



SIMPSON
Strong-Tie
®



THIS YEAR, STEEL IS GOLDEN.

WOOD CONSTRUCTION CONNECTORS

C-2006

50TH
ANNIVERSARY

1956-2006

(800) 999-5099
www.strongtie.com



Our valued customers,

This year we celebrate 50 years of business. Fifty years! What an amazing journey it has been. During this time, we've had the great opportunity to meet and support the best customers in the world. We are very fortunate to work with so many wonderful people throughout our industry: architects, engineers, builders and developers, contractors, dealers and distributors, building officials, and do-it-yourselfers – all of us working together to make homes and buildings safer and stronger.

Over the years we have learned so much. We've expanded our product line to serve a wide range of construction needs and expanded our thinking by looking beyond individual products to structures as whole systems. We've relied on research to guide us. Our state-of-the-art Tyrell Gilb Research Laboratory generates data that helps position us as the leader in structural systems technology. This investment in research continues to benefit our customers as we use the knowledge to create trusted, high-performance products that are easy to use.

We also learn from Mother Nature. The past hurricane season reminds us of why we continue to look for new product solutions and construction methods to increase structural safety. Our evaluation of structures following natural disasters has led to many important product improvements and innovations.

As you might imagine, in 50 years we have much to be thankful for and many reasons to be proud. We're grateful to have such a strong and loyal customer base. We've always viewed our customers as integral partners whose feedback and contributions help us develop better products as well as strengthen our level of service.

We are also very fortunate to have such an amazing team of people at Simpson. Our employees have a natural tendency toward innovation, problem-solving and customer service. We are proud to be a U.S. based manufacturer. And we have people and facilities in many parts of the world who are ready to support your needs.

We look forward to the future with great respect for those who helped get us here – our customers and our employees. With your ongoing support, we know the next 50 years will inspire, challenge and shape our thought and design process, and will result in structures that are stronger, safer and more economical.

Barc Simpson
Chairman

Steve Lamson
President

Tom Fitzmyers
Chief Executive Officer

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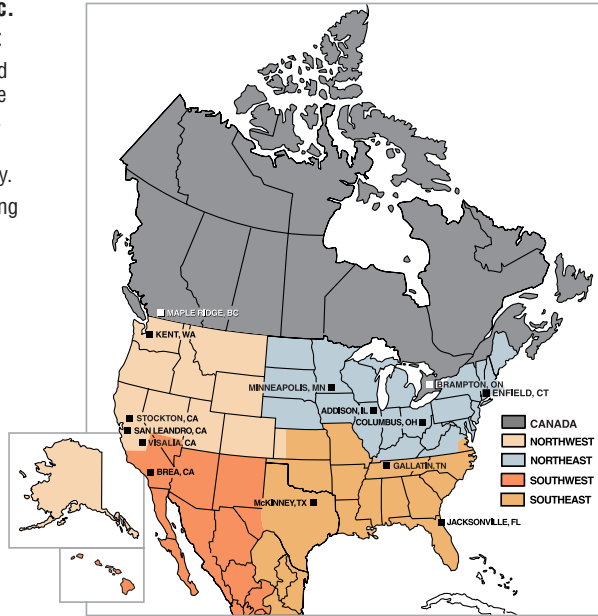


INTRODUCTION

The Simpson Strong-Tie® Company was founded in Oakland, California in 1914 and has been manufacturing wood-to-wood and wood-to-concrete connectors since 1956. Since then, Simpson Strong-Tie Company, Inc., has grown to be the world's largest manufacturer of construction connectors and to expand to include a complete line of anchor systems products.

The Simpson Strong-Tie Co., Inc. "NO EQUAL" program includes:

- Quality products value-engineered for the lowest installed cost at the highest rated performance levels.
- Most thoroughly tested and evaluated products in the industry.
- Strategically-located manufacturing and warehouse facilities.
- National Code Agency listings.
- Largest number of patented connectors in the industry.
- European locations with an international sales team.
- In-house R&D, and tool and die professionals.
- In-house product testing and quality control engineers.
- Member of AITC, ASTM, ASCE, AWWA, ACI, AISC, CSI, ICFA, NBMDA, NLBMDA, SETMA, STAFDA, SREA, NFBA, WTCA and local engineering groups.



CONNECTOR SELECTION KEY

Products are divided into fourteen general categories, identified by tabs along the page's outer edge.

Fasteners & Quik Drive

16-20 ▶

Concrete Connectors

21-28 ▶

Anchors

29-45 ▶

Caps & Bases

46-55 ▶

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56-67 ▶

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68-87 ▶

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88-118 ▶

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119-124 ▶

Plated Truss Connectors

125-146 ▶

Masonry Connectors

147-154 ▶

Straps & Ties

155-171 ▶

Miscellaneous

172-182 ▶

Architectural Products Group

183-187 ▶

Hanger Options

188-193 ▶

SIMPSON'S QUALITY POLICY

We help people build safer structures economically. We do this by designing, engineering and manufacturing "No Equal" structural connectors and other related products that meet or exceed our customers' needs and expectations. Everyone is responsible for product quality and is committed to ensuring the effectiveness of the Quality Management System.

Tom Fitzmyers
Chief Executive Officer

Steve Lamson
President

GETTING FAST TECHNICAL SUPPORT

When you call for engineering technical support, we can help you quickly if you have the following information at hand. This will help us to serve you promptly and efficiently.

- Which Simpson catalog are you using?
(See the front cover for the catalog number).
- Which Simpson product are you using?
- What is your load requirement?
- What is the carried member's width and height?
- What is the supporting member's width and height?
- What is the carried and supporting members' material and application?

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CORROSION INFORMATION

Understanding the Issues

Metal connectors, anchors, and fasteners will corrode and may lose load-carrying capacity when installed in corrosive environments or exposed to corrosive materials. There are many environments and materials which may cause corrosion including ocean salt air, fire-retardants, fumes, fertilizers, preservative-treated wood, dissimilar metals, and other corrosive elements.

The many variables present in a single building environment make it impossible to accurately predict if, or when, significant corrosion will begin or reach a critical level. This relative uncertainty makes it crucial that specifiers and users be knowledgeable of the potential risks and select a product coating or metal suitable for the intended use. It is also important that regular maintenance and periodic inspections are performed, especially for outdoor applications.

It is common to see some corrosion on connectors especially in outdoor applications. Even Stainless Steel can corrode. The presence of some corrosion does not mean that load capacity has necessarily been affected or that a failure will occur. If significant corrosion is apparent or suspected, then the wood, fasteners and connectors should be inspected by a professional engineer or general contractor and may need to be replaced.

In the last several years, pressure treated wood formulations have changed significantly. Many of the new formulations are more corrosive to steel connectors and fasteners than the traditionally used formulation of CCA-C. Simpson testing has shown that ACQ-C, ACQ-D (Carbonate), CBA-A and CA-B treated woods are approximately 2 times more corrosive than CCA-C,

while SBX-DOT (Sodium Borate) treated woods were shown to be less corrosive than CCA-C. (See *Technical Bulletin T-PTWOOD* for details).

Due to the many different pressure treatment formulations, fluctuating retention levels, **moisture content**, and because the formulations may vary regionally, or change without warning, understanding which connectors and fasteners to use with these materials has become a complex task. We have attempted to provide basic knowledge on the subject here, but it is important to fully educate yourself by reviewing our technical bulletins on the topic, and also by viewing information and literature provided by others. Additionally, because the issue is evolving, it is important to get the very latest connector information on the topic by visiting our website at www.strongtie.com/info.

Stainless Steel is always the most effective solution to corrosion risk. However, it is also more expensive and sometimes more difficult to obtain. To best serve our customers, Simpson is evaluating the options to identify the safest and most cost-effective solutions. Based on our testing and experience there are some specific applications that are appropriate for ZMAX/HDG or G90 connectors (see chart on page 7.)

Because increased corrosion from some newer pressure-treated wood is a new issue with little historical data, we have to base our recommendations on the testing and experience we have to date. It is possible that as we learn more, our recommendations may change, but these recommendations are based on the best information we have at this time.

See www.strongtie.com/info for additional critical information.

CORROSION INFORMATION

General Simpson Recommendations

- Outdoor environments are generally more corrosive to steel. If you choose to use ZMAX or HDG on an outdoor project (*i.e. deck, patio cover*), you should periodically inspect your connectors and fasteners or have a professional inspection performed. Regular maintenance including water-proofing of the wood used in your outdoor project is also a good practice.
- For wood with actual retention levels greater than 0.40 pcf for ACQ, 0.41 pcf for CBA-A, or 0.21 pcf for CA-B (Ground Contact), Stainless Steel connectors and fasteners are recommended. Verify actual retention level with the wood treater.
- When using Stainless Steel connectors, use Stainless Steel fasteners. When using ZMAX/HDG galvanized connectors, use fasteners galvanized per ASTM A153.

- Testing indicates wood installed dry reduces potential corrosion. If dry wood is used, see our website for additional information.
- Using a barrier membrane can provide additional corrosion protection, see Technical Bulletin T-PTBARRIER.

Due to the many variables involved, Simpson cannot provide estimates on service life of connectors, anchors or fasteners. We suggest that all users and specifiers also obtain recommendations for HDG, ZMAX™ (G185), mechanically galvanized, or other coatings from the treated wood supplier for the type of wood used. However, as long as Simpson's recommendations are followed, Simpson stands behind its product performance and our standard warranty (*page 15*) applies.

Guidelines for Selecting the Proper Connector

1 Evaluate the Application.

Consider the type of structure and how it will be used. These recommendations may not apply to non-structural applications such as fences.

2 Evaluate the Environment.

Testing and experience indicate that indoor dry environments are less corrosive than outdoor environments. Determining the type of environment where a connector or fastener will be used is an important factor in selecting the most appropriate material and finish for use on the connectors and fasteners. To help in your decision making, consider the following general exposure information:

Interior Dry Use: Includes wall and ceiling cavities, and raised floor applications of enclosed buildings that have been designed to ensure that condensation and other sources of moisture do not develop.

Exterior – Dry: Includes outdoor installations in low rainfall environments and no regular exposure to moisture.

Exterior – Wet: Includes outdoor installations in higher moisture and rainfall environments.

Higher Exposure Use: Includes exposure to ocean salt air, fire retardants, large bodies of water, fumes, fertilizers, soil, some preservative treated woods, industrial zones, acid rain, and other corrosive elements.

3 Evaluate and select a suitable pressure-treated wood for the intended application and environment.

The treated wood supplier should provide all the information needed regarding the wood being used. This information should include: the specific type of wood treatment used, if ammonia was used in the treatment, and the chemical retention level. If the needed information is not provided then Simpson would recommend the use of Stainless Steel connectors and fasteners. You should also ask the treated wood supplier for a connector coating or material recommendation.

4 Use the chart on the right, which was created based on Simpson's testing and experience to select the connector finish or material.

If a pressure treated wood product is not identified on the chart, Simpson has not evaluated test results regarding such product and therefore cannot make any recommendation other than the use of Stainless Steel with that product. Manufacturers may independently provide test results or other product use information; Simpson expresses no opinion regarding any such information.

5 Compare the treated wood supplier's recommendation with the Simpson recommendation.

If these recommendations are different, Simpson recommends that the most conservative recommendation be followed.

Low = Use Simpson standard painted and G90 galvanized connectors as a minimum.

Med = Use ZMAX/HDG galvanized connectors as a minimum.
Use fasteners galvanized per ASTM A153.

High = Use Type 304 or 316 Stainless Steel connectors and fasteners.

Connector Coating Recommendation - Structural Applications

Environment	Untreated Wood	SBX/DOT & Zinc Borate	ACQ-C, ACQ-D (Carbonate), CA-B & CBA-A			ACZA	Other or Uncertain
			No Ammonia	With Ammonia	Higher Chemical Content ¹		
Interior Dry	Low	Low	Med	Med	High	High	High
Exterior - Dry	Low	N/A ²	Med	High	High	High	High
Exterior - Wet	Med	N/A ²	Med ^{3,4}	High	High	High	High
Higher Exposure	High	N/A ²	High	High	High	High	High
Uncertain	High	N/A ²	High	High	High	High	High

- Woods with actual retention levels greater than 0.40 pcf for ACQ, 0.41 pcf for CBA-A, or 0.21 pcf for CA-B (Ground Contact level).
- Borate treated woods are not appropriate for outdoor use.
- Test results indicate that ZMAX/HDG will perform adequately, subject to regular maintenance and periodic inspection. However, the nationally-approved test method used, AWWPA E12-94, is an accelerated test, so data over an extended period of time is not available. If uncertain, use Stainless Steel.
- Some treated wood may have excess surface chemicals making it potentially more corrosive. If you suspect this or are uncertain, use Stainless Steel.

SIMPSON COATINGS AVAILABLE

Contact Simpson for product availability, ordering information and lead times.

STANDARD COATING G90

(Galvanized G90) .90 oz. of zinc per square foot of surface area. Simpson Strong-Tie began producing connectors in G90 when we started participation in markets outside the United States. The minimum standard for galvanization in the United States has long been G60 where the minimum for most of the world equates to G90. We began producing product in G90 specifically for these international markets, but in the late 90's we decided to produce all our structural products with the higher level of zinc coating.



Galvanized (G185) 1.85 oz. of zinc per square foot of surface area (*hot-dip galvanized per ASTM A653 total both sides*). Z-MAX™ meets all catalog load specifications listed for the regular products and all published building code reports. These products require hot-dip galvanized fasteners (*fasteners galvanized per ASTM A153*).



Products hot-dip galvanized after fabrication (*14 ga. and thicker*). The coating weight increases with material thickness. Hot-dip galvanizing is available for many products. The minimum specified coating weight is 2.0 oz./ft² (*per ASTM A123 total both sides*). These products require hot-dip galvanized fasteners (*fasteners galvanized per ASTM A153*).



Products manufactured from Type 316L stainless steel, and provide greater durability against corrosion. Stainless steel nails are required with stainless steel products, and are available from Simpson.

THE APPRECIATION WE HAVE FOR OUR



1956

1966

1976

CUSTOMERS COULD FILL VOLUMES.



Thank you for your partnership and support as we celebrate our golden anniversary.



1986

1996

2006

NEW PRODUCTS FOR 2006

**H2.5T Hurricane Tie**

The H2.5T's truncated design was developed to accommodate trusses with 2x4 bottom chords. The easy to install, five nail pattern is stronger and gets better uplift loads than our popular H2.5 hurricane tie.

Page 162-164

**LGU/MGU/HGU/HHGU High Capacity Girder Hangers**

The GU hangers are a high-capacity girder hanger designed for situations where the header and joist are flush at top. This part can be used for retrofit on the framing members after they are temporarily placed in position. It uses Simpson Strong-Drive screws (SDS) to make installation fast and easy, with no pre-drilling required.

Page 103 and 120

**THGQ/THGQH Truss Girder Hangers**

The THGQ and THGQH hangers for multi-ply girder trusses use SDS screws to provide high load capacities and easier installation compared to bolts. Both models offer minimum and optional maximum fastener quantities to accommodate varying design needs. Allowable loads for various girder web member sizes provide additional installation options.

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**TJC37 Jack Truss Connector**

The TJC37 is a versatile connector for jack trusses. It is adjustable from 0 to 67.5 degrees (*shipped with 67.5 degree bend*). Nail hole locations allow for easy installation. Minimum nailing option provides faster installation and lower installed cost.

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NEW PRODUCTS FOR 2006

**LGT3-SDS2.5** Girder Truss Tiedown

The LGT3-SDS2.5 is a high capacity girder truss tiedown for 3-ply girder trusses with over 3,500 lbs. of uplift. It does not require attachment to the top of the truss, allowing installation after the roof is sheathed. Featuring SDS screws into the truss for higher load capacity and low profile connection to studs ensures easy installation of drywall. It can be installed on the inside or outside of wall and provides additional bearing enhancement for heavy download applications.

Page 153 and 167

**HDU** Holdown

The HDU series of holdowns are the latest in a long series of innovations from Simpson. These holdowns combine the advantages of low deflection and high capacity from the pre-deflected geometry with the ease of installation of Simpson's patented SDS screws.

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**ICFVL** Ledger Connector System

The ICFVL Ledger Connector System is engineered to solve the challenges of mounting wood or steel ledgers to insulated concrete form (ICF) walls. Simpson's new ICF component of the system, the ICFVL, is designed to provide both vertical and lateral, in-plane performance. The system is still quick, versatile and easy to use but now provides the lateral loads many have requested.

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**FSC** Floor Span Connector

As an alternative to coil strap, our new FSC connects upper floors to lower floors from the inside of the wall. The convenient obround holes make installation in narrow wall cavities easy. Installs to studs with nails and through the floor system with a $\frac{3}{8}$ " all thread rod, a nut and washer (*not included*).

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IMPORTANT INFORMATION & GENERAL NOTES

CODES

We have a feature in our catalog tables—a “Quick-Code” Reference column. This column allows users to quickly locate which products have code listings and which code agency has issued the report. We’ve added this feature to our catalog to help our customers easily access the information they need regarding our products. Over the years, the number of products we offer has greatly increased, and the number of code reports we have has also increased. At the same time, there have been many changes over the years in the code agencies themselves. All of these factors have made it increasingly difficult for our customers to determine which codes apply to various products.

The Quick-Code reference column, used in conjunction with the chart at right, allows you to easily see which code listing applies to a product. The reference numbers also clearly identify:

- Products submitted for code listing (160)
- Products with no code listing (170)
- Products not submitted because they have no load rating and a code listing is not necessary (180)
- Products which meet prescriptive code requirements (190)

Where a model has been submitted for listing (160) or does not have a code listing (170), Simpson can supply complete test data to support our published loads. **Please contact us for a copy of our product test documentation at (800) 925-5099.** Product acceptance can be obtained through the Alternate Methods and Materials section of the applicable building code.

Some loads and applications may not be covered in the code report and specific reductions and restrictions may be required by other code agencies. Visit www.strongtie.com or visit the code agencies’ web sites for the current evaluation reports.

Simpson Strong-Tie® connectors are recognized by most code agencies. Agencies that recognize some or all of our products include ICC-ES (formerly ICBO, BOCA, SBCCI); the City of Los Angeles, California; State of Wisconsin; and State of Florida. The allowable loads in this catalog comply with the 2001 National Design Specifications.

In October 2002, Members of BOCA, ICBO and SBCCI voted to consolidate services, products and operations into one member service organization—the International Code Council (ICC). Existing code reports and new code reports will be recognized under the new ICC organization. Please contact the ICC at www.icc-es.org for more information.

In August 2004 the Department of State Architecture, California, issued a revised IR 23-1. The Revised Interpretation of Regulation addresses and clarifies issues relating to Pre-fabricated Wood Construction Connectors. IR 23-1 defines the Purpose and Scope and clarifies Listing Requirements, Acceptable Load Capacities, Design Requirements, Installation Requirements and Connector Fabrication which addresses corrosion-resistant material and/or coatings. Please contact the DSA at www.dsa.dgs.ca.gov/Publications/default.htm

WE ARE ISO 9001-2000 REGISTERED



Simpson Strong-Tie is an ISO 9001-2000 registered company. ISO 9001-2000 is an internationally-recognized quality assurance system which lets our domestic and international customers know that they can count on the consistent quality of Simpson Strong-Tie's products and services.

CODE LISTING KEY CHART

AGENCY	CODE LISTING	CODE REF.	AGENCY	CODE LISTING	CODE REF.
ICC-NER (OLD NES)	209	1	City of Los Angeles, California	RR 22086	80
	393	2		RR 24682	81
	413	3		RR 24818	82
	421	4		RR 24947	83
	422	5		RR 24949	84
	432	6		RR 25064	85
	443	7		RR 25074	86
	469	8		RR 25076	87
	499	9		RR 25119	88
	694	10		RR 25120	89
ICC-ER (OLD ICBO)	1211	20		RR 25149	90
	3631	21		RR 25158	91
	4546	22		RR 25185	92
	4935	23		RR 25236	93
	4945	24		RR 25248	94
	5090	25		RR 25279	95
	5117	26		RR 25281	96
	5268	27		RR 25293	97
	5275	28		RR 25300	98
	5313	30		RR 25318	99
	5328	31		RR 25427	101
	5349	32		RR 25459	102
	5357	33		RR 25469	103
	5485	34		RR 25489	104
	5537	35		RR 25528	105
	5655	36		RR 25540	106
	5656	37		RR 25552	107
	5672	39		RR 25568	108
	5708	40		RR 25560	109
	5709	41	State of Florida	FL402	120
	5791	42		FL474	121
	5824	44		FL503	122
	5938	45		FL538	123
	5952	46		FL1218	124
	6119	47		FL1423	125
	5053	49		FL1463	126
ICC-ESR	1056	19		FL1725	127
	1679	50		FL1901	128
	1772	48		FL2361	129
ICC-ES (OLD SBCCI)	2207	60		FL2304	130
	9603C	62		FL2355	131
No Code Listing	Call us for Test Data	170		FL3750	133
No Load Rating	—	180		FL3751	134
Prescriptive Code	—	190		FL3746	135
	—	190		FL4426	136
State of Wisconsin	200043-N	140		FL4432	137
	—	—		FL5113	139
CA DSA	PA-110	150		FL5415	141
	—	—	Submitted for Listing	Call us for Status and Test Data	160*
	—	—		—	—

* As of the printing of this catalog, products coded 160 have been submitted and are awaiting issuance from the respective code agency. Because code reports can be issued throughout the year, we encourage the user to visit www.strongtie.com, www.icc-es.org, www.ladbs.org, www.dsa.dgs.ca.gov, and www.floridabuilding.org for the most current information, call Simpson at 800-999-5099, or contact the code agency directly.

HOW TO USE THIS CATALOG

NEW PRODUCTS

New products are shown with the  symbol. There are also many new sizes within existing model series.

CHANGES IN RED

Significant changes from last year's catalog are indicated in red.



SIMPSON SPEC

This icon indicates a product that is preferable to similar connectors because of a) easier installation, b) higher loads, c) lower installed cost, or a combination of these features.



Extra Corrosion Protection

This icon identifies products that are available with additional corrosion protection (ZMAX, Hot-Dip Galvanized or Stainless Steel). **Check with factory. The end of the product name will indicate what type of extra corrosion protection is provided (Z = ZMAX, HDG = Hot-Dip Galvanized or SS = Stainless Steel).** See page 6-7 for information on corrosion, and visit our website www.strongtie.com/info for more technical information on this topic.

HOW WE DETERMINE ALLOWABLE LOADS

Allowable loads in this catalog are determined using calculations and/or one or more of the following methods:

- a minimum of 3 static load tests in wood assemblies;
- a minimum of 3 static load tests in steel jigs;
- a minimum of 3 static load tests of products embedded in concrete or masonry.

Some tests include only portions of a product such as purlin anchor tests—only the embedded hook is tested, not the nailed or bolted section of the strap, which is calculated. Testing to determine allowable loads in this catalog is not done on connection systems in buildings. Testing is conducted under the supervision of an independent laboratory. Typically the allowable load is limited to the lowest of $\frac{1}{8}$ " deflection, test ultimate/3 or calculation value.

For detailed information regarding how Simpson tests specific products, contact Simpson.

OTHER CATALOG DEFINITIONS

Deflection: The distance a point moves when a load is applied.

Model No.: This is the Simpson product name.

Nails: This shows the fastener quantity and type required to achieve the table loads.

Allowable Design Loads: The maximum load that a connection is designed to provide. There may be multiple design loads acting in different directions (up, down, lateral, perpendicular, etc.) imposed on a connection.

Model No.	W	L	H	Nails	Allowable Loads				Code Ref.
					(133) and (160)			Down (100)	
					Uplift	F ₁	F ₂		
EPB44A	3⅜	3	2⅝	8-16d	1100	815	935	2670	2, 40, 121
EPB44	3⅜	3¼	2⅝	8-16d	800	985	1135	3465	
EPB46	5½	3⅜	3	8-16d	800	985	1135	3465	
EPB66	5½	5½	3	12-16d	1500	985	1135	3465	

NAILS: 16d = 0.162" dia. x 3 $\frac{1}{2}$ " long. See page 16-17 for other nail sizes and information.

Dimensions W, L, H: This shows the product dimensions (width, length and height in this case.) The product drawing includes these callouts as a cross-reference.

Throughout this catalog a footnote will typically be provided indicating the required nail diameter and length.

All installations should be designed only in accordance with the allowable load values set forth in this catalog.

STEEL STRESS INCREASE

Recent changes in building codes and standards have affected the way allowable loads on some connectors are determined when using Allowable Stress Design. Building codes and material standards have traditionally allowed designers and manufacturers to take a one-third stress increase on the calculated design capacities of some building materials and components when designing for forces generated from wind and seismic events. Specifically, the codes allowed Simpson Strong-Tie to take a one-third stress increase on the calculated tensile capacity of steel connectors.

Newer codes and standards only allow steel stress increase when using an alternate set of load combinations. For example, the International Building Code and Uniform Building Code do not allow a stress increase when designing with the Basic load combinations of Allowable Stress Design. However, these codes do allow the use of a stress increase when using the Alternate (or Alternative) basic load combinations, as long as the referenced material standard/section permits it. The ASCE7 Standards do not have Alternate basic load combinations, so stress increases are not permitted.

Simpson Strong-Tie determines allowable loads in accordance with building codes and steel design standards (AISI and AISC). In the past, these steel standards have permitted the use of a one-third stress increase when designing for wind and seismic forces. However, the latest editions of these standards have discontinued that practice.

Because of these changes, Simpson Strong-Tie re-evaluated its entire product line to determine which loads were governed by calculated steel strength and included an allowable stress increase on the steel. **The majority of Simpson Strong-Tie's products were not affected, since their allowable load is governed**

by a tested value, not a calculated value. Those products which were affected are shown with their revised capacities with no steel stress increase.

Additionally, it must be clarified that the load duration factors for wood permitted by the National Design Specification for Wood Construction are separate and distinct from the one-third stress increase. Load duration factors for wood are permitted to be used in design calculations for all load combinations in the codes and standards covered by this catalog. For that reason there will be loads listed that include a load duration increase for wood or fasteners in wood, such as 1.33 or 1.6 for wind or seismic loading, with no further $\frac{1}{3}$ stress increase permitted.

The table below summarizes when stress increases are permitted.

Code	Load Combination	C _d (Wood) Allowed	$\frac{1}{3}$ Stress Increase (Steel) Allowed
ASCE 7-05, ASCE7-02	Basic	Yes	No
1997 Uniform Building Code	Basic	Yes	No
	Alternate	Yes	Yes
2000 International Building Code	Basic	Yes	No
	Alternate	Yes	Yes
2003 International Building Code	Basic	Yes	No
	Alternate	Yes	No
Florida Building Code 2004	Basic	Yes	No
	Alternate	Yes	No

IMPORTANT INFORMATION & GENERAL NOTES

These notes are provided to ensure proper installation of Simpson Strong-Tie® Company, Inc. products and must be followed fully.

- a. Simpson Strong-Tie Co., Inc. reserves the right to change specifications, designs, and models without notice or liability for such changes.
- b. Steel used for each Simpson product is individually selected based on the product's steel specifications, including strength, thickness, formability, finish, and weldability. Contact factory for steel information on specific products.
- c. Unless otherwise noted, dimensions are in inches, loads are in pounds.
- d. Unless otherwise noted, bolts and nails may not be combined to achieve highest load value. 8d (0.131"x2½"), 10d (0.148"x3"), and 16d (0.162"x3½") specify common nails **that meet the requirements of ASTM F1667**. When a shorter nail is specified, it will be noted (for example 8dx1½). Refer to page 16, 17, **NDS (National Design Specification) and ASTM F1667 (American Society of Testing and Materials)** for more nail info.
- e. Unless otherwise noted, allowable loads are for Douglas Fir-Larch under continuously dry conditions. Allowable loads for other species or conditions must be adjusted according to the code. In many cases, Simpson code reports will indicate loads derived from Doug Fir header material only. However under ICC-ES AC13, loads for Douglas Fir are the same as LVL, LSL, PSL, Glulam's and Southern Pine, since the specific gravity of these wood species fall within the specific gravity range of the AC13 criteria. The chart below gives specific gravity for the different wood species as listed by NDS. For your convenience we have placed the section from the AC13 criteria indicating the range of specific gravity. **3.2.3** The species of lumber used shall have a specific gravity of 0.49 or greater, such as Douglas fir, but not greater than 0.55 as determined in accordance with the NDS.

Species	Fc.L	Specific Gravity
Douglas Fir-Larch (DF)	625 psi	0.50
Southern Pine (SP)	565 psi	0.55
Spruce-Pine-Fir (SPF)	425 psi	0.42
Hem Fir (HF)	405 psi	0.43
Glulam	560 psi	0.50
LVL (DF/SP)	750 psi	0.50
TimberStrand® LSL (E=1.3x10 ⁶)	680 psi	0.50
TimberStrand® LSL (E≥1.5x10 ⁶)	880 psi	0.50
Parallam® PSL	750 psi	0.50
- f. For face-mount hangers & straight straps, use 0.86 of table loads for Spruce-Pine-Fir.
- g. Simpson Strong-Tie Co., Inc. will manufacture non-catalog products provided prior approval is obtained and an engineering drawing is included with the order. Steel specified on the drawings as ⅝", ¾", and 1" will be 11 gauge (0.120"), 7 ga (0.179"), and 3 gauge (0.239"), respectively. The minimum yield and tensile strengths are 33 ksi and 52 ksi, respectively.
- h. All references to bolts or machine bolts (MBs) are for structural quality through bolts (*not lag screws*) equal to or better than ASTM Standard A307, Grade A. RFB is A307, Grade C; SSTB is ASTM A36.
- i. Unless otherwise noted, bending steel in the field may cause fractures at the bend line. Fractured steel will not carry load and must be replaced.
- j. A fastener that splits the wood will not take the design load. Evaluate splits to determine if the connection will perform as required. Dry wood may split more easily and should be evaluated as required. If wood tends to split, consider pre-boring holes with diameters not exceeding .75 of the nail diameter (2001 NDS 11.1.5.3).
- k. Wood shrinks and expands as it loses and gains moisture, particularly perpendicular to its grain. Take wood shrinkage into account when designing and installing connections. Simpson manufactures products to fit common dry lumber dimensions. If you need a connector with dimensions other than those listed in this catalog, Simpson may be able to vary connector dimensions; contact the factory. The effects of wood shrinkage are increased in multiple lumber connections, such as floor-to-floor installations. This may result in the vertical rod nuts becoming loose, requiring post-installation tightening.
- l. Top flange hangers may cause unevenness. Possible remedies should be evaluated by a professional and include using a face mount hanger, and routing the beam or cutting the subfloor to accommodate the top flange thickness.
- m. Built-up lumber (*multiple members*) must be fastened together to act as one unit to resist the applied load (*excluding the connector fasteners*). This must be determined by the Designer/Engineer of Record.
- n. Do Not Overload. Do not exceed catalog allowable loads, which would jeopardize the connection.
- o. Some model configurations may differ from those shown in this catalog. Contact factory for details.
- p. **Hanger Options (page 188) – some combinations of hanger options are not available.** In some cases, combinations of these options may not be installable. Horizontal loads induced by sloped joists must be resisted by other members in the structural system. **A qualified designer must always evaluate each connection, including carried and carrying member limitations, before specifying the product.** Fill all fastener holes with fastener types specified in the tables, unless otherwise noted. Hanger configurations, height, and fastener schedules may vary from the tables depending on joist size, skew and slope. See the allowable table load for the non-modified hanger, and adjust as indicated. Gauge may vary from that specified depending on the manufacturing process used. U and W hangers normally have single stirrups; occasionally, the seat may be welded. B, GLT, HGLT, HW, LBV, W and WNP hangers for sloped seat installations are assumed backed. To order a custom non-backed hanger, contact the factory.
- q. **Simpson will calculate the net height for a sloped seat. The customer must provide the H1 joist height before slope.**
- r. Truss plates shown are not manufactured by Simpson.
- s. **Do not weld products listed in this catalog unless this publication specifically identifies a product as acceptable for welding, or unless specific approval for welding is provided in writing by Simpson. Some steels have poor weldability and a tendency to crack when welded. Cracked steel will not carry load and must be replaced. Refer to page 188 for hangers which can be welded.**

INSTRUCTIONS FOR THE INSTALLER

- a. All specified fasteners must be installed according to the instructions in this catalog. Incorrect fastener quantity, size, type, material, or finish may cause the connection to fail. 16d fasteners are common nails (0.162" dia. x 3½" long) and cannot be replaced with 16d sinkers (0.148" dia. x 3¼" long) for full load value unless otherwise specified.
- b. Bolt holes shall be at least a minimum of ⅛" and no more than a maximum of ⅛" larger than the bolt diameter (*per the 2001 NDS 11.1.2*).
- c. Install all specified fasteners before loading the connection.
- d. Some hardened fasteners may have premature failure if exposed to moisture. These fasteners are recommended to be used in dry interior applications.
- e. Use proper safety equipment.
- f. Welding galvanized steel may produce harmful fumes; follow proper welding procedures and safety precautions. Welding should be in accordance with A.W.S. (*American Welding Society*) standards. Unless otherwise noted Simpson connectors cannot be welded.
- g. Pneumatic or powder-actuated fasteners may deflect and injure the operator or others. Pneumatic nail tools may be used to install connectors, provided the correct quantity and type of nails (*length and diameter*) are properly installed in the nail holes. Tools with nail hole-locating mechanisms should be used. Follow the manufacturer's instructions and use the appropriate safety equipment. Over driving nails may reduce allowable loads. Contact Simpson.
- h. Joist shall bear completely on the connector seat, and the gap between the joist end and the header shall not exceed ⅛" per ASTM D1761 test standards.
- i. For holdowns, anchor bolt nuts should be finger-tight plus ⅓ to ½ turn with a **hand** wrench, with consideration given to possible future wood shrinkage. Care should be taken to not over-torque the nut. **Impact wrenches should not be used as they may preload the holdown.**
- j. **Strong-Drive Screws shall not be installed through metal truss plates unless approved by the Truss Engineer (pre-drilling required). For additional information regarding fasteners installed through truss connector plates, refer to ANSI/TPI 1-2002 Section 8.10.**

IMPORTANT INFORMATION & GENERAL NOTES

INSTRUCTIONS FOR THE DESIGNER

- The allowable load is limited to the lowest of 1/8" deflection, lowest test ultimate/3 or calculation value.
- Allowable simultaneous loads in more than one direction on a single connector must be evaluated as follows:
Design Uplift/Allowable Uplift + Design Lateral Parallel to Plate/Allowable Lateral Parallel to Plate + Design Lateral Perpendicular to Plate/Allowable Lateral Perpendicular to Plate < 1.0.
- Loads are based on the 2001 National Design Specifications (NDS), unless otherwise specified. Other code agencies may use different allowable loads.
- Duration of load adjustments for fasteners into wood as specified by the code are as follows:
"FLOOR" and "DOWN" (100) — no increase for duration of load.
"SNOW" (115) — 115% of design load for 2 month duration of load.
"ROOF LOAD" (125) — 125% of design load for 7 day duration of load.
"EARTHQUAKE/WIND" (133 and 160) — 133% and 160% of design load for earthquake/wind loading.
- Unless otherwise noted, wood shear is not considered in the loads given; reduce allowable loads when wood shear is limiting.
Glulam 145 psi, LVL 285 psi, LSL 285 psi, PSL 290 psi; E = 1.3x10⁶ psi.
- Simpson strongly recommends the following addition to construction drawings and specifications: **"Simpson Strong-Tie connectors are specifically required to meet the structural calculations of plan. Before substituting another brand, confirm load capacity based on reliable published testing data or calculations. The Designer/Engineer of Record should evaluate and give written approval for substitution prior to installation."**
- Verify that the dimensions of the supporting member are sufficient to receive the specified fasteners, and develop the top flange bearing length.
- Some catalog illustrations show connections that could cause cross-grain tension or bending of the wood during loading if not sufficiently reinforced. In this case, mechanical reinforcement should be considered.
- For holdowns, anchor bolt nuts should be finger-tight plus 1/4 to 1/2 turn with a **hand** wrench, with consideration given to possible future wood shrinkage. Care should be taken to not over-torque the nut. **Impact wrenches should not be used as they may preload the holdown.**
- Simpson will provide, upon request, code testing data on all products that have been code tested.
- The allowable loads published in this catalog are for use when utilizing the traditional Allowable Stress Design methodology. A method for using Load and Resistance Factor Design (LRFD) for wood has been published in AF&PA/ASCE 16. When designing with LRFD, reference lateral resistances must be used. Contact Simpson for reference lateral resistances of products listed in this catalog. For more information, refer to the American Forest and Paper Association "Guideline to Pre-engineered Metal Connectors" and ASCE 16. The "Guideline" contains a soft-conversion procedure that can be used to derive reference lateral resistances.
- Simpson recommends that hanger height be at least 60% of joist height for stability.
- The term "Designer" used throughout this catalog is intended to mean **a licensed/certified building design professional**, a licensed professional engineer, or a licensed architect.
- All connected members and related elements shall be designed by the Designer.**
- All installations should be designed only in accordance with the allowable load values set forth in this catalog.**

LIMITED WARRANTY

Simpson Strong-Tie Co., Inc. warrants catalog products to be free from defects in material or manufacturing. Simpson Strong-Tie Co., Inc. products are further warranted for adequacy of design when used in accordance with design limits in this catalog, and properly specified and installed. This warranty does not apply to uses not in compliance with specific applications and installation procedures set forth in this catalog, or to non-catalog or modified products, or to deterioration due to environmental conditions.

Simpson Strong-Tie connectors are designed to enable structures to resist the movement, stress, and loading that results from impact events such as earthquakes and high velocity winds. Other Simpson Strong-Tie products are designed to the load capacities and uses listed in this catalog. Properly-installed Simpson Strong-Tie products will perform in accordance with the specifications set forth in the applicable Simpson catalog. Additional performance limitations for specific products may be listed on the applicable catalog pages.

Due to the particular characteristics of potential impact events, the specific design and location of the structure, the building materials used, the quality

of construction, and the condition of the soils involved, damage may nonetheless result to a structure and its contents even if the loads resulting from the impact event do not exceed Simpson catalog specifications and Simpson Strong-Tie connectors are properly installed in accordance with applicable building codes.

All warranty obligations of Simpson Strong-Tie Co., Inc. shall be limited, at the discretion of Simpson Strong-Tie Co., Inc., to repair or replacement of the defective part. These remedies shall constitute Simpson Strong-Tie Co., Inc.'s sole obligation and sole remedy of purchaser under this warranty. In no event will Simpson Strong-Tie Co., Inc. be responsible for incidental, consequential, or special loss or damage, however caused.

This warranty is expressly in lieu of all other warranties, expressed or implied, including warranties of merchantability or fitness for a particular purpose, all such other warranties being hereby expressly excluded.

This warranty may change periodically – consult our website www.strongtie.com for current information.

TERMS & CONDITIONS OF SALE

PRODUCT USE

Products in this catalog are designed and manufactured for the specific purposes shown, and should not be used with other connectors not approved by a qualified Designer. Modifications to products or changes in installation procedures should only be made by a qualified Designer. The performance of such modified products or altered installation procedures is the sole responsibility of the Designer.

INDEMNITY

Customers or Designers modifying products or installation procedures, or designing non-catalog products for fabrication by Simpson Strong-Tie Co., Inc. shall, regardless of specific instructions to the user, indemnify, defend, and hold harmless Simpson Strong-Tie Co., Inc. for any and all claimed loss or damage occasioned in whole or in part by non-catalog or modified products.

NON-CATALOG AND MODIFIED PRODUCTS

Consult Simpson Strong-Tie Co., Inc. for applications for which there is no catalog product, or for connectors for use in hostile environments, with excessive wood shrinkage, or with abnormal loading or erection requirements.

Non-catalog products must be designed by the customer and will be fabricated by Simpson Strong-Tie in accordance with customer specifications.

Simpson Strong-Tie cannot and does not make any representations regarding the suitability of use or load-carrying capacities of non-catalog products. Simpson Strong-Tie provides no warranty, express or implied, on non-catalog products. F.O.B. Shipping Point unless otherwise specified.

NAILS

Strong-Tie nails and structural fasteners have been developed as the optimum fasteners for connector products. Special lengths afford economy of purchase and installation, and depth compatibility with framing members. Nail specifications include head size, thickness, steel and shank design, and point configuration to ensure conformity to published values.

For pneumatic nail use, see Instructions to the Installer, page 14 and visit www.strongtie.com for technical bulletins.

COMPARABLE SIZES: SSN8 = N8; SS8D = 8d common;
SSN10 = N10; SS10D = 10d common;
SS16D = 16d common

TO ORDER: Display Packages—available for
N8DHDG, N10DHDG, 10DHDG and 16DHDG nails.

To order, specify:

Display Package	Description
N8DHDG MSTR CTN	24 display packs of 150 N8 nails
N8D5HDG MSTR CTN	6 display packs of 750 N8 nails
N10DHDG MSTR CTN	24 display packs of 120 N10 nails
N10D5HDG MSTR CTN	6 display packs of 600 N10 nails
10DHDG MSTR CTN	24 display packs of 50 10d nails
10D5HDG MSTR CTN	6 display packs of 250 10d nails
16DHDG MSTR CTN	24 display packs of 40 16d nails
16D5HDG MSTR CTN	6 display packs of 200 16d nails
50 lb. Bulk Boxes	Available for N8HDG, N10HDG and N16HDG nails, model no. N8, N10, N16

Load adjustment factors for optional nails used with face mount hangers and straight straps

Catalog Nail	Replacement Nail	Allowable Load Adjustment Factor	
		Face Mount Hangers	Straight Straps
16d common (0.162 x 3½")	10dx1½" (0.148 x 1½")	0.64	0.64
16d common (0.162 x 3½")	10d common (0.148 x 3") 12d common (0.148 x 3¼")	0.85	0.85
16d common (0.162 x 3½")	16d sinker (0.148 x 3¼")	0.85	0.85
16d common (0.162 x 3½")	16d x 2½" (N16) (0.162 x 2½")	1.00	1.00
10d common (0.148 x 3") 12d common (0.148 x 3¼") 16d sinker (0.148 x 3¼")	10dx1½" (0.148 x 1½")	0.77	1.00
10d common (0.148 x 3") 16d sinker (0.148 x 3¼")	10d x 1¼" (0.148 x 1¼")	0.64	1.00
10d common (0.148 x 3") 12d common (0.148 x 3¼")	16d sinker (0.148 x 3¼")	1.00	1.00
8d common (0.131 x 2½")	8dx1½" (0.131 x 1½")	0.86	1.00
10d common (0.148 x 3")	8d x 2½" (0.131 x 2½")	0.83	0.83

- 10dx1½" or 16dx2½" nails **may not** be substituted for joist nails in double shear hangers (*i.e.* LUS, MUS, HUS, HHUS, HGUS).
- Do not substitute 10dx1½" nails for face nails on slope and skew combinations or skewed only LSU and LSSU.
- This table does not apply to specials (*see Hanger Options*), or steel thicker than 10 gauge. Face mount hangers, joist and face nails (*except as noted*) and straight straps may be installed with alternate nails. Use this table to determine the load adjustment factor.

Nail Type	Description	Wire Gauge (ga)	Metric Equivalent (mm)	Finish ²	Fasteners per CWT
N8HDG	(8d) 0.131 x 1½" Smooth shank	10¼	3.3 x 38.1	HDG	15200
SSN8	(8d) 0.131 x 1½" Smooth shank	10¼	3.3 x 38.1	SS	15200
SS8D	(8d) 0.131 x 2½" Smooth shank	10¼	3.3 x 63.5	SS	9400
8d common	(8d) 0.131 x 2½" Smooth shank	10¼	3.3 x 63.5	BRIGHT	9400
N10HDG	(10d) 0.148 x 1½" Smooth shank	9	3.8 x 38.1	HDG	11900
SSN10	(10d) 0.148 x 1½" Smooth shank	9	3.8 x 38.1	SS	12200
SS10D	(10d) 0.148 x 3" Smooth shank	9	3.8 x 76.2	SS	6700
10d common	(10d) 0.148 x 3" Smooth shank	9	3.8 x 76.2	BRIGHT	6700
10DHDG	(10d) 0.148 x 3" Smooth shank	9	3.8 x 76.2	HDG	6700
16d sinker	0.148 x 3¼" Smooth shank	9	3.8 x 82.6	GV	6100
12d common	0.148 x 3¼" Smooth shank	9	3.8 x 82.6	BRIGHT	6100
N16	(16d) 0.162 x 2½" Smooth shank	8	4.1 x 63.5	BRIGHT	6300
SS16D	(16d) 0.162 x 3½" Smooth shank	8	4.1 x 88.9	SS	4400
16d common	(16d) 0.162 x 3½" Smooth shank	8	4.1 x 88.9	BRIGHT	4400
16DHDG	(16d) 0.162 x 3½" Smooth shank	8	4.1 x 88.9	HDG	4400
N54A	0.250 x 2½" Annular ring	3	6.4 x 63.5	BRIGHT	2700
N54AHDG	0.250 x 2½" Annular ring	3	6.4 x 63.5	HDG	2700

Available with additional corrosion protection. Check with factory.

- N16 fasteners may be ordered **electro-galvanized**; specify EG; for example N16EG. **This finish is not acceptable for ZMAX™ or HDG applications.**
- HDG = hot-dip galvanized; SS = stainless steel; Bright = no finish; GV = Green vinyl.
- Metric equivalents are listed Diameter x Length.

4. The 8d common, 12d common, 16d common (bright), and 16d sinker nails are for reference only. Simpson does not sell these nails. All other nails are available through Simpson.

- For pneumatic fastener info, request additional technical information.
- Recommended minimum end distance to prevent splitting is 10 x the nail diameter per 97 NDS Commentary Table C12.4.1.
- Use HDG nails with ZMAX™ and HDG products.
- 16d sinker with GV finish is not acceptable for ZMAX or HDG applications.

CONVERSION CHARTS

Metric Conversion

Imperial	Metric
1 in	25.40 mm
1 ft	0.3048 m
1 lb	4.448N
1 Kip	4.448 kN
1 psi	6895 Pa

Bolt Diameter

in	mm
⅜	9.5
½	12.7
⅝	15.9
¾	19.1
⅞	22.2
1	25.4

If Common Rafter Roof Pitch is...

Rise/Run	Slope
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	Slope
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°

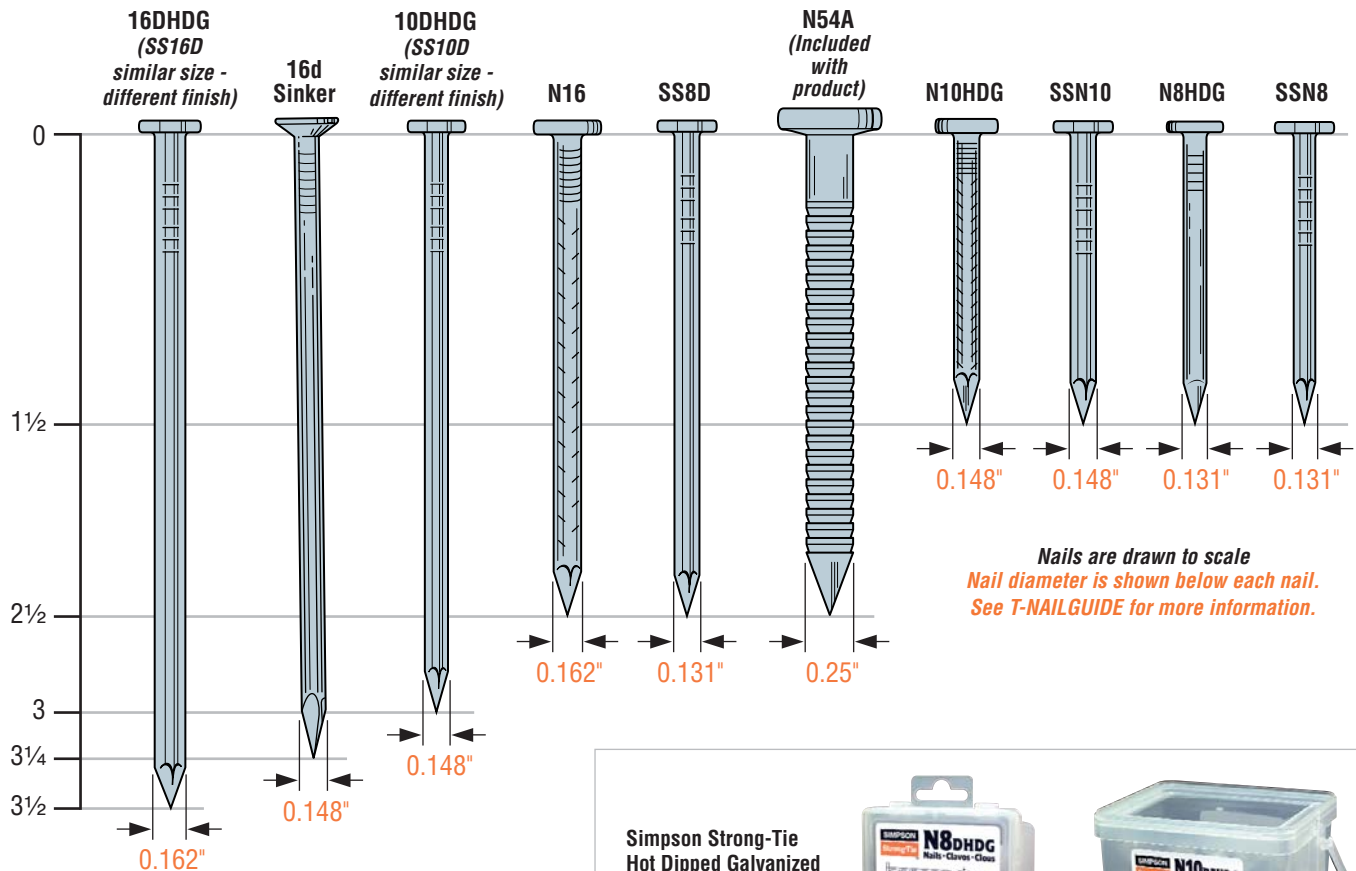
US Standard Steel Gauge Equivalents in Nominal Dimensions

Ga	Approximate Dimensions		Decimals (in)		
	in	mm	Uncoated Steel	Galvanized Steel (G90)	Z-MAX (G185)
3	¼	6.0	0.239	—	—
7	⅜	4.5	0.179	0.186	—
10	⅝	3.5	0.134	0.138	0.140
11	⅞	3.1	0.120	0.123	0.125
12	7/16	2.7	0.105	0.108	0.110
14	⅝	2.0	0.075	0.078	0.080
16	⅞	1.6	0.060	0.063	0.065
18	¾	1.3	0.048	0.052	0.054
20	½	1.0	0.036	0.040	0.042
22	⅜	1.0	0.030	0.033	0.035

Steel thickness varies according to mill standards.

Use these Roof Pitch to Hip/Valley Rafter Roof Pitch conversion tables only for hip/valley rafters that are skewed 45° right or left. All other skews will cause the slope to change from that listed.

NAILS



10 Nail info on N8HDG, N10HDG and N16 similar nail heads (N10 shown)

On all stainless steel and N54A nail heads

Simpson Strong-Tie Hot Dipped Galvanized nails are packed in 1 lb. and 5 lb. plastic retail containers for easy handling.

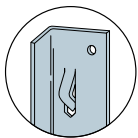


1 lb. Retail Tub

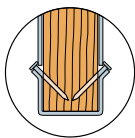


5 lb. Retail Bucket

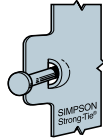
FASTENING IDENTIFICATION

**Speed Prongs**

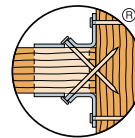
Used to temporarily position and secure the connector for easier and faster installation.

**Positive Angle Nailing (PAN)**

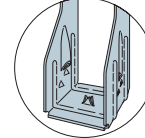
Provided when wood splitting may occur, and to speed installation.

**Dome Nailing**

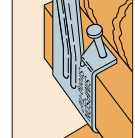
This feature guides the nail into the joist and header at a 45° angle. U.S. Patent 5,603,580

**Double Shear Nailing**

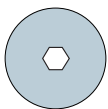
The nail is installed into the joist and header, distributing the load through two points on each joist nail for greater strength.

**IUS Snap Detail**

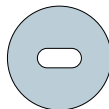
The "Snap-In" teardrops and Strong-Grips allow the I-joist to "snap" in securely without the need for joist nails.

**ITT Tab Nailing**

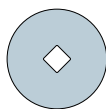
The nail is hammered in at an angle to prevent the wood from splitting.

**Hexagonal Holes**

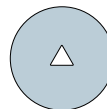
Used for concrete or masonry screw applications.

**Obround Holes**

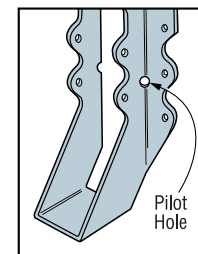
Used to provide easier nailing access in tight locations. Fasteners may be installed at an angle. Holes must be filled.

**Diamond Holes**

Optional holes to temporarily secure connectors to the member during installation.

**Triangle Holes**

Provided on some products in addition to round holes. Round and triangle holes must be filled to achieve the published maximum load value.

**Pilot Holes**

Tooling holes for manufacturing purpose. No fasteners required.

QUIK DRIVE FASTENERS AND ATTACHMENTS



Quik Drive® offers labor saving auto-feed systems and specialty fasteners engineered for a wide range of commercial and residential construction applications.



AUTO-FEED SCREW DRIVING SYSTEMS

The systems offer several easy-to-use attachments bringing speed and reliability to applications that require the fastening power of screws. Our Pro series attachments provide tough, reliable performance in specific fastening applications.

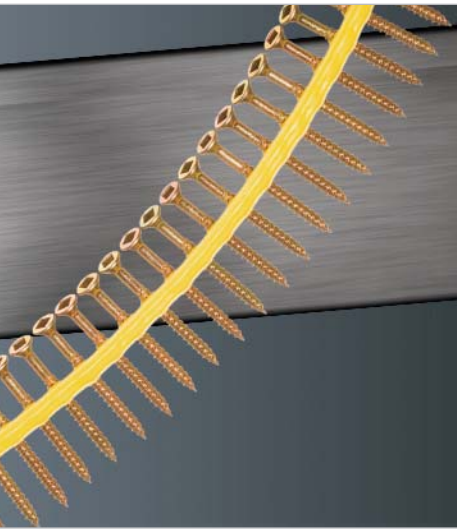
QUIK DRIVE FASTENERS

Featuring patented collation technology, Quik Drive's fasteners are designed to meet or exceed industry standards for strength and longevity while offering easy-to-load, tangle-free strips for efficient performance in auto-feed systems.



For more information visit www.strongtie.com

QUIK DRIVE FASTENERS AND ATTACHMENTS



REDUCE SQUEAKS

One of the most common causes of floor squeaks is nail withdrawal from the floor framing members, which often dry 6 to 12% in service. Nail withdrawal allows the sheathing to move locally, rubbing against the nail resulting in squeaks.

Quik Drive® auto-feed screw delivery systems offer withdrawal resistance which can help reduce squeaks. These systems install screws almost as quickly as pneumatic nailers and provide equivalent shear transfer. With these advantages, engineers can design using screws resulting in long term serviceability advantages over nails, particularly in floor diaphragms.



Allowable Shear in Pounds per Foot for Horizontal Plywood Diaphragms with WSNTL2LS or WSNTL212S Screws and Douglas Fir-Larch or Southern Pine^{1,6} Framing

Panel Grade	Panel Thickness	Minimum Nominal Width of Framing Member	BLOCKED DIAPHRAGMS ² Screw spacing at diaphragm boundaries (all cases), at continuous panel edges parallel to load (Cases 3 and 4), and at all panel edges (Cases 5 and 6)				UNBLOCKED DIAPHRAGMS Screws spaced 6 inches, maximum, at supported edges ²		Code Ref.
			6	4	2½ ³	2 ³	Case 1 (No unblocked edges or continuous joints parallel to load)	All other configurations (Cases 2, 3, 4, 5 and 6)	
			Screw Spacing at Other Panel Edges ²						
			6	6	4	3			
Structural I	15/32	2	320	425	640	730	285	215	49
		3	360	480	720	820	320	240	
Sheathing, single floor and other grades covered in DOC PS1 and PS2 ⁷	15/32	2	290	385	575	655	255	190	
		3	325	430	650	735	290	215	
	19/32	2	320	425	640	730	285	215	
		3	360	480	720	820	320	240	
	1⅞ ^{4,5}	2	320	425	640	730	285	215	
		3	360	480	720	820	320	240	

1. For IBC wind design, shear capacities may be increased 40% per IBC 2306.3.1. For normal loading, shear capacities shall be reduced 25%.

These two adjustments are not included in the Code Report.

2. Space screws at 12" on center along intermediate framing members.

3. Framing at adjoining panel edges must be 3 inches nominal or wider, and screws must be staggered where screws are spaced 2" or 2½" on center.

4. WSNTL212S screws required.

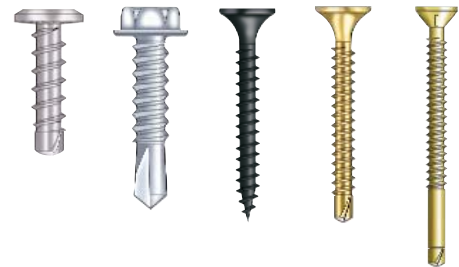
5. The values for this application are not included in the Code Report.

6. See 2003 IBC chapter 23 and 1997 UBC chapter 23 for additional requirements and information.

7. See 1997 UBC Table 23-II-H for Panel Grades.

Designing with Steel?

If you are designing a structure using Cold-Formed Steel, comprehensive design information on using Quik Drive® screws in your project can be found in the latest issue of Simpson Strong-Tie's *Cold-Formed Steel* catalog (C-CFS06). You can access this information via the web at www.strongtie.com.



For more information visit www.strongtie.com

SCREWS

SIMPSON

Strong-Tie

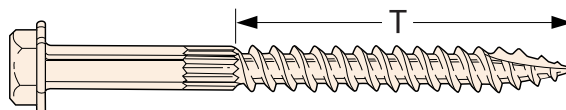
The SDS Strong-Driver® has a deep socket and magnetic tip to help provide a positive installation for the SDS Screws. Fits a standard drill.

The Simpson Strong-Drive® wood screw has a hex washer head for easy driving with a 3/8" hex head socket and a low speed drill. The built-in reamer and type 17 tip cuts a hole to allow installation without predrilling. Predrilling may be necessary depending on the type and moisture content of wood. Use 5/32" drill bit.

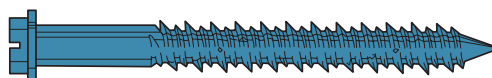
WARNING: Industry studies show that hardened fasteners can experience performance problems in wet or corrosive environments. Accordingly, use this product in dry, interior, and noncorrosive environments only. (Titen and SD8 only)

CODES: See page 12 for Code Listing Key Chart.

Identification
on all SDS
screw heads
(SDS 1/4x3 shown)



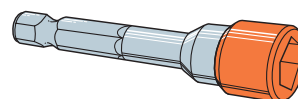
SDS 1/4x3 U.S. Patent 6,109,850



Titen Hex Head



SD8x1.25



SDS 5/8-RB
Strong-Driver®

Titen Screw Anchors for Concrete

Titen Dia. (in)	Drill Bit Dia. (in)	Embed. Depth (in)	Critical Spacing (in)	Critical Edge Dist. (in)	Tension Load		Shear Load	Code Ref.
					f'c >= 2000 psi (13.8 MPa) Concrete	f'c >= 4000 psi (27.6 MPa) Concrete	f'c >= 2000 psi (13.8 MPa) Concrete	
					Allowable lbs.	Allowable lbs.	Allowable lbs.	
3/16 ¹	5/32	1	2 1/4	1 1/8	125	160	255	131
3/16	5/32	1 1/2	2 1/4	1 1/8	305	460	415	
1/4 ¹	3/16	1	3	1 1/2	145	180	225	
1/4	3/16	1 1/2	3	1 1/2	365	500	400	

1. These loads also apply to masonry.

2. The Designer shall verify allowable load of the attached member or element as it may govern the allowable load.



Titen Drill Bit

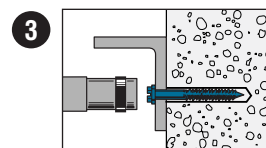
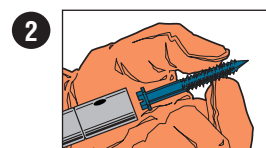
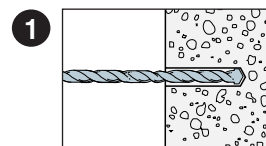


Titen Drill Bit / Driver



Special hex adaptor on the bit allows the Titen Installation Tool to slide over the bit and lock in, ready to drive screws.

Titen Installation Sequence



SDS and SD Wood Screws

Available with additional corrosion protection. Check with factory.

Model No.	Wood Screw Description (Metric Equivalent) (mm)	T	Finish ³	Fasteners per Carton	Doug Fir-Larch/Southern Pine Allowable Loads ¹					Spruce-Pine-Fir Allowable Loads ¹					Code ⁹ Ref.
					Shear ⁶ Wood to Wood (DF to DF)	14 ga to 3 ga ¹³		Withdrawal ¹² (lbs.)	Shear ⁶ Wood to Wood (SPF to SPF)	14 ga to 3 ga ¹³		Withdrawal ¹² (lbs.)			
						Shear (100)	Shear (133/ 160) ¹⁴			(100)	(133/ 160) ¹⁴		Shear (100)	Shear (133/ 160) ¹⁴	
SD8x1.25 ⁸	5/32 x 1¼" (4.2 x 31.8)	—	EG	—	—	50	65	—	—	—	45	60	—	—	170
SDS¼ x 1½	¼ x 1½" (6.1 x 38)	1	ZINC	1500	—	295	390	170	230	—	245	325	120	160	27, 96 126
SDS¼ x 1½HDG	¼ x 1½" (6.1 x 38)	1	HDG	1500	—	295	390	170	230	—	245	325	120	160	
SDS¼ x 1¾	¼ x 1¾" (6.1 x 44.5)	1¼	ZINC	1400	—	295	390	215	285	—	245	325	150	200	
SDS¼ x 2	¼ x 2" (6.1 x 50.8)	1¼	ZINC	1300	—	470	625	215	285	—	395	525	150	200	
SDS¼ x 2HDG	¼ x 2" (6.1 x 50.8)	1¼	HDG	1300	—	470	625	215	285	—	395	525	150	200	
SDS¼ x 2½	¼ x 2½" (6.1 x 63.5)	1½	ZINC	1100	—	470	625	255	345	—	395	525	180	240	
SDS¼ x 2½HDG	¼ x 2½" (6.1 x 63.5)	1½	HDG	1100	—	470	625	255	345	—	395	525	180	240	
SDS¼ x 3	¼ x 3" (6.1 x 76.2)	2	ZINC	950	240	470	625	345	460	200	395	525	240	320	
SDS¼ x 3HDG	¼ x 3" (6.1 x 76.2)	2	HDG	950	240	470	625	345	460	200	395	525	240	320	
SDS¼ x 3½	¼ x 3½" (6.1 x 88.9)	2¼	ZINC	900	240	470	625	385	515	200	395	525	270	365	
SDS¼ x 4½	¼ x 4½" (6.1 x 114.3)	2¾	ZINC	800	260	470	625	475	630	220	395	525	330	445	
SDS¼ x 6	¼ x 6" (6.1 x 152.4)	3¼	ZINC	600	260	470	625	490	650	220	395	525	345	460	

1. Allowable loads for SDS screws are based on testing per ASTM D1761.

2. Metric equivalents are listed by Diameter x Length.

3. Zinc = Yellow zinc dichromate, EG = Electrogalvanized,

HDG = Hot-dip Galvanized.

4. SDS screws install best with a low speed 1/2" drill with a 3/8" hex head driver.

5. Wood-to-wood applications are based on a wood thickness of 1 1/2" side member. All applications are based on full penetration into the main member.

6. Shear (100) values may be increased by the wood load duration factor, C_d, as permitted by the building code.

7. DO NOT USE SD8x1.25" wood screws with structural connectors

unless specifically stated in this catalog.

8. SD8 requires 3/4" minimum penetration.

9. Load shown may not match code reports. New tested loads have been submitted to the Code Report Agencies.

10. The SDS screws with HDG finish will be supplied with their corresponding HDG or ZMAX™ connectors.

11. SDS-HDG available in bulk or 50-piece retail pack.

12. Loads based on NDS calculation for a #14 wood screw or tested ultimate/5. If thread penetration into main member is less than thread length T as shown in table, reduce allowable load by 172 lbs. x inches of thread not in main member. Use 121 lbs./inch for SPF.

13. Shear: steel side member to wood main member.

14. The (133/160) values for earthquake or wind loading may not be increased any further than shown.

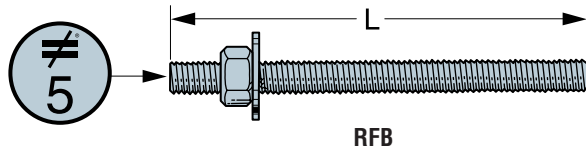
RFB Retrofit Bolts

RFBs are clean, oil free, pre-cut threaded rod, supplied with nut and washer. Offers a complete engineered anchoring system when used with the Epoxy-Tie or SET Epoxy. Inspection is easy; the head is stamped with rod length and "No Equal" symbol for identification after installation.

MATERIAL: A307 Grade C.

FINISH: Zinc Plated, available in HDG.

See page 29-32 for application information and request T-ANCHORSPEC for additional product use information.



Available with additional corrosion protection. Check with factory.

Model No.	L	Bolt Diameter
NEW RFB#4X4	4	1/2
RFB#4X5	5	1/2
RFB#4X6	6	1/2
RFB#4X7	7	1/2
RFB#4X10	10	1/2
NEW RFB#5X5	5	5/8
RFB#5X8	8	5/8
	8	5/8
RFB#5X10	10	5/8
	10	5/8
RFB#5X16	16	5/8
RFB#6X10.5	10 1/2	3/4

CNW/HSCNW Coupler Nuts

All-thread rod is correctly installed when visible through CNW's and HSCNW's "witness" holes. **Standard CNW's and HSCNW's** provide a positive stop to allow even bolt threading top and bottom.

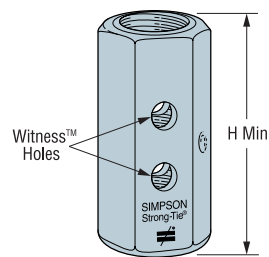
CNW's and HSCNW's are tested and load-rated coupler nuts. They can be used for extending anchor bolts, for example, through floor framing. CNW's meet and exceed the capacity of corresponding ASTM A36 bolts and threaded rod. **HSCNW's meet and exceed the capacity of corresponding ASTM A193 Grade B7 bolts and threaded rods.** Contact factory for other coupler nut sizes.

FINISH: Zinc Plated.

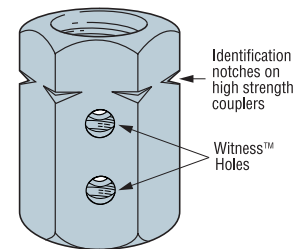
INSTALLATION:

- Tighten the two rods until each all-thread rod can be fully seen in the witness hole.

CODES: See page 12 for Code Listing Key Chart.



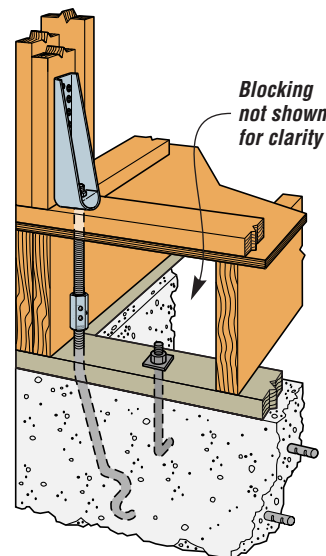
CNW
Allows fast visual check
for correct all thread
rod installation



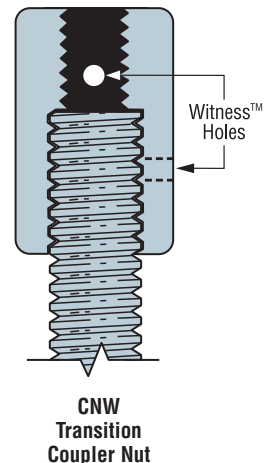
HSCNW
High Strength
Coupler Nut

Model No.	Rod Diameter	H Min	Allowable Tension Capacity (lbs.)	Code Ref.
			(100)	
CNW½	0.500	1½	3750	160
CNW⅝	0.625	1⅞	5875	
CNW¾	0.750	2¼	8460	
CNW⅞	0.875	2½	11500	
CNW1	1.000	2¾	15035	
CNW1¼	1.250	3	23490	
HSCNW¾	0.750	2¼	18225	
HSCNW1	1.000	2¾	32400	
Transition Couplers				
CNW⅝-½	0.625 to 0.500	1½	3750	
CNW¾-⅝	0.750 to 0.625	1¾	5875	
CNW⅞-⅝	0.875 to 0.625	2	5875	
CNW1-⅞	1.000 to 0.875	2¼	11500	

1. Allowable loads may be increased as permitted on page 13.
2. Allowable loads shown are based on threaded rod allowable load.



Typical CNW
Rim Joist Installation



Concrete Connectors

SIMPSON

Strong-Tie

ABS Anchor Bolt Stabilizer

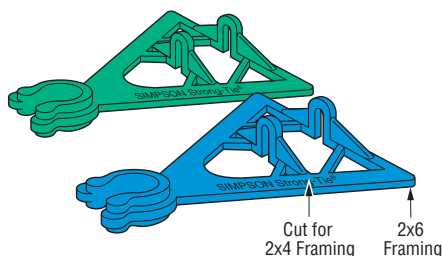
The ABS stabilizes the bolt against the force of the concrete during the concrete pour.

FEATURES:

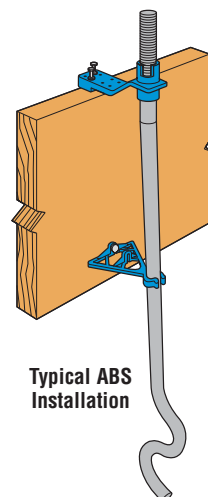
- Keeps the SSTB bolts from moving due to the force of the concrete pour.
- Supports the bolt approx. 8" below the top of the concrete.
- Model ABS $\frac{5}{8}$ is for the 5/8 SSTB and ABS $\frac{7}{8}$ is for the 7/8 SSTB.
- Thin section limits the effect of a cold joint.
- Sized for 2x4 and 2x6 mudsills.

MATERIAL: Engineered Composite Plastic.

CODES: See page 12 for Code Listing Key Chart.



ABS Anchor Bolt Stabilizer



Typical ABS Installation

Model No.	Dia.	Color	Code Ref.
ABS $\frac{5}{8}$	$\frac{5}{8}$	Blue	180
ABS $\frac{7}{8}$	$\frac{7}{8}$	Green	

STRAPMATE® Strap Holder

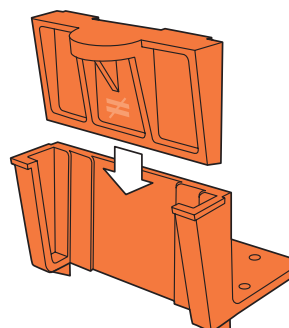
The StrapMate is designed to keep the STHD, LSTHD, HPAHD and PAHD straps vertically aligned during the concrete pour. The friction fit allows for quick and easy installation.

- The StrapMate is reusable.
- Works with STHD, LSTHD, HPAHD, PAHD.

MATERIAL: Engineered Composite Plastic.

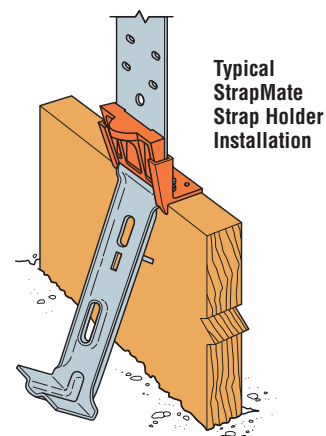
- Designed to fit $\frac{3}{4}$ " plywood forms up to 1 $\frac{3}{4}$ " LVL forms and larger.
- The strap is positioned off the front edge of the form board.

CODES: See page 12 for Code Listing Key Chart.



StrapMate Strap Holder

U.S. Patent 6,796,099



Typical StrapMate Strap Holder Installation

Model No.	Nails	Code Ref.
SM1	2-8d duplex	180

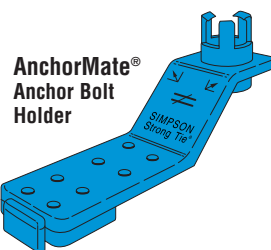
ANCHORMATE® Anchor Bolt Holders

Designed to hold the anchor in place before the concrete pour, as required in some jurisdictions.

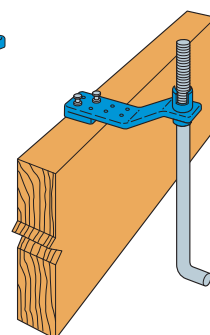
- Built-in 2x4 and 2x6 stops eliminate measuring.
- Elevated bolt grippers allow easy trowel finishing.
- Color-coded for easy size identification.
- Lightweight, durable and easy to use.
- Reusable yet cost-efficient for single application.
- Threaded grippers hold each bolt in the exact same location and height. They secure the bolt in place without a nut for quicker set-up and tear-down, and protect threads from splashing concrete.
- Use the 5/8" and 7/8" AnchorMate to secure the SSTB to the formboard before the concrete pour. Alignment arrows (left or right) match the SSTB bolt head arrow.
- Available in clear coded buckets of 100 parts with a flip-top lid for easy access or bags of 10 parts.

MATERIAL: Nylon.

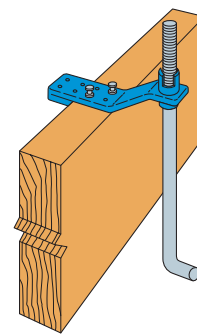
CODES: See page 12 for Code Listing Key Chart.



AnchorMate® Anchor Bolt Holder



Typical AnchorMate Installation for a 2x6 Mudsill



Typical AnchorMate Installation for a 2x4 Mudsill

Model No.	Dia.	Color	Code Ref.
AM $\frac{1}{2}$	$\frac{1}{2}$	Yellow	180
AM $\frac{5}{8}$	$\frac{5}{8}$	Blue	
AM $\frac{3}{4}$	$\frac{3}{4}$	Red	
AM $\frac{7}{8}$	$\frac{7}{8}$	Green	

BP/LBP Bearing Plates

The BP $\frac{1}{2}$ -3 and BP $\frac{5}{8}$ -3 Bearing Plates meet the latest requirements of the International Residential Code®. These plate washers are available uncoated or with a hot dip galvanized (HDG) finish.

The BP $\frac{5}{8}$ SKT uses SDS $\frac{1}{4}$ x 1 $\frac{1}{2}$ screws to provide lateral resistance when $\frac{5}{8}$ " diameter sill holes are overdrilled (screws are provided). **The shear capacity of the connection and the sill/anchor bolt shall be determined by the Designer for each installation.** Bearing Plates give greater bearing surface than standard cut washers, and help distribute the load at these critical connections.

MATERIAL: See table

FINISH: LBP, LBPS & BP $\frac{5}{8}$ S—galvanized; BP—None. BP's may be ordered HDG, LBP's may be ordered ZMAX™; check factory. Refer to page 6-7 for corrosion information.

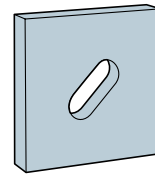
INSTALLATION: See General Notes.

CODES: See page 12 for Code Listing Key Chart.

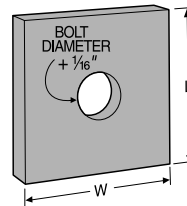
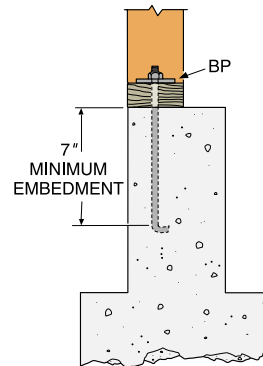
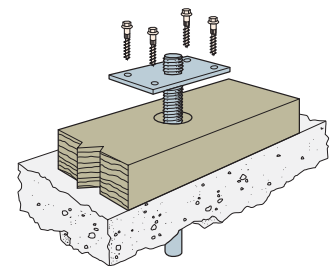
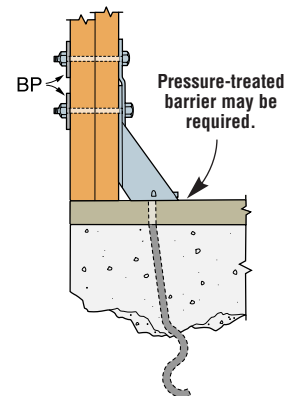
Available with additional corrosion protection. Check with factory.

Model No.	Thickness	Dimensions		Bolt Dia.	Code Ref.
		W	L		
LBP $\frac{1}{2}$	$\frac{9}{64}$	2	2	$\frac{1}{2}$	180
LBP $\frac{5}{8}$	$\frac{9}{64}$	2	2	$\frac{5}{8}$	
LBPS $\frac{1}{2}$	$\frac{9}{64}$	3	3	$\frac{1}{2}$	
LBPS $\frac{5}{8}$	$\frac{9}{64}$	3	3	$\frac{5}{8}$	
BP $\frac{1}{2}$	$\frac{3}{16}$	2	2	$\frac{1}{2}$	97
BP $\frac{1}{2}$ -3	$\frac{1}{4}$	3	3	$\frac{1}{2}$	190
BP $\frac{5}{8}$ -2	$\frac{3}{16}$	2	2	$\frac{5}{8}$	
BP $\frac{5}{8}$ SKT	3 ga	4	2	$\frac{5}{8}$	170
BP $\frac{5}{8}$	$\frac{1}{4}$	2 $\frac{1}{2}$	2 $\frac{1}{2}$	$\frac{5}{8}$	97
BP $\frac{5}{8}$ -3	$\frac{1}{4}$	3	3	$\frac{5}{8}$	190
BP $\frac{3}{4}$	$\frac{5}{16}$	2 $\frac{3}{4}$	2 $\frac{3}{4}$	$\frac{3}{4}$	97
NEW BP $\frac{7}{8}$ -2	$\frac{5}{8}$	1 $\frac{15}{16}$	2 $\frac{1}{4}$	$\frac{7}{8}$	170
BP $\frac{7}{8}$	$\frac{5}{16}$	3	3	$\frac{7}{8}$	97
BP1	$\frac{3}{8}$	3 $\frac{1}{2}$	3 $\frac{1}{2}$	1	

1. BP $\frac{5}{8}$ SKT sold as a kit.



LBPS

BP
(LBP similar)Typical BP Installed
with a Mudsill Anchor BoltThe BP $\frac{5}{8}$ SKT is used when
 $\frac{5}{8}$ " diameter sill bolt holes
are overdrilledTypical BPs Installed
with a Holdown**WT** Wedge Form Ties

Especially designed for low foundation wall applications. $\frac{5}{8}$ " wide formed "V" design for rigidity allows accurate form spacing and support.

