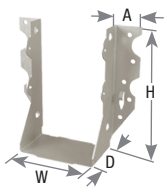
Face Mount Hanger Charts

MiTek®

Joist Size	USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in) W	H	D	A	Min/ Max	Fastener Schedule[2,3,4] Header Qty	Header Nail	Joist Qty	Joist Nail	DF/SP Allowable Loads (Lbs.) Floor 100%	Roof 115%	Roof 125%	Uplift[1] 160%	Corrosion	Finish	Code Ref.
(2) 2 x 12	JUS210-2	LUS210-2	18	3-1/8	9-1/8	2	1	--	8	16d	6	16d	1845	2105	2290	1980			5, R5, F2
	SUH210-2	U210-2	16	3-1/8	8-9/16	2	1-1/8	--	16	10d	6	10d	2000	2245	2420	1135			
									16	16d	6	10d	2350	2670	2880	1135			
	HUS210-2	HUS210-2	14	3-1/8	9-1/8	2	1	--	8	16d	8	16d	2170	2465	2660	2210			
	HUS210-2IF	HUSC210-2	14	3-1/8	9-1/8	2	1	--	8	16d	8	16d	2170	2465	2660	2210			
	HD210-2	HU210-2	14	3-1/8	9	2-1/2	1-1/8	Min	14	16d	6	10d	2155	2430	2610	1170			
								Max	20		10		3080	3475	3725	1950			
	HD210-2IF	HUC210-2	14	3-1/8	9	2-1/2	--	Min	14	16d	6	10d	2155	2430	2610	1170			
								Max	20		10		3080	3475	3725	1950			
	HUS212-2	HUS212-2	14	3-1/8	11-1/8	2	1	--	10	16d	10	16d	2710	3080	3325	3060			
	HUS212-2IF	HUSC212-2	14	3-1/8	11-1/8	2	--	--	10	16d	10	16d	2710	3080	3325	3060			
	HD212-2	HU212-2	14	3-1/8	11	2-1/2	1-1/8	Min	16	16d	8	10d	2465	2780	2980	1425			
								Max	24		12		3695	4170	4470	2340			
	HD212-2IF	HUC212-2	14	3-1/8	11	2-1/2	--	Min	16	16d	8	10d	2465	2780	2980	1425			
								Max	24		12		3695	4170	4470	2340			
	HDQ210-2IF	HUCQ210-2	14	3-1/4	9	3	1-1/2	--	12	WS3	6	WS3	5015	5590	5590	2975			31, R1, F32
(2) 2 x 14	JUS210-2	LUS210-2	18	3-1/8	9-1/8	2	1	--	8	16d	6	16d	1845	2105	2290	1980			5, R5, F2
	JUS214-2	LUS214-2	18	3-1/8	13-1/8	2	1	--	12	16d	6	16d	2420	2755	2995	1980			
	SUH210-2	U210-2	16	3-1/8	8-9/16	2	1-1/8	--	16	10d	6	10d	2000	2245	2420	1135			
									16	16d	6	10d	2350	2670	2880	1135			
	HD210-2	HU210-2	14	3-1/8	9	2-1/2	1-1/8	Min	14	16d	6	10d	2155	2430	2610	1170			
								Max	20		10		3080	3475	3725	1950			
	HD210-2IF	HUC210-2	14	3-1/8	9	2-1/2	--	Min	14	16d	6	10d	2155	2430	2610	1170			
								Max	20		10		3080	3475	3725	1950			
	HUS210-2	HUS210-2	14	3-1/8	9-1/8	2	1	--	8	16d	8	16d	2170	2465	2660	2210			
	HUS210-2IF	HUSC210-2	14	3-1/8	9-1/8	2	1	--	8	16d	8	16d	2170	2465	2660	2210			
	HUS212-2	HUS212-2	14	3-1/8	11-1/8	2	1	--	10	16d	10	16d	2710	3080	3325	3060			
	HUS212-2IF	HUSC212-2	14	3-1/8	11-1/8	2	1		10	16d	10	16d	2710	3080	3325	3060			
	HD212-2	HU212-2	14	3-1/8	11	2-1/2	1-1/8	Min	16	16d	8	10d	2465	2780	2980	1425			
								Max	24		12		3695	4170	4470	2340			
	HD212-2IF	HUC212-2	14	3-1/8	11	2-1/2	--	Min	16	16d	8	10d	2465	2780	2980	1425			
								Max	24		12		3695	4170	4470	2340			
	HD214-2	HU214-2	14	3-1/8	13	2-1/2	1-1/8	Min	18	16d	8	10d	2770	3125	3355	1560			
								Max	26		12		4005	4515	4845	2340			
	HDQ210-2IF	HUCQ210-2	14	3-1/4	9	3	1-1/2	--	12	WS3	6	WS3	5015	5590	5590	2975			31, R1, F32
(2) 2 x 16	JUS214-2	LUS214-2	18	3-1/8	13-1/8	2	1	--	12	16d	6	16d	2420	2755	2995	1980			5, R5, F2
	HD212-2	HU212-2	14	3-1/8	11	2-1/2	1-1/8	Min	16	16d	8	10d	2465	2780	2980	1425			
								Max	24		12		3695	4170	4470	2340			
	HD212-2IF	HUC212-2	14	3-1/8	11	2-1/2	--	Min	16	16d	8	10d	2465	2780	2980	1425			
								Max	24		12		3695	4170	4470	2340			
	HD214-2	HU214-2	14	3-1/8	13	2-1/2	1-1/8	Min	18	16d	8	10d	2770	3125	3355	1560			
								Max	26		12		4005	4515	4845	2340			
	HD216-2	HU216-2	14	3-1/8	14	2-1/2	1-1/8	Min	20	16d	10	10d	3080	3475	3725	1950			
								Max	28		14		4310	4860	5000	2735			
3 x 4	SUH34	U34	16	2-9/16	3-3/8	2	1-1/8	--	6	10d	2	10d x 1-1/2	750	840	910	380			
									6	16d	2	10d x 1-1/2	880	1000	1080	380			
	HD34	HU34	14	2-9/16	3	2-1/2	1-1/8	Min	4	16d	2	10d x 1-1/2	615	695	745	365			
								Max			4		615	695	745	595			
	HD34IF	HUC34	14	2-9/16	3	2-1/2	--	Min	4	16d	2	10d x 1-1/2	615	695	745	365			
								Max			4		615	695	745	595			

1) Uplift loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) 16d sinkers (0.148 dia. x 3-1/4" long) may be used at 0.84 of the table load where 16d commons are specified. This does not apply to JUS, HUS, MUS slant nail hangers.
3) WS15 is 1/4" x 1-1/2" long wood screw, WS3 is 1/4" x 3" long wood screw and are included with HDQ hangers.
4) **NAILS:** 10d x 1-1/2" nails are 0.148" dia. x 1-1/2" long, 10d nails are 0.148" dia. x 3" long, 16d nails are 0.162" dia. x 3-1/2" long.
New products or updated product information are designated in **blue font**.

Corrosion Finish Stainless Steel Gold Coat HDG Triple Zinc



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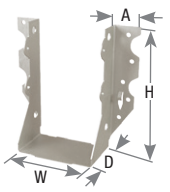
Face Mount Hanger Charts

MiTek®

Joist Size	USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in) W	H	D	A	Min/ Max	Fastener Schedule[2,3,4] Header Qty	Header Nail	Joist Qty	Joist Nail	DF/SP Allowable Loads (Lbs.) Floor 100%	Roof 115%	Roof 125%	Uplift[1] 160%	Corrosion Finish	Code Ref.
3 x 6	JUS36	LUS36	18	2-9/16	5-1/4	2	1	--	4	16d	4	16d	1040	1185	1220	1355		5, R5, F2
	SUH36	U36	16	2-9/16	5-5/16	2	1-1/8	--	10	10d	4	10d x 1-1/2	1250	1405	1515	755		
									10	16d	4	10d x 1-1/2	1470	1670	1800	755		
	HD36	HU36	14	2-9/16	4-3/4	2-1/2	1-1/8	Min	8	16d	4	10d x 1-1/2	1230	1390	1490	780		
								Max			6		1230	1390	1490	825		
	HD36IF	HUC36	14	2-9/16	4-3/4	2-1/2	--	Min	8	16d	4	10d x 1-1/2	1230	1390	1490	780		
								Max			6		1230	1390	1490	825		
3 x 8	JUS38	--	18	2-9/16	6-3/4	2	1	--	6	16d	4	16d	1325	1510	1645	1355		
	SUH36	U36	16	2-9/16	5-5/16	2	1-1/8	--	10	10d	4	10d x 1-1/2	1250	1405	1515	755		
									10	16d	4	10d x 1-1/2	1470	1670	1800	755		
	HD38	HU38	14	2-9/16	6-11/16	2-1/2	1-1/8	Min	10	16d	4	10d x 1-1/2	1540	1735	1865	780		
								Max	14		6		2155	2430	2610	1170		
	HD38IF	HUC38	14	2-9/16	6-11/16	2-1/2	--	Min	10	16d	4	10d x 1-1/2	1540	1735	1865	780		
								Max	14		6		2155	2430	2610	1170		
3 x 10	JUS310	LUS310	18	2-9/16	9-1/8	2	1	--	8	16d	6	16d	1845	2105	2290	1980		
	SUH310	U310	16	2-9/16	8-7/8	2	1-1/8	--	16	10d	6	10d x 1-1/2	2000	2245	2420	1135		
									16	16d	6	10d x 1-1/2	2350	2670	2880	1135		
	HD38	HU38	14	2-9/16	6-3/4	2	1-1/8	Min	10	16d	4	10d x 1-1/2	1540	1735	1865	780		
								Max	14		6		2155	2430	2610	1170		
	HD38IF	HUC38	14	2-9/16	6-3/4	2	--	Min	10	16d	4	10d x 1-1/2	1540	1735	1865	780		
								Max	14		6		2155	2430	2610	1170		
	HD310	HU310	14	2-9/16	7-7/16	2-1/2	1-1/8	Min	10	16d	4	10d x 1-1/2	1540	1735	1865	780		
								Max	14		6		2155	2430	2610	1170		
	HD310IF	HUC310	14	2-9/16	7-7/16	2-1/2	--	Min	10	16d	4	10d x 1-1/2	1540	1735	1865	780		
								Max	14		6		2155	2430	2610	1170		
	HDQ310IF	HUCQ310	14	2-9/16	9	3	1-3/16	--	8	WS3	4	WS15	3340	3605	3605	1110		31, F32, R1
3 x 12	SUH310	U310	16	2-9/16	8-7/8	2	1-1/8	--	16	10d	6	10d x 1-1/2	2000	2245	2420	1135		5, R5, F2
									16	16d	6	10d x 1-1/2	2350	2670	2880	1135		
	HD310	HU310	14	2-9/16	7-7/16	2-1/2	1-1/8	Min	10	16d	4	10d x 1-1/2	1540	1735	1865	780		
								Max	14		6		2155	2430	2610	1170		
	HD310IF	HUC310	14	2-9/16	7-7/16	2-1/2	--	Min	10	16d	4	10d x 1-1/2	1540	1735	1865	780		
								Max	14		6		2155	2430	2610	1170		
	HDQ310IF	HUCQ310	14	2-9/16	9	3	1-3/16	--	8	WS3	4	WS15	3340	3605	3605	1110		31, F32, R1
	HD312	HU312	14	2-9/16	9-5/16	2-1/2	1-1/8	Min	14	16d	6	10d x 1-1/2	2155	2430	2610	1170		
								Max	20		10		3080	3475	3725	1625		
	HD312IF	HUC312	14	2-9/16	9-5/16	2-1/2	--	Min	14	16d	6	10d x 1-1/2	2155	2430	2610	1170		
								Max	20		10		3080	3475	3725	1625		
3 x 14	SUH314	U314	16	2-9/16	10-9/16	2	1-1/8	--	18	10d	6	10d x 1-1/2	2250	2525	2725	1135		
									18	16d	6	10d x 1-1/2	2645	3000	3010	1135		
	HDQ310IF	HUCQ310	14	2-9/16	9	3	1-3/16	--	8	WS3	4	WS15	3340	3605	3605	1110		31, F32, R1
	HD312	HU312	14	2-9/16	9-5/16	2-1/2	1-1/8	Min	14	16d	6	10d x 1-1/2	2155	2430	2610	1170		
								Max	20		10		3080	3475	3725	1625		
	HD312IF	HUC312	14	2-9/16	9-5/16	2-1/2	--	Min	14	16d	6	10d x 1-1/2	2155	2430	2610	1170		
								Max	20		10		3080	3475	3725	1625		
	HD314	HU314	14	2-9/16	11-5/16	2-1/2	1-1/8	Min	16	16d	8	10d x 1-1/2	2465	2780	2980	1280		
								Max	24		12		3695	4170	4435	2045		
	HD314IF	HUC314	14	2-9/16	11-5/16	2-1/2	--	Min	16	16d	8	10d x 1-1/2	2465	2780	2980	1280		
								Max	24		12		3695	4170	4435	2045		

1) Uplift loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) 16d sinkers (0.148 dia. x 3-1/4" long) may be used at 0.84 of the table load where 16d commons are specified. This does not apply to JUS, HUS, MUS slant nail hangers.
3) WS15 is 1/4" x 1-1/2" long wood screw, WS3 is 1/4" x 3" long wood screw and are included with HDQ hangers.
4) **NAILS:** 10d x 1-1/2" nails are 0.148" dia. x 1-1/2" long, 10d nails are 0.148" dia. x 3" long, 16d nails are 0.162" dia. x 3-1/2" long.
New products or updated product information are designated in **blue font**.

Corrosion Finish Stainless Steel Gold Coat HDG Triple Zinc



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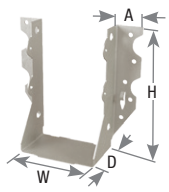
Face Mount Hanger Charts

MiTek®

Joist Size	USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in) W	H	D	A	Min/ Max	Fastener Schedule[2,3,4] Header Qty	Header Nail	Joist Qty	Joist Nail	DF/SP Allowable Loads (Lbs.) Floor 100%	Roof 115%	Roof 125%	Uplift[1] 160%	Corrosion Finish	Code Ref.
3 x 16	SUH314	U314	16	2-9/16	10-9/16	2	1-1/8	--	18	10d	6	10d x 1-1/2	2250	2525	2725	1135		
									18	16d	6	10d x 1-1/2	2645	3000	3010	1135		
	HD314	HU314	14	2-9/16	11-5/16	2-1/2	1-1/8	Min	16	16d	8	10d x 1-1/2	2465	2780	2980	1280		
								Max	24		12		3695	4170	4435	2045		
	HD314IF	HUC314	14	2-9/16	11-5/16	2-1/2	--	Min	16	16d	8	10d x 1-1/2	2465	2780	2980	1280		
								Max	24		12		3695	4170	4435	2045		
	HD316	HU316	14	2-9/16	13-5/16	2-1/2	1-1/8	Min	18	16d	8	10d x 1-1/2	2770	3125	3355	1560		
								Max	26		12		4005	4435	4435	2045		
	HD316IF	HUC316	14	2-9/16	13-5/16	2-1/2	--	Min	18	16d	8	10d x 1-1/2	2770	3125	3355	1560		
								Max	26		12		4005	4435	4435	2045		
(2) 3 x 8	HD38-2	HU38-2	14	5-1/8	6-1/8	2-1/2	1-1/8	Min	10	16d	4	10d	1540	1735	1865	780		
								Max	14		6		2155	2430	2610	1170		
(2) 3 x 10	HD38-2	HU38-2	14	5-1/8	6-1/8	2-1/2	1-1/8	Min	10	16d	4	10d	1540	1735	1865	780		
								Max	14		6		2155	2430	2610	1170		
	HD310-2	HU310-2	14	5-1/8	8	2-1/2	1-1/8	Min	14	16d	6	10d	2155	2430	2610	1170		
								Max	20		10		3080	3475	3725	1625		
(2) 3 x 12	HD312-2	HU312-2	14	5-1/8	10	2-1/2	1-1/8	Min	16	16d	8	10d	2465	2780	2980	1065		
								Max	24		12		3695	4170	4470	2340		
(2) 3 x 14	HD312-2	HU312-2	14	5-1/8	10	2-1/2	1-1/8	Min	16	16d	8	10d	2465	2780	2980	1065		
								Max	24		12		3695	4170	4470	2340		
(3) 2 x 6	JUS26-3	LUS26-3	18	4-5/8	4-1/2	2	1	--	4	16d	4	16d	1040	1185	1220	1355		
	SUH26-3	U26-3	16	4-5/8	5-1/4	2	1	--	8	10d	2	10d	1000	1120	1165	380		
									8	16d	2	10d	1165	1165	1165	380		
	HD26-3	HU26-3	14	4-5/8	4-1/2	2-1/2	1-1/8	Min	8	16d	4	10d	1230	1390	1490	780		
								Max	12		6		1850	2085	2235	1170		5, R5, F2
	HD26-3IF	HUC26-3	14	4-5/8	4-1/2	2-1/2	--	Min	8	16d	4	10d	1230	1390	1490	780		
								Max	12		6		1850	2085	2235	1170		
(3) 2 x 8	JUS26-3	LUS26-3	18	4-5/8	4-1/2	2	1	--	4	16d	4	16d	1040	1185	1220	1355		
	JUS28-3	LUS28-3	18	4-5/8	6-3/8	2	1	--	6	16d	4	16d	1325	1510	1645	1355		
	SUH26-3	U26-3	16	4-5/8	5-1/4	2	1	--	8	10d	2	10d	1000	1120	1165	380		
									8	16d	2	10d	1165	1165	1165	380		
	HD26-3	HU26-3	14	4-5/8	4-1/2	2-1/2	1-1/8	Min	8	16d	4	10d	1230	1390	1490	780		
								Max	12		6		1850	2085	2235	1170		
	HD26-3IF	HUC26-3	14	4-5/8	4-1/2	2-1/2	--	Min	8	16d	4	10d	1230	1390	1490	780		
								Max	12		6		1850	2085	2235	1170		
	HD28-3	--	14	4-5/8	6-3/8	2-1/2	1-1/8	Min	10	16d	4	10d	1540	1735	1865	780		
								Max	14		6		2155	2430	2610	1170		
	HD28-3IF	--	14	4-5/8	6-3/8	2-1/2	--	Min	10	16d	4	10d	1540	1735	1865	780		
								Max	14		6		2155	2430	2610	1170		
(3) 2 x 10	JUS28-3	LUS28-3	18	4-5/8	6-3/8	2	1	--	6	16d	4	16d	1325	1510	1645	1355		
	JUS210-3	LUS210-3	18	4-5/8	8-3/8	2	1	--	8	16d	6	16d	1845	2105	2290	1980		
	SUH210-3	U210-3	16	4-5/8	8-3/8	2	1	--	14	10d	6	10d	1750	1965	2120	1135		
									14	16d	6	10d	2060	2335	2520	1135		
	HD28-3	--	14	4-5/8	6-3/8	2-1/2	1-1/8	Min	10	16d	4	10d	1540	1735	1865	780		
								Max	14		6		2155	2430	2610	1170		
	HD28-3IF	--	14	4-5/8	6-3/8	2-1/2	--	Min	10	16d	4	10d	1540	1735	1865	780		
								Max	14		6		2155	2430	2610	1170		
	HD210-3	HU210-3	14	4-5/8	8-1/4	2-1/2	1-1/8	Min	14	16d	6	10d	2155	2430	2610	1170		
								Max	20		10		3080	3475	3725	1950		
	HD210-3IF	HUC210-3	14	4-5/8	8-1/4	2-1/2	--	Min	14	16d	6	10d	2155	2430	2610	1170		
								Max	20		10		3080	3475	3725	1950		
	HDQ210-3IF	HUCQ210-3	14	4-5/8	9	3	1-1/2	--	12	WS3	6	WS3	5015	5590	5590	2975		31, R1, F32

1) Uplift loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) 16d sinkers (0.148 dia. x 3-1/4" long) may be used at 0.84 of the table load where 16d commons are specified. This does not apply to JUS, HUS, MUS slant nail hangers.
3) WS3 Wood Screws are 1/4" x 3" long and are included with HDQ hangers.
4) **NAILS:** 10d nails are 0.148" dia. x 3" long, 16d nails are 0.162" dia. x 3-1/2" long.
New products or updated product information are designated in **blue font.**

Corrosion Finish Stainless Steel Gold Coat HDG Triple Zinc



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Face Mount Hanger Charts

MiTek®

Joist Size	USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in)				Fastener Schedule[2,3,4]					DF/SP Allowable Loads (Lbs.)				Corrosion Finish	Code Ref.
									Header		Joist		Floor	Roof		Uplift[1]		
				W	H	D	A	Min/ Max	Qty	Nail	Qty	Nail	100%	115%	125%	160%		
(3) 2 x 12	JUS210-3	LUS210-3	18	4-5/8	8-3/8	2	1	--	8	16d	6	16d	1845	2105	2290	1980		5, R5, F2
	SUH210-3	U210-3	16	4-5/8	8-3/8	2	1	--	14	10d	6	10d	1750	1965	2120	1135		
									14	16d	6	10d	2060	2335	2520	1135		
	HD210-3	HU210-3	14	4-5/8	8-1/4	2-1/2	1-1/8	Min	14	16d	6	10d	2155	2430	2610	1170		
								Max	20		10		3080	3475	3725	1950		
	HD210-3IF	HUC210-3	14	4-5/8	8-1/4	2-1/2	--	Min	14	16d	6	10d	2155	2430	2610	1170		
								Max	20		10		3080	3475	3725	1950		
	HDQ210-3IF	HUCQ210-3	14	4-5/8	9	3	1-1/2	--	12	WS3	6	WS3	5015	5590	5590	2975		31, R1, F32
	HD212-3	HU212-3	14	4-5/8	10-1/4	2-1/2	1-1/8	Min	16	16d	8	10d	2465	2780	2980	1425		
								Max	24		12		3695	4170	4470	2340		
	HD212-3IF	HUC212-3	14	4-5/8	10-1/4	2-1/2	--	Min	16	16d	8	10d	2465	2780	2980	1425		
								Max	24		12		3695	4170	4470	2340		
(3) 2 x 14	JUS210-3	LUS210-3	18	4-5/8	8-3/8	2	1	--	8	16d	6	16d	1845	2105	2290	1980		5, R5, F2
	SUH210-3	U210-3	16	4-5/8	8-3/8	2	1	--	14	10d	6	10d	1750	1965	2120	1135		
									14	16d	6	10d	2060	2335	2520	1135		
	HDQ210-3IF	HUCQ210-3	14	4-5/8	9	3	1-1/2	--	12	WS3	6	WS3	5015	5590	5590	2975		31, R1, F32
	HD212-3	HU212-3	14	4-5/8	10-1/4	2-1/2	1-1/8	Min	16	16d	8	10d	2465	2780	2980	1425		
								Max	24		12		3695	4170	4470	2340		
	HD212-3IF	HUC212-3	14	4-5/8	10-1/4	2-1/2	--	Min	16	16d	8	10d	2465	2780	2980	1425		
								Max	24		12		3695	4170	4470	2340		
	HD214-3	HU214-3	14	4-5/8	12-1/4	2-1/2	1-1/8	Min	18	16d	8	10d	2770	3125	3355	1560		
								Max	26		12		4005	4515	4845	2340		
(3) 2 x 16	HD212-3	HU212-3	14	4-5/8	10-1/4	2-1/2	1-1/8	Min	16	16d	8	10d	2465	2780	2980	1425		
								Max	24		12		3695	4170	4470	2340		
	HD212-3IF	HUC212-3	14	4-5/8	10-1/4	2-1/2	--	Min	16	16d	8	10d	2465	2780	2980	1425		
								Max	24		12		3695	4170	4470	2340		
	HD214-3	HU214-3	14	4-5/8	12-1/4	2-1/2	1-1/8	Min	18	16d	8	10d	2770	3125	3355	1560		
								Max	26		12		4005	4515	4845	2340		
	HD216-3	HU216-3	14	4-5/8	13-1/4	2-1/2	1-1/8	Min	22	16d	10	10d	3080	3475	3725	1950		
								Max	30		14		4310	4860	5035	2735		
(4) 2 x 8	HD28-4	HU28-4	14	6-1/8	7	2-1/2	1-3/4	Min	10	16d	4	16d	1540	1735	1865	920		
								Max	14		6		2155	2430	2610	1380		
(4) 2 x 10	HD210-4	HU210-4	14	6-1/8	9-1/4	2-1/2	2	Min	14	16d	6	16d	2155	2430	2610	1380		
								Max	18		8		2770	3125	3355	1845		
(4) 2 x 12	HD210-4	HU210-4	14	6-1/8	9-1/4	2-1/2	2	Min	14	16d	6	16d	2155	2430	2610	1380		
								Max	18		8		2770	3125	3355	1845		
(4) 2 x 14	HD210-4	HU210-4	14	6-1/8	9-1/4	2-1/2	2	Min	14	16d	6	16d	2155	2430	2610	1380		
								Max	18		8		2770	3125	3355	1845		
4 x 4	JUS44	LUS44	18	3-5/8	3-1/4	2	1	--	4	16d	2	16d	805	920	965	325		
	SUH44	U44	16	3-9/16	2-7/8	2	1-1/8	--	6	10d	2	10d	750	840	910	380		
									6	16d	2	10d	880	1000	1080	380		
	HD44	HU44	14	3-9/16	3-5/16	2-1/2	1-1/8	--	4	16d	2	10d	615	695	745	390		
	HD44IF	HUC44	14	3-9/16	3-5/16	2-1/2	--	--	4	16d	2	10d	615	695	745	390		

1) Uplift loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) 16d sinkers (0.148 dia. x 3-1/4" long) may be used at 0.84 of the table load where 16d commons are specified. This does not apply to JUS, HUS, MUS slant nail hangers.
3) WS3 Wood Screws are 1/4" x 3" long and are included with HDQ hangers.
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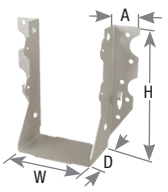
Corrosion Finish Stainless Steel Gold Coat HDG Triple Zinc



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Face Mount Hanger Charts

MiTek®

Joist Size	USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in) W	H	D	A	Min/ Max	Fastener Schedule[2,3,4] Header Qty	Header Nail	Joist Qty	Joist Nail	DF/SP Allowable Loads (Lbs.) Floor 100%	Roof 115%	Roof 125%	Uplift[1] 160%	Corrosion Finish	Code Ref.
4 x 6	JUS46	LUS46	18	3-5/8	5	2	1	--	4	16d	4	16d	1040	1185	1220	1355		5, R5, F2
	SUH46	U46	16	3-9/16	4-13/16	2	1-1/8	--	10	10d	4	10d	1250	1405	1515	755		
									10	16d	4	10d	1470	1670	1800	755		
	HUS46	HUS46	14	3-5/8	5	2	1	--	4	16d	4	16d	1085	1235	1300	1155		
	HUS46IF	HUSC46	14	3-5/8	5	2	1	--	4	16d	4	16d	1085	1235	1300	1155		
	HD46	HU46	14	3-9/16	**5-1/16**	2-1/2	1-1/8	**Min**	**8**	**16d**	**4**	**10d**	**1230**	**1390**	**1490**	**780**		
								Max	**12**		**6**		**1850**	**2085**	**2235**	**1170**		
	HD46IF	HUC46	14	3-9/16	**5-1/16**	2-1/2	--	**Min**	**8**	**16d**	**4**	**10d**	**1230**	**1390**	**1490**	**780**		
								Max	**12**		**6**		**1850**	**2085**	**2235**	**1170**		
4 x 8	JUS46	LUS46	18	3-5/8	5	2	1	--	4	16d	4	16d	1040	1185	1220	1355		
	JUS48	LUS48	18	3-5/8	6-7/8	2	1	--	6	16d	4	16d	1325	1510	1645	1355		
	SUH46	U46	16	3-9/16	4-13/16	2	1-1/8	--	10	10d	4	10d	1250	1405	1515	755		
									10	16d	4	10d	1470	1670	1800	755		
	HUS46	HUS46	14	3-5/8	5	2	1	--	4	16d	4	16d	1085	1235	1300	1155		
	HUS46IF	HUSC46	14	3-5/8	5	2	1	--	4	16d	4	16d	1085	1235	1300	1155		
	HUS48	HUS48	14	3-5/8	7	2	1	--	6	16d	6	16d	1625	1850	1995	1810		
	HUS48IF	HUSC48	14	3-5/8	7	2	1	--	6	16d	6	16d	1625	1850	1995	1810		
	HD46	HU46	14	3-9/16	**5-1/16**	2-1/2	1-1/8	**Min**	**8**	**16d**	**4**	**10d**	**1230**	**1390**	**1490**	**780**		
								Max	**12**		**6**		**1850**	**2085**	**2235**	**1170**		
	HD46IF	HUC46	14	3-9/16	**5-1/16**	2-1/2	--	**Min**	**8**	**16d**	**4**	**10d**	**1230**	**1390**	**1490**	**780**		
								Max	**12**		**6**		**1850**	**2085**	**2235**	**1170**		
	HD48	HU48	14	3-9/16	**6-15/16**	2-1/2	1-1/8	**Min**	**10**	**16d**	**4**	**10d**	**1540**	**1735**	**1865**	**780**		
								Max	**14**		**6**		**2155**	**2430**	**2610**	**1170**		
	HD48IF	HUC48	14	3-9/16	**6-15/16**	2-1/2	--	**Min**	**10**	**16d**	**4**	**10d**	**1540**	**1735**	**1865**	**780**		
								Max	**14**		**6**		**2155**	**2430**	**2610**	**1170**		
4 x 10	JUS48	LUS48	18	3-5/8	6-7/8	2	1	--	6	16d	4	16d	1325	1510	1645	1355		
	JUS410	LUS410	18	3-5/8	8-7/8	2	1	--	8	16d	6	16d	1845	2105	2290	1980		
	SUH410	U410	16	3-9/16	8-3/8	2	1-1/8	--	16	10d	6	10d	2000	2245	2420	1135		
									16	16d	6	10d	2350	2670	2880	1135		
	HUS48	HUS48	14	3-5/8	7	2	1	--	6	16d	6	16d	1625	1850	1995	1810		
	HUS48IF	HUSC48	14	3-5/8	7	2	1	--	6	16d	6	16d	1625	1850	1995	1810		
	HD48	HU48	14	3-9/16	**6-15/16**	2-1/2	1-1/8	Min	10	16d	4	10d	**1540**	**1735**	**1865**	**780**		
								Max	14		6		**2155**	**2430**	**2610**	**1170**		
	HD48IF	HUC48	14	3-9/16	**6-15/16**	2-1/2	--	Min	10	16d	4	10d	**1540**	**1735**	**1865**	**780**		
								Max	14		6		**2155**	**2430**	**2610**	**1170**		
	HUS410	HUS410	14	3-5/8	8-7/8	2	1	--	8	16d	8	16d	2170	2465	2660	2210		
	HUS410IF	HUSC410	14	3-5/8	8-7/8	2	1	--	8	16d	8	16d	2170	2465	2660	2210		
	HD410	HU410	14	3-9/16	8-13/16	2-1/2	1-1/8	Min	14	16d	6	10d	**2155**	**2430**	**2610**	**1170**		
								Max	20		10		**3080**	**3475**	**3725**	**1950**		
	HD410IF	HUC410	14	3-9/16	8-13/16	2-1/2	--	Min	14	16d	6	10d	**2155**	**2430**	**2610**	**1170**		
								Max	20		10		**3080**	**3475**	**3725**	**1950**		
	HDQ410IF	HUCQ410	14	3-9/16	9	3	1-1/2	--	12	WS3	6	WS3	5015	5590	5590	2975		31, **R1**, F32

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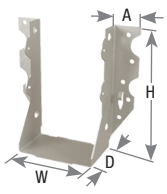
Corrosion Finish Stainless Steel Gold Coat HDG Triple Zinc



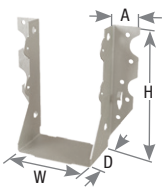
Face Mount Hanger Charts

MiTek®

Joist Size	USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in) W	H	D	A	Fastener Schedule[2,3,4] Min/ Max	Header Qty	Header Nail	Joist Qty	Joist Nail	DF/SP Allowable Loads (Lbs.) Floor 100%	Roof 115%	Roof 125%	Uplift[1] 160%	Corrosion Finish	Code Ref.
4 x 12	JUS410	LUS410	18	3-5/8	8-7/8	2	1	--	8	16d	6	16d	1845	2105	2290	1980		5, R5, F2
	SUH410	U410	16	3-9/16	8-3/8	2	1-1/8	--	16	10d	6	10d	2000	2245	2420	1135		
									16	16d	6	10d	2350	2670	2880	1135		
	HUS410	HUS410	14	3-5/8	8-7/8	2	1	--	8	16d	8	16d	2170	2465	2660	2210		
	HUS410IF	HUSC410	14	3-5/8	8-7/8	2	1	--	8	16d	8	16d	2170	2465	2660	2210		
	HD410	HU410	14	3-9/16	8-13/16	2-1/2	1-1/8	Min	14	16d	6	10d	2155	2430	2610	1170		
								Max	20		10		3080	3475	3725	1950		
	HD410IF	HUC410	14	3-9/16	8-13/16	2-1/2	--	Min	14	16d	6	10d	2155	2430	2610	1170		
								Max	20		10		3080	3475	3725	1950		
	HDQ410IF	HUCQ410	14	3-9/16	9	3	1-1/2	--	12	WS3	6	WS3	5015	5590	5590	2975		31, R1, F32
	HUS412	HUS412	14	3-5/8	10-7/8	2	1	--	10	16d	10	16d	2710	3080	3325	3060		5, R5, F2
	HUS412IF	HUSC412	14	3-5/8	10-7/8	2	1	--	10	16d	10	16d	2710	3080	3325	3060		
	HD412	HU412	14	3-9/16	10-13/16	2-1/2	1-1/8	Min	16	16d	8	10d	2465	2780	2980	1425		
								Max	24		12		3695	4170	4470	2340		
	HD412IF	HUC412	14	3-9/16	10-13/16	2-1/2	--	Min	16	16d	8	10d	2465	2780	2980	1425		
								Max	24		12		3695	4170	4470	2340		
	HDQ412IF	HUCQ412	14	3-9/16	11	3	1-1/2	--	14	WS3	6	WS3	5605	5605	5605	3280		31, R1, F32
4 x 14	JUS414	LUS414	18	3-5/8	12-7/8	2	1	--	12	16d	6	16d	2420	2755	2995	1980		5, R5, F2
	SUH414	U414	16	3-9/16	10-1/16	2	1-1/8	--	18	10d	6	10d	2250	2525	2725	1135		
									18	16d	6	10d	2645	3000	3010	1135		
	HD410	HU410	14	3-9/16	8-13/16	2-1/2	1-1/8	Min	14	16d	6	10d	2155	2430	2610	1170		
								Max	20		10		3080	3475	3725	1950		
	HD410IF	HUC410	14	3-9/16	8-13/16	2-1/2	--	Min	14	16d	6	10d	2155	2430	2610	1170		
								Max	20		10		3080	3475	3725	1950		
	HDQ410IF	HUCQ410	14	3-9/16	9	3	1-1/2	--	12	WS3	6	WS3	5015	5590	5590	2975		31, R1, F32
	HUS412	HUS412	14	3-5/8	10-7/8	2	1	--	10	16d	10	16d	2710	3080	3325	3060		5, R5, F2
	HUS412IF	HUSC412	14	3-5/8	10-7/8	2	1	--	10	16d	10	16d	2710	3080	3325	3060		
	HDQ412IF	HUCQ412	14	3-9/16	11	3	1-1/2	--	14	WS3	6	WS3	5605	5605	5605	3280		31, R1, F32
	HD412	HU412	14	3-9/16	10-13/16	2-1/2	1-1/8	Min	16	16d	8	10d	2465	2780	2980	1425		
								Max	24		12		3695	4170	4470	2340		
	HD412IF	HUC412	14	3-9/16	10-13/16	2-1/2	--	Min	16	16d	8	10d	2465	2780	2980	1425		
								Max	24		12		3695	4170	4470	2340		
	HD414	HU414	14	3-9/16	12-13/16	2-1/2	1-1/8	Min	18	16d	8	10d	2770	3125	3355	1560		
								Max	26		12		4005	4515	4845	2340		
	HD414IF	HUC414	14	3-9/16	12-13/16	2-1/2	--	Min	18	16d	8	10d	2770	3125	3355	1560		
								Max	26		12		4005	4515	4845	2340		
4 x 16	JUS414	LUS414	18	3-5/8	12-7/8	2	1	--	12	16d	6	16d	2420	2755	2995	1980		5, R5, F2
	SUH414	U414	16	3-9/16	10-1/16	2	1-1/8	--	18	10d	6	10d	2250	2525	2725	1135		
									18	16d	6	10d	2645	3000	3010	1135		
	HD412	HU412	14	3-9/16	10-13/16	2-1/2	1-1/8	Min	16	16d	8	10d	2465	2780	2980	1425		
								Max	24		12		3695	4170	4470	2340		
	HD412IF	HUC412	14	3-9/16	10-13/16	2-1/2	--	Min	16	16d	8	10d	2465	2780	2980	1425		
								Max	24		12		3695	4170	4470	2340		
	HDQ412IF	HUCQ412	14	3-9/16	11	3	1-1/2	--	14	WS3	6	WS3	5605	5605	5605	3280		31, R1, F32
	HD414	HU414	14	3-9/16	12-13/16	2-1/2	1-1/8	Min	18	16d	8	10d	2770	3125	3355	1560		
								Max	26		12		4005	4515	4845	2340		
	HD414IF	HUC414	14	3-9/16	12-13/16	2-1/2	--	Min	18	16d	8	10d	2770	3125	3355	1560		
								Max	26		12		4005	4515	4845	2340		
	HD416	HU416	14	3-9/16	14-13/16	2-1/2	1-1/8	Min	22	16d	10	10d	3390	3820	4100	1950		
								Max	30		14		4620	5195	5195	2275		
	HD416IF	HUC416	14	3-9/16	14-13/16	2-1/2	--	Min	22	16d	10	10d	3390	3820	4100	1950		
								Max	30		14		4620	5195	5195	2275		

1) Uplift loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) 16d sinkers (0.148 dia. x 3-1/4" long) may be used at 0.84 of the table load where 16d commons are specified. This does not apply to JUS, HUS, MUS slant nail hangers.
3) WS3 Wood Screws are 1/4" x 3" long and are included with HDQ hangers.
4) **NAILS:** 10d nails are 0.148" dia. x 3" long, 16d nails are 0.162" dia. x 3-1/2" long.
New products or updated product information are designated in **blue font**.

Corrosion Finish Stainless Steel Gold Coat HDG Triple Zinc



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Face Mount Hanger Charts

MiTek®

Joist Size	USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in) W	H	D	A	Min/ Max	Fastener Schedule[2,3,4] Header Qty	Header Nail	Joist Qty	Joist Nail	DF/SP Allowable Loads (Lbs.) Floor 100%	Roof 115%	Roof 125%	Uplift[1] 160%	Corrosion Finish	Code Ref.
4 x 18	HD414	HU414	14	3-9/16	12-13/16	2-1/2	1-1/8	Min	18	16d	8	10d	2770	3125	3355	1560		5, R5, F2
								Max	26		12		4005	4515	4845	2340		
	HD414IF	HUC414	14	3-9/16	12-13/16	2-1/2	--	Min	18	16d	8	10d	2770	3125	3355	1560		
								Max	26		12		4005	4515	4845	2340		
	HD416	HU416	14	3-9/16	14-13/16	2-1/2	1-1/8	Min	22	16d	10	10d	3390	3820	4100	1950		
								Max	30		14		4620	5195	5195	2275		
	HD416IF	HUC416	14	3-9/16	14-13/16	2-1/2	--	Min	22	16d	10	10d	3390	3820	4100	1950		
								Max	30		14		4620	5195	5195	2275		
	HD418	--	14	3-9/16	16-1/2	2-1/2	1-1/4	--	28	16d	8	10d	4310	4860	5000	1560		
6 x 6	SUH66	U66	16	5-1/2	5	2	1	--	8	10d	4	10d	1000	1120	1210	755		
									8	16d	4	10d	1175	1335	1440	755		
	HD66	HU66	14	5-1/2	4-1/16	2-1/2	1-1/8	Min	8	16d	4	16d	1230	1390	1490	920		
								Max	12		6		1850	2085	2235	1380		
	HD66IF	HUC66	14	5-1/2	4-1/16	2-1/2	--	Min	8	16d	4	16d	1230	1390	1490	920		
								Max	12		6		1850	2085	2235	1380		
6 x 8	SUH66	U66	16	5-1/2	5	2	1	--	8	10d	4	10d	1000	1120	1210	755		
									8	16d	4	10d	1175	1335	1440	755		
	HD66	HU66	14	5-1/2	4-1/16	2-1/2	1-1/8	Min	8	16d	4	16d	1230	1390	1490	920		
								Max	12		6		1850	2085	2235	1380		
	HD66IF	HUC66	14	5-1/2	4-1/16	2-1/2	--	Min	8	16d	4	16d	1230	1390	1490	920		
								Max	12		6		1850	2085	2235	1380		
	HD68	HU68	14	5-1/2	5-15/16	2-1/2	1-1/8	Min	10	16d	4	16d	1540	1735	1865	920		
								Max	14		6		2155	2430	2610	1380		
	HD68IF	HUC68	14	5-1/2	5-15/16	2-1/2	--	Min	10	16d	4	16d	1540	1735	1865	920		
								Max	14		6		2155	2430	2610	1380		
6 x 10	SUH610	U610	16	5-1/2	9	2	1	--	14	10d	6	10d	1750	1965	2120	1135		
									14	16d	6	10d	2060	2335	2520	1135		
	HD68	HU68	14	5-1/2	5-15/16	2-1/2	1-1/8	Min	10	16d	4	16d	1540	1735	1865	920		
								Max	14		6		2155	2430	2610	1380		
	HD68IF	HUC68	14	5-1/2	5-15/16	2-1/2	--	Min	10	16d	4	16d	1540	1735	1865	920		
								Max	14		6		2155	2430	2610	1380		
	HD610	HU610	14	5-1/2	7-13/16	2-1/2	1-1/8	Min	14	16d	6	16d	2155	2430	2610	1380		
								Max	20		10		3080	3475	3725	2305		
	HD610IF	HUC610	14	5-1/2	7-13/16	2-1/2	--	Min	14	16d	6	16d	2155	2430	2610	1380		
								Max	20		10		3080	3475	3725	2305		
	HDQ610IF	HUCQ610	14	5-1/2	9	3	1-1/8	--	12	WS3	6	WS3	5015	5590	5590	2975		31, R1, F32
6 x 12	SUH610	U610	16	5-1/2	9	2	1	--	14	10d	6	10d	1750	1965	2120	1135		
									14	16d	6	10d	2060	2335	2520	1135		
	HD610	HU610	14	5-1/2	7-13/16	2-1/2	1-1/8	Min	14	16d	6	16d	2155	2430	2610	1380		
								Max	20		10		3080	3475	3725	2305		
	HD610IF	HUC610	14	5-1/2	7-13/16	2-1/2	--	Min	14	16d	6	16d	2155	2430	2610	1380		
								Max	20		10		3080	3475	3725	2305		
	HDQ610IF	HUCQ610	14	5-1/2	9	3	1-1/2	--	12	WS3	6	WS3	5015	5590	5590	2975		31, R1, F32
	HD612	HU612	14	5-1/2	9-13/16	2-1/2	1-1/8	Min	16	16d	8	16d	2465	2780	2980	1425		5, R5, F2
								Max	24		12		3695	4170	4470	2765		
	HD612IF	HUC612	14	5-1/2	9-13/16	2-1/2	--	Min	16	16d	8	16d	2465	2780	2980	1425		
								Max	24		12		3695	4170	4470	2765		
	HDQ612IF	HUCQ612	14	5-1/2	11	3	1-1/2	--	14	WS3	6	WS3	5605	5605	5605	3280		31, R1, F32

1) Uplift loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) 16d sinkers (0.148 dia. x 3-1/4" long) may be used at 0.84 of the table load where 16d commons are specified. This does not apply to JUS, HUS, MUS slant nail hangers.
3) WS3 Wood Screws are 1/4" x 3" long and are included with HDQ hangers.
4) **NAILS:** 10d nails are 0.148" dia. x 3" long, 16d nails are 0.162" dia. x 3-1/2" long.
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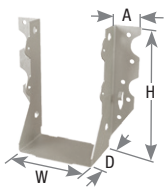
Corrosion Finish Stainless Steel Gold Coat HDG Triple Zinc



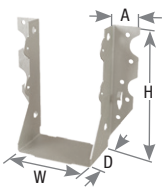
Face Mount Hanger Charts

MiTek®

Joist Size	USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in) W	H	D	A	Fastener Schedule[2,3] Min/ Max	Header Qty	Header Nail	Joist Qty	Joist Nail	DF/SP Allowable Loads (Lbs.) Floor 100%	Roof 115%	Roof 125%	Uplift[1] 160%	Corrosion Finish	Code Ref.
6 x 14	HDQ610IF	HUCQ610	14	5-1/2	9	3	1-1/2	--	12	WS3	6	WS3	5015	5590	5590	2975		31, R1, F32
	HD612	HU612	14	5-1/2	9-13/16	2-1/2	1-1/8	Min	16	16d	8	16d	2465	2780	2980	1425		5, R5, F2
								Max	24		12		3695	4170	4470	2765		
	HD612IF	HUC612	14	5-1/2	9-13/16	2-1/2	--	Min	16	16d	8	16d	2465	2780	2980	1425		
								Max	24		12		3695	4170	4470	2765		
	HDQ612IF	HUCQ612	14	5-1/2	11	3	1-1/2	--	14	WS3	6	WS3	5605	5605	5605	3280		31, R1, F32
	HD614	HU614	14	5-1/2	11-13/16	2-1/2	1-1/8	Min	18	16d	8	16d	2770	3125	3355	1845		5, R5, F2
								Max	26		12		4005	4515	4845	2765		
	HD614IF	HUC614	14	5-1/2	11-13/16	2-1/2	--	Min	18	16d	8	16d	2770	3125	3355	1845		
								Max	26		12		4005	4515	4845	2765		
6 x 16	HD612	HU612	14	5-1/2	9-13/16	2-1/2	1-1/8	Min	16	16d	8	16d	2465	2780	2980	1425		
								Max	24		12		3695	4170	4470	2765		
	HD612IF	HUC612	14	5-1/2	9-13/16	2-1/2	--	Min	16	16d	8	16d	2465	2780	2980	1425		
								Max	24		12		3695	4170	4470	2765		
	HDQ612IF	HUCQ612	14	5-1/2	11	3	1-1/2	--	14	WS3	6	WS3	5605	5605	5605	3280		31, R1, F32
	HD614	HU614	14	5-1/2	11-13/16	2-1/2	1-1/8	Min	18	16d	8	16d	2770	3125	3355	1845		5, R5, F2
								Max	26		12		4005	4515	4845	2765		
	HD614IF	HUC614	14	5-1/2	11-13/16	2-1/2	--	Min	18	16d	8	16d	2770	3125	3355	1845		
								Max	26		12		4005	4515	4845	2765		
	HD616	HU616	14	5-1/2	13-13/16	2-1/2	1-1/8	Min	22	16d	10	16d	3390	3820	4100	2305		
								Max	30		14		4620	5195	5195	2795		
	HD616IF	HUC616	14	5-1/2	13-13/16	2-1/2	--	Min	22	16d	10	16d	3390	3820	4100	2305		
								Max	30		14		4620	5195	5195	2795		
6 x 18	HD614	HU614	14	5-1/2	11-13/16	2-1/2	1-1/8	Min	18	16d	8	16d	2770	3125	3355	1845		5, R5, F2
								Max	26		12		4005	4515	4845	2765		
	HD614IF	HUC614	14	5-1/2	11-13/16	2-1/2	--	Min	18	16d	8	16d	2770	3125	3355	1845		
								Max	26		12		4005	4515	4845	2765		
	HD616	HU616	14	5-1/2	13-13/16	2-1/2	1-1/8	Min	22	16d	10	16d	3390	3820	4100	2305		
								Max	30		14		4620	5195	5195	2795		
	HD616IF	HUC616	14	5-1/2	13-13/16	2-1/2	--	Min	22	16d	10	16d	3390	3820	4100	2305		
								Max	30		14		4620	5195	5195	2795		
8 x 6	HD86	--	14	7-1/2	4-15/16	2-1/2	1-1/2	Min	8	16d	4	16d	1230	1390	1490	920		
								Max	10		4		1540	1735	1865	920		
	HD86IF	--	14	7-1/2	5-1/8	2-1/2	1-1/2	--	10	16d	4	16d	1410	1620	1740	900		
8 x 8	HD88	HU88	14	7-1/2	6-13/16	2-1/2	1-1/2	Min	10	16d	4	16d	1540	1735	1865	920		
								Max	14		6		2155	2430	2610	1380		
	HD88IF	HUC88	14	7-1/2	6-13/16	2-1/2	--	Min	10	16d	4	16d	1540	1735	1865	920		
								Max	14		6		2155	2430	2610	1380		

1) Uplift loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) 16d sinkers (0.148 dia. x 3-1/4" long) may be used at 0.84 of the table load where 16d commons are specified. This does not apply to JUS, HUS, MUS slant nail hangers.
3) **NAILS:** 10d x 1-1/2" nails are 0.148" dia. x 1-1/2" long, 10d nails are 0.148" dia. x 3" long, 16d nails are 0.162" dia. x 3-1/2" long.
New products or updated product information are designated in **blue font**.

Corrosion Finish Stainless Steel Gold Coat HDG Triple Zinc



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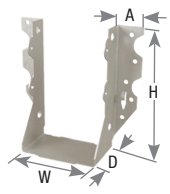
Face Mount Hanger Charts

MiTek®

Joist Size	USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in) W	H	D	A	Fastener Schedule[2,3] Min/ Max	Header Qty	Header Nail	Joist Qty	Joist Nail	DF/SP Allowable Loads (Lbs.) Floor 100%	Roof 115%	Roof 125%	Uplift[1] 160%	Corrosion Finish	Code Ref.
8 x 10	HD810	HU810	14	7-1/2	8-9/16	2-1/2	1-1/2	Min	14	16d	6	16d	2155	2430	2610	1380		5, R5, F2
								Max	18	16d	8	16d	2770	3125	3355	1845		
	HD810IF	HUC810	14	7-1/2	8-9/16	2-1/2	--	Min	14	16d	6	16d	2155	2430	2610	1380		
								Max	18	16d	8	16d	2770	3125	3355	1845		
8 x 12	HD812	HU812	14	7-1/2	10-1/2	2-1/2	1-1/2	Min	16	16d	6	16d	2465	2780	2980	1380		
								Max	22	16d	8	16d	3390	3820	4100	1845		
	HD812IF	HUC812	14	7-1/2	10-1/2	2-1/2	--	Min	16	16d	6	16d	2465	2780	2980	1380		
								Max	22	16d	8	16d	3390	3820	4100	1845		
8 x 14	HD814	HU814	14	7-1/2	11-13/16	2-1/2	1-1/2	Min	18	16d	8	16d	2770	3125	3355	1845		
								Max	24	16d	12	16d	3695	4170	4470	2765		
	HD814IF	HUC814	14	7-1/2	11-13/16	2-1/2	--	Min	18	16d	8	16d	2770	3125	3355	1845		
								Max	24	16d	12	16d	3695	4170	4470	2765		
8 x 16	HD816	HU816	14	7-1/2	12-13/16	2-1/2	1-1/2	Min	20	16d	8	16d	3080	3475	3725	1845		
								Max	26	16d	12	16d	4005	4515	4845	2765		
	HD816IF	HUC816	14	7-1/2	12-13/16	2-1/2	--	Min	20	16d	8	16d	3080	3475	3725	1845		
								Max	26	16d	12	16d	4005	4515	4845	2765		
Rough Lumber Sizes																		
2 x 4	SUH24R	LU24R-18, U24R	16	2	3-1/16	2	1-1/8	--	4	10d	2	10d x 1-1/2	500	560	605	380		5, R5, F2
										16d			590	665	720	380		
2 x 6 - 8	SUH26R	LU26R-18, U26R	16	2	4-15/16	2	1-3/16	--	6	10d	4	10d x 1-1/2	750	840	910	755		
										16d			880	1000	1080	755		
2 x 8 - 10	SUH28R	LU28R-18	16	2	6-7/16	2	1-1/8	--	8	10d	6	10d x 1-1/2	1000	1120	1210	800		
										16d			1175	1335	1440	800		
2 x 10 - 12	SUH210R	LU210R-18, U210R	16	2	7-13/16	2	1-1/8	--	10	10d	6	10d x 1-1/2	1250	1405	1515	1135		
										16d			1470	1670	1800	1135		
2 x 14 - 16	SUH214R	--	16	2	9-13/16	2	1-1/8	--	12	10d	8	10d x 1-1/2	1500	1685	1815	1330		
										16d			1765	2000	2160	1330		
4 x 4	SUH44R	U44R	16	4	2-11/16	2	1-1/8	--	6	10d	2	16d	750	840	910	440		
										16d			880	1000	1080	440		
4 x 6	SUH46R	U46R	16	4	4-11/16	2	1-1/8	--	8	10d	4	16d	1000	1120	1210	885		
										16d			1175	1335	1440	885		
4 x 10 - 12	SUH410R	U410R	16	4	8-3/16	2	2	--	14	10d	6	16d	1750	1965	2120	1345		
										16d			2060	2335	2520	1345		
6 x 8	SUH66R	U66R	16	6	5	2	1	--	8	10d	4	16d	1000	1120	1210	885		
										16d			1175	1335	1440	885		
6 x 10 - 12 - 14	SUH610R	U610R	16	6	9	2	1	--	14	10d	6	16d	1750	1965	2120	1345		
										16d			2060	2335	2520	1345		
Glulam Sizes																		
3-1/8 x 10-1/2 - 19-1/2	HD32105	HU3.25/10.5	14	3-1/4	9-15/16	2-1/2	1-1/8	Min	16	16d	6	10d	2465	2780	2980	1170		5, R5, F2
								Max	22		10		3390	3820	4100	1950		
3-1/8 x 12 - 21	HD3212	HU3.25/12	14	3-1/4	11-7/8	2-1/2	1-1/8	Min	18	16d	8	10d	2770	3125	3355	1560		
								Max	26		12		4005	4515	4845	2340		
5-1/8 x 10-1/2 - 19-1/2	HD5112	HU5.125/12	14	5-1/4	9-15/16	2-1/2	1-1/8	Min	16	16d	8	16d	2465	2780	2980	1425		
								Max	24		12		3695	4170	4470	2765		
5-1/8 x 14-1/2 - 21	HD51135	HU5.125/13.5	14	5-1/4	12-15/16	2-1/2	1-1/8	Min	20	16d	10	16d	3080	3475	3725	2305		
								Max	28		14		4310	4860	5035	2795		

1) Uplift loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) 16d sinkers (0.148 dia. x 3-1/4" long) may be used at 0.84 of the table load where 16d commons are specified. This does not apply to JUS, HUS, MUS slant nail hangers.
3) **NAILS:** 10d x 1-1/2" nails are 0.148" dia. x 1-1/2" long, 10d nails are 0.148" dia. x 3" long, 16d nails are 0.162" dia. x 3-1/2" long.
New products or updated product information are designated in **blue font.**

Corrosion Finish Stainless Steel Gold Coat HDG Triple Zinc



ADTT-TZ Adjustable Deck Tension Tie

Deck collapses are often caused by failure of the connection where the deck is attached to the main structure due to little or no lateral capacity. ADTT-TZ is an Adjustable Deck Tension Tie designed to effectively transfer the out of plane lateral loads of the deck to the house structure.

- Adjustable design. MiTek WS8-EXT or 3/8-in HDG lag screws may be installed adjacent or up to 4-3/8-in below deck joist (see Figure A).
- 2-hole break-out washer (BO-W) will work with multiple screw sizes.
- Blocking extensions not required.

Materials: 14 gauge
Finish: G-185 galvanizing
Codes: See page 10 for Code Reference Chart
Patents: #9,809,974

Installation:

- Install with MiTek's WS8-EXT wood screw or 3/8-in HDG lag screw.
- Drive screw horizontally and aligned vertically with the deck joist into the wall top plate of the main (house) structure.
- Install four (4) of the specified joist fasteners into vertical legs. (Two (2) on each side of deck joist).
- Secure front brace with six (6) specified joist fasteners.
- Re-tighten the WS8-EXT or 3/8-in HDG lag screw as needed to fully engage with the ADTT-TZ. **DO NOT OVERDRIVE.** Note: Minimum 3-in thread penetration required for proper installation of WS8-EXT or lag screw.
- **For detailed installation instructions refer to www.MiTek-US.com**

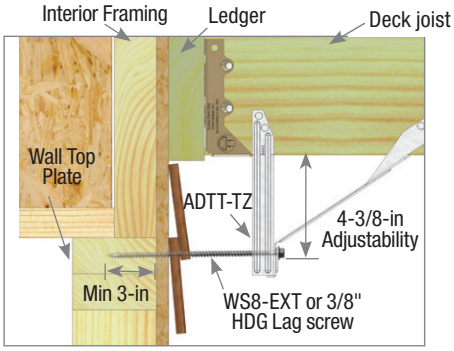
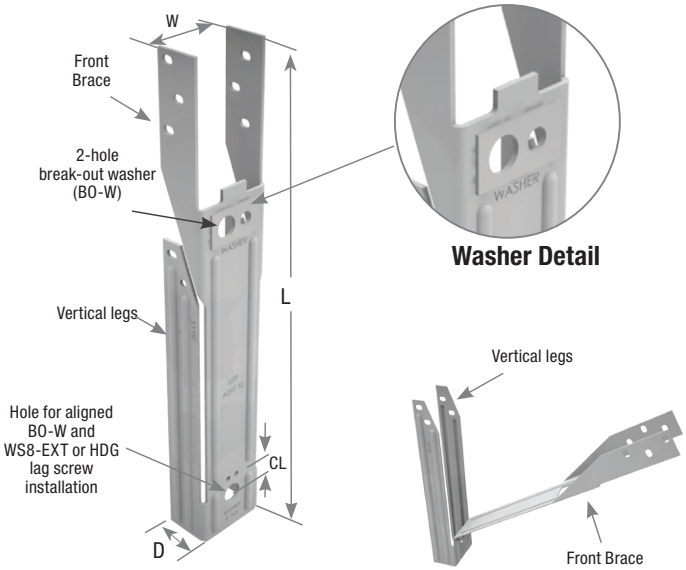


Figure A

Typical ADTT-TZ full extension installation
Extended Installation

Typical ADTT-TZ flush installation
Contracted Installation



Washer Detail

ADTT-TZ out of box

ADTT-TZ ready for installation

USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in) W	L	D	CL	Fastener Schedule Wall Qty	Wall Type[3,4,5]	Joist Qty	Joist Type[6,8]	Installation Type[1]	DF/SP Allowable Tension (Lbs.) 160%	Δ (in) at 160%[2]	S-P-F Allowable Tension (Lbs.) 160%	Corrosion Finish	Code Ref.
ADTT-TZ	DTT1Z	14	1-9/16	10-1/2	15/16	3/8	1	3/8" HDG Lag Screw	10	10d x 1-1/2	Contracted	820	0.070	820		21, F14, R17
											Extended	850	0.117	810		
									10	LL915	Contracted	820	0.121	780		
											Extended	790	0.114	780		
							1	WS8-EXT	10	10d x 1-1/2	Contracted	830	0.080	780		
											Extended	835	0.113	780		
									10	LL915	Contracted	830	0.121	780		
											Extended	790	0.114	780		
ADTT-TZKT[7]	DTT1Z-KT	14	1-9/16	10-1/2	15/16	3/8	1	WS8-EXT	10	LL915	Contracted	830	0.121	780		130
											Extended	790	0.114	780		

Corrosion Finish
- Stainless Steel
- Gold Coat
- HDG
- Triple Zinc

1) Allowable loads are for the ADTT-TZ installed tight to the bottom of the joist (Contracted) or 4-inches from bottom of joist to ADTT-TZ bend line (Extended).
2) Deflections are derived from static, monotonic load tests of devices connected to DF wood members with specified fasteners.
3) WS8-EXT is a 1/4" dia. x 8" long hot-dip galvanized screw sold by USP and must be ordered seperately if not purchasing the kit. The minimum thread penetration into the top plate of the wall framing is 3".
4) 3/8" HDG Lag Screw is an ASTM A307 Grade A lag screw with a thread diameter of 3/8-inch and is hot-dip galvanized to ASTM A153 standards. The minimum thread penetration into the top plate of the wall framing is 3". Lag screws are available at your local hardware store and must be purchased seperately.
5) Check with your siding manufacturer for recommendations for fastening through your siding material.
6) LL915 denotes a USP LumberLok Screw, #9 x 1-3/8" long and must be ordered seperately if not purchasing the kit.
7) ADTT-TZKT is a kit with (4) ADTT-TZ packaged with USP's WS8-EXT screws and LL915 LumberLok screws.
8) **Nails:** 10d x 1-1/2" nails are 0.148" dia. x 1-1/2" long.
New products or updated product information are designated in **blue font.**

DTB Deck Tie Back

The DTB-TZ Deck Tie Back provides positive anchorage between the deck framing and the exterior wall with a load carrying capacity that exceeds building code requirements. When used in conjunction with USP triple-zinc or gold-coat joist hangers, the DTB-TZ transfers the lateral loads into the exterior wall while the joist hangers support the vertical loads. The DTB-TZ can also be used to reinforce the connection between the rail post and the deck.

Materials: 14 gauge

Finish: G-185 galvanizing

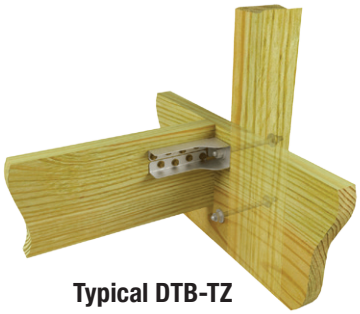
Options: See chart for Corrosion Finish Options

Codes: See page 10 for Code Reference Key Chart

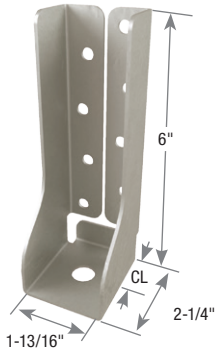
Installation:

- Use all specified fasteners. See Product Notes, page 18.
- Install with USP's THR 1/2" threaded rod or equivalent.
- Drive WS15-EXT wood screws into joist.
- Re-install threaded rod or anchor bolt. Secure with washer and nut.
- Tighten anchor bolt nuts finger tight to base plus 1/3 to 1/2 additional turns with wrench.

Typical DTB-TZ deck to ledger installation



Typical DTB-TZ installation



DTB-TZ

USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in)				Fastener Schedule[1,3,4]				DF/SP Allowable Tension (Lbs.)		S-P-F Allowable Tension (Lbs.)	Corrosion Finish	Code Ref.
							Wall		Joist						
			W	L	D	CL	Qty	Type	Qty	Type	160%	Δ (in) at 160%[2]	160%		
DTB-TZ	DTT2Z, FSC	14	1-13/16	6	2-1/4	1-1/8	1	1/2	8	WS15-EXT	1835	0.119	1510		30, F31, R16

1) WS15-EXT Wood Screws are 1/4" dia. x 1-1/2" long and are included with DTB-TZ Deck Tie-Backs.
2) Deflections are derived from static, monotonic load tests of devices connected to DF wood members with specified fasteners.
New products or updated product information are designated in **blue font**.

Corrosion Finish Stainless Steel Gold Coat HDG Triple Zinc

ERB / FB / FRB Fence Brackets

ERB24 – Designed to mount prefabricated fence sections and works with 2x4 horizontal section rails.

FB26 – Secures 2x6 rails to wood posts.

FRB24 – Secures continuous 2x4 rails to wood posts. Pre-punched holes allow installers to splice 2x4 rail ends within the bracket.

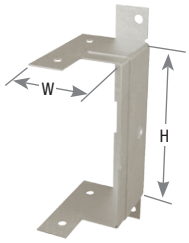
Materials: See chart

Finish: G-185 galvanizing

Codes: See page 10 for Code Reference Chart

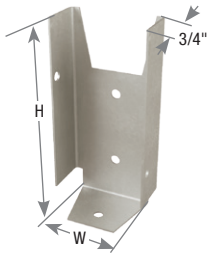
Installation:
- Use all specified fasteners. See Product Notes, page 18.

Typical ERB24-TZ installation



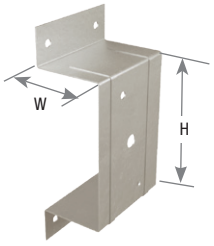
ERB24-TZ

Typical FB24-TZ installation

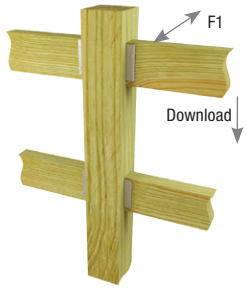


FB24-TZ

Typical FRB24-TZ installation

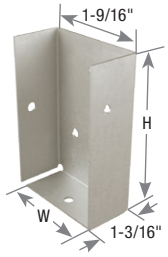


FRB24-TZ



Typical FB26-TZ installation

FB26-TZ



FB23-TZ

FB14-TZ

Rail Size	USP Stock No.	Ref. No	Steel Gauge	Dimensions (in) W	Dimensions (in) H	Fastener Schedule[2] Rail Qty	Fastener Schedule[2] Rail Type	Fastener Schedule[2] Post Qty	Fastener Schedule[2] Post Type	DF/SP Allowable Loads (Lbs)[1] Download 100%	Download 115%	F1 100%	F1 115%	Corrosion Finish	Code Ref.
1 x 4	FB14-TZ	--	20	3/4	3-1/2	3	14 ga. x 3/4 HDG	2	8d x 1-1/2 HDG	--	--	--	--		120
2 x 3	FB23-TZ	--	20	1-9/16	2-3/8	3	8d x 1-1/2 HDG	4	8d x 1-1/2 HDG	--	--	--	--		
2 x 4	ERB24-TZ	--	18	1-1/2	3-9/16	4	8d HDG	3	8d HDG	--	--	--	--		
	FB24-TZ	FB24Z, FBR24, FBR24Z	20	1-9/16	3-3/8	2	8d HDG	2	8d HDG	--	--	--	--		
	FRB24-TZ	--	18	1-9/16	3-9/16	2	10d x 1-1/2 HDG	4	10d HDG	--	--	--	--		
2 x 6	FB26-TZ	FB26	18	1-9/16	5	4	10d x 1-1/2 HDG	4	10d x 1-1/2 HDG	330	330	350	400		
						4	LL915	4	LL915	315	360	315	360		

1) Allowable loads have been increased 15% for short duration loading. No further increase is permitted.

2) **NAILS:** 8d x 1-1/2" nails are 0.131" dia. x 1-1/2" long, 8d nails are 0.131" dia. x 2-1/2" long, 10d x 1-1/2" nails are 0.148" dia. x 1-1/2" long, 10d nails are 0.148" dia. x 3" long, LL915 denotes a LumberLok screw #9 x 1-3/8" long.

Corrosion Finish Stainless Steel Gold Coat HDG Triple Zinc

CSH Concealed Stringer Hanger

The CSH-TZ concealed stringer hanger provides a method of connecting a stair stringer with a hidden hanger. The seat of the hanger is adjustable to match the slope of the stair stringer.

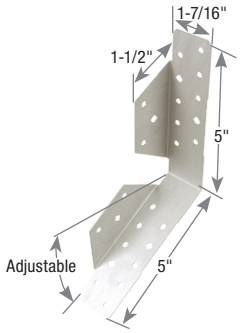
The reversible design allows the connector to be used on the left, right, or interior stringers. The CSH-TZ may be used with USP's SCA Stair Angles for a complete, easy-to-use stair framing solution.

Materials: 18 gauge
Finish: G-185 galvanizing
Codes: See page 10 for Code Reference Chart
Patents: #7,631,463

Installation:
- Use all specified fasteners. See Product Notes, page 18.
- **Bend angle only once.**

Steps:
1. Attach CSH-TZ to header with tabs positioned towards the inside of the stringer member.
2. Adjust the seat of the CSH-TZ to match the slope of the stringer member. Diamond shaped holes in the connector allow temporary installation of woodscrews to aid in installation of the CSH-TZ.
3. Install 10d x 1-1/2" HDG nails into the stringer and rim/band joist.

Typical CSH-TZ installation



CSH-TZ

USP Stock No.	Ref. No.	Steel Gauge	Fastener Schedule[2]					DF/SP Allowable Loads (Lbs.)				S-P-F/Hem Fir Allowable Loads (Lbs.)				Corrosion	Finish	Code Ref.
			Rim/Band Joist		Stringer													
			Qty	Type	Wide Face Qty	Narrow Face Qty	Type	100%	115%	125%	Uplift 160%	100%	115%	125%	Uplift 160%			
CSH-TZ	LSCZ	18	8	10d x 1-1/2 HDG	3	2	10d x 1-1/2 HDG	890	890	890	370	725	725	725	305			31, F32, R1

1) Uplift loads are increased 60% for wind or seismic loads; no further increase shall be permitted.
2) **NAILS:** 10d x 1-1/2 HDG nails are 0.148" dia. x 1-1/2" long.
New products or updated product information are designated in **blue font**.

Corrosion Finish Stainless Steel Gold Coat HDG Triple Zinc

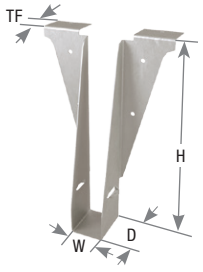
HL Light Gauge Purlin Hangers

These top mount hangers are designed for supporting floor joists or 2x purlins. The top mount style allows builders to drop in joists or purlins quickly.

Materials: 18 gauge
Finish: G90 galvanizing
Codes: See page 10 for Code Reference Chart

Installation:
- Use all specified fasteners. See Product Notes, page 18.

Typical HL210 installation



HL210

KB / KLB Beam & Purlin Hangers

With a top mount design and heavy steel fabrication the KB and KLB hangers can cover medium-to-heavy beam and purlin applications. The top mount design offers high loads with less nailing than comparable face mount hangers.

KLB – 14 gauge.

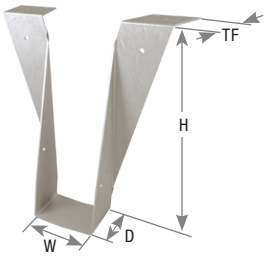
KB – 12 gauge.

Materials: See chart
Finish: G90 galvanizing
Codes: See page 10 for Code Reference Chart

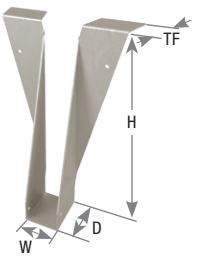
Installation:
- Use all specified fasteners. See Product Notes, page 18.
- NA20D nails are included with hangers where applicable.
- For welded installations, see page 249.
- **KB models are not recommended for use with LVL, PSL, or LSL members.**

Typical KB installation

Typical KLB installation



KB



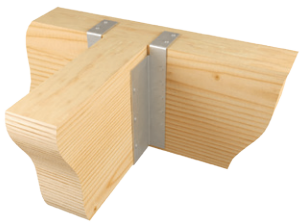
KLB

HDO Heavy-Duty Top Mount Hangers

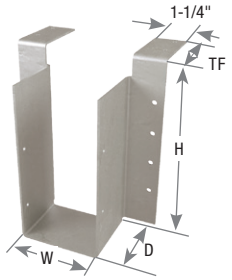
Primarily used to hang joists or headers in medium load conditions. These hangers provide higher load values with less nailing.

Materials: 12 gauge
Finish: G90 galvanizing
Options: All nominal lumber sizes are available for rough/full size lumber. See Specialty Options Chart.
Codes: See page 10 for Code Reference Chart

Installation:
- Use all specified fasteners. See Product Notes, page 18.
- Check top flange dimensions to ensure compatibility with header widths.
- **Do not use for welded or nailer applications. Reference Specialty Options chart below for hanger options.**



HDO standard installation



HDO28-2

Typical HDO410IF inverted flange installation

Typical HDO skewed option installation

Specialty Options Chart
Refer to Specialty Options pages 245 and 247 for additional details.

Option	Skewed[1,3]	Sloped Seat[2]	Sloped / Skewed[1,2,3]	Inverted Flange
Range	1˚ to 67-1/2˚ when width is 1-3/4" or less. 1˚ to 50˚ on all others.	1˚ to 45˚	See Sloped Seat and Skewed	Not available in widths less than 3-1/8"
Allowable Loads	100% of table load. 75% of uplift load on skews greater than 15˚.	100% of table load	80% of table load. 75% of uplift load on skews greater than 15˚.	100% of table load. 65% of table load when nailing into the support members end grain.
Ordering	Add *SK,* angle required, right *(R)* or left *(L),* and square cut (*SQ*) or bevel cut (*BV*) to product number. Ex. HDO210_SK45R_SQ	Add *SL,* slope required, and up *(U)* or down *(D),* to product number. Ex. HDO210_SL30D	See Sloped Seat and Skewed. Ex. HDO210_SK45R_SQ_SL30D	Add *IF* to product number. Ex. HDO610_IF

1) Skewed hangers with skews greater than 15° may have all joist nailing on outside flange.
2) Sloped or sloped / skewed hangers with slopes greater than 15° may have additional joist nails.
3) For skewed hangers, the required cut type (square or bevel) of joist member may vary based on skew angle and width of hanger. Some square cut hangers will require custom pricing due to welded back plate.

KHW / SW / SWH Welded Top Flange Hangers

SW – Light-duty hanger.

SWH – Medium-duty hanger.

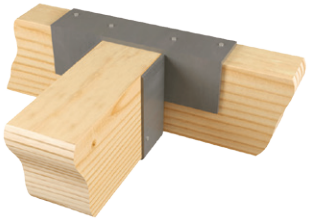
KHW – Heavy-duty hanger installs with NA20D nails for higher load capacities.

Materials: SW top flange - 12 gauge; stirrup - 12 gauge; SWH top flange - 7 gauge; stirrup - 12 gauge; KHW top flange - 3 gauge; stirrup - 10 gauge

Finish: USP primer

Options: All nominal lumber sizes are available for rough/ full size lumber. See Specialty Options below.

Codes: See page 10 for Code Reference Chart

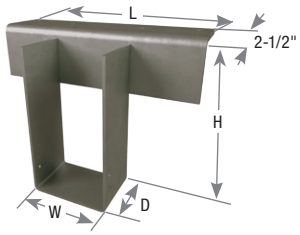


Typical KHW46 installation

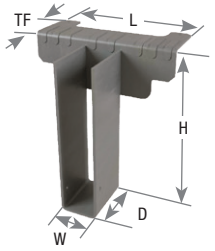
Typical SW210 installation

Installation:

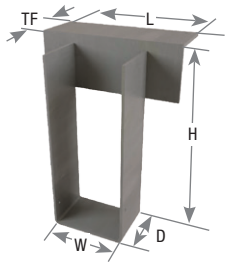
- Use all specified fasteners. See Product Notes, page 18.
- NA20D nails are supplied with KHW hangers.
- For welded installations see page 249.
- **KHW models are not recommended for use with LVL, PSL, or LSL members.**



KHW46



SW210



SWH410

Nailer Installation Chart

Chart represents maximum allowable loads for hangers used on wood nailers. Reference page 153.

USP Series	Nailer Size	Fastener Schedule[2]				DF/SP Allowable Loads (Lbs.)[1]	S-P-F Allowable Loads (Lbs.)[1]
		Header		Joist			
		Qty	Type	Qty	Type	100%	100%
SW	2X	2	10d x 1-1/2	2	10d x 1-1/2	1635	1115
	3x	**2**	**16d x 2-1/2**	**2**	**10d x 1-1/2**	**2390**	**2010**
	(2) 2x	**2**	**16d x 2-1/2**	**2**	**10d x 1-1/2**	**2390**	**2010**
	4x	**2**	**16d x 2-1/2**	**2**	**10d x 1-1/2**	**2390**	**2010**
SWH	2X	2	10d x 1-1/2	2	**10d x 1-1/2**	2600	1770
	3X	2	16d x 2-1/2	2	**10d x 1-1/2**	**3350**	2280
	(2) 2x	**2**	**16d x 2-1/2**	**2**	**10d x 1-1/2**	**2600**	**1770**
	4x	**2**	**16d x 2-1/2**	**2**	**10d x 1-1/2**	**2600**	**1770**
KHW	3X	4	16d x 2-1/2	2	10d	5180	3525

1) Listed loads shall not be increased.
2) **NAILS:** 10d x 1-1/2 nails are 0.148" dia. x 1-1/2" long, 10d nails are 0.148" dia. x 3" long, 16d x 2-1/2 nails are 0.162" dia. x 2-1/2" long.
New products or updated product information are designated in **blue font**.

Specialty Options Chart – Refer to Specialty Options pages 245, 247-249 for additional details.

Option	Skewed[1,3]	Sloped Seat[2]	Sloped / Skewed[1,2,3]	Sloped Top Flange[4]	Top Flange Offset		Saddle	Ridge
Range	1˚ to 84˚	1˚ to 45˚	See Sloped Seat and Skewed	0° to 35°	--		--	0° to 45°
Allowable Loads	100% of table load	100% of table load	100% of table load	Reduce allowable table loads using straight-line interpolation	**Hanger Width** 3-1/2" or less 3-9/16" to 5-1/2" 5-9/16" to 7-1/2"	**% of table load:** 60% 75% 85%	100% of table load per side	100% of table load
Ordering	Add SK, angle required, right (*R*) or left (*L*), and square cut (*SQ*) or bevel cut (*BV*) to product number. Ex. SW212_SK45R_SQ	Add *SL*, slope required, and up *(U)* or down *(D)*, to product number. Ex. SW212_SL30D	See Sloped Seat and Skewed. Ex. SW212_SK45R_SQ_SL30D	Add *SF*, angle required, and right *(R)* or left *(L)*, to product number. Ex. SW212_SF30L	Add *OS*, and right *(R)* or left *(L)*, to product number. Ex. SW212_OSL		Add SA,and saddle width required to product number. Ex. SW212_SA=5-1/2"	Add *DA*, angle required to product number. Ex. SW212_DA30

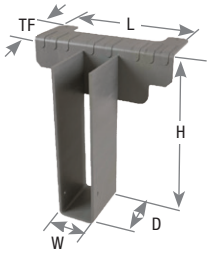
1) Skewed hangers with skews greater than 15° may have all joist nailing on outside flange.
2) Sloped or sloped / skewed hangers with slopes greater than 15° may have additional joist nails.
3) For skewed hangers, the required cut type (square or bevel) of joist member may vary based on skew angle and width of hanger. Some square cut hangers will require custom pricing due to welded back plate.
4) Sloped top flanges with greater than 15° may have additional header nails.

Top Mount Hanger Charts

MiTek®

Beam/ Joist Size	USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in)					Fastener Schedule[4]					DF/SP Allowable Loads (Lbs.)[3]				Code Ref.
									Header			Joist		Floor	Roof		Uplift[1,2]	
									Qty									
				W	H	D	L	TF	Top	Face	Type	Qty	Type	100%	115%	125%	160%	
2 x 4	HDO24	HU24TF	12	1-9/16	3-7/16	2-1/4	--	2-1/2	4	2	16d	2	10d x 1-1/2	2170	2170	2170	315	2, R12, F1
2 x 6	HL26	JB26	18	1-9/16	5-3/8	1-1/2	--	1-5/16	2	4	16d	2	prongs	1270	1270	1270	--	
	KLB26	LB26	14	1-9/16	5-3/8	1-1/2	--	1-3/8	2	4	16d	2	10d x 1-1/2	1670	1705	1725	390	2, R12
	SW26	W26	12	1-9/16	5-3/8	2-1/2	6-1/2	2-1/2	2	--	10d	2	10d x 1-1/2	2315	2315	2315	145	2,
	HDO26	HU26TF	12	1-9/16	5-3/8	2-1/4	--	2-1/2	4	6	16d	4	10d x 1-1/2	2615	2615	2615	815	R12, F1
2 x 8	HL28	JB28	18	1-9/16	7-5/16	1-3/4	--	1-5/16	2	4	16d	2	prongs	1590	1590	1590	--	
	KLB28	LB28	14	1-9/16	7-1/4	1-3/4	--	1-3/8	2	4	16d	2	10d x 1-1/2	1905	1935	1960	390	2, R12
	SW28	W28	12	1-9/16	7-1/8	2-1/2	6-1/2	2-1/2	2	--	10d	2	10d x 1-1/2	2315	2315	2315	145	2,
	HDO28	HU28TF	12	1-9/16	7-1/8	2-1/4	--	2-1/2	4	6	16d	4	10d x 1-1/2	3160	3160	3160	755	R12, F1
2 x 10	HL210	JB210A	18	1-9/16	9-5/16	2	--	1-5/16	2	4	16d	2	prongs	1590	1590	1590	--	
	KLB210	--	14	1-9/16	9-1/4	2	--	1-3/8	2	4	16d	2	10d x 1-1/2	2140	2170	2195	390	2, R12
	SW210	W210	12	1-9/16	9-1/8	2-1/2	6-1/2	2-1/2	2	--	10d	2	10d x 1-1/2	2315	2315	2315	145	2,
	HDO210	HU210TF	12	1-9/16	9-1/8	2-1/4	--	2-1/2	4	8	16d	4	10d x 1-1/2	3300	3300	3300	725	R12, F1
2 x 12	HL212	JB212A	18	1-9/16	11-1/4	2-5/16	--	1-5/16	2	4	16d	2	prongs	1590	1590	1590	--	
	KLB212	--	14	1-9/16	11-1/8	2	--	1-3/8	2	4	16d	2	10d x 1-1/2	2140	2170	2195	390	2, R12
	SW212	W212	12	1-9/16	11-1/8	2-1/2	6-1/2	2-1/2	2	--	10d	2	10d x 1-1/2	2315	2315	2315	145	
	HDO212	HU212TF	12	1-9/16	11	2-1/4	--	2-1/2	4	10	16d	6	10d x 1-1/2	2355	2355	2355	1220	
2 x 14	HL214	JB214A	18	1-9/16	13-1/8	2	--	2-1/2	2	6	16d	2	10d x 1-1/2	1590	1590	1590	360	
	SW214	W214	12	1-9/16	13-1/8	2-1/2	6-1/2	2-1/2	2	--	10d	2	10d x 1-1/2	2315	2315	2315	145	
	HDO214	HU214TF	12	1-9/16	13	2-1/4	--	2-1/2	4	12	16d	6	10d x 1-1/2	3590	3685	3745	1050	
2 x 16	SW216	W216	12	1-9/16	15-1/8	2-1/2	6-1/2	2-1/2	2	--	10d	2	10d x 1-1/2	2315	2315	2315	145	
	HDO216	HU216TF, LB216	12	1-9/16	15	2-1/4	--	2-1/2	4	14	16d	8	10d x 1-1/2	3870	4000	4000	1625	
3 x 4	HDO34	HU34TF	12	2-9/16	3-7/16	2-1/2	--	2-1/2	4	4	16d	2	10d x 1-1/2	2665	2665	2665	315	
3 x 6	SW36	W36	12	2-9/16	5-3/8	2-1/2	6-1/2	2-1/2	2	--	10d	2	10d x 1-1/2	2520	2520	2520	145	
	HDO36	HU36TF	12	2-9/16	5-3/8	2-1/2	--	2-1/2	4	6	16d	4	10d x 1-1/2	3010	3010	3010	815	
3 x 8	SW38	W38	12	2-9/16	7-1/8	2-1/2	6-1/2	2-1/2	2	--	10d	2	10d x 1-1/2	2520	2520	2520	145	
	HDO38	B38, HU38TF	12	2-9/16	7-1/8	2-1/2	-- --	2-1/2	4	8	16d	4	10d x 1-1/2	3605	3605	3605	755	
3 x 10	SW310	W310	12	2-9/16	9-1/8	2-1/2	6-1/2	2-1/2	2	--	10d	2	10d x 1-1/2	2520	2520	2520	145	
	HDO310	B310, HU310TF	12	2-9/16	9-1/8	2-1/2	--	2-1/2	4	10	16d	6	10d x 1-1/2	4165	4165	4165	1220	
3 x 12	SWH312	WNP312	7/12	2-9/16	11-1/8	2-1/2	7	2-1/2	2	--	16d	2	10d x 1-1/2	3305	3305	3305	145	
	HDO312	B312, HU312TF	12	2-9/16	11	2-1/2	--	2-1/2	4	12	16d	6	10d x 1-1/2	4475	4475	4475	1220	
3 x 14	SWH314	WNP314	7/12	2-9/16	13-1/8	2-1/2	7	2-1/2	2	--	16d	2	10d x 1-1/2	3305	3305	3305	145	
	HDO314	B314, HU314TF	12	2-9/16	13	2-1/2	--	2-1/2	4	14	16d	8	10d x 1-1/2	4475	4475	4475	1315	
3 x 16	SWH316	WNP316	7/12	2-9/16	15-1/8	2-1/2	7	2-1/2	2	--	16d	2	10d x 1-1/2	3305	3305	3305	145	
	HDO316	B316, HU316TF	12	2-9/16	15	2-1/2	--	2-1/2	4	16	16d	8	10d x 1-1/2	5715	5755	5755	1625	
(2) 2 x 4	HDO24-2	HU24-2TF	12	3-1/8	3-7/16	2-1/4	--	2-1/2	4	4	16d	2	10d	2445	2445	2445	405	2, R12, F1
(2) 2 x 6	SWH26-2	WNP26-2	7/12	3-1/8	5-3/8	2-1/2	7	2-1/2	2	--	16d	2	10d	3305	3305	3305	145	
	HDO26-2	HU26-2TF, HUS26-2TF	12	3-1/8	5-3/8	2-1/4	--	2-1/2	4	6	16d	4	10d	3050	3050	3050	815	
(2) 2 x 8	SWH28-2	WNP28-2	7/12	3-1/8	7-1/8	2-1/2	7	2-1/2	2	--	16d	2	10d	3305	3305	3305	145	
	HDO28-2	HU28-2TF, HUS28-2TF	12	3-1/8	7-1/8	2-1/4	--	2-1/2	4	8	16d	4	10d	3825	3825	3825	815	
(2) 2 x 10	SWH210-2	WNP210-2	7/12	3-1/8	9-1/8	2-1/2	7	2-1/2	2	--	16d	2	10d	3305	3305	3305	145	
	HDO210-2	HU210-2TF, HUS210-2TF	12	3-1/8	9-1/8	2-1/2	--	2-1/2	4	10	16d	6	10d	4565	4565	4565	1220	
	HDO210-2IF	HUC210-2TF, HUSC210-2TF	12	3-1/8	9-1/8	2-1/2	--	2-1/2	4	10	16d	6	10d	4565	4565	4565	1220	
(2) 2 x 12	SWH212-2	WNP212-2	7/12	3-1/8	11-1/8	2-1/2	7	2-1/2	2	--	16d	2	10d	3305	3305	3305	145	
	HDO212-2	HU212-2TF, HUS212-2TF	12	3-1/8	11	2-1/2	--	2-1/2	4	12	16d	6	10d	5060	5370	5500	1220	
(2) 2 x 14	SWH214-2	WNP214-2	7/12	3-1/8	13-1/8	2-1/2	7	2-1/2	2	--	16d	2	10d	3305	3305	3305	145	
	HDO214-2	HU214-2TF, HUS214-2TF	12	3-1/8	13	2-1/2	--	2-1/2	4	14	16d	8	10d	5385	5410	5410	1625	
(2) 2 x 16	SWH216-2	WNP216-2	7/12	3-1/8	15-1/8	2-1/2	7	2-1/2	2	--	16d	2	10d	3305	3305	3305	145	
	HDO216-2	HU216-2TF	12	3-1/8	15	2-1/2	--	2-1/2	4	16	16d	8	10d	5715	6100	6240	1625	

1) Uplift Loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) HL products do not provide uplift resistance, except for the HL214.
3) Refer to the respective Nailer Options chart on page 129 for hangers installed on wood nailers.
4) **NAILS:** 10d x 1-1/2" nails are 0.148" dia. x 1-1/2" long, 10d nails are 0.148" dia. x 3" long, 16d nails are 0.162" dia. x 3-1/2" long.
New products or updated product information are designated in **blue font**.