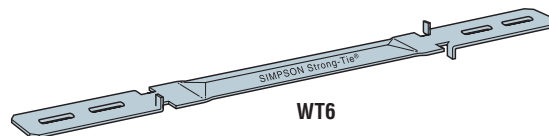
MATERIAL: Wedges—14 gauge, WT—18 gauge

FINISH: Galvanized

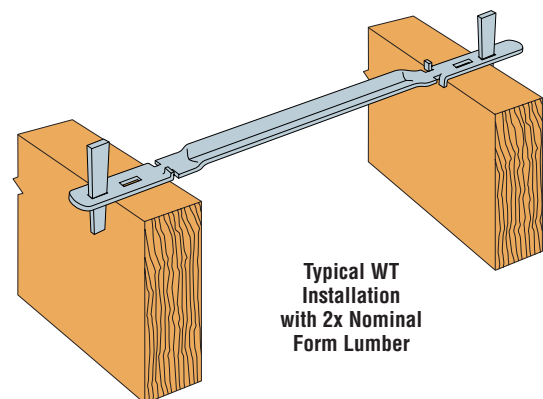
INSTALLATION: • Use two 3 $\frac{1}{2}$ " long wedges for each tie.

- Not recommended for wall pours greater than 4' high.
- Wall thickness from 6" to 12".
- Request technical bulletin T-WT for recommended spacing.

Model No	Wall Thickness
WT6	6
WT8	8
WT10	10
WT12	12



WT6

Order wedges
separately.
Specify W1.Typical WT
Installation
with 2x Nominal
Form Lumber

LMA/MASB/MAS/MAB/MA MudSill Anchors

See page 25 for additional product illustrations. The LMA offers a higher lateral load capacity in a lighter gauge. Two sizes provide an economical replacement for 1/2" diameter sill plate bolts. The MASB is designed for installation on concrete masonry units.

MAS—For slab or concrete stemwall construction. Fast for the finisher—install before pouring concrete by nailing into form, or insert into concrete after pour. Finish up to the edge of slab. No anchor bolts to hand trowel around, no nuts or washers to lose. Fast for the framer—eliminates plate drilling and mislocated anchor bolts.

MAB—Anchors mudsill to concrete block, poured walls or slab foundation.

MATERIAL: MASB, MAS, MA—16 gauge; LMA, MAB—18 gauge

FINISH: Galvanized. Some products available in Z-MAX.

See Corrosion Information, page 6-7.

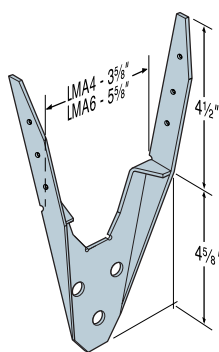
INSTALLATION: • Use all specified fasteners. See General Notes.

- Not for use where (a) a horizontal cold joint exists between the slab and foundation wall or footing beneath, unless provisions are made to transfer the load, or (b) anchors are installed in slabs poured over foundation walls formed of concrete block. All grout and concrete must have a minimum f'_c 2000 psi.
- **MASB**—First fill CMU cell with concrete grout. Place MASB into the grouted cell, and adjust into position. Attach mudsill to anchor after the concrete cures.
- **MAB**—When used in monolithic slab or concrete stemwall construction, prior to installation, spread the MAB legs to accommodate mudsill. Immediately after pouring and screeding, insert into the concrete or grout. Attach the mudsill to the anchor with 10dx1 1/2" nails after the concrete cures. When installed in grouted concrete block or solid pour for a center hole installation, drill a 3/4" hole through the mudsill and install straps through the hole. Wrap MAB straps around the mudsill and install 10dx1 1/2" nails.
- MASB and MAB tested in standard 8" CMU.
- **Testing has shown that the MAS anchor can be used in high seismic zones in lieu of the code required bolt and washer. See T-MASSW for additional information.**
- **For MAS installations where concrete spalling has occurred, the MAS achieves full published capacity when the maximum height of spall is limited to 1 1/4" and the maximum depth is no deeper than 7/8". Any exposed portion of the MAS must be protected against possible corrosion.**

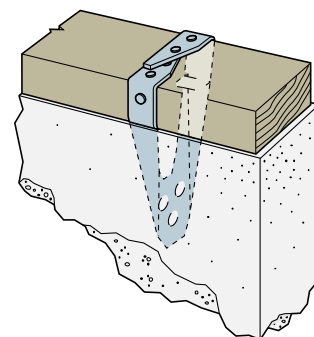
CODES: See page 12 for Code Listing Key Chart.

Code listed mudsill anchors may be used in place of anchor bolts.

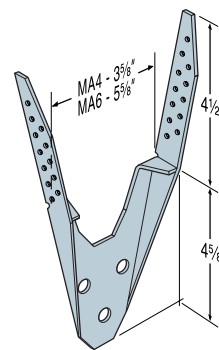
• IRC 2003, R408.1.6 • IBC 2003, 2308.6



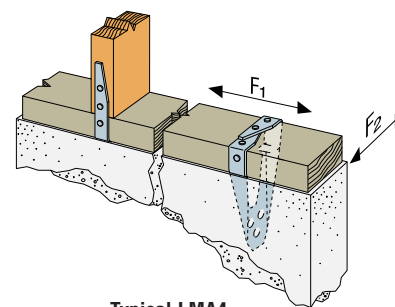
LMA4
(LMA6 similar)



LMA4



MA4
(MA6 similar)



Typical LMA4
and LMA6 Installation

Available with additional corrosion protection. Check with factory.

Model No.	Sill Size	Fasteners		Allowable Loads ¹ (133)			Allowable Loads ¹ (160)			Code Ref.
		Sides Total	Top	Uplift ²	Parallel to Plate (F ₁)	Perp to Plate (F ₂)	Uplift ²	Parallel to Plate (F ₁)	Perp to Plate (F ₂)	
MAS	2x4,6	2-10dx1 1/2	4-10dx1 1/2	1005	720	480	1005	815	575	1, 28, 121
	3x4,6	4-10dx1 1/2	2-10dx1 1/2	955	720	465	955	835	465	170
MASB	2x4,6,8	2-10dx1 1/2	6-10dx1 1/2	130	930	410	130	930	410	33, 62, 122
LMA4	2x4	2-10dx1 1/2	4-10dx1 1/2	905	675	520	905	675	520	160
	3x4	4-10dx1 1/2	2-10dx1 1/2	905	675	520	905	675	520	
LMA6	2x6	2-10dx1 1/2	4-10dx1 1/2	905	730	650	905	825	650	160
	3x6	4-10dx1 1/2	4-10dx1 1/2	1110	825	650	1110	825	650	
MA4	2x4	2-10dx1 1/2	2-10dx1 1/2	830	480	430	830	575	430	7, 90, 121
	3x4	4-10dx1 1/2	2-10dx1 1/2	915	680	430	915	680	430	
MA6	2x6	2-10dx1 1/2	4-10dx1 1/2	915	680	430	915	680	430	7, 90, 121
	3x6	4-10dx1 1/2	4-10dx1 1/2	915	680	430	915	680	430	
MAB15	2x4,6	2-10dx1 1/2	4-10dx1 1/2	565	500	500	565	500	500	2, 40, 121
MAB23	2x4,6	2-10dx1 1/2	4-10dx1 1/2	565	500	500	565	500	500	

1. Loads have been increased for short-term loading.
2. For uplift loads, provide attachment from mudsill to building's structural components to prevent cross-grain bending.
3. MAS installed with 1 leg attached to stud has loads of 435 lbs (uplift), 700 lbs (parallel to plate) and 240 lbs. (perpendicular to plate).
4. MASB installed with 1 leg attached to stud has load of 960 lbs (parallel to plate) and 360 lbs (perpendicular to plate).
5. MA installed attached to the stud has a perpendicular load of 670 lbs. Parallel loads as listed. For reduced uplift loads, contact Simpson.
6. LMA installed attached to the stud has no load reduction for parallel and perpendicular loads. For reduced uplift contact Simpson.
7. **NAILS:** 10dx1 1/2 = 0.148" dia. x 1 1/2" long. See page 16-17 for other nail sizes and information.

MAS/MASB Installed To Rim Board Over Max. 1/2" Plywood or OSB

Model No.	Sill Size	Fasteners	Allowable Loads (133)			Allowable Loads (160)			Code Ref.
		Sides Total	Uplift	F ₁	F ₂	Uplift	F ₁	F ₂	
MAS	2x4,6	6-10dx1 1/2	755	720	260	755	785	260	170
MASB	2x4,6,8	8-10dx1 1/2	45	295	25	45	295	25	

1. Rim board shall be a minimum of 1 1/2" thick.

LMA/MASB/MAS/MAB/MA Mud sill Anchors

Available with additional corrosion protection. Check with factory.

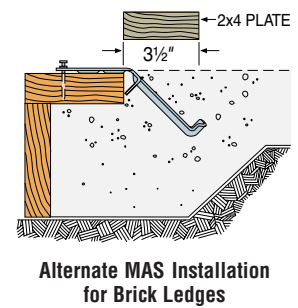
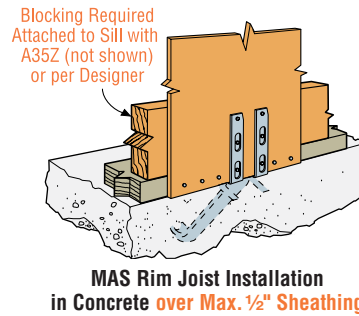
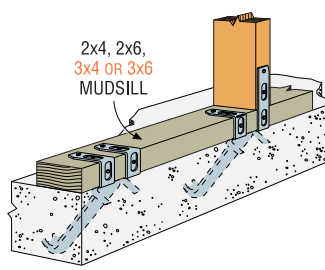
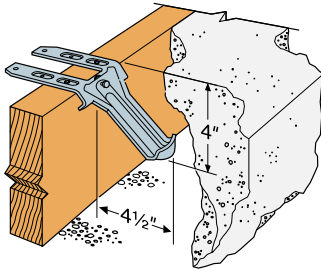
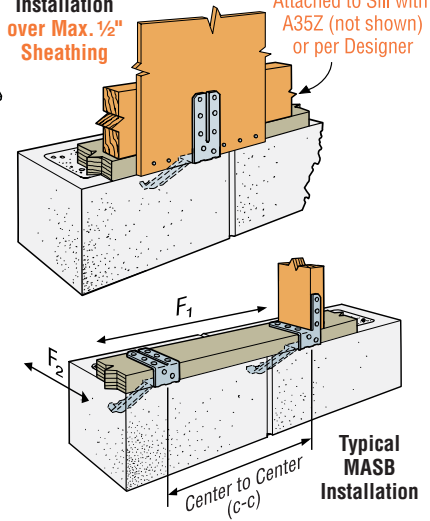
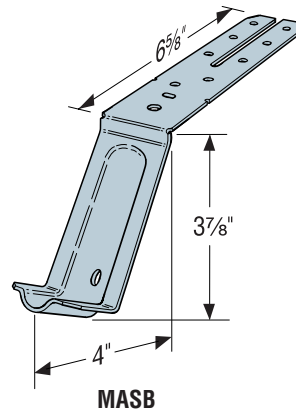
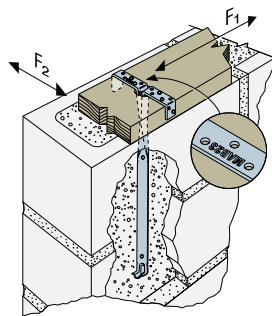
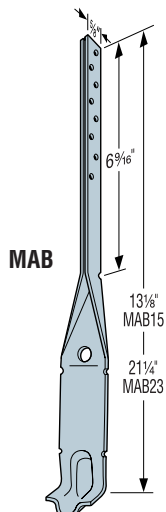
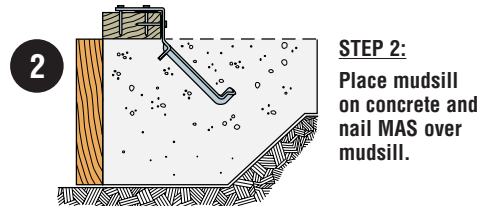
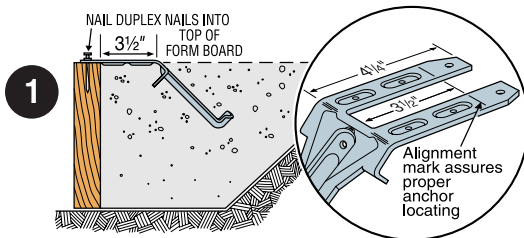
Anchor Spacing

Model No.	O.C. Spacing to replace 1/2" Anchor Bolt 6' O.C.		O.C. Spacing to replace 5/8" Anchor Bolt 6' O.C.		Min. Concrete End Distance	Min. C-C Spacing
	(133)	(160)	(133)	(160)		
LMA4	5'	4'	3 1/2'	3'	4 5/8"	9 1/4"
LMA6	5 1/2'	5'	3 1/2'	3 1/2'		
MA4	3 1/2'	3 1/2'	2 1/2'	2 1/2'	4 5/8"	9 1/4"
MA6	5'	4'	3 1/2'	3'		
MAB15	3 1/2'	3'	2 1/2'	2'	6 1/2"	13"
MAB23	3 1/2'	3'	2 1/2'	2'	12"	24"
MAS	5'	5'	3 1/2'	3 1/2'	4"	8"
MASB	6'	6'	4' 10"	4' 10"	3 3/4"	7 1/2"

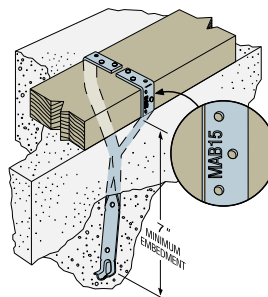
- Place anchors not more than 1' from the end of each sill per code.
- Spacing is based on parallel to plate load direction only.
- All grout and concrete min. f'c 2000 psi.

MASB Rim Joist Installation over Max. 1/2" Sheathing

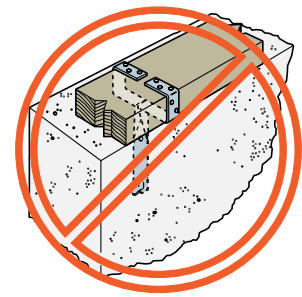
Blocking Required Attached to Sill with A35Z (not shown) or per Designer

**ALTERNATE INSTALLATION**

Typical MAB23 provides a two block embedment, if required by the local code jurisdiction.



Not applicable for concrete block installation



UFP Universal Foundation Plate

The UFP10 Retrofit Foundation Plate cuts installation time in half. Designed to connect when the mudsill is offset from the foundation up to 2½" or extended beyond the foundation up to ½".

The UFP may be used in place of the FA, HFA and FAP connectors.

MATERIAL: 14 gauge.

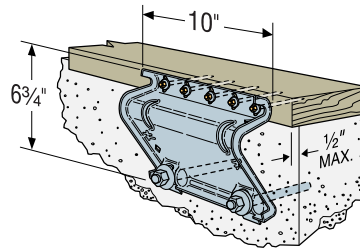
FINISH: Galvanized. May be ordered HDG, check with our factory. See Corrosion Information, page 6-7.

INSTALLATION: • Use all specified fasteners; see General Notes.

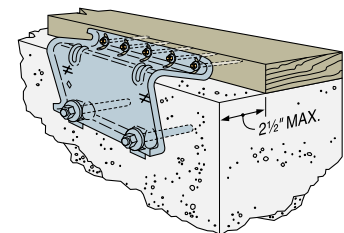
- Loads are based on test results using Simpson's SDS¼x3 screws, which are supplied with the UFP10.
- Alternate lag screws will not achieve published loads.

• Refer to T-ANCHORSPEC for post-installed anchorage solutions.

CODES: See page 12 for Code Listing Key Chart.

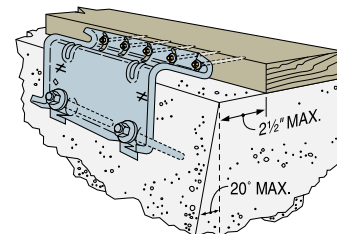


UFP10 installed on a Straight Foundation with ½" Offset Mudsill



UFP10 installed on a Straight Foundation

U.S. Patent
5,732,519



UFP10 installed on a Trapezoid Foundation

Model No.	Max Spacing to replace Anchor Bolt ½" or ⅝" dia.	Fasteners			Allowable Load Parallel to Plate (133)	Code Ref.
		Anchor Bolt Qty	Anchor Bolt Dia	Plate		
UFP10-SDS3	6'	2	½	5-SDS¼x3	1340	30, 96

1. Allowable loads have been increased 33% for earthquake or wind loading, with no further increase allowed. Reduce where other load durations apply.
2. Each anchor bolt requires a standard cut washer.

GH Girder Hangers

A girder-to-foundation wall connection.

MATERIAL: 12 gauge.

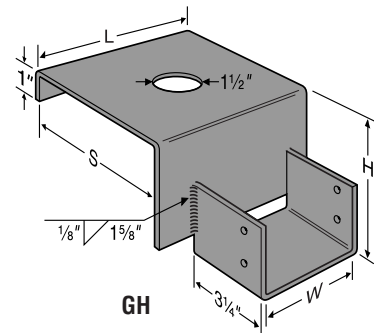
FINISH: Painted. May be ordered HDG, check factory. See Corrosion Information, page 6-7.

INSTALLATION: • Use all specified fasteners. See General Notes.

- Insert four 16d commons into girder.
- **H = girder height – mudsill thickness.**
- 1½" clearance hole accommodates rebar or anchor. This is not required.

OPTIONS: For skewed and saddle hangers, see Hanger Options on page 188. Contact Simpson for other sizes available.

CODES: See page 12 for Code Listing Key Chart.

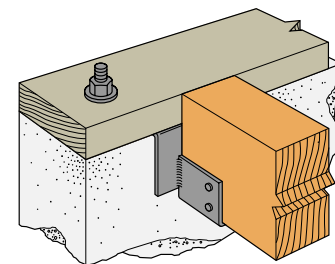


GH

Model No.	Girder	Dimensions						Allowable Loads		Code Ref.
		W	L	H 2x Plate	H 3x Plate	S		Floor (100)	Roof (125)	
GH46-6	4x6	3⅞	6	4	3	6⅞		2000	2000	7, 90, 121
GH46-8	4x6	3⅞	6	4	3	8⅞		2000	2000	
GH48-6	4x8	3⅞	6	6	5	6⅞		2000	2000	
GH48-8	4x8	3⅞	6	6	5	8⅞		2000	2000	
GH66-6	6x6	5½	8	4	3	6⅞		4000	4000	170
GH66-8	6x6	5½	8	4	3	8⅞		4000	4000	
GH68-6	6x8	5½	8	6	5	6⅞		4000	4000	
GH68-8	6x8	5½	8	6	5	8⅞		4000	4000	

1. Loads may not be increased for short-term loading.
2. A mudsill on top of the GH is required to achieve the table loads.
3. Models listed are for a 2x plate, specify "H" dimension when ordering for use with a 3x plate.
4. **NAILS: 16d = 0.162" dia. x 3½" long.**

See page 16-17 for other nail sizes and information.



Typical GH Installation

FA/FAP/HFA/FJA/FSA Foundation Anchors

This series is for retrofit or new construction. These products may be used together as a system or in individual applications, designed and tested for earthquake and high wind conditions.

FA and HFA Foundation Anchors eliminate vertical drilling by nailing into the top of the mudsill. They facilitate installation when vertical space is limited, and resist forces between the foundation and mudsill. The FAP Plate connects the mudsill to the foundation. Designed to provide lateral load resistance.

FJA Foundation Joist Anchor nails or bolts directly into floor joist, and provides a direct connection between the foundation and joist. It provides uplift and lateral resistance. FSA Foundation Stud Anchor nails or bolts to floor joist, or nails to stud. Plywood shearwall may require notching with stud-to-foundation installation.

MATERIAL: FAP—7 gauge; all others—12 gauge

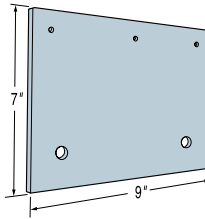
FINISH: Galvanized. May be ordered HDG, check with our factory.

See Corrosion Information, page 6-7.

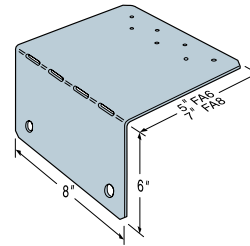
INSTALLATION:

- Use all specified fasteners; see General Notes.
- Select and install concrete anchor bolts in accordance with the manufacturer's recommendations.
- Use the RFB#4x6 with Epoxy-Tie for the anchorage system.

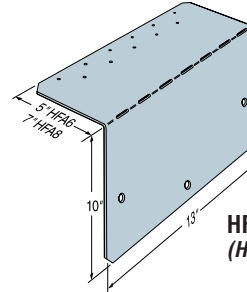
CODES: See page 12 for Code Listing Key Chart.



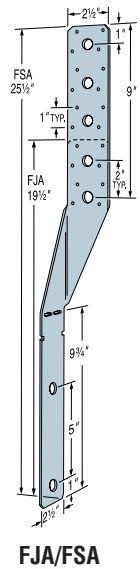
FAP
(screws not included)



FA8
(FA6 similar)



HFA6
(HFA8 similar)



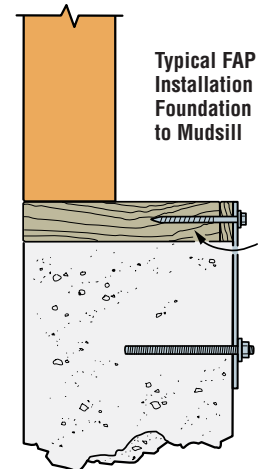
FJA/FSA

Available with additional corrosion protection. Check with factory.

Model No.	Max Spacing to Replace Anchor Bolts		Fasteners		Allowable Loads DF/SP						Code Ref.	
			Anchor Bolt	Stud/Joist/Plate	(133)			(160)				
	1/2"	5/8"	Qty		Dia	Uplift	F ₁	F ₂	Uplift	F ₁		F ₂
FAP	5½'	4'	2	½	3-SDS¼ x 2½ + shim thickness	—	950	365	—	950	365	97
FA6	2½'	1½'	2	½	7-10dx1½	—	400	515	—	400	515	8, 97, 121
FA8					7-10dx1½	—	400	515	—	400	515	8, 36, 91, 121
HFA6	6'	6'	3	½	11-10dx1½	—	1350	365	—	1400	365	9, 121
HFA8					11-10dx1½	—	1350	365	—	1400	365	
FJA	—	—	2	½	8-10dx1½	1000	185	60	1205	185	60	8, 36, 91, 121
					2-½MB	575	185	60	690	185	60	
FSA	—	—	2	½	8-10dx1½	1000	—	—	1205	—	—	
					2-½MB	575	—	—	690	—	—	

1. Allowable loads have been increased 33% and 60% for earthquake or wind loading with no further increase allowed; reduce where other load durations govern.
2. For redwood mudsills, reduce F₁ on HFA to 1215 lbs, and 840 lbs on FAP.
3. Spacing to be specified by the Designer.
4. FAP shall use a minimum SDS wood screw length of 2 1/2" plus the shim thickness.
5. The shim must be fastened to the mudsill by means other than the FAP wood screw.
6. See page 20 for SDS wood screw information.
7. FAP may be installed with 1/4" HDG lag bolts. Follow code requirements for predrilling.
8. **NAILS:** 10dx1 1/2" = 0.148" dia. x 1 1/2" long.

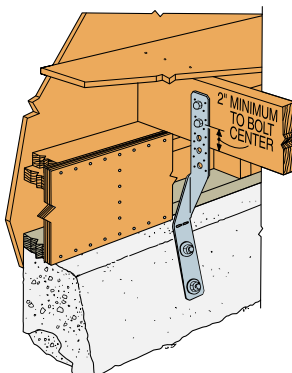
See page 16-17 for other nail sizes and information.



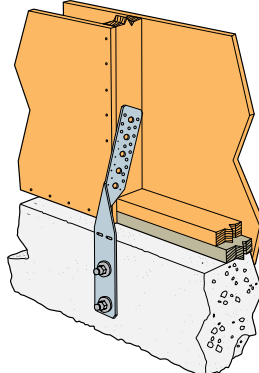
SDS 1/4" dia.
HDG wood screw with a length of 2 1/2" plus shim thickness

Add a shim between plate and sill when space is between 3/16" and 1 1/2". When space exceeds 1 1/2" use the FA or HFA. The shim must be fastened to the mudsill by means other than the FAP SDS wood screw.

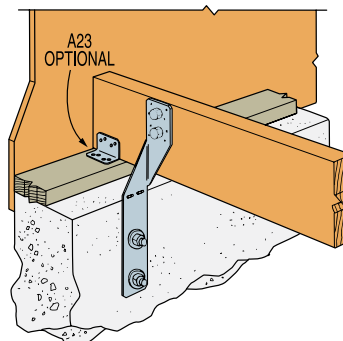
For Corrosion Information, see page 6-7.



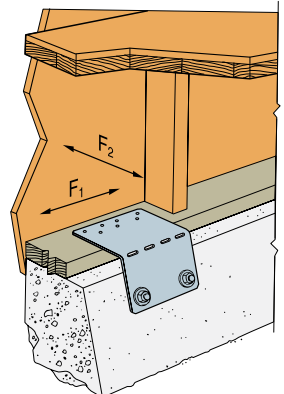
Typical FSA Installation
Foundation to Joist



Typical FSA Installation
Foundation to Stud



Typical FJA Installation
Foundation to Joist



Typical FA Installation
Foundation to Mudsill
Slotted for easy bending
for trapezoid foundations

GLB/HGLB/GLBT Beam Seats**FINISH:** Simpson gray paint**INSTALLATION:**

- Use all specified fasteners. See General Notes.
- Bolt holes shall be a minimum of $\frac{1}{32}$ " to a maximum of $\frac{1}{16}$ " larger than the bolt diameter (*per the 2001 NDS, section 11.1.2.*).
- Check the rebar spacing requirements on all installations.

OPTIONS:

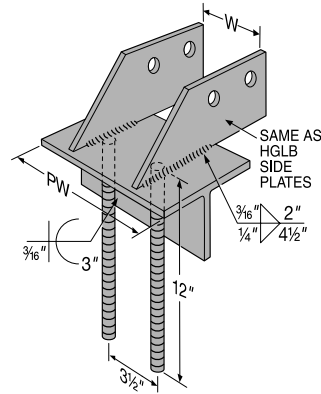
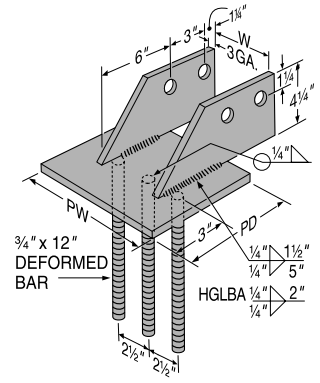
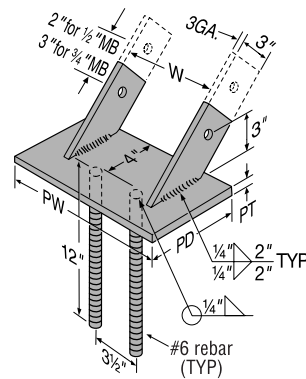
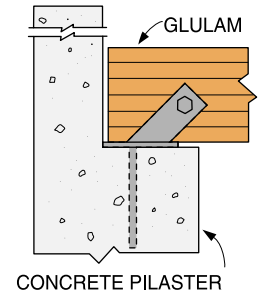
- Sawn timber and other sizes may be ordered by specifying special dimensions; use the letter designations shown on the illustrations.
- Specify if two-bolt GLB model is desired; see illustration.

CODES: See page 12 for Code Listing Key Chart.

Model No.	Dimensions				Bolts	Allowable Bearing Loads (lbs) ^{1,2}			Code Ref.
	W	PD	PW	PT		Masonry @ 195 psi	Masonry @ 390 psi	Wood $F_c \perp$	
GLB5A	5 $\frac{1}{4}$	5	7	3 ga	1 - $\frac{1}{2}$	6825	13650	14350	20, 80, 124
GLB5B	5 $\frac{1}{4}$	6	7	$\frac{3}{8}$	1 - $\frac{1}{2}$	8190	16380	17220	
GLB5C	5 $\frac{1}{4}$	7	7	$\frac{3}{8}$	1 - $\frac{1}{2}$	9555	19110	20090	
GLB5D	5 $\frac{1}{4}$	8	7	$\frac{3}{8}$	1 - $\frac{1}{2}$	10920	21840	22960	
GLB7A	6 $\frac{7}{8}$	5	9	3 ga	1 - $\frac{3}{4}$	8775	17550	14350	
GLB7B	6 $\frac{7}{8}$	6	9	$\frac{3}{8}$	1 - $\frac{3}{4}$	10530	21060	17220	
GLB7C	6 $\frac{7}{8}$	7	9	$\frac{3}{8}$	1 - $\frac{3}{4}$	12285	24570	20090	
GLB7D	6 $\frac{7}{8}$	8	9	$\frac{3}{8}$	1 - $\frac{3}{4}$	14040	28080	22960	

1. Allowable masonry bearing loads based on f'_m of 1,500 psi.

Wood bearing based on 560 psi.

2. When installed on masonry, use the lesser of the masonry or the wood allowable load values. When installed on concrete, a minimum $f'_c = 2000$ psi shall be used and use the wood values as the limiting allowable bearing load values.**GLBT****HGLB****GLB****Typical GLB Installation**

Model No.	Dimensions				Bolts	Allowable Bearing Loads (lbs) ^{1,2,8}							Allowable Horizontal Bolt Loads ^{3,4} (lbs)	Code Ref.
	W ⁶	PD	PW	PT		Masonry @ 195 psi	Masonry @ 390 psi	Wood F _c ⊥ on Glulam Width						
								3⅝	5⅝	6¾	8¾	10¾		
HGLBA	3¼ to 9	5	10	⅜	2 - ¾	9750	19500	8750	14350	18900	24500	—	20, 80 124	
HGLBB	3¼ to 9	6	10	⅜	2 - ¾	11700	23400	10500	17220	22680	29400	—		
HGLBC	3¼ to 9	7	10	⅜	2 - ¾	13650	27300	12250	20090	26460	34300	—		
HGLBD	3¼ to 9	8	10	⅜	2 - ¾	15600	31200	14000	22960	30240	39200	—		
GLBT512	3¼ to 11	5¼	12	⅝ ₁₆	2 - ¾	12285	24570	9190	15070	19845	25725	31605		
GLBT612	3¼ to 11	6½	12	⅜	2 - ¾	15210	30420	11375	18655	24570	31850	39130		
GLBT516	3¼ to 15	5¼	16	⅝ ₁₆	2 - ¾	16380	32760	9190	15070	19845	25725	31605		
GLBT616	3¼ to 15	6½	16	⅜	2 - ¾	20280	40560	11375	18655	24570	31850	39130		
GLBT520	3¼ to 19	5¼	20	⅝ ₁₆	2 - ¾	20475	40950	9190	15070	19845	25725	31605		
GLBT620	3¼ to 19	6½	20	⅜	2 - ¾	25350	50700	11375	18655	24570	31850	39130		

1. Allowable masonry bearing loads based on f'_m of 1,500 psi. Wood bearing based on 560 psi.2. When installed on masonry, use the lesser of the masonry or the wood allowable load values. When installed on concrete, a minimum $f'_c = 2000$ psi shall be used and use the wood values as the limiting allowable bearing load values.

3. Allowable horizontal loads are bolt values and include a 33% increase for earthquake or wind loading. Loads must be reduced if stresses in masonry or concrete are limiting.

4. Beams must fully bear on base plate.

5. The GLBT5 has a WT4x9 structural tee; the GLBT6 has a WT4x12 structural tee.

6. Specify "W" dimension when ordering.

7. For 2003 International Building Code loads: "Masonry @ 195 psi values" are not applicable and "Masonry @ 390 psi values" shall be reduced by 0.96.

ANCHOR SYSTEMS – GENERAL INFORMATION

SIMPSON

Strong-Tie
ANCHOR SYSTEMS

Simpson Anchor Systems manufactures a full line of anchoring and fastening products for concrete and masonry. The product line includes adhesives for anchoring and crack injection, mechanical anchors, powder actuated fasteners and drill bits. Anchor Systems products offer unique solutions to applications in the light framed construction market when used with, and without, Simpson connectors.

For complete information on product performance, installation requirements and appropriate code listings for Anchor Systems products please refer to the 2006 Anchor Systems catalog (form C-SAS-2006) or visit www.simpsonanchors.com.



IN THE SPECS • ON THE JOB • AT YOUR SERVICE™

Anchors

ADHESIVE ANCHOR SOLUTIONS

AT HIGH STRENGTH, ALL TEMPERATURE ADHESIVE

Acrylic-Tie is a two-component, 10:1 ratio acrylic based adhesive for use as a high strength, anchor grouting material. Formulated for use in all types of weather, AT is designed to dispense easily and cure at temperatures down to 0°F. Resin and initiator are dispensed and mixed simultaneously through the mixing nozzle.



AT13

SET HIGH STRENGTH EPOXY

Epoxy-Tie SET epoxy is a two-component, low odor, 1:1 ratio, 100% solids epoxy-based adhesive for use as a high strength, non-shrink anchor grouting material. SET is ideal for high load applications where strength is the main concern. Resin and hardener are dispensed and mixed simultaneously through the mixing nozzle.



SET22

ET EPOXY-TIE ADHESIVE

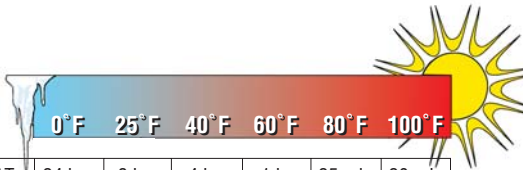
Epoxy-Tie ET is a two-component, low odor, 1:1 ratio, 100% solids epoxy-based system for use as a high strength, non-shrink anchor grouting material. ET offers an economical solution for general anchoring applications. Resin and hardener are dispensed and mixed simultaneously through the mixing nozzle.



ET22

CODES: ICC ER-1722 (SET); ER-4945 (ET); ER-5791 (AT); City of L.A. RR 25279 (SET); RR 25185 and RR 25120 (ET); RR 25459 (AT); FL 402.3 (SET); FL 402.2 (ET); FL 2304.1 (AT).

Refer to C-SAS-2006 for other Adhesive Solutions

Base Material Temp							
	AT	SET	ET	24 hrs	8 hrs	4 hrs	1 hr
0°F	24 hrs	—	—	72 hrs	24 hrs	20 hrs	16 hrs
25°F	8 hrs	—	—	72 hrs	24 hrs	24 hrs	12 hrs
40°F	4 hrs	—	—	24 hrs	24 hrs	24 hrs	12 hrs
60°F	1 hr	—	—	24 hrs	24 hrs	24 hrs	12 hrs
80°F	25 min	—	—	24 hrs	24 hrs	24 hrs	12 hrs
100°F	20 min	—	—	24 hrs	24 hrs	24 hrs	12 hrs

MECHANICAL ANCHOR SOLUTIONS

TITEN HD

The Titen HD is a patented, high-strength screw anchor for concrete and masonry. The self-undercutting, non-expansion characteristics of the Titen HD makes it the ideal anchor for structural applications, even at minimum edge distances and under reduced spacing conditions. The proprietary cutting teeth enable the Titen HD to be installed in one eighth of the time when compared to traditional expansion anchors, and at significantly reduced installation torques. This heat-treated anchor undercuts the concrete to create a strong mechanical interlock over the entire length of the anchor. The anchor can be installed with a standard ANSI tolerance drill bit and is removeable. **Recommended for permanent dry, interior, non-corrosive environments or temporary outdoor applications. Contact Simpson for more information.**



Titen HD

U.S. Patent 5,674,035 & 6,623,228

WEDGE-ALL

The Wedge-All is a non-bottom bearing, wedge style expansion anchor for use in solid concrete or grout filled masonry. A one-piece clip ensures uniform holding capacity that increases as tension is applied. The threaded stud version is available in nine diameters and multiple lengths. A single size tie-wire version is available for wire supported fixtures. Threaded studs are set by tightening the nut. Tie-wire anchors are set with the claw end of a hammer.



Wedge-All

CODES: ICC ER-1056 (Titen HD); ER-3631 (Wedge-All); City of L.A. RR24682; FL 2304.2 (Titen HD); FL 402.5 (Wedge-All).

Available with additional corrosion protection. Check with factory.

Refer to C-SAS-2006 for other Mechanical Anchor Solutions

ANCHOR SYSTEMS *Holdown and Post Base Anchor Solutions*

Simpson Anchor Systems products offer several post-installed anchorage solutions for holdowns and bases. Often times these products are used when cast-in-place anchors are omitted or mislocated, or in retrofit applications. The following design values provide solutions to common applications encountered in the light frame construction market.

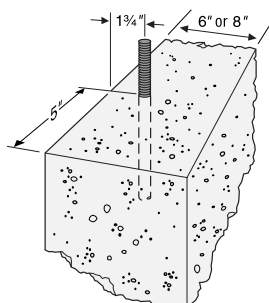
For a more complete solution guide refer to the *Anchor Systems Specifications for Connectors* catalog (T-ANCHORSPEC). For complete information on product performance, installation requirements and appropriate code listings for Anchor Systems products please refer to the 2006 Anchor Systems catalog (form C-SAS-2006) or visit www.simpsonanchors.com.



Adhesive Tension and Shear Loads for Threaded Rod Anchors in Concrete

Rod Dia. in.	SET/ET Drill Bit Dia. in.	AT Drill Bit Dia. in.	Embed. Depth in.	Tension Load Based on Bond Strength f'c >= 2000 psi Concrete			Shear Load Based on Conc. Edge Distance	Load Based on Steel Strength A307 (SAE 1018)	
				SET	ET	AT		Tension	Shear
				Allow. lbs.	Allow. lbs.	Allow. lbs.		Allow. lbs.	Allow. lbs.
3/8	1/2	7/16	1 3/4	475	—	840	1,145	2,105	1,085
			3 1/2	2,550	2,195	2,235	1,385		
			4 1/2	2,655	—	2,605	1,385		
1/2	5/8	9/16	2 1/8	1,805	—	1,315	1,750	3,750	1,930
			4 1/4	4,425	3,840	4,165	2,500		
			6	4,640	—	4,795	2,500		
5/8	3/4	1 1/16	2 1/2	1,695	—	2,125	3,605	5,875	3,025
			5	6,680	5,720	—	3,925		
			5 1/2	—	—	6,505	3,925		
			9 3/8	8,350	—	7,920	3,925		
3/4	7/8	1 3/16	3 3/8	3,865	—	3,250	5,090	8,460	4,360
			6 3/4	10,525	8,865	9,405	5,090		
			11 1/4	11,910	—	10,595	5,090		
7/8	1	1	3 7/8	4,780	—	3,550	6,870	11,500	5,925
			7 3/4	12,290	10,900	10,710	7,720		
			13 1/8	16,670	—	13,785	7,720		
1	1 1/8	1 1/16	4 1/2	5,020	—	5,200	7,630	15,025	7,740
			9	15,015	11,835	15,125	8,465		
			15	20,600	—	20,630	8,465		
1 1/4	1 3/8	1 5/16	5 5/8	8,965	—	8,090	12,595	23,490	12,100
			11 1/4	19,260	19,685	18,090	16,145		
			18 3/4	30,670	—	31,625	16,440		

1. The allowable tension and shear loads are based on a reduction factor of 4.0.
2. The allowable tension load is the lesser of the allowable load based on bond strength and the allowable load based on steel strength.
3. The allowable shear load is the lesser of the allowable load based on concrete edge distance and the allowable load based on steel strength.
4. Where permitted by Code the allowable loads may be increased by 33 1/3 percent for short-term loading due to wind or seismic forces with no further increase allowed.
5. Anchors are not permitted for use in conjunction with fire-resistive construction. Exceptions are:
(1) Anchors designed to resist wind or seismic loading only,
(2) For other than wind or seismic loading, special consideration is given to fire exposure conditions.
6. Anchors are not permitted to resist tension forces in overhead or wall installations unless proper consideration is given to fire-exposure and elevated temperature conditions.
7. The tabled values are for concrete edge distance of 1 1/2 x embedment and spacing of 4 x embedment.
8. See the C-SAS-2006 catalog for reduced edge distance and reduced spacing requirements, allowable load adjustment for temperature and other important information.



Loads for some stem wall applications have changed from previous catalogs. Refer to the C-SAS-2006 or download our technical bulletin (T-STEM06) at www.strongtie.com for the latest information.

ANCHOR SYSTEMS *Sill Plate Anchor Solutions*

Simpson Anchor Systems offers several post-installed solutions for sill plate anchorage to concrete or concrete block foundations. Often times these products are used in retrofit applications or when cast-in-place anchors are omitted or mislocated. Some products are available in galvanized and stainless steel versions to address most pressure-treated

wood applications. The following information provides some guidance when substituting Anchor Systems products for cast-in-place sill bolts.

For complete information on product performance, installation requirements and appropriate code listings for Anchor Systems products please refer to the 2006 Anchor Systems catalog (*form C-SAS-2006*) or visit www.simpsonanchors.com.

EXTERIOR/INTERIOR WALL ANCHORAGE SOLUTIONS

Available with additional corrosion protection. Check with factory.

Titen HD: As a Direct 1 to 1 Replacement for Sill Bolts

Titen HD Size (in.)	Titen HD Model No.	Sill Plate Size (in.)	Minimum Edge Distance	Minimum End Distance
1/2 x 6	THD50600H ²	2x or 3x	1 3/4	8
1/2 x 8	THD50800H ²	Double 2x	1 3/4	8
5/8 x 6	THD62600H ²	2x	1 3/4	10
5/8 x 6 1/2	THD62612H ²	3x	1 3/4	10

1. Minimum concrete strength 2500 psi.
2. For ACQ or CA pressure-treated wood order products Mechanically Galvanized (MG). For additional information, visit www.strongtie.com/info.
3. Designs based on a minimum embedment of 3 3/4" for 1/2" Titen HDs and 3 3/4" for 5/8" Titen HDs.
4. For additional information, refer to the latest *Simpson Anchor and Fastening Systems for Concrete & Masonry* catalog and T-ANCHORSUB.
5. Direct 1 to 1 replacement is based on parallel-to-plate, perpendicular-to-plate, and tension comparisons to a cast-in-place anchor bolt of equivalent diameter.
6. For concrete foundation only, 6" minimum stem wall width.
7. Minimum edge and end distances are based on distance from edge of concrete to center of bolt.

RFB and SET/AT/ET: As a Direct 1 to 1 Replacement for Sill Bolts

RFB Size	Minimum Embed.	Sill Plate Size (in.)	Minimum Edge Distance	Minimum End Distance
RFB #4x7	4 1/4	2x	1 3/4	8 1/2
RFB #4x10		Double 2x or 3x		
RFB #5x8	5	2x	1 3/4	10
RFB #5x10		Double 2x or 3x		

1. Minimum concrete strength 2500 psi.
2. For ACQ or CA pressure-treated wood, order products HDG. For additional information, visit www.strongtie.com/info.
3. Direct 1 to 1 replacement is based on parallel-to-plate, perpendicular-to-plate, and tension comparisons to a cast-in-place anchor bolt of equivalent diameter.
4. For concrete foundations only.
5. Minimum edge and end distances are based on distance from edge of concrete to center of bolt.



Titen HD



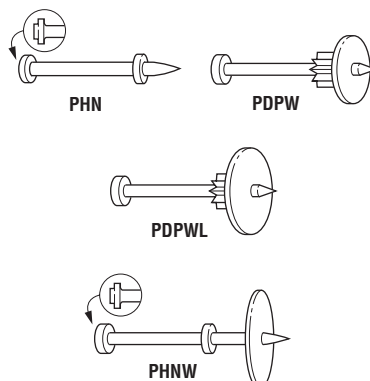
RFB



INTERIOR (ONLY) WALL ANCHORAGE SOLUTIONS

Simpson Anchor Systems offers a full line of powder actuated tools, fasteners and powder systems for fastening to concrete and steel. Powder actuated pins are often used to fasten the sill plate to concrete slabs.

For complete information on product performance, installation requirements and appropriate code listings for Anchor Systems products please refer to the 2006 Anchor Systems catalog (*form C-SAS-2006*) or visit www.simpsonanchors.com.



Catalog Number	Overall Length inches (mm)	Head Diameter inches (mm)	Shank Diameter inches (mm)	Maximum Spacing inches (mm)	
				Interior Braced Walls ³	Interior Walls ²
PDPW-300 or PDPWL-300	3 (76)	5/16 (7.9)	0.145 (3.7)	12 (305)	24 (610)
PHN-72 or PHNW-72	2 7/8 (73)	5/16 (7.9)	0.145 (3.7)	18 (457)	36 (914)

1. Spacings are based upon the attachment of 2-inch (*nominal thickness*) wood sill plates, with specific gravity of 0.50 or greater, to concrete floor slabs or footings. For species of wood with specific gravity of 0.42 to 0.49, multiply required spacing of fasteners for shear walls by 0.81. For species of wood with specific gravity of 0.31 to 0.41, multiply the required spacing of fasteners for shear walls by 0.65.
2. All walls shall have fasteners placed at 6 inches from ends of sill plates, with maximum spacing as shown in the table.
3. Fasteners indicated shall have two pins placed 6 inches and 10 inches, respectively, from each end of sill plates, with maximum spacing as shown in the table.
4. All fasteners must be installed with a minimum 3/4-inch-diameter, No. 16 gauge (0.0598 inch) steel washer.
5. Fasteners shall not be driven until the concrete has reached a compressive strength of 2,000 psi. Minimum edge distance is 1 3/4 inches.
6. The fasteners shall not be used for the attachment of shear walls having a unit shear in excess of 100 pounds per foot. Spacings shown are independent of the number of building stories.

ANCHOR SYSTEMS *Ledger and Purlin Anchorage Solutions*

Simpson Anchor Systems offers adhesive and mechanical anchor solutions to anchor ledgers to concrete and concrete block (*both grouted and hollow*). These products are also used to anchor roof connections in new and retrofit construction.

For complete information on product performance, installation requirements and appropriate code listings for Anchor Systems products please refer to the 2006 Anchor Systems catalog (*form C-SAS-2006*) or visit www.simpsonanchors.com.

Purlin Anchorage Adhesive Tension Allowable Loads

Rod Dia. (in.)	Embed. Depth (in.)	Critical End/Edge Distance (in.)	SET Spacing (in.)	AT Spacing (in.)	Allowable Tension Loads (133)	
					SET	AT
NORMAL-WEIGHT CONCRETE (7¼" MIN. WALL THICKNESS)						
5⁄8	5	7½	5	5	5875	5465
			15	16	5875	5875
7⁄8			5	5	6020	4730
			16	24	9555	7505
GROUT FILLED CMU (8" NOMINAL WALL THICKNESS)						
5⁄8	5	20	8	—	1775 ⁴	—
			20	—	2195 ⁴	—

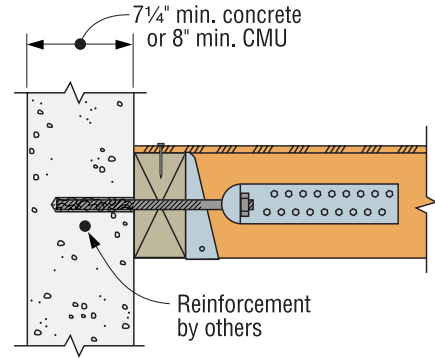
- The allowable loads for the adhesives (only) have been increased 33 1/3 percent for short term loading due to wind or seismic forces.
- Concrete shall have a minimum $f'_c = 3000$ psi and CMU shall have a minimum $f'_m = 1500$ psi at 28 days. Refer to C-SAS-2006 for additional block, mortar and grout specifications.
- Threaded rods must comply with ASTM A307 minimum
- Allowable loads may be increased to 2225 lbs for 8" spacing and 2745 lbs for 20" spacing for designs using the UBC.

Titen HD as a Replacement for a Ledger Shear Bolt

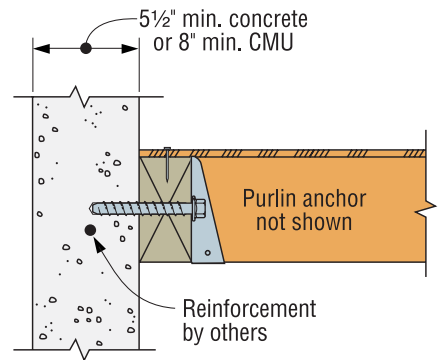
Titen HD Diameter (in.)	Concrete			Grout Filled CMU		
	Minimum Embedment Depth (in.)	Minimum Edge/End Distance (in.)	Minimum Spacing (in.)	Minimum Embedment Depth (in.)	Minimum Edge/End Distance (in.)	Minimum Spacing (in.)
1/2	2 3/4	6	2	3 1/2	12	4
5/8		7 1/2	2 1/2	4 1/2		5
3/4		9	3	5 1/2		6

- Titen HD anchors installed with the dimensional limitations described shall achieve equivalent NDS wood calculated capacity as the same diameter anchor bolt for DF, SP, SPF and HF lumber up to 4x ledgers. NDS values may include a maximum 133% duration increase.
- For combined gravity and lateral loads Designers shall consider the unity equation.
- Concrete shall have a minimum $f'_c = 3000$ psi and CMU shall have a minimum $f'_m = 1500$ psi at 28 days. Refer to C-SAS-2006 for additional block, mortar and grout specifications.
- For CMU applications install a minimum of 1 1/4" from vertical head and T-joints.
- Titen HD fasteners are recommended for permanent dry environments only.

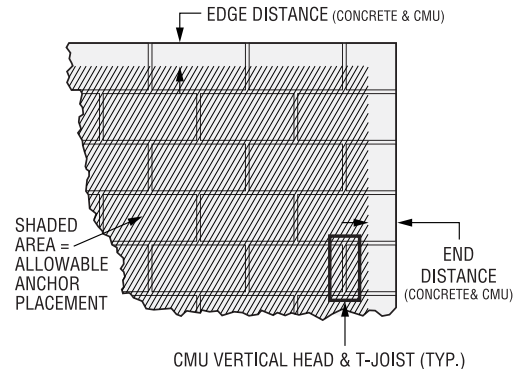
Purlin Anchor Attachment with Adhesive



Ledger Shear Bolt Attachment With Titen HD



Anchor Placement



Get the rest of the information on Simpson Strong-Tie Anchor Systems

The information in this catalog is an introduction to *Anchoring and Fastening Systems for Concrete & Masonry* catalog. You can get the rest of the technical information three ways:

- Call Simpson Strong-Tie at (800) 999-5099 and request the current C-SAS-2006 catalog.
- For a full Simpson Anchor Systems Technical Manual/Binder, call Simpson and ask to speak with your local Technical Sales Representative or Field Engineer. This binder features the C-SAS-2006 catalog in easy-to-use tabular format, as well as code reports, MSDS sheets and more!
- Visit Simpson Anchor Systems at www.simpsonanchors.com. You can access technical and product application information, code reports, new product information and much more. E-mail Ask Simpson at ask@simpsonanchors.com for answers to your questions or check our Frequently Asked Questions section for the information you are looking for.
- Call Simpson and request an Anchor Systems CD-ROM which contains all of the information you need for your anchoring and fastening needs. In addition to complete product information and the Anchor Designer, Drill Bit Selector and Adhesive Estimator programs, the CD also contains product code reports, MSDS sheets and product fliers.

NEW! SSTB14 is a 5/8" diameter anchor bolt designed and tested specifically for shallow foundation installations.

Extensive SSTB testing has been done to determine the design load capacity at a common application, the garage stem wall. Design loads are based on a series of five tests, with a three-times **reduction** factor.

SPECIAL FEATURES: • Rolled threads for higher tensile capacity.

- Offset angle reduces side-bursting, provides more concrete cover.
- Stamped embedment line aids installation.
- Configuration results in minimum rebar interference.

MATERIAL: ASTM A36

FINISH: None. May be ordered HDG; check factory

INSTALLATION: • SSTB is used for monolithic and two-pour installations.

- Nuts and washers are not supplied with the SSTB; install standard nuts, couplers and/or washers as required.

REINFORCED CONCRETE FOUNDATION

- Install SSTB before the concrete pour using AnchorMates (see page 22). Install the SSTB per plan view detail **shown on page 34**. Install one #4 rebar 3" to 5" (may be foundation rebar not post-tension cable) from the top of the foundation.

- The SSTB does not need to be tied to the rebar.

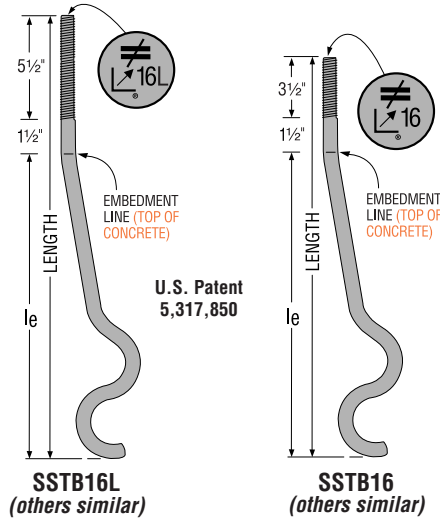
- Minimum concrete compression strength is 2500 psi. Unless noted otherwise, no special inspection is required for foundation concrete when the structural design is based on concrete no greater than 2500 psi (UBC Section 1701.5.1 and IBC Section 1704.4).

- Unless otherwise noted, do NOT install where: (a) a horizontal cold joint exists within the embedment depth between the slab and foundation wall or footing beneath, unless provisions are made to transfer the load, or the slab is designed to resist the load imposed by the anchor; or (b) slabs are poured over concrete block foundation walls.

REINFORCED CONCRETE BLOCK

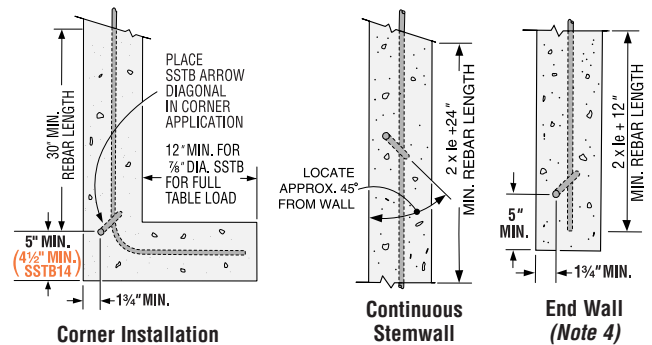
- Before concrete pour, install diagonally at approx. 45° in the cell **per plan view detail shown on page 34**.
- Horizontal #4 rebar (minimum 56" long **centered about the anchor bolt**)—approximately one rebar 12" from the top and two rebars approximately 28" from the top. Vertical #4 rebar (minimum 24" long)—install with maximum 24" o.c. spacing.
- Grout all cells with minimum 2000 psi concrete. Vibrate the grout per the 1997 Uniform Building Code, Section 2104.6.2, **2003 International Building Code, Section 2104.1**.

CODES: See page 12 for Code Listing Key Chart.



Identification on the bolt head showing embedment angle and model.

See page 34 for additional installation details.



TYPICAL PLAN VIEWS OF REBAR INSTALLATION

SELECTION GUIDE (Per Anchor Bolt Diameter)

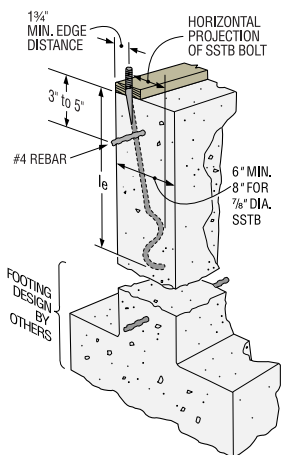
Model No.	2x, 3x, 2-2x Sill Plates	
	Mono Pour	Two Pour
HDU2 PHD2 ¹ HD2A LTT20B LTT131	SSTB14	SSTB20
HTT16 HDU4 HD5A	SSTB16	SSTB20
PHD5 ¹ MTT28B	SSTB20	SSTB24
HTT22 HDC5/22 HDC5/4	SSTB24	—
HDU8 PHD6 ¹ HD6A HD8A HD10A HDQ8 ¹ HDC10/22 ⁴ HDC10/4 ⁴	SSTB28	SSTB34

Available with additional corrosion protection. Check with factory.

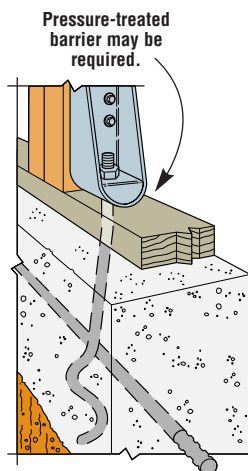
Model ⁷ No.	Stem-wall Width	Dia.	Length	Min Embed le	Allowable Tension Load ^{1,2}			Code Ref.
					Concrete ⁴ f'c = 2500 psi	Concrete ¹² 8" CMU Block	Concrete 8" CMU Block End	
SSTB14	9	5/8"	15 3/8"	11"	3835 ¹¹	—	—	160
SSTB16	6	5/8"	17 3/8" (SSTB16L = 19 3/8")	12 3/8"	4420	4780	1850	23, 94, 136
SSTB20	6	5/8"	21 3/8" (SSTB20L = 24 3/8")	16 3/8"	4600	4780	1850	
SSTB24	6	5/8"	25 3/8" (SSTB24L = 28 3/8")	20 3/8"	5175	4780	1850	
SSTB28	8	7/8"	29 3/8" (SSTB28L = 32 3/8")	24 3/8"	10100	6385	4815	
SSTB34	8	7/8"	34 3/8"	28 3/8"	10100	6385	4815	23, 94
SSTB36	8	7/8"	36 3/8"	28 3/8"	10100	6385	4815	

NEW

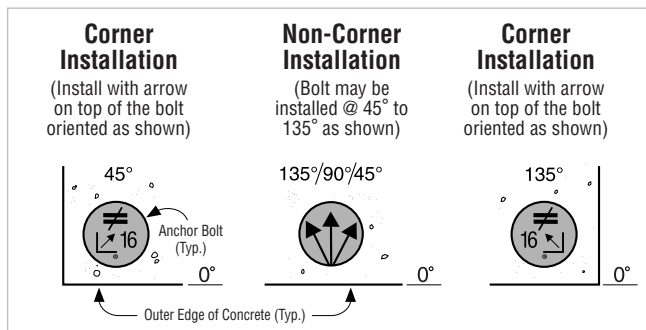
1. Loads may not be increased for short-term loading. Loads apply to earthquake and wind loading.
2. Minimum anchor center-to-center spacing is 2le for anchors acting in tension at the same time for full load.
3. The SSTB was tested in a stem wall with a minimum amount of concrete cover.
4. Maximum allowable load is 8150 lbs. for SSTB28, 34 and 36 when used 5" from the end of a concrete foundation. Use full table load when installed 24" from the end or installed in a corner condition (see illustration).
5. Connection is limited by the lowest of bolt or holdown capacity.
6. PHD and HTT minimum end distance is 4 3/8".
7. Order the SSTBL models for longer thread length (5 1/2") ex. SSTB24L. SSTBL and SSTB loads are the same. Not available on SSTB14.
8. SSTB34 has 4 1/2" of thread and SSTB36 has 6 1/2". These two models are not available in SSTBL versions.
9. Use 90% of the table load for 2000 psi concrete.
10. See page 34 for Additional Anchor Design information.
11. Allowable load for SSTB14 is 5020 lbs. when f'c = 3000 psi. See T-SSTB for additional information.
12. Minimum end distance required to achieve table loads is le.



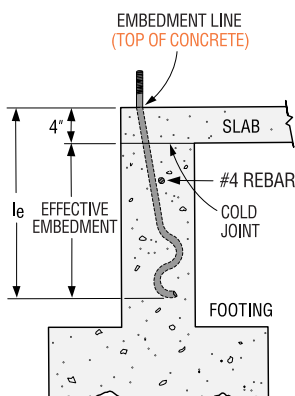
Typical SSTB Installation
Maintain minimum rebar cover, per ACI-318 concrete code requirements



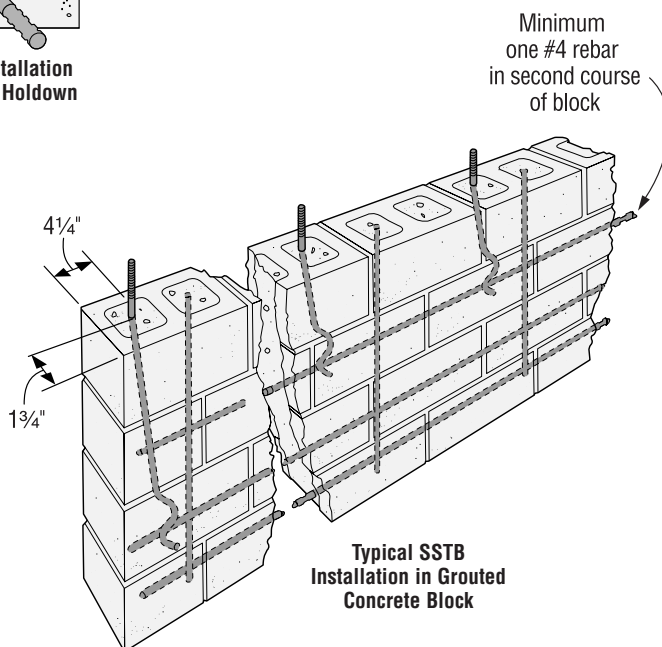
Typical SSTB Installation with Mudsill and Holddown



Plan View of SSTB Placement in Concrete



Two Pour Installation (SSTB20, 24 and 34)



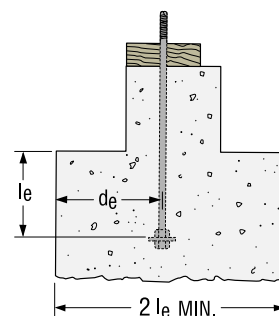
Typical SSTB Installation in Grouted Concrete Block

ADDITIONAL ANCHOR DESIGNS

See SSTB, page 33. Anchor types shown are made by others and used with Simpson Strong-Tie® holdowns. The design engineer may specify an alternate anchorage system, provided the anchor diameter is the same. See the Prestressed Concrete Institute Design Handbook (Ed. 5), Sec. 6.5.2, UBC 1923.2 or ACI 318-02 App. D.

Dia.	Distance			Minimum Concrete Strength (psi)	Allowable ⁴ Tension PCI Ed. 5	Allowable ⁴ Tension 97 UBC	Allowable ⁴ Tension ACI 318-02
	Min. $l_e^{1,3}$	d_e	Min. End Distance				
1	8	8	8	2500	14350	10540 ⁵	—
1 1/4	8	8	8	2500	14920	10850 ⁵	—
1 ⁶	9	13 1/2	13 1/2	3000	—	—	13180
1 7/8, 1 1/4	10	15	15	3000	—	—	15590

- Anchor embedment length is based on a single-pour concrete foundation. Double pour foundation systems, masonry walls and masonry footings must be evaluated by the designer.
- Anchor bolt must be ASTM A307, A36 steel or better with hex head or nut washer nut, unless noted otherwise.
- Spacing between anchors is $2l_e$ minimum for anchors in tension at the same time.
- Values assume no special inspection for 2500 psi concrete and no supplemental reinforcing in the concrete failure area. For ACI 318-02, cracked concrete is assumed and ductility requirements per D.3.3.4 not considered. Contact Simpson for other options.
- 17380 for 1" and 18280 for 1 1/4" diameter with 3000 psi concrete and special inspection.
- Requires a square or heavy hex head or nut minimum.
- Requires an ASTM A449 type 1 or ASTM F1554 grade 55 anchor bolt and a heavy square nut or 1/4 x 1 1/4 x 1 1/4 min. plate washer.



Anchor with Nut/Washer/Nut (shown) or Hex-Head Bolt

Design loads are calculated using a full shear cone. Coverage on each side of the bolt shall be a minimum of d_e or reductions must be taken



*This product is preferable to similar connectors because of
a) easier installation, b) higher loads, c) lower installed cost,
or a combination of these features.*

NEW! The HDU series of holdowns are the latest in a long series of innovations from Simpson. These holdowns combine the advantages of low deflection and high capacity from the pre-deflected geometry with the ease of installation of Simpson's patented SDS screws.

HDU SPECIAL FEATURES:

- Pre-deflected body virtually eliminates deflection due to material stretch.
- Uses SDS screws which install easily, reduces fastener slip, and provides a greater net section area of the post compared to bolts.
- SDS $\frac{1}{4} \times 2\frac{1}{2}$ screws are supplied with the holdowns. (*Lag screws will not achieve the same load.*) This ensures the proper fasteners are used and is convenient for the installer.
- No stud bolts to countersink at openings.

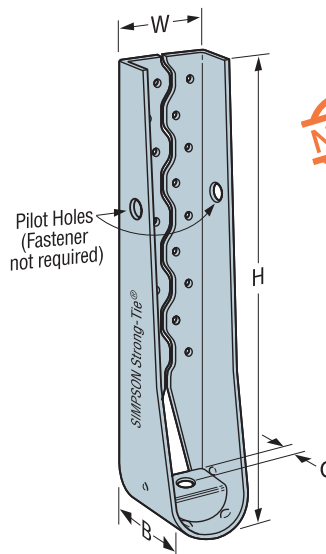
MATERIAL: See table.

FINISH: Galvanized

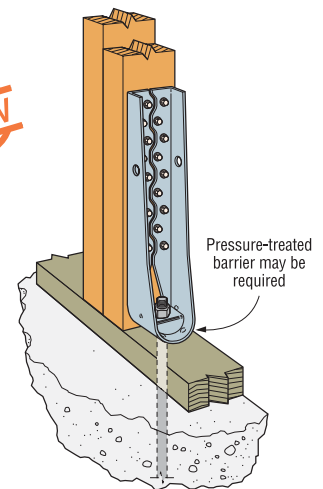
INSTALLATION:

- Use all specified fasteners. See General Notes.
- Place the HDU over the anchor bolt.
- No additional washer required.
- To tie double 2x members together, the Designer must determine the fasteners required to bind the members to act as one unit without splitting the wood.
- See SSTB Anchor Bolts on page 33-34 for anchorage options.
- See Simpson Anchor Systems catalog for tested, load-rated retrofit anchors or request T-ANCHORSPEC for more information.

CODES: See page 12 for Code Listing Key Chart.



HDU
U.S. Patent 5,979,130



Vertical HDU Installation

HDU may be installed raised off the sill plate with no increase in deflection values.

For holdowns, per ASTM test standards, anchor bolt nut should be finger-tight plus $\frac{1}{3}$ to $\frac{1}{2}$ turn with a **hand** wrench, with consideration given to possible future wood shrinkage. Care should be taken to not over-torque the nut. **Impact wrenches should not be used.**

Model No.	Ga	Dimensions				Fasteners		Allowable Tension Loads		Holdown Deflection at Highest Allowable Design Load	Code Ref.
		W	H	B	C	Anchor Bolt	Number of SDS $\frac{1}{4} \times 2\frac{1}{2}$	DF/SP (133/160)	SPF/HF (133/160)		
HDU2-SDS2.5	14	3	$8\frac{1}{16}$	$3\frac{1}{4}$	$1\frac{1}{4}$	$\frac{5}{8}$	6	2625	2260	.017	160
HDU4-SDS2.5	14	3	$10\frac{15}{16}$	$3\frac{1}{4}$	$1\frac{1}{4}$	$\frac{5}{8}$	10	4190	3600	.049	
HDU5-SDS2.5	14	3	$13\frac{3}{16}$	$3\frac{1}{4}$	$1\frac{1}{4}$	$\frac{5}{8}$	14	5430	4670	.061	
HDU8-SDS2.5	10	3	$16\frac{5}{8}$	$3\frac{1}{2}$	$1\frac{1}{4}$	$\frac{7}{8}$	20	8350	7180	.037	
HDU11-SDS2.5	10	3	$22\frac{1}{4}$	$3\frac{1}{2}$	$1\frac{1}{4}$	1	30	11275	9695	.040	

1. Allowable loads have been increased for earthquake or wind load durations with no further increase allowed; reduce where other load durations govern.
2. Loads are based on static tests on wood posts, limited by the lowest of 0.125" deflection, lowest test ultimate divided by 3 or the calculated values of the SDS $\frac{1}{4} \times 2\frac{1}{2}$ screws.
3. The Designer must specify anchor bolt type, length and embedment.
4. When using structural composite lumber columns screws must be applied to the wide face of the column.
5. Post design shall be by Designer.
6. SDS screws install best with a low speed $\frac{1}{2}$ " right angle drill with a $\frac{3}{8}$ " hex head driver.
7. Deflection values are valid for holdowns flush with and raised off of sill plate.
8. When using structural composite lumber columns, screws must be applied to the wide face of the column.

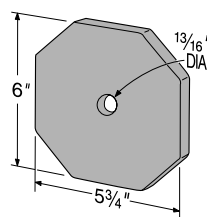
RP6 Retro Plate

The RP6 heavy steel plate fits on the outside of masonry buildings, helps tie the walls to the roof or floor structure with a $\frac{3}{4}$ " diameter rod.

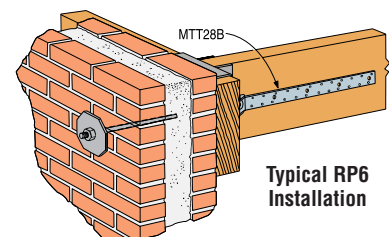
FINISH: Simpson gray paint. Optional hot-dip galvanized finish; see Corrosion-Resistance, page 6-7, and specify HDG.

MATERIAL: $\frac{3}{8}$ " steel. *Available with additional corrosion protection. Check with factory.*

INSTALLATION: Use a $\frac{3}{4}$ " diameter rod.



RP6



Typical RP6 Installation

PHD Predeflected Holdown / HDQ8 Holdown

The Predeflected Holdown (PHD) and HDQ8 are revolutionary developments in holdown connections. Predeflected during manufacturing, the PHD virtually eliminates deflection from material stretch. **Each holdown uses SDS screws, which install easily, reduce fastener slip, and provides a greater net section area of the post compared to bolts.**

SPECIAL FEATURES:

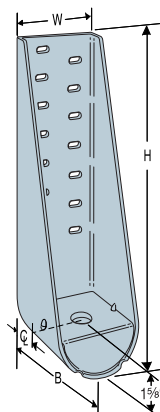
- Wood screws reduce slip due to overdrilled bolt holes.
- Smaller centerline reduces eccentricity in the stud.
- No stud bolts to countersink.
- Fits easily in a 2x4 stud wall.

MATERIAL: See table. **FINISH:** Galvanized.

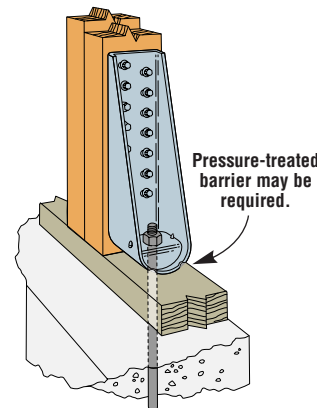
INSTALLATION: • Use all specified fasteners. See General Notes.

- Place the PHD or HDQ8 over the anchor bolt.
- HDQ8: 5/8" of adjustability perpendicular to the wall.
- HDQ8: Use in vertical and horizontal applications.
- **Install Simpson's SDS 1/4"x3 wood screws, which are provided with the holdown. (Lag screws will not achieve the same load.)**
- For an improved connection, use a steel nylon locking nut or a thread adhesive on the anchor bolt. (No washer required.)
- See SSTB Anchor Bolts, page 33-34, for anchorage options. The Designer may specify any alternate anchorage calculated to resist the tension load for a specific job. Anchorage length should take the bearing plate/washer height into account, to ensure adequate length of threads to engage the nut. **For 2-2x and 3x sill plates use SSTBL models.**
- To tie double 2x members together, the Designer must determine the fasteners required to bind members to act as one unit without splitting the wood.
- See Simpson Anchor Systems for tested, load-rated anchors and request T-ANCHORSPEC for more information.

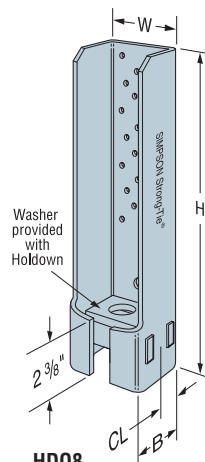
CODES: See page 12 for Code Listing Key Chart.



PHD5
(others similar)
US Patent 5,979,130

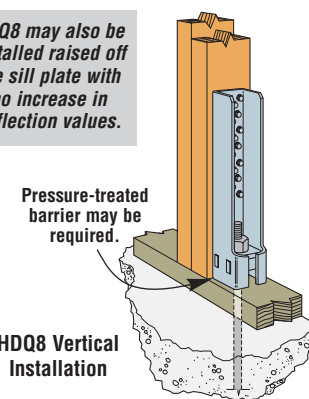


Vertical PHD Installation
(shown "flush", touching sill plate)



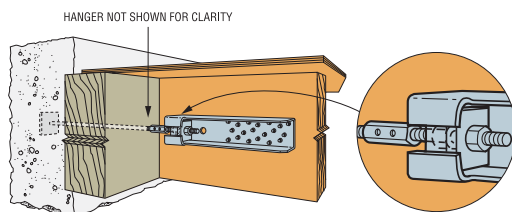
HDQ8
US Patents 6,006,487 and 6,327,831

HDQ8 may also be installed raised off the sill plate with no increase in deflection values.



HDQ8 Vertical Installation

Horizontal HDQ8 Installation



For holdowns, per ASTM test standards, anchor bolt nut should be finger-tight plus 1/3 to 1/2 turn with a hand wrench, with consideration given to possible future wood shrinkage. Care should be taken to not over-torque the nut. **Impact wrenches should not be used.**

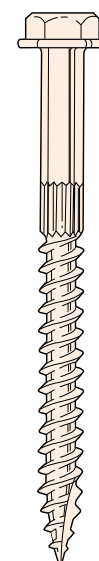
Available with additional corrosion protection. Check with factory.

Model No.	Ga	Dimensions				Fasteners		Allowable Tension Loads DF/SP (133/160)	Allowable Tension Loads SPF/HF (133/160)	Holdown ⁵ Deflection at Highest Allowable Design Load Flush	Holdown ⁵ Deflection at Highest Allowable Design Load Raised	Code Ref.
		W	H	B	℄	Anchor Dia.	No. of Simpson SDS ¹ / ₄ x3 Wood Screws					
PHD2-SDS3	14	3	9 ⁵ / ₁₆	2 ⁷ / ₈	1 ³ / ₈	5 ⁸ / ₁₆	10	3610	3375	.063	.081	31, 98, 122, 140
PHD5-SDS3	14	3	11 ⁹ / ₁₆	2 ⁷ / ₈	1 ³ / ₈	5 ⁸ / ₁₆	14	4685	4380	.077	.077	
PHD6-SDS3	12	3 ¹ / ₂	13 ¹³ / ₁₆	2 ⁷ / ₈	1 ³ / ₈	7 ⁸ / ₁₆	18	5860	5480	.068	.073	
PHD8-SDS3 deleted — see HDQ8-SDS3 and HDU8-SDS2.5												

Model No.	Ga	W	H	B	CL	Anchor Dia.	No. of SDS 1/4"x3 Wood Screws	Allowable Compression Load ¹⁰ (lbs)	Allowable Tension Loads DF/SP (133/160)	Allowable Tension Loads SPF/HF (133/160)	Holdown Deflection at Highest Allowable Tension Design Load	Code Ref.
HDQ8-SDS3	7	2 1/2	14	2 1/2	1 1/4	7/8	20	7175	8325	7210	.052	45, 106, 126

1. Allowable loads have been increased for earthquake or wind load durations with no further increase allowed; reduce where other load durations govern.
2. The Designer must specify anchor bolt type, length and embedment. See the SSTB and SSTBL Anchor Bolts (page 33-34).
3. See page 21 and 29 for retrofit anchor bolt.
4. Loads are based on static tests on wood studs, limited by the lowest of 0.125" deflection, test ultimate divided by 3, or the wood screw value.
5. Deflection at Highest Allowable Design Load: The deflection of a holdown measured between the anchor bolt and the strap portion of the holdown when loaded to the highest allowable load listed in the catalog table. This movement is strictly due to the holdown deformation under a static load test conducted on a wood jig.
6. **SDS screws install** best with a low speed 1/2" right angle drill with a 5/8" hex head driver.

7. **SDS 1/4"x3 screws are required for PHD's and HDQ8's.** See T-HDLA for loads using shorter screws.
8. When using structural composite lumber columns, screws must be applied to the wide face of the column.
9. **Tabulated loads may be doubled when the PHD or HDQ8 are installed on both sides of the wood member provided either the post is large enough or the holdowns are offset to eliminate screw interferences.**
10. HDQ8's compression load requires an additional standard nut and square washer (BP 7/8-2) below the holdown. Maximum rod length is 6" from the concrete to achieve 7175 lbs using A36 steel. If rod length is longer, Designer needs to check rod for buckling capacity.
11. **Maximum HDQ8 compression load is 6560 lbs. with 2-2x4 DF member.**
12. **Post design shall be by Designer.**



SDS 1/4"x3 Screw
US Patent No. 6,109,850
See screw info on page 20

HHDQ Heavy Duty Holdowns

The heavy-duty HHDQ holdowns combine low deflection and high loads with ease of installation by using Simpson's patented SDS screws.

FINISH: Gray paint.

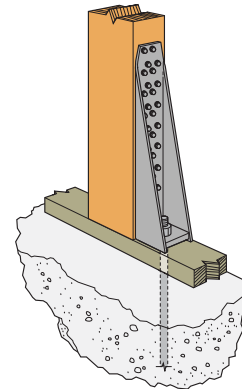
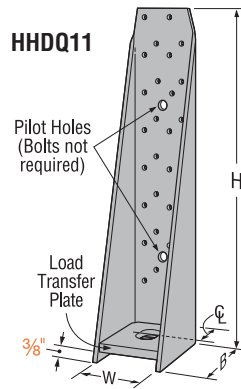
INSTALLATION: • Use all specified fasteners. See General Notes.

- 1½" centerline dimension for reduced eccentricity.
- Use in vertical or horizontal applications.
- Install Simpson SDS1/4x2½" wood screws, which are supplied. (*Lag screws will not achieve the same load.*)
- The load transfer plate is an integral part of the HHDQ; no additional washer is required.

CODES: See page 12 for Code Listing Key Chart.

Check factory for availability.

HHDQ11



For holdowns, per ASTM test standards, anchor bolt nut should be finger-tight plus ⅓ to ½ turn with a hand wrench, with consideration given to possible future wood shrinkage. Care should be taken to not over-torque the nut. Impact wrenches should not be used.

Vertical HHDQ11 Installation

Model No.	Ga	W	H	B	C	Anchor Dia.	No. of SDS ¼x2½" Wood Screws	Allowable Tension Loads DF/SP (133/160)	Allowable Tension Loads SPF/HF (133/160)	Holdown Deflection at Highest Allowable Tension Design Load	Code Ref.
HHDQ11-SDS2.5	7	3	15¼"	3½"	1½"	1	24	11445	9615	0.076	160
HHDQ14-SDS2.5	7	3	18¾"	3½"	1½"	1	30	14700	12350	0.081	

1. Allowable loads have been increased for earthquake or wind load durations with no further increase allowed; reduce where other load durations govern.
2. Loads are based on static tests on wood posts, limited by the lowest of 0.125" deflection, test ultimate divided by 3, or the SDS wood screw value.
3. HHDQ's can be raised off the sill with no reduction in load or increase in deflection.
4. SDS screws install best with a low speed ½" drill with a ⅜" hex head driver.
5. The Designer must specify anchor bolt type, length and embedment.
6. When using structural composite lumber columns, screws must be applied to the wide face of the column.
7. Post design shall be by Designer.
8. SDS ¼x2½" screws are required for HHDQ's. See T-HDLA for HHDQ loads using shorter screws.

HDC Concentric Holdown



This product is preferable to similar connectors because of a) easier installation, b) higher loads, c) lower installed cost, or a combination of these features.

HDC product line eliminates eccentricity. Installs with SDS screws (included) to reduce slip and provides a greater net section area of the post compared to bolts.

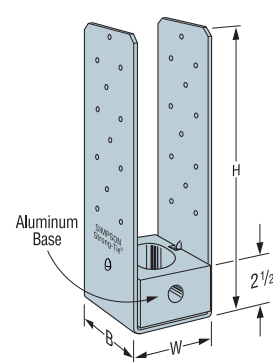
MATERIAL: 10 gauge strap.

FINISH: Galvanized strap, aluminum base.

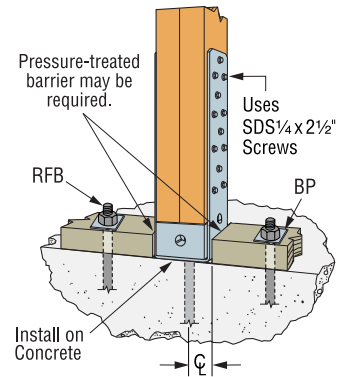
INSTALLATION: • Use all specified fasteners. See General Notes.

- **Install on concrete.**
- Sized for 2-2x, 4x and 2-2x6 members. **Center 2-2x6 posts on holdown.**
- Centric to eliminate bending on the stud.
- **Install Simpson's SDS ¼x2½" wood screws, which are provided with the holdown. (Lag screws will not achieve the same load.)**
- Slot in the seat allows for ⅜" of adjustment perpendicular to plate.
- (Standard N series cut washer required, 1¾" diameter - 0.134" thick.)
- Witness slot in the base to inspect the nut.
- Maximum anchor bolt height above concrete is 2½".
- **To tie double 2x members together, the Designer must determine the fasteners required to bind members to act as one unit without splitting the wood.**
- Aluminum standoff cannot be in contact with pressure-treated wood.
- See Simpson Anchor Systems for tested, load-rated anchors and request T-ANCHORSPEC for more information.

CODES: See page 12 for Code Listing Key Chart.



HDC10
US Patent 6,513,290



Typical HDC Installation
with 2-2x4 studs
(Similar with 2-2x6 studs)

For holdowns, per ASTM test standards, anchor bolt nut should be finger-tight plus ⅓ to ½ turn with a hand wrench, with consideration given to possible future wood shrinkage. Care should be taken to not over-torque the nut. Impact wrenches should not be used.

Model No.	Post Size	W	H	B	C	Anchor Bolt	Number of SDS ¼x2½"	Allowable Tension Loads DF/SP (133)	Allowable Tension Loads SPF/HF (133)	Concrete Bearing ⁷ @ 2500 psi	Holdown Deflection at Highest Allowable Design Load	Code Ref.
HDC5/22-SDS2.5	2-2x4	3⅜"	9¾"	3	1⅞"	⅝"	12	4870	4215	7460	.032	45, 106, 126
HDC5/4-SDS2.5	4x4	3⅞"	9¾"	3	1⅞"	⅝"	12	4870	4215	9060	.046	
HDC10/22-SDS2.5	2-2x4	3⅜"	14¾"	3	1⅞"	⅞"	24	9665	8425	7460	.050	
HDC10/4-SDS2.5	4x4	3⅞"	14¾"	3	1⅞"	⅞"	24	9665	8425	9060	.058	

1. The Designer must specify anchor bolt type, length and embedment. See the SSTB Anchor Bolts (page 33-34).
2. See page 21 and 29 for retrofit anchor bolt.
3. Loads are based on static tests on wood studs, limited by the lowest of 0.125" deflection, test ultimate divided by 3, or the wood screw value.
4. Deflection at Highest Allowable Design Load:
The deflection of a holdown measured between the anchor bolt and the strap portion of the holdown when loaded to the highest allowable load listed in the catalog table. This movement is strictly due to the holdown deformation under a static load test conducted on a wood jig.
5. SDS screws install best with a low speed ½" drill with a ⅜" hex head driver.
6. The HDC's will be limited by wood compression capacity if installed on a sill plate. HDC5/22 and HDC10/22 will achieve an allowable load of 4005 lb. on a DFL plate. HDC5/4 and HDC10/4 will achieve an allowable load of 4940 lb. on a DFL plate, which does not take deflection into account. Full tension values apply when installed on a sill, deflections may be higher.
7. Higher values may be obtained when HDC is not placed at an edge or with f'c concrete strength > 2500 psi.
8. When using structural composite lumber columns, screws must be applied to the wide face of the column.
9. Post design shall be by Designer.

Holdowns are used to transfer tension loads between floors, to tie purlins to masonry or concrete, etc. Use HDAs and HDs for overturning requirements and other applications to transfer tension loads. All HDAs and the HD15 are self-jigging, ensuring code-required minimum 7 bolt diameter spacing from the end of the wood member to the center of the first bolt hole.

HD6A, HD8A, HD10A and HD14A's seat design allows greater installation adjustability. An overall width of $3\frac{1}{4}$ " for the HD6A, HD8A and HD10A, and $3\frac{1}{2}$ " for the HD14A provides an easy fit in a standard **2x4 stud wall**.

HDA SPECIAL FEATURES:

- Load Transfer Plate eliminates the need for a seat washer.
- Fewer inspection problems.

MATERIAL: See table on opposite page.

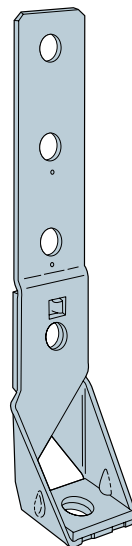
LOADS: See table on opposite page.

FINISH: **HDA's**—galvanized. May be ordered HDG, check with factory.
HD15—Simpson gray paint.

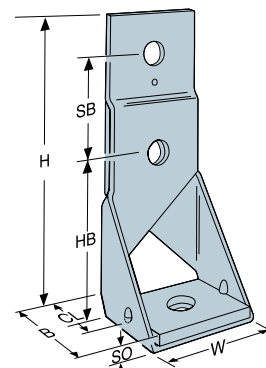
INSTALLATION: • Use all specified fasteners. See General Notes.

- Contact engineered wood manufacturers for connections that are not through the wide face.
- For an improved connection, use a steel nylon locking nut or a thread adhesive on the anchor bolt.
- Bolt holes shall be a minimum of $\frac{1}{32}$ " to a maximum of $\frac{1}{16}$ " larger than the bolt diameter (per 2001 NDS, section 11.1.2).
- Standard washers are required between the base plate and anchor nut (HD15 only), and on stud bolt nuts against the wood. The Load Transfer Plate is an integral part of the HDA Holdown and no washer is required. See page 23 for BP/LBP Bearing Plates.
- See SSTB Anchor Bolts, Simpson's Anchoring Systems and Additional Anchorage Designs for anchorage options. The **Designer** may specify any alternate anchorage calculated to resist the tension load for a specific job.
- Locate on wood member to maintain a minimum distance of seven bolt diameters, distance is automatically maintained when end of wood member is flush with the bottom of the holdown.
- Stud bolts should be snugly tightened.
- To tie double 2x members together, the Designer must determine the fasteners required to bind members to act as one unit without splitting the wood.
- For additional information, request T-HD.
- See Simpson Anchor Systems for tested, load-rated anchors and request T-ANCHORSPEC for more information.

CODES: See page 12 for Code Listing Key Chart.

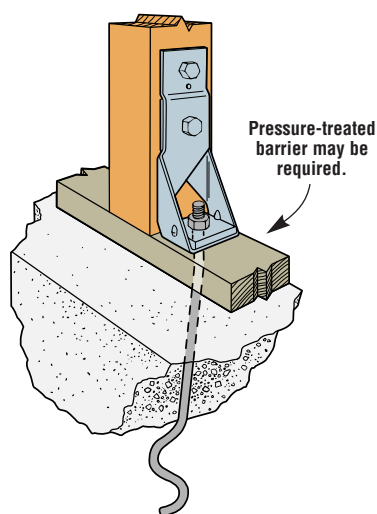


HD10A
(HD6A, HD8A
and HD14A similar)

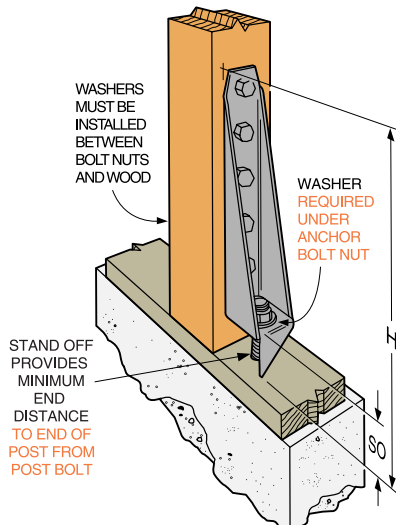


HD5A
(HD2A similar)

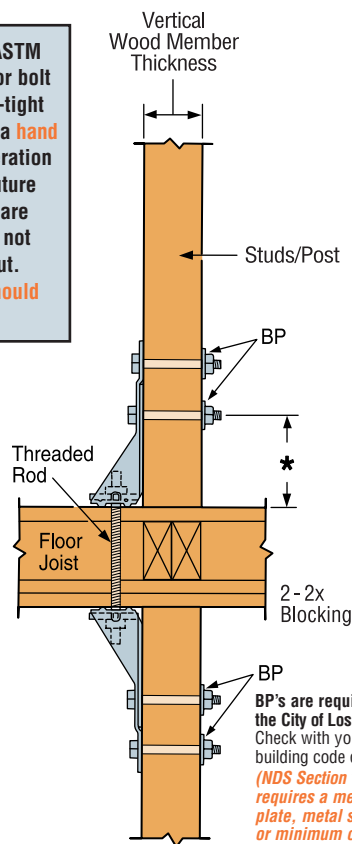
For holdowns, per ASTM test standards, anchor bolt nut should be finger-tight plus $\frac{1}{8}$ to $\frac{1}{2}$ turn with a **hand wrench**, with consideration given to possible future wood shrinkage. Care should be taken to not over-torque the nut. **Impact wrenches should not be used.**



Vertical HD5A Installation
with SSTB anchor bolt. Washers are not required at the base.



Vertical HD15 Installation



Typical HD5A Tie between Floors

- * To achieve table loads, the minimum bolt end distance is seven bolt diameters. This distance is designed into holdowns.

Available with additional corrosion protection. Check with factory.

Model No.	Material		Dimensions							Fasteners		
	Base Ga	Body Ga	HB ⁴	SB	W	H	B	SO	CL	Anchor Dia ⁵	Stud Machine Bolts	
											Qty	Dia
HD2A	7	12	4 ⁹ / ₁₆	2 ¹ / ₂	2 ³ / ₄	8	2 ⁹ / ₁₆	3 ⁸ / ₁₆	1 ⁷ / ₁₆	5 ⁸ / ₁₆	2	5 ⁸ / ₁₆
HD5A	3	10	5 ¹ / ₄	3	3 ¹ / ₈	9 ⁷ / ₁₆	3 ⁹ / ₁₆	1 ¹ / ₂	2 ³ / ₁₆	5 ⁸ / ₁₆	2	3 ⁴ / ₁₆
HD6A	3 ⁸ / ₁₆	7	6 ³ / ₁₆	3 ¹ / ₂	3 ¹ / ₄	11 ¹ / ₁₆	3 ⁷ / ₁₆	9 ¹ / ₁₆	2 ¹ / ₁₆	7 ⁸ / ₁₆	2	7 ⁸ / ₁₆
HD8A	3 ⁸ / ₁₆	7	6 ³ / ₁₆	3 ¹ / ₂	3 ¹ / ₄	14 ⁹ / ₁₆	3 ⁷ / ₁₆	9 ¹ / ₁₆	2 ¹ / ₁₆	7 ⁸ / ₁₆	3	7 ⁸ / ₁₆
HD10A	3 ⁸ / ₁₆	7	6 ³ / ₁₆	3 ¹ / ₂	3 ¹ / ₄	18 ¹ / ₁₆	3 ⁷ / ₁₆	9 ¹ / ₁₆	2 ¹ / ₁₆	7 ⁸ / ₁₆	4	7 ⁸ / ₁₆
HD14A	3 ⁸ / ₁₆	3	7	4	3 ¹ / ₂	20 ⁹ / ₁₆	3 ⁵ / ₈	5 ⁸ / ₁₆	2 ³ / ₁₆	1	4	1
HD15	3 ⁸ / ₁₆	3	7	4	3 ¹ / ₂	24 ¹ / ₂	4 ⁷ / ₁₆	3 ⁵ / ₈	2 ¹ / ₈	1 ¹ / ₄	5	1

See notes below.

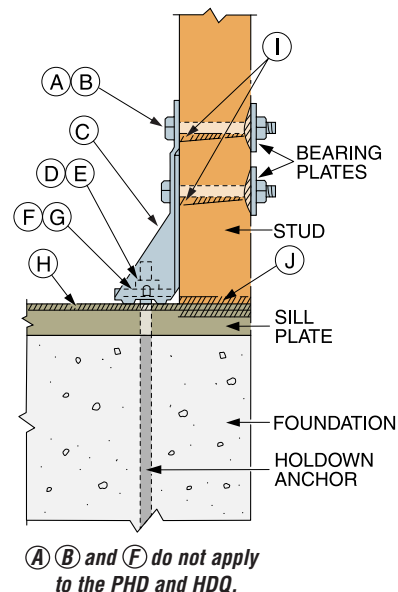
Model No.	Allowable Tension Loads DF/SP (133/160)						Allowable Tension Loads SPF/HF (133/160)						Holdown ⁹ Deflection at Highest Allowable Design Load	Holdown ⁹ Deflection at Highest Allowable Design Load Raised	Code Ref.
	Wood Member Thickness						Wood Member Thickness								
	1½	2	2½	3	3½	5½	1½	2	2½	3	3½	5½			
HD2A	1555	2055	2565	2775	2775	2760	1320	1740	2165	2570	2565	2550	0.058	0.077	40, 105, 122
HD5A	1870	2485	3095	3705	4010	3980	1585	2110	2625	3130	3645	3680	0.067	0.117	
HD6A	2275	2980	3685	4405	5105	5510	1870	2470	3065	3680	4280	5020	0.041	0.125	
HD8A	3220	4350	5415	6465	7460	7910	2710	3655	4530	5480	6350	7330	0.111	0.121	
HD10A	3945	5540	6935	8310	9540	9900	3275	4600	5745	7045	8160	9195	0.269	0.269	
HD14A	—	—	—	—	11080	13380	—	—	—	—	9495	12485	0.215	0.282	
HD15	—	—	—	—	—	15305	—	—	—	—	—	13810	0.082	0.082	

- Allowable loads have been increased for earthquake or wind **load durations** with no further increase allowed; reduce where other **load durations** govern.
- HD15 requires a minimum 4x8 (in a 3¹/₂" wide shearwall) or a 6x6 nominal post to ensure the tension load carrying capacity of the critical net section meets the holdown capacity.
- Use a minimum 4x6 nominal post for the HD14A. Minimum post size is required to ensure the tension load carrying capacity of the critical net section meets the holdown capacity.
- HB is the required minimum distance from the end of the stud to the center of the first stud bolt hole. End distance may be increased as necessary for installation.
- The designer must specify anchor bolt type, length and embedment. See SSTB Anchor Bolts (page 33-34) and Additional Anchor Designs (page 34).
- See page 21 and 29 for anchor bolt retrofit.
- Lag bolts will not develop the listed loads.

- See page 13-15 for testing and other important information.
- Deflection at Highest Allowable Design Load:
The deflection of a holdown measured between the anchor bolt and the strap portion of the holdown when loaded to the highest allowable load listed in the catalog table. This movement is strictly due to the holdown deformation under a static load test conducted on a steel jig. All other sources of deflection shall be in addition.
- When using structural composite lumber columns, **bolts** must be applied to the wide face of the column.
- The Designer shall reduce the allowable loads shown per NDS requirements when bolt threads are in the shear plane.**
- HDA and HD allowable loads are based on the lower of the 2001 NDS fastener values or the ultimate load on a steel test jig divided by 2.5.**
- Post design shall be by Designer.**

SOURCES OF DEFLECTION AT SHEARWALL HOLDOWN CONNECTIONS

- Bolt slip can occur at holdown stud bolts.
- Increased bolt slip can occur if oversized holes are drilled through the stud for holdown stud bolts (*oversized holes are when the hole diameter is greater than the bolt diameter plus 1/16" per 2001 NDS 11.1.2*).
- When a holdown is installed on only one side of the stud, an eccentricity exists during loading which can cause more critical movement in the shearwall system.
- Unrestrained anchor bolt nuts can spin loose during cyclic loading; using steel nylon locking nuts or thread adhesive may prevent nut spin.
- Movement can occur when nuts are not tightened enough. Retightening bolts before covering wall may prevent this.
- Deflection can occur in the holdown under load caused by stresses due to earthquake or high wind.
- Lateral displacement at the top of the wall rotates the stud around its base causing the holdown base plate to displace vertically.
- Wood shrinkage can occur due to drying of the sill plate, rim joist, and/or top plate; nuts may require retightening.
- Uplift forces on the bolts can cause localized wood crushing at bolt bearing locations. Using larger bearing plates may prevent this.
- Wood at the end of the studs (*sill plates, rim joists, etc.*) may crush under normal dead and live loading; additional compressive forces due to overturning during earthquake and high wind loads add to the deflection.



BP's are required by the City of Los Angeles. Check with your local building code on usage. (NDS Section 11.1.2.3 requires a metal plate, metal strap, or minimum of a standard cut washer.)

LTT/MTT/HTT Tension Ties

The HTT22 is a single-piece formed tension tie—no rivets, and a 4-ply formed seat which won't unfold during loading. No washers required. The LTT19 Light Tension Tie is designed for 2x joists or purlins and the LTT20B is for nail- or bolt-on applications. The 3" nail spacing makes the LTT20B suitable for wood I-joists if 10dx1½" nails are substituted for the specified 16d's.

The LTT131 is designed for wood chord open web truss attachments to concrete or masonry walls.

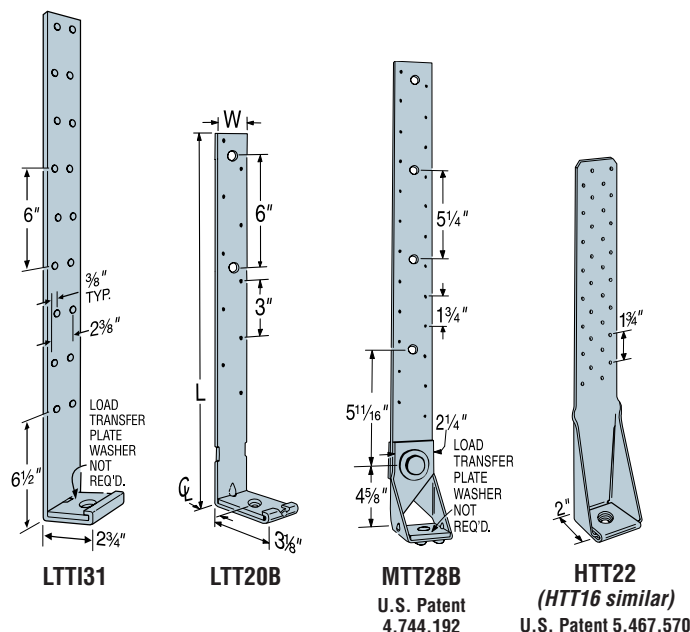
MATERIAL: See table

FINISH: Galvanized. May be ordered HDG; check factory.

INSTALLATION: • Use all specified fasteners. See General Notes.

- Use the specified number and type of nails to attach the strap portion to the top or side of purlin or beam (minimum 4x width (2-2x4 or 4x4), except LTT19). Bolt the base to the wall or foundation with a suitable anchor; see table for the required bolt diameter.
- Do not install LTT and MTT tension ties raised.
- **The HTT22 can be substituted for the MTT28B.**
- See Epoxy-Tie Adhesive System, pages 29 for tested, load-rated epoxies for anchor bolt options.
- To tie double 2x members together, the designer must determine the fasteners required to bind members to act as one unit without splitting the wood.
- See Simpson Anchor Systems for tested, load-rated anchors and request T-ANCHORSPEC for more information.

CODES: See page 12 for Code Listing Key Chart.



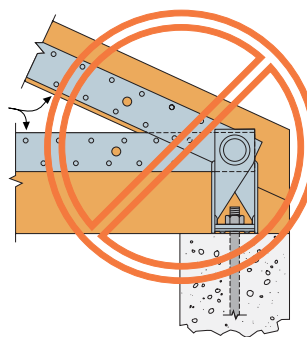
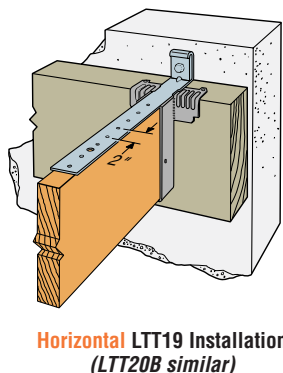
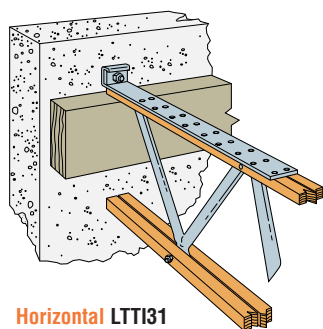
Available with additional corrosion protection. Check with factory.

Model No.	Material (Ga)		Dimensions			Seat Thickness	Fasteners				Allowable Tension Loads DF/SP				Allowable Tension Loads - SPF/HF		Deflection at Highest Allowable Design Load	Code Ref.
	Strap	Plate	W	L	C		Anchor Bolts	Nails	Bolts		(133)		(160)		(133)	(160)		
									Qty	Dia	Nails	Bolts	Nails	Bolts	Nails	Nails		
LTT19	16	3	1¾	19½	1½	⅝	¾	8-16d Sinkers	—	—	1205	—	1350	—	1085	1305	2, 40, 82, 121	
LTT20B ⁶	12	3	2	19¾	1½	⅝	½, ⅝ or ¾	10-16d	2	½	1750	1220	1750	1460	1675	1750		
LTTI31	18	3	3¾	31	1½	¼	⅝	18-10dx1½	—	—	2185	—	2310	—	1985	2310	6, 40, 82	
HTT16	11	—	2½	16	1½	⅞	⅝	18-16d	—	—	3480	—	4175	—	3080	3695	30, 99, 122	
HTT22	11	—	2½	22	1½	⅞	⅝	32-16d Sinkers	—	—	5250	—	5260	—	4670	5250	40, 97, 99, 122	
MTT28B	12	7	2¼	27	1½	¾	⅝ or ¾	24-16d	4	½	4455	2150	4455	2725	4140	4455	40, 122	

1. Allowable loads for HTT are based on the lower of the 2001 NDS fastener values or the ultimate load on a steel test jig divided by 2.5.
2. 16d sinkers (0.148" dia. x 3 3/4" long) or 10d commons may be substituted for the specified 16d commons at 0.85 of the table loads.
3. The Designer must specify anchor bolt type, length and embedment.
4. Allowable loads have been increased for earthquake or wind load durations with no further increase allowed; reduce where other load durations govern.
5. Bolt values are based on a minimum lumber thickness of 1 1/2".

6. If a 1/2" or 5/8" anchor bolt is used for the LTT20B, add a standard cut washer to the seat. No additional washer is required for a 3/4" anchor bolt. See table for appropriate anchor bolt sizes.
7. HTT22 holdown installed raised off the plate has a load of 5190 lbs. HTT16 installed raised off the plate will achieve the table loads.
8. Post design shall be by Designer.
9. NAILS: 16d = 0.162" dia. x 3 3/8" long, 10dx1 1/2 = 0.148" dia. x 1 1/2" long, 16d sinker = 0.148" dia. x 3 3/4" long. See page 16-17 for other nail sizes and information.

For holdowns, per ASTM test standards, anchor bolt nut should be finger-tight plus 1/3 to 1/2 turn with a **hand wrench**, with consideration given to possible future wood shrinkage. Care should be taken to not over-torque the nut. **Impact wrenches should not be used.**

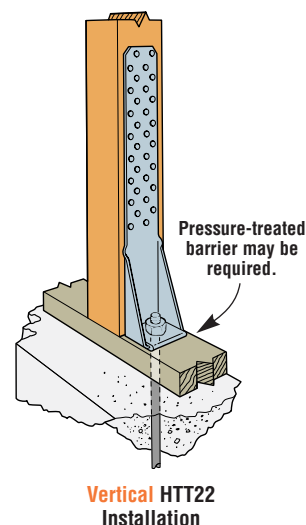


DO NOT MODIFY THE MTT28B.

Do not rotate the MTT28B's strap around the rivet.

The strap must be in line vertically with the body of the holdown to achieve table loads.

See Girder Tiedown Connectors on page 153 & 167 for installation solutions.



PA/HPA Purlin Anchors

Wood-to-concrete and -concrete block connectors that satisfy code requirements. The PA's Dual Embedment Line allows installation in concrete or concrete block.

MATERIAL: PA—12 gauge; HPA—10 gauge.

FINISH: Galvanized. PA's available HDG or Z-MAX.

INSTALLATION: • Minimum concrete strength is 2000 psi.

- Use all specified fasteners; some models have extra fastener holes.
- See General Notes.
- Purlin Anchor must hook around rebar.
- Wood splitting may occur when anchor is nailed to wood less than 3½" wide. For widths less than 3½", see PAHD Holdowns for alternate nailing configurations, or PAI.

EDGE DISTANCE—Minimum concrete edge distance is 5".
Minimum concrete block left-to-right edge distance is 20".

CONCRETE BLOCK WALL—The masonry embedment line on the PA allows for 4" of grout embedment in a standard 8" concrete masonry unit. The minimum wall specifications are:

- A** One #4 vertical rebar, 32" long, 16" each side of anchor;
- B** Two courses of grout filled block above and below the anchor (no cold joints allowed);
- C** A horizontal bond beam with two #4 rebars, 40" long, a maximum of two courses above or below the anchor.

All cells grouted with 2000 psi ¾" aggregate grout. Grout shall be vibrated per the Code. Rebar quantities, sizes and lengths are minimum requirements and may be increased per any additional wall design requirements.

OPTIONS: See LTT and HTT Tension Ties.

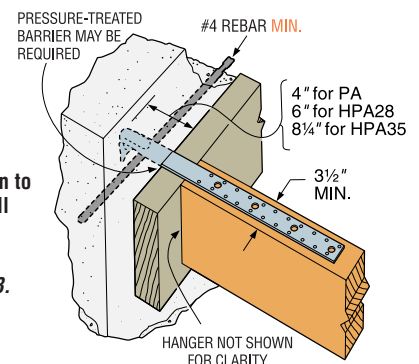
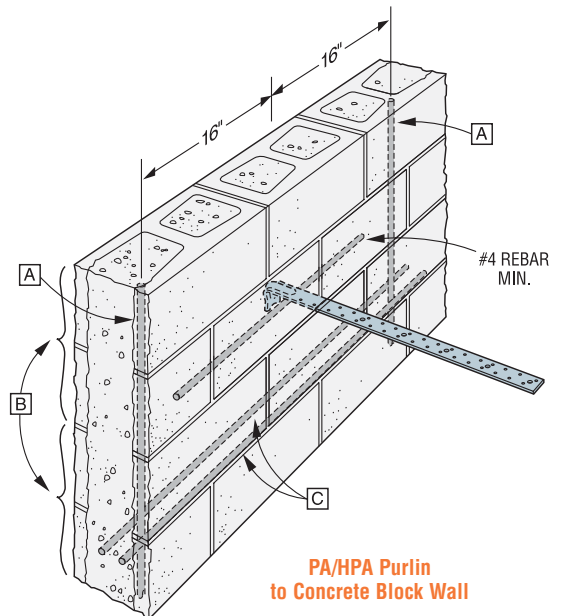
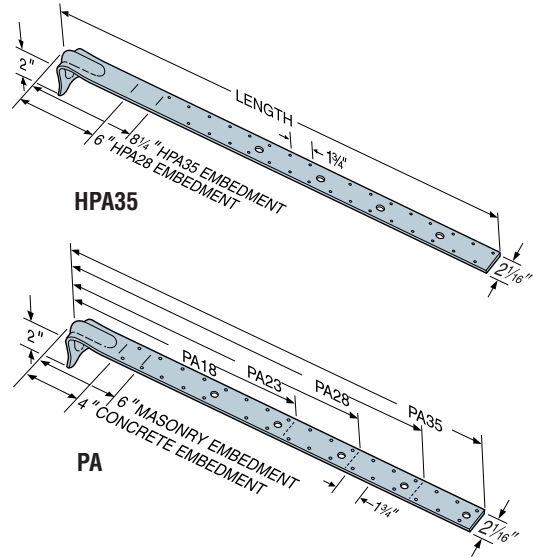
CODES: See page 12 for Code Listing Key Chart.

Available with additional corrosion protection. Check with factory.

Model No.	L	Fasteners		Allowable Tension Loads				Code Ref.
		Masonry	Concrete	Masonry		Concrete		
				(133)	(160)	(133)	(160)	
Maximum Capacity								
PA18	18½	10-16d	12-16d	1880	2255	2255	2705	2, 40, 121
PA23	23¾	16-16d	18-16d	2815	2815	3385	3480	
PA28	29	18-16d	20-16d	2815	2815	3590	3590	
PA35	35	18-16d	20-16d	2815	2815	3590	3590	
HPA28	32½	—	24-16d	—	—	4845	4845	
HPA35	38½	—	27-16d	—	—	5420	5420	
1¼ LVL and 3x Ledger								
PA18	18½	10-16d	12-16d	1880	2255	2255	2705	2, 40, 121
PA23	23¾	15-16d	18-16d	2815	2815	3385	3480	
PA28	29	15-16d	20-16d	2815	2815	3590	3590	
PA35	35	15-16d	20-16d	2815	2815	3590	3590	
HPA28	32½	—	24-16d	—	—	4845	4845	
HPA35	38½	—	27-16d	—	—	5420	5420	
4x Ledger								
PA18	18½	8-16d	11-16d	1505	1805	2070	2480	2, 40, 121
PA23	23¾	15-16d	17-16d	2815	2815	3195	3480	
PA28	29	15-16d	20-16d	2815	2815	3590	3590	
PA35	35	15-16d	20-16d	2815	2815	3590	3590	
HPA28	32½	—	27-16d	—	—	4845	4845	
HPA35	38½	—	27-16d	—	—	5420	5420	

1. Allowable loads are for a horizontal installation into the side of a concrete or masonry wall.
2. Minimum penetration for 16d commons is 1½".
3. 16d sinkers (0.148" dia. x 3¾" long) or 10d commons may be substituted for the specified 16d commons at 0.85 of the table loads.
4. Allowable loads have been increased for earthquake or wind load durations with no further increase allowed; reduce where other load durations govern.
5. NAILS: 16d = 0.162" dia. x 3½" long.
See page 16-17 for other nail sizes and information.

The UBC Section 1633.2.8 and IBC 1620.2.1 state:
... Diaphragm to wall anchorage using embedded straps shall have the straps attached to or hooked around the reinforcing steel, or otherwise terminated to effectively transfer forces to the reinforcing steel.



PA/HPA Purlin to Concrete Wall
For I-Joist applications see page 118.

LSTHD/STHD Strap Tie Holddown



This product is preferable to similar connectors because of a) easier installation, b) higher loads, c) lower installed cost, or a combination of these features.

The STHD is an embedded strap tie holddown with high load capacity and a staggered nail pattern to help minimize splitting. **The latest version of the STHD strap tie holddown incorporates many new features that improve installation and function. When used in conjunction with the StrapMate® you have a system that helps prevent both parallel and perpendicular movement during installation relative to the form. Allows for accurate location of the STHD's and reduces the possibility of spalling!**

FEATURES

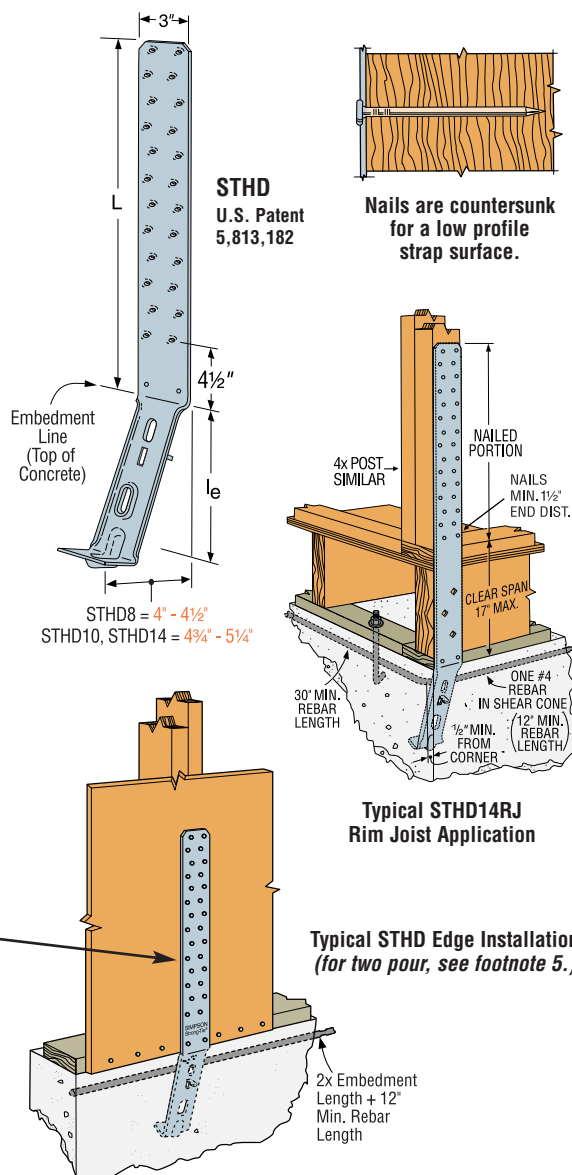
- The strap nailing pattern allows for nailing to the edges of double 2x's.
- A slot below the embedment line allows for increased front to back concrete bond and reduced spalling.
- Strap nail slots are countersunk to provide a lower nail head profile.
- Rim joist models accommodate up to a 17" clear span without any loss of strap nailing.

MATERIAL: LSTHD8, LSTHD8RJ—14 ga, all others—12 ga. **FINISH:** Galvanized

INSTALLATION: • Use all specified fasteners. See General Notes.

- See Post Tension information on page 43.
- Install before concrete pour with a StrapMate, or other holding device.**
- Nail strap from the bottom up. **Strap may be bent one full cycle.**
- Bending the strap 90° to aid wall placement may cause spalling behind the strap. If the spall is 1" or less, measured from the embedment line to the bottom of the spall, full loads apply. For spalls between 1" and 4" (see illustration), the allowable load is 0.90 of the table loads. **Any portion of the strap left exposed should be protected against corrosion.**
- For two pour installations spalling is measured from the first pour.
- Where fewer fasteners are used in the structural wood member, reduce loads according to the code.
- Unless otherwise noted, do NOT install where: (a) a horizontal cold joint exists within the embedment depth between the slab and foundation wall or footing beneath, unless provisions are made to transfer the load, or the slab is designed to resist the load imposed by the anchor; or (b) slabs are poured over concrete block foundation walls.
- To get the full table load, the minimum center-to-center spacing is twice the embedment depth when resisting tension loads at the same time.
- There is an increase in the amount of deflection if the strap is installed on the outside of the shear panel instead of directly to the framing. Ask for Form T-PLYWOOD for complete details.**
- FOUNDATION CORNERS:** Nail quantities may be reduced for less than l_e corner distance design loads—use the code allowable loads for fasteners in shear.
- To tie double 2x members together, the Designer must determine the fasteners required to bind members to act as one unit without splitting the wood.
- Additional studs attached to the shearwall studs or post may be required by the Designer for wall sheathing nailing.
- Wood shrinkage after strap installation across horizontal members may cause strap to buckle outward.**

CODES: See page 12 for Code Listing Key Chart.

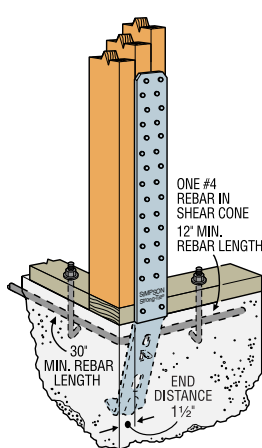


Model No. Standard / Rim Joist	Min Stem Wall	Strap Length (L)		l _e	Nails	Allowable Tension Loads (DF/SP/HF/SPF) (133 & 160)									Code Ref.
		Std Model	Rim Joist Model			End Distance									
						½"⁵	1½"	l _e	½"	1½"	l _e	½"	1½"	l _e	
						2000 psi Concrete			2500 psi Concrete			3000 psi Concrete			
LSTHD8 / LSTHD8RJ	6	21⅔	35⅙	8	24-16d sinker	1695	1695	1695	1825	1825	1825	1950	1950	1950	32, 121
STHD8 / STHD8RJ	6	21⅔	35⅙	8	24-16d sinker	1760	2050	2345	1950	2210	2385	2135	2370	2425	
STHD10 / STHD10RJ	6	23⅓	36⅔	10	28-16d sinker	2035	2575	3295	3730	3730	3730	3730	3730	3730	
STHD14 / STHD14RJ	6	31⅓	39⅔	14	38-16d sinker	3235	4220	4805	5025	5025	5025	5025	5025	5025	
LSTHD8 / LSTHD8RJ	8	21⅔	35⅙	8	24-16d sinker	1695	1695	1695	1825	1825	2335	1950	1950	2975	32, 28, 122
STHD8 / STHD8RJ	8	21⅔	35⅙	8	24-16d sinker	2370	2370	3195	2370	2370	3195	2370	2370	3195	
STHD10 / STHD10RJ	8	23⅓	36⅔	10	28-16d sinker	2745	2745	3725	3730	3730	3730	3730	3730	3730	
STHD14 / STHD14RJ ²	8	31⅓	39⅔	14	38-16d sinker	3885	4430	5785	5025	5025	5785	5025	5025	5785	

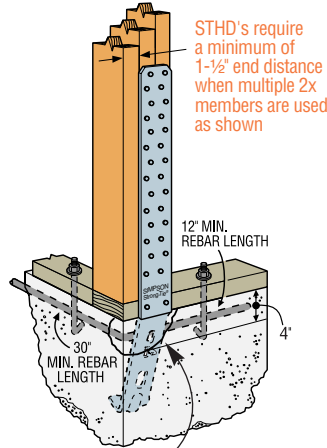
- 'RJ' after the model indicates STHDs for rim joist applications, e.g. STHD8RJ.
- STHD14RJ on 8" stemwall requires 30-16d sinkers, with the (l_e) load at 133% of 4960 lbs.
- 10d commons or 12d common nails may be used with no load reduction.
- Minimum nail end distance to prevent splitting is 10 x diameter, $1 1/2"$ for 16d sinkers, 10d common and 12d common.
- For two pour with 4" slab or less. The STHD14 load at $1/2"$ end distance 2000 psi is 3235 lbs. and 4220 lbs. at $1 1/2"$ end distance. The STHD10 at the same condition is 2035 lbs. for $1/2"$ end distance, and 2750 lbs. at $1 1/2"$ end distance.
- Allowable loads have been increased for earthquake or wind load durations with no further increase allowed; reduce where other load durations govern.
- Strap may be bent one full cycle. (*Bent horizontal 90° then bent vertical.*)
- Calculate loads using straight line interpolation for corner distances between $1/2"$ and l_e .

- STHD14 and STHD14RJ installed on HF/SPF in an 8" stemwall: the l_e load is 5280 lbs.
- Post design shall be by Designer.
- Loads shown apply to post tension slabs when one #4 rebar (minimum) is installed as shown on page 43.
- NAILS:** 16d sinker = 0.148" dia. x 3 3/4" long. See page 16-17 for other nail sizes and information.
- STHD14 and STHD10 allowable loads for an End Installation Condition (Not a Corner) at $1/2"$ end distance, 6-inch stem wall, 2500 psi concrete, are 3105 and 2095 lbs respectively.
- STHD14 allowable loads for an end installation, 8-inch stem wall, 2500 psi concrete, $1/2"$ and $1 1/2"$ end distances are 3645 and 4200 lbs respectively.
- STHD14 allowable load for an end installation, 10-inch stem wall, $1/2"$ end distance and 2500 psi concrete is 4500 lbs.

LSTHD/STHD Strap Tie Holdown



Typical STHD Corner Installation on 3-2x studs (for two pour, see footnote 5.)



SPALLING LOAD REDUCTION!
If strap is bent horizontal 90° during installation, and then bent vertical (**bent one full cycle**) for nailing to the stud, concrete spalling could result. Load reductions may apply, see installation note.

SPALL REDUCTION SYSTEM FOR STHD STRAP TIE HOLDOWN

FEATURES

- Built-in tab.
- StrapMate® locator line.
- Additional diamond hole in RJ versions.

BENEFITS

Built-in Tab:

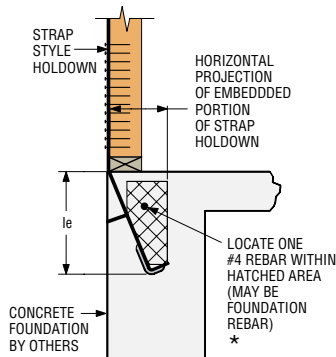
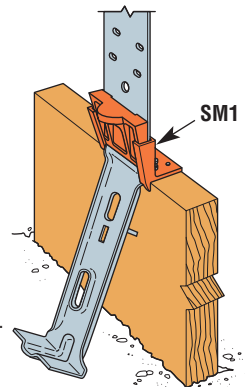
- Reduces spalling and costly retrofits.
- No additional labor to install.
- Holds STHD away from form board.

StrapMate Locator Line:

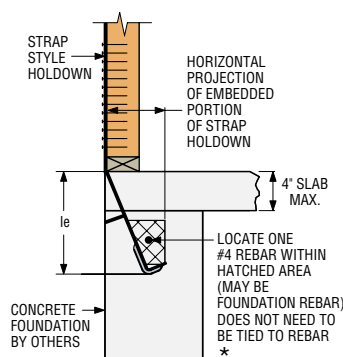
- Easy inspection to ensure proper location.
- Allows adjustment without removing STHD.

Additional Diamond Hole:

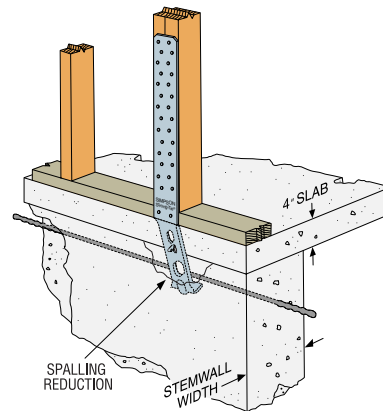
- One more fastener to help prevent the STHD RJ models from bowing out at the rim joist section.



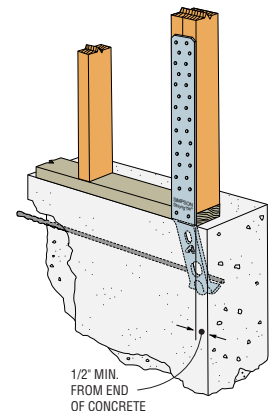
Single Pour Rebar Installation
*Maintain minimum rebar cover, per ACI-318 concrete code requirements.



Two Pour Rebar Installation
*Maintain minimum rebar cover, per ACI-318 concrete code requirements.

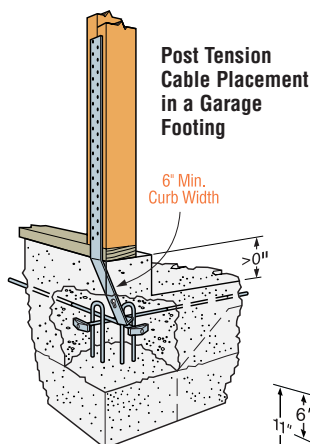


Typical STHD14 Two Pour Installation

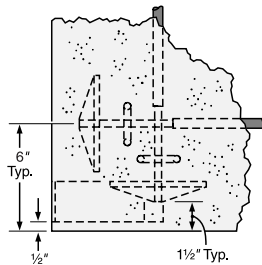


Typical STHD14 End Installation (No corner return)

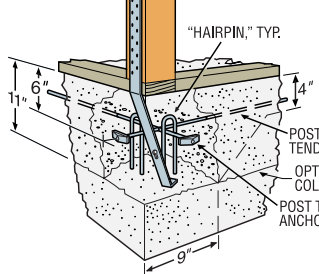
POST-TENSION INFORMATION



DETAIL 1
When installed on a raised curb, use **6" Stemwall installation and loads (page 42)**
(rebar required)



Top View of Post Tension Cable Placement



DETAIL 2
Post Tension Cable Placement Corner Installation
(no rebar required)

Model No.	Distance from Corner	Fasteners	Allowable Uplift Loads (133)	Code Ref.
HPAHD22	1/2" Min	13-16d	2705	20, 124
	8" Min	23-16d	4570	
LSTHD8/ LSTHD8RJ	1/2" Min	24-16d sinkers	1695	32, 121
	8" Min	24-16d sinkers	1695	
STHD8/ STHD8RJ	1/2" Min	24-16d sinkers	2055	32, 28, 122
	8" Min	24-16d sinkers	2345	
STHD10/ STHD10RJ	1/2" Min	28-16d sinkers	2055	
	10" Min	28-16d sinkers	3185	

1. Minimum concrete strength is 2500 psi.
2. Post-tension steel is minimum 1/2" diameter, 7-wire, low-relaxation strand in accordance with ASTM A416, Grade 270 ksi, with a guaranteed ultimate strength of 41.3 k.
3. Anchorage is monostrand-type anchor system with current ICC approval using a ductile iron casting of at least 2.25"x4.5" of bearing and reusable pocket formers on all stressing ends.
4. It is the Designer's responsibility to provide reinforcement to tie cold-joints and to resist bending stresses in the foundation due to anchor uplift.
5. Post design shall be by Designer.
6. NAILS: 16d = 0.162" dia. x 3 1/2" long, 16d sinker = 0.148" dia. x 3 1/4" long. See page 16-17 for other nail sizes and information.

PA/PAHD/HPAHD Strap Tie Holdowns

Wood-to-concrete connectors that satisfy engineering and code requirements.

MATERIAL: HPA—10 ga; all others—12 ga

FINISH: Galvanized, some models available in ZMAX or HDG.

INSTALLATION: • Use all specified fasteners. See General Notes.

- Install before concrete pour with a StrapMate, or other holding device.
- Bending the strap 90° to aid wall placement may cause spalling behind the strap. If the spall is 1" or less, measured from the embedment line to the bottom of the spall, full loads apply. For spalls between 1" and 4" (see illustration on page 45), the allowable load is 0.90 of the table loads.
- For two pour installations spalling is measured from the first pour.
- Nail strap from bottom up. Strap may be bent one full cycle.
- Where fewer fasteners are used in the structural wood member, reduce loads according to the code. A wood splitting problem may occur when holdowns are nailed to lumber less than 3½" wide. To lessen splitting of 3x's or double 2x's, either fill every nail hole with 10d x 1½" nails or fill every other nail hole with 16d commons. Reduce the allowable load based on the size and quantity of fasteners used.
- Unless otherwise noted, do NOT install where: (a) a horizontal cold joint exists within the embedment depth between the slab and foundation wall or footing beneath, unless provisions are made to transfer the load, or the slab is designed to resist the load imposed by the anchor; or (b) slabs are poured over concrete block foundation walls.
- To get the full table load, the minimum center-to-center spacing is twice the embedment depth when resisting tension loads at the same time.
- To tie double 2x members together, the Designer must determine the fasteners required to bind members to act as one unit without splitting the wood.
- Additional studs attached to the shearwall studs or post may be required by the Designer for wall sheathing nailing.

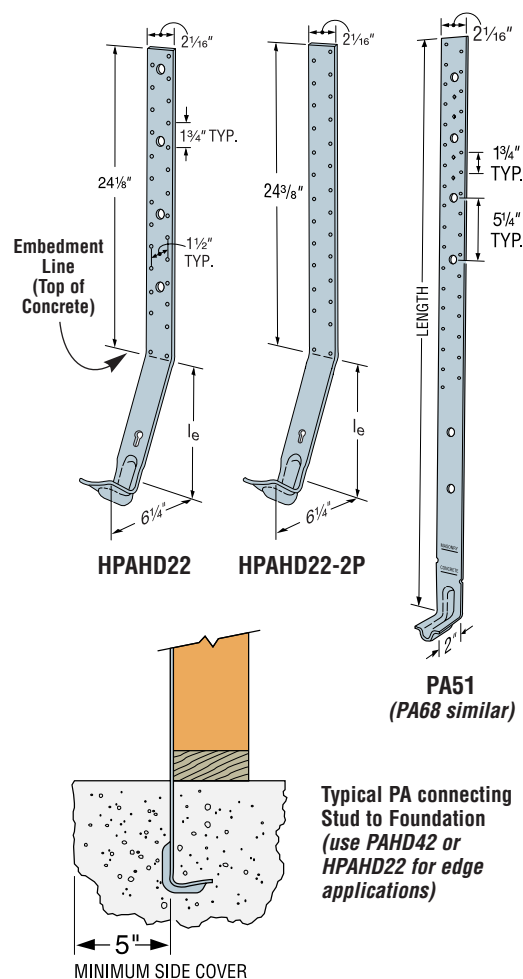
FOUNDATION CORNERS: Nail and bolt quantities have been reduced when the load is limited by tested concrete pullout strength (fill holes from bottom up); additional nail holes need not be filled. Nail and bolt quantities may be reduced further for less than 8" corner distance design loads—use code allowable loads for fasteners used in shear.

TWO-POUR SYSTEMS: When a cold joint exists between slab and foundation, the holdown will be lower on the stud wall since the embedded portion of the holdown must be in the foundation (see table footnote 1 for exception). Fewer fasteners are used, reducing allowable loads. Loads are calculated using a 4" slab over 6" and 8" foundation walls.

PAHD42, HPAHD22, HPAHD22-2P HOLDOWNS: Designed to be installed at the edge of concrete. Tests determined the pullout strength with one horizontal #4 rebar in the shear cone. Rebar should be a minimum length of 2x embedment depth + 12" (except corner installations, page 45). Install before pouring concrete by nailing to form. Installation holes allow nailing to the form, resulting in 1" deeper embedment; see illustration.

OPTIONS: See also **STHD** Holdowns, LTT, MTT, HTT Tension Ties.

CODES: See page 12 for Code Listing Key Chart.



Typical PA connecting Stud to Foundation (use PAHD42 or HPAHD22 for edge applications)

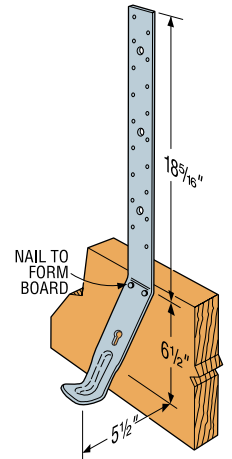
Available with additional corrosion protection. Check with factory.

Model No.	L	Min. Embed. Depth	Nails	Allowable Uplift Loads		Code Ref.
				(133)	(160)	
PA51	51	4	9-16d	1690	2030	8, 36, 121
PA68	70	4	9-16d	1690	2030	

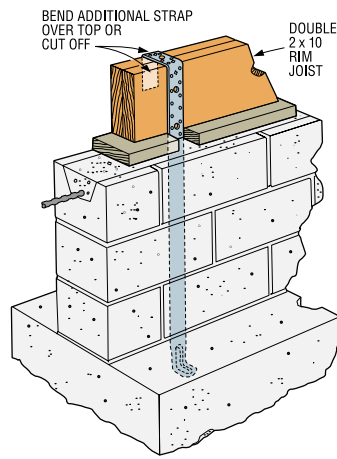
1. Loads have been increased 33% and 60% for earthquake or wind loading with no further increase allowed; reduce where other loads govern.
2. 16d sinkers (9 ga x 3¼") or 10d commons may be substituted for the specified 16d commons at 0.84 of the table loads.
3. Optional fastener holes provided. Calculate loads according to the code to a maximum of 3685 lbs. Minimum embedment is 4"; 5" to the nearest edge.

Model No.	Min Stem Wall	Embed. Depth le	Nails	Allowable Tension Loads (133 & 160) DF/SP								Code Ref.
				2000 psi Concrete				2500 psi Concrete				
				End Distance								
				½"		8"		½"		8"		
133	160	133	160	133	160	133	160					
SINGLE POUR												
PAHD42	6	6½"	12-16d	920	920	2030	2030	1225	1225	2205	2205	20, 124
	8		16-16d	1050	1050	2715	2715	1400	1400	2945	2945	
HPAHD22	6	10"	16-16d	1315	1315	3335	3335	1750	1750	3335	3335	
	8		23-16d	2030	2030	4745	4745	2210	2210	4875	5160	
TWO POUR												
PAHD42	6	6½"	12-16d	920	920	2030	2030	1225	1225	2205	2205	20, 124
	8		12-16d	1050	1050	2305	2715	1400	1400	2305	2765	
HPAHD22	6	10"	16-16d	1315	1315	3335	3335	1750	1750	3335	3335	
	8		19-16d	2030	2030	4030	4745	2210	2210	4030	4835	
HPAHD22-2P	6	14⅞"	16-16d	2455	2455	3335	3335	2455	2455	3335	3335	8, 20, 28, 121, 124
	8		23-16d	2455	2455	4745	4745	2455	2455	4875	5160	

1. HPAHD22 may be embedded 4" into the slab and 6" into the 8" stemwall beneath for a maximum load of 2810 lbs. at 8" minimum from the closest corner, and 1200 lbs. at ½" from the closest corner (like installation 4).
2. Allowable loads have been increased for earthquake or wind load durations with no further increase allowed; reduce where other load durations govern.
3. 16d sinkers (0.148" dia. x 3¼" long) or 10d commons may be substituted for specified 16d commons at 0.85 of table loads.
4. Minimum nail end distance to prevent splitting is 10x the nail diameter, or 1½" for 16d nails.
5. Calculate loads using straight line interpolation for corner distances between ½" and 8".
6. Optional fastener holes are provided on selected products. Because the product is limited by the concrete foundation, you may not need to install optional fasteners.
7. Strap may be bent one full cycle. (Bent horizontal 90° then bent vertical.)
8. Rim Joist application: see Installation 3 for corner condition.
9. Loads shown apply to post-tension slabs when one #4 rebar (minimum) is installed as shown on page 43.
10. Post design shall be by Designer.
11. NAILS: 16d = 0.162" dia. x 3½" long. See page 16-17 for other nail sizes and information.



Typical PAHD42
before the Concrete Pour



Typical PA51 Installation
(PA68 similar)

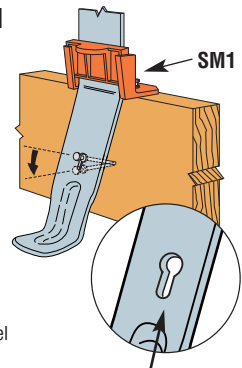
SPALL REDUCTION SYSTEM FOR PAHD AND HPAHD

FEATURES

- Secures holdown to wood form-board.
- Allows for proper side-cover.
- Keeps strap vertical.
- Prevents tilting or twisting of strap during the concrete pour.
- Uses one 16d duplex nail.

BENEFITS

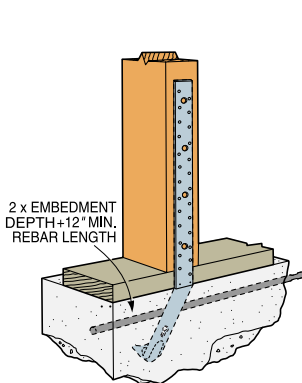
- Greatly reduces spalling and costly retrofits.
- **Helps** prevent strap movement parallel and perpendicular to plate.
- Decreases possibility of misinstallation of strap to wood member.
- Simple to use:
 - Common jobsite nail.
 - No additional expense.



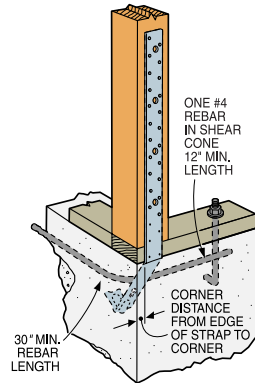
Keyhole Feature
U.S. Patent
6,658,806

When using keyhole feature, care should be taken when removing form boards. If concrete is not set, the duplex nail will move the strap placement.

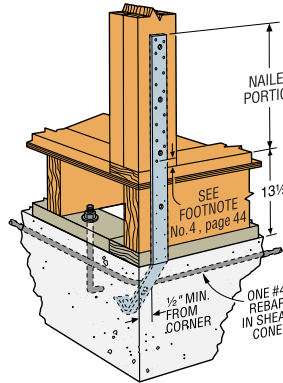
SINGLE POUR INSTALLATIONS



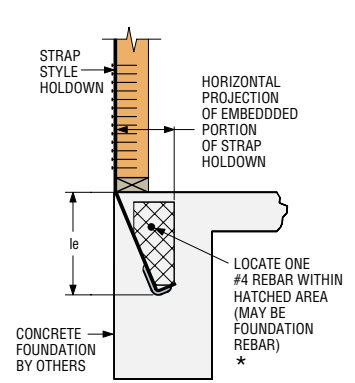
INSTALLATION 1
Typical HPAHD Single
Pour Edge Installation



INSTALLATION 2
Typical HPAHD Single Pour
Corner and Endwall Installation



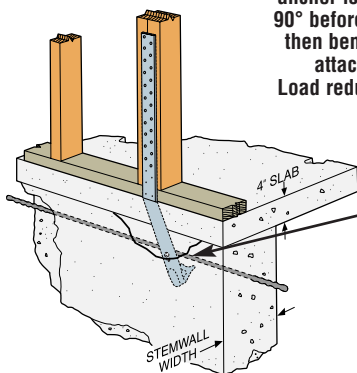
INSTALLATION 3
Typical HPAHD Single Pour
Rim Joist Installation
(Reduce allowable load based on
quantity of effective nails used.)



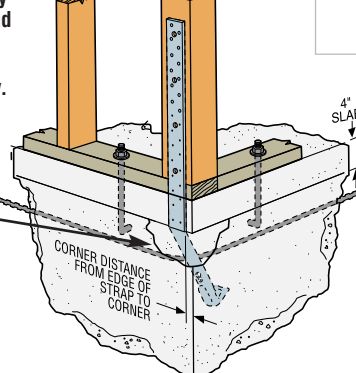
Single Pour Rebar Installation
*Maintain minimum rebar cover,
per ACI-318 concrete code
requirements.

TWO POUR INSTALLATIONS

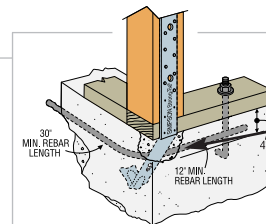
Spalling may occur if the anchor is bent horizontally 90° before installation, and then bent up vertically to attach to the stud. Load reduction may apply.



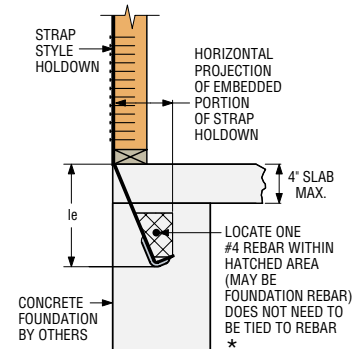
INSTALLATION 4
Typical HPAHD22-2P Two Pour Edge
Installation. Unless noted, install other
models with bend embedment line at
cold joint between slab and foundation.



INSTALLATION 5
Typical HPAHD
Two Pour Corner
Installation



SPALLING!
Spalling may occur if the anchor is bent horizontally 90° before installation, and then bent up vertically to attach to the stud. Load reduction may apply.



Two Pour Rebar Installation
*Maintain minimum rebar cover, per
ACI-318 concrete code requirements.

AB/ABA/ABE/ABU Adjustable and Standoff Post Bases

Additional standoff bases are on page 187.

The AB is an adjustable post base which offers moisture protection and finished hardware appearance.

Post Bases provide tested capacity. They feature 1" standoff height above concrete floors, code-required when supporting permanent structures that are exposed to the weather or water splash, or in basements. They reduce the potential for decay at post and column ends.

MATERIAL: AB—12 ga plates; 16 ga base cover; all others—see table.

FINISH: Galvanized. Some products available in Z-MAX; see Corrosion-Resistance, page 6-7.

INSTALLATION: • Use all specified fasteners. See General Notes.

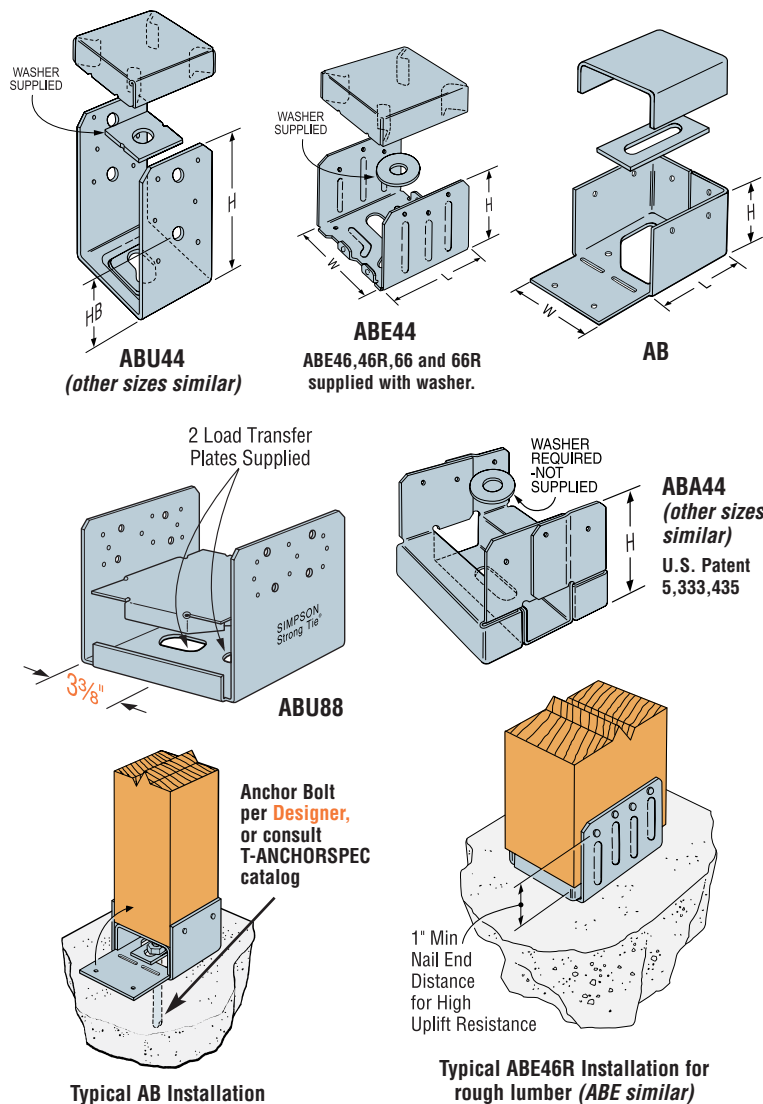
- Post bases do not provide adequate resistance to prevent members from rotating about the base and therefore are not recommended for non top-supported installations (such as fences or unbraced carports).
- AB supplied as shown; position the post, secure the easy-access nut, then bend up the fourth side.
- AB, ABA, ABE and ABU—for pre-pour installed anchors. For epoxy or wedge anchors, select and install according to anchor manufacturer's recommendations; anchor diameter shown in table. Install required washer, which is not included for ABAs.
- See Simpson Anchor Systems for tested, load-rated anchors and request T-ANCHORSPEC for more information.

CODES: See page 12 for Code Listing Key Chart.

Available with additional corrosion protection. Check with factory.

Model No.	Dimensions			Anchor Dia.	Fasteners	Allowable Download (100)	Code Ref.
	W	L	H				
AB44	3 ¹ / ₁₆	3 ¹ / ₁₆	2 ¹ / ₄	1/2	8-10d	4065	2, 40, 82, 121
AB44R	4	4 ¹ / ₁₆	2 ⁹ / ₁₆	1/2	8-10d	4065	
AB46	3 ¹ / ₁₆	5 ³ / ₈	3	1/2	8-10d	4165	
AB46R	4	6	2 ¹³ / ₁₆	1/2	8-10d	4165	
AB66	5 ¹ / ₂	5 ⁹ / ₁₆	3	1/2	8-10d	5335	
AB66R	6	6	2 ¹³ / ₁₆	1/2	8-10d	5335	

1. Loads may not be increased for short-term loading.



Model No.	Nominal Post Size	Material		Dimensions				Fasteners				Allowable Loads (DF/SP)					Code Ref.
		Base (Ga)	Strap (Ga)	W	L	H	HB ⁶	Anch. Dia	Post		Uplift (133)		Uplift (160)		Down (100)		
									Nails	Machine Bolts	Nails	Bolts	Nails	Bolts			
																Qty	
ABA44	4x4	16	16	3 ⁹ / ₁₆	3 ¹ / ₈	3 ¹ / ₁₆	—	1 ¹ / ₂	6-10d	—	—	555	—	555	—	6000	5, 41, 121
ABE44	4x4	16	16	3 ⁹ / ₁₆	3 ¹ / ₂	2 ³ / ₄	—	1 ¹ / ₂	6-10d	—	—	520	—	520	—	6665	6, 86, 121
ABU44	4x4	16	12	3 ⁹ / ₁₆	3	5 ¹ / ₂	1 ³ / ₄	5 ⁸ / ₁₆	12-16d	2	1 ¹ / ₂	2200	1800	2200	2160	6665	8, 36, 91, 121
ABA44R	RGH 4x4	16	16	4 ¹ / ₁₆	3 ¹ / ₈	2 ¹³ / ₁₆	—	1 ¹ / ₂	6-10d	—	—	555	—	555	—	8000	5, 41, 121
ABE44R	RGH 4x4	16	16	4	3 ¹ / ₂	2 ⁹ / ₁₆	—	1 ¹ / ₂	6-10d	—	—	400	—	400	—	6665	6, 86
ABE46	4x6	12	16	3 ⁹ / ₁₆	5 ⁷ / ₁₆	4 ¹ / ₁₆	—	5 ⁸ / ₁₆	8-16d	—	—	810	—	810	—	7335	9, 121
ABA46	4x6	14	14	3 ⁹ / ₁₆	5 ⁹ / ₁₆	3 ¹ / ₈	—	5 ⁸ / ₁₆	8-16d	—	—	700	—	700	—	9435	5, 41, 121
ABU46	4x6	12	12	3 ⁹ / ₁₆	5	7	2 ⁵ / ₈	5 ⁸ / ₁₆	12-16d	2	1 ¹ / ₂	2255	2300	2300	2300	10335	8, 36, 91, 121
ABE46R	RGH 4x6	12	16	4 ¹ / ₁₆	5 ⁷ / ₁₆	3 ⁹ / ₁₆	—	5 ⁸ / ₁₆	8-16d	—	—	810	—	810	—	7335	9
ABA46R	RGH 4x6	14	14	4 ¹ / ₁₆	5 ⁹ / ₁₆	2 ⁷ / ₈	—	5 ⁸ / ₁₆	8-16d	—	—	700	—	700	—	12000	5, 41, 121
ABA66	6x6	14	14	5 ¹ / ₂	5 ¹ / ₄	3 ¹ / ₈	—	5 ⁸ / ₁₆	8-16d	—	—	720	—	720	—	10665	
ABE66	6x6	12	14	5 ¹ / ₂	5 ⁷ / ₁₆	3 ¹ / ₈	—	5 ⁸ / ₁₆	8-16d	—	—	900	—	900	—	12000	9, 121
ABU66	6x6	12	10	5 ¹ / ₂	5	6 ¹ / ₁₆	1 ³ / ₄	5 ⁸ / ₁₆	12-16d	2	1 ¹ / ₂	2300	2300	2300	2300	12000	8, 36, 91, 127
ABA66R	RGH 6x6	14	14	6	5 ⁹ / ₁₆	2 ⁷ / ₈	—	5 ⁸ / ₁₆	8-16d	—	—	720	—	720	—	12665	5, 41, 121
ABE66R	RGH 6x6	12	14	6 ¹ / ₁₆	5 ⁷ / ₁₆	2 ⁷ / ₈	—	5 ⁸ / ₁₆	8-16d	—	—	900	—	900	—	12000	9
ABU88 ⁴	8x8	14	12	7 ¹ / ₂	7	7	—	2-5 ⁸ / ₁₆ ⁷	18-16d	—	—	2320	—	2320	—	24335	8, 36, 127
ABU88R ⁴	RGH 8x8	14	12	8	7	7	—	2-5 ⁸ / ₁₆ ⁷	18-16d	—	—	2320	—	2320	—	24335	8, 36

1. Uplift loads have been increased for earthquake or wind load durations with no further increase allowed; reduce where other load durations govern.
2. Downloads may not be increased for short-term loading.
3. Specifier to design concrete for shear capacity.
4. ABU88 and ABU88R may be installed with 8-SDS¹/₄X3 wood screws for the same table load.

5. For higher downloads, solidly pack grout under 1" standoff plate before installing into concrete. Base download on column or concrete, according to the code.
6. HB dimension is the distance from the bottom of the post up to the first bolt hole.

7. NAILS: 16d = 0.162" dia. x 3¹/₂" long, 10d = 0.148" dia. x 3" long. See page 16-17 for other nail sizes and information.

EPB44T/EPB44PHDG Elevated Post Bases

NEW! EPB44PHDG (Elevated Post Base – Hot-Dip Galvanized) can be used both for pier block and cast-in-place installation for 4x4 posts.

MATERIAL: 12 gauge base. EPB44T—Threaded rod support $\frac{5}{8}$ "x5" (shipped assembled). EPB44PHDG—Threaded rod support $\frac{3}{4}$ "x6", nut and washer are shipped assembled

FINISH: EPB44T: Base—Galvanized, Threaded Rod—Zinc Plate

EPB44PHDG: Hot-Dip Galvanized

INSTALLATION:

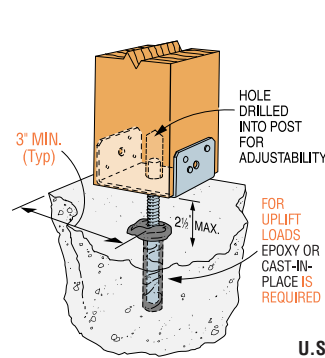
- **Secured with Epoxy:** EPB44T—Drill a $\frac{3}{4}$ " hole 3" deep minimum into the concrete. Fill the hole half full with epoxy. Insert the EPB44T and adjust to the desired height. The threaded rod shall be embedded a minimum of 2½". To adjust after the epoxy cures, drill a hole in the center of the post and rotate the post base up or down to the desired height. EPB44PHDG—Drill a $\frac{7}{8}$ " diameter hole 4" deep minimum and fill the hole halfway with SET epoxy or drill a $\frac{1}{4}$ " diameter hole 4" deep minimum and fill the hole halfway with AT adhesive. Insert the EPB44PHDG and adjust to the desired height. The threaded rod shall be embedded a minimum of 3½". Minimum sidecover is 3" from the center of the threaded rod for both products.
- **Supported by a Nut:** EPB44T—Drill a $\frac{3}{4}$ " hole 2½" deep minimum into concrete. Install a $\frac{5}{8}$ -11 NC nut and cut washer on the threaded rod. (Nut and washer not supplied). Insert EPB44T into the hole and adjust to the desired height. EPB44PHDG—Drill a 1" diameter hole 3½" deep minimum. Insert the EPB44PHDG and adjust to the desired height.
- Embedded in wet concrete: Embed $\frac{5}{8}$ " rod minimum 4" embedment.
- Minimum sidecover is 3" from the center of the threaded rod.
- Fully engage at least three threads in the base.
- Post bases do not provide adequate resistance to prevent members from rotating about the base and therefore are not recommended for non top-supported installations (such as fences or unbraced carports).

CODES: See page 12 for Code Listing Key Chart.

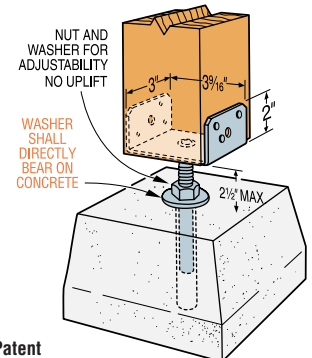
Available with additional corrosion protection. Check with factory.

Model No.	Nails	Anchor Bolt	Allowable Loads (DF/SP)			Code Ref.
			Download (100)	Uplift (133/160)		
EPB44T	6-16d	$\frac{5}{8}$	3275	1130	1140	6, 121
EPB44PHDG	8-16d	$\frac{3}{4}$	3670	1265	985	170

1. Loads may not be increased for short term loading.
2. Uplift and lateral loads require the threaded rod to be set in wet concrete or attached to cured concrete with SET epoxy or AT adhesive.
3. Specifier to design concrete for shear capacity.
4. Downloads shall be reduced where limited by buckling capacity of the post.
5. NAILS: 16d = 0.162" dia. x 3½" long. See page 16-17 for other nail sizes and information.

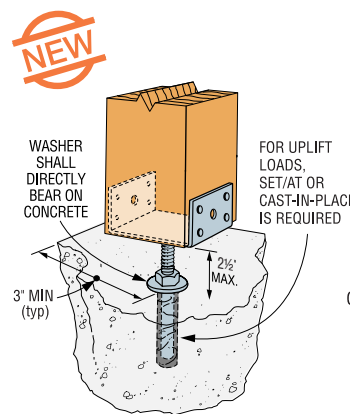


Typical EPB44T
Installed with SET Epoxy
or AT Adhesive

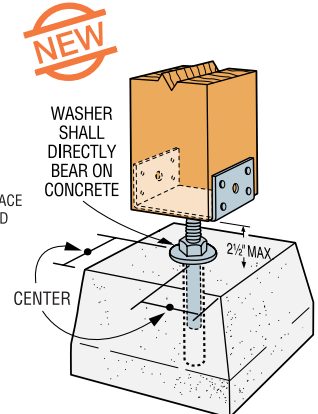


U.S. Patent
5,666,774

Typical EPB44T
installed with nut and
washer (not supplied)



Typical EPB44PHDG
Installed with SET Epoxy
or AT Adhesive



Typical EPB44PHDG
Pier Block Installation
(Supported by a nut)

EPB Elevated Post Bases

MATERIAL: EPB44A—14 ga.; others—12 ga. base plate, 1½" OD x 8" pipe

FINISH: EPB44A—Galvanized; all others—Simpson gray paint (may be ordered HDG); see Corrosion-Resistance, page 6-7.

INSTALLATION: • Use all specified fasteners. See General Notes.

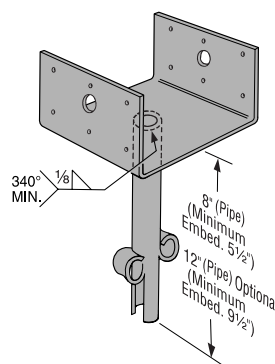
- Allows 1" to 2½" clearance above concrete, 2" for EPB44A.
- Post bases do not provide adequate resistance to prevent members from rotating about the base and therefore are not recommended for non top-supported installations (such as fences or unbraced carports).

OPTIONS: 12" pipe available for EPB44, 46, 66; specify "-12" after model number.

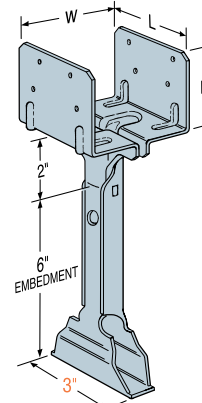
CODES: See page 12 for Code Listing Key Chart.

Available with additional corrosion protection. Check with factory.

Model No.	W	L	H	Nails	Allowable Loads (DF/SP)				Code Ref.
					(133) and (160)			Down (100)	
EPB44A	3½"	3"	2½"	8-16d	1100	815	935	2670	2, 40, 121
EPB44	3½"	3¼"	2½"	8-16d	800	985	1135	3465	2, 40,
EPB46	5½"	3½"	3"	8-16d	800	985	1135	3465	82, 121
EPB66	5½"	5½"	3"	12-16d	1500	985	1135	3465	

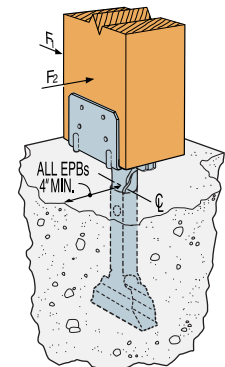


EPB66
(EPB44 and
EPB46 similar)



EPB44A

U.S. Patent 4,995,206,
Canada Patent 2,031,552



Typical EPB44A
Installation

1. Loads may not be increased for short-term loading.
2. EPB44 and EPB46 have extra nail holes; only eight must be filled to achieve table loads.
3. Specifier to design concrete for shear capacity.
4. Downloads shall be reduced where limited by buckling capacity of the post.
5. NAILS: 16d = 0.162" dia. x 3½" long. See page 16-17 for other nail sizes and information.

PB/PBS Regular and Standoff Post Bases

The PBS features a 1" standoff height. It reduces the potential for decay at post and column ends.

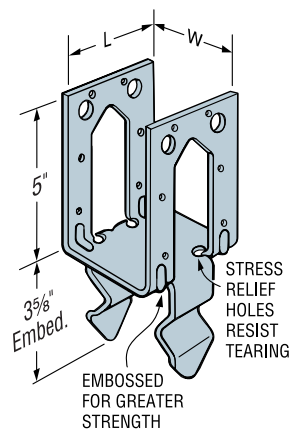
MATERIAL: PB—12 gauge; PBS—see table.

FINISH: Galvanized. Some products available in Z-MAX or HDG; see Corrosion-Resistance, page 6-7.

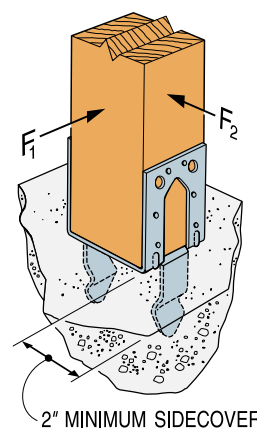
INSTALLATION: • Use all specified fasteners. See General Notes.

- Post bases do not provide adequate resistance to prevent members from rotating about the base and therefore are not recommended for non top-supported installations (such as fences or unbraced carports).
- PB: Holes are provided for installation with either 16d commons or 1/2" bolts for PB66 and PB66R; all other models use 16d commons only. A 2" minimum sidecover is required to obtain the full load.
- PBS: Embded into wet concrete up to the bottom of the 1" standoff base plate. A 2" minimum side cover is required to obtain the full load. Holes in the bottom of the straps allow for free concrete flow.