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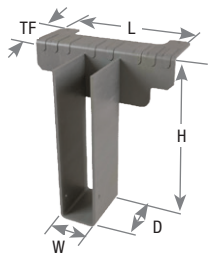
Top Mount Hanger Charts

MiTek®

Beam/ Joist Size	USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in)					Fastener Schedule[4]					DF/SP Allowable Loads (Lbs.)[2,3]				Code Ref.
									Header			Joist		Floor	Roof		Uplift[1]	
									Qty									
				W	H	D	L	TF	Top	Face	Type	Qty	Type	100%	115%	125%	160%	
4 x 4	HDO44	HU44TF	12	3-9/16	3-7/16	2-1/4	--	2-1/2	4	4	16d	2	10d	2445	2445	2445	405	
4 x 6	SW46	W46	12	3-9/16	5-3/8	2-1/2	6-1/2	2-1/2	2	--	10d	2	10d	2520	2520	2520	145	
	HDO46	HU46TF, HUS46TF	12	3-9/16	5-3/8	2-1/4	--	2-1/2	4	6	16d	4	10d	3050	3050	3050	815	
	KHW46	HW46	3/10	3-9/16	5-3/8	2-1/2	10	2-1/2	4	--	NA20D	2	10d	5535	5535	5535	145	
4 x 8	SW48	W48	12	3-9/16	7-1/8	2-1/2	6-1/2	2-1/2	2	--	10d	2	10d	2520	2520	2520	145	
	HDO48	B48, BA48, HU48TF, HUS48TF	12	3-9/16	7-1/8	2-1/4	--	2-1/2	4	8	16d	4	10d	3825	3825	3825	815	2, R12, F1
	KHW48	HW48	3/10	3-9/16	7-1/8	2-1/2	10	2-1/2	4	--	NA20D	2	10d	5535	5535	5535	145	
4 x 10	SW410	W410	12	3-9/16	9-1/8	2-1/2	6-1/2	2-1/2	2	--	10d	2	10d	2520	2520	2520	145	
	HDO410	B410, HU410TF, HUS410TF	12	3-9/16	9-1/8	2-1/4	--	2-1/2	4	10	16d	6	10d	4565	4565	4565	1220	
	SWH410	-- --	7/12	3-9/16	9-1/8	2-1/2	7	2-1/2	2	--	16d	2	10d	3305	3305	3305	145	
	KHW410	HW410	3/10	3-9/16	9-1/8	2-1/2	10	2-1/2	4	--	NA20D	2	10d	5535	5535	5535	145	
4 x 12	KB412	B412	12	3-9/16	11-1/8	2-3/8	--	2-1/2	4	2	NA20D	2	NA20D	4075	4155	4185	580	2, **R12**
	HDO412	HU412TF, HUS412TF	12	3-9/16	11	2-1/4	--	2-1/2	4	12	16d	6	10d	5060	5370	5500	1220	
	SWH412	WNP412	7/12	3-9/16	11-1/8	2-1/2	7	2-1/2	2	--	16d	2	10d	3305	3305	3305	145	
	KHW412	HW412	3/10	3-9/16	11-1/8	2-1/2	10	2-1/2	4	--	NA20D	2	10d	5535	5535	5535	145	
4 x 14	HDO414	B414, HHB414, HU414TF, HUI414TF, HUS414TF	12	3-9/16	13	2-1/2	--	2-1/2	4	14	16d	8	10d	5385	5410	5410	1625	
	SWH414	WNP414	7/12	3-9/16	13-1/8	2-1/2	7	2-1/2	2	--	16d	2	10d	3305	3305	3305	145	
	KHW414	HW414	3/10	3-9/16	13-1/8	2-1/2	10	2-1/2	4	--	NA20D	2	10d	5535	5535	5535	145	
4 x 16	HDO416	B416, HHB416, HU416TF	12	3-9/16	15	2-1/2	--	2-1/2	4	16	16d	8	10d	5715	6100	6240	1625	2, R12, F1
	SWH416	WNP416	7/12	3-9/16	15-1/8	2-1/2	7	2-1/2	2	--	16d	2	10d	3305	3305	3305	145	
	KHW416	HW416	3/10	3-9/16	15-1/8	2-1/2	10	2-1/2	4	--	NA20D	2	10d	5535	5535	5535	145	
(3) 2 x 10	HDO210-3	HU210-3TF	12	4-11/16	9-1/8	2-1/2	--	2-1/2	4	10	16d	6	16d	4565	4565	4565	1430	
(3) 2 x 12	HDO212-3	HU212-3TF	12	4-11/16	11	2-1/2	--	2-1/2	4	12	16d	6	16d	5060	5370	5500	1430	
(3) 2 x 14	HDO214-3	HU214-3TF	12	4-11/16	13	2-1/2	--	2-1/2	4	14	16d	8	16d	5385	5410	5410	1710	
(3) 2 x 16	HDO216-3	HU216-3TF	12	4-11/16	15	2-1/2	--	2-1/2	4	16	16d	8	16d	5715	6100	6240	1905	
6 x 6	HDO66	HU66TF	12	5-1/2	5-3/8	2-1/2	--	2-1/2	4	6	16d	4	16d	3050	3050	3050	955	
	SWH66	WNP66	7/12	5-1/2	5-3/8	2-1/2	7	2-1/2	2	--	16d	2	10d	3305	3305	3305	145	
	KHW66	HW66	3/10	5-1/2	5-3/8	2-1/2	10	2-1/2	4	--	NA20D	2	10d	5535	5535	5535	145	
6 x 8	HDO68	HHB68, HU68TF	12	5-1/2	7-1/8	2-1/2	--	2-1/2	4	8	16d	4	16d	3825	3825	3825	955	
	SWH68	WNP68	7/12	5-1/2	7-1/8	2-1/2	7	2-1/2	2	--	16d	2	10d	3305	3305	3305	145	
	KHW68	HW68	3/10	5-1/2	7-1/8	2-1/2	10	2-1/2	4	--	NA20D	2	10d	5535	5535	5535	145	
6 x 10	KB610	B610	12	5-1/2	9-1/4	2-3/8	--	2-1/2	4	6	NA20D	2	NA20D	4795	4920	4920	580	2, **R12**
	HDO610	HHB610, HU610TF	12	5-1/2	9-1/8	2-1/2	--	2-1/2	4	10	16d	6	16d	4565	4565	4565	1430	2, R12, F1
	SWH610	WNP610	7/12	5-1/2	9-1/8	2-1/2	7	2-1/2	2	--	16d	2	10d	3305	3305	3305	145	
	KHW610	HW610	3/10	5-1/2	9-1/8	2-1/2	10	2-1/2	4	--	NA20D	2	10d	5535	5535	5535	145	
6 x 12	KB612	B612	12	5-1/2	11-1/8	2-3/8	--	2-1/2	4	6	NA20D	2	NA20D	4795	4920	4920	580	2, **R12**
	HDO612	HHB612, HU612TF	12	5-1/2	11	2-1/2	--	2-1/2	4	12	16d	6	16d	5060	5370	5500	1430	
	KHW612	HW612	3/10	5-1/2	11-1/8	2-1/2	10	2-1/2	4	--	NA20D	2	10d	5535	5535	5535	145	
6 x 14	HDO614	B614, HHB614, HU614TF	12	5-1/2	13	2-1/2	--	2-1/2	4	14	16d	8	16d	5385	5410	5410	1710	2, R12, F1
	KHW614	HW614	3/10	5-1/2	13-1/8	2-1/2	10	2-1/2	4	--	NA20D	2	10d	5535	5535	5535	145	
6 x 16	HDO616	B616, HHB616, HU616TF	12	5-1/2	15	2-1/2	--	2-1/2	4	16	16d	8	16d	5715	6100	6240	1905	
	KHW616	HW616	3/10	5-1/2	15-1/8	2-1/2	10	2-1/2	4	--	NA20D	2	10d	5535	5535	5535	145	

1) Uplift Loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) KHW Glulam load values are based on 560 psi perpendicular to grain loading.
3) Refer to the respective Nailer Options chart on page 129 for hangers installed on wood nailers.
4) **NAILS:** 10d nails are 0.148" dia. x 3" long, 16d nails are 0.162" dia. x 3-1/2" long, NA20D nails are 0.192" dia. x 2-1/2" long and are included with KB and KHW hangers.

New products or updated product information are designated in **blue font**.



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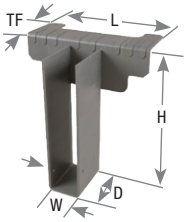
Top Mount Hanger Charts

MiTek®

Beam/ Joist Size	USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in)					Fastener Schedule[5]					DF/SP Allowable Loads (Lbs.)[2,3]				Code Ref.
									Header			Joist		Floor	Roof		Uplift[1]	
									Qty									
				W	H	D	L	TF	Top	Face	Type	Qty	Type	100%	115%	125%	160%	
8 x 6	KHW86	HW86	3/10	7-1/2	5-3/8	2-1/2	10	2-1/2	4	--	NA20D	2	10d	5535	5535	5535	145	2, R12, F1
8 x 8	KHW88	HW88	3/10	7-1/2	7-1/8	2-1/2	10	2-1/2	4	--	NA20D	2	10d	5535	5535	5535	145	
8 x 10	KHW810	HW810	3/10	7-1/2	9-1/8	2-1/2	10	2-1/2	4	--	NA20D	2	10d	5535	5535	5535	145	
8 x 12	KHW812	HHB812, HW812	3/10	7-1/2	11-1/8	2-1/2	10	2-1/2	4	--	NA20D	2	10d	5535	5535	5535	145	
8 x 14	KHW814	HHB814, HW814	3/10	7-1/2	13-1/8	2-1/2	10	2-1/2	4	--	NA20D	2	10d	5535	5535	5535	145	
8 x 16	KHW816	HHB816, HW816	3/10	7-1/2	15-1/8	2-1/2	10	2-1/2	4	--	NA20D	2	10d	5535	5535	5535	145	
Glulam Sizes[4]																		
2-1/2 glulam	KHW26	--	3/10	2-11/16	specify	4	10	2-1/2	4	--	NA20D	2	10d x 1-1/2	5295	5295	5295	145	2, R12, F1
3-1/8 glulam	KHW3	HW3.25	3/10	3-1/4	specify	3	10	2-1/2	4	--	NA20D	2	10d	5535	5535	5535	145	
5-1/8 glulam	KHW5	HW5.25	3/10	5-1/4	specify	2-1/2	10	2-1/2	4	--	NA20D	2	10d	5535	5535	5535	145	

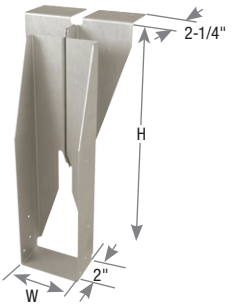
1) Uplift Loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) KHW Glulam load values are based on 560 psi perpendicular to grain loading.
3) Refer to the respective Nailer Options chart on page 129 for hangers installed on wood nailers.
4) **Consult USP for additional Glulam sizes.**
5) **NAILS:** 10d x 1-1/2" nails are 0.148" dia. x 1-1/2" long, 10d nails are 0.148" dia. x 3" long, 16d nails are 0.162" dia. x 3-1/2" long, NA20D nails are 0.192" dia. x 2-1/2" long and are included with KHW hangers.



FWH Fire Wall Hangers

The Fire Wall Hanger is designed for attaching truss, I-joist, solid sawn lumber, or engineered wood floor framing members to double wall top plates or minimum 2-ply 2x solid sawn header fire rated wood frame walls. The advanced design allows the installation of the FWH **before** the 5/8" gypsum wallboard (drywall) is attached and permits the building project to be completely framed-up, and weather-tight before the gypsum wallboard sheathing work starts.

Materials: 14 gauge
Finish: G90 galvanizing
Options: See Specialty Options chart on page 129.
Codes: See page 10 for Code Reference Chart
Patents: Pending



FWH

Installation:

- Install the face of hanger flanges tight to stud wall framing.
- For wall framing, hangers do NOT need to be installed at stud locations for full design values.
- The end of the truss/joist should measure 1-5/8" from the face of the supporting wall. See Figure 1.
- The truss/joist should bear fully on the FWH seat with a gap no greater than 1/8" between the end of the supported member and the hanger. See Figure 1.
- **Gypsum Wallboard Installation** - Use the FWH-T template to slot cut the gypsum wallboard. See FWH-T Template Sequence. Slide the gypsum wallboard into position and fasten to the framing members meeting the minimum requirements specified by code.

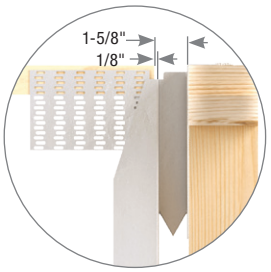
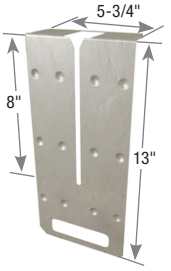


Figure 1
Typical FWH Side View

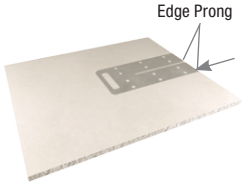


FWH-T template

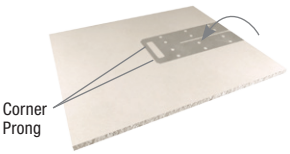
2 Hour Fire-Rating

FWH hangers are tested per ASTM E814 standards. When installed on one side of a maximum 2 hour fire-rated wall assembly, the penetration of the USP FWH Fire Wall Hanger through the gypsum wallboard will not reduce the fire resistive rating of the 2 hour fire resistive assembly.

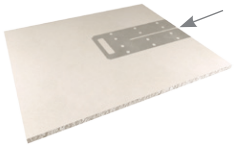
FWH-T Template Installation Sequence



1.) Align the FWH-Template slot with the mark in the gypsum wallboard and engage the prongs into edge of gypsum wallboard



2.) Rotate the template and press down on the end to engage the corner prongs



3.) Run the gypsum wallboard cutter down the template to cut the slot

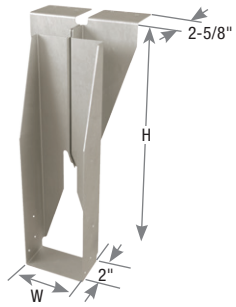
Continued on next page

FWH Fire Wall Hangers

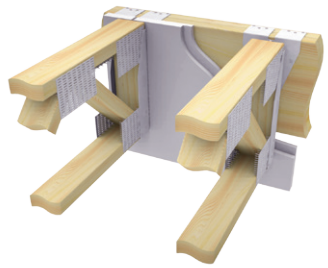
MiTek®

Geometry Table

Joist Size	USP Stock No.	Ref. No.	Dimensions (in)	
			W	H
2 x 8	FWH28	--	1-9/16	7-1/8
2 x 10	FWH210	--	1-9/16	9-1/8
2 x 12	FWH212	--	1-9/16	11-1/8
1-3/4 x 9-1/2	FWH1795	DGH1.81/9.5	1-13/16	9-7/16
1-3/4 x 11-7/8	FWH17118	DGH1.81/11.88	1-13/16	11-13/16
1-3/4 x 14	FWH1714	DGH1.81/14	1-13/16	13-15/16
1-3/4 x 16	FWH1716	DGH1.81/16	1-13/16	15-15/16
2 - 2-1/8 x 9-1/2	FWH2095	DGH2.1/9.5	2-1/8	9-7/16
2 - 2-1/8 x 11-7/8	FWH20118	DGH2.1/11.88	2-1/8	11-13/16
2 - 2-1/8 x 14	FWH2014	DGH2.1/14	2-1/8	13-15/16
2 - 2-1/8 x 16	FWH2016	DGH2.1/16	2-1/8	15-15/16
2-5/16 x 9-1/2	FWH2395	DGH2.37/9.5	2-3/8	9-7/16
2-5/16 x 11-7/8	FWH23118	DGH2.37/11.88	2-3/8	11-13/16
2-5/16 x 14	FWH2314	DGH2.37/14	2-3/8	13-15/16
2-5/16 x 16	FWH2316	DGH2.37/16	2-3/8	15-15/16
2-5/16 x 18	FWH2318	DGH2.37/18	2-3/8	17-15/16
2-5/16 x 20	FWH2320	DGH2.37/20	2-3/8	19-15/16
2-1/2 x 9-1/2	FWH2595	DGH2.56/9.5	2-9/16	9-7/16
2-1/2 x 11-7/8	FWH25118	DGH2.56/11.88	2-9/16	11-13/16
2-1/2 x 14	FWH2514	DGH2.56/14	2-9/16	13-15/16
2-1/2 x 16	FWH2516	DGH2.56/16	2-9/16	15-15/16
2-1/2 x 18	FWH2518	DGH2.56/18	2-9/16	17-15/16
2-1/2 x 20	FWH2520	DGH2.56/20	2-9/16	19-15/16
3-1/2 x 9-1/2	FWH3595	DGH3.62/9.5, DGB3.62/9.5	3-9/16	9-7/16
3-1/2 x 11-7/8	FWH35118	DGH3.62/11.88, DGB3.62/11.88	3-9/16	11-13/16
3-1/2 x 14	FWH3514	DGH3.62/14, DGB3.62/14	3-9/16	13-15/16
3-1/2 x 16	FWH3516	DGH3.62/16, DGB3.62/16	3-9/16	15-15/16
3-1/2 x 18	FWH3518	DGH3.62/18, DGB3.62/18	3-9/16	17-15/16
3-1/2 x 20	FWH3520	DGH3.62/20, DGB3.62/20	3-9/16	19-15/16
3-1/2 x 22	FWH3522	DGH3.62/22, DGB3.62/22	3-9/16	21-15/16
3-1/2 x 24	FWH3524	DGH3.62/24, DGB3.62/24	3-9/16	23-15/16
--	FWH-T	--	5-3/4	13

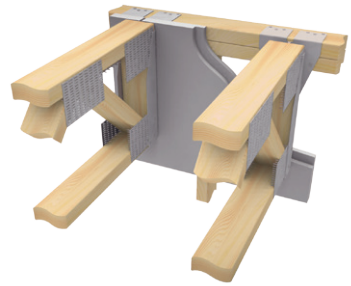


FWH



Typical FWH solid sawn header installation

Typical FWH stud wall installation



Typical FWH stud wall with (2) layers of 5/8-in gypsum wallboard installation

2 Hour Fire-Rating

FWH hangers are tested per ASTM E814 standards. When installed on one side of a maximum 2 hour fire-rated wall assembly, the penetration of the USP FWH Fire Wall Hanger through the gypsum wallboard will not reduce the fire resistive rating of the 2 hour fire resistive assembly.

Fastener / Allowable Load Table

Installation Type	Fastener Schedule[2]					DF Allowable Loads (Lbs.)								Code Ref.
	Header			Joist		Solid Sawn Header				2-Ply, 2x Wall Top Plate				
	Top Qty	Face Qty	Type	Qty	Type	Download 100%	Download 115%	Download 125%	Uplift[1] 160%	Download 100%	Download 115%	Download 125%	Uplift[1] 160%	
Without 5/8-in gypsum wallboard or structural sheathing	6	--	10d	6	10d x 1-1/2	2240	2240	2240	180	2045	2045	2045	180	2, R12, F1
		2							380				380	
After (1) layer of 5/8-in gypsum wallboard is installed	6	--	10d	6	10d x 1-1/2	2400	2400	2400	180	2400	2400	2400	180	130
		2							380				380	
After (2) layers of 5/8-in gypsum wallboard are installed	6	--	10d	6	10d x 1-1/2	2400	2400	2400	180	2400	2400	2400	180	
		2							380				380	
Two-sided after (2) layers of 5/8-in gypsum wallboard are installed (min. 2x6 wall)	6	--	10d	6	10d x 1-1/2	2400	2400	2400	180	2400	2400	2400	180	
		2							380				380	
After (1) layer of structural sheathing & (1) layer of 5/8-in gypsum wallboard is installed	6	--	10d	6	10d x 1-1/2	2400	2400	2400	180	2400	2400	2400	180	
		2							380				380	

1) Uplift Loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) **NAILS**: 10d x 1-1/2" nails are 0.148" dia. x 1-1/2" long, 10d nails are 0.148" dia. x 3" long

Updated product information are designated in **blue font.**

Specialty Options Chart - Refer to Specialty Options pages 245 and 247 for additional details.

Option	Skewed[1]
Range	1˚ to 45˚
Allowable Loads	80% of table load
Ordering	Add *SK*, angle required, right *(R)* or left *(L)*, and square cut *(SQ)* to product number. Ex. FWH3514_SK45R_SQ

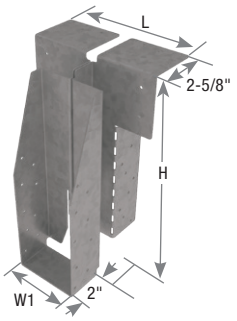
1) Skewed hangers with skews greater than 15° may have all joist nailing on outside flange.

FWHBP Fire Wall Hangers for Beams and Purlins

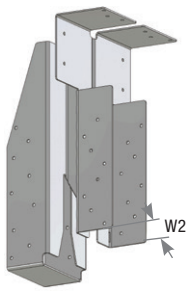
MiTek

MiTek has expanded the FWH Fire Wall Hanger series to include the higher load carrying capacity FWHBP, the Fire Wall Hanger for Beams and Purlins. The FWHBP transfers the load into the supporting wall thru bearing on the top plates and directly attaching to the stud pack or post below. As with the FWH hanger, the advanced design allows you to install the hangers before the drywall is attached, allowing your project to be completely framed-up and weather-tight before the drywall sheathing shows up on site.

Materials: 12 gauge
Finish: USP primer
Codes: See page 10 for Code Reference Chart
Patents: Pending



FWHBP Hanger

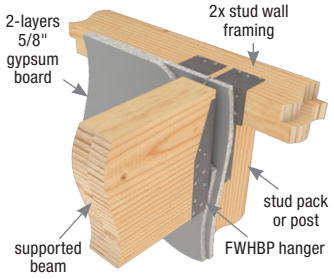


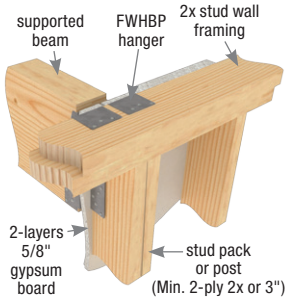
FHWBP Stud Pack Width

Installation:

- Install the face of hanger flanges tight to stud wall framing.
- The end of the truss/joist should measure 1-5/8" from the face of the supporting wall.
- The truss/joist should bear fully on the FWH seat with a gap no greater than 1/8" between the end of the supported member and the hanger.
- **Gypsum Wallboard Installation** - Use the FWH-T template to slot cut the gypsum wallboard. See FWH-T Template Sequence. Slide the gypsum wallboard into position and fasten to the framing members meeting the minimum requirements specified by code.

FWH-T template
(must be ordered seperately)

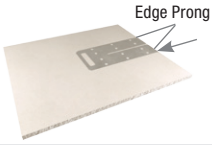




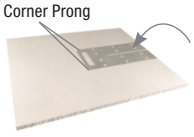
Typical FWHBP attachment to top plate/beam and stud pack/post

FWH-T Template Installation Sequence

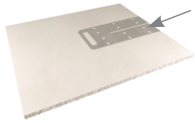
1) Align the FWH-Template slot with the mark in the gypsum wallboard and engage the prongs into edge of gypsum wallboard



2) Rotate the template and press down on the end to engage the corner prongs



3) Run the gypsum wallboard cutter down the template to cut the slot



Joist Size	USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in) W1	W2[3]	H	L	Fastener Schedule[4] Header Top Qty	Header Face Qty	Header Stud Qty	Header Type	Joist Qty	Joist Type	DF/SP Allowable Loads (Lbs.) Download 2-Ply 2x Wall Top Plate[1] 100%	115%	125%	Uplift 160%[2]	Code Ref.
3-1/2 x 11-7/8	FWHBP35118	--	12	3-9/16	Specify	11-7/8	7-1/8	6	4	16	10d	18	10d	5705	5705	5705	3830	130
3-1/2 x 14	FWHBP3514					13-15/16												
3-1/2 x 16	FWHBP3516					15-15/16												
3-1/2 x 18	FWHBP3518					17-15/16												
3-1/2 x 20	FWHBP3520					19-15/16												
3-1/2 x 22	FWHBP3522					21-15/16												
3-1/2 x 24	FWHBP3524					23-15/16												
5-1/4 x 11-7/8	FWHBP52118	--	12	5-3/8	Specify	11-7/8	7-15/16	6	4	16	10d	18	10d	5705	5705	5705	3830	
5-1/4 x 14	FWHBP5214					13-15/16												
5-1/4 x 16	FWHBP5216					15-15/16												
5-1/4 x 18	FWHBP5218					17-15/16												
5-1/4 x 20	FWHBP5220					19-15/16												
5-1/4 x 22	FWHBP5222					21-15/16												
5-1/4 x 24	FWHBP5224					23-15/16												
7 x 11-7/8	FWHBP71118	--	12	7-1/8	Specify	11-7/8	9-11/16	6	4	16	10d	18	10d	5705	5705	5705	3830	
7 x 14	FWHBP7114					13-15/16												
7 x 16	FWHBP7116					15-15/16												
7 x 18	FWHBP7118					17-15/16												
7 x 20	FWHBP7120					19-15/16												
7 x 22	FWHBP7122					21-15/16												
7 x 24	FWHBP7124					23-15/16												

1) Download allowable load is for a 2-Ply Top Plate with stud pack (or post) below without wall and floor sheathing attached.
2) Uplift loads have been increased 60% for wind or seismic loads. No further increase shall be permitted.
3) "Specify" denotes required stud pack/post width must be specified when ordering. Minimum 3".
4) **NAILS:** 10d nails are 0.148" dia. x 3" long.
New products or updated product information are designated in **blue font**.

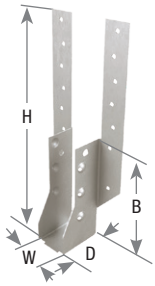
JH Multi-Purpose Joist Hanger

These strap-style hangers are designed to support trusses, joists, or purlins. JH models may be bent along the flange allowing builders to use the hangers in top mount, face mount, or combination applications.

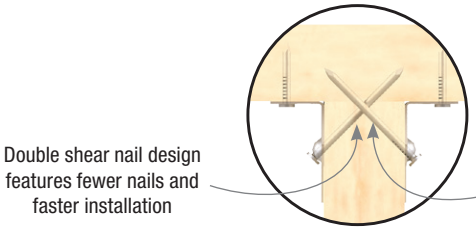
Materials: 18 gauge
Finish: G90 galvanizing
Codes: See page 10 for Code Reference Chart

Installation:
- Use all specified fasteners. See Product Notes, page 18.
- Joist nails must be driven at a 30° to 45° angle through the joist or truss into the header to achieve listed loads. **Standard length "double shear" nails must be used to achieve listed load values.**
- If installing in top mount configuration, field bend top flange over header.
- 16d sinkers (0.148" dia. x 3-1/4") may be used where 10d common are specified with no load reduction.

Typical JH20 installation



JH20



Joist Size	USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in) W	H	D	B	TF	Header Size	Fastener Schedule[2,3] Header Top Qty	Header Face Qty	Header Type	Joist Qty	Joist Type	DF/SP Allowable Loads (Lbs.) Floor 100%	Roof 115%	Roof 125%	Uplift[1] 160%	Code Ref.
2 x 6 - 12	JH20	--	18	1-9/16	10-1/16	2-1/4	5-1/8	1-3/16	2 x 6	2	4	10d	6	10d	1900	2060	2165	1285	2, R12, F1
								1-7/16	2 x 8	2	8	10d	6	10d	2540	2765	2900	1285	
								7/16	2 x 10	2	12	10d	6	10d	2270	2565	2760	1285	
								--	2 x 12	--	14	10d	6	10d	2185	2510	2730	1285	

1) Uplift Loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) Nails must be driven at a 30° to 45° angle through the joist or truss into header to achieve the table loads.
3) **NAILS:** 10d nails are 0.148" dia. x 3" long. 16d sinkers (0.148" dia. x 3-1/4" long) may be used where 10d commons are specified with no reduction in load.

LS Light Slope Rafter Hangers

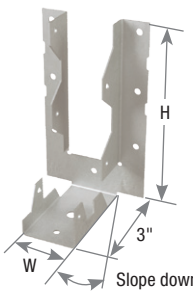
A field-adjustable seat gives the LS hanger application flexibility.

The LS hanger slopes from 0° to 30° down (0 to 7:12 pitch down).

Materials: 18 gauge
Finish: G90 galvanizing
Codes: See page 10 for Code Reference Chart

Installation:
- Use all specified fasteners. See Product Notes, page 18.
- The LS can be field adjusted to slopes from 0° to 30° down.

Typical LS268 installation



LS268

Joist Size	USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in) W	H	Fastener Schedule[2] Header Qty	Header Type	Joist Qty	Joist Type	DF/SP Allowable Loads (Lbs.) Floor 100%	Roof 115%	Roof 125%	Uplift[1] 160%	Code Ref.
2 x 6 - 8	LS268	--	18	1-9/16	5-1/2	7	10d x 1-1/2	7	10d x 1-1/2	785	900	980	675	6, R11, F3
						7	16d	7	10d x 1-1/2	960	1105	1170	675	
2 x 10	LS210	--	18	1-9/16	7-7/8	9	10d x 1-1/2	9	10d x 1-1/2	1010	1160	1260	1035	
						9	16d	9	10d x 1-1/2	1235	1370	1370	1035	

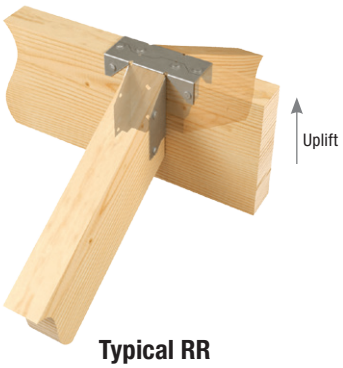
1) Uplift loads are increased 60% for wind or seismic loads; no further increase shall be permitted.
2) **NAILS:** 10d x 1-1/2 nails are 0.148˝ dia. x 1-1/2˝ long, 16d nails are 0.162˝ dia. x 3-1/2˝ long.

RR Ridge Rafter Hanger

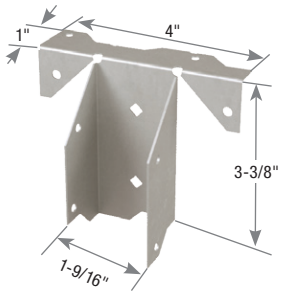
The RR Ridge Rafter supports rafter pitches up to 7:12 (30°). Nesting top flange for installation on 2x support beams.

Materials: 18 gauge
Finish: G90 galvanizing
Codes: See page 10 for Code Reference Chart

Installation:
- Use all specified fasteners. See Product Notes, page 18.
- The rafter end at the ridge must be plumb cut to achieve published loads.
- Optional diamond nail holes can be used to fasten RR to end of rafter before setting rafter into place.



Typical RR installation



RR

USP Stock No.	Ref. No.	Steel Gauge	Min Rafter Size	Fastener Schedule[2]				DF/SP Allowable Loads (Lbs.)[1]				S-P-F Allowable Loads (Lbs.)[1]				Code Ref.
				Header		Rafter		Download			Uplift	Download			Uplift	
				Qty	Type	Qty	Type	100%	115%	125%	160%	100%	115%	125%	160%	
RR	RR	18	2 x 6	4	10d x 1-1/2	4	10d x 1-1/2	365	365	365	205	290	290	290	160	130
				4	LL915	4	LL915	380	380	380	180	320	320	320	150	

1) Allowable loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) **NAILS:** 10d x 1-1/2 nails are 0.148" diameter x 1-1/2" long and LL915 denotes a USP LumberLok Screw, #9 x 1-3/8" long.
New products or updated product information are designated in **blue font.**

LSSH Slope/Skew Hangers

The LSSH series connects rafters to ridge beams in vaulted roof structures. This series is field adjustable to meet a variety of skew and/or slope applications. Slopes and skews 0° to 45°.

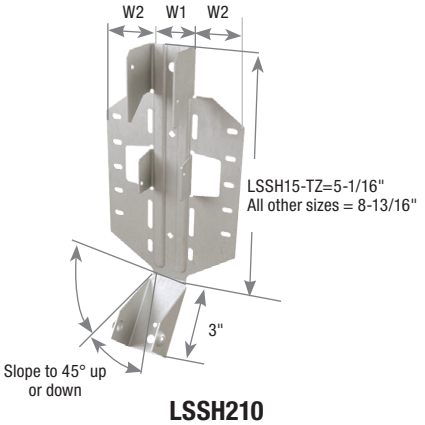
Materials: See chart
Finish: G90 galvanizing; LSSH15-TZ – G-185 Galvanizing
Options: See Chart for Corrosion Finish Options
Codes: See page 10 for Code Reference Chart

Installation:
- Use all specified fasteners. See Product Notes, page 18.

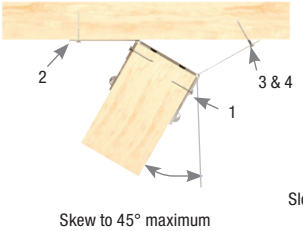
Steps:
1. Position LSSH connector against plumb-cut end of joist. Fasten joist side flanges on both sides with 10d (0.148") x 1-1/2" nails. Bend seat up to fit against joist bottom and drive (1) 10d (0.148") x 1-1/2" nail through bottom seat into rafter bottom. Drive (2) 10d (0.148") x 1-1/2" nails at downward angle through dimpled nailing guides.
2. Lean connector and rafter end against ridge beam at desired position. Install specified 10d (0.148" dia. x 3") or 16d (0.162 x 3-1/2") nails through nail holes into ridge beam at right 90° angle. If skewing the rafter, only drive nails into ridge beam on inside flange.
3. Bend flange to desired angle.
4. Hammer outside flange until edge touches header. Fasten outside flange to ridge by driving specified 10d (0.148" dia. x 3") or 16d (0.162 x 3-1/2") nails through nail holes.

- Web stiffeners are required for all wood I-Joist installations.
- Designer may consider adding a tension restraint for the supported member for roof slopes exceeding 6/12. Refer to pages 98-99.

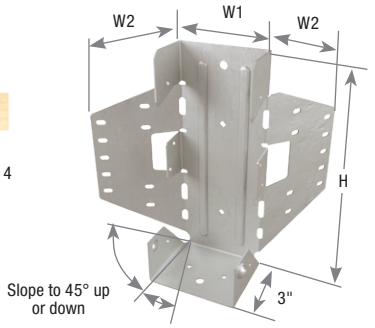
Typical LSSH179 installation



LSSH210



Skew to 45° maximum



LSSH35

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LSSH Slope/Skew Hangers

MiTek®

Rafter Width (in)	USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in)		Fastener Schedule[2]				DF/SP Allowable Loads (Lbs.)					S-P-F Allowable Loads (Lbs.)				Corrosion Finish	Code Ref.
						Header		Rafter		Floor	Roof		Uplift[1]		Floor	Roof		Uplift[1]		
				W1	W2	Qty	Type	Qty	Type	100%	115%	125%	160%		100%	115%	125%	160%		
SLOPED ONLY HANGERS																				
1-1/2	LSSH15-TZ	LSU26, LSU26Z, LSSU28, LSSU28Z	18	1-9/16	1-3/4	6	10d HDG	7	10d x 1-1/2 HDG	720	830	900	740		640	730	785	580		130
1-1/2	LSSH210	LSSU210	18	1-9/16	1-3/4	10	10d	7	10d x 1-1/2	1180	1345	1450	1065		1065	1225	1325	835		6, R11, F3
1-3/4	LSSH179	LSSUI25	18	1-13/16	1-5/8	10	10d	7	10d x 1-1/2	1180	1345	1450	1065		1065	1225	1325	835		
2 - 2-1/8	LSSH20	LSSUI2.06, LSSU2.1	18	2-1/8	2-1/2	10	10d	7	10d x 1-1/2	1180	1345	1450	980		1065	1225	1245	765		
2-1/4 - 2-5/16	LSSH23	LSSUI35	18	2-5/16	2-3/8	10	10d	7	10d x 1-1/2	1180	1345	1450	980		1065	1225	1240	760		
2-1/2	LSSH25	LSSUH310	16	2-9/16	2-3/4	18	16d	12	10d x 1-1/2	2590	2600	2600	1195		2040	2040	2040	935		
2-5/8	LSSH26	--	16	2-11/16	2-5/8	18	16d	12	10d x 1-1/2	2590	2600	2600	1195		2040	2040	2040	935		
3	LSSH31	LSSU210-2	16	3-1/8	3-3/4	18	16d	12	10d x 1-1/2	2590	2940	3175	1585		2345	2500	2500	1240		
3-1/2	LSSH35	LSSU410	16	3-9/16	3-1/2	18	16d	12	10d x 1-1/2	2590	2940	3175	1585		2345	2485	2485	1235		
SKEWED HANGERS or SLOPED & SKEWED HANGERS																				
1-1/2	LSSH15-TZ	LSU26, LSU26Z, LSSU28, LSSU28Z	18	1-9/16	1-3/4	6	10d HDG	7	10d x 1-1/2 HDG	720	815	815	740		640	640	640	580		130
1-1/2	LSSH210	LSSU210	18	1-9/16	1-3/4	10	10d	7	10d x 1-1/2	1180	1345	1450	1065		1065	1215	1310	835		6, R11, F3
1-3/4	LSSH179	LSSUI25	18	1-13/16	1-5/8	10	10d	7	10d x 1-1/2	1180	1345	1450	1065		1065	1215	1310	835		
2 - 2-1/8	LSSH20	LSSUI2.06, LSSU2.1	18	2-1/8	2-1/2	10	10d	7	10d x 1-1/2	1180	1345	1450	980		1065	1215	1245	765		
2-1/4 - 2-5/16	LSSH23	LSSUI35	18	2-5/16	2-3/8	10	10d	7	10d x 1-1/2	1180	1345	1450	980		1065	1215	1240	760		
2-1/2	LSSH25	LSSUH310	16	2-9/16	2-3/4	14	16d	12	10d x 1-1/2	1825	1825	1825	1195		1430	1430	1430	935		
2-5/8	LSSH26	--	16	2-11/16	2-5/8	14	16d	12	10d x 1-1/2	1825	1825	1825	1195		1430	1430	1430	935		
3	LSSH31	LSSU210-2	16	3-1/8	3-3/4	14	16d	12	10d x 1-1/2	1920	1920	1920	1585		1500	1500	1500	1240		
3-1/2	LSSH35	LSSU410	16	3-9/16	3-1/2	14	16d	12	10d x 1-1/2	1920	1920	1920	1585		1495	1495	1495	1235		

1) Uplift loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) **NAILS:** 10d x 1-1/2" nails are 0.148" dia. x 1-1/2" long, 10d nails are 0.148" dia. x 3" long, 16d nails are 0.162" dia. x 3-1/2" long.
New products or updated product information are designated in **blue font**.

Corrosion Finish
Stainless Steel · Gold Coat · HDG · Triple Zinc

SKH / SKHH Skewed 45° Hangers

SKH – Standard 45° skew hanger allows for a 40° to 50° skew range, without hanger modification.

SKHH – For heavier applications.

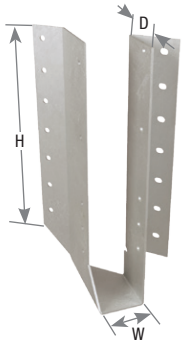
Materials: 14 or 16 gauge
Finish: G90 galvanizing
Options: See chart for Corrosion Finish Options
Codes: See page 10 for Code Reference Chart

SKH26R
right skew

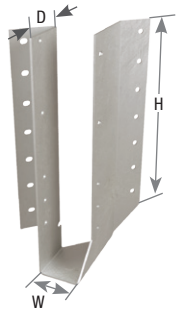
SKH26L
left skew

Installation:

- Use all specified fasteners. See Product Notes, page 18.
- The hangers listed are for standard sizes and will accommodate a 40° to 50° skew range.
- Most sizes do not require a miter cut for installation. Refer to chart footnote identified with an asterisk.
- Illustrations show left and right skews. (SKH_L = skewed left; SKH_R = skewed right)
- For I-Joist installations, web stiffeners are required.
- Refer to illustration for staggered I-Joist application for double 2", 2-5/16", and 2-1/2" models.
- For double I-Joist installations, web stiffeners between I-Joists are required.



SKH210R



SKH210L

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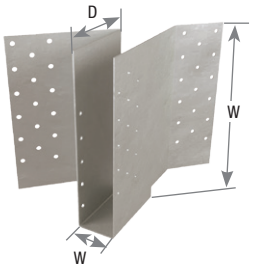
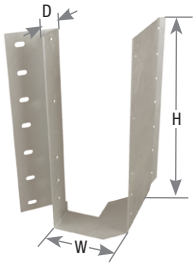
SKH / SKHH Skewed 45° Hangers

Typical SKH26L installation
left skew



SKHH210L
left skew



SKHH210L-2
left skew

AVAILABLE IN GOLD COAT

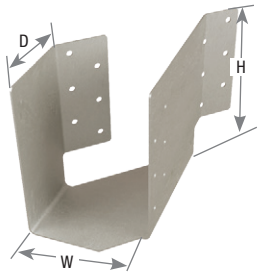
Beam/Joist Size	USP Stock No.	Ref. No.	Ga.	Dimensions (in)			Fastener Schedule[2]				DF/SP Allowable Loads (Lbs.)					S-P-F Allowable Loads (Lbs.)				Corrosion Finish	Code Ref.
							Header		Joist		Floor	Roof		Uplift[1]		Floor	Roof		Uplift[1]		
				W	H	D	Qty	Type	Qty	Type	100%	115%	125%	160%		100%	115%	125%	160%		
2 x 4	SKH24L/R	SUR/L24	16	1-9/16	3-1/4	1-7/8	4	16d	4	10d x 1-1/2	510	510	510	565		395	395	395	440		6, R11, F3
2 x 6-8	SKH26L/R	SUR/L26	16	1-9/16	5-1/4	1-7/8	6	16d	6	10d x 1-1/2	830	890	890	1085		700	700	700	980		
	SKHH26L/R	--	14	1-5/8	5-1/8	3-1/4	18	16d	12	10d x 1-1/2	1850	1980	1980	885		1555	1555	1555	695		130
2 x 8-12	SKH28L/R	--	16	1-9/16	7-1/4	1-7/8	10	16d	8	10d x 1-1/2	1380	1465	1465	1360		1160	1160	1160	1075		6, R11, F3
	SKHH28L/R	--	14	1-5/8	7	3-1/4	26	16d	16	10d x 1-1/2	2465	2780	2790	1260		2115	2200	2200	995		130
2 x 10-14	SKH210L/R	SUR/L210, SUR/L214	16	1-9/16	9-1/4	1-7/8	14	16d	10	10d x 1-1/2	1790	1790	1790	1565		1425	1425	1425	1245		6, R11, F3
	SKHH210L/R	--	14	1-5/8	9	4-1/4	34	16d	20	10d x 1-1/2	2935	2935	2935	1520		2330	2330	2330	1210		130
1-3/4 x 9-1/4 - 14	SKH1720L/R	SUR/L1.81/9	16	1-13/16	9-1/8	1-7/8	14	10d	10	10d x 1-1/2	1625	1870	2030	1565		1430	1645	1730	1245		6, R11, F3
1-3/4 x 11-1/4 - 18	SKH1724L/R	SUR/L1.81/11, SUR/L1.81/14	16	1-13/16	11-1/8	1-7/8	16	10d	10	10d x 1-1/2	1855	2135	2320	1565		1635	1880	2040	1245		
2 - 2-1/8 x 9-1/4 - 14	SKH2020L/R	SUR/L2.06/9, SUR/L2.1/9	16	2-1/8	9	1-7/8	14	10d	10	10d x 1-1/2	1625	1870	2030	1565		1430	1645	1715	1235		
2 - 2-1/8 x 11-1/4 - 18	SKH2024L/R	SUR/L2.06/11, SUR/L2.1/11	16	2-1/8	11	1-7/8	16	10d	10	10d x 1-1/2	1855	2135	2320	1565		1635	1880	2040	1235		
2-1/4 - 2-5/16 x 9-1/4 - 14	SKH2320L/R	SUR/L2.37/9	16	2-3/8	8-7/8	1-7/8	14	10d	10	10d x 1-1/2	1625	1870	2030	1565		1430	1645	1715	1235		
2-1/4 - 2-5/16 x 11-1/4 - 18	SKH2324L/R	SUR/L2.37/11, SUR/L2.37/14	16	2-3/8	10-7/8	1-7/8	16	10d	10	10d x 1-1/2	1855	2135	2320	1565		1635	1880	2040	1235		
3 x 6-8	SKH36L/R	--	16	2-9/16	4-3/4	1-3/8	6	16d	6	10d x 1-1/2	830	950	1025	1085		725	830	830	980		
3 x 8-12	SKH38L/R	--	16	2-9/16	6-3/4	1-3/8	10	16d	8	10d x 1-1/2	1380	1585	1585	1360		1210	1255	1255	1240		
3 x 10-14	SKH310L/R	--	16	2-9/16	8-3/4	1-3/8	14	16d	10	10d x 1-1/2	1930	2220	2250	1565		1780	2045	2090	1245		
3 x 12 - 14 - 16	SKH312L/R	--	16	2-9/16	10-3/4	1-3/8	16	16d	10	10d x 1-1/2	2210	2500	2500	1565		2035	2190	2190	1245		
2-1/2 x 9-1/4 - 14	SKH2520L/R	SUR/L2.56/9	16	2-9/16	8-5/8	1-7/8	14	10d	10	10d x 1-1/2	1625	1870	2030	1565		1430	1645	1705	1230		
2-1/2 x 11-1/4 - 16	SKH2524L/R	SUR/L2.56/11, SUR/L2.56/14	16	2-9/16	10-3/4	1-7/8	16	10d	10	10d x 1-1/2	1855	2135	2320	1565		1635	1880	2040	1230		
2-5/8 x 9-1/4 - 14	SKH2620L/R	-- --	16	2-11/16	8-11/16	1-7/8	14	10d	10	10d x 1-1/2	1625	1870	2030	1565		1430	1645	1705	1230		
2-5/8 x 11-1/4 - 16	SKH2624L/R	-- --	16	2-11/16	10-11/16	1-7/8	16	10d	10	10d x 1-1/2	1855	2135	2320	1565		1635	1880	2040	1230		
(2) 2 x 6-8	SKH26L/R-2 *	SUR/L26-2	16	3-1/16	4-1/2	1-3/8	6	16d	6	10d	830	950	1035	1115		725	835	865	980		
	SKHH26L/R-2	HSUR/L26-2	14	3-1/16	5-1/4	2	12	16d	4	16d x 2-1/2	1850	2040	2040	885		1495	1495	1495	650		130
	SKHH26L/R-2IF	HSUR/LC26-2	14	3-1/16	5-1/4	2	12	16d	4	16d x 2-1/2											
(2) 2 x 8-12	SKH28L/R-2 *	--	16	3-1/16	6-1/2	1-3/8	10	16d	8	10d	1380	1585	1725	1360		1210	1395	1515	1065		6, R11, F3
(2) 2 x 10-14	SKH210L/R-2 *	SUR/L210-2	16	3-1/16	8-1/2	1-3/8	14	16d	10	10d	1930	2220	2415	1565		1695	1950	2120	1235		
	SKHH210L/R-2	HSUR/L210-2, HSUR/L214-2	14	3-1/16	8-1/2	2	20	16d	6	16d x 2-1/2	3080	3475	3695	2280		2580	2745	2745	1695		130
	SKHH210L/R-2IF	HSUR/LC210-2	14	3-1/16	8-1/2	2	20	16d	6	16d x 2-1/2											
(2) 2 x 12-16	SKH212L/R-2 *	SUR/L214-2	16	3-1/16	10-1/2	1-3/8	16	16d	10	10d	2240	2575	2800	1565		1940	2230	2405	1235		
3-1/2 x 8-14	SKH410L/R *	SUR/L410	14	3-9/16	8-1/2	2-1/2	16	16d	10	16d	2255	2540	2540	1565		1995	2290	2400	1215		6, R11, F3
3-1/2 x 12-18	SKH414L/R *	SUR/L414	14	3-9/16	12-1/2	2-1/2	22	16d	10	16d	3100	3565	3880	1565		2740	3150	3425	1215		
4 x 6-8	SKH46L/R *	SUR/L46	14	3-9/16	4-3/4	2-1/2	10	16d	6	16d	1410	1590	1590	1355		1225	1225	1225	1050		
	SKHH46L/R	HSUR/L46	14	3-9/16	5-1/4	2-1/2	12	16d	6	16d	1850	2040	2040	885		1490	1490	1490	650		130
	SKHH46L/RIF	HSUR/LC46	14	3-9/16	5-1/4	2-1/2	12	16d	6	16d											
4 x 10-14	SKH410L/R *	SUR/L410	14	3-9/16	8-1/2	2-1/2	16	16d	10	16d	2255	2540	2540	1565		1995	2290	2400	1215		6, R11, F3
	SKHH410L/R	HSUR/L410	14	3-9/16	8-1/2	2-1/2	20	16d	10	16d	3080	3475	3695	2280		2580	2735	2735	1690		130
	SKHH410L/RIF	HSUR/LC410	14	3-9/16	8-1/2	2-1/2	20	16d	10	16d											
4 x 14-18	SKH414L/R *	SUR/L414	14	3-9/16	12-1/2	2-1/2	22	16d	10	16d	3100	3565	3880	1565		2740	3150	3425	1215		6, R11, F3
	SKHH414L/R	HSUR/L414	14	3-9/16	12-1/2	2-1/2	26	16d	10	16d	4005	4515	4650	2280		3520	3740	3740	1835		130
	SKHH414L/RIF	HSUR/LC414	14	3-9/16	12-1/2	2-1/2	26	16d	10	16d											

1) Uplift loads have been increased 60% for wind and seismic loads; no further increase shall be permitted.
2) **NAILS:** 10d x 1-1/2 nails are 0.148" dia. x 1-1/2" long, 10d nails are 0.148" dia. x 3" long, 16d nails are 0.162" dia. x 3-1/2" long.
*Miter cut required on end of joist to achieve design loads.
New products or updated product information are designated in **blue font**.

Corrosion Finish
Stainless Steel Gold Coat
HDG Triple Zinc

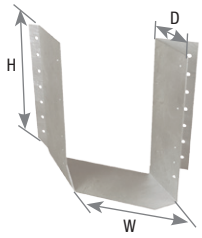
Continued on next page

SKH / SKHH Skewed 45° Hangers



SKHH46LIF
left skew

Typical SKH2520R-2
staggered I-Joist installation
right skew



SKH2520R-2
right skew

Beam/Joist Size	USP Stock No.	Ref. No.	Ga.	Dimensions (in)			Fastener Schedule[2]				DF/SP Allowable Loads (Lbs.)				S-P-F Allowable Loads (Lbs.)				Corrosion Finish	Code Ref.
							Header		Joist		Floor	Roof		Uplift[1]	Floor	Roof		Uplift[1]		
				W	H	D	Qty	Type	Qty	Type	100%	115%	125%	160%	100%	115%	125%	160%		
(2) 2 - 2-1/8 x 9-1/4 - 14	SKH2020L/R-2 *	HSUR/L4.12/9, HSUR/L4.28/9	14	4-3/16	9-1/4	3-1/2	14	10d	10	10d	1665	1915	2085	1905	1480	1700	1850	1475		6, R11, F3
(2) 2 - 2-1/8 x 11-1/4 - 18	SKH2024L/R-2 *	HSUR/L4.12/11, HSUR/L4.12/14, HSUR/L4.12/16, HSUR/L4.28/11	14	4-3/16	11-1/4	3-1/2	16	10d	10	10d	1905	2190	2380	1905	1690	1945	2110	1475		
(2) 2-5/16 x 9-1/4 - 14	SKH2320L/R-2 *	HSUR/L4.75/9	14	4-7/8	9-1/4	3-1/2	14	10d	10	10d	1665	1915	2085	1905	1480	1700	1850	1470		
(2) 2-5/16 x 11-1/4 - 18	SKH2324L/R-2 *	HSUR/L4.75/11, HSUR/L4.75/14, HSUR/L4.75/16	14	4-7/8	11-1/4	3-1/2	16	10d	10	10d	1905	2190	2380	1905	1690	1945	2110	1470		
(2) 2-1/2 x 9-1/4 - 14	SKH2520L/R-2 *	HSUR/L5.12/9	14	5-1/8	9-1/4	3-1/2	14	10d	10	10d	1665	1915	2085	1905	1480	1700	1850	1470		
(2) 2-1/2 x 11-1/4 - 16	SKH2524L/R-2 *	HSUR/L5.12/11, HSUR/L5.12/14, HSUR/L5.12/16	14	5-1/8	11-1/4	3-1/2	16	10d	10	10d	1905	2190	2380	1905	1690	1945	2110	1470		

1) Uplift loads have been increased 60% for wind and seismic loads; no further increase shall be permitted.
2) **NAILS:** 16d nails are 0.162" dia. x 3-1/2" long, 16d x 2-1/2 nails are 0.162" dia. x 2-1/2" long.
*Miter cut required on end of joist to achieve design loads.
New products or updated product information are designated in **blue font**.

Corrosion Finish
Stainless Steel Gold Coat
HDG Triple Zinc

KF / PHG Panel Hangers

KF – Fastens to joist ends quickly with nails.

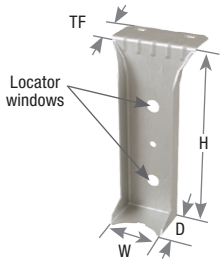
PHG – Features a gripper design to hold the joist in place with out nailing during the assembly process.

Materials: 18 gauge
Finish: G90 galvanizing
Codes: See page 10 for Code Reference Chart

Installation:

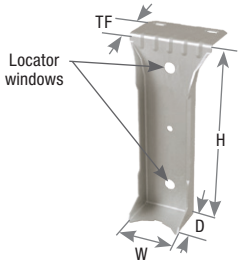
- Use all specified fasteners. See Product Notes, page 18.
- In panelized construction, installers are allowed to nail through both the sheathing and the hanger top flange with (1) 10d nail. The nail should be centered in the top flange and be no closer than 1/4" from the back or front edge of the top flange.
- Use locator window to center hanger on purlin center line.
- **KF / PHG – These hangers do not provide uplift resistance.**

Typical KF installation



KF

Typical PHG26 installation



PHG26

Continued on next page

KF / PHG Panel Hangers

Joist Size	USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in) W	H	D	TF[5]	Fastener Schedule[2,3] Header Qty	Header Type	Joist Qty	Joist Type	DF/SP Allowable Loads (Lbs.)[1] 125%	Code Ref.
2 x 4	PHG24	HF24N	18	1-9/16	3-1/2	1-3/16	1-1/16	2	8d	--	--	580	2, R12, F1
2 x 6	PHG26	HF26N	18	1-9/16	5-3/8	1	1-1/16	2	10d	--	--	650	
3 x 4	PHG34	HF34N	18	2-9/16	3-1/2	1	1-1/8	2	10d	--	--	650	
3 x 6	PHG36	HF36N	18	2-9/16	5-3/8	1	1-1/8	2	10d	--	--	650	
(2) 2 x 4	PHG24-2	F24-2	18	3-1/8	3-1/2	1	1-1/8	2	10d	--	--	650	
(2) 2 x 6	PHG26-2	F26-2	18	3-1/8	5-3/8	1	1-1/8	2	10d	--	--	650	
4 x 4	KF44	F44	18	3-9/16	3-3/8	1	1-1/8	2	10d	1	10d x 1-1/2	695	
4 x 6	KF46	F46	18	3-9/16	5-3/8	1	1-1/8	2	10d	1	10d x 1-1/2	810	

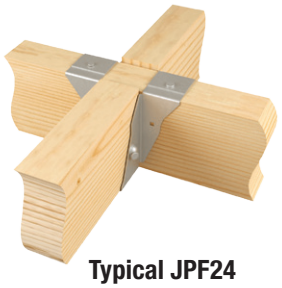
1) Loads listed are per side.
2) **NAILS:** 8d nails are 0.131" dia. x 2-1/2" long, 10d x 1-1/2 nails are 0.148" dia. x 1-1/2" long, 10d nails are 0.148" dia. x 3" long.

JPF Purlin Hangers

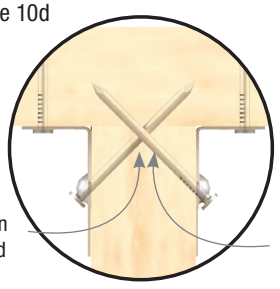
Materials: 20 gauge
Finish: G90 galvanizing
Options: See chart for Corrosion Finish Options
Codes: See page 10 for Code Reference Chart

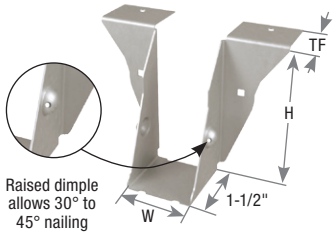
Installation:
- Use all specified fasteners. See Product Notes, page 18.
- Diamond holes allow optional header nailing.
- Joist nails must be driven at a 30° to 45° angle through the purlin into the header to achieve listed loads. **Standard length "double shear" nails must be used to achieve listed load values.**
- 16d sinkers (0.148" dia. x 3-1/4") may be used where 10d commons are specified with no load reduction.

Typical JPF24 installation



Typical JPF24 back-to-back installation





JPF24

Purlin Size	USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in) W	H	TF	Fastener Schedule[3] Header[2] Top Qty	Header Face Qty	Header Type	Joist Qty	Joist Type	DF/SP Allowable Loads (Lbs.) Floor 100%	Roof 115%	Roof 125%	Uplift[1] 160%	S-P-F Allowable Loads (Lbs.) Floor 100%	Roof 115%	Roof 125%	Uplift[1] 160%	Corrosion	Finish	Code Ref.
2 x 4	JPF24	PF24	20	1-9/16	3-3/8	1-1/16	2	--	10d	2	10d	1070	1070	1070	315	815	840	840	280			2, R12, F1
							2	2	10d	2	10d	1275	1275	1275	470	995	1020	1020	375			
2 x 6	JPF26	PF26	20	1-9/16	5-3/8	1-1/16	2	--	10d	2	10d	1070	1070	1070	315	815	840	840	280			
							2	2	10d	2	10d	1275	1275	1275	470	995	1020	1020	375			

1) Uplift loads have been increased 60% for wind and seismic loads; no further increase shall be permitted.
2) JPF cannot be used back to back on a single ply header when optional nailing is used.
3) **NAILS:** 10d nails are 0.148" dia. x 3" long.
New products or updated product information are designated in **blue font**.

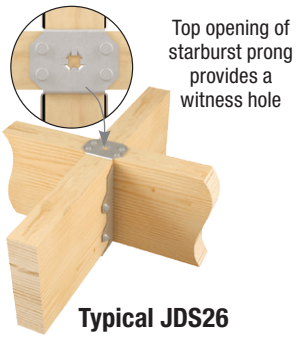
Corrosion Finish
Stainless Steel Gold Coat
HDG Triple Zinc

JDS Purlin Hangers

Materials: 18 gauge
Finish: G90 galvanizing
Codes: See page 10 for Code Reference Chart

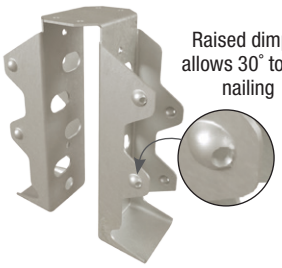
Installation:

- Use all specified fasteners. See Product Notes, page 18.
- Joist nails must be driven at a 30° to 45° angle through the purlin into the header to achieve listed loads. **Standard length "double shear" nails must be used to achieve listed load values.**

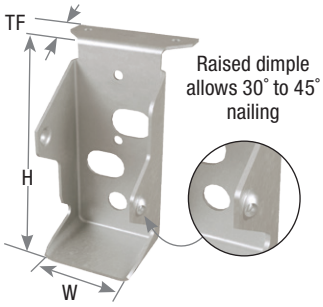


Typical JDS26 installation

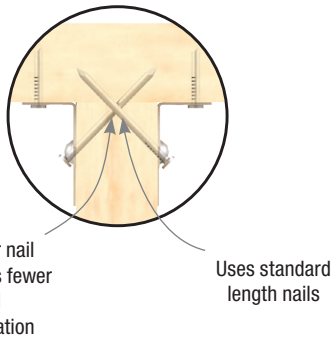
Typical JDS24S installation

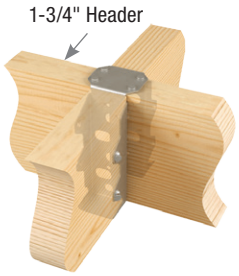


JDS26 (JDS24 similar)

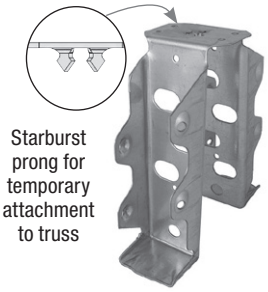


JDS24S





JDS26-175 installation



JDS26-175

Purlin Size	USP Stock	Ref. No.	Steel Gauge	Dimensions (in) W	H	TF	Min/ Max	Fastener Schedule[2] Header Top Qty	Face Qty	Type	Each Purlin Qty	Type	DF/SP Allowable Loads (Lbs.) Floor 100%	Roof 115%	Roof 125%	Uplift[1] 160%	Code Ref.
2 x 4 single	JDS24S	PF24B	18	1-9/16	3-1/2	3/4	Min	1	2	10d x 1-1/2	2	10d x 1-1/2	480	480	480	180	130
							Max	2	--		2	10d	575	575	575	340	31, R1, F32
2 x 6 single	JDS26S	PF26B	18	1-9/16	5-1/2	3/4	Min	1	2	10d x 1-1/2	4	10d x 1-1/2	550	550	550	355	130
							Max	2	--		4	10d	775	830	835	390	31, R1, F32
2 x 4 saddle	JDS24	PFD24B	18	1-9/16	3-1/2	1-9/16	Min	2	4	10d x 1-1/2	2	10d x 1-1/2	960	960	960	365	130
							Max	4	--		2	10d	1155	1155	1155	680	31, R1, F32
2 x 6 saddle	JDS26-175	--	18	1-9/16	5-7/16	1-3/4	Min	2	4	10d x 1-1/2	4	10d x 1-1/2	1105	1105	1105	705	130
							Max	4	--		4	10d	1675	1790	1870	950	
	JDS26	PFD26B	18	1-9/16	5-1/2	1-9/16	Min	2	4	10d x 1-1/2	4	10d x 1-1/2	1105	1105	1105	705	
							Max	4	--		4	10d	1575	1670	1670	775	31, R1, F32

1) Uplift loads have been increased 60% for wind and seismic loads; no further increase shall be permitted.
2) **NAILS:** 10d x 1-1/2" nails are 0.148" dia. x 1-1/2" long, 10d nails are 0.148" dia. x 3" long.
New products or updated product information are designated in **blue font**.

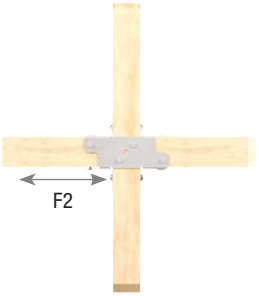
TUS / DTUS Undersaddle Hangers

TUS – For a single ply purlin.

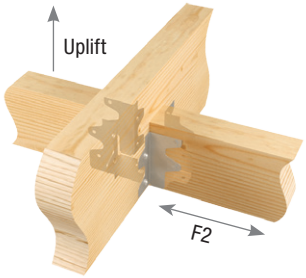
DTUS – For a single ply purlin with a 2-ply saddle dimension.

Materials: 20 gauge
Finish: G90 galvanizing
Codes: See page 10 for Code Reference Chart
Patents: #8,966,857 B2

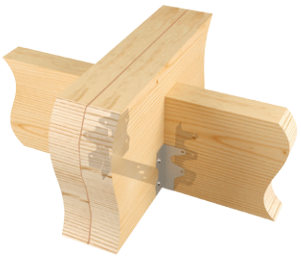
Installation:
- Use all specified fasteners. See Product Notes, page 18.
- Attaches with standard 1-1/2" joist hanger nails that can be installed with a positive placement nail gun or be hand driven.
- Other 1-1/2" fasteners with a shear value equal or greater than a 10d nail may be used.

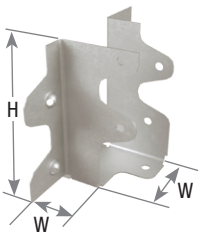


Bottom View

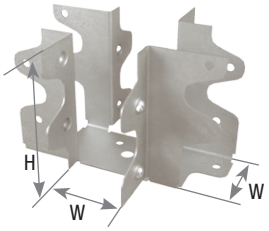


Typical TUS24 installation

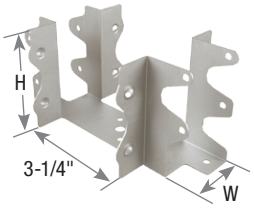

Typical DTUS24 installation



TUS24S



TUS24



DTUS24

Joist Size	USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in)		Fastener Schedule[2,3]						DF/SP Allowable Loads (Lbs.)[1]					Code Ref.
						Header			Joist								
						Qty			Qty						Uplift[1]	F2	
				W	H	Face	Bottom	Type	Face	Bottom	Type	100%	115%	125%	160%	160%	
2 x 4 - 6 Single	TUS24S	-- --	20	1-9/16	3	4	1	8d x 1-1/2	4	1	8d x 1-1/2	485	**550**	**595**	505	205	130
								10d x 1-1/2			10d x 1-1/2	580	620	620	505	205	
								LL915			LL915	580	620	620	505	205	
2 x 4 - 6 Saddle	TUS24	-- --	20	1-9/16	3	4	1	8d x 1-1/2	4	1	8d x 1-1/2	485	**550**	**595**	505	645	
								10d x 1-1/2			10d x 1-1/2	580	620	620	505	645	
								LL915			LL915	580	620	620	505	645	
	DTUS24	-- --	20	1-9/16	3	4	1	8d x 1-1/2	4	1	8d x 1-1/2	485	**550**	**595**	505	645	
								10d x 1-1/2			10d x 1-1/2	580	620	620	505	645	
								LL915			LL915	580	620	620	505	645	

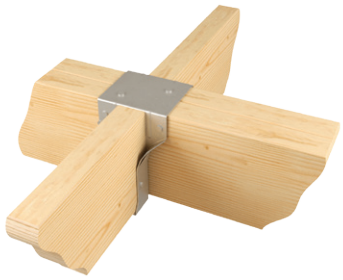
1) Uplift loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) LL915 screws are #9 (0.131" diameter) x 1-1/2" long.
3) **NAILS:** 8d x 1-1/2" nails are 0.131" dia. x 1-1/2" long, 10d x 1-1/2" nails are 0.148" dia. x 1-1/2" long, LL915 screws are #9 (0.131" dia.) x 1-1/2" long.
New products or updated product information are designated in **blue font**.

FHD Panel Hangers

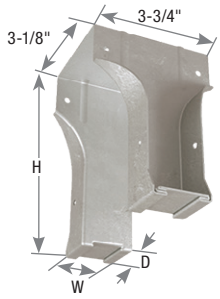
The FHD26 hanger straddles the header and receives a joist from both sides.

Materials: 18 gauge
Finish: G90 galvanizing
Codes: See page 10 for Code Reference Chart

Installation:
- Use all specified fasteners. See Product Notes, page 18.
- In panelized construction, installers are allowed to nail through both the sheathing and the hanger top flange with (1) 10d nail. The nail should be centered in the top flange and be no closer than 1/4" from the back or front edge of the top flange.



Typical FHD26 installation



FHD26

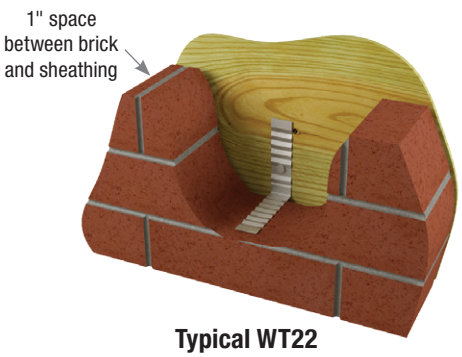
Joist Size	USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in) W	H	D	Fastener Schedule[3] Header Top Qty	Top Type	Face Qty	Face Type	Joist Qty	Joist Type	DF/SP Allowable Loads (Lbs.)[1] 125%	Uplift[2] 160%	Code Ref.
2 x 6	FHD26	PFDS24	18	1-9/16	5-3/8	1-1/2	2	16d	2	16d	2	10d x 1-1/2	960	175	130

1) Loads listed are per side.
2) Uplift loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
3) **NAILS:** 10d x 1-1/2" nails are 0.148" dia. x 1-1/2" long, 16d nails are 0.162" dia. x 3-1/2" long.
10d x 1-1/2 nails may be substituted for 16d header nails with a maximum load of 960 lbs.

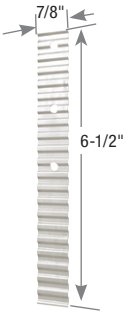
WT Wall Tie

Materials: 22 gauge
Finish: G90 galvanizing
Options: See chart for Corrosion Finish Options
Codes: See page 10 for Code Reference Chart

Installation:
- Use nails appropriate for intended use. See Product Notes, page 18.
- The opposite end must be bonded in the mortar joint of brick facade.
- Check local codes for spacing requirements.
- Wall tie shall be bent at nail, bonding into mortar joint.



Typical WT22 installation



WT22

USP Stock No.	Ref. No.	Description	Steel Gauge	Dimensions (in) W	L	Fastener Schedule[1] Qty	Type	Corrosion Finish	Code Ref.
WT22	BTB	Straight Edge - Duplex	22	7/8	6-1/2	1	10d		120

1) **NAILS:** 10d nails are 0.148" dia. x 3" long.

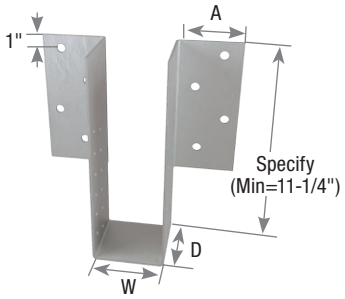
Corrosion Finish Stainless Steel Gold Coat HDG Triple Zinc

LGUM / HGUM Masonry Girder Hangers

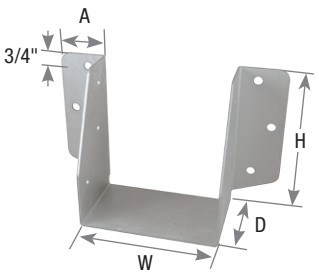
MiTek®

LGUM and HGUM Masonry Girder Hangers are high-capacity beam/girder hangers designed for installation to masonry or concrete walls. The LGUM and HGUM hangers use USP's WS screws (supplied) to attach the beam to hanger and screw anchors (supplied) to attach to the masonry or concrete wall. These hangers eliminate the need for constructing beam pockets.

Materials: LGUM – 12 gauge; HGUM – 7 gauge
Finish: G90 galvanizing
Options: See HGUM Specialty Options chart
Codes: See page 10 for Code Reference Chart



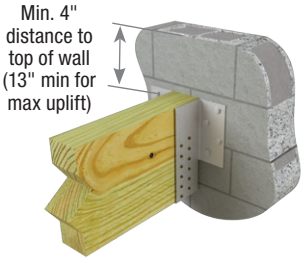
HGUM



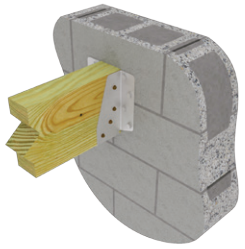
LGUM

Installation:

- WS3 structural screws and screw anchors are supplied with hangers. Substituting other fasteners may reduce capacity.
- Powers Wedge-Bolt+ screw anchors require Powers SDS Wedge-Bit drill bit. Wedge-Bits are not included and must be ordered seperately. Refer to page 34.
- Beams comprised of multiple plies must be adequately fastened to act as a single member.
- Beam height dimension (H) must be specified when ordering HGUM hangers.
- Moisture barrier between beam and wall may be required by local jurisdiction.



Typical HGUM installation



Typical LGUM installation

USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in.) W	H[3]	D	A	Fastener Schedule CMU/Concrete Qty	Screw Anchor[4]	Joist Qty	Type[5]	DF Allowable Loads (Lbs.)[2] Download (100/115/125%) CMU 1,500psi	Concrete 2,000 psi	Uplift (160%)[1] CMU / Concrete 4" Min. to Top of Wall	13" Min. to Top of Wall	Code Ref.
Double 2x Sizes															
LGUM26-2	LGUM26-2-SDS	12	3-5/16	5-7/16	4	2-3/8	4	3/8" x 4"	4	WS3	6065	6425	2125	2125	
LGUM28-2	LGUM28-2-SDS	12	3-5/16	7-3/16	4	2-3/8	6	3/8" x 4"	6	WS3	8155	8155	2770	2770	
LGUM210-2	LGUM210-2-SDS	12	3-5/16	9-3/16	4	2-3/8	8	3/8" x 4"	8	WS3	9905	9905	3350	3350	
Triple 2x Sizes															
LGUM26-3	LGUM26-3-SDS	12	4-15/16	5-1/2	4	2-3/8	4	3/8" x 4"	4	WS3	6065	6425	2125	2125	
LGUM28-3	LGUM28-3-SDS	12	4-15/16	7-1/4	4	2-3/8	6	3/8" x 4"	6	WS3	8155	8155	2770	2770	
LGUM210-3	LGUM210-3-SDS	12	4-15/16	9-1/4	4	2-3/8	8	3/8" x 4"	8	WS3	9905	9905	3350	3350	
Quadruple 2x Sizes															
LGUM26-4	LGUM26-4-SDS	12	6-9/16	5-7/16	4	2-3/8	4	3/8" x 4"	4	WS3	6065	6425	2125	2125	
LGUM28-4	LGUM28-4-SDS	12	6-9/16	7-3/16	4	2-3/8	6	3/8" x 4"	6	WS3	8155	8155	2770	2770	
LGUM210-4	LGUM210-4-SDS	12	6-9/16	9-3/16	4	2-3/8	8	3/8" x 4"	8	WS3	9905	9905	3350	3350	130
4x Sizes															
LGUM46	LGUM46-SDS	12	3-5/8	4-7/8	4	2-3/8	4	3/8" x 4"	4	WS3	6065	6425	2125	2125	
LGUM48	LGUM48-SDS	12	3-5/8	6-7/8	4	2-3/8	6	3/8" x 4"	6	WS3	8155	8155	2770	2770	
LGUM410	LGUM410-SDS	12	3-5/8	8-7/8	4	2-3/8	8	3/8" x 4"	8	WS3	9905	9905	3350	3350	
Engineered Wood & Structural Lumber Sizes (Heavy Duty)															
HGUM525	HGUM5.25-SDS	7	5-1/4	Specify 11-1/4 to 30	5-1/2	4-3/4	8	5/8" x 5"	24	WS3	16680	16680	4470	10130	
HGUM550	HGUM5.50-SDS	7	5-1/2		5-1/2	4-3/4	8	5/8" x 5"	24	WS3	16680	16680	4470	10130	
HGUM700	HGUM7.00-SDS	7	7		5-1/2	4-3/4	8	5/8" x 5"	24	WS3	16680	16680	4470	10130	
HGUM725	HGUM7.25-SDS	7	7-1/4		5-1/2	4-3/4	8	5/8" x 5"	24	WS3	16680	16680	4470	10130	
HGUM900	HGUM9.00-SDS	7	9		5-1/2	4-3/4	8	5/8" x 5"	24	WS3	16680	16680	4470	10130	

1) Uplift loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) Allowable loads assume top header fasteners are a minimum of 4-inches from the top of the wall.
3) "Specify" denotes the required supported beam height that must be specified at the time of ordering.
4) Use Powers Wedge-Bolt+ **or DeWalt Screw-Bolt+** (included); or equal, installed in accordance with manufacturer's specification.
5) WS3 Wood Screws are 1/4" dia. x 3" long and are included with hangers.
New products or updated product information are designated in **blue font**.

HGUM Specialty Options Chart - Refer to Specialty Options pages 245 and 247 for additional details.

Option	USP Series	Inverted Flange[1]
Range	HGUM	One Inverted-Flange option available
Allowable Loads	HGUM	50% of table download 75% of table uplift load
Ordering	HGUM	Add *IF* and right *(R)* or left *(L)* to product number. Ex. HGUM525_H=18_IFL

1) The inverted flange option is not available for LGUM hangers.

Typical HGUM one inverted flange, left shown

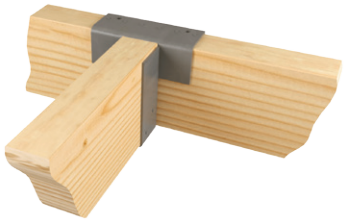
HWUH Heavy-Duty Welded Universal Hangers

MiTek®

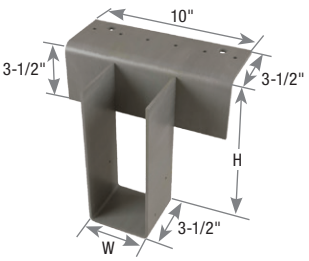
Versatile heavy-duty top flange hanger attaches to both wood and masonry. Unique design allows builders to use one style hanger on the job when the structure has a variety of support materials.

Materials: Top Flange – 3 gauge; Stirrup – 7 gauge
Finish: USP primer
Options: See Specialty Options Chart on page 146.
Codes: See page 10 for Code Reference Chart

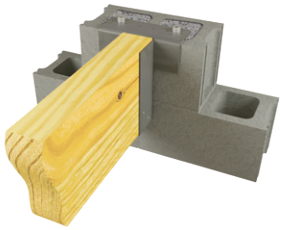
Installation:
- Use all specified fasteners. See Product Notes, page 18.
- NA21 nails are included with hangers where specified.
- **NA21 nails are not recommended for use with LVL, PSL, or LSL headers.**
- Masonry design load values apply to both solid concrete tie beams and grout-filled CMU walls.
- Alternate installation – Use (2) 1/2" x 4" Powers Fasteners Wedge-Bolts® or equal for loads up to 2,400 lbs. when attaching to CMU. Loads shall not exceed table loads.



Typical HWUH410 wood-to-wood installation



HWUH



Typical HWUH410 wood-to-masonry installation

Beam/ Joist Size	USP Stock No.	Ref. No.	Dimensions (in) W	Dimensions (in) H	Installation Type	Fastener Schedule[2] Supporting Member Wood Qty	Supporting Member Wood Type	Supported Member Qty	Supported Member Type	DF/SP Allowable Loads (Lbs.) Floor 100%	Roof 115%	Roof 125%	Uplift[1] 160%	Code Ref.
2 x 4 - 6	HWUH26	--	1-5/8	5-3/8	Wood	6	10d	4	10d x 1-1/2	3925	4020	4085	955	
					Masonry	2	1/2" x 6" J-Bolt			3060	3060	3060	1030	
2 x 8	HWUH28	--	1-5/8	7-1/8	Wood	6	10d	4	10d x 1-1/2	3925	4020	4085	955	
					Masonry	2	1/2" x 6" J-Bolt			3060	3060	3060	1030	
2 x 10	HWUH210	--	1-5/8	9-1/8	Wood	6	10d	4	10d x 1-1/2	3925	4020	4085	955	
					Masonry	2	1/2" x 6" J-Bolt			3060	3060	3060	1030	
2 x 12	HWUH212	--	1-5/8	11	Wood	6	10d	4	10d x 1-1/2	3925	4020	4085	955	
					Masonry	2	1/2" x 6" J-Bolt			3060	3060	3060	1030	
2 x 14	HWUH214	--	1-5/8	13	Wood	6	10d	4	10d x 1-1/2	3925	4020	4085	955	
					Masonry	2	1/2" x 6" J-Bolt			3060	3060	3060	1030	
2 x 16	HWUH216	--	1-5/8	16	Wood	6	10d	4	10d x 1-1/2	3925	4020	4085	955	
					Masonry	2	1/2" x 6" J-Bolt			3060	3060	3060	1030	
3 x 6	HWUH36	--	2-5/8	5-3/8	Wood	6	10d	4	10d	4615	4615	4615	955	
					Masonry	2	1/2" x 6" J-Bolt			3060	3060	3060	1030	
3 x 8	HWUH38	--	2-5/8	7-1/8	Wood	6	10d	4	10d	4615	4615	4615	955	
					Masonry	2	1/2" x 6" J-Bolt			3060	3060	3060	1030	
3 x 10	HWUH310	--	2-5/8	9-1/8	Wood	6	10d	4	10d	4615	4615	4615	955	
					Masonry	2	1/2" x 6" J-Bolt			3060	3060	3060	1030	
3 x 12	HWUH312	--	2-5/8	11	Wood	6	10d	4	10d	4615	4615	4615	955	
					Masonry	2	1/2" x 6" J-Bolt			3060	3060	3060	1030	
3 x 14	HWUH314	--	2-5/8	13	Wood	6	10d	4	10d	4615	4615	4615	955	
					Masonry	2	1/2" x 6" J-Bolt			3060	3060	3060	1030	
3 x 16	HWUH316	--	2-5/8	16	Wood	6	10d	4	10d	4615	4615	4615	955	
					Masonry	2	1/2" x 6" J-Bolt			3060	3060	3060	1030	
(2) 2 x 6	HWUH26-2	--	3-1/8	5-3/8	Wood	6	10d	4	10d	4615	4615	4615	955	
					Masonry	2	1/2" x 6" J-Bolt			3060	3060	3060	1030	
(2) 2 x 8	HWUH28-2	--	3-1/8	7-1/8	Wood	6	10d	4	10d	4615	4615	4615	955	
					Masonry	2	1/2" x 6" J-Bolt			3060	3060	3060	1030	
(2) 2 x 10	HWUH210-2	--	3-1/8	9-1/8	Wood	6	10d	4	10d	4615	4615	4615	955	
					Masonry	2	1/2" x 6" J-Bolt			3060	3060	3060	1030	
(2) 2 x 12	HWUH212-2	--	3-1/8	11	Wood	6	10d	4	10d	4615	4615	4615	955	
					Masonry	2	1/2" x 6" J-Bolt			3060	3060	3060	1030	
(2) 2 x 14	HWUH214-2	--	3-1/8	13	Wood	6	10d	4	10d	4615	4615	4615	955	
					Masonry	2	1/2" x 6" J-Bolt			3060	3060	3060	1030	
(2) 2 x 16	HWUH216-2	--	3-1/8	16	Wood	6	10d	4	10d	4615	4615	4615	955	
					Masonry	2	1/2" x 6" J-Bolt			3060	3060	3060	1030	

1) Uplift loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) **NAILS:** 10d nails are 0.148" dia. x 3" long.
New products or updated product information are designated in **blue font**.

Continued on next page

HWUH Heavy-Duty Welded Universal Hangers

MiTek

Beam/ Joist Size	USP Stock No.	Ref. No.	Dimensions (in) W	Dimensions (in) H	Installation Type	Fastener Schedule[2] Supporting Member Wood Qty	Fastener Schedule[2] Supporting Member Wood Type	Fastener Schedule[2] Supported Member Qty	Fastener Schedule[2] Supported Member Type	DF/SP Allowable Loads (Lbs.) Floor 100%	Roof 115%	Roof 125%	Uplift[1] 160%	Code Ref.
4 x 6	HWUH46	--	3-9/16	5-3/8	Wood	6	NA21	4	10d	5265	5265	5265	675	130
					Masonry	2	1/2" x 6" J-Bolt			3060	3060	3060	1030	
4 x 8	HWUH48	--	3-9/16	7-1/8	Wood	6	NA21	4	10d	5265	5265	5265	675	
					Masonry	2	1/2" x 6" J-Bolt			3060	3060	3060	1030	
4 x 10	HWUH410	--	3-9/16	9-1/8	Wood	6	NA21	4	10d	5265	5265	5265	675	
					Masonry	2	1/2" x 6" J-Bolt			3060	3060	3060	1030	
4 x 12	HWUH412	--	3-9/16	11	Wood	6	NA21	4	10d	5265	5265	5265	675	
					Masonry	2	1/2" x 6" J-Bolt			3060	3060	3060	1030	
4 x 14	HWUH414	--	3-9/16	13	Wood	6	NA21	4	10d	5265	5265	5265	675	
					Masonry	2	1/2" x 6" J-Bolt			3060	3060	3060	1030	
4 x 16	HWUH416	--	3-9/16	16	Wood	6	NA21	4	10d	5265	5265	5265	675	
					Masonry	2	1/2" x 6" J-Bolt			3060	3060	3060	1030	
6 x 6	HWUH66	--	5-1/2	5-3/8	Wood	6	NA21	4	10d	5265	5265	5265	675	
					Masonry	2	1/2" x 6" J-Bolt			3060	3060	3060	1030	
6 x 8	HWUH68	--	5-1/2	7-1/8	Wood	6	NA21	4	10d	5265	5265	5265	675	
					Masonry	2	1/2" x 6" J-Bolt			3060	3060	3060	1030	
6 x 10	HWUH610	--	5-1/2	9-1/8	Wood	6	NA21	4	10d	5265	5265	5265	675	
					Masonry	2	1/2" x 6" J-Bolt			3060	3060	3060	1030	
6 x 12	HWUH612	--	5-1/2	11	Wood	6	NA21	4	10d	5265	5265	5265	675	
					Masonry	2	1/2" x 6" J-Bolt			3060	3060	3060	1030	
6 x 14	HWUH614	--	5-1/2	13	Wood	6	NA21	4	10d	5265	5265	5265	675	
					Masonry	2	1/2" x 6" J-Bolt			3060	3060	3060	1030	
6 x 16	HWUH616	--	5-1/2	16	Wood	6	NA21	4	10d	5265	5265	5265	675	
					Masonry	2	1/2" x 6" J-Bolt			3060	3060	3060	1030	
8 x 6	HWUH86	--	7-1/2	5-3/8	Wood	6	NA21	4	10d	5265	5265	5265	675	
					Masonry	2	1/2" x 6" J-Bolt			3060	3060	3060	1030	
8 x 8	HWUH88	--	7-1/2	7-1/8	Wood	6	NA21	4	10d	5265	5265	5265	675	
					Masonry	2	1/2" x 6" J-Bolt			3060	3060	3060	1030	
8 x 10	HWUH810	--	7-1/2	9-1/8	Wood	6	NA21	4	10d	5265	5265	5265	675	
					Masonry	2	1/2" x 6" J-Bolt			3060	3060	3060	1030	
8 x 12	HWUH812	--	7-1/2	11	Wood	6	NA21	4	10d	5265	5265	5265	675	
					Masonry	2	1/2" x 6" J-Bolt			3060	3060	3060	1030	
8 x 14	HWUH814	--	7-1/2	13	Wood	6	NA21	4	10d	5265	5265	5265	675	
					Masonry	2	1/2" x 6" J-Bolt			3060	3060	3060	1030	
8 x 16	HWUH816	--	7-1/2	16	Wood	6	NA21	4	10d	5265	5265	5265	675	
					Masonry	2	1/2" x 6" J-Bolt			3060	3060	3060	1030	

1) Uplift loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) **NAILS:** NA21 nails are 0.192" dia. x 1-3/4" long and are included with 4x, 6x, and 8x HWUH hangers.
New products or updated product information are designated in **blue font**.

Specialty Options Chart

Refer to Specialty Options pages 245 and 247-248 for additional details.

Option	Skewed[1,3]	Sloped Seat[2]	Sloped / Skewed[1,2,3]	Top Flange Offset		Saddle
Range	1˚ to 45˚	1˚ to 45˚	See Sloped Seat and Skewed	--		--
Allowable Loads	100% of table load	100% of table load	100% of table load	**Hanger Width** 3-1/2" or less 3-9/16" to 5-1/2" 5-9/16" to 7-1/2"	**% of table load:** 60% 75% 85%	100% of table load per side
Ordering	Add *SK,* angle required, right *(R)* or left *(L),* and square cut (*SQ*) or bevel cut (*BV*) to product number. Ex. HWUH410_SK45R_SQ	Add *SL,* slope required, and up *(U)* or down *(D),* to product number. Ex. HWUH410_SL30D	See Sloped Seat and Skewed. Ex. HWUH410_SK45R_SQ_SL30D	Add *OS,* and right *(R)* or left *(L),* to product number. Ex. HWUH410_OSL		Add *SA,* and saddle width required to product number. Ex. HWUH410_SA=5-1/2"

1) Skewed hangers with skews greater than 15° may have all joist nailing on outside flange.
2) Sloped or sloped / skewed hangers with slopes greater than 15° may have additional joist nails.
3) For skewed hangers, the required cut type (square or bevel) of joist member may vary based on skew angle and width of hanger. Some square cut hangers will require custom pricing due to welded back plate.

MPH Masonry Hangers

MiTek®

These hangers are designed to support standard lumber joists, I-Joists, or beams. Easy installation into concrete block walls makes the MPH an attractive alternative to fabricating seats in masonry (or attaching ledgers) to support joists or beams.

Materials: 12 gauge

Finish: USP primer

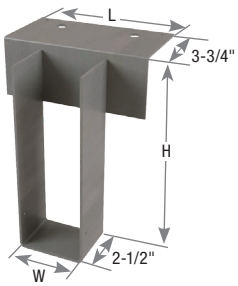
Options: All nominal lumber sizes are available for rough full size lumber. See Specialty Options Chart on page 148.

Codes: See page 10 for Code Reference Chart

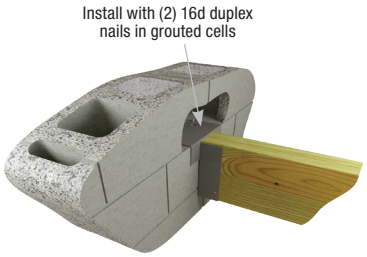
Installation:

- Use all specified fasteners. See Product Notes, page 18.
- 16d duplex nails are not supplied with MPH hangers.
- Place hanger into position on top of concrete block. Install (2) 16d duplex nails (0.162" dia. x 3-1/2" double head) through the top flange nail holes. Then continue laying the next course of block.
- A minimum of one course shall be laid over hanger top flange and one course below hanger top flange. Courses adjacent to the top flange shall be subsequently grouted.
- **These products do not provide uplift resistance.**

Typical MPH single ply installation



MPH



Typical MPH double ply installation

Beam/ Joist Size	USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in)			Fastener Schedule[2]				DF/SP Allowable Loads (Lbs.)[1]			Code Ref.
							Block		Joist		Floor	Roof		
				W	H	L	Qty	Type	Qty	Type	100%	115%	125%	
Standard Lumber Sizes														
2 x 10	MPH210	WM210	12	1-9/16	9-1/4	7	2	16d duplex	2	10d x 1-1/2	2585	2620	2645	
2 x 12	MPH212	WM212	12	1-9/16	11-1/4	7	2	16d duplex	2	10d x 1-1/2	2585	2620	2645	
2 x 14	MPH214	WM214	12	1-9/16	13-1/8	7	2	16d duplex	2	10d x 1-1/2	2585	2620	2645	
2 x 16	MPH216	WM216	12	1-9/16	15-1/8	7	2	16d duplex	2	10d x 1-1/2	2585	2620	2645	
(2) 2 x 10	MPH210-2	WM210-2	12	3-1/8	9-1/4	7	2	16d duplex	2	10d	4280	4280	4280	
(2) 2 x 12	MPH212-2	WM212-2	12	3-1/8	11-1/4	7	2	16d duplex	2	10d	4280	4280	4280	
(2) 2 x 14	MPH214-2	WM214-2	12	3-1/8	13-1/8	7	2	16d duplex	2	10d	4280	4280	4280	
(2) 2 x 16	MPH216-2	WM216-2	12	3-1/8	15-1/8	7	2	16d duplex	2	10d	4280	4280	4280	8, F4, R10
3 x 10	MPH310	WM310	12	2-9/16	9-1/4	7	2	16d duplex	2	10d x 1-1/2	3240	3240	3240	
3 x 12	MPH312	WM312	12	2-9/16	11-1/4	7	2	16d duplex	2	10d x 1-1/2	3240	3240	3240	
3 x 14	MPH314	WM314	12	2-9/16	13-1/8	7	2	16d duplex	2	10d x 1-1/2	3240	3240	3240	
3 x 16	MPH316	WM316	12	2-9/16	15-1/8	7	2	16d duplex	2	10d x 1-1/2	3240	3240	3240	
4 x 10	MPH410	WM410	12	3-9/16	9-1/4	7	2	16d duplex	2	10d	4280	4280	4280	
4 x 12	MPH412	WM412	12	3-9/16	11-1/4	7	2	16d duplex	2	10d	4280	4280	4280	
4 x 14	MPH414	WM414	12	3-9/16	13-1/8	7	2	16d duplex	2	10d	4280	4280	4280	
4 x 16	MPH416	WM416	12	3-9/16	15-1/8	7	2	16d duplex	2	10d	4280	4280	4280	
6 x 10	MPH610	WM610	12	5-9/16	9-1/4	7	2	16d duplex	2	10d	4280	4280	4280	
Engineered Lumber Sizes														
1-1/2 x 9-1/4	MPH210	WM29.25	12	1-9/16	9-1/4	7	2	16d duplex	2	10d x 1-1/2	2585	2620	2645	
1-1/2 x 9-1/2	MPH1595	WM29.5	12	1-9/16	9-1/2	7	2	16d duplex	2	10d x 1-1/2	2585	2620	2645	
1-1/2 x 11-1/4	MPH212	WM211.25	12	1-9/16	11-1/4	7	2	16d duplex	2	10d x 1-1/2	2585	2620	2645	
1-1/2 x 11-7/8	MPH15118	WM211.88	12	1-9/16	11-7/8	7	2	16d duplex	2	10d x 1-1/2	2585	2620	2645	
1-1/2 x 14	MPH1514	--	12	1-9/16	14	7	2	16d duplex	2	10d x 1-1/2	2585	2620	2645	8, F4, R10
1-3/4 x 9-1/2	MPH1795	WM9	12	1-13/16	9-1/2	7	2	16d duplex	2	10d x 1-1/2	2975	3010	3035	
1-3/4 x 11-7/8	MPH17118	WM11	12	1-13/16	11-7/8	7	2	16d duplex	2	10d x 1-1/2	2975	3010	3035	
1-3/4 x 14	MPH1714	WM14	12	1-13/16	14	7	2	16d duplex	2	10d x 1-1/2	2975	3010	3035	
1-3/4 x 16	MPH1716	WM16	12	1-13/16	16	7	2	16d duplex	2	10d x 1-1/2	2975	3010	3035	

1) Masonry compressive strength shall be minimum 1500 psi.

2) **NAILS:** 10d x 1-1/2 nails are 0.148" dia. x 1-1/2" long, 10d nails are 0.148" dia. x 3" long, 16d duplex nails are 0.162" dia. x 3-1/2" long, double headed nails and shall be installed in grouted cells in accordance to manufacturer's installation specifications.

Continued on next page

MPH Masonry Hangers

MiTek®

Beam/ Joist Size	USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in)			Fastener Schedule[2]				DF/SP Allowable Loads (Lbs.)[1]			Code Ref.
							Block		Joist		Floor	Roof		
				W	H	L	Qty	Type	Qty	Type	100%	115%	125%	
Engineered Lumber Sizes														
2-5/16 x 9-1/2	MPH2395	--	12	2-3/8	9-1/2	7	2	16d duplex	2	10d x 1-1/2	3855	3890	3915	
2-5/16 x 11-7/8	MPH23118	WM3511.88	12	2-3/8	11-7/8	7	2	16d duplex	2	10d x 1-1/2	3855	3890	3915	
2-5/16 x 14	MPH2314	WM3514	12	2-3/8	14	7	2	16d duplex	2	10d x 1-1/2	3855	3890	3915	
2-5/16 x 16	MPH2316	WM3516	12	2-3/8	16	7	2	16d duplex	2	10d x 1-1/2	3855	3890	3915	
2-5/16 x 18	MPH2318	WM3518	12	2-3/8	18	7	2	16d duplex	2	10d x 1-1/2	3855	3890	3915	
2-5/16 x 20	MPH2320	WM3520	12	2-3/8	20	7	2	16d duplex	2	10d x 1-1/2	3855	3890	3915	
2-1/2 x 9-1/4	MPH25925	--	12	2-1/2	9-1/4	7	2	16d duplex	2	10d x 1-1/2	4145	4180	4205	
2-1/2 x 9-1/2	MPH2595	--	12	2-1/2	9-1/2	7	2	16d duplex	2	10d x 1-1/2	4145	4180	4205	
2-1/2 x 11-1/4	MPH25112	--	12	2-1/2	11-1/4	7	2	16d duplex	2	10d x 1-1/2	4145	4180	4205	
2-1/2 x 11-7/8	MPH25118	--	12	2-1/2	11-7/8	7	2	16d duplex	2	10d x 1-1/2	4145	4180	4205	
2-1/2 x 14	MPH2514	WMI314	12	2-1/2	14	7	2	16d duplex	2	10d x 1-1/2	4145	4180	4205	
2-1/2 x 16	MPH2516	WMI316	12	2-1/2	16	7	2	16d duplex	2	10d x 1-1/2	4145	4180	4205	
2-1/2 x 18	MPH2518	WMI318	12	2-1/2	18	7	2	16d duplex	2	10d x 1-1/2	4145	4180	4205	
2-1/2 x 20	MPH2520	WMI320	12	2-1/2	20	7	2	16d duplex	2	10d x 1-1/2	4145	4180	4205	
2-1/2 x 22	MPH2522	--	12	2-1/2	22	7	2	16d duplex	2	10d x 1-1/2	4145	4180	4205	
2-1/2 x 24	MPH2524	--	12	2-1/2	24	7	2	16d duplex	2	10d x 1-1/2	4145	4180	4205	
2-1/2 x 26	MPH2526	--	12	2-1/2	26	7	2	16d duplex	2	10d x 1-1/2	4145	4180	4205	
3 x 9-1/4	MPH210-2	WM29.25-2	12	3-1/8	9-1/4	7	2	16d duplex	2	10d	4280	4280	4280	
3 x 9-1/2	MPH1595-2	WM29.5-2	12	3-1/8	9-1/2	7	2	16d duplex	2	10d	4280	4280	4280	
3 x 11-1/4	MPH15112-2	WM211.25-2	12	3-1/8	11-1/4	7	2	16d duplex	2	10d	4280	4280	4280	
3 x 11-7/8	MPH15118-2	WM211.88-2	12	3-1/8	11-7/8	7	2	16d duplex	2	10d	4280	4280	4280	8,
3-1/2 x 12	MPH3512	WMI412	12	3-1/2	12	7	2	16d duplex	2	10d	4280	4280	4280	F4,
3-1/2 x 14	MPH3514	WMI414	12	3-1/2	14	7	2	16d duplex	2	10d	4280	4280	4280	R10
3-1/2 x 16	MPH3516	WMI416	12	3-1/2	16	7	2	16d duplex	2	10d	4280	4280	4280	
3-1/2 x 18	MPH3518	WMI418	12	3-1/2	18	7	2	16d duplex	2	10d	4280	4280	4280	
3-1/2 x 20	MPH3520	WMI420	12	3-1/2	20	7	2	16d duplex	2	10d	4280	4280	4280	
3-1/2 x 9-1/4	MPH410	WM410	12	3-9/16	9-1/4	7	2	16d duplex	2	10d	4280	4280	4280	
3-1/2 x 11-1/4	MPH412	WM412	12	3-9/16	11-1/4	7	2	16d duplex	2	10d	4280	4280	4280	
3-1/2 x 9-1/2	MPH1795-2	WM3.56/9.5	12	3-5/8	9-1/2	7	2	16d duplex	2	10d	4280	4280	4280	
3-1/2 x 11-7/8	MPH17118-2	WM3.56/11.88	12	3-5/8	11-7/8	7	2	16d duplex	2	10d	4280	4280	4280	
4-5/8 x 11-7/8	MPH23118-2	WM3511.88-2	12	4-5/8	11-7/8	7	2	16d duplex	2	10d	4280	4280	4280	
4-5/8 x 14	MPH2314-2	WM3514-2	12	4-5/8	14	7	2	16d duplex	2	10d	4280	4280	4280	
4-5/8 x 16	MPH2316-2	WM3516-2	12	4-5/8	16	7	2	16d duplex	2	10d	4280	4280	4280	
4-5/8 x 18	MPH2318-2	WM3518-2	12	4-5/8	18	7	2	16d duplex	2	10d	4280	4280	4280	
4-5/8 x 20	MPH2320-2	WM3520-2	12	4-5/8	20	7	2	16d duplex	2	10d	4280	4280	4280	
5-1/4 x 9-1/2	MPH5595	WM5.50/9.5	12	5-5/8	9-1/2	7	2	16d duplex	2	10d	4280	4280	4280	
5-1/4 x 11-7/8	MPH55118	WM5.50/11.88	12	5-5/8	11-7/8	7	2	16d duplex	2	10d	4280	4280	4280	
7 x 9-1/2	MPH3595-2	WMI49.5-2	12	7-1/8	9-1/2	8	2	16d duplex	2	10d	4280	4280	4280	
7 x 11-1/4	MPH35112-2	WMI411.25-2	12	7-1/8	11-1/4	8	2	16d duplex	2	10d	4280	4280	4280	
7 x 11-7/8	MPH35118-2	WMI411.88-2	12	7-1/8	11-7/8	8	2	16d duplex	2	10d	4280	4280	4280	
7 x 14	MPH3514-2	WMI414-2	12	7-1/8	14	8	2	16d duplex	2	10d	4280	4280	4280	
7 x 16	MPH3516-2	WMI416-2	12	7-1/8	16	8	2	16d duplex	2	10d	4280	4280	4280	
7 x 18	MPH3518-2	WMI418-2	12	7-1/8	18	8	2	16d duplex	2	10d	4280	4280	4280	
Glulam Sizes														
3-1/8 x glulam	MPH325	--	12	3-1/4	specify	7	2	16d duplex	2	10d	4280	4280	4280	8, F4,
5-1/8 x glulam	MPH525	--	12	5-1/4	specify	7	2	16d duplex	2	10d	4280	4280	4280	R10

1) Masonry compressive strength shall be minimum 1500 psi.
2) **NAILS:** 10d x 1-1/2 nails are 0.148" dia. x 1-1/2" long, 10d nails are 0.148" dia. x 3" long, 16d duplex nails are 0.162" dia. x 3-1/2" long, double headed nails and shall be installed in grouted cells in accordance to manufacturer's installation specifications.

Specialty Options Chart – Refer to Specialty Options pages 245, 247-248 for additional details.

Option	Skewed[1,3]	Sloped Seat[2]	Sloped / Skewed[1,2,3]	Top Flange Offset	
Range	1° to 60°	1° to 45°	See Sloped Seat and Skewed	--	
Allowable Loads	100% of table load	100% of table load	100% of table load	**Hanger Width** 3-1/2" or less 3-9/16" to 5-1/2" 5-9/16" to 7-1/2"	**% of table load:** 60% 75% 85%
Ordering	Add SK, angle required, right (*R*) or left (*L*), and square cut (*SQ*) or bevel cut (*BV*) to product number. Ex. MPH210_SK45R_SQ	Add *SL*, slope required, and up *(U)* or down *(D)*, to product number. Ex. MPH210_SL30D	See Sloped Seat and Skewed. Ex. MPH210_SK45R_SQ_SL30D	Add *OS*, and right *(R)* or left *(L)*, to product number. Ex. MPH210_OSL	

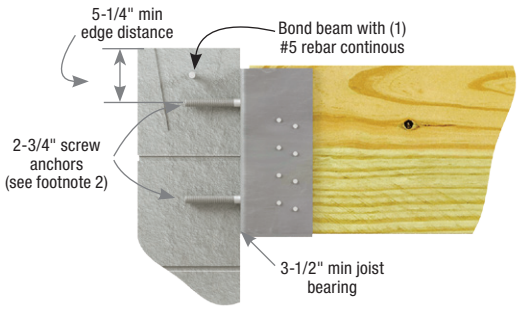
1) Skewed hangers with skews greater than 15° may have all joist nailing on outside flange.
2) Sloped or sloped / skewed hangers with slopes greater than 15° may have additional joist nails.
3) For skewed hangers, the required cut type (square or bevel) of joist member may vary based on skew angle and width of hanger. Some square cut hangers will require custom pricing due to welded back plate.

UMH Universal Masonry Hangers

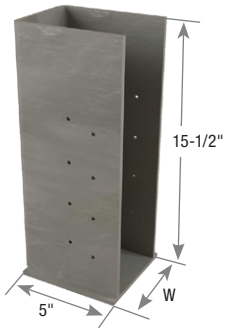
A versatile solution for hanging beams from masonry walls. Face mount design allows hanger to be used with beam heights from 16" to 24". Available in a variety of widths for solid sawn, glulam, or engineered lumber beams.

Materials: 3 gauge
Finish: USP primer
Codes: See page 10 for Code Reference Chart

Installation:
- Use all specified fasteners. See Product Notes, page 18.
- Fully grouted and reinforced concrete block or cast-in-place concrete with a minimum of (1) #5 rebar continuous to footing with standard hook at bolt locations.
- Minimum joist bearing length is 3-1/2".



Typical UMH installation



UMH

USP Stock No.	Ref. No.	Steel Gauge	W (in)	Fastener Schedule				DF/SP Allowable Loads (Lbs.)								Code Ref.
				Header[2]		Joist[3]		Masonry - 2,500 psi				Cast in Place Concrete - 3,000 psi				
								Floor	Roof		Uplift[1]	Floor	Roof		Uplift[1]	
				Qty	Screw Anchor	Qty	Type	100%	115%	125%	160%	100%	115%	125%	160%	
UMH358	MBHU3.56/16KT, MBHU3.56/18KT	3	3-5/8	2	3/4	16	16d	3550	3550	3550	3550	6380	6380	6380	4815	
UMH458	--	3	4-5/8	2	3/4	16	16d	3550	3550	3550	3550	6380	6380	6380	4815	
UMH538	--	3	5-3/8	2	3/4	16	16d	3550	3550	3550	3550	6380	6380	6380	4815	F25
UMH558	MBHU5.50/16KT, MBHU5.50/18KT	3	5-5/8	2	3/4	16	16d	3550	3550	3550	3550	6380	6380	6380	4815	
UMH718	--	3	7-1/8	2	3/4	16	16d	3550	3550	3550	3550	6380	6380	6380	4815	

1) Uplift loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) Fasten UMH hanger to concrete structure with (2) 3/4" dia. Powers Fasteners Wedge-Bolt+ or DeWalt Screw-Bolt+ screw anchors or equal with 5" minimum embedment. Screw anchors shall be installed in masonry with grouted cells in accordance with manufacturer's installation specifications.
3) **NAILS:** 16d nails are 0.162" dia. x 3-1/2" long.

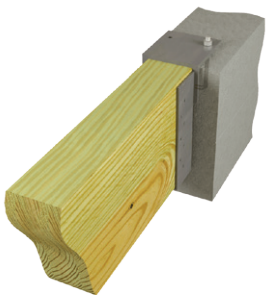
NFM Narrow Flange Masonry Hangers

NFM – Standard design.

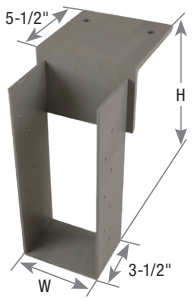
NFM_U – High uplift design.

Materials: Top Flange – 3/8" steel; U-strap – 7 gauge
Finish: USP primer
Options: See Specialty Options Chart on page 146.
Codes: See page 10 for Code Reference Chart

Installation:
- Use all specified fasteners. See Product Notes, page 18.
- Designed for both concrete walls and grout-filled reinforced CMU walls.
- Bolts must be ordered separately. See page 25 for available sizes.



Typical NFM installation



NFM3

Typical NFM_U installation

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NFM Narrow Flange Masonry Hangers

MiTek®

USP Stock No.	Ref. No.	Steel Gauge		Dimensions (in)		Fastener Schedule				DF/SP Allowable Loads (Lbs.)[1,2]				Code Ref.
						Header[3,4,5]		Joist[6]						
		Top Flange	U-Strap	W	H	Qty	Type	Qty	Type	Floor 100%	Roof 115%	Roof 125%	Uplift 160%	
NFM3X8	--	3/8	7	3-1/8	7-1/4	1	1/2" J-Bolt	10	10d	6720	6720	6720	1415	F9
NFM3X10	--	3/8	7	3-1/8	9-1/4	1	1/2" J-Bolt	12	10d	6720	6720	6720	1415	
NFM3X10U	MBHA3.12/9.25	3/8	7	3-1/8	9-1/4	1	1/2" J-Bolt	5	1/2	7130	7130	7130	2580	
NFM3X12	--	3/8	7	3-1/8	11-1/4	1	1/2" J-Bolt	14	10d	6720	6720	6720	1415	
NFM3X12U	MBHA3.12/11.25	3/8	7	3-1/8	11-1/4	1	1/2" J-Bolt	5	1/2	7130	7130	7130	2580	
NFM3	--	3/8	7	3-3/8	11-3/4	1	1/2" J-Bolt	14	10d	7510	7510	7510	1415	
NFM35X8	--	3/8	7	3-5/8	7-1/4	1	1/2" J-Bolt	10	10d	7510	7510	7510	1415	
NFM35X8U	MBHA3.56/7.25	3/8	7	3-5/8	7-1/4	1	1/2" J-Bolt	3	1/2	7130	7130	7130	2580	
NFM35X10	--	3/8	7	3-5/8	9-1/4	1	1/2" J-Bolt	12	10d	7510	7510	7510	1415	
NFM35X10U	MBHA3.56/9.25	3/8	7	3-5/8	9-1/4	1	1/2" J-Bolt	5	1/2	7130	7130	7130	2580	
NFM35X12	--	3/8	7	3-5/8	11-1/4	1	1/2" J-Bolt	14	10d	7510	7510	7510	1415	
NFM35X12U	MBHA3.56/11.25	3/8	7	3-5/8	11-1/4	1	1/2" J-Bolt	5	1/2	7130	7130	7130	2580	
NFM35X1178	--	3/8	7	3-5/8	11-7/8	1	1/2" J-Bolt	14	10d	7510	7510	7510	1415	
NFM35X1178U	MBHA3.56/11.88	3/8	7	3-5/8	11-7/8	1	1/2" J-Bolt	5	1/2	7130	7130	7130	2580	
NFM35X14	--	3/8	7	3-5/8	14	1	1/2" J-Bolt	14	10d	7510	7510	7510	1415	130
NFM35X14U	MBHA3.56/14	3/8	7	3-5/8	14	1	1/2" J-Bolt	5	1/2	7130	7130	7130	2580	F9
NFM35X16	--	3/8	7	3-5/8	16	1	1/2" J-Bolt	14	10d	7510	7510	7510	1415	
NFM35X16U	MBHA3.56/16	3/8	7	3-5/8	16	1	1/2" J-Bolt	5	1/2	7130	7130	7130	2580	
NFM35X18	--	3/8	7	3-5/8	18	1	1/2" J-Bolt	14	10d	7510	7510	7510	1415	
NFM35X18U	MBHA3.56/18	3/8	7	3-5/8	18	1	1/2" J-Bolt	5	1/2	7130	7130	7130	2580	
NFM6X8U	MBHA5.50/7.25	3/8	7	5-5/8	7-1/4	1	1/2" J-Bolt	3	1/2	10310	10310	10310	2580	
NFM6X10U	MBHA5.50/9.25	3/8	7	5-5/8	9-1/4	1	1/2" J-Bolt	5	1/2	10310	10310	10310	2580	
NFM6X12U	MBHA5.50/11.25	3/8	7	5-5/8	11-1/4	1	1/2" J-Bolt	5	1/2	10310	10310	10310	2580	
NFM6X1178	--	3/8	7	5-5/8	11-7/8	1	1/2" J-Bolt	14	10d	7510	7510	7510	1415	
NFM6X1178U	MBHA5.50/11.88	3/8	7	5-5/8	11-7/8	1	1/2" J-Bolt	5	1/2	10310	10310	10310	2580	
NFM6X14U	MBHA5.50/14	3/8	7	5-5/8	14	1	1/2" J-Bolt	5	1/2	10310	10310	10310	2580	
NFM6X16	--	3/8	7	5-5/8	16	1	1/2" J-Bolt	14	10d	7510	7510	7510	1415	
NFM6X16U	MBHA5.50/16	3/8	7	5-5/8	16	1	1/2" J-Bolt	5	1/2	10310	10310	10310	2580	
NFM6X18	--	3/8	7	5-5/8	18	1	1/2" J-Bolt	14	10d	7510	7510	7510	1415	
NFM6X18U	MBHA5.50/18	3/8	7	5-5/8	18	1	1/2" J-Bolt	5	1/2	10310	10310	10310	2580	

1) Allowable loads are based on 2500 psi concrete or masonry.
2) Design loads are governed by test ultimate loads with a safety factor of three.
3) J-Bolt shall be cast-in-place and have a minimum 6" embedment and not less than 4" from the edge of concrete.
4) In addition to the J-Bolt, "U" models also require a 3/4" dia. ITW Ramset/Redhead Dyna Bolt sleeve anchor or equal with minimum 5-in embedment depth installed in the face. Bolt shall be installed in accordance with installation specifications provided by ITW Ramset.
5) Bolts shall conform to ASTM A 307 or better.
6) **NAILS:** 10d nails are 0.148" dia. x 3" long
New products or updated product information are designated in **blue font.**

Specialty Options Chart

Refer to Specialty Options pages 245, 247-248 for additional details.

Option	USP Series	Skewed[1,2]
Range	NFM / NFMU	1° to 45°
Allowable Loads	NFM / NFMU	100% of table load
Ordering	NFM	Add SK, angle required, right (*R*) or left (*L*), and square cut (*SQ*) or bevel cut (*BV*) to product number. Ex. NFM3_SK45R_BV
	NFMU	Add SK, angle required, right (*R*) or left (*L*), and square cut (*SQ*) to product number. Ex. NFM35X8U_SK45R_SQ

1) Skewed hangers with skews greater than 15° may have all joist nailing on outside flange.
2) For skewed hangers, the required cut type (square or bevel) of joist member may vary based on skew angle and width of hanger. Some square cut hangers will require custom pricing due to welded back plate.

EWP Hangers

EWP Hanger Selector Guide

Hanger Type	USP Series	Steel Gauge	Style						Supported Member								Supporting Member					Allowable Loads (Lbs.) Range	
																						Header Material	
			Face Mount	Top Mount	Skewed	Sloped	Formed	Welded	Beam/Joist/Rafter (rect shapes)	I-Joist	Truss (2x)	Floor Truss 4x	Nailer	Glulam	Wall	Post	Rim Joist	Beam/Joist/Rafter (rect shapes)	I-Joist	Truss (2x)	Floor Truss 4x	Glulam	LVL 100%	DF/SP 100%
Face Mount	THF	18							•									•	•				910 - 2,735	910 - 2,735
		16	•																				1,390 - 2,785	1,390 - 2,785
		12																					2,285 - 3,050	2,285 - 3,050
	THFI	18	•						•									•	•				960 - 1,680	960 - 1,680
	HUS	16	•						•		•			•			•	•		•		•	5,510	5,510
	HD	14	•						•		•			•			•	•	•	•	•	•	**1,850 - 5,195**	**1,625 - 4,270**
	HDQIF	14	•						•		•			•		•	•	•	•	•	•	•	3,340 - 5,605	3,340 - 5,605
	THD	14	•						•		•			•				•	•	•	•	•	5,850 - 7,045	5,850 - 7,045
		12																					6,535 - 8,415	6,535 - 8,415
	THDH	12	•						•		•			•				•	•	•	•	•	8,990 - 12,510	8,990 - 12,510
Top Mount	TFL	18		•					•			•	•	•				•	•				1,645	1,600
	THO	18																					1,345 - 2,715	1,005 - 2,715
		16		•					•	•	•	•	•	•				•	•	•	•		1,030 - 2,330	1,030 - 2,700
		12																					2,330 - 3,535	3,665 - 4,770
	TFI	16		•					•			•	•	•				•	•	•	•		2,560 - 3,245	2,560 - 3,245
	BPH	12		•					•	•	•	•	•	•	•		•	•	•	•	•	•	3,120 - 3,485	2,705 - 3,485
	HBPH	10		•					•		•	•	•				•	•	•	•	•		6,930 - 7,000	6,930 - 7,000
	PHM	7 - Top Flange, 10 - Stirrup		•					•			•	•	•				•	•	•	•	•	3,535 - 3,745	2,865 - 3,390
	PHXU	7		•					•			•	•	•				•	•	•	•	•	4,420 - 6,650	4,425 - 5,285
	HLBH	7		•					•				•					•		•	•	•	10,225 - 10,620	9,600
Glulam	GHF	12	•				•		•					•				•				•	2,190 - 6,570	2,190 - 6,570
		7																					6,500 - 12,000	6,500 - 12,000
	HGU	7	•		•		•		•		•			•				•		•	•	•	14,705	14,705
	KLEG[2]	7		•				•	•					•				•				•	11,940	11,940
	KMEG[2]	7		•				•	•					•				•				•	12,635	12,635
	KEG[2]	1/4" - Top Flange, 7 - Stirrup		•				•	•					•				•				•	17,615 - 21,545	17,615 - 21,545
	KHHB	7		•			•		•					•				•				•	5,835 - 5,960	5,835 - 5,960
	KGB	7		•			•		•					•				•		•		•	7,000	7,000
	KHGB	7		•			•		•					•				•		•		•	7,000	7,000
	KGLT	3 - Top Flange, 7 - Stirrup		•				•	•				•	•				•		•		•	9,920	9,920
	KHGLT	3 - Top Flange, 7 - Stirrup		•				•	•					•				•				•	13,240 - 13,400	13,240 - 13,400
	KGLS	3 - Top Flange, 7 - Stirrup		•				•	•					•				•		•		•	10,275 - 20,425	10,275 - 20,425
	KHGLS	3 - Top Flange, 7 - Stirrup		•				•	•					•				•				•	20,685 - 20,985	20,685 - 20,985
	KGLST	3 - Top Flange, 7 - Stirrup		•				•	•					•				•		•		•	12,900 - 26,095	12,900 - 26,095
	KHGLST	3 - Top Flange, 7 - Stirrup		•				•	•					•				•				•	19,250 - 26,585	19,250 - 26,585
	KHC	7						•	•					•				•				•	10,505 - 44,100	10,505 - 44,100
		3																					22,040 - 54,180	22,040 - 54,180
	KHCST[1]	7					•		•					•				•				•	9,950 - 14,500	9,950 - 14,500
		3																					20,145	20,145
	LGU	10	•		•		•		•		•			•				•		•	•	•	7,135	7,135
	MGU	10	•		•		•		•					•				•		•		•	9,515	9,515
Slope / Skew	LSSH	18	•		•	•			•	•								•		•			685 - 1,180	685 - 1,180
		16																					1,825 - 2,590	1,825 - 2,590

1) KHCST allowable loads are based on 160% load duration.
2) KEG, KLEG, KMEG hangers assume allowable loads with top flange.
• Represents common applications and product configurations. Consult USP for additional applications and/or optional product configurations.
New products or updated product information are designated in **blue font**.

Wood I-Joist Installation to Wood

Sloped I-Joists
Use sloped seat hangers and beveled web stiffeners whenever the slope exceeds the following: 1/2:12 for seat bearing lengths of 2-1/2" or less; 3/8:12 for bearing lengths between 2-1/2" and 3-1/2"; and 1/4:12 for bearing lengths in excess of 3-1/2".

Multiple I-Joist Plies
Fasten together multiple plies of wood I-Joists, in accordance with the manufacturer's installation guidelines, such that the joists act as a single unit.

I-Joist Rotation
It may be necessary to install straps, blocking, or sheathing to restrain torsional rotation of a supporting wood I-Joist when using top mount I-Joist hangers.

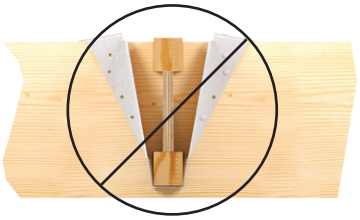
Fasteners
Install only the specified nails. The flanges of wood I-Joists may split if larger diameter nails or longer nails are installed. Do not install nails larger than 16d common wire nails (0.162" diameter) into the web stiffeners in the wood I-Joist.

Backer Blocks
Pattern the nails used to install backer blocks or web stiffeners in wood I-Joists to avoid splitting the block. The nail pattern should be sufficiently spaced to avoid the same grain line, particularly with solid sawn backer blocks. Backer blocks must be installed on wood I-Joist acting as the header, or supporting member. Install in accordance with the I-Joist manufacturer's installation guidelines. The nails used to install hangers mounted to an I-Joist header must penetrate through the web and into the backer block on the opposite side.

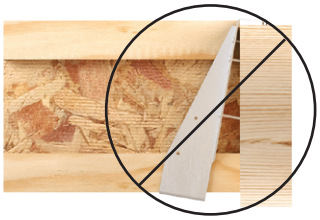
Top Flange Hangers

The thickness of the hanger metal and nail heads on top mount hangers must be evaluated for the effect on subsequent sheathing. Ensure that the top mount hanger is installed so the flanges of the hanger are not over-spread which tends to elevate the supported I-Joist causing uneven floor surfaces and squeaking. Similarly, ensure that the hanger is installed plumb such that the face flanges of the hanger are mounted firmly against the wide-face surface of the header.

Flush framing



Hanger over-spread



Hanger not plumb

Correct Slant Nail Installation

Always secure wood I-Joist using 10d x 1-1⁄2" nail driven at a 30° to 45° angle and firmly seated

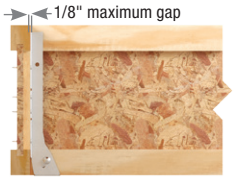
Common Nailing Errors

Wrong Angle
When a nail is driven into the bottom flange of the wood I-Joist parallel to the glue lines, separation of veneers can occur which substantially reduces the design loads of the connection.

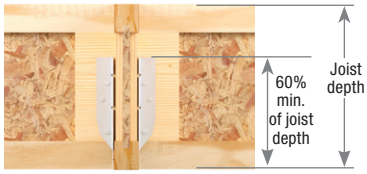
Nail Too Long
When using nails longer than USP's recommended nails, bottom flange splitting may occur. Also, this can raise the wood I-Joist off the seat, resulting in uneven surfaces and squeaky floors along with reduced allowable loads.

Support Height & Lateral Stability

Hangers for joists **without web stiffeners** must support the I-Joist's top flange and provide lateral resistance with no less than 1/8" contact.



Hangers for joists **with web stiffeners** must support a minimum of 60% of joist depth or potential joist rotation must be addressed.



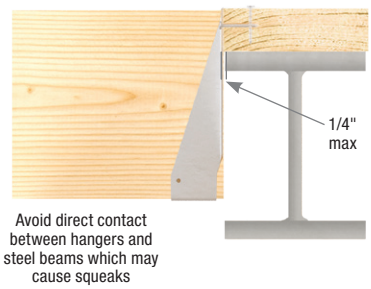
(Top flange support requirements can be verified in this section charts under Web stiffener Reqd. column.)

Nailer Installations

Correct Hanger Attachment to Nailer
A nailer or sill plate is considered to be any wood member attached to a steel beam, concrete block wall, concrete stem wall, or other structure unsuitable for nailing, which is used as a nailing surface for top mount hangers to hold beams or joists.

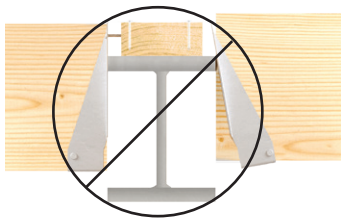
Nailer Sized Correctly
Top flange of hanger is fully supported and recommended nails have full penetration into nailer, resulting in a carried member hanging safely at the proper height.

The nailer must be sized to fit the support width as shown and be of sufficient thickness to satisfy recommended top flange nailing requirements. A design professional must specify nailer attachment to steel beams.



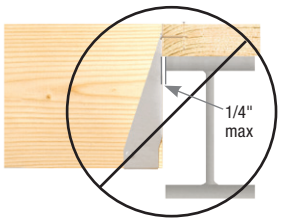
Correct Attachment

Wrong Nailer Size Causes Component Failure



Too Narrow

Top flange not fully supported can cause nail breakout. Or, by fully supporting top flange, hanger is tilted back, causing lifting of carried member which results in uneven surfaces and squeaky floors.



Too Wide

Loading can cause cross grain breaking of nailer. The recommended nailer overhang is 1/4" maximum per side.

Too Thin

Top flange nailing cannot fully penetrate nailer, causing reduced allowable loads. Never use hangers which require multiple face nails since the allowable loads are dependent on all nail holes being used.

THFI Face Mount I-Joist Hangers

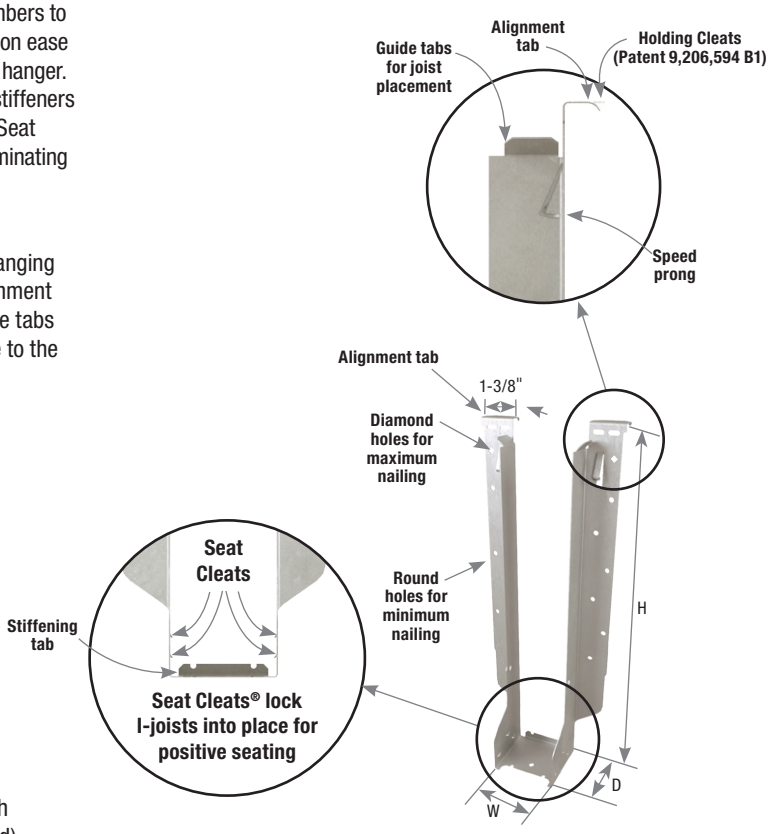
The THFI is a face mount hanger designed to attach EWP I-joist members to wood headers. The unique design of the THFI combines the installation ease of a top mount hanger with the installation flexibility of a face mount hanger. Because the side flanges extend to the top chord of the I-joist, web stiffeners are not required. The THFI hangers also feature strategically placed Seat Cleats® which lock the bottom flange of the I-joist to the hanger eliminating the need for joist nails to be installed.

The innovative top flange alignment tabs with the holding cleats assist the placing and alignment of the hanger prior to nailing by hanging onto the header with holding cleats biting into the wood. If the alignment tabs are not desired or a deeper height member is to be carried, the tabs can be easily bent out of the way. Alignment tabs do not contribute to the allowable design values of the THFI hangers.

Materials: 18 Gauge
Finish: G90 galvanizing
Codes: See page 10 for Code Reference Chart
Patents: #5,564,248 & #9,206,594 B1

Installation:

- Use all specified fasteners.
- Alignment tabs are not structural and can be bent back or removed to assist hanger placement.
- Web stiffeners are not required for THFI hangers unless specified by the I-joist manufacturer. Web stiffeners are not required for lateral stability.
- For additional uplift capacity, install (2) 10d x 1-1/2" nails through diamond holes and into the joist member. (web stiffeners required)
- THFI2514 model has diamond holes in the header flange for MIN/MAX nailing option. For the MAX nailing option, install nails in both the round and diamond shaped header holes.



THFI2514

Typical THFI installation

THF Face Mount I-Joist Hangers

Designed to provide lateral support for the top chords of I-Joists in depths up to 16". Eliminates the need for web stiffeners in most applications (see Web Stiffener Reqd. column in EWP Face Mount Hanger Chart for specific applications).

Materials: See EWP Face Mount Hangers charts, pages 158-159.

Finish: G90 galvanizing

Options: See Specialty Options chart.

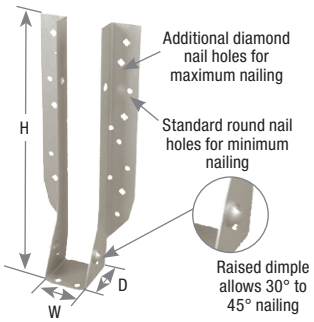
Codes: See page 10 for Code Reference Chart

Patents: #5,564,248 (all models except doubles)

Installation:

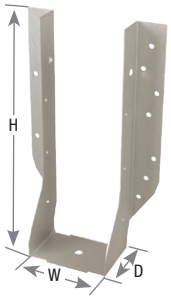
- Use all specified fasteners. See Product Notes, page 18.
- Install 10d x 1-1/2" nails into joist through raised dimple at 30° to 45° angle.
- **THF Min** – Fill all round nail holes.
- **THF Max** – Fill all round and diamond holes.
- Uplift capacity for THF single ply hangers installed without joist nails = 85 lbs. Refer to THO, TFL, & THF Single Ply I-Joist Hangers Technical Bulletin.

Typical THF I-Joist to joist installation

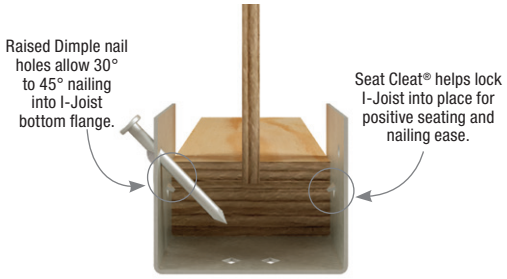


THF single

Typical THF double I-Joist to LVL installation



THF double



Specialty Options Chart

– refer to Specialty Options pages 245-246 for additional details.

Option	Skewed[1,3]	Sloped Seat[2,3]	Sloped / Skewed[1,2,3]	Inverted Flange
Range	1˚ to 67-1/2˚ when width is 1-3/4" or less. 1˚ to 50˚ on all others.	1˚ to 45˚	See Sloped Seat and Skewed	Not available in widths less than 2-1/4"
Allowable Loads	100% of table load. 75% of uplift load on skews greater than 15˚.	100% of table load	80% of table load. 75% of uplift load on skews greater than 15˚.	100% of table load. 65% of table load when nailing into the support members end grain.
Ordering	Add *SK*, angle required, right *(R)* or left *(L)*, and square cut *(SQ)* or bevel cut *(BV)* to product number. Example: THF23925_SK45R_BV	Add *SL,* slope required, and up *(U)* or down *(D),* to product number. Example: THF23925_SL30D	See Sloped Seat and Skewed Example: THF23925_SK45R_BV_SL30D	Add *IF,* to product number. Example: THF23925_IF

1) Skewed hangers with skews greater than 15° may have all joist nailing on outside flange.
2) Sloped or sloped / skewed hangers with slopes greater than 15° may have additional joist nails.
3) For skewed hangers, the required cut type (square or bevel) of joist member may vary based on skew angle and width of hanger. Some square cut hangers will require custom pricing due to welded back plate.
4) Modifications to THF hangers do not feature seat cleats.

HD / HDQIF Face Mount Hangers

HD – Designed to support LVL, LSL, and PSL beams and headers in medium load conditions.

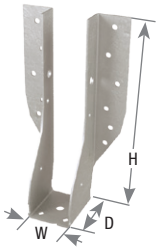
HDQIF – inverted flange face mount hangers fasten to LVL, LSL and PSL beams and headers with WS Wood Screws.

Materials: See EWP Face Mount Hangers charts, pages 160-161.
Finish: G90 galvanizing
Options: See Specialty Options chart.
Codes: See page 10 for Code Reference Chart

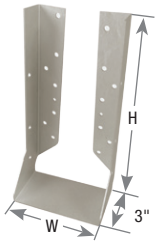
Installation:
- Use all specified fasteners. See Product Notes, page 18.
- WS15 and WS3 Wood Screws are supplied with HDQIF hangers.
- **HD Min** – Fill all round nail holes.
- **HD Max** – Fill all round and diamond nail holes.

Typical HD installation

Typical HDQIF installation



HD



HDQIF

HD Specialty Options Chart
– refer to Specialty Options pages 245-246 for additional details.

Option	Skewed[1,3]	Sloped Seat[2,3]	Sloped / Skewed[1,2,3]	Inverted Flange
Range	1˚ to 67-1/2˚ when width is 1-3/4" or less. 1˚ to 50˚ on all others.	1˚ to 45˚	See Sloped Seat and Skewed	2-1/4" widths or greater **(Widths < 2-1/4" may be available as a Custom, contact USP)**
Allowable Loads	100% of table load. 75% of uplift load on skews greater than 15˚.	100% of table load	80% of table load. 75% of uplift load on skews greater than 15˚.	100% of table load. 65% of table load when nailing into the support members end grain.
Ordering	Add *SK,* angle required, right *(R)* or left *(L), and* square cut *(SQ) or* bevel cut *(BV)* to product number. Example: HD410_SK45R_SQ	Add *SL,* slope required, and up *(U)* or down *(D),* to product number. Example: HD410_SL30D	See Sloped Seat and Skewed Example: HD410_SK45R_SQ_SL30D	Add *IF,* to product number. Example: HD410_IF

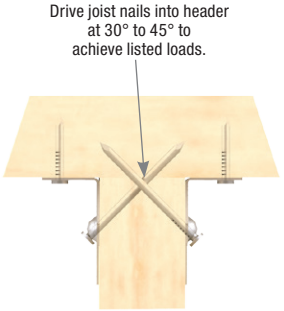
1) Skewed hangers with skews greater than 15° may have all joist nailing on outside flange.
2) Sloped or sloped / skewed hangers with slopes greater than 15° may have additional joist nails.
3) For skewed hangers, the required cut type (square or bevel) of joist member may vary based on skew angle and width of hanger. Some square cut hangers will require custom pricing due to welded back plate.
4) HD option hangers may be manufactured as welded products to achieve listed loads. Welded products have a primer finish.
New products or updated product information are designated in **blue font**.

HUS Face Mount Hangers

Designed for medium load conditions. Extended 3" deep seat provides extra truss bearing.

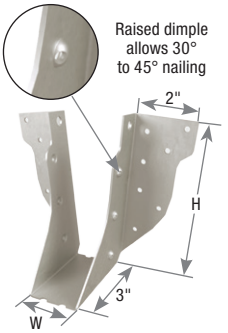
Materials: 16 gauge
Finish: G90 galvanizing
Codes: See page 10 for Code Reference Chart

Installation:
- Use all specified fasteners. See Product Notes, page 18.
- Joist nails must be driven at a 30° to 45° angle through the joist into the header to achieve listed loads. **Standard length "double shear" nails must be used to achieve listed load values.**



Typical HUS double shear installation

Typical HUS installation



HUS

THD / THDH Face Mount Hangers

THD – Medium capacity hanger for LVL, LSL, and PSL beams.

THDH – Heavy capacity hanger for LVL, LSL, and PSL beams.

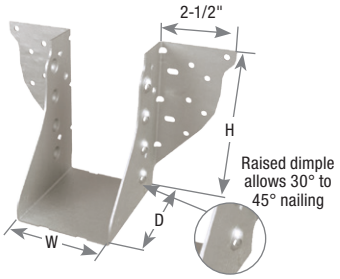
Materials: See EWP Face Mount Hangers charts, pages 160-161.
Finish: G90 galvanizing
Options: Rough/ Full sizes available for THD series. THD hangers with widths greater than 3" can have one flange inverted with no load reduction. Specify left (L) or (R) flange. See Specialty Options chart.
Codes: See page 10 for Code Reference Chart

Installation:
- Use all specified fasteners. See Product Notes, page 18.
- **THDH** – Drive joist nails into header at 30° to 45° to achieve listed loads.

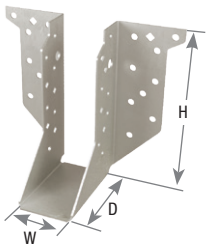
Typical THDH installation

Typical THD installation

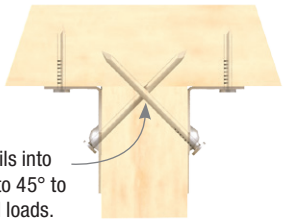
Some model designs may vary from illustration shown



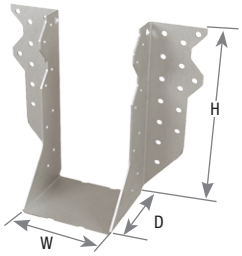
THDH26-2



THD single



Typical THDH double shear installation



THD double or larger

Specialty Options Chart

– refer to Specialty Options pages 245-246 for additional details.

Option	USP Series	Skewed[1,3,4]	Sloped Seat[2]	Sloped / Skewed[1,2,3,4]	Inverted Flange
Range	THD	1˚ to 45˚	1˚ to 45˚	See Sloped Seat and Skewed	Not available in widths less than 3". Widths greater can have one flange inverted.
	THDH				N/A
Allowable Loads	THD	85% of table load	65% of table load	65% of table load	100% of table load. 65% of table load when nailing into the support members end grain.
	THDH	85% of table load. 50% of table uplift load.	52% of table load	52% of table load. 50% of table uplift load.	N/A
Ordering	THD	Add *SK*, angle required, right *(R)* or left *(L)*, and square cut *(SQ)* or bevel cut *(BV)* to product number. Ex. THDH410_SK45R_BV	Add SL, slope required, and up *(U)* or down *(D)*, to product number. Ex: THDH410_SL30D	See Sloped Seat and Skewed Ex. THDH410_SK45R_BV_SL30D	Add *IF*, one flange, right *(R)* and left *(L)*, Ex. THD410_IFR
	THDH				N/A

1) Skewed hangers with skews greater than 15° may have all joist nailing on outside flange. All skewed THDH hangers have nails on one side only.
2) Sloped or sloped / skewed hangers with slopes greater than 15° may have additional joist nails.
3) THDH models - Skewed hangers typically require a bevel cut. A square cut option may be available as a custom.
4) THD models - For skewed hangers, the required cut type (square or bevel) of joist member may vary based on skew angle and width of hanger. Some square cut hangers will require custom pricing due to welded back plate.

I-Joist Charts Face Mount Hangers

MiTek®

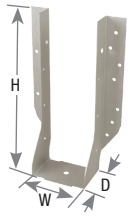
Joist Size (in)	USP Stock	Ref. No.	Web Stiff Reqd	Ga	Dimensions (in)			Fastener Schedule[2]					DF/SP Header Allowable Loads (Lbs.)				S-P-F Header Allowable Loads (Lbs.)				Code Ref.
									Header		Joist										
					W	H	D	Min/ Max	Qty	Type	Qty	Type	100%	115%	125%	Uplift[1] 160%	100%	115%	125%	Uplift[1] 160%	
1-1/2 x 9-1/2	THF15925	MIU1.56/9	--	18	1-1/2	9-1/16	2	Min	8	10d	2	10d x 1-1/2	930	1065	1160	255	810	935	1015	200	
								Max	12	10d	2	10d x 1-1/2	1390	1600	1740	255	1215	1400	1430	200	
1-1/2 x 11-1/4 - 11-7/8	THF15112	MIU1.56/11	--	18	1-1/2	11-1/16	2	Min	8	10d	2	10d x 1-1/2	930	1065	1160	255	810	935	1015	200	
								Max	16	10d	2	10d x 1-1/2	1855	2135	2165	255	1480	1510	1530	200	
1-1/2 x 14	THF15140	--	--	18	1-1/2	13-1/2	2	Min	12	10d	2	10d x 1-1/2	1390	1600	1740	255	1215	1400	1520	200	
								Max	20	10d	2	10d x 1-1/2	2105	2140	2165	255	1480	1510	1530	200	
1-5/8 x 9-1/4 - 9-1/2	THF16925	--	--	18	1-5/8	9	2	Min	8	10d	2	10d x 1-1/2	930	1065	1160	255	810	935	1015	200	
								Max	12	10d	2	10d x 1-1/2	1390	1600	1740	255	1215	1400	1430	200	
1-5/8 x 11-1/4 - 12	THF16112	--	--	18	1-5/8	11	2	Min	8	10d	2	10d x 1-1/2	930	1065	1160	255	810	935	1015	200	
								Max	16	10d	2	10d x 1-1/2	1855	2135	2320	255	1585	1615	1635	200	
1-5/8 x 14	THF16140	--	--	18	1-5/8	13-7/16	2	Min	12	10d	2	10d x 1-1/2	1390	1600	1740	255	1215	1400	1520	200	
								Max	20	10d	2	10d x 1-1/2	2265	2300	2320	255	1585	1615	1635	200	
.	THF17925	IUS1.81/9.5	--	18	1-3/4	8-15/16	2	Min	8	10d	2	10d x 1-1/2	930	1065	1160	255	810	935	1015	200	
								Max	12	10d	2	10d x 1-1/2	1390	1600	1740	255	1215	1400	1430	200	
1-3/4 x 11-7/8	THF17112	IUS1.81/11.88	--	18	1-3/4	10-15/16	2	Min	8	10d	2	10d x 1-1/2	930	1065	1160	255	810	935	1015	200	
								Max	16	10d	2	10d x 1-1/2	1855	2135	2320	255	1625	1720	1740	200	
1-3/4 x 14	THF17140	IUS1.81/14	--	18	1-3/4	13-3/8	2	Min	12	10d	2	10d x 1-1/2	1390	1600	1740	255	1215	1400	1520	200	
								Max	20	10d	2	10d x 1-1/2	2320	2455	2480	255	1690	1720	1740	200	
1-3/4 x 16	THF17157	IUS1.81/16	--	18	1-13/16	15-3/4	3-1/2	--	24	10d	2	10d x 1-1/2	2785	3200	3480	255	2435	2800	2855	200	
2 - 2-1/8 x 9-1/2	THF20925	IUS2.06/9.5	--	18	2-1/8	8-7/8	2	Min	8	10d	2	10d x 1-1/2	930	1065	1160	255	810	935	1015	200	
								Max	12	10d	2	10d x 1-1/2	1390	1600	1740	255	1215	1400	1430	200	5, F2, R5
2 - 2-1/8 x 11-7/8	THF20112	IUS2.06/11.88	--	18	2-1/8	11-3/16	2	Min	8	10d	2	10d x 1-1/2	930	1065	1160	255	810	935	1015	200	
								Max	16	10d	2	10d x 1-1/2	1855	2135	2320	255	1625	1865	1955	200	
2 - 2-1/8 x 14	THF20140	IUS2.06/14	--	18	2-1/8	13-1/4	2	Min	12	10d	2	10d x 1-1/2	1390	1600	1740	255	1215	1400	1520	200	
								Max	20	10d	2	10d x 1-1/2	2320	2670	2790	255	1905	1935	1955	200	
2 - 2-1/8 x 16	THF20157	IUS2.06/16	--	18	2-1/8	15-3/4	3-3/8	--	24	10d	2	10d x 1-1/2	2785	3200	3480	255	2435	2800	3045	200	
2-5/16 x 9-1/2	THF23925	IUS2.37/9.5, MIU2.37/9, U3510/14	--	18	2-5/16	9-3/16	2-1/2	--	12	10d	2	10d x 1-1/2	1390	1600	1740	160	1215	1400	1520	130	
2-5/16 x 11-7/8	THF23118	IUS2.37/11.88, MIU2.37/11, U3516/20	--	18	2-5/16	11-3/16	2-1/2	--	14	10d	2	10d x 1-1/2	1625	1870	2030	330	1420	1635	1730	260	
2-5/16 x 14	THF23140	IUS2.37/14, MIU2.37/14	--	16	2-5/16	13-1/2	2-1/2	--	18	10d	2	10d x 1-1/2	2125	2445	2655	330	1860	2135	2320	260	
2-5/16 x 16	THF23160	IUS2.37/16, MIU2.37/16	--	16	2-5/16	15-9/16	2-1/2	--	22	10d	2	10d x 1-1/2	2595	2905	2905	330	2270	2295	2295	260	
2-5/16 x 18 - 28	THF23180	MIU2.37/18, MIU2.37/20	x	16	2-5/16	17-1/8	2-1/2	--	24	10d	8	10d x 1-1/2	2830	3255	3540	1235	2475	2850	2910	990	
2-1/2 x 9-1/4 - 9-1/2	THF25925	MIU2.56/9	--	18	2-1/2	9-1/8	2-1/2	--	12	10d	2	10d x 1-1/2	1390	1600	1740	160	1225	1410	1530	130	
2-1/2 x 9-1/2	THFI2595	IUS2.56/9.25, IUS2.56/9.5	--	18	2-5/8	9-1/2	2	--	8	10d	--	--	960	1095	1180	120	845	950	950	95	
2-1/2 x 11-1/4 - 11-7/8	THF25112	MIU2.56/11	--	16	2-1/2	11-1/8	2-1/2	--	14	10d	2	10d x 1-1/2	1625	1870	2030	330	1430	1645	1730	260	
2-1/2 x 11-7/8	THFI25118	IUS2.56/11.88	--	18	2-5/8	11-7/8	2	--	10	10d	--	--	1200	1210	1210	120	950	950	950	95	
2-1/2 x 13	THF25130	--	--	16	2-1/2	12-1/4	2-1/2	--	18	10d	2	10d x 1-1/2	2125	2445	2655	330	1870	2150	2335	260	

1) Uplift loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.

2) **NAILS:** 10d x 1-1/2" nails are 0.148" dia. x 1-1/2" long, 10d nails are 0.148" dia. x 3" long.

Load tables address hanger/header/fastener limitations only. Joist limitations must be determined for each installation.

New products or updated product information are designated in **blue font.**



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I-Joist Charts Face Mount Hangers

MiTek®

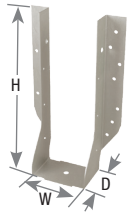
Joist Size (in)	USP Stock	Ref. No.	Web Stiff Reqd	Ga	Dimensions (in)			Fastener Schedule[2]					DF/SP Header Allowable Loads (Lbs.)				S-P-F Header Allowable Loads (Lbs.)				Code Ref.
									Header		Joist										
					W	H	D	Min/ Max	Qty	Type	Qty	Type	100%	115%	125%	Uplift[1] 160%	100%	115%	125%	Uplift[1] 160%	
2-1/2 x 14	THFI2514	IUS2.56/14	--	18	2-5/8	14	2	Min	12	10d	--	--	1440	1640	1770	120	1265	1445	1555	95	
								Max	14	10d	--	--	1680	1915	2065		1480	1685	1795		
	THF25140	MIU2.56/14	--	16	2-1/2	13-7/16	2-1/2	--	18	10d	2	10d x 1-1/2	2125	2445	2655	330	1870	2150	2295	260	
2-1/2 x 16	THF25160	IUS2.56/16, MIU2.56/16, MIU2.56/18, MIU2.56/20	--	16	2-1/2	15-1/2	2-1/2	--	22	10d	2	10d x 1-1/2	2595	2905	2905	330	2285	2295	2295	260	
2-1/2 x 18 - 24	THF25160	IUS2.56/16, MIU2.56/16, MIU2.56/18, MIU2.56/20	x	16	2-1/2	15-1/2	2-1/2	--	22	10d	2	10d x 1-1/2	2595	2905	2905	330	2285	2295	2295	260	
2-5/8 x 9-1/4 - 9-1/2	THF26925	--	--	18	2-5/8	9-1/16	2-1/2	--	12	10d	2	10d x 1-1/2	1390	1600	1740	160	1225	1410	1530	130	
2-5/8 x 11-1/4 - 11-7/8	THF26112	--	--	18	2-5/8	11-1/16	2-1/2	--	14	10d	2	10d x 1-1/2	1625	1870	2030	330	1430	1645	1730	260	
2-5/8 x 14	THF26140	--	--	16	2-5/8	13-3/8	2-1/2	--	18	10d	2	10d x 1-1/2	2125	2445	2655	330	1870	2150	2290	260	
2-5/8 x 16	THF26160	--	--	16	2-5/8	15-7/16	2-1/2	--	22	10d	2	10d x 1-1/2	2595	2905	2905	330	2285	2290	2290	260	
3 x 9-1/4 - 14	THF15925-2	MIU3.12/9	x	16	3-1/8	9-3/16	2-1/2	--	12	10d	6	10d	1415	1630	1770	1135	1240	1425	1550	990	
3 x 11-1/4 - 14	THF15112-2	MIU3.12/11	x	16	3-1/8	10-13/16	2-1/2	--	14	10d	6	10d	1650	1900	2065	1135	1445	1660	1805	990	
3 x 14	THF15140-2	--	x	12	3-1/8	12-3/4	2-1/2	--	18	10d	6	10d	2395	2755	2995	1275	2095	2395	2465	1115	
3-1/4 x 9-1/4 - 14	THF16925-2	--	x	16	3-3/8	9-1/16	2-1/2	--	12	10d	6	10d	1415	1630	1770	1135	1240	1425	1550	990	
3-1/4 x 11-1/4 - 14	THF16112-2	--	x	16	3-3/8	10-3/4	2-1/2	--	14	10d	6	10d	1650	1900	2065	1135	1445	1660	1805	990	
3-1/4 x 14	THF16140-2	--	x	12	3-3/8	12-5/8	2-1/2	--	18	10d	6	10d	2395	2755	2995	1275	2095	2410	2615	1115	
3-1/2 x 9-1/4 - 9-1/2	THF35925	IUS3.56/9.5	--	18	3-1/2	8-5/8	2-1/2	--	12	10d	2	10d x 1-1/2	1390	1600	1740	225	1225	1410	1530	180	
3-1/2 x 11-1/4	THF35112	IUS3.56/11.88	--	18	3-1/2	10-5/8	2-1/2	--	16	10d	2	10d x 1-1/2	1855	2135	2320	225	1635	1880	2040	180	
3-1/2 x 14	THF35140	IUS3.56/14	--	16	3-1/2	12-15/16	2-1/2	--	20	10d	2	10d x 1-1/2	2360	2715	2950	225	2075	2390	2595	180	
3-1/2 x 16 - 22	THF17157-2	--	x	12	3-5/8	15-3/4	2-1/2	--	22	10d	6	10d	2925	3365	3660	1275	2560	2945	3200	1115	5, F2, R5
3-1/2 x 16	THF35157	IUS3.56/16	--	16	3-1/2	15	2-1/2	--	22	10d	2	10d x 1-1/2	2595	2985	3245	225	2285	2625	2855	180	
3-1/2 x 18 - 26	THF35165	--	x	16	3-1/2	16-9/16	2-1/2	--	24	10d	8	10d x 1-1/2	2830	3255	3540	1235	2490	2865	3115	985	
4 - 4-3/16 x 9-1/2	THF20925-2	MIU4.12/9, MIU4.28/9	x	16	4-3/16	8-11/16	2-1/2	--	12	10d	6	10d	1415	1630	1770	1135	1240	1425	1550	990	
4 - 4-3/16 x 11-7/8	THF20112-2	MIU4.12/11, MIU4.28/11	x	16	4-3/16	11	2-1/2	--	16	10d	6	10d	1890	2170	2360	1135	1650	1900	2065	990	
4 - 4-3/16 x 14	THF20140-2	MIU4.12/14, MIU4.12/16, MIU4.28/14, MIU4.28/16	x	16	4-3/16	13-5/8	2-1/2	--	20	10d	6	10d	2360	2715	2950	1135	2065	2375	2580	990	
4-5/8 x 9-1/4 - 14	THF23925-2	U3510-2	x	16	4-3/4	8-3/8	2-1/2	--	12	10d	6	10d	1415	1630	1770	1135	1240	1425	1550	990	
4-5/8 x 11-1/4 - 16	THF23118-2	U3512-2	x	16	4-3/4	10-11/16	2-1/2	--	16	10d	6	10d	1890	2170	2360	1135	1650	1900	2065	990	
4-5/8 x 14 - 22	THF23140-2	MIU4.75/14	x	12	4-3/4	13-5/16	2-1/2	--	20	10d	6	10d	2660	3060	3325	1275	2325	2675	2910	1115	
4-5/8 x 16 - 26	THF23160-2	MIU4.75/16, MIU4.75/18, MIU4.75/20	x	12	4-3/4	15-15/16	2-1/2	--	24	10d	6	10d	3190	3670	3790	1275	2790	3000	3000	1115	
5 x 9-1/4 - 11-7/8	THF25925-2	MIU5.12/9	x	16	5-1/8	8-3/16	2-1/2	--	12	10d	6	10d	1415	1630	1770	1135	1245	1435	1555	975	
5 x 11-1/4 - 16	THF25112-2	MIU5.12/11	x	16	5-1/8	10-7/16	2-1/2	--	16	10d	6	10d	1890	2170	2360	1135	1660	1910	2075	975	
5 x 14 - 20	THF25140-2	MIU5.12/14	x	12	5-1/8	13-1/8	2-1/2	--	20	10d	6	10d	2660	3060	3325	1235	2340	2690	2925	975	
5 x 16 - 26	THF25160-2	MIU5.12/16, MIU5.12/18, MIU5.12/20	x	12	5-1/8	15-3/4	2-1/2	--	24	10d	6	10d	3190	3670	3790	1235	2810	3000	3000	975	
7 x 9-1/4 - 14	HD7100	HU410-2	x	14	7-1/8	9	2-1/2	Min	14	16d	6	16d	2155	2430	2610	1305	1895	2140	2295	1035	
								Max	18		8		2770	3125	3355	1845	2440	2750	2950	1585	
7 x 11-1/4 - 16	HD7120	HU412-2	x	14	7-1/8	10-11/16	2-1/2	Min	16	16d	6	16d	2465	2780	2980	1305	2165	2445	2620	1035	
								Max	22		8		3390	3820	4100	1845	2980	3360	3605	1620	
7 x 14 - 20	HD7140	HU414-2	x	14	7-1/8	13	2-1/2	Min	20	16d	8	16d	3080	3475	3715	1845	2710	2940	2940	1585	
								Max	26		12		4005	4435	4435	2765	3520	3710	3710	2430	

1) Uplift loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.

2) **NAILS:** 10d x 1-1/2" nails are 0.148" dia. x 1-1/2" long, 10d nails are 0.148" dia. x 3" long, 16d nails are 0.162" dia. x 3-1/2" long.

Load tables address hanger/header/fastener limitations only. Joist limitations must be determined for each installation.

New products or updated product information are designated in **blue font**.



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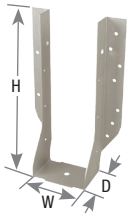
SCL Charts Face Mount Hangers

MiTek®

Joist Size (in)	USP Stock No.	Ref. No.	Web Stiff Reqd	Ga	Dimensions (in) W	H	D	Min/ Max	Fastener Schedule[2,3] Header Qty	Header Type	Joist Qty	Joist Type	DF/SP Header Allowable Loads (Lbs.) 100%	115%	125%	Uplift[1] 160%	S-P-F Header Allowable Loads (Lbs.) 100%	115%	125%	Uplift[1] 160%	Code Ref.
1-3/4 x 7-1/4	HD1770	HU7	x	14	1-13/16	7-1/8	2-1/2	Min	12	16d	4	10d x 1 1/2	1850	2085	2235	760	1625	1835	1890	610	5, F2, R5
								Max	16		8		2465	2780	2980	1180	2165	2445	2620	955	
1-3/4 x 9-1/2	HD17925	HU9, MIU1.81/9	x	14	1-13/16	9-1/8	2-1/2	Min	18	16d	6	10d x 1 1/2	2770	3125	3355	1170	2440	2645	2695	950	5, F2, R5
								Max	24		10		3695	4170	4320	1900	3020	3165	3255	1540	
	HD17925IF	--	x	14	1-13/16	9-1/8	--	--	18	16d	6	10d x 1-1/2	2540	2775	2775	1065	2195	2195	2195	840	130
	HDQ179IF	HUCQ1.81/9-SDS	x	14	1-13/16	9	3	--	8	WS3	4	WS15	3340	3605	3605	1110	2980	3010	3010	925	31, R1, F32
	HUS179	HUS1.81/10	x	16	1-13/16	9-1/8	3	--	30	16d	10	16d	5580	6040	6040	4110	4555	4880	4895	3390	5, F2, R5
1-3/4 x 11-1/4 - 11-7/8	HD17112	HU11, MIU1.81/11	x	14	1-13/16	11-3/8	2-1/2	Min	22	16d	6	10d x 1 1/2	3390	3625	3685	1170	2555	2645	2695	950	
								Max	30		12		4320	4515	4640	1900	3255	3425	3535	1550	
	HD17112IF	--	x	14	1-13/16	11-3/8	--	--	22	16d	6	10d x 1-1/2	2900	3010	3080	1065	2785	2855	2855	840	130
	HDQ17112IF	HUCQ1.81/11-SDS	x	14	1-13/16	11	3	--	10	WS3	6	WS15	3340	3340	3340	1580	2890	2890	2890	1365	31, R1, F32
	HUS179	HUS1.81/10	x	16	1-13/16	9-1/8	3	--	30	16d	10	16d	5580	6040	6040	4110	4555	4880	4895	3390	5, F2, R5
1-3/4 x 14	HD1714	HU14, MIU1.81/14, MIU1.81/16, MIU1.81/18, U14	x	14	1-13/16	13-5/16	2-1/2	Min	28	16d	8	10d x 1 1/2	3790	3920	4005	1550	2790	2905	2975	1255	
								Max	36		14		4580	4810	4955	1900	3485	3685	3815	1555	
	HD1714IF	--	x	14	1-13/16	13-5/16	--	--	26	16d	8	10d x 1-1/2	3140	3280	3380	1065	2860	2860	2860	845	130
	HDQ1714IF	--	x	14	1-13/16	13-3/8	3	--	12	WS3	6	WS15	4660	4870	4955	2035	3355	3525	3635	1680	31, R1, F32
	HUS179	HUS1.81/10	x	16	1-13/16	9-1/8	3	--	30	16d	10	16d	5580	6040	6040	4110	4555	4880	4895	3390	5, F2, R5
1-3/4 x 16	HD1714	HU14, MIU1.81/14, MIU1.81/16, MIU1.81/18, U14	x	14	1-13/16	13-5/16	2-1/2	Min	28	16d	8	10d x 1 1/2	3790	3920	4005	1550	2790	2905	2975	1255	
								Max	36		14		4580	4810	4955	1900	3485	3685	3815	1555	
	HD1714IF	--	x	14	1-13/16	13-5/16	--	--	26	16d	8	10d x 1-1/2	3140	3280	3380	1065	2860	2860	2860	845	130
	HDQ1714IF	--	x	14	1-13/16	13-3/8	3	--	12	WS3	6	WS15	4660	4870	4955	2035	3355	3525	3635	1680	31, R1, F32
2-11/16 x 9-1/4 - 14	HD27925	HU2.75/10	x	14	2-3/4	9-3/16	2-1/2	Min	14	16d	6	10d x 1 1/2	2155	2430	2610	1170	1895	2140	2295	940	5, F2, R5
								Max	20		10		3080	3475	3715	1550	2710	2980	2980	1245	
	THDH27925	--	x	12	2-3/4	9-1/8	4	--	46	16d	12	16d	9020	9020	9020	4445	7515	7900	7975	3560	
2-11/16 x 11-1/4 - 16	HD27112	HU2.75/12	x	14	2-3/4	11-3/16	2-1/2	Min	16	16d	8	10d x 1 1/2	2465	2780	2980	1180	2165	2445	2620	945	
								Max	24		12		3695	4170	4435	1900	3250	3665	3760	1530	
	THDH27112	--	x	12	2-3/4	10-7/8	4	--	56	16d	14	16d	9710	9710	9710	4445	7795	7795	7795	3570	
2-11/16 x 14 - 16	HD2714	HU2.75/14	x	14	2-3/4	13-3/16	2-1/2	Min	18	16d	8	10d x 1 1/2	2770	3125	3355	1550	2440	2750	2950	1240	
								Max	26		12		4005	4435	4435	1900	3520	3760	3760	1530	
	THDH2714	--	x	12	2-3/4	12-1/4	4	--	66	16d	16	16d	11185	11760	11760	5260	8530	9045	9390	4235	
3-1/2 x 9-1/4 - 14	HD410	MIU3.56/9	x	14	3-9/16	8-13/16	2-1/2	Min	14	16d	6	10d	2155	2430	2610	1170	1895	2140	2295	1030	
								Max	20		10		3080	3475	3715	1950	2710	2970	2970	1715	
	HDQ410IF	HUCQ410-SDS	x	14	3-9/16	9	3	--	12	WS3	6	WS3	5015	5590	5590	2975	4670	4900	4900	2865	31, R1, F32
	THD410	HHUS410	x	14	3-5/8	9-1/16	3	--	38	16d	20	10d	5850	6600	7045	3905	5145	5680	5680	3235	5, F2, R5
	THDH410	HGUS410	x	12	3-9/16	9-1/8	4	--	46	16d	12	16d	9020	9020	9020	4445	7950	7950	7950	3545	
3-1/2 x 11-1/4 - 16	HD412	MIU3.56/11	x	14	3-9/16	10-13/16	2-1/2	Min	16	16d	8	10d	2465	2780	2980	1305	2165	2445	2620	1040	
								Max	24		12		3695	4170	4470	2340	3250	3665	3860	2060	
	HDQ412IF	HUCQ412-SDS	x	14	3-9/16	11	3	--	14	WS3	6	WS3	5605	5605	5605	3280	4980	4980	4980	2775	31, R1, F32
	THD412	--	x	14	3-5/8	11	3	--	48	16d	20	10d	7045	7045	7045	3905	5680	5680	5680	3235	5, F2, R5
	THDH412	HGUS412	x	12	3-9/16	10-1/2	4	--	56	16d	14	16d	9710	9710	9710	5260	7765	7765	7765	4205	

1) Uplift loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) WS3 Wood Screws are 1/4" x 3" and are included with HDQ hangers.
3) **NAILS:** 10d x 1-1/2" nails are 0.148" dia. x 1-1/2" long, 10d nails are 0.148" dia. x 3" long, 16d nails are 0.162" dia. x 3-1/2" long.
Load tables address hanger/header/fastener limitations only. Joist limitations must be determined for each installation.
New products or updated product information are designated in **blue font.**



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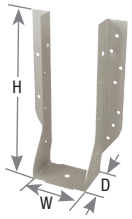
SCL Charts Face Mount Hangers

MiTek®

Joist Size (in)	USP Stock No.	Ref. No.	Web Stiff Reqd	Ga	Dimensions (in) W	H	D	Fastener Schedule[2,3] Min/ Max	Header Qty	Header Type	Joist Qty	Joist Type	DF/SP Header Allowable Loads (Lbs.) 100%	115%	125%	Uplift[1] 160%	S-P-F Header Allowable Loads (Lbs.) 100%	115%	125%	Uplift[1] 160%	Corrosion Finish	Code Ref.
3-1/2 x 14 - 20	HD414	MIU3.56/14	x	14	3-9/16	12-13/16	2-1/2	Min	18	16d	8	10d	2770	3125	3355	1550	2440	2750	2950	1235		5, F2, R5
								Max	26		12		4005	4515	4815	2340	3520	3860	3860	2060		
	THD414	--	x	14	3-5/8	12-7/8	3	--	58	16d	20	10d	7045	7045	7045	3905	5680	5680	5680	3235		
	THDH414	HGUS414	x	12	3-9/16	13-1/16	4	--	66	16d	16	16d	11760	11760	11760	5655	9420	9420	9420	4530		
3-1/2 x 16 - 22	HD416	MIU3.56/16	x	14	3-9/16	14-13/16	2-1/2	Min	22	16d	10	10d	3390	3820	4100	1950	2980	3360	3605	1715		
								Max	30		14		4620	4965	4965	2245	3990	3990	3990	1805		
3-1/2 x 18 - 26	HD418	MIU3.56/18, MIU3.56/20	x	14	3-9/16	16-1/2	2-1/2	--	28	16d	8	10d	4310	4815	4815	1560	3795	3835	3835	1375		
5-1/4 x 9-1/4 - 11-7/8	HD5210	--	x	14	5-3/8	7-7/8	2-1/2	Min	14	16d	6	16d	2155	2430	2610	1305	1895	2140	2295	1035		
								Max	20		10		3080	3475	3725	2305	2710	3055	3275	2025		
	HDQ5210IF	HUCQ5.25/9-SDS	x	14	5-1/4	9	3	--	12	WS3	6	WS3	5015	5590	5590	2975	4670	4890	4890	2855		31, R1, F32
	THD610	HHUS5.50/10	x	12	5-1/2	9	3	--	38	16d	20	10d	6535	7255	7745	4010	5750	6380	6810	3210		
	THDH610	HGUS5.25/10, HGUS5.50/10	x	12	5-1/2	9	4	--	46	16d	16	16d	9020	9020	9020	5260	7930	7930	7930	4190		5, F2, R5
5-1/4 x 11-1/4 - 16	HD5212	--	x	14	5-3/8	9-7/8	2-1/2	Min	16	16d	8	16d	2465	2780	2980	1305	2165	2445	2620	1040		
								Max	24		12		3695	4170	4470	2765	3250	3665	3930	2430		
	HDQ5212IF	HUCQ5.25/11-SDS	x	14	5-1/4	11	3	--	14	WS3	6	WS3	5605	5605	5605	3280	4965	4965	4965	2770		31, R1, F32
	THD612	--	x	12	5-1/2	11	3	--	48	16d	20	10d	8255	8860	8860	4010	7090	7090	7090	3210		
	THDH612	HGUS5.25/12, HGUS5.50/12	x	12	5-1/2	11	4	--	56	16d	20	16d	9740	9740	9740	5260	7775	7775	7775	4200		
5-1/4 x 14 - 20	HD5214	--	x	14	5-3/8	11-7/8	2-1/2	Min	18	16d	8	16d	2770	3125	3355	1845	2440	2750	2950	1590		
								Max	26		12		4005	4515	4845	2765	3520	3970	4020	2430		
	THD614	--	x	12	5-1/2	12-7/8	3	--	58	16d	20	10d	8860	8860	8860	4010	7090	7090	7090	3210		
	THDH614	HGUS5.50/14	x	12	5-1/2	13	4	--	66	16d	22	16d	11760	11760	11760	5655	9400	9400	9400	4520		
5-1/4 x 16 - 22	HD5216	--	x	14	5-3/8	13-7/8	2-1/2	Min	22	16d	10	16d	3390	3820	4100	2305	2980	3360	3605	2025		
								Max	30		14		4620	4965	4965	3225	3975	3975	3975	2835		
6-3/4 x 9 - 14	THDH6710	HGUS210-4, HGUS6.88/10	x	12	6-7/8	8-13/16	4	--	46	16d	12	16d	9020	9020	9020	4445	7890	7890	7890	3520		
6-3/4 x 11 - 18	THDH6712	HGUS212-4, HGUS6.88/12	x	12	6-7/8	10-13/16	4	--	56	16d	14	16d	9020	9020	9020	5260	7900	7900	7900	4175		
6-3/4 x 13 - 20	THDH6714	HGUS214-4, HGUS6.88/14	x	12	6-7/8	12-13/16	4	--	66	16d	16	16d	11760	11760	11760	5655	9340	9340	9340	4490		5, F2, R5
7 x 9-1/4 - 14	HD7100	HU410-2	x	14	7-1/8	9	2-1/2	Min	14	16d	6	16d	2155	2430	2610	1305	1895	2140	2295	1035		
								Max	18		8		2770	3125	3355	1845	2440	2750	2950	1585		
	THD7210	HHUS7.25/10	x	12	7-1/4	9	3	--	38	16d	20	10d	6535	7255	7745	4010	5750	6380	6810	3200		
	THDH7210	HGUS7.25/10	x	12	7-1/4	9	4	--	46	16d	12	16d	9020	9020	9020	4445	7890	7890	7890	3520		
7 x 11-1/4 - 16	HD7120	HU412-2	x	14	7-1/8	10-11/16	2-1/2	Min	16	16d	6	16d	2465	2780	2980	1305	2165	2445	2620	1035		
								Max	22		8		3390	3820	4100	1845	2980	3360	3605	1620		
	THDH7212	HGUS7.25/12	x	12	7-1/4	10-1/2	4	--	56	16d	14	16d	9020	9020	9020	5260	7900	7900	7900	4170		
7 x 14 - 20	HD7140	HU414-2	x	14	7-1/8	13	2-1/2	Min	20	16d	8	16d	3080	3475	3715	1845	2710	2940	2940	1585		
								Max	26		12		4005	4435	4435	2765	3520	3710	3710	2430		
	THDH7214	HGUS7.25/14	x	12	7-1/4	12-1/4	4	--	66	16d	16	16d	11760	11760	11760	5655	9335	9335	9335	4490		
7 x 16 - 22	HD7160	--	x	14	7-1/8	15-5/8	2-1/2	--	24	16d	8	10d	3695	4170	4435	1560	3250	3665	3695	1375		
7 x 18 - 26	HD7180	--	x	14	7-1/8	17-3/4	2-1/2	--	28	16d	8	10d	4310	4815	4815	1560	3795	3810	3810	1375		

1) Uplift loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) WS3 Wood Screws are 1/4" x 3" and are included with HDQ hangers.
3) **NAILS:** 10d nails are 0.148" dia. x 3" long, 16d nails are 0.162" dia. x 3-1/2" long.
Load tables address hanger/header/fastener limitations only. Joist limitations must be determined for each installation.
New products or updated product information are designated in **blue font.**

Corrosion Finish Stainless Steel Gold Coat HDG Triple Zinc



TFI / TFL / THO Top Mount Hangers

TFI & THO – Engineered for I-Joist to header applications. Offers full lateral support of the I-Joist top chord, eliminating the need for web stiffeners in most applications. Raised dimple nailing guides help assure correct 45° nailing into the I-Joist bottom flange. The THO's feature the patented Seat Cleat® that allows for quick, positive seating. The Seat Cleat® will hold the I-Joist in place, eliminating spring back during nailing in the bottom flange.

TFL – Features 1-1/2" top flange depth that accommodates all header types as well as back-to-back installations. Also features USP's patented Seat Cleat® for quick, positive seating.

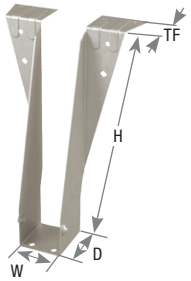
Materials: See EWP Top Mount Hangers charts, pages 166-171.
Finish: G90 galvanizing
Codes: See page 10 for Code Reference Chart
Patents: #5,564,248 – THO & TFL

Installation:

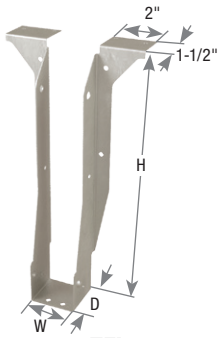
- Use all specified fasteners. See Product Notes, page 18.
- Refer to the top mount chart for applications requiring web stiffeners.
- Requirements for web stiffener from the I-Joist manufacturer should be followed, even if web stiffeners are not required in USP literature.
- Uplift capacity for THO and TFL single ply hangers installed without joist nails = 85 lbs. Refer to THO, TFL, & THF Single Ply I-Joist Hangers Technical Bulletin.

Typical THO installation

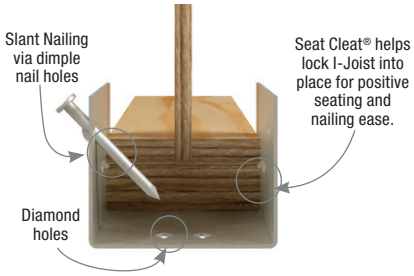
Typical TFL installation

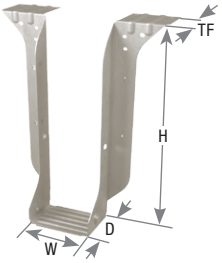


THO



TFL





TFI

Nailer Options
– chart represents maximum allowable loads for hangers used on wood nailers. Reference page 153.

USP Series	Nailer Size	Fastener Schedule[3] Header Qty	Header Type	Joist Qty	Joist Type	DF/ SP Allowable Loads (Lbs.)[2] 100%	DF/ SP Uplift[1] 160%	S-P-F Allowable Loads (Lbs.)[2] 100%	S-P-F Uplift[1] 160%
TFL	2X	6	10d x 1-1/2	2	10d x 1-1/2	1270	**140**	1090	120
	3X	6	16d x 2-1/2	2	10d x 1-1/2	1600	**140**	**1230**	120
	(2) 2X	6	10d	2	10d x 1-1/2	1280	**140**	1100	120
	4X	6	16d	2	10d x 1-1/2	**1600**	**140**	**1230**	120
THO	2X	6	10d x 1-1/2	2	10d x 1-1/2	1360	**230**	1170	**195**
	3X	6	16d x 2-1/2	2	10d x 1-1/2	**1335**	**230**	**1050**	**195**
	(2) 2X	6	**16d x 2-1/2**	2	10d x 1-1/2	**1335**	**230**	**1050**	**195**
	4X	6	16d	2	10d x 1-1/2	**1335**	**230**	**1050**	**195**
THO (Double)	2X	6	10d x 1-1/2	**2**	**10d x 1-1/2**	1455	**360**	**1250**	310
	3X	6	16d x 2-1/2	**2**	**10d x 1-1/2**	2335	**500**	**2010**	**310**
	(2) 2X	**6**	10d	**2**	**10d x 1-1/2**	2370	**500**	**2040**	**310**
	4X	**6**	16d	**2**	**10d x 1-1/2**	2665	**500**	**2290**	**430**
TFI	**2X**	**6**	**10d x 1-1/2**	**2**	**10d x 1-1/2**	**1985**	280	**1660**	235
	3X	**10**	**16d x 2-1/2**	**2**	**10d x 1-1/2**	**2560**	280	**1660**	235
	(2) 2X	**10**	**10d**	**2**	**10d x 1-1/2**	**2560**	280	**1660**	235
	4X	6	16d	2	10d x 1-1/2	2560	**360**	2200	310
	4X	10	16d	2	10d x 1-1/2	**3245**	**360**	2200	310

1) Uplift loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) Listed loads shall not be increased.
3) **NAILS:** 10d x 1-1/2 nails are 0.148" dia. x 1-1/2" long, 10d nails are 0.148" dia. x 3" long, 16d nails are 0.162" dia. x 3-1/2" long, 16d x 2-1/2 nails are 0.162" dia. x 2-1/2" long.
New products or updated product information are designated in **blue font**.

BPH / HBPH Top Mount Hangers

These hangers are used to support LVL, LSL, and PSL beams and headers in medium-to-heavy load conditions.

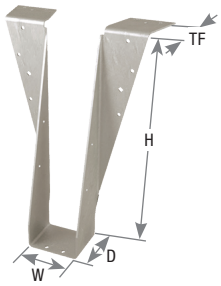
Materials: BPH – 12 gauge; HBPH – 10 gauge
Finish: G90 galvanizing
Codes: See page 10 for Code Reference Chart

Installation:

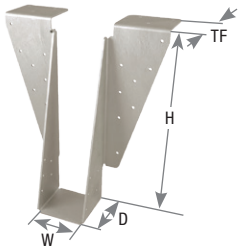
- Use all specified fasteners. See Product Notes, page 18.
- Refer to the top mount chart for applications requiring web stiffeners.
- Requirements for web stiffener from the I-Joist manufacturer should be followed, even if web stiffeners are not required in USP literature.
- For welded installations, see page 249.

Typical BPH installation

Typical HBPH installation



BPH



HBPH

Nailer Options

– chart represents maximum allowable loads for hangers used on wood nailers. Reference page 153.

USP Series	Nailer Size	Fastener Schedule[3] Header Qty	Header Type	Joist Qty	Joist Type	DF/SP Allowable Loads (Lbs.)[2] 100%	DF/SP Uplift[1] 160%	S-P-F Allowable Loads (Lbs.)[2] 100%	S-P-F Uplift[1] 160%
BPH	2X	6	10d x 1-1/2	4	10d x 1-1/2	2080	230	1790	200
	3X	8	16d x 2-1/2	4	10d x 1-1/2	2360	535	2030	460
	(2) 2X	8	10d	4	10d x 1-1/2	2310	535	1985	460
	4X	8	16d	4	10d x 1-1/2	2245	535	1930	460
HBPH	2X	8	10d x 1-1/2	10	16d	2540	--	2135	--
	3X	12	16d x 2-1/2	10	10d	4500	--	3780	--
	(2) 2X	14	10d	10	16d	4140	1610	3480	1350
	4X	16	16d	10	16d	5745	1610	4825	1350

1) Uplift loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) Listed loads shall not be increased.
3) **NAILS:** 10d x 1-1/2 nails are 0.148" dia. x 1-1/2" long, 10d nails are 0.148" dia. x 3" long, 16d nails are 0.162" dia. x 3-1/2" long, 16d x 2-1/2 nails are 0.162" dia. x 2-1/2" long.
New products or updated product information are designated in **blue font**.