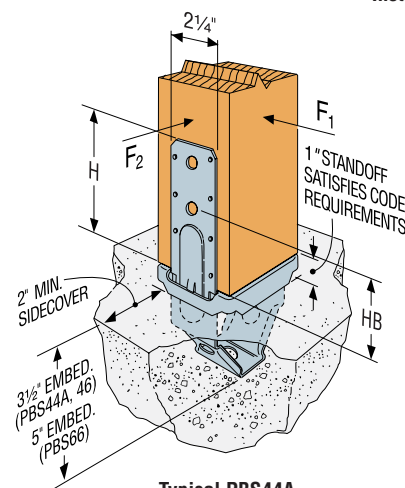
CODES: See page 12 for Code Listing Key Chart.



PB



Typical PB Installation



Typical PBS44A Installation

Available with additional corrosion protection. Check with factory.

Model No.	Dimensions		Allowable Loads (DF/SP)				Code Ref.
	W	L	12-16d Nails (133 & 160)			2-½MB	
			Uplift	F ₁	F ₂	Uplift (133 & 160)	
PB44	3⅜	3¼	1365	765	1325	—	7, 62, 90, 121
PB44R	4	3¼	1365	765	1325	—	
PB46	5½	3¼	1365	765	1325	—	
PB66	5½	5¼	1640	765	1325	1640	
PB66R	6	5¼	1640	765	1325	1640	

1. Allowable loads have been increased 33% and 60% for earthquake or wind loading; no further increase allowed; reduce where other loads govern.
2. PBS—Downloads may not be increased for short-term loading.
3. PBS—Designer to design concrete for shear capacity.
4. PBS—For higher downloads, solidly pack grout under 1" standoff plate before installing into concrete. Base download on column or concrete, according to the code.
5. Downloads shall be reduced where limited by buckling capacity of the post.
6. When using structural composite lumber posts, bolts must be applied to the wide face of the post.
7. NAILS: 16d = 0.162" dia. x 3 1/2" long. See page 16-17 for other nail sizes and information.

Model No.	Nominal Post Size	Material		Dimensions				Fasteners				Allowable Loads (DF/SP)										Code Ref.
		Base (Ga)	Strap (Ga)	W	L	H	HB	Anch. Dia	Post		Uplift (133)		Uplift (160)		F ₁ (133 & 160)		F ₂ (133 & 160)		Down (100)			
									Nails	Machine Bolts	Nails	Bolts	Nails	Bolts	Nails	Bolts						
																	Qty	Dia				
PBS44A	4x4	12	14	3⅞	3½	6¼	3⅞	—	14-16d	2	½	2400	2400	2400	2400	1165	230	885	885	6665	5, 41, 85, 121	
PBS46	4x6	12	14	3⅞	5⅞	6⅞	3⅞	—	14-16d	2	½	2400	2400	2400	2400	1165	360	885	885	9335		
PBS66	6x6	12	12	5½	5⅝	6½	3⅞⅞	—	14-16d	2	½	2630	3560	3160	4000	1865	570	1700	1700	9335		

IS Insulation Supports

Mitered edges ensure a tight fit when installed between joists.

INSTALLATION:

- Install between joists. IS16 for 16" o.c. spacing; IS24 for 24" o.c. spacing. Follow insulation manufacturer's installation instructions.
- Wear safety glasses, gloves and other appropriate safety equipment.

Model	Gauge	Length
IS16	14 ga	15 1/2"
IS24	14 ga	23 1/2"



Typical IS Installation



This product is preferable to similar connectors because of a) easier installation, b) higher loads, c) lower installed cost, or a combination of these features.

The CBSQ uses Simpson's SDS screws, which allow for fast installation, reduced reveal and high capacity, **provides a greater net section area of the column compared to bolts.**

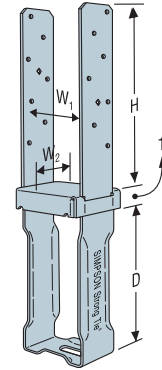
MATERIAL: See table.

FINISH: Galvanized, available in HDG with HDG screws.

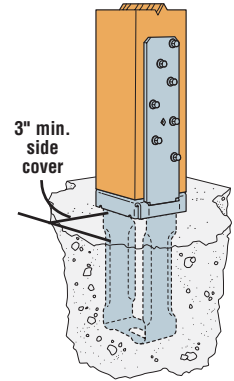
INSTALLATION: • Use all specified fasteners. See General Notes.

- Install Simpson's SDS $\frac{1}{4}$ x2 wood screws, which are provided with the column base. (*Lag screws will not achieve the same load.*)
- Post bases do not provide adequate resistance to prevent members from rotating about the base and therefore are not recommended for non top-supported installations (*such as fences or unbraced carports*).

CODES: See page 12 for Code Listing Key Chart.



CBSQ-SDS2
U.S. Patent 4,924,648



Typical CBSQ-SDS2 Installation

Available with additional corrosion protection. Check with factory.

Model No.	Nominal Column Size	Material		Dimensions				Number of Simpson SDS $\frac{1}{4}$ x 2" Screws	Allowable Loads			Code Ref.
		Base (Ga)	Strap (Ga x Width)	W ₁	W ₂	D	H		Uplift (133)	Uplift (160)	Down (100)	
CBSQ44-SDS2	4x4	12	10ga x 2 $\frac{1}{4}$	3 $\frac{3}{16}$	3 $\frac{1}{2}$	7 $\frac{1}{16}$	8 $\frac{3}{8}$	14	5335	5335	10975	46, 107, 124
CBSQ46-SDS2	4x6	12	10ga x 3	3 $\frac{3}{16}$	5 $\frac{5}{16}$	7 $\frac{3}{4}$	8 $\frac{11}{16}$	14	5335	5335	14420	
CBSQ66-SDS2	6x6	12	10ga x 3	5 $\frac{1}{2}$	5 $\frac{1}{2}$	6 $\frac{7}{8}$	8 $\frac{3}{4}$	14	5710	6855	14420	

- For higher downloads, solidly pack grout under 1" standoff plate before installing CBSQ into concrete. Base download on column or concrete, according to the code.
- When using structural composite lumber columns, screws must be applied to the wide face of the column.
- Downloads shall be reduced where limited by buckling capacity of the column.

CBQ and CBSQ

To order with screws, specify **CBQ-SDS2** or **CBSQ-SDS2**.

To order without screws, specify **CBQ** or **CBSQ**.



This product is preferable to similar connectors because of a) easier installation, b) higher loads, c) lower installed cost, or a combination of these features.

The CBQ uses Simpson's SDS screws, which allows for fast installation, reduced reveal and high capacity, **provides a greater net section area of the column compared to bolts.**

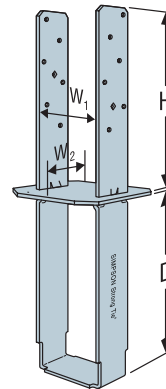
MATERIAL: See table.

FINISH: Galvanized, available in HDG with HDG screws.

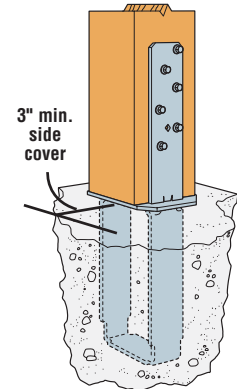
INSTALLATION: • Use all specified fasteners. See General Notes.

- Install Simpson's SDS $\frac{1}{4}$ x2 wood screws, which are provided with the column base. (*Lag screws will not achieve the same load.*)
- Post bases do not provide adequate resistance to prevent members from rotating about the base and therefore are not recommended for non top-supported installations (*such as fences or unbraced carports*).

CODES: See page 12 for Code Listing Key Chart.



CBQ-SDS2



Typical CBQ-SDS2 Installation

Available with additional corrosion protection. Check with factory.

Model No.	Nominal Column Size	Material		Dimensions				Number of Simpson SDS $\frac{1}{4}$ x 2" Screws	Allowable Loads		Code Ref.
		Base (Ga)	Strap (Ga x Width)	W ₁	W ₂	D	H		Uplift (133)	Uplift (160)	
CBQ44-SDS2	4x4	7	7ga x 2	3 $\frac{3}{16}$	3 $\frac{3}{16}$	8	8 $\frac{11}{16}$	12	4200	4200	46, 107, 124
CBQ46-SDS2	4x6	7	7ga x 2	3 $\frac{3}{16}$	5 $\frac{1}{2}$	8	8 $\frac{11}{16}$	12	4200	4200	
CBQ66-SDS2	6x6	7	7ga x 3	5 $\frac{1}{2}$	5 $\frac{1}{2}$	8	8 $\frac{11}{16}$	12	4200	4200	

- When using structural composite lumber columns, screws must be applied to the wide face of the column.

LCB/CB Column Bases

FINISH: LCB, CB44, CB46, CB66—galvanized;
all other CB-Simpson gray paint or HDG.

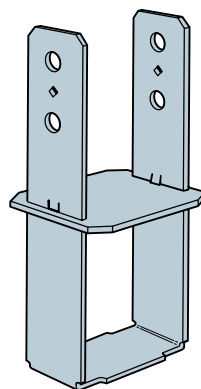
INSTALLATION: • Use all specified fasteners. See General Notes.

- For full loads, minimum side cover required is 3" for CB, 2" for LCB.
- Install all models with bottom of base plate flush with concrete.
- Post bases do not provide adequate resistance to prevent members from rotating about the base and therefore are not recommended for non top-supported installations (such as fences or unbraced carports).
- Contact engineered wood manufacturers for connections that are not through the wide face.

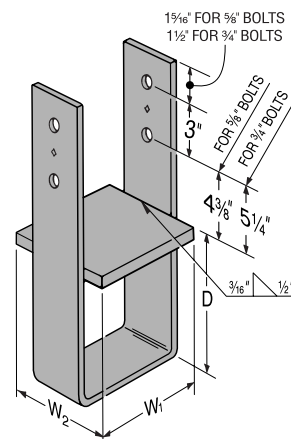
OPTIONS: • The LCB may be shipped unassembled; specify "Disassembled".

- LCB and CB are available in rough size. Other sizes available for CB specify W1 and W2 dimensions. Consult Simpson for bolt sizes and allowable loads. See PBS on page 48.

CODES: See page 12 for Code Listing Key Chart.



CB44
(CB46, CB66 similar)



Configuration of all other CB sizes

Available with additional corrosion protection. Check with factory.

Model No.	Nominal Column Size	Material		Dimensions			Column Fasteners			Allowable Uplift Loads				Code Ref.
		Strap	Base (Ga)	W ₁	W ₂	D	Nails	Machine Bolts		Nails		Bolts		
								Qty	Dia	(133)	(160)	(133)	(160)	
LCB44	4x4	12 ga x 2	16	3 ⁹ / ₁₆	3 ¹ / ₂	6 ¹ / ₂	12-16d	2	¹ / ₂	2255	2705	3545	4250	2, 40, 121
CB44	4x4	7 ga x 2	7	3 ⁹ / ₁₆	3 ⁹ / ₁₆	8	—	2	⁵ / ₈	—	—	4200	4200	2, 40, 82, 121
LCB46	4x6	12 ga x 2	16	3 ⁹ / ₁₆	5 ¹ / ₂	6 ¹ / ₂	12-16d	2	¹ / ₂	2255	2705	3530	4240	2, 40, 121
CB46	4x6	7 ga x 2	7	3 ⁹ / ₁₆	5 ¹ / ₂	8	—	2	⁵ / ₈	—	—	4200	4200	2, 40, 82, 121
CB48	4x8	7 ga x 2	7	3 ⁹ / ₁₆	7 ¹ / ₂	8	—	2	⁵ / ₈	—	—	4200	4200	
CB5-4.5	GLULAM	7 ga x 3	7	4 ⁹ / ₁₆	5 ¹ / ₈	8	—	2	⁵ / ₈	—	—	4200	4200	
CB5-6	GLULAM	7 ga x 3	7	6 ¹ / ₁₆	5 ¹ / ₈	8	—	2	⁵ / ₈	—	—	4200	4200	
LCB66	6x6	12 ga x 2	16	5 ¹ / ₂	5 ¹ / ₂	5 ¹ / ₂	12-16d	2	¹ / ₂	2255	2705	3525	4230	2, 40, 121
CB64	6x4	7 ga x 3	7	5 ¹ / ₂	3 ⁹ / ₁₆	8	—	2	⁵ / ₈	—	—	4200	4200	2, 40, 82, 121
CB66	6x6	7 ga x 3	7	5 ¹ / ₂	5 ¹ / ₂	8	—	2	⁵ / ₈	—	—	4200	4200	
CB6-7	6x	7 ga x 3	7	5 ¹ / ₂	7	8	—	2	⁵ / ₈	—	—	4200	4200	
CB7 ¹ / ₈ -4	PSL	3 ga x 3	7	7 ¹ / ₈	3 ¹ / ₂	8	—	2	³ / ₄	—	—	6650	6650	
CB7 ¹ / ₈ -6	PSL	3 ga x 3	7	7 ¹ / ₈	5 ¹ / ₂	8	—	2	³ / ₄	—	—	6650	6650	
CB7 ¹ / ₈ -7	PSL	3 ga x 3	7	7 ¹ / ₈	7	8	—	2	³ / ₄	—	—	6650	6650	
CB68	6x8	7 ga x 3	7	5 ¹ / ₂	7 ¹ / ₂	8	—	2	⁵ / ₈	—	—	4200	4200	
CB7-6	GLULAM	3 ga x 3	7	6 ¹ / ₁₆	6 ³ / ₄	8	—	2	³ / ₄	—	—	6650	6650	
CB7-7.5	GLULAM	3 ga x 3	7	7 ⁹ / ₁₆	6 ³ / ₄	8	—	2	³ / ₄	—	—	6650	6650	
CB7-9	GLULAM	3 ga x 3	7	9 ¹ / ₁₆	6 ³ / ₄	8	—	2	³ / ₄	—	—	6650	6650	
CB7-10.5	GLULAM	3 ga x 3	7	10 ⁹ / ₁₆	6 ³ / ₄	8	—	2	³ / ₄	—	—	6650	6650	
CB86	8x6	3 ga x 3	7	7 ¹ / ₂	5 ¹ / ₂	8	—	2	³ / ₄	—	—	6650	6650	
CB88	8x8	3 ga x 3	7	7 ¹ / ₂	7 ¹ / ₂	8	—	2	³ / ₄	—	—	6650	6650	
CB9-6	GLULAM	3 ga x 3	7	6 ¹ / ₁₆	8 ³ / ₄	8	—	2	³ / ₄	—	—	6650	6650	
CB9-7.5	GLULAM	3 ga x 3	7	7 ⁹ / ₁₆	8 ³ / ₄	8	—	2	³ / ₄	—	—	6650	6650	
CB9-9	GLULAM	3 ga x 3	7	9 ¹ / ₁₆	8 ³ / ₄	8	—	2	³ / ₄	—	—	6650	6650	
CB9-10.5	GLULAM	3 ga x 3	7	10 ⁹ / ₁₆	8 ³ / ₄	8	—	2	³ / ₄	—	—	6650	6650	
CB1010	10x10	3 ga x 3	3	9 ¹ / ₂	9 ¹ / ₂	8	—	2	³ / ₄	—	—	6650	6650	
CB1012	10x12	3 ga x 3	3	9 ¹ / ₂	11 ¹ / ₂	8	—	2	³ / ₄	—	—	6650	6650	
CB1212	12x12	3 ga x 3	3	11 ¹ / ₂	11 ¹ / ₂	8	—	2	³ / ₄	—	—	6650	6650	

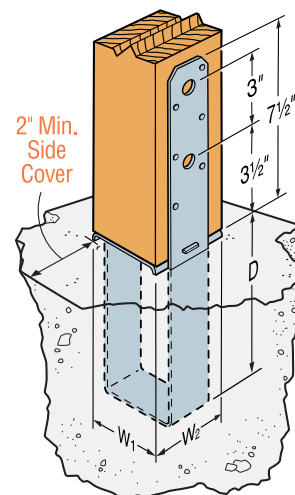
1. Uplift loads have been increased 33% and 60% for earthquake or wind loading, with no further increase allowed; reduce where other loads govern.

2. PSL is parallel strand lumber.

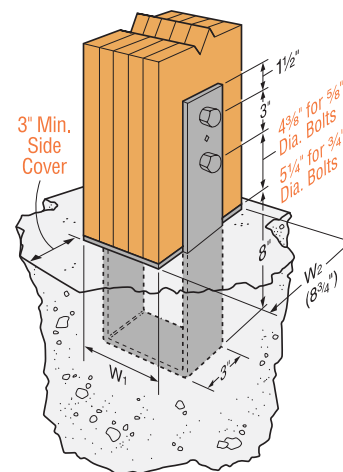
3. LCB nail or bolt loads do not combine.

4. When using structural composite lumber columns, screws must be applied to the wide face of the column.

5. NAILS: 16d = 0.162" dia. x 3 1/2" long. See page 16-17 for other nail sizes and information.



LCB



CB9
(CB5, CB7 similar)
for Glulam Column

BC/BCS Post Caps

The BCS allows for the connection of 2-2x's to a 4x post or 3-2x's to a 6x post. Double shear nailing between beam and post gives added strength! The BC series offers dual purpose post cap/base for light cap or base connections.

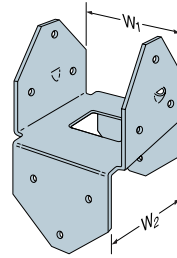
MATERIAL: 18 gauge

FINISH: Galvanized. Some products available in Z-MAX; see Corrosion-Resistance, page 6-7.

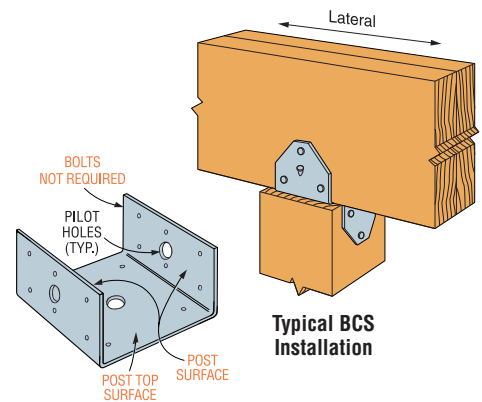
INSTALLATION:

- Use all specified fasteners. See General Notes.
- If $\frac{3}{16}$ " pilot holes are bolted, no additional load is achieved.
- BCS: install dome nails on beam; drive nails at an angle through the beam into the post below to achieve the table loads
- BC: install with 16d commons or 16dx2½" joist hanger nails.
- Post bases do not provide adequate resistance to prevent members from rotating about the base and therefore are not recommended for non top-supported installations (such as fences or unbraced carports).

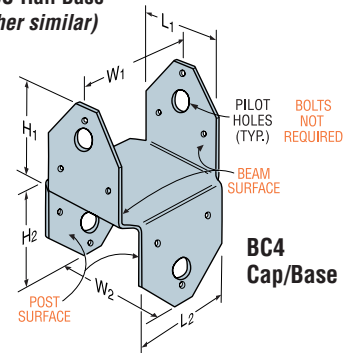
CODES: See page 12 for Code Listing Key Chart.



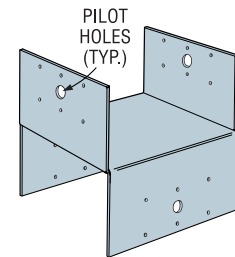
BCS2-2/4
U.S. Patent
5,603,580



BC60 Half Base
(other similar)



BC4
Cap/Base



BC8
Cap/Base

Model No.	Dimensions						Fasteners (Each Side)			Allowable Loads (133 & 160) ¹		Code Ref.
	W ₁	W ₂	L ₁	L ₂	H ₁	H ₂	Beam Surface	Post Surface	Post Top Surface	Uplift	Lateral	
CAPS												
BC4	3 ⁹ / ₁₆	3 ⁹ / ₁₆	2 ⁷ / ₈	2 ⁷ / ₈	3	3	3-16d	3-16d	—	980	1000	4, 37, 87 121
BC46	3 ⁹ / ₁₆	5 ¹ / ₂	4 ⁷ / ₈	2 ⁷ / ₈	3 ¹ / ₂	2 ¹ / ₂	6-16d	3-16d	—	980	1000	
BC4R	4	4	4	4	3	3	6-16d	6-16d	—	980	1000	
BC6	5 ¹ / ₂	5 ¹ / ₂	4 ³ / ₈	4 ³ / ₈	3 ³ / ₈	3 ³ / ₈	6-16d	6-16d	—	1050	2000	
BC6R	6	6	6	6	3	3	6-16d	6-16d	—	1050	2000	
BC8	7 ¹ / ₂	7 ¹ / ₂	7 ¹ / ₂	7 ¹ / ₂	4	4	6-16d	6-16d	—	1800	2000	33, 122
BCS2-2/4	3 ¹ / ₈	3 ⁹ / ₁₆	2 ⁷ / ₈	2 ⁷ / ₈	2 ¹⁵ / ₁₆	2 ¹⁵ / ₁₆	4-10d	3-10d	—	780	1025	
BCS2-3/6	4 ⁵ / ₈	5 ⁹ / ₁₆	4 ³ / ₈	2 ⁷ / ₈	3 ⁹ / ₁₆	2 ¹⁵ / ₁₆	6-16d	3-16d	—	800	1495	
BASES												
BC40	3 ⁹ / ₁₆	—	3 ¹ / ₄	—	2 ¹ / ₄	—	3-16d	—	4-16d	—	535	170
BC40R	4	—	4	—	3	—	4-16d	—	4-16d	—	535	
BC460	5 ¹ / ₂	—	3 ³ / ₈	—	3	—	4-16d	—	4-16d	—	535	
BC60	5 ¹ / ₂	—	5 ¹ / ₂	—	3	—	6-16d	—	4-16d	—	535	
BC60R	6	—	6	—	3	—	6-16d	—	4-16d	—	535	

1. Allowable loads have been increased 33% and 60% for earthquake or wind loading with no further increase allowed; reduce where other loads govern.

2. NAILS: 16d = 0.162" dia. x 3½" long,
10d = 0.148" dia. x 3" long.
See page 16-17 for other nail sizes and information.

LCC Lally Column Caps

Lally column caps provide adequate bearing length for larger girder reactions.

MATERIAL: 12 gauge **FINISH:** Simpson gray paint

INSTALLATION: • Use all specified fasteners. See General Notes.

- Fit the lally column cap over the lally column and attach to the girder.

CODES: See page 12 for Code Listing Key Chart.

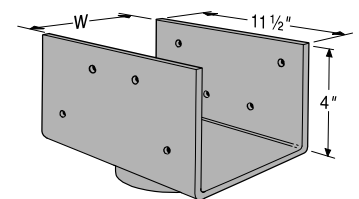
Model No.	W	Girder	Nails	Lally Column Outside Dia.	Allowable Loads				Code Ref.
					Download		F ₁		
					DF/SP/SPF	LVL/PSL	(133)	(160)	
LCC4.5-3.5	4½	Triple 2x10/12	8-16d	3½	15820	—	1345	1615	170
LCC4.5-4	4½	Triple 2x10/12	8-16d	4	20670	—	1345	1615	
LCC6-3.5	6½	Quad 2x10/12	8-16d	3½	15820	—	1345	1615	
LCC6-4	6½	Quad 2x10/12	8-16d	4	20670	—	1345	1615	
LCC3.5-3.5	3½	3.5 LVL/PSL	8-16d	3½	—	15820	1345	1615	
LCC3.5-4	3½	3.5 LVL/PSL	8-16d	4	—	20670	1345	1615	
LCC5.25-3.5	5½	5.25 LVL/PSL	8-16d	3½	—	15820	1345	1615	
LCC5.25-4	5½	5.25 LVL/PSL	8-16d	4	—	20670	1345	1615	
LCC7-3.5	7½	7 LVL/PSL	8-16d	3½	—	15820	1345	1615	
LCC7-4	7½	7 LVL/PSL	8-16d	4	—	20670	1345	1615	

1. Loads may not be increased for short-term loading.
2. Allowable loads are determined using the lowest of the bearing loads using F_c equal to 425 psi for SPF, 625 psi for DF and 700 for LVL/PSL, or the 8" lally column capacity.
3. Loads are for a continuous beam.
4. Spliced conditions must be detailed by the Designer to transfer tension loads between spliced members by

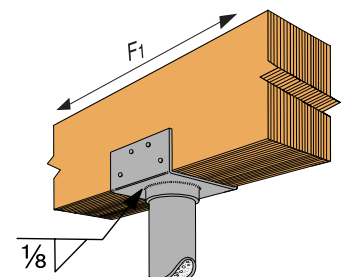
means other than the lally column. The splice condition load is 6750 lbs per beam side and the lally cap must be evenly loaded.

5. To achieve lateral loads, LCC pipe must be welded to the column with an ⅛" fillet weld around the entire pipe.

6. NAILS: 16d = 0.162" dia. x 3½" long.
See page 16-17 for other nail sizes and information.



LCC5.25-3.5



Typical LCC5.25-3.5 Installation
connecting a 3 ply LVL and
a 3½" diameter steel column

AC/LPC/LCE Post Caps

The LCE4's universal design provides high capacity while eliminating the need for rights and lefts. For use with 4x or 6x lumber. LPC—Adjustable design allows greater connection versatility.

MATERIAL: LCE4—20 ga; AC, ACE, LPC4—18 ga; LPC6—16 ga

FINISH: Galvanized. Some products available in Z-MAX and stainless steel; see Corrosion-Resistance, page 6-7.

INSTALLATION: • Use all specified fasteners. See General Notes.

- Install all models in pairs. LPC—2½" beams may be used if 10dx1½" nails are substituted for 10d commons.

CODES: See page 12 for Code Listing Key Chart.

Available with additional corrosion protection. Check with factory.

Model No.	Dimensions		Total No. Fasteners		Allowable Loads (133 & 160) ¹		Code Ref.
	W	L	Beam	Post	Uplift	Lateral	
AC4 (Min)	3⅞	6½	12-16d	8-16d	1430	715	4, 37, 87, 121
AC4 (Max)	3⅞	6½	14-16d	14-16d	2500	1070	
AC4R (Min)	4	7	12-16d	8-16d	1430	715	
AC4R (Max)	4	7	14-16d	14-16d	2500	1070	37
ACE4 (Min)	—	4½	8-16d	6-16d	1070	715	4, 37, 87, 121
ACE4 (Max)	—	4½	10-16d	10-16d	1785	1070	
LCE4	—	5⅞	14-16d	10-16d	1880	1425	
AC6 (Min)	5½	8½	12-16d	8-16d	1430	715	4, 37, 87, 121
AC6 (Max)	5½	8½	14-16d	14-16d	2500	1070	
AC6R (Min)	6	9	12-16d	8-16d	1430	715	
AC6R (Max)	6	9	14-16d	14-16d	2500	1070	37
ACE6 (Min)	—	6½	8-16d	6-16d	1070	715	4, 37, 87, 121
ACE6 (Max)	—	6½	10-16d	10-16d	1785	1070	
LPC4	3⅞	3½	8-10d	8-10d	760	325	7, 121
LPC6	5⅞	5½	8-10d	8-10d	915	490	8, 36, 121

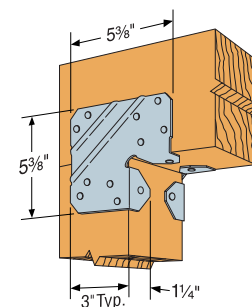
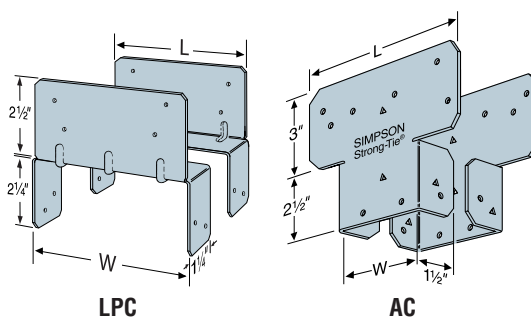
1. Allowable loads have been increased for earthquake or wind **load durations** with no further increase allowed; reduce where other **load durations** govern.
2. Loads apply only when used in pairs.

3. LPC lateral load is in the direction parallel to the beam.

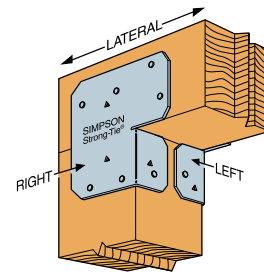
4. MIN nailing quantity and load values—fill all round holes;

- MAX nailing quantities and load values—fill round and triangle holes.

5. Uplift loads do not apply to splice conditions.



Typical LCE4 Installation
(For 4x or 6x lumber)



Typical ACE Installation

6. Spliced conditions must be detailed by the Designer to transfer tension loads between spliced members by means other than the post cap.

7. NAILS: 16d = 0.162" dia. x 3½" long, 10d = 0.148" dia. x 3" long. See page 16-17 for other nail sizes and information.

PC/EPC Post Caps

A custom connection for post-beam combinations at medium design loads.

MATERIAL: PC—12 gauge; PC-16—16 gauge

FINISH: Galvanized. Some products available in Z-MAX; see Corrosion-Resistance, page 6-7.

INSTALLATION: • Use all specified fasteners; see General Notes.

- If ⅞" pilot holes are bolted, no additional load is achieved.

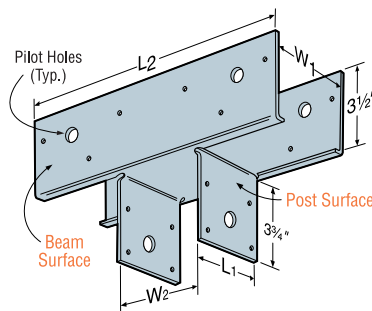
OPTIONS: • For end conditions, specify EPC post caps, providing dimensions are in accordance with table; see illustration.

- Some PC and EPC models are available in rough sizes.

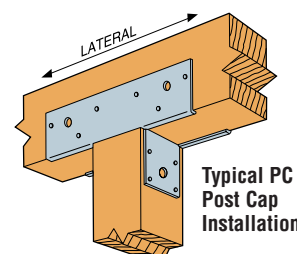
- For heavy duty applications, see CC and CCQ series.

CODES: See page 12 for Code Listing Key Chart.

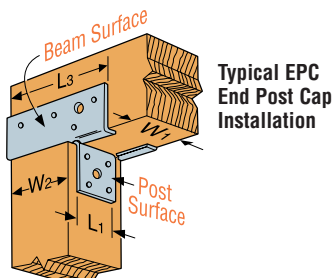
Available with additional corrosion protection. Check with factory.



PC



Typical PC Post Cap Installation



Typical EPC End Post Cap Installation

Model No.	Min Post Size	Dimensions					Fasteners Each Side			Allowable Loads				Code Ref.
		W ₁	W ₂	L ₁	L ₂	L ₃	Surfaces			Uplift PC/EPC		Lateral ²		
							Post	Beam PC	Beam EPC	(133)	(160)	PC (133/160)	EPC (133/160)	
PC44-16	4x4	3⅞	3⅞	2⅞	11	7⅞	4-16d	6-16d	4-16d	1000	1000	925	1000	7, 90, 121
PC44	4x4	3⅞	3⅞	2⅞	11	7⅞	4-16d	6-16d	4-16d	1470	1700	925	1070	
PC46-16	4x6	3⅞	5½	2⅞	13	9¼	4-16d	6-16d	4-16d	1000	1000	925	1000	
PC46	4x6	3⅞	5½	2⅞	13	9¼	4-16d	6-16d	4-16d	1470	1700	925	1070	
PC48-16	4x8	3⅞	7½	2⅞	15	11¼	4-16d	8-16d	6-16d	1000	1000	1475	1285	
PC48	4x8	3⅞	7½	2⅞	15	11¼	4-16d	8-16d	6-16d	1470	1700	2075	1610	
PC64-16	4x6	5½	3⅞	4⅞	11	7⅞	4-16d	6-16d	4-16d	1000	1000	925	1000	
PC64	4x6	5½	3⅞	4⅞	11	7⅞	4-16d	6-16d	4-16d	1470	1700	925	1070	
PC66-16	6x6	5½	5½	4⅞	13	9¼	4-16d	6-16d	6-16d	1000	1000	925	1285	
PC66	6x6	5½	5½	4⅞	13	9¼	4-16d	6-16d	6-16d	1470	1700	925	1610	
PC68	6x8	5½	7½	4⅞	15	11¼	4-16d	8-16d	6-16d	1470	1700	2075	1610	
PC84	4x8	7½	3⅞	6⅞	11	7⅞	4-16d	6-16d	6-16d	1470	1700	925	1610	
PC86	6x8	7½	5½	6⅞	13	9¼	4-16d	6-16d	6-16d	1470	1700	925	1610	
PC88	8x8	7½	7½	6⅞	15	11¼	4-16d	8-16d	6-16d	1470	1700	2075	1610	

1. Allowable loads have been increased for earthquake or wind **load durations** with no further increase allowed; reduce where other **load durations** govern.
2. Lateral loads are in the direction parallel to the beam.
3. Allowable loads are for nails only.
4. Uplift loads do not apply to splice conditions.
5. Spliced conditions must be detailed by the Designer to transfer tension loads between spliced members by means other than the post cap.
6. NAILS: 16d = 0.162" dia. x 3½" long. See page 16-17 for other nail sizes and information.



This product is preferable to similar connectors because of a) easier installation, b) higher loads, c) lower installed cost, or a combination of these features.

This design uses SDS screws to provide faster installation and **provides a greater net section area of the column compared to bolts**. The SDS screws provide for a lower profile compared to standard through bolts.

MATERIAL: CCQ3, ECCQ3, CCQ4, ECCQ4, CCQ6, ECCQ6—7 gauge; all others—3 gauge.

FINISH: Simpson gray paint, available in HDG with HDG screws.

CCQ and ECCQ—no finish

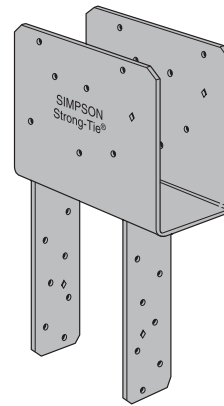
INSTALLATION: • Fasteners provided. See General Notes.

- Install Simpson's SDS $\frac{1}{4}$ " x $2\frac{1}{2}$ " wood screws, which are provided with the column cap. (*Lag screws will not achieve the same load.*)

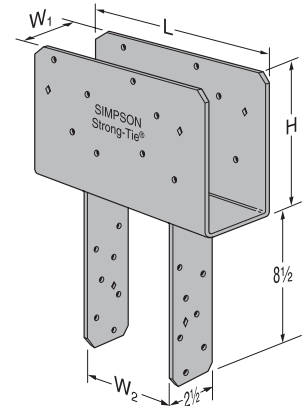
OPTIONS:

- Straps may be rotated 90° where $W_1 \geq W_2$. For end conditions, specify ECCQ. Loads do not apply to CCQ and ECCQ. **CCQ and ECCQ column cap only (no straps) may be ordered for field-welding to pipe or other columns. No loads apply. Dimensions are same as CCQ and ECCQ.**

CODES: See page 12 for Code Listing Key Chart.



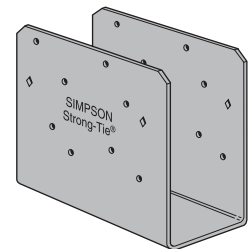
ECCQ46SDS2.5



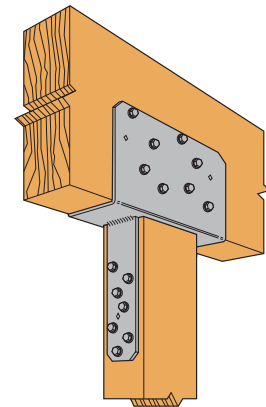
CCQ46SDS2.5

Available with additional corrosion protection. Check with factory.

Model No.	Beam Width	Dimensions					No. of ⁹ SDS 1/4" x 1/2" Screws		Allowable Loads					Code Ref.
		W ₁	W ₂	L		H			CCQ		ECCQ			
				CCQ	ECCQ				Uplift	Down	Uplift	Down		
				(133)	(160)	(100)	(133/160)	(100)						
CCQ3-4SDS2.5	3 1/8	3 1/4	3 3/8	11	8 1/2	7	16	14	5680	5680	19250	3695	6125	46, 107, 124
CCQ3-6SDS2.5	3 1/8	3 1/4	5 1/2	11	8 1/2	7	16	14	5680	5680	19250	3695	9625	
CCQ44SDS2.5	4x	3 3/8	3 3/8	11	8 1/2	7	16	14	5680	5680	24065	4040	7655	
CCQ46SDS2.5	4x	3 3/8	5 1/2	11	8 1/2	7	16	14	5955	7145	24065	4040	12030	
CCQ48SDS2.5	4x	3 3/8	7 1/2	11	8 1/2	7	16	14	5955	7145	24065	4040	16405	
CCQ5-4SDS2.5	5 1/8	5 1/4	3 3/8	11	8 1/2	7	16	14	5680	5680	31570	4040	10045	
CCQ5-6SDS2.5	5 1/8	5 1/4	5 1/2	11	8 1/2	7	16	14	6270	7245	31570	5535	15785	
CCQ5-8SDS2.5	5 1/8	5 1/4	7 1/2	11	8 1/2	7	16	14	6270	7245	31570	5535	21525	
CCQ64SDS2.5	6x	5 1/2	3 3/8	11	8 1/2	7	16	14	5680	5680	37815	4040	12030	
CCQ66SDS2.5	6x	5 1/2	5 1/2	11	8 1/2	7	16	14	5955	7145	37815	4040	18905	
CCQ68SDS2.5	6x	5 1/2	7 1/2	11	8 1/2	7	16	14	5955	7145	37815	4040	25780	
CCQ6-7.13SDS2.5	6x	5 1/2	7 1/8	11	8 1/2	7	16	14	5955	7145	37815	4040	24490	160
CCQ74SDS2.5	6 3/4	6 3/8	3 3/8	11	8 1/2	7	16	14	5680	5680	41580	4040	13230	46, 107, 124
CCQ76SDS2.5	6 3/4	6 3/8	5 1/2	11	8 1/2	7	16	14	6270	7245	41580	5535	20790	
CCQ77SDS2.5	6 3/4	6 3/8	6 3/8	11	8 1/2	7	16	14	6270	7245	41580	5535	25515	
CCQ78SDS2.5	6 3/4	6 3/8	7 1/2	11	8 1/2	7	16	14	6270	7245	41580	5535	28350	
CCQ7.1-4SDS2.5	7	7 1/8	3 3/8	11	8 1/2	7	16	14	5680	5680	57750	4040	19030	160
CCQ7.1-6SDS2.5	7	7 1/8	5 1/2	11	8 1/2	7	16	14	6270	7245	57750	5535	28875	
CCQ7.1-7.1SDS2.5	7	7 1/8	7 1/8	11	8 1/2	7	16	14	6270	7245	57750	5535	37405	
CCQ7.1-8SDS2.5	7	7 1/8	7 1/2	11	8 1/2	7	16	14	6270	7245	57750	5535	39375	
CCQ86SDS2.5	8x	7 1/2	5 1/2	11	8 1/2	7	16	14	6270	7245	51565	5535	25780	
CCQ88SDS2.5	8x	7 1/2	7 1/2	11	8 1/2	7	16	14	6270	7245	51565	5535	35155	
CCQ96SDS2.5	8 3/4	8 1/8	5 1/2	11	8 1/2	7	16	14	6270	7245	53900	5535	26950	
CCQ98SDS2.5	8 3/4	8 1/8	7 1/2	11	8 1/2	7	16	14	6270	7245	53900	5535	36750	
CCQ106SDS2.5	10x	9 1/2	5 1/2	11	8 1/2	7	16	14	6270	7245	65315	5535	32655	



CCQ4-SDS2.5



Typical CCQ46SDS2.5 Installation

1. Downloads are determined using F_c equal to: 560 psi for glulam sizes and 625 psi for all others; reduce where end grain bearing or buckling capacity of the column, or other criteria are limiting.
2. Spliced conditions must be detailed by the Designer to transfer tension loads between spliced members by means other than the column cap.
3. Uplift loads do not apply to splice conditions.
4. Post sides are assumed to lie in the same vertical plane as the beam sides.
5. Loads may not be increased for short-term loading.
6. Uplift loads have been increased for earthquake or wind load durations with no further increase allowed; reduce where other load durations govern.
7. ECCQ downloads assume a post of $W_1 \times W_2$.
8. When using structural composite lumber columns, screws must be applied to the wide face of the column.
9. ECCQ uses 14-SDS screws into the beam and 14-SDS screws into the post.
10. Beam depth must be greater than 7".

CC Column Caps

MATERIAL: CC3¼, CC44, CC46, CC48, CC64, CC66, CC68, CC6-7½—7 gauge;
all others—3 gauge

FINISH: Simpson gray paint; may be ordered HDG; CCO—no finish.

INSTALLATION: • Use all specified fasteners. See General Notes.

- Bolt holes shall be a minimum of 1/32" to a maximum of 1/16" larger than the bolt diameter (*per 2001 NDS, section 11.1.2*).
- Contact engineered wood manufacturers for connections that are not through the wide face.

OPTIONS: • Straps may be rotated 90° where $W_1 \geq W_2$ (*see illustration*).

- For special, custom, or rough cut lumber sizes, provide dimensions. An optional W_2 dimension may be specified with any column size given (*note that the W_2 dimension on straps rotated 90° is limited by the W_1 dimension*).

- Column caps with W_1 , L , H_1 , and hole schedules different from the table may be special ordered. Provide a drawing to ensure accuracy.

CCO—Column cap only (*no straps*) may be ordered for field-welding to pipe or other columns. **No loads apply. CCO dimensions are the same as CC.**

CCOB—Any two CCOs may be specified for back-to-back welding to create a cross beam connector. Use the table loads; the load is no greater than the lesser element employed.

CCC/CCT—Cross Column Cap/T Column Cap. 7 gauge stirrups may be welded to column cap sides. Uplift loads do not apply to side stirrups. **Column cap only (*no straps*) may be ordered for field-welding to pipe or other columns. No loads apply. Specify CCO/CCOT.**

The following criteria apply:

1. The side stirrup maximum allowable download cannot exceed 40% of the download in the table for the unmodified product, and cannot exceed 10,665 lbs. The sum of the loads cannot exceed the table load. The column width in the direction of the beam width must be the same as the beam width: W_1 .
2. Specify the stirrup height from the top of the cap. The minimum H_2/H_3 for the stirrup is 6½" (3½" for 44s).
3. The L dimension may vary depending on W_3 or W_4 .

Ordering examples: A CCC66 with $W_3 = 5½"$, H_2 and $H_3 = 6½"$ is a CC66 column cap with 5½" beams on each side with all beam seats flush.

CODES: See page 12 for Code Listing Key Chart.

Available with additional corrosion protection. Check with factory.

Model No.	Beam Width	Dimensions				Fasteners				Allowable Loads			Code Ref.
		W_1	W_2	L	H_1	Beam Qty	Beam Dia	Post Qty	Post Dia	Uplift (133)	Uplift (160)	Down (100)	
CC3¼-4	3½	3¼	3¾	11	6½	4	5/8	2	5/8	3035	3640	19250	20, 80, 124
CC3¼-6	3½	3¼	5½	11	6½	4	5/8	2	5/8	3035	3640	19250	
CC44	4x	3¾	3¾	7	4	2	5/8	2	5/8	1220	1465	15310	
CC46	4x	3¾	5½	11	6½	4	5/8	2	5/8	2330	2800	24060	
CC48	4x	3¾	7½	11	6½	4	5/8	2	5/8	2330	2800	24060	
CC5¼-4	5½	5¼	3¾	13	8	4	¾	2	¾	6305	7530	37310	
CC5¼-6	5½	5¼	5½	13	8	4	¾	2	¾	6275	7530	37310	
CC5¼-8	5½	5¼	7½	13	8	4	¾	2	¾	6275	7530	37310	
CC64	6x	5½	3¾	11	6½	4	5/8	2	5/8	3365	4040	37810	
CC66	6x	5½	5½	11	6½	4	5/8	2	5/8	3365	4040	37810	
CC68	6x	5½	7½	11	6½	4	5/8	2	5/8	3365	4040	37810	
CC6-7½	6x	5½	7½	11	6½	4	5/8	2	5/8	3365	4040	37810	
CC7¼-4	7	7½	3¾	13	8	4	¾	2	¾	6260	7510	68250	
CC7¼-6	7	7½	5½	13	8	4	¾	2	¾	6320	7585	68250	
CC7¼-7½	7	7½	7½	13	8	4	¾	2	¾	6320	7585	68250	
CC7¼-8	7	7½	7½	13	8	4	¾	2	¾	6320	7585	68250	
CC74	6¾	6¾	3¾	13	8	4	¾	2	¾	6270	7525	49140	
CC76	6¾	6¾	5½	13	8	4	¾	2	¾	6270	7525	49140	
CC77	6¾	6¾	6¾	13	8	4	¾	2	¾	6270	7525	49140	
CC78	6¾	6¾	7½	13	8	4	¾	2	¾	6270	7525	49140	
CC86	8x	7½	5½	13	8	4	¾	2	¾	6200	7440	54600	
CC88	8x	7½	7½	13	8	4	¾	2	¾	6200	7440	54600	
CC96	8¾	8¾	5½	13	8	4	¾	2	¾	6260	7515	63700	
CC98	8¾	8¾	7½	13	8	4	¾	2	¾	6260	7515	63700	
CC106	10x	9½	5½	13	8	4	¾	2	¾	6260	7515	69160	

1. Post sides are assumed to lie in the same vertical plane as the beam sides.

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

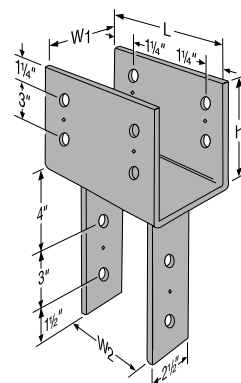
3. Downloads are determined using F_{cL} equal to:
560 psi for glulam sizes and CC86, CC88 and CC106;
750 psi for 7½" size; 625 psi for all others; reduce where end grain bearing or buckling capacity of the column, or other criteria are limiting.

4. Uplift loads have been increased for earthquake or wind load durations with no further increase allowed; reduce where other load durations govern. Uplift loads are limited by the beam shear capacity per 2001 NDS except CC76, CC78, and CC96 through CC106.

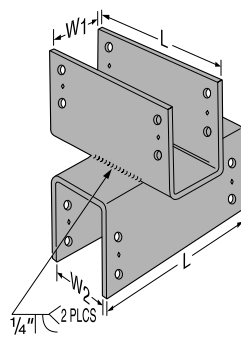
5. Spliced conditions must be detailed by the Designer to transfer tension loads between spliced members by means other than the column cap.

6. Uplift loads do not apply to splice conditions.

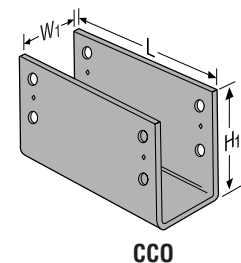
7. Beam depth must be greater than H_1 .



CC

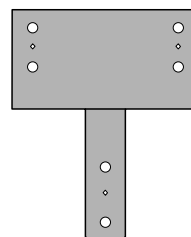


CCOB



CCO

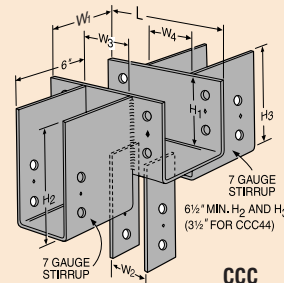
Side stirrups are available in different depths.



Optional CC with straps rotated 90°

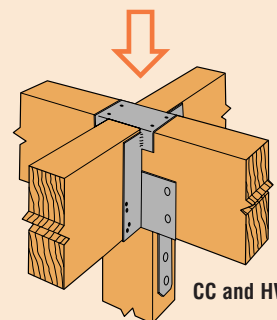
There are cost-effective alternatives for replacing column caps by using a combination of connectors. Here are some examples. Designer must specify the options required.

NOTE: The side stirrup will be welded flush with the top of the main cap.



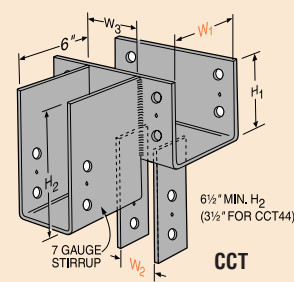
CCC

Instead of the column cap, consider this connector combination.



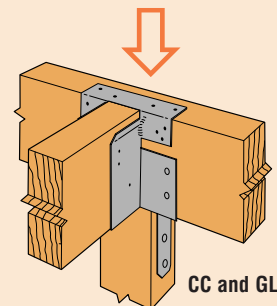
CC and HWD

NOTE: The side stirrup will be welded flush with the top of the main cap.



CCT

Instead of the column cap, consider this connector combination.



CC and GLT

Side stirrups are available in different depths.

Order each connector separately. Specify all side stirrup widths and heights

For more information, request Form T-CC and the Product Worksheet.

ECC/ECCU Column Caps

MATERIAL: ECC3/4, ECC44, ECC46, ECC48, ECC64, ECC66, ECC68, ECC6-7/8—7 gauge; all others—3 gauge

FINISH: Simpson gray paint; may be ordered HDG, ECCO—no finish.

INSTALLATION: • Use all specified fasteners. See General Notes.

- Bolt holes shall be a minimum of $\frac{1}{32}$ " to a maximum of $\frac{1}{16}$ " larger than the bolt diameter (per 2001 NDS, section 11.1.2).
- Contact engineered wood manufacturers for connections that are not through the wide face.

OPTIONS: • Straps may be rotated 90° where $W_1 \geq W_2$ (see illustration).

- For special, custom, or rough cut lumber sizes, provide dimensions. An optional W_2 dimension may be specified with any column size given (note that the W_2 dimension on straps rotated 90° is limited by the W_1 dimension).
- Column caps with W_1 , L , H_1 , and hole schedules different from the table may be special ordered. Provide a drawing to ensure accuracy. Loads may not apply.

ECCO—Column cap only (no straps) may be ordered for field-welding to pipe or other columns. **No loads apply. ECCO dimensions are the same as ECC.**

ECCU—Order for uplift applications. See T-ECCUP for ordering information.

ECCL—L Column Cap. 7 gauge stirrups may be welded to column cap sides.

ECCL has no uplift loads. Column cap only (no straps) may be ordered for field-welding to pipe or other columns. No loads apply. Specify ECCOL and direction left or right.

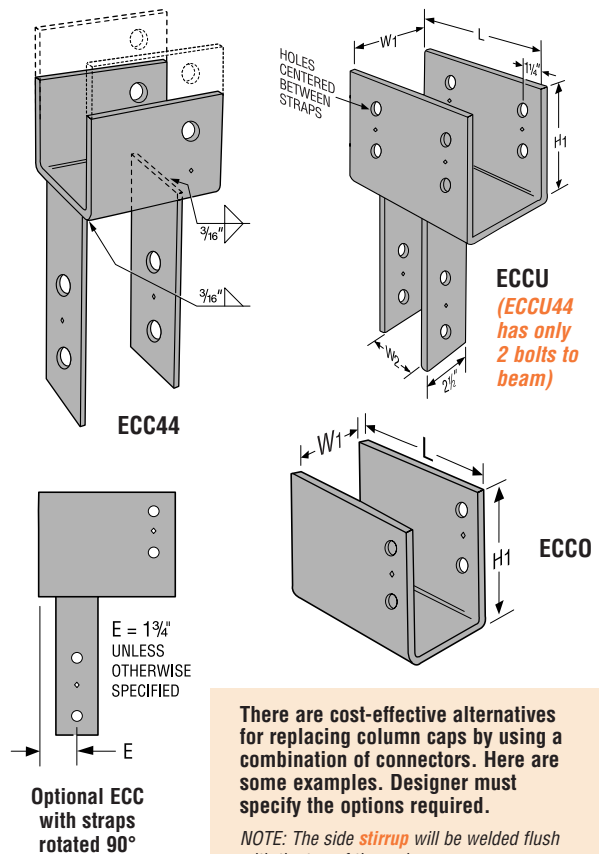
The following criteria apply:

1. The side stirrup maximum allowable download cannot exceed 40% of the download in the table for the unmodified product, and cannot exceed 10,665 lbs. The sum of the loads cannot exceed the table load. The column width in the direction of the beam width must be the same as the beam width: W_1 .
2. Specify the stirrup height from the top of the cap. The minimum H_2/H_3 for the stirrup is $6\frac{1}{2}$ " ($3\frac{1}{2}$ " for 44s).
3. The L dimension may vary depending on W_3 or W_4 .

Ordering examples: An ECCL66 with $W_3 = 3\frac{5}{8}$ ", $H_2 = 7\frac{1}{2}$ " is an ECC66 end column cap with a 4x beam on the right side (specify **direction left or right (left is shown)** for stirrup) and stirrup seat 1" below the cap seat.

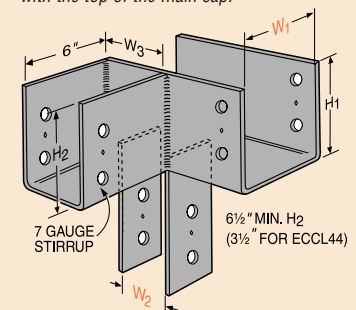
CODES: See page 12 for Code Listing Key Chart.

Available with additional corrosion protection. Check with factory.



There are cost-effective alternatives for replacing column caps by using a combination of connectors. Here are some examples. Designer must specify the options required.

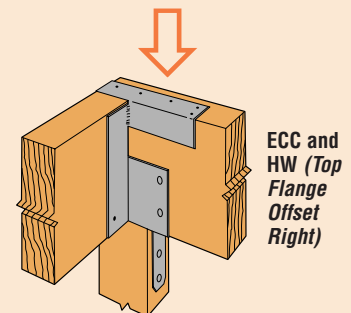
NOTE: The side stirrup will be welded flush with the top of the main cap.



ECCL (for left), shown above. Order ECCLR for right condition.

Side stirrups are available in different depths.

Instead of the column cap, consider this connector combination.



Order each connector separately. Specify all side stirrup widths and heights

For more information, request Form T-CC and the Product Worksheet.

Model No.	Beam Width	Dimensions					Fasteners					Allowable Loads		Code Ref.
		W ₁	W ₂	L ECC	L ECCU	H ₁	Beam		Post			Uplift ECCU (133/160)	Down ECC/ECCU (100)	
							Qty ECC	ECCU	Dia	Qty	Dia			
ECC3¼-4	3½	3¼	3⅝	7½	9½	6½	2	4	⅝	2	⅝	1010	6125	20, 80
ECC3¼-6	3½	3¼	5½	7½	9½	6½	2	4	⅝	2	⅝	1010	9625	
ECC44	4x	3⅝	3⅝	5½	6½	4	1	2	⅝	2	⅝	205	7655	
ECC46	4x	3⅝	5½	8½	9½	6½	2	4	⅝	2	⅝	740	12030	
ECC48	4x	3⅝	7½	8½	9½	6½	2	4	⅝	2	⅝	740	16405	
ECC5¼-4	5½	5¼	3⅝	9½	10½	8	2	4	¾	2	¾	2735	10045	
ECC5¼-6	5½	5¼	5½	9½	10½	8	2	4	¾	2	¾	2735	15785	
ECC5¼-8	5½	5¼	7½	9½	10½	8	2	4	¾	2	¾	2735	21525	
ECC64	6x	5½	3⅝	7½	9½	6½	2	4	⅝	2	⅝	1165	12030	
ECC66	6x	5½	5½	7½	9½	6½	2	4	⅝	2	⅝	1165	18905	
ECC68	6x	5½	7½	9½	9½	6½	2	4	⅝	2	⅝	1165	25780	
ECC6-7⅙	6x	5½	7⅙	9½	9½	6½	2	4	⅝	2	⅝	1165	24060	
ECC7⅙-4	7	7⅙	3⅝	10½	10½	8	2	4	¾	2	¾	4855	18375	
ECC7⅙-6	7	7⅙	5½	10½	10½	8	2	4	¾	2	¾	4855	28875	
ECC7⅙-7⅙	7	7⅙	7⅙	10½	10½	8	2	4	¾	2	¾	4855	36750	
ECC7⅙-8	7	7⅙	7½	10½	10½	8	2	4	¾	2	¾	4855	36750	
ECC74	6¾	6⅞	3⅝	10½	10½	8	2	4	¾	2	¾	3605	13230	
ECC76	6¾	6⅞	5½	10½	10½	8	2	4	¾	2	¾	3605	20790	
ECC77	6¾	6⅞	6⅞	10½	10½	8	2	4	¾	2	¾	3605	25515	
ECC78	6¾	6⅞	7½	10½	10½	8	2	4	¾	2	¾	3605	28350	
ECC86	8x	7½	5½	10½	10½	8	2	4	¾	2	¾	2625	23100	
ECC88	8x	7½	7½	10½	10½	8	2	4	¾	2	¾	2625	31500	
ECC96	8¾	8⅞	5½	10½	10½	8	4	4	¾	2	¾	4670	26950	
ECC98	8¾	8⅞	7½	10½	10½	8	4	4	¾	2	¾	4670	36750	
ECC106	10x	9½	5½	10½	10½	8	4	4	¾	2	¾	3325	29260	

1. Post sides are assumed to lie in the same vertical plane as the beam sides.

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

3. Downloads are determined using $F_{c\perp}$ equal to: 560 psi for glulam sizes; 750 psi for 7/8" size; 625 psi for all others; where end grain bearing or buckling capacity of the column, or other criteria are limiting.

4. Uplift loads have been increased for earthquake or wind load durations with no further increase allowed; reduce where other load durations govern. Uplift loads are limited by the beam shear capacity per 2001 NDS.

5. ECC downloads assume a post of $W_1 \times W_2$.

6. Uplift loads assume minimum beam height of 11". Beam shear must be calculated for different heights. The load cannot be greater than listed.

7. Beam depth must be greater than H_1 .

STEEL STRONG-WALL®

We have responded to the needs of builders, specifiers and contractors who asked for improvements in our Strong-Wall shearwall. The result is the newest addition to the Strong-Wall line, our Steel Strong-Wall!

This composite shearwall boasts some of the highest allowable loads in the industry. Wood framing is preattached to interior and exterior finishes.

- **Stronger Wall:** Allowable loads are two to three times higher than the original Strong-Wall®.
- **Unique Design:** Resists distortion of the center section and results in sustained vertical load capacity.
- **Simplified Installation:** Fewer anchor bolts and SDS screws. Easy access at top and bottom for quick installation.
- **Contractor friendly:** Easy to use reversible template for concrete contractors and predrilled holes where electricians need them for wiring.
- **Support and Service:** Simpson provides the best engineering technical support and experienced field representation available.

MATERIAL:

- Vertical panel – 10 ga

FINISH:

- Vertical Panel - Galvanized
- Top and Base Plates - Simpson gray paint.

NOW CODE LISTED!

ICC-ES ESR-1679.

State of Florida FL5113

WALL PROFILES



SSW12



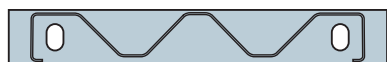
SSW15



SSW18



SSW21

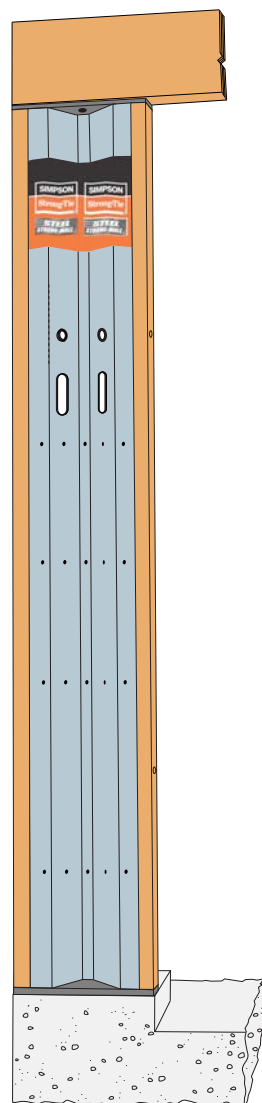


SSW24

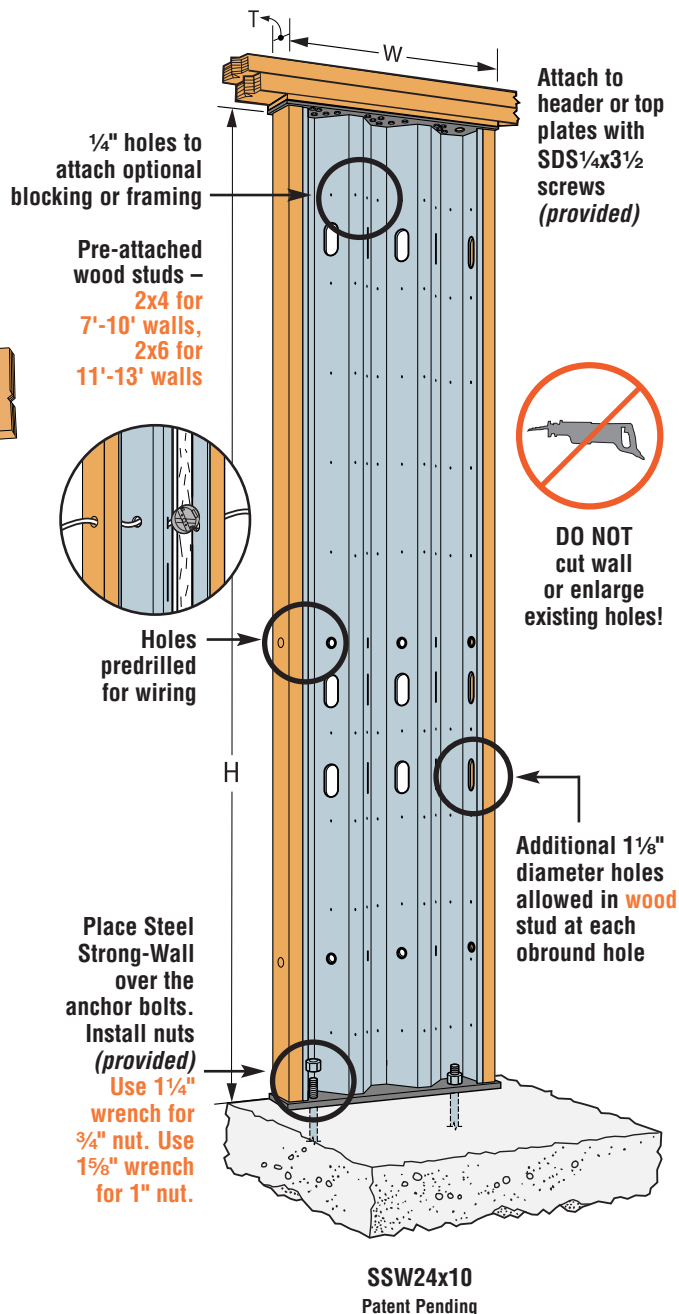
Maximum shim height between Steel Strong-Wall and top plates or header is 7/8" using SDS 1/4x3 1/2 screws. For additional shim height, see ICC-ES ESR-1679.

NOTE:

Walls may also be used in 2x6 wall framing. Install Steel Strong-Wall flush to one face of framing and add furring to opposite side.

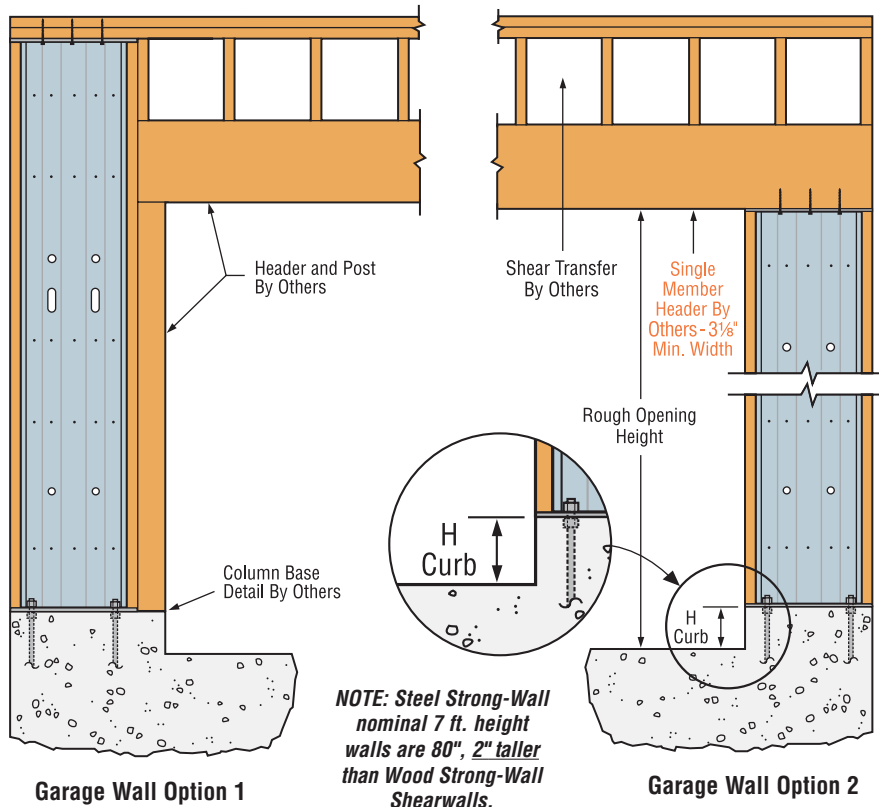


SSW12x7



NOTE: The Engineer of Record is responsible for concrete design.

STEEL STRONG-WALL®

GARAGE HEADER
ROUGH OPENING HEIGHT

Model No.	H Curb	Rough Opening Height
SSW12x7 SSW15x7 SSW18x7 SSW21x7 SSW24x7	5 1/2"	7'-1 1/2"
SSW12x8 SSW15x8 SSW18x8 SSW21x8 SSW24x8	6"	7'-2"
SSW12x8 SSW15x8 SSW18x8 SSW21x8 SSW24x8	5 1/2"	8'-2 3/4" ⁿ³
SSW12x8 SSW15x8 SSW18x8 SSW21x8 SSW24x8	6"	8'-3 1/4" ⁿ³

1. The height of the garage curb above the garage slab is critical for garage header opening at garage return walls.
2. Shims are not provided with Steel Strong-Wall.
3. Furring down garage header may be necessary for correct rough opening height.

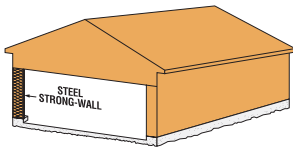
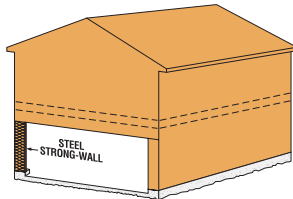
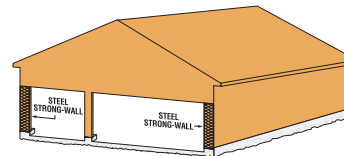
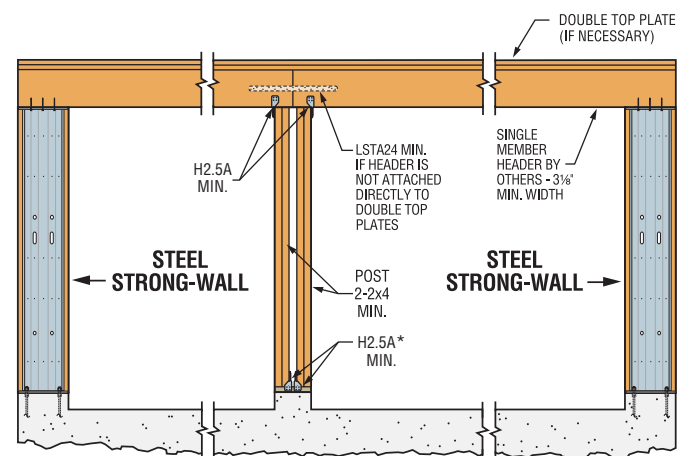
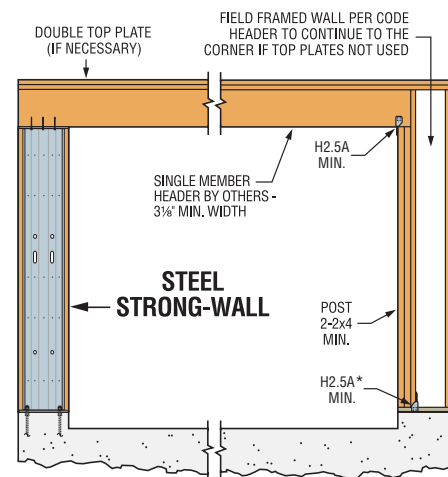
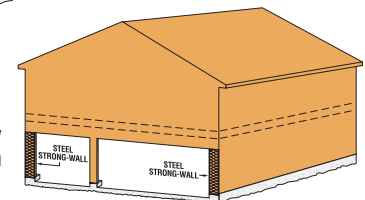
FOR GARAGE WALL OPTION 2

Engineer of Record shall design for:

1. Shear transfer
2. Out of plane loading effect
3. Increased overturning and drift due to additional height.

WALL BRACING APPLICATIONS

ICC-ES has approved the use of Steel Strong-Wall Shearwalls for wall bracing applications including a unique 1 for 2 substitution at garage fronts. This approved application allows only one Steel Strong-Wall panel to be used to meet the wall bracing requirements instead of the two site-built braced walls required by Code. See ICC-ES ESR-1679 or Technical Bulletin T-BRACEDWALL for additional information.

Single Story
Single Wall Application1st Story of a 2 Story
Single Wall ApplicationSingle Story
3 Car Garage Application1st Story of a 2 Story
3 Car Garage Application

*ZMAX connectors (for example, H2.5AZ) should be used when in contact with some preservative-treated woods. See www.strongtie.com for the most current information.

The building designer shall verify that these details are consistent with the complete load path requirements of the structure.

STEEL STRONG-WALL®

STEEL STRONG-WALL ON CONCRETE FOUNDATIONS

1997 UNIFORM BUILDING CODE AND 2000 INTERNATIONAL BUILDING CODE

Model No.	W	H	T	Qty of Top of Wall Screws ¹	Anchor Bolt dia. (2 per wall)	Seismic ²						Wind ³					
						2500 psi concrete			3000 psi concrete			2500 psi concrete			3000 psi concrete		
						Allowable ASD Shear V Load (lbs)	Drift at Allow. Shear V (in.)	Uplift at Allow. Shear V (lbs)	Allowable ASD Shear V Load (lbs)	Drift at Allow. Shear V (in.)	Uplift at Allow. Shear V (lbs)	Allowable ASD Shear V Load (lbs)	Drift at Allow. Shear V (in.)	Uplift at Allow. Shear V (lbs)	Allowable ASD Shear V Load (lbs)	Drift at Allow. Shear V (in.)	Uplift at Allow. Shear V (lbs)
SSW12x7	12	80	3½	4	¾"	1230	0.33	12760	1230	0.33	11255	1345	0.35	15270	1540	0.41	16670
SSW12x8	12	93¼	3½	4	¾"	985	0.41	11150	985	0.41	10010	1155	0.48	15270	1230	0.51	14595
SSW12x9	12	105¼	3½	4	¾"	785	0.47	9200	785	0.47	8405	1015	0.61	15110	1015	0.61	12920
SSW12x10	12	117¼	3½	4	¾"	630	0.52	7620	630	0.52	7045	820	0.68	12120	820	0.68	10770
SSW15x7	15	80	3½	6	1"	1850	0.23	14160	1850	0.23	12940	2270	0.29	20755	2310	0.29	18395
SSW15x8	15	93¼	3½	6	1"	1500	0.31	12915	1500	0.31	11900	1875	0.38	19180	1875	0.38	16800
SSW15x9	15	105¼	3½	6	1"	1270	0.37	12025	1270	0.37	11140	1590	0.47	17625	1590	0.47	15670
SSW15x10	15	117¼	3½	6	1"	1090	0.44	11130	1090	0.44	10360	1360	0.55	16135	1360	0.55	14530
SSW15x11	15	129¼	5½	6	1"	940	0.51	10300	940	0.51	9630	1175	0.63	14820	1175	0.63	13480
SSW15x12	15	141¼	5½	6	1"	815	0.58	9480	815	0.58	8900	1020	0.73	13560	1020	0.73	12440
SSW18x7	18	80	3½	9	1"	3585	0.24	26880	3630	0.24	23725	3585	0.24	26880	4365	0.29	33055
SSW18x8	18	93¼	3½	9	1"	3075	0.32	26880	3110	0.33	23695	3075	0.32	26880	3745	0.39	33055
SSW18x9	18	105¼	3½	9	1"	2725	0.41	26880	2760	0.42	23785	2725	0.41	26880	3315	0.50	33055
SSW18x10	18	117¼	3½	9	1"	2445	0.51	26880	2465	0.52	23545	2445	0.51	26880	2980	0.63	33055
SSW18x11	18	129¼	5½	9	1"	2065	0.58	23365	2065	0.58	20825	2220	0.62	26880	2685	0.75	32625
SSW18x12	18	141¼	5½	9	1"	1710	0.63	19600	1710	0.63	17905	2030	0.75	26880	2220	0.82	27005
SSW18x13	18	153¼	5½	9	1"	1455	0.68	17225	1455	0.68	15935	1870	0.88	26880	1890	0.89	23635
SSW21x7	21	80	3½	12	1"	4600	0.19	26205	4740	0.20	24855	5210	0.22	33005	5900	0.24	35345
SSW21x8	21	93¼	3½	12	1"	4040	0.27	27255	4040	0.27	24590	4470	0.29	33005	5045	0.33	35160
SSW21x9	21	105¼	3½	12	1"	3555	0.34	26935	3555	0.34	24350	3960	0.38	33005	4440	0.42	34740
SSW21x10	21	117¼	3½	12	1"	3135	0.41	26160	3135	0.41	23745	3555	0.47	33005	3920	0.52	33715
SSW21x11	21	129¼	5½	12	1"	2860	0.50	26405	2860	0.50	23935	3225	0.57	33005	3575	0.63	34035
SSW21x12	21	141¼	5½	12	1"	2605	0.60	26180	2605	0.60	23760	2950	0.68	33005	3255	0.75	33740
SSW21x13	21	153¼	5½	12	1"	2315	0.68	24655	2315	0.68	22550	2720	0.80	33005	3005	0.89	33845
SSW24x7	24	80	3½	14	1"	5420	0.15	24555	5505	0.15	23410	6630	0.18	33990	6880	0.19	32240
SSW24x8	24	93¼	3½	14	1"	4750	0.21	25340	4750	0.21	23590	5820	0.26	35440	5935	0.26	32510
SSW24x9	24	105¼	3½	14	1"	4230	0.27	25565	4230	0.27	23780	5240	0.34	36530	5290	0.34	32805
SSW24x10	24	117¼	3½	14	1"	3800	0.34	25585	3800	0.34	23800	4750	0.42	37235	4750	0.42	32830
SSW24x11	24	129¼	5½	14	1"	3480	0.41	25960	3480	0.41	24110	4350	0.51	37940	4350	0.51	33310
SSW24x12	24	141¼	5½	14	1"	3200	0.50	26135	3200	0.50	24260	4000	0.62	38275	4000	0.62	33540
SSW24x13	24	153¼	5½	14	1"	2970	0.59	26405	2970	0.59	24485	3710	0.74	38880	3710	0.74	33885

1. SDS¼x3½ screws provided with wall.
2. For designs using R=5.5 per 1997 UBC or R=6.0 per 2000 IBC.
3. May also be used for Seismic designs using R=4.4 per 1997 UBC.
4. Loads applicable to designs using the ASD alternate basic load combinations of the UBC and IBC.
For designs per the ASD basic load combinations, divide shear, drift, uplift and axial values by 1.33.
5. Loads based on a 4000 lbs. total axial load acting on the entire panel in combination with the shear load.
Refer to ICC-ES ESR-1679 for corresponding shear loads at 1000 lbs. and 7500 lbs.
6. Uplifts are net overturning forces which include the effects of axial loading.
7. See Simpson catalog C-CFS06 for S/SSW models for Cold Form Steel Construction.
8. See page 61 for SSWAB anchor bolt information.

STEEL STRONG-WALL®

STEEL STRONG-WALL ON CONCRETE FOUNDATIONS
2003 INTERNATIONAL BUILDING CODE

Model No.	W	H	T	Qty of Top of Wall Screws ¹	Anchor Bolt dia. (2 per wall)	Seismic ²						Wind					
						2500 psi concrete			3000 psi concrete			2500 psi concrete			3000 psi concrete		
						Allowable ASD Shear V Load (lbs)	Drift at Allow. Shear V (in.)	Uplift at Allow. Shear V (lbs)	Allowable ASD Shear V Load (lbs)	Drift at Allow. Shear V (in.)	Uplift at Allow. Shear V (lbs)	Allowable ASD Shear V Load (lbs)	Drift at Allow. Shear V (in.)	Uplift at Allow. Shear V (lbs)	Allowable ASD Shear V Load (lbs)	Drift at Allow. Shear V (in.)	Uplift at Allow. Shear V (lbs)
SSW12x7	12	80	3½	4	¾"	875	0.23	8470	875	0.23	7365	965	0.25	10450	1095	0.29	11150
SSW12x8	12	93¼	3½	4	¾"	690	0.29	7175	690	0.29	6355	830	0.34	10450	865	0.36	9515
SSW12x9	12	105¼	3½	4	¾"	565	0.34	6100	565	0.34	5470	705	0.42	9560	705	0.42	8165
SSW12x10	12	117¼	3½	4	¾"	455	0.38	4985	455	0.38	4515	570	0.47	7690	570	0.47	6765
SSW15x7	15	80	3½	6	1"	1330	0.17	9670	1330	0.17	8745	1645	0.21	14565	1665	0.21	12670
SSW15x8	15	93¼	3½	6	1"	1075	0.22	8695	1075	0.22	7930	1345	0.27	13150	1345	0.27	11435
SSW15x9	15	105¼	3½	6	1"	905	0.26	7925	905	0.26	7275	1130	0.33	11840	1130	0.33	10465
SSW15x10	15	117¼	3½	6	1"	770	0.31	7210	770	0.31	6650	960	0.39	10675	960	0.39	9560
SSW15x11	15	129¼	5½	6	1"	650	0.35	6430	650	0.35	5960	815	0.44	9470	815	0.44	8580
SSW15x12	15	141¼	5½	6	1"	550	0.39	5615	550	0.39	5230	690	0.49	8265	690	0.49	7565
SSW18x7	18	80	3½	9	1"	2615	0.17	19160	2955	0.20	20390	2615	0.17	19160	3195	0.21	23790
SSW18x8	18	93¼	3½	9	1"	2240	0.24	19160	2575	0.27	20995	2240	0.24	19160	2740	0.29	23790
SSW18x9	18	105¼	3½	9	1"	1985	0.30	19160	2240	0.34	20275	1985	0.30	19160	2430	0.37	23790
SSW18x10	18	117¼	3½	9	1"	1785	0.37	19160	1930	0.40	18800	1785	0.37	19160	2180	0.46	23790
SSW18x11	18	129¼	5½	9	1"	1615	0.45	19160	1670	0.47	17330	1615	0.45	19160	1980	0.55	23790
SSW18x12	18	141¼	5½	9	1"	1450	0.54	18405	1450	0.54	15955	1480	0.55	19160	1810	0.67	23790
SSW18x13	18	153¼	5½	9	1"	1265	0.59	16440	1265	0.59	14555	1365	0.64	19160	1580	0.74	21315
SSW21x7	21	80	3½	12	1"	3550	0.15	20670	3550	0.15	18370	3810	0.16	23755	4440	0.18	26735
SSW21x8	21	93¼	3½	12	1"	3170	0.21	22270	3170	0.21	19515	3270	0.22	23755	3960	0.26	28870
SSW21x9	21	105¼	3½	12	1"	2870	0.27	23335	2870	0.27	20240	2895	0.28	23755	3535	0.34	29305
SSW21x10	21	117¼	3½	12	1"	2585	0.34	23445	2585	0.34	20315	2600	0.34	23755	3170	0.42	29305
SSW21x11	21	129¼	5½	12	1"	2230	0.39	21195	2230	0.39	18750	2360	0.41	23755	2785	0.49	27430
SSW21x12	21	141¼	5½	12	1"	1935	0.45	19280	1935	0.45	17320	2160	0.50	23755	2420	0.56	24905
SSW21x13	21	153¼	5½	12	1"	1690	0.50	17515	1690	0.50	15930	1990	0.59	23755	2110	0.62	22610
SSW24x7	24	80	3½	14	1"	4585	0.13	22115	4585	0.13	20055	5240	0.15	28350	5730	0.16	28495
SSW24x8	24	93¼	3½	14	1"	4085	0.18	23610	4085	0.18	21215	4495	0.20	28350	5105	0.23	30460
SSW24x9	24	105¼	3½	14	1"	3685	0.24	24385	3685	0.24	21795	3980	0.26	28350	4570	0.29	31040
SSW24x10	24	117¼	3½	14	1"	3365	0.30	25165	3365	0.30	22370	3575	0.32	28350	4100	0.36	31010
SSW24x11	24	129¼	5½	14	1"	2970	0.35	23920	2970	0.35	21450	3240	0.38	28350	3710	0.44	30865
SSW24x12	24	141¼	5½	14	1"	2600	0.40	22170	2600	0.40	20100	2965	0.46	28350	3250	0.51	28565
SSW24x13	24	153¼	5½	14	1"	2290	0.45	20525	2290	0.45	18785	2735	0.54	28350	2860	0.57	26425

1. SDS¼x3½ screws provided with wall.

2. For designs using R=6.5

3. Loads applicable to designs using the ASD basic (Section 1605.3.1) or the alternate basic (Section 1605.3.2) load combinations.