Specialty Options Chart

– refer to Specialty Options pages 245 and 247 for additional details

Option	Skewed[1,3]	Sloped Seat[2,3]	Sloped / Skewed[1,2,3]	Sloped Top Flange[4]
Range	1° to 50°	1° to 45°	See Sloped Seat and Skewed	0° to 45°
Allowable Loads	100% of table load	100% of table load	100% of table load	100% of table load
Ordering	Add *SK*, angle required, right *(R)* or left *(L)*, and **square cut *(SQ)* or bevel cut *(BV)*** to product number. Example: BPH3595_SK45R_SQ	Add *SL*, slope required, and up *(U)* or down *(D)*, to product number. Example: BPH3595_SL30D	See Sloped Seat and Skewed. Example: BPH3595_SK45R_SQ_SL30D	Add *SF*, angle required and right *(R)* or left *(L)*, to product number. Example: BPH3595_SF30L

1) Skewed hangers with skews greater than 15° may have all joist nailing on outside flange.
2) Sloped or sloped / skewed hangers with slopes greater than 15° may have additional joist nails.
3) For skewed hangers, the required cut type (square or bevel) of joist member may vary based on skew angle and width of hanger. Some square cut hangers will require custom pricing due to welded back plate.
4) Sloped top flanges with slopes greater than 15° may have additional header nails.

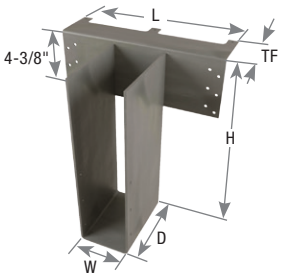
HLBH Beam Hangers

Heavy-duty hanger for LVL, LSL, and PSL beams.

Materials: 7 gauge
Finish: USP primer
Codes: See page 10 for Code Reference Chart

Installation:
- Use all specified fasteners. See Product Notes, page 18.
- For welded installations, see page 249.
- 16d ring shank nails are supplied with HLBH hangers.

Typical HLBH installation



HLBH

Nailer Options
– chart represents maximum allowable loads for hangers used on wood nailers. Reference page 153.

USP Series	Nailer Size	Fastener Schedule[2] Header Qty	Header Type	Joist Qty	Joist Type	DF/SP Allowable Loads (Lbs.) 100%	DF/SP Uplift 160%	S-P-F Allowable Loads (Lbs.) 100%	S-P-F Uplift 160%
HLBH	2x	7	10d x 1-1/2	6	10d x 1-1/2	6115	--	5135	--
	3x	9	16d x 2-1/2	6	10d	6825	--	5735	--
	(2) 2x	11	10d	6	10d x 1-1/2	4385	--	3685	--
	4X	11	NA16D-RS	6	10d x 1-1/2	9600	1390	8255	1195
	4X	11	NA16D-RS	6	16d	9600	1605	8255	1380

1) Listed loads shall not be increased.
2) **NAILS:** 10d x 1-1/2" nails are 0.148" dia. x 1-1/2" long, 10d nails are 0.148" dia. x 3" long, NA16D-RS nails are 0.148 dia, x 3-1/2" long, 16d nails are 0.162" dia. x 3-1/2" long.
New products or updated product information are designated in **blue font**.

Specialty Options Chart
– refer to Specialty Options pages 245, 247-248 for additional details

Option	Skewed[1,3]	Sloped Seat[2,3]	Sloped / Skewed[1,2,3]	Sloped Top Flange[4]	Top Flange Offset	Saddle[5]	Ridge
Range	1˚ to 50˚	1˚ to 45˚	See Sloped Seat and Skewed	0˚ to 45˚	--	--	0˚ to 45˚
Allowable Loads	8070 lbs. Max. 50% of uplift load on skew greater than 15˚.	7000 lbs. Max.	6650 lbs. Max. 50% of uplift load on skew greater than 15˚.	100% of table load	45% of table load	100% of table load per side. **See footnote 5.**	100% of table load
Ordering	Add *SK*, angle required, right *(R)* or left *(L)*, and **square cut *(SQ)* or bevel cut *(BV)*** to product number. Ex. HLBH3595_SK45R_BV	Add *SL*, slope required, and up *(U)* or down *(D)*, to product number. Ex. HLBH3595_SL30D	See Sloped Seat and Skewed. Ex. HLBH3595_SK45R_BV_SL30D	Add *SF*, angle required, and right *(R)* or left *(L)*, to product number. Ex. HLBH3595_SF30L	Add O.*S*, and right *(R)* or left *(L)*, to product number. Ex. HLBH3595_OSL	Add SA,and saddle width required to product number. Ex. HLBH3595_SA=5-1/2"	Add *DA*, and angle required to product number. Ex. HLBH3595_DA30

1) Skewed hangers with skews greater than 15° may have all joist nailing on outside flange.
2) Sloped or sloped / skewed hangers with slopes greater than 15° may have additional joist nails.
3) Skewed hangers typically require a bevel cut however, a square cut option may be available as a custom when requested.
4) Sloped top flanges with slopes greater than 15° may have additional header nails.
5) Minimum header thickness shall be double the top flange (TF) dimension for 100% table load.

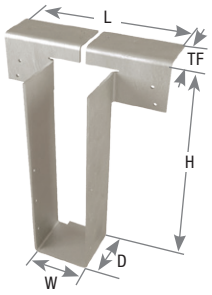
PHM / PHXU Top Flange Hangers

Used to connect LVL, LSL, and PSL beams to headers in medium load conditions using standard nails.

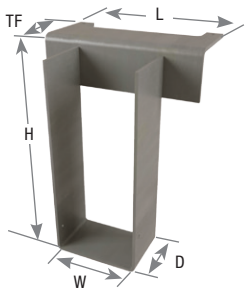
Materials: See EWP Top Mount Hangers charts, pages 166-173.
Finish: USP primer; PHXU – G90 galvanizing.
Codes: See page 10 for Code Reference Chart
Patents: #6,463,711 B1 – PHXU

Installation:
- Use all specified fasteners. See Product Notes, page 18.
- For welded installations, see page 249.

Typical PHXU installation



PHXU



PHM

Nailer Options
– chart represents maximum allowable loads for hangers used on wood nailers. Reference page 153.

USP Series	Nailer Size	Fastener Schedule[3] Header Qty	Header Type	Joist Qty	Joist Type	DF/SP Allowable Loads (Lbs.)[1] 100%	DF/SP Uplift 160%	S-P-F Allowable Loads (Lbs.)[1] 100%	S-P-F Uplift 160%
PHM	2X	2	10d x 1-1/2	2	10d x 1-1/2	3010	--	2590	--
	3X	2	16d x 2-1/2	2	10d x 1-1/2	**3570**	--	3070	--
	(2) 2X	2	10d	2	10d x 1-1/2	**3325**	--	2860	--
	4X	2	16d	2	10d x 1-1/2	**3255**	--	2800	--
PHXU widths < 3-1/2"	2X	**4**	**10d x 1-1/2**	**6**	**10d x 1-1/2**	**2585**	--	**2170**	--
	3X	**6**	**16d x 2-1/2**	**6**	**10d x 1-1/2**	**3855**	--	**3070**	--
	(2) 2X	**6**	**10d**	**6**	**10d x 1-1/2**	**3590**	--	**3015**	--
	4X	8	16d	6	10d x 1-1/2	4420	**1035**	**3070**	890
PHXU[2] widths ≥ 3-1/2"	**2X**	**4**	**10d x 1-1/2**	**6**	**10d**	**2765**	--	**2325**	--
	3X	**6**	**16d x 2-1/2**	**6**	**10d**	**3895**	--	**3270**	--
	(2) 2X	**6**	**10d**	**6**	**10d**	**3785**	--	**3180**	--
	4X	8	16d	6	10d x 1-1/2	5285	**970**	**3590**	835
	4X	8	16d	6	10d	5285	**1290**	**3590**	1110

1) Listed loads shall not be increased.
2) Loads valid for hanger height ≤ 20". For hanger height ≥ 22", consult USP Engineering.
3) **NAILS:** 10d x 1-1/2" nails are 0.148" dia. x 1-1/2" long, 10d nails are 0.148" dia. x 3" long, 16d nails are 0.162" dia. x 3-1/2" long, 16d x 2-1/2 nails are 0.162" dia. x 2-1/2" long.
New products or updated product information are designated in **blue font.**

Specialty Options Chart
– refer to Specialty Options pages 245, 247-248 for additional details.

Option	USP Series	Skewed[1,3,5]	Sloped Seat[2,3]	Sloped / Skewed[1,2,3]	Sloped Top Flange[4]	Top Flange Offset[5,7]	Saddle[5,6]	Ridge
Range	PHM	1° to 84°	1° to 45°	See Sloped Seat and Skewed	0° to 35°	--	--	0° to 45°
	PHXU	1° to 60°						N/A
Allowable Loads	PHM	100% of table load	100% of table load	100% of table load up to Max. load of 2500 lbs.	100% of table load	**Hanger Width** / **% of table load**: 3-1/2" or less 60%; 3-9/16" to 5-1/2" 75%; 5-9/16" to 7-1/2" 85%	100% of table load. **See footnote 6.**	100% of table load
	PHXU			100% of table load up to Max. load of 3900 lbs.				
Ordering	PHM	Add *SK*, angle required, right *(R)* or left *(L)*, and **square cut *(SQ)* or bevel cut *(BV)*** to product number. Ex: PHXU1795_SK45R_SQ	Add *SL*, slope required, and up *(U)* or down *(D)*, to product number. Ex: PHXU1795_SL30D	See Sloped Seat and Skewed. Ex: PHXU1795_SK45R_SQ_SL30D	Add *SF*, angle required, and right *(R)* or left *(L)*, to product number. Ex: PHXU1795_SF30L	Add *OS*, and right *(R)* or left *(L)*, to product number. Ex: PHXU1795_OSL	Add SA, and saddle width required to product number. Ex: PHXU1795_SA=5-1/2"	Add *DA*, and angle required to product number. Ex. PHXU1795_DA30
	PHXU							N/A

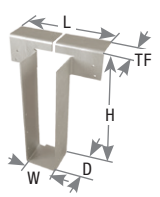
1) Skewed hangers with skews greater than 15° may have all joist nailing on outside flange.
2) Sloped or sloped/skewed hangers with slopes greater than 15° may have additional joist nails.
3) For skewed hangers, the required cut type (square or bevel) of joist member may vary based on skew angle and width of hanger. Some square cut hangers will require custom pricing due to welded back plate.
4) Sloped top flanges with slopes greater than 15° may have additional header nails.
5) Skewed, top flange offset, or saddle options will have a solid, welded top flange.
6) Minimum header thickness shall be double the top flange (TF) dimension for 100% table load.
7) PHXU offset option - hanger will be welded with a closed top angle, not formed.

Top Mount Hanger Charts

MiTek®

Joist Size (in)	USP Stock No.	Ref. No.	Web Stiff Reqd	Ga	Dimensions (in)					Fastener Schedule[5]				Allowable Loads Header Type (Lbs.)[1,3]							Code Ref.
										Header		Joist		Download 100%						Uplift[2]	
					W	H	D	L	TF	Qty	Type	Qty	Type	LVL	PSL	LSL	SPF	DF I-Joist[4]	DF/SP	DF/SP 160%	
1-1/2 x 9-1/4	THO15925	--	--	18	1-9/16	9-1/4	2	--	1-1/2	6	10d	2	10d x 1-1/2	1345	1290	1335	775	1005	1005	230	
	BPH15925	LBV1.56/9.25	x	12	1-9/16	9-1/4	2-3/8	--	1-1/2	10	16d	4	10d x 1-1/2	3120	3065	3065	2095	--	2705	625	
1-1/2 x 9-1/2	THO15950	--	--	18	1-1/2	9-1/2	2	--	1-1/2	6	10d	2	10d x 1-1/2	1345	1290	1335	840	1090	1090	270	
	BPH1595	LBV1.56/9.5	x	12	1-9/16	9-1/2	2-3/8	--	1-1/2	10	16d	4	10d x 1-1/2	3120	3065	3065	2095	--	2705	625	
1-1/2 x 11-1/4	BPH15112	LBV1.56/11.25	x	12	1-9/16	11-1/4	2-3/8	--	1-1/2	10	16d	4	10d x 1-1/2	3120	3065	3065	2095	--	2705	625	
1-1/2 x 11-7/8	THO15118	ITS1.56/11.88	--	18	1-1/2	11-7/8	2	--	1-9/16	6	10d	2	10d x 1-1/2	1345	1290	1335	930	1205	1205	270	
	BPH15118	LBV1.56/11.88	x	12	1-9/16	11-7/8	2-3/8	--	1-1/2	10	16d	4	10d x 1-1/2	3120	3065	3065	2095	--	2705	625	
1-1/2 x 14	THO15140	--	--	16	1-9/16	14	2-3/8	--	1-1/2	10	10d	2	10d x 1-1/2	1030	1030	1030	795	1030	1030	230	
	BPH1514	LBV1.56/14	x	12	1-9/16	14	2-3/8	--	1-1/2	10	16d	4	10d x 1-1/2	3120	3065	3065	2095	--	2705	625	
1-5/8 x 9-1/2	THO16950	--	--	18	1-11/16	9-1/2	2	--	1-1/2	6	10d	2	10d x 1-1/2	1345	1290	1335	775	1005	1005	230	
1-5/8 x 11-1/4	THO16112	--	--	16	1-11/16	11-1/4	2	--	1-1/2	6	10d	2	10d x 1-1/2	1345	1290	1335	795	1030	1030	230	
1-5/8 x 11-7/8	THO16118	--	--	16	1-11/16	11-7/8	2	--	1-1/2	6	10d	2	10d x 1-1/2	1345	1290	1335	795	1030	1030	230	
1-5/8 x 14	THO16140	--	--	16	1-11/16	14	3	--	1-3/4	10	10d	2	10d x 1-1/2	1030	1030	1030	790	1030	1030	230	
1-3/4 x 7-1/4	PHXU17725	LBV1.81/7.25, WP1.81/7.25	x	7	1-13/16	7-1/4	3-1/4	10	2-1/2	8	16d	6	10d x 1-1/2	4420	4425	4425	3245	--	4425	1035	
1-3/4 x 9-1/4	BPH17925	LBV1.81/9.25	x	12	1-13/16	9-1/4	2-3/8	--	1-11/16	10	16d	4	10d x 1-1/2	3340	3395	3395	2345	--	3030	625	
	PHM17925	WP9.25	x	7/10	1-13/16	9-1/4	2-1/2	7	3	2	16d	2	10d x 1-1/2	3535	3330	3080	2140	--	2865	--	
	PHXU17925	WPU1.81/9.25	x	7	1-13/16	9-1/4	3-1/4	10	2-1/2	8	16d	6	10d x 1-1/2	4420	4425	4425	3245	--	4425	1035	
1-3/4 x 9-1/2	THO17950	ITS1.81/9.5	--	18	1-3/4	9-1/2	2	--	1-1/2	6	10d	2	10d x 1-1/2	1345	1290	1335	1030	1260	1260	270	
	BPH1795	BA1.81/9.5, LBV1.81/9.5, MIT9.5	x	12	1-13/16	9-1/2	2-3/8	--	1-11/16	10	16d	4	10d x 1-1/2	3340	3395	3395	2345	--	3030	625	
	PHM1795	WP9	x	7/10	1-13/16	9-1/2	2-1/2	7	3	2	16d	2	10d x 1-1/2	3535	3330	3080	2140	--	2865	--	
	PHXU1795	--	x	7	1-13/16	9-1/2	3-1/4	10	2-1/2	8	16d	6	10d x 1-1/2	4420	4425	4425	3245	--	4425	1035	
1-3/4 x 11-1/4	BPH17112	LBV1.81/11.25	x	12	1-13/16	11-1/4	2-3/8	--	1-11/16	10	16d	4	10d x 1-1/2	3340	3395	3395	2345	--	3030	625	
	PHM17112	--	x	7/10	1-13/16	11-1/4	2-1/2	7	3	2	16d	2	10d x 1-1/2	3535	3330	3080	2140	--	2865	--	
	PHXU17112	WPU1.81/11.25	x	7	1-13/16	11-1/4	3-1/4	10	2-1/2	8	16d	6	10d x 1-1/2	4420	4425	4425	3245	--	4425	1035	2, R12, F1
1-3/4 x 11-7/8	THO17118	ITS1.81/11.88, MIT11.88	--	18	1-3/4	11-7/8	2	--	1-9/16	6	10d	2	10d x 1-1/2	1345	1290	1335	1070	1305	1305	270	
	BPH17118	BA1.81/11.88, LBV1.81/11.88	x	12	1-13/16	11-7/8	2-3/8	--	1-11/16	10	16d	4	10d x 1-1/2	3340	3395	3395	2345	--	3030	625	
	PHM17118	WP11	x	7/10	1-13/16	11-7/8	2-1/2	7	3	2	16d	2	10d x 1-1/2	3535	3330	3080	2140	--	2865	--	
	PHXU17118	WPU1.81/11.88	x	7	1-13/16	11-7/8	3-1/4	10	2-1/2	8	16d	6	10d x 1-1/2	4420	4425	4425	3245	--	4425	1035	
1-3/4 x 14	TFL1714	ITS1.81/14	--	18	1-3/4	14	2	--	1-1/2	6	10d	2	10d x 1-1/2	1645	1600	1700	1230	1245	1600	140	
	BPH1714	BA1.81/14, LBV1.81/14, MIT1.81/14	x	12	1-13/16	14	2-3/8	--	1-11/16	10	16d	4	10d x 1-1/2	3340	3395	3395	2345	--	3030	625	
	PHM1714	WP14	x	7/10	1-13/16	14	2-1/2	7	3	2	16d	2	10d x 1-1/2	3535	3330	3080	2140	--	2865	--	
	PHXU1714	--	x	7	1-13/16	14	3-1/4	10	2-1/2	8	16d	6	10d x 1-1/2	4420	4425	4425	3245	--	4425	1035	
1-3/4 x 16	TFL1716	ITS1.81/16	--	18	1-3/4	16	2	--	1-1/2	6	10d	2	10d x 1-1/2	1645	1600	1700	1230	1245	1600	140	
	BPH1716	B1.81/16, LBV1.81/16, MIT1.81/16	x	12	1-13/16	16	2-3/8	--	1-11/16	10	16d	4	10d x 1-1/2	3340	3395	3395	2345	--	3030	625	
	PHM1716	WP16	x	7/10	1-13/16	16	2-1/2	7	3	2	16d	2	10d x 1-1/2	3535	3330	3080	2140	--	2865	--	
2 - 2-1/8 x 9-1/2	TFL2095	ITS2.06/9.5	--	18	2-1/8	9-1/2	2	--	1-1/2	6	10d	2	10d x 1-1/2	1645	1600	1700	1230	1245	1600	140	
2 - 2-1/8 x 11-7/8	TFL20118	ITS2.06/11.88	--	18	2-1/8	11-7/8	2	--	1-1/2	6	10d	2	10d x 1-1/2	1645	1600	1700	1230	1245	1600	140	
2 - 2-1/8 x 14	TFL2014	ITS2.06/14	--	18	2-1/8	14	2	--	1-1/2	6	10d	2	10d x 1-1/2	1645	1600	1700	1230	1245	1600	140	
2 - 2-1/8 x 16	TFL2016	ITS2.06/16	--	18	2-1/8	16	2	--	1-1/2	6	10d	2	10d x 1-1/2	1645	1600	1700	1230	1245	1600	140	
2-1/4 - 2-5/16 x 9-1/2	TFL2395	ITS2.37/9.5	--	18	2-5/16	9-1/2	2	--	1-1/2	6	10d	2	10d x 1-1/2	1645	1600	1700	1225	1245	1600	140	
2-1/4 - 2-5/16 x 11-7/8	TFL23118	ITS2.37/11.88	--	18	2-5/16	11-7/8	2	--	1-1/2	6	10d	2	10d x 1-1/2	1645	1600	1700	1225	1245	1600	140	
2-1/4 - 2-5/16 x 14	TFL2314	ITS2.37/14	--	18	2-5/16	14	2	--	1-1/2	6	10d	2	10d x 1-1/2	1645	1600	1700	1225	1245	1600	140	
	THO23140	LBV2.37/14	--	18	2-3/8	14	2-3/8	--	2	12	10d	2	10d x 1-1/2	2715	2715	2715	2085	2715	2715	265	
	TFI3514	MIT3514	--	16	2-3/8	14	2-1/2	--	2-1/16	6	16d	2	10d x 1-1/2	2560	2235	2265	1960	--	2560	360	130
	PHM2314	WP3514	x	7/10	2-3/8	14	2-1/2	7	3	2	16d	2	10d x 1-1/2	3570	3570	3080	2715	--	2865	--	
2-1/4 - 2-5/16 x 16	TFL2316	ITS2.37/16	--	18	2-5/16	16	2	--	1-1/2	6	10d	2	10d x 1-1/2	1645	1600	1700	1225	1245	1600	140	2, R12, F1
	TFI3516	MIT3516	--	16	2-3/8	16	2-1/2	--	2-1/16	6	16d	2	10d x 1-1/2	2560	2235	2265	1960	--	2560	360	
	PHM2316	WP3516	x	7/10	2-3/8	16	2-1/2	7	3	2	16d	2	10d x 1-1/2	3570	3570	3080	2715	--	2865	--	

1) When I-joist is used as a header, all nails must be 10d x 1-1/2.
2) Uplift loads have been increased 60% for wind or seismic loads; no further increase shall be permitted
3) Some listed loads may be increased for short-term loading. Refer to code evaluation reports for MiTek USA, Inc. for details.
4) When I-Joists with flanges less than 1-1/2" thick are used as headers, the published capacity shall be reduced. Contact USP for additional information.
5) **NAILS:** 10d x 1-1/2" nails are 0.148" dia. x 1-1/2" long, 10d nails are 0.148" dia. x 3" long, 16d nails are 0.162" dia. x 3-1/2" long.
Load tables address hanger/header/fastener limitations only. Joist limitations must be determined for each installation.
New products or updated product information are designated in **blue font.**



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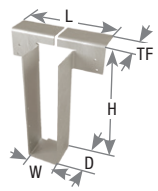
Top Mount Hanger Charts

MiTek®

Joist Size (in)	USP Stock No.	Ref. No.	Web Stiff Reqd	Ga	Dimensions (in)					Fastener Schedule[5]				Allowable Loads Header Type (Lbs.)[1,3]							Code Ref.
										Header		Joist		Download 100%						Uplift[2]	
					W	H	D	L	TF	Qty	Type	Qty	Type	LVL	PSL	LSL	SPF	DF I-Joist[4]	DF/SP	DF/SP 160%	
2-1/4 - 2-5/16 x 18	TFI3518	HIT3518, LBV2.37/18, MIT3518	--	16	2-3/8	18	2-1/2	--	2-1/16	6	16d	2	10d x 1-1/2	2560	2235	2265	1960	--	2560	360	
	PHM2318	WP3518	x	7/10	2-3/8	18	2-1/2	7	3	2	16d	2	10d x 1-1/2	3570	3570	3080	2715	--	2865	--	
2-1/4 - 2-5/16 x 20	TFI3520	HIT3520, LBV2.37/20, MIT3520	--	16	2-3/8	20	2-1/2	--	2-1/16	6	16d	2	10d x 1-1/2	2560	2235	2265	1960	--	2560	360	
	PHM2320	WP3520	x	7/10	2-3/8	20	2-1/2	7	3	2	16d	2	10d x 1-1/2	3570	3570	3080	2715	--	2865	--	2,
2-1/2 x 9-1/4	TFL25925	ITS2.56/9.25	--	18	2-1/2	9-1/4	2	--	1-1/2	6	10d	2	10d x 1-1/2	1645	1600	1700	1225	1245	1600	140	R12,
2-1/2 x 9-3/8	TFL25938	--	--	18	2-1/2	9-3/8	2	--	1-1/2	6	10d	2	10d x 1-1/2	1645	1600	1700	1225	1245	1600	140	F1
2-1/2 x 9-1/2	TFL2595	ITS2.56/9.5	--	18	2-1/2	9-1/2	2	--	1-1/2	6	10d	2	10d x 1-1/2	1645	1600	1700	1225	1245	1600	140	
2-1/2 x 11-1/4	TFL25112	ITS2.56/11.25	--	18	2-1/2	11-1/4	2	--	1-1/2	6	10d	2	10d x 1-1/2	1645	1600	1700	1225	1245	1600	140	
2-1/2 x 11-7/8	TFL25118	ITS2.56/11.88	--	18	2-1/2	11-7/8	2	--	1-1/2	6	10d	2	10d x 1-1/2	1645	1600	1700	1225	1245	1600	140	
	THO25118	MIT311.88	--	16	2-9/16	11-7/8	2-3/8	--	1-15/16	10	10d	2	10d x 1-1/2	1835	1835	1835	1405	1835	1835	265	
2-1/2 x 13	TFL2513	ITS2.56/13	--	18	2-1/2	13	2	--	1-1/2	6	10d	2	10d x 1-1/2	1645	1600	1700	1225	1245	1600	140	
2-1/2 x 14	TFL2514	ITS2.56/14	--	18	2-1/2	14	2	--	1-1/2	6	10d	2	10d x 1-1/2	1645	1600	1700	1225	1245	1600	140	
	THO25140	MIT314	--	18	2-9/16	14	2-3/8	--	2	12	10d	2	10d x 1-1/2	2715	2715	2715	2080	2715	2715	265	
	TFI314	--	--	16	2-9/16	14	2-1/2	--	2	6	16d	2	10d x 1-1/2	2560	2235	2265	1960	--	2560	360	130
	PHM2514	WPI314	--	7/10	2-9/16	14	2-1/2	7	3	2	16d	2	10d x 1-1/2	3570	3570	3080	2715	--	2865	--	
2-1/2 x 16	TFL2516	ITS2.56/16	--	18	2-1/2	16	2	--	1-1/2	6	10d	2	10d x 1-1/2	1645	1600	1700	1225	1245	1600	140	
	TFI316	LBV2.56/16, MIT316	--	16	2-9/16	16	2-1/2	--	2	6	16d	2	10d x 1-1/2	2560	2235	2265	1960	--	2560	360	
	PHM2516	WPI316	--	7/10	2-9/16	16	2-1/2	7	3	2	16d	2	10d x 1-1/2	3570	3570	3080	2715	--	2865	--	
2-1/2 x 18	TFI318	HIT318, LBV2.56/18, MIT318	--	16	2-9/16	18	2-1/2	--	2	6	16d	2	10d x 1-1/2	2560	2235	2265	1960	--	2560	360	
2-1/2 x 20	TFI320	HIT320, LBV2.56/20, MIT320	--	16	2-9/16	20	2-1/2	--	2	6	16d	2	10d x 1-1/2	2560	2235	2265	1960	--	2560	360	
2-1/2 x 22	TFI322	HIT322, LBV2.56/22, WPI322	--	16	2-9/16	22	2-1/2	--	2	10	16d	2	10d x 1-1/2	3245	2920	2950	2485	--	3245	360	
2-1/2 x 24	TFI324	HIT324, LBV2.56/24, WPI324	--	16	2-9/16	24	2-1/2	--	2	10	16d	2	10d x 1-1/2	3245	2920	2950	2485	--	3245	360	
2-1/2 x 26	TFI326	LBV2.56/26, WPI326	--	16	2-9/16	26	2-1/2	--	2	10	16d	2	10d x 1-1/2	3245	2920	2950	2485	--	3245	360	2, R12, F1
2-5/8 x 9-1/2	THO26950	--	--	18	2-11/16	9-1/2	2-3/8	--	2	10	10d	2	10d x 1-1/2	1625	1625	1625	1245	1625	1625	265	
2-5/8 x 11-7/8	THO26118	--	--	16	2-11/16	11-7/8	2-3/8	--	2	10	10d	2	10d x 1-1/2	1835	1835	1835	1405	1835	1835	265	
2-5/8 x 14	THO26140	--	--	18	2-11/16	14	2-3/8	--	2	12	10d	2	10d x 1-1/2	2715	2715	2715	2080	2715	2715	265	
2-5/8 x 16	THO26160	--	--	18	2-11/16	16	2-3/8	--	2	12	10d	2	10d x 1-1/2	2715	2715	2715	2080	2715	2715	265	
2-11/16 x 9-1/4	PHXU27925	--	--	7	2-3/4	9-1/4	3-1/4	10	2-1/2	8	16d	6	10d x 1-1/2	6020	5785	6020	4540	--	5285	970	
	HLBH27925	--	x	7	2-3/4	9-1/4	6	12	2-3/4	15	NA16D-RS	6	10d x 1-1/2	10225	10540	9600	6885	--	9600	1380	
2-11/16 x 9-1/2	PHXU2795	--	--	7	2-3/4	9-1/2	3-1/4	10	2-1/2	8	16d	6	10d x 1-1/2	6020	5785	6020	4540	--	5285	970	
	HLBH2795	--	x	7	2-3/4	9-1/2	6	12	2-3/4	15	NA16D-RS	6	10d x 1-1/2	10225	10540	9600	6885	--	9600	1380	
2-11/16 x 11-1/4	PHXU27112	--	--	7	2-3/4	11-1/4	3-1/4	10	2-1/2	8	16d	6	10d x 1-1/2	6020	5785	6020	4540	--	5285	970	
	HLBH27112	--	x	7	2-3/4	11-1/4	6	12	2-3/4	15	NA16D-RS	6	10d x 1-1/2	10225	10540	9600	6885	--	9600	1380	
2-11/16 x 11-7/8	PHXU27118	--	--	7	2-3/4	11-7/8	3-1/4	10	2-1/2	8	16d	6	10d x 1-1/2	6020	5785	6020	4540	--	5285	970	
	HLBH27118	--	x	7	2-3/4	11-7/8	6	12	2-3/4	15	NA16D-RS	6	10d x 1-1/2	10225	10540	9600	6885	--	9600	1380	
2-11/16 x 14	PHXU2714	--	--	7	2-3/4	14	3-1/4	10	2-1/2	8	16d	6	10d x 1-1/2	6020	5785	6020	4540	--	5285	970	
	HLBH2714	--	x	7	2-3/4	14	6	12	2-3/4	15	NA16D-RS	6	10d x 1-1/2	10225	10540	9600	6885	--	9600	1380	
2-11/16 x 16	PHXU2716	--	--	7	2-3/4	16	3-1/4	10	2-1/2	8	16d	6	10d x 1-1/2	6020	5785	6020	4540	--	5285	970	
	HLBH2716	--	x	7	2-3/4	16	6	12	2-3/4	15	NA16D-RS	6	10d x 1-1/2	10225	10540	9600	6885	--	9600	1380	
3 x 9-1/4	BPH31925	LBV3.12/9.25	x	12	3-1/8	9-1/4	3	--	**2-1/8**	10	16d	4	10d	3440	3510	3775	2640	--	3440	625	
	PHXU31925	WP29.25-2	x	7	3-1/8	9-1/4	3-1/4	10	2-1/2	8	16d	6	10d x 1-1/2	6020	5785	6020	4620	--	5285	970	130
3 x 9-1/2	THO15950-2	MIT29.5-2	x	16	3-1/16	9-1/2	2-3/8	--	1-1/2	10	16d	6	10d	2330	2490	2490	1905	2630	2500	1115	2, R12,
	BPH3195	LBV3.12/9.5	x	12	3-1/8	9-1/2	3	--	**2-7/16**	10	16d	4	10d	3440	3510	3775	2640	--	3440	625	F1
	PHXU3195	WP29.5-2	x	7	3-1/8	9-1/2	3-1/4	10	2-1/2	8	16d	6	10d x 1-1/2	6020	5785	6020	4620	--	5285	970	130
3 x 11-1/4	BPH31112	LBV3.12/11.25	x	12	3-1/8	11-1/4	3	--	**2-1/8**	10	16d	4	10d	3440	3510	3775	2640	--	3440	625	2, R12, F1
	PHXU31112	WP211.25-2	x	7	3-1/8	11-1/4	3-1/4	10	2-1/2	8	16d	6	10d x 1-1/2	6020	5785	6020	4620	--	5285	970	130
3 x 11-7/8	THO15118-2	MIT211.88-2	x	16	3-1/16	11-7/8	2-3/8	--	1-1/2	10	16d	6	10d	2330	2465	2465	1890	2630	2490	1115	2, R12,
	BPH31118	LBV3.12/11.88	x	12	3-1/8	11-7/8	3	--	**2-1/8**	10	16d	4	10d	3440	3510	3775	2640	--	3440	625	F1
	PHXU31118	WP211.88-2	x	7	3-1/8	11-7/8	3-1/4	10	2-1/2	8	16d	6	10d x 1-1/2	6020	5785	6020	4620	--	5285	970	130

1) When I-joist is used as a header, all nails must be 10d x 1-1/2.
2) Uplift loads have been increased 60% for wind or seismic loads; no further increase shall be permitted
3) Some listed loads may be increased for short-term loading. Refer to code evaluation reports for MiTek USA, Inc. for details.
4) When I-Joists with flanges less than 1-1/2" thick are used as headers, the published capacity shall be reduced. Contact USP for additional information.
5) **NAILS:** 10d x 1-1/2" nails are 0.148" dia. x 1-1/2" long, 10d nails are 0.148" dia. x 3" long, NA16D-RS nails are 0.148" x 3-1/2" long, 16d nails are 0.162" dia. x 3-1/2" long.
Load tables address hanger/header/fastener limitations only. Joist limitations must be determined for each installation.
New products or updated product information are designated in **blue font.**



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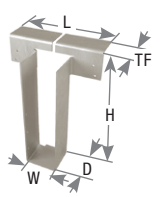
Top Mount Hanger Charts

MiTek®

Joist Size (in)	USP Stock No.	Ref. No.	Web Stiff Reqd	Ga	Dimensions (in)					Fastener Schedule[5]				Allowable Loads Header Type (Lbs.)[1,3]							Code Ref.
										Header		Joist		Download 100%						Uplift[2]	
					W	H	D	L	TF	Qty	Type	Qty	Type	LVL	PSL	LSL	SPF	DF I-Joist[4]	DF/SP	DF/SP 160%	
3 x 14	BPH3114	LBV3.12/14	x	12	3-1/8	14	3	--	2-3/32	10	16d	4	10d	3440	3510	3775	2640	--	3440	625	2, R12, F1
	PHXU3114	--	x	7	3-1/8	14	3-1/4	10	2-1/2	8	16d	6	10d x 1-1/2	6020	5785	6020	4620	--	5285	970	130
3-1/2 x 7-1/4	PHXU35725	WPU3.56/7.25	x	7	3-9/16	7-1/4	3-1/4	10	2-1/2	8	16d	6	10d	6650	5785	6420	5105	--	5285	1290	
3-1/2 x 9-1/4	THO35925	ITS3.56/9.25	--	16	3-9/16	9-1/4	2-3/8	--	2-1/2	10	10d	2	10d x 1-1/2	2050	2050	2050	2370	2050	2050	265	2, R12, F1
	BPH35925	BA410, LBV3.56/9.25	x	12	3-9/16	9-1/4	2-3/8	--	2-3/8	10	16d	4	10d	3485	3510	3775	2675	--	3485	815	
	HBPH35925	HB3.56/9.25	x	10	3-9/16	9-1/4	3-1/2	--	3	22	16d	10	16d	7000	7000	7000	5295	--	7000	2705	2, R12
	PHM35925	WPI49.25	x	7/10	3-5/8	9-1/4	2-1/2	7	3	2	16d	2	10d	3745	3570	3080	2845	--	3255	--	2, R12, F1
	PHXU35925	HWI49.25, HWU3.56/9.25	x	7	3-9/16	9-1/4	3-1/4	10	2-1/2	8	16d	6	10d	6650	5785	6420	5105	--	5285	1290	
	HLBH35925	GLTV3.56/9.25, HGLTV3.56/9.25	x	7	3-5/8	9-1/4	6	12	3-1/8	15	NA16D-RS	6	16d	10620	10565	9600	7870	--	9600	1420	
3-1/2 x 9-3/8	THO35938	ITS3.56/9.37	--	16	3-9/16	9-3/8	2-3/8	--	2-9/16	10	10d	2	10d x 1-1/2	2050	2050	2050	2215	2050	2050	265	
3-1/2 x 9-1/2	THO35950	ITS3.56/9.5	--	16	3-9/16	9-1/2	2-3/8	--	2-7/16	10	10d	2	10d x 1-1/2	2050	2050	2050	2370	2050	2050	265	
	THO17950-2	MIT49.5	x	16	3-9/16	9-1/2	2-3/8	--	1-9/16	10	16d	6	10d	2330	2555	2555	1955	2630	2580	1115	
	BPH3595	LBV3.56/9.5	x	12	3-9/16	9-1/2	2-3/8	--	2-3/8	10	16d	4	10d	3485	3510	3775	2675	--	3485	815	
	HBPH3595	HB3.56/9.5	x	10	3-9/16	9-1/2	3-1/2	--	3	22	16d	10	16d	7000	7000	7000	5295	--	7000	2705	2, R12
	PHM3595	WPI49.5	x	7/10	3-5/8	9-1/2	2-1/2	7	3	2	16d	2	10d	3745	3570	3080	2845	--	3255	--	2, R12, F1
	PHXU3595	HWI49.5, HWU3.56/9.5	x	7	3-9/16	9-1/2	3-1/4	10	2-1/2	8	16d	6	10d	6650	5785	6420	5105	--	5285	1290	
	HLBH3595	GLTV3.59, HGLTV3.59	x	7	3-5/8	9-1/2	6	12	3-1/8	15	NA16D-RS	6	16d	10620	10565	9600	7870	--	9600	1420	
3-1/2 x 11-1/4	THO35112	ITS3.56/11.25	--	16	3-9/16	11-1/4	2-3/8	--	2-1/2	10	10d	2	10d x 1-1/2	2050	2050	2050	2370	2050	2050	265	
	BPH35112	BA412, LBV3.56/11.25	x	12	3-9/16	11-1/4	2-3/8	--	2-3/8	10	16d	4	10d	3485	3510	3775	2675	--	3485	815	
	HBPH35112	HB3.56/11.25	x	10	3-9/16	11-1/4	3-1/2	--	3	22	16d	10	16d	7000	7000	7000	5295	--	7000	2705	2, R12
	PHXU35112	HWI411.25, HWU3.56/11.25, WPI411.25	x	7	3-9/16	11-1/4	3-1/4	10	2-1/2	8	16d	6	10d	6650	5785	6420	5105	--	5285	1290	
	HLBH35112	GLTV3.56/11.25, HGLTV3.56/11.25	x	7	3-5/8	11-1/4	6	12	3-1/8	15	NA16D-RS	6	16d	10620	10565	9600	7870	--	9600	1420	
3-1/2 x 11-7/8	THO35118	ITS3.56/11.88	--	18	3-9/16	11-7/8	2-3/8	--	2-1/2	10	10d	2	10d x 1-1/2	2050	2050	2050	2370	2050	2050	265	
	THO17118-2	MIT411.88	x	16	3-9/16	11-7/8	2-3/8	--	1-9/16	10	16d	6	10d	2330	2355	2355	1815	2630	2375	1115	
	BPH35118	B3.56/11.88, BA3.56/11.88, LBV3.56/11.88	x	12	3-9/16	11-7/8	2-3/8	--	2-3/8	10	16d	4	10d	3485	3510	3775	2675	--	3485	815	
	HBPH35118	HB3.56/11.88	x	10	3-9/16	11-7/8	3-1/2	--	3	22	16d	10	16d	7000	7000	7000	5295	--	7000	2705	2, R12
	PHM35118	WPI411.88	x	7/10	3-5/8	11-7/8	2-1/2	7	3	2	16d	2	10d	3745	3570	3080	2845	--	3255	--	2, R12, F1
	PHXU35118	HWI411.88, HWU3.56/11.88, WPU3.56/11.88	x	7	3-9/16	11-7/8	3-1/4	10	2-1/2	8	16d	6	10d	6650	5785	6420	5105	--	5285	1290	
	HLBH35118	GLTV3.511, HGLTV3.511	x	7	3-5/8	11-7/8	6	12	3-1/8	15	NA16D-RS	6	16d	10620	10565	9600	7870	--	9600	1420	
3-1/2 x 12	THO35120	--	--	18	3-9/16	12	2-3/8	--	2-1/2	10	10d	2	10d x 1-1/2	2050	2050	2050	2370	2050	2050	265	
	BPH3512	HWI412, LBV3.56/12	x	12	3-9/16	12	2-3/4	--	2-1/32	10	16d	6	10d	3430	3510	3775	2635	--	3430	1140	
	HBPH3512	HB3.56/12	x	10	3-9/16	12	3-1/2	--	3	22	16d	10	16d	7000	7000	7000	5295	--	7000	2705	2, R12
	PHXU3512	WPI412	x	7	3-9/16	12	3-1/4	10	2-1/2	8	16d	6	10d	6650	5785	6420	5105	--	5285	1290	
	HLBH3512	GLTV3.512, HGLTV3.512	x	7	3-5/8	12	6	12	3-1/8	15	NA16D-RS	6	16d	10620	10565	9600	7870	--	9600	1420	
3-1/2 x 13	THO35130	ITS3.56/13	--	18	3-9/16	13	2-3/8	--	2-1/2	10	10d	2	10d x 1-1/2	2050	2050	2050	2370	2050	2050	265	2, R12, F1
3-1/2 x 14	THO35140	ITS3.56/14	--	18	3-9/16	14	2-3/8	--	2-1/2	12	10d	2	10d x 1-1/2	2715	2715	2715	2075	2715	2715	265	
	TFI414	MIT414	--	16	3-9/16	14	2-1/2	--	2-1/8	6	16d	2	10d x 1-1/2	2560	2235	2265	1955	--	2560	360	
	BPH3514	B3.56/14, BA3.56/14, LBV3.56/14	x	12	3-9/16	14	2-3/4	--	2-1/32	10	16d	6	10d	3430	3510	3775	2635	--	3430	1140	
	HBPH3514	HB3.56/14	x	10	3-9/16	14	3-1/2	--	3	22	16d	10	16d	7000	7000	7000	5295	--	7000	2705	2, R12
	PHM3514	WPI414	x	7/10	3-5/8	14	2-1/2	7	3	2	16d	2	10d	3745	3570	3080	2845	--	3255	--	2, R12, F1
	PHXU3514	HWI414, HWU3.56/14, WPU3.56/14	x	7	3-9/16	14	3-1/4	10	2-1/2	8	16d	6	10d	6650	5785	6420	5105	--	5285	1290	
	HLBH3514	GLTV3.514, HGLTV3.514	x	7	3-5/8	14	6	12	3-1/8	15	NA16D-RS	6	16d	10620	10565	9600	7870	--	9600	1420	

1) When I-joist is used as a header, all nails must be 10d x 1-1/2.
2) Uplift loads have been increased 60% for wind or seismic loads; no further increase shall be permitted
3) Some listed loads may be increased for short-term loading. Refer to code evaluation reports for MiTek USA, Inc. for details.
4) When I-Joists with flanges less than 1-1/2" thick are used as headers, the published capacity shall be reduced. Contact USP for additional information.
5) **NAILS:** 10d x 1-1/2" nails are 0.148" dia. x 1-1/2" long, 10d nails are 0.148" dia. x 3" long, NA16D-RS nails are 0.148" x 3-1/2" long, 16d nails are 0.162" dia. x 3-1/2" long.
Load tables address hanger/header/fastener limitations only. Joist limitations must be determined for each installation.
New products or updated product information are designated in **blue font**.



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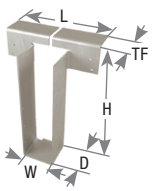
Top Mount Hanger Charts

MiTek®

Joist Size (in)	USP Stock No.	Ref. No.	Web Stiff Reqd	Ga	Dimensions (in)					Fastener Schedule[5]				Allowable Loads Header Type (Lbs.)[1,3]							Code Ref.
										Header		Joist		Download 100%						Uplift[2]	
					W	H	D	L	TF	Qty	Type	Qty	Type	LVL	PSL	LSL	SPF	DF I-Joist[4]	DF/SP	DF/SP 160%	
3-1/2 x 16	THO35160	ITS3.56/16	--	18	3-9/16	16	2-3/8	--	2-1/2	12	10d	2	10d x 1-1/2	2715	2715	2715	2075	2715	2715	265	2, R12, F1
	TFI416	MIT416	--	16	3-9/16	16	2-1/2	--	2-1/8	6	16d	2	10d x 1-1/2	2560	2235	2265	1955	--	2560	360	
	BPH3516	B3.56/16, BA3.56/16, LBV3.56/16	x	12	3-9/16	16	2-3/4	--	2-1/32	10	16d	6	10d	3430	3510	3775	2635	--	3430	1140	
	HBPH3516	HB3.56/16	x	10	3-9/16	16	3-1/2	--	3	22	16d	10	16d	7000	7000	7000	5295	--	7000	2705	2, R12
	PHM3516	WPI416	x	7/10	3-5/8	16	2-1/2	7	3	2	16d	2	10d	3745	3570	3080	2845	--	3255	--	2, R12, F1
	PHXU3516	HWI416, HWU3.56/16, WPU3.56/16	x	7	3-9/16	16	3-1/4	10	2-1/2	8	16d	6	10d	6650	5785	6420	5105	--	5285	1290	
	HLBH3516	GLTV3.516, HGLTV3.516	x	7	3-5/8	16	6	12	3-1/8	15	NA16D-RS	6	16d	10620	10565	9600	7870	--	9600	1420	
3-1/2 x 18	TFI418	HIT418, MIT418	--	16	3-9/16	18	2-1/2	--	2-1/8	6	16d	2	10d x 1-1/2	2560	2235	2265	1955	--	2560	360	
	BPH3518	LBV3.56/18	x	12	3-9/16	18	2-3/4	--	2-1/32	10	16d	6	10d	3430	3510	3775	2635	--	3430	1140	
	HBPH3518	HB3.56/18	x	10	3-9/16	18	3-1/2	--	3	22	16d	10	16d	7000	7000	7000	5295	--	7000	2705	2, R12
	PHM3518	WPI418	x	7/10	3-5/8	18	2-1/2	7	3	2	16d	2	10d	3745	3570	3080	2845	--	3255	--	2, R12, F1
	PHXU3518	HWI418, HWU3.56/18, WPU3.56/18	x	7	3-9/16	18	3-1/4	10	2-1/2	8	16d	6	10d	6650	5785	6420	5105	--	5285	1290	
	HLBH3518	GLTV3.518, HGLTV3.518	x	7	3-5/8	18	6	12	3-1/8	15	NA16D-RS	6	16d	10620	10565	9600	7870	--	9600	1420	
3-1/2 x 20	TFI420	HIT420, MIT420	--	16	3-9/16	20	2-1/2	--	2-1/8	6	16d	2	10d x 1-1/2	2560	2235	2265	1955	--	2560	360	
	BPH3520	LBV3.56/20	x	12	3-9/16	20	2-3/4	--	2-1/32	10	16d	6	10d	3430	3510	3775	2635	--	3430	1140	
	HBPH3520	HB3.56/20	x	10	3-9/16	20	3-1/2	--	3	22	16d	10	16d	7000	7000	7000	5295	--	7000	2705	2, R12
	PHM3520	WPI420	x	7/10	3-5/8	20	2-1/2	7	3	2	16d	2	10d	3745	3570	3080	2845	--	3255	--	2, R12, F1
	PHXU3520	HWI420, HWU3.56/20, WPU3.56/20	x	7	3-9/16	20	3-1/4	10	2-1/2	8	16d	6	10d	6650	5785	6420	5105	--	5285	1290	
	HLBH3520	GLTV3.520, HGLTV3.520	x	7	3-5/8	20	6	12	3-1/8	15	NA16D-RS	6	16d	10620	10565	9600	7870	--	9600	1420	
3-1/2 x 22	TFI422	HIT422	--	16	3-9/16	22	2-1/2	--	2-1/8	10	16d	2	10d x 1-1/2	3245	2920	2950	2480	--	3245	360	
	BPH3522	LBV3.56/22	x	12	3-9/16	22	2-3/4	--	2-1/32	10	16d	6	10d	3430	3510	3775	2635	--	3430	1140	
	HBPH3522	HB3.56/22	x	10	3-9/16	22	3-1/2	--	3	22	16d	10	16d	7000	7000	7000	5295	--	7000	2705	2, R12
	PHM3522	HWI422, WPI422	x	7/10	3-5/8	22	2-1/2	7	3	2	16d	2	10d	3745	3570	3080	2845	--	3255	--	2, R12, F1
	PHXU3522	WPU3.56/22	x	7	3-9/16	22	3-1/4	10	2-1/2	8	16d	6	10d	6650	5785	6420	5105	--	5285	1290	
3-1/2 x 24	TFI424	HIT424, LBV3.56/24	--	16	3-9/16	24	2-1/2	--	2-1/8	10	16d	2	10d x 1-1/2	3245	2920	2950	2480	--	3245	360	
	BPH3524	--	x	12	3-9/16	24	2-3/4	--	2-1/32	10	16d	6	10d	3430	3510	3775	2635	--	3430	1140	
	HBPH3524	HB3.56/24	x	10	3-9/16	24	3-1/2	--	3	22	16d	10	16d	7000	7000	7000	5295	--	7000	2705	2, R12
	PHM3524	HWI424, WPI424	x	7/10	3-5/8	24	2-1/2	7	3	2	16d	2	10d	3745	3570	3080	2845	--	3255	--	2, R12, F1
	PHXU3524	WPU3.56/24	x	7	3-9/16	24	3-1/4	10	2-1/2	8	16d	6	10d	6650	5785	6420	5105	--	5285	1290	
3-1/2 x 26	TFI426	--	--	16	3-9/16	26	2-1/2	--	2-1/8	10	16d	2	10d x 1-1/2	3245	2920	2950	2480	--	3245	360	
	BPH3526	LBV3.56/26	x	12	3-9/16	26	2-3/4	--	2-1/32	10	16d	6	10d	3430	3510	3775	2635	--	3430	1140	
	HBPH3526	HB3.56/26	x	10	3-9/16	26	3-1/2	--	3	22	16d	10	16d	7000	7000	7000	5295	--	7000	2705	2, R12
	PHM3526	HWI426, WPI426	x	7/10	3-5/8	26	2-1/2	7	3	2	16d	2	10d	3745	3570	3080	2845	--	3255	--	2, R12, F1
	PHXU3526	WPU3.56/26	x	7	3-9/16	26	3-1/4	10	2-1/2	8	16d	6	10d	6650	5785	6420	5105	--	5285	1290	

1) When I-joist is used as a header, all nails must be 10d x 1-1/2.
2) Uplift loads have been increased 60% for wind or seismic loads; no further increase shall be permitted
3) Some listed loads may be increased for short-term loading. Refer to code evaluation reports for MiTek USA, Inc. for details.
4) When I-Joists with flanges less than 1-1/2" thick are used as headers, the published capacity shall be reduced. Contact USP for additional information.
5) **NAILS:** 10d x 1-1/2" nails are 0.148" dia. x 1-1/2" long, 10d nails are 0.148" dia. x 3" long, NA16D-RS nails are 0.148" x 3-1/2" long, 16d nails are 0.162" dia. x 3-1/2" long.
Load tables address hanger/header/fastener limitations only. Joist limitations must be determined for each installation.
New products or updated product information are designated in **blue font**.



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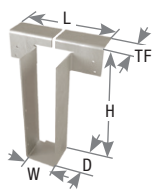
Top Mount Hanger Charts

MiTek®

Joist Size (in)	USP Stock No.	Ref. No.	Web Stiff Reqd	Ga	Dimensions (in)					Fastener Schedule[5]				Allowable Loads Header Type (Lbs.)[1,3]							Code Ref.
										Header		Joist		Download 100%						Uplift[2]	
					W	H	D	L	TF	Qty	Type	Qty	Type	LVL	PSL	LSL	SPF	DF I-Joist[4]	DF/SP	DF/SP 160%	
3-1/2 x 28	BPH3528	LBV3.56/28	x	12	3-9/16	28	2-3/4	--	2-1/32	10	16d	6	10d	3430	3510	3775	2635	--	3430	1140	2, R12, F1
	HBPH3528	HB3.56/28	x	10	3-9/16	28	3-1/2	--	3	22	16d	10	16d	7000	7000	7000	5295	--	7000	2705	2, R12
	PHM3528	HWI428, WPI428	x	7/10	3-5/8	28	2-1/2	7	3	2	16d	2	10d	3745	3570	3080	2845	--	3255	--	2, R12, F1
	PHXU3528	WPU3.56/28	x	7	3-9/16	28	3-1/4	10	2-1/2	8	16d	6	10d	6650	5785	6420	5105	--	5285	1290	
3-1/2 x 30	BPH3530	LBV3.56/30	x	12	3-9/16	30	2-3/4	--	2-1/32	10	16d	6	10d	3430	3510	3775	2635	--	3430	1140	
	HBPH3530	HB3.56/30	x	10	3-9/16	30	3-1/2	--	3	22	16d	10	16d	7000	7000	7000	5295	--	7000	2705	2, R12
	PHM3530	HWI430, WPI430	x	7/10	3-5/8	30	2-1/2	7	3	2	16d	2	10d	3745	3570	3080	2845	--	3255	--	2, R12, F1
	PHXU3530	--	x	7	3-9/16	30	3-1/4	10	2-1/2	8	16d	6	10d	6650	5785	6420	5105	--	5285	1290	
3-1/2 x 32	BPH3532	--	x	12	3-9/16	32	2-3/4	--	2-1/32	10	16d	6	10d	3430	3510	3775	2635	--	3430	1140	
	PHM3532	HWI432, WPI432	x	7/10	3-5/8	32	2-1/2	7	3	2	16d	2	10d	3745	3570	3080	2845	--	3255	--	
	PHXU3532	--	x	7	3-9/16	32	3-1/4	10	2-1/2	8	16d	6	10d	6650	5785	6420	5105	--	5285	1290	130
4 - 4-3/16 x 9-1/2	THO20950-2	LBV4.12/9.5, LBV4.28/9.5, MIT4.28/9.5	x	16	4-3/16	9-1/2	3	--	2	10	16d	6	10d	2330	2665	2665	2050	2630	2665	1115	
	PHM4295	--	x	7/10	4-3/16	9-1/2	2-1/2	7	3	2	16d	2	10d	3745	3570	3080	2845	--	3255	--	
4 - 4-3/16 x 11-7/8	THO20118-2	LBV4.12/11.88, LBV4.28/11.88, MIT4.28/11.88	x	16	4-3/16	11-7/8	3	--	2	10	16d	6	10d	2330	2700	2700	2265	2630	2700	1115	
	PHM42118	--	x	7/10	4-3/16	11-7/8	2-1/2	7	3	2	16d	2	10d	3745	3570	3080	2845	--	3255	--	
4 - 4-3/16 x 14	THO20140-2	LBV4.12/14, LBV4.28/14, MIT4.28/14	x	12	4-3/16	14	3	--	1-15/16	10	16d	6	10d	2330	3700	3700	2840	2630	3700	1175	
	PHM4214	--	x	7/10	4-3/16	14	2-1/2	7	3	2	16d	2	10d	3745	3570	3080	2845	--	3255	--	
4 - 4-3/16 x 16	THO20160-2	LBV4.12/16, LBV4.28/16	x	12	4-3/16	16	3	--	1-15/16	10	16d	6	10d	2330	3700	3700	2840	2630	3700	1175	
	PHM4216	--	x	7/10	4-3/16	16	2-1/2	7	3	2	16d	2	10d	3745	3570	3080	2845	--	3255	--	
4-1/2 - 4-5/8 x 9-1/2	THO23950-2	LBV4.75/9.5, MIT359.5-2	x	12	4-3/4	9-1/2	3	--	2	10	16d	6	10d	3535	3635	3635	2790	2630	3665	1175	
	PHM2395-2	WP359.5-2	x	7/10	4-3/4	9-1/2	2-1/2	7	3	2	16d	2	10d	3745	3255	2965	2845	--	3255	--	
4-1/2 - 4-5/8 x 11-7/8	THO23118-2	LBV4.75/11.88, MIT3511.88-2	x	12	4-3/4	11-7/8	3	--	2-1/8	10	16d	6	10d	3535	3665	3665	2815	2630	3665	1175	
	PHM23118-2	WP3511.88-2	x	7/10	4-3/4	11-7/8	2-1/2	7	3	2	16d	2	10d	3745	3255	2965	2845	--	3255	--	
4-1/2 - 4-5/8 x 14	THO23140-2	LBV4.75/14, MIT3514-2, WP3514-2	x	12	4-3/4	14	3	--	2-1/8	12	16d	6	10d	3535	4405	4405	3415	2630	4450	1175	
4-1/2 - 4-5/8 x 16	THO23160-2	LBV4.75/16, MIT4.75/16	x	12	4-3/4	16	3	--	2-1/8	12	16d	6	10d	3535	4405	4405	3415	2630	4450	1175	
	PHM2316-2	WP3516-2	x	7/10	4-3/4	16	2-1/2	7	3	2	16d	2	10d	3745	3255	2965	2845	--	3255	--	
4-1/2 - 4-5/8 x 18	THO23180-2	LBV4.75/18	x	12	4-3/4	18	3	--	2-1/8	14	16d	6	10d	3535	4685	4685	3720	2630	4770	1175	
	PHM2318-2	WP3518-2	x	7/10	4-3/4	18	2-1/2	7	3	2	16d	2	10d	3745	3255	2965	2845	--	3255	--	
4-1/2 - 4-5/8 x 20	THO23200-2	LBV4.75/20	x	12	4-3/4	20	3	--	2-1/8	14	16d	6	10d	3535	4685	4685	3720	2630	4770	1175	
	PHM2320-2	WP3520-2	x	7/10	4-3/4	20	2-1/2	7	3	2	16d	2	10d	3745	3255	2965	2845	--	3255	--	

1) When I-joist is used as a header, all nails must be 10d x 1-1/2.
2) Uplift loads have been increased 60% for wind or seismic loads; no further increase shall be permitted
3) Some listed loads may be increased for short-term loading. Refer to code evaluation reports for MiTek USA, Inc. for details.
4) When I-Joists with flanges less than 1-1/2" thick are used as headers, the published capacity shall be reduced. Contact USP for additional information.
5) **NAILS:** 10d x 1-1/2" nails are 0.148" dia. x 1-1/2" long, 10d nails are 0.148" dia. x 3" long, 16d nails are 0.162" dia. x 3-1/2" long.
Load tables address hanger/header/fastener limitations only. Joist limitations must be determined for each installation.
New products or updated product information are designated in **blue font**.



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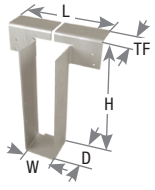
Top Mount Hanger Charts

MiTek®

Joist Size (in)	USP Stock No.	Ref. No.	Web Stiff Reqd	Ga	Dimensions (in)					Fastener Schedule[5]				Allowable Loads Header Type (Lbs.)[1,3]							Code Ref.
										Header		Joist		Download 100%						Uplift[2]	
					W	H	D	L	TF	Qty	Type	Qty	Type	LVL	PSL	LSL	SPF	DF I-Joist[4]	DF/SP	DF/SP 160%	
5 x 9-1/4	THO25925-2	LBV5.12/9.25	x	12	5-1/8	9-1/4	3	--	2-11/16	10	16d	6	10d	3535	3665	3665	2810	2630	3665	1175	2, R12, F1
5 x 9-1/2	THO25950-2	MIT39.5-2	x	12	5-1/8	9-1/2	3	--	2-1/8	10	16d	6	10d	3535	3665	3665	2810	2630	3665	1175	
	PHM2595-2	WPI39.5-2	x	7/10	5-1/8	9-1/2	2-1/2	7	3	2	16d	2	10d	3745	3255	2965	2845	--	3255	--	
5 x 11-1/4	THO25112-2	LBV5.12/11.25	x	12	5-1/8	11-1/4	3	--	2-1/8	10	16d	6	10d	3535	3665	3665	2810	2630	3665	1175	
5 x 11-7/8	THO25118-2	LBV5.12/11.88, MIT311.88-2, WPI311.88-2	x	12	5-1/8	11-7/8	3	--	2-1/8	10	16d	6	10d	3535	3665	3665	2810	2630	3665	1175	
5 x 14	THO25140-2	MIT314-2	x	12	5-1/8	14	3	--	2-1/8	12	16d	6	10d	3535	4405	4405	3410	2630	4450	1175	
	PHM2514-2	WPI314-2	x	7/10	5-1/8	14	2-1/2	7	3	2	16d	2	10d	3745	3255	2965	2845	--	3255	--	
5 x 16	THO25160-2	MIT5.12/16	x	12	5-1/8	16	3	--	2-1/8	12	16d	6	10d	3535	4405	4405	3410	2630	4450	1175	
	HBPH5116	HB5.12/16	x	10	5-1/8	16	3-1/2	--	3	22	16d	10	16d	6930	6930	6930	5340	--	6930	2705	2, R12
	PHM2516-2	WPI316-2	x	7/10	5-1/8	16	2-1/2	7	3	2	16d	2	10d	3745	3255	2965	2845	--	3255	--	2, R12, F1
5 x 18	THO25180-2	B5.12/18	x	12	5-1/8	18	3	--	2-1/8	14	16d	6	10d	3535	4685	4685	3720	2630	4770	1175	
	HBPH5118	HB5.12/18	x	10	5-1/8	18	3-1/2	--	3	22	16d	10	16d	6930	6930	6930	5340	--	6930	2705	2, R12
	PHM2518-2	WPI318-2	x	7/10	5-1/8	18	2-1/2	7	3	2	16d	2	10d	3745	3255	2965	2845	--	3255	--	2, R12, F1
5 x 20	THO25200-2	B5.12/20	x	12	5-1/8	20	3	--	2-1/8	14	16d	6	10d	3535	4685	4685	3720	2630	4770	1175	
	HBPH5120	HB5.12/20	x	10	5-1/8	20	3-1/2	--	3	22	16d	10	16d	6930	6930	6930	5340	--	6930	2705	2, R12
	PHM2520-2	WPI320-2	x	7/10	5-1/8	20	2-1/2	7	3	2	16d	2	10d	3745	3255	2965	2845	--	3255	--	2, R12, F1
5 x 22	HBPH5122	HB5.12/22	x	10	5-1/8	22	3-1/2	--	3	22	16d	10	16d	6930	6930	6930	5340	--	6930	2705	2, R12
	PHM2522-2	WPI322-2	x	7/10	5-1/8	22	2-1/2	7	3	2	16d	2	10d	3745	3255	2965	2845	--	3255	--	2, R12, F1
5 x 24	HBPH5124	HB5.12/24	x	10	5-1/8	24	3-1/2	--	3	22	16d	10	16d	6930	6930	6930	5340	--	6930	2705	2, R12
	PHM2524-2	WPI324-2	x	7/10	5-1/8	24	2-1/2	7	3	2	16d	2	10d	3745	3255	2965	2845	--	3255	--	2, R12, F1
5 x 26	HBPH5126	HB5.12/26	x	10	5-1/8	26	3-1/2	--	3	22	16d	10	16d	6930	6930	6930	5340	--	6930	2705	2, R12
	PHM2526-2	WPI326-2	x	7/10	5-1/8	26	2-1/2	7	3	2	16d	2	10d	3745	3255	2965	2845	--	3255	--	2, R12, F1
5 x 28	HBPH5128	HB5.12/28	x	10	5-1/8	28	3-1/2	--	3	22	16d	10	16d	6930	6930	6930	5340	--	6930	2705	2, R12
5 x 30	HBPH5130	HB5.12/30	x	10	5-1/8	30	3-1/2	--	3	22	16d	10	16d	6930	6930	6930	5340	--	6930	2705	
5-1/4 x 7-1/4	BPH55725	--	x	10	5-9/16	7-1/4	2-1/4	--	2-1/2	10	16d	6	10d	3450	3510	3775	2635	--	3450	815	130
	HBPH55725	--	x	10	5-1/2	7-1/4	3-1/2	--	3	22	16d	10	16d	6930	6930	6930	5340	--	6930	2705	2, R12
5-1/4 x 9-1/4	HBPH55925	HB5.50/9.25	x	10	5-1/2	9-1/4	3-1/2	--	3	22	16d	10	16d	6930	6930	6930	5340	--	6930	2705	
	PHXU55925	HWU5.50/9.25	x	7	5-1/2	9-1/4	3-1/4	11-1/2	3	8	16d	6	10d	6650	5785	6650	5095	--	5285	1290	2, R12, F1
	HLBH55925	GLTV5.50/9.25	x	7	5-9/16	9-1/4	6	12	3-1/8	15	NA16D-RS	6	16d	10620	10565	9600	7870	--	9600	1605	
5-1/4 x 9-1/2	BPH5595	--	x	12	5-9/16	9-1/2	3	--	2-5/32	10	16d	4	10d	3450	3510	3775	2635	--	3450	815	
	HBPH5595	HB5.50/9.5	x	10	5-1/2	9-1/2	3-1/2	--	3	22	16d	10	16d	6930	6930	6930	5340	--	6930	2705	2, R12
	PHM5595	WP5.50/9.5	x	7/10	5-5/8	9-1/2	2-1/2	7	3	2	16d	2	10d	3745	3665	3080	2845	--	3390	--	
	PHXU5595	HWU5.50/9.5	x	7	5-1/2	9-1/2	3-1/4	11-1/2	2-1/2	8	16d	6	10d	6650	5785	6650	5095	--	5285	1290	2, R12, F1
	HLBH5595	GLTV5.59, HGLTV5.59	x	7	5-9/16	9-1/2	6	12	3-1/8	15	NA16D-RS	6	16d	10620	10565	9600	7870	--	9600	1605	
5-1/4 x 11-1/4	HBPH55112	HB5.50/11.25	x	10	5-1/2	11-1/4	3-1/2	--	3	22	16d	10	16d	6930	6930	6930	5340	--	6930	2705	2, R12
	PHXU55112	HWU5.50/11.25	x	7	5-1/2	11-1/4	3-1/4	11-1/2	2-1/2	8	16d	6	10d	6650	5785	6650	5095	--	5285	1290	
	HLBH55112	GLTV5.50/11.25	x	7	5-9/16	11-1/4	6	12	3-1/8	15	NA16D-RS	6	16d	10620	10565	9600	7870	--	9600	1605	2, R12, F1
5-1/4 x 11-1/2	HLBH55115	--	x	7	5-9/16	11-1/2	6	12	3-1/8	15	NA16D-RS	6	16d	10620	10565	9600	7870	--	9600	1605	
5-1/4 x 11-7/8	BPH55118	--	x	12	5-9/16	11-7/8	2-1/2	--	2-1/32	10	16d	6	10d	3430	3510	3775	2630	--	3430	1220	
	HBPH55118	HB5.50/11.88	x	10	5-1/2	11-7/8	3-1/2	--	3	22	16d	10	16d	6930	6930	6930	5340	--	6930	2705	2, R12
	PHM55118	WP5.50/11.88	x	7/10	5-5/8	11-7/8	2-1/2	7	3	2	16d	2	10d	3745	3665	3080	2845	--	3390	--	
	PHXU55118	HWU5.50/11.88	x	7	5-1/2	11-7/8	3-1/4	11-1/2	2-1/2	8	16d	6	10d	6650	5785	6650	5095	--	5285	1290	2, R12, F1
	HLBH55118	GLTV5.511, HGLTV5.511	x	7	5-9/16	11-7/8	6	12	3-1/8	15	NA16D-RS	6	16d	10620	10565	9600	7870	--	9600	1605	
5-1/4 x 12	HBPH5512	HB5.50/12	x	10	5-1/2	12	3-1/2	--	3	22	16d	10	16d	6930	6930	6930	5340	--	6930	2705	2, R12
	PHXU5512	HWU5.50/12	x	7	5-1/2	12	3-1/4	11-1/2	2-1/2	8	16d	6	10d	6650	5785	6650	5095	--	5285	1290	
	HLBH5512	GLTV5.512, HGLTV5.512	x	7	5-9/16	12	6	12	3-1/8	15	NA16D-RS	6	16d	10620	10565	9600	7870	--	9600	1605	2, R12, F1
5-1/4 x 14	BPH5514	--	x	12	5-9/16	14	2-1/2	--	2-1/32	10	16d	6	10d	3430	3510	3775	2630	--	3430	1220	
	HBPH5514	HB5.50/14	x	10	5-1/2	14	3-1/2	--	3	22	16d	10	16d	6930	6930	6930	5340	--	6930	2705	2, R12
	PHM5514	--	x	7/10	5-5/8	14	2-1/2	7	3	2	16d	2	10d	3745	3665	3080	2845	--	3390	--	
	PHXU5514	HWU5.50/14	x	7	5-1/2	14	3-1/4	11-1/2	2-1/2	8	16d	6	10d	6650	5785	6650	5095	--	5285	1290	2, R12, F1
	HLBH5514	GLTV5.514, HGLTV5.514	x	7	5-9/16	14	6	12	3-1/8	15	NA16D-RS	6	16d	10620	10565	9600	7870	--	9600	1605	

1) When I-joist is used as a header, all nails must be 10d x 1-1/2.
2) Uplift loads have been increased 60% for wind or seismic loads; no further increase shall be permitted
3) Some listed loads may be increased for short-term loading. Refer to code evaluation reports for MiTek USA, Inc. for details.
4) When I-Joists with flanges less than 1-1/2" thick are used as headers, the published capacity shall be reduced. Contact USP for additional information.
5) **NAILS:** 10d nails are 0.148" dia. x 3" long, NA16D-RS nails are 0.148" x 3-1/2" long, 16d nails are 0.162" dia. x 3-1/2" long.
Load tables address hanger/header/fastener limitations only. Joist limitations must be determined for each installation.
New products or updated product information are designated in **blue font**.



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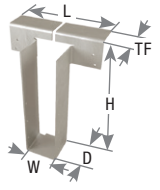
Top Mount Hanger Charts

MiTek®

Joist Size (in)	USP Stock No.	Ref. No.	Web Stiff Reqd	Ga	Dimensions (in)					Fastener Schedule[5]				Allowable Loads Header Type (Lbs.)[1,3]							Code Ref.
										Header		Joist		Download 100%						Uplift[2]	
					W	H	D	L	TF	Qty	Type	Qty	Type	LVL	PSL	LSL	SPF	DF I-Joist[4]	DF/SP	DF/SP 160%	
5-1/4 x 16	BPH5516	--	x	12	5-9/16	16	2-1/2	--	2-1/32	10	16d	6	10d	3430	3510	3775	2630	--	3430	1220	2, R12, F1
	HBPH5516	HB5.50/16	x	10	5-1/2	16	3-1/2	--	3	22	16d	10	16d	6930	6930	6930	5340	--	6930	2705	2, R12
	PHM5516	--	x	7/10	5-5/8	16	2-1/2	7	3	2	16d	2	10d	3745	3665	3080	2845	--	3390	--	2, R12, F1
	PHXU5516	HWU5.50/16	x	7	5-1/2	16	3-1/4	11-1/2	2-1/2	8	16d	6	10d	6650	5785	6650	5095	--	5285	1290	
	HLBH5516	GLTV5.516, HGLTV5.516	x	7	5-9/16	16	6	12	3-1/8	15	NA16D-RS	6	16d	10620	10565	9600	7870	--	9600	1605	
5-1/4 x 18	BPH5518	--	x	12	5-9/16	18	2-1/2	--	2-1/32	10	16d	6	10d	3430	3510	3775	2630	--	3430	1220	2, R12, F1
	HBPH5518	HB5.50/18	x	10	5-1/2	18	3-1/2	--	3	22	16d	10	16d	6930	6930	6930	5340	--	6930	2705	2, R12
	PHM5518	--	x	7/10	5-5/8	18	2-1/2	7	3	2	16d	2	10d	3745	3665	3080	2845	--	3390	--	2, R12, F1
	PHXU5518	HWU5.50/18	x	7	5-1/2	18	3-1/4	11-1/2	2-1/2	8	16d	6	10d	6650	5785	6650	5095	--	5285	1290	
	HLBH5518	GLTV5.518, HGLTV5.518	x	7	5-9/16	18	6	12	3-1/8	15	NA16D-RS	6	16d	10620	10565	9600	7870	--	9600	1605	
5-1/4 x 20	HBPH5520	HB5.50/20	x	10	5-1/2	20	3-1/2	--	3	22	16d	10	16d	6930	6930	6930	5340	--	6930	2705	2, R12
	PHXU5520	HWU5.50/20	x	7	5-1/2	20	3-1/4	11-1/2	2-1/2	8	16d	6	10d	6650	5785	6650	5095	--	5285	1290	2, R12, F1
	HLBH5520	GLTV5.520, HGLTV5.520	x	7	5-9/16	20	6	12	3-1/8	15	NA16D-RS	6	16d	10620	10565	9600	7870	--	9600	1605	
7 x 7-1/4	PHXU71725	HWU7.12/7.25	x	7	7-1/8	7-1/4	3-1/4	13-1/8	2-1/2	8	16d	6	10d	6650	5785	6650	5090	--	5285	1290	
7 x 9-1/4	BPH71925	--	x	12	7-1/8	9-1/4	3	--	2-3/8	10	16d	6	10d	3485	3510	3775	2665	--	3485	1220	2, R12, F1
	HBPH71925	HB7.12/9.25	x	10	7-1/8	9-1/4	3-1/2	--	3	22	16d	10	16d	6930	6930	6930	5325	--	6930	2705	2, R12
	PHM35925-2	--	x	7/10	7-1/8	9-1/4	2-1/2	10	3	2	16d	2	10d	3745	3665	3080	2845	--	3390	--	2, R12, F1
	PHXU71925	WPI49.25-2, HWU7.12/9.25	x	7	7-1/8	9-1/4	3-1/4	13-1/8	2-1/2	8	16d	6	10d	6650	5785	6650	5090	--	5285	1290	
	HLBH71925	GLTV49.25-2	x	7	7-1/8	9-1/4	6	12	3-1/8	15	NA16D-RS	6	16d	10620	10370	9600	7870	--	9600	1605	
7 x 9-1/2	BPH7195	B7.12/9.5	x	12	7-1/8	9-1/2	3	--	2-3/8	10	16d	6	10d	3485	3510	3775	2665	--	3485	1220	2, R12, F1
	HBPH7195	HB7.12/9.5	x	10	7-1/8	9-1/2	3-1/2	--	3	22	16d	10	16d	6930	6930	6930	5325	--	6930	2705	2, R12
	PHM3595-2	--	x	7/10	7-1/8	9-1/2	2-1/2	10	3	2	16d	2	10d	3745	3665	3080	2845	--	3390	--	2, R12, F1
	PHXU7195	WPI49.5-2, HWU7.12/9.5	x	7	7-1/8	9-1/2	3-1/4	13-1/8	2-1/2	8	16d	6	10d	6650	5785	6650	5090	--	5285	1290	
	HLBH7195	GLTV49.5-2	x	7	7-1/8	9-1/2	6	12	3-1/8	15	NA16D-RS	6	16d	10620	10370	9600	7870	--	9600	1605	
7 x 11-1/4	BPH71112	--	x	12	7-1/8	11-1/4	3	--	2-3/16	10	16d	6	10d	3455	3515	3775	2645	--	3455	1220	2, R12, F1
	HBPH71112	HB7.12/11.25	x	10	7-1/8	11-1/4	3-1/2	--	3	22	16d	10	16d	6930	6930	6930	5325	--	6930	2705	2, R12
	PHXU71112	HWU7.12/11.25, WPI411.25-2	x	7	7-1/8	11-1/4	3-1/4	13-1/8	2-1/2	8	16d	6	10d	6650	5785	6650	5090	--	5285	1290	
	HLBH71112	GLTV411.25-2, HGLTV411.25-2	x	7	7-1/8	11-1/4	6	12	3-1/8	15	NA16D-RS	6	16d	10620	10370	9600	7870	--	9600	1605	
7 x 11-7/8	BPH71118	B7.12/11.88	x	12	7-1/8	11-7/8	3	--	2-3/16	10	16d	6	10d	3455	3515	3775	2645	--	3455	1220	2, R12, F1
	HBPH71118	HB7.12/11.88	x	10	7-1/8	11-7/8	3-1/2	--	3	22	16d	10	16d	6930	6930	6930	5325	--	6930	2705	2, R12
	PHM35118-2	--	x	7/10	7-1/8	11-7/8	2-1/2	10	3	2	16d	2	10d	3745	3665	3080	2845	--	3390	--	2, R12, F1
	PHXU71118	HWU7.12/11.88, WPI411.88-2	x	7	7-1/8	11-7/8	3-1/4	13-1/8	2-1/2	8	16d	6	10d	6650	5785	6650	5090	--	5285	1290	
	HLBH71118	GLTV411.88-2, HGLTV411.88-2	x	7	7-1/8	11-7/8	6	12	3-1/8	15	NA16D-RS	6	16d	10620	10370	9600	7870	--	9600	1605	
7 x 14	BPH7114	B7.12/14	x	12	7-1/8	14	3	--	2-3/16	10	16d	6	10d	3455	3515	3775	2645	--	3455	1220	2, R12, F1
	HBPH7114	HB7.12/14	x	10	7-1/8	14	3-1/2	--	3	22	16d	10	16d	6930	6930	6930	5325	--	6930	2705	2, R12
	PHM3514-2	--	x	7/10	7-1/8	14	2-1/2	10	3	2	16d	2	10d	3745	3665	3080	2845	--	3390	--	2, R12, F1
	PHXU7114	WPI414-2, HWU7.12/14	x	7	7-1/8	14	3-1/4	13-1/8	2-1/2	8	16d	6	10d	6650	5785	6650	5090	--	5285	1290	
	HLBH7114	GLTV414-2, HGLTV414-2	x	7	7-1/8	14	6	12	3-1/8	15	NA16D-RS	6	16d	10620	10370	9600	7870	--	9600	1605	

1) When I-joist is used as a header, all nails must be 10d x 1-1/2.
2) Uplift loads have been increased 60% for wind or seismic loads; no further increase shall be permitted
3) Some listed loads may be increased for short-term loading. Refer to code evaluation reports for MiTek USA, Inc. for details.
4) When I-Joists with flanges less than 1-1/2" thick are used as headers, the published capacity shall be reduced. Contact USP for additional information.
5) **NAILS:** 10d nails are 0.148" dia. x 3" long, NA16D-RS nails are 0.148" x 3-1/2" long, 16d nails are 0.162" dia. x 3-1/2" long.
Load tables address hanger/header/fastener limitations only. Joist limitations must be determined for each installation.
New products or updated product information are designated in **blue font.**



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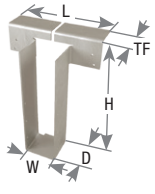
Top Mount Hanger Charts

MiTek®

Joist Size (in)	USP Stock No.	Ref. No.	Web Stiff Reqd	Ga	Dimensions (in)					Fastener Schedule[5]				Allowable Loads Header Type (Lbs.)[1,3]							Code Ref.
										Header		Joist		Download 100%						Uplift[2]	
					W	H	D	L	TF	Qty	Type	Qty	Type	LVL	PSL	LSL	SPF	DF I-Joist[4]	DF/SP	DF/SP 160%	
7 x 16	BPH7116	B7.12/16	x	12	7-1/8	16	3	--	2-3/16	10	16d	6	10d	3455	3515	3775	2645	--	3455	1220	2, R12, F1
	HBPH7116	HB7.12/16	x	10	7-1/8	16	3-1/2	--	3	22	16d	10	16d	6930	6930	6930	5325	--	6930	2705	2, R12
	PHM3516-2	--	x	7/10	7-1/8	16	2-1/2	10	3	2	16d	2	10d	3745	3665	3080	2845	--	3390	--	2, R12, F1
	PHXU7116	WPI416-2, HWU7.12/16	x	7	7-1/8	16	3-1/4	13-1/8	2-1/2	8	16d	6	10d	6650	5785	6650	5090	--	5285	1290	
	HLBH7116	GLTV416-2, HGLTV416-2	x	7	7-1/8	16	6	12	3-1/8	15	NA16D-RS	6	16d	10620	10370	9600	7870	--	9600	1605	
7 x 18	BPH7118	B7.12/18	x	12	7-1/8	18	3	--	2-3/16	10	16d	6	10d	3455	3515	3775	2645	--	3455	1220	2, R12, F1
	HBPH7118	HB7.12/18	x	10	7-1/8	18	3-1/2	--	3	22	16d	10	16d	6930	6930	6930	5325	--	6930	2705	2, R12
	PHM3518-2	--	x	7/10	7-1/8	18	2-1/2	10	3	2	16d	2	10d	3745	3665	3080	2845	--	3390	--	2, R12, F1
	PHXU7118	HWI418-2, HWU7.12/18	x	7	7-1/8	18	3-1/4	13-1/8	2-1/2	8	16d	6	10d	6650	5785	6650	5090	--	5285	1290	
	HLBH7118	GLTV418-2, HGLTV418-2	x	7	7-1/8	18	6	12	3-1/8	15	NA16D-RS	6	16d	10620	10370	9600	7870	--	9600	1605	
7 x 20	BPH7120	B7.12/20	x	12	7-1/8	20	3	--	2-3/16	10	16d	6	10d	3455	3510	3775	2645	--	3455	1220	2, R12, F1
	HBPH7120	HB7.12/20	x	10	7-1/8	20	3-1/2	--	3	22	16d	10	16d	6930	6930	6930	5325	--	6930	2705	2, R12
	PHM3520-2	--	x	7/10	7-1/8	20	2-1/2	10	3	2	16d	2	10d	3745	3665	3080	2845	--	3390	--	2, R12, F1
	PHXU7120	HWI420-2, HWU7.12/20	x	7	7-1/8	20	3-1/4	13-1/8	2-1/2	8	16d	6	10d	6650	5785	6650	5090	--	5285	1290	
	HLBH7120	GLTV420-2, HGLTV420-2	x	7	7-1/8	20	6	12	3-1/8	15	NA16D-RS	6	16d	10620	10370	9600	7870	--	9600	1605	
7 x 22	BPH7122	B7.12/22	x	12	7-1/8	22	3	--	2-3/16	10	16d	6	10d	3455	3510	3775	2645	--	3455	1220	2, R12, F1
	HBPH7122	HB7.12/22	x	10	7-1/8	22	3-1/2	--	3	22	16d	10	16d	6930	6930	6930	5325	--	6930	2705	2, R12
	PHXU7122	HWI422-2	x	7	7-1/8	22	3-1/4	13-1/8	2-1/2	8	16d	6	10d	6650	5785	6650	5090	--	5285	1290	
	HLBH7122	GLTV422-2, HGLTV7.12/22	x	7	7-1/8	22	6	12	3-1/8	15	NA16D-RS	6	16d	10620	10370	9600	7870	--	9600	1605	
7 x 24	BPH7124	B7.12/24	x	12	7-1/8	24	3	--	2-3/16	10	16d	6	10d	3455	3510	3775	2645	--	3455	1220	2, R12, F1
	HBPH7124	HB7.12/24	x	10	7-1/8	24	3-1/2	--	3	22	16d	10	16d	6930	6930	6930	5325	--	6930	2705	2, R12
	PHXU7124	HWI424-2	x	7	7-1/8	24	3-1/4	13-1/8	2-1/2	8	16d	6	10d	6650	5785	6650	5090	--	5285	1290	
	HLBH7124	GLTV424-2, HGLTV7.12/24	x	7	7-1/8	24	6	12	3-1/8	15	NA16D-RS	6	16d	10620	10370	9600	7870	--	9600	1605	
7 x 26	HBPH7126	HB7.12/26	x	10	7-1/8	26	3-1/2	--	3	22	16d	10	16d	6930	6930	6930	5325	--	6930	2705	2, R12
	PHXU7126	B7.12/26, HWI426-2	x	7	7-1/8	26	3-1/4	13-1/8	2-1/2	8	16d	6	10d	6650	5785	6650	5090	--	5285	1290	
	HLBH7126	GLTV426-2, HGLTV426-2	x	7	7-1/8	26	6	12	3-1/8	15	NA16D-RS	6	16d	10620	10370	9600	7870	--	9600	1605	
7 x 28	HBPH7128	HB7.12/28	x	10	7-1/8	28	3-1/2	--	3	22	16d	10	16d	6930	6930	6930	5325	--	6930	2705	2, R12
	PHXU7128	B7.12/28, HWI428-2	x	7	7-1/8	28	3-1/4	13-1/8	2-1/2	8	16d	6	10d	6650	5785	6650	5090	--	5285	1290	
	HLBH7128	GLTV428-2, HGLTV428-2	x	7	7-1/8	28	6	12	3-1/8	15	NA16D-RS	6	16d	10620	10370	9600	7870	--	9600	1605	
7 x 30	PHXU7130	HWI430-2	x	7	7-1/8	30	169	13-1/8	2-1/2	8	16d	6	10d	6650	5785	6650	5090	--	5285	1290	
	HLBH7130	GLTV430-2, HGLTV430-2	x	7	7-1/8	30	6	12	3-1/8	15	NA16D-RS	6	16d	10620	10370	9600	7870	--	9600	1605	
7 x 32	PHXU7132	HWI432-2	x	7	7-1/8	32	3-1/4	13-1/8	2-1/2	8	16d	6	10d	6650	5785	6650	5090	--	5285	1290	130
	HLBH7132	GLTV432-2, HGLTV432-2	x	7	7-1/8	32	6	12	3-1/8	15	NA16D-RS	6	16d	10620	10370	9600	7870	--	9600	1605	2, R12, F1

1) When I-joist is used as a header, all nails must be 10d x 1-1/2.
2) Uplift loads have been increased 60% for wind or seismic loads; no further increase shall be permitted
3) Some listed loads may be increased for short-term loading. Refer to code evaluation reports for MiTek USA, Inc. for details.
4) When I-Joists with flanges less than 1-1/2" thick are used as headers, the published capacity shall be reduced. Contact USP for additional information.
5) **NAILS:** 10d nails are 0.148" dia. x 3" long, NA16D-RS nails are 0.148" x 3-1/2" long, 16d nails are 0.162" dia. x 3-1/2" long.
Load tables address hanger/header/fastener limitations only. Joist limitations must be determined for each installation.
New products or updated product information are designated in **blue font**.



TMP / TMPH Adjustable Rafter-To-Plate Connectors

The TMP and TMPH are designed to make rafter-to-plate connections and eliminate time-consuming bird's-mouth notching or bevel plate installation. Both series are available in I-Joists sizes, as well as standard 2x sizes.

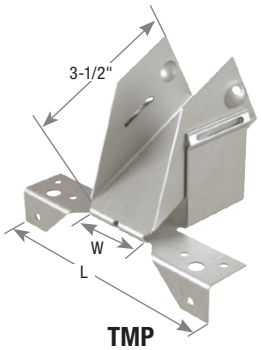
TMP – Adjusts to pitches from 1/12 to 6/12.

TMPH – Adjusts to pitches from 6/12 to 14/12.

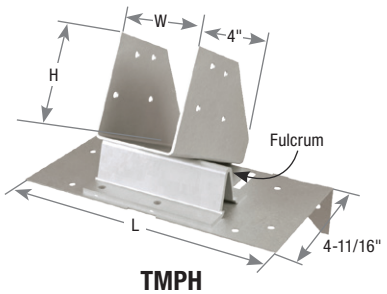
Materials: TMP – 18 gauge;
TMPH – 16 gauge, Fulcrum – 12 gauge

Finish: G90 galvanizing

Codes: See page 10 for Code Reference Chart



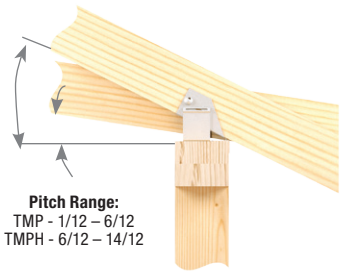
TMP



TMPH

Installation:

- Use all specified fasteners. See Product Notes, page 18.
- Position connector on top plate. Fasten connector to outside of top plate with specified nails. Insert rafter into rafter pocket. Adjust rafter and pocket to correct pitch. Fasten rafter to connector with specified nails. Installing the TMP requires driving specified nails through the opposing slots in the pocket. TMPH installation involves sliding the fulcrum until it supports the pocket at the desired pitch and nailing down through the fulcrum base into the top plate to lock the fulcrum into position.




Typical TMP installation


Typical TMPH installation

TMP Chart

Rafter Width (in)	USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in)		Fastener Schedule[2]				DF/SP Allowable Loads (Lbs.)[1]				S-P-F Allowable Loads (Lbs.)[1]				Code Ref.
						Plate		Rafter		Floor	Roof		Uplift	Floor	Roof		Uplift	
				W	L	Qty	Type	Qty	Type	100%	115%	125%	160%	100%	115%	125%	160%	
1-1/2	TMP2	VPA2	18	1-9/16	5-9/16	6	10d	4	10d x 1-1/2	990	990	990	220	990	990	990	170	6, R11, F3
1-3/4	TMP175	VPA25	18	1-13/16	5-9/16	6	10d	4	10d x 1-1/2	1150	1150	1150	220	1025	1025	1025	170	
2 or 2-1/8	TMP21	VPA2.06, VPA2.1	18	2-1/8	6-3/8	6	10d	4	10d x 1-1/2	1290	1290	1290	220	1290	1290	1290	170	
2-5/16	TMP23	VPA35	18	2-3/8	6-3/8	6	10d	4	10d x 1-1/2	1970	1970	1970	220	1970	1970	1970	170	
2-1/2 or 2-5/8	TMP25	VPA3	18	2-11/16	6-3/8	6	10d	4	10d x 1-1/2	1970	1970	1970	220	1970	1970	1970	170	
3	TMP31	--	18	3-1/8	7-5/16	6	10d	4	10d x 1-1/2	1970	1970	1970	220	1970	1970	1970	170	
3-1/2	TMP4	VPA4	18	3-9/16	7-5/16	6	10d	4	10d x 1-1/2	1970	1970	1970	220	1970	1970	1970	170	

1) Allowable Loads are governed by test results; no further increase shall be permitted
2) **NAILS:** 10d x 1-1/2" nails are 0.148" dia. x 1-1/2" long, 10d nails are 0.148" dia. x 3" long.
New products or updated product information are designated in **blue font.**

TMPH Chart

Rafter Width (in)	USP Stock No.	Ref. No.	Dimensions (in)			Fastener Schedule[3]					DF/SP Allowable Loads (Lbs.)[1]										Code Ref.
						Plate			Rafter[2]		According to Pitch									Uplift	
						Top	Side														
			W	H	L	Qty	Qty	Type	Qty	Type	6/12	7/12	8/12	9/12	10/12	11/12	12/12	13/12	14/12	160%	
1-1/2	TMPH2	VPA2	1-9/16	2-1/2	6-9/16	8	2	10d	8	10d x 1-1/2	3190	3290	3390	3140	2900	2710	2520	2230	1950	200	6, R11, F3
1-3/4	TMPH175	VPA25	1-13/16	2-3/8	6-9/16	8	2	10d	8	10d x 1-1/2	3190	3290	3390	3140	2900	2710	2520	2230	1950	200	
2 or 2-1/8	TMPH21	VPA2.06, VPA2.1	2-1/8	2-5/8	7-3/8	8	2	10d	8	10d x 1-1/2	3190	3290	3390	3140	2900	2710	2520	2230	1950	200	
2-5/16	TMPH23	VPA35	2-3/8	2-1/2	7-3/8	8	2	10d	8	10d x 1-1/2	3190	3290	3390	3140	2900	2710	2520	2230	1950	200	
2-1/2 or 2-5/8	TMPH25	VPA3	2-11/16	2-5/16	7-3/8	8	2	10d	8	10d x 1-1/2	3190	3290	3390	3140	2900	2710	2520	2230	1950	200	
3	TMPH31	--	3-1/8	2-11/16	8-9/16	8	2	10d	8	10d x 1-1/2	3190	3290	3390	3140	2900	2710	2520	2230	1950	200	
3-1/2	TMPH4	VPA4	3-9/16	2-1/2	8-9/16	8	2	10d	8	10d x 1-1/2	3190	3290	3390	3140	2900	2710	2520	2230	1950	200	

1) Allowable loads may not be increased for duration of load adjustments.
2) Web stiffeners are required for all Wood I-Joist installations.
3) **NAILS:** 10d x 1-1/2" nails are 0.148" dia. x 1-1/2" long, 10d nails are 0.148" dia. x 3" long.

LSSH Slope/Skew Hangers

The LSSH series connects rafters to ridge beams in vaulted roof structures. This series is field adjustable to meet a variety of skew and/or slope applications. Slopes and skews 0° to 45°.

Materials: See chart
Finish: G90 galvanizing; LSSH15-TZ – G-185 Galvanizing
Options: See chart for Corrosion Finish Options
Codes: See page 10 for Code Reference Chart

Installation:

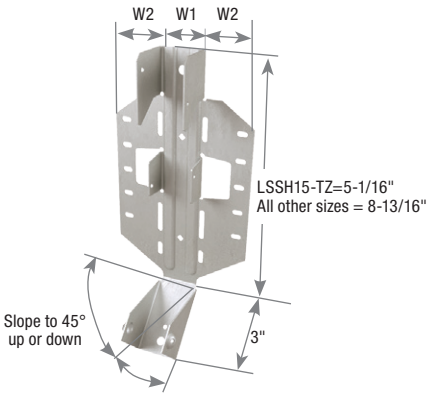
- Use all specified fasteners. See Product Notes, page 18.

Steps:

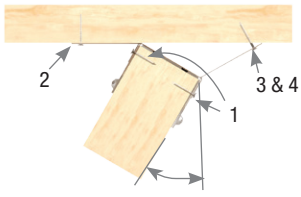
1. Position LSSH connector against plumb-cut end of joist. Fasten joist side flanges on both sides with 10d (0.148") x 1-1/2" nails. Bend seat up to fit against joist bottom and drive (1) 10d (0.148") x 1-1/2" nail through bottom seat into rafter bottom. Drive (2) 10d (0.148") x 1-1/2" nails at downward angle through dimpled nailing guides.
2. Lean connector and rafter end against ridge beam at desired position. Install specified 10d (0.148" x 3") or 16d (0.162" x 3-1/2") nails through nail holes into ridge beam at right 90° angle. If skewing the rafter, only drive nails into ridge beam on inside flange.
3. Bend flange to desired angle.
4. Hammer outside flange until edge touches header. Fasten outside flange to ridge by driving specified 10d (0.148" x 3) or 16d (0.162" x 3-1/2") nails through nail holes.

- Web stiffeners are required for all wood I-Joist installations.
- Designer may consider adding a tension restraint for the supported member for roof slopes exceeding 6/12. Refer to pages 95-96.

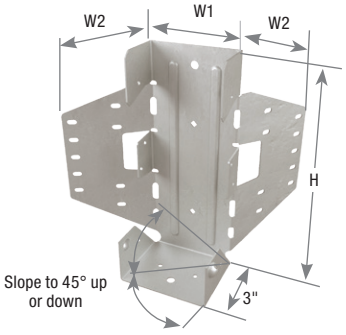
Typical LSSH179 installation



LSSH210



Skew to 45° maximum



LSSH35

Rafter Width (in)	USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in) W1	Dimensions (in) W2	Fastener Schedule[2] Header Qty	Header Type	Rafter Qty	Rafter Type	DF/SP Allowable Loads (Lbs.) Floor 100%	DF/SP Roof 115%	DF/SP Roof 125%	DF/SP Uplift[1] 160%	S-P-F Allowable Loads (Lbs.) Floor 100%	S-P-F Roof 115%	S-P-F Roof 125%	S-P-F Uplift[1] 160%	Corrosion Finish	Code Ref.
SLOPED ONLY HANGERS																			
1-1/2	LSSH15-TZ	LSU26, LSU26Z, LSSU28, LSSU28Z	18	1-9/16	1-3/4	6	10d HDG	7	10d x 1-1/2 HDG	720	830	900	740	640	730	785	580		130
1-1/2	LSSH210	LSSU210	18	1-9/16	1-3/4	10	10d	7	10d x 1-1/2	1180	1345	1450	1065	1065	1225	1325	835		6, R11, F3
1-3/4	LSSH179	LSSUI25	18	1-13/16	1-5/8	10	10d	7	10d x 1-1/2	1180	1345	1450	1065	1065	1225	1325	835		
2 - 2-1/8	LSSH20	LSSUI2.06, LSSU2.1	18	2-1/8	2-1/2	10	10d	7	10d x 1-1/2	1180	1345	1450	980	1065	1225	1245	765		
2-1/4 - 2-5/16	LSSH23	LSSUI35	18	2-5/16	2-3/8	10	10d	7	10d x 1-1/2	1180	1345	1450	980	1065	1225	1240	760		
2-1/2	LSSH25	LSSUH310	16	2-9/16	2-3/4	18	16d	12	10d x 1-1/2	2590	2600	2600	1195	2040	2040	2040	935		
2-5/8	LSSH26	--	16	2-11/16	2-5/8	18	16d	12	10d x 1-1/2	2590	2600	2600	1195	2040	2040	2040	935		
3	LSSH31	LSSU210-2	16	3-1/8	3-3/4	18	16d	12	10d x 1-1/2	2590	2940	3175	1585	2345	2500	2500	1240		
3-1/2	LSSH35	LSSU410	16	3-9/16	3-1/2	18	16d	12	10d x 1-1/2	2590	2940	3175	1585	2345	2485	2485	1235		
SKEWED HANGERS or SLOPED & SKEWED HANGERS																			
1-1/2	LSSH15-TZ	LSU26, LSU26Z, LSSU28, LSSU28Z	18	1-9/16	1-3/4	6	10d HDG	7	10d x 1-1/2 HDG	720	815	815	740	640	640	640	580		130
1-1/2	LSSH210	LSSU210	18	1-9/16	1-3/4	10	10d	7	10d x 1-1/2	1180	1345	1450	1065	1065	1215	1310	835		6, R11, F3
1-3/4	LSSH179	LSSUI25	18	1-13/16	1-5/8	10	10d	7	10d x 1-1/2	1180	1345	1450	1065	1065	1215	1310	835		
2 - 2-1/8	LSSH20	LSSUI2.06, LSSU2.1	18	2-1/8	2-1/2	10	10d	7	10d x 1-1/2	1180	1345	1450	980	1065	1215	1245	765		
2-1/4 - 2-5/16	LSSH23	LSSUI35	18	2-5/16	2-3/8	10	10d	7	10d x 1-1/2	1180	1345	1450	980	1065	1215	1240	760		
2-1/2	LSSH25	LSSUH310	16	2-9/16	2-3/4	14	16d	12	10d x 1-1/2	1825	1825	1825	1195	1430	1430	1430	935		
2-5/8	LSSH26	--	16	2-11/16	2-5/8	14	16d	12	10d x 1-1/2	1825	1825	1825	1195	1430	1430	1430	935		
3	LSSH31	LSSU210-2	16	3-1/8	3-3/4	14	16d	12	10d x 1-1/2	1920	1920	1920	1585	1500	1500	1500	1240		
3-1/2	LSSH35	LSSU410	16	3-9/16	3-1/2	14	16d	12	10d x 1-1/2	1920	1920	1920	1585	1495	1495	1495	1235		

1) Uplift loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) **NAILS:** 10d x 1-1/2" nails are 0.148" dia. x 1-1/2" long, 10d nails are 0.148" dia. x 3" long, 16d nails are 0.162" dia. x 3-1/2" long.
New products or updated product information are designated in **blue font**.

Corrosion Finish
Stainless Steel Gold Coat
HDG Triple Zinc

Glulam Beam Connectors

LGU / MGU / HGU Girder Hangers

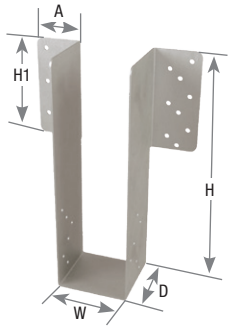
LGU, **MGU**, and **HGU**'s are high capacity girder to girder face mount connectors. Fastening is by WS structural screws for ease of installation. Fastenings are placed high on connector to permit the connection of a deep carried member to a shallower carrying member. Very useful where tops of beams must be flush.

Materials: LGU / MGU – 10 gauge; HGU – 7 gauge
Finish: G90 galvanizing
Options: See Specialty Options chart.
Codes: See page 10 for Code Reference Chart

Installation:

- Use all specified fasteners. See Product Notes, page 18.
- WS structural screws supplied with connector. Substituting lag screws will reduce capacity.
- Beams comprised of multiple plies must be laminated to act as a single member.
- Multi-ply carrying beams may require additional connection of laminations at connector.
- Beam height dimension (H) must be specified when ordering.

Typical LGU, MGU, HGU installation



LGU, MGU, HGU

Beam Width (in)	USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in)					Fastener Schedule[3]				DF/SP Allowable Loads (Lbs.)				S-P-F Allowable Loads (Lbs.)				Code Ref.
									Header		Truss		Floor	Roof		Uplift[1]	Floor	Roof		Uplift[1]	
				W	H[2] (min)	H1	D	A	Qty	Type	Qty	Type	100%	115%	125%	160%	100%	115%	125%	160%	
3-1/8	LGU325	LGU3.25-SDS	10	3-1/4	8	7-3/8	4-1/2	3-1/4	18	WS3	12	WS3	7135	7410	7410	4160	5960	5960	5960	3345	5, F2, R5
3-1/2	LGU363	LGU3.63-SDS	10	3-5/8	8	7-3/8	4-1/2	3-1/4	18	WS3	12	WS3	7135	7410	7410	4160	5945	5945	5945	3340	
	MGU363	MGU3.63-SDS	10	3-5/8	9-1/4	8-5/8	4-1/2	4	24	WS3	16	WS3	9515	10940	11890	5100	8355	9610	9705	4115	
	HGU363	HGU3.63-SDS	7	3-5/8	11	10-3/8	5-1/4	4-3/4	38	WS3	24	WS3	14705	14990	14990	7375	12175	12175	12175	5990	
5-1/8	LGU525	LGU5.25-SDS	10	5-1/4	8	7-3/8	4-1/2	3-1/4	18	WS3	12	WS3	7135	7410	7410	4160	5910	5910	5910	3320	
	MGU525	MGU5.25-SDS	10	5-1/4	9-1/4	8-5/8	4-1/2	4	24	WS3	16	WS3	9515	10940	11890	5100	8355	9610	9640	4085	
	HGU525	HGU5.25-SDS	7	5-1/4	11	10-3/8	5-1/4	4-3/4	38	WS3	24	WS3	14705	14990	14990	7375	12070	12070	12070	5935	
5-1/4	MGU550	MGU5.50-SDS	10	5-1/2	9-1/4	8-5/8	4-1/2	4	24	WS3	16	WS3	9515	10940	11890	5100	8355	9610	9635	4085	
	HGU550	HGU5.50-SDS	7	5-1/2	11	10-3/8	5-1/4	4-3/4	38	WS3	24	WS3	14705	14990	14990	7375	12060	12060	12060	5930	
5-1/2	MGU562	MGU5.62-SDS	10	5-5/8	9-1/4	8-5/8	4-1/2	4	24	WS3	16	WS3	9515	10940	11890	5100	8355	9610	9625	4080	
	HGU562	HGU5.62-SDS	7	5-5/8	11	10-3/8	5-1/4	4-3/4	38	WS3	24	WS3	14705	14990	14990	7375	12050	12050	12050	5930	
6-3/4	MGU700	MGU7.00-SDS	10	7	9-1/4	8-5/8	4-1/2	4	24	WS3	16	WS3	9515	10940	11890	5100	8355	9590	9590	4065	
	HGU700	HGU7.00-SDS	7	7	11	10-3/8	5-1/4	4-3/4	38	WS3	24	WS3	14705	14990	14990	7375	12010	12010	12010	5910	
7	HGU725	HGU7.25-SDS	7	7-1/4	11	10-3/8	5-1/4	4-3/4	38	WS3	24	WS3	14705	14990	14990	7375	12000	12000	12000	5905	
8-3/4	HGU900	HGU9.00-SDS	7	9	11	10-3/8	5-1/4	4-3/4	38	WS3	24	WS3	14705	14990	14990	7375	11960	11960	11960	5885	

1) Uplift loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) H denotes minimum hanger height. Specify height when ordering.
3) WS3 Wood Screws are 1/4" x 3" long and are included with hangers.
New products or updated product information are designated in **blue font**.

Specialty Options Chart

– refer to Specialty Options pages 245-246 for additional details

Option	USP Series	Skewed[1]	Inverted Flange
Range	LGU MGU HGU	1° to 45°	One Inverted Flange option available on some sizes. See footnotes 2 and 3.
Allowable Loads	LGU	55% of table value. 30% of uplift.	100% of table value
	MGU	65% of table value. 30% of uplift.	
	HGU	70% of table value. 30% of uplift.	
Ordering	LGU MGU HGU	Add *SK*, angle required, right *(R)* or left *(L)*, and square cut *(SQ)* or bevel cut *(BV)* to product number. Ex. LGU525_H=18_SK45R_SQ	Add *IF* and right *(R)* or left *(L)* to product number. Ex. LGU525_H=18_IFR

1) Skewed hangers with skews greater than 15° may have all joist fasteners on outside flange.
2) One inverted-flange (IF) is available on the following sizes:
LGU363, LGU525
MGU525, MGU550, MGU563, MGU700
HGU525, HGU550, HGU562, HGU700, HGU725, HGU900
3) The inverted flange option is not available on skewed LGU, MGU or HGU hangers.
4) Bevel cut required on skewed parts to meet table loads.
5) Skewed hangers typically require a bevel cut however, a square cut option may be available as a custom when requested.

GHF Glulam Face Mount Hangers

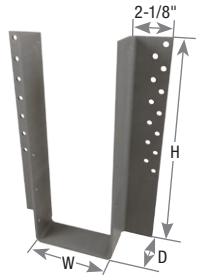
MiTek®

An architectural choice for exposed glulam purlin applications. The GHF features heavy load capacity and a multitude of optional designs for unusual applications. Header fasteners are positioned high and joist flange fasteners low for best design with glulam members.

Materials: See chart
Finish: USP primer
Options: See Specialty Options Chart on page 178.
Codes: See page 10 for Code Reference Chart

Installation:
- Use all specified fasteners. See Product Notes, page 18.
- WS Wood Screws are supplied with GHF hangers.

Typical GHF51135 installation



GHF

Glulam Size (in)	USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in)			Fastener Schedule[2]				DF/SP Allowable Loads (Lbs.)[1]				Code Ref.
							Header		Joist		Floor	Roof		Uplift[3]	
				W	H	D	Qty	Type	Qty	Type	100%	115%	125%	160%	
3-1/8 x 6	GHF31600	--	12	3-3/16	5-7/8	2-3/8	10	WS25	4	WS25	2740	2740	2740	1400	130
3-1/8 x 7-1/2	GHF31750	--	12	3-3/16	7-3/8	2-3/8	12	WS25	4	WS25	3285	3285	3285	1400	
3-1/8 x 9	GHF31900	--	12	3-3/16	8-7/8	2-3/8	16	WS25	5	WS25	4380	4380	4380	1750	
3-1/8 x 10-1/2	GHF31105	--	12	3-3/16	10-3/8	2-3/8	20	WS25	6	WS25	5475	5475	5475	2100	
3-1/8 x 12	GHF31120	--	12	3-3/16	11-7/8	2-3/8	22	WS25	6	WS25	5800	5800	5800	2100	
3-1/8 x 13-1/2	GHF31135	--	12	3-3/16	13-3/8	2-3/4	24	WS25	6	WS25	5800	5800	5800	2100	
3-1/8 x 15	GHF31150	--	12	3-3/16	14-7/8	2-3/4	26	WS25	7	WS25	6730	6730	6730	2455	
3-1/8 x 16-1/2	GHF31165	--	12	3-3/16	16-3/8	2-3/4	28	WS25	9	WS25	7275	7275	7275	3155	
3-1/8 x 18	GHF31178	--	12	3-3/16	17-3/4	2-3/4	30	WS25	11	WS25	7825	7825	7825	3855	
3-1/4 x 9	GHF32900	--	12	3-5/16	8-7/8	2-3/8	16	WS25	5	WS25	4380	4380	4380	1750	
3-1/4 x 12	GHF32120	--	12	3-5/16	11-7/8	2-3/8	22	WS25	6	WS25	5800	5800	5800	2100	
5-1/8 x 6	GHF51600	--	12	5-3/16	5-7/8	2-3/8	10	WS3	4	WS3	2740	2740	2740	1400	
5-1/8 x 7-1/2	GHF51750	--	12	5-3/16	7-3/8	2-3/8	14	WS3	4	WS3	3835	3835	3835	1400	
5-1/8 x 9	GHF51900	--	12	5-3/16	8-7/8	2-3/8	18	WS3	5	WS3	4930	4930	4930	1750	
5-1/8 x 10-1/2	GHF51105	--	12	5-3/16	10-3/8	2-3/8	22	WS3	6	WS3	6025	6025	6025	2100	
5-1/8 x 12	GHF51120	--	12	5-3/16	11-7/8	2-3/8	24	WS3	6	WS3	6570	6570	6570	2100	
5-1/8 x 13-1/2	GHF51135	--	7	5-3/16	13-3/8	2-3/8	26	WS3	6	WS3	8125	8125	8125	2400	
5-1/8 x 15	GHF51150	--	7	5-3/16	14-7/8	2-3/4	28	WS3	7	WS3	8750	8750	8750	2800	
5-1/8 x 16-1/2	GHF51165	--	7	5-3/16	16-3/8	2-3/4	30	WS3	7	WS3	9375	9375	9375	2800	
5-1/8 x 18	GHF51178	--	7	5-3/16	17-3/4	2-3/4	32	WS3	8	WS3	10000	10000	10000	3200	
5-1/8 x 19-1/2	GHF51192	--	7	5-3/16	19-1/8	2-3/4	34	WS3	8	WS3	10395	10395	10395	3200	
5-1/8 x 21	GHF51205	--	7	5-3/16	20-3/8	2-3/4	36	WS3	9	WS3	10705	10705	10705	3600	
5-1/8 x 24	GHF51233	--	7	5-3/16	23-1/4	2-3/4	40	WS3	11	WS3	11330	11330	11330	4400	
5-1/4 x 9	GHF52900	--	12	5-5/16	8-7/8	2-3/8	18	WS3	5	WS3	4930	4930	4930	1750	
5-1/4 x 12	GHF52120	--	12	5-5/16	11-7/8	2-3/8	24	WS3	6	WS3	6570	6570	6570	2100	
6-3/4 x 6	GHF67600	--	12	6-7/8	5-7/8	2-3/8	12	WS3	4	WS3	3285	3285	3285	1400	
6-3/4 x 7-1/2	GHF67750	--	12	6-7/8	7-3/8	2-3/8	16	WS3	5	WS3	4380	4380	4380	1750	
6-3/4 x 9	GHF67900	--	12	6-7/8	8-7/8	2-3/8	20	WS3	6	WS3	5475	5475	5475	2100	
6-3/4 x 10-1/2	GHF67105	--	12	6-7/8	10-3/8	2-3/8	24	WS3	8	WS3	6570	6570	6570	2805	
6-3/4 x 12	GHF67120	--	7	6-7/8	11-7/8	2-3/4	28	WS3	8	WS3	8750	8750	8750	3200	
6-3/4 x 13-1/2	GHF67135	--	7	6-7/8	13-3/8	2-3/4	30	WS3	8	WS3	9375	9375	9375	3200	
6-3/4 x 15	GHF67150	--	7	6-7/8	14-7/8	2-3/4	32	WS3	10	WS3	10000	10000	10000	4000	
6-3/4 x 16-1/2	GHF67165	--	7	6-7/8	16-3/8	2-3/4	34	WS3	10	WS3	10625	10625	10625	4000	
6-3/4 x 18	GHF67180	--	7	6-7/8	17-3/4	2-3/4	36	WS3	12	WS3	11250	11250	11250	4800	
6-3/4 x 19-1/2	GHF67195	--	7	6-7/8	19-1/8	3	40	WS3	14	WS3	12500	12500	12500	5600	
6-3/4 x 21	GHF67210	--	7	6-7/8	20-3/8	3	44	WS3	18	WS3	13000	13000	13000	7200	
6-3/4 x 22-1/2	GHF67225	--	7	6-7/8	21-7/8	3	46	WS3	20	WS3	13000	13000	13000	8000	
6-3/4 x 24	GHF67240	--	7	6-7/8	23-1/4	3	48	WS3	22	WS3	13000	13000	13000	8800	

1) Allowable loads based on seat bearing calculated at 560 psi perpendicular to grain.
2) WS25 Wood Screws are 1/4" x 2-1/2" long, WS3 Wood Screws are 1/4" x 3" long and are included with GHF hangers.
3) Uplift loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
New products or updated product information are designated in **blue font.**

Continued on next page

GHF Glulam Face Mount Hangers

MiTek®

Specialty Options Chart

– refer to Specialty Options pages 245-246 for additional details

Option	Skewed[1,3]	Sloped Seat[2]	Sloped / Skewed[1,2]	Inverted Flange
Range	1˚ to 50˚	1˚ to 45˚	See Sloped Seat and Skewed	Not available in widths less than 4-1/2-in
Allowable Loads	100% of table load. 75% of uplift load on skews greater than 15˚.	100% of table load	80% of table load on skews greater. 75% of uplift load than 15˚.	100% of table load. 65% of table load when nailing into the support members end grain.
Ordering	Add *SK*, angle required, right *(R)* or left *(L)*, and square cut *(SQ)* or bevel cut *(BV)* to product number. Ex. GHF31900_SK45R_BV	Add *SL*, slope required, and up *(U)* or down *(D)*, to product number. Ex. GHF31900_SL30D	See Sloped Seat and Skewed. Ex. GHF31900_SK45R_BV_SL30D	Add *IF* to product number. Ex. GHF51135_IF

1) Skewed hangers with skews greater than 15° may have all joist nailing on outside flange.
2) Sloped or sloped / skewed hangers with slopes greater than 15° may have additional joist nails.
3) Skewed hangers typically require a bevel cut however, a square cut option may be available as a custom when requested.

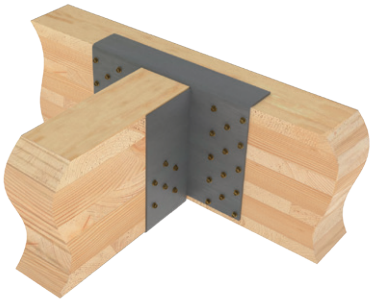
Typical GHF51135IF inverted flange installation

KEGQ Glulam Beam Hangers

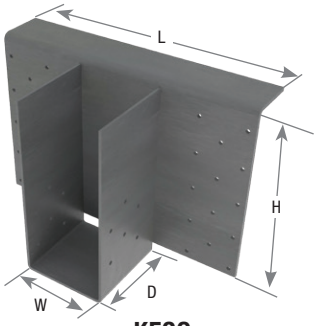
WS Wood Screw fastening, heavy steel construction, and a continuous top flange allow the KEGQ products to have high load capacities.

Materials: See chart
Finish: USP primer
Codes: See page 10 for Code Reference Chart

Installation:
- Use all specified fasteners.
- WS3 Wood Screws, ¼" dia. x 3" long, are supplied with KEGQ hangers.
- **Minimum header height (H) is 11-inches.**
- Beam height dimension (H) must be specified when ordering.



Typical KEGQ 550 installation



KEGQ

Joist / Purlin Size	USP Stock No.	Ref. No	Steel Ga. Top Flange	Steel Ga. U-Strap	Dimensions (in) W	Dimensions (in) H[2]	Dimensions (in) D	Dimensions (in) L	Fastener Schedule[3] Header Qty	Fastener Schedule[3] Header Type	Fastener Schedule[3] Joist Qty	Fastener Schedule[3] Joist Type	DF/SP Allowable Loads (Lbs.) Download 100%	Download 115%	Download 125%	Uplift[1] 160%	Code Ref.
3-1/2	KEGQ325	EGQ3.62-SDS3	3	7	3-5/8	specify	6	18	28	WS3	12	WS3	16360	17060	17525	5330	110
5-1/4	KEGQ550	EGQ5.50-SDS3	3	7	5-1/2	specify	6	18	28	WS3	12	WS3	19455	19455	19455	7430	2
7	KEGQ725	EGQ7.25-SDS3	3	7	7-1/4	specify	6	18	28	WS3	12	WS3	19455	19455	19455	7430	

1) Uplift loads have been increased 60% for wind and seismic loads; no further increase shall be permitted.
2) "Specify" denotes the required supported beam height that must be specified at the time of ordering, with 11" being the minimum.
3) WS3 Wood Screws are 1/4" x 3" long and are included with KEGQ hangers.
New products or updated product information are designated in **blue font**.

KEG / KLEG / KMEG Bolted Glulam Beam Hangers

Bolt-only fastening, heavy steel construction, and a continuous top flange allow the KLEG, KMEG, and KEG products to have high load capacities.

KLEG – (4) bolt light-duty hanger.

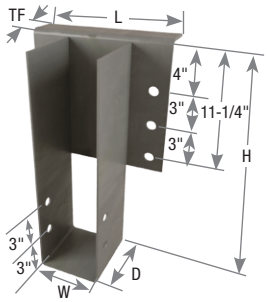
KMEG – (6) bolt medium-duty hanger.

KEG – (8) bolt heavy-duty hanger.

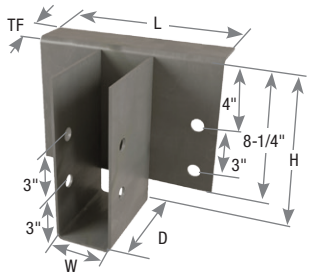
Materials: See chart
Finish: USP primer
Options: See Specialty Options Chart.
Codes: See page 10 for Code Reference Chart

Installation:
- Use all specified fasteners. See Product Notes, page 18.
- Bolts are not supplied unless ordered separately. See page 24 for available sizes. Bolts provided by other suppliers must meet or exceed ASTM A 307 Grade A, or ASME SAE Grade 2, or better.
- **Minimum header height is 10" for the KLEG; 13" for the KMEG; 20" for the KEG.**
- Beam height dimension (H) must be specified when ordering.

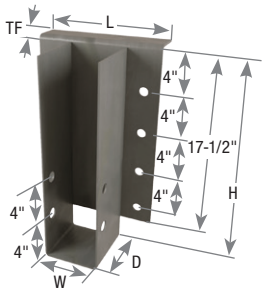
Typical KLEG5 installation



KMEG5



KLEG3



KEG5

KLEG without top flange

Beam Width (in)	USP Stock No.	Ref. No.	Steel Ga. Top Flange	Steel Ga. U-Strap	Dimensions (in) W	Dimensions (in) H[3]	Dimensions (in) D	Dimensions (in) TF	Dimensions (in) L	Bolt Schedule Header Qty	Bolt Schedule Header Dia (in)	Bolt Schedule Joist Qty	Bolt Schedule Joist Dia (in)	Allowable Loads (Lbs.) With Top Flange[1] Floor 100%	With Top Flange[1] Roof 125%	Without Top Flange[1] Floor 100%	Without Top Flange[1] Roof 125%	Uplift 160%	Code Ref.
3-1/8	KLEG3	LEG3	7	7	3-1/4	specify	6	2-1/2	12	4	3/4	2	3/4	11940	12200	3540	4420	3845	
5-1/8	KLEG5	LEG5	7	7	5-1/4	specify	6	2-1/2	12	4	3/4	2	3/4	11940	12200	3540	4420	5620	
	KMEG5	MEG5	7	7	5-1/4	specify	6	2-1/2	12	6	3/4	2	3/4	12635	12635	5285	6610	5620	
	KEG5	EG5	3	7	5-1/4	specify	6	2-1/2	12	8	1	2	1	17615	19920	9215	11520	7305	2,
6-3/4	KLEG7	LEG7	7	7	6-7/8	specify	6	2-1/2	12	4	3/4	2	3/4	11940	12200	3540	4420	5635	R12,
	KMEG7	MEG7	7	7	6-7/8	specify	6	2-1/2	12	6	3/4	2	3/4	12635	12635	5285	6610	5635	F1
	KEG7	EG7	3	7	6-7/8	specify	6	2-1/2	13-1/2	8	1	2	1	18695	21005	9245	11555	9215	
8-3/4	KEG9	EG9	3	7	8-7/8	specify	6	2-1/2	15-1/2	8	1	2	1	20125	21220	9275	11595	9240	
10-3/4	KEG11	--	3	7	10-7/8	specify	6	2-1/2	17-1/2	8	1	2	1	21545	23870	9295	11620	9260	

1) Allowable loads are for a supporting member with a width of 5-1/2-in, and 560 psi perpendicular to grain loading in single shear.
2) Uplift loads have been increased 60% for wind and seismic loads; no further increase shall be permitted.
3) "Specify" denotes the required supported beam height that must be specified at the time of ordering.

Specialty Options Chart

– refer to Specialty Options pages 245 and 247-248 for additional details

Option	Skewed[3]	Sloped Seat	Top Flange Offset[1,2]
Range	1˚ to 45˚	1˚ to 45˚	--
Allowable Loads	KLEG – 10,000-lb Max KMEG – 10,000-lb Max KEG – 14,250-lb Max	KLEG – 9665 lbs. Max KMEG – 9665 lbs. Max KEG – 9665 lbs. Max	KLEG – 5,665-lb Max KLEG – 9-in Min Height KMEG – 5665 lbs. Max KMEG – 11-in Min Height
Ordering	Add *SK*, angle required, right *(R)* or left *(L)*, and square cut *(SQ)* to product number. Ex. KLEG3_H=112_SK45R_SQ	Add *SL*, slope required, and up *(U)* or down *(D)*, to product number. Ex. KLEG3_H=112_SL30D	Add *OS*, and right *(R)* or left *(L)*, to product number. Ex. KLEG3_H=112_OSL

1) Top flange offset hangers may not be skewed.
2) Top flange offset option is not available for KEG models.
3) Carried member must have square cut end on skewed option. Refer to Typical PHXU hanger, skewed, left shown, Square Cut illustration on page 247.

KGB / KHGB / KHHB Glulam Top Mount Hangers

These hangers cover medium-to-heavy glulam beam and purlin applications.

KHHB – Medium capacity hanger.

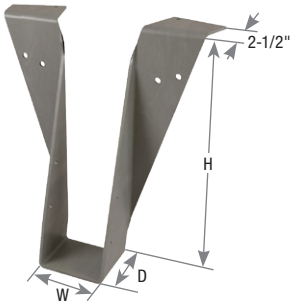
KGB – Medium-to-heavy capacity hanger.

KHGB – Heavy capacity hanger.

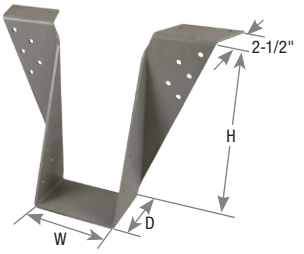
Materials: 7 gauge
Finish: USP primer
Codes: See page 10 for Code Reference Chart

Installation:
- Use all specified fasteners. See Product Notes, page 18.
- WS3 Wood Screws are supplied with hangers.
- Beam height dimension (H) must be specified when ordering.
- **Minimum height (H) is 7-1/2".**
- See Welded installation chart on page 249.

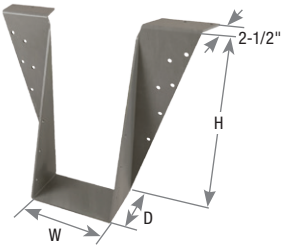
Typical KHHB installation



KHHB



KGB



KHGB

Beam Width (in)	USP Stock No.	Ref. No.	Dimensions (in)[2]			Fastener Schedule[4]					Allowable Loads (Lbs.)				Code Ref.
						Header[3]			Joist		$F_{c\perp}$ = 625 psi			Uplift[1] 160%	
						Top	Face				Floor	Roof			
			W	H	D	Qty	Qty	Type	Qty	Type	100%	115%	125%		
3-1/8	KHHB3	HHB3	3-1/4	specify	3	4	6	WS3	6	WS3	5835	6330	6575	2160	2, R12, F1
	KGB3	GB3	3-1/4	specify	3-1/2	4	10	WS3	6	WS3	7000	7000	7000	2160	130
5-1/8	KHHB5	HHB5	5-1/4	specify	3	4	6	WS3	6	WS3	5960	6330	6575	2160	2, R12, F1
	KGB5	GB5	5-1/4	specify	3-1/2	4	10	WS3	6	WS3	7000	7000	7000	2160	2, R12
	KHGB5	HGB5	5-1/4	specify	4	4	12	WS3	6	WS3	7000	7000	7000	2160	
6-3/4	KHHB7	HHB7	6-7/8	specify	3	4	6	WS3	6	WS3	5960	6330	6575	2160	2, R12, F1
	KGB7	GB7	6-7/8	specify	3-1/2	4	10	WS3	6	WS3	7000	7000	7000	2160	2, R12
	KHGB7	HGB7	6-7/8	specify	4	4	12	WS3	6	WS3	7000	7000	7000	2160	

1) Uplift loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) "Specify" denotes the required supported beam height must be specified at the time of ordering.
3) Supporting header shall be no less than 3-in thick.
4) WS3 Wood Screws are 1/4" x 3" long and are included with hangers.
New products or updated product information are designated in **blue font**.

KGLT / KHGLT Glulam Beam Hangers

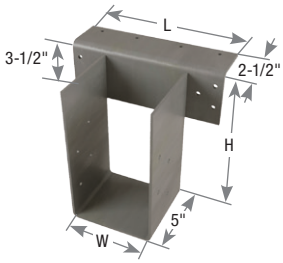
These heavy beam hangers are designed for use with glulam and timber beams. The continuous top mount flange offers high load capacity with minimal nailing.

KGLT – Medium capacity hanger.

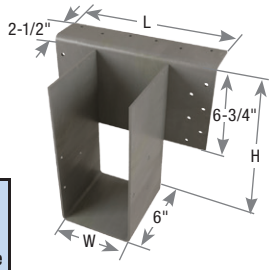
KHGLT – Heavy capacity hanger.

Materials: See chart
Finish: USP primer
Options: See Specialty Options Chart
Codes: See page 10 for Code Reference Chart

Typical KGLT5 installation



KGLT



KHGLT

Installation:
- Use all specified fasteners. See Product Notes, page 18.
- Beam height dimension (H) must be specified when ordering.
- See Welded installation chart on page 249.

Beam Width (in)	USP Stock No.	Ref. No.	Steel Gauge		Dimensions (in)			Fastener Schedule[5]					Allowable Loads (Lbs.)[2]				Code Ref.
								Header			Joist		Floor	Roof		Uplift[1]	
			Top Flange	U-Strap	W	H[4]	L	Top Qty	Face Qty	Type	Qty	Type	100%[3]	115%	125%	160%	
3-1/8	KGLT3	GLT3	3	7	3-1/4	specify	10	4	6	WS3	8	WS3	7545	7815	7995	2870	2, R12, F1
	KHGLT3	HGLT3	3	7	3-1/4	specify	12	6	12	WS3	6	WS3	12965	13400	13400	2440	
3-1/2	KGLT4	GLT4, GLTV4	3	7	3-5/8	specify	10	4	6	WS3	8	WS3	7545	7815	7995	2870	
	KHGLT4	HGLT4, HGLTV4	3	7	3-5/8	specify	12	6	12	WS3	6	WS3	12965	13400	13400	2440	
5-1/8	KGLT5	GLT5, GLTV5	3	7	5-1/4	specify	10	4	6	WS3	8	WS3	7545	7815	7995	2870	
	KHGLT5	HGLT5, HGLTV5	3	7	5-1/4	specify	12	6	12	WS3	6	WS3	12965	13400	13400	2440	
5-5/16	KHGLT537	HGLTV5.37	3	7	5-3/8	specify	12	6	12	WS3	6	WS3	12965	13400	13400	2440	
5-1/2	KGLT6	GLT6, GLTV6	3	7	5-5/8	specify	12	4	6	WS3	8	WS3	7545	7815	7995	2870	
	KHGLT6	HGLT6, HGLTV6	3	7	5-5/8	specify	12	6	12	WS3	6	WS3	12965	13400	13400	2440	
6-3/4	KGLT7	GLT7, GLTV7.12	3	7	6-7/8	specify	12	4	6	WS3	8	WS3	7545	7815	7995	2870	
	KHGLT7	HGLT7, HGLTV7.12	3	7	6-7/8	specify	12	6	12	WS3	6	WS3	12965	13400	13400	2440	
8-3/4	KGLT9	--	3	7	8-7/8	specify	14	4	6	WS3	8	WS3	7545	7815	7995	2870	
	KHGLT9	HGLT9, HGLTV9	3	7	8-7/8	specify	14	6	12	WS3	6	WS3	13400	13400	13400	2440	
10-3/4	KHGLT11	--	3	7	10-7/8	specify	16	6	12	WS3	6	WS3	13400	13400	13400	2440	

1) Uplift loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) KGLT load values based on 460 psi perpendicular to grain loading. KHGLT load values based on 625 psi perpendicular to grain loading.
3) No further increase for duration of load allowed.
4) "Specify" denotes the required supported beam height that must be specified at time of ordering, with 7-1/2-in being the minimum.
5) WS3 Wood Screws are 1/4" x 3" long and are included with hangers.

New products or updated product information are designated in **blue font.**

KGLT Nailer Options

– chart represents maximum allowable loads for hangers used on wood nailers. Reference page 153.

USP Series	Nailer Size	Fastener Schedule[2,3]				DF/SP Allowable Loads (Lbs.)		S-P-F Allowable Loads (Lbs.)	
		Header		Joist					
		Qty	Type	Qty	Type	100%	Uplift 160%	100%	Uplift 160%
KGLT	2x	4	WS15	8	WS15	5210	--	4375	--
	3x	6	WS15	8	WS15	6655	--	5590	--
	(2) 2x	8	WS3	8	WS3	6430	--	5400	--
	4X	10	WS3	8	WS3	6040	--	5075	--

1) Listed loads shall not be increased.
2) USP's WS15 Wood Screws are 1/4" diameter x 1-1/2" long and are not included with hangers.
3) USP's WS3 Wood Screws are 1/4" x 3" long and are included with hangers.

New products or updated product information are designated in **blue font.**

Specialty Options Chart

– refer to Specialty Options pages 245 and 247-248 for additional details

Option	Skewed[1,3]	Sloped Seat[2,3]	Sloped / Skewed[1,2,3]	Sloped Top Flange[4]	Top Flange Offset	Saddle
Range	1° to 50°	1° to 45°	See Sloped Seat and Skewed	0° to 45°	--	--
Allowable Loads	50% of uplift load on skew greater than 15°	KGLT – 4,110-lb Max KHGLT – 7,000-lb Max	50% of uplift load on skew greater than 15°	Table Loads using Reduce Allowable straight-line interpolation	60% of table load for KGLT. 45% of table load for KHGLT.	100% of table load per side
Ordering	Add *SK*, angle required, right *(R)* or left *(L)*, and **square cut *(SQ)* or bevel cut *(BV)* to** product number. Ex. KGLT3_H=16_SK45R_BV	Add *SL,* slope required, and up *(U)* or down *(D),* to product number. Ex. KGLT3_H=16_SL30D	See Sloped Seat and Skewed. Ex. KGLT3_H=16_SK45R_BV_SL30D	Add *SF,* angle required and right *(R)* or left *(L),* to product number. Ex. KGLT3_H=16_SF30L	Add *OS,* and right *(R)* or left *(L),* to product number. Ex. KGLT3_H=16_OSL	Add SA,and saddle width required to product number. Ex. KGLT3_H=16_SA=5-1/2"

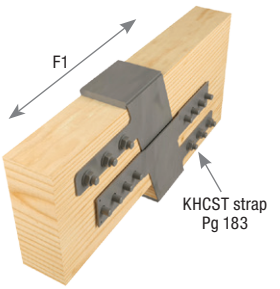
1) Skewed hangers with skews greater than 15° may have all joist nailing on outside flange.
2) Sloped or sloped / skewed hangers with slopes greater than 15° may have additional joist nails.
3) Skewed hangers typically require a bevel cut however, a square cut option may be available as a custom when requested.
4) Sloped top flanges with slopes greater than 15° may have additional header nails.

KHC Hinge Connectors

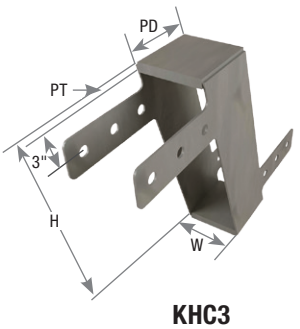
Supports a glulam beam off of another glulam beam. Refer to the Optional Horizontal Loading Chart for design variations.

Materials: See chart
Finish: USP primer
Codes: See page 10 for Code Reference Chart

Installation:
- Use all specified fasteners. See Product Notes, page 18.
- To allow for wood shrinkage, position bolts in slots away from the bearing seat.
- For dapped beams, reduce the "H" dimension by the "PT" dimension for each dap.



Typical KHC installation



KHC3

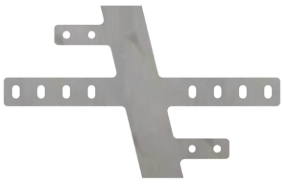
Optional Horizontal Loading Chart

USP Stock No. Prefix	Ref. No.	Min. H[3] (in)	Rotation Bolts[2]/Beam Qty	Rotation Bolts[2]/Beam Dia (in)	Seismic Bolts[2] Qty	Seismic Bolts[2] Dia (in)	DF/SP Allowable Loads (Lbs.)[1] F1 160%
* KHC	HCA	8	2	3/4	--	--	--
* KHC2T	--	9	2	3/4	2	3/4	--
KHC2CT	HC2CTA	12	2	3/4	2	3/4	9445
KHCCT	HCCTA	12	2	3/4	3	3/4	14170
KHC4CT	HC4CTA	12	2	3/4	4	3/4	18895
* KHC3	HC3A	8	3	3/4	--	--	--
* KHC3T	--	9	3	3/4	3	3/4	--
KHC2C3T	--	12	3	3/4	2	3/4	9445
KHCC3T	HCC3TA	12	3	3/4	3	3/4	14170
KHC4C3T	HC4C3TA	12	3	3/4	4	3/4	18895

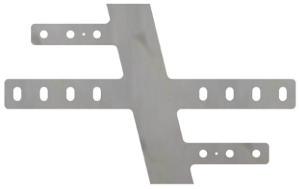
1) Loads are based on a 5-1/8-in width Douglas-Fir Larch beam.
2) All bolts are 3/4", and shall meet or exceed the specifications of ASTM A 307.
3) Minimum H may be less than H required for listed loads; in which case, load reductions are required.
* When used with optional KHCST Seismic Strap, the minimum H is 12-in.

KHC3 side view

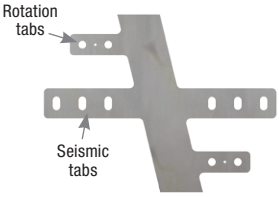
KHC3 top view



KHC4CT



KHC4C3T

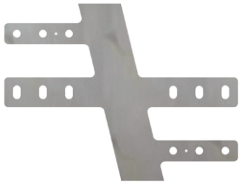


KHCCT

KHC2C3T

KHC2T

KHC3T



KHCC3T

KHC

KHC3

KHC2CT

Continued on next page

KHC Hinge Connectors

Allowable Download Chart

Beam Width (in)	USP Stock No. Suffix	Ref. No.	Steel Gauge	Dimensions (in)			(2) Rotation Bolts[3] Per Beam			(3) Rotation Bolts[3] Per Beam			Code Ref.
				W	PD	PT	H^2 (in)	DF/SP Allowable Loads (Lbs.)[1] 410 psi	DF/SP Allowable Loads (Lbs.)[1] 560 psi	H^2 (in)	DF/SP Allowable Loads (Lbs.)[1] 410 psi	DF/SP Allowable Loads (Lbs.)[1] 560 psi	
5-1/8	55	HCA5-5	7	5-1/4	5	3/4	17-1/2	10505	14350	14	10505	14350	2, R12, F1
	56	HCA5-6	7	5-1/4	6	3/4	22-3/4	12610	17220	17-1/2	12610	17220	
	57	HCA5-7	7	5-1/4	7	3/4	28-3/4	14710	20090	21-3/4	14710	20090	
	59	HCA5-9	7	5-1/4	9	3/4	43-1/2	18910	25830	32	18910	25830	
6-3/4	75	HCA7-5	7	6-7/8	5	1	20-3/4	13840	18900	16	13840	18900	
	76	HCA7-6	7	6-7/8	6	1	27-1/2	16605	22680	20-3/4	16605	22680	
	77	HCA7-7	7	6-7/8	7	1	35-1/2	19375	26460	26-1/4	19375	26460	
	79	HCA7-9	7	6-7/8	9	1	55	24910	34020	40	24910	34020	
8-3/4	95	HCA9-5	7	8-7/8	5	1-1/4	24-3/4	17940	24500	18-3/4	17940	24500	
	96	HCA9-6	7	8-7/8	6	1-1/4	33-1/2	21525	29400	24-3/4	21525	29400	
	97	HCA9-7	7	8-7/8	7	1-1/4	43-3/4	25115	34300	32	25115	34300	
	99	HCA9-9	7	8-7/8	9	1-1/4	69-1/4	32290	44100	49-3/4	32290	44100	
10-3/4	115	HCA11-5	3	10-7/8	5	1-1/2	27-1/4	22040	30100	20-1/4	22040	30100	
	116	HCA11-6	3	10-7/8	6	1-1/2	37-1/4	26445	36120	27	26445	36120	
	117	HCA11-7	3	10-7/8	7	1-1/2	49-1/4	30855	42140	35-1/4	30855	42140	
	119	HCA11-9	3	10-7/8	9	1-1/2	78-1/4	39670	54180	55-1/4	39670	54180	

1) Allowable loads shall not be further increased for duration.
2) The minimum height is for loads shown. For heights less than the minimum shown reduce the allowable loads in direct proportion.
3) All bolts are 3/4-in, and shall meet or exceed the specifications of ASTM A 307.

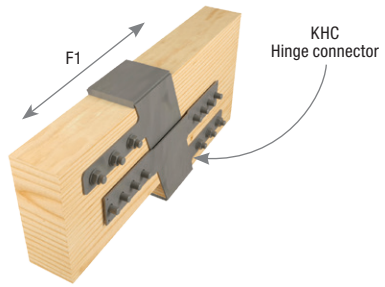
KHCST / KHCSTR Seismic Straps

Seismic straps can be installed during construction or added as a retrofit item.

Materials: See chart
Finish: USP primer
Codes: See page 10 for Code Reference Chart

Installation:

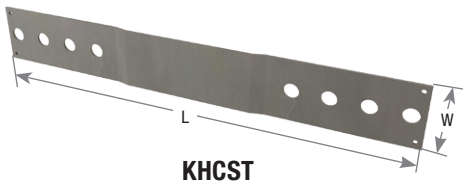
- Use all specified fasteners. See Product Notes, page 18.



Typical KHCST installation

USP Stock No.[3]	Ref. No.	Steel Gauge	Dimensions (in) W	Dimensions (in) L	Bolt Schedule Qty	Bolt Schedule Dia (in)	DF/SP Allowable Loads (Lbs.)[1,2] F1 160%	Code Ref.
KHCST2	--	7	3-1/2	25-5/8	4	3/4	9950	2, R12, F1
KHCSTR2	HCSTR2							
KHCST3	--	7	3-1/2	31-5/8	6	3/4	14500	
KHCSTR3	HCSTR3							
KHCST4	--	3	3-1/2	37-5/8	8	3/4	20145	
KHCSTR4	HCSTR4							

1) Allowable loads are for straps used in pairs, and are increased 60% for wind or seismic loads; no further increase shall be permitted.
2) Loads are based on a 5-1/8-in width Douglas-Fir-Larch beam.
3) Seismic straps shall be used with the KHC hinge connectors.



KHCST

KGLS / KGLST / KHGLS / KHGLST Glulam Saddle Hangers

MiTek®

KGLS – Saddle hanger.

KGLST – Saddle hanger with seismic straps.

KHGLS – Heavier version of KGLS.

KHGLST – Heavier version of KGLST.

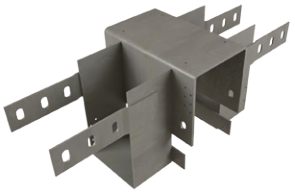
Materials: Top flange - 3 gauge; Stirrup - 7 gauge

Finish: USP primer

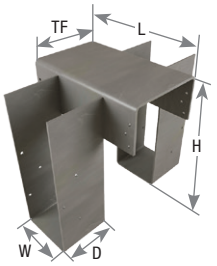
Options: See KGLS / KHGLS Specialty Options Chart

Codes: See page 10 for Code Reference Chart

Typical KHGLST installation



KHGLST



KGLS

Installation:

- Use all specified fasteners. See Product Notes, page 18.
- Loads and nail schedule apply to each saddle hanger stirrup.
- **Minimum header height is 8-1/2" for the KGLS; 8-1/2" for the KGLST; 10-1/2" for the KHGLS, and 10-1/2" for the KHGLST.**
- Beam height dimension (H) must be specified when ordering.
- **KGLST** and **KHGLST** models include seismic straps which must be installed with (3) 3/4" thru-bolts in each supported member and (2) 3/4" thru-bolts into the supporting beams.
- See Welded installation chart on page 249.

Supported Glulam Beam Size (in)	USP Stock No.	Ref. No.	Dimensions (in)[4]					Fastener Schedule								Allowable Loads (Lbs.)[1]					Code Ref.
								Header				Joist				$F_{c\perp}$ = 560 psi					
								Wood Screws[1,3]		Bolts		Wood Screws[1,3]		Bolts		Floor	Roof				
			W	H[4]	D	L	TF	Qty	Type	Qty	Dia (in)	Qty	Type	Qty	Dia (in)	100%	115%	125%	Uplift 160%	Tension 160%	
3-1/8	KGLS35	GLS3-5	3-1/4	specify	5	6	5-1/4	6	WS3	--	--	6	WS3	--	--	10275	10505	10655	2440	--	2, R12, F1
	KGLST35	--	3-1/4	specify	6-1/2	10	5-1/4	6	WS3	2	3/4	6	WS3	3	3/4	12900	13130	13280	2440	15120	
	KGLS37	GLS3-7	3-1/4	specify	5	6	6-7/8	6	WS3	--	--	6	WS3	--	--	10275	10505	10655	2440	--	
	KGLST37	--	3-1/4	specify	6-1/2	10	6-7/8	6	WS3	2	3/4	6	WS3	3	3/4	12900	13130	13280	2440	15120	
	KGLS39	GLS3-9	3-1/4	specify	5	6	8-7/8	6	WS3	--	--	6	WS3	--	--	10275	10505	10655	2440	--	
	KGLST39	--	3-1/4	specify	6-1/2	10	8-7/8	6	WS3	2	3/4	6	WS3	3	3/4	12900	13130	13280	2440	15120	
5-1/8	KGLS55	GLS5-5	5-1/4	specify	5	9	5-1/4	6	WS3	--	--	6	WS3	--	--	14710	14980	15160	2440	--	
	KGLST55	--	5-1/4	specify	6-1/2	12	5-1/4	6	WS3	2	3/4	6	WS3	3	3/4	19015	19285	19465	2440	15120	
	KGLS57	GLS5-7	5-1/4	specify	5	9	6-7/8	6	WS3	--	--	6	WS3	--	--	15875	16105	16255	2440	--	
	KGLST57	--	5-1/4	specify	6-1/2	12	6-7/8	6	WS3	2	3/4	6	WS3	3	3/4	20180	20410	20560	2440	15120	
	KHGLS5	HGLS5	5-1/4	specify	6-1/2	12	specify	14	WS3	--	--	8	WS3	--	--	20685	20990	21195	3250	--	
	KHGLST5	--	5-1/4	specify	6	12	specify	14	WS3	2	3/4	8	WS3	3	3/4	19250	19555	19760	3250	15120	
6-3/4	KGLS77	GLS7-7	6-7/8	specify	5	12	6-7/8	6	WS3	--	--	6	WS3	--	--	20425	20655	20805	2440	--	
	KGLST77	--	6-7/8	specify	6-1/2	12	6-7/8	6	WS3	2	3/4	6	WS3	3	3/4	24475	24745	24925	2440	15120	
	KGLS79	GLS7-9	6-7/8	specify	5	12	8-7/8	6	WS3	--	--	6	WS3	--	--	20425	20655	20805	2440	--	
	KGLST79	--	6-7/8	specify	6-1/2	12	8-7/8	6	WS3	2	3/4	6	WS3	3	3/4	26095	26325	26475	2440	15120	
	KHGLS7	HGLS7	6-7/8	specify	6	12	specify	14	WS3	--	--	8	WS3	--	--	20985	21615	22035	3250	--	
	KHGLST7	--	6-7/8	specify	6-1/2	14	specify	14	WS3	2	3/4	8	WS3	3	3/4	23785	24415	24835	3250	15120	
8-3/4	KHGLS9	HGLS9	8-7/8	specify	6	12	specify	14	WS3	--	--	8	WS3	--	--	20985	21615	22035	3250	--	
	KHGLST9	--	8-7/8	specify	6-1/2	16	specify	14	WS3	2	3/4	8	WS3	3	3/4	26585	27215	27635	3250	15120	

1) Allowable loads and fastener schedules apply to each side of the saddled hanger.
2) Minimum header height is 8-1/2-in for the KGLS and KGLST; 10-1/2-in for the KHGLS and KHGLST.
3) WS3 Wood Screws are 1/4" x 3" long and are included with hangers.
4) Hangers with seismic straps may require a minimum joist depth. Consult USP for additional information.

KGLS / KHGLS Specialty Options Chart – refer to Specialty Options pages 245 and 247-248 for additional details

Option	Skewed[1,3]	Sloped Seat[2,3]	Sloped / Skewed[1,2,3]	Sloped Top Flange[4]	Top Flange Offset	Saddle
Range	1° to 50°	1° to 45°	See Sloped Seat and Skewed	0° to 45°	--	--
Allowable Loads	50% of uplift load on skew greater than 15°	KGLT – 4,110-lb Max KHGLT – 7,000-lb Max	50% of uplift load on skew greater than 15°	Table Loads using Reduce Allowable straight-line interpolation	60% of table load for KGLT. 45% of table load for KHGLT.	100% of table load per side
Ordering	Add *SK*, angle required, right *(R)* or left *(L)*, and **square cut *(SQ)* or bevel cut *(BV)* to** product number. Ex. KGLT3_H=16_SK45R_BV	Add *SL*, slope required, and up *(U)* or down *(D)*, to product number. Ex. KGLT3_H=16_SL30D	See Sloped Seat and Skewed. Ex. KGLT3_H=16_SK45R_BV_SL30D	Add *SF*, angle required and right *(R)* or left *(L)*, to product number. Ex. KGLT3_H=16_SF30L	Add *OS*, and right *(R)* or left *(L)*, to product number. Ex. KGLT3_H=16_OSL	Add SA,and saddle width required to product number. Ex. KGLT3_H=16_SA=5-1/2"

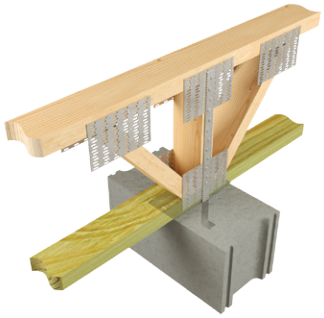
1) Skewed hangers with skews greater than 15° may have all joist nailing on outside flange.
2) Sloped or sloped / skewed hangers with slopes greater than 15° may have additional joist nails.
3) Skewed hangers typically require a bevel cut however, a square cut option may be available as a custom when requested.
4) Sloped top flanges with greater than 15° may have additional header nails.

NOP Moisture Barrier Plates

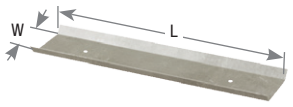
Moisture Barrier Plates protect the bottom chords of trusses from moisture damage caused by direct contact with concrete. These plates eliminate the need for more expensive treated wood plates.

Materials: See chart
Finish: G90 galvanizing
Codes: See page 10 for Code Reference Chart

Installation:
- Use all specified fasteners. See Product Notes, page 18.
- Pre-attach to truss bottom chord or rafter using pre-punched prongs and/or 6d common nails to prevent wood-to-concrete contact.

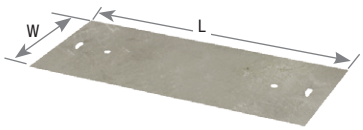


Typical NOP4 installation



NOP1

NOP2X



NOP4

Size	Stock No.	Ref. No.	Steel Gauge	Dimensions (in) W	Dimensions (in) L	Fastener Schedule[1] Qty	Fastener Schedule[1] Type	Code Ref.
2x	NOP2X	TSS2, TBP8	26	1-7/16	8	--	--	120
	NOP1	--	22	1-1/2	8	2	6d	
4x	NOP4	TSS2-2	26	3-1/2	8	2	6d	

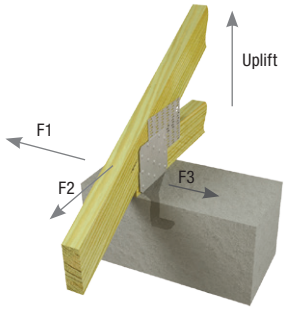
1) **Nails**: 6d nails are 0.120" dia. x 2" long.

LPTA Embedded Truss Anchors

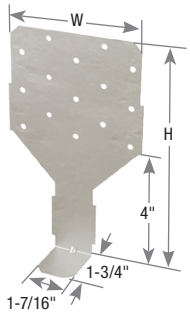
Low profile design attaches to 2 x 4 or larger bottom chords and provides uplift and lateral load resistance.

Materials: 18 gauge
Finish: G90 galvanizing
Codes: See page 10 for Code Reference Chart

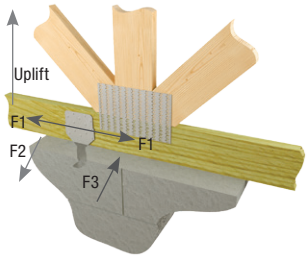
Installation:
- Use all specified fasteners. See Product Notes, page 18.
- Embed LPTA 4" into concrete tie beam or masonry bond beam.
- Anchors should be spaced no closer than 8" center-to-center.
- **Moisture barrier may be required.**



Typical LPTA perpendicular installation



LPTA



Typical LPTA parallel installation

USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in) W	Dimensions (in) H	Load Direction to Wall Installation	Fastener Schedule[5] Per Anchor Min Qty.[3,4]	Fastener Schedule[5] Per Anchor Type	DF/SP Allowable Loads (Lbs.)[1,2] Uplift 160%	F1 160%	F2 160%	F3 160%	S-P-F Allowable Loads (Lbs.)[1,2] Uplift 160%	F1 160%	F2 160%	F3 160%	Code Ref.
LPTA	LTA2	18	5	8-1/4	Perpendicular	10	10d x 1-1/2	1510	335	745	345	1510	280	745	345	F16
					Parallel			1470	750	1085	335	1470	750	975	280	

1) Allowable loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) Grout or concrete compressive strength shall be 2,500 psi or greater at 28 days.
3) Minimum quantity of fasteners to be installed. Product may have additional nail holes not needed to meet published allowable load of product.
4) The five nail holes nearest the embedment line must be filled to achieve the lateral loads listed in the table.
5) **NAILS:** 10d x 1-1/2" nails are 0.148" dia. x 1-1/2" long.
New products or updated product information are designated in **blue font**.

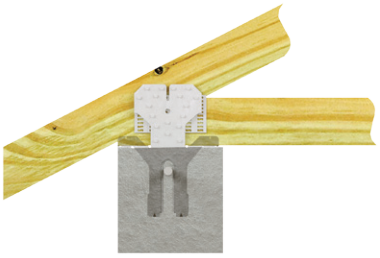
HLPTA Embedded Truss Anchor

The HLPTA75 is designed and tested to provide higher lateral capacity and net uplift. Offers greater pullout resistance and is compatible with bond beam reinforcing.

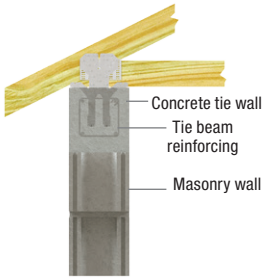
Materials: 18 gauge
Finish: G90 galvanizing
Codes: See page 10 for Code Reference Chart
Patent: #7,254,919

Installation:

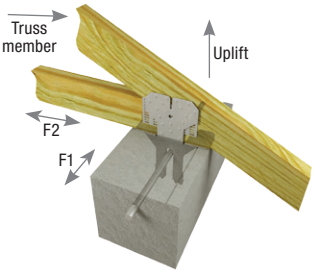
- Use all specified fasteners. See Product Notes, page 18.
- Embed in concrete tie beam or masonry bond beam until the seat is resting on the surface.
- Minimum of one #7 rebar or two #5 rebars through the theoretical shear cone is required.
- Grout or concrete compressive strength shall be 2,500 psi at 28 days.
- Minimum spacing between anchors is 10" to achieve full design load capacities on single anchors.
- When used in a double rebar installation, concrete tie beam stirrup should be sized to accommodate connector leg placement.
- Designer shall verify connector clearance when using in conjunction with stirrups and two rebar applications.
- Verify grout is not in contact with truss member. **Moisture barrier may be required.**



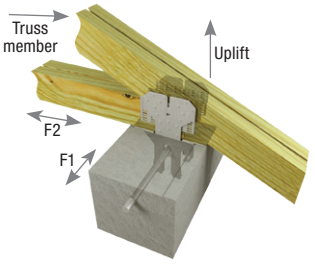
Typical HLPTA75 single rebar installation



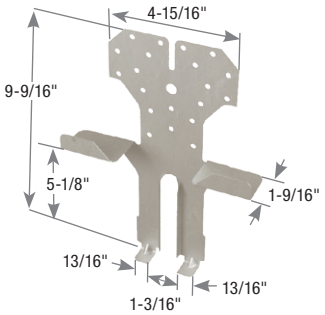
Typical HLPTA75 double rebar installation



Typical HLPTA75 single anchor installation



Typical HLPTA75 double anchor installation



HLPTA75

USP Stock No.	Ref. No.	Steel Gauge	Installation Type	Fastener Schedule[2]				DF/SP Allowable Loads (Lbs.)[1]			S-P-F Allowable Loads (Lbs.)[1]			Code Ref.
				Seat Plate		Truss/Rafter								
				Qty	Type	Qty	Type	Uplift 160%	F1 160%	F2 160%	Uplift 160%	F1 160%	F2 160%	
HLPTA75	--	18	Single Anchor	2	10d x 1-1/2	20	10d x 1-1/2	2125	1860	1715	2125	1860	1160	F22
			Double Anchor	--	--	40	10d x 1-1/2	3500	2040	2100	3500	2040	2100	130

1) Allowable loads have been increased 60% for wind and seismic loads; no further increase shall be permitted.
2) **NAILS:** 10d x 1-1/2" nails are 0.148" dia. x 1-1/2" long.

HTA / HHTA / HTAR Embedded Truss Anchors

HTA – 16 or 18 gauge

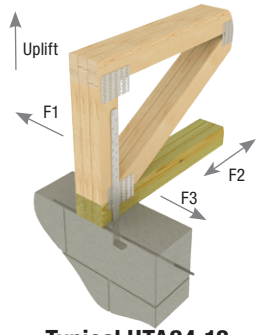
HTAR – 16 or 18 gauge with attached moisture barrier.

HHTA – 14 gauge

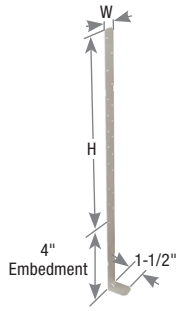
Materials: See chart
Finish: G90 galvanizing
Options: See chart for Corrosion Finish Options
Codes: See page 10 for Code Reference Chart

Installation:

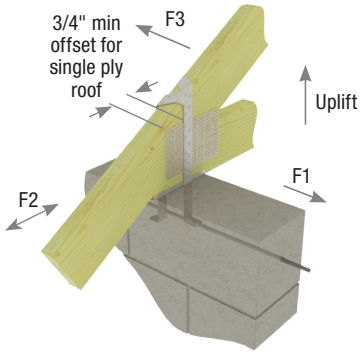
- Use all specified fasteners. See Product Notes, page 18.
- Embed 4" into concrete tie beam or masonry bond beam.
- **For double anchor installations:** anchors should be installed on opposite sides of wood member and offset a minimum 3/4" from each other in bond beam or concrete tie beam.
- Designer may specify alternative nailing schedules. Refer to Nail Specification table on page 21 for nail shear values, load values shall not exceed published allowable loads.
- When using alternative nailing schedules, lower-most holes in strap shall be filled progressing upward towards the top of the strap.
- Straps may be installed straight or wrapped over to achieve table loads.
- Moisture barrier will be required in HTA / HHTA unless another moisture remediation method is used.



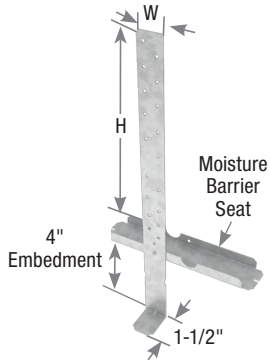
Typical HTA24-18 single anchor installation



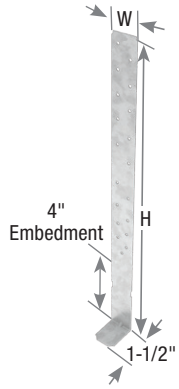
HTA24-18



Typical HTA16 double anchor installation



HTA16R



HHTA16

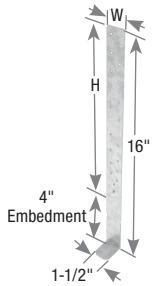
USP Stock No.	Ref. No.	GA	Dimensions (in) W	Dimensions (in) H[7] (Out of Concrete)	Fastener Schedule Per Anchor Min Qty.[6]	Fastener Schedule Per Anchor Type[9]	Installation Type[8]	SP Allowable Loads (Lbs.)[1,2,3,4,5] Masonry 1 Ply Uplift 160%	Masonry 2 Ply Uplift 160%	Concrete 1 Ply Uplift 160%	Concrete 2 Ply Uplift 160%	Lateral Loads Masonry/Concrete (1 or 2 Ply) F1 160%	F2 160%	F3 160%	Corrosion Finish	Code Ref.
HTA12	HETA12	16	1-1/4	8	9	10d x 1-1/2	Single Anchor	1870	1870	1870	1870	270	710	945		F16
							Double Anchor	2430	2430	2430	2430	1215	1310	1215		
HTA12R	HETA12-TSS2						Single Anchor	1870	1870	1870	1870	270	710	945		
							Double Anchor	2430	2430	2430	2430	1215	1310	1215		
HTA12-2R	HETA12-TSS2-2						Single Anchor	1870	1870	1870	1870	270	710	945		
							Double Anchor	2430	2430	2430	2430	1215	1310	1215		

1) Allowable loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) Allowable loads are based on anchorage to masonry/uncracked concrete.
3) DF Allowable Loads are identical to all SP Allowable Loads listed in the chart with the exception of the HTA single anchor installation type uplift allowable load which is limited to 1730 lbs. in both masonry and concrete.
4) Minimum specified masonry or concrete compressive strength, f'm is 1,500 psi and f'c is 2,500 psi at 28 days respectively.
5) Allowable loads require a No. 4 rebar through the shear cones of the anchors.
6) Minimum quantity of fasteners to be installed. Product may have additional nail holes not needed to meet published allowable load of product.
7) Height (H) is the distance the anchor extends out of concrete or masonry.
8) Double anchor installation is permitted on 1-ply roof members when anchors are offset from each other a minimum of 3/4-inch. Do not install anchors directly back-to-back or nails will interfere with each other.
9) NAILS: 10d x 1-1/2" nails are 0.148" dia. x 1-1/2" long.
New products or updated product information are designated in **blue font.**

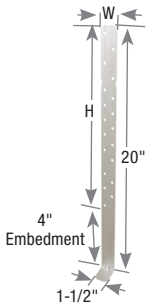
Continued on next page

HTA / HHTA / HTAR Embedded Truss Anchors

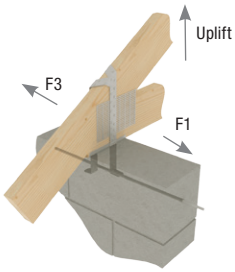
MiTek®



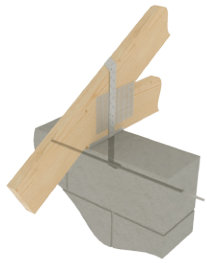
HHTA16



HHTA20



Typical HHTA20 double roof-truss installation



Typical HHTA20 single roof-truss installation

USP Stock No.	Ref. No.	GA	Dimensions (in) W	Dimensions (in) H[7] (Out of Concrete)	Fastener Schedule Per Anchor Min Qty.[6]	Fastener Schedule Per Anchor Type[9]	Installation Type[8]	SP Allowable Loads (Lbs.)[1,2,3,4,5] Masonry 1 Ply Uplift 160%	Masonry 2 Ply Uplift 160%	Concrete 1 Ply Uplift 160%	Concrete 2 Ply Uplift 160%	Lateral Loads Masonry/Concrete (1 or 2 Ply) F1 160%	F2 160%	F3 160%	Corrosion Finish	Code Ref.
HTA16-18	META12, META16	18	1-1/4	12	9	10d x 1-1/2	Single Anchor	1625	1625	1625	1625	250	570	835		F16
							Double Anchor	2430	2430	2430	2430	1085	1140	1085		
HTA16-18R	META16-TSS2						Single Anchor	1625	1625	1625	1625	250	570	835		
							Double Anchor	2430	2430	2430	2430	1085	1140	1085		
HTA16	HETA16	16			9	10d x 1-1/2	Single Anchor	1870	1870	1870	1870	270	710	945		
							Double Anchor	2430	2430	2430	2430	1215	1310	1215		
HTA16R	HETA16-TSS2						Single Anchor	1870	1870	1870	1870	270	710	945		
							Double Anchor	2430	2430	2430	2430	1215	1310	1215		
HTA16-2R	HETA16-TSS2-2						Single Anchor	1870	1870	1870	1870	270	710	945		
							Double Anchor	2430	2430	2430	2430	1215	1310	1215		
HHTA16	HHETA16	14			11	10d x 1-1/2	Single Anchor	2375	2375	2375	2375	270	710	945		
							Double Anchor	2650	2650	2650	2770	1215	1310	1215		
HTA20-18	META18, META20	18	1-1/4	16	9	10d x 1-1/2	Single Anchor	1625	1625	1625	1625	250	570	835		
							Double Anchor	2430	2430	2430	2430	1085	1140	1085		
HTA20-18R	META20-TSS2						Single Anchor	1625	1625	1625	1625	250	570	835		
							Double Anchor	2430	2430	2430	2430	1085	1140	1085		
HTA20	HETA20	16			9	10d x 1-1/2	Single Anchor	1870	1870	1870	1870	270	710	945		
							Double Anchor	2430	2430	2430	2430	1215	1310	1215		
HTA20R	HETA20-TSS2						Single Anchor	1870	1870	1870	1870	270	710	945		
							Double Anchor	2430	2430	2430	2430	1215	1310	1215		
HTA20-2R	HETA20-TSS2-2						Single Anchor	1870	1870	1870	1870	270	710	945		
							Double Anchor	2430	2430	2430	2430	1215	1310	1215		
HHTA20	HHETA20	14			11	10d x 1-1/2	Single Anchor	2375	2375	2375	2375	270	710	945		
							Double Anchor	2650	2650	2650	2770	1215	1310	1215		
HTA24-18	META22, META24	18	1-1/4	20	9	10d x 1-1/2	Single Anchor	1625	1625	1625	1625	250	570	835		
							Double Anchor	2430	2430	2430	2430	1085	1140	1085		
HTA24-18R	META24-TSS2						Single Anchor	1625	1625	1625	1625	250	570	835		
							Double Anchor	2430	2430	2430	2430	1085	1140	1085		
HTA24	HETA24	16			9	10d x 1-1/2	Single Anchor	1870	1870	1870	1870	270	710	945		
							Double Anchor	2430	2430	2430	2430	1215	1310	1215		
HTA24R	HETA24-TSS2						Single Anchor	1870	1870	1870	1870	270	710	945		
							Double Anchor	2430	2430	2430	2430	1215	1310	1215		
HTA24-2R	HETA24-TSS2-2						Single Anchor	1870	1870	1870	1870	270	710	945		
							Double Anchor	2430	2430	2430	2430	1215	1310	1215		
HTA48R	--	16	1-1/4	42-1/2	9	10d x 1-1/2	Single Anchor	1870	1870	1870	1870	240	470	680		
							Single Anchor	2430	2430	2430	2430	955	940	955		
HTA48-2R	HETA40-TSS2-2					10d x 1-1/2	Single Anchor	1870	1870	1870	1870	240	470	680		
							Single Anchor	2430	2430	2430	2430	955	940	955		

1) Allowable loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) Allowable loads are based on anchorage to masonry/uncracked concrete.
3) DF Allowable Loads are identical to all SP Allowable Loads listed in the chart with the exception of the HTA single anchor installation type uplift allowable load which is limited to 1730 lbs. in both masonry and concrete.
4) Minimum specified masonry or concrete compressive strength, f'm is 1,500 psi and f'c is 2,500 psi at 28 days respectively.
5) Testing conducted and design values based on unreinforced masonry. Rebar in wall specified by others.
6) Minimum quantity of fasteners to be installed. Product may have additional nail holes not needed to meet published allowable load of product.
7) Height (H) is the distance the anchor extends out of concrete or masonry.
8) Double anchor installation is permitted on 1-ply roof members when anchors are offset from each other a minimum of 3/4-inch. Do not install anchors directly back-to-back or nails will interfere with each other.
9) **NAILS:** 10d x 1-1/2" nails are 0.148" dia. x 1-1/2" long.
New products or updated product information are designated in **blue font**.

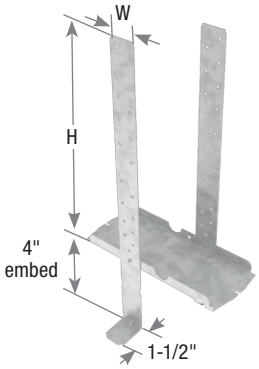
Corrosion Finish
- Stainless Steel
- Gold Coat
- HDG
- Triple Zinc

DHTA Embedded Truss Anchors

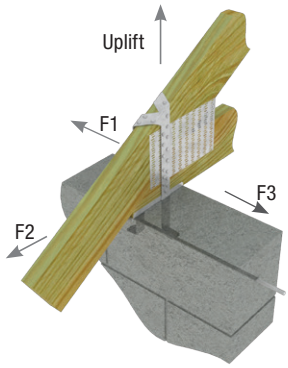
The DHTA embedded truss anchor series offer high uplift capacity with a two-strap design. The straps are attached to USP's NOP style plate which ensures proper placement of straps while also providing a moisture barrier between the top of the wall and the truss.

Materials: DHTA-18 – 18 gauge; DHTA – 16 gauge
Finish: G90 galvanizing
Codes: See page 10 for Code Reference Chart

Installation:
- Use all specified fasteners.
- Embed 4" into concrete tie beam or masonry bond beam.
- Designer may specify alternative nailing schedules.
- When using alternative nailing schedules, lower-most holes in strap shall be filled progressing upward towards the top of the strap.
- Straps may be installed straight or wrapped over to achieve table loads.
- Moisture barrier plate may be under bent during shipping causing attached straps to be misaligned. Install straps vertically at 90° from the horizontal top surface of the wall.



DHTA



Typical DHTA 1-Ply installation


DHTA 1-Ply plan view
(DHTA 2-Ply application similar)

USP Stock No.	Ref. No.	Steel Gauge	Dimension (in) W	Dimension (in) H[8] (Out of Concrete)	Fastener Schedule Per Anchor Min Qty.[6]	Fastener Schedule Per Anchor Type[9]	No. of Plies	SP Allowable Loads (Lbs.)[1,2,3,4] Uplift 160% Masonry	Uplift 160% Concrete	Lateral Loads[5] F1 160%	Lateral Loads[5] F2 160%	Lateral Loads[5] F3 160%	Code Ref.
DHTA16-18	--	18	1-1/4	12	8	10d x 1-1/2	1 Ply	2430	2430	1085	1140	1085	F16
							2 Ply		2770				
DHTA16-18-2	--	18	1-1/4	12	8	10d x 1-1/2	1 Ply	2430	2430	1085	1140	1085	
							2 Ply		2770				
DHTA20-18	--	18	1-1/4	16	8	10d x 1-1/2	1 Ply	2430	2430	1085	1140	1085	
							2 Ply		2770				
DHTA20-18-2	--	18	1-1/4	16	8	10d x 1-1/2	1 Ply	2430	2430	1085	1140	1085	
							2 Ply		2770				
DHTA24-18	--	18	1-1/4	20	8	10d x 1-1/2	1 Ply	2430	2430	1085	1140	1085	
							2 Ply		2770				
DHTA24-18-2	--	18	1-1/4	20	8	10d x 1-1/2	1 Ply	2430	2430	1085	1140	1085	
							2 Ply		2770				
DHTA12	--	16	1-1/4	8	8	10d x 1-1/2	1 Ply	2430	2430	1215	1310	1215	
							2 Ply		2770				
DHTA12-2	--	16	1-1/4	8	8	10d x 1-1/2	1 Ply	2430	2430	1215	1310	1215	
							2 Ply		2770				
DHTA16	--	16	1-1/4	12	8	10d x 1-1/2	1 Ply	2430	2430	1215	1310	1215	
							2 Ply		2770				
DHTA16-2	--	16	1-1/4	12	8	10d x 1-1/2	1 Ply	2430	2430	1215	1310	1215	
							2 Ply		2770				
DHTA20	DETAL20	16	1-1/4	16	8	10d x 1-1/2	1 Ply	2430	2430	1215	1310	1215	
							2 Ply		2770				
DHTA20-2	--	16	1-1/4	16	8	10d x 1-1/2	1 Ply	2430	2430	1215	1310	1215	
							2 Ply		2770				
DHTA24	--	16	1-1/4	20	8	10d x 1-1/2	1 Ply	2430	2430	1215	1310	1215	
		16				10d x 1-1/2	2 Ply	2430	2770	1215	1310	1215	
DHTA24-2	--	16	1-1/4	20	8	10d x 1-1/2	1 Ply	2430	2430	1215	1310	1215	
		16				10d x 1-1/2	2 Ply	2430	2770	1215	1310	1215	
DHTA48	--	16	1-1/4	43	8	10d x 1-1/2	1 Ply	2430	2430	955	940	955	
		16				10d x 1-1/2	2 Ply						
DHTA48-2	--	16	1-1/4	43	8	10d x 1-1/2	1 Ply	2430	2430	955	940	955	
		16				10d x 1-1/2	2 Ply						

1) Allowable loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) Allowable loads are based on anchorage to masonry/uncracked concrete.
3) DF lumber may be substituted for SP with no load reduction.
4) Minimum specified masonry or concrete compressive strength, f'm is 1,500 psi and f'c is 2,500 psi at 28 days respectively.
5) The five nail holes nearest the embedment line must be filled to achieve the lateral loads listed in the table.
6) Minimum quantity of fasteners to be installed. Product may have additional nail holes not needed to meet published allowable load of product.
7) Install (8) nails into each anchor for the DHTA installation.
8) Height (H) is the distance the anchor extends out of concrete or masonry.

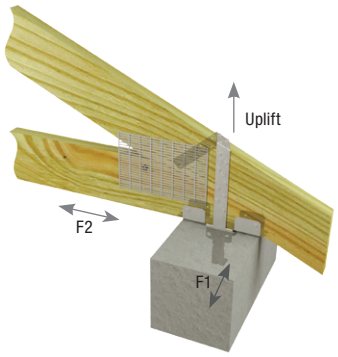
New products or updated product information are designated in **blue font**.

DTC Embedded Truss Anchors

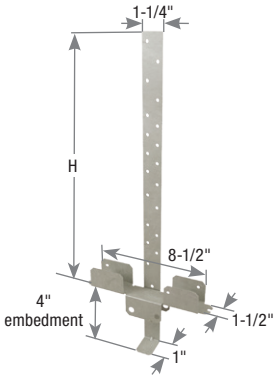
The DTC series attaches trusses to concrete or masonry walls. Innovative seat design gives added lateral resistance while still providing a moisture barrier.

Materials: 16 gauge
Finish: G90 galvanizing
Codes: See page 10 for Code Reference Chart

Installation:
- Use all specified fasteners. See Product Notes, page 18.
- Embed 4" into concrete tie beam or masonry bond beam.
- Installations should be spaced no closer together than 8" center-to-center.
- Straps may be installed straight or wrapped over to achieve table loads.



Typical DTC installation



DTC

USP Stock No.	Ref. No.	Steel Gauge	Out of Concrete H (in)	Fastener Schedule[4] Seat Plate Qty	Seat Plate Type	Truss/Rafter Qty	Truss/Rafter Type	DF/SP Allowable Loads (Lbs.)[1,2,3] Uplift 160%	DF/SP F1 160% Toward Strap	DF/SP F1 160% Away from Strap	DF/SP F2 160%	S-P-F Allowable Loads (Lbs.)[1,2,3] Uplift 160%	S-P-F F1 160% Toward Strap	S-P-F F1 160% Away from Strap	S-P-F F2 160%	Code Ref.
DTC	HETAL12, HETAL16, HETAL20	16	16	4	10d x 1-1/2	9	10d x 1-1/2	1825	840	1200	1290	1440	840	1200	1290	F9

1) Allowable loads have been increased 60% for wind and seismic loads; no further increase shall be permitted.
2) Grout or concrete compressive strength shall be 2500 psi or greater at 28 days.
3) Allowable loads require a No. 5 rebar through the shear cones of the anchors.
4) **NAILS:** 10d x 1-1/2" nails are 0.148" dia. x 1-1/2" long.

TA / TAR Embedded Truss Anchors

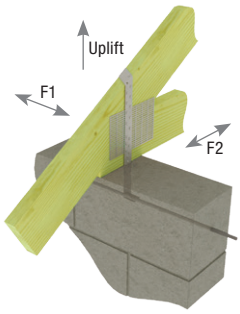
TA – Anchors are rated for both uplift and lateral loads. They can be installed straight or field-bent around truss or rafter members. An embossed embedment line assures accurate embedment depth.

TAR – Riveted anchors provide a moisture barrier in addition to uplift and lateral resistance all in one product.

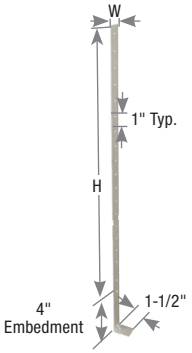
Materials: 14 gauge
Finish: G90 galvanizing
Codes: See page 10 for Code Reference Chart

Installation:

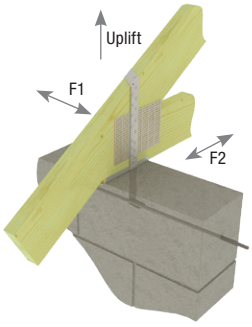
- Use all specified fasteners. See Product Notes, page 18.
- Embed 4" into concrete tie beam or masonry bond beam.
- **For double anchor installations:** anchors should be installed on opposite sides of wood member and offset a minimum 3/4" from each other in bond beam or concrete tie beam. See increased design values in chart below.
- Designer may specify alternative nailing schedules. Refer to Nail Specification table on page 21 for nail shear values, load values shall not exceed published allowable loads.
- When using alternative nailing schedules, lower-most holes in strap shall be filled progressing upward towards the top of the strap.
- Straps may be installed straight or wrapped over to achieve table loads.
- Moisture barrier will be required in installations unless another moisture remediation method is used.



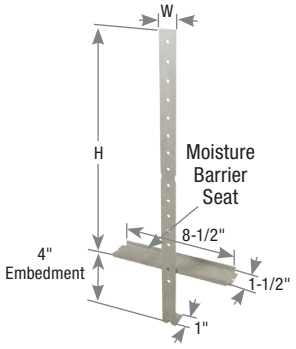
Typical TA18 installation



TA18



Typical TA16R installation



TA20R

USP Stock No.[6]	Ref. No.	Steel Gauge	Dimensions (in) W	Dimensions (in) H[8] (Out of Concrete)	Fastener Schedule Per Anchor Min Qty.[7]	Fastener Schedule Per Anchor Type[10]	SP Allowable Loads (Lbs.)[1,2,3,4,5] Single Anchor Uplift 160%	Single Anchor F1 160%	Single Anchor F2 160%	Double Anchor[9] Uplift 160%	Double Anchor[9] F1 160%	Double Anchor[9] F2 160%	Code Ref.
TA12	--	14	1	6-3/4	5	10d x 1-1/2	990	245	335	1980	490	670	
TA14	--	14	1	8-3/4	7	10d x 1-1/2	1205	245	335	2410	490	670	
TA14R	--	14	1	8-3/4	7	10d x 1-1/2	1205	245	335	2410	490	670	
TA16	--	14	1	10-3/4	8	10d x 1-1/2	1205	245	335	2410	490	670	
TA16R	--	14	1	10-3/4	8	10d x 1-1/2	1205	245	335	2410	490	670	
TA18	--	14	1	12-3/4	8	10d x 1-1/2	1205	245	335	2410	490	670	
TA18R	--	14	1	12-3/4	8	10d x 1-1/2	1205	245	335	2410	490	670	
TA20	--	14	1	14-3/4	8	10d x 1-1/2	1205	245	335	2410	490	670	130
TA20R	--	14	1	14-3/4	8	10d x 1-1/2	1205	245	335	2410	490	670	
TA22	--	14	1	16-3/4	8	10d x 1-1/2	1205	245	335	2410	490	670	
TA22R	--	14	1	16-3/4	8	10d x 1-1/2	1205	245	335	2410	490	670	
TA24	--	14	1	18-3/4	8	10d x 1-1/2	1205	245	335	2410	490	670	
TA24R	--	14	1	18-3/4	8	10d x 1-1/2	1205	245	335	2410	490	670	
TA36	--	14	1	30-3/4	8	10d x 1-1/2	1205	245	335	2410	490	670	

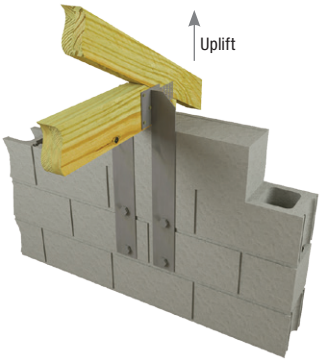
1) Allowable loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) Allowable loads are based on anchorage to masonry/uncracked concrete.
3) DF Allowable Loads are identical to all SP Allowable Loads listed in the chart.
4) Minimum specified masonry or concrete compressive strength, f'm is 1,500 psi and f'c is 2,500 psi at 28 days respectively.
5) Allowable loads require a No. 4 rebar through the shear cones of the anchors.
6) "R" after TA models indicates truss anchors with riveted moisture barrier as in TA12R.
7) Minimum quantity of fasteners to be installed. Product may have additional nail holes not needed to meet published allowable load of product.
8) Height (H) is the distance the anchor extends out of concrete or masonry.
9) Double anchor installation is permitted on 1-ply roof members when anchors are offset from each other a minimum of 3/4-inch. Do not install anchors directly back-to-back or nails will interfere with each other.
10) **NAILS:** 10d x 1-1/2" nails are 0.148" dia. x 1-1/2" long.
New products or updated product information are designated in **blue font**.