4. Loads based on a 4000 lbs. total axial load acting on entire panel in combination with the shear load.

Contact Simpson for corresponding shear loads at 1000 lbs. and 7500 lbs.

5. Uplifts are net overturning forces which include the effects of axial loading.

6. See Simpson catalog C-CFS06 for S/SSW models for Cold Form Steel Construction.

7. Published wind values are approved for use in the State of Florida (refer to FL5113)

8. See page 61 for SSWAB anchor bolt information.

STEEL STRONG-WALL®

ALLOWABLE OUT OF PLANE LOADS (PSF)

Model Width	Axial Load (lbs)	Nominal Height of Panel (feet)					
		8	9	10	11	12	13
12" wide	1000	200	140	105	NA	NA	NA
	4000	150	105	70	NA	NA	NA
	7500	90	55	25	NA	NA	NA
15" wide	1000	165	130	100	80	70	NA
	4000	130	95	70	50	40	NA
	7500	95	65	45	30	15	NA
18" wide	7500	310	215	160	120	90	70
21" wide	7500	260	185	135	100	70	50
24" wide	7500	275	195	135	105	80	65

1. Loads shown are at ASD level in pounds per square foot (psf) of wall **with no further increase in load.**
2. Axial load denotes maximum gravity load permitted on entire panel acting in combination with the out-of-plane load.
3. Load considers a deflection limit of $h/240$.
4. Values do not include the 1/3 steel stress increase and therefore are applicable to either the ASD Basic or Alternate Basic load combinations of the 97 UBC, 2000 IBC or 2003 IBC.
5. Allowable out-of plane loads for the 12 & 15 inch walls may be linearly interpolated between the axial loads shown.
6. See Simpson catalog C-CFS06 for S/SSW models for Cold Form Steel Construction.

STEEL STRONG-WALL CONCRETE TEMPLATES

Steel Strong-Wall Model	Width (in)	Steel Strong-Wall Template Model		
		Reversible	Panel Form	Brick Ledge
SSW12x7 SSW12x8 SSW12x9 SSW12x10	12	SSWT12	SSWTPF12	SSWTBL12
SSW15x7 SSW15x8 SSW15x9 SSW15x10 SSW15x11 SSW15x12	15	SSWT15	SSWTPF15	SSWTBL15
SSW18x7 SSW18x8 SSW18x9 SSW18x10 SSW18x11 SSW18x12 SSW18x13	18	SSWT18	SSWTPF18	SSWTBL18
SSW21x7 SSW21x8 SSW21x9 SSW21x10 SSW21x11 SSW21x12 SSW21x13	21	SSWT21	SSWTPF21	SSWTBL21
SSW24x7 SSW24x8 SSW24x9 SSW24x10 SSW24x11 SSW24x12 SSW24x13	24	SSWT24	SSWTPF24	SSWTBL24

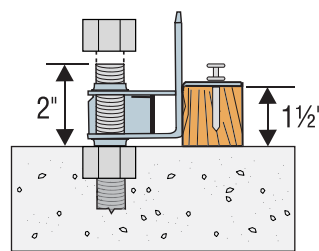
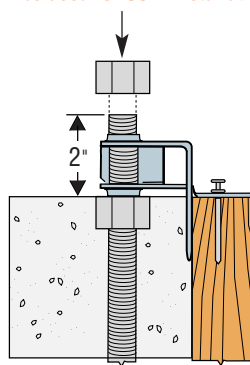
1. The height of the garage curb above the garage slab is critical for rough header opening at garage return walls.
2. See Garage Header Rough Opening Height table.
3. Templates are recommended and are required in some jurisdictions.
4. Foundation design by others.
5. Templates are the same for 4" or 6" thick walls.

AXIAL CAPACITIES

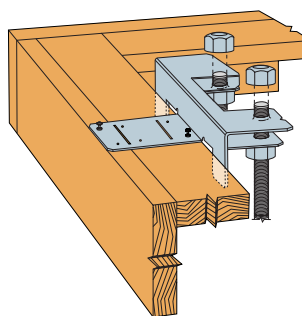
Model Width	Compression Capacity (lbs)						
	Nominal Height of Panel (feet)						
	7	8	9	10	11	12	13
12" wide	20200	17200	14500	11800	NA	NA	NA
15" wide	25300	22600	20000	17400	14900	12600	NA
18" wide	42500	37500	32900	28400	24100	20200	17200
21" wide	43700	37500	32000	26700	22000	18400	15700
24" wide	51600	44800	38700	32900	27400	22900	19500

1. Compression capacity is lesser of wall buckling capacity or 2500 psi concrete bearing limit.
2. Compression capacity of wall assumes no lateral loads present. See allowable in-plane shear load tables for combined lateral and 4000 lb axial loading condition.
3. Values do not include the 1/3 steel stress increase and therefore are applicable to either the ASD Basic or Alternate Basic load combinations of the 97 UBC, 2000 IBC or 2003 IBC.
4. See Simpson catalog C-CFS06 for S/SSW models for Cold Form Steel Construction.

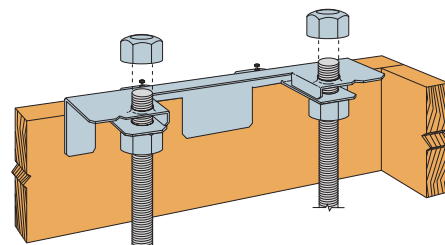
An additional nut for template installation is provided with each SSWAB. May also be used for SSW installation.



Anchor Bolt Height

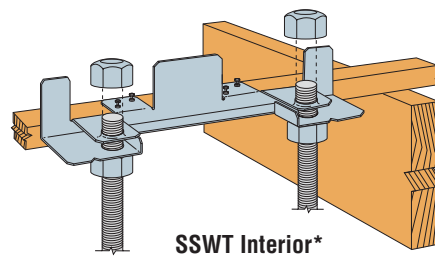


SSWTBL (Brick Ledge)

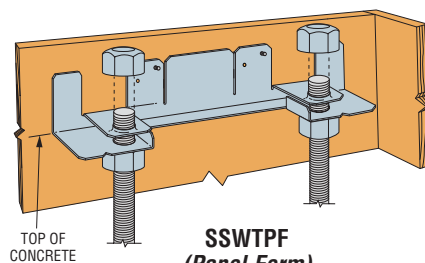


SSWT Exterior* Installation

(May be used for Steel Form Systems)



SSWT Interior* Installation

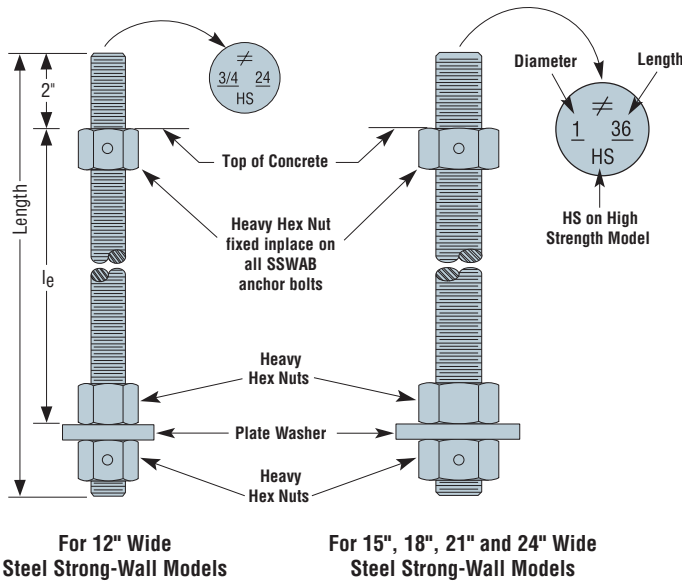


SSWTPF (Panel Form)

*SSWT templates are reversible. Use the same template for interior or exterior applications.

STEEL STRONG-WALL®

SSWAB anchor bolts in the ¾" and 1" diameters offer flexibility to meet specific project demands. Inspection is easy; the head is stamped with a "No Equal" symbol for identification, bolt length, bolt diameter, and optional "HS" for High Strength if specified.



An additional nut for template installation is provided with each SSWAB. May also be used for SSW installation.

Model No.	Dia.	Total Length	l_e	Model No.	Dia.	Total Length	l_e
SSWAB3/4x24	¾"	24"	20"	SSWAB1x24	1"	24"	20"
SSWAB3/4x24HS	¾"	24"	20"	SSWAB1x24HS	1"	24"	20"
SSWAB3/4x36HS	¾"	36"	32"	SSWAB1x36HS	1"	36"	32"

EMBEDMENT SCHEDULES FOR ENGINEERED DESIGN

Embedment Schedule for 1997 UBC Loads ¹								
Model Width	Wind				Seismic			
	2500 psi		3000 psi		2500 psi		3000 psi	
	d_e	F	d_e	F	d_e	F	d_e	F
$\phi = 0.65$ (reinforcement not provided per Section 1923.3.2)								
12" Wall	12	12	12	12	11	11	10	10
15" Wall	13	13	12	12	11	11	10	10
18" Wall	15	15	15	15	14	14	13	13
21" Wall	16	16	15	15	14	14	13	13
24" Wall	16	16	15	15	14	14	13	13
$\phi = 0.85$ (reinforcement provided per Section 1923.3.2)								
12" Wall	10	10	10	10	10	10	9	9
15" Wall	11	11	11	11	10	10	9	9
18" Wall	13	13	13	13	12	12	11	11
21" Wall	14	14	13	13	12	12	12	12
24" Wall	14	14	13	13	12	12	12	12

1. Assumes no special inspection and a multiplier of 2 (anchor not embedded in tension zone of member) per Section 1923.3.2.

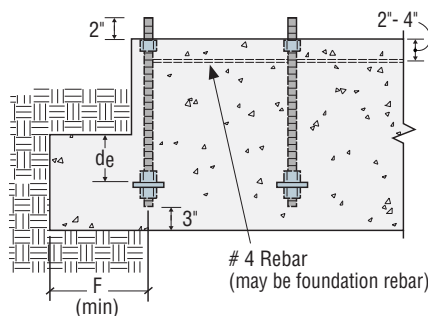
Embedment Schedule for 2000/2003 IBC Loads ¹								
Model Width	Seismic Design Category A and B or Wind				Seismic Design Category C through F			
	2500 psi		3000 psi		2500 psi		3000 psi	
	d_e	F	d_e	F	d_e	F	d_e	F
12" Wall	10	15	10	15	11	17	10	15
15" Wall	12	18	11	17	15	23	15	23
18" Wall	14	21	14	21	15	23	15	23
21" Wall	15	23	14	21	15	23	15	23
24" Wall	15	23	14	21	15	23	15	23

1. Assumes cracked concrete with no supplementary reinforcement per ACI 318-02.

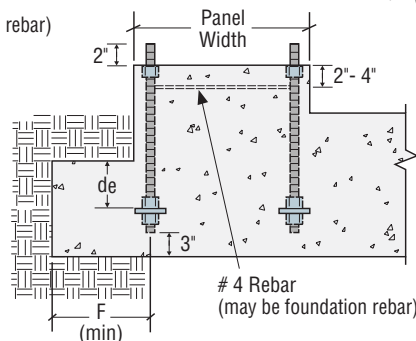
Anchor Bolt Embedment Schedules General Notes

1. Embedment schedules based on high strength SSWAB anchor bolts.
2. The Engineer of Record may specify alternate embedment or bolt grade.
3. Footing dimensions and rebar requirements are for anchorage only.

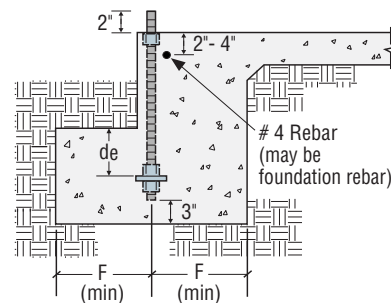
ANCHORAGE INSTALLATION



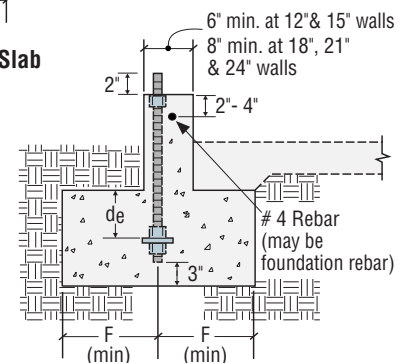
Elevation at Slab



Elevation at Curb



Section at Slab



Section at Curb

Foundation and stemwall design (size and reinforcement) by others.

The building designer shall verify that these details are consistent with the complete load path requirements of the structure.

STRONG-WALL® SHEARWALL

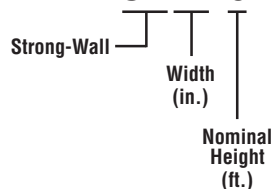
CODES: See page 12 for Code Listing Key Chart.

The Strong-Wall® Shearwall can be installed around window and door openings, on garage wing walls, interior walls or any other locations where increased lateral resistance is required. Strong-Wall® Shearwalls can reduce the amount of wall space required for shearwalls, allowing for more windows and doors in house designs.

Standard models are used for applications where the wall will bear directly on concrete. Simply fasten the bottom of the wall to the embedded bolts with the provided hardware. The top of the wall attaches with pre-installed SDS screws to double top plates or can fasten to various header materials.

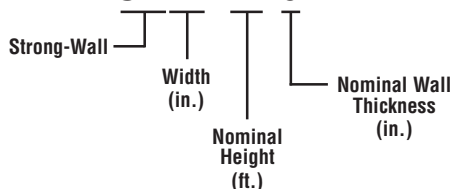
Naming Scheme – 8' to 10'

SW24x8

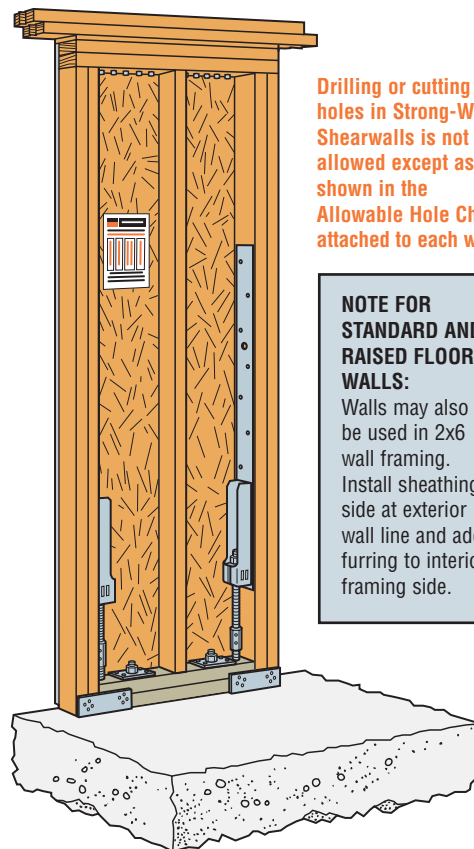


Naming Scheme – 12'

SW24x12x6



- **PREFABRICATED** - The high-strength frame comes with the sheathing and holdowns pre-attached. Additional installation hardware is included.
- **EASY TO INSTALL** - Reusable templates locate the required holdown and mudsill anchor bolts accurately in the foundation. The walls are then placed over the anchor bolts followed by a simple top and bottom plate attachment. **Use 1⁵/₁₆" wrench for 7/8" nut. Use 1⁵/₁₆" wrench for 5/8" nut.**
- **INSTALLATION GUIDE** - Attached to every wall.
- **STATE-OF-THE-ART TESTING** - Third-party documentation of our cyclic testing verifies the Strong-Wall® Shearwall's high design loads.
- **QUALITY ASSURANCE** - No-Equal quality controlled manufacturing reduces inspection problems commonly faced with site built shearwalls.
- **SUPPORT AND SERVICE** - Simpson provides the best engineering technical support and experienced field representation available to assist you.



Drilling or cutting holes in Strong-Wall Shearwalls is not allowed except as shown in the Allowable Hole Chart attached to each wall.

NOTE FOR STANDARD AND RAISED FLOOR WALLS:

Walls may also be used in 2x6 wall framing. Install sheathing side at exterior wall line and add furring to interior framing side.

Standard Strong-Wall® Shearwall

U.S. Patents 5,706,626; 6,006,487, 6,109,850, 6,327,831, and 6,643,986

STANDARD STRONG-WALL

Model No.	W (in)	H (in)	T (in)	Number of Fasteners in Top of Wall	Number of Mudsill Anchors ³	Holdown ² Anchor Bolts	Allowable Shear V Load (lb)	Drift at Allowable Shear V (in)	Allowable Shear V Load (lb/ft)	Wall Weight (lbs)	Code Ref.
SW18x8	18	93 1/4	3 1/2	9-SDS 1/4x6	2-5/8	2-SSTB28	1150	.317	763	85	34, 101
SW24x8	24	93 1/4	3 1/2	12-SDS 1/4x6	2-5/8	2-SSTB28	1610	.389	804	91	34, 60, 101, 137, 150
SW32x8	32	93 1/4	3 1/2	16-SDS 1/4x6	2-5/8	2-SSTB28	2865	.377	1074	116	
SW48x8	48	93 1/4	3 1/2	24-SDS 1/4x6	3-5/8	2-SSTB28	4545	.380	1136	149	
SW18x9	18	105 1/4	3 1/2	9-SDS 1/4x6	2-5/8	2-SSTB28	1080	.371	722	94	34, 101
SW24x9	24	105 1/4	3 1/2	12-SDS 1/4x6	2-5/8	2-SSTB28	1585	.396	793	101	34, 60, 101, 137, 150
SW32x9	32	105 1/4	3 1/2	16-SDS 1/4x6	2-5/8	2-SSTB28	2600	.427	975	128	
SW48x9	48	105 1/4	3 1/2	24-SDS 1/4x6	3-5/8	2-SSTB28	4370	.439	1093	165	
SW24x10	24	117 1/4	3 1/2	12-SDS 1/4x6	2-5/8	2-SSTB28	1590	.446	797	111	34, 101
SW32x10	32	117 1/4	3 1/2	16-SDS 1/4x6	2-5/8	2-SSTB28	2460	.453	923	134	34, 60, 101, 137, 150
SW48x10	48	117 1/4	3 1/2	24-SDS 1/4x6	3-5/8	2-SSTB28	4095	.435	1024	171	
SW24x12x6	24	141 1/4	5 1/2	12-SDS 1/4x6	2-5/8	2-SSTB28	1260	.543	629	167	
SW32x12x6	32	141 1/4	5 1/2	16-SDS 1/4x6	2-5/8	2-SSTB28	2150	.581	807	201	34, 101
SW48x12x6	48	141 1/4	5 1/2	24-SDS 1/4x6	3-5/8	2-SSTB28	3695	.521	924	256	

Check our website for installation guide or structural details:
www.strongtie.com

For holdowns, anchor bolt nuts should be finger-tight plus 1/3 to 1/2 turn with a **hand wrench**, with consideration given to possible future wood shrinkage. Care should be taken to not over-torque the nut. **Impact wrenches should not be used.**

NOTE: The Engineer of Record is responsible for concrete design.

- For plywood shear panel, add "P" to model name (e.g. SW24x8P), and multiply the table loads by 0.88.
- For two-pour applications, use the SSTB34. See the SSTB anchor bolts, pages 33-34, for allowable loads and installation. Alternate 7/8" diameter anchorage may be required depending on load.
- Recommended minimum 5/8" x 12" mudsill anchor.
- Maximum shim height between Strong-Wall and top plates or header is 7/8". Shims of greater thickness will result in load reductions.

- See allowable vertical load table on page 64 for Strong-Wall maximum compression and tension capacities.
- Standard walls may be installed with sheathing facing inside or outside.
- Capacities must be reduced as limited by anchor bolt capacities for installations on CMU.**

The building designer shall verify that these details are consistent with the complete load path requirements of the structure.

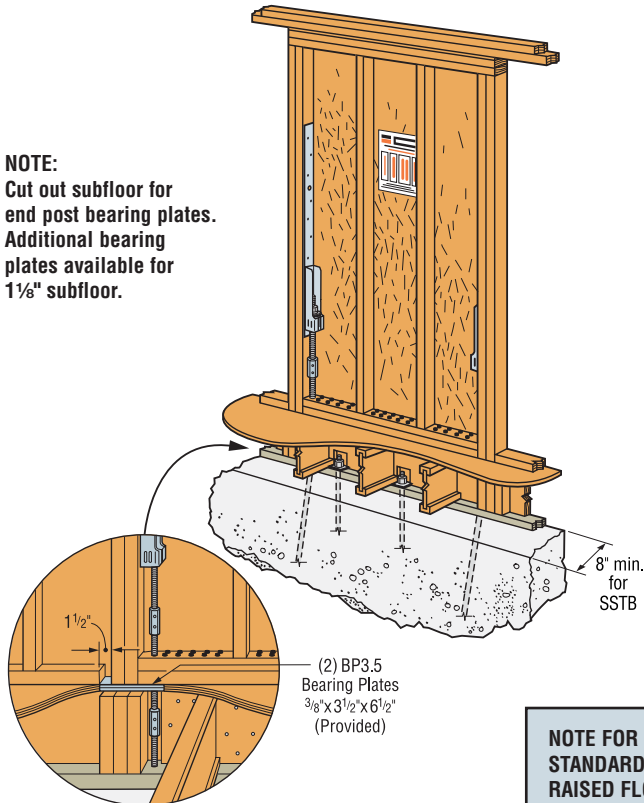
STRONG-WALL® SHEARWALL

RAISED FLOOR (-RF)

Raised Floor walls are designed and tested for installation on top of raised wood floor systems. All 2nd Floor Applications must use the Raised Floor Models. Raised Floor walls are compatible with both solid sawn lumber and I-joist floor systems. Simpson SDS screws pre-installed in both the top and bottom of the wall allow for fast installation to the top plate and floor framing elements.

NOTE:

Cut out subfloor for end post bearing plates. Additional bearing plates available for 1 $\frac{1}{8}$ " subfloor.



Naming Scheme: SW24x8-RF

Strong-Wall | Width (in.) | Raised Floor
Nominal Height (ft.)

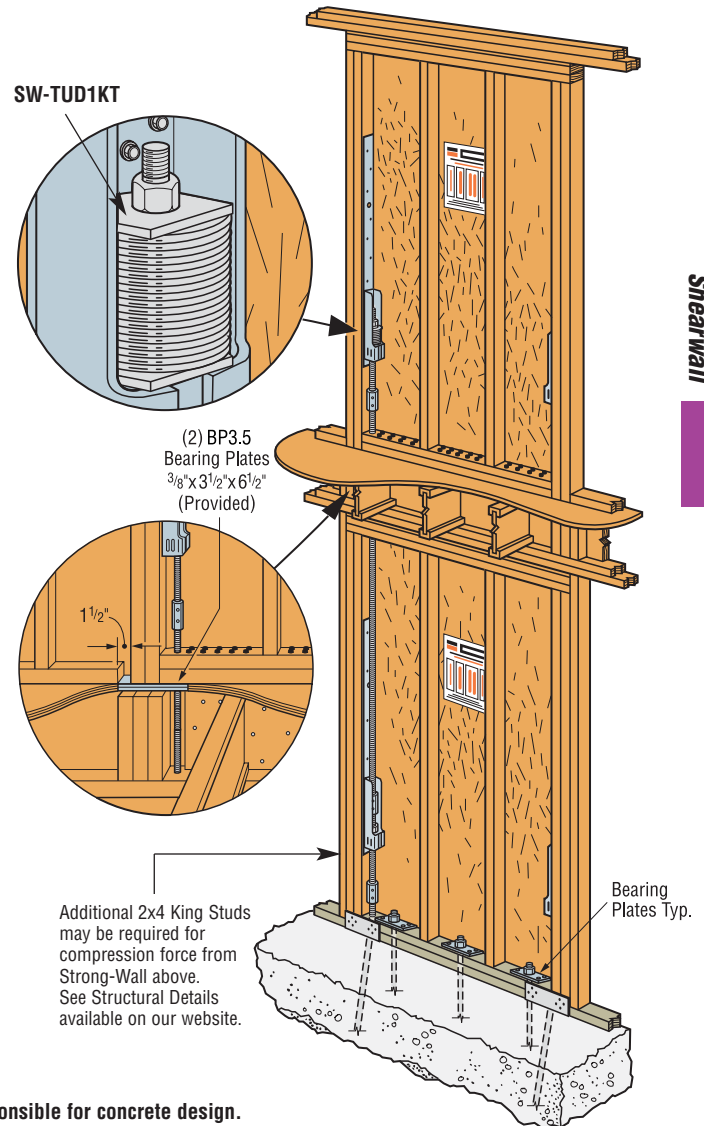
NOTE FOR STANDARD AND RAISED FLOOR WALLS:

Walls may also be used in 2x6 wall framing. Install sheathing side at exterior wall line and add furring to interior framing side.

NOTE: The Engineer of Record is responsible for concrete design.

STRONG-WALL® SHEARWALL FOR 2nd FLOOR APPLICATIONS!

Raised Floor (-RF) walls are code listed for use on the second floor of two-story wood light-frame construction. Simpson Strong-Tie recommends the Simpson Takeup Device, (SW-TUD1KT), be used at the 2nd floor to compensate for wood shrinkage and settlement due to dead load.



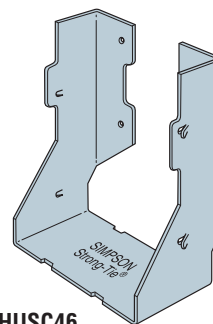
HUSC Concealed Flange Face Mount Hanger

When framing conditions necessitate this application, only the HUSC46 may be used with the Strong-Wall® Shearwall for light duty door and window headers. With face nailing closer to the center of the carrying member and the double shear nailing feature, an HUSC46 hanger will achieve the loads listed in the Face Mount Hanger tables. **Application is limited to the HUSC46.** See page 69 for details.

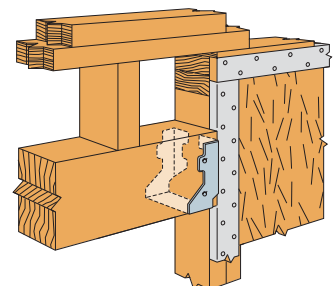
NOTE: When nailing into the carrying member's end grain, the allowable load is 0.67 of the table load.

CODE REF.: 1, 84, 121, 140

CODES: See page 12 for Code Listing Key Chart.



HUSC46



Typical Installation of HUSC46

The building designer shall verify that these details are consistent with the complete load path requirements of the structure.

STRONG-WALL® SHEARWALL**RAISED FLOOR - 1st FLOOR**

CODES: See page 12 for Code Listing Key Chart.

Model No.	W (in)	H (in)	T (in)	Number of Fasteners in Top of Wall	Number of Fasteners in Bottom of Wall	Holdown ² Anchor Bolts	Allowable Shear V Load (lb)	Drift at Allowable Shear V (in)	Allowable Shear V Load (lb/ft)	Wall Weight (lbs)	Code Ref.
SW18x8-RF	18	93¼	3½	9-SDS¼x6	13-SDS¼x6	2-SSTB28	835	.423	557	85	34
SW24x8-RF	24	93¼	3½	12-SDS¼x6	16-SDS¼x6	2-SSTB28	1260	.427	630	91	
SW32x8-RF	32	93¼	3½	16-SDS¼x6	20-SDS¼x6	2-SSTB28	1900	.409	712	116	
SW48x8-RF	48	93¼	3½	24-SDS¼x6	28-SDS¼x6	2-SSTB28	3570	.421	892	149	34, 101
SW18x9-RF	18	105¼	3½	9-SDS¼x6	13-SDS¼x6	2-SSTB28	710	.399	475	94	34
SW24x9-RF	24	105¼	3½	12-SDS¼x6	16-SDS¼x6	2-SSTB28	1010	.420	506	101	
SW32x9-RF	32	105¼	3½	16-SDS¼x6	20-SDS¼x6	2-SSTB28	1685	.430	632	128	
SW48x9-RF	48	105¼	3½	24-SDS¼x6	28-SDS¼x6	2-SSTB28	3085	.435	771	165	34, 101
SW24x10-RF	24	117¼	3½	12-SDS¼x6	16-SDS¼x6	2-SSTB28	985	.425	493	111	34
SW32x10-RF	32	117¼	3½	16-SDS¼x6	20-SDS¼x6	2-SSTB28	1640	.504	616	134	
SW48x10-RF	48	117¼	3½	24-SDS¼x6	28-SDS¼x6	2-SSTB28	2675	.434	669	171	34, 101

RAISED FLOOR - 2nd FLOOR

Model No.	W (in)	H (in)	T (in)	Number of Fasteners in Top of Wall	Number of Fasteners in Bottom of Wall	Holdown ³ Anchor Bolts	Allowable Shear V Load (lb)	Drift at Allowable Shear V (in)	Allowable Shear V Load (lb/ft)	Wall Weight (lbs)	Code Ref.
SW18x8-RF	18	93¼	3½	9-SDS¼x6	13-SDS¼x6	7/8" ATR	735	.319	489	85	34
SW24x8-RF	24	93¼	3½	12-SDS¼x6	16-SDS¼x6	7/8" ATR	1105	.388	553	91	
SW32x8-RF	32	93¼	3½	16-SDS¼x6	20-SDS¼x6	7/8" ATR	1480	.398	556	116	
SW48x8-RF	48	93¼	3½	24-SDS¼x6	28-SDS¼x6	7/8" ATR	2790	.429	697	149	
SW18x9-RF	18	105¼	3½	9-SDS¼x6	13-SDS¼x6	7/8" ATR	620	.318	413	94	
SW24x9-RF	24	105¼	3½	12-SDS¼x6	16-SDS¼x6	7/8" ATR	960	.337	481	101	
SW32x9-RF	32	105¼	3½	16-SDS¼x6	20-SDS¼x6	7/8" ATR	1420	.406	532	128	
SW48x9-RF	48	105¼	3½	24-SDS¼x6	28-SDS¼x6	7/8" ATR	2395	.447	599	165	
SW24x10-RF	24	117¼	3½	12-SDS¼x6	16-SDS¼x6	7/8" ATR	850	.333	424	111	
SW32x10-RF	32	117¼	3½	16-SDS¼x6	20-SDS¼x6	7/8" ATR	1400	.490	526	134	
SW48x10-RF	48	117¼	3½	24-SDS¼x6	28-SDS¼x6	7/8" ATR	2115	.437	528	171	

- For plywood shear panel, add "P" to model name (e.g. SW24x8P), and multiply the table loads by 0.88.
- For two-pour applications, use SSTB34. See SSTB anchor bolts, pages 33-34, for allowable loads and installation. Alternate ¾" diameter anchorage may be required depending on load.
- All thread rod not supplied with Raised Floor walls. Minimum ASTM A307 required. Engineer of record must specify if high strength all-thread rod is required, depending on load.
- All Raised Floor walls require 1½" or 3" end distance from corner for end post bearing

plate. See details available on website.

- Maximum shim height between Strong-Wall and top plates or header is 7/8". Shims of greater thickness will result in load reductions.
- See allowable vertical load table below for Strong-Wall maximum compression and tension capacities.
- Capacities must be reduced as limited by anchor bolt capacities for installations on CMU.

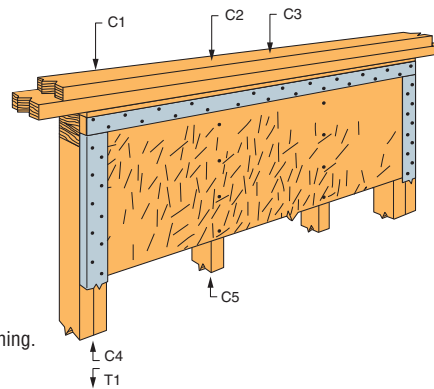
ALLOWABLE VERTICAL LOADS (lbs)

Strong-Wall Model No.	C1	C2	C3		C4	C5		T1
	C ₀ =1.0	C ₀ =1.0	C ₀ =1.0	C ₀ =1.25	C ₀ =1.33	C ₀ =1.0	C ₀ =1.25	C ₀ =1.33
SW16x7x4, 8x4	7100	N/A	N/A	N/A	19100	N/A	N/A	8325
SW22x7x4, 8x4								
SW16x7x6, 8x6	10700	N/A	N/A	N/A	30500	N/A	N/A	8325
SW22x7x6, 8x6								
SW18x8,9	6100	N/A	1685	2105	13300	N/A	N/A	10790
SW24x8,9,10								
SW32x8,9,10	6100	4160	2955	3690	13000	4270	4620	10790
SW48x8,9,10								
SW24x12x6	9920	N/A	2820	3525	16200	N/A	N/A	10790
SW32x12x6	9920	6765	4945	6185	16200	5280	5520	10790
SW48x12x6								

- For RF Raised Floor walls, use the corresponding standard Strong-Wall® Shearwall values.

- C1 = Max. compressive force applied over end post.
 C2 = Max. compressive force applied over interior post.
 C3 = Max. compressive force applied to top plates between studs.
 C4 = Max. compressive force in end post due to load from above (C1) and overturning.
 C5 = Max. compressive force in interior post.
 T1 = Max. allowable tension force in holdown due to net uplift.

These allowable vertical loads are intended to aid the user in correctly implementing the Strong-Wall® Shearwall into the load path of the structure. Load combinations that tend to cause compression can be limited by perpendicular to grain interface issues, by buckling of the vertical members or by the bending and shear capacity of the combined top plates. Loads that result in net uplift in the boundary posts are limited by the value T₁ shown in the table.

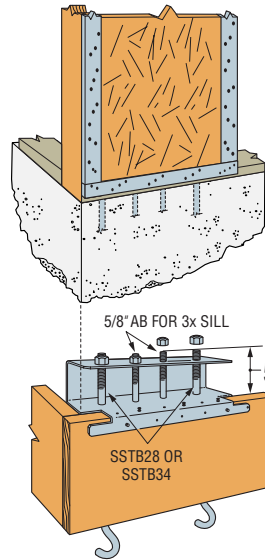


The building designer shall verify that these details are consistent with the complete load path requirements of the structure.

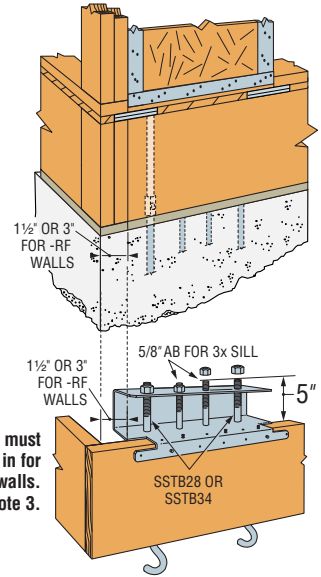
STRONG-WALL® SHEARWALL**STRONG-WALL CONCRETE TEMPLATES**

Strong-Wall Model	Width (in)	Strong-Wall Template Model No.				
		Exterior	Interior	Panel Form	Steel Form	CMU
SW16x7x4 SW16x7x6 SW16x8x4 SW16x8x6	16	SWT16	SWTI16	SWTPF16	SWTSF16	SWTCMU16
SW18x8 SW18x9	18	SWT18	SWTI18	SWTPF18	SWTSF18	SWTCMU18
SW22x7x4 SW22x7x6 SW22x8x4 SW22x8x6	22	SWT22	SWTI22	SWTPF22	SWTSF22	SWTCMU22
SW24x8 SW24x9 SW24x10 SW24x12x6	24	SWT24	SWTI24	SWTPF24	SWTSF24	SWTCMU24
SW32x8 SW32x9 SW32x10 SW32x12x6	32	SWT32	SWTI32	SWTPF32	SWTSF32	SWTCMU32
SW48x8 SW48x9 SW48x10 SW48x12x6	48	SWT48	SWTI48	SWTPF48	SWTSF48	SWTCMU48

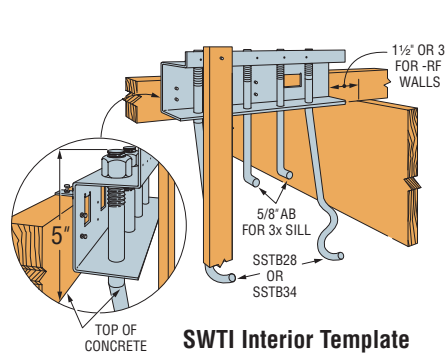
1. The height of the garage curb above the garage slab is critical for rough header opening on portal walls.
2. See Garage Portal page for curb height tables.
3. Raised Floor Strong-Wall® Shearwalls require 1½" or 3" of concrete on either side. Allow 1½" or 3" of concrete on either side of the template if the design is for a wood 1st floor or 2nd floor application.
4. For RF Raised Floor walls, use the corresponding Standard Strong-Wall® Shearwall template as required.
5. Templates are recommended and are required in some jurisdictions.
6. Foundation design by others.
7. Templates are the same for 4" or 6" thick walls.



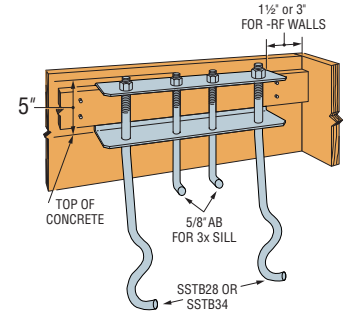
SWT Exterior Template
(for 2x Form Boards)



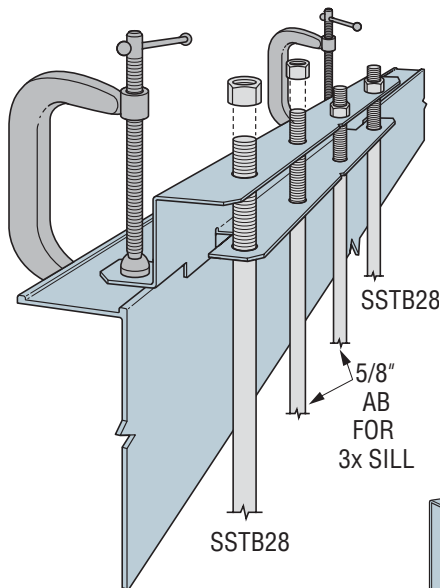
SWT Exterior Template
(for 2x Form Boards,
Raised Floor Installation)



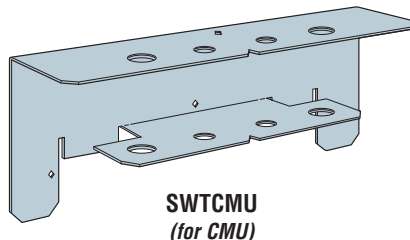
SWTI Interior Template
(for 2x4 Above Concrete)



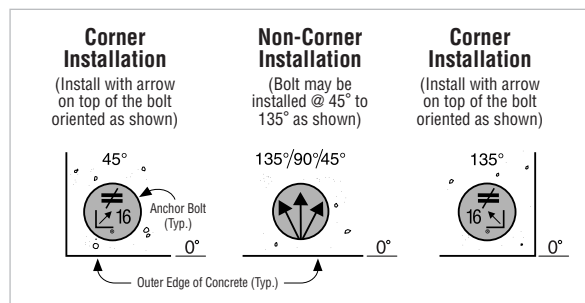
SWTPF Template
(for Plywood Panel Forms)



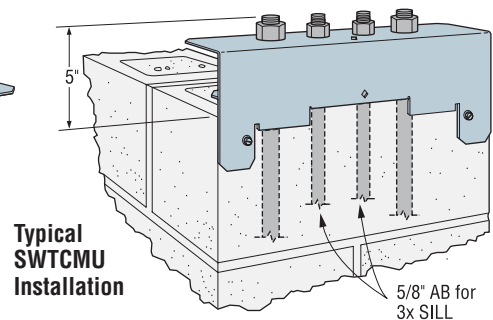
SWTSF Template
(for Steel Form Systems)



SWTCMU
(for CMU)



**Plan View of
SSTB Placement
in Concrete**



**Typical
SWTCMU
Installation**

STRONG-WALL® SHEARWALL

GARAGE PORTAL SYSTEMS

Garage Portal systems provide increased lateral resistance over site-built shearwalls in locations where space is at a premium. Portal walls shall be installed with a minimum 12" nominal deep header for adequate shear nailing. Because the portal walls and header are tested as a system, the resulting portal frame offers superior engineered performance over site-built walls.

CODES: See page 12 for Code Listing Key Chart.

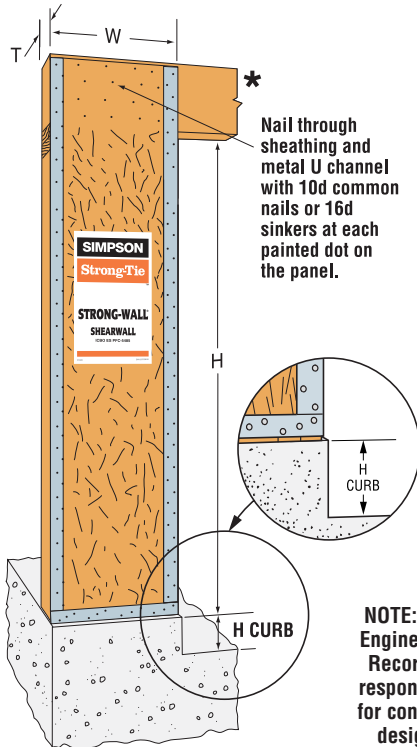
NOTE FOR GARAGE PORTAL WALLS:

Cripple walls over the garage header shall be designed by Engineer of Record.

Naming Scheme:

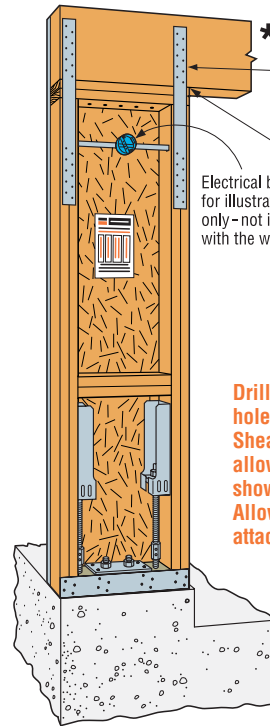
SW16x7x4

Strong-Wall | Width (in.) | Nominal Wall Thickness (in.) | Nominal Height (ft.)



16" Garage Portal

★ Header shall be a single member with width matching wall thickness x 12" min. nominal depth.



Alternate Exterior Installation
For easy electrical installation position wall with sheathing inside garage.

SWMST STRAP (PROVIDED) (10 ga) WITH 10d NAILS OR 16d SINKERS. INSTALL ONLY TO FRAMING SIDE OF PORTAL WALL.

Electrical box for illustration only - not included with the wall.

Drilling or cutting holes in Strong-Wall Shearwalls is not allowed except as shown in the Allowable Hole Chart attached to each wall.

Portal walls may have a maximum 7/8" shim without any load reduction.

8" Min. for SSTB
6" if stemwall and footing are single pour and stemwall is 12" high max. from top of footing, not slab.

22" Garage Portal

GARAGE HEADER ROUGH OPENING HEIGHT

Model No.	H Curb	Without 1/2" Shim	With 1/2" Shim
SW16x7x4	6"	7'	7'-1/2"
SW22x7x4	7"	7'-1"	7'-1 1/2"
SW16x7x6	6"	8'	8'-1/2"
SW22x7x6	7"	8'-1"	8'-1 1/2"

- The height of the garage curb above the garage slab is critical for rough header opening on portal walls.
- One 1/2" shim is provided with Garage Portal walls.

DOUBLE WALL GARAGE PORTAL⁴

Model No.	W (in)	H (in)	T (in)	Number of Fasteners in Top of Wall	Number of Mudsill Anchors ⁶	Holdown ² Anchor Bolts	Allow. Shear V Load (lb) for Portal System ⁵	Drift at Allow. Shear V (in)	Allow. Shear V Load (lb/ft)	Wall Weight (lbs)	Code Ref.
SW16x7x4	16	78	4	8-SDS 1/4x6	2-5/8"	2-SSTB28	2800	.367	1050	90	34, 60, 101, 137
SW16x7x6	16	78	5 3/4	8-SDS 1/4x6	2-5/8"	2-SSTB28	2800	.367	1050	112	34, 101
SW16x8x4	16	90	4	8-SDS 1/4x6	2-5/8"	2-SSTB28	2490	.420	935	95	
SW16x8x6	16	90	5 3/4	8-SDS 1/4x6	2-5/8"	2-SSTB28	2490	.420	935	120	34, 60, 101, 137
SW22x7x4	22	78	4	10-SDS 1/4x6	2-5/8"	2-SSTB28	4820	.369	1315	95	
SW22x7x6	22	78	5 3/4	10-SDS 1/4x6	2-5/8"	2-SSTB28	4820	.369	1315	117	34, 101
SW22x8x4	22	90	4	10-SDS 1/4x6	2-5/8"	2-SSTB28	3990	.446	1090	105	
SW22x8x6	22	90	5 3/4	10-SDS 1/4x6	2-5/8"	2-SSTB28	3990	.446	1090	130	

- For plywood shear panel, add "P" to model name (e.g. SW24x8P), and multiply the table loads by 0.88.
- For two-pour bolted applications, use the SSTB34.
- Recommended header moisture content is 19% or less at time of installation.
- A double wall garage portal system consists of 2 walls with a header spanning over the top and connected as shown.
- SW16 and SW22 walls may be combined. The capacity of the combined system shall be the sum of the "Single Wall Garage Portal" capacities.
- Recommended minimum 5/8"x12" mudsill anchor.
- The minimum header sizes listed are the minimum required

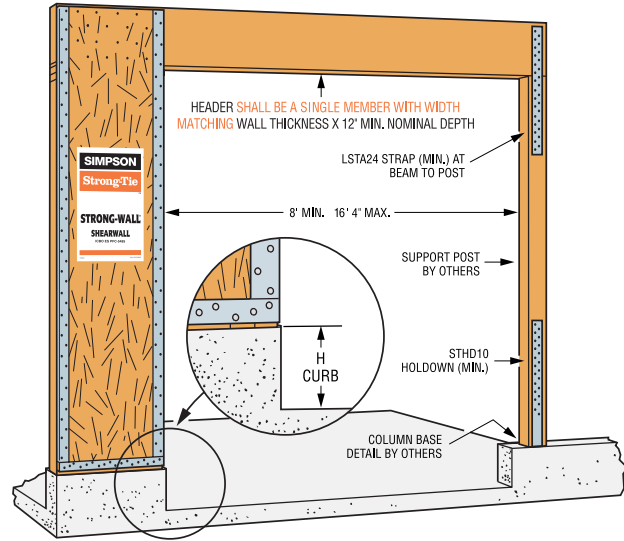
- for lateral rigidity of the portal system. Larger headers may be required due to vertical loading.
- Portal walls may be installed with sheathing facing inside or outside.
- Maximum shim height between Strong-Wall Portal Walls and header is 7/8". Shims of greater thickness will result in load reductions.
- See allowable vertical load table on page 64 for Strong-Wall maximum compression and tension capacities.
- Capacities must be reduced as limited by anchor bolt capacities for installations on CMU.

The building designer shall verify that these details are consistent with the complete load path requirements of the structure.

STRONG-WALL® SHEARWALL

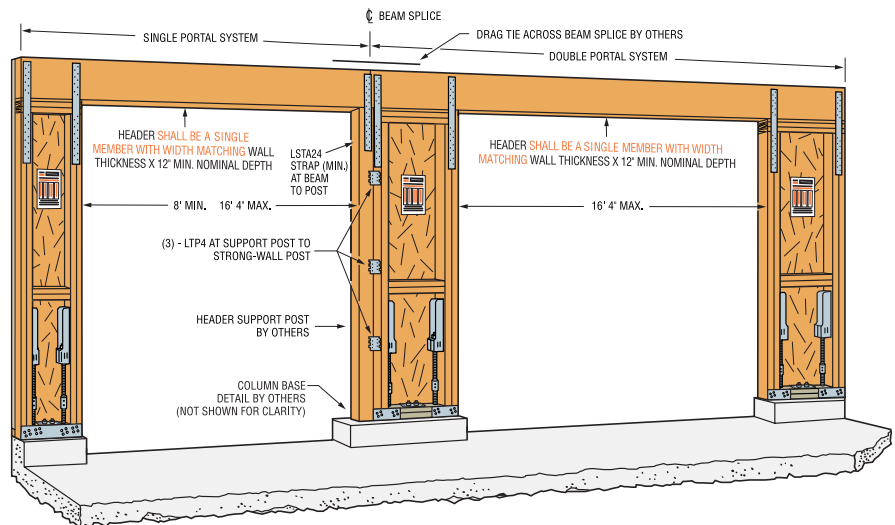
Detail 1 - Single Wall Garage Portal

1. Beam to support post and support post to foundation uplift connectors may be reduced where justified by calculations.
2. This detail reflects lateral load requirements of a Single Wall Portal system. It is the designer's responsibility to provide a complete load path for all loads in accordance with the governing codes.
3. Longer header spans can be accommodated if larger headers are used such that equivalent stiffness is equal to or greater than that provided by the minimum header and maximum length indicated.
4. STHD10 and LSTA24 (*design by others*) are minimum requirements to achieve the allowable loads.



Detail 2 - Single and Double Wall Garage Portal

1. Beam to support post and support post to foundation uplift connectors may be reduced where justified by calculations.
2. This detail reflects lateral load requirements of a Single and Double Wall Portal system. It is the designer's responsibility to provide a complete load path for all loads in accordance with the governing codes.
3. System rating equals the sum of the Single and Double Wall Portal values.
4. Alternate Installation: A single piece header (*no camber*) may be substituted for the two headers shown. The design rating for this condition may then be evaluated as the sum of the individual wall (*pier*) ratings. Individual wall (*pier*) ratings for this condition may be taken as half of their Double Wall Portal values.
5. Longer header spans can be accommodated if larger headers are used such that equivalent stiffness is equal to or greater than that provided by the minimum header and maximum length indicated.
6. LTP4 and LSTA24 (*design by others*) are minimum requirements to achieve the allowable loads.



CODES: See page 12 for Code Listing Key Chart.

SINGLE WALL GARAGE PORTAL⁴

Model No.	W (in)	H (in)	T (in)	Number of Fasteners in Top of Wall	Number of Mudsill Anchors ⁵	Holdown ² Anchor Bolts	Allowable Shear V Load (lbs) for Portal System	Drift at Allowable Shear V (in)	Allowable Shear V Load (lb/ft)	Wall Weight (lbs)	Code Ref.
SW16x7x4	16	78	4	8-SDS ¹ / ₄ x6	2- ⁵ / ₈	2-SSTB28	1460	.348	1095	90	34, 101
SW16x7x6	16	78	5 ³ / ₄	8-SDS ¹ / ₄ x6	2- ⁵ / ₈	2-SSTB28	1460	.348	1095	112	
SW16x8x4	16	90	4	8-SDS ¹ / ₄ x6	2- ⁵ / ₈	2-SSTB28	1245	.420	935	95	
SW16x8x6	16	90	5 ³ / ₄	8-SDS ¹ / ₄ x6	2- ⁵ / ₈	2-SSTB28	1245	.420	935	120	
SW22x7x4	22	78	4	10-SDS ¹ / ₄ x6	2- ⁵ / ₈	2-SSTB28	2190	.396	1195	95	
SW22x7x6	22	78	5 ³ / ₄	10-SDS ¹ / ₄ x6	2- ⁵ / ₈	2-SSTB28	2190	.396	1195	117	
SW22x8x4	22	90	4	10-SDS ¹ / ₄ x6	2- ⁵ / ₈	2-SSTB28	1995	.446	1090	105	
SW22x8x6	22	90	5 ³ / ₄	10-SDS ¹ / ₄ x6	2- ⁵ / ₈	2-SSTB28	1995	.446	1090	130	

1. For plywood shear panel, add "P" to model name (e.g. SW24x8P), and multiply loads by 0.88.
2. For two-pour applications, use the SSTB34.
3. Recommended header moisture content is 19% or less at time of installation.
4. A single wall garage portal system consists of 1 wall with a header spanning over the top and connected as shown.
5. Recommended minimum 5/8"x12" mudsill anchor.

6. The minimum header sizes listed are the minimum required for lateral rigidity of the portal system. Larger headers may be required due to vertical loading.
7. Portal walls may be installed with sheathing facing inside or outside.
8. Maximum shim height between Strong-Wall Portal Walls and header is ⁷/₈". Shims of greater thickness will result in load reductions.
9. See allowable vertical load table on page 64 for Strong-Wall maximum compression and tension capacities.
10. Capacities must be reduced as limited by anchor bolt capacities for installations on CMU.

The building designer shall verify that these details are consistent with the complete load path requirements of the structure.

FACE MOUNT HANGERS LU/U/HU Standard Joist Hangers

See Hanger tables on pages 70 to 76. See Hanger Options on pages 188 for hanger modifications, which may result in reduced loads.

LU—Value engineered for strength and economy. Precision-formed—engineered for installation ease and design value.

U—The standard U hanger provides flexibility of joist to header installation. Versatile fastener selection with tested allowable loads.

HU—Most models have triangle and round holes. To achieve maximum loads, fill both round and triangle holes with common nails. These heavy-duty connectors are designed for schools and other structures requiring additional strength, longevity and safety factors.

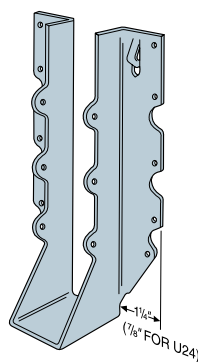
MATERIAL: See tables on pages 70 to 76.

FINISH: Galvanized

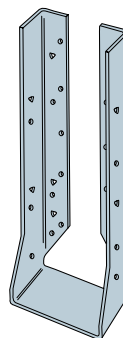
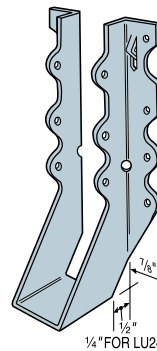
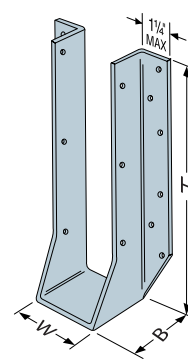
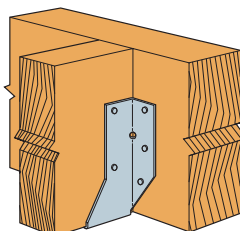
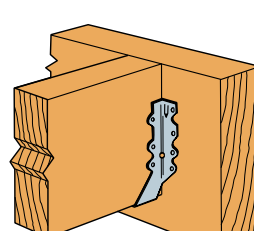
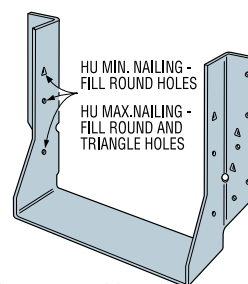
INSTALLATION:

- Use all specified fasteners. See General Notes.
- **HU—can be installed filling round holes only, or filling round and triangle holes for maximum values.**
- **Joists sloped up to ¼:12 achieve table loads.**

- OPTIONS:**
- HU hangers available with the header flanges turned in for 2½" width and larger, with no load reduction—order HUC hanger.
 - See Hanger Options on page 188 and 191, for sloped and/or skewed U/HU models, and HUC (concealed flange) models.
 - HU only—rough beam sizes available by special order.
 - See page 76 for stocked U hanger rough size tables. Rough sizes are not available in 8x.
 - Also see LUS and HUS series.



U210

HUC412
Concealed
FlangesLU28
(except
LU Roughs)HU214
Projection seat on most
models for maximum bearing
and section economy.Typical HU
InstallationTypical LU28
Installation

HU68

Model configurations may differ from those shown.
Some HU models do not have triangle holes. Consult factory.

HUCQ Heavy Duty Joist Hangers

The HUCQ series are heavy duty joist hangers that incorporate Simpson's SDS wood screws. Designed and tested for installation at the end of a beam or on a post, they provide a strong connection with fewer fasteners than nailed hangers. **See page 91 for structural composite lumber hangers.**

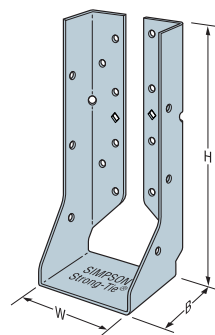
MATERIAL: 14 gauge

FINISH: Galvanized

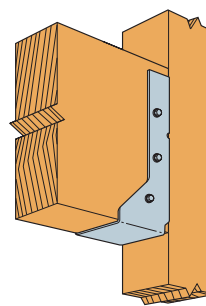
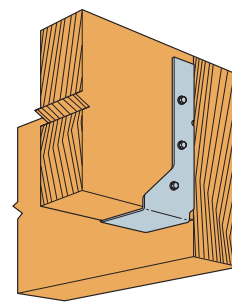
INSTALLATION:

- Use all specified fasteners. See General Notes.
- SDS screws supplied.
- For use on solid sawn **wood members.**

CODES: See page 12 for Code Listing Key Chart.



HUCQ410

Typical HUCQ Installation
on a PostTypical HUCQ Installation
on a Beam

Model No.	Dimension			Fasteners		Allowable Loads							Code Ref.
	W	H	B	Face	Joist	Uplift (133/160)	DF/SP			SPF/HF			
							Floor (100)	Snow (115)	Roof (125)	Floor (100)	Snow (115)	Roof (125)	
HUCQ310-SDS	2⅞ ₁₆	9	3	8-SDS ¼x2½	4-SDS ¼x2½	2505	3195	3195	3195	1960	2015	2015	160
HUCQ210-2-SDS	3¼	9	3	12-SDS ¼x2½	6-SDS ¼x2½	2505	4955	4955	4955	4170	4170	4170	
HUCQ410-SDS	3⅞ ₁₆	9	3	12-SDS ¼x2½	6-SDS ¼x2½	3025	4955	4955	4955	4170	4170	4170	
HUCQ412-SDS	3⅞ ₁₆	11	3	14-SDS ¼x2½	6-SDS ¼x2½	3025	5560	5560	5560	4680	4680	4680	
HUCQ210-3-SDS	4⅞ ₈	9	3	12-SDS ¼x2½	6-SDS ¼x2½	3025	4955	4955	4955	4170	4170	4170	
HUCQ5.25/9-SDS	5¼	9	3	12-SDS ¼x2½	6-SDS ¼x2½	3025	4955	4955	4955	4170	4170	4170	
HUCQ5.25/11-SDS	5¼	11	3	14-SDS ¼x2½	6-SDS ¼x2½	3025	5560	5560	5560	4680	4680	4680	
HUCQ610-SDS	5½ ₂	9	3	12-SDS ¼x2½	6-SDS ¼x2½	3025	4955	4955	4955	4170	4170	4170	
HUCQ612-SDS	5½ ₂	11	3	14-SDS ¼x2½	6-SDS ¼x2½	3025	5560	5560	5560	4680	4680	4680	

1. Uplift loads have been increased 33% for earthquake or wind loading, with no further increase allowed.
2. See page 91 for additional engineered wood products sizes.

3. When using structural composite lumber columns, screws must be applied to the wide face of the column.

LUS/HUS Double Shear Joist Hangers

This product is preferable to similar connectors because of a) easier installation, b) higher loads, c) lower installed cost, or a combination of these features.

See Hanger tables on pages 70 to 76. See Hanger Options on pages 188 for hanger modifications, which may result in reduced loads.

All hangers in this series have double shear nailing. This patented innovation distributes the load through two points on each joist nail for greater strength. It also allows the use of fewer nails, faster installation, and the use of standard nails for all connections. (Do not bend or remove tabs.)

MATERIAL: See tables, pages 70 to 76.

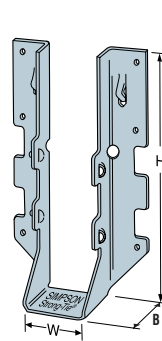
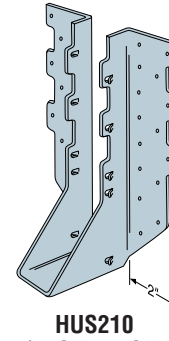
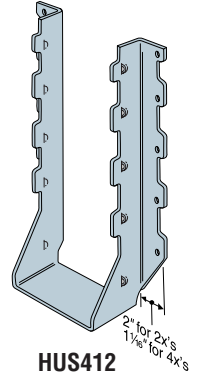
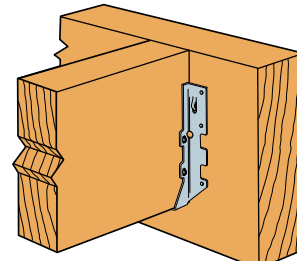
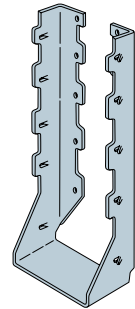
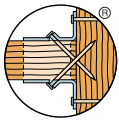
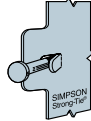
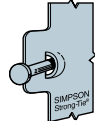
FINISH: Galvanized. Some products available in stainless steel or Z-MAX; see Corrosion-Resistance, page 6-7. Stainless steel (SS) hangers are available with SS nails—order **LUS210-2SSN**.

INSTALLATION • Use all specified fasteners. See General Notes.

- Nails must be driven at an angle through the joist or truss into the header to achieve the table loads.
- Not designed for welded or nailer applications.
- 16d sinkers (**0.148" dia. x 3 1/4" long**) may be used where 10d commons are specified with no reduction in load. Where 16d commons are specified, 10d commons or 16d sinkers (**0.148" dia. x 3 1/4" long**) may be used at **0.85** of the table load.
- With 3x carrying members, use 16d x 2 1/2" nails into the header and 16d commons into the joist with no load reduction. With 2x carrying members, use 10d x 1 1/2" nails into the header and 10d commons into the joist, reduce the load to 0.64 of the table value.
- Use stainless steel (SS) nails with SS hangers.

OPTIONS: • LUS hangers cannot be modified.

- HUS hangers available with the header flanges turned in for 2-2x (3/8") and 4x only, with no load reduction. See the HUSC Concealed Flange illustration.
- See Hanger Options, page 188.

**LUS28****HUS210**
(HUS26, HUS28,
and HHUS similar)**HUS412****Typical LUS28 Installation**
use .148x3" (10d common)
or .148x3 1/4" (16d sinker) nail**HUSC**
Concealed Flanges
(not available for HHUS,
HGUS and HUS2x)**Double
Shear
Nailing
Top View****Double
Shear
Nailing
Side View****Dome Double Shear
Nailing Side View**
(available on
some models)
U.S. Patent 5,603,580**LOAD TABLE EXPLANATION**

Dimensions W, H, B: This shows the product dimensions (width, height and base in this case.) The product drawing includes these callouts as a cross-reference.

Nails: This shows the fastener quantity and type required to achieve the table loads.

Allowable Design Loads: The maximum load that a connection is designed to provide.

There may be multiple design loads acting in different directions (up, down, lateral, perpendicular, etc.) imposed on a connection.

Code Ref.: See page 12 for the Code Listing Key Chart, to determine which code reports include this product.

Gauge: Product material

Model No.: This is the Simpson product name.

Joist Size: This shows the size of joist member.

Joist Size	Model No.	Ga	Dimensions			Fasteners			Doug Fir Larch/Southern Pine Allowable Loads								Code Ref.
			W	H	B	Header		Joist	Uplift		Floor (100)		Snow (115)		Roof (125)		
						10d	16d		(133)	(160)	10d	16d	10d	16d	10d	16d	
ROUGH LUMBER SIZES																	
2x4(R)	LU24R-18	18	2	3 ¹¹ / ₁₆	1½	—	4-16d	2-10dx1½	245	265	—	530	—	610	—	665	170
	U24R	16	2	3 ⁵ / ₈	2	4-10d	4-16d	2-10dx1½	240	265	445	530	510	610	555	665	26, 121
2x6(R)	LU26R-18	18	2	4 ⁹ / ₁₆	1½	—	6-16d	4-10dx1½	490	565	—	800	—	920	—	1000	170
	U26R	16	2	5 ⁵ / ₈	2	8-10d	8-16d	4-10dx1½	480	575	890	1065	1020	1225	1110	1330	26, 121

All installations should be designed only in accordance with the allowable load values set forth in this catalog.

OTHER CATALOG DEFINITIONS

Deflection: The distance a point moves when a load is applied.

NAILS: 16d = 0.162" dia. x 3 1/2" long,
10dx1 1/2 = 0.148" dia. x 1 1/2" long.
See page 16-17 for other nail sizes and information.

Throughout this catalog a footnote will typically be provided indicating the required nail diameter and length.

FACE MOUNT HANGERS – SOLID SAWN LUMBER (DF & SP)

Available with additional corrosion protection. Check with factory.

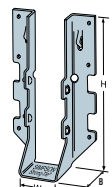
CODES: See page 12 for Code Listing Key Chart.

Joist Size	Model No.	Ga	Dimensions			Fasteners			Doug Fir Larch/Southern Pine Allowable Loads								Installed Cost Index (ICI)	Code Ref.
			W	H	B	Header		Joist	Uplift		Floor (100)		Snow (115)		Roof (125)			
						10d	16d		(133)	(160)	10d	16d	10d	16d	10d	16d		
SAWN LUMBER SIZES																		
2x4	LU24	20	1⅞	3⅝	1½	4-10d	4-16d	2-10dx1½	245	265	445	530	510	610	555	665	Lowest	2, 40, 121
	LUS24	18	1⅞	3⅝	1¾	4-10d	—	2-10d	465	490	640	—	735	—	800	—	+ 3%	4, 37, 87, 121, 133, 140
	U24	16	1⅞	3⅝	1½	4-10d	4-16d	2-10dx1½	240	290	445	530	510	610	555	665	+ 67%	26, 83, 124
	HU26	14	1⅞	3⅞	2¼	—	4-16d	2-10dx1½	240	290	—	535	—	615	—	670	+ 295%	26, 83, 124
DBL 2x4	LUS24-2	18	3⅝	3⅝	2	—	4-16d	2-16d	440	440	—	765	—	880	—	960	Lowest	1, 84, 121, 133
	U24-2	16	3⅝	3	2	4-10d	4-16d	2-10d	295	355	445	530	510	610	555	665	+ 33%	26, 83, 124
	HU24-2	14	3⅝	3⅞	2½	—	4-16d	2-10d	300	360	—	535	—	615	—	670	+ 240%	26, 83, 124
	LUS26	18	1⅞	4¾	1¾	4-10d	—	4-10d	930	1115	830	—	955	—	1040	—	Lowest	4, 37, 87, 121, 133, 140
2x6	LU26	20	1⅞	4¾	1½	6-10d	6-16d	4-10dx1½	490	565	665	800	765	920	830	1000	+ 6%	2, 40, 121
	U26	16	1⅞	4¾	2	6-10d	6-16d	4-10dx1½	480	575	665	800	765	920	830	1000	+ 43%	26, 83, 124
	HU26	14	1⅞	3⅞	2¼	—	4-16d	2-10dx1½	240	290	—	535	—	615	—	670	+ 179%	26, 83, 124
	HUS26	16	1⅞	5⅝	3	—	14-16d	6-16d	1550	1550	—	2565	—	2950	—	3205	+ 276%	4, 37, 87, 121, 133
DBL 2x6	LUS26-2	18	3⅝	4⅞	2	—	4-16d	4-16d	1140	1165	—	1000	—	1150	—	1250	Lowest	1, 84, 121, 133
	U26-2	16	3⅝	5	2	8-10d	8-16d	4-10d	590	710	890	1065	1020	1225	1110	1330	+ 65%	26, 83, 124, 140
	HUS26-2	14	3⅝	5⅞	2	—	4-16d	4-16d	1080	1235	—	1005	—	1155	—	1255	+ 172%	1, 84, 121, 133
	HU26-2 (Min)	14	3⅝	5⅝	2½	—	8-16d	4-10d	605	725	—	1070	—	1235	—	1340	+ 233%	26, 83, 124
2x8	HU26-2 (Max)	14	3⅝	5⅝	2½	—	12-16d	6-10d	905	1085	—	1610	—	1850	—	2010	+ 254%	26, 83, 124
	LUS26-3	18	4⅞	4⅞	2	—	4-16d	4-16d	1140	1165	—	1000	—	1150	—	1250	*	9, 121, 133
	U26-3	16	4⅞	4¼	2	8-10d	8-16d	4-10d	590	710	890	1065	1020	1225	1110	1330	*	26, 83, 124
	HU26-3 (Min)	14	4⅞	5½	2½	—	8-16d	4-10d	605	725	—	1070	—	1235	—	1340	*	170
DBL 2x8	HU26-3 (Max)	14	4⅞	5½	2½	—	12-16d	6-10d	905	1085	—	1610	—	1850	—	2010	*	26, 83, 124
	LUS26	18	1⅞	4¾	1¾	4-10d	—	4-10d	930	1115	830	—	955	—	1040	—	Lowest	4, 37, 87, 121, 133, 140
	LU26	20	1⅞	4¾	1½	6-10d	6-16d	4-10dx1½	490	565	665	800	765	920	830	1000	+ 6%	2, 40, 121
	LUS28	18	1⅞	6⅝	1¾	6-10d	—	4-10d	930	1115	1055	—	1210	—	1320	—	+ 23%	4, 37, 87, 121, 133, 140
2x10	LU28	20	1⅞	6⅝	1½	8-10d	8-16d	6-10dx1½	735	850	890	1065	1020	1225	1110	1300	+ 39%	2, 40, 121
	U26	16	1⅞	4¾	2	6-10d	6-16d	4-10dx1½	480	575	665	800	765	920	830	1000	+ 43%	26, 83, 124
	HU28	14	1⅞	5¼	2¼	—	6-16d	4-10dx1½	480	575	—	805	—	925	—	1005	+ 251%	26, 83, 124
	HUS26	16	1⅞	5⅝	3	—	14-16d	6-16d	1550	1550	—	2565	—	2950	—	3205	+ 276%	4, 37, 87, 121, 133
DBL 2x10	HUS28	16	1⅞	7	3	—	22-16d	8-16d	2000	2000	—	3585	—	3700	—	3775	+ 409%	4, 37, 87, 121, 133
	LUS26-2	18	3⅝	4⅞	2	—	4-16d	4-16d	1140	1165	—	1000	—	1150	—	1250	Lowest	1, 84, 121, 133
	LUS28-2	18	3⅝	7	2	—	6-16d	4-16d	1140	1165	—	1265	—	1455	—	1585	+ 8%	26, 83, 124, 140
	U26-2	16	3⅝	5	2	8-10d	8-16d	4-10d	590	710	890	1065	1020	1225	1110	1330	+ 65%	26, 83, 124, 140
2x12	HUS28-2	14	3⅝	7⅞	2	—	6-16d	6-16d	1550	1550	—	1505	—	1730	—	1885	+ 188%	1, 84, 121, 133
	HU28-2 (Min)	14	3⅝	7	2½	—	10-16d	4-10d	605	725	—	1340	—	1540	—	1675	+ 397%	26, 83, 124
	HU28-2 (Max)	14	3⅝	7	2½	—	14-16d	6-10d	905	1085	—	1875	—	2155	—	2345	+ 418%	26, 83, 124
	LUS28-3	18	4⅞	6¼	2	—	6-16d	4-16d	1140	1165	—	1265	—	1455	—	1585	*	9, 121, 133
DBL 2x12	U26-3	16	4⅞	4¼	2	8-10d	8-16d	4-10d	590	710	890	1065	1020	1225	1110	1330	*	26, 83, 124
	LUS28	18	1⅞	6⅝	1¾	6-10d	—	4-10d	930	1115	1055	—	1210	—	1320	—	Lowest	4, 37, 87, 121, 133, 140
	LU28	20	1⅞	6⅝	1½	8-10d	8-16d	6-10dx1½	735	850	890	1065	1020	1225	1110	1300	+ 13%	2, 40, 121
	LUS210	18	1⅞	7⅞	1¾	8-10d	—	4-10d	930	1115	1275	—	1470	—	1595	—	+ 15%	4, 37, 87, 121, 133, 140
2x14	LU210	20	1⅞	7⅞	1½	10-10d	10-16d	6-10dx1½	735	850	1110	1330	1275	1530	1390	1660	+ 28%	2, 40, 121
	U210	16	1⅞	7⅞	2	10-10d	10-16d	6-10dx1½	720	865	1110	1330	1275	1530	1390	1660	+ 76%	26, 83, 124
	HU210	14	1⅞	7⅝	2¼	—	8-16d	4-10dx1½	480	575	—	1070	—	1235	—	1340	+ 225%	26, 83, 124
	HUS210	16	1⅞	9	3	—	30-16d	10-16d	2845	3000	—	3775	—	3920	—	4020	+ 450%	4, 37, 87, 121, 133
DBL 2x14	LUS28-2	18	3⅝	7	2	—	6-16d	4-16d	1140	1165	—	1265	—	1455	—	1585	Lowest	1, 84, 121, 133
	LUS210-2	18	3⅝	9	2	—	8-16d	6-16d	1710	1745	—	1765	—	2030	—	2210	+ 34%	26, 83, 121, 124
	U210-2	16	3⅝	8½	2	14-10d	14-16d	6-10d	890	1065	1555	1860	1785	2140	1940	2330	+ 88%	1, 84, 121, 133, 140
	HUS210-2	14	3⅝	9⅞	2	—	8-16d	8-16d	2160	2590	—	2010	—	2310	—	2510	+ 217%	1, 84, 121, 133, 140
2x16	HU210-2 (Min)	14	3⅝	8⅞	2½	—	14-16d	6-10d	905	1085	—	1875	—	2155	—	2345	+ 441%	26, 83, 124
	HU210-2 (Max)	14	3⅝	8⅞	2½	—	18-16d	10-10d	1505	1810	—	2410	—	2775	—	3015	+ 467%	26, 83, 124
	HHUS210-2	14	3⅝	8⅝	3	—	30-16d	10-16d	2855	3430	—	5190	—	5900	—	5900	*	4, 37, 121, 133, 140
	LUS28-3	18	4⅞	6¼	2	—	6-16d	4-16d	1140	1165	—	1265	—	1455	—	1585	*	9, 121, 133
DBL 2x16	LUS210-3	18	4⅞	8⅞	2	—	8-16d	6-16d	1710	1745	—	1765	—	2030	—	2210	*	26, 83, 124
	U210-3	16	4⅞	7¾	2	14-10d	14-16d	6-10d	890	1065	1555	1860	1785	2140	1940	2330	*	26, 83, 124
	HU210-3 (Min)	14	4⅞	8⅞	2½	—	14-16d	6-10d	905	1085	—	1875	—	2155	—	2345	*	26, 83, 124
	HU210-3 (Max)	14	4⅞	8⅞	2½	—	18-16d	10-10d	1505	1810	—	2410	—	2775	—	3015	*	133
2x18	HHUS210-3	14	4⅞	9	3	—	30-16d	10-16d	2855	3430	—	5190	—	5900	—	5900	*	26, 83, 124
	HGUS210-3	12	4⅞	9⅞	4	—	46-16d	16-16d	3630	3630	—	8780	—	8940	—	8940	*	133

1. 10d commons or 16d sinkers may be used instead of the specified 16d at 0.85 of the table load value.
2. 16d sinkers may be used instead of the specified 10d commons with no load reduction. (16d sinkers are not acceptable for HDG applications.)
3. Uplift loads have been increased 33% and 60% for earthquake or wind loading with no further increase allowed. Divide by 1.33 and 1.60 for normal loading such as in cantilever construction.
4. MIN nailing quantity and load values—fill all round holes; MAX nailing quantity and load values—fill all round and triangle holes.

5. DF/SP loads can be used for SCL that has fastener holding capacity of Doug Fir.
6. Truss chord cross-grain tension may limit allowable loads. Refer to Technical Bulletins T-ANSITPISPF, T-ANSITPISP and T-ANSITPIDF for allowable loads that consider ANSI/TPI 1-2002 wood member design criteria.
7. NAILS: 16d = 0.162" dia. x 3 1/2" long, 10d = 0.148" dia. x 3" long, 10dx1 1/2 = 0.148" dia. x 1 1/2" long. See page 16-17 for other nail sizes and information.

* Hangers do not have an Installed Cost Index.



FACE MOUNT HANGERS – SOLID SAWN LUMBER (DF & SP)

Available with additional corrosion protection. Check with factory.

CODES: See page 12 for Code Listing Key Chart.