RFUS Uplift Girder Ties

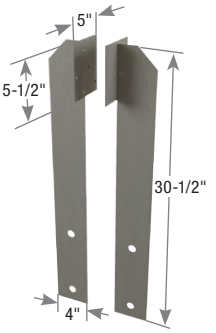
The RFUS is a multi-purpose engineered solution for attaching trusses to concrete or masonry walls. Wedgebolt™ fastening eliminates mislocated cast-in-place anchor bolts and allows retrofit installations.

Materials: 10 gauge
Finish: USP primer
Codes: See page 10 for Code Reference Chart

Installation:
- **Always install in pairs.**
- Use all specified fasteners. See Product Notes, page 18.
- Powers Wedge-Bolt+ screw anchors require Powers SDS Wedge-Bit drill bit. Wedge-Bits are not included and must be ordered seperately. Refer to page 34.
- Designer shall be responsible for design of masonry structure, including any required reinforcement.
- For 1 ply applications, add filler block. Refer to page 221 for wood filler block installation.
- **Moisture barrier may be required.**



Typical RFUS installation



RFUS

USP Stock No.	Ref. No.	Steel Gauge	No. of Plies[6]	Fastener Schedule[5]				DF/SP Allowable Loads (Lbs.)	Code Ref.
				Rafter/Truss		Concrete/Masonry[4]			
				Qty	Type[7]	Qty	Screw Anchor[2,3]	Uplift 160%[1]	
RFUS	FGTR	10	2 Ply >	12	WS3	4	3/4" x 6"	7100	F26

1) Uplift loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) Use Powers 3/4" x 6" Wedge Bolt+ **or DeWalt 3/4" x 6" Screw-Bolt+**; or equal, installed in accordance with manufacturer's specifications.
3) **Powers 3/4" x 6" Wedge Bolt+ or DeWalt 3/4" x 6" Screw-Bolt+ are not supplied with RFUS ties. See page 34 for anchor information.**
4) Fasteners shall be installed to fully grouted and reinforced concrete masonry or reinforced concrete (f'c = 2,500 psi at 28 days).
5) Fastener shedule is for two straps used together. The straps shall be installed in pairs.
6) Truss plies shall be fastened together to act as a unit.
7) WS3 Wood Screws are 1/4" x 3" long and are supplied with RFUS connector.
New products or updated product information are designated in **blue font**.

UGTS / USC Uplift Girder Ties

UGTS – 2-screw anchor shorter design when space is limited.

USC – 4-screw anchor high load design.

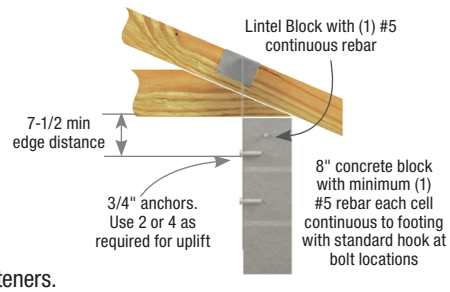
Materials: 10 gauge

Finish: USP primer

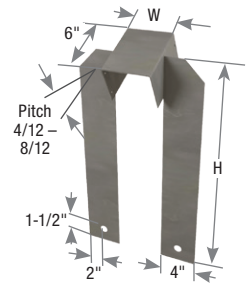
Codes: See page 10 for Code Reference Chart

Installation:

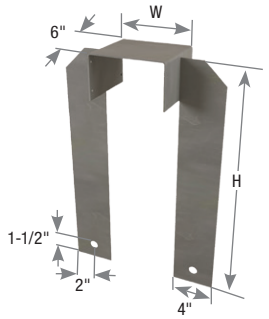
- Use all specified fasteners. See Product Notes, page 18.
- Place connector over truss or rafter and fasten with specified fasteners.
- Designer shall be responsible for design of masonry structure, including any required reinforcement.
- For 2 ply applications, add filler block. Refer to page 217 for wood filler block installation.
- Works with heel heights up to 14".
- **Moisture barrier may be required.**
- Powers Wedge-Bolt+ screw anchors require Powers SDS Wedge-Bit drill bit. Wedge-Bits are not included and must be ordered seperately. Refer to page 34.



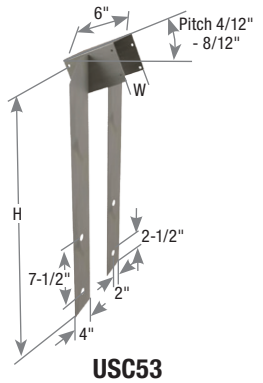
Typical USC53 installation
UGTS Similar



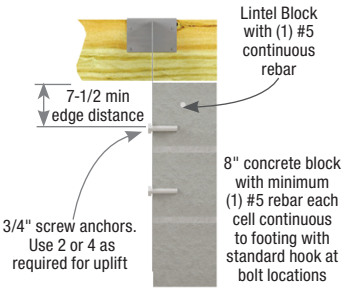
UGTS63



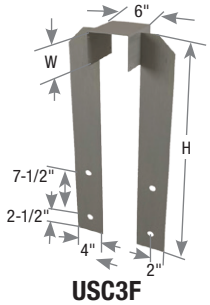
UGTS4F



USC53



Typical USC3F installation
UGTS similar



USC3F

Description	USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in) W	Dimensions (in) H	Fastener Schedule: Rafter/ Truss Qty	Fastener Schedule: Rafter/ Truss Type[5]	Fastener Schedule: Concrete/ Masonry Wall Qty	Fastener Schedule: Concrete/ Masonry Wall Screw Anchor[2,3,4]	DF/SP Allowable Loads (Lbs.) Uplift 160%[1]	Code Ref.
3-Ply Flat	UGTS3F	--	10	4-3/4	23	8	16d	2	3/4" x 6"	7813	F23
	USC3F	--	10	4-3/4	30-1/2	8	16d	2	3/4" x 6"	7813	
								4		10133	
4-Ply Flat	UGTS4F	--	10	6-1/2	23	8	16d	2	3/4" x 6"	7813	
	USC4F	--	10	6-1/2	30-1/2	8	16d	2	3/4" x 6"	7813	
								4		10133	
4/12 pitch	UGTS43	--	10	4-3/4	23	8	16d	2	3/4" x 6"	7813	
	UGTS44	--	10	6-1/2	23	8	16d	2	3/4" x 6"	7813	
	USC43	--	10	4-3/4	30-1/2	8	16d	2	3/4" x 6"	7813	
								4		10133	
	USC44	--	10	6-1/2	30-1/2	8	16d	2	3/4" x 6"	7813	
								4		10133	
5/12 pitch	UGTS53	--	10	4-3/4	23	8	16d	2	3/4" x 6"	7813	
	UGTS54	--	10	6-1/2	23	8	16d	2	3/4" x 6"	7813	
	USC53	--	10	4-3/4	30-1/2	8	16d	2	3/4" x 6"	7813	
								4		10133	
	USC54	--	10	6-1/2	30-1/2	8	16d	2	3/4" x 6"	7813	
								4		10133	
6/12 pitch	UGTS63	--	10	4-3/4	23	8	16d	2	3/4" x 6"	7813	
	UGTS64	--	10	6-1/2	23	8	16d	2	3/4" x 6"	7813	
	USC63	--	10	4-3/4	30-1/2	8	16d	2	3/4" x 6"	7813	
								4		10133	
	USC64	--	10	6-1/2	30-1/2	8	16d	2	3/4" x 6"	7813	
								4		10133	
7/12 pitch	UGTS73	--	10	4-3/4	23	8	16d	2	3/4" x 6"	7813	
	UGTS74	--	10	6-1/2	23	8	16d	2	3/4" x 6"	7813	
	USC73	--	10	4-3/4	30-1/2	8	16d	2	3/4" x 6"	7813	
								4		10133	
	USC74	--	10	6-1/2	30-1/2	8	16d	2	3/4" x 6"	7813	
								4		10133	
8/12 pitch	UGTS83	--	10	4-3/4	23	8	16d	2	3/4" x 6"	7813	
	UGTS84	--	10	6-1/2	23	8	16d	2	3/4" x 6"	7813	
	USC83	--	10	4-3/4	30-1/2	8	16d	2	3/4" x 6"	7813	
								4		10133	
	USC84	--	10	6-1/2	30-1/2	8	16d	2	3/4" x 6"	7813	
								4		10133	

1) Uplift loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) Use Powers 3/4" x 6" Wedge Bolt+ **or DeWalt 3/4" x 6" Screw-Bolt+**; or equal, installed in accordance with manufacturer's specifications.
3) **Powers 3/4" x 6" Wedge Bolt+ or DeWalt 3/4" x 6" Screw-Bolt+ are not supplied with ties. See page 34 for anchor information.**
4) Fasteners shall be installed to fully grouted and reinforced concrete masonry or reinforced concrete (f'c = 2,500 psi at 28 days).
5) **NAILS:** 16d nails are 0.162" dia. x 3-1/2" long.

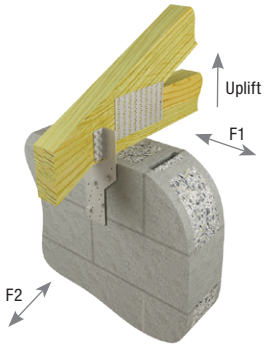
LUGT Girder Tiedowns

The LUGT series is an extremely adaptable tiedown for girder trusses and offers several installation options to accommodate different framing conditions. It is an ideal retrofit solution to reinforce truss connections to transfer high wind loads to supporting walls and can be used on either concrete or CMU block walls. Sizes available for 2-ply, 3-ply and 4-ply trusses.

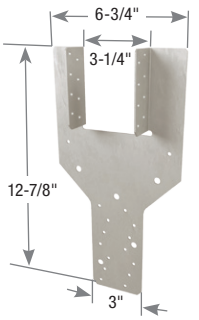
Materials: See chart
Finish: G90 galvanizing
Codes: See page 10 for Code Reference Chart

Installation:

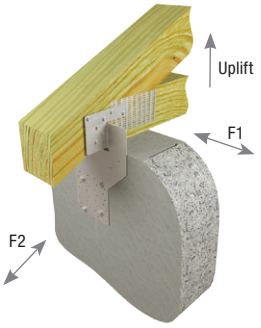
- Use all specified fasteners. See Product Notes, page 18.
- All fastener holes must be filled with specified fasteners to achieve loads listed in the chart. Smaller fastener holes are for girder-to-stud applications (reference page 198) and do not need to be filled when used for concrete/masonry installations.
- WS Wood Screws included with LUGT3 and LUGT4.
- Powers Wedge-Bolt+ screw anchors require the Powers SDS Wedge-Bit drill bit, USP #1314. Wedge-Bits are not included and must be ordered separately. Refer to page 34.
- **For concrete and masonry applications, a moisture barrier may be required, check local building code.**



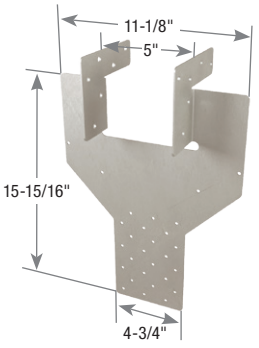
Typical LUGT2 masonry installation



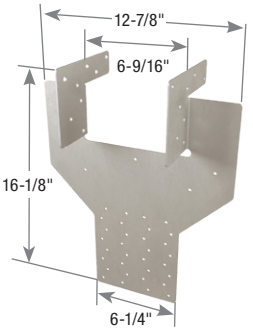
LUGT2



Typical LUGT4 masonry installation (LUGT3 similar)



LUGT3



LUGT4

USP Stock No.	Ref. No.	Steel Gauge	No. of Plies	Fastener Schedule[2]				DF/SP Allowable Loads (Lbs.)[1]			S-P-F Allowable Loads (Lbs.)[1]			Code Ref.
				Rafter/Truss		CMU/Concrete Wall[6]								
				Qty	Type[7,8]	Qty	Screw Anchor[3,4,5]	Uplift 160%	F1 160%	F2 160%	Uplift 160%	F1 160%	F2 160%	
LUGT2	LGT2	14	2	16	10d	5	1/4" x 3"	1550	1505	475	1550	1265	400	110
LUGT3	LGT3-SDS2.5	12	3	12	WS25	4	3/8" x 5"	3525	--	--	3240	--	--	
LUGT4	LGT4-SDS3	12	4	16	WS3	4	3/8" x 5"	3525	--	--	3525	--	--	

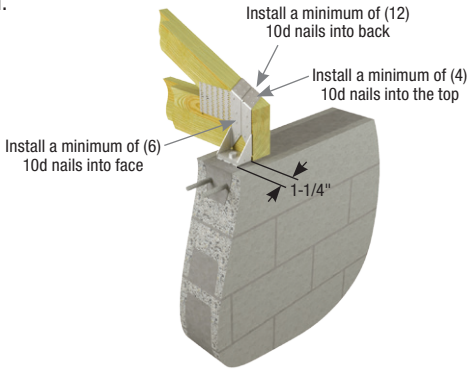
1) Allowable loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) Additional anchorage products to be designed by others.
3) Use Powers 1/4" x 3" Wedge-Bolt+ **or DeWalt 1/4" x 3" Screw-Bolt+**; or equal, installed in accordance with manufacturer's specification.
4) Use Powers 3/8" x 5" Wedge-Bolt+ **or DeWalt 3/8" x 5" Screw-Bolt+**; or equal, installed in accordance with manufacturer's specification.
5) Powers 1/4" x 1-3/4" Wedge-Bolt+ **or DeWalt 1/4" x 1-3/4" Screw-Bolt+** are not supplied with LUGT tiedowns. **See page 34 for anchor information.**
6) Fasteners must be installed in fully grouted and reinforced concrete masonry (f'm = 1,500 psi) or reinforced concrete (f'c = 2,500 psi).
7) WS25 Wood Screws are 1/4" dia. x 2-1/2" long (supplied with LUGT3) and WS3 Wood Screws are 1/4" dia. x 3" long (supplied with LUGT4).
8) **NAILS:** 10d nails are 0.148" dia. x 3" long.

MUGT15 Girder Tiedown

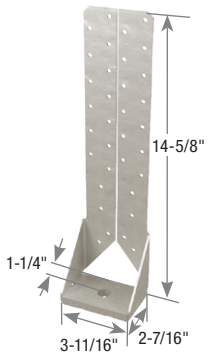
Designed for higher uplift resistance for concrete block construction. The MUGT15 can accommodate variable truss bearing depths.

Materials: 12 gauge
Finish: G90 galvanizing
Codes: See page 10 for Code Reference Chart

Installation:
- Use all specified fasteners. See Product Notes, page 18.
- When straps are wrapped over the truss, install nails in backside of truss. See MUGT15 installation diagram for minimum nail requirements into the face and on top of the truss.
- If installed straight-up with no wrap over the top of the truss, fill all nail holes.
- **Moisture barrier may be required.**



Typical MUGT15 installation



MUGT15

USP Stock No.	Ref. No.	Steel Gauge	Mounting Condition	Fastener Schedule[2]						DF/SP Allowable Loads (Lbs.)[1]	Code Ref.
				Anchor Bolt[3]		Rafter/Truss[4]					
				Qty	Dia (in)	Top Qty	Face Qty	Back Qty	Type	Uplift 160%	
MUGT15	MGT	12	Face-Max	1	5/8	--	28	--	10d	4495	8, F4, R10
			Top-Min	1	5/8	4	6	12	10d	4175	

1) Allowable loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) Additional anchorage products to be designed by others.
3) Designer must specify anchor bolt type, length, and embedment.
4) **NAILS:** 10d nails are 0.148" dia. x 3" long.

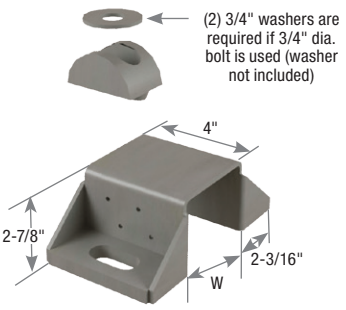
HUGT Girder Tiedowns

The HUGT series high uplift girder tiedowns can be installed on beams and top chords of trusses with slopes from 0˚ to 34˚.

Materials: 7 gauge
Finish: USP primer
Codes: See page 10 for Code Reference Chart

Installation:
- Use all specified fasteners. See Product Notes, page 18.
- Install the HUGT over the beam or truss (see "W" dimension on chart for appropriate width).
- Attached members shall be designed to resist applied loads.
- **Moisture barrier may be required.**

Typical HUGT2 installation



HUGT

USP Stock No.	Ref. No.	Steel Gauge	W (in)	O.C. Dim Between Anchors (in)	Fastener Schedule[3,4,5]				DF/SP Allowable Loads (Lbs.)[1,2]	S-P-F Allowable Loads (Lbs.)[1,2]	Code Ref.
					Threaded Rod		Girder				
					Qty	Dia (in)	Qty	Type	Uplift 160%	Uplift 160%	
HUGT2	HGT-2	7	3-5/16	5-3/4	2	3/4	8	10d	9790	7020	F26
HUGT3	HGT-3	7	4-15/16	7-3/8	2	3/4	8	10d	9860	9650	
HUGT4	HGT-4	7	6-7/8	9	2	3/4	8	10d	9860	9860	

1) Allowable loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) Listed loads apply where roof pitch is between 3:12 and 8:12.
3) Additional anchorage products to be designed by others.
4) Designer must specify anchor bolt type, length, and embedment.
5) **NAILS:** 10d nails are 0.148" dia. x 3" long.

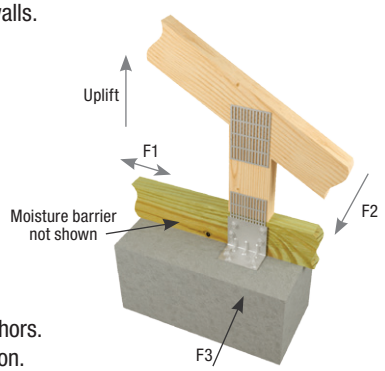
HGAM Hurricane Gusset Angles

Designed for attaching gable end trusses to wood top plates and masonry walls.

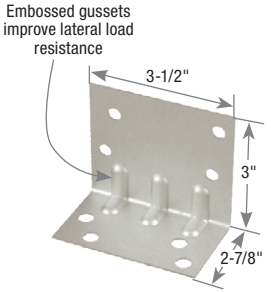
For installation into grouted concrete tie beam or masonry bond beam. Provides lateral and uplift resistance.

Materials: 14 gauge
Finish: G90 galvanizing
Codes: See page 10 for Code Reference Chart

Installation:
- Use all specified fasteners. See Product Notes, page 18.
- Install USP's WS15 Wood Screws into the truss and drill holes for screw anchors. Install screw anchors into concrete block per manufacturer's recommendation.
- WS Wood Screws and screw anchors are included with HGAM10 angles.
- Powers Wedge-Bolt+ screw anchors require Powers SDS Wedge-Bit drill bit, USP #1314. Wedge-Bits are not included and must be ordered separately. Refer to page 34.
- **Moisture barrier may be required.**



Typical HGAM10 installation



HGAM10

USP Stock No.	Ref. No.	Steel Gauge	Fastener Schedule				DF/SP Allowable Loads (Lbs.)[1]				Code Ref.
			Rafter/Truss		Plate		Uplift 160%	F1 160%	F2 160%	F3 160%	
			Qty	Type[2]	Qty	Screw Anchor[3]					
HGAM10KT	HGAM10KTA	14	4	WS15	4	1/4" x 1-3/4"	915	1075	1110	740	F17

1) Allowable loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) WS15 Wood Screws, 1/4" dia. x 1-1/2" long, are supplied with HGAM10KT.
3) Use Powers Wedge-Bolt+ 1/4" x 1-3/4" **or DeWalt 1/4" x 1-3/4" Screwbolt+** (included); or equal, installed in accordance with manufacturer's specification.

New products or updated product information are designated in **blue font.**

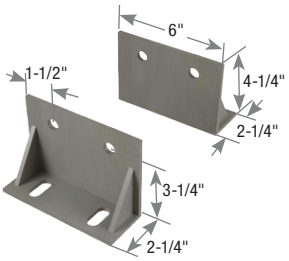
SHA Masonry Uplift Connectors

Connects trusses directly to masonry or concrete and features slotted base holes to ease installation.

Materials: Angle – 3 gauge; Gussets – 10 gauge
Finish: USP primer
Codes: See page 10 for Code Reference Chart

Installation:
- Use all specified fasteners. See Product Notes, page 18.
- Bolts must be ordered separately.
- Install directly flush to masonry wall.
- **The SHA series connectors shall be installed in pairs.**
- **Moisture barrier may be required.**

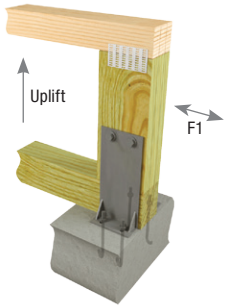

Typical SHA6 installation



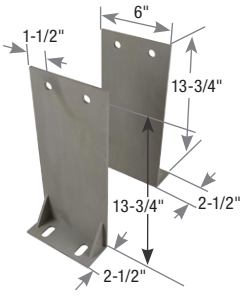
SHA6

USP Stock No.	Ref. No.	Fastener Schedule[3]				No. of Plies[6]	DF/SP Allowable Loads (Lbs.)[1,2]		Code Ref.
		Concrete Wall		Rafter/Truss[7]			Uplift 160%	F1 160%	
		J-Bolts[4,5,8]							
		Qty	Dia (in)	Qty	Bolt Dia (in)				
SHA6	--	4	1/2	2	3/4	2 Ply	3745	4005	130
						3 Ply or greater	5615	5565	
SHA6T	--	4	1/2	2	3/4	2 Ply	8370	1590	
						3 Ply or greater		2190	

1) Allowable loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) Allowable loads are for a pair of SHA devices. SHA's shall be installed in pairs.
3) Fastener schedule is for a pair of SHA devices.
4) 1/2" x 8" J-Bolts or equivalent.
5) Concrete compressive strength shall be 2,500 psi or greater at 28 days.
6) Multiple ply truss shall be fastened together to act as a single unit.
7) Bolts shall conform to ASTM A 307 or better.
8) The designer must specify anchor bolt type, length, and embedment.



Typical SHA6T installation



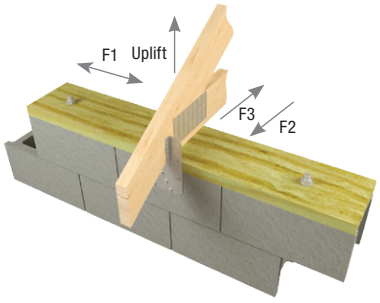
SHA6T

RTM Hurricane Retrofit Connector

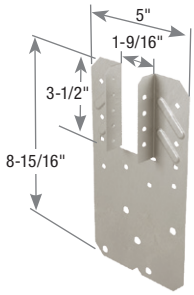
Designed as a retrofit connector for trusses installed on top plates. Can also be used as a holdown for a roof or floor system.

Materials: 18 gauge
Finish: G90 galvanizing
Codes: See page 10 for Code Reference Chart

Installation:
- Use all specified fasteners. See Product Notes, page 18.
- Tapcon® Concrete Screws are not supplied with RT16M connector.
- Install Tapcon® Concrete Screws in lower two holes for Single Top Plate or Conventional Raised Foundation or Modular Home Installations.
- **Moisture barrier may be required.**



Typical RT16M top plate installation



RT16M

USP Stock No.	Ref. No.	Steel Gauge	Fastener Schedule: Truss/Rafter[5] Qty	Truss/Rafter[5] Type	Top Plate[5] Qty	Top Plate[5] Type	CMU/Concrete[2,3,4] Qty	CMU/Concrete[2,3,4] Screws (in)	DF/SP Allowable Loads (Lbs.)[1] Uplift 160%	DF/SP F1 160%	DF/SP F2 160%	DF/SP F3 160%	S-P-F Allowable Loads (Lbs.)[1] Uplift 160%	S-P-F F1 160%	S-P-F F2 160%	S-P-F F3 160%	Code Ref.
RT16M	HM9KT	18	9	10d x 1-1/2	--	--	4	1/4 x 1-3/4 Tapcon	1395	630	115	480	1395	630	115	480	F19
					4	16d	2		1360	--	--	--	1360	--	--	--	

1) Allowable loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) Install with 1/4" x 1-3/4" Tapcon® Concrete Screws in accordance to manufacturer's installation specifications.
3) Fasteners to be installed to fully grouted and reinforced concrete masonry.
4) Concrete compressive strength shall be 2,500 psi or greater at 28 days.
5) **NAILS:** 10d x 1-1/2" nails are 0.148" dia. x 1-1/2" long, 16d nails are 0.162" dia. x 3-1/2" long.
New products or updated product information are designated in **blue font**.

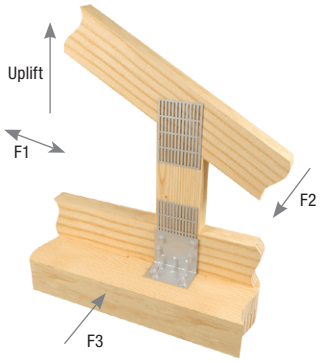
HGA Hurricane Gusset Angles

Designed for attaching gable end trusses to wood top plates and masonry walls.

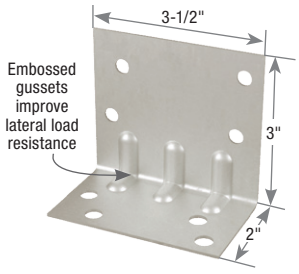
Versatile wood-to-wood connector that satisfies high wind and seismic loading requirements.

Materials: 14 gauge
Finish: G90 galvanizing
Codes: See page 10 for Code Reference Chart

Installation:
- Use all specified fasteners. See Product Notes, page 18.
- Install with USP's WS3 Wood Screws into top plate, and WS15 Wood Screws into the truss.
- WS Wood Screws are included with HGA10 angles.
- **Moisture barrier may be required.**



Typical HGA10 installation



HGA10

USP Stock No.	Ref. No.	Steel Gauge	Fastener Schedule[2]: Rafter/Truss Qty	Rafter/Truss Type	Plate Qty	Plate Type	DF/SP Allowable Loads (Lbs.)[1] Uplift 160%	F1 160%	F2 160%	F3 160%	Code Ref.
HGA10KT	HGA10KT	14	4	WS15	4	WS3	1285	1320	1565	835	10, R8, F5

1) Allowable loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) WS15 Wood Screws are 1/4" x 1-1/2" long and WS3 Wood Screws are 1/4" x 3" long.

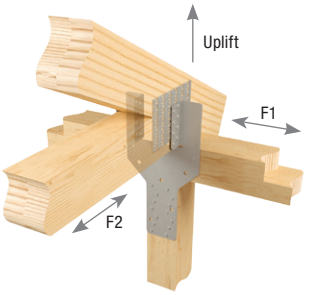
LUGT Girder Tiedowns

MiTek

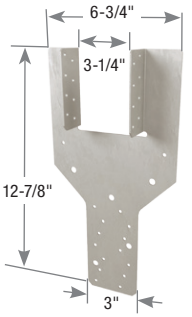
The LUGT series is an extremely adaptable tiedown for girder trusses and offers several installation options to accommodate different framing conditions. It is an ideal retrofit solution to reinforce truss connections to transfer high wind loads to supporting walls. Sizes available for 1-ply, 2-ply, 3-ply and 4-ply trusses.

Materials: See chart
Finish: G90 galvanizing
Codes: See page 10 for Code Reference Chart

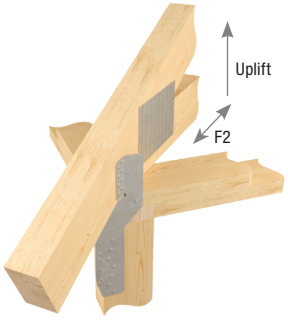
Installation:
- Use all specified fasteners. See Product Notes, page 18.
- All fastener holes must be filled with specified fasteners to achieve loads listed in the chart. Large fastener holes are for concrete/masonry installations (reference page 194) and do not need to be filled when used for girder-to-stud applications.
- WS Wood Screws included with LUGT3 and LUGT4.



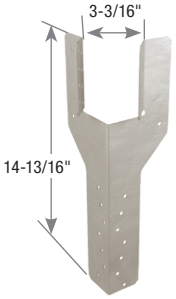
Typical LUGT2 installation



LUGT2

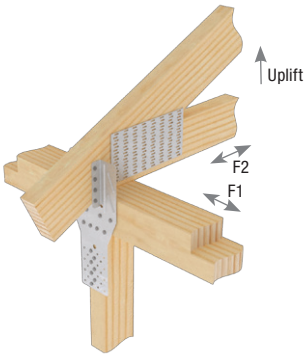


Typical LUGTC2 corner hip installation

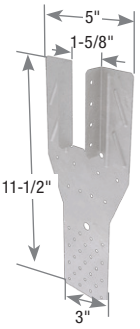


LUGTC2

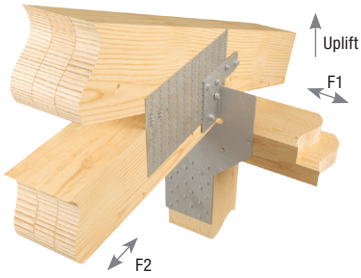
LUGT1 offset stud installation



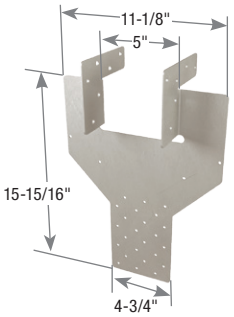
Typical LUGT1 installation



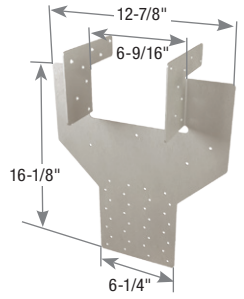
LUGT1



Typical LUGT3 installation (LUGT4 similar)



LUGT3



LUGT4

No. of Plies	USP Stock No.	Ref. No.	Steel Gauge	Fastener Schedule[2,3,5] Rafter/Truss Qty	Rafter/Truss Type	Plate Qty	Plate Type	Stud Qty	Stud Type	DF/SP Allowable Loads (Lbs.)[1] Uplift[4] 160%	DF/SP F1 160%	DF/SP F2 160%	S-P-F Allowable Loads (Lbs.)[1] Uplift[4] 160%	S-P-F F1 160%	S-P-F F2 160%	Code Ref.
1	LUGT1	H10S	18	8	8d x 1-1/2	8	8d x 1-1/2	7	8d x 1-1/2	1045	675	175	875	565	175	110
2	LUGT2	LGT2	14	16	10d	2	10d	14	10d	2260	1015	505	1900	850	425	8, R10, F4
	LUGTC2	--	14	16	10d	2	10d	14	10d	2260	--	575	1900	--	480	
3	LUGT3	LGT3-SDS2.5	12	12	WS25	4	16d Sinker	24	16d Sinker	3855	1980	890	3240	1660	745	110
4	LUGT4	LGT4-SDS3	12	16	WS3	5	16d Sinker	32	16d Sinker	4640	--	--	3900	--	--	

1) Allowable loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) Additional anchorage products to be designed by others.
3) For proper installation, the number of studs must be equal-to or greater-than the number of roof truss plies.
4) **The LUGT1 can be installed with the stud offset from the rafter a maximum of 1-in (center-to-center) for a reduced allowable uplift load of 1,000-lb (DF/SP) and 840-lb (S-P-F).**
5) **NAILS:** 8d x 1-1/2 are 0.131" dia. x 1-1/2" long, 10d nails are 0.148" dia. x 3" long, 16d Sinkers are 0.148" dia. x 3-1/4" long, WS25 Wood Screws are 1/4" dia. x 2-1/2" long (supplied with LUGT3) and WS3 Wood Screws are 1/4" dia. x 3" long (supplied with LUGT4).

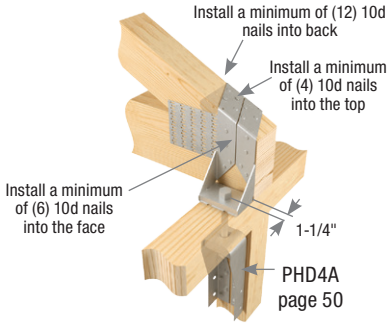
New products or updated product information are designated in **blue font**.

MUGT Girder Tiedown

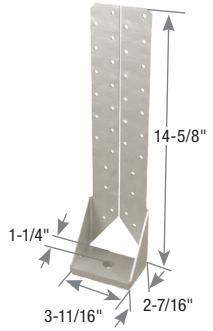
Designed for higher uplift resistance for wood frame construction. The MUGT15 can accommodate variable truss bearing depths.

Materials: 12 gauge
Finish: G90 galvanizing
Codes: See page 10 for Code Reference Chart

Installation:
- Use all specified fasteners. See Product Notes, page 18.
- When straps are wrapped over the truss, install nails in backside of truss. See MUGT15 installation diagram for minimum nail requirements into the face and on top of the truss.
- If installed straight-up with no wrap over the top of the truss, fill all nail holes.
- **Moisture barrier may be required.**



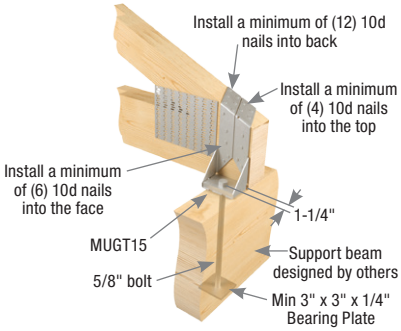
Typical MUGT15 top-min installation with PHD4A



MUGT15

USP Stock No.	Ref. No.	Steel Gauge	Mounting Condition	Fastener Schedule[2] Rod/Bolt[3] Qty	Dia (in)	Rafter/Truss[4] Top Qty	Face Qty	Back Qty	Type	DF/SP Allowable Loads (Lbs.)[1] Uplift 160%	Code Ref.
MUGT15	MGT	12	Face-Max	1	5/8	--	28	--	10d	4495	8, F4, R10
			Top-Min	1	5/8	4	6	12	10d	4175	

1) Allowable loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) Additional anchorage products to be designed by others.
3) Designer must specify anchor bolt type, length, and holdown device.
4) **NAILS:** 10d nails are 0.148" dia. x 3" long.



Typical MUGT15 connection to support beam

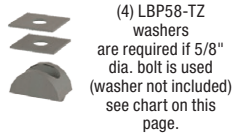
HUGT Girder Tiedowns

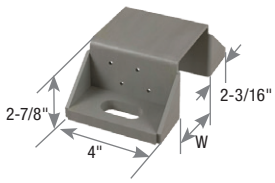
The HUGT series high uplift girder tiedowns can be installed on beams and top chords of trusses with slopes from 0˚ to 34˚.

Materials: 7 gauge
Finish: USP primer
Codes: See page 10 for Code Reference Chart

Installation:
- Use all specified fasteners. See Product Notes, page 18.
- Install the HUGT over the beam or truss (see "W" dimension on chart for appropriate width).
- Install (4) LBP58-TZ washers if (2) 5/8" tension bolts are used.
- Attached members shall be designed to resist applied loads.
- **Moisture barrier may be required.**

Typical HUGT3 installation with HTT45's





HUGT

USP Stock No.	Ref. No.	Steel Gauge	W (in)	O.C. Dim Between Anchors (in)	Fastener Schedule[3,5] Anchor Washers Qty	Anchor Washers Type	Threaded Rod Qty	Threaded Rod Dia (in)	Girder Qty	Girder Type	DF/SP Allowable Loads (Lbs.)[1,2] Uplift 160%	S-P-F Allowable Loads (Lbs.)[1,2] Uplift 160%	Code Ref.
HUGT2	HGT-2	7	3-5/16	5-3/4	4	LBP58-TZ	2	5/8	8	10d	9790	7020	F26
HUGT3	HGT-3	7	4-15/16	7-3/8	4	LBP58-TZ	2	5/8	8	10d	9860	9650	
HUGT4	HGT-4	7	6-7/8	9	4	LBP58-TZ	2	5/8	8	10d	9860	9860	

1) Allowable loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) Listed loads apply where roof pitch is between 3:12 and 8:12.
3) Additional anchorage products to be designed by others.
4) Designer must specify anchor bolt type, length, and holdown device.
5) **NAILS:** 10d nails are 0.148" dia. x 3" long.

HC / HCPRS / HHCP / LFTA / RT Hurricane Ties

MiTek®

These anchors tie trusses and rafters to top plates and may be used to tie wood framing members to resist uplift and lateral forces.

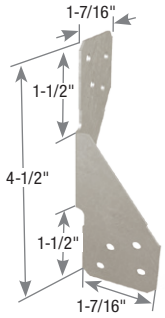
Materials: See chart

Finish: G90 galvanizing; HHCP4-TZ – G-185 galvanizing.

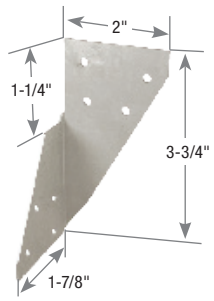
Options: See chart for Corrosion Finish Options

Codes: See page 10 for Code Reference Chart IRC 802.10.5. IBC 2308.10.1

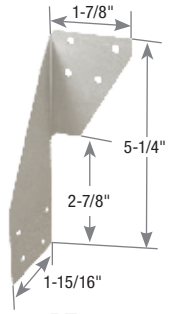
AVAILABLE IN GOLD COAT



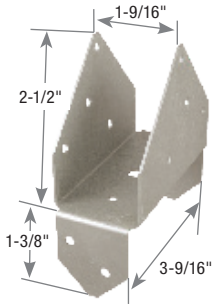
RT3A



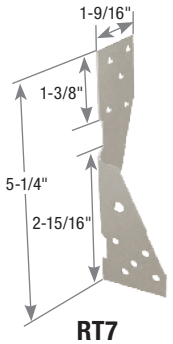
RT4
(left version shown)



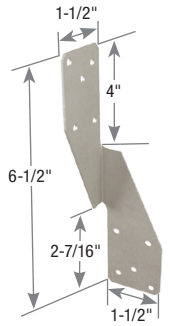
RT5
(left version shown)



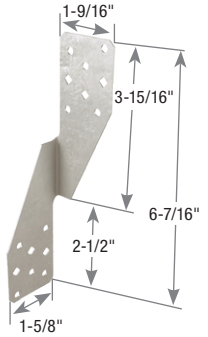
RT6



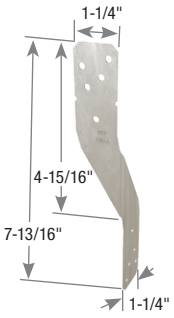
RT7
(left version shown)



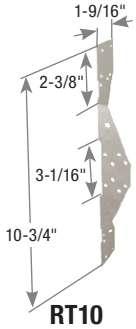
RT7A



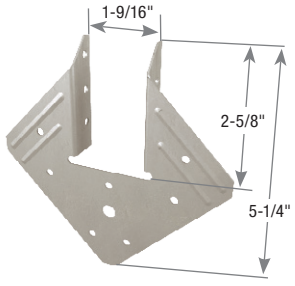
RT7AT



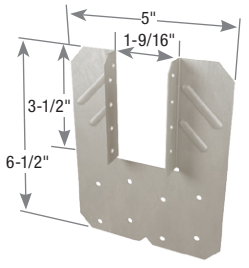
RT8A



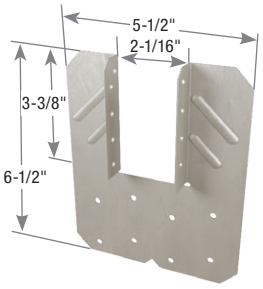
RT10



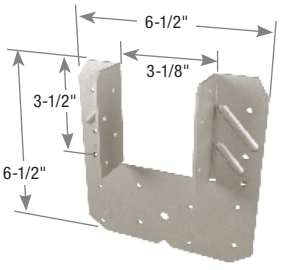
RT15



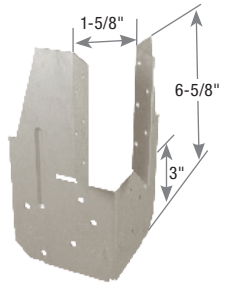
RT16A



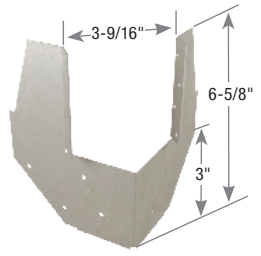
RT16AR



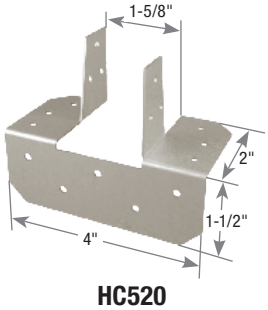
RT16-2



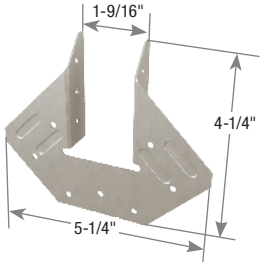
HHCP2



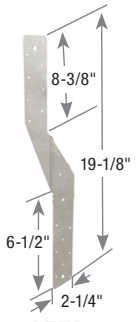
HHCP4-TZ



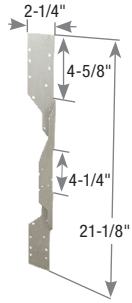
HC520



HCPRS



LFTA6
(left version shown)



RT20

Continued on next page

HC / HCPRS / HHCP / LFTA / RT Hurricane Ties

MiTek®

Installation:

- Use all specified fasteners. See Product Notes, page 18.
- To achieve full allowable loads listed, fasteners must be installed as prescribed in the chart.
- Depending on pitch, birdsmouth notching may be required with some models to enable installers to fill all nail holes.
- Designer shall determine if solid blocking is required.
- LFTA6, RT4, RT5, and RT7 ship in equal quantities of left and right versions. Left version images shown.

USP Stock No.	Ref. No.	Steel Gauge	Fastener Schedule[3,4]						DF/SP Allowable Loads (Lbs.)[1]				S-P-F Allowable Loads (Lbs.)1				Corrosion Finish	Code Ref.
			Truss/Rafter		Plate		Stud		Uplift 160%	Lateral F1 160%	Lateral F2 160%	Uplift with 8d x 1-1/2" 160%	Uplift 160%	Lateral F1 160%	Lateral F2 160%	Uplift with 8d x 1-1/2" 160%		
			Qty	Type	Qty	Type	Qty	Type										
RT3A	H3	18	4	8d	4	8d	--	--	610	190	190	610	525	160	160	525		10, R8, F5
RT4	H4	18	4	8d	4	8d	--	--	410	215	215	410	345	180	180	345		
RT5	H5	18	4	8d	4	8d	--	--	540	265	265	540	450	225	225	450		
RT6	HS24	18	8	10d x 1-1/2	6	10d x 1-1/2	--	--	665	800	800	665	560	670	670	560		
RT7	--	18	5	8d	5	8d	--	--	585	195	195	585	495	160	160	495		
RT7A	H2.5A	18	5	8d	5	8d	--	--	670	210	210	670	565	175	175	565		
RT7AT	H2.5T	18	5	8d x 1-1/2	5	8d x 1-1/2	--	--	555	210	210	555	465	180	180	465		F18
RT8A	H8	18	5	10d x 1-1/2	5	10d x 1-1/2	--	--	775	215	215	775	650	180	180	650		10, R8, F5
RT10	H2, H2A	18	6	8d	8	8d	6	8d	585	195	195	585	495	160	160	495		
RT15	H1	18	5	8d x 1-1/2	5	8d	--	--	530	500	340	530	445	410	285	445		
RT16A	H10A, H14	18	9	10d x 1-1/2	8	10d	--	--	1380	800	645	1380	1160	670	545	1160		
RT16AR	H10AR	18	9	10d x 1-1/2	8	10d	--	--	1380	800	645	1380	1160	670	545	1160		F5
RT16-2	H10-2	18	8	8d	8	8d	--	--	1160	655	415	1160	975	550	345	975		10, R8, F5
HHCP2	HCP2	18	10	10d x 1-1/2	10	10d x 1-1/2	--	--	800	370	--	800	670	310	--	670		
HHCP4-TZ	HCP4Z	16	8	10d	8	10d	--	--	1100	410	--	--	920	345	--	--		130
HC520	GBC	18	--	--	11	8d	6	8d	515	470	430	515	445	405	370	445		
HCPRS	--	18	--	--	5	8d	6	8d	540	500	340	540	455	375	285	455		10, R8, F5
LFTA6 [2]	H6	16	8	8d	8	8d	--	--	1210	700	90	1210	1015	590	75	1015		14, R9, F7
RT20	--	16	9	10d x 1-1/2	4	10d	9	10d x 1-1/2	1200	--	--	1200	1005	--	--	1005		10, R8, F5

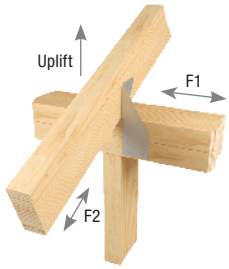
1) Allowable loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) LFTA6: To achieve F1 lateral loads, three nails must be installed on each side on the strap located closest to the bend line. Lateral F1 and F2 load directions do not apply to roof truss-to-top plate installations.
3) 8d common nails may be substituted for 8d x 1-1/2 nails, and 10d common nails may be substituted for 10d x 1-1/2 nails.
4) **NAILS:** 8d x 1-1/2" nails are 0.131" dia. x 1-1/2" long, 8d nails are 0.131" dia. x 2-1/2" long, 10d x 1-1/2" nails are 0.148" dia. x 1-1/2" long, 10d nails are 0.148" dia. x 3" long.

New products or updated product information are designated in **blue font**.

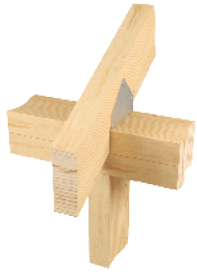
Corrosion Finish
Stainless Steel · Gold Coat · HDG · Triple Zinc

Typical RT3A truss/rafter to plate installation

Typical RT4 truss/rafter to plate installation



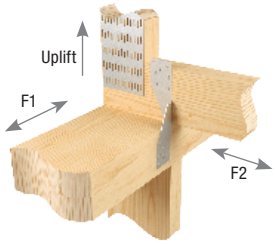
Typical RT5 truss/rafter to double plate installation



Typical RT6 truss/rafter to plate installation

Typical RT7 truss/rafter to double plate installation

Typical RT7A truss/rafter to double plate installation



Typical RT7AT 2x4 bottom chord installation

Typical RT8A stud to double plate installation

Typical RT10 truss/rafter to double plate to stud installation

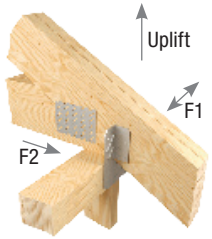
Typical RT15 truss/rafter to double plate installation

Continued on next page

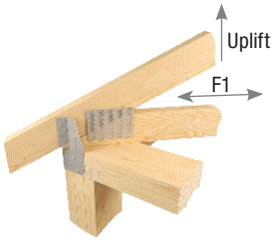
HC / HCPRS / HHCP / LFTA / RT Hurricane Ties

Typical RT16A truss/rafter to double plate installation

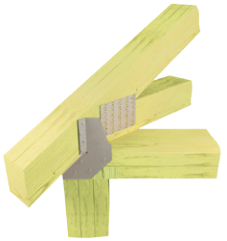
Typical RT16AR truss/rafter to double plate installation



Typical RT16-2 truss/rafter to double plate installation



Typical HHCP2 truss/rafter to double plate corner installation



Typical HHCP4-TZ truss/rafter to double plate corner installation

Typical HC520 stud to plate installation

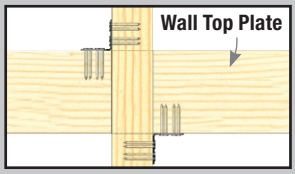
Typical HC520 gable brace installation

Typical HCPRS stud to plate installation

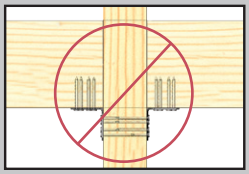
Typical LFTA6 stud to plate installation

Typical RT20 truss/rafter to double plate to stud installation

Anchor installation to achieve twice the load (using two identical anchors)



Install diagonally across from each other for minimum 1-1/2" truss/rafter.



Nailing into both sides of a single ply 2x truss/rafter may cause damages in wood

RUSC Retrofit Strap Connector

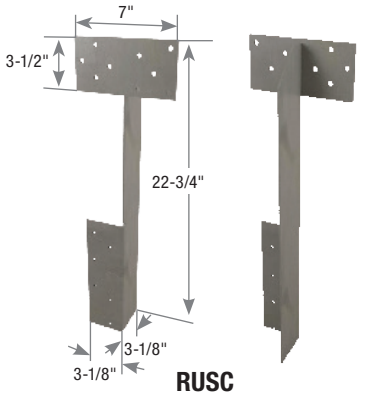
The RUSC Retro Uplift Strap Connector provides a wood-to-wood uplift connection attaching trusses with a 2 x 4 bottom chord to a double stud in the wall below. WS3 Wood Screws are utilized for fast installation. The connector can be installed after roof sheathing has been installed.

Materials: 10 gauge
Finish: USP primer
Codes: See page 10 for Code Reference Chart

Installation:

- Use all specified fasteners. See Product Notes, page 18.
- **The RUSC shall be installed in pairs.**
- Install on minimum 2 ply with equal wall studs centered directly below.
- Works with 2 x 4 bottom chord member and 2 x 4 wall studs.

Typical RUSC installation



RUSC

USP Stock No.	Ref. No.	Steel Gauge	No. of Plies[6]	Fastener Schedule[4,5] Qty	Rafter/ Truss	Qty	Stud	DF/SP Allowable Uplift Loads (Lbs.)[1] 160%	S-P-F Allowable Uplift Loads (Lbs.)[1] 160%	Code Ref.
RUSC	-- --	10	2 Ply or greater	16	WS3	16	WS3	6040	5225	F26

1) Allowable loads are for a pair of RUSC devices.
2) Uplift loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
3) Designer must specify stud or post to resist published load values.
4) WS3 Wood Screws are 1/4" x 3" long and are included with RUSC connectors.
5) Fastener schedule is for two straps used together. The RUSC shall be installed in pairs with a minimum 2 ply truss and wall stud attachment.
6) Truss plies shall be fastened together to act as a single unit.

MUS / HUS Slant Nail Truss Hangers

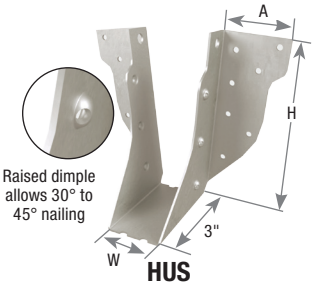
The MUS / HUS hanger series offers double shear nailing. USP's raised dimple allows for 30° to 45° nailing through the joist into header, resulting in higher loads and less nailing.

Materials: MUS – 18 gauge; HUS – 16 gauge
Finish: G90 galvanizing
Options: See chart for Corrosion Finish Options
Codes: See page 10 for Code Reference Chart

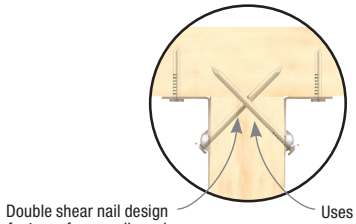
Installation:

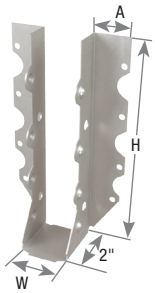
- Use all specified fasteners. See Product Notes, page 18.
- Joist nails must be driven in at a 30° to 45° angle through the joist or truss into the header to achieve listed loads. **Standard length "double shear" nails must be used to achieve listed load values.**
- See EWP applications on page 160.

Typical HUS installation (MUS similar)



HUS





MUS

Joist / Truss Size	USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in)			Fastener Schedule[4]				DF/SP Allowable Loads (Lbs.)[3]				S-P-F Allowable Loads (Lbs.)[3]				Corrosion	Finish	Code Ref.
							Header		Truss[2]		Floor	Roof		Uplift[1]	Floor	Roof		Uplift[1]			
				W	H	A	Qty	Type	Qty	Type	100%	115%	125%	160%	100%	115%	125%	160%			
2 x 6 - 8	MUS26	MUS26	18	1-9/16	5-1/16	1	6	10d	6	10d	1285	1475	1605	865	1190	1365	1475	760			31, R1, F32
	HUS26	HUS26	16	1-5/8	5-7/16	2	14	16d	6	16d	2760	3140	3400	2035	2430	2765	2990	1630			5, R5, F2
2 x 8 - 10	MUS28	MUS28	18	1-9/16	7-1/16	1	8	10d	8	10d	1710	1970	2140	1230	1585	1815	1965	1085			31, R1, F32
	HUS28	HUS28	16	1-5/8	7-3/16	2	22	16d	8	16d	4170	4745	5090	2950	3670	4035	4105	2380			
2 x 10 - 12	HUS210	HUS210	16	1-5/8	9-3/16	2	30	16d	10	16d	5455	5825	6040	4110	4235	4565	4780	3390			
1-3/4 x 5-1/2 - 7-1/4	HUS175	HU1.81/5	16	1-13/16	5-3/8	2	14	16d	6	16d	2760	3140	3400	2035	2430	2765	2990	1630			5, R5, F2
1-3/4 x 7-1/4 - 11-1/4	HUS177	--	16	1-13/16	7-1/8	2	22	16d	8	16d	4170	4745	5090	2950	3670	4105	4105	2380			
1-3/4 x 9-1/4 - 14	HUS179	HUS1.81/10	16	1-13/16	9-1/8	2	30	16d	10	16d	5580	6040	6040	4110	4555	4880	4895	3390			

1) Uplift loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) Nails must be driven at a 30° to 45° angle through joist or truss into header to achieve the table loads.
3) HUS175, HUS177, and HUS179 load values assume the joist is 1-3/4-in wide and has a bearing strength of not less than 675 psi.
4) **NAILS:** 10d nails are 0.148" dia. x 3" long, 16d nails are 0.162" dia. x 3-1/2" long.
New products or updated product information are designated in **blue font**.

Corrosion Finish
Stainless Steel · Gold Coat · HDG · Triple Zinc

CLPBF Butterfly Hanger

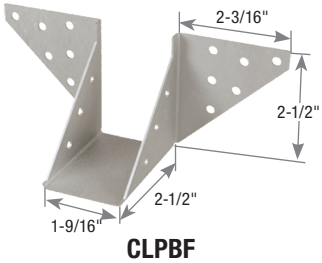
The butterfly hanger's flared header flange design allows for added nailing. Excellent truss-to-truss hanger for 2x4 purlin or truss bottom chords.

Materials: 18 gauge
Finish: G90 galvanizing
Codes: See page 10 for Code Reference Chart

Installation:

- Use all specified fasteners. See Product Notes, page 18.

Typical CLPBF installation



CLPBF

Joist Size	USP Stock No.	Ref. No.	Steel Gauge	Fastener Schedule[2]				DF/SP Allowable Loads (Lbs.)				Code Ref.
				Header		Joist		Floor	Roof		Uplift[1]	
				Qty	Type	Qty	Type	100%	115%	125%	160%	
2 x 4	CLPBF	--	18	12	10d	6	10d x 1-1/2	1340	1340	1340	185	5, R5, F2

1) Uplift loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) **NAILS:** 10d x 1-1/2 nails are 0.148" dia. x 1-1/2" long, 10d nails are 0.148" dia. x 3" long.
New products or updated product information are designated in **blue font**.

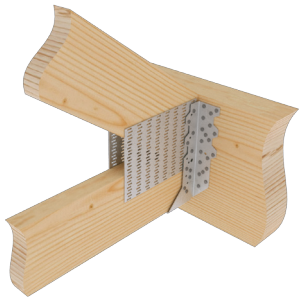
THD Heavy-Duty Face Mount Truss Hangers

MiTek®

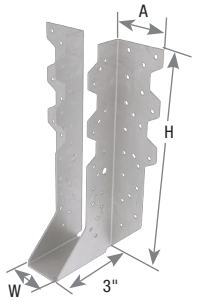
Medium-to-heavy capacity face mount hanger. Some THD models are available with a min/max installation option.

Materials: See chart
Finish: G90 galvanizing
Options: See chart for Corrosion Finish Options
Codes: See page 10 for Code Reference Chart

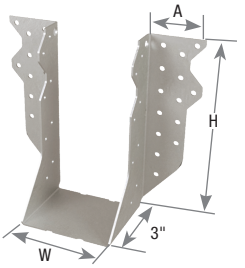
Installation:
- Use all specified fasteners. See Product Notes, page 18.
- **THD Min** – Fill all round nail holes.
- **THD Max** – Fill all round and diamond holes.



Typical THD28 installation



THD28



THD double or larger

Some model designs may vary from illustration shown

Joist / Truss Size	USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in) W	H	D	A	Min/ Max	Fastener Schedule[2] Header Qty	Header Type	Truss Qty	Truss Type	DF/SP Allowable Loads (Lbs.) Floor 100%	Roof 115%	Roof 125%	Uplift[1] 160%	Corrosion Finish	Code Ref.
2 x 6 - 8	THD26	HTU26	16	1-5/8	5-1/16	3	1-7/8	Min	18	16d	12	10d x 1-1/2	2645	3000	**3240**	2265		5, R5, F2
								Max	20	16d	20	10d x 1-1/2	2940	**3260**	**3260**	**2315**		
2 x 8 - 10	THD28	HTU28	16	1-5/8	7	3	1-7/8	Min	28	16d	16	10d x 1-1/2	4115	**4195**	**4195**	**2315**		
								Max	28	16d	26	10d x 1-1/2	4115	4670	5040	**2315**		
2 x 10 - 12	THD210	HTU210	16	1-5/8	9	3	1-7/8	Min	38	16d	20	10d x 1-1/2	**5315**	**5590**	**5590**	**3775**		
								Max	38	16d	32	10d x 1-1/2	5585	**5990**	**5990**	**4010**		
(2) 2 x 6 - 8	THD26-2	HHUS26-2, HTU26-2	14	3-7/16	5-3/8	3	2	--	18	16d	12	10d	2770	**3125**	3355	2340		
(2) 2 x 8 - 10	THD28-2	HHUS28-2, HTU28-2	14	3-7/16	7-1/8	3	2	--	28	16d	16	10d	4310	4860	5005	2595		
(2) 2 x 10 - 12	THD210-2	HHUS210-2, HTU210-2	14	3-7/16	9-1/8	3	2	--	38	16d	20	10d	5850	6600	7045	3905		
4 x 6 - 8	THD46	HHUS46	14	3-5/8	5-5/16	3	2	--	18	16d	12	10d	2770	3125	3355	2340		
4 x 8 - 10	THD48	HHUS48	14	3-5/8	7-1/16	3	2	--	28	16d	16	10d	4310	4860	5005	2595		
4 x 10 -12	THD410	HHUS410	14	3-5/8	9-1/16	3	2	--	38	16d	20	10d	5850	6600	7045	3905		
4 x 12 - 14	THD412	--	14	3-5/8	11	3	3	--	48	16d	20	10d	7045	7045	7045	3905		
4 x 14 - 16	THD414	--	14	3-5/8	12-7/8	3	3	--	58	16d	20	10d	7045	7045	7045	3905		
(3) 2 x 10 - 12	THD210-3	HHUS210-3	12	5-1/8	9	3	3	--	38	16d	20	10d	6535	7255	**7745**	**4010**		
6 x 10 -12	THD610	HHUS5.50/10	12	5-1/2	9	3	3	--	38	16d	20	10d	6535	7255	**7745**	**4010**		
6 x 12 - 14	THD612	--	12	5-1/2	11	3	3	--	48	16d	20	10d	8255	**8860**	**8860**	**4010**		
6 x 14 - 16	THD614	--	12	5-1/2	12-7/8	3	3	--	58	16d	20	10d	**8860**	**8860**	**8860**	**4010**		
(4) 2 x 10 - 12	THD210-4	HHUS210-4	12	6-3/4	9	3	3	--	38	16d	20	10d	6535	7255	**7745**	**4010**		
7 x 9-1/4 - 14	THD7210	HHUS7.25/10	12	7-1/4	9	3	3	--	38	16d	20	10d	6535	7255	**7745**	**4010**		

1) Uplift loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) **NAILS:** 10d x 1-1/2" nails are 0.148" dia. x 1-1/2" long, 10d nails are 0.148" dia. x 3" long,16d nails are 0.162" dia. x 3-1/2" long.
New products or updated product information are designated in **blue font**.

Corrosion Finish Stainless Steel Gold Coat HDG Triple Zinc

Specialty Options Chart

– refer to Specialty Options pages 245-246 for additional details.

Option	Skewed[1,3]	Sloped Seat[2]	Sloped / Skewed[1,2,3]	Inverted Flange
Range	1˚ to 45˚	1˚ to 45˚	See Sloped Seat and Skewed	Not available in widths < 3". Widths > 3" can have one flange inverted.
Allowable Loads	85% of table load	65% of table load	65% of table load	100% of table load. 65% of table load when nailing into the support members end grain.
Ordering	Add *SK*, angle required, right *(R)* or left *(L)*, and square cut *(SQ)* or bevel cut *(BV)* to product number. Ex. THD410_SK45R_SQ	Add *SL*, slope required, and up *(U)* or down *(D)*, to product number. Ex. THD410_SL30D	See Sloped Seat and Skewed. Ex. THD410_SK45R_SQ_SL30D	Add *1IF*, one flange, right *(R)* and left *(L)*, to product number. Ex. THD410_1IFR

1) Skewed hangers with skews greater than 15° may have all joist nailing on outside flange.
2) Sloped or sloped / skewed hangers with slopes greater than 15° may have additional joist nails.
3) For skewed hangers, the required cut type (square or bevel) of joist member may vary based on skew angle and width of hanger. Some square cut hangers will require custom pricing due to welded back plate.

THDH Heavy-Duty Truss Hangers

Materials: 12 gauge

Finish: G90 galvanizing

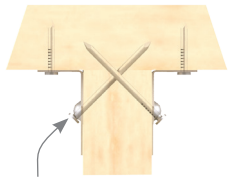
Options: See chart for Corrosion Finish Options and page 199 for Specialty Options chart

Codes: See page 10 for Code Reference Chart

Installation:

- Use all specified fasteners. See Product Notes, page 18.
- Joist nails must be driven in at a 30° to 45° angle through the joist or truss into the header to achieve listed loads. **Standard length "double shear" nails must be used to achieve listed load values.**
- See EWP applications pages 160-161.

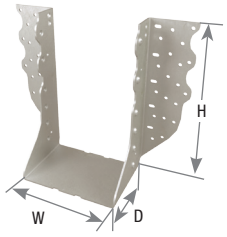
Some model designs may vary from illustration shown



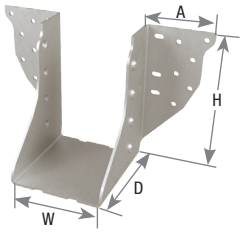
Drive joist nails into header at 30° to 45° to achieve listed loads.

Typical THDH double shear installation

Typical THDH26-2 installation



THDH



THDH26-2

Joist / Truss Size	USP Stock No.	Ref. No.	Dimensions (in) W	H	D	Fastener Schedule[3] Header Qty	Header Type	Truss[2] Qty	Truss Type	DF/SP Allowable Loads (Lbs.) Floor 100%	DF/SP Roof 115%	DF/SP Roof 125%	DF/SP Uplift[1] 160%	S-P-F Allowable Loads (Lbs.) Floor 100%	S-P-F Roof 115%	S-P-F Roof 125%	S-P-F Uplift[1] 160%	Corrosion Finish	Code Ref.
2 x 6 - 8	THDH26	HGUS26	1-5/8	5-7/16	5	20	16d	8	16d	4375	4895	5245	2865	3850	4280	4280	2290		
2 x 8 - 10	THDH28	HGUS28	1-5/8	7-3/16	5	36	16d	12	16d	7595	8130	8130	4445	6240	6545	6545	3580		
2 x 10 - 12	THDH210	--	1-5/8	9-3/16	5	46	16d	16	16d	9310	9710	9710	5260	7255	7770	7870	4265		
2-11/16 x 9-1/4 - 14	THDH27925	--	2-3/4	9-1/8	4	46	16d	12	16d	9020	9020	9020	4445	7515	7900	7975	3560		
2-11/16 x 11-1/4 - 16	THDH27112	--	2-3/4	10-7/8	4	56	16d	14	16d	9710	9710	9710	4445	7795	7795	7795	3570		
2-11/16 x 14 - 16	THDH2714	--	2-3/4	12-1/4	4	66	16d	16	16d	11185	11760	11760	5260	8530	9045	9390	4235		
3-1/4 x 9-1/2	THDH3210	HGUS3.25/10	3-3/16	9-3/8	4	46	16d	12	16d	9020	9020	9020	4445	7955	7955	7955	3550		
3-1/4 x 10-5/8	THDH3212	HGUS3.25/12	3-3/16	10-5/8	4	56	16d	14	16d	9710	9710	9710	5260	7775	7775	7775	4210		
(2) 2 x 6 - 8	THDH26-2	HGUS26-2	3-7/16	5-3/8	4	20	16d	8	16d	4375	4895	5245	2865	3850	4255	4255	2280		
(2) 2 x 8 - 10	THDH28-2	HGUS28-2	3-7/16	7-1/8	4	36	16d	10	16d	7360	8130	8130	3165	6475	6485	6485	2525		
(2) 2 x 10 - 12	THDH210-2	HGUS210-2	3-7/16	9-1/8	4	46	16d	12	16d	9020	9020	9020	4445	7965	7965	7965	3555		
4 x 6 - 8	THDH46	HGUS46	3-9/16	5-3/8	4	20	16d	8	16d	4375	4895	5245	2865	3850	4250	4250	2275		
4 x 8 - 10	THDH48	HGUS48	3-9/16	7-1/8	4	36	16d	10	16d	7360	8130	8130	3165	6470	6470	6470	2520		
4 x 10 - 12	THDH410	HGUS410	3-9/16	9-1/8	4	46	16d	12	16d	9020	9020	9020	4445	7950	7950	7950	3545		
4 x 12 - 14	THDH412	HGUS412	3-9/16	10-1/2	4	56	16d	14	16d	9710	9710	9710	5260	7765	7765	7765	4205		
4 x 14 - 16	THDH414	HGUS414	3-9/16	13-1/16	4	66	16d	16	16d	11760	11760	11760	5655	9420	9420	9420	4530		
(3) 2 x 6 - 8	THDH26-3	HGUS26-3	5-1/8	5-7/16	4	20	16d	8	16d	4375	4895	5245	2865	3850	4240	4240	2270		
(3) 2 x 8 - 10	THDH28-3	HGUS28-3	5-1/8	7-3/16	4	36	16d	12	16d	7595	8130	8130	4445	6465	6465	6465	3535		
(3) 2 x 10 - 12	THDH210-3	HGUS210-3	5-1/8	9-3/16	4	46	16d	16	16d	9710	9710	9710	5260	7750	7750	7750	4200		
(3) 2 x 12 - 14	THDH212-3	HGUS212-3	5-1/8	11-3/16	4	56	16d	20	16d	9740	9740	9740	5260	7800	7800	7800	4215		
(3) 2 x 14 - 16	THDH214-3	HGUS214-3	5-1/8	13-3/16	4	66	16d	22	16d	11760	11760	11760	5655	9430	9430	9430	4535		
6 x 10 - 12	THDH610	HGUS5.25/10, HGUS5.50/10	5-1/2	9	4	46	16d	16	16d	9020	9020	9020	5260	7930	7930	7930	4190		
6 x 12 - 14	THDH612	HGUS5.25/12, HGUS5.50/12	5-1/2	11	4	56	16d	20	16d	9740	9740	9740	5260	7775	7775	7775	4200		
6 x 14 - 16	THDH614	HGUS5.50/14	5-1/2	13	4	66	16d	22	16d	11760	11760	11760	5655	9400	9400	9400	4520		
(4) 2 x 6 - 8	THDH26-4	HGUS26-4	6-9/16	5-7/16	4	20	16d	8	16d	4375	4895	5245	2865	3850	4230	4230	2265		5
(4) 2 x 8 - 10	THDH28-4	HGUS28-4	6-7/16	7-9/16	4	36	16d	12	16d	7595	8130	8130	4445	6445	6445	6445	3525		
6-3/4 x 9 - 14	THDH6710	HGUS210-4, HGUS6.88/10	6-7/8	8-13/16	4	46	16d	12	16d	9020	9020	9020	4445	7890	7890	7890	3520		
6-3/4 x 11 - 18	THDH6712	HGUS212-4, HGUS6.88/12	6-7/8	10-13/16	4	56	16d	14	16d	9020	9020	9020	5260	7900	7900	7900	4175		
6-3/4 x 13 - 20	THDH6714	HGUS214-4, HGUS6.88/14	6-7/8	12-13/16	4	66	16d	16	16d	11760	11760	11760	5655	9340	9340	9340	4490		
7 x 9-1/4 - 14	THDH7210	HGUS7.25/10	7-1/4	9	4	46	16d	12	16d	9020	9020	9020	4445	7890	7890	7890	3520		
7 x 11-1/4 - 16	THDH7212	HGUS7.25/12	7-1/4	10-1/2	4	56	16d	14	16d	9020	9020	9020	5260	7900	7900	7900	4170		
7 x 14 - 20	THDH7214	HGUS7.25/14	7-1/4	12-1/4	4	66	16d	16	16d	11760	11760	11760	5655	9335	9335	9335	4490		

1) Uplift loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) Joist nails need to be toe nailed at a 30° to 45° angle to achieve allowable loads shown.
3) **NAILS:** 16d nails are 0.162" dia. x 3-1/2" long.
New products or updated product information are designated in **blue font**.

Corrosion Finish
Stainless Steel · Gold Coat · HDG · Triple Zinc

Continued on next page

THDH Heavy-Duty Truss Hangers

MiTek®

Specialty Options Chart

– refer to Specialty Options pages 245-246 for additional details.

Option	Skewed[1,3]	Sloped Seat[2]	Sloped / Skewed[1,2,3]
Range	1˚ to 45˚	1˚ to 45˚	See Sloped Seat and Skewed
Allowable Loads	85% of table allowable load. 50% of table uplift load.	85% of table allowable load	52% of table allowable load. 50% of table uplift load.
Ordering	Add *SK*, angle required, right *(R)* or left *(L)*, and square cut *(SQ)* or bevel cut *(BV)* to product number. Ex. THDH410_SK45R_BV	Add SL, slope required, and up (U) or down (D), to product number. Ex. THDH410_SL30D	See Sloped Seat and Skewed. Ex. THDH410_SK45R_BV_SL30D

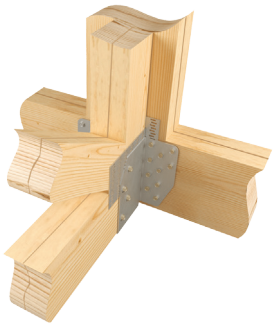
1) Skewed THDH hangers with skews greater than 15° always have all joist nailing on one side of the outside flange.
2) Sloped or sloped / skewed hangers with slopes greater than 15° may have additional joist nails.
3) Skewed hangers typically require a bevel cut however, a square cut option may be available as a custom when requested.
Inverted flange option is not available for THDH models.

THDHQ Girder Truss Hangers

The THDHQ hangers are designed to attach multi-ply girder trusses together using USP's WS Wood Screws for higher design load capacity. THDHQ hangers can also be used to attach structural composite lumber (SCL).

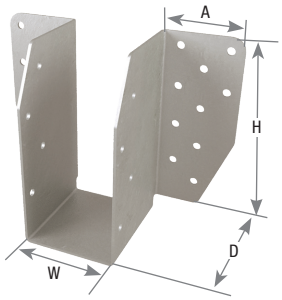
Materials: 12 gauge
Finish: G90 galvanizing
Codes: See page 10 for Code Reference Chart

Installation:
- Use all specified fasteners.
- WS Wood Screws are supplied with THDHQ hangers.



Typical THDHQ28-2 truss installation

Typical THDHQ28-2 SCL installation



THDHQ28-2

Joist / Truss Size	USP Stock No.	Ref. No.	Dimensions (in) W	H	D	A	Fastener Schedule[2,3] Supporting Member[5] Qty	Type	Supported Member Qty[4]	Type	DF/SP Allowable Loads (Lbs.) Floor 100%	Roof 115%	Roof 125%	Uplift[1] 160%	S-P-F Allowable Loads (Lbs.) Floor 100%	Roof 115%	Roof 125%	Uplift[1] 160%	Code Ref.
Double 2x Sizes																			
(2) 2 x 6 - 8	THDHQ26-2	HGUQ26-2-SDS3	3-5/16	5-7/16	4	1-15/16	12	WS3	4	WS3	5015	5745	5745	2015	4405	4560	4560	1600	5, F2, R5
(2) 2 x 8 - 10	THDHQ28-2	HGUQ28-2-SDS3	3-5/16	7-3/16	4	2-13/16	20	WS3	8	WS3	8355	9610	10165	3645	7340	8140	8140	2920	
(2) 2 x 10 - 12	THDHQ210-2	HGUQ210-2-SDS3	3-5/16	9-3/16	4	2-13/16	28	WS3	8	WS3	10840	10880	10880	5345	8035	8475	8715	4500	
Triple 2x Sizes																			
(3) 2 x 6 - 8	THDHQ26-3	HGUQ26-3-SDS4.5	4-15/16	5-7/16	4	1-15/16	12	WS45	4	WS45	5015	5745	5745	2015	4405	4545	4545	1595	
(3) 2 x 8 - 10	THDHQ28-3	HGUQ28-3-SDS4.5	4-15/16	7-3/16	4	2-13/16	20	WS45	8	WS45	8355	9610	10165	3645	7340	8095	8095	2900	
(3) 2 x 10 - 12	THDHQ210-3	HGUQ210-3-SDS4.5	4-15/16	9-3/16	4	2-13/16	28	WS45	8	WS45	10880	10880	10880	5345	8665	8665	8665	4475	
Quadruple 2x Sizes																			
(4) 2 x 6 - 8	THDHQ26-4	HGUQ26-4-SDS6	6-9/16	5-7/16	4	1-15/16	12	WS6	4	WS6	5015	5745	5745	2600	4405	4535	4535	2050	
(4) 2 x 8 - 10	THDHQ28-4	HGUQ28-4-SDS6	6-9/16	7-3/16	4	2-13/16	20	WS6	8	WS6	8355	9610	10165	4830	7340	8070	8070	3830	
(4) 2 x 10 - 12	THDHQ210-4	HGUQ210-4-SDS6	6-9/16	9-3/16	4	2-13/16	28	WS6	8	WS6	10880	10880	10880	4440	8635	8635	8635	3525	
4x Sizes																			
4 x 6 - 8	THDHQ46	HGUQ46-SDS3	3-5/8	5-7/16	4	1-15/16	12	WS3	8	WS3	5015	5745	5745	2015	4405	4590	4590	1610	
4 x 8 - 10	THDHQ48	HGUQ48-SDS3	3-5/8	7-3/16	4	2-13/16	20	WS3	8	WS3	8355	9610	10165	3645	7340	8120	8120	2910	
4 x 10 - 12	THDHQ410	HGUQ410-SDS3	3-5/8	9-3/16	4	2-13/16	28	WS3	8	WS3	10880	10880	10880	5345	8690	8690	8690	4490	

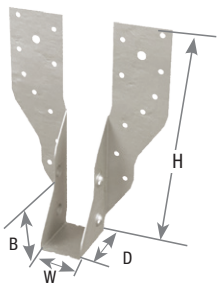
1) Uplift loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) WS3 is 1/4" x 3" long wood screw, WS45 is 1/4" x 4-1/2" long wood screw, WS6 is 1/4" x 6" long wood screw and are included with THDHQ hangers.
3) WS Wood Screws may be installed through metal truss connector plates as approved by truss designer per ANSI/TPI 1-2007 Section 7.5.3.4 and 8.9.2. Pre-drilling required through the plate using a maximum of 5/32" bit.
4) Wood screws specified for supported member must ALL be installed into the supported member while maintaining a minimum 5/8-in edge distance where truss connector plates are not present.
5) When fastening to a multi-ply supporting truss: use WS3 for 2-ply, WS45 for 3-ply and WS6 for 4-ply.
New products or updated product information are designated in **blue font**.

MSH Adjustable Strap Hangers

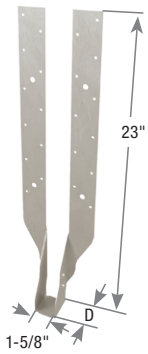
The MSH is field adjustable. The flanges can be used in top mount, face mount, or combination installations. An open back design allows installation after a member is placed in position.

Materials: See chart
Finish: G90 galvanizing
Options: See chart for Corrosion Finish Options on pages 204-205 and Nailer Options Chart
Codes: See page 10 for Code Reference Chart

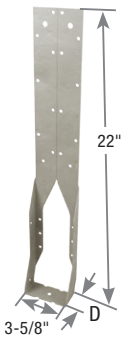
Installation:
- Use all specified fasteners. See Product Notes, page 18.
- Web stiffeners are required for I-Joist installations.



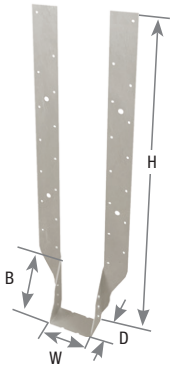
MSH



MSH222



MSH422IF



MSH426

Mounting Conditions

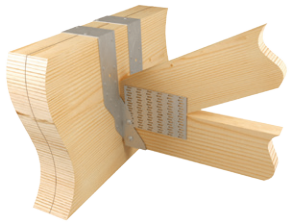
Face Max

All header nails used should be driven into the wide face of the header.


Typical MSH face-max installation

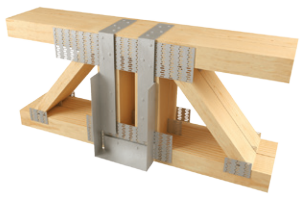
Top-Max

The hanger is installed in a top mount condition with at least six lowest header face nail holes filled, and four top flange nails filled. The strap must wrap over the top at least 2-1/2".


Typical MSH top-max installation

Top-Min

The hanger is installed in a top mount condition with at least the top two header face nail holes filled, and four top flange nail holes filled. The strap must wrap over the top at least 2-1/2" and the joist nails shall be installed straight into the joist for all models.


Typical MSH top-min installation

Combination Face-Max / Top-Max

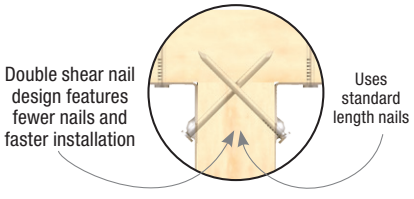
Face-Max values apply for the entire connection. Follow fastening directions for the applicable mounting condition for each individual flange strap.


Typical MSH combination installation

Nailer Options

– chart represents maximum allowable loads for hangers used on wood nailers. Reference page 153.

USP Series	Nailer Size	Fastener Schedule[2] Header Qty	Header Type	Joist Qty	Joist Type	DF/SP Allowable Loads (Lbs.)[1] 100%	DF/SP Uplift 160%	S-P-F Allowable Loads (Lbs.)[1] 100%	S-P-F Uplift 160%
MSH (18 gauge)	2X	4	10d x 1-1/2	4	10d x 1-1/2	1245	--	1045	--
	3X	4	10d x 1-1/2	4	10d x 1-1/2	1245	--	1045	--
	(2) 2X	6	10d	4	10d x 1-1/2	1950	--	1640	--
	4X	6	10d	4	10d x 1-1/2	1950	--	1640	--
MSH (16 or 14 gauge)	2X	6	10d x 1-1/2	6	10d x 1-1/2	2025	--	1700	--
	3X	6	10d x 1-1/2	6	10d x 1-1/2	2025	--	1700	--
	(2) 2X	6	16d x 2-1/2	6	10d x 1-1/2	2025	--	1700	--
	4X	6	16d x 2-1/2	6	10d x 1-1/2	2025	--	1700	--



1) Listed loads shall not be increased.
2) **NAILS:** 10d x 1-1/2" nails are 0.148" dia. x 1-1/2" long, 10d nails are 0.148" dia. x 3" long, 16d x 2-1/2 nails are 0.162" dia. x 2-1/2" long.
New products or updated product information are designated in **blue font**.

Continued on next page

MSH Adjustable Strap Hangers

MiTek®

Plated Truss Chart

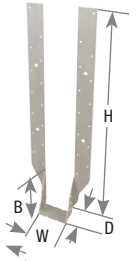
Joist Material & Width	USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in) W	D	H	B	Mounting Condition	Fastener Schedule[2] Header Top Qty	Header Face Qty	Header Type	Joist Qty	Joist Type	DF/SP Allowable Loads (Lbs.) Floor 100%	Roof 115%	Roof 125%	Uplift[1] 160%	S-P-F Allowable Loads (Lbs.) Floor 100%	Roof 115%	Roof 125%	Uplift[1] 160%	Corrosion Finish	Code Ref.
2x Lumber or Trusses	MSH29	THA29	18	1-5/8	2-1/4	8-3/4	5	face-max	--	18	10d	4	10d	2550	2915	2915	785	2190	2270	2270	615		
								top-max	4	6	10d	4	10d	2980	3015	3015	785	2190	2300	2350	615		
								top-min	4	2	10d	4	10d x 1-1/2	2425	2425	2425	--	1760	1790	1810	--		
	MSH213	THA213	18	1-5/8	2-1/4	12-3/4	5	face-max	--	20	10d	4	10d	2790	2915	2915	785	2190	2270	2270	615		
								top-max	4	6	10d	4	10d	2980	3015	3015	785	2190	2300	2350	615		
								top-min	4	2	10d	4	10d x 1-1/2	2425	2425	2425	--	1720	1750	1770	--		
	MSH218	THA218	18	1-5/8	2-1/4	16-3/4	5	face-max	--	26	10d	4	10d	2915	2915	2915	785	2190	2270	2270	615		
								top-max	4	6	10d	4	10d	2980	3015	3015	785	2190	2300	2350	615		
								top-min	4	2	10d	4	10d x 1-1/2	2425	2425	2425	--	1760	1790	1810	--		
	MSH222	THAI222	18	1-5/8	1-3/4	23	10-13/16	face-max	--	22	10d	4	10d x 1-1/2	2120	2190	2230	595	1530	1590	1625	460		
								top-max	4	6	10d	4	10d x 1-1/2	2120	2190	2230	595	1530	1590	1625	460		
								top-min	4	2	10d	4	10d x 1-1/2	2120	2165	2165	--	1365	1390	1410	--		
2-1/2" wide Floor Trusses	MSH322	THAI322	18	2-9/16	1-3/4	22-1/2	10-3/8	face-max	-- --	22	10d	4	10d x 1-1/2	2475	2475	2475	595	1805	1805	1805	435		
								top-max	4	6	10d	4	10d x 1-1/2	3140	3140	3140	595	1745	1830	1885	435		
								top-min	4	2	10d	4	10d x 1-1/2	2355	2355	2355	--	1355	1380	1400	--		
(2) 2x Lumber or Trusses	MSH218-2	THA218-2	16	3-1/8	1-3/4	17-3/4	10-1/16	face-max	--	16	10d	4	10d	1855	2135	2320	605	1730	1945	2095	465		
								top-max	4	6	10d	4	10d	3430	3485	3485	605	1805	1885	1940	465		
								top-min	4	2	10d	4	10d	2210	2210	2210	--	1370	1400	1415	--		
	MSH222-2	THA222-2	16	3-1/8	1-3/4	22-1/4	10-1/16	face-max	--	22	10d	4	10d	2750	3085	3330	605	2380	2600	2600	465		
								top-max	4	6	10d	4	10d	3485	3485	3485	605	1805	1885	1940	465		
								top-min	4	2	10d	4	10d	2435	2435	2435	--	1370	1400	1415	--		
3-1/2" wide Floor Trusses	MSH413	THA413	16	3-9/16	1-3/4	14	7-5/8	face-max	--	14	10d	6	10d	2340	2640	2855	1570	2025	2285	2470	1215		2, R12, F1
								top-max	4	6	10d	6	10d	3640	3640	3640	1570	2355	2510	2615	1215		
								top-min	4	2	10d	6	10d	2025	2025	2025	--	1560	1560	1560	--		
	MSH418	THA418	16	3-9/16	1-3/4	17-1/2	7-5/8	face-max	--	18	10d	6	10d	2840	3200	3460	1570	2455	2770	2990	1215		
								top-max	4	6	10d	6	10d	3640	3640	3640	1570	2355	2510	2615	1215		
								top-min	4	2	10d	6	10d	2025	2025	2025	--	1560	1560	1560	--		
	MSH422	THA422, THAI422	16	3-9/16	1-3/4	21-1/2	7-5/8	face-max	--	22	10d	6	10d	3340	3765	4065	1570	2730	3075	3185	1145		
								top-max	4	6	10d	6	10d	3640	3640	3640	1570	2355	2510	2615	1215		
								top-min	4	2	10d	6	10d	2025	2025	2025	--	1560	1560	1560	--		
	MSH422IF	THAC418, THAC422	16	3-5/8	1-3/4	22	9-13/16	face-max	--	22	10d	4	10d	2750	3085	3330	605	2380	2590	2590	465		
								top-max	4	6	10d	4	10d	3485	3485	3485	605	1765	1845	1900	465		
								top-min	4	2	10d	4	10d	2435	2435	2435	--	1330	1360	1375	--		
	MSH424	--	16	3-5/8	2	21-1/2	5-3/16	face-max	--	36	10d	6	10d	3960	3960	3960	1285	3060	3060	3060	655		
								top-max	4	6	10d	6	10d	2965	2965	2965	1285	2290	2290	2290	655		
								top-min	4	2	10d	6	10d	1550	1550	1550	--	1195	1195	1195	--		
	MSH426	THA426	14	3-5/8	1-3/4	26	8	top-max	4	8	16d	6	16d	3855	3855	3855	1870	2830	2990	2990	1195		
								top-min	4	2	16d	6	16d	2735	2735	2735	--	2030	2115	2115	385		
	MSH426IF	THAC426	14	3-5/8	1-3/4	26	8	top-max	4	8	16d	6	16d	3855	3855	3855	1870	2830	2990	2990	795		
								top-min	4	2	16d	6	16d	2735	2735	2735	--	2030	2115	2115	385		
(2) 3-1/2" wide Floor Trusses	MSH422-2	THA422-2	14	7-1/4	2	22-1/8	11	face-max	--	26	16d	6	16d	4005	4515	4845	1175	3295	3715	3985	850		
								top-max	4	10	16d	6	16d	4585	4585	4585	1175	2685	2855	2965	900		
								top-min	4	4	16d	6	16d	3740	3820	3870	--	1890	1955	2000	--		
	MSH422-2IF	THAC422-2	14	7-1/4	2	22-1/8	11	face-max	--	26	16d	6	16d	4005	4515	4845	1175	3295	3715	3985	850		
								top-max	4	10	16d	6	16d	4585	4585	4585	1175	2685	2855	2965	900		
								top-min	4	4	16d	6	16d	3740	3820	3870	--	1890	1955	2000	--		
	MSH426-2	THA426-2	14	7-1/4	2	26-1/16	11	face-max	--	26	16d	6	16d	4005	4515	4845	1175	3295	3715	3985	610		130
								top-max	4	10	16d	6	16d	4585	4585	4585	1175	2685	2855	2965	640		
								top-min	4	4	16d	6	16d	3740	3820	3870	--	1890	1955	2000	--		

1) Uplift loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.

2) **NAILS:** 10d x 1-1/2" nails are 0.148" dia. x 1-1/2" long, 10d nails are 0.148" dia. x 3" long, 16d nails are 0.162" dia. x 3-1/2" long.

New products or updated product information are designated in **blue font**.

Corrosion Finish Stainless Steel Gold Coat HDG Triple Zinc



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MSH Adjustable Strap Hangers

MiTek®

I-Joist, LVL, LSL & PSL Chart

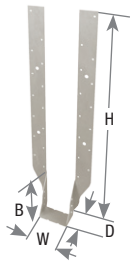
Joist Material & Width	USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in) W	D	H	B	Mounting Condition	Fastener Schedule[2] Header Top Qty	Header Face Qty	Header Type	Joist Qty	Joist Type	DF/SP Allowable Loads (Lbs.) Floor 100%	DF/SP Roof 115%	DF/SP Roof 125%	DF/SP Uplift[1] 160%	S-P-F Allowable Loads (Lbs.) Floor 100%	S-P-F Roof 115%	S-P-F Roof 125%	S-P-F Uplift[1] 160%	Corrosion Finish	Code Ref.
2x Lumber or Trusses	MSH222	THAI222	18	1-5/8	1-3/4	23	10-13/16	face-max	--	22	10d	4	10d x 1-1/2	2120	2190	2230	595	1530	1590	1625	460		
								top-max	4	6	10d	4	10d x 1-1/2	2120	2190	2230	595	1530	1590	1625	460		
								top-min	4	2	10d	4	10d x 1-1/2	2120	2165	2165	--	1365	1390	1410	--		
1-3/4" LVL or I-Joist	MSH1713	--	18	1-13/16	1-3/4	14-7/16	10-3/4	face-max	--	12	10d	4	10d	1440	1640	1770	595	1245	1420	1530	460		2, R12, F1
								top-max	4	6	10d	4	10d	2395	2460	2505	595	1715	1775	1810	460		
								top-min	4	2	10d	4	10d x 1-1/2	2165	2165	2165	--	1365	1390	1410	--		
	MSH1722	THAI1.81/22	18	1-13/16	1-3/4	22-7/8	10-3/4	face-max	--	22	10d	4	10d x 1-1/2	2395	2460	2475	595	1695	1750	1785	435		
								top-max	4	6	10d	4	10d x 1-1/2	2395	2460	2505	595	1695	1750	1785	435		
								top-min	4	2	10d	4	10d x 1-1/2	2355	2355	2355	--	1395	1420	1440	--		
2" wide I-Joist	MSH2022	THAI2.06/22	18	2-1/16	1-3/4	22-5/8	10-7/16	face-max	--	22	10d	4	10d	2475	2475	2475	595	1805	1805	1805	435		130
								top-max	4	6	10d	4	10d	2670	2735	2780	595	1745	1830	1885	435		
								top-min	4	2	10d	4	10d	2355	2355	2355	--	1355	1380	1400	--		
2-5/16" wide I-Joist	MSH2322	THAI3522	18	2-3/8	1-3/4	22-5/8	10-7/16	face-max	--	22	10d	4	10d x 1-1/2	2475	2475	2475	595	1805	1805	1805	435		
								top-max	4	6	10d	4	10d x 1-1/2	3010	3075	3120	595	1745	1830	1885	435		
								top-min	4	2	10d	4	10d x 1-1/2	2355	2355	2355	--	1355	1380	1400	--		
2-1/2" wide Floor Trusses	MSH322	THAI322	18	2-9/16	1-3/4	22-1/2	10-3/8	face-max	--	22	10d	4	10d x 1-1/2	2475	2475	2475	595	1805	1805	1805	435		
								top-max	4	6	10d	4	10d x 1-1/2	3140	3140	3140	595	1745	1830	1885	435		
								top-min	4	2	10d	4	10d x 1-1/2	2355	2355	2355	--	1355	1380	1400	--		
3-1/2" wide Floor Trusses	MSH413	THA413	16	3-9/16	1-3/4	14	7-5/8	face-max	--	14	10d	6	10d	2340	2640	2855	1570	2025	2285	2470	1215		
								top-max	4	6	10d	6	10d	3640	3640	3640	1570	2355	2510	2615	1215		
								top-min	4	2	10d	6	10d	2025	2025	2025	--	1560	1560	1560	--		
	MSH418	THA418	16	3-9/16	1-3/4	17-1/2	7-5/8	face-max	--	18	10d	6	10d	2840	3200	3460	1570	2455	2770	2990	1215		
								top-max	4	6	10d	6	10d	3640	3640	3640	1570	2355	2510	2615	1215		
								top-min	4	2	10d	6	10d	2025	2025	2025	--	1560	1560	1560	--		
	MSH422	THA422, THAI422	16	3-9/16	1-3/4	21-1/2	7-5/8	face-max	--	22	10d	6	10d	3340	3765	4065	1570	2730	3075	3185	1145		
								top-max	4	6	10d	6	10d	3640	3640	3640	1570	2355	2510	2615	1215		
								top-min	4	2	10d	6	10d	2025	2025	2025	--	1560	1560	1560	--		
	MSH422IF	THAC418, THAC422	16		1-3/4	22	9-13/16	face-max	--	22	10d	4	10d	2750	3085	3330	605	2380	2590	2590	465		
								top-max	4	6	10d	4	10d	3485	3485	3485	605	1765	1845	1900	465		
								top-min	4	2	10d	4	10d	2435	2435	2435	--	1330	1360	1375	--		
	MSH424	--	16	3-5/8	2	21-1/2	5-3/16	face-max	--	36	10d	6	10d	3960	3960	3960	1285	3060	3060	3060	655		
								top-max	4	6	10d	6	10d	2965	2965	2965	1285	2290	2290	2290	655		
								top-min	4	2	10d	6	10d	1550	1550	1550	--	1195	1195	1195	--		
	MSH426	THA426	14	3-5/8	1-3/4	26	8	top-max	4	8	16d	6	16d	3855	3855	3855	1870	2830	2990	2990	1195		
								top-min	4	2	16d	6	16d	2735	2735	2735	--	2030	2115	2115	385		
	MSH426IF	THAC426	14	3-5/8	1-3/4	26	8	top-max	4	8	16d	6	16d	3855	3855	3855	1870	2830	2990	2990	795		
								top-min	4	2	16d	6	16d	2735	2735	2735	--	2030	2115	2115	385		
4-5/8" wide I-Joist	MSH2322-2	--	16	4-3/4	1-3/4	22	9-1/4	face-max	--	46	10d	4	10d	5560	5620	5665	605	3850	3900	3935	435		
								top-max	4	6	10d	4	10d	3485	3575	3640	605	1810	1885	1940	435		
								top-min	4	2	10d	4	10d	2430	2430	2430	--	1400	1425	1445	--		
	MSH2622-2	--	16	5-3/8	1-3/4	22	9-1/4	face-max	--	46	10d	4	10d	5560	5620	5665	605	3850	3900	3935	435		
								top-max	4	6	10d	4	10d	3485	3575	3640	605	1810	1885	1940	435		
								top-min	4	2	10d	4	10d	2430	2430	2430	--	1400	1425	1445	--		

1) Uplift loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.

2) **NAILS:** 10d x 1-1/2" nails are 0.148" dia. x 1-1/2" long, 10d nails are 0.148" dia. x 3" long, 16d nails are 0.162" dia. x 3-1/2" long.

New products or updated product information are designated in **blue font**.

Corrosion Finish Stainless Steel Gold Coat HDG Triple Zinc



MSHL / R Skewed Truss Hangers

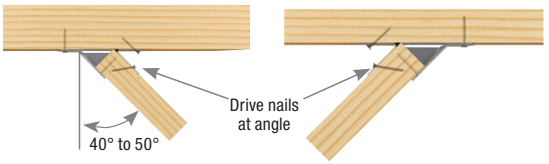
MiTek®

The MSHL/R is a versatile 45-degree skewed hanger with multiple installation options. It can be installed on a supporting girder truss as well as solid-sawn and structural composite lumber headers.

Materials: See chart
Finish: G90 galvanizing
Codes: See page 10 for Code Reference Chart

Installation:

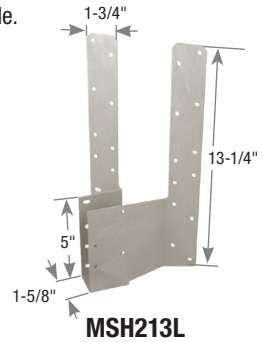
- Install the required number of fasteners according to the load table.
- Install fasteners into the carrying members at the locations described below based on the proper "Mounting Condition."
- Web stiffeners are required for I-Joist installations.
- Hanger is factory skewed at 45° left or right.



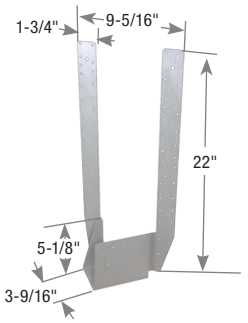
Right skew | Left skew

Typical MSH213R installation
right skew

Typical MSH213L installation
left skew



MSH213L
left skew



MSH422L
left skew

MSH422R
right skew

CONNECTION TO CARRYING MEMBER
Mounting Condition

Face-Max

For MSH422L/R, the bottom six (6) fastener holes (three on each side of the bucket) must be filled. Install eight additional fasteners (four (4) in each strap) where applicable. For MSH213L/R, the bottom eight (8) fastener holes must be filled (four (4) in each strap). Install fourteen (14) additional fasteners, seven (7) in each strap. Min. 2x6 bottom chord required.

Typical MSHL/R face-max installation

Top-Max

The straps must be field-bent over the header a minimum of 2" to allow four (4) top flange nail holes to be filled (two in each strap). The bottom six (6) fastener holes (three on each side of the bucket) must be filled. Min. 2x6 bottom chord required.

Typical MSHL/R top-max installation

Top-Min

The straps must be field bent over the header a minimum of 2" to allow four (4) top flange nail holes to be filled (two in each strap). Also install the two (2) uppermost face nails (one on each strap) near the top of the header.

Typical MSHL/R top-min installation

Combination Face-Max/Top-Max

Follow the Face-Max installation for one side of the connector and the Top-Max installation for the opposite side of the connector. The Face-Max allowable loads apply to this type of installation. Min. 2x6 bottom chord required.

Typical MSHL/R combination installation

CONNECTION TO CARRIED MEMBER
All Mounting Conditions

Install six (6) 10d x 1-1/2" nails into 2x carried member, or six (6) 10d nails into 3-1/2" wide carried member.

Joist Material & Width	USP Stock No.	Ref. No.	Steel Gauge	Mounting Condition	Fastener Schedule[2] Header Top Qty	Header Face Qty	Header Type	Joist Qty	Joist Type	DF/SP Allowable Loads (Lbs.) Floor 100%	Roof 115%	Roof 125%	Uplift[1] 160%	S-P-F Allowable Loads (Lbs.) Floor 100%	Roof 115%	Roof 125%	Uplift[1] 160%	Code Ref.
2x Lumber or Trusses	MSH213L/R	--	18	face-max	--	22	10d	6	10d x 1-1/2	1770	1770	1770	730	1710	1710	1710	705	6, R11, F3
				top-max	4	6	10d	6	10d x 1-1/2	1735	1735	1735	730	1750	1750	1750	705	
				top-min	4	2	10d	6	10d x 1-1/2	1240	1240	1240	--	1325	1325	1325	--	
				combination	2	14	10d	6	10d x 1-1/2	1770	1770	1770	730	1710	1710	1710	705	
3-1/2" LVL or Floor Trusses	MSH422L/R	THAL/R422	16	face-max	--	14	10d	6	10d	1750	1835	1835	615	1520	1520	1520	490	F26
				top-max	4	6	10d	6	10d	1820	1820	1820	615	1505	1505	1505	490	
				top-min	4	2	10d	6	10d	1415	1415	1415	--	1125	1125	1125	--	
				combination	2	10	10d	6	10d	1750	1835	1835	615	1520	1520	1520	490	

1) Uplift loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) **NAILS:** 10d x 1-1/2" nails are 0.148" dia. x 1-1/2" long, 10d nails are 0.148" dia. x 3" long

New products or updated product information are designated in **blue** font.

MSSHL/R Severely Skewed Hangers

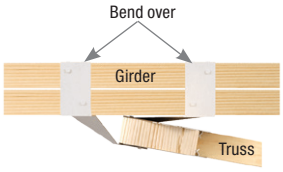
USP's MSSH217 hanger accommodates a skew range of 60° to 85° (30° maximum off the girder) without the need for a more expensive custom design hanger. Face nail to webs or bend the flange strap over the chord. Available in left (L) or right (R) configurations.

Materials: 18 gauge
Finish: G90 galvanizing
Codes: See page 10 for Code Reference Chart

Installation:

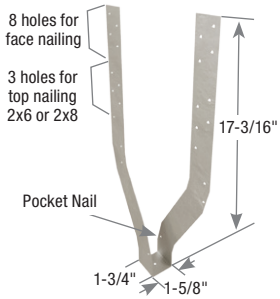
- Use all specified fasteners. See Product Notes, page 18.
- The 3 lower holes on each strap are for top nailing when the strap is bent over the truss chord. These holes are not for face nailing.
- One or both straps may be bent over the bottom chord of the girder with top or backside nailing.
- **Note:** Select the correct (right or left) hanger so that the strap on the outside of the angle will pass the end of the truss. When facing the hanger, the strap in the rear turns in the direction of the skew. The front strap turns to pass behind the end of the carried member.
- Attach the hanger at the end of the truss with a single 10d (0.148" dia.) x 1-1⁄2" nail into the side flange or bottom.
- Place the truss in position against the girder. Push the outside strap past the end of the truss to the girder web and face nail through the top 8 holes with 10d (0.148" dia.) x 1-1⁄2" nails for a 1 ply girder, or 10d (0.148" dia. x 3") common nails for multiple-ply girders.
- The strap inside the angle can be formed over diagonal webs (if design allows) or bend over the girder chord. Use two nails into the top and/or back side of the girder.
- If the outside strap does not contact a web, bend the strap tightly over the girder chord. Use two nails into the top and/or back side of the girder.
- For uplift resistance, other means of attachment are required. If both the truss and girder have vertical webs, attach a scab to pack out the girder web nearly flush with the truss web and use a field adjustable MP framing angle across the two. A top chord connection for uplift requires a flat LSTA strap tie wrapped under the girder and over the truss chord.

MSSH217L
Left shown attached to web and top of chord



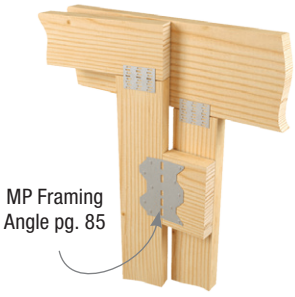
Top view right shown

MSSH217R
Right shown attached to webs



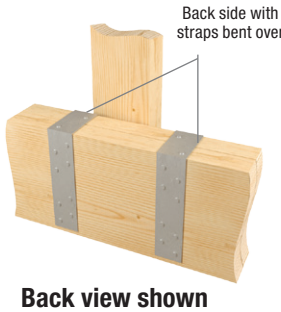
MSSH217R
right shown

MSSH217R shown bent over bottom chord



Additional strapping for high uplift

Additional strapping for high uplift



Back view shown

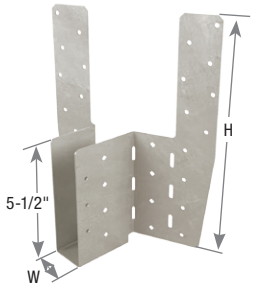
USP Stock No.	Ref. No.	Steel Gauge	Fastener Schedule[2,3,5] Mounting Condition	Supporting Member Top Qty	Supporting Member Top Type	Supporting Member Face/Backside Qty	Supporting Member Face/Backside Type	Supported Member[4] Qty	Supported Member[4] Type	Girder Truss	DF/SP Allowable Loads (Lbs.)[1] Floor 100%	DF/SP Roof 115%	DF/SP Roof 125%	S-P-F Allowable Loads (Lbs.)[1] Floor 100%	S-P-F Roof 115%	S-P-F Roof 125%	Code Ref.
MSSH217L/R	--	18	face-max	--	--	16	10d	1	10d x 1-1/2	1 Ply	1755	1770	1770	1140	1155	1165	130
			top-min	4	10d	6	10d			1 Ply	1735	1735	1735	1140	1155	1165	

1) No uplift value with this hanger. Use other hardware or nailing higher on supported member to counteract uplift.
2) One or both straps may be bent over bottom chord of girder with top or backside nailing.
3) Maintain minimum 3/4" edge distance when installing nails.
4) The supported member shall be supported by blocking or other means to prevent rotation.
5) **NAILS:** 10d x 1-1/2" nails are 0.148" dia. x 1-1/2" long, 10d nails are 0.148" dia. x 3" long.
Note: The 3 lower holes on each strap are for top nailing when strap is bent. These holes are not for face nailing.
New products or updated product information are designated in **blue font**.

MSHA Adjustable Strap Skewed Hangers

USP's MSHA Series hanger offers the most flexible field solution for truss-to-truss connections accommodating a range of skews and challenging web-chord geometry often found in truss framing. Eliminating the need for special orders, the MSHA Series hanger provides economical solutions for 1-ply or 2-ply roof trusses and 1-ply floor trusses skewed between 22-1/2° to 75°. MSHA hangers can be installed in top-min, top-max, face-max, or combination mounting conditions as required.

Materials: 16 gauge
Finish: G90 galvanizing
Codes: See page 10 for Code Reference Chart



MSHA29L
Left Shown

MSHA29R-2
Right Shown

Installation:

- Install the required number of fasteners according to the load table.
- Install fasteners into the carrying member at the locations described below based on the proper "Mounting Condition".
- Product is factory skewed 22-1/2° and may be field skewed from 22-1/2° to 75°. See installation sequence on page 197 for skews greater than 22-1/2°.
- Face-Max and Combination mounting conditions require a minimum chord or header height of 7-1/4". Top-Max and Top-Min mounting conditions require a minimum chord or header height of 5-1/2".

CONNECTION TO CARRYING MEMBER
Mounting Conditions:

Face-Max

Fill the lowest four holes nearest each side of the bucket. For a 22-1/2° skew, fill the four diamond holes on one side and 4 round holes on the other. For skews greater than 22-1/2°, fill the 4 round holes on each side.

Add an equal amount of nails in each side of the hanger in any of the remaining nail holes to meet the minimum fastener requirements listed in the table on page 197.

Typical MSHA face-max installation

Top-Max

Field bend the strap over the supporting member. The bent strap must extend a minimum of 2 inches over the carrying member to allow for the four top flange nail holes to be filled.

Fill the lowest four nail holes nearest each side of the bucket. For a 22-1/2° skew, fill the four diamond holes on one side and 4 round holes on the other. For skews greater than 22-1/2°, fill the 4 round holes on each side.

Typical MSHA top-max installation

Top-Min

Field bend the strap over the supporting member. The bent strap must extend a minimum of 2 inches over the carrying member to allow for the four top flange nail holes to be filled.

Fill the four nail holes (two each strap) nearest the top of the carrying member.

Typical MSHA top-min installation

Combination Face-Max/Top-Max

Follow the Face-Max installation for one side of the connector. Follow the Top-Max installation for the opposite side of the connector. The Face-Max allowable loads apply to this type of installation.

Typical MSHA combination installation

CONNECTION TO CARRIED MEMBER
Mounting Conditions:

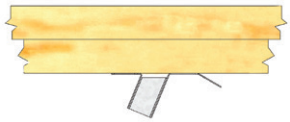
For the 22-1/2° skew installation, all round holes must be filled. For skews greater than 22-1/2°, only the diamond holes must be filled.

Continued on next page

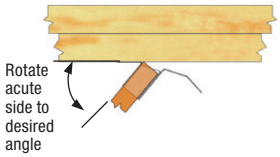
MSHA Adjustable Strap Skewed Hangers

MiTek®

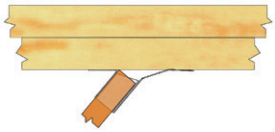
Installation Sequence for Skews > 22½°:



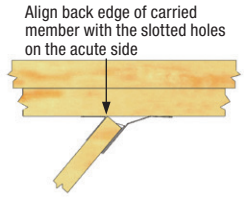
Step 1: Install acute side top and/or face header nails.



Step 2: Utilizing a piece of scrap fastened to the hanger on the obtuse side, bend the hanger to the desired angle.



Step 3: Bend the obtuse side of hanger back toward the header until the flange lies flat against the header, and install header top and/or face nails as noted below.



Step 4: Install carried truss and all required nails fasteners working from the bottom up.

Joist Material & Width	USP Stock No.	Ref. No.	Dimensions (in) W	Dimensions (in) H	Min H_{eff}[2] (in)	Mounting Condition[3]	Skew Angle (degrees)	Fastener Schedule[4] Carrying Member Top Qty	Carrying Member Face Qty	Carrying Member Type	Carried Member Qty	Carried Member Type	DF/SP Allowable Loads (Lbs.) Floor 100%	DF/SP Roof 115%	DF/SP Roof 125%	DF/SP Uplift[1] 160%	S-P-F Allowable Loads (Lbs.) Floor 100%	S-P-F Roof 115%	S-P-F Roof 125%	S-P-F Uplift[1] 160%	Code Ref.
2x Trusses	MSHA29L/R	THASR/L29	1-5/8	10-3/4	7-1/4	face-max	22-1/2	--	12	10d	7	10d x 1-1/2	1500	1615	1615	975	1250	1275	1275	770	
							23 to 45	--	12	10d	4	10d x 1-1/2	1485	1485	1485	560	1250	1350	1350	435	
							46 to 75	--	12	10d	4	10d x 1-1/2	1500	1615	1615	720	1250	1315	1315	560	
					5-1/2	top-max	22-1/2	4	8	10d	7	10d x 1-1/2	1985	1985	1985	975	1510	1510	1510	745	
							23 to 45	4	8	10d	4	10d x 1-1/2	1705	1705	1705	560	1255	1255	1255	415	
							46 to 75	4	8	10d	4	10d x 1-1/2	1605	1605	1605	720	1605	1605	1605	560	
						top-min	22-1/2	4	4	10d	7	10d x 1-1/2	1350	1350	1350	--	1045	1045	1045	--	
							23 to 45	4	4	10d	4	10d x 1-1/2	1335	1335	1335	--	1060	1060	1060	--	
							46 to 75	4	4	10d	4	10d x 1-1/2	695	695	695	--	695	695	695	--	
2-2x Trusses	MSHA29L/R-2	THASR/L29-2	3-1/8	10-3/4	7-1/4	face-max	22-1/2	--	12	10d	7	10d	1500	1615	1615	975	1215	1215	1215	735	130
							23 to 45	--	12	10d	4	10d	1485	1485	1485	560	1210	1260	1260	405	
							46 to 75	--	12	10d	4	10d	1500	1615	1615	720	1250	1300	1300	555	
					5-1/2	top-max	22-1/2	4	8	10d	7	10d	1985	1985	1985	975	1495	1495	1495	735	
							23 to 45	4	8	10d	4	10d	1705	1705	1705	560	1275	1275	1275	420	
							46 to 75	4	8	10d	4	10d	1605	1605	1605	720	1565	1565	1565	535	
						top-min	22-1/2	4	4	10d	7	10d	1350	1350	1350	--	1040	1040	1040	--	
							23 to 45	4	4	10d	4	10d	1335	1335	1335	--	1060	1060	1060	--	
							46 to 75	4	4	10d	4	10d	695	695	695	--	695	695	695	--	
4x Trusses	MSHA422L/R	THASR/L422	3-5/8	22	7-1/4	face-max	22-1/2	--	12	10d	7	10d	1500	1590	1590	960	1250	1250	1250	755	
							23 to 45	--	12	10d	4	10d	1485	1485	1485	550	1250	1335	1335	430	
							46 to 75	--	12	10d	4	10d	1500	1615	1615	705	1250	1300	1300	555	
					5-1/2	top-max	22-1/2	4	8	10d	7	10d	1955	1955	1955	960	1490	1490	1490	735	
							23 to 45	4	8	10d	4	10d	1680	1680	1680	550	1270	1270	1270	420	
							46 to 75	4	8	10d	4	10d	1605	1605	1605	705	1565	1565	1565	535	
						top-min	22-1/2	4	4	10d	7	10d	1330	1330	1330	--	1040	1040	1040	--	
							23 to 45	4	4	10d	4	10d	1335	1335	1335	--	1060	1060	1060	--	
							46 to 75	4	4	10d	4	10d	695	695	695	--	695	695	695	--	

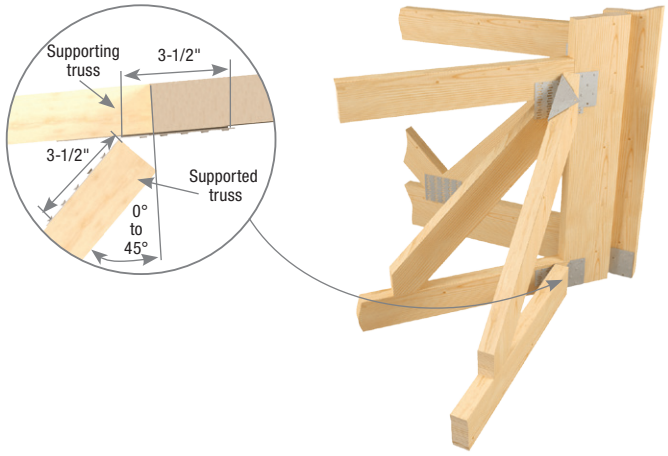
1) Uplift loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) H_{eff} is the minimum distance from the top of the hanger seat to the top of the carrying member.
3) For tabulated top-mount installation loads, the straps must be wrapped over the header a minimum of 2".
4) **NAILS:** 10d x 1-1/2" nails are 0.148" dia. x 1-1/2" long, 10d nails are 0.148" dia. x 3" long.
New products or updated product information are designated in **blue font**.

SNP Skewed Nail Plate

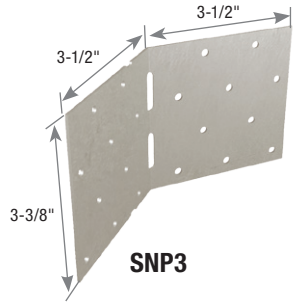
The SNP3 Skewed Nail Plate is designed and tested for connecting square cut corner jack trusses at skews up to 45˚.

Materials: 16 gauge
Finish: G90 galvanizing
Codes: See page 10 for Code Reference Chart

Installation:
- Install specified fasteners from bend line out from each end. Not all nail holes will be filled.
- Attach to the supported truss on the acute angle side so the SNP3 runs behind the end of the jack.
- Set jack truss against supporting truss and nail on exposed flange.
- **Bend angle only once.**
- 8d common nails may be substituted for 8d x 1-1/2" nails with no reduction in load.



Typical SNP3 installation



SNP3

USP Stock No.	Ref. No.	Steel Gauge	Fastener Schedule[2]				DF/SP Allowable Loads (Lbs.)[1]				S-P-F Allowable Loads (Lbs.)[1]				Code Ref.
			Supporting Member		Supported Member					Upift				Upift	
			Qty	Type	Qty	Type	100%	115%	125%	160%	100%	115%	125%	160%	
SNP3	TJC37	16	6	8d x 1-1/2	6	8d x 1-1/2	530	530	530	530	465	465	465	465	6, R11, F3

1) Allowable loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) **NAILS:** 8d x 1-1/2" nails are 0.131" dia. by 1-1/2" long.
New products or updated product information are designated in **blue font**.

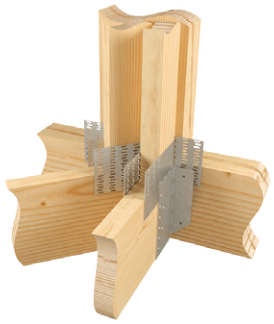
HHC / HJC / HJHC / HTHJ Hip/Jack Connectors

HHC – Designed to support hip/hip truss/rafter.
Contact USP when using in multi-ply applications.

HJHC – Allows for hip/hip support and hip/jack/hip installations.

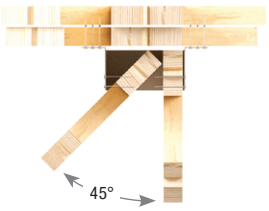
HJC & HTHJ – Used to simultaneously hang a combination of hips and jacks off girder trusses. These hangers fit both left-hand and right-hand applications. An open back design allows for retrofit installations.

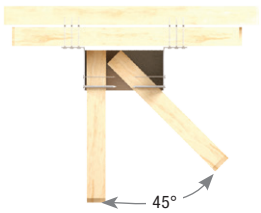
Materials: HHC, HJC, & HJHC – 12 gauge, HTHJ –18 gauge
Finish: G90 galvanizing
Options: See HJC Specialty Options Chart
Codes: See page 10 for Code Reference Chart



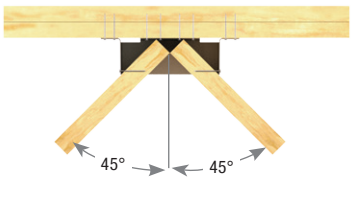
Typical HJC/HTHJ installation

Installation:
• Use all specified fasteners. See Product Notes, page 18.

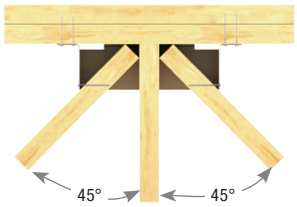




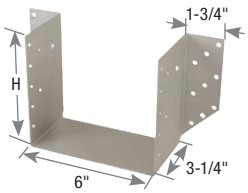
Typical HJC/HTHJ installation top view



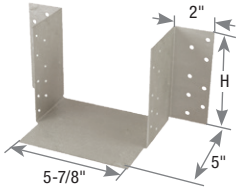
Typical HHC installation top view



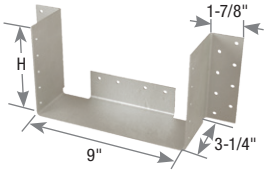
Typical HJHC installation top view



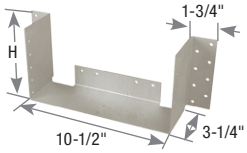
HJC



HTHJ



HHC



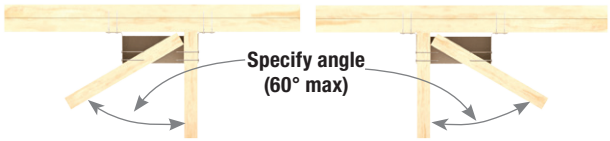
HJHC

Description	USP Stock No.	Ref. No.	Steel Gauge	H (in)	Fastener Schedule[3] Supporting Member Qty	Supporting Member Type	Supported Member per Hip Qty	Supported Member per Jack Qty	Supported Member Type	DF/SP Allowable Loads (Lbs.)[2] Floor 100%	DF/SP Roof 115%	DF/SP Roof 125%	DF/SP Uplift[1] 160%	S-P-F Allowable Loads (Lbs.)[2] Floor 100%	S-P-F Roof 115%	S-P-F Roof 125%	S-P-F Uplift[1] 160%	Code Ref.
2 x 6 right / left	HJC26	LTHJA26, THJA26, THJU26	12	5-3/8	16	16d	5	7	10d	2385	2740	2980	1840	**2180**	**2510**	**2725**	**1955**	10, R8, F5
2 x 8 right / left	HJC28	--	12	7-1/8	20	16d	6	8	10d	2980	3425	3505	1840	**2725**	**2855**	**2855**	**1965**	
2 x 6 terminal	HHC26	LTHJA26, THJA26	12	5-7/16	20	16d	5	--	10d	**3100**	**3505**	3505	**2130**	**2725**	**2800**	**2800**	**1870**	130
2 x 8 terminal	HHC28	--	12	7-3/16	24	16d	6	--	10d	3505	3505	3505	**2410**	**2805**	**2805**	**2805**	**1930**	
2 x 6 terminal	HJHC26	--	12	5-7/16	20	16d	5	2	10d	**3100**	**3505**	3505	**2410**	**2725**	**2815**	**2815**	**1935**	
2 x 8 terminal	HJHC28	--	12	7-3/16	24	16d	6	2	10d	3505	3505	3505	**2410**	**2820**	**2820**	**2820**	**1940**	
2 x 6 terminal	HTHJ26-18	--	18	5	16	16d	7	5	16d	2190	2520	2740	1790	**1920**	**2110**	**2110**	**1225**	10, R8, F5

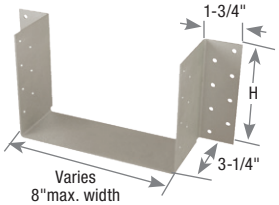
1) Uplift loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) Loading published for total load of hip / jack connection.
3) **NAILS:** 10d nails are 0.148" dia. x 3" long, 16d nails are 0.162" dia. x 3-1/2" long.
New products or updated product information are designated in **blue font**.

HJC Specialty Options Chart

Option	Hip Truss Skew
Range	30˚ to 60˚
Allowable Loads	100% of table load
Ordering	Add SK, angle of hip required, to product number. Ex. HJC26_SK55



Typical HJC (skewed) installation with alternate skew angle top view



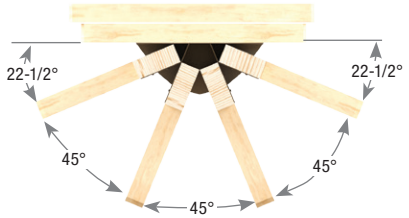
HJC (skewed)

BN Breakfast Nook Hangers

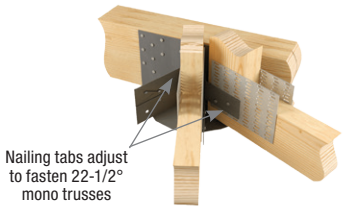
Designed to carry four mono trusses in one connector, it reduces installation time and cost. Provides a tested, load rated connection. Standard configuration spacing: 22-1/2°, 45°, 45°, 45°, 22-1/2°. The design also includes field adjustable nailing tabs.

Materials: 14 gauge
Finish: USP primer
Codes: See page 10 for Code Reference Chart

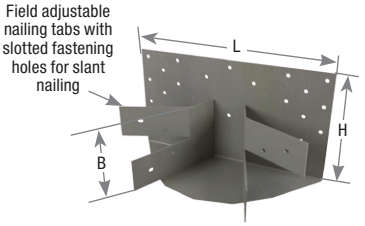
Installation:
- Use all specified fasteners. See Product Notes, page 18.
- Allow a 2" setback for each mono truss.
- For pitched ceiling, design mono trusses with end-vertical upset. Upset equals tangent of the ceiling slope times 5.6".
- **Bend tab only once.**



BN264
Standard configuration
(top view)



Typical BN264 installation



BN264

USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in)			Fastener Schedule[4]				DF/SP Allowable Loads (Lbs.)[3]				Code Ref.
						Carrying Member		Carried Member per Mono Truss		Floor	Roof		Uplift[1,2]	
			L	H	B	Qty	Type	Qty	Type	100%	115%	125%	160%	
BN264	THJM2-4-SDS3	14	10	5-3/8	3-1/4	20	10d	2	10d x 1-1/2	2380	2735	2975	645	10, R8, F5
BN284	--	14	10	7-1/8	3-1/4	20	10d	2	10d x 1-1/2	2380	2735	2975	645	

1) Uplift loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) Maximum uplift per mono truss is 175-lb at 160% for DF/SP and 150-lb at 160% for S-P-F.
3) Loading published is for total load of connection.
4) **NAILS:** 10d x 1-1/2 nails are 0.148" dia. x 1-1/2" long, 10d nails are 0.148" dia. x 3" long.

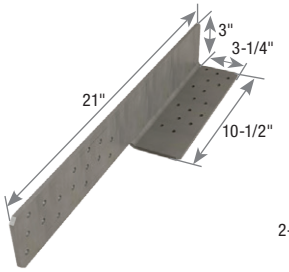
LDSC / DSC Drag Strut Connectors

Transfers lateral loads from girder truss into bearing walls.

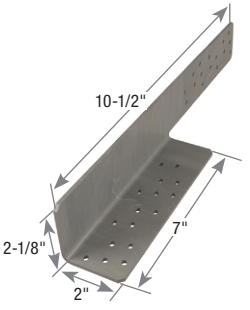
Materials: See chart
Finish: USP primer
Codes: See page 10 for Code Reference Chart

Installation:
- Use all specified fasteners. See Product Notes, page 18.
- WS3 Wood Screw, 1/4" dia. x 3" long, are supplied with DSC4 connector.

Typical DSC4R installation



DSC4R right shown



LDSC4L left shown

USP Stock No.	Ref. No.	Steel Gauge	Fastener Schedule[2,3]				DF/SP Allowable Loads (Lbs.)[1]		S-P-F Allowable Loads (Lbs.)[1]		Code Ref.
			Truss		Top Plate		Compression	Tension	Compression	Tension	
			Qty	Type	Qty	Type	160%	160%	160%	160%	
LDSC4L/R	--	14	9	10d x 1-1/2	9	10d x 1-1/2	1640	1640	1425	1425	10, R8, F5
DSC4L/R	DSC5R/L-SDS3	3	16	WS3	16	WS3	4965	4945	4270	4250	

1) Allowable loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) WS3 wood screws are 1/4" x 3" and are included with DSC4 connector.
3) **NAILS:** 10d x 1-1/2" nails are 0.148" dia. x 1-1/2" long.

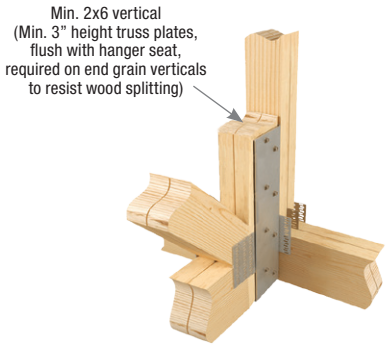
GTWS High Uplift Girder Truss Hangers

The GTWS series girder-to-girder hangers feature high uplift capacities along with high gravity load ratings.

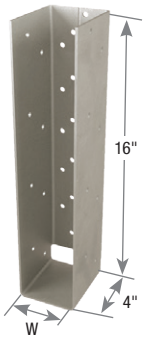
Materials: 10 gauge
Finish: G90 galvanizing
Codes: See page 10 for Code Reference Chart

Installation:

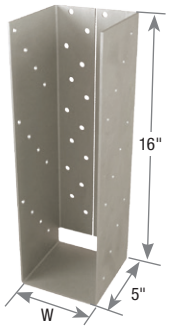
- Use all specified fasteners. See Product Notes, page 18.
- WS Wood Screws are included with hangers where specified.
- **GTWS2T** shall be installed to a minimum 2x4 vertical member of a girder truss with no restriction on the size of the bottom chord.
- **GTWS3T** shall be installed to a minimum 2x6 vertical member of a girder truss with no restriction on the size of the bottom chord.
- **GTWS4T** shall be installed to a minimum 2x8 vertical member of a girder truss with no restriction on the size of the bottom chord.



Typical GTWS installation



GTWS2T



GTWS3T

USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in)			Fastener Schedule[2,3,4]				No. of Plies	DF/SP Allowable Loads (Lbs.)				Code Ref.
						Supporting Truss		Supported Truss						Uplift[1]	
			W	H	D	Qty	Wood Screws	Qty	Wood Screws		100%	115%	125%	160%	
GTWS2T	--	10	3-1/4	16	4	22	WS3	16	WS3	2	8720	10030	10900	**9770**	F26
GTWS3T	--	10	4-7/8	16	5	28	WS3	24	WS3	3	11100	12470	12470	12490	
GTWS4T	--	10	6-1/2	16	5	28	WS3	24	WS3	4	11100	12470	12470	12490	

1) Uplift loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) WS3 wood screws require a minimum 3-in wood penetration.
3) WS3 wood screws are 1/4" x 3" long and are included with the GTWS hangers.
4) WS3 wood screws may be installed in both vertical and horizontal members.
New products or updated product information are designated in **blue font**.

GTQ / GTQM Girder Truss Hangers

The GTQ / GTQM hangers connect to multi-ply girder truss with USP's WS Wood Screws offering high load capacities. Design features minimum and maximum fastening installation options to accommodate various sizes of vertical web. GTQM's are designed for LVL sizes, for example GTQM218.

Materials: 7 gauge

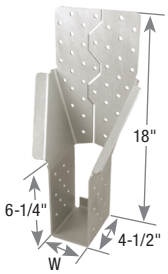
Finish: G90 galvanizing

Codes: See page 10 for Code Reference Chart

Installation:

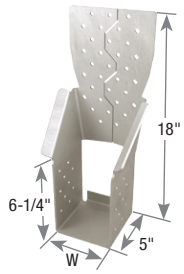
- Use all WS wood screws as specified.
- Install hanger centered on vertical web.
- GTQ's are designed to be installed on various sizes of vertical web. Maintain a minimum 5/8" fastener edge distance as per the National Design Specification where truss connector plates are not present.
- Install WS wood screws in all fastener holes including diamond holes for maximum values.
- Refer to Backer Block installation on page 221 if the length of the screws going into the supporting truss are longer than the thickness of the plies.

Typical GTQ218 installation
(GTQM218 similar)



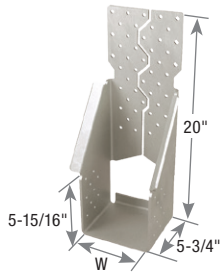
GTQ218
(GTQM218 similar)

Typical GTQ318 installation
(GTQM318 similar)



GTQ318
(GTQM318 similar)

Typical GTQ420 installation
(GTQM420 similar)



GTQ420
(GTQM420 similar)

USP Stock No.	Ref. No.	W (in)	Install Type	Min Vert Web Size	Fastener Schedule[1,3] Supporting Truss[4,5] Qty	Supporting Truss Type[5]	Supporting Truss Min. No. of Plies	Supported Truss Qty[6]	Supported Truss Type	Supported Truss No. of Plies	DF/SP Allowable Loads (Lbs.) Floor 100%	DF/SP Roof 115%	DF/SP Roof 125%	DF/SP Wind[8] 160%	DF/SP Uplift[2] 160%	S-P-F Allowable Loads (Lbs.) Floor 100%	S-P-F Roof 115%	S-P-F Roof 125%	S-P-F Wind[8] 160%	S-P-F Uplift[2] 160%	Code Ref.
GTQ218	THGQ2-SDS3, THGQH2-SDS3	3-1/4	Min	2x6	18	WS3	2	20	WS3	2	6965	7900	7900	7900	4595	6225	6605	6605	6605	3845	130
			Max	2x8	30						11610	13160	13160	13160	4595	10375	11005	11005	11005	3845	
GTQM218[7]	--	3-5/8	Min	2x6	18						6965	7900	7900	7900	4595	6225	6605	6605	6605	3845	
			Max	2x8	30						11610	13160	13160	13160	4595	10375	11005	11005	11005	3845	
GTQ318	THGQ3-SDS4.5, THGQH3-SDS4.5	4-7/8	Min	2x6	25	WS45	2	20	WS45	3	11480	11480	11480	11480	4595	10240	10240	10240	10240	3810	
			Max	2x8	33						14665	14665	14665	14665	4760	14500	14500	14500	14500	3945	
GTQM318[7]	--	5-1/2	Min	2x6	25						11480	11480	11480	11480	4595	10240	10240	10240	10240	3810	
			Max	2x8	33						14665	14665	14665	14665	4760	14500	14500	14500	14500	3945	
GTQ420	THGQH4-SDS6	6-1/2	Min	2x8	41	WS6	3	20	WS6	4	14435	14435	14435	14435	4690	14435	14435	14435	14435	3745	
			Max	2x10	47						17600	17600	17600	17600	4690	15795	15795	15795	15795	3745	
GTQM420[7]	--	7-1/4	Min	2x8	41						14435	14435	14435	14435	4690	14435	14435	14435	14435	3745	
			Max	2x10	47						17600	17600	17600	17600	4690	15795	15795	15795	15795	3745	

1) WS3 Wood Screws are 1/4" x 3" long, WS45 Wood Screws are 1/4" x 4-1/2" long, WS6 Wood Screws are 1/4" x 6" long. Screws are included with GTQ and GTQM hangers.
2) Uplift loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
3) WS Wood Screws may be installed through metal truss connector plates as approved by truss designer per ANSI/TPI 1-2007 Section 7.5.3.4 and 8.9.2. Pre-drilling required through the plate using a maximum of 5/32" bit.
4) Truss plies of the supporting member must be fastened together to transfer the load (through all truss plies) that is not transferred by the hanger screws; fastening schedule is to be specified by the truss designer.
5) **If the length of the screws going into the supporting truss are longer than the thickness of the plies, refer to the backer block installation on page 221.**
6) Wood screws specified for supported member must ALL be installed into the supported member while maintaining a minimum 5/8" edge distance where truss connector plates are not present.
7) Supported members on GTQM hangers shall have Specific Gravity of not less than 0.46.
8) Wind (160%) is a download value.

New products or updated product information are designated in **blue font**.

GT / GTD / GTS Girder Truss Hangers

The GT primarily hangs girder trusses off other girder trusses, although a wide variety of other heavy-duty installations apply.

Materials: Back Plate – 3 gauge; Strap – 7 gauge

Finish: USP primer

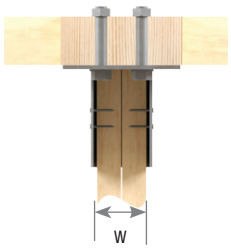
Options: All models available in LVL sizes, use M in place of T, as in GT2M4B.

Codes: See page 10 for Code Reference Chart

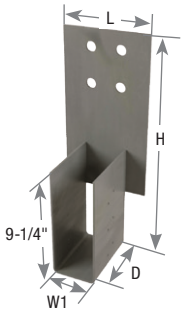
Installation:

- Use all specified fasteners. See Product Notes, page 18.
- Minimum heel height is 9-1/4" for GT hangers.

Typical GT2T4B installation



GT top view



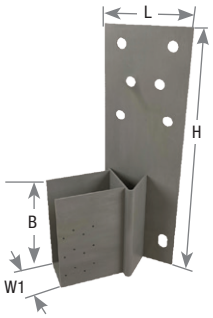
GT2T4B

Supported Member	USP Stock No.	Ref. No.	Dimensions (in) W1	L	H	D	Fastener Schedule[1,2,3] Supporting Truss Qty	Supporting Truss Bolt Dia (in)	Supported Truss Qty	Supported Truss Type	No of Plies	DF Allowable Loads (Lbs.) Supporting Member 100%	115%	Uplift 160%	S-P-F Allowable Loads (Lbs.) Supporting Member 100%	115%	Uplift 160%	Code Ref.
2-ply	GT2T2B	--	3-7/16	6	19	4-1/2	2	3/4	12	16d	1	1725	1985	2000	1580	1590	1600	130
											2	2950	3390		2580	2715		
											3	3340	3840		3075	3075		
	GT2T2BH	--	3-7/16	6	22-1/4	4-1/2	2	1	12	16d	1	2270	2610	2000	2075	2090	1600	
											2	3920	4510		3430	3610		
											3	5715	6575		4950	5265		
	GT2T3B	--	3-7/16	6	22	4-1/2	3	3/4	12	16d	1	2505	2880	2000	2295	2305	1600	
											2	4370	5025		3825	4025		
											3	4985	5730		4590	4590		
	GT2T4B	THGB2	3-7/16	7	19	5-1/2	4	3/4	12	16d	1	3465	3985	2000	3170	3180	1595	10, R8, F5
											2	5905	6790		5170	5945		
											3	6680	7680		6310	6655		
	GT2T6B	--	3-7/16	7-1/4	22	6	6	3/4	12	16d	1	5200	5980	2000	4755	4770	1595	
											2	8860	10190		7755	8920		
											3	10020	11520		9465	9945		
	GT2T6BH	--	3-7/16	7-1/4	26-1/4	6	6	1	12	16d	1	6855	7885	2000	6260	6290	1595	130
											2	11795	13565		9645	9945		
											3	13530	13870		9645	9945		
	GT2T8B	THGBH2	3-7/16	7-1/4	25	6	8	3/4	12	16d	1	6935	7975	2000	6340	6360	1595	10, R8, F5
											2	11815	13585		9645	9945		
											3	13355	13870		9645	9945		
3-ply	GT3T3B	--	5-1/8	6	22	4-1/2	3	3/4	12	16d	1	2505	2880	2000	2295	2295	1595	130
											2	4370	5025		3825	4005		
											3	4985	5730		4565	4565		
	GT3T3BH	--	5-1/8	6	26-1/4	4-1/2	3	1	12	16d	1	3200	3675	2000	2920	2930	1595	
											2	5740	6605		5020	5260		
											3	8490	9765		7355	7780		
	GT3T4B	THGB3	5-1/8	7	19	5-1/2	4	3/4	12	16d	1	3465	3985	2000	3165	3165	1590	10, R8, F5
											2	5905	6790		5170	5945		
											3	6680	7680		6310	6620		
	GT3T4BH	--	5-1/8	7	22-1/4	5-1/2	4	1	12	16d	1	4570	5255	2000	4175	4175	1590	
											2	7865	9045		6875	7910		
											3	11435	13150		9905	10605		
	GT3T6B	--	5-1/8	7-1/4	22	6	6	3/4	12	16d	1	5200	5980	2000	4750	4750	1590	
											2	8860	10190		7755	8920		
											3	10020	11520		9465	10190		
	GT3T6BH	--	5-1/8	7-1/4	26-1/4	6	6	1	12	16d	1	6855	7885	2000	6260	6260	1590	
											2	11795	13565		10315	11865		
											3	14860	14860		12360	12360		
	GT3T8B	THGBH3	5-1/8	7-1/4	25	6	8	3/4	12	16d	1	6935	7975	2000	6330	6330	1590	
											2	11815	13585		10340	11890		
											3	13355	15360		12370	12370		
	GT3T8BH	--	5-1/8	7-1/4	30-1/4	6	8	1	12	16d	1	9140	10515	2000	8350	8350	1590	
											2	15725	18085		13470	13770		
											3	19155	19465		13470	13770		

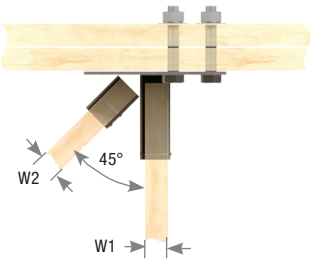
1) Bolts shall conform to ASTM A 307 Grade A or better.
2) GT series require 2 x 6 vertical member for 2-, 3-, and 4-bolt hangers and 2 x 8 for 6 and 8-bolt hangers.
3) **NAILS:** 16d nails are 0.162" dia. x 3-1/2" long.
New products or updated product information are designated in **blue font**.

Continued on next page

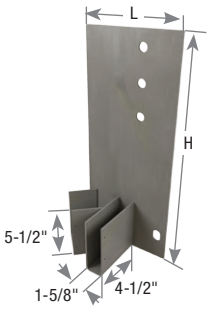
GT / GTD / GTS Girder Truss Hangers



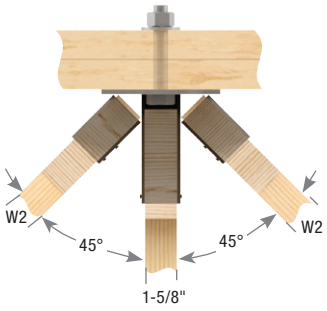
GT skewed



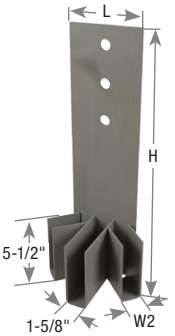
GTS
top view (left shown)



GTS1T2H3BSKL
(left shown)



GTD
top view



GTD1T1H3B

Supported Member	USP [4,5] Stock No.	Ref. No.	Dimensions (in) W1	W2	L	H	B	Fastener Schedule [2,3,6] Supporting Truss Qty	Supporting Truss Bolt Dia.	Supported Truss Qty	Supported Truss Type	Supported Hip Qty	Supported Hip Type	No. of Plies	DF Allowable Loads (Lbs.) Supporting Member 100%	115%	Uplift 160%	S-P-F Allowable Loads (Lbs.) Supporting Member 100%	115%	Uplift 160%	Code Ref.
4-ply	GT4T4B	--	6-1/2	--	7-1/2	19	5-1/2	4	3/4	12	16d	--	--	1	3465	3985	2000	3160	3160	1585	10, R8, F5
														2	5905	6790		5170	5945		
														3	6680	7680		6310	6605		
	GT4T4BH	--	6-1/2	--	7-1/2	22-1/4	5-1/2	4	1	12	16d	--	--	1	4570	5255	2000	4165	4165	1585	
														2	7860	9040		6875	7905		
														3	11440	13155		9910	10580		
	GT4T6B	--	6-1/2	--	7-1/2	22	6	6	3/4	12	16d	--	--	1	5200	5980	2000	4735	4735	1585	
														2	8860	10185		7755	8920		
														3	10020	11525		9465	10160		
	GT4T6BH	--	6-1/2	--	7-1/2	26-1/4	6	6	1	12	16d	--	--	1	6855	7880	2000	6240	6240	1585	
														2	11790	13560		10310	11860		
														3	14860	14860		12325	12325		
	GT4T8B	THGBH4	6-1/2	--	7-1/2	25	6	8	3/4	12	16d	--	--	1	6930	7970	2000	6310	6310	1585	
														2	11810	13580		10340	11890		
														3	13360	15365		12340	12340		
5-ply	GT5T8BH	--	8-1/8	--	9-1/4	30-1/4	6	8	1	12	16d	--	--	1	9140	10510	2000	8295	8295	1580	
														2	15720	18080		13725	15390		
														3	19465	19465		15390	15390		
2-ply skewed 45°	GT2T2BSKL/R	--	3-7/16	--	6	19	9-1/4	3	3/4	12	16d	--	--	1	1725	1985	2000	1580	1590	1600	130
														2	2920	3355		2555	2715		
														3	3295	3785		3075	3075		
	GT2T4BSKL/R	--	3-7/16	--	7-1/4	19	9-1/4	5	3/4	12	16d	--	--	1	3450	3970	2000	3155	3190	1600	
														2	5835	6710		5110	5875		
														3	6585	7575		6220	6675		
1-ply hip & jack	GTS1T1H3BSKL/R	--	1-5/8	1-5/8	9-1/4	22	5-1/2	4	3/4	4	10d x 1-1/2	4	10d x 1-1/2	1	2490	2865	--	2280	2295	--	
														2	4215	4850		3690	4005		
														3	4755	5470		4495	4570		
	GTS1T1H4BSKL/R	--	1-5/8	1-5/8	9-1/4	19	5-1/2	5	3/4	4	10d x 1-1/2	4	10d x 1-1/2	1	3445	3965	--	3155	3175	--	
														2	5830	6705		5105	5760		
														3	6580	7565		5590	5760		
2-ply hip & 1-ply jack	GTS1T2H3BSKL/R	--	1-5/8	3-4/9	9-1/4	22	5-1/2	4	3/4	4	10d x 1-1/2	4	10d x 1-1/2	1	2490	2865	--	2280	2285	--	
														2	4215	4850		3690	3985		
														3	4755	5470		4495	4545		
1-ply terminal hip	GTD1T1H3B	--	1-5/8	1-5/8	6	22	5-1/2	3	3/4	4	10d x 1-1/2	4	10d x 1-1/2	1	2505	2880	--	2285	2285	--	
														2	4240	4875		3710	3990		
														3	4785	5500		4520	4550		
2-ply terminal hip	GTD1T2H3B	--	1-5/8	3-7/16	8	22	5-1/2	3	3/4	4	10d x 1-1/2	4	10d x 1-1/2	1	2495	2870	--	2280	2280	--	
														2	4225	4855		3695	3975		
														3	4765	5480		4500	4535		

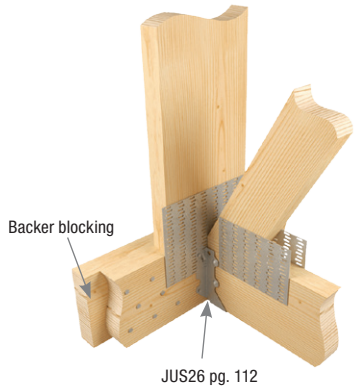
1) The listed loads for GTS and GTD is the total of hip and jack connection.
2) Bolts shall conform to ASTM A 307 or better.
3) GT Series require 2 x 6 vertical member for 2, 3, and 4 bolt hangers and 2 x 8 for 6 and 8 bolt hangers.
4) All side pocket applications assume 45° angle.
5) Must specify right or left for all GTS and GT skewed.
6) **NAILS:** 10d x 1-1/2" nails are 0.148" dia. x 1-1/2" long, 16d nails are 0.162" dia. x 3-1/2" long.
New products or updated product information are designated in **blue font.**

ALTERNATE INSTALLATIONS

Backer block installation

Wood blocking used to achieve full design load value of a face mount hanger attached to a carrying member. **(Blocking to be designed by truss designer or engineer of record)**

- Wood blocking should be of similar size/grade as the truss member to which it is attached. The blocking should be designed to act as one unit with truss members.
- Truss designer shall approve blocking size/grade, fasteners required, and application.
- All fasteners used to attach wood blocking should be independent of the fasteners in the truss hanger.

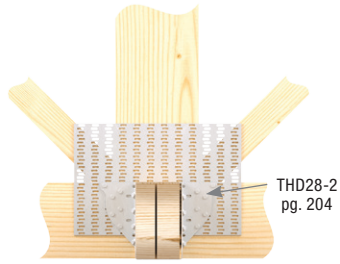


Panel point installation

Connection with face mount hanger attaching to a truss panel point.

(Hanger nails that do not penetrate wood in panel point provide no load resistance)

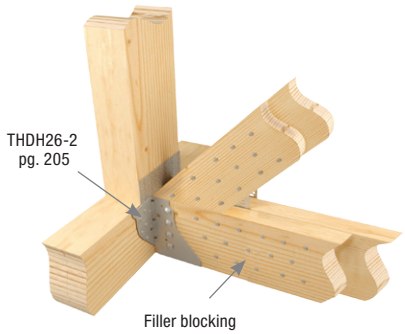
Reduce load according to the code.

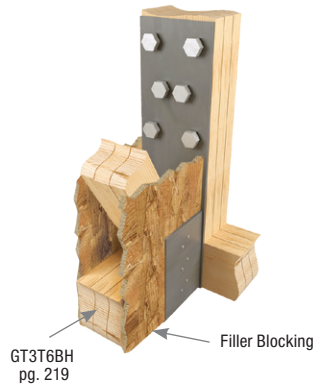


Filler block installation

Wood filler blocking used for supported member width less than hanger width.

(Blocking and blocking fasteners/quantity to be designed by truss designer or engineer of record)





TRUSS BRACE & SPACER (STABILIZER™)

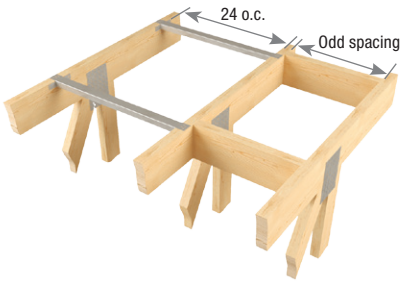
The Stabilizer™ Truss Brace & Spacer provides temporary construction bracing in the roof and ceiling planes, as well as permanent lateral bracing for webs as specified by your truss engineering.

The Stabilizer™ is easily installed by embedding the patented MII 20 teeth on the top flange straight into the edge of the truss member to be braced with a framing hammer. The side tabs are then secured by driving the teeth into the face of the truss member being braced.

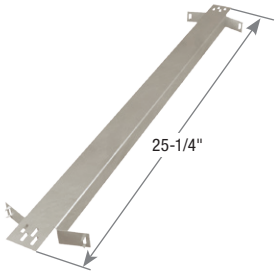
Materials: 20 gauge
Finish: G60 galvanizing
Codes: See page 10 for Code Reference Chart

Installation:

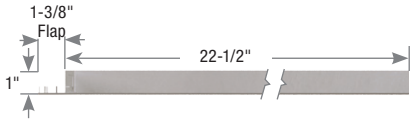
- Use 31-16 for standard 16" o.c. spacing and 31-24 for standard 24" o.c. spacing. For odd spacing, cut and insert a solid block between the trusses.
- Typically, The Stabilizer™ is installed at 6'– 8' centers along the roof plane and 10'– 15' along the ceiling plane. (Refer to engineering specifications BCSI 1-03, published by The Truss Plate Institute for specific bracing requirements.)
- The Stabilizer™ must be supplemented with diagonal bracing in the roof and ceiling planes and cross bracing in the web plane at required intervals.
- Web forces are not to exceed 8000 lbs.
- The Stabilizer™ is properly installed when the top flap and side tabs are flush with the member being braced.



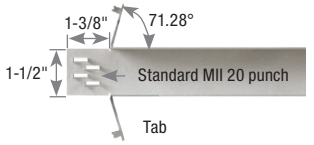
Temporary construction bracing installation



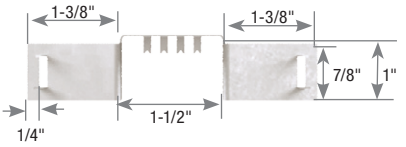
31-24 Stabilizer™



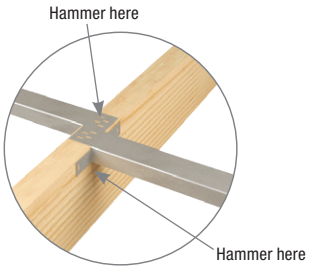
Side view



Top view



End view



Chord attachment detail

Web bracing installation

Important: The erection contractor is responsible for determining and installing the temporary bracing for the structure, including the trusses. It is most important for the installer to provide adequate means for bracing the first truss installed. The performance of the entire bracing system depends on the adequacy of the ground bracing or other means of bracing the first group of trusses installed. The building designer is responsible for the permanent bracing design of the overall structure including the truss. This includes the design of required supplemental diagonal and cross bracing.

USP Stock No.	Ref. No.	Steel Gauge	O.C. Spacing (in)	Allowable Axial Loads (Lbs.)			Code Ref.
				Tension	Tension with Fastener	Compression	
31-16	TSBR2-16	20	16	105	155	420	17
31-24	TSBR2-24	20	24	105	155	420	

1) 1 pound = 4.448N
2) Fastener shall be (1) 8d or 10d common wire nail inserted through nail slot.
3) **NAILS:** 8d nails are 0.131" dia. x 2-1/2" long, 10d nails are 0.148" dia. x 3" long.

TS / TSX Truss Spacers

Truss spacers give framers fast and accurate spacing for trusses, rafters, or floor joists. The TS and TSX eliminate the need to mark layouts on bearing plates, improve installation speed, and help eliminate spacing errors. These spacers are light weight and compact.

Materials: See chart
Finish: G90 galvanizing
Codes: See page 10 for Code Reference Chart

Installation:
- Use (1) 8d nail per end to fasten units to trusses, rafters, or floor joists.

Important: These units provide spacing guides only. Do not rely on the TS or TSX for bracing.

Typical TSX installation

TSX multi-unit spacer

Joist Width	USP Stock No.[1]	Ref. No.	Steel Gauge	O. C. Spacing	Overall Length	Sections Per Piece	Fastener Schedule		Code Ref.
							Qty	Type[2]	
1-1/2	TS	--	20	24	2-ft 1-1/2-in	1	2	8d	120
1-1/2	TSX16	TSF2-16	22	16	8-ft	6	2	8d	
1-1/2	TSX24	TSF2-24	22	24	10-ft	5	2	8d	

1) TSX spacers are shipped folded.
2) **NAILS:** 8d nails are 0.131" dia x 2-1/2" long.

Typical TS installation

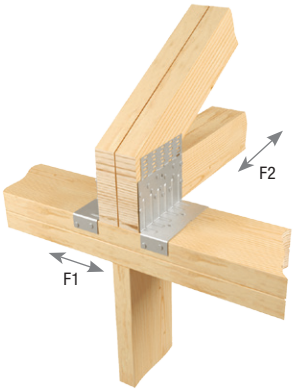
TS single-unit spacer

SBP Supplementary Bearing Plates

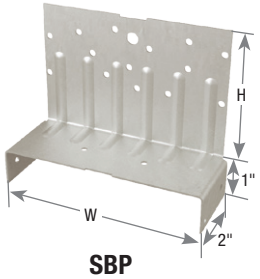
Use the SBP instead of extra truss plies or nail-on scabs to distribute concentrated truss reactions and avoid top plate crushing. The two-piece design accommodates any number of girder plies. A wraparound design gives superior uplift resistance, and reinforcement ribs effectively distribute bearing loads. Works with both single and double 2x4 or 2x6 top plates.

Materials: 16 gauge
Finish: G90 galvanizing
Codes: See page 10 for Code Reference Chart

Installation:
- Use all specified fasteners. See Product Notes, page 18.
- **The SBP shall be installed in pairs.**



Typical SBP installation



SBP

No. of Truss Plies	Wood Species	F_c (psi)	Allowable Loads (Lbs.)[1,2,3] SBP's Alone 100%	115%	125%	SBP + Truss Bearing[4] 100%	EBL	115%	EBL	125%	EBL
SBP4 on 2 x 4 Top Plate (3-1/2" wide)											
1-Ply	DF	625	2260	2600	2825	5540	5.91	5880	6.27	6105	6.51
	SP	565	2440	2805	3050	5405	6.38	5770	6.81	6015	7.10
	S-P-F	425	1940	2230	2425	4170	6.54	4460	7.00	4655	7.30
	Hem Fir	405	1980	2275	2475	4105	6.76	4400	7.24	4600	7.57
2-Ply	DF	625	2320	2670	2900	8885	4.74	9235	4.93	9465	5.05
	SP	565	2500	2875	3075	8435	4.98	8810	5.20	9010	5.32
	S-P-F	425	2000	2300	2500	6465	5.07	6765	5.31	6965	5.46
	Hem Fir	405	2040	2345	2550	6295	5.18	6600	5.43	6805	5.60
3-Ply	DF	625	2320	2670	2900	12165	4.33	12515	4.45	12745	4.53
	SP	565	2500	2875	3075	11400	4.48	11775	4.63	11975	4.71
	S-P-F	425	2000	2300	2500	8695	4.55	8995	4.70	9195	4.81
	Hem Fir	405	2040	2345	2550	8420	4.62	8725	4.79	8930	4.90
4-Ply	DF	625	2320	2670	2900	15445	4.12	15795	4.21	16025	4.27
	SP	565	2500	2875	3075	14365	4.24	14740	4.35	14940	4.41
	S-P-F	425	2000	2300	2500	10925	4.28	11225	4.40	11425	4.48
	Hem Fir	405	2040	2345	2550	10545	4.34	10850	4.47	11055	4.55
SBP6 on 2 x 6 Top Plate (5-1/2" wide)											
1-Ply	DF	625	3165	3640	3955	8320	8.87	8795	9.38	9110	9.72
	SP	565	3415	3930	4270	8075	9.53	8590	10.14	8930	10.54
	S-P-F	425	2715	3125	3395	6220	9.76	6630	10.40	6900	10.82
	Hem Fir	405	2770	3190	3465	6110	10.06	6530	10.75	6805	11.20
2-Ply	DF	625	3250	3735	4060	13565	7.23	14050	7.49	14375	7.67
	SP	565	3500	4025	4375	12825	7.57	13350	7.88	13700	8.08
	S-P-F	425	2800	3220	3500	9815	7.70	10235	8.03	10515	8.25
	Hem Fir	405	2855	3285	3570	9540	7.85	9970	8.21	10255	8.44
3-Ply	DF	625	3250	3735	4060	18720	6.66	19205	6.83	19530	6.94
	SP	565	3500	4025	4375	17485	6.88	18010	7.08	18360	7.22
	S-P-F	425	2800	3220	3500	13320	6.96	13740	7.18	14020	7.33
	Hem Fir	405	2855	3285	3570	12880	7.07	13310	7.30	13595	7.46
4-Ply	DF	625	3250	3735	4060	23875	6.37	24360	6.50	24685	6.58
	SP	565	3500	4025	4375	22145	6.53	22670	6.69	23020	6.79
	S-P-F	425	2800	3220	3500	16825	6.60	17245	6.76	17525	6.87
	Hem Fir	405	2855	3285	3570	16220	6.67	16650	6.85	16935	6.97

1) Allowable loads are for a pair of SBP devices. SBP's shall be installed in pairs.
2) Multiple ply trusses shall be fastened together to act as a single unit.
3) EBL denotes effective bearing length and includes the actual bearing length plus the contribution of the SBP device.
4) Assumes full seating of truss on top plate.

USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in) W	H	Joist Thickness (in)	Fastener Schedule[1,5] Plate Top Qty	Plate Sides Qty	Plate Type	Truss Qty	Truss Type	DF/SP Allowable Loads (Lbs.)[2,3] Uplift[4] 160%	F1 160%	F2 160%	S-P-F Allowable Loads (Lbs.)[2,3] Uplift[4] 160%	F1 160%	F2 160%	Code Ref.
SBP4	TBE4	16	3-1/2	3-1/4	2-7/8 or less	4	8	10d	20	10d x 1-1/2	1485	1530	1630	1280	1285	1370	10, R8, F5
					3 or more				20	10d							
SBP6	TBE6	16	5-1/2	3-1/4	2-7/8 or less	4	8	10d	28	10d x 1-1/2	1485	1530	1630	1280	1285	1370	
					3 or more				28	10d							

1) Fastener Schedule is for a pair of SBP devices.
2) Allowable loads are for a pair of SBP devices. SBP's shall be installed in pairs.
3) Multiple ply trusses shall be fastened together to act as a single unit.
4) Uplift loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
5) **NAILS:** 10d x 1-1/2" nails are 0.148" dia. x 1-1/2" long, 10d nails are 0.148" dia. x 3" long.

FTC / FTCF Floor Truss Clips

FTC clips slide easily onto the top or bottom chord and provides a guide to help position and support the second truss during assembly.

FTCF clips easily install after the trusses are installed.

Materials: 18 gauge
Finish: G90 galvanizing
Codes: See page 10 for Code Reference Chart
Patents: #5,653,079

Installation:

- Use all specified fasteners. See Product Notes, page 18.
- The truss designer must determine the number of clips and spacing between units according to concentrated load conditions and uniform loading requirements.

Concentrated Load Spacing Tips:
Divide half of the concentrated load by the clip capacity to find the number of clips required.

Example:
Concentrated (point) load = 3000 lbs, FTC1 capacity (DF/SP) = 865 lbs

$$\frac{1/2\ (3000\ \text{lbs})}{865\ \text{lbs}} = 1.73 = 2\ \text{clips}$$

Place 2 clips near concentrated load.

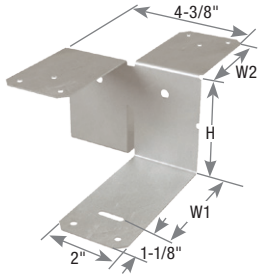
Uniform Load Spacing Tips:
Divide the clip capacity by half the required load per lineal foot.

Example:
Uniform (distributed) load = 500 lbs/ft, FTC1 capacity (DF/SP) = 865 lbs

$$\frac{865\ \text{lbs}}{1/2\ (500\ \text{lbs})} = 3.46'\ \text{spacing}$$

Space clips at 3'4" along length of truss.

Typical FTC installation



FTC

Typical FTC
2-ply metal web truss
installation

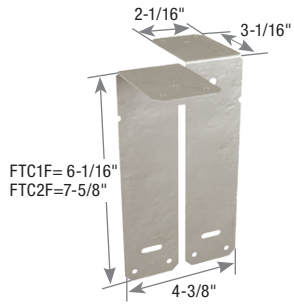
Step 1

Step 2

Typical FTC2F
retrofit installation

Truss Size	USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in)			Fastener Schedule[3]		DF/SP Maximum Transfer Loads[1,2]	S-P-F Maximum Transfer Loads[1,2]	Code Ref.
				W1	W2	H	Qty	Type			
3 x 2	FTC32	--	18	2-1/16	2-1/2	1-1/2	10	10d x 1-1/2	680	590	10, R8, F5
4 x 2	FTC1	--	18	3-1/2	3-1/16	1-1/2	10	10d	865	750	
	FTC1F	--	18	3-1/16	--	4-3/8	10	10d	865	750	
(2) 4 x 2	FTC2	--	18	3-1/2	3-1/16	3	10	10d	865	750	
	FTC2F	--	18	3-1/16	--	4-3/8	10	10d	865	750	

1) Transfer loads are for 100% floor load, and shall not be increased for short term load duration.
2) Truss designer shall determine the number of clips for concentrated loads and the spacing for uniform loads.
3) **NAILS:** 10d x 1-1/2" nails are 0.148" dia. x 1-1/2" long, 10d nails are 0.148" dia. x 3" long.



FTCF

VTT Valley Truss Tie

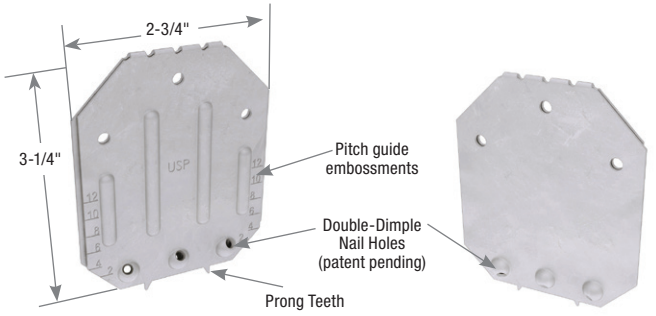
The VTT is a Valley Truss Tie designed to transfer loads from a valley truss into the supporting structure below. It also resists the sliding forces from downward loads when the valley truss is set upon a sloped lower roof. The ability to resist the sliding force eliminates the need for support wedges under the valley truss bottom chord or special order valley roof trusses with a bevel-cut bottom chord.

- Double-dimple nail holes assure the nails are driven in at the correct angle into the supporting member every time.
- Flat design requires no field bending to match the supporting roof pitch.
- 2-Ply steel with stiffening ribs provides a high resistance to sliding forces from downward loads.
- Prong teeth help hold the VTT in place while nailing.
- Accommodates supporting roof pitches from 0/12 to 12/12.
- Pitch guide embossments allow attachment to valley truss on ground.

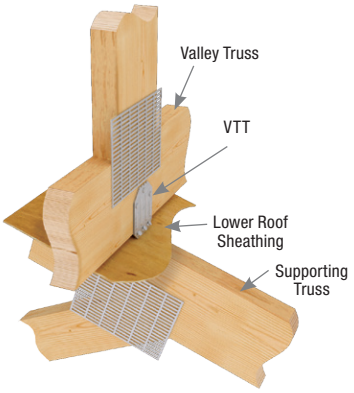
Materials: 18 gauge
Finish: G90 galvanizing
Codes: See page 10 for Code Reference Chart
Patents: Pending

Installation:
- Mark the location of the supporting truss located below the lower roof sheathing.
- Place the VTT flat against the valley truss, centered over the top chord of the truss below. Tap the top edge down with a hammer to engage the prong teeth.
- Nail the VTT to the bottom chord of the valley truss using (3) 10d x 1-1/2" nails.
- Install (3) 10d common nails through the double-dimples and drive them through the sheathing into the top chord of the supporting truss below. One nail will be centered in the top chord below. The other two nails are driven in at preset angles guided by the dimple holes.

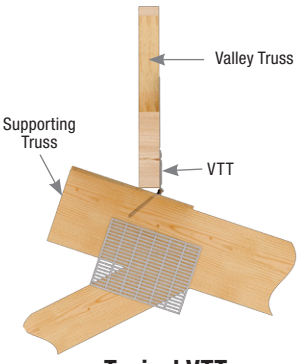
Alternate Installation for Ground/Pre-Placement of VTT
- Mark the location of the supporting truss located below the lower roof sheathing. Center VTT horizontally on that mark.
- Use pitch guide embossments on part to locate the vertical position of VTT. Pitch numbers on connector are the numerator in the pitch slope ratio. (i.e. “6” indicates a 6/12 pitch, “12” indicates a 12/12 pitch, etc.)
- Secure the VTT to valley truss with (3) 10d x 1-1/2” nails.
- When valley truss is hoisted into proper position on roof, install (3) 10d common nails through the double-dimples and drive them through the sheathing into the top chord of the supporting truss below. One nail will be centered in the top chord below. The other two nails are driven in at a preset angles guided by the dimple holes.



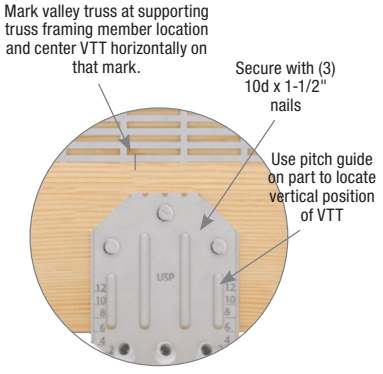
VTT Front View **VTT Back View**



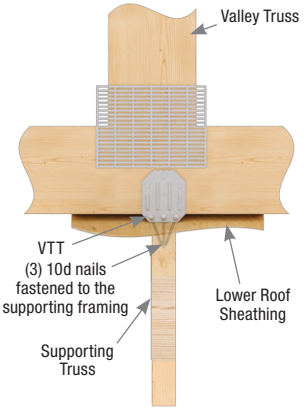
Typical VTT installation



Typical VTT side view installation



Alternate Installation for Ground / Pre-Placement installation



Typical VTT front view installation

USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in) W	Dimensions (in) H	Fastener Schedule[4] Supporting Framing Qty	Supporting Framing Type	Valley Truss Qty	Valley Truss Type	Supporting Roof Pitch	DF/SP Allowable Loads (Lbs.) Download[3] 115%,125%,160%	DF/SP Uplift[1,2] 160%	S-P-F Allowable Loads (Lbs.) Download[3] 115%,125%,160%	S-P-F Uplift[1,2] 160%	Code Ref.
VTT	VTCR	18	2-3/4	3-1/4	3	10d	3	10d x 1-1/2	< 4/12	840	375	685	270	130
									4/12 to < 8/12	840	445	685	325	
									8/12 to 12/12	840	480	685	400	

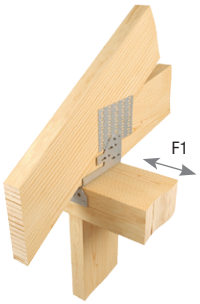
1) Uplift Loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) Uplift loads are based on installation over 7/16" or 15/32" sheathing.
3) Downloads have been increased for snow, construction and wind loads; no further increase shall be permitted.
4) **NAILS:** 10d x 1-1/2" nails are 0.148" dia. x 1-1/2" long, 10d nails are 0.148" dia. x 3" long.
New products or updated product information are designated in **blue font**.

STC Truss Clips

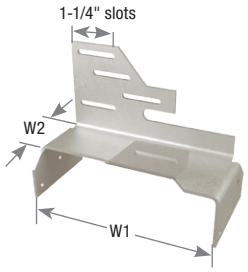
The STC provides uplift resistance by securing trusses to top plates. Slotted nail holes allow for horizontal movement as scissor trusses deflect.

Materials: 12 gauge
Finish: G90 galvanizing
Codes: See page 10 for Code Reference Chart

Installation:
- Use all specified fasteners. See Product Notes, page 18.
- When installing, do not fully set nails.
- Locate nails into the center of slots to allow for horizontal movement.



Typical STC installation



STC

USP Stock No.	Ref. No.	Steel Gauge	Description	Dimensions (in) W1	Dimensions (in) W2	Fastener Schedule[2] Truss Qty	Fastener Schedule[2] Truss Type	Fastener Schedule[2] Plate Qty	Fastener Schedule[2] Plate Type	DF/SP Allowable Loads (Lbs.) Uplift[1] 160%	DF/SP Allowable Loads (Lbs.) F1 160%	S-P-F Allowable Loads (Lbs.) Uplift[1] 160%	S-P-F Allowable Loads (Lbs.) F1 160%	Code Ref.
STC24	TC24	12	2 x 4 top plate	3-9/16	1-5/8	5	10d x 1-1/2	6	10d x 1-1/2	810	330	680	275	10, R8, F5
STC26	TC26	12	2 x 6 top plate	5-1/2	1-5/8	5	10d x 1-1/2	6	10d x 1-1/2	810	330	680	275	
STC28	TC28	12	2 x 8 top plate	7-1/4	1-5/8	5	10d x 1-1/2	6	10d x 1-1/2	810	330	680	275	

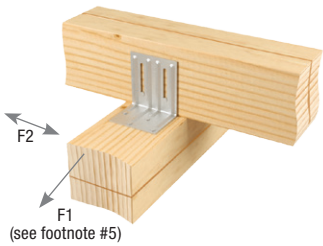
1) Uplift loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) **NAILS:** 10d x 1-1/2" nails are 0.148" dia. x 1-1/2" long.

TR Roof Truss Ties

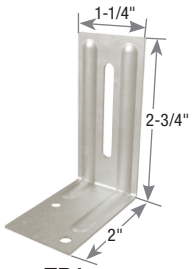
Slotted design allows truss to deflect without imposing load on wall below.

Materials: See chart
Finish: G90 galvanizing
Codes: See page 10 for Code Reference Chart

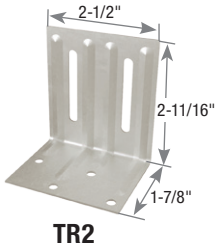
Installation:
- Use all specified fasteners. See Product Notes, page 18.
- Do not fully set nails.
- Locate nails into the center of slots.
- **Due to the potential for squeaks, the TR series products are not recommended for floor applications.**



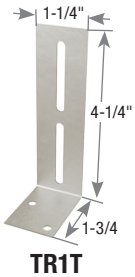
Typical TR2 installation



TR1



TR2



TR1T

USP Stock No.	Ref. No.	Steel Gauge	Description	Fastener Schedule[6] Truss Qty	Truss Type	Plate Qty	Plate Type	DF/SP Allowable Loads (Lbs.)[1] Without Gap[2] F1[5] 160%	Without Gap[2] F2 160%	With 1/4" Gap[3] F1[5] 160%	With 1/4" Gap[3] F2 160%	With 1/2" Gap[4] F1[5] 160%	With 1/2" Gap[4] F2 160%	Code Ref.
TR1	STC	18	single slot	1	8d	2	8d	85	50	35	35	--	--	130
TR1T	STCT	16	single slot	1	8d	2	8d	240	--	130	--	80	--	
TR2	DTC	18	double slot	2	8d	4	8d	125	210	85	135	--	--	

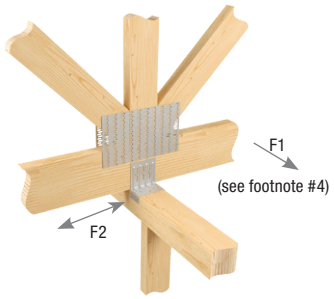
1) Loads have been increased for short-term loading; no further increase allowed.
2) Truss must be bearing on top plate to achieve the allowable loads under "Without Gap".
3) Installed with maximum 1/4" space between rafter or truss and top plate under "With 1/4" Gap". Space is not limited to 1/4", where loads are not required.
4) Installed with maximum 1/2" space between rafter or truss and top plate under "With 1/2" Gap". Space is not limited to 1/2", where loads are not required.
5) To achieve F1 loads in both directions, clips must be installed on both sides of the truss and staggered to avoid nail interference.
6) **NAILS:** 8d nails are 0.131" dia. x 2-1/2" long.

HTC Heavy Truss Deflection Clip

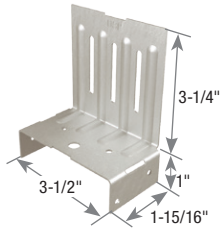
Slotted design allows truss to deflect without imposing load on wall below.

Materials: 16 gauge
Finish: G90 galvanizing
Codes: See page 10 for Code Reference Chart

Installation:
- Use all specified fasteners. See Product Notes, page 18.
- Do not fully set nails.



Typical HTC4 installation



HTC4

USP Stock No.	Ref. No.	Steel Gauge	Fastener Schedule[4] Plate Top Qty	Plate Side Qty	Truss/Rafter Qty	Type	DF/SP Allowable Loads (Lbs.)[1] Without Gap[2] F1[5] 160%	Without Gap F2 160%	With 1-1/4" Gap[3] F1[5] 160%	With 1-1/4" Gap F2 160%	Code Ref.
HTC4	HTC4	16	2	4	3	10d x 1-1/2	255	525	55	295	31, R1, F32

1) Loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) Truss/Rafter must be bearing on top plate to achieve the allowable loads under "Without Gap".
3) When installed with maximum 1-1/4" space between truss/rafter and top plate, use loads under "With 1-1/4" Gap".
4) To achieve F1 loads in both directions, clips must be installed on both sides of the truss and staggered to avoid nail interference.
5) **NAILS:** 10d x 1-1/2" nails are 0.148" dia. x 1-1/2" long.
New products or updated product information are designated in **blue font.**

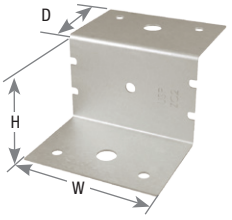
ZC Blocking Supports

ZC clips secure blocking between joists or trusses which provides support for drywall or sheathing.

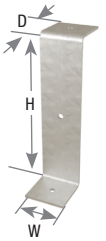
Materials: See chart
Finish: G90 galvanizing
Codes: See page 10 for Code Reference Chart

Installation:
- Use all specified fasteners. See Product Notes, page 18.

Typical ZC installation



ZC2



ZC4

USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in) W	H	D	Fastener Schedule[1] Header Qty	Header Type	Blocking Qty	Blocking Type	DF/SP Allowable Download (Lbs.)[2] 100%	Code Ref.
ZC2	Z2	20	2-1/4	1-9/16	1-1/2	2	10d x 1-1/2	2	10d x 1-1/2	490	130
ZC4	Z4	12	1-1/2	3-9/16	1-3/8	2	10d x 1-1/2	1	10d x 1-1/2	420	
ZC24	Z28	28	2-9/32	1-9/16	1-3/8	10d x 1-1/2		10d x 1-1/2		--	120
ZC34	Z38	28	2-9/32	2-9/16	1-5/16	10d x 1-1/2		10d x 1-1/2		--	

1) Allowable load shall not be increased for other load duration factors.
2) **NAILS:** 10d x 1-1/2" nails are 0.148" dia. x 1-1/2" long.
New products or updated product information are designated in **blue font.**

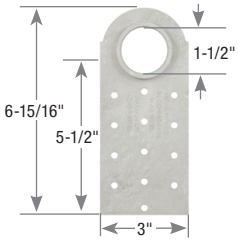
T Hoist Plates

Engineered with a reinforced collar around the hoist hole for added strength.

Materials: 14 gauge
Finish: G90 galvanizing
Codes: See page 10 for Code Reference Chart

Installation:
- Fill all nail holes that align with wood.

Typical T10 installation



T10

USP Stock No.	Ref. No.	Steel Gauge	Fastener Schedule[1] Min. Qty	Type	Max Load (Lbs.)	Code Ref.
T10	CHC	14	10	8d common	800	130

1) **NAILS:** 8d nails are 0.131" dia. x 2-1/2" long.

FS / FSS Truss Field Splice Kits

Job site splicing of long trusses is made easier with Truss Field Splice Kits. The FS and FSS (for scissors trusses) includes a pair of plates, bolts, nuts, and a Splice Clip for top chord alignment. Allowable loads are sometimes limited by tension in the net section of the wood. Choose the bottom chord size and species that will satisfy the tension requirement. Analyze tension in the web to determine the required size.

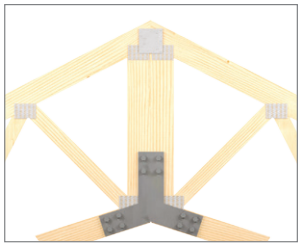
Materials: FS & FSS – See chart, bolts, and nuts included Splice Clip – 12 gauge

Finish: FS & FSS – USP primer; Splice Clip – G90 galvanizing; Bolts – zinc plating

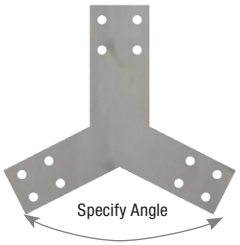
Codes: See page 10 for Code Reference Chart

Installation:

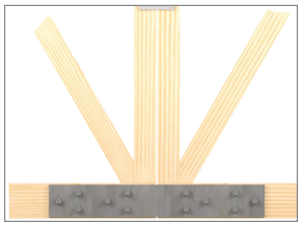
- Use all specified fasteners. See Product Notes, page 18.
- Position the two trusses, center one splice plate on the bottom chords and clamp in place for a drilling template. Install the Splice Clip at the top truss plate and fasten with (18) 10d x 1-1⁄2" nails. Drill through the bottom chord using splice plate as a template. Place splice plate on each side and bolt the connection firmly.