Joist Size	Model No.	Ga	Dimensions			Fasteners			Doug Fir Larch/Southern Pine Allowable Loads								Installed Cost Index (ICI)	Code Ref.
			W	H	B	Header		Joist	Uplift		Floor (100)		Snow (115)		Roof (125)			
						10d	16d		(133)	(160)	10d	16d	10d	16d	10d	16d		
SAWN LUMBER SIZES																		
QUAD 2x10	HHUS210-4	14	6⅝	8⅞	3	—	30-16d	10-16d	2855	3430	—	5190	—	5900	—	5900	*	133
	HGUS210-4	12	6⅞ ₁₆	9⅞	4	—	46-16d	16-16d	3630	3630	—	8780	—	8940	—	8940	*	
2x12	LUS210	18	1⅞ ₁₆	7⅞ ₁₆	1¾	8-10d	—	4-10d	930	1115	1275	—	1470	—	1595	—	Lowest	4, 37, 87, 121, 133, 140
	LU210	20	1⅞ ₁₆	7⅞ ₁₆	1½	10-10d	10-16d	6-10dx1½	735	850	1110	1330	1275	1530	1390	1660	+ 11%	2, 40, 121
	U210	16	1⅞ ₁₆	7⅞ ₁₆	2	10-10d	10-16d	6-10dx1½	720	865	1110	1330	1275	1530	1390	1660	+ 53%	26, 83, 124
	HU212	14	1⅞ ₁₆	9	2¼	—	10-16d	6-10dx1½	720	865	—	1340	—	1540	—	1675	+ 347%	
	HUS210	16	1⅞	9	3	—	30-16d	10-16d	2845	3000	—	3775	—	3920	—	4020	+ 378%	
DBL 2x12	LUS210-2	18	3⅝	9	2	—	8-16d	6-16d	1550	1550	—	1765	—	2030	—	2210	Lowest	1, 84, 121, 133
	U210-2	16	3⅝	8½	2	14-10d	14-16d	6-10d	890	1065	1555	1860	1785	2140	1940	2330	+ 40%	26, 83, 121, 124
	LUS214-2	18	3⅝	10⅞ ₁₆	2	—	10-16d	6-16d	1550	1550	—	2030	—	2335	—	2540	+ 56%	1, 84, 121, 133
	HUS210-2	14	3⅝	9⅞ ₁₆	2	—	8-16d	8-16d	2050	2590	—	2010	—	2310	—	2510	+ 136%	
	HUS212-2	14	3⅝	10¾	2	—	10-16d	10-16d	2560	3240	—	2510	—	2885	—	3140	+ 156%	
	HU212-2 (Min)	14	3⅝	10⅞ ₁₆	2½	—	16-16d	6-10d	905	1085	—	2145	—	2465	—	2680	+ 387%	
HU212-2 (Max)	14	3⅝	10⅞ ₁₆	2½	—	22-16d	10-10d	1505	1810	—	2950	—	3390	—	3685	+ 411%		
TPL 2x12	LUS210-3	18	4⅝	8⅞ ₁₆	2	—	8-16d	6-16d	1550	1550	—	1765	—	2030	—	2210	*	9, 121, 133
	HU212-3 (Min)	14	4⅞ ₁₆	10⅞ ₁₆	2½	—	16-16d	6-10d	905	1085	—	2145	—	2465	—	2680	*	26, 83, 124
	HU212-3 (Max)	14	4⅞ ₁₆	10⅞ ₁₆	2½	—	22-16d	10-10d	1505	1810	—	2950	—	3390	—	3685	*	
	U210-3	16	4⅝	7¾	2	14-10d	14-16d	6-10d	890	1065	1555	1860	1785	2140	1940	2330	*	
2x14	LUS210	18	1⅞ ₁₆	7⅞ ₁₆	1¾	8-10d	—	4-10d	930	1115	1275	—	1470	—	1595	—	Lowest	4, 37, 87, 121, 133, 140
	LU210	20	1⅞ ₁₆	7⅞ ₁₆	1¾	10-10d	10-16d	6-10dx1½	735	850	1110	1330	1275	1530	1390	1660	+ 11%	2, 40, 121
	U210	16	1⅞ ₁₆	7⅞ ₁₆	2	10-10d	10-16d	6-10dx1½	720	865	1110	1330	1275	1530	1390	1660	+ 53%	26, 83, 124
	HU214	14	1⅞ ₁₆	10⅞	2¼	—	12-16d	6-10dx1½	720	865	—	1610	—	1850	—	2010	+ 88%	
	U214	16	1⅞ ₁₆	10	2	12-10d	12-16d	8-10dx1½	960	1150	1330	1595	1530	1835	1665	1995	+ 147%	
DBL 2x14	U210-2	16	3⅝	8½	2	14-10d	14-16d	6-10d	890	1065	1555	1860	1785	2140	1940	2330	Lowest	1, 84, 121, 133
	LUS214-2	18	3⅝	10⅞ ₁₆	2	—	10-16d	6-16d	1710	1745	—	2030	—	2335	—	2540	+ 12%	
	HUS212-2	14	3⅝	10¾	2	—	10-16d	10-16d	2700	3240	—	2510	—	2885	—	3140	+ 83%	
	HU212-2 (Min)	14	3⅝	10⅞ ₁₆	2½	—	16-16d	6-10d	905	1085	—	2145	—	2465	—	2680	+ 248%	
	HU212-2 (Max)	14	3⅝	10⅞ ₁₆	2½	—	22-16d	10-10d	1505	1810	—	2950	—	3390	—	3685	+ 265%	26, 83, 124
	HU214-2 (Min)	14	3⅝	12⅞ ₁₆	2½	—	18-16d	8-10d	1205	1505	—	2410	—	2775	—	3015	+ 259%	
HU214-2 (Max)	14	3⅝	12⅞ ₁₆	2½	—	24-16d	12-10d	1810	2170	—	3215	—	3700	—	4020	+ 276%		
TPL 2x14	U210-3	16	4⅝	7¾	2	14-10d	14-16d	6-10d	890	1065	1555	1860	1785	2140	1940	2330	*	26, 83, 124
	HU214-3 (Min)	14	4⅞ ₁₆	12⅞ ₁₆	2½	—	18-16d	8-10d	1205	1445	—	2410	—	2775	—	3015	*	
	HU214-3 (Max)	14	4⅞ ₁₆	12⅞ ₁₆	2½	—	24-16d	12-10d	1810	2170	—	3215	—	3700	—	4020	*	
2x16	U214	16	1⅞ ₁₆	10	2	12-10d	12-16d	8-10dx1½	960	1150	1330	1595	1530	1835	1665	1995	Lowest	1, 84, 121, 133
	HU214	14	1⅞ ₁₆	10⅞	2¼	—	12-16d	6-10dx1½	720	865	—	1610	—	1850	—	2010	+ 130%	
	HU216	14	1⅞ ₁₆	12⅞ ₁₆	2¼	—	18-16d	8-10dx1½	960	1155	—	2410	—	2775	—	3015	+ 130%	
DBL 2x16	HUS212-2	14	3⅝	10¾	2	—	10-16d	10-16d	2700	3240	—	2510	—	2885	—	3140	Lowest	26, 83, 124
	HU216-2 (Min)	14	3⅝	13⅞	2½	—	20-16d	8-10d	1205	1445	—	2680	—	3080	—	3350	+ 111%	
	HU216-2 (Max)	14	3⅝	13⅞	2½	—	26-16d	12-10d	1810	2015	—	3485	—	4005	—	4355	+ 120%	
TPL 2x16	HU216-3 (Min)	14	4⅞ ₁₆	13⅞	2½	—	20-16d	8-10d	1205	1445	—	2680	—	3080	—	3350	*	26, 83, 124
	HU216-3 (Max)	14	4⅞ ₁₆	13⅞	2½	—	26-16d	12-10d	1810	2015	—	3485	—	4005	—	4355	*	
3x4	U34	16	2⅞ ₁₆	3⅞	2	4-10d	4-16d	2-10dx1½	240	265	445	530	510	610	555	665	*	133
	HU34	14	2⅞ ₁₆	3⅞	2½	—	4-16d	2-10dx1½	240	290	—	535	—	615	—	670	*	
3x6	U36	16	2⅞ ₁₆	5⅞	2	8-10d	8-16d	4-10dx1½	480	575	890	1065	1020	1225	1110	1330	*	26, 83, 124
	LUS36	18	2⅞ ₁₆	5¼	2	—	4-16d	4-16d	1140	1160	—	1000	—	1150	—	1250	*	
	HU36	14	2⅞ ₁₆	5⅞	2½	—	8-16d	4-10dx1½	480	575	—	1070	—	1235	—	1340	*	
3x8	U36	16	2⅞ ₁₆	5⅞	2	8-10d	8-16d	4-10dx1½	480	575	890	1065	1020	1225	1110	1330	*	129, 133
	HU38	14	2⅞ ₁₆	7⅞	2½	—	10-16d	4-10dx1½	480	575	—	1340	—	1540	—	1675	*	
3x10	U310	16	2⅞ ₁₆	8⅞	2	14-10d	14-16d	6-10dx1½	720	865	1555	1860	1785	2140	1940	2330	*	26, 83, 124
	LUS310	18	2⅞ ₁₆	7¼	2	—	6-16d	4-16d	1140	1160	—	1265	—	1455	—	1585	*	
	HU310	14	2⅞ ₁₆	8⅞	2½	—	14-16d	6-10dx1½	720	865	—	1875	—	2155	—	2345	*	
3x12	U310	16	2⅞ ₁₆	8⅞	2	14-10d	14-16d	6-10dx1½	720	865	1555	1860	1785	2140	1940	2330	*	26, 83, 124
	HU312	14	2⅞ ₁₆	10⅞	2½	—	16-16d	6-10dx1½	720	865	—	2145	—	2465	—	2680	*	
3x14	U314	16	2⅞ ₁₆	10½	2	16-10d	16-16d	6-10dx1½	720	865	1775	2130	2040	2445	2220	2660	*	1, 84, 121, 133
	HU314	14	2⅞ ₁₆	12⅞	2½	—	18-16d	8-10dx1½	960	1150	—	2410	—	2775	—	3015	*	
3x16	U314	16	2⅞ ₁₆	10½	2	16-10d	16-16d	6-10dx1½	720	865	1775	2130	2040	2445	2220	2660	*	26, 83, 124
	HU316	14	2⅞ ₁₆	14⅞	2½	—	20-16d	8-10dx1½	960	1150	—	2680	—	3080	—	3350	*	
4x4	LUS44	18	3⅞ ₁₆	3	2	—	4-16d	2-16d	440	440	—	765	—	880	—	960	Lowest	1, 84, 121, 133
	U44	16	3⅞ ₁₆	2⅞	2	4-10d	4-16d	2-10d	295	355	445	530	510	610	555	665	+ 20%	26, 83, 124
	HU44	14	3⅞ ₁₆	2⅞	2½	—	4-16d	2-10d	300	360	—	535	—	615	—	670	+ 161%	

See footnotes on opposite page.

FACE MOUNT HANGERS – SOLID SAWN LUMBER (DF & SP)

Available with additional corrosion protection. Check with factory.

CODES: See page 12 for Code Listing Key Chart.

Joist Size	Model No.	Ga	Dimensions			Fasteners			Doug Fir Larch/Southern Pine Allowable Loads								Installed Cost Index (ICI)	Code Ref.
			W	H	B	Header		Joist	Uplift		Floor (100)		Snow (115)		Roof (125)			
						10d	16d		(133)	(160)	10d	16d	10d	16d	10d	16d		
SAWN LUMBER SIZES																		
4x6	LUS46	18	3 ⁹ / ₁₆	4 ³ / ₄	2	—	4-16d	4-16d	1140	1160	—	1000	—	1150	—	1250	Lowest	1, 84, 121, 133
	U46	16	3 ⁹ / ₁₆	4 ⁷ / ₈	2	8-10d	8-16d	4-10d	590	710	890	1065	1020	1225	1110	1330	+ 37%	26, 83, 121, 124
	HUS46	14	3 ⁹ / ₁₆	5	2	—	4-16d	4-16d	1080	1235	—	1005	—	1155	—	1255	+ 152%	1, 84, 121, 133
	HU46 (Min)	14	3 ⁹ / ₁₆	5 ³ / ₁₆	2 ¹ / ₂	—	8-16d	4-10d	605	725	—	1070	—	1235	—	1340	+ 163%	26, 83, 124
	HU46 (Max)	14	3 ⁹ / ₁₆	5 ³ / ₁₆	2 ¹ / ₂	—	12-16d	6-10d	905	1085	—	1610	—	1850	—	2010	+ 185%	
4x8	LUS46	18	3 ⁹ / ₁₆	4 ³ / ₄	2	—	4-16d	4-16d	1140	1165	—	1000	—	1150	—	1250	Lowest	1, 84, 121, 133
	U46	16	3 ⁹ / ₁₆	4 ⁷ / ₈	2	8-10d	8-16d	4-10d	590	710	890	1065	1020	1225	1110	1330	+ 37%	26, 83, 121, 124
	LUS48	18	3 ⁹ / ₁₆	6 ³ / ₄	2	—	6-16d	4-16d	1140	1165	—	1265	—	1455	—	1585	+ 40%	1, 84, 121, 133
	HUS48	14	3 ⁹ / ₁₆	6 ¹⁵ / ₁₆	2	—	6-16d	6-16d	1550	1550	—	1505	—	1730	—	1885	+ 203%	
	HU48 (Min)	14	3 ⁹ / ₁₆	6 ¹³ / ₁₆	2 ¹ / ₂	—	10-16d	4-10d	605	725	—	1340	—	1540	—	1675	+ 213%	26, 83, 124
HU48 (Max)	14	3 ⁹ / ₁₆	6 ¹³ / ₁₆	2 ¹ / ₂	—	14-16d	6-10d	905	1085	—	1875	—	2155	—	2345	+ 235%		
4x10	LUS48	18	3 ⁹ / ₁₆	6 ³ / ₄	2	—	6-16d	4-16d	1140	1165	—	1265	—	1455	—	1585	Lowest	1, 84, 121, 133
	LUS410	18	3 ⁹ / ₁₆	8 ³ / ₄	2	—	8-16d	6-16d	1710	1745	—	1765	—	2030	—	2210	+ 19%	26, 83, 121, 124
	U410	16	3 ⁹ / ₁₆	8 ³ / ₈	2	14-10d	14-16d	6-10d	890	1065	1555	1860	1785	2140	1940	2330	+ 74%	
	HUS410	14	3 ⁹ / ₁₆	8 ¹⁵ / ₁₆	2	—	8-16d	8-16d	2160	2590	—	2010	—	2310	—	2510	+ 154%	1, 84, 121, 133
	HU410 (Min)	14	3 ⁹ / ₁₆	8 ⁵ / ₈	2 ¹ / ₂	—	14-16d	6-10d	905	1085	—	1875	—	2155	—	2345	+ 232%	26, 83, 124
HU410 (Max)	14	3 ⁹ / ₁₆	8 ⁵ / ₈	2 ¹ / ₂	—	18-16d	10-10d	1505	1810	—	2410	—	2775	—	3015	+ 253%		
4x12	LUS410	18	3 ⁹ / ₁₆	8 ³ / ₄	2	—	8-16d	6-16d	1710	1745	—	1765	—	2030	—	2210	Lowest	1, 84, 121, 133
	LUS414	18	3 ⁹ / ₁₆	10 ³ / ₄	2	—	10-16d	6-16d	1710	1745	—	2030	—	2335	—	2540	+ 33%	26, 83, 121, 124
	U410	16	3 ⁹ / ₁₆	8 ³ / ₈	2	14-10d	14-16d	6-10d	890	1065	1555	1860	1785	2140	1940	2330	+ 46%	
	HUS410	14	3 ⁹ / ₁₆	8 ¹⁵ / ₁₆	2	—	8-16d	8-16d	2160	2590	—	2010	—	2310	—	2510	+ 114%	1, 84, 121, 133
	HUS412	14	3 ⁹ / ₁₆	10 ¹ / ₂	2	—	10-16d	10-16d	2700	3240	—	2510	—	2885	—	3140	+ 129%	
HU412 (Min)	14	3 ⁹ / ₁₆	10 ⁵ / ₁₆	2 ¹ / ₂	—	16-16d	6-10d	905	1085	—	2145	—	2465	—	2680	+ 268%	26, 83, 124	
HU412 (Max)	14	3 ⁹ / ₁₆	10 ⁵ / ₁₆	2 ¹ / ₂	—	22-16d	10-10d	1505	1810	—	2950	—	3390	—	3685	+ 290%		
4x14	LUS410	18	3 ⁹ / ₁₆	8 ³ / ₄	2	—	8-16d	6-16d	1710	1745	—	1765	—	2030	—	2210	Lowest	1, 84, 121, 133
	LUS414	18	3 ⁹ / ₁₆	10 ³ / ₄	2	—	10-16d	6-16d	1710	1745	—	2030	—	2335	—	2540	+ 33%	26, 83, 121, 124
	U414	16	3 ⁹ / ₁₆	10	2	16-10d	16-16d	6-10d	890	1065	1775	2130	2040	2445	2220	2660	+ 93%	
	HUS412	14	3 ⁹ / ₁₆	10 ¹ / ₂	2	—	10-16d	10-16d	2700	3240	—	2510	—	2885	—	3140	+ 129%	1, 84, 121, 133
	HU414 (Min)	14	3 ⁹ / ₁₆	12 ⁵ / ₈	2 ¹ / ₂	—	18-16d	8-10d	1205	1445	—	2410	—	2775	—	3015	+ 333%	26, 83, 124
HU414 (Max)	14	3 ⁹ / ₁₆	12 ⁵ / ₈	2 ¹ / ₂	—	24-16d	12-10d	1810	2170	—	3215	—	3700	—	4020	+ 355%		
4x16	U414	16	3 ⁹ / ₁₆	10	2	16-10d	16-16d	6-10d	890	1065	1775	2130	2040	2445	2220	2660	Lowest	1, 84, 121, 133
	HUS412	14	3 ⁹ / ₁₆	10 ¹ / ₂	2	—	10-16d	10-16d	2700	3240	—	2510	—	2885	—	3140	+ 19%	
	HU416 (Min)	14	3 ⁹ / ₁₆	13 ⁵ / ₈	2 ¹ / ₂	—	20-16d	8-10d	1205	1445	—	2680	—	3080	—	3350	+ 167%	
	HU416 (Max)	14	3 ⁹ / ₁₆	13 ⁵ / ₈	2 ¹ / ₂	—	26-16d	12-10d	1810	2170	—	3485	—	4005	—	4355	+ 178%	
	U66	16	5 ¹ / ₂	5	2	8-10d	8-16d	4-10d	590	710	890	1065	1020	1225	1110	1330	*	
6x6	HU66 (Min)	14	5 ¹ / ₂	4 ³ / ₁₆	2 ¹ / ₂	—	8-16d	4-16d	715	860	—	1070	—	1235	—	1340	*	
	HU66 (Max)	14	5 ¹ / ₂	4 ³ / ₁₆	2 ¹ / ₂	—	12-16d	6-16d	1070	1285	—	1610	—	1850	—	2010	*	
	U66	16	5 ¹ / ₂	5	2	8-10d	8-16d	4-10d	590	710	890	1065	1020	1225	1110	1330	*	
6x8	HU68 (Min)	14	5 ¹ / ₂	5 ¹³ / ₁₆	2 ¹ / ₂	—	10-16d	4-16d	715	860	—	1340	—	1540	—	1675	*	
	HU68 (Max)	14	5 ¹ / ₂	5 ¹³ / ₁₆	2 ¹ / ₂	—	14-16d	6-16d	1070	1285	—	1875	—	2155	—	2345	*	
	U610	16	5 ¹ / ₂	8 ¹ / ₂	2	14-10d	14-16d	6-10d	890	1065	1555	1860	1785	2140	1940	2330	*	
6x10	HU610 (Min)	14	5 ¹ / ₂	7 ⁵ / ₈	2 ¹ / ₂	—	14-16d	6-16d	1070	1285	—	1875	—	2155	—	2345	*	
	HU610 (Max)	14	5 ¹ / ₂	7 ⁵ / ₈	2 ¹ / ₂	—	18-16d	8-16d	1430	1715	—	2410	—	2775	—	3015	*	
	HU612 (Min)	14	5 ¹ / ₂	9 ³ / ₈	2 ¹ / ₂	—	16-16d	6-16d	1070	1285	—	2145	—	2465	—	2680	*	
6x12	HU612 (Max)	14	5 ¹ / ₂	9 ³ / ₈	2 ¹ / ₂	—	22-16d	8-16d	1430	1715	—	2950	—	3390	—	3685	*	
	HU614 (Min)	14	5 ¹ / ₂	11 ⁵ / ₈	2 ¹ / ₂	—	18-16d	8-16d	1430	1715	—	2410	—	2775	—	3015	*	
	HU614 (Max)	14	5 ¹ / ₂	11 ⁵ / ₈	2 ¹ / ₂	—	24-16d	12-16d	2145	2575	—	3215	—	3700	—	4020	*	
6x16	HU616 (Min)	14	5 ¹ / ₂	12 ¹ / ₁₆	2 ¹ / ₂	—	20-16d	8-16d	1430	1715	—	2680	—	3080	—	3350	*	
	HU616 (Max)	14	5 ¹ / ₂	12 ¹ / ₁₆	2 ¹ / ₂	—	26-16d	12-16d	2145	2575	—	3485	—	4005	—	4355	*	
	HU88 (Min)	14	7 ¹ / ₂	6 ⁵ / ₈	2 ¹ / ₂	—	10-16d	4-16d	715	860	—	1340	—	1540	—	1675	*	
8x8	HU88 (Max)	14	7 ¹ / ₂	6 ⁵ / ₈	2 ¹ / ₂	—	14-16d	6-16d	1070	1285	—	1875	—	2155	—	2345	*	
	HU810 (Min)	14	7 ¹ / ₂	8 ³ / ₈	2 ¹ / ₂	—	14-16d	6-16d	1070	1285	—	1875	—	2155	—	2345	*	
	HU810 (Max)	14	7 ¹ / ₂	8 ³ / ₈	2 ¹ / ₂	—	18-16d	8-16d	1430	1715	—	2410	—	2775	—	3015	*	
8x12	HU812 (Min)	14	7 ¹ / ₂	10 ⁵ / ₈	2 ¹ / ₂	—	16-16d	6-16d	1070	1285	—	2145	—	2465	—	2680	*	
	HU812 (Max)	14	7 ¹ / ₂	10 ⁵ / ₈	2 ¹ / ₂	—	22-16d	8-16d	1430	1715	—	2950	—	3390	—	3685	*	
	HU814 (Min)	14	7 ¹ / ₂	11 ⁵ / ₈	2 ¹ / ₂	—	18-16d	8-16d	1430	1715	—	2410	—	2775	—	3015	*	
8x14	HU814 (Max)	14	7 ¹ / ₂	11 ⁵ / ₈	2 ¹ / ₂	—	24-16d	12-16d	2145	2575	—	3215	—	3700	—	4020	*	
	HU816 (Min)	14	7 ¹ / ₂	13 ⁵ / ₈	2 ¹ / ₂	—	20-16d	8-16d	1430	1715	—	2680	—	3080	—	3350	*	
	HU816 (Max)	14	7 ¹ / ₂	13 ⁵ / ₈	2 ¹ / ₂	—	26-16d	12-16d	2145	2575	—	3485	—	4005	—	4355	*	

FACE MOUNT HANGERS – SOLID SAWN LUMBER (SPF)

Available with additional corrosion protection. Check with factory.

CODES: See page 12 for Code Listing Key Chart.

Joist Size	Model No.	Ga	Dimensions			Fasteners			Spruce-Pine-Fir Allowable Loads								Code Ref.
			W	H	B	Header		Joist	Uplift		Floor (100)		Snow (115)		Roof (125)		
						10d	16d		(133)	(160)	10d	16d	10d	16d	10d	16d	
SAWN LUMBER SIZES																	
2x4	LU24	20	1⅞	3½	1½	4-10d	4-16d	2-10dx1½	210	255	385	460	440	530	480	575	2, 40, 121
	LUS24	18	1⅞	3½	1¾	4-10d	—	2-10d	390	465	540	—	625	—	675	—	4, 37, 87, 121, 133, 140
	U24	16	1⅞	3½	1½	4-10d	4-16d	2-10dx1½	210	250	385	460	440	530	480	575	26, 83, 124
	HU26	14	1⅞	3⅛	2¼	—	4-16d	2-10dx1½	210	250	—	465	—	535	—	580	26, 83, 124
DBL 2x4	LUS24-2	18	3⅛	3½	2	—	4-16d	2-16d	440	440	—	640	—	735	—	800	1, 84, 121, 133
	U24-2	16	3⅛	3	2	4-10d	4-16d	2-10d	255	305	385	460	440	530	480	575	26, 83, 121, 124
	HU24-2	14	3⅛	3⅛	2½	—	4-16d	2-10d	260	315	—	465	—	535	—	580	26, 83, 121, 124
2x6	LUS26	18	1⅞	4¾	1¾	4-10d	—	4-10d	780	935	700	—	805	—	875	—	4, 37, 87, 121, 133, 140
	LU26	20	1⅞	4¾	1½	6-10d	6-16d	4-10dx1½	420	505	575	690	660	795	720	860	2, 40, 121
	U26	16	1⅞	4¾	2	6-10d	6-16d	4-10dx1½	415	500	575	690	660	795	720	860	26, 83, 124
	HU26	14	1⅞	3⅛	2¼	—	4-16d	2-10dx1½	210	250	—	465	—	535	—	580	26, 83, 124
	HUS26	16	1⅞	5⅞	3	—	14-16d	6-16d	1390	1550	—	2155	—	2475	—	2540	4, 37, 87, 121, 133
DBL 2x6	LUS26-2	18	3⅛	4⅞	2	—	4-16d	4-16d	925	1115	—	820	—	945	—	1025	1, 84, 121, 133
	U26-2	16	3⅛	5	2	8-10d	8-16d	4-10d	510	615	770	920	885	1060	960	1150	26, 83, 121, 124
	HUS26-2	14	3⅛	5⅞	2	—	4-16d	4-16d	875	1055	—	825	—	950	—	1030	1, 84, 121, 133
	HU26-2 (Min)	14	3⅛	5⅞	2½	—	8-16d	4-10d	525	625	—	930	—	1065	—	1160	26, 83, 124
	HU26-2 (Max)	14	3⅛	5⅞	2½	—	12-16d	6-10d	785	940	—	1390	—	1600	—	1740	26, 83, 124
TPL 2x6	LUS26-3	18	4⅞	4⅞	2	—	4-16d	4-16d	925	1115	—	820	—	945	—	1025	9, 121, 133
	U26-3	16	4⅞	4¼	2	8-10d	8-16d	4-10d	510	615	770	920	885	1060	960	1150	26, 83, 121, 124
	HU26-3 (Min)	14	4⅞	5½	2½	—	8-16d	4-10d	525	625	—	930	—	1065	—	1160	170
	HU26-3 (Max)	14	4⅞	5½	2½	—	12-16d	6-10d	785	940	—	1390	—	1600	—	1740	170
2x8	LUS26	18	1⅞	4¾	1¾	4-10d	—	4-10d	780	935	700	—	805	—	875	—	4, 37, 87, 121, 133, 140
	LU26	20	1⅞	4¾	1½	6-10d	6-16d	4-10dx1½	420	505	575	690	660	795	720	860	2, 40, 121
	LUS28	18	1⅞	6⅞	1¾	6-10d	—	4-10d	780	935	890	—	1025	—	1115	—	4, 37, 87, 121, 133, 140
	LU28	20	1⅞	6⅞	1½	8-10d	8-16d	6-10dx1½	630	760	770	920	885	1060	960	1150	2, 40, 121
	U26	16	1⅞	4¾	2	6-10d	6-16d	4-10dx1½	415	500	575	690	660	795	720	860	26, 83, 124
	HU28	14	1⅞	5¼	2¼	—	6-16d	4-10dx1½	415	500	—	695	—	800	—	870	26, 83, 124
	HUS26	16	1⅞	5⅞	3	—	14-16d	6-16d	1390	1550	—	2155	—	2475	—	2540	4, 37, 87, 121, 133
	HUS28	16	1⅞	7	3	—	22-16d	8-16d	1855	2000	—	2580	—	2680	—	2745	4, 37, 87, 121, 133
DBL 2x8	LUS26-2	18	3⅛	4⅞	2	—	4-16d	4-16d	925	1115	—	820	—	945	—	1025	1, 84, 121, 133
	LUS28-2	18	3⅛	7	2	—	6-16d	4-16d	925	1115	—	1050	—	1210	—	1315	1, 84, 121, 133
	U26-2	16	3⅛	5	2	8-10d	8-16d	4-10d	510	615	770	920	885	1060	960	1150	26, 83, 121, 124
	HUS28-2	14	3⅛	7⅞	2	—	6-16d	6-16d	1315	1550	—	1240	—	1425	—	1550	1, 84, 121, 133
	HU28-2 (Min)	14	3⅛	7	2½	—	10-16d	4-10d	525	625	—	1160	—	1335	—	1450	26, 83, 124
	HU28-2 (Max)	14	3⅛	7	2½	—	14-16d	6-10d	785	940	—	1625	—	1870	—	2030	26, 83, 124
TPL 2x8	LUS28-3	18	4⅞	6¼	2	—	6-16d	4-16d	925	1115	—	1050	—	1210	—	1315	9, 121, 133
	U26-3	16	4⅞	4¼	2	8-10d	8-16d	4-10d	510	615	770	920	885	1060	960	1150	26, 83, 121, 124
2x10	LUS28	18	1⅞	6⅞	1¾	6-10d	—	4-10d	780	935	890	—	1025	—	1115	—	4, 37, 87, 121, 133, 140
	LU28	20	1⅞	6⅞	1½	8-10d	8-16d	6-10dx1½	630	760	770	920	885	1060	960	1150	2, 40, 121
	LUS210	18	1⅞	7⅞	1¾	8-10d	—	4-10d	780	935	1085	—	1245	—	1355	—	4, 37, 87, 121, 133, 140
	LU210	20	1⅞	7⅞	1½	10-10d	10-16d	6-10dx1½	630	760	960	1150	1105	1320	1200	1440	2, 40, 121
	U210	16	1⅞	7⅞	2	10-10d	10-16d	6-10dx1½	625	750	960	1150	1105	1320	1200	1440	26, 83, 124
	HU210	14	1⅞	7⅞	2¼	—	8-16d	4-10dx1½	415	500	—	930	—	1065	—	1160	26, 83, 124
DBL 2x10	HUS210	16	1⅞	9	3	—	30-16d	10-16d	2310	2780	—	2745	—	2870	—	2955	4, 37, 87, 121, 133
	LUS28-2	18	3⅛	7	2	—	6-16d	4-16d	925	1115	—	1050	—	1210	—	1315	1, 84, 121, 133
	LUS210-2	18	3⅛	9	2	—	8-16d	6-16d	1390	1670	—	1465	—	1680	—	1830	1, 84, 121, 133
	U210-2	16	3⅛	8½	2	14-10d	14-16d	6-10d	770	920	1345	1610	1545	1850	1680	2010	26, 83, 121, 124
	HUS210-2	14	3⅛	9⅞	2	—	8-16d	8-16d	1755	2105	—	1650	—	1900	—	2065	1, 84, 121, 133
	HU210-2 (Min)	14	3⅛	8⅞	2½	—	14-16d	6-10d	785	940	—	1625	—	1870	—	2030	26, 83, 124
	HU210-2 (Max)	14	3⅛	8⅞	2½	—	18-16d	10-10d	1305	1570	—	2090	—	2400	—	2610	26, 83, 124
TPL 2x10	HHUS210-2	14	3⅞	8⅞	3	—	30-16d	10-16d	2450	2940	—	4475	—	5145	—	5145	4, 37, 121, 133, 140
	LUS28-3	18	4⅞	6¼	2	—	6-16d	4-16d	925	1115	—	1050	—	1210	—	1315	9, 121, 133
	LUS210-3	18	4⅞	8⅞	2	—	8-16d	6-16d	1390	1670	—	1465	—	1680	—	1830	9, 121, 133
	U210-3	16	4⅞	7¾	2	14-10d	14-16d	6-10d	770	920	1345	1610	1545	1850	1680	2010	26, 83, 124
	HU210-3 (Min)	14	4⅞	8⅞	2½	—	14-16d	6-10d	785	940	—	1625	—	1870	—	2030	26, 83, 124
	HU210-3 (Max)	14	4⅞	8⅞	2½	—	18-16d	10-10d	1305	1570	—	2090	—	2400	—	2610	26, 83, 124
QUAD 2x10	HHUS210-3	14	4⅞	9	3	—	30-16d	10-16d	2450	2940	—	4475	—	5145	—	5145	133
	HHUS210-4	14	6⅞	8⅞	3	—	30-16d	10-16d	2330	2795	—	4385	—	5040	—	5480	133
	LUS210	18	1⅞	7⅞	1¾	8-10d	—	4-10d	780	935	1085	—	1245	—	1355	—	4, 37, 87, 121, 133, 140
	LU210	20	1⅞	7⅞	1½	10-10d	10-16d	6-10dx1½	630	760	960	1150	1105	1320	1200	1440	2, 40, 121
	U210	16	1⅞	7⅞	2	10-10d	10-16d	6-10dx1½	625	750	960	1150	1105	1320	1200	1440	26, 83, 124
2x12	HU212	14	1⅞	9	2¼	—	10-16d	6-10dx1½	625	750	—	1160	—	1335	—	1440	26, 83, 124
	HUS210	16	1⅞	9	3	—	30-16d	10-16d	2320	2780	—	2745	—	2870	—	2955	4, 37, 87, 121, 133

FACE MOUNT HANGERS – SOLID SAWN LUMBER (SPF)

Available with additional corrosion protection. Check with factory.

CODES: See page 12 for Code Listing Key Chart.

Joist Size	Model No.	Ga	Dimensions			Fasteners			Spruce-Pine-Fir Allowable Loads								Code Ref.	
			W	H	B	Header		Joist	Uplift		Floor (100)		Snow (115)		Roof (125)			
						10d	16d		(133)	(160)	10d	16d	10d	16d	10d	16d		
SAWN LUMBER SIZES																		
DBL 2x12	LUS210-2	18	3⅝	9	2	—	8-16d	6-16d	1390	1670	—	1465	—	1680	—	1830	1, 84, 121, 133	
	U210-2	16	3⅝	8½	2	14-10d	14-16d	6-10d	770	920	1345	1610	1545	1850	1680	2010	26, 83, 121, 124	
	LUS214-2	18	3⅝	10⅞ ₁₆	2	—	10-16d	6-16d	1390	1670	—	1695	—	1945	—	2115	1, 84, 121, 133	
	HUS210-2	14	3⅝	9⅞ ₁₆	2	—	8-16d	8-16d	1755	2105	—	1650	—	1900	—	2065		
	HUS212-2	14	3⅝	10¾	2	—	10-16d	10-16d	2195	2630	—	2065	—	2375	—	2580		
	HU212-2 (Min)	14	3⅝	10⅞ ₁₆	2½	—	16-16d	6-10d	785	940	—	1855	—	2135	—	2320	26, 83, 124	
HU212-2 (Max)	14	3⅝	10⅞ ₁₆	2½	—	22-16d	10-10d	1305	1570	—	2550	—	2935	—	3190			
TPL 2x12	LUS210-3	18	4⅝	8⅜ ₁₆	2	—	8-16d	6-16d	1390	1670	—	1465	—	1680	—	1830	9, 121, 133	
	HU212-3 (Min)	14	4⅞ ₁₆	10⅞ ₁₆	2½	—	16-16d	6-10d	785	940	—	1855	—	2135	—	2320	26, 83, 124	
	HU212-3 (Max)	14	4⅞ ₁₆	10⅞ ₁₆	2½	—	22-16d	10-10d	1305	1570	—	2550	—	2935	—	3190		
2x14	U210-3	16	4⅝	7¾	2	14-10d	14-16d	6-10d	770	920	1345	1610	1545	1850	1680	2010		4, 37, 87, 121, 133, 140
	LUS210	18	1⅞ ₁₆	7⅞ ₁₆	1¾	8-10d	—	4-10d	780	935	1085	—	1245	—	1355	—		
	LU210	20	1⅞ ₁₆	7⅞ ₁₆	1¾	10-10d	10-16d	6-10dx1½	630	760	960	1150	1105	1320	1200	1440	2, 40, 121	
	U210	16	1⅞ ₁₆	7⅞ ₁₆	2	10-10d	10-16d	6-10dx1½	625	750	960	1150	1105	1320	1200	1440	26, 83, 124	
	HU214	14	1⅞ ₁₆	10⅞	2¼	—	12-16d	6-10dx1½	625	750	—	1390	—	1600	—	1740		
U214	16	1⅞ ₁₆	10	2	12-10d	12-16d	8-10dx1½	830	1000	1150	1380	1325	1585	1440	1725			
DBL 2x14	U210-2	16	3⅝	8½	2	14-10d	14-16d	6-10d	770	920	1345	1610	1545	1850	1680	2010	1, 84, 121, 133	
	LUS214-2	18	3⅝	10⅞ ₁₆	2	—	10-16d	6-16d	1390	1670	—	1695	—	1945	—	2115		
	HUS212-2	14	3⅝	10¾	2	—	10-16d	10-16d	2195	2630	—	2065	—	2375	—	2580		
	HU212-2 (Min)	14	3⅝	10⅞ ₁₆	2½	—	16-16d	6-10d	785	940	—	1855	—	2135	—	2320	26, 83, 124	
	HU212-2 (Max)	14	3⅝	10⅞ ₁₆	2½	—	22-16d	10-10d	1305	1570	—	2550	—	2935	—	3190		
	HU214-2 (Min)	14	3⅝	12⅞ ₁₆	2½	—	18-16d	8-10d	1045	1255	—	2090	—	2400	—	2610		
	HU214-2 (Max)	14	3⅝	12⅞ ₁₆	2½	—	24-16d	12-10d	1570	1880	—	2785	—	3200	—	3480		
TPL 2x14	U210-3	16	4⅝	7¾	2	14-10d	14-16d	6-10d	770	920	1345	1610	1545	1850	1680	2010	26, 83, 124	
	HU214-3 (Min)	14	4⅞ ₁₆	12⅞ ₁₆	2½	—	18-16d	8-10d	1045	1255	—	2090	—	2400	—	2610		
	HU214-3 (Max)	14	4⅞ ₁₆	12⅞ ₁₆	2½	—	24-16d	12-10d	1570	1880	—	2785	—	3200	—	3480		
2x16	U214	16	1⅞ ₁₆	10	2	12-10d	12-16d	8-10dx1½	830	1000	1150	1380	1325	1585	1440	1725	26, 83, 124	
	HU214	14	1⅞ ₁₆	10⅞	2¼	—	12-16d	6-10dx1½	625	750	—	1390	—	1600	—	1740		
DBL 2x16	HUS212-2	14	3⅝	10¾	2	—	10-16d	10-16d	2195	2630	—	2065	—	2375	—	2580	1, 84, 121, 133	
	HU216-2 (Min)	14	3⅝	13⅞	2½	—	20-16d	8-10d	1045	1255	—	2320	—	2670	—	2900		
	HU216-2 (Max)	14	3⅝	13⅞	2½	—	26-16d	12-10d	1570	1880	—	3015	—	3470	—	3770		
TPL 2x16	HU216-3 (Min)	14	4⅞ ₁₆	13⅞	2½	—	20-16d	8-10d	1045	1255	—	2320	—	2670	—	2900	26, 83, 124	
	HU216-3 (Max)	14	4⅞ ₁₆	13⅞	2½	—	26-16d	12-10d	1570	1880	—	3015	—	3470	—	3770		
3x4	U34	16	2⅞ ₁₆	3⅝	2	4-10d	4-16d	2-10dx1½	210	250	385	460	440	530	480	575		26, 83, 124
	HU34	14	2⅞ ₁₆	3⅝	2½	—	4-16d	2-10dx1½	210	250	—	465	—	535	—	580		
3x6	U36	16	2⅞ ₁₆	5⅝	2	8-10d	8-16d	4-10dx1½	415	500	770	920	885	1060	960	1150	133	
	LUS36	18	2⅞ ₁₆	5¼	2	—	4-16d	4-16d	925	1115	—	820	—	945	—	1025		
	HU36	14	2⅞ ₁₆	5⅝	2½	—	8-16d	4-10dx1½	415	500	—	930	—	1065	—	1160		
3x8	U36	16	2⅞ ₁₆	5⅝	2	8-10d	8-16d	4-10dx1½	415	500	770	920	885	1060	960	1150	26, 83, 124	
	HU38	14	2⅞ ₁₆	7⅞	2½	—	10-16d	4-10dx1½	415	500	—	1160	—	1335	—	1450		
3x10	U310	16	2⅞ ₁₆	8⅞	2	14-10d	14-16d	6-10dx1½	625	750	1345	1610	1545	1850	1680	2010	129, 133	
	LUS310	18	2⅞ ₁₆	7¼	2	—	6-16d	4-16d	925	1115	—	1050	—	1210	—	1315		
	HU310	14	2⅞ ₁₆	8⅞	2½	—	14-16d	6-10dx1½	625	750	—	1625	—	1870	—	2030		
3x12	U310	16	2⅞ ₁₆	8⅞	2	14-10d	14-16d	6-10dx1½	625	750	1345	1610	1545	1850	1680	2010	26, 83, 124	
	HU312	14	2⅞ ₁₆	10⅝	2½	—	16-16d	6-10dx1½	625	750	—	1855	—	2135	—	2320		
3x14	U314	16	2⅞ ₁₆	10½	2	16-10d	16-16d	6-10dx1½	625	750	1535	1840	1765	2115	1920	2300		
	HU314	14	2⅞ ₁₆	12⅝	2½	—	18-16d	8-10dx1½	830	1000	—	2090	—	2400	—	2610		
3x16	U314	16	2⅞ ₁₆	10½	2	16-10d	16-16d	6-10dx1½	625	750	1535	1840	1765	2115	1920	2300	26, 83, 124	
	HU316	14	2⅞ ₁₆	14⅞	2½	—	20-16d	8-10dx1½	830	1000	—	2320	—	2670	—	2900		
4x4	LUS44	18	3⅞ ₁₆	3	2	—	4-16d	2-16d	440	440	—	640	—	735	—	800	1, 84, 121, 133	
	U44	16	3⅞ ₁₆	2⅞	2	4-10d	4-16d	2-10d	255	305	385	460	440	530	480	575	26, 83, 124	
	HU44	14	3⅞ ₁₆	2⅞	2½	—	4-16d	2-10d	260	315	—	465	—	535	—	580		
4x6	LUS46	18	3⅞ ₁₆	4¾	2	—	4-16d	4-16d	925	1115	—	820	—	945	—	1025	1, 84, 121, 133	
	U46	16	3⅞ ₁₆	4⅞	2	8-10d	8-16d	4-10d	510	615	770	920	885	1060	960	1150	26, 83, 121, 124	
	HUS46	14	3⅞ ₁₆	5	2	—	4-16d	4-16d	875	1055	—	825	—	950	—	1030	1, 84, 121	
	HU46 (Min)	14	3⅞ ₁₆	5⅞ ₁₆	2½	—	8-16d	4-10d	525	625	—	930	—	1065	—	1160	26, 83, 124	
	HU46 (Max)	14	3⅞ ₁₆	5⅞ ₁₆	2½	—	12-16d	6-10d	785	940	—	1390	—	1600	—	1740		

See footnotes on page 75.

FACE MOUNT HANGERS – SOLID SAWN LUMBER (SPF)

Available with additional corrosion protection. Check with factory.

CODES: See page 12 for Code Listing Key Chart.

Joist Size	Model No.	Ga	Dimensions			Fasteners			Spruce-Pine-Fir Allowable Loads								Code Ref.
			W	H	B	Header		Joist	Uplift		Floor (100)		Snow (115)		Roof (125)		
						10d	16d		(133)	(160)	10d	16d	10d	16d	10d	16d	
SAWN LUMBER SIZES																	
4x8	LUS46	18	3 ⁹ / ₁₆	4 ³ / ₄	2	—	4-16d	4-16d	925	1115	—	820	—	945	—	1025	1, 84, 121, 133
	U46	16	3 ⁹ / ₁₆	4 ⁷ / ₈	2	8-10d	8-16d	4-10d	510	615	770	920	885	1060	960	1150	26, 83, 121, 124
	LUS48	18	3 ⁹ / ₁₆	6 ³ / ₄	2	—	6-16d	4-16d	925	1115	—	1050	—	1210	—	1315	1, 84, 121, 133
	HUS48	14	3 ⁹ / ₁₆	6 ¹⁵ / ₁₆	2	—	6-16d	6-16d	1315	1550	—	1240	—	1425	—	1550	26, 83, 124
	HU48 (Min)	14	3 ⁹ / ₁₆	6 ¹³ / ₁₆	2 ¹ / ₂	—	10-16d	4-10d	525	625	—	1160	—	1335	—	1450	26, 83, 124
	HU48 (Max)	14	3 ⁹ / ₁₆	6 ¹³ / ₁₆	2 ¹ / ₂	—	14-16d	6-10d	785	940	—	1625	—	1870	—	2030	
4x10	LUS48	18	3 ⁹ / ₁₆	6 ³ / ₄	2	—	6-16d	4-16d	925	1115	—	1050	—	1210	—	1315	1, 84, 121, 133
	LUS410	18	3 ⁹ / ₁₆	8 ³ / ₄	2	—	8-16d	6-16d	1390	1670	—	1465	—	1680	—	1830	26, 83, 121, 124
	U410	16	3 ⁹ / ₁₆	8 ³ / ₈	2	14-10d	14-16d	6-10d	770	920	1345	1610	1545	1850	1680	2010	1, 84, 121, 133
	HUS410	14	3 ⁹ / ₁₆	8 ¹⁵ / ₁₆	2	—	8-16d	8-16d	1755	2105	—	1650	—	1900	—	2065	26, 83, 124
	HU410 (Min)	14	3 ⁹ / ₁₆	8 ⁵ / ₈	2 ¹ / ₂	—	14-16d	6-10d	785	940	—	1625	—	1870	—	2030	26, 83, 124
	HU410 (Max)	14	3 ⁹ / ₁₆	8 ⁵ / ₈	2 ¹ / ₂	—	18-16d	10-10d	1305	1570	—	2090	—	2400	—	2610	
4x12	LUS410	18	3 ⁹ / ₁₆	8 ³ / ₄	2	—	8-16d	6-16d	1390	1670	—	1465	—	1680	—	1830	1, 84, 121, 133
	LUS414	18	3 ⁹ / ₁₆	10 ³ / ₄	2	—	10-16d	6-16d	1390	1670	—	1695	—	1945	—	2115	26, 83, 121, 124
	U410	16	3 ⁹ / ₁₆	8 ³ / ₈	2	14-10d	14-16d	6-10d	770	920	1345	1610	1545	1850	1680	2010	1, 84, 121, 133
	HUS410	14	3 ⁹ / ₁₆	8 ¹⁵ / ₁₆	2	—	8-16d	8-16d	1755	2105	—	1650	—	1900	—	2065	26, 83, 121, 133
	HUS412	14	3 ⁹ / ₁₆	10 ¹ / ₂	2	—	10-16d	10-16d	2195	2630	—	2065	—	2375	—	2580	1, 84, 121, 133
	HU412 (Min)	14	3 ⁹ / ₁₆	10 ⁵ / ₁₆	2 ¹ / ₂	—	16-16d	6-10d	785	940	—	1855	—	2135	—	2320	26, 83, 124
	HU412 (Max)	14	3 ⁹ / ₁₆	10 ⁵ / ₁₆	2 ¹ / ₂	—	22-16d	10-10d	1305	1570	—	2550	—	2935	—	3190	
4x14	LUS410	18	3 ⁹ / ₁₆	8 ³ / ₄	2	—	8-16d	6-16d	1390	1670	—	1465	—	1680	—	1830	1, 84, 121, 133
	LUS414	18	3 ⁹ / ₁₆	10 ³ / ₄	2	—	10-16d	6-16d	1390	1670	—	1695	—	1945	—	2115	26, 83, 121, 124
	U414	16	3 ⁹ / ₁₆	10	2	16-10d	16-16d	6-10d	770	920	1535	1840	1765	2115	1920	2300	1, 84, 121, 133
	HUS412	14	3 ⁹ / ₁₆	10 ¹ / ₂	2	—	10-16d	10-16d	2195	2630	—	2065	—	2375	—	2580	26, 83, 121, 124
	HU414 (Min)	14	3 ⁹ / ₁₆	12 ⁵ / ₈	2 ¹ / ₂	—	18-16d	8-10d	1045	1255	—	2090	—	2400	—	2610	1, 84, 121, 133
	HU414 (Max)	14	3 ⁹ / ₁₆	12 ⁵ / ₈	2 ¹ / ₂	—	24-16d	12-10d	1570	1880	—	2785	—	3200	—	3480	26, 83, 124
4x16	U414	16	3 ⁹ / ₁₆	10	2	16-10d	16-16d	6-10d	770	920	1535	1840	1765	2115	1920	2300	1, 84, 121, 133
	HUS412	14	3 ⁹ / ₁₆	10 ¹ / ₂	2	—	10-16d	10-16d	2195	2630	—	2065	—	2375	—	2580	
	HU416 (Min)	14	3 ⁹ / ₁₆	13 ⁵ / ₈	2 ¹ / ₂	—	20-16d	8-10d	1045	1255	—	2320	—	2670	—	2900	
	HU416 (Max)	14	3 ⁹ / ₁₆	13 ⁵ / ₈	2 ¹ / ₂	—	26-16d	12-10d	1570	1880	—	3015	—	3470	—	3770	
6x6	U66	16	5 ¹ / ₂	5	2	8-10d	8-16d	4-10d	590	710	770	920	885	1060	960	1150	
	HU66 (Min)	14	5 ¹ / ₂	4 ³ / ₁₆	2 ¹ / ₂	—	8-16d	4-16d	715	860	—	930	—	1065	—	1160	
	HU66 (Max)	14	5 ¹ / ₂	4 ³ / ₁₆	2 ¹ / ₂	—	12-16d	6-16d	1070	1285	—	1390	—	1600	—	1740	
6x8	U66	16	5 ¹ / ₂	5	2	8-10d	8-16d	4-10d	590	710	770	920	885	1060	960	1150	
	HU68 (Min)	14	5 ¹ / ₂	5 ¹³ / ₁₆	2 ¹ / ₂	—	10-16d	4-16d	715	860	—	1160	—	1335	—	1450	
	HU68 (Max)	14	5 ¹ / ₂	5 ¹³ / ₁₆	2 ¹ / ₂	—	14-16d	6-16d	1070	1285	—	1625	—	1870	—	2030	
6x10	U610	16	5 ¹ / ₂	8 ¹ / ₂	2	14-10d	14-16d	6-10d	890	1065	1345	1610	1545	1850	1680	2010	26, 83, 124
	HU610 (Min)	14	5 ¹ / ₂	7 ⁵ / ₈	2 ¹ / ₂	—	14-16d	6-16d	1070	1285	—	1625	—	1870	—	2030	
	HU610 (Max)	14	5 ¹ / ₂	7 ⁵ / ₈	2 ¹ / ₂	—	18-16d	8-16d	1430	1715	—	2090	—	2400	—	2610	
6x12	HU612 (Min)	14	5 ¹ / ₂	9 ⁵ / ₈	2 ¹ / ₂	—	16-16d	6-16d	1070	1285	—	1855	—	2135	—	2320	
	HU612 (Max)	14	5 ¹ / ₂	9 ⁵ / ₈	2 ¹ / ₂	—	22-16d	8-16d	1430	1715	—	2550	—	2935	—	3190	
6x14	HU614 (Min)	14	5 ¹ / ₂	11 ⁵ / ₈	2 ¹ / ₂	—	18-16d	8-16d	1430	1715	—	2090	—	2400	—	2610	
	HU614 (Max)	14	5 ¹ / ₂	11 ⁵ / ₈	2 ¹ / ₂	—	24-16d	12-16d	2145	2575	—	2785	—	3200	—	3480	
6x16	HU616 (Min)	14	5 ¹ / ₂	12 ¹ / ₁₆	2 ¹ / ₂	—	20-16d	8-16d	1430	1715	—	2320	—	2670	—	2900	
	HU616 (Max)	14	5 ¹ / ₂	12 ¹ / ₁₆	2 ¹ / ₂	—	26-16d	12-16d	2145	2575	—	3015	—	3470	—	3770	
8x8	HU88 (Min)	14	7 ¹ / ₂	6 ⁵ / ₈	2 ¹ / ₂	—	10-16d	4-16d	715	860	—	1160	—	1335	—	1450	
	HU88 (Max)	14	7 ¹ / ₂	6 ⁵ / ₈	2 ¹ / ₂	—	14-16d	6-16d	1070	1285	—	1625	—	1870	—	2030	
8x10	HU810 (Min)	14	7 ¹ / ₂	8 ³ / ₈	2 ¹ / ₂	—	14-16d	6-16d	1070	1285	—	1625	—	1870	—	2030	
	HU810 (Max)	14	7 ¹ / ₂	8 ³ / ₈	2 ¹ / ₂	—	18-16d	8-16d	1430	1715	—	2090	—	2400	—	2610	
8x12	HU812 (Min)	14	7 ¹ / ₂	10 ¹ / ₈	2 ¹ / ₂	—	16-16d	6-16d	1070	1285	—	1855	—	2135	—	2320	26
	HU812 (Max)	14	7 ¹ / ₂	10 ¹ / ₈	2 ¹ / ₂	—	22-16d	8-16d	1430	1715	—	2550	—	2935	—	3190	
8x14	HU814 (Min)	14	7 ¹ / ₂	11 ⁷ / ₈	2 ¹ / ₂	—	18-16d	8-16d	1430	1715	—	2090	—	2400	—	2610	
	HU814 (Max)	14	7 ¹ / ₂	11 ⁷ / ₈	2 ¹ / ₂	—	24-16d	12-16d	2145	2575	—	2785	—	3200	—	3480	
8x16	HU816 (Min)	14	7 ¹ / ₂	13 ⁵ / ₈	2 ¹ / ₂	—	20-16d	8-16d	1430	1715	—	2320	—	2670	—	2900	
	HU816 (Max)	14	7 ¹ / ₂	13 ⁵ / ₈	2 ¹ / ₂	—	26-16d	12-16d	2145	2575	—	3015	—	3470	—	3770	

1. 10d commons or 16d sinkers may be used instead of the specified 16d at 0.85 of the table load value.

2. 16d sinkers may be used instead of the specified 10d commons with no load reduction.

(16d sinkers are not acceptable for HDG applications.)

3. Uplift loads have been increased 33% and 60% for earthquake or wind loading with no further increase allowed. Divide by 1.33 and 1.60 for normal loading such as in cantilever construction.

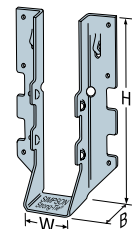
4. MIN nailing quantity and load values—fill all round holes;

MAX nailing quantity and load values—fill all round and triangle holes.

5. Truss chord cross-grain tension may limit allowable loads. Refer to Technical Bulletins T-ANSITPISPF, T-ANSITPISP and T-ANSITPIDF for allowable loads that consider ANSI/TPI 1-2002 wood member design criteria.

6. NAILS: 16d = 0.162" dia. x 3¹/₂" long, 10d = 0.148" dia. x 3" long, 10dx1¹/₂ = 0.148" dia. x 1¹/₂" long.

See page 16-17 for other nail sizes and information.



FACE MOUNT HANGERS – ROUGH LUMBER (DF & SP)

Joist Size	Model No.	Ga	Dimensions			Fasteners			Doug Fir Larch/Southern Pine Allowable Loads								Code Ref.
			W	H	B	Header		Joist	Uplift		Floor (100)		Snow (115)		Roof (125)		
						10d	16d		(133)	(160)	10d	16d	10d	16d	10d	16d	
ROUGH LUMBER SIZES																	
2x4(R)	LU24R-18	18	2	3 ¹ / ₁₆	1½	—	4-16d	2-10dx1½	245	265	—	530	—	610	—	665	40
	U24R	16	2	3 ⁵ / ₈	2	4-10d	4-16d	2-10dx1½	240	265	445	530	510	610	555	665	26, 121, 124
2x6(R)	LU26R-18	18	2	4 ¹ / ₁₆	1½	—	6-16d	4-10dx1½	490	565	—	800	—	920	—	1000	40
	U26R	16	2	5 ⁵ / ₈	2	8-10d	8-16d	4-10dx1½	480	575	890	1065	1020	1225	1110	1330	26, 121, 124
2x8(R)	LU28R-18	18	2	6 ³ / ₁₆	1½	—	8-16d	6-10dx1½	735	865	—	1065	—	1225	—	1330	40
	U26R	16	2	5 ⁵ / ₈	2	8-10d	8-16d	4-10dx1½	480	575	890	1065	1020	1225	1110	1330	26, 121, 124
2x10(R)	LU210R-18	18	2	7 ¹ / ₁₆	2	—	10-16d	6-10dx1½	735	850	—	1330	—	1530	—	1660	40
	U210R	16	2	9 ¹ / ₈	2	14-10d	14-16d	6-10dx1½	720	865	1555	1860	1785	2140	1940	2330	26, 121, 124
2x12(R)	U210R	16	2	9 ¹ / ₈	2	14-10d	14-16d	6-10dx1½	720	865	1555	1860	1785	2140	1940	2330	
2x14(R)	U210R	16	2	9 ¹ / ₈	2	14-10d	14-16d	6-10dx1½	720	865	1555	1860	1785	2140	1940	2330	
4x4(R)	U44R	16	4	2 ⁵ / ₈	2	4-10d	4-16d	2-16d	355	425	445	530	510	610	555	665	
4x6(R)	U46R	16	4	4 ⁵ / ₈	2	8-10d	8-16d	4-16d	710	850	890	1065	1020	1225	1110	1330	
4x8(R)	U46R	16	4	4 ⁵ / ₈	2	8-10d	8-16d	4-16d	710	850	890	1065	1020	1225	1110	1330	
4x10(R)	U410R	16	4	8 ¹ / ₈	2	14-10d	14-16d	6-16d	1065	1115	1555	1860	1785	2140	1940	2330	
4x12(R)	U410R	16	4	8 ¹ / ₈	2	14-10d	14-16d	6-16d	1065	1115	1555	1860	1785	2140	1940	2330	
4x14(R)	U410R	16	4	8 ¹ / ₈	2	14-10d	14-16d	6-16d	1065	1115	1555	1860	1785	2140	1940	2330	
6x6(R)	U66R	16	6	5	2	8-10d	8-16d	4-16d	710	850	890	1065	1020	1225	1110	1330	
6x8(R)	U66R	16	6	5	2	8-10d	8-16d	4-16d	710	850	890	1065	1020	1225	1110	1330	
6x10(R)	U610R	16	6	8½	2	14-10d	14-16d	6-16d	1065	1115	1555	1860	1785	2140	1940	2330	
6x12(R)	U610R	16	6	8½	2	14-10d	14-16d	6-16d	1065	1115	1555	1860	1785	2140	1940	2330	
6x14(R)	U610R	16	6	8½	2	14-10d	14-16d	6-16d	1065	1115	1555	1860	1785	2140	1940	2330	

FACE MOUNT HANGERS – ROUGH LUMBER (SPF)

Joist Size	Model No.	Ga	Dimensions			Fasteners			Spruce-Pine-Fir Allowable Loads								Code Ref.
			W	H	B	Header		Joist	Uplift		Floor (100)		Snow (115)		Roof (125)		
						10d	16d		(133)	(160)	10d	16d	10d	16d	10d	16d	
ROUGH LUMBER SIZES																	
2x4(R)	LU24R-18	18	2	3 ¹ / ₁₆	1½	—	4-16d	2-10dx1½	210	255	—	460	—	530	—	575	40
	U24R	16	2	3 ⁵ / ₈	2	4-10d	4-16d	2-10dx1½	210	250	385	460	440	530	480	575	26, 121, 124
2x6(R)	LU26R-18	18	2	4 ¹ / ₁₆	1½	—	6-16d	4-10dx1½	420	505	—	690	—	795	—	860	40
	U26R	16	2	5 ⁵ / ₈	2	8-10d	8-16d	4-10dx1½	415	500	575	690	660	795	720	860	26, 121, 124
2x8(R)	LU28R-18	18	2	6 ³ / ₁₆	1½	—	8-16d	6-10dx1½	630	760	—	920	—	1060	—	1150	40
	U26R	16	2	5 ⁵ / ₈	2	8-10d	8-16d	4-10dx1½	415	500	575	690	660	795	720	860	26, 121, 124
2x10(R)	LU210R-18	18	2	7 ¹ / ₁₆	2	—	10-16d	6-10dx1½	630	760	—	1150	—	1320	—	1440	40
	U210R	16	2	9 ¹ / ₈	2	14-10d	14-16d	6-10dx1½	625	750	960	1150	1105	1320	1200	1440	26, 121, 124
2x12(R)	U210R	16	2	9 ¹ / ₈	2	14-10d	14-16d	6-10dx1½	625	750	960	1150	1105	1320	1200	1440	
2x14(R)	U210R	16	2	9 ¹ / ₈	2	14-10d	14-16d	6-10dx1½	625	750	960	1150	1105	1320	1200	1440	
4x4(R)	U44R	16	4	2 ⁵ / ₈	2	4-10d	4-16d	2-16d	255	305	385	460	440	530	480	575	
4x6(R)	U46R	16	4	4 ⁵ / ₈	2	8-10d	8-16d	4-16d	510	615	770	920	885	1060	960	1150	
4x8(R)	U46R	16	4	4 ⁵ / ₈	2	8-10d	8-16d	4-16d	510	615	770	920	885	1060	960	1150	
4x10(R)	U410R	16	4	8 ¹ / ₈	2	14-10d	14-16d	6-16d	770	920	1345	1610	1545	1850	1680	2010	
4x12(R)	U410R	16	4	8 ¹ / ₈	2	14-10d	14-16d	6-16d	770	920	1345	1610	1545	1850	1680	2010	
4x14(R)	U410R	16	4	8 ¹ / ₈	2	14-10d	14-16d	6-16d	770	920	1345	1610	1545	1850	1680	2010	
6x6(R)	U66R	16	6	5	2	8-10d	8-16d	4-16d	590	710	770	920	885	1060	960	1150	
6x8(R)	U66R	16	6	5	2	8-10d	8-16d	4-16d	590	710	770	920	885	1060	960	1150	
6x10(R)	U610R	16	6	8½	2	14-10d	14-16d	6-16d	890	1065	1345	1610	1545	1850	1680	2010	
6x12(R)	U610R	16	6	8½	2	14-10d	14-16d	6-16d	890	1065	1345	1610	1545	1850	1680	2010	
6x14(R)	U610R	16	6	8½	2	14-10d	14-16d	6-16d	890	1065	1345	1610	1545	1850	1680	2010	

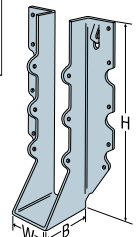
1. 10d commons or 16d sinkers may be used instead of the specified 16d at 0.85 of the table load value.
2. 16d sinkers may be used instead of the specified 10d commons with no load reduction.
3. Uplift loads have been increased 33% and 60% for earthquake or wind loading with no further increase allowed. Divide by 1.33 and 1.60 for normal loading such as in cantilever construction.

4. DF/SP loads can be used for SCL that has fastener holding capacity of Doug Fir.

5. HU's can be ordered in rough sizes at full table loads. Add "X" to the model designation ex: HU28X and specify rough width or height. **Maximum width 8".**

6. **NAILS:** 16d = 0.162" dia. x 3¹/₂" long, 10d = 0.148" dia. x 3" long, 10dx1¹/₂ = 0.148" dia. x 1¹/₂" long. See page 16-17 for other nail sizes and information.

CODES: See page 12 for Code Listing Key Chart.



TOP FLANGE HANGERS JB/LB/BA/B/HHB Joist, Beam and Purlin Hangers

The BA hanger is a cost effective hanger featuring min/max joist nailing option. Min Nailing featuring Positive Angle Nailing targets moderate load conditions where as the Max Nailing generates capacities for higher loads. The unique two level embossment provides added stiffness to the top flange.

The newly improved B hanger offers wide versatility with enhanced load capacities.

See tables on pages 79 to 81. See Hanger Options on pages 188 and 192 for hanger modifications, which may result in reduced loads.

MATERIAL: See tables, pages 79 to 81.

FINISH: JB, LB and B—Galvanized; HHB—all saddle hangers and all welded sloped and special hangers—Simpson gray paint.

INSTALLATION: • Use specified fasteners. See General Notes and nailer table.

- LB, BA, B and HHB may be welded to steel headers with weld size to match material thickness (approximate thickness shown). The minimum required weld to the top flanges is $\frac{1}{8}$ " x 2" ($\frac{1}{8}$ " x $1\frac{1}{2}$ " for LB) fillet weld to each side of each top flange tab for 14 and 12 gauge and $\frac{3}{16}$ " x 2" fillet weld to each side of each top flange tab for 7 gauge. Distribute the weld equally on both top flanges. Welding cancels the top and face nailing requirements. Consult the code for special considerations when welding galvanized steel. The area should be well-ventilated (see page 14 for welding information). Weld on applications produce the maximum allowable down load listed. Uplift loads do not apply to welded applications.
- Ledgers must be evaluated for each application separately. Check TF dimension, nail length and nail location on ledger.

OPTIONS: • B and HHB

- Other widths are available; specify W dimension (the minimum W dimension is $1\frac{1}{16}$ " for B and $2\frac{5}{16}$ " for HHB).
- B dimensions may be increased on some models.
- See Hanger Options, page 188.

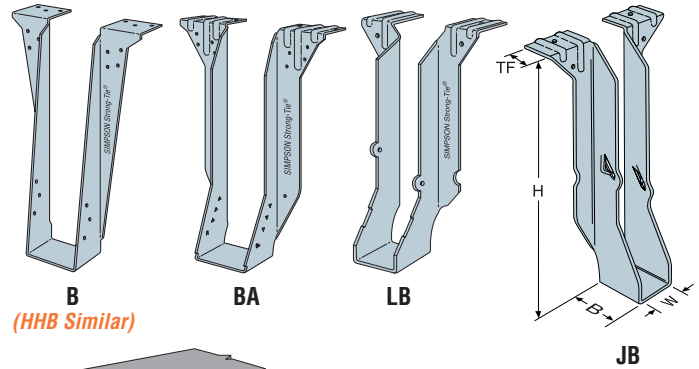
CODES: See page 12 for Code Listing Key Chart.

NAILER TABLE

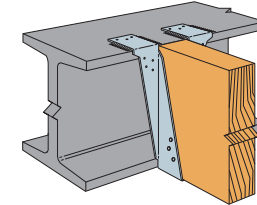
This table also applies to sloped-seat hangers.

Model No.	Nailer	Header Nails	Allowable Down Loads	
			DF/SP	SPF
LB26	2x	4-10dx1½	850	—
LB28	2x	4-10dx1½	915	—
LB210	2x	4-10dx1½	915	—
LB212	2x	4-10dx1½	915	—
LB214	2x	4-10dx1½	915	—
LB216	2x	4-10dx1½	1150	—
BA	2x	10-10dx1½	2220	1755
	2-2x	14-10d	2695	2235
	3x	14-16dx2½	3230	—
	4x	14-16d	3300 ¹	—
B	2-2x	14-10d	3615	2770
	3x	14-16dx2½	3725	—
	4x	14-16d	3800	—

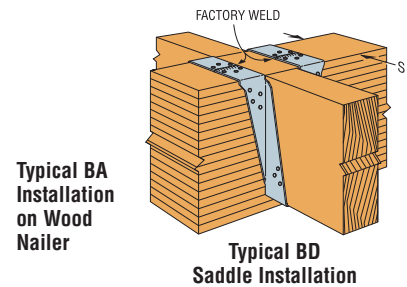
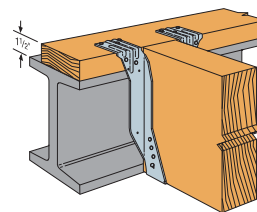
1. Based on an additional $\frac{1}{32}$ " beyond the normal $\frac{1}{8}$ " deflection limit.



(HHB Similar)



LB, BA, B and HHB are acceptable for weld-on applications. See Installation Information.



B SERIES WITH VARIOUS HEADER APPLICATIONS

Model Series	Fasteners			Allowable Loads Header Type						Code Ref.
	Top	Face	Joist	Uplift (133)	Uplift (160)	LVL	PSL	DF/SP	SPF	
BA Min.	6-10dx1½	4-10dx1½	2-10dx1½	—	—	—	—	—	—	160
	6-10d	10-10d	2-10dx1½	265	315	3230	3630	3080	2425	
	6-16d	10-16d	2-10dx1½	265	315	4015	3705	3435	2665	
BA Max.	6-10d	10-10d	8-10dx1½	1055	1170	3555	3630	3625	2465	
	6-16d	10-16d	8-10dx1½	1055	1170	4715	4320	3800	2665	
B	6-10d	8-10d	6-10dx1½	825	990	3575	3195	3625	2190	
	6-16d	8-16d	6-16dx2½	1010	1010	4135	3355	3800	2650	

1. Uplift loads have been increased 33% and 60% for earthquake or wind loading with no further increase allowed. Reduce by 33% and 60% for normal loading such as in cantilever construction.
2. Loads may not be increased for short-term loading.
3. Code values are based on DF/SP header species.
4. NAILS: 16d = 0.162" dia. x 3½" long, 10d = 0.148" dia. x 3" long, 10dx1½ = 0.148" dia. x 1½" long. See page 16-17 for other nail sizes and information.

HUTF/HUSTF Heavy Duty and Double Shear Joist Hangers

See dimensions, material, loads on table pages.

HUSTF has the double shear nailing advantage—distributing the joist load through two points on each nail for greater strength.

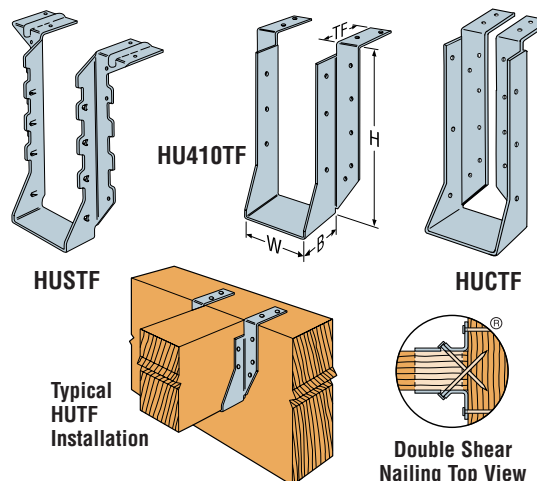
FINISH: Galvanized. See Corrosion-Resistance, page 6-7.

INSTALLATION:

- Use all specified fasteners. See General Notes.
- Not acceptable for nailer or welded applications; see W and B hangers.
- HUTF—The minimum header or ledger size that can be used with this hanger is 3½".
- HUSTF—With 3x carrying members, use 16dx2½" nails into the header and 16d commons into the joist.

OPTIONS:

- HUTF Rough beam sizes are available by special order.
- See Hanger Options on page 188 for skewed hangers.
- Available with flanges turned in (2-2x and 4x only for HUSCTF. 2% or greater for HUCTF).



HUSTF

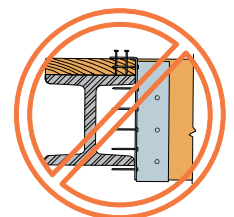
HU410TF

HUCTF

Typical HUTF Installation

Double Shear Nailing Top View

Some model configurations may differ from those shown. Production models have projected seats. Square cut seats may be ordered. Consult factory for details.



Nailer application is NOT acceptable. Fasteners cannot be installed

TOP FLANGE HANGERS W/WPU/WNP/WM/WMU/HW/HWU

The W, WPU, HWU and HW series purlin hangers offer the greatest design flexibility and versatility. WMs are designed for use on standard 8" grouted masonry block wall construction.

MATERIAL: See tables on pages 79 to 81; W—12 ga. top flange and stirrup; WM, WMU—12 ga. top flange and stirrup; WNP, WP, WPU—7 ga. top flange, 12 ga. stirrup; HW—3 ga. top flange, 11 ga. stirrup; HWU—3 ga. top flange, 10 ga. stirrup.

FINISH: Simpson gray paint; hot-dipped galvanized available; specify HDG, check factory.

ALLOWABLE LOADS: For hanger heights exceeding the joist height, the allowable load is 0.50 of the table load.

INSTALLATION: • Use all specified fasteners. WM—two 16d duplex nails must be installed into the top flange and embedded into the grouted wall. Verify that the grouted wall can take the required fasteners specified in the table.

• Hangers may be welded to steel headers with weld size to match material thickness (*approximate thickness shown*) $\frac{1}{8}$ " for W, $\frac{3}{16}$ " for WNP/WPU and $\frac{1}{4}$ " for HW/HWU, by $\frac{1}{2}$ " fillet welds located at each end of the top flange (*see page 14 for welding information*). Weld-on applications produce maximum allowable load listed. Uplift loads do not apply to this application.

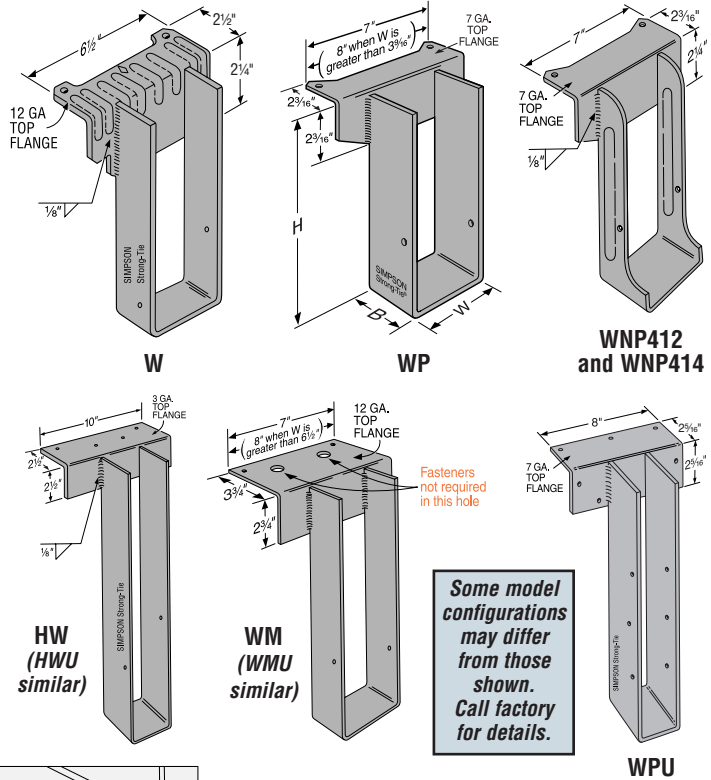
• Hangers can support multi-ply carried members; the individual members must be secured together to work as a single unit before installation into the hanger.

• H dimensions are sized to account for normal joist shrinkage. W dimensions are for dressed timber widths.

• Embed WM into block with a minimum of one course above and one course below the top flange with one #5 vertical rebar minimum 24" long in each cell. **Minimum grout strength is 2000 psi.**

• See Hanger Options, page 188 for hanger modifications and associated load reductions.

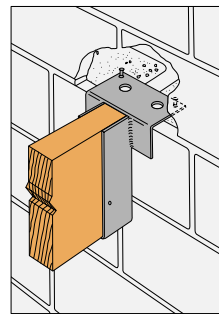
CODES: See page 12 for Code Listing Key Chart.



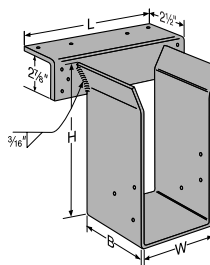
Model	Nailer	Top Flange Nailing	Allowable Down Loads		
			DF/SP	SPF	LSL
W	2x	2-10dx1½	1600	1600	—
	3x	2-16dx2½	1765	1740	—
	2-2x	2-10d	1665	1665	—
	4x	2-10d	2200	2200	—
WP and WNP	2x	2-10dx1½	2525	2500	3375
	3x	2-16dx2½	3000	2510	3375
	2-2x	2-10d	3255	3255	—
	4x	2-10d	3255	3255	—
HW	4x	4-16d	5285	—	—
HWU	2-2x	8-16dx2½	5630	—	—

NAILER TABLE

The table indicates the maximum allowable loads for W, WNP and HW hangers used on wood nailers. Nailers are wood members attached to the top of a steel I-beam, concrete or masonry wall. This table also applies to sloped-seat hangers.

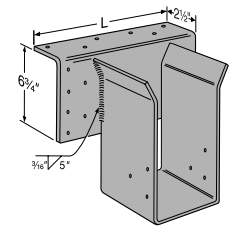


Typical WM Mid-Wall Installation
Refer to page 147 for Top-of-Wall Installation Detail.



GLT (fasteners included)

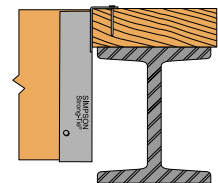
See page 122 for GLT and HGLT information.



HGLT (fasteners included)

W SERIES WITH VARIOUS HEADER APPLICATIONS

Model	Joist		Fasteners			Allowable Loads Header Type								Code Ref.
	Width	Depth	Top	Face	Joist	Uplift (133 & 160)	LVL	PSL	LSL	DF/SP	SPF	I-Joist	Masonry	
W	1½ to 4	3½ to 30	2-10dx1½	—	2-10dx1½	—	1635	1740	—	1600	1415	—	—	170, 124
	1½ to 4	3½ to 30	2-10d	—	2-10dx1½	—	2150	2020	—	2200	1435	—	—	26, 83, 140, 124
	1½ to 4	3½ to 30	2-16d	—	2-10dx1½	—	2335	1950	2335	1765	1435	—	—	
WM	1½ to 7½	3½ to 30	2-16d DPLX	—	2-10dx1½	—	MID-WALL INSTALLATION ⁵						4175	1, 84, 140, 124
	1½ to 7½	3½ to 30	2-¼x1¾ Titens	—	2-10dx1½	—	TOP OF WALL INSTALLATION						3380	
WMU	1½ to 7½	9 to 28	2-16d DPLX	4-¼x1¾ Titens	6-10dx1½	625	MID-WALL INSTALLATION ⁵						4175	170
	1½ to 7½	9 to 28	2-¼x1¾ Titens	4-¼x1¾ Titens	6-10dx1½	545	TOP OF WALL INSTALLATION						3380	
WP/WNP	1½ to 7½	3½ to 30	3-10dx1½	—	2-10dx1½	—	2865	3250	—	2500	2000	2030	—	26, 83, 140, 124
	1½ to 7½	3½ to 30	3-10d	—	2-10dx1½	—	2525	3250	3650	3255	2525	—	—	
	1½ to 7½	3½ to 30	3-16d	—	2-10dx1½	—	3635	3320	3650	3255	2600	—	—	
WPU/WNPU	1¼ to 5½	7¼ to 18	3-16d	4-16d	6-10dx1½	775	4700	4880	3650	4165	4165	—	—	26, 83, 124
	1¾ to 5½	18½ to 22½	3-16d	4-16d	6-10dx1½	485	4700	4880	3650	4165	4165	—	—	
	1¼ to 5½	23 to 28	3-16d	4-16d	6-10dx1½	315	4700	4880	3650	4165	4165	—	—	
HW	1½ to 7½	3½ to 32	4-10d	—	2-10dx1½	—	3100	4000	—	5285	3100	—	—	
	1½ to 7½	3½ to 32	4-16d	—	2-10dx1½	—	5100	4000	4500	5285	3665	—	—	
HWU	1¼ to 3½	9 to 18	4-16d	4-16d	6-10dx1½	810	6335	5500	5535	6335	5415	—	—	26, 124
	1¼ to 3½	18½ to 22½	4-16d	4-16d	6-10dx1½	765	6335	5500	5535	6335	5415	—	—	
	1¼ to 3½	23 to 28	4-16d	4-16d	6-10dx1½	635	6335	5500	5535	6335	5415	—	—	
	1¾ to 3½	28½ to 32	4-16d	4-16d	8-10dx1½	1005	6335	5500	5535	6335	5415	—	—	
	4½ to 7	9 to 18	4-16d	4-16d	6-10dx1½	810	6000	5500	5535	6000	5415	—	—	
	4½ to 7	18½ to 22½	4-16d	4-16d	6-10dx1½	765	6000	5500	5535	6000	5415	—	—	
	4½ to 7	23 to 28	4-16d	4-16d	6-10dx1½	635	6000	5500	5535	6000	5415	—	—	
	4½ to 7	28½ to 32	4-16d	4-16d	8-10dx1½	1005	6000	5500	5535	6000	5415	—	—	

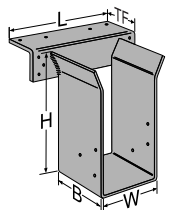


Installation on Wood Nailer

1. 16d sinkers (0.148" dia. x 3¼" long) may be used where 10d commons are called out with no load reduction.
2. Code values are based on DF/SP header species.
3. WMU, WPU and HWU uplift loads have been increased 33% and 60% for earthquake or wind loading; no further increase allowed. Divide by 1.33 and 1.60 for normal loading like cantilever construction.
4. NAILS: 16d = 0.162" dia. x 3½" long, 10d = 0.148" dia. x 3" long, 10dx1½ = 0.148" dia. x 1½" long. See page 16-17 for other nail sizes and information.
5. Mid-wall Installation requires minimum of one grouted course above and below the hanger.