Typical FSS installation



FSS



Typical FS installation

FS

Splice Clip

USP Stock No.	Ref. No.	Steel Gauge	Truss Plies	Bolt Schedule Qty	Bolt Schedule Size (in)	Chord Size	Allowable Loads (Lbs.)[1,2] DF 115%	SP 115%	S-P-F 115%	Code Ref.
FS8B	--	7	1	8	3/4 x 3	2 x 6	4995	4845	3910	130
						2 x 8	6695	6305	5240	
						2 x 10	7195	7565	6030	
FS8B-2	--	7	2	8	3/4 x 5	2 x 6	9995	9690	7820	
						2 x 8	13390	12615	10480	
						2 x 10	14130	14725	12140	
FS8B-3	--	7	3	8	3/4 x 7	2 x 6	14120	14540	11730	
						2 x 8	14145	14740	13070	
						2 x 10	14130	14725	13075	
FS12B	--	3	1	12	3/4 x 3	2 x 6	4995	4845	3910	
						2 x 8	6695	6305	5240	
						2 x 10	8320	7565	6510	
FS12B-2	--	3	2	12	3/4 x 5	2 x 6	9995	9690	7820	
						2 x 8	13390	12615	10480	
						2 x 10	16640	15125	13020	
FS12B-3	--	3	3	12	3/4 x 7	2 x 6	14990	14540	11730	
						2 x 8	20085	18920	15720	
						2 x 10	21770	22670	19530	
FSS8B	--	7	1	12	3/4 x 3	2 x 6	4995	4845	3910	
						2 x 8	6695	6305	5240	
						2 x 10	7195	7565	6030	
FSS8B-2	--	7	2	12	3/4 x 5	2 x 6	9995	9690	7820	
						2 x 8	13390	12615	10480	
						2 x 10	14130	14725	12140	
FSS12B	--	3	1	18	3/4 x 3	2 x 6	4995	4845	3910	
						2 x 8	6695	6305	5240	
						2 x 10	8320	7565	6510	
FSS12B-2	--	3	2	18	3/4 x 5	2 x 6	9995	9690	7820	
						2 x 8	13390	12615	10480	
						2 x 10	16640	15125	13020	

1) Allowable loads shall not be increased for other load duration factors.
2) Allowable loads are based on the lesser of the calculated bolt loads and the calculated wood tensile strength at the critical net section.
3) Wood tensile strengths are based on the Ft of 450 psi for S-P-F, 575 psi for DF-L, and approximately 540 psi for SP; and increased by the size factors in accordance with the NDS®.
4) Bolts shall confrom to ASTM A 307 Grade A or better.

ADTT-TZ Adjustable Deck Tension Tie

Deck collapses are often caused by failure of the connection where the deck is attached to the main structure due to little or no lateral capacity. ADTT-TZ is an Adjustable Deck Tension Tie designed to effectively transfer the out of plane lateral loads of the deck to the house structure.

- Adjustable design. MiTek WS8-EXT or 3/8-in HDG lag screws may be installed adjacent or up to 4-3/8-in below deck joist (see Figure A).
- 2-hole break-out washer (BO-W) will work with multiple screw sizes.
- Blocking extensions not required.

Materials: 14 gauge
Finish: G-185 galvanizing
Options: See chart for Corrosion Finish Options
Codes: See page 10 for Code Reference Chart
Patents: #9,809,974

Typical ADTT-TZ full extension installation
Extended Installation

Typical ADTT-TZ flush installation
Contracted Installation

Installation:

- Install with MiTek's WS8-EXT wood screw or 3/8-in HDG lag screw.
- Drive screw horizontally and aligned vertically with the deck joist into the wall top plate of the main (house) structure.
- Install four (4) of the specified joist fasteners into vertical legs. (Two (2) on each side of deck joist).
- Secure front brace with six (6) specified joist fasteners.
- Re-tighten the WS8-EXT or 3/8-in HDG lag screw as needed to fully engage with the ADTT-TZ. **DO NOT OVERDRIVE.** Note: Minimum 3-in thread penetration required for proper installation of WS8-EXT or lag screw.
- **For detailed installation instructions refer to www.MiTek-US.com.**

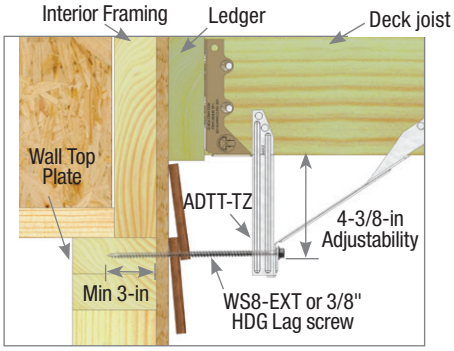
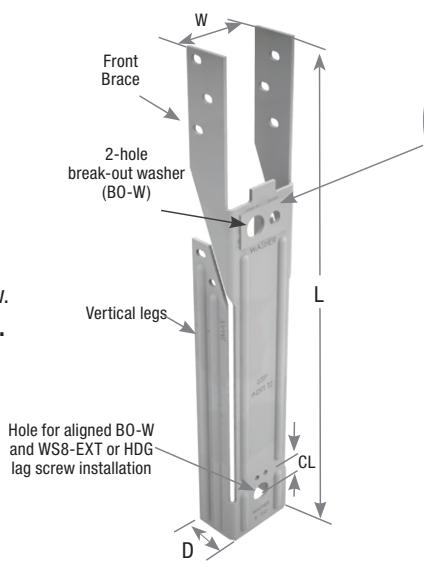
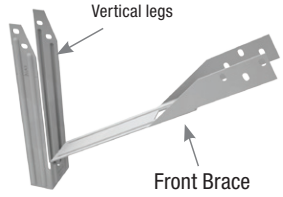


Figure A



ADTT-TZ out of box

Washer Detail



ADTT-TZ ready for installation

USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in) W	L	D	CL	Fastener Schedule Wall Qty	Wall Type[3,4,5]	Joist Qty	Joist Type[6,8]	Installation Type[1]	DF/SP Allowable Tension (Lbs.) 160%	Δ (in) at 160%[2]	S-P-F Allowable Tension (Lbs.) 160%	Corrosion Finish	Code Ref.
ADTT-TZ	DTT1Z	14	1-9/16	10-1/2	15/16	3/8	1	3/8" HDG Lag Screw	10	10d x 1-1/2	Contracted	820	0.070	820		21, F14, R17
											Extended	850	0.117	810		
									10	LL915	Contracted	820	0.121	780		
											Extended	790	0.114	780		
							1	WS8-EXT	10	10d x 1-1/2	Contracted	830	0.080	780		
											Extended	835	0.113	780		
									10	LL915	Contracted	830	0.121	780		
											Extended	790	0.114	780		
ADTT-TZKT[7]	DTT1Z-KT	14	1-9/16	10-1/2	15/16	3/8	1	WS8-EXT	10	LL915	Contracted	830	0.121	780		130
											Extended	790	0.114	780		

Corrosion Finish
- Stainless Steel
- Gold Coat
- HDG
- Triple Zinc

1) Allowable loads are for the ADTT-TZ installed tight to the bottom of the joist (Contracted) or 4-inches from bottom of joist to ADTT-TZ bend line (Extended).
2) Deflections are derived from static, monotonic load tests of devices connected to DF wood members with specified fasteners.
3) WS8-EXT is a 1/4" dia. x 8" long hot-dip galvanized screw sold by USP and must be ordered separately if not purchasing the kit. The minimum thread penetration into the top plate of the wall framing is 3".
4) 3/8" HDG Lag Screw is an ASTM A307 Grade A lag screw with a thread diameter of 3/8-inch and is hot-dip galvanized to ASTM A153 standards. The minimum thread penetration into the top plate of the wall framing is 3". Lag screws are available at your local hardware store and must be purchased separately.
5) Check with your siding manufacturer for recommendations for fastening through your siding material.
6) LL915 denotes a USP LumberLok Screw, #9 x 1-3/8" long and must be ordered separately if not purchasing the kit.
7) ADTT-TZKT is a kit with (4) ADTT-TZ packaged with USP's WS8-EXT screws and LL915 LumberLok screws.
8) **Nails:** 10d x 1-1/2" nails are 0.148" dia. x 1-1/2" long.

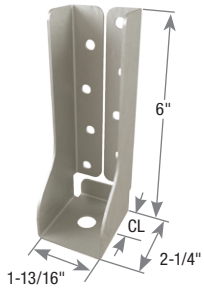
New products or updated product information are designated in **blue font.**

DTB Deck Tie Back

Deck Tie Back reinforces the connection of rail posts to a deck. Also provides lateral strength of deck-to-ledger attachment by securing deck to house framing.

Materials: 14 gauge
Finish: G-185 galvanizing
Options: See chart for Corrosion Finish Options
Codes: See page 10 for Code Reference Chart, IRC R507.1

Typical DTB-TZ installation



DTB-TZ

Typical DTB-TZ deck to ledger installation

Installation:
- Use all specified fasteners. See Product Notes, page 18.
- Install with USP's THR 1/2" threaded rod or equivalent.
- Drive WS15-EXT wood screws into joist.
- Re-install threaded rod or anchor bolt. Secure with washer and nut.
- Tighten anchor bolt nuts finger tight to base plus 1/3 to 1/2 additional turns with wrench.

USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in) W	L	D	CL	Fastener Schedule[1,3,4] Wall Qty	Wall Type	Joist Qty	Joist Type	DF/SP Allowable Tension (Lbs.) 160%	DF/SP Δ (in) at 160%[2]	S-P-F Allowable Tension (Lbs.) 160%	Corrosion	Finish	Code Ref.
DTB-TZ	DTT2Z, FSC	14	1-13/16	6	2-1/4	1-1/8	1	1/2	8	WS15-EXT	1835	0.119	1510			30, F31, R16

Corrosion Finish
Stainless Steel
Gold Coat
HDG
Triple Zinc

1) WS15-EXT Wood Screws are 1/4" dia. x 1-1/2" long and are included with DTB-TZ Deck Tie-Backs.
2) Deflections are derived from static, monotonic load tests of devices connected to DF wood members with specified fasteners.
New products or updated product information are designated in **blue font**.

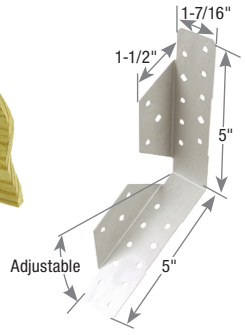
CSH Concealed Stringer Hanger

The CSH-TZ concealed stringer hanger provides a method of connecting a stair stringer with a hidden hanger. The seat of the hanger is adjustable to match the slope of the stair stringer.

The reversible design allows the connector to be used on the left, right, or interior stringers. The CSH-TZ may be used with USP's SCA Stair Angles for a complete, easy-to-use stair framing solution.

Materials: 18 gauge
Finish: G-185 galvanizing
Options: See chart for Corrosion Finish Options
Codes: See page 10 for Code Reference Chart
Patents: #7,631,463

Typical CSH-TZ installation



CSH-TZ

Installation:
- Use all specified fasteners. See Product Notes, page 18.
- **Bend angle only once.**

Steps:
1. Attach CSH-TZ to header with tabs positioned towards the inside of the stringer member.
2. Adjust the seat of the CSH-TZ to match the slope of the stringer member. Diamond shaped holes in the connector allow temporary installation of woodscrews to aid in installation of the CSH-TZ.
3. Install 10d x 1-1/2" HDG nails into the stringer and rim/band joist.

USP Stock No.	Ref. No.	Steel Gauge	Fastener Schedule[2] Rim/Band Joist Qty	Rim/Band Joist Type	Stringer Wide Face Qty	Stringer Narrow Face Qty	Stringer Type	DF/SP Allowable Loads (Lbs.) 100%	115%	125%	Uplift 160%	S-P-F/Hem Fir Allowable Loads (Lbs.) 100%	115%	125%	Uplift 160%	Corrosion	Finish	Code Ref.
CSH-TZ	LSCZ	18	8	10d x 1-1/2 HDG	3	2	10d x 1-1/2 HDG	890	890	890	370	725	725	725	305			31, F32, R1

1) Uplift loads are increased 60% for wind or seismic loads; no further increase shall be permitted.
2) **NAILS:** 10d x 1-1/2 HDG nails are 0.148" dia. x 1-1/2" long.
New products or updated product information are designated in **blue font**.

Corrosion Finish
Stainless Steel
Gold Coat
HDG
Triple Zinc

SCA Stair Angles

Stair angles simplify stair construction. There is no need to calculate and notch stair stringers. Stronger and safer than wood blocking, and the angle and fasteners are hidden from view.

Materials: 12 gauge

Finish: G-185 galvanizing

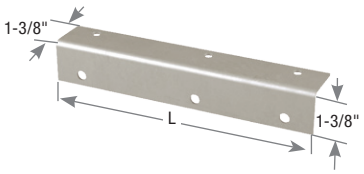
Options: See chart for Corrosion Finish Options

Codes: See page 10 for Code Reference Chart

Installation:

- Use all specified fasteners. See Product Notes, page 18.
- Use the SCA9-TZ for single 2x10 stair treads. Use the SCA10-TZ for double 2 x 6 stair treads.
- To calculate stair construction do the following:
  1. Find the number of steps needed by taking the vertical drop from the deck surface to grade. Divide by 7. Round off to the nearest whole number. (Ex: Vertical drop of 39" divided by 7 equals 5.57" rounded off is 6")
  2. Find the step rise by dividing the vertical drop by the number of steps (39" divided by 6 = 6.5")
  3. Find the step run by measuring the depth of your tread board (Ex: (2) 2x6s have a run of 11-1/4")
  4. Find the stairway span by multiplying the run by the number of treads minus one (Ex: 11-1/4" x 5 = 56-1/4")
- Using the above calculations, mark stair angle locations on each stringer. Attach a stair angle to the inside of each stringer at the marked locations. Attach stringers to deck rim joist and railing posts. Position treadboards on angles and fasten from below.

Typical SCA9-TZ installation



SCA9-TZ

AVAILABLE IN GOLD COAT

Typical SCA10-TZ installation

USP Stock No.	Ref. No.	Steel Gauge	L (in)	Fastener Schedule[2] Qty	Fastener Schedule[2] Lag Screws	DF/SP Allowable Download (Lbs.)[1] 100%	Corrosion Finish	Code Ref.
SCA9-TZ	TA9Z-R	12	9	6	1/4" x 1-1/2" HDG	335		15, R14, F8
SCA10-TZ	TA10Z-R	12	10	8	1/4" x 1-1/2" HDG	450		

1) Loads assume rise over run of 7/11.

New products or updated product information are designated in **blue font**.

Corrosion Finish Stainless Steel Gold Coat HDG Triple Zinc

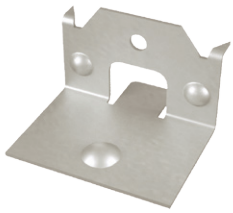
DC Deck Clip

Connects deck boards to joists without face nails or screws. Eliminates rust stains on decks, as well as splintering or wood rot caused by screw or nail “craters”. The DC50-TZ works like tongue-in-groove flooring and is easy to install. Raised dimples on the clip provide consistent spacing between deck boards.

Materials: 20 gauge
Finish: G-185 galvanizing
Options: See chart for Corrosion Finish Options
Codes: See page 10 for Code Reference Chart

Installation:
- Use all specified fasteners. See Product Notes, page 18.
- Fits 1-1/8" or thicker decking.
- Fasten the first deck board onto the joists by toenailing up through the joist below into the deck board. Be sure no sharp points protrude above the deck surface. For subsequent deck board rows, nail DC50-TZ's onto the deck board edge, positioned 2" from each joist. Slide the deck board along the joist until the DC50-TZ “lip” is under the previously laid deck board. Toenail the deck board’s exposed edge to the joist. Repeat until decking is completed. The last deck board will require toenailing up from below to secure the outside edge.

Typical DC50-TZ installation



DC50-TZ

USP Stock No.	Ref. No.	Steel Gauge	Fastener Schedule[1,2] Qty	Fastener Schedule[1,2] Type	Corrosion Finish	Code Ref.
DC50-TZ	DBT1Z	20	1	8d x 1-1/2 HDG		120

1) Use with 1-1/8" minimum thickness decking.
2) **NAILS:** 8d x 1-1/2" nails are 0.131" dia. x 1-1/2" long.

Corrosion Finish Stainless Steel Gold Coat HDG Triple Zinc

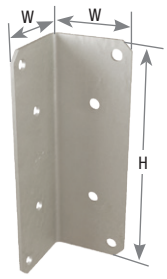
ML Angles

ML angles are multi-purpose angles that install easily with USP’s WS15 wood screws. The staggered fastener pattern allows for back-to-back installations.

Materials: 12 gauge
Finish: G-185 galvanizing
Options: See chart for Corrosion Finish Options
Codes: See page 10 for Code Reference Chart

Installation:
- Use all specified fasteners. See Product Notes, page 18.
- USP WS15 (1/4" x 1-1/2") are not supplied with ML angles.

Typical ML26-TZ installation
(ML24-TZ similar)



ML26-TZ
(ML24-TZ similar)

USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in) W	Dimensions (in) H	Fastener Schedule[2,3] Header Qty	Fastener Schedule[2,3] Joist Qty	Fastener Schedule[2,3] Type	DF/SP Allowable Loads (Lbs.)[1] F1 100%	DF/SP F1 115%	DF/SP F1 125%	DF/SP F1 160%	S-P-F Allowable Loads (Lbs.)[1] F1 100%	S-P-F F1 115%	S-P-F F1 125%	S-P-F F1 160%	Corrosion Finish	Code Ref.
ML24-TZ	ML24Z	12	2	4	3	3	WS15	615	615	615	615	520	520	520	520		14,
ML26-TZ	ML26Z	12	2	6	4	4	WS15	920	1060	1060	1060	755	865	890	890		F7, R9

1) Allowable loads have been increased 60% for wind and seismic loads; no further increase shall be permitted.
2) USP's WS15 Wood Screws are 1/4" diameter x 1-1/2" long and are not included with angles.
3) For exterior applications use WS15-EXT screws with exterior coat finish.
New products or updated product information are designated in **blue font.**

Corrosion Finish Stainless Steel Gold Coat HDG Triple Zinc

PRT Pipe Rail Ties

PRT15-TZ – is for 1-5/8" vertical pipe posts (1-7/8" outside pipe diameter). Can be field bent 90° for outside corner installations.

PRT2-TZ / PRT2H-TZ – is for 2" vertical pipe posts (2-3/8" outside pipe diameter). Can be field bent 90° for outside corner installations.

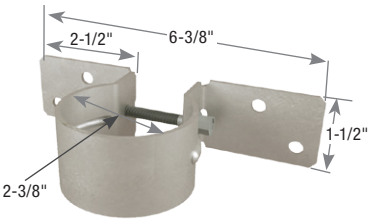
PRTIC2-TZ – is for inside corner installations. For 2" vertical pipe posts (2-3/8" outside pipe diameter).

Materials: See chart
Finish: G-185 galvanizing
Options: See chart for Corrosion Finish Options
Codes: See page 10 for Code Reference Chart

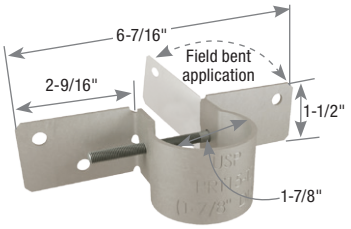
Installation:

- Use all specified fasteners. See Product Notes, page 18.
- PRT15-TZ, PRT2H-TZ and PRTIC2-TZ - 1/4" Self Tapping Bolts are supplied with PRT models.
- Install self tapping bolts with 3/8" socket in predrilled holes.
- PRT2-TZ fastens with (1) 1/4" carriage bolt and nut (included) for tightening PRT2-TZ to pipe and (4) 1/4" lag bolts for attaching tie to rail.
- Install 3 to 4 PRT's per pipe.
- PRT15-TZ, PRT2-TZ and PRT2H-TZ may be bent once to fit corner and angled conditions.

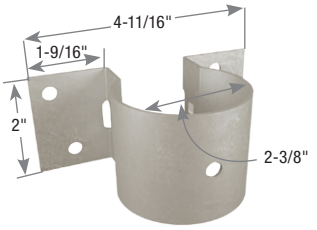
Typical PRT2H-TZ installation
PRT15-TZ & PRT2-TZ similar



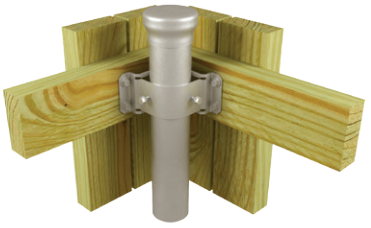
PRT2H-TZ



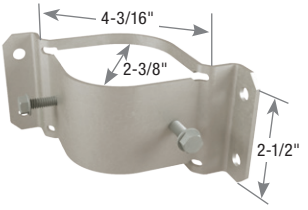
PRT15-TZ



PRT2-TZ



Typical PRTIC2-TZ installation



PRTIC2-TZ

USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in)		Fastener Schedule[1]				Corrosion Finish	Code Ref.
					Pipe		Rail			
			L	H	Qty	Type	Qty	Type		
PRT15-TZ	PGT1.5Z-R	12	6-7/16	1-1/2	1	1/4-in Self Tapping Bolt	4	1/4-in HDG Lag Bolt		120
PRT2-TZ	PGT2E	16	4-11/16	2	1	1/4-in HDG Carriage Bolt	4	1/4-in HDG Lag Bolt		
PRT2H-TZ	PGT2Z-R, PGT2A	12	6-3/8	1-1/2	1	1/4-in Self Tapping Bolt	4	1/4-in HDG Lag Bolt		
PRTIC2-TZ	PGTIC2Z-R	12	4-3/16	2-1/2	2	1/4-in Self Tapping Bolt	4	1/4-in HDG Lag Bolt		

1) WS15 wood screws can be substituted for specified lag bolts.
2) Install self tapping bolts (included) with 3/8-in socket in predrilled holes.
3) Install 3 to 4 PRT's per pipe.
4) PRT15, PRT2 and PRT2H Pipe Rail Ties may be bent once to fit corner and angled conditions.

Corrosion Finish Stainless Steel Gold Coat HDG Triple Zinc

ERB / FB / FRB Fence Brackets

ERB24 – Designed to mount prefabricated fence sections and works with 2x4 horizontal section rails.

FB26 – Secures 2x6 rails to wood posts.

FRB24 – Secures continuous 2x4 rails to wood posts. Pre-punched holes allow installers to splice 2x4 rail ends within the bracket.

Materials: See chart

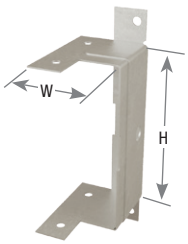
Finish: G-185 galvanizing

Options: See chart for Corrosion Finish Options

Codes: See page 10 for Code Reference Chart

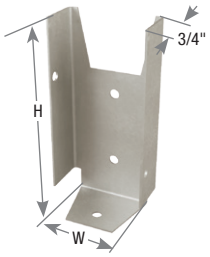
Installation:
- Use all specified fasteners. See Product Notes, page 18.

Typical ERB24-TZ installation



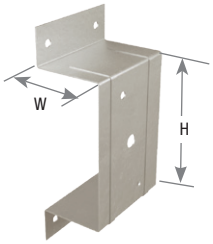
ERB24-TZ

Typical FB24-TZ installation

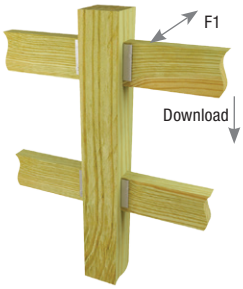


FB24-TZ

Typical FRB24-TZ installation

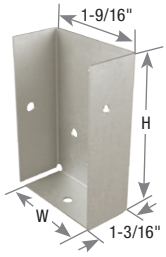


FRB24-TZ



Typical FB26-TZ installation

FB26-TZ



FB23-TZ

FB14-TZ

Rail Size	USP Stock No.	Ref. No	Steel Gauge	Dimensions (in) W	Dimensions (in) H	Fastener Schedule[2] Rail Qty	Fastener Schedule[2] Rail Type	Fastener Schedule[2] Post Qty	Fastener Schedule[2] Post Type	DF/SP Allowable Loads (Lbs)[1] Download 100%	Download 115%	F1 100%	F1 115%	Corrosion Finish	Code Ref.
1 x 4	FB14-TZ	--	20	3/4	3-1/2	3	14 ga. x 3/4 HDG	2	8d x 1-1/2 HDG	--	--	--	--		120
2 x 3	FB23-TZ	--	20	1-9/16	2-3/8	3	8d x 1-1/2 HDG	4	8d x 1-1/2 HDG	--	--	--	--		
2 x 4	ERB24-TZ	--	18	1-1/2	3-9/16	4	8d HDG	3	8d HDG	--	--	--	--		
	FB24-TZ	FB24Z, FBR24, FBR24Z	20	1-9/16	3-3/8	2	8d HDG	2	8d HDG	--	--	--	--		
	FRB24-TZ	--	18	1-9/16	3-9/16	2	10d x 1-1/2 HDG	4	10d HDG	--	--	--	--		
2 x 6	FB26-TZ	FB26	18	1-9/16	5	4	10d x 1-1/2 HDG	4	10d x 1-1/2 HDG	330	330	350	400		
						4	LL915	4	LL915	315	360	315	360		

1) Allowable loads have been increased 15% for short duration loading. No further increase is permitted.

2) **NAILS:** 8d x 1-1/2" nails are 0.131" dia. x 1-1/2" long, 8d nails are 0.131" dia. x 2-1/2" long, 10d x 1-1/2" nails are 0.148" dia. x 1-1/2" long, 10d nails are 0.148" dia. x 3" long, LL915 denotes a LumberLok screw #9 x 1-3/8" long.

Corrosion Finish Stainless Steel Gold Coat HDG Triple Zinc

PCP Plastic Post Caps

These seamless caps keep water off post tops, protecting wood from moisture damage. The PCP's plastic construction is corrosion-proof and paintable. Not available in rough or full lumber sizes.

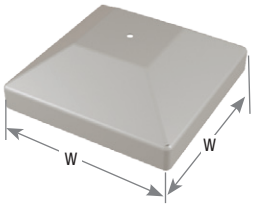
Materials: Hi-impact plastic
Finish: Gray
Codes: See page 10 for Code Reference Chart

Installation:
• Fasten cap to post top with (1) 8d HDG or 10d HDG nail.

Post / Column Size[1]	USP Stock No.	Ref. No.	Dimension (in) W	Color	Code Ref.
4 x 4	PCP44	DPPC4BK	3-5/8	Gray	120
6 x 6	PCP66	DPPC6BK	5-5/8	Gray	

1) Not available in rough or full lumber sizes.

Typical PCP44 installation



PCP66

SFP / SMP Fence Post Connectors

Take the work out of fence post installation and repair with the Speedpost, SFP30, and Speedmender, SMP. The Speedpost is used to install 4 x 4 fence posts without digging post holes or pouring concrete. The Speedmender plates act as reinforcement brackets for rotted or damaged 4 x 4 fence posts.

SFP30 – For 6' nominally-sized 4 x 4 fence posts.

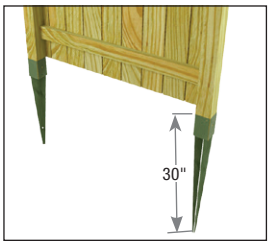
SMP – For nominally-sized 4 x 4 posts.

Materials: 13 gauge
Finish: Paint
Patent: #7,152,841
Codes: See page 10 for Code Reference Chart

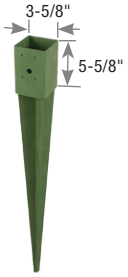
Installation:
• Step-by-step installation instructions are labeled onto each product.

Post Size	USP Stock No.	Ref. No.	Steel Gauge	Fastener Schedule[2] Qty	Fastener Schedule[2] Type	Code Ref.
4 x 4	SFP30	FPBS44	13	3	1/4-in HDG Lag Bolt	120
4 x 4	SMP[1]	FPBM44	13	20	10d HDG	

1) Fastener schedule is per pair of SMP's.
2) **NAILS:** 10d nails are 0.148" dia. x 3" long.



Typical SFP30 installation



SFP30

Typical SMP installation

SMP

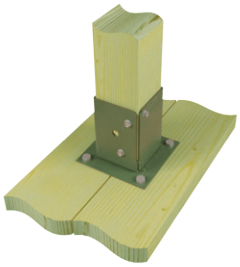
BD Bolt Down

Anchors 4 x 4 post to wood or concrete surfaces.

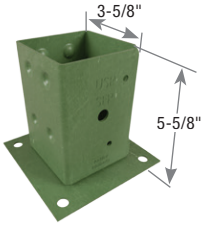
Materials: 13 gauge
Finish: Paint
Patents: #7,152,841
Codes: See page 10 for Code Reference Chart

Installation:
• Use all specified fasteners. See Product Notes, page 18.

Post Size	USP Stock No.	Ref. No.	Steel Gauge	Fastener Schedule Qty	Fastener Schedule Type (in)	Code Ref.
4 x 4	BD	FPBB44	13	3	1/4 x 1-1/2 HDG Lag Bolt	120



Typical BD installation

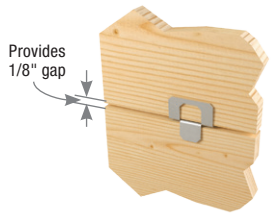


BD

PC / RC Plywood Clips

Steel plywood clips. All models feature embossed dimples to provide 1/8" gap.

Materials: See chart
Finish: G90 galvanizing
Codes: See page 10 for Code Reference Chart



Typical PC installation

PC

RC

Span Rating[1]	USP Stock No.	Ref. No.	Steel Gauge	Maximum Span[1] With PC	Maximum Span[1] Without PC	Plywood Thickness (in)	PC's Per Span	Code Ref.
24	RC38-250	PSCL3/8	18	24	20	3/8	1	120
24	PC716	PSCL7/16	20	24	24	7/16	1	
32	PC1532	PSCL15/32, PSCA15/32	20	32	28	15/32	1	
32	PC12	PSCL1/2	20	32	28	1/2	1	
40	PC1932	PSCL19/32	20	40	32	19/32	2	
40	PC58	PSCL5/8	20	40	32	5/8	2	
48	PC34	PSCL3/4	20	48	36	3/4	2	

1) Based on code specified allowable spans for panel sheathing continuous over two or more spans with plywood strength axis perpendicular to supports.
2) Applicable to roof sheathing.
3) Applies to panels 24" or wider.
4) Uniform load deflection limitations 1/180 of span under live load plus dead load or 1/240 under live load only.

DC Drywall Clip

Drywall clips or “stops” help support drywall or wood paneling and reduce wood blocking on top plates, end walls, and corners.

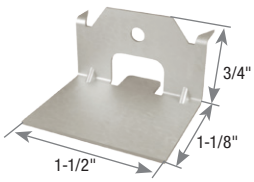
Materials: 20 gauge
Finish: G90 galvanizing
Codes: See page 10 for Code Reference Chart

Installation:
- Use 8d nails to install DC1, 16" on-center or less.

USP Stock No.	Ref. No.	Steel Gauge	Fastener Schedule[1] Qty	Fastener Schedule[1] Type	Code Ref.
DC1	DS	20	1	8d	120

1) **NAILS:** 8d nails are 0.131" dia. x 2-1/2" long.

Typical DC1 installation



DC1

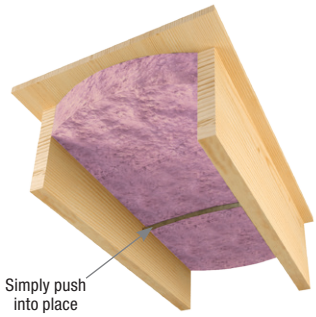
IS Insulation Supports

Insulation supports secure batt-type insulation in place between joists. Chisel-cut ends dig into joists for permanent holding. Easy to install in hard-to-reach crawl spaces.

Materials: 13 gauge carbon steel wire
Finish: None
Codes: See page 10 for Code Reference Chart

Installation:
- Use IS16 for joist spaced 16" O.C. and IS24 for 24" O.C. spacing.
- Position insulation batt in place between joists. Hold IS unit at the center and push into place.
- Wear gloves and safety glasses during installation.

USP Stock No.	Ref. No.	Steel Gauge	Joist Spacing	Dimensions (in) Overall Length	Code Ref.
IS16	IS16-R100	13	16" O. C.	15-1/2"	120
IS24	IS24-R100	13	24" O. C.	23-1/2"	



Typical IS installation

TT D.I.Y. Products

Connectors for homeowner / D.I.Y. Projects.

TTA12-TZ - an angle connects two 1x wood members at 90º angles.

TTA2-TZ - an angle connects two 2x wood members at 90º angles.

TTB22-TZ - a bracket connects two intersecting 2x wood members at 90º angles.

TTC24-TZ - a corner tie connects 2x wood members at 90º to the corner of a 2x4 post. Mirror design allows for post to be oriented in either direction.

TTC42-TZ - a corner tie connects 2x wood members at 90º to the corner of a 4x4 post.

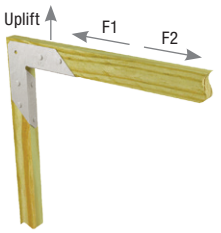
TTF22-TZ - a bracket connects 2x wood members to opposite sides of a 2x4 or 4x4 post.

TTR-TZ - a clip connects a 2x wood member to the face of another wood member.

TTU2-TZ - a U-clip connects 2x wood members crossing at 90º.

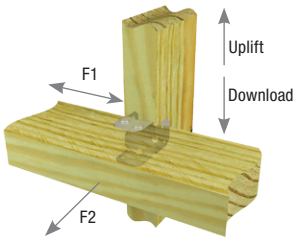
Materials: See chart
Finish: G-185 galvanizing
Options: See chart for Corrosion Finish Options
Codes: See page 10 for Code Reference Chart

Installation:
- Use all specified fasteners. See Product Notes, page 18.
- USP LumberLok LL915 (#9 x 1-3/8" long) wood screws are not supplied with connectors.



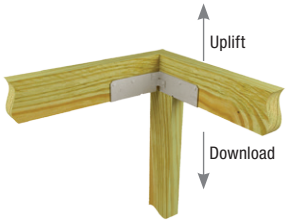
Typical TTA12-TZ installation

TTA12-TZ
(TTA2-TZ Similar)



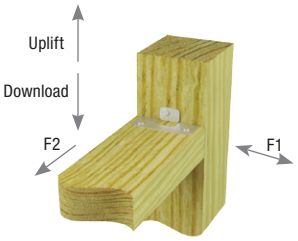
Typical TTB22-TZ installation

TTB22-TZ

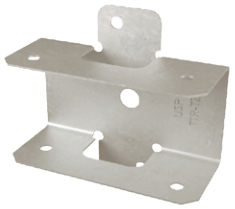


Typical TTC24-TZ installation

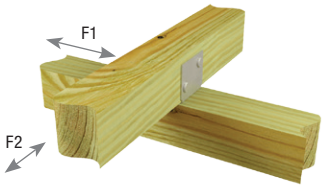
TTC24-TZ
(TTC42-TZ Similar)



Typical TTR-TZ installation

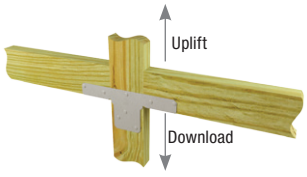


TTR-TZ



Typical TTU2-TZ installation

TTU2-TZ



Typical TTF22-TZ installation

TTF22-TZ

USP Stock No.	Ref. No.	Steel Gauge	Post Size	Joist Size	Fastener Schedule[1] Post Qty	Post Type	Joist (Total) Qty	Joist (Total) Type	DF/SP Allowable Loads (Lbs.)[2,3] Download 100%	Uplift 100%	F1 100%	F2 100%	Corrosion Finish	Code Ref.
TTA12-TZ	RTA12	18	1x	1x	4	LL915	4	LL915	--	205	190	205		130
TTA2-TZ	RTA2Z	16	2x	2x	4	LL915	4	LL915	--	185	255	185		
TTU2-TZ	RTU2	18	2x	2x	2	LL915	4	LL915	--	--	210	210		
TTR-TZ	RTR	20	2x	2x	2	LL915	4	LL915	210	210	210	155		
TTB22-TZ	RTB22	20	2x	2x	4	LL915	4	LL915	360	360	360	250		
TTF22-TZ	RTF2Z	18	2 x 4	2x	4	LL915	8	LL915	420	265	--	--		
TTC24-TZ	RTC24Z	18	2 x 4	2x	9	LL915	8	LL915	475	415	--	--		
TTC42-TZ	RTC42, RTC42Z	18	4 x 4	2x	14	LL915	8	LL915	735	420	--	--		

1) LL915 denotes a USP LumberLok Screw, #9 x 1-3/8" long.
2) TTF22-TZ: Allowable loads must be equally distributed on both joists.
3) TTC24-TZ and TTC42-TZ: Allowable loads listed in this table are for each joist being carried by the post.

Corrosion Finish
Stainless Steel Gold Coat
HDG Triple Zinc

ICPL / KNS / PL Protection Plates

Easy-to-install plates protect plumbing and power/communication wiring from nail or screw penetration.

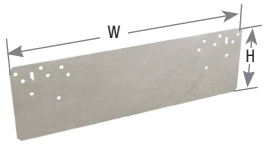
ICPL58 – Installs with nails.

KNS1 / PL4 – Prongs allow for quick installation.

Materials: 16 gauge
Finish: ICPL516-TZ – G-185 galvanizing; All others – G90 galvanizing
Options: See chart for Corrosion Finish Options
Codes: See page 10 for Code Reference Chart

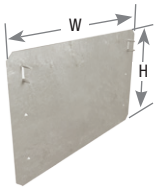
Installation:
- Use all specified fasteners. See Product Notes, page 18.
- 16 gauge steel conforms to protection shield plate requirements of the National Electrical Code and International Plumbing Code.


Typical ICPL516-TZ installation



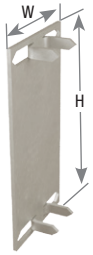
ICPL516-TZ


Typical ICPL58 installation



ICPL58


Typical KNS1 & PL4 installation



KNS1

PL4

USP Stock No.	Ref. No.	Steel Thickness	Dimensions (in) W	Dimensions (in) H	Fastener Schedule[2] Qty	Fastener Schedule[2] Type	Installation Type	DF/SP Allowable Loads (Lbs.)[1] F1 160%	S-P-F Allowable Loads (Lbs.)[1] F1 160%	Corrosion Finish	Code Ref.
ICPL58	--	1/16	8-1/16	5	4	8d or prongs	--	--	--		100
PL4	NS2	1/16	2	5	--	prongs	--	--	--		
KNS1	NS1	1/16	1-1/2	3	--	prongs	--	--	--		
ICPL516-TZ	PSPN516Z	1/16	16-1/4	5	12	16d HDG + prongs	Sill Plate	1355	1160		
					16	16d HDG + prongs	Double Top Plate	1805	1550		

1) Allowable loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) **NAILS:** 8d nails are 0.131" dia. x 2-1/2" long, 16d nails are 0.162" dia. x 3-1/2" long.

Corrosion Finish
Stainless Steel | Gold Coat | HDG | Triple Zinc

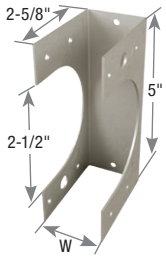
STS Stud Shoes

Stud shoes reinforce joists, plates, studs, or rafters which have been drilled or notched during construction.

Materials: 16 gauge
Finish: G90 galvanizing
Codes: See page 10 for Code Reference Chart

Installation:
- Use all specified fasteners. See Product Notes, page 18.
- **STS units are not structurally rated and should not be used as a total member replacement in structural applications.**
- For use with 2" O.D. pipe.


Typical STS1 installation



STS

USP Stock No.	Ref. No.	Steel Gauge	Description	Dimensions (in) W	Fastener Schedule[1,2] Qty	Fastener Schedule[1,2] Type	Code Ref.
STS1	SS1.5	16	Single Stud	1-9/16	10	10d x 1-1/2	120
STS2	SS3	16	Double Stud	3-1/16	12	10d	
STS3	SS4.5	16	Triple Stud	4-9/16	14	10d	

1) Maximum hole size = 2".
2) **NAILS:** 10d x 1-1/2" nails are 0.148" dia. x 1-1/2" long, 10d nails are 0.148" dia. x 3" long.

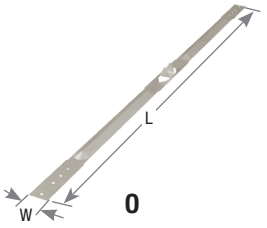
O / N Bridging

O – The O series spans three joists in under/over installation. Prong teeth in the center help reduce nailing.

N – The N series spans two joists per unit. Can be used for bridging or bracing I-Joists. See chart.

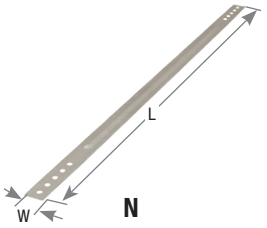
Materials: See chart
Finish: G90 galvanizing
Codes: See page 10 for Code Reference Chart

Typical O installation



O

Typical N installation



N

Installation:

- Use specified fasteners in models with fastener requirements.
- For all models – Bridging should be installed on floor joists with a nominal depth-to-thickness ratio of 5 to 6 or more (2012 National Design Specification for Wood Construction; Section 4.4.1). Bridging units should be installed in pairs at intervals of 8' or less. Bridging pairs should form an "X" between joists; leave a slight space between the units to avoid noise-generating contact. Follow specific installation instructions below for particular models.
- Install prior to subfloor sheathing. Use (2) 8d (0.131") x 1-1/2" nails at each end. Fully seat nails to avoid any movement against the bridging and subsequent floor noise.

USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in)		Fastener Schedule[1]		Joist Spacing O.C. (in)	Code Ref.
			W	L	Qty	Type		
N16	LTB20, TB20	22	3/4	19-3/4	4	8d x 1-1/2	16	15, R14, F8
040	LTB40	22	3/4	39-3/4	4	8d x 1-1/2	16	
N27	TB27	20	3/4	26-13/16	4	8d x 1-1/2	--	
N30	TB30	20	3/4	29-13/16	4	8d x 1-1/2	--	
N36	TB36	20	3/4	35-13/16	4	8d x 1-1/2	--	
N42	TB42	20	3/4	42	4	8d x 1-1/2	--	
N48	TB48	20	3/4	48	4	8d x 1-1/2	--	
N54	TB54	20	3/4	54	4	8d x 1-1/2	--	
N56	TB56	20	1	56	4	8d x 1-1/2	--	
N60	TB60	20	1	60	4	8d x 1-1/2	--	
016	--	18	1	44	4	8d x 1-1/2	16	120

1) For joist spacing, refer to the Joist Installation chart.
2) Joist spacing is based on a 1-1/2" joist. Consult USP regarding wider joist applications.
3) **NAILS:** 8d x 1-1/2" nails are 0.131" dia. x 1-1/2" long.

Joist Installations

Sized for Joist-to-Joist X Bridging									
I-Beam Height (in)	Joist Spacing (in)[1]								
	12	16	19.2	24	30	32	36	42	48
7-1/4	--	N16/016 /040	--	--	--	--	--	--	--
9-1/4	N16	N16/016 /040	N27	N27/N30	N36	N36/N42	N42	N48	N54/N56
9-1/2	N16	N16	N27	N27/N30	N36	N36/N42	N42	N48	N54/N56
10	N16	N16	N27	N27/N30	N36	N36/N42	N42	N48	N54/N56
11-1/4	N16	N16	N27	N30	N36	N36/N42	N42	N48	N54/N56
11-7/8	N16	N27	N27	N30	N36	N36/N42	N42	N48	N54/N56
12	N16	N27	N27	N30	N36	N36/N42	N42	N48	N54/N56
14	N16	N27	N27/N30	N30	N36/N42	N36/N42	N42	N48	N54/N56
16	N27	N27	N27/N30	N30	N36/N42	N42	N42/N48	N48/N54	N54/N56
18	N27	N27/N30	N30	N36	N36/N42	N42	N42/N48	N48/N54	N54/N56
20	N27/N30	N27/N30	N30	N36	N42	N42	N42/N48	N48/N54	N54/N56/N60
22	N27/N30	N30	N36	N36/N42	N42	N42/N48	N48	N54/N56	N54/N56/N60
24	N30	N36	N36	N36/N42	N42	N42/N48	N48	N54/N56	N56/N60
26	N30/N36	N36	N36/N42	N42	N42/N48	N48	N48/N54	N54/N56	N56/N60
28	N36	N36/N42	N36/N42	N42	N42/N48	N48	N48/N54	N54/N56	N60
30	N36/N42	N36/N42	N42	N42/N48	N48	N48	N48/N54/N56	N54/N56/N60	N60
32	N36/N42	N42	N42	N42/N48	N48	N48/N54	N54/N56	N54/N56/N60	N60

All models require (2) 8d (0.131") x 1-1/2 nails at each end.
1) Based on 1-1/2" joist. Consult USP for suitable product for wider joists.

MB / MBG Bridging

MBG – Grip tooth bridging. Features special teeth which grip joists and provide easy single-nail installation. Can be installed after subfloor is in place.

MB16 – Snap-on, no-nail bridging can be placed in existing floor systems where joist movement is suspected. Two-piece construction creates a solid diagonal brace against joist movement.

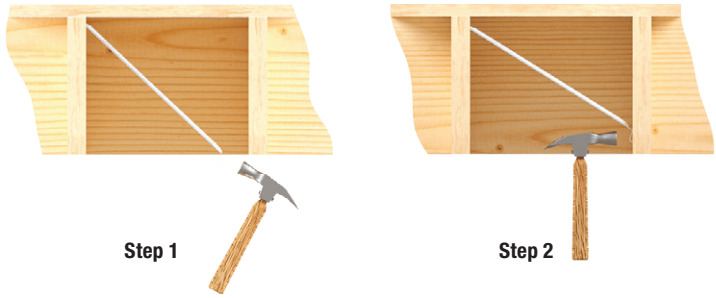
Materials: See chart
Finish: G90 galvanizing
Codes: See page 10 for Code Reference Chart

MB16

Typical MB16 installation

Installation:

- Use specified fasteners in models with fastener requirements.
- For all models – Bridging should be installed on floor joists with a nominal depth-to-thickness ratio of 5 to 6 or more (2012 National Design Specification for Wood Construction; Section 4.4.1). Bridging units should be installed in pairs at intervals of 8'or less. Bridging pairs should form an "X" between joists; leave a slight space between the units to avoid noise-generating contact. Follow specific installation instructions below for particular models.
- **MBG** – May be installed before or after sheathing. Position the unbent end of the bridging unit near the top of the joist and drive prongs into wood with a hammer blow to the heel of the bent end. Wedge bent end near the lower edge of the opposite joist, set teeth into wood with hammer blow. Nail holes are provided at the bent end if prongs are damaged during installation. Fully seat nails to avoid any movement against the bridging and subsequent floor noise.
- **MB16** – Two-piece unit is shipped as one piece. Bend unit in center up and down to break into two pieces. Slide narrower piece inside wider piece, setting the end tab into slot appropriate for joist spacing. Setting one prong end near the top of one joist and the opposite prong end near the bottom of the opposite joist, pull down on the center of the bridging until the wider piece snaps into place over the narrow piece and creates a rigid, one-piece bridging unit. Wear gloves during installation.



Typical MBG installation

MBG

Joist Size	Joist Spacing O.C. (in)[1]	USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in) W	Dimensions (in) L	Fastener Schedule[2] Qty	Fastener Schedule[2] Type	Code Ref.
2 x 8	12	MBG812	NCA2X8-12	22	15/16	11-3/4	1	8d x 1-1/2	15, R14, F8
2 x 10	12	MBG1012	NCA2X10-12	22	15/16	12-3/4	1	8d x 1-1/2	
2 x 12	12	MBG1212	NCA2X12-12	22	15/16	14	1	8d x 1-1/2	
2 x 14	12	MBG1412	--	22	15/16	16	1	8d x 1-1/2	
2 x 16	12	MBG1612	--	22	15/16	17	1	8d x 1-1/2	
2 x 8-10-12	16	MB16	--	22	11/16	--	--	--	
2 x 8	16	MBG816	NCA2X8-16	22	15/16	15-9/16	1	8d x 1-1/2	
2 x 10	16	MBG1016	NCA2X10-16	22	15/16	16-5/16	1	8d x 1-1/2	
2 x 12	16	MBG1216	NCA2X12-16	22	15/16	17-1/4	1	8d x 1-1/2	
2 x 14	16	MBG1416	--	22	15/16	18-7/16	1	8d x 1-1/2	
2 x 16	16	MBG1616	--	22	15/16	19-5/8	1	8d x 1-1/2	
2 x 8	24	MBG824	--	22	1-5/16	23-1/2	1	8d x 1-1/2	
2 x 10	24	MBG1024	--	22	1-5/16	24	1	8d x 1-1/2	
2 x 12	24	MBG1224	--	22	1-5/16	24-3/4	1	8d x 1-1/2	
2 x 14	24	MBG1424	--	22	1-5/16	25-5/8	1	8d x 1-1/2	
2 x 16	24	MBG1624	--	22	15/16	26-5/8	1	8d x 1-1/2	

1) Joist spacing is based on a 1-1/2-in joist, consult USP regarding wider joist applications.
2) **NAILS:** 8d x 1-1/2" nails are 0.131" dia. x 1-1/2" long.

RWB / WB / WBC / WBT Wall Bracing

MiTek®

RWB – Flat bracing conveniently packaged in a handy roll out dispenser. Perfect for unexpected job site shortages. The 35-pound dispenser pack fits easily into a truck bed for transport. Pre-embossed snap-off points can be broken off by hand (wear gloves for safety).

WB – A flat style bracing engineered to easily nail to studs. No cutting or fitting needed.

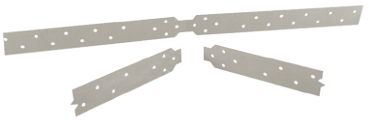
WBC – L-shaped design for additional strength and rigidity.

WBT – Rolled edges and T-style design gives the WBT strength, rigidity, and eliminates sharp, sheared edges.

Materials: See chart

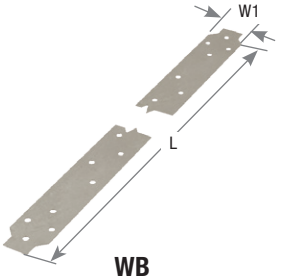
Finish: G90 galvanizing

Codes: See page 10 for Code Reference Chart



RWB pre-embossed snap-off points

Typical RWB/WB installation



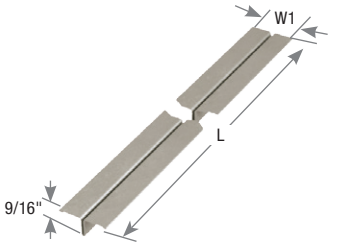
WB

Installation:

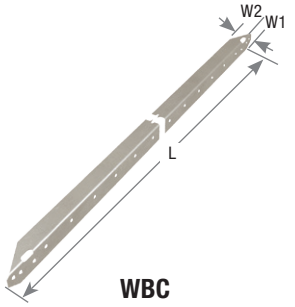
- Use all specified fasteners. See Product Notes, page 18.
- Bracing is a framing aid, not a substitute for structural shear wall components.
- **RWB / WB** – Use with 16" or 24" o.c. studs. Install in pairs forming an "X" or opposing "V" at each end of a maximum 25-foot long wall panel.

  Steps: Square the panel. Straighten any kinks in bracing caused by handling. Lay bracing on the panel flush to the top of top plate and flush to the bottom of the bottom plate. Secure bracing to the top plate and bottom plate using 16d nails (WB) or 8d nails (RWB). Position second bracing at an angle opposite to the first brace to form an "X" and secure to top and bottom plate as with the first bracing. Using 8d nails, secure bracing to all intersecting studs.
- **WBC / WBT** – Use with 16" o.c. studs. Install one brace at each end of wall section, not exceeding 25 feet, in an opposing "V" pattern. Use the web portion of a length of bracing as a straight edge to mark studs. Cut a saw kerf 5/8" deep (1" deep for WBC). Insert the bracing web into the saw kerf, and drive one nail into the top plate. Raise the wall section into place and plumb. Finish fastening according to the nail schedule.

Typical WBC/WBT installation



WBT



WBC

USP Stock No.[1]	Ref. No.	Steel Gauge	Dimensions (in)			Pieces Per Roll	Wall Height (ft)	Install Angle	Fastener Schedule[2]				Code Ref.
			W1	W2	L				Each Plate		Each Stud		
									Qty	Type	Qty	Type	
RWB96	WB106C	16	1-1/4	--	9' 6"	15	8'	60°	4	8d	1	8d	15, R14, F8
RWB114	WB126C	16	1-1/4	--	11' 4-3/8"	12	8'	45°	4	8d	1	8d	
RWB143	WB143C	16	1-1/4	--	14' 3"	10	10'	45°	4	8d	1	8d	
WBC10	RCWB10	18	7/8	1	9' 5-3/4"	--	8'	60°	2	16d	1	8d	
WBC12	RCWB12	18	7/8	1	11' 4-3/8"	--	8'	45°	2	16d	1	8d	
WBT10	TWB10	22	1-3/8	--	9' 3"	--	8'	60°	4	8d	1	8d	
WBT12	TWB12	22	1-3/8	--	11' 4"	--	8'	45°	2	8d	1	8d	
WBT14	RCWB14, TWB14	22	1-3/8	--	14' 2"	--	10'	45°	2	8d	1	8d	
WB106	WB106	16	1-1/4	--	9' 5-1/2"	--	8'	60°	3	16d	1	8d	
WB126	WB126	16	1-1/4	--	11' 4-1/4"	--	8'	45°	3	16d	1	8d	

1) These products substitute for code prescribed 1 x 4 let-in bracing.

2) **NAILS:** 8d nails are 0.131" dia. x 2-1/2" long, 16d nails are 0.162" dia. x 3-1/2" long.

SB Shelf Brackets

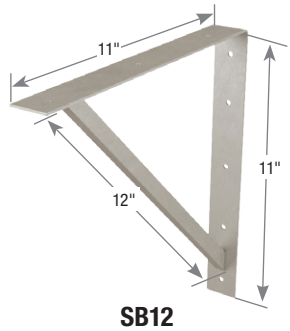
This shelf bracket combines shelving capabilities and closet rod support in a one-piece design.

Materials: 13 gauge
Finish: Zinc Plated
Codes: See page 10 for Code Reference Chart

USP Stock No.	Ref. No.	Steel Gauge	Fastener Schedule[1]		Code Ref.
			Qty	Type	
SB12	SBV	13	8	10d	120

1) **NAILS:** 10d nails are 0.148" dia. x 3" long.

Typical SB12 installation



SB12

KSCT Corner Tie

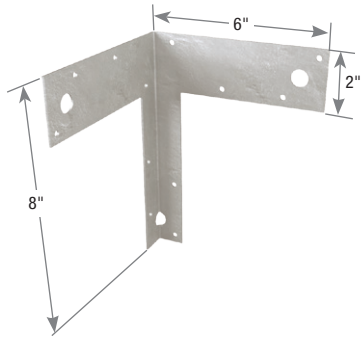
The Corner Tie secures three-way wood-to-wood connections. Handy for building workbenches, utility tables, or shelving using 2x4 lumber.

Materials: 14 gauge
Finish: G90 galvanizing
Codes: See page 10 for Code Reference Chart

Installation:
- Use (12) #10 panhead screws to fasten the KSCT68 to wood framing.

USP Stock No.	Ref. No.	Steel Gauge	Fastener Schedule		Code Ref.
			Qty	Screws	
KSCT68	--	14	12	#10 panhead	120

Typical KSCT68 installation

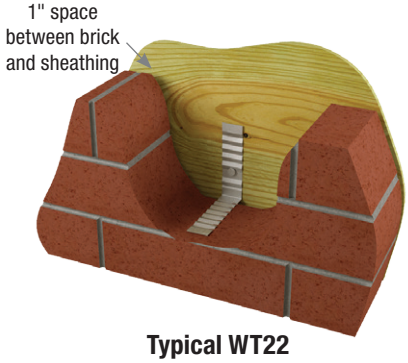


KSCT68

WT Wall Tie

Materials: 22 gauge
Finish: G90 galvanizing
Options: See chart for Corrosion Finish Options
Codes: See page 10 for Code Reference Chart

Installation:
- Use nails appropriate for intended use. See Product Notes, page 18.
- The opposite end must be bonded in the mortar joint of brick facade.
- Check local codes for spacing requirements.
- Wall tie shall be bent at nail, bonding into mortar joint.



Typical WT22 installation

WT22

USP Stock No.	Ref. No.	Description	Steel Gauge	Dimensions (in)		Fastener Schedule[1]		Corrosion Finish	Code Ref.
				W	L	Qty	Type		
WT22	BTB	Straight Edge - Duplex	22	7/8	6-1/2	1	10d		120

1) **NAILS:** 10d nails are 0.148" dia. x 3" long.

Corrosion Finish Stainless Steel Gold Coat HDG Triple Zinc

NP Nail Plates

The NP Nail Plates are an ideal economical solution for attaching wooden members together in a non-structural connection. Also may be used as a prescriptive top plate splice per the 2015 International Residential Code (IRC). They are pre-punched for 8d common nails.

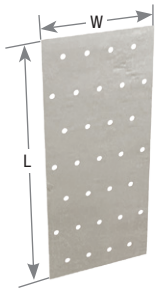
Materials: 20 gauge
Finish: G90 galvanizing
Codes: See page 10 for Code Reference Chart, IRC R602.3.2

Installation:
- Use nails appropriate for intended use. Holes are sized for 8d common or 8d x 1-1/2" nails.
- The designer shall determine appropriate load values.

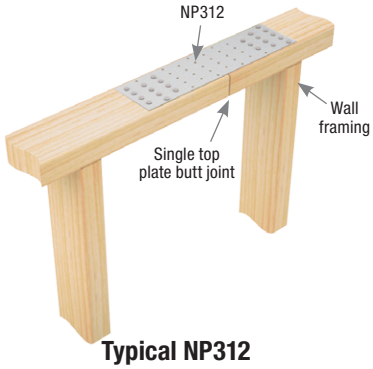
USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in)		Number of Nail Holes	Code Ref.
			W	L		
NP15	TP15	20	1-13/16	5	12	120
NP35	TP35	20	3-1/8	5	22	
NP37	TP37	20	3-1/8	7	31	
NP39	TP39	20	3-1/8	9	40	
NP311	TP311	20	3-1/8	11	49	
NP312	--	20	3-1/8	12	54	
NP315	--	20	3-1/8	15	67	
NP45	TP45	20	4-1/8	5	30	
NP47	TP47	20	4-1/8	7	42	
NP49	TP49	20	4-1/8	9	54	
NP411	TP411	20	4-1/8	11	66	
NP57	TP57	20	5-3/4	7	59	

New products or updated product information are designated in **blue font.**

Typical nail plate installation



NP



Typical NP312 prescriptive top plate splice installation

JNP / TPP Mending Plates

TPP – Prong plates with straight prongs.

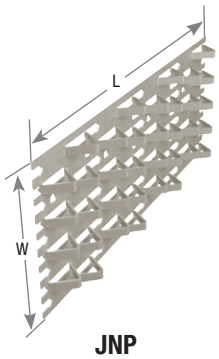
JNP – Prong plates with angled, hammer-in prongs.

Materials: See chart
Finish: G90 galvanizing
Codes: See page 10 for Code Reference Chart

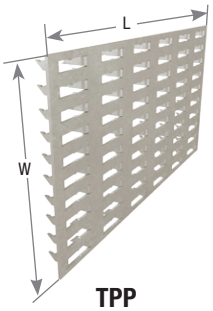
Installation:
- **These products are not intended for structural use. No load ratings are assigned. These plates are not intended for use in truss assembly.**

USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in)		Code Ref.
			W	L	
JNP24	--	18	1-1/2	4	120
JNP26	--	18	1-1/2	6	
JNP46	--	18	3-3/16	6	
JNP48	--	18	3-3/16	8	
TPP14	MP14	22	13/16	3-1/2	
TPP24	MP24	22	1-11/16	3-1/2	
TPP36	MP36	22	2-3/4	5-1/4	
TPP58	--	22	4-3/16	7-13/16	

Typical mending plate installation



JNP



TPP

SPECIALTY OPTIONS & GENERAL NOTES

The information listed only applies to hangers manufactured by MiTek® and installed according to the instructions listed in this catalog. Some of the options listed may not have been evaluated on a single hanger. The designer must always evaluate each connection, including the joist and header capacities, before specifying a specialty connector. USP sloped hangers are manufactured with the plumb cut of the joist already calculated. If a hanger with a different height is needed, it must be specified at the time of ordering.

Materials: Steel gauge may vary from that specified depending on the specialty option and manufacturing process used. Some formed hangers may be welded when modifying the hanger. Hanger configurations, fastener schedules, and height may vary from the tables depending on the joist size, skew, and slope.

Finish: See specific hanger option tables. Welded hangers are painted with USP gray primer. Non-catalog hangers available in Hot-dip galvanized, use HDG after product number.

Allowable Loads: For multiple options for the same connector, use the most conservative reduction to give the lowest design load.

Installation:

- Fill all nail holes with fasteners specified in the tables.
- Fastener quantities may increase from the amount listed in the tables depending on hanger option.
- NA16D-RS and NA20D nails are supplied with hangers.
- For type A skewed hangers, the end of joist must be bevel cut; for type B skewed hangers, the end of joist must be square cut.

Codes: Modified hangers are not code evaluated due to their numerous variations.

USP Series	Width	Skewed (Maximum)	Sloped Seat (Maximum)	Sloped / Skewed	Sloped Top Flange (Maximu	Top Flange Offset	Saddle Hanger	Ridge Hanger (Maximum)	Inverted Flange	Uplift	Weldability	USP Series Catalog Page Reference
BPH	all	50º	45º	•	45º					•	•	163, 166-173
FWH	all	45º								•	•	132-133
GHF	all	50º	45º	•					• width > 4-1/2"	•		177-178
HBPH	all	50º	45º	•	45º					•	•	163, 168-173
HD[1,2]	1-3/4" or less	67-1/2º	45º	•					• width > 2-1/4"	•		111-123, 156, 159-161
	> 1-3/4"	50º										
HDO	1-3/4" or less	67-1/2º	45º	•					• width > 3-1/8"	•		128, 130-131
	> 1-3/4"	50º										
HDQIF	all								•			111, 114-122, 156, 160-161
HGU	all	45º							• one flange width > 5-1/4"	•		176
HGUM									• one flange			144
HJC	all	60º								•		215
HLBH	all	50º	45º	•	45º	•	•	45º			•	164, 167, 168, 171-173
HUS	all								• width > 2-1/4"	•		110, 112-115, 119-120, 156, 160, 203
HWUH	all	45º	45º	•		•	•			•		145-146
KB	all									•	•	128, 131
KEG	all	45º	45º							•		179
KGB	all									•	•	180
KGH	all	45º					•					49
KGLS	all	50º	45º	•	30º	•	•			•	•	184
KGLST	all						•			•	•	184
KGLT	all	50º	45º	•	45º	•	•			•	•	181
KHGB	all									•	•	180
KHGLS	all	50º	45º		30º	•	•			•	•	184
KHGLST	all						•			•	•	184
KHGLT	all	50º	45º	•	45º	•	•			•	•	181
KHHB	all									•	•	180
KHW	all	84º	45º	•	35º	•	•	45º			•	129, 131-132
KLB	all										•	128, 130
KLEG	all	45º	45º			•				•		179
KMEG	all	45º	45º			•				•		179
LGU	all	45º							• one flange width > 3-5/8"	•		176
LSSH	all	45º	45º	•						•		136-137, 175
MGU	all	45º							• one flange width > 5-1/4"	•		176
MPH[1]	all	60º	45º	•		•						147-148
MSHA	all	75°								•		212-213
MSHL/R	all	45º								•		210
NFM	all	45º								•		149-150
PHM	all	84º	45º	•	35º	•	•	45º			•	165-173
PHXU[1]	all	60º	45º	•	35º	•	•			•	•	165-173
SKH	all	45º								•		137-139
SKHH	all	45º								•		137-138
SUH	1-3/4" or less	67-1/2º	45º	•						•		109, 112-121, 123
	> 1-3/4"	50º										
SW[1]	all	84º	45º	•	35º	•	•	45º			•	129-131
SWH[1]	all	84º	45º	•	35º	•	•	45º			•	129-131
THD	all	45º	45º	•					• one flange width > 3"	•		157, 160-161, 204
THDH	all	45º	45º	•						•		157, 160-161, 205-206
THF	1-3/4" or less	67-1/2º	45º	•					• width > 2-1/4"	•		155, 158-159
	> 1-3/4"	50º										

1) Skews greater than 45° will have square cut joist with back plate.
Refer to Typical PHXU hanger skewed, left shown, squre cut illustration on page 247.

2) HD hanger widths less than 2-1/4" may have flanges inverted as a Custom, contact USP.

New products or updated product information are designated in **blue font**.

FACE MOUNT HANGER SPECIALTY DETAILS

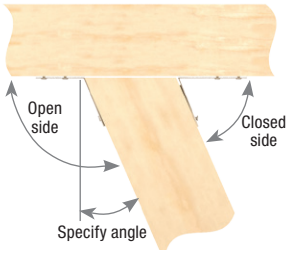
See the Specialty Options Chart for each hanger series for load reductions and hanger maximum range of skew, slope, etc.

Skewed Hanger:
- Consider SKH or SKHH hangers for 45° skews.
- Joist nails on the closed side may be relocated to the open side to ensure proper nailing.
- Specify skew angle, type (square cut or bevel cut), and direction when ordering.

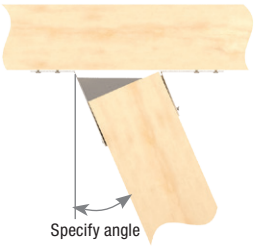
Sloped Seat Hanger:
- Consider LSSH series for sloped applications.
- Additional nail holes may be added to joist flanges.
- Specify slope angle and direction when ordering.

Sloped/Skewed Hanger:
- See nailing notes for both skewed and sloped hangers.
- Specify skew and slope angles as well as skew/slope directions and skew type (square cut or bevel cut) when ordering.

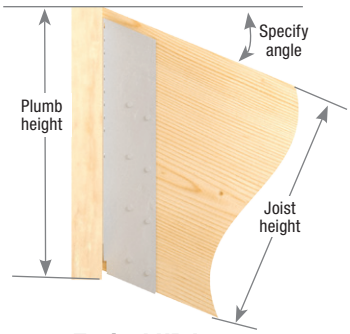
Inverted Flange Hanger:
- When nailing into the carrying member's end grain, the allowable load is 0.65 of the table load.
- Hangers with one flange inverted achieve 100% of listed table load.
- Specify right or left flange when inverting only one flange.



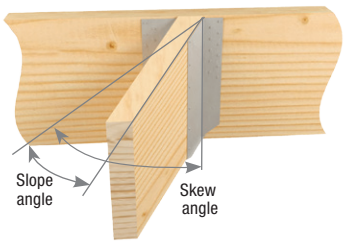
Typical SUH hanger skewed, right shown (bevel cut)



Typical SUH formed hanger skewed, right shown (square cut)



Typical HD hanger sloped seat, down shown



Typical HD hanger sloped down, skewed left shown

Typical GHF hanger one flange inverted, left shown

Typical HD hanger inverted flange

OPEN TOP FLANGE HANGER SPECIALTY DETAILS

MiTek®

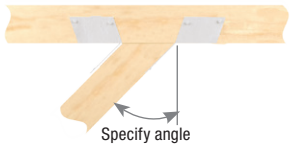
See Specialty Options Chart for each hanger series for load reductions and hanger maximum range of skew, slope, etc.

Skewed Hanger:
- Joist nails may be located on obtuse side to ensure proper nailing.
- Specify skew angle, type (square cut or bevel cut), and direction when ordering.

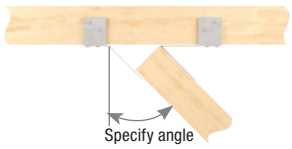
Sloped Seat Hanger:
- Additional nail holes may be added to joist flanges.
- Specify slope angle, direction, and joist height when ordering.

Sloped/Skewed Hanger:
- See nailing notes for both skewed and sloped hangers.
- Specify skew and slope angles as well as skew/slope directions, and skew type (square cut or bevel cut) when ordering.
- Similar to face mount skewed/sloped hanger, refer to illustration on page 246: Typical HD hanger sloped down, skewed left shown.
- Specify if hanger is to be high side flush, low side flush, or center flush.

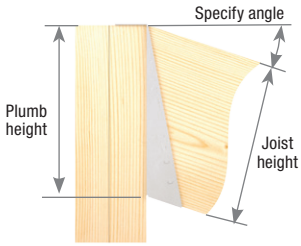
Sloped/Skewed/Sloped Top Flange Hanger:
- See nailing notes for both skewed and sloped hangers.
- Specify skew, slope, and top flange slope angles as well as skew/slope and top flange slope directions when ordering.
- Hangers may be galvanized or painted.
- Hangers may be made with solid top plate.



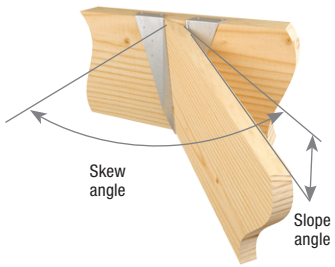
Typical BPH hanger skewed, left shown
(bevel cut)



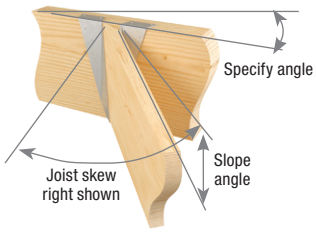
Typical HDO hanger skewed, right shown
(square cut)



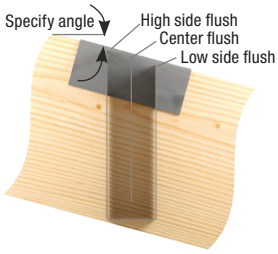
Typical BPH hanger sloped seat, down shown



Typical BPH hanger sloped down, skewed right, low side flush shown



Typical BPH hanger skewed right, sloped down, top flange sloped



Typical BPH hanger sloped top flange right shown
(this configuration will not be open back)

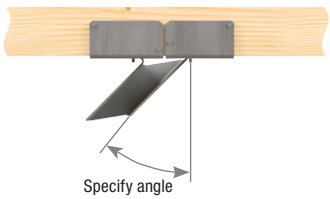
SOLID TOP FLANGE HANGER SPECIALTY DETAILS

See Specialty Options Chart for each hanger series for load reductions and hanger maximum range of skew, slope, etc.

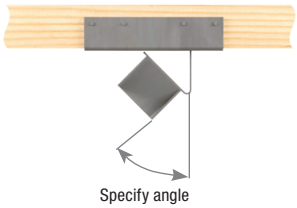
Skewed Hanger:
- Joist nails may be located on obtuse side to ensure proper nailing.
- Specify skew angle, type (square cut or bevel cut), and direction when ordering.

Sloped Seat Hanger:
- Additional nail holes may be added to joist flanges.
- Specify slope angle, direction, and joist height when ordering.

Sloped/Skewed Hanger:
- See nailing notes for both skewed and sloped hangers.
- Specify skew and slope angles as well as skew/slope directions, and skew type (square cut or bevel cut) when ordering.
- Specify if hanger is to be high side flush, low side flush, or center flush.



Typical PHXU hanger skewed, left shown
(bevel cut)



Typical PHXU hanger skewed, left shown
(square cut)

Continued on next page

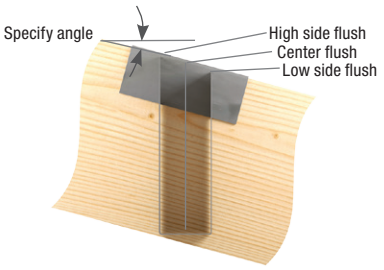
SOLID TOP FLANGE HANGER SPECIALTY DETAILS

Sloped Top Flange Hanger:
- Additional nail holes may be added to top angle.
- Specify top flange slope and direction when ordering.
- Specify if hanger is to be high side flush, low side flush, or center flush.

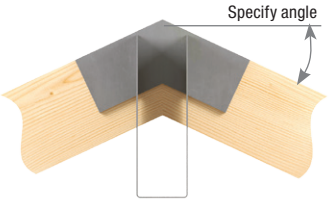
Ridge Hanger:
- Specify flush top of beam at center, right side, or left side.
- Specify angle of slope when ordering.

Top Flange Offset Hanger:
- Specify offset, left (L) or right (R), when ordering.

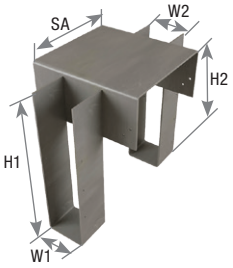
Saddle Hanger:
- Specify saddle width, "SA" when ordering. Allow clearance for saddled member.



Typical HLBH hanger sloped top flange, right shown

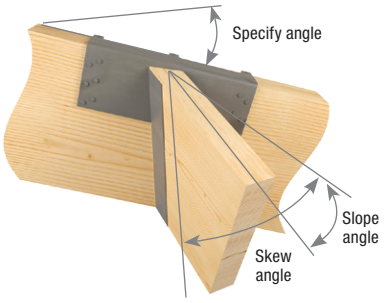


Typical HLBH hanger ridge, top flange slope

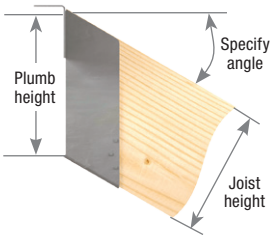


Typical PHXU hanger saddle option

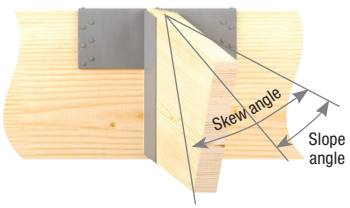
Typical HLBH hanger top flange offset, right shown



Typical HLBH hanger skewed right, sloped down, top flange sloped



Typical HLBH hanger sloped seat, down shown



Typical HLBH hanger sloped down, skewed right, center flush shown

WELDED TOP FLANGE

- Weld sizes and lengths shown on chart.
- Weld-on applications produce maximum allowable load listed. **Uplift loads do not apply to this application.**

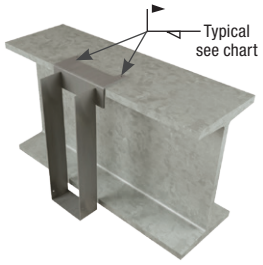
Top Angle Weld Length Chart

USP Welded Hanger Series	Weld Length
SW	3"
BPH, HBPH, PHM, SWH	4"
KLB, KHW, PHXU	6"
KB, KGB, KHGB, KHHB, KGLS, KGLST, KGLT, KHGLS, KHGLST	8"
HLBH, KHGLT	10"

Weld shall be distributed evenly.

Top Angle Steel Gauge	Weld Size
10 gauge or lighter	1/8"
7 gauge	3/16"
3 gauge	1/4"

Typical top flange welded installation



Typical top angle welded installation

PART NUMBER SYSTEM

Part Numbers assigned to TFL, THO, and THF I-Joist hangers reveal the I-Joist sizes to be used with the specific hanger. This guide will teach you how to recognize I-Joist dimensions in the part numbers.

1st, 3rd, and sometimes 4th digits are whole numbers
(This example denotes 2 and 11)
4th digit may be part of a decimal –

TFL 23118

2nd and 5th digits are decimals
(see guide below)
(This example denotes .3125 [5/16] and .875 [7/8])
5th digit may be (0) or dropped if height is even

Part Number Guide for Decimals

1 = .125	or	1/8 inch
2 or 25 = .25	or	1/4 inch
3 = .3125	or	5/16 inch
5 = .5	or	1/2 inch
6 = .625	or	5/8 inch
7 = .75	or	3/4 inch
8 = .875	or	7/8 inch

THO35925-2

THO — **Letters** refer to **Hanger Series** ex.: THO

35 — **First (2) Digits** refer to **Member Width** ex.: 3.5 inches

925 — **Last (2) or (3) Digits** refer to **Member Height** ex.: 9.25 inches

-2 — **Digits after Dash** refer to **Number of Plies** ex.: 2 ply

Some Examples:

THO15950 ..... 1-1/2" x 9-1/2"

THF17925 ..... 1-3/4" x 9-1/4"

THO16925-2 ..... double 1-5/8" x 9-1/4"

THF23140-2..... double 2-5/16" x 14"

Note: USP's Product Catalog lists a range of heights for THF hangers. Face mount hangers can usually accommodate more than one I-Joist height. The hanger height must be tall enough to support the top chord of the I-Joist to eliminate web stiffener requirements for lateral stability. The THF hanger must be a minimum of 60% of the joist height.

SHEAR WALL SYSTEMS

Hardy Frame® Shear Wall Systems

Hardy Frames has been leading the pre-manufactured shear wall industry from its beginning. We were the first to be recognized by ICBO-ES and LA City, first to gain approval for multi-story applications, first Balloon Wall application and first to be recognized to comply with the 2003 and 2006 IBC and IRC Building Codes. Today we are the first, and only, to offer a 9 inch Panel width that is the narrowest in the industry

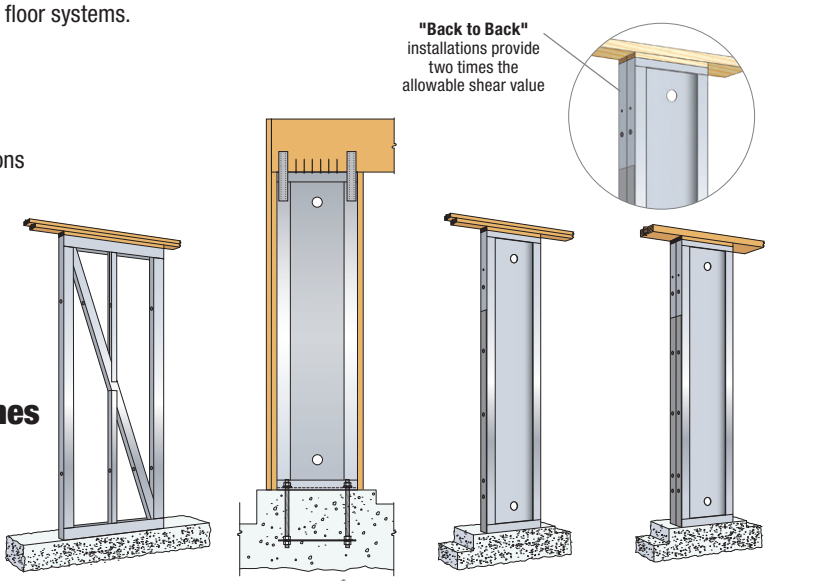
All Hardy Frame® Panels and Brace Frames are code listed in ICC-ES ESR-2089 and includes installations on concrete, raised floor and upper floor systems.

Hardy Frame® HFX-Series Panels

- Panels are available in 9, 12, 15, 18, 21 and 24 inch widths
- Standard Heights range from 78 inches for portal applications to 20 feet for Balloon Walls
- Custom heights are manufactured routinely
- R Value for design = 6.5, Cd = 4.0
- With proper detailing and anchorage “Back to Back” installations provide two times the allowable shear value without increasing the wall width

Hardy Frame® HFX-Series Brace Frames

- Brace Frames are available in 32 and 44 inch widths
- Standard Heights range from nominal 8 to 13 feet
- Custom heights are manufactured routinely
- R Value for design = 6.5, Cd = 4.0
- For a given shear load, installing a wider shear wall results in reduced overturning

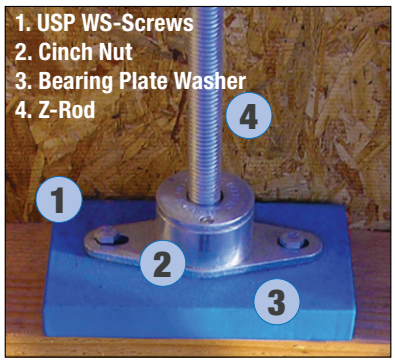


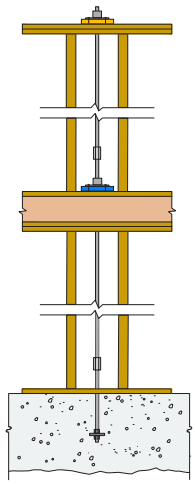
Hardy Frame® Brace Frame | **Hardy Frame® Portal Installation** | **Hardy Frame® Panel** | **Hardy Frame® Panel Back to Back**

For more information on the Hardy Frame product line, please contact us at 800-754-3030 • www.hardyframe.com

TIE-DOWN SYSTEMS

Z4 Tie-Down Systems utilize Z4 CNX-Series Cinch Nuts to compensate for wood shrinkage and building settlement that cause connections to loosen over time. The Cinch Nut uses an internal self-ratcheting action that permits movement or “travel” perpetually in one direction along the length of a threaded rod. Cinch nuts are available for installation with threaded rods that are 3/8" through 1-1/2" diameter in 1/8" increments. The CNX Cinch Nut has been code evaluated and published in ESR-2190, FL17546, RR25623.

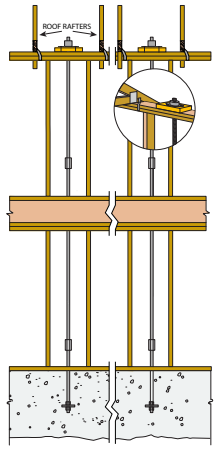




For Lateral Loads

Z4 Tie-Down System for Lateral Loads

To resist tension loads due to overturning moments in multi-story buildings the CNX Cinch Nut is installed over a Bearing Plate Washer at each level in a fast and easy application. At the upper-most level a Cinch Nut is installed over a Bearing Plate Washer above the top plates. At walls below that bear on wood floor systems, the Cinch Nut and Bearing Plate Washer are installed over the bottom plate. Tension loads are gathered at each level and transferred into the foundation through a continuous system of Cinch Nuts, Bearing Plate Washers, Z-Rods/ATRs and Couplers all available from **MiTek® Builder Products**.



For Wind Uplift Loads

Z4 Tie-Down System for Wind Uplift

For resisting roof uplift loads resulting from wind the Z4 Cinch Nut is installed over a Bearing Plate Washer above the top plates with roof framing above to create a tie-down system. Uplift forces are transferred into a continuous system of Z-Rods / ATRs and Couplers that form a load path to the foundation.

For more information on the Z4 product line, please contact us at 951-245-9525 • www.hardyframe.com

MOMENT FRAMES

SidePlate Code Evaluations

Included in the Standard AISC 358
ICC-Evaluation Service ESR-1275 Report
LA City Research Report RR-25393

Hardy Frames introduced the first standardized, prefabricated Special Moment Frame in 2006. Since then we have delivered thousands of Moment Frames that have been successfully installed. Our Special Moment Frames provide maximum structural capacities and enable large openings in architectural design.

Hardy Frame® Special Moment Frames utilize the SidePlate moment connection which has now been approved by the Connection Prequalification Review Panel (CPRP) for inclusion in the AISC 358 Prequalified Moment Connection Standard. Typically, **Hardy Frame®** Moment Frames are delivered to the jobsite in one-piece, completely prefabricated with wood nailers attached, and ready to be installed with no assembly. No field welding and or special inspection is required.

On production framing jobs the **Hardy Frame®** Moment Frame can't be beat. We have delivered truckload quantities of up to 30 Moment Frames that were installed in a single day. That is an accomplishment that cannot be matched by conventional or assembly-required moment frames.

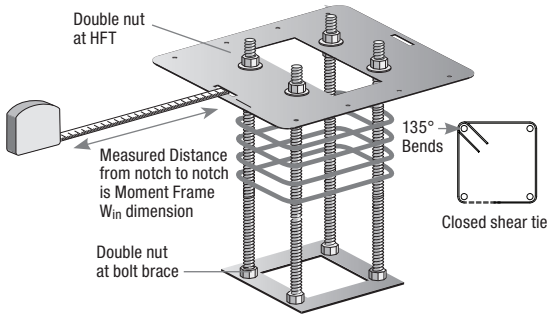
Custom Sizes and Custom Calculations

We offer over 300 standard dimension Moment Frames, but we don't stop there. We also offer calculations and solutions for sizes beyond our standard listing. We commonly provide solutions for two-story and multi-story frames as well as for fixed base connections.

At Hardy Frames we understand that Moment Frames require job-specific considerations. We work with contractors to meet their needs without treating adjustments as a custom order.

Moment Frame Template Kits

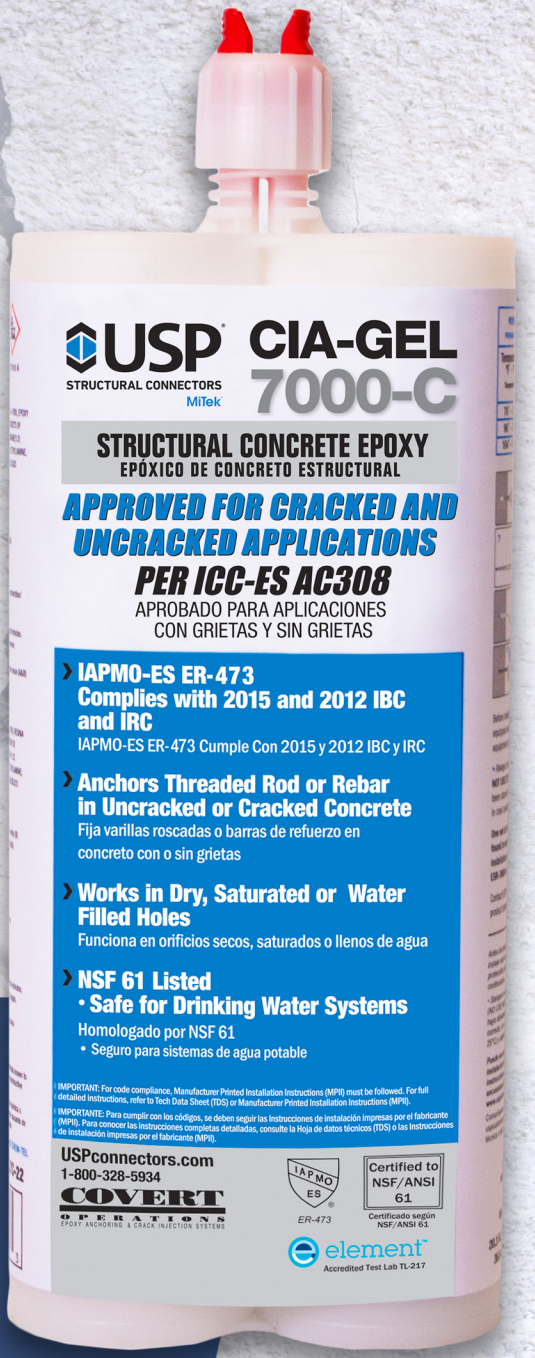
Template Kits are included with the purchase of the **Hardy Frame®** Moment Frame and are a stock item that can be shipped within one business day. The Kit includes all embed anchors, nuts, washers and Templates so the concrete pour can proceed prior to the Moment Frame delivery. Correctly locating the anchors is easy with a slot provided in the Template to measure the "W_{in}", (inside steel-to-steel) dimension.



WON'T CRACK UNDER PRESSURE, EVEN IF THE CONCRETE DOES.

Our structural concrete epoxy is designed for anchoring into concrete that is, or may become, cracked due to cyclic loading from wind or earthquakes. It may also be used with fully grouted CMU construction.

- 15 minute gel time and 8 hour cure time
- Use with threaded steel rod or deformed rebar
- Can be installed in dry or water filled holes
- Use in over head installations



To place your order,
call **800-328-5934**

EPOXY QUANTITY ESTIMATOR

Do you need to know how much epoxy your job needs? Quickly calculate the number of cartridges using the USP Epoxy Quantity Estimator. Run our web application on your desktop, smart phone or tablet from anywhere with an internet connection.

Learn more at **USPconnectors.com/CIA7000C**

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Customer Service:
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Fax: 952-898-8605
Email: uspcustomerservice@mii.com
Websites: USPconnectors.com
Mitek-US.com

LOCATIONS

WAREHOUSE & DISTRIBUTION:

MiTek US / USP Structural Connectors
2363 East Perry Road
Plainfield, Indiana 46168
Will Call Hours: 8:00 am to 4:00 pm EST

MiTek US / USP Structural Connectors
120 Hancock Drive
Westampton, New Jersey 08060
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Friday only - 8:00 am to 4:00 pm EST

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Atlanta, Georgia 30354
Will Call Hours: 7:30 am to 4:00 pm EST

MANUFACTURING:

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Montgomery, Minnesota 56069
Will Call Hours: 8:00 am to 4:30 pm CST

MiTek US / USP Structural Connectors
11910 62nd Street North
Largo, Florida 33773
Will Call Hours: 8:30 am to 4:30 pm EST

MiTek US / USP Structural Connectors
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Phoenix, Arizona 85353

MiTek / USP Structural Connectors
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