TOP FLANGE HANGERS – SOLID SAWN LUMBER (DF/SP)

Joist or Purlin Size	Model No.	Ga	Dimensions				Fasteners		DF/SP Allowable Loads					Installed Cost Index (ICI)	Code Ref.
			W	H	B	TF	Header	Joist	Uplift (133)	Uplift (160)	Floor (100)	Snow (115)	Roof (125)		
SAWN LUMBER SIZES															
2x4	HU24TF	12	1 ⁹ / ₁₆	3 ⁷ / ₁₆	2 ¹ / ₄	2 ¹ / ₂	6-16d	2-10dx1 ¹ / ₂	245	295	2090	2100	2100	Lowest	26, 83, 124, 140
DBL 2x4	HU24-2TF	12	3 ¹ / ₈	3 ⁷ / ₁₆	2 ¹ / ₂	2 ¹ / ₂	8-16d	2-10d	310	375	2600	2600	2600	Lowest	
2x6	JB26	18	1 ⁹ / ₁₆	5 ³ / ₈	1 ¹ / ₂	1 ¹ / ₂	4-10d	2 PRONG	—	—	1040	1040	1040	Lowest	2, 40, 82, 121
	LB26	14	1 ⁹ / ₁₆	5 ³ / ₈	1 ¹ / ₂	1 ¹ / ₂	4-16d	2-10dx1 ¹ / ₂	240	290	1380	1380	1380	+ 117%	
	HU26TF	12	1 ⁹ / ₁₆	5 ³ / ₈	2 ¹ / ₄	2 ¹ / ₂	10-16d	4-10dx1 ¹ / ₂	490	590	2275	2330	2335	+ 568%	26, 83, 124, 140
	W26	12	1 ⁹ / ₁₆	5 ³ / ₈	2 ¹ / ₂	2 ¹ / ₂	2-10d	2-10dx1 ¹ / ₂	—	—	2200	2200	2200	+ 890%	
	WM26	12	1 ⁹ / ₁₆	5 ³ / ₈	4 ¹ / ₂	3 ³ / ₄	2-16d DPLX	2-10dx1 ¹ / ₂	—	—	2540	2565	2590	*	
DBL 2x6	HUS26-2TF	14	3 ¹ / ₈	5 ³ / ₈	2	1 ³ / ₄	6-16d	4-16d	1080	1235	2820	3000	3000	Lowest	1, 84, 121
	WNP26-2	12	3 ¹ / ₈	5 ³ / ₈	2 ¹ / ₂	2 ³ / ₁₆	2-10d	2-10d	—	—	3255	3255	3255	+ 33%	26, 83, 124, 140
	HU26-2TF	12	3 ¹ / ₈	5 ³ / ₈	2 ¹ / ₂	2 ¹ / ₂	10-16d	4-10d	625	750	3725	3900	3900	+ 87%	
	WM26-2	12	3 ¹ / ₈	5 ³ / ₈	2 ¹ / ₂	3 ³ / ₄	2-16d DPLX	2-10d	—	—	4175	4175	4175	*	1, 84, 121, 140
	JB28	18	1 ⁹ / ₁₆	7 ¹ / ₄	1 ¹ / ₂	1 ¹ / ₂	4-10d	2 PRONG	—	—	1050	1050	1050	Lowest	2, 40, 82, 121
LB28	14	1 ⁹ / ₁₆	7 ¹ / ₄	1 ¹ / ₂	1 ¹ / ₂	4-16d	2-10dx1 ¹ / ₂	240	290	1270	1270	1270	+ 98%		
2x8	HU28TF	12	1 ⁹ / ₁₆	7 ¹ / ₈	2 ¹ / ₄	2 ¹ / ₂	10-16d	4-10dx1 ¹ / ₂	490	590	2335	2335	2335	+ 563%	
	W28	12	1 ⁹ / ₁₆	7 ¹ / ₈	2 ¹ / ₂	2 ¹ / ₂	2-10d	2-10dx1 ¹ / ₂	—	—	2200	2200	2200	+ 570%	
	WM28	12	1 ⁹ / ₁₆	7 ¹ / ₈	4 ¹ / ₂	3 ³ / ₄	2-16d DPLX	2-10dx1 ¹ / ₂	—	—	2540	2565	2590	*	1, 84, 121, 140
	DBL 2x8	HUS28-2TF	14	3 ¹ / ₈	7 ¹ / ₄	2	1 ⁷ / ₈	8-16d	6-16d	1550	1550	3455	3720	3895	Lowest
WNP28-2		12	3 ¹ / ₈	7 ¹ / ₈	2 ¹ / ₂	2 ³ / ₁₆	2-10d	2-10d	—	—	3255	3255	3255	+ 16%	26, 83, 124, 140
HU28-2TF		12	3 ¹ / ₈	7 ¹ / ₈	2 ¹ / ₂	2 ¹ / ₂	12-16d	4-10d	625	750	3900	3900	3900	+ 75%	
WM28-2		12	3 ¹ / ₈	7 ¹ / ₈	2 ¹ / ₂	3 ³ / ₄	2-16d DPLX	2-10d	—	—	4175	4175	4175	*	1, 84, 121, 140
2x10	JB210	18	1 ⁹ / ₁₆	9 ¹ / ₄	2	1 ¹ / ₂	4-16d	2 PRONG	—	—	1255	1255	1255	Lowest	2, 40, 82, 121
	LB210	14	1 ⁹ / ₁₆	9 ¹ / ₄	2	1 ¹ / ₂	4-16d	2-10dx1 ¹ / ₂	240	290	1550	1550	1550	+ 35%	26, 83, 124, 140
	HU210TF	12	1 ⁹ / ₁₆	9 ¹ / ₈	2 ¹ / ₄	2 ¹ / ₂	12-16d	4-10dx1 ¹ / ₂	490	590	2335	2335	2335	+ 359%	
	W210	12	1 ⁹ / ₁₆	9 ¹ / ₈	2 ¹ / ₂	2 ¹ / ₂	2-10d	2-10dx1 ¹ / ₂	—	—	2200	2200	2200	+ 360%	
	WM210	12	1 ⁹ / ₁₆	9 ¹ / ₈	4 ¹ / ₂	3 ³ / ₄	2-16d DPLX	2-10dx1 ¹ / ₂	—	—	2540	2565	2590	*	1, 84, 121, 140
DBL 2x10	HUS210-2TF	14	3 ¹ / ₈	9 ¹ / ₄	2	1 ¹ / ₂	10-16d	8-16d	2160	2590	3585	3925	4155	Lowest	1, 84, 121
	WNP210-2	12	3 ¹ / ₈	9 ¹ / ₈	2 ¹ / ₂	2 ³ / ₁₆	2-10d	2-10d	—	—	3255	3255	3255	+ 9%	26, 83, 124, 140
	HU210-2TF	12	3 ¹ / ₈	9 ¹ / ₈	2 ¹ / ₂	2 ¹ / ₂	14-16d	6-10d	935	1125	4170	4170	4170	+ 67%	
	WM210-2	12	3 ¹ / ₈	9 ¹ / ₈	2 ¹ / ₂	3 ³ / ₄	2-16d DPLX	2-10d	—	—	4175	4175	4175	*	1, 84, 121, 140
TPL 2x10	HU210-3TF	12	4 ¹ / ₁₆	9 ¹ / ₈	2 ¹ / ₂	2 ¹ / ₂	14-16d	6-16d	1105	1325	4150	4150	4150	Lowest	26, 83, 124, 140
2x12	JB212	18	1 ⁹ / ₁₆	11 ¹ / ₈	2	1 ¹ / ₂	6-16d	2 PRONG	—	—	1540	1540	1540	Lowest	2, 40, 82, 121
	LB212	14	1 ⁹ / ₁₆	11 ¹ / ₈	2	1 ¹ / ₂	4-16d	2-10dx1 ¹ / ₂	240	290	1580	1580	1580	+ 27%	
	W212	12	1 ⁹ / ₁₆	11	2 ¹ / ₂	2 ¹ / ₂	2-10d	2-10dx1 ¹ / ₂	—	—	2200	2200	2200	+ 317%	26, 83, 124, 140
	HU212TF	12	1 ⁹ / ₁₆	11	2 ¹ / ₄	2 ¹ / ₂	14-16d	6-10dx1 ¹ / ₂	735	885	2335	2335	2335	+ 339%	
	WM212	12	1 ⁹ / ₁₆	11	4 ¹ / ₂	3 ³ / ₄	2-16d DPLX	2-10dx1 ¹ / ₂	—	—	2540	2565	2590	*	
DBL 2x12	HUS212-2TF	14	3 ¹ / ₈	11 ¹ / ₈	2	2 ¹ / ₄	10-16d	8-16d	2000	2000	4435	4535	4605	Lowest	1, 84, 121
	WNP212-2	12	3 ¹ / ₈	11	2 ¹ / ₂	2 ³ / ₁₆	2-10d	2-10d	—	—	3255	3255	3255	+ 12%	26, 83, 124, 140
	HU212-2TF	12	3 ¹ / ₈	11	2 ¹ / ₂	2 ¹ / ₂	16-16d	6-10d	935	1125	4325	4660	4880	+ 48%	
	WM212-2	12	3 ¹ / ₈	11	2 ¹ / ₂	3 ³ / ₄	2-16d DPLX	2-10d	—	—	4175	4175	4175	*	1, 84, 121, 140
TPL 2x12	HU212-3TF	12	4 ¹ / ₁₆	11	2 ¹ / ₂	2 ¹ / ₂	16-16d	6-16d	1105	1325	4550	4885	5105	Lowest	26, 83, 124, 140
2x14	LB214	14	1 ⁹ / ₁₆	13 ³ / ₈	2	1 ¹ / ₂	4-16d	2-10dx1 ¹ / ₂	240	290	1425	1425	1425	Lowest	2, 40, 82, 121
	JB214	18	1 ⁹ / ₁₆	13 ³ / ₈	2	1 ¹ / ₄	6-16d	2-10dx1 ¹ / ₂	235	235	1505	1505	1505	+ 117%	
	W214	12	1 ⁹ / ₁₆	13	2 ¹ / ₂	2 ¹ / ₂	2-10d	2-10dx1 ¹ / ₂	—	—	2200	2200	2200	+ 188%	26, 83, 124, 140
	HU214TF	12	1 ⁹ / ₁₆	13	2 ¹ / ₄	2 ¹ / ₂	16-16d	6-10dx1 ¹ / ₂	735	885	2660	2745	2800	+ 189%	
	WM214	12	1 ⁹ / ₁₆	13	4 ¹ / ₂	3 ³ / ₄	2-16d DPLX	2-10dx1 ¹ / ₂	—	—	2540	2565	2590	*	
DBL 2x14	HUS214-2TF	14	3 ¹ / ₈	13 ³ / ₈	2	2 ¹ / ₄	12-16d	8-16d	2160	2590	4435	4535	4605	Lowest	1, 84, 121
	WNP214-2	12	3 ¹ / ₈	13	2 ¹ / ₂	2 ³ / ₁₆	2-10d	2-10d	—	—	3255	3255	3255	+ 2%	26, 83, 124, 140
	HU214-2TF	12	3 ¹ / ₈	13	2 ¹ / ₂	2 ¹ / ₂	18-16d	8-10d	1250	1500	4335	4335	4335	+ 33%	
	WM214-2	12	3 ¹ / ₈	13	2 ¹ / ₂	3 ³ / ₄	2-16d DPLX	2-10d	—	—	4175	4175	4175	*	1, 84, 121, 140
TPL 2x14	HU214-3TF	12	4 ¹ / ₁₆	13	2 ¹ / ₂	2 ¹ / ₂	18-16d	8-16d	1470	1765	4835	5050	5050	Lowest	26, 83, 124, 140
2x16	LB216	14	1 ⁹ / ₁₆	15 ¹ / ₈	2	1 ¹ / ₂	4-16d	2-10dx1 ¹ / ₂	240	290	1425	1425	1425	Lowest	2, 40, 121, 82
	W216	12	1 ⁹ / ₁₆	15	2 ¹ / ₂	2 ¹ / ₂	2-10d	2-10dx1 ¹ / ₂	—	—	2200	2200	2200	+ 122%	26, 83, 124, 140
	HU216TF	12	1 ⁹ / ₁₆	15	2 ¹ / ₄	2 ¹ / ₂	18-16d	8-10dx1 ¹ / ₂	980	1180	2845	2955	3030	+ 199%	
	WM216	12	1 ⁹ / ₁₆	15	4 ¹ / ₂	3 ³ / ₄	2-16d DPLX	2-10dx1 ¹ / ₂	—	—	2540	2565	2585	*	
DBL 2x16	WNP216-2	12	3 ¹ / ₈	15	2 ¹ / ₂	2 ³ / ₁₆	2-10d	2-10d	—	—	3255	3255	3255	Lowest	26, 83, 124, 140
	HU216-2TF	12	3 ¹ / ₈	15	2 ¹ / ₂	2 ¹ / ₂	20-16d	8-10d	1250	1500	4335	4335	4335	+ 34%	
	WM216-2	12	3 ¹ / ₈	15	2 ¹ / ₂	3 ³ / ₄	2-16d DPLX	2-10d	—	—	4175	4175	4175	*	



1. N54A fasteners are supplied with hangers.
2. 16d sinkers may be used where 10d commons are called out with no load reduction.
3. Uplift loads have been increased 33% and 60% for earthquake or wind loading with no further increase allowed. Divide by 1.33 and 1.60 for normal loading such as in cantilever construction.

4. NAILS: 16d = 0.162" dia. x 3¹/₂" long, 10d = 0.148" dia. x 3" long.
10dx1¹/₂ = 0.148" dia. x 1¹/₂" long. See page 16-17 for other nail sizes and information.

CODES: See page 12 for Code Listing Key Chart.

*Hangers do not have an Installed Cost Index.

TOP FLANGE HANGERS – SOLID SAWN LUMBER (DF/SP)

Joist or Purlin Size	Model No.	Ga	Dimensions				Fasteners		DF/SP Allowable Loads					Installed Cost Index (ICI)	Code Ref.
			W	H	B	TF	Header	Joist	Uplift (133)	Uplift (160)	Floor (100)	Snow (115)	Roof (125)		
SAWN LUMBER SIZES															
TPL 2x16	HU216-3TF	12	4 ¹¹ ₁₆	15	2 ¹ ₂	2 ¹ ₂	20-16d	8-16d	1470	1765	5050	5050	5050	Lowest	26, 83, 124, 140
3x4	HU34TF	12	2 ⁹ ₁₆	3 ⁷ ₁₆	2 ¹ ₂	2 ¹ ₂	8-16d	2-10dx1 ¹ ₂	245	295	2600	2600	2600	*	
3x6	W36	12	2 ⁹ ₁₆	5 ³ ₁₆	2	2 ¹ ₂	2-10d	2-10dx1 ¹ ₂	—	—	2200	2200	2200	*	1, 84, 121, 140
	WM36	12	2 ⁹ ₁₆	5 ³ ₁₆	3	3 ³ ₄	2-16d DPLX	2-10dx1 ¹ ₂	—	—	4100	4130	4150	*	
	HU36TF	12	2 ⁹ ₁₆	5 ³ ₁₆	2 ¹ ₂	2 ¹ ₂	10-16d	4-10dx1 ¹ ₂	490	590	3725	3900	3900	*	
3x8	W38	12	2 ⁹ ₁₆	7 ¹ ₁₆	2	2 ¹ ₂	2-10d	2-10dx1 ¹ ₂	—	—	2200	2200	2200	*	26, 83, 124, 140
	WM38	12	2 ⁹ ₁₆	7 ¹ ₁₆	3	3 ³ ₄	2-16d DPLX	2-10dx1 ¹ ₂	—	—	4100	4130	4150	*	1, 84, 121, 140
	HU38TF	12	2 ⁹ ₁₆	7 ¹ ₁₆	2 ¹ ₂	2 ¹ ₂	12-16d	4-10dx1 ¹ ₂	490	590	3900	3900	3900	*	26, 83, 124, 140
	B38	12	2 ⁹ ₁₆	7 ¹ ₁₆	2 ¹ ₂	2 ¹ ₂	14-16d	6-16dx2 ¹ ₂	1010	1010	3800	3800	3800	*	124
3x10	W310	12	2 ⁹ ₁₆	9 ¹ ₁₆	2	2 ¹ ₂	2-10d	2-10dx1 ¹ ₂	—	—	2200	2200	2200	*	26, 83, 124, 140
	WM310	12	2 ⁹ ₁₆	9 ¹ ₁₆	3	3 ³ ₄	2-16d DPLX	2-10dx1 ¹ ₂	—	—	4100	4130	4150	*	1, 84, 121, 140
	HU310TF	12	2 ⁹ ₁₆	9 ¹ ₁₆	2 ¹ ₂	2 ¹ ₂	14-16d	6-10dx1 ¹ ₂	735	885	4170	4170	4170	*	26, 83, 124, 140
	B310	12	2 ⁹ ₁₆	9 ¹ ₁₆	2 ¹ ₂	2 ¹ ₂	14-16d	6-16dx2 ¹ ₂	1010	1010	3800	3800	3800	*	124
3x12	WNP312	12	2 ⁹ ₁₆	11	2 ¹ ₂	2 ³ ₁₆	2-10d	2-10dx1 ¹ ₂	—	—	3255	3255	3255	*	26, 83, 124
	WM312	12	2 ⁹ ₁₆	11	3	3 ³ ₄	2-16d DPLX	2-10dx1 ¹ ₂	—	—	4100	4130	4150	*	1, 84, 121, 140
	HU312TF	12	2 ⁹ ₁₆	11	2 ¹ ₂	2 ¹ ₂	16-16d	6-10dx1 ¹ ₂	735	885	4335	4335	4335	*	26, 83, 124, 140
	B312	12	2 ⁹ ₁₆	11	2 ¹ ₂	2 ¹ ₂	14-16d	6-16dx2 ¹ ₂	1010	1010	3800	3800	3800	*	124
3x14	WNP314	12	2 ⁹ ₁₆	13	2 ¹ ₂	2 ³ ₁₆	2-10d	2-10dx1 ¹ ₂	—	—	3255	3255	3255	*	26, 83, 124
	WM314	12	2 ⁹ ₁₆	13	3	3 ³ ₄	2-16d DPLX	2-10dx1 ¹ ₂	—	—	4100	4130	4150	*	1, 84, 121, 140
	HU314TF	12	2 ⁹ ₁₆	13	2 ¹ ₂	2 ¹ ₂	18-16d	8-10dx1 ¹ ₂	980	1180	4335	4335	4335	*	26, 83, 124, 140
	B314	12	2 ⁹ ₁₆	13	2 ¹ ₂	2 ¹ ₂	14-16d	6-16dx2 ¹ ₂	1010	1010	3800	3800	3800	*	124
3x16	WNP316	12	2 ⁹ ₁₆	15	2 ¹ ₂	2 ³ ₁₆	2-10d	2-10dx1 ¹ ₂	—	—	3255	3255	3255	*	26, 83, 124
	WM316	12	2 ⁹ ₁₆	15	3	3 ³ ₄	2-16d DPLX	2-10dx1 ¹ ₂	—	—	4100	4130	4150	*	1, 84, 121, 140
	HU316TF	12	2 ⁹ ₁₆	15	2 ¹ ₂	2 ¹ ₂	20-16d	8-10dx1 ¹ ₂	980	1180	4335	4335	4335	*	26, 83, 124, 140
	B316	12	2 ⁹ ₁₆	15	2 ¹ ₂	2 ¹ ₂	14-16d	6-16dx2 ¹ ₂	1010	1010	3800	3800	3800	*	124
4x4	HU44TF	12	3 ⁹ ₁₆	3 ⁷ ₁₆	2 ¹ ₂	2 ¹ ₂	8-16d	2-10d	310	375	2600	2600	2600	Lowest	26, 83, 124, 140
4x6	HUS46TF	14	3 ⁹ ₁₆	5 ³ ₁₆	2	1 ¹ ₂	6-16d	4-16d	1080	1235	2700	2890	3000	Lowest	1, 84, 121
	W46	12	3 ⁹ ₁₆	5 ³ ₁₆	2 ¹ ₂	2 ¹ ₂	2-10d	2-10d	—	—	2200	2200	2200	+ 12%	26, 83, 124, 140
	HU46TF	12	3 ⁹ ₁₆	5 ³ ₁₆	2 ¹ ₂	2 ¹ ₂	10-16d	4-10d	625	750	3165	3165	3165	+ 28%	
	HW46	11	3 ⁹ ₁₆	5 ³ ₁₆	2 ¹ ₂	2 ¹ ₂	4-10d	2-10d	—	—	5285	5285	5285	+ 83%	26, 83, 124
	WM46	12	3 ⁹ ₁₆	5 ³ ₁₆	2 ¹ ₂	3 ³ ₄	2-16d DPLX	2-10d	—	—	4175	4175	4175	*	1, 84, 121, 140
4x8	BA48 (min)	14	3 ⁹ ₁₆	7 ¹ ₁₆	3	2 ¹ ₂	16-16d	2-10dx1 ¹ ₂	265	315	3435	3435	3435	Lowest	160
	BA48 (max)	14	3 ⁹ ₁₆	7 ¹ ₁₆	3	2 ¹ ₂	16-16d	8-10dx1 ¹ ₂	1055	1170	3800	3800	3800	+ 7%	160
	HUS48TF	14	3 ⁹ ₁₆	7 ¹ ₄	2	1 ¹¹ ₁₆	8-16d	6-16d	1550	1550	3225	3495	3670	+ 33%	1, 84, 121
	B48	12	3 ⁹ ₁₆	7 ¹ ₁₆	2 ¹ ₂	2 ¹ ₂	14-16d	6-16d	1010	1010	3800	3800	3800	+ 35%	124
	W48	12	3 ⁹ ₁₆	7 ¹ ₁₆	2 ¹ ₂	2 ¹ ₂	2-10d	2-10d	—	—	2200	2200	2200	+ 54%	26, 83, 124, 140
	HU48TF	12	3 ⁹ ₁₆	7 ¹ ₁₆	2 ¹ ₂	2 ¹ ₂	12-16d	4-10d	625	750	3500	3500	3500	+ 95%	
	HW48	11	3 ⁹ ₁₆	7 ¹ ₁₆	2 ¹ ₂	2 ¹ ₂	4-10d	2-10d	—	—	5285	5285	5285	+ 130%	26, 83, 124
	WM48	12	3 ⁹ ₁₆	7 ¹ ₁₆	2 ¹ ₂	3 ³ ₄	2-16d DPLX	2-10d	—	—	4175	4175	4175	*	1, 84, 121, 140
4x10	BA410 (min)	14	3 ⁹ ₁₆	9 ¹ ₁₆	3	2 ¹ ₂	16-16d	2-10dx1 ¹ ₂	265	315	3435	3435	3435	Lowest	160
	BA410 (max)	14	3 ⁹ ₁₆	9 ¹ ₁₆	3	2 ¹ ₂	16-16d	8-10dx1 ¹ ₂	1055	1170	3800	3800	3800	+ 7%	160
	HUS410TF	14	3 ⁹ ₁₆	9 ¹ ₄	2	1 ¹ ₄	10-16d	8-16d	2160	2590	3365	3710	3935	+ 21%	1, 84, 121
	B410	12	3 ⁹ ₁₆	9 ¹ ₁₆	2 ¹ ₂	2 ¹ ₂	14-16d	6-16d	1010	1010	3800	3800	3800	+ 35%	124
	W410	12	3 ⁹ ₁₆	9 ¹ ₁₆	2 ¹ ₂	2 ¹ ₂	2-10d	2-10d	—	—	2200	2200	2200	+ 49%	26, 83, 124, 140
	HU410TF	12	3 ⁹ ₁₆	9 ¹ ₁₆	2 ¹ ₂	2 ¹ ₂	14-16d	6-10d	935	1125	4150	4150	4150	+ 86%	
	HW410	11	3 ⁹ ₁₆	9 ¹ ₁₆	2 ¹ ₂	2 ¹ ₂	4-10d	2-10d	—	—	5285	5285	5285	+ 130%	26, 83, 124
	WM410	12	3 ⁹ ₁₆	9 ¹ ₁₆	2 ¹ ₂	3 ³ ₄	2-16d DPLX	2-10d	—	—	4175	4175	4175	*	1, 84, 121, 140
	GLT4	7	3 ⁹ ₁₆	7 ¹ ₂ Min	5	2 ¹ ₂	10-N54A	6-N54A	1455	1745	7000	7000	7000	*	26, 83, 124
	HGLT4	7	3 ⁹ ₁₆	7 ¹ ₂ Min	6	2 ¹ ₂	18-N54A	6-N54A	1455	1745	12750	12750	12750	*	
4x12	BA412 (min)	14	3 ⁹ ₁₆	11	3	2 ¹ ₂	16-16d	2-10dx1 ¹ ₂	265	315	3435	3435	3435	Lowest	160
	BA412 (max)	14	3 ⁹ ₁₆	11	3	2 ¹ ₂	16-16d	8-10dx1 ¹ ₂	1055	1170	3800	3800	3800	+ 6%	160
	HUS412TF	14	3 ⁹ ₁₆	11 ¹ ₁₆	2	2	10-16d	8-16d	2000	2000	4420	4760	4990	+ 14%	1, 84, 121
	B412	12	3 ⁹ ₁₆	11	2 ¹ ₂	2 ¹ ₂	14-16d	6-16d	1010	1010	3800	3800	3800	+ 27%	124
	WNP412	12	3 ⁹ ₁₆	11	2 ¹ ₂	2 ³ ₁₆	2-10d	2-10d	—	—	3255	3255	3255	+ 32%	26, 83, 124, 140
	HU412TF	12	3 ⁹ ₁₆	11	2 ¹ ₂	2 ¹ ₂	16-16d	6-10d	935	1125	4550	4885	5105	+ 84%	
	HW412	11	3 ⁹ ₁₆	11	2 ¹ ₂	2 ¹ ₂	4-10d	2-10d	—	—	5285	5285	5285	+ 115%	26, 83, 124
	HHB412	7	3 ⁹ ₁₆	11	3	2 ¹ ₂	4-N54A	2-N54A	485	580	4185	4185	4185	+ 174%	
	WM412	12	3 ⁹ ₁₆	11	2 ¹ ₂	3 ³ ₄	2-16d DPLX	2-10d	—	—	4175	4175	4175	*	1, 84, 121, 140
	GLT4	7	3 ⁹ ₁₆	7 ¹ ₂ Min	5	2 ¹ ₂	10-N54A	6-N54A	1455	1745	7000	7000	7000	*	26, 83, 124
	HGI T4	7	3 ⁹ ₁₆	7 ¹ ₂ Min	6	2 ¹ ₂	18-N54A	6-N54A	1455	1745	12750	12750	12750	*	

TOP FLANGE HANGERS – SOLID SAWN LUMBER (DF/SP)

Joist or Purlin Size	Model No.	Ga	Dimensions				Fasteners		DF/SP Allowable Loads					Installed Cost Index (ICI)	Code Ref.
			W	H	B	TF	Header	Joist	Uplift (133)	Uplift (160)	Floor (100)	Snow (115)	Roof (125)		
SAWN LUMBER SIZES															
4x14	HUS414TF	14	3 ¹ / ₁₆	13 ¹ / ₈	2	2	12-16d	8-16d	2160	2160	4765	5100	5100	Lowest	1, 84, 121
	B414	12	3 ¹ / ₁₆	13	2 ¹ / ₂	2 ¹ / ₂	14-16d	6-16d	1010	1010	3800	3800	3800	+ 8%	124
	WNP414	12	3 ¹ / ₁₆	13	2 ¹ / ₂	2 ³ / ₁₆	2-10d	2-10d	—	—	3255	3255	3255	+ 13%	26, 83, 124, 140
	HU414TF	12	3 ¹ / ₁₆	13	2 ¹ / ₂	2 ¹ / ₂	18-16d	8-10d	1250	1500	4830	5050	5050	+ 89%	
	HW414	11	3 ¹ / ₁₆	13	2 ¹ / ₂	2 ¹ / ₂	4-10d	2-10d	—	—	5285	5285	5285	+ 108%	26, 83, 124
	HHB414	7	3 ¹ / ₁₆	13	3	2 ¹ / ₂	6-N54A	4-N54A	970	1165	5135	5135	5135	+ 150%	
	WM414	12	3 ¹ / ₁₆	13	2 ¹ / ₂	3 ³ / ₄	2-16d DPLX	2-10d	—	—	4175	4175	4175	*	1, 84, 121, 140
	GLT4	7	3 ¹ / ₁₆	7 ¹ / ₂ MIN	5	2 ¹ / ₂	10-N54A	6-N54A	1455	1745	7000	7000	7000	*	26, 83, 124
HGLT4	7	3 ¹ / ₁₆	7 ¹ / ₂ MIN	6	2 ¹ / ₂	18-N54A	6-N54A	1455	1745	12750	12750	12750	*		
4x16	WNP416	12	3 ¹ / ₁₆	15	2 ¹ / ₂	2 ³ / ₁₆	2-10d	2-10d	—	—	3255	3255	3255	Lowest	26, 83, 124, 140
	B416	12	3 ¹ / ₁₆	15	2 ¹ / ₂	2 ¹ / ₂	14-16d	6-16d	1010	1010	3800	3800	3800	+ 23%	124
	HU416TF	12	3 ¹ / ₁₆	15	2 ¹ / ₂	2 ¹ / ₂	20-16d	8-10d	1250	1500	5050	5050	5050	+ 81%	26, 83, 124, 140
	HW416	11	3 ¹ / ₁₆	15	2 ¹ / ₂	2 ¹ / ₂	4-10d	2-10d	—	—	5285	5285	5285	+ 108%	26, 83, 124
	HHB416	7	3 ¹ / ₁₆	15	3	2 ¹ / ₂	6-N54A	4-N54A	970	1165	5135	5135	5135	+ 109%	
	WM416	12	3 ¹ / ₁₆	15	2 ¹ / ₂	3 ³ / ₄	2-16d DPLX	2-10d	—	—	4175	4175	4175	*	1, 84, 121, 140
	GLT4	7	3 ¹ / ₁₆	7 ¹ / ₂ MIN	5	2 ¹ / ₂	10-N54A	6-N54A	1455	1745	7000	7000	7000	*	26, 83, 124
	HGLT4	7	3 ¹ / ₁₆	7 ¹ / ₂ MIN	6	2 ¹ / ₂	18-N54A	6-N54A	1455	1745	12750	12750	12750	*	
6x6	WNP66	12	5 ¹ / ₂	5 ³ / ₈	2 ¹ / ₂	2 ⁵ / ₁₆	3-10d	2-10d	—	—	3255	3255	3255	*	26, 83, 124, 140
	WM66	12	5 ¹ / ₂	5 ³ / ₈	2 ¹ / ₂	3 ³ / ₄	2-16d DPLX	2-10d	—	—	4175	4175	4175	*	1, 84, 121, 140
	HU66TF	12	5 ¹ / ₂	5 ³ / ₈	2 ¹ / ₂	2 ¹ / ₂	10-16d	4-16d	735	885	3165	3165	3165	*	26, 83, 124, 140
	HW66	11	5 ¹ / ₂	5 ³ / ₈	2 ¹ / ₂	2 ¹ / ₂	4-10d	2-10d	—	—	5285	5285	5285	*	26, 83, 124
6x8	WNP68	12	5 ¹ / ₂	7 ¹ / ₈	2 ¹ / ₂	2 ⁵ / ₁₆	3-10d	2-10d	—	—	3255	3255	3255	*	
	WM68	12	5 ¹ / ₂	7 ¹ / ₈	2 ¹ / ₂	3 ³ / ₄	2-16d DPLX	2-10d	—	—	4175	4175	4175	*	1, 84, 121, 140
	HU68TF	12	5 ¹ / ₂	7 ¹ / ₈	2 ¹ / ₂	2 ¹ / ₂	12-16d	4-16d	735	885	3500	3500	3500	*	26, 83, 124, 140
	HHB68	7	5 ¹ / ₂	7 ¹ / ₈	3	2 ¹ / ₂	4-N54A	2-N54A	485	580	4185	4185	4185	*	26, 83, 124
	HW68	11	5 ¹ / ₂	7 ¹ / ₈	2 ¹ / ₂	2 ¹ / ₂	4-10d	2-10d	—	—	5285	5285	5285	*	
6x10	WNP610	12	5 ¹ / ₂	9 ¹ / ₈	2 ¹ / ₂	2 ⁵ / ₁₆	3-10d	2-10d	—	—	3255	3255	3255	*	
	WM610	12	5 ¹ / ₂	9 ¹ / ₈	2 ¹ / ₂	3 ³ / ₄	2-16d DPLX	2-10d	—	—	4175	4175	4175	*	1, 84, 121, 140
	B610	12	5 ¹ / ₂	9 ¹ / ₈	2 ¹ / ₂	2 ¹ / ₂	14-16d	6-16d	1010	1010	3800	3800	3800	*	124
	HHB610	7	5 ¹ / ₂	9 ¹ / ₈	3	2 ¹ / ₂	4-N54A	2-N54A	485	580	4185	4185	4185	*	26, 83, 124
	HU610TF	12	5 ¹ / ₂	9 ¹ / ₈	2 ¹ / ₂	2 ¹ / ₂	14-16d	6-16d	1105	1325	4150	4150	4150	*	
	HW610	11	5 ¹ / ₂	9 ¹ / ₈	2 ¹ / ₂	2 ¹ / ₂	4-10d	2-10d	—	—	5285	5285	5285	*	
	GLT6	7	5 ¹ / ₁₆	7 ¹ / ₂ MIN	5	2 ¹ / ₂	10-N54A	6-N54A	1455	1745	7000	7000	7000	*	
	HGLT6	7	5 ¹ / ₁₆	7 ¹ / ₂ MIN	6	2 ¹ / ₂	18-N54A	6-N54A	1455	1745	12750	12750	12750	*	
6x12	HW612	11	5 ¹ / ₂	11	2 ¹ / ₂	2 ¹ / ₂	4-10d	2-10d	—	—	5285	5285	5285	*	26, 83, 124
	B612	12	5 ¹ / ₂	11	2 ¹ / ₂	2 ¹ / ₂	14-16d	6-16d	1010	1010	3800	3800	3800	*	124
	HHB612	7	5 ¹ / ₂	11	3	2 ¹ / ₂	10-N54A	6-N54A	1455	1745	6235	6235	6235	*	26, 83, 124
	HU612TF	12	5 ¹ / ₂	11	2 ¹ / ₂	2 ¹ / ₂	16-16d	6-16d	1105	1325	4550	4885	5105	*	26, 83, 124, 140
	GLT6	7	5 ¹ / ₁₆	7 ¹ / ₂ MIN	5	2 ¹ / ₂	10-N54A	6-N54A	1455	1745	7000	7000	7000	*	26, 83, 124
	HGLT6	7	5 ¹ / ₁₆	7 ¹ / ₂ MIN	6	2 ¹ / ₂	18-N54A	6-N54A	1455	1745	12750	12750	12750	*	
6x14	HW614	11	5 ¹ / ₂	13	2 ¹ / ₂	2 ¹ / ₂	4-10d	2-10d	—	—	5285	5285	5285	*	26, 83, 124
	B614	12	5 ¹ / ₂	13	2 ¹ / ₂	2 ¹ / ₂	14-16d	6-16d	1010	1010	3800	3800	3800	*	124
	HHB614	7	5 ¹ / ₂	13	3	2 ¹ / ₂	10-N54A	6-N54A	1455	1745	6235	6235	6235	*	26, 83, 124
	HU614TF	12	5 ¹ / ₂	13	2 ¹ / ₂	2 ¹ / ₂	18-16d	8-16d	1470	1765	4830	5200	5450	*	26, 83, 124, 140
	GLT6	7	5 ¹ / ₁₆	7 ¹ / ₂ MIN	5	2 ¹ / ₂	10-N54A	6-N54A	1455	1745	7000	7000	7000	*	26, 83, 124
	HGLT6	7	5 ¹ / ₁₆	7 ¹ / ₂ MIN	6	2 ¹ / ₂	18-N54A	6-N54A	1455	1745	12750	12750	12750	*	
6x16	HW616	11	5 ¹ / ₂	15	2 ¹ / ₂	2 ¹ / ₂	4-10d	2-10d	—	—	5285	5285	5285	*	
	B616	12	5 ¹ / ₂	15	2 ¹ / ₂	2 ¹ / ₂	14-16d	6-16d	1010	1010	3800	3800	3800	*	124
	HHB616	7	5 ¹ / ₂	15	3	2 ¹ / ₂	10-N54A	6-N54A	1455	1745	6235	6235	6235	*	26, 83, 124
	HU616TF	12	5 ¹ / ₂	15	2 ¹ / ₂	2 ¹ / ₂	20-16d	8-16d	1470	1765	5105	5520	5795	*	26, 83, 124, 140
	GLT6	7	5 ¹ / ₁₆	7 ¹ / ₂ MIN	5	2 ¹ / ₂	10-N54A	6-N54A	1455	1745	7000	7000	7000	*	26, 83, 124
	HGLT6	7	5 ¹ / ₁₆	7 ¹ / ₂ MIN	6	2 ¹ / ₂	18-N54A	6-N54A	1455	1745	12750	12750	12750	*	
8x6	HW86	7	7 ¹ / ₂	5 ³ / ₈	2 ¹ / ₂	2 ¹ / ₂	4-10d	2-10d	—	—	5285	5285	5285	*	26, 83, 124
8x8	HW88	7	7 ¹ / ₂	7 ¹ / ₈	2 ¹ / ₂	2 ¹ / ₂	4-10d	2-10d	—	—	5285	5285	5285	*	
8x10	HW810	7	7 ¹ / ₂	9 ¹ / ₈	2 ¹ / ₂	2 ¹ / ₂	4-10d	2-10d	—	—	5285	5285	5285	*	
8x12	HW812	7	7 ¹ / ₂	11	2 ¹ / ₂	2 ¹ / ₂	4-10d	2-10d	—	—	5285	5285	5285	*	
	HHB812	7	7 ¹ / ₂	11	3	2 ¹ / ₂	10-N54A	6-N54A	1455	1745	6235	6235	6235	*	
8x14	HW814	7	7 ¹ / ₂	13	2 ¹ / ₂	2 ¹ / ₂	4-10d	2-10d	—	—	5285	5285	5285	*	
	HHB814	7	7 ¹ / ₂	13	3	2 ¹ / ₂	10-N54A	6-N54A	1455	1745	6235	6235	6235	*	
8x16	HW816	7	7 ¹ / ₂	15	2 ¹ / ₂	2 ¹ / ₂	4-10d	2-10d	—	—	5285	5285	5285	*	
	HHB816	7	7 ¹ / ₂	15	3	2 ¹ / ₂	10-N54A	6-N54A	1455	1745	6235	6235	6235	*	

LSU/LSSU Adjustable Light Slopeable/Skewable U Hangers



This product is preferable to similar connectors because of a) easier installation, b) higher loads, c) lower installed cost, or a combination of these features.

This series attach joists or rafters to headers, sloped up or down, and skewed left or right, up to 45°.

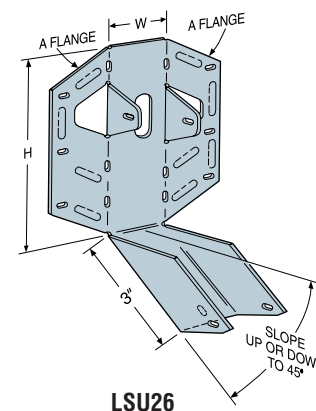
MATERIAL: See table.

FINISH: Galvanized. Some products available in Z-MAX; see Corrosion-Resistance, page 6-7.

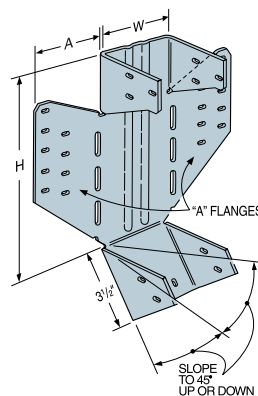
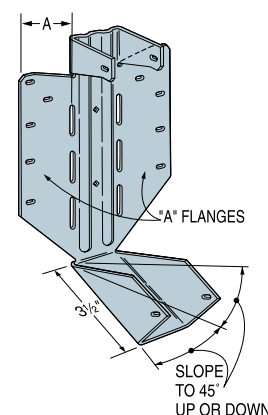
INSTALLATION:

- Use all specified fasteners. See General Notes.
- Attach the sloped joist at both ends so that the horizontal force developed by the slope is fully supported by the supporting members.

CODES: See page 12 for Code Listing Key Chart.

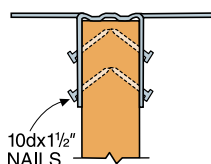


LSU26

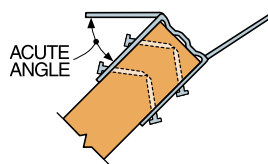
LSSU410
(LSSU210-2 similar)

LSSU28

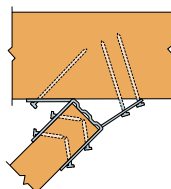
LSSU INSTALLATION SEQUENCE



STEP 1
Nail hanger to slope-cut carried member, installing seat nail first. No bevel necessary for skewed installation.



STEP 2
Skew flange to form acute angle. Bend other flange back along centerline of slots. Bend one time only.



STEP 3
Attach hanger to the carrying member, acute angle side first. Install nails at an angle.

Available with additional corrosion protection. Check with factory.

Joist Width	Model No.	Ga	Dimensions			Fasteners		DF/SP Species Header Allowable Loads						SPF Species Header Allowable Loads				Code Ref.
			W	H	A	Face	Joist	Uplift ² (133)	Uplift ² (160)	Floor (100)	Roof		Uplift ² (133)	Floor (100)	Roof			
											Snow (115)	Const (125)			Snow (115)	Const (125)		
Sloped Only Hangers																		
1½	LSU26	18	1⅞	4⅞	1½	6-10d	5-10dx1½	485	535	665	765	800	415	575	660	690	1, 84,140,121	
1½	LSSU28	18	1⅞	7⅞	1½	10-10d	5-10dx1½	485	535	1110	1275	1390	415	960	1105	1200	6, 86, 140, 121	
1½	LSSU210	18	1⅞	8½	1⅝	10-10d	7-10dx1½	730	875	1110	1275	1390	625	960	1105	1200	160	
2½	LSSUH310	16	2⅞	8½	3⅞	18-16d	12-10dx1½	1150	1150	2295	2295	2295	990	1930	1930	1930	4, 87, 121	
3	LSSU210-2	16	3⅞	8½	2⅞	18-16d	12-10dx1½	1150	1150	2430	2795	3035	990	2160	2485	2700		
3½	LSSU410	16	3⅞	8½	2⅝	18-16d	12-10dx1½	1150	1150	2430	2795	3035	990	2160	2485	2700		
Skewed Hangers or Sloped and Skewed																		
1½	LSU26	18	1⅞	4⅞	1½	6-10d	5-10dx1½	485	535	665	765	800	415	575	660	690	1, 84	
1½	LSSU28	18	1⅞	7⅞	1½	9-10d	5-10dx1½	450	450	885	885	885	415	765	765	765	6, 86, 140	
1½	LSSU210	18	1⅞	8½	1⅝	9-10d	7-10dx1½	730	785	995	1145	1205	625	860	995	1050	160	
2½	LSSUH310	16	2⅞	8½	3⅞	14-16d	12-10dx1½	1150	1150	1600	1600	1600	990	1385	1385	1385	4, 87	
3	LSSU210-2	16	3⅞	8½	2⅞	14-16d	12-10dx1½	1150	1150	1625	1625	1625	990	1365	1365	1365	4, 87	
3½	LSSU410	16	3⅞		2⅝													

1. Roof loads are 125% of floor loads unless limited by other criteria.

2. Uplift loads include a 33% and 60% increase for earthquake or wind loading; no further increase is allowed; reduce when other loads govern.

3. Truss chord cross-grain tension may limit allowable loads. Refer to Technical Bulletins T-ANSITPISPF, T-ANSITPISP and T-ANSITPIDF for allowable loads that consider ANSI/TPI 1-2002 wood member design criteria.

4. NAILS: 16d = 0.162" dia. x 3 1/2" long, 10d = 0.148" dia. x 3" long, 10dx1 1/2 = 0.148" dia. x 1 1/2" long. See page 16-17 for other nail sizes and information.

VPA Adjustable Variable Pitch Connectors

The VPA is adjustable to slopes between 3:12 and 12:12, complementing the versatile LSSU.

No notching is required when using the VPA. This hanger reduces the need for beveled plates and toe-nailing.

MATERIAL: 18 gauge

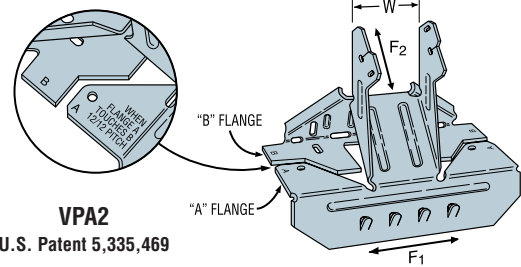
FINISH: Galvanized

INSTALLATION:

- Use all specified fasteners. See General Notes.

CODES: See page 12 for Code Listing Key Chart.

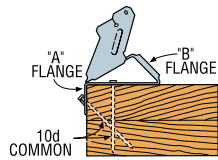
A and B
flanges touch
at 45°



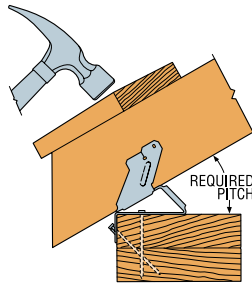
Joist Width	Model No.	W	Fasteners		DF/SP Species Allowable Loads								SPF Species Allowable Loads								Code Ref.
			Carrying Member	Carried Member	Uplift		Down-load	Lateral				Uplift		Down-load	Lateral						
								(133)		(160)					(133)		(160)				
					(133)	(160)		F ₁	F ₂	F ₁	F ₂	(133)	(160)		F ₁	F ₂	F ₁	F ₂			
1½	VPA2	1⅞	8-10d	2-10dx1½	245	295	1050	375	245	375	250	210	250	870	325	210	325	250	1, 121, 140		
2½	VPA3	2⅞	9-10d	2-10dx1½	245	295	1230	375	245	375	250	210	250	1020	325	210	325	250			
3½	VPA4	3⅞	11-10d	2-10dx1½	245	295	1230	375	245	375	250	210	250	1020	325	210	325	250			

1. Uplift loads include a 33% and 60% increase for earthquake or wind loading; no further increase allowed; reduce where other loads govern.
2. Loads may not be increased for short-term loading.

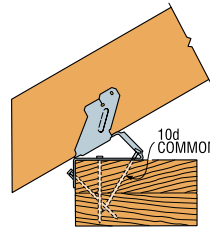
3. NAILS: 10d = 0.148" dia. x 3" long, 10dx1½ = 0.148" dia. x 1½" long.
See page 16-17 for other nail sizes and information.

VPA INSTALLATION SEQUENCE

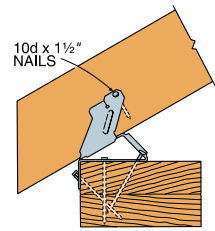
STEP 1
Install top nails and face PAN nails in "A" flange to outside wall top plate.



STEP 2
Seat rafter with a hammer, adjusting "B" flange to the required pitch.



STEP 3
Install "B" flange nails in the obround nail holes, locking the pitch.



STEP 4
Install 10dx1½" nail into tab nail hole. Hammer nail in at a slight angle to prevent splitting.

HCP Hip Corner Plates

The HCP connects a rafter or joist to double top plates at a 45° angle.

MATERIAL: 18 gauge.

FINISH: HCP2—galvanized or Z-MAX; HCP4Z—Z-MAX™.

INSTALLATION: • Use all specified fasteners. See General Notes.

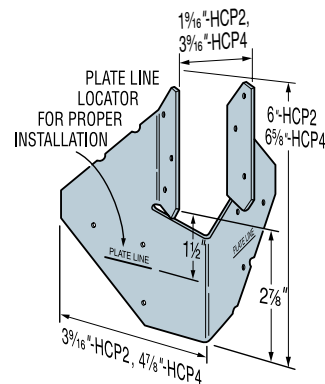
- Attach HCP to double top plates; birdsmouth not required for table loads.
- Install rafter and complete nailing. Rafter may be sloped to 45°.

CODES: See page 12 for Code Listing Key Chart.

Available with additional corrosion protection. Check with factory.

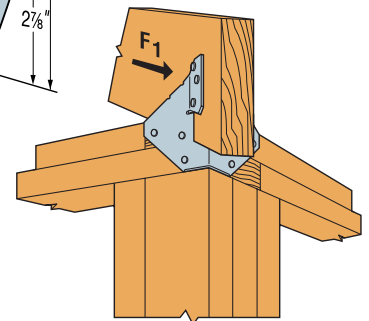
Member Size	Model No.	Fasteners		Doug-Fir-Larch/ So. Pine Allowable Loads¹		Spruce-Pine-Fir Allowable Loads¹		Code Ref.
		To Rafters	To Plates	(133 & 160)		(133 & 160)		
				Uplift	F₁	Uplift	F₁	
2x	HCP2	6-10dx1½	6-10dx1½	605	300	520	260	9,
4x	HCP4Z	8-10d	8-10d	1000	265	860	230	121

1. Loads may not be increased for short-term loading.
2. The HCP can be installed on the inside and the outside of the wall with a flat bottom chord truss and achieve twice the load capacity.
3. Uplift loads include a 33% and 60% increase for earthquake or wind loading; no further increase allowed; reduce where other loads govern.
4. NAILS: 10d = 0.148" dia. x 3" long, 10dx1½ = 0.148" dia. x 1½" long.
See page 16-17 for other nail sizes and information.



HCP2
(HCP4Z similar)

U.S. Patent 5,380,115



Typical HCP Installation

HRC Hip Ridge Connectors

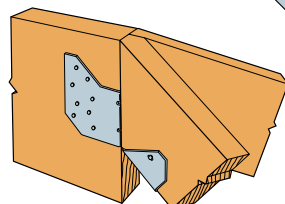
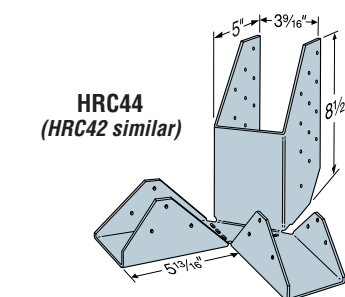
MATERIAL: HRC22, HRC42—16 gauge;
HRC44—14 gauge

FINISH: Galvanized

INSTALLATION:

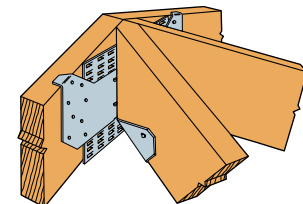
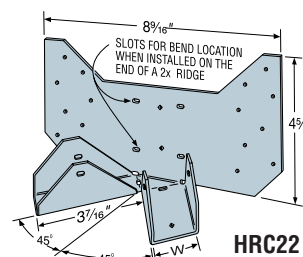
- Use all specified fasteners. See General Notes.
- On end of ridge—use optional diamond holes on HRC22 and HRC42 to secure the HRC. Bend face flanges on HRC22 back flush with ridge, and complete nailing.
- HRC22 on face of ridge—adjust to correct height and install nails.
- Double bevel-cut hip members to achieve full bearing capacity.
- The HRC may be sloped to 45° with no reduction in loads.

CODES: See page 12 for Code Listing Key Chart.



Typical HRC22
Installation
on the end
of a ridge

U.S. Patent
5,380,116



Optional
HRC22
Installation

Model No.	Member Size		Fasteners		Doug Fir Larch/So. Pine Allowable Loads					Spruce-Pine-Fir Allowable Loads					Code Ref.
	W	Ridge	Carrying Member	Each Hip	Uplift (133)	Uplift (160)	Floor (100)	Snow (115)	Roof (125)	Uplift (133)	Uplift (160)	Floor (100)	Snow (115)	Roof (125)	
HRC22	1 1/4	2x or 1 3/4" wide	16-10dx1 1/2	2-10dx1 1/2	240	290	720	830	900	210	250	625	720	780	9, 121
HRC42	1 1/4	4x	16-16d	2-10dx1 1/2	240	290	1050	1050	1050	210	250	905	905	905	
HRC44	3 3/4	4x	24-16d	6-16d	480	480	1610	1775	1775	410	410	1385	1525	1525	

1. Allowable loads shown are for each hip. Total load carried by the connector is double this number.

2. Uplift loads include a 33% and 60% increase for earthquake or wind loading; no further increase allowed; reduce where other loads govern.

3. Roof loads are 125% of floor loads unless limited by other criteria.

4. **NAILS:** 16d = 0.162" dia. x 3 1/2" long, 10dx1 1/2 = 0.148" dia. x 1 1/2" long. See page 16-17 for other nail sizes and information.

PF Post Frame Hangers

PFD and PFA post frame hangers have double shear nailing to speed installation. Diamond holes allow easy hanger alignment and attachment.

MATERIAL: 20 gauge

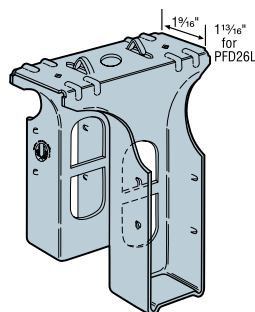
FINISH: Galvanized. Some products available in Z-MAX; see Corrosion-Resistance, page 6-7.

INSTALLATION: • Use all specified fasteners. See General Notes.

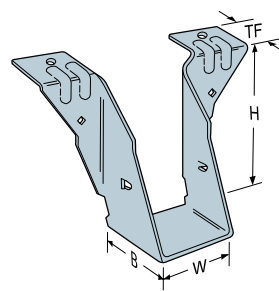
- Diamond holes on PFD allow optional top flange nailing.
- Double shear nailing distributes the load through two points on each nail for greater strength.

OPTIONS: These hangers cannot be modified.

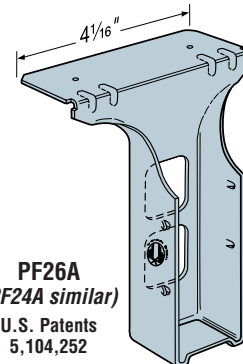
CODES: See page 12 for Code Listing Key Chart.



PFD26
(PFD24, PFD26L similar)
U.S. Patent 5,104,252



PF24
(PF26 similar)



PF26A
(PF24A similar)
U.S. Patents
5,104,252

Available with additional corrosion protection. Check with factory.

Model No.	Dimensions				Fasteners		Doug-Fir-Larch & Southern Pine Allowable Loads¹							Spruce-Pine-Fir Allowable Loads¹							Code Ref.
	W	H	B	TF	Carrying Member	Carried Member	Uplift² (133)	Uplift² (160)	Floor (100)	Snow (115)	Roof (125)	Wind (133)	Uplift² (133)	Uplift² (160)	Floor (100)	Snow (115)	Roof (125)	Wind (133)			
PF24	1⅞	3⅝	1½	1⅞	2-10d	2-10d	260	310	955	955	955	955	190	230	650	660	660	660	2, 40, 82, 121		
PF24A	1⅞	3⅝	1¼	1½	2-10d	2-10d	235	280	840	865	885	895	190	230	650	660	660	660	4, 37, 121, 140		
PFD24	1⅞	3⅝	1¼	1⅞	2 PRONGS	2-10d	235	280	840	865	885	895	190	230	650	675	690	700	2, 40, 82, 121		
PF26	1⅞	5⅝	1½	1⅞	2-10d	2-10d	260	310	955	955	955	955	380	455	805	850	880	905	4, 37, 121, 140		
PF26A	1⅞	5⅝	1¼	1½	2-10d	4-10d	520	620	970	1020	1050	1075	420	505	765	770	770	770	170		
PFD26	1⅞	5⅝	1¼	1⅞	2 PRONGS	4-10d	470	560	1015	1070	1105	1130	380	455	805	850	880	905	4, 37, 121, 140		
PFD26L	1⅞	5⅝	1½	1⅞	2-10d	2-10d	260	310	955	955	955	955	380	455	805	850	880	905	170		
PFDS26	1⅞	5⅝	1¼	3¼	4-10d	4-10d	520	620	970	1020	1050	1075	420	505	765	805	835	855	4, 37, 121, 140		

1. To assure the table loads, the carried member's nails must be common nails and driven at an angle through the carried member into the carrying member.

2. Uplift loads have been increased 33% and 60% for earthquake or wind loading with no further increase allowed; reduce where other loads govern.

3. **NAILS:** 10d = 0.148" dia. x 3" long. See page 16-17 for other nail sizes and information.

THA/THAC Adjustable Truss Hangers



This product is preferable to similar connectors because of a) easier installation, b) higher loads, c) lower installed cost, or a combination of these features.

The THA series' extra long straps allow full code nailing and can be field-formed to give top flange hanger convenience.

Designed for 4x2 floor trusses and 4x beams, the THAR/L422 has a standard skew of 45 degrees. Straps can be formed to give top flange hanger convenience. PAN nailing helps eliminate splitting of 4x2 truss bottom chords.

MATERIAL: See table.

FINISH: Galvanized. Some products available in Z-MAX; see Corrosion-Resistance, page 6-7.

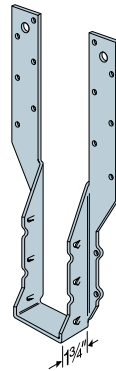
INSTALLATION: • Use all specified fasteners. See General Notes.

Two different installation methods may be used:

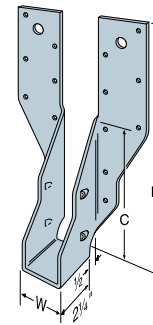
Maximum nailing—Install all face nails according to the table. Nails used for the joist attachment must be driven at an angle so that they penetrate through the corner of the joist into the header. With single 2x carrying members, use 10dx1½" nails into the carrying member, and 10d or 16d commons into the carried member, and use 0.81 of the table value for 18 gauge, and 0.68 of the table value for 16 gauge.

Minimum nailing—For the THA29, the minimum nailing schedule requires the use of joist double shear nailing as detailed above, and that the strap be field-formed over the header a minimum of 2½". A minimum of four top and four face nails must be used. For all models except the THA29, the minimum nailing schedule may be followed where double shear nailing is not possible, provided the strap is field-formed over the top of the header a minimum of 1½" for the THA213 and THA413, and 2" for all others, and a minimum of four top and two face nails are used.

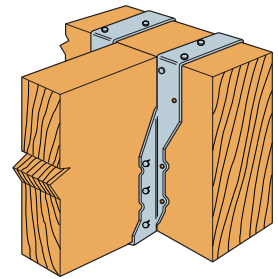
CODES: See page 12 for Code Listing Key Chart.



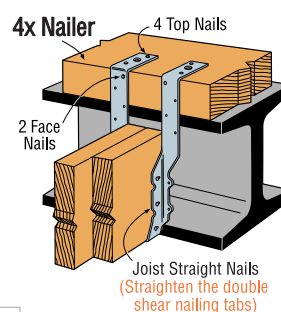
THA



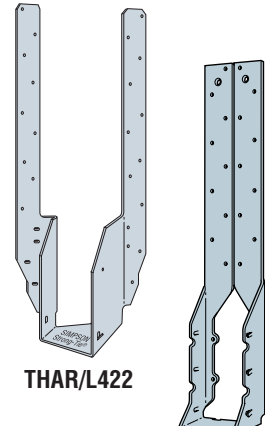
THA29



Typical THA Installation



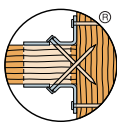
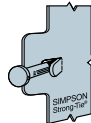
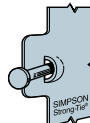
Typical THA
Minimum Nailing
Configuration on a
4x Nailers
(except THA29)



THAR/L422

1¾" for THAC422
2½" for THA422-2
and THA426-2

THAC422

Double
Shear
Nailing
Top ViewDouble
Shear
Nailing
Side View

Dome Double Shear
Nailing Side View
(available on
some models)
U.S. Patent 5,603,580

Available with additional corrosion protection. Check with factory.

Minimum Carried Member	Model No.	Ga	Dimensions			Fasteners ¹				Doug-Fir-Larch/Southern Pine Allowable Loads ⁴				Spruce-Pine-Fir Allowable Loads ⁴				Code Ref.
			W	H	C	Carrying Member		Carried Member		Uplift ² (133 & 160)	Floor (100)	Snow (115)	Roof (125)	Uplift ² (133 & 160)	Floor (100)	Snow (115)	Roof (125)	
						Top	Face	Straight	Slant									
MINIMUM NAILING — TOP FLANGE																		
2x4	THA29	18	1½	9 11⁄16	5 1⁄2	4-10d	4-10d	—	4-10d	560	2260	2310	2350	480	1740	1785	1815	1, 84, 140
2x6	THA213	18	1½	13 5⁄16	5 1⁄2	4-10d	2-10d	4-10dx1 1⁄2	—	—	1615	1615	1615	—	1280	1280	1280	1, 84, 121, 140
2x6	THA218	18	1½	17 9⁄16	5 1⁄2	4-10d	2-10d	4-10dx1 1⁄2	—	—	1615	1615	1615	—	1280	1280	1280	
(2)2x10	THA218-2	16	3 1⁄8	17 11⁄16	8	4-16d	2-16d	6-16dx2 1⁄2	—	—	1635	1635	1635	—	1465	1465	1465	1, 84,121,129,140
(2)2x10	THA222-2	16	3 1⁄8	22 3⁄16	8	4-16d	2-16d	6-16dx2 1⁄2	—	—	1635	1635	1635	—	1465	1465	1465	
4x6	THA413	18	3 3⁄8	13 5⁄16	4 1⁄2	4-10d	2-10d	4-10d	—	—	1615	1615	1615	—	1280	1280	1280	1, 84, 121, 140
4x10	THA418	16	3 3⁄8	17 1⁄2	7 7⁄8	4-16d	2-16d	6-16d	—	—	1635	1635	1635	—	1465	1465	1465	
4x10	THA422	16	3 3⁄8	22	7 7⁄8	4-16d	2-16d	6-16d	—	—	1635	1635	1635	—	1465	1465	1465	127
4x10	THAC418	16	3 3⁄8	17 1⁄2	7 7⁄8	4-16d	2-16d	6-16d	—	—	1635	1635	1635	—	1465	1465	1465	
4x2 truss	THA426	14	3 3⁄8	26	7 7⁄8	4-16d	4-16d	6-16d	—	—	2425	2425	2425	—	1940	1940	1940	170
MAXIMUM NAILING — ALL NAIL HOLES FILLED																		
2x4	THA29	18	1½	9 11⁄16	5 1⁄2	—	16-10d	—	4-10d	560	2125	2310	2350	480	1740	1785	1815	1, 84, 140
2x6	THA213	18	1½	13 5⁄16	5 1⁄2	—	14-10d	—	4-10d	930	1795	1840	1870	780	1385	1425	1450	1, 84, 121, 140
2x6	THA218	18	1½	17 9⁄16	5 1⁄2	—	18-10d	—	4-10d	930	1795	1840	1870	780	1385	1425	1450	
(2)2x10	THA218-2	16	3 1⁄8	17 11⁄16	8	—	16-16d	—	6-16d	1550	2830	3050	3050	1355	2385	2740	2820	1, 84,121,129,140
(2)2x10	THA222-2	16	3 1⁄8	22 3⁄16	8	—	22-16d	—	6-16d	1550	3510	3595	3650	1355	2705	2775	2820	
4x6	THA413	18	3 3⁄8	13 5⁄16	4 1⁄2	—	14-10d	—	4-10d	930	1940	2235	2400	780	1660	1910	2075	1, 84, 121, 140
4x10	THA418	16	3 3⁄8	17 1⁄2	7 7⁄8	—	16-16d	—	6-16d	1550	2830	3050	3050	1355	2385	2740	2980	
4x10	THA422	16	3 3⁄8	22	7 7⁄8	—	22-16d	—	6-16d	1550	3630	4090	4145	1355	3075	3145	3195	127
4x10	THAC418	16	3 3⁄8	17 1⁄2	7 7⁄8	—	16-16d	—	6-16d	1550	2830	3050	3050	1355	2385	2740	2980	
4x2 truss	THA426	14	3 3⁄8	26	7 7⁄8	—	30-16d	—	6-16d	1715	4020	4625	4655	1355	3480	4000	4030	170
FACTORY SKEW 45°																		
4x truss	THAR/L422	16	3 3⁄8	22 5⁄8	8	4-10d	2-10d	1-10d	2-10dx1 1⁄2	—	1090	1090	1090	—	915	915	915	47, 134
4x truss	THAR/L422	16	3 3⁄8	22 5⁄8	8	4-10d	12-10d	1-10d	2-10dx1 1⁄2	310	1675	1675	1675	260	1405	1405	1405	

1. 16d sinkers may be used to replace 16d commons at 0.85 of table load.

2. Uplift has been increased 33% and 60% for earthquake or wind loading with no further increase allowed; reduce where other loads govern.

3. Roof loads are 125% of floor loads unless limited by other criteria.

4. THAR/L422 with 4-10d top nails and 2-10d face nails: When the hanger height is between 9" to 12", the allowable download is 1440 lbs for DFL and 1210 lbs for SPF. No further increase allowed.

5. NAILS: 16d = 0.162" dia. x 3½" long, 16dx2½ = 0.162" dia. x 2½" long, 10d = 0.148" dia. x 3" long, 10dx1½ = 0.148" dia. x 1½" long. See page 16-17 for other nail sizes and information.

SUR/SUL/HSUR/HSUL Skewed 45° Hangers

This product is preferable to similar connectors because of a) easier installation, b) higher loads, c) lower installed cost, or a combination of these features.

Standardized 45° skewed hangers, angled slots direct nails to allow proper installation.

MATERIAL: SUR and SUL—16 gauge; HSUR and HSUL—14 gauge

FINISH: Galvanized. Some products available in Z-MAX; see Corrosion-Resistance, page 6-7.

INSTALLATION: • Use all specified fasteners. See General Notes.

- These hangers will normally accommodate a 40° to 50° skew.

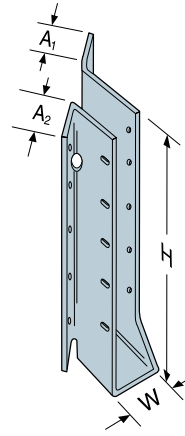
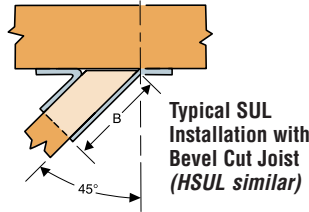
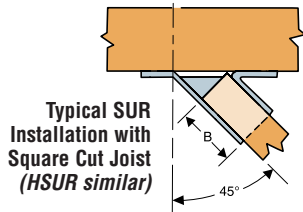
• **Illustration shows left and right skews SUR/L (SUR=skewed right; SUL=skewed left).**

- The joist end may be square cut or bevel cut.

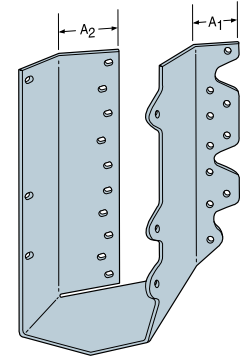
OPTIONS:

- Available with the A2 flange turned in on the 2-2x and 4x models only (see illustration).
- To order, add "C" (for concealed) to the product name.
- For example, specify HSURC46, HSULC46, SURC46, or SULC46.

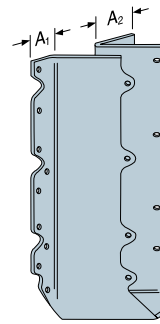
CODES: See page 12 for Code Listing Key Chart.



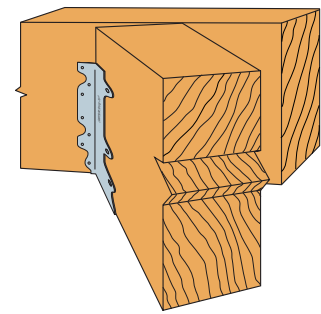
SUL



HSULC
Available for 2-2x
and 4x models only



HSUR



Typical SUR410 Installation

Available with additional corrosion protection. Check with factory.

Joist Size	Model No.	Dimensions					Fasteners		DF/SP Species Header Allowable Loads					SPF Species Header Allowable Loads					Code Ref.
		W	H	B	A ₁	A ₂	Face	Joist	Uplift (133)	Uplift (160)	Floor (100)	Roof		Uplift (133)	Uplift (160)	Floor (100)	Roof		
												Snow (115)	Const (125)				Snow (115)	Const (125)	
2x4	SUR/L24	1⅞	3½	2	1⅝	1¼	4-16d	4-10dx1½	450	450	530	610	665	415	450	460	530	575	26, 83, 124, 140
2x6, 8	SUR/L26	1⅞	5	2	1⅝	1⅝	6-16d	6-10dx1½	720	765	800	960	1000	625	750	690	795	860	
2x10, 12	SUR/L210	1⅞	8⅝	2	1⅝	1⅝	10-16d	10-10dx1½	1200	1250	1330	1530	1660	1040	1250	1150	1320	1440	
2x14	SUR/L214	1⅞	10	2	1⅝	1⅝	12-16d	12-10dx1½	1440	1730	1595	1835	1995	1250	1500	1380	1585	1725	
3x10, 12	SUR/L310	2⅞	8⅞	2⅝	1½	2	14-16d	6-10dx1½	720	765	1860	2140	2330	625	750	1610	1785	1785	
3x14	SUR/L314	2⅞	13	2⅝	1½	2	18-16d	8-10dx1½	960	1150	2395	2500	2500	830	1000	1795	1795	1795	
(2) 2x6, 8	SUR/L26-2	3⅝	4⅞	2⅝	1⅞	2⅝	8-16d	4-16dx2½	710	815	1065	1225	1330	615	735	920	1005	1005	
(2) 2x6, 8	HSUR/L26-2	3⅝	4⅞	2⅞	1¼	2⅝	12-16d	4-16dx2½	715	815	1610	1850	2000	620	740	1390	1600	1740	26, 33, 83, 122, 124
(2) 2x10, 12	SUR/L210-2	3⅝	8⅞	2⅝	1⅞	2⅝	14-16d	6-16dx2½	1065	1275	1860	2140	2330	920	1105	1610	1850	2010	26, 83, 124, 140
(2) 2x10, 12	HSUR/L210-2	3⅝	8⅞	2⅞	1¼	2⅝	20-16d	6-16dx2½	1070	1285	2680	3080	3350	930	1115	2320	2670	2900	26, 33, 83, 122, 124
(2) 2x14	SUR/L214-2	3⅝	12⅞	2⅞	1⅞	2⅝	18-16d	8-16dx2½	1430	1700	2395	2500	2500	1225	1470	1795	1795	1795	26, 83, 124, 140
(2) 2x14	HSUR/L214-2	3⅝	12⅞	2⅞	1¼	2⅝	26-16d	8-16dx2½	1430	1715	3485	4005	4355	1235	1485	3015	3470	3770	26, 33, 83, 122, 124
4x6, 8	SUR/L46	3⅝	4⅞	2⅝	1	2⅝	8-16d	4-16d	710	815	1065	1225	1330	615	735	920	1005	1005	26, 83, 124, 140
4x6, 8	HSUR/L46	3⅝	4⅞	2⅞	1	2⅝	12-16d	4-16d	715	815	1610	1850	2000	620	740	1390	1600	1740	26, 33, 83, 122, 124
4x10, 12	SUR/L410	3⅝	8½	2⅝	1	2⅝	14-16d	6-16d	1065	1275	1860	2140	2330	920	1105	1610	1850	2010	26, 83, 124, 140
4x10, 12	HSUR/L410	3⅝	8½	2⅞	1	2⅝	20-16d	6-16d	1070	1285	2680	3080	3350	930	1115	2320	2670	2900	26, 33, 83, 122, 124
4x14	SUR/L414	3⅝	12½	2½	1	2⅝	18-16d	8-16d	1420	1700	2395	2500	2500	1225	1470	1795	1795	1795	26, 83, 124, 140
4x14	HSUR/L414	3⅝	12½	2⅞	1	2⅝	26-16d	8-16d	1430	1715	3485	4005	4355	1235	1485	3015	3470	3770	26, 33, 83, 122, 124

1. Uplift loads have been increased by 33% and 60% for earthquake or wind loading with no further increase allowed; reduce where other loads govern.

2. Roof loads are 125% of floor loads unless limited by other criteria.

3. Truss chord cross-grain tension may limit allowable loads. Refer to Technical Bulletins T-ANSITPSPF, T-ANSITPISP and T-ANSITPIDF for allowable loads that consider ANSI/TPI 1-2002 wood member design criteria.

4. **NAILS:** 16d = 0.162" dia. x 3¹/₂" long, 16dx2¹/₂ = 0.162" dia. x 2¹/₂" long, 10dx1¹/₂ = 0.148" dia. x 1¹/₂" long. See page 16-17 for other nail sizes and information.

HF26N/F Panelized Construction Hangers

The HF24N, HF26N, HF34N and HF36N hangers are designed for panels or components using jigs or similar devices for precision fabrication. Grip-groove feature provides positive lock into the 2x or 3x member without nailing. F series panel hangers are engineered components for panelized construction only.

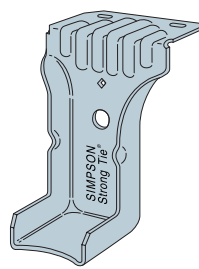
MATERIAL: 18 gauge

FINISH: Galvanized. Some products available in Z-MAX; see Corrosion-Resistance, page 6-7.

INSTALLATION:

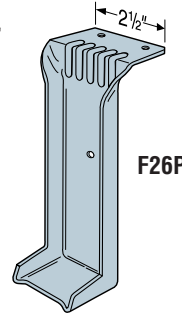
- Use all specified fasteners. See General Notes.
- In panelized construction, it is acceptable to nail through the sheathing into the hanger's top flange using on 10dx2½" nail placed in the middle third of the top flange, no closer than ¼" from the back edge of the hanger.
- On the F-series hanger, the seat nail is non-structural and does not contribute to the load.

CODES: See page 12 for Code Listing Key Chart.

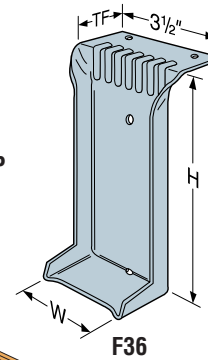


HF24N
(HF34N similar)

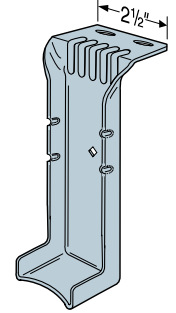
U.S. Patent
6,260,402



F26P

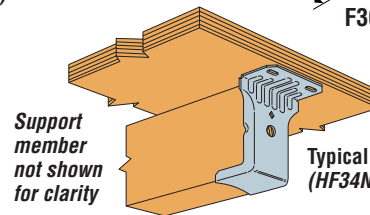


F36



HF26N
(HF36N similar)
Dimples hold joist securely in place

U.S. Patent 6,260,402

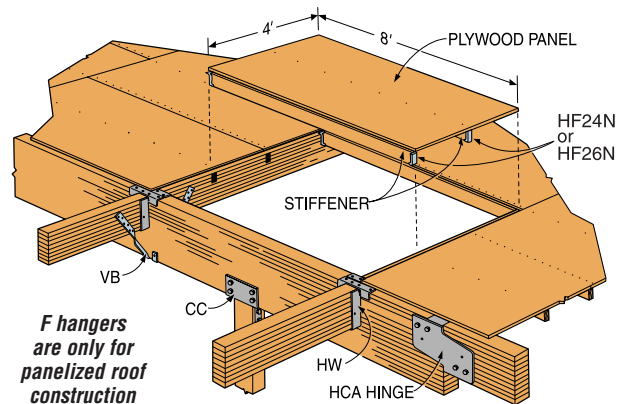


Typical HF24N Installation
(HF34N similar)

Available with additional corrosion protection. Check with factory.

Model No.	Joist Size	Dimensions			Fasteners	Allowable Roof Loads (125)	Code Ref.
		W	H	TF			
HF24N	2x4	1 9/16	3 3/8	1 1/4	2-10dx2 1/2"	575	20, 37, 80, 124
F26P	2x6	1 11/32	5 3/8	1 9/16	2-10d	585	4, 37, 87, 121
HF26N	2x6	1 9/16	5 3/8	1 1/4	2-10dx2 1/2"	660	20, 37, 80, 124
F34	3x4	2 5/8	3 15/32	1 3/8	2-10d	650	4, 37, 87, 121
HF34N	3x4	2 9/16	3 3/8	1 1/4	2-10dx2 1/8"	575	160
F36	3x6	2 5/8	5 3/8	1 3/8	2-10d	685	4, 37, 87, 121
HF36N	3x6	2 9/16	5 3/8	1 1/4	2-10dx2 1/2"	660	160
F24-2	(2)2x4	3 1/4	3 15/32	1 3/8	2-10d	735	4, 37, 87, 121
F26-2	(2)2x6	3 1/4	5 3/8	1 9/16	2-10d	800	
F44	4x4	3 9/16	3 7/16	1 1/2	2-10d	880	
F46	4x6	3 9/16	5 3/8	1 7/16	2-10d	785	

1. NAILS: 10d = 0.148" dia. x 3" long, 10dx2½" = 0.148" dia. x 2½" long.
See page 16-17 for other nail sizes and information.



F hangers are only for panelized roof construction

Typical Panelized Roof System

MSC Multiple Seat Connector

INSTALLATION: • Distribute the total load evenly about the centerline to avoid eccentric loading.

- Fasten all built-up members together as one unit.
- Net height will be calculated based on specified valley member depth and slope by the factory unless noted otherwise.

SLOPED AND/OR SKEWED VALLEYS

- The valley stirrups can be sloped to 45° and skewed from 25° to 45°.
(MSC5 skewed 20°-45°.)
- The total design load of the hanger is split between the ridge (20%) and each valley (40%).
- For two valley connections with no ridge member, divide the total load by two for each valley load.

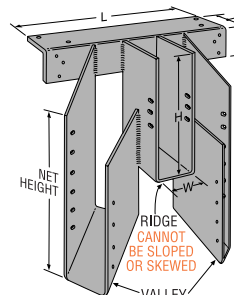
CODES: See page 12 for Code Listing Key Chart.

Model No.	Dimensions				Fasteners		Hips		Allowable Loads (100 & 125)			Code Ref.
	W	H (Min)	TF	L	Header	Joist	Max. Skew	Max. Slope	Valley	Ridge	Total	
MSC2	1 9/16	5 1/2	2 7/8	12	10-16d	18-10dx1 1/2"	45°	0°	2535	1265	6335	6, 121
						26-10dx1 1/2"		45°	2010	1005	5025	
						18-10dx1 1/2"		0°	2535	1265	6335	
MSC1.81	1 13/16	5 1/2	2 7/8	12	10-16d	26-10dx1 1/2"	45°	45°	2010	1005	5025	
						18-10d		0°	3335	1665	8335	
MSC4	3 9/16	7 1/2	2 7/8	18	10-16d	26-10d	45°	45°	3335	1665	8335	6
						18-16d		0°	6450	3220	16120	
MSC5	5 1/4	9 1/2	2 7/8	26	13-16d	26-16d	45°	45°	5340	2675	13355	

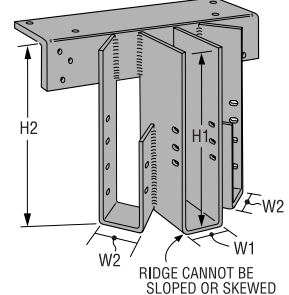
1. Valley loads are for each valley.
2. Other valley-ridge load distributions are allowed provided the sum of all three carried members is distributed symmetrically about the center of the hanger and combined do not exceed the total load.
3. MSC4 is also available in 3/4" Glulam width.
4. MSC5 is also available in widths up to 5½".

5. MSC4 is also available in widths down to 1 9/16". Use 10dx1 1/2" nails and MSC2 allowable loads.

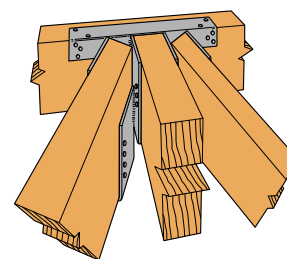
6. NAILS: 16d = 0.162" dia. x 3 1/2" long, 10d = 0.148" dia. x 3" long, 10dx1 1/2" = 0.148" dia. x 1 1/2" long. See page 16-17 for other nail sizes and information.



MSC4 with Valley
sloped and skewed 45°



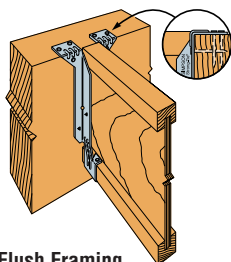
MSC1.81 with Valley
skewed 45°, and sloped 0°



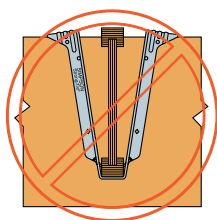
Typical MSC4 Installation

GENERAL CONNECTOR INSTALLATION

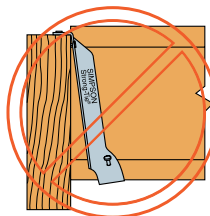
TOP FLANGE HANGERS

**Flush Framing**

Top flange configuration and thickness of top flange need to be considered for flush frame conditions.

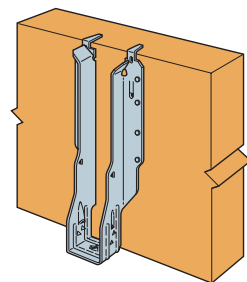
**Hanger Over-Spread**

If the hanger is over-spread, it can raise the I-joist above the header and may cause uneven surfaces and squeaky floors.

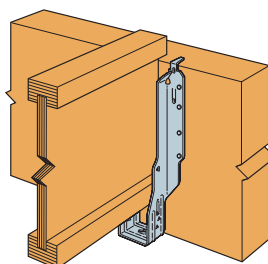
**Hanger Not Plumb**

A hanger "kicked-out" from the header can cause uneven surfaces and squeaky floors.

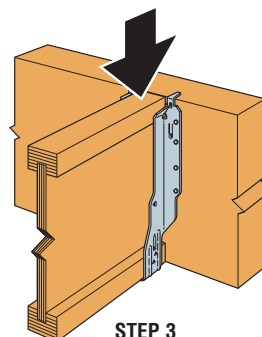
IUS INSTALLATION SEQUENCE

**STEP 1**

Attach the IUS to the header

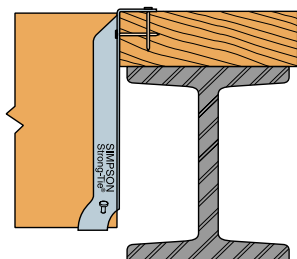
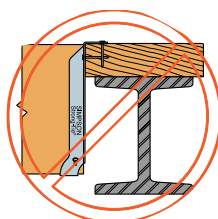
**STEP 2**

Slide the I-joist into the IUS until it rests above the large teardrop.

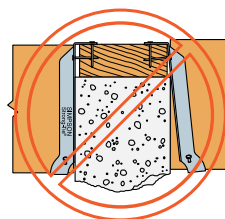
**STEP 3**

Firmly push or snap I-joist fully into the seat of the IUS.

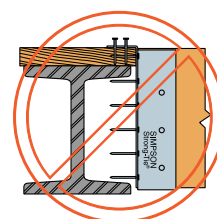
WOOD NAILERS

**Correct Attachment****Nailer Too Wide**

The loading may cause cross-grain bending. As a general rule, the maximum allowable overhang is 1/4", depending on nailer thickness.

**Nailer Too Narrow**

A maximum mismatch of 1/8" for normal installations is allowed.

**Nailer Too Thin**

or the wrong hanger for the application.

WOOD I-JOISTS

SLOPED JOISTS

For sloped joists up to 1/4:12 there is no reduction. For slopes greater than 1/4:12 see individual product pages or refer to technical bulletin **T-WSLOPEJST**.

MULTIPLE JOISTS

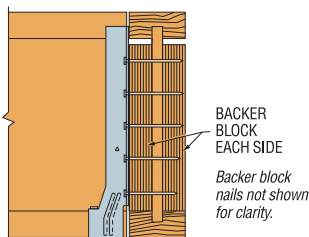
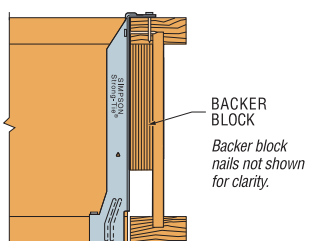
Multiple joists should be adequately connected together to act as one unit.

FASTENERS

Use the correct nails. Wood may split if the nails are too large. Hanger nails into flanges should not exceed 10d common (0.148 dia.), no longer than 1 1/2". Nails into web stiffeners should not exceed 16d commons (0.162 dia.).

ECCENTRICALLY-LOADED I-JOISTS

Supporting a top flange hanger may require bottom flange restraining straps, blocking or directly-applied ceiling systems to prevent rotation at the hanger location.

NAIL PATTERN**Face Mount Hanger****I-JOIST HEADERS****Top Flange Hanger**

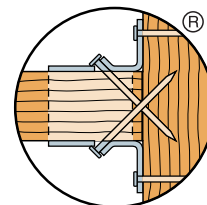
Attach backer block with 10-10d nails. Solid sawn backer blocks may split if a row of closely-spaced nails goes along the wood grain.

For I-joist to I-joist connections, the nails should extend through backer block and web. Refer to manufacturer's literature for other attachment details.

When supporting one I-joist from another, install backer blocks to the carrying I-joist with 10-10d nails. Check with the joist manufacturer to see if backer blocks are required on both sides.

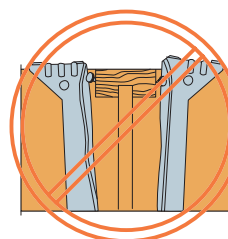
DOUBLE SHEAR NAILING

The nail is installed into joist and header, distributing load through two points on each nail for greater strength.



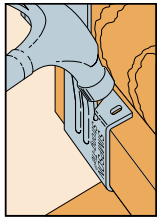
TOE-NAILING

Toe nailing causes squeaks and improper hanger installations. **Do not toe nail I-joists before installing top flange or face mount hangers.**

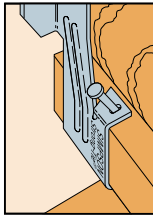


GENERAL CONNECTOR INSTALLATION

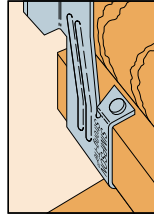
IUT & ITT INSTALLATION (VPA SIMILAR)



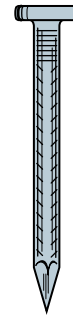
Bend the tab with a hammer.



Hammer the nail in at **approximately 45° angle.**

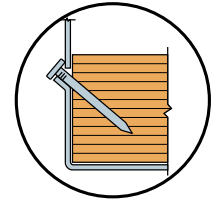


The tab is now correctly installed.



Use a 10d $\times$ 1½ nail (Simpson N10 HDG shown)

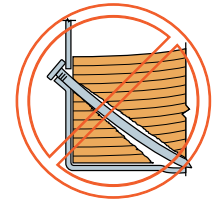
POSITIVE ANGLE NAILING



Correct Nailing
Approx. 45° angle



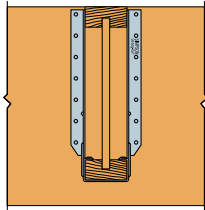
Nail at wrong angle



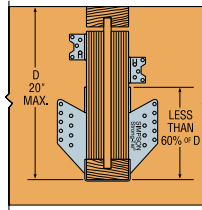
Nail too long

PREVENT ROTATION

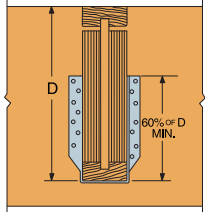
Hangers provide some joist rotation resistance; however, additional lateral restraint may be required for deep joists.



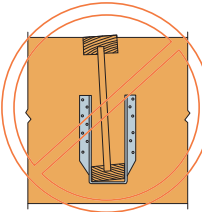
No Web Stiffener Installed
Hanger side flange supports joist top flange.



Rotation Resistance
If non-skewed hanger side flange is less than 60% of joist depth, attach staggered A34 framing anchors above the hanger.



Web Stiffener Required
Hanger side flange should be at least 60% of joist depth or potential joist rotation must be addressed.



No Web Stiffener Results in Rotation
Hanger side flange is below the joist top flange. No web stiffener results in rotation, unless restrained by other means.

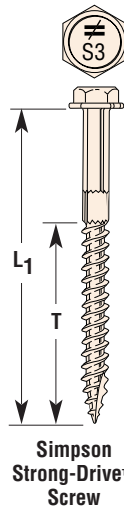
STRONG-DRIVE SCREW INSTALLATION FOR LVL

INSTALLATION:

- Hex washer head allows for easy driving.
- Built-in reamer and type 17 tip means no pre-drilling required.
- See illustrations for SDS positioning on different assemblies.
- Install with high-torque, low-speed drill (5 amp+).
- Do not over-drive the SDS screws.

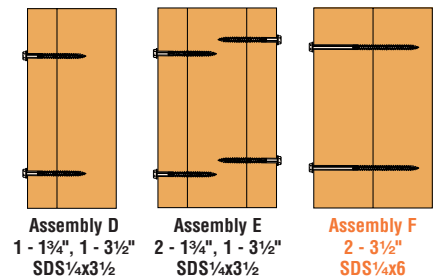
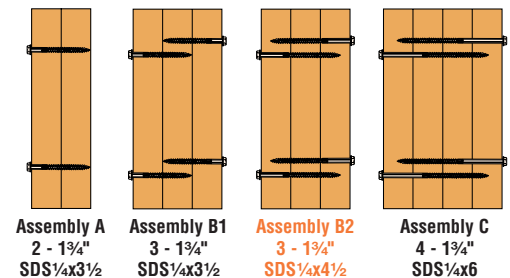
DESIGN:

- Allowable load values are derived from testing based on ASTM D-1761. The Designer shall apply adjustment factors per 2001 NDS. Loads shown are $C_D = 1.0$. Increase as allowed per code to a maximum $C_D = 1.33$.
- This document uses Douglas Fir-Larch values ($G = 0.5$), as per the LVL and PSL manufacturer's instructions.
- Loads shown are at 100%. Increase as allowed by code.
- The designer shall specify the location of all screws (stagger screws on opposite faces). **Minimum recommended spacing—Wide Face: end distance 4", edge distance 1½", spacing parallel to grain 4", spacing perpendicular to grain 2".**
- Uniform loads in the table below are based on the capacity of the fasteners to transfer loads between plies. The capacity of the LVL beam may be less and should be checked by a qualified Designer or with the manufacturer's literature.



Simpson Strong-Drive™ Screw

ASSEMBLIES A-F SHOW LAMINATED VENEER LUMBER (LVL)



MAXIMUM ALLOWABLE UNIFORM LOAD (LBS PER LINEAL FT)							
Multiple Members		SDS Screws, 12" OC		SDS Screws, 16" OC		SDS Screws, 24" OC	
Assembly	Components	2 Rows	3 Rows	2 Rows	3 Rows	2 Rows	3 Rows
A	2 pieces (all 1¼)	960	1440	720	1080	480	720
B1	3 pieces (all 1¼)	720	1080	540	810	360	540
B2	3 pieces (all 1¼)	1380	2070	1035	1550	690	1035
C	4 pieces (all 1¼)	1225	1840	920	1380	615	920
D	2 pieces (1¼ - 3½)	720	1080	540	810	360	540
E	3 pieces (1¼ - 3½ - 1¼)	640	960	480	720	320	480
F	2 pieces (3½ - 3½)	960	1440	720	1080	480	720

Model	L ₁	T	Head Stamp
SDS ¼ $\times$ 3½	3½	2¼	S3.5
SDS ¼ $\times$ 4½	4½	2¾	S4.5
SDS ¼ $\times$ 6	6	3¼	S6

1. If 7" wide beams are not equally loaded on each side, the plf load from the lesser side should be at least 25% of the opposite side.
2. Quantity and spacing of screws in table are for each screw head side of the assembly as shown in the Assembly figures above.
3. The design professional shall ensure that adequate lateral bracing is provided to prevent displacement of the beam due to the torsion created by the structural members framing into the side of the beam assembly.

IUS/IUT/MIU I-Joist Hangers



This product is preferable to similar connectors because of a) easier installation, b) higher loads, c) lower installed cost, or a combination of these features.

The improved IUS is now fully compatible with shallow flange I-joists! I-joists with flange thicknesses between $1\frac{1}{8}$ " and $1\frac{1}{2}$ " achieve the full allowable table loads including uplift values and joist nails are not required! The IUS is a hybrid hanger that incorporates the advantages of the face mount and top mount hanger. Installation is fast with the Strong-Grip and Snap-In joist features along with easy-to-reach face nail locations and self-jigging locator tabs.

The MIU series hangers are designed for commercial and high load I-joist applications without requiring web stiffeners. The MIU features Positive Angle Nailing (PAN), which minimizes splitting of the flanges while permitting time-saving nailing from a better angle.

The IUT features a bend-tab which nails into the I-joist's bottom flange when web stiffeners are not used, or directly into the web stiffener. I-joist flange thickness for bend-tab application is $1\frac{1}{8}$ " to $1\frac{1}{2}$ ". This constrains the member, helping to reduce squeaks resulting from joist movement.

MATERIAL: See table page 92-96. **FINISH:** Galvanized

UPLIFT LOADS: • Models have optional triangle joist nail holes for additional uplift. Properly attached web stiffeners are required.

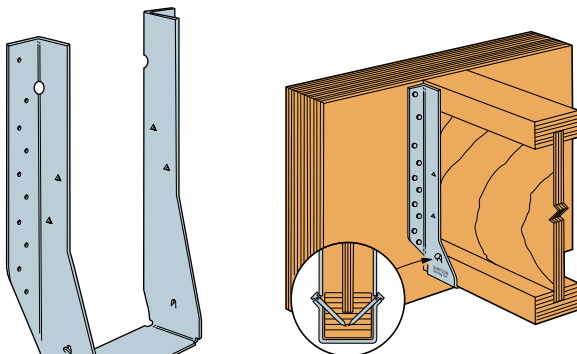
- IUT—add two additional 10d $\times$ 1 $\frac{1}{2}$ " joist nails for a total uplift load of 480 lbs and 575 lbs (33% and 60% increase respectively).
- MIU—add four additional 10d $\times$ 1 $\frac{1}{2}$ " joist nails for a total uplift load of 720 lbs and 865 lbs (33% and 60% increase respectively).
- IUS—for additional uplift capacity options refer to technical bulletin T-OPTUPLIFTCWP.

INSTALLATION: • Use all specified fasteners. Verify that the header can take the required fasteners specified in the table. See pages 88-89 for more installation information.

- IUS—fasten hanger to header. Position I-joist into hanger and snap into place. No joist nailing required. Some IUS models have triangle and round header nail holes. To achieve Max. download, fill both round and triangle holes.
- IUS—Locator tabs are not structural. They may be bent back to adjust for hanger placement.
- IUS—for rimboard applications see T-RIMBDHGR.
- IUT—optional seat diamond hole allows alternate attachment of hanger. See T-OPTUPLIFTCWP.
- Web stiffeners are not required with I-joists when the joist top flange is laterally supported by the sides of the hanger. I-joist manufacturers may require web stiffeners.

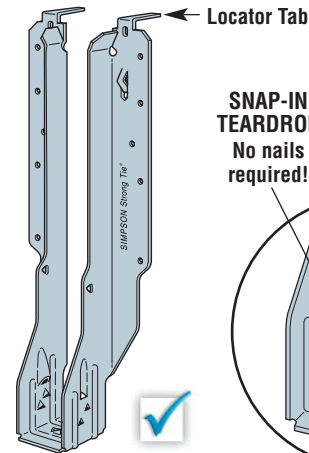
OPTIONS:

These hangers cannot be modified. However, these models will normally accommodate a skew of up to 5°. For sloped joists up to $\frac{1}{4}$:12 there is no reduction, between $\frac{1}{4}$:12 and up to $\frac{1}{2}$:12, tests show a 10% reduction in ultimate hanger strength. Local crushing of the bottom flange or excessive deflection may be limiting; check with joist manufacturer for specific limitations on bearing of this type.



MIU

MIU with correct PAN installation



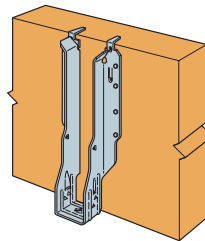
IUS
(some IUS models have triangle holes in header flanges for Min/Max nailing)

U.S. Patent 6,523,321

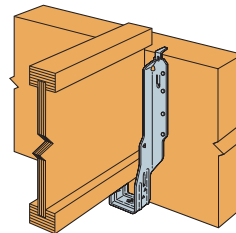
SNAP-IN TEARDROP
No nails required!

Strong-Grips holds bottom chord in position.

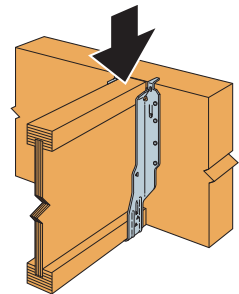
Starburst detail allows secure seating of joist.

IUS INSTALLATION SEQUENCE

STEP 1
Attach the IUS to the header



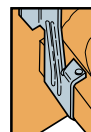
STEP 2
Slide the I-joist downward into the IUS until it rests above the large teardrop.



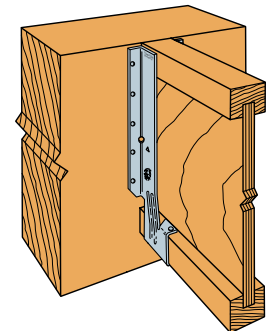
STEP 3
Firmly push or snap I-joist fully into the seat of the IUS.

IUT
U.S. Patent 5,555,694

OPTIONAL NAIL LOCATIONS



Bend tab into the bottom flange and fasten with 10d x 1 $\frac{1}{2}$ " nails at approximately 45°.



Typical IUT Installation

FACE MOUNT HANGERS U/HU I-Joist & Structural Composite Lumber Hangers

See Hanger tables on pages 92 to 96. See Hanger Options on page 188 for hanger modifications, which may result in reduced loads.

U—The standard U hanger provides flexibility of joist to header installation. Versatile fastener selection with tested allowable loads.

HU—Most models have triangle and round holes. To achieve maximum loads, fill both round and triangle holes with common nails. These heavy-duty connectors are designed for schools and other structures requiring additional strength, longevity and safety factors.

MATERIAL: See tables on pages 92 to 96.

FINISH: Galvanized

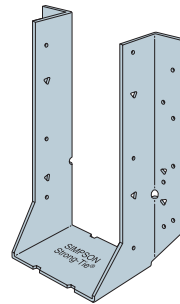
INSTALLATION: • Use all specified fasteners. See General Notes.

- HU—can be installed filling round holes only, or filling round and triangle holes for maximum values.
- Web Stiffeners are required for all I-joists used with these hangers.

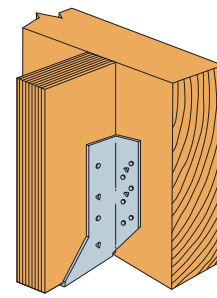
OPTIONS: • HU hangers available with the header flanges turned in for $2\frac{5}{16}$ " and larger widths, with no load reduction—order HUC hanger.

- See Hanger Options on page 188 and 191, for sloped and/or skewed U/HU models, and HUC (concealed flange) models.
- See also HUS series.

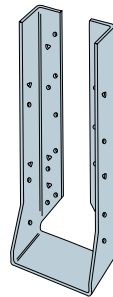
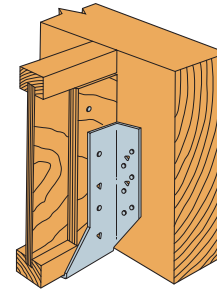
Model configurations may differ from those shown. Some HU models do not have triangle holes. Consult factory for details.



HU410



Typical HU7 Installation

HUC412
Concealed
Flanges

Typical HU7 Installation

FACE MOUNT HANGERS HUCQ/HUS/HHUS/HGUS Double Shear SCL Hangers

See Hanger tables on pages 92 to 96. See Hanger Options on page 188 for hanger modifications, which may result in reduced loads.

These hangers have the highest loads of any face mount hangers!

All hangers in this series have double shear nailing, except the HUCQ. This patented innovation distributes the load through two points on each joist nail for greater strength. It also allows the use of fewer nails, faster installation, and the use of common nails for all connections. (Do not bend or remove tabs)

MATERIAL: See tables, pages 92 to 96.

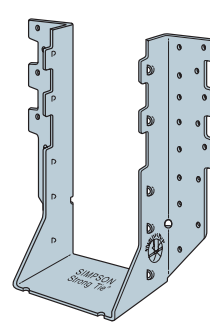
FINISH: Galvanized. Some products available in stainless steel or Z-MAX; see Corrosion-Resistance, page 6-7.

INSTALLATION • Use all specified fasteners. See General Notes.

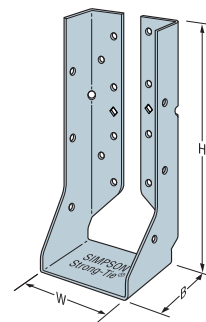
- Do not use double shear hangers with I-joists.
- Nails must be driven at an angle through the joist or truss into the header to achieve the table loads.
- Not designed for welded or nailer applications.
- 16d sinkers (0.148" dia. x $3\frac{3}{4}$ " long) may be used where 10d commons are specified with no reduction in load. Where 16d commons are specified, 10d commons or 16d sinkers (0.148" dia. x $3\frac{3}{4}$ " long) may be used at 0.85 of the table load.
- With 3x carrying members, use 16d x $2\frac{1}{2}$ " nails into the header and 16d commons into the joist with no load reduction. With 2x carrying members, use 10d x $1\frac{1}{2}$ " nails into the header and 10d commons into the joist, and reduce the load to 0.64 of the table value.
- Install HUCQ's with SDS wood screws which are supplied with the hanger.

OPTIONS: • HUS hangers available with the header flanges turned in for $3\frac{1}{2}$ " wide joist only, with no load reduction. See HUSC Concealed Flange illustration.

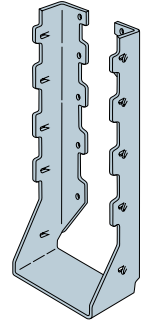
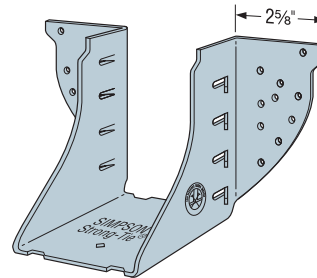
- Concealed flanges are not available for HGUS, HUS1.81/10 and HHUS.
- See Hanger Options, page 188, for sloped and/or skewed HHUS and HGUS models.
- Other sizes available; consult your Simpson representative.



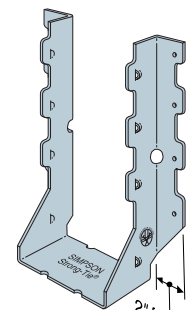
HHUS410



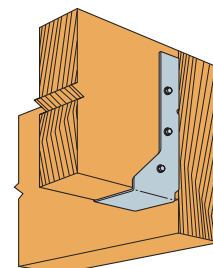
HUCQ

HUSC
Concealed Flanges
(not available for HHUS,
HGUS and HUS1.81/10)

HGUS46



HUS410

Typical HUCQ
Installed on
End of a Beam

Model No.	Dimensions			Fasteners		Allowable Loads (DF-LVL)				Code Ref.
	W	H	B	Face	Joist	Uplift (133/160)	Floor (100)	Snow (115)	Roof (125)	
HUCQ1.81/9-SDS	$1\frac{13}{16}$	9	3	8-SDS $\frac{1}{4}$ x $1\frac{3}{4}$	4-SDS $\frac{1}{4}$ x $1\frac{3}{4}$	1505	2360	2715	2950	160
HUCQ1.81/11-SDS	$1\frac{13}{16}$	11	3	10-SDS $\frac{1}{4}$ x $1\frac{3}{4}$	4-SDS $\frac{1}{4}$ x $1\frac{3}{4}$	1505	2950	3395	3510	
HUCQ410-SDS	$3\frac{9}{16}$	9	3	12-SDS $\frac{1}{4}$ x $2\frac{1}{2}$	6-SDS $\frac{1}{4}$ x $2\frac{1}{2}$	3025	4955	4955	4955	
HUCQ412-SDS	$3\frac{9}{16}$	11	3	14-SDS $\frac{1}{4}$ x $2\frac{1}{2}$	6-SDS $\frac{1}{4}$ x $2\frac{1}{2}$	3025	5560	5560	5560	
HUCQ610-SDS	$5\frac{1}{2}$	9	3	12-SDS $\frac{1}{4}$ x $2\frac{1}{2}$	6-SDS $\frac{1}{4}$ x $2\frac{1}{2}$	3025	4955	4955	4955	
HUCQ612-SDS	$5\frac{1}{2}$	11	3	14-SDS $\frac{1}{4}$ x $2\frac{1}{2}$	6-SDS $\frac{1}{4}$ x $2\frac{1}{2}$	3025	5560	5560	5560	

1. Uplift loads have been increased for earthquake or wind loading, with no further increase allowed.
2. Download columns apply to either Douglas Fir-Larch/Southern Pine carrying members, or structural composite lumber carrying members that have fastener holding capacity of Douglas Fir.
3. When using structural composite lumber columns, screws must be applied to the wide face of the column.

FACE MOUNT HANGERS – I-JOISTS

Actual Joist Size	Model No.	Web Stiff Req'd	Ga	Dimensions			Fasteners		Allowable Loads									Code Ref.
				W	H	B	Face	Joist	DF/SP Species Header					SPF Species Header				
									Uplift (133)	Uplift (160)	Floor (100)	Snow (115)	Roof (125)	Floor (100)	Snow (115)	Roof (125)		
1½ x 9½	IUS1.56/9.5	—	18	1⅞	9½	2	8-10d	—	75	75	935	1075	1170	810	930	1010	44, 108, 126	
	IUT29	—	18	1⅞	9	2	8-10dx1½	2-10dx1½	245	255	730	835	910	625	720	780	8, 36, 91, 121	
	MIU1.56/9	—	16	1⅞	8⅞	2½	16-16d	2-10dx1½	240	255	2270	2615	2840	1970	2265	2460	160	
1½ x 11¼ - 11⅞	IUS1.56/11.88	—	18	1⅞	11⅞	2	10-10d	—	75	75	1170	1345	1465	1010	1160	1265	44, 108, 126	
	IUT211	—	18	1⅞	11⅞	2	10-10dx1½	2-10dx1½	245	255	910	1045	1140	780	895	975	8, 36, 91, 121	
	MIU1.56/11	—	16	1⅞	11⅞	2½	20-16d	2-10dx1½	240	255	2840	3265	3550	2460	2830	3075	160	
1½ x 14	IUT214	—	18	1⅞	13¾	2	14-10dx1½	2-10dx1½	245	255	1275	1465	1590	1090	1255	1365	8, 36, 91, 121	
1¾ x 9½	IUS1.81/9.5	—	18	1⅞	9½	2	8-10d	—	75	75	935	1075	1170	810	930	1010	44, 108, 126	
1¾ x 9¼ - 9½	IUT9	—	18	1⅞	9	2	8-10dx1½	2-10dx1½	245	255	730	835	910	625	720	780	8, 36, 91, 121	
	MIU1.81/9	—	16	1⅞	8⅞	2½	16-16d	2-10dx1½	240	255	2270	2615	2840	1970	2265	2460	160	
1¾ x 11⅞	IUS1.81/11.88	—	18	1⅞	11⅞	2	10-10d	—	75	75	1170	1345	1465	1010	1160	1265	44, 108, 126	
	IUT11	—	18	1⅞	11⅞	2	10-10dx1½	2-10dx1½	245	255	910	1045	1140	780	895	975	8, 36, 91, 121	
	MIU1.81/11	—	16	1⅞	11⅞	2½	20-16d	2-10dx1½	240	255	2840	3265	3550	2460	2830	3075	160	
1¾ x 14	IUS1.81/14 (Min)	—	18	1⅞	14	2	12-10d	—	75	75	1405	1615	1755	1210	1395	1515	44, 108, 126	
	IUS1.81/14 (Max)			1⅞	14	2	14-10d	—	75	75	1640	1885	1980	1415	1625	1770		
	IUT14	—	18	1⅞	13¾	2	14-10dx1½	2-10dx1½	245	255	1275	1465	1590	1090	1255	1365	8, 36, 91, 121	
	MIU1.81/14	—	16	1⅞	13¾	2½	22-16d	2-10dx1½	240	255	3125	3595	3905	2705	3110	3385	160	
1¾ x 16	IUS1.81/16 (Min)	—	18	1⅞	16	2	14-10d	—	75	75	1640	1885	1980	1415	1625	1770	44, 108	
	IUS1.81/16 (Max)			1⅞	16	2	16-10d	—	75	75	1870	1980	1980	1615	1860	1980		
	MIU1.81/16	—	16	1⅞	15¾	2½	24-16d	2-10dx1½	240	255	3410	3920	4005	2950	3395	3690	160	
1¾ x 18 - 20	MIU1.81/18	—	16	1⅞	17¾	2½	26-16d	2-10dx1½	240	255	3690	4005	4005	3200	3680	4000		
2 x 9½	IUS2.06/9.5	—	18	2⅞	9½	2	8-10d	—	75	75	935	1075	1170	810	930	1010	44, 108	
	IUT2.06/9	—	18	2⅞	9¾	2	8-10d	2-10dx1½	245	255	890	1020	1110	770	885	960	8, 36, 91, 121	
2 x 11⅞	IUS2.06/11.88	—	18	2⅞	11⅞	2	10-10d	—	75	75	1170	1345	1465	1010	1160	1265	44, 108	
	IUT2.06/11	—	18	2⅞	11¾	2	10-10d	2-10dx1½	245	255	1110	1275	1390	960	1105	1200	8, 36, 91, 121	
2 x 14	IUS2.06/14 (Min)	—	18	2⅞	14	2	12-10d	—	75	75	1405	1615	1755	1210	1395	1515	44, 108	
	IUS2.06/14 (Max)	—	18	2⅞	14	2	14-10d	—	75	75	1640	1885	1980	1415	1625	1770		
	IUT2.06/14	—	18	2⅞	13¾	2	14-10d	2-10dx1½	245	255	1555	1785	1940	1345	1545	1680	8, 36, 91, 121	
2 x 16	IUS2.06/16 (Min)	—	18	2⅞	16	2	14-10d	—	75	75	1640	1885	1980	1415	1625	1770	44, 108	
	IUS2.06/16 (Max)	—	18	2⅞	16	2	16-10d	—	75	75	1870	1980	1980	1615	1860	1980		
2⅞ x 9½	IUS2.06/9.5	—	18	2⅞	9½	2	8-10d	—	75	75	935	1075	1170	810	930	1010		
	HU2.1/9	✓	14	2⅞	9	2½	14-16d	6-10dx1½	720	865	1875	2155	2345	1625	1870	2030	26	
2⅞ x 11⅞	IUS2.06/11.88	—	18	2⅞	11⅞	2	10-10d	—	75	75	1170	1345	1465	1010	1160	1265	44, 108	
	HU2.1/11	✓	14	2⅞	11	2½	16-16d	6-10dx1½	720	865	2145	2465	2680	1855	2135	2320	26	
2⅞ x 14	IUS2.06/14	—	18	2⅞	14	2	12-10d	—	75	75	1405	1615	1755	1210	1395	1515	44, 108	
2⅞ x 16	IUS2.06/16	—	18	2⅞	16	2	14-10d	—	75	75	1640	1885	1980	1415	1625	1770		
2⅞ x 9½	IUS2.37/9.5	—	18	2⅞	9½	2	8-10d	—	75	75	935	1075	1170	810	930	1010	8, 36, 91, 121	
	IUT3510	—	18	2⅞	9	2	8-10dx1½	2-10dx1½	245	255	730	835	910	625	720	780		
	MIU2.37/9	—	16	2⅞	9	2½	16-16d	2-10dx1½	240	255	2270	2615	2840	1970	2265	2460		
	U3510/14	✓	16	2⅞	9	2	14-16d	6-10dx1½	720	865	1860	2140	2330	1610	1850	2010	26, 83, 124	
	HU359 (Min)	✓	14	2⅞	8⅞	2½	14-16d	6-10dx1½	720	865	1875	2155	2345	1625	1870	2030	26, 83	
	HU359 (Max)	✓	14	2⅞	8⅞	2½	18-16d	10-10dx1½	1200	1440	2410	2775	3015	2090	2400	2610	26	
2⅞ x 11⅞	IUS2.37/11.88	—	18	2⅞	11⅞	2	10-10d	—	75	75	1170	1345	1465	1010	1160	1265	44, 108, 126	
	IUT3512	—	18	2⅞	11⅞	2	10-10dx1½	2-10dx1½	245	255	910	1045	1140	780	895	975	8, 36, 91, 121	
	MIU2.37/11	—	16	2⅞	11⅞	2½	20-16d	2-10dx1½	240	255	2840	3265	3550	2460	2830	3075		
	U3516/20	✓	16	2⅞	10¾	2	16-16d	6-10dx1½	720	865	2130	2445	2660	1840	2115	2300	26, 83	
	HU3511 (Min)	✓	14	2⅞	11⅞	2½	16-16d	6-10dx1½	720	865	2145	2465	2680	1855	2135	2320	26	
	HU3511 (Max)	✓	14	2⅞	11⅞	2½	22-16d	10-10dx1½	1200	1440	2950	3390	3685	2550	2935	3190		
2⅞ x 14	IUS2.37/14 (Min)	—	18	2⅞	14	2	12-10d	—	75	75	1405	1615	1755	1210	1395	1515	44, 108, 126	
	IUS2.37/14 (Max)			2⅞	14	2	14-10d	—	75	75	1640	1885	1980	1415	1625	1770		
	IUT3514	—	18	2⅞	13¾	2	14-10dx1½	2-10dx1½	245	255	1275	1465	1590	1090	1255	1365	8, 36, 91, 121	
	MIU2.37/14	—	16	2⅞	13½	2½	22-16d	2-10dx1½	240	255	3125	3595	3905	2705	3110	3385	160	
	HU3514 (Min)	✓	14	2⅞	13½	2½	18-16d	8-10dx1½	960	1150	2410	2775	3015	2090	2400	2610	26, 83	
	HU3514 (Max)	✓	14	2⅞	13½	2½	24-16d	12-10dx1½	1440	1730	3215	3700	4020	2785	3200	3480	26	

FACE MOUNT HANGERS – I-JOISTS

Actual Joist Size	Model No.	Web Stiff Req'd	Ga	Dimensions			Fasteners		Allowable Loads									Code Ref.
				W	H	B	Face	Joist	DF/SP Species Header					SPF Species Header				
									Uplift (133)	Uplift (160)	Floor (100)	Snow (115)	Roof (125)	Floor (100)	Snow (115)	Roof (125)		
2 ⁵ / ₁₆ x 16	IUS2.37/16 (Min)	—	18	2 ⁷ / ₁₆	16	2	14-10d	—	75	75	1640	1885	1980	1415	1625	1770	44, 108, 126	
	IUS2.37/16 (Max)			2 ⁷ / ₁₆	16	2	16-10d	—	75	75	1870	1980	1980	1615	1860	1980		
	IUT3516	—	18	2 ³ / ₈	15 ⁷ / ₈	2	16-10d	2-10dx1 ¹ / ₂	245	255	1775	1865	2165	1535	1765	1920	8, 36, 91, 121	
	MIU2.37/16	—	16	2 ³ / ₈	15 ¹ / ₂	2 ¹ / ₂	24-16d	2-10dx1 ¹ / ₂	240	255	3410	3920	4005	2950	3395	3690	160	
	HU3516/22	✓	14	2 ³ / ₈	14 ¹ / ₄	2 ¹ / ₂	20-16d	8-10dx1 ¹ / ₂	960	1150	2680	3080	3350	2320	2670	2900	26, 83, 124	
2 ⁵ / ₁₆ x 18	MIU2.37/18	—	16	2 ³ / ₈	17 ¹ / ₂	2 ¹ / ₂	26-16d	2-10dx1 ¹ / ₂	240	255	3690	4005	4005	3200	3680	4000	160	
	HU3524/30 (Min)	✓	14	2 ³ / ₈	18	2 ¹ / ₂	18-16d	8-10dx1 ¹ / ₂	960	1150	2410	2775	3015	2090	2400	2610	26, 83	
	HU3524/30 (Max)	✓	14	2 ³ / ₈	18	2 ¹ / ₂	24-16d	14-10dx1 ¹ / ₂	1680	2015	3215	3700	4020	2785	3200	3480	26	
2 ⁵ / ₁₆ x 20	MIU2.37/20	—	16	2 ³ / ₈	19 ¹ / ₂	2 ¹ / ₂	28-16d	2-10dx1 ¹ / ₂	240	255	3975	4005	4005	3445	3960	4005	160	
2 ⁵ / ₁₆ x 22 - 30	MIU2.37/20	✓	14	2 ³ / ₈	19 ¹ / ₂	2 ¹ / ₂	28-16d	2-10dx1 ¹ / ₂	240	255	3975	4005	4005	3445	3960	4005	26, 83	
	HU3524/30 (Min)			2 ³ / ₈	18	2 ¹ / ₂	18-16d	8-10dx1 ¹ / ₂	960	1150	2410	2775	3015	2090	2400	2610		
	HU3524/30 (Max)			2 ³ / ₈	18	2 ¹ / ₂	24-16d	14-10dx1 ¹ / ₂	1680	2015	3215	3700	4020	2785	3200	3480		
	2 ¹ / ₂ x 9 ¹ / ₂	IUS2.56/9.5	—	18	2 ³ / ₈	9 ¹ / ₂	2	8-10d	—	75	75	935	1070	1170	810	930	1010	44, 108, 126
2 ¹ / ₂ x 9 ¹ / ₄ - 9 ¹ / ₂	IUT310	—	18	2 ³ / ₁₆	9 ¹ / ₈	2	8-10dx1 ¹ / ₂	2-10dx1 ¹ / ₂	245	255	730	835	910	625	720	780	8, 36, 91, 121	
	MIU2.56/9			16	2 ³ / ₁₆	8 ¹ / ₈	2 ¹ / ₂	16-16d	2-10dx1 ¹ / ₂	240	255	2270	2615	2840	1970	2265		2460
	HU310	✓	14	2 ³ / ₁₆	8 ⁷ / ₈	2 ¹ / ₂	14-16d	6-10dx1 ¹ / ₂	720	865	1875	2155	2345	1625	1870	2030	26, 83, 124	
2 ¹ / ₂ x 11 ⁷ / ₈	IUS2.56/11.88	—	18	2 ³ / ₈	11 ⁷ / ₈	2	10-10d	—	75	75	1170	1345	1465	1010	1160	1265	44, 108, 126	
2 ¹ / ₂ x 11 ¹ / ₄ - 11 ⁷ / ₈	IUT312	—	18	2 ³ / ₁₆	11 ¹ / ₄	2	10-10dx1 ¹ / ₂	2-10dx1 ¹ / ₂	245	255	910	1045	1140	780	895	975	8, 36, 91, 121	
	MIU2.56/11			16	2 ³ / ₁₆	11 ¹ / ₈	2 ¹ / ₂	20-16d	2-10dx1 ¹ / ₂	240	255	2840	3265	3550	2460	2830		3075
	HU312	✓	14	2 ³ / ₁₆	10 ³ / ₈	2 ¹ / ₂	16-16d	6-10dx1 ¹ / ₂	720	865	2145	2465	2680	1855	2135	2320	26, 83, 124	
2 ¹ / ₂ x 13	IUT313	—	18	2 ³ / ₁₆	12 ³ / ₄	2	12-10d	2-10dx1 ¹ / ₂	245	255	1330	1530	1665	1150	1325	1440	8, 36, 91, 121	
2 ¹ / ₂ x 14	IUS2.56/14 (Min)	—	18	2 ³ / ₈	14	2	12-10d	—	75	75	1405	1615	1755	1210	1395	1575	44, 108, 126	
	IUS2.56/14 (Max)			2 ³ / ₈	14	2	14-10d	—	75	75	1640	1885	1980	1415	1625	1770		
	IUT314	—	18	2 ³ / ₁₆	13 ³ / ₁₆	2	14-10dx1 ¹ / ₂	2-10dx1 ¹ / ₂	245	255	1275	1465	1590	1090	1255	1365	8, 36, 91, 121	
	MIU2.56/14			16	2 ³ / ₁₆	13 ³ / ₁₆	2 ¹ / ₂	22-16d	2-10dx1 ¹ / ₂	240	255	3125	3595	3905	2705	3110		3385
	HU314	✓	14	2 ³ / ₁₆	12 ³ / ₈	2 ¹ / ₂	18-16d	8-10dx1 ¹ / ₂	960	1150	2410	2775	3015	2090	2400	2610	26, 83, 124	
2 ¹ / ₂ x 16	IUS2.56/16 (Min)	—	18	2 ³ / ₈	16	2	14-10d	—	75	75	1640	1885	1980	1415	1625	1770	44, 108, 126	
	IUS2.56/16 (Max)			2 ³ / ₈	16	2	16-10d	—	75	75	1870	1980	1980	1615	1860	1980		
	IUT316	—	18	2 ³ / ₁₆	15 ³ / ₄	2	16-10d	2-10dx1 ¹ / ₂	245	255	1775	2040	2220	1535	1765	1920	8, 36, 91, 121	
	MIU2.56/16			16	2 ³ / ₁₆	15 ¹ / ₈	2 ¹ / ₂	24-16d	2-10dx1 ¹ / ₂	240	255	3410	3920	4005	2950	3395		3690
	HU316	✓	14	2 ³ / ₁₆	14 ¹ / ₈	2 ¹ / ₂	20-16d	8-10dx1 ¹ / ₂	960	1150	2680	3080	3350	2320	2670	2900	26, 83, 124	
2 ¹ / ₂ x 18	MIU2.56/18	—	16	2 ³ / ₁₆	17 ¹ / ₈	2 ¹ / ₂	26-16d	2-10dx1 ¹ / ₂	240	255	3690	4005	4005	3200	3680	4000	160	
2 ¹ / ₂ x 20	MIU2.56/20	—	16	2 ³ / ₁₆	19 ¹ / ₈	2 ¹ / ₂	28-16d	2-10dx1 ¹ / ₂	240	255	3975	4005	4005	3445	3960	4005		
2 ¹ / ₂ x 22 - 26	MIU2.56/20	✓	16	2 ³ / ₁₆	19 ¹ / ₈	2 ¹ / ₂	28-16d	2-10dx1 ¹ / ₂	240	255	3975	4005	4005	3445	3960	4005		
3 x 9 ¹ / ₄ - 9 ¹ / ₂	MIU3.12/9	—	16	3 ¹ / ₈	9 ¹ / ₁₆	2 ¹ / ₂	16-16d	2-10dx1 ¹ / ₂	240	255	2270	2615	2840	1970	2265	2460		26, 83, 124
	HU210-2 (Min)	✓	14	3 ¹ / ₈	8 ¹ / ₁₆	2 ¹ / ₂	14-16d	6-10d	905	1085	1875	2155	2345	1625	1870	2030		
	HU210-2 (Max)			3 ¹ / ₈	8 ¹ / ₁₆	2 ¹ / ₂	18-16d	10-10d	1505	1810	2410	2775	3015	2090	2400	2610		
3 x 11 ¹ / ₄ - 11 ⁷ / ₈	MIU3.12/11	—	16	3 ¹ / ₈	11 ¹ / ₈	2 ¹ / ₂	20-16d	2-10dx1 ¹ / ₂	240	255	2840	3265	3550	2460	2830	3075	160	
	HU212-2 (Min)	✓	14	3 ¹ / ₈	10 ¹ / ₁₆	2 ¹ / ₂	16-16d	6-10d	905	1085	2145	2465	2680	1855	2135	2320	26, 83, 124	
	HU212-2 (Max)			3 ¹ / ₈	10 ¹ / ₁₆	2 ¹ / ₂	22-16d	10-10d	1505	1810	2950	3390	3685	2550	2935	3190	26, 124	
	MIU3.12/11			16	3 ¹ / ₈	11 ¹ / ₈	2 ¹ / ₂	20-16d	2-10dx1 ¹ / ₂	240	255	2840	3265	3550	2460	2830	3075	160
3 x 14 - 20	HU212-2 (Min)	✓	14	3 ¹ / ₈	10 ¹ / ₁₆	2 ¹ / ₂	16-16d	6-10d	905	1085	2145	2465	2680	1855	2135	2320	26, 83, 124	
	HU212-2 (Max)			3 ¹ / ₈	10 ¹ / ₁₆	2 ¹ / ₂	22-16d	10-10d	1505	1810	2950	3390	3685	2550	2935	3190	26, 124	
	3 ¹ / ₂ x 9 ¹ / ₂	IUS3.56/9.5	—	18	3 ³ / ₈	9 ¹ / ₂	2	10-10d	—	75	75	1170	1345	1465	1010	1160	1265	44, 108
3 ¹ / ₂ x 9 ¹ / ₄ x 9 ¹ / ₂	IUT410	—	18	3 ³ / ₁₆	9 ¹ / ₄	2	8-10dx1 ¹ / ₂	2-10dx1 ¹ / ₂	245	255	730	835	910	625	720	780	8, 36, 91, 121	
	MIU3.56/9			16	3 ³ / ₁₆	8 ¹ / ₁₆	2 ¹ / ₂	16-16d	2-10dx1 ¹ / ₂	240	255	2270	2615	2840	1970	2265		2460
3 ¹ / ₂ x 11 ⁷ / ₈	IUS3.56/11.88	—	18	3 ³ / ₈	11 ⁷ / ₈	2	12-10d	—	75	75	1405	1615	1725	1210	1395	1515	44, 108, 126	
3 ¹ / ₂ x 11 ¹ / ₄ x 11 ⁷ / ₈	IUT412	—	18	3 ³ / ₁₆	11 ¹ / ₄	2	10-10dx1 ¹ / ₂	2-10dx1 ¹ / ₂	245	255	910	1045	1140	780	895	975	8, 36, 91, 121	
	MIU3.56/11			16	3 ³ / ₁₆	11 ¹ / ₈	2 ¹ / ₂	20-16d	2-10dx1 ¹ / ₂	240	255	2840	3265	3550	2460	2830		3075

1. 10d commons or 16d sinkers may be used instead of the specified 16d at 0.85 of the table load value.
2. 16d sinkers may be used instead of the specified 10d commons with no load reduction.
3. Uplift loads based on Douglas Fir have been increased 33% and 60% for earthquake or wind loading with no further increase allowed. Divide by 1.33 and 1.60 for normal loading such as in cantilever construction. For SPF, use 0.86 x DF/SP Uplift Load.

4. MIN nailing quantity and load values—fill all round holes;

MAX nailing quantity and load values—fill all round and triangle holes.

5. Hangers sorted in order of recommended selection for best overall performance and installation value.

6. NAILS: 16d = 0.162" dia. x 3¹/₂" long, 10d = 0.148" dia. x 3" long, 10dx1¹/₂ = 0.148" dia. x 1¹/₂" long.

See page 16-17 for other nail sizes and information.

CODES: See page 12 for Code Listing Key Chart.

FACE MOUNT HANGERS – I-JOIST

Actual Joist Size	Model No.	Web Stiff Req'd	Ga	Dimensions			Fasteners		Allowable Loads								Code Ref.
				W	H	B	Face	Joist	DF/SP Species Header				SPF Species Header				
									Uplift (133)	Uplift (160)	Floor (100)	Snow (115)	Roof (125)	Floor (100)	Snow (115)	Roof (125)	
3½ x 14	IUS3.56/14 (Min)	—	18	3⅝	14	2	12-10d	—	75	75	1405	1615	1725	1210	1395	1515	44, 108, 126
	IUS3.56/14 (Max)			3⅝	14	2	14-10d	—	75	75	1640	1725	1725	1415	1625	1725	
	IUT414			3⅞ ₁₆	13¾ ₄	2	14-10dx1½	2-10dx1½	245	255	1275	1465	1590	1090	1255	1365	8, 36, 91, 121
				3⅞ ₁₆	13¾ ₄	2	14-10d	2-10dx1½	245	255	1555	1785	1940	1345	1545	1680	
	MIU3.56/14		16	3⅞ ₁₆	13⅝ ₁₆	2½	22-16d	2-10dx1½	240	255	3125	3595	3905	2705	3110	3385	160
3½ x 16	IUS3.56/16 (Min)	—	18	3⅝	16	2	14-10d	—	75	75	1640	1725	1725	1415	1625	1725	44, 108, 126
	IUS3.56/16 (Max)			3⅝	16	2	16-10d	—	75	75	1725	1725	1725	1615	1725	1725	
	IUT416			3⅞ ₁₆	15¾ ₄	2	16-10dx1½	2-10dx1½	245	255	1455	1675	1820	1250	1435	1560	8, 36, 91, 121
				3⅞ ₁₆	15¾ ₄	2	16-10d	2-10dx1½	245	255	1775	2040	2165	1535	1765	1920	
	MIU3.56/16		16	3⅞ ₁₆	15⅝ ₁₆	2½	24-16d	2-10dx1½	240	255	3410	3920	4005	2950	3395	3690	
3½ x 18	MIU3.56/18	—	16	3⅞ ₁₆	17⅝ ₁₆	2½	26-16d	2-10dx1½	240	255	3690	4005	4005	3200	3680	4000	160
3½ x 20	MIU3.56/20	—	16	3⅞ ₁₆	19⅝ ₁₆	2½	28-16d	2-10dx1½	240	255	3975	4005	4005	3445	3960	4005	
3½ x 22 - 30	MIU3.56/20	✓	16	3⅞ ₁₆	19⅝ ₁₆	2½	28-16d	2-10dx1½	240	255	3975	4005	4005	3445	3960	4005	
4 x 9½	MIU4.12/9	—	16	4⅞	9⅞ ₁₆	2½	16-16d	2-10dx1½	240	255	2270	2615	2840	1970	2265	2460	
	HU4.12/9 (Min)	✓	14	4⅞	8⅞	2½	14-16d	6-10d	905	1085	1875	2155	2345	1625	1870	2030	
	HU4.12/9 (Max)	✓	14	4⅞	8⅞	2½	18-16d	10-10d	1505	1810	2410	2775	3015	2090	2400	2610	26
4 x 11⅝ - 16	MIU4.12/11	—	16	4⅞	11⅞	2½	20-16d	2-10dx1½	240	255	2840	3265	3550	2460	2830	3075	160
	HU4.12/11 (Min)	✓	14	4⅞	10⅞ ₁₆	2½	16-16d	6-10d	905	1085	2145	2465	2680	1855	2135	2320	26, 83
	HU4.12/11 (Max)	✓	14	4⅞	10⅞ ₁₆	2½	22-16d	10-10d	1505	1810	2950	3390	3685	2550	2935	3190	26
	4 x 14	MIU4.12/14	—	16	4⅞	13⅞ ₁₆	2½	22-16d	2-10dx1½	240	255	3125	3595	3905	2705	3110	3385
4 x 16	MIU4.12/16	—	16	4⅞	15⅞ ₁₆	2½	24-16d	2-10dx1½	240	255	3410	3920	4005	2950	3395	3690	
4⅞ x 9½	MIU4.28/9	—	16	4⅝ ₃₂	9	2½	16-16d	2-10dx1½	240	255	2270	2615	2840	1970	2265	2460	
	HU4.28/9	✓	14	4⅝ ₃₂	9	2½	18-16d	8-10d	1205	1445	2410	2775	3015	2070	2400	2610	26
4⅞ x 11⅝	MIU4.28/11	—	16	4⅝ ₃₂	11⅞	2½	20-16d	2-10dx1½	240	255	2840	3265	3550	2460	2830	3075	160
	HU4.28/11	✓	14	4⅝ ₃₂	11	2½	22-16d	8-10d	1205	1445	2950	3390	3685	2550	2935	3190	26
4⅞ x 14	MIU4.28/14	—	16	4⅝ ₃₂	13½	2½	22-16d	2-10dx1½	240	255	3125	3595	3905	2705	3110	3385	160
4⅞ x 16	MIU4.28/16	—	16	4⅝ ₃₂	15½	2½	24-16d	2-10dx1½	240	255	3410	3920	4005	2950	3395	3690	
4½ - 4⅝ x 9¼ - 9½	MIU4.75/9	—	16	4¾	9⅞ ₁₆	2½	16-16d	2-10dx1½	240	255	2270	2615	2840	1970	2265	2460	
	U3510-2	✓	16	4¾	8¾	2	14-16d	6-10d	890	1065	1860	2140	2330	1610	1850	2010	26, 83, 124
	HU4.75/9	✓	14	4¾	9	2½	18-16d	8-10d	1205	1445	2410	2775	3015	2070	2400	2610	26, 83
4½ - 4⅝ x 11¼ - 11⅝	MIU4.75/11	—	16	4¾	11⅞ ₁₆	2½	20-16d	2-10dx1½	240	255	2840	3265	3550	2460	2830	3075	160
	U3512-2	✓	16	4¾	11¼	2	16-16d	6-10d	890	1065	2130	2445	2660	1840	2115	2300	26, 83, 124
	HU4.75/11	✓	14	4¾	11	2½	22-16d	8-10d	1205	1445	2950	3390	3685	2550	2935	3190	26, 83
4½ - 4⅝ x 14	MIU4.75/14	—	16	4¾	13½	2½	22-16d	2-10dx1½	240	255	3125	3595	3905	2705	3110	3385	160
4½ - 4⅝ x 16	HU3514-2	✓	14	4¾	13¼	2½	18-16d	8-10d	1205	1445	2410	2775	3015	2090	2400	2610	26, 83, 124
	MIU4.75/16	—	16	4¾	15½	2½	24-16d	2-10dx1½	240	255	3410	3920	4005	2950	3395	3690	160
	HU3516-2 (Min)	✓	14	4¾	15¼	2½	20-16d	8-10d	1205	1445	2680	3080	3350	2320	2670	2900	26, 83, 124
	HU3516-2 (Max)			4¾	15¼	2½	26-16d	12-10d	1810	2015	3485	4005	4355	3015	3470	3770	26, 124
4½ - 4⅝ x 18	MIU4.75/18	—	16	4¾	17½	2½	26-16d	2-10dx1½	240	255	3690	4005	4005	3200	3680	4000	160
4½ - 4⅝ x 20	MIU4.75/20	—	16	4¾	19½	2½	28-16d	2-10dx1½	240	255	3975	4005	4005	3445	3960	4005	
	HU3520-2 (Min)	✓	14	4¾	19¼	2½	20-16d	8-10d	1205	1445	2680	3080	3350	2320	2670	2900	
	HU3520-2 (Max)			4¾	19¼	2½	26-16d	12-10d	1810	2170	3485	4005	4355	3015	3470	3770	26
4½ - 4⅝ x 22 - 30	MIU4.75/20	✓	14	4¾	19½	2½	28-16d	2-10dx1½	240	255	3975	4005	4005	3445	3960	4005	160
	HU3520-2 (Min)			4¾	19¼	2½	20-16d	8-10d	1205	1445	2680	3080	3350	2320	2670	2900	26, 83
	HU3520-2 (Max)			4¾	19¼	2½	26-16d	12-10d	1810	2170	3485	4005	4355	3015	3470	3770	26
5 x 9¼ - 9½	MIU5.12/9	—	16	5⅞	8⅞ ₁₆	2½	16-16d	2-10dx1½	240	255	2270	2615	2840	1970	2265	2460	160
5 x 11¼ - 11⅝	HU310-2	✓	14	5⅞	8⅞	2½	14-16d	6-10d	905	1085	1875	2155	2345	1625	1870	2030	26, 83, 124
	MIU5.12/11	—	16	5⅞	11⅞	2½	20-16d	2-10dx1½	240	255	2840	3265	3550	2460	2830	3075	160
	HU312-2	✓	14	5⅞	10⅞	2½	16-16d	6-10d	905	1085	2145	2465	2680	1855	2135	2320	26, 83, 124
5 x 14	MIU5.12/14	—	16	5⅞	13⅞ ₁₆	2½	22-16d	2-10dx1½	240	255	3125	3595	3905	2705	3110	3385	160
5 x 16	MIU5.12/16	—	16	5⅞	15⅞ ₁₆	2½	24-16d	2-10dx1½	240	255	3410	3920	4005	2950	3395	3690	
5 x 18	MIU5.12/18	—	16	5⅞	17⅞ ₁₆	2½	26-16d	2-10dx1½	240	255	3690	4005	4005	3200	3680	4000	
5 x 20	MIU5.12/20	—	16	5⅞	19⅞ ₁₆	2½	28-16d	2-10dx1½	240	255	3975	4005	4005	3445	3960	4005	26
5 x 22 - 30	MIU5.12/20	✓	16	5⅞	19⅞ ₁₆	2½	28-16d	2-10dx1½	240	255	3975	4005	4005	3445	3960	4005	
7 x 9¼ - 9½	HU410-2 (Min)	✓	14	7⅞	9⅞	2½	14-16d	6-16d	1070	1285	1875	2155	2345	1625	1870	2030	
	HU410-2 (Max)	✓	14	7⅞	9⅞	2½	18-16d	8-16d	1430	1715	2410	2775	3015	2090	2400	2610	
7 x 11¼ - 11⅝	HU412-2 (Min)	✓	14	7⅞	11⅞	2½	16-16d	6-16d	1070	1285	2145	2465	2680	1855	2135	2320	
	HU412-2 (Max)	✓	14	7⅞	11⅞	2½	22-16d	8-16d	1430	1715	2950	3390	3685	2550	2935	3190	
7 x 14	HU414-2 (Min)	✓	14	7⅞	13⅞	2½	20-16d	8-16d	1430	1715	2680	3080	3350	2320	2670	2900	
	HU414-2 (Max)	✓	14	7⅞	13⅞	2½	26-16d	12-16d	2145	2575	3485	4005	4355	3015	3470	3770	

FACE MOUNT HANGERS – STRUCTURAL COMPOSITE LUMBER

Available with additional corrosion protection. Check with factory.

CODES: See page 12 for Code Listing Key Chart.

Actual Joist Size	Model No.	Ga	Dimensions			Fasteners		Allowable Loads									Code Ref.
								DF/SP Species Header					SPF Species Header				
			W	H	B	Face	Joist	Uplift (133)	Uplift (160)	Floor (100)	Snow (115)	Roof (125)	Floor (100)	Snow (115)	Roof (125)		
1¾ x 5½	HU1.81/5 (Min)	14	1⅜	5⅞	2½	12-16d	4-10d×1½	480	575	1610	1850	2010	1390	1600	1740	26, 83	
	HU1.81/5 (Max)		1⅜	5⅞	2½	16-16d	6-10d×1½	720	865	2145	2465	2680	1855	2135	2320	26	
1¾ x 7¼	HU7 (Min)	14	1⅜	6⅞	2½	12-16d	4-10d×1½	480	575	1610	1850	2010	1390	1600	1740	26, 83	
	HU7 (Max)		1⅜	6⅞	2½	16-16d	8-10d×1½	960	1150	2145	2465	2680	1855	2135	2320	26	
1¾ x 9½	HUS1.81/10	16	1⅜	8⅞	3	30-16d	10-16d	2845	3000	4900	5045	5145	4355	5010	5145	133	
	HU9 (Min)	14	1⅜	9⅞	2½	18-16d	6-10d×1½	720	865	2410	2775	3015	2090	2400	2610	26, 83	
	HU9 (Max)		1⅜	9⅞	2½	24-16d	10-10d×1½	1200	1440	3215	3700	4020	2785	3200	3480	26	
1¾ x 11¼ x 11⅞	HUS1.81/10	16	1⅜	8⅞	3	30-16d	10-16d	2845	3000	4900	5045	5145	4355	5010	5145	133	
	HU11 (Min)	14	1⅜	11⅞	2½	22-16d	6-10d×1½	720	865	2950	3390	3685	2550	2935	3190	26	
	HU11 (Max)		1⅜	11⅞	2½	30-16d	10-10d×1½	1200	1440	4020	4315	4405	3480	4000	4350		
1¾ x 14	HUS1.81/10	16	1⅜	8⅞	3	30-16d	10-16d	2845	3000	4900	5045	5145	4355	5010	5145	133	
	U14		1⅜	10¼	2	14-16d	6-10d×1½	720	865	1860	2140	2330	1610	1850	2010	26, 83, 121, 140	
	HU14 (Min)	14	1⅜	13⅞	2½	28-16d	8-10d×1½	960	1150	3750	4110	4180	3250	3735	4060	26, 83, 124	
	HU14 (Max)		1⅜	13⅞	2½	36-16d	14-10d×1½	1680	2015	4540	4730	4855	4175	4730	4855	26, 124	
2⅞ x 9¼ x 9½	HU2.75/10 (Min)	14	2¾	9	2½	14-16d	6-10d×1½	720	865	1875	2155	2345	1625	1870	2030	26	
	HU2.75/10 (Max)		2¾	9	2½	18-16d	10-10d×1½	1200	1440	2410	2775	3015	2090	2400	2610		
	HGUS2.75/10	12	2¾	8⅞	4	46-16d	16-16d	3630	3630	7940	8220	8410	5980	6195	6335	133	
2⅞ x 11¼ x 11⅞	HU2.75/12 (Min)	14	2¾	10¾	2½	16-16d	6-10d×1½	720	865	2145	2465	2680	1855	2135	2320	26, 83	
	HU2.75/12 (Max)		2¾	10¾	2½	22-16d	10-10d×1½	1200	1440	2950	3390	3685	2550	2935	3190	26	
	HGUS2.75/12	12	2¾	10⅞	4	56-16d	20-16d	4055	4055	8410	8760	8995	6335	6600	6775	133	
2⅞ x 14	HU2.75/14 (Min)	14	2¾	13	2½	18-16d	8-10d×1½	960	1150	2410	2775	3015	2090	2400	2610	26, 83	
	HU2.75/14 (Max)		2¾	13	2½	24-16d	14-10d×1½	1680	2015	3215	3700	4020	2785	3200	3480	26	
	HGUS2.75/14	12	2¾	12⅞	4	66-16d	22-16d	5380	5380	8645	9030	9285	6510	6800	6995	133	
2⅞ x 16	HU2.75/16 (Min)	14	2¾	14⅞	2½	20-16d	8-10d×1½	960	1150	2680	3080	3350	2320	2670	2900	26, 83	
	HU2.75/16 (Max)		2¾	14⅞	2½	26-16d	14-10d×1½	1680	2015	3485	4005	4355	3015	3470	3770	26	
	HGUS2.75/14	12	2¾	12⅞	4	66-16d	22-16d	5380	5380	8645	9030	9285	6510	6800	6995	133	
3½ x 7¼	HU48 (Min)	14	3⅞	6⅞	2½	10-16d	4-10d	605	725	1340	1540	1675	1160	1335	1365	26, 83, 124	
	HU48 (Max)		3⅞	6⅞	2½	14-16d	6-10d	905	1085	1875	2155	2345	1625	1870	2030	26, 124	
	HGUS46	12	3⅞	47⅞	4	20-16d	8-16d	2325	2325	3940	4535	4930	3410	3920	4260	3, 39, 121, 133, 140	
	HGUS48		3⅞	7⅞	4	36-16d	12-16d	3220	3220	6805	7830	7925	5890	6655	6655		
3½ x 9¼ x 9½	U410	16	3⅞	8⅞	2	14-16d	6-10d	890	1065	1860	2140	2330	1610	1850	2010	26, 83, 121, 140	
	HUS410	14	3⅞	8⅞	2	8-16d	8-16d	2160	2590	2010	2310	2510	1650	1900	2065	1, 84, 121, 133	
	HU410 (Min)		3⅞	8⅞	2½	14-16d	6-10d	905	1085	1875	2155	2345	1625	1870	2030	26, 83, 124	
	HU410 (Max)		3⅞	8⅞	2½	18-16d	10-10d	1505	1810	2410	2775	3015	2090	2400	2610	26, 124	
	HHUS410	12	3⅞	9	3	30-16d	10-16d	2855	3430	5190	5900	5900	4385	5040	5480	4, 37, 121, 133, 140	
	HGUS48		3⅞	7⅞	4	36-16d	12-16d	3220	3220	6805	7830	7925	5890	6655	6655	3, 39, 121, 133, 140	
HGUS410	3⅞		9⅞	4	46-16d	16-16d	3630	3630	8780	8940	8940	7365	7510	7510			
3½ x 11¼ x 11⅞	U410	16	3⅞	8⅞	2	14-16d	6-10d	890	1065	1860	2140	2330	1610	1850	2010	26, 83, 121, 140	
	HUS412	14	3⅞	10½	2	10-16d	10-16d	2700	3240	2510	2885	3140	2065	2375	2580	1, 84, 121, 133	
	HU412 (Min)		3⅞	10⅞	2½	16-16d	6-10d	905	1085	2145	2465	2680	1855	2135	2320	26, 83, 124	
	HU412 (Max)		3⅞	10⅞	2½	22-16d	10-10d	1505	1810	2950	3390	3685	2550	2935	3190	26, 124	
	HHUS410	12	3⅞	9	3	30-16d	10-16d	2855	3430	5190	5900	5900	4385	5040	5480	4, 37, 121, 133, 140	
	HGUS48		3⅞	7⅞	4	36-16d	12-16d	3220	3220	6805	7830	7925	5890	6655	6655	3, 39, 121, 133, 140	
	HGUS410		3⅞	9⅞	4	46-16d	16-16d	3630	3630	8780	8940	8940	7365	7510	7510		
HGUS412	3⅞	107⅞	4	56-16d	20-16d	4055	4055	9155	9155	9155	7690	7690	7690	133			
3½ x 14	U414	16	3⅞	10	2	16-16d	6-10d	890	1065	2130	2445	2660	1840	2115	2300	26, 83, 124	
	HU416 (Min)	14	3⅞	13⅞	2½	20-16d	8-10d	1205	1445	2680	3080	3350	2320	2670	2900	26, 124	
	HU416 (Max)		3⅞	13⅞	2½	26-16d	12-10d	1810	2015	3485	4005	4355	3015	3470	3770		
	HHUS410		3⅞	9	3	30-16d	10-16d	2855	3430	5190	5900	5900	4385	5040	5480		4, 37, 121, 133, 140
	HGUS410	12	3⅞	9⅞	4	46-16d	16-16d	3630	3630	8780	8940	8940	7365	7510	7510	3, 39, 121, 133, 140	
	HGUS414		3⅞	127⅞	4	66-16d	22-16d	5380	5380	10015	10015	10015	7890	8185	8380	133	

1. 10d commons or 16d sinkers may be used instead of the specified 16d at 0.85 of the table load value.
2. 16d sinkers may be used instead of the specified 10d commons with no load reduction.
3. Uplift loads based on Douglas Fir have been increased 33% and 60% for earthquake or wind loading with no further increase allowed. Divide by 1.33 and 1.60 for normal loading such as in cantilever construction. For SPF, use 0.86 x DF/SP Uplift Load.

4. MIN nailing quantity and load values—fill all round holes;
MAX nailing quantity and load values—fill all round and triangle holes.
5. Hangers sorted in order of recommended selection for best overall performance and installation value.
6. NAILS: 16d = 0.162" dia. x 3½" long, 10d = 0.148" dia. x 3" long, 10dx1½ = 0.148" dia. x 1½" long. See page 16-17 for other nail sizes and information.

FACE MOUNT HANGERS – STRUCTURAL COMPOSITE LUMBER

Actual Joist Size	Model No.	Ga	Dimensions			Fasteners		Allowable Loads								Code Ref.
								DF/SP Species Header					SPF Species Header			
			W	H	B	Face	Joist	Uplift (133)	Uplift (160)	Floor (100)	Snow (115)	Roof (125)	Floor (100)	Snow (115)	Roof (125)	
3½ x 16	HU416 (Min)	14	3⅞	13⅝	2½	20-16d	8-10d	1205	1445	2680	3080	3350	2320	2670	2900	26, 83, 124
	HU416 (Max)		3⅞	13⅝	2½	26-16d	12-10d	1810	2015	3485	4005	4355	3015	3470	3770	26, 124
	HGUS410	12	3⅞	8⅞	4	46-16d	16-16d	3630	3630	8780	8940	8940	7365	7510	7510	3, 39, 121, 133, 140
	HGUS412		3⅞	10⅞	4	56-16d	20-16d	4055	4055	9155	9155	9155	7690	7690	7690	133
	HGUS414		3⅞	12⅞	4	66-16d	22-16d	5380	5380	10015	10015	10015	7890	8185	8380	
3½ x 18	HU416 (Min)	14	3⅞	13⅝	2½	20-16d	8-10d	1205	1445	2680	3080	3350	2320	2670	2900	26, 83, 124
	HU416 (Max)		3⅞	13⅝	2½	26-16d	12-10d	1810	2015	3485	4005	4050	3015	3470	3485	26, 124
	HGUS412	12	3⅞	10⅞	4	56-16d	20-16d	4055	4055	9155	9155	9155	7690	7690	7690	133
	HGUS414		3⅞	12⅞	4	66-16d	22-16d	5380	5380	10015	10015	10015	7890	8185	8380	
5¼ x 9¼ - 9½	HU610 (Min)	14	5½	7⅞	2½	14-16d	6-16d	1070	1285	1875	2155	2345	1625	1870	2030	26, 83, 124
	HU610 (Max)		5½	7⅞	2½	18-16d	8-16d	1430	1715	2410	2775	3015	2090	2400	2610	26, 124
	HHUS5.50/10	12	5½	9	3	30-16d	10-16d	2855	3430	5190	5970	6490	4385	5040	5480	133
	HGUS5.50/10		5½	8⅞	4	46-16d	16-16d	3630	3630	8780	8940	8940	7510	7510	7510	
5¼ x 11¼ - 11⅞	HU612 (Min)	14	5½	9⅞	2½	16-16d	6-16d	1070	1285	2145	2465	2680	1855	2135	2320	26, 83, 124
	HU612 (Max)		5½	9⅞	2½	22-16d	8-16d	1430	1715	2950	3390	3685	2550	2935	3190	26, 124
	HHUS5.50/10	12	5½	9	3	30-16d	10-16d	2855	3430	5190	5970	6490	4385	5040	5480	133
	HGUS5.50/12		5½	10½	4	56-16d	20-16d	4055	4055	9155	9155	9155	7690	7690	7690	
5¼ x 14	HU616 (Min)	14	5½	12⅞	2½	20-16d	8-16d	1430	1715	2680	3080	3350	1625	1870	2030	26, 83, 124
	HU616 (Max)		5½	12⅞	2½	26-16d	12-16d	2145	2575	3485	4005	4255	2090	2400	2610	26, 124
	HHUS5.50/10	12	5½	9	3	30-16d	10-16d	2855	3430	5190	5970	6490	4385	5040	5480	133
	HGUS5.50/14		5½	12½	4	66-16d	22-16d	5380	5380	10015	10015	10015	8415	8415	8415	
5¼ x 16	HU616 (Min)	14	5½	12⅞	2½	20-16d	8-16d	1430	1715	2680	3080	3350	2320	2670	2900	26, 83, 124
	HU616 (Max)		5½	12⅞	2½	26-16d	12-16d	2145	2575	3485	4005	4355	3015	3470	3770	26, 124
	HHUS5.50/10	12	5½	9	3	30-16d	10-16d	2855	3430	5190	5970	6490	4385	5040	5480	133
	HGUS5.50/14		5½	12½	4	66-16d	22-16d	5380	5380	10015	10015	10015	8415	8415	8415	
5¼ x 18	HU616 (Min)	14	5½	12⅞	2½	20-16d	8-16d	1430	1715	2680	3080	3350	2320	2670	2900	26, 83, 124
	HU616 (Max)		5½	12⅞	2½	26-16d	12-16d	2145	2575	3485	4005	4255	3015	3470	3770	26, 124
	HHUS5.50/10	12	5½	9	3	30-16d	10-16d	2855	3430	5190	5970	6490	4385	5040	5480	133
	HGUS5.50/14		5½	12½	4	66-16d	22-16d	5380	5380	10015	10015	10015	8415	8415	8415	
7 x 9¼ - 9½	HU410-2 (Min)	14	7⅞	9⅞	2½	14-16d	6-16d	1070	1285	1875	2155	2345	1625	1870	2030	26
	HU410-2 (Max)		7⅞	9⅞	2½	18-16d	8-16d	1430	1715	2410	2775	3015	2090	2400	2610	26
	HHUS7.25/10	12	7¼	9	3⅞	30-16d	10-16d	2855	3430	5190	5970	6490	4385	5040	5480	133
	HGUS7.25/10		7¼	8⅝	4	46-16d	16-16d	3630	3630	8780	9625	9625	7595	8085	8085	
7 x 11¼ - 11⅞	HU412-2 (Min)	14	7⅞	11⅞	2½	16-16d	6-16d	1070	1285	2145	2465	2680	1855	2135	2320	26
	HU412-2 (Max)		7⅞	11⅞	2½	22-16d	8-16d	1430	1715	2950	3390	3685	2550	2935	3190	26
	HHUS7.25/10	12	7¼	9	3⅞	30-16d	10-16d	2855	3430	5190	5970	6490	4385	5040	5480	133
	HGUS7.25/12		7¼	10⅞	4	56-16d	20-16d	4055	4055	9835	9835	9835	8260	8260	8260	
7 x 14	HU414-2 (Min)	14	7⅞	13⅞	2½	20-16d	8-16d	1430	1715	2680	3080	3350	2320	2670	2900	26
	HU414-2 (Max)		7⅞	13⅞	2½	26-16d	12-16d	2145	2575	3485	4005	4355	3015	3470	3770	26
	HHUS7.25/10	12	7¼	9	3⅞	30-16d	10-16d	2855	3430	5190	5970	6490	4385	5040	5480	133
	HGUS7.25/14		7¼	12⅞	4	66-16d	22-16d	5380	5380	11110	11110	11110	9330	9330	9330	
7 x 16	HU414-2 (Min)	14	7⅞	13⅞	2½	20-16d	8-16d	1430	1715	2680	3080	3350	2320	2670	2900	26
	HU414-2 (Max)		7⅞	13⅞	2½	26-16d	12-16d	2145	2575	3485	4005	4355	3015	3470	3770	26
	HHUS7.25/10	12	7¼	9	3⅞	30-16d	10-16d	2855	3430	5190	5970	6490	4385	5040	5480	133
	HGUS7.25/14		7¼	12⅞	4	66-16d	22-16d	5380	5380	11110	11110	11110	9330	9330	9330	
7 x 18	HU414-2 (Min)	14	7⅞	13⅞	2½	20-16d	8-16d	1430	1715	2680	3080	3350	2320	2670	2900	26
	HU414-2 (Max)		7⅞	13⅞	2½	26-16d	12-16d	2145	2575	3485	4005	4355	3015	3470	3770	26
	HHUS7.25/10	12	7¼	9	3⅞	30-16d	10-16d	2855	3430	5190	5970	6490	4385	5040	5480	133
	HGUS7.25/14		7¼	12⅞	4	66-16d	22-16d	5380	5380	11110	11110	11110	9330	9330	9330	

- 10d commons or 16d sinkers may be used instead of the specified 16d at 0.85 of the table load value.
- 16d sinkers may be used instead of the specified 10d commons with no load reduction.
- Uplift loads based on Douglas Fir have been increased 33% and 60% for earthquake or wind loading with no further increase allowed. Divide by 1.33 and 1.60 for normal loading such as in cantilever construction. For SPF, use 0.86 x DF/SP Uplift Load.

- MIN nailing quantity and load values—fill all round holes;
MAX nailing quantity and load values—fill all round and triangle holes.
- Hangers sorted in order of recommended selection for best overall performance and installation value.
6. NAILS: 16d = 0.162" dia. x 3½" long, 10d = 0.148" dia. x 3" long.
See page 16-17 for other nail sizes and information.

CODES: See page 12 for Code Listing Key Chart.

THAI I-Joist & Structural Composite Lumber Hangers

Designed for I-joists, the THAI has extra long straps and can be field-formed to give height adjustability and top flange hanger convenience. Positive angle nailing helps eliminate splitting of the I-joist's bottom flange.

MATERIAL: THAI-2—14 gauge; all others—18 gauge

FINISH: Galvanized

INSTALLATION: • Factory-order the THAI-2 for hanger width needed.

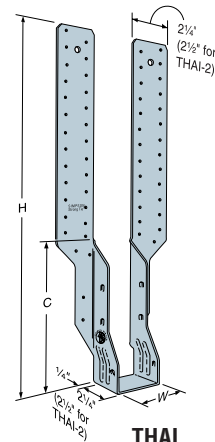
See table for allowable widths.

- Use all specified fasteners. Verify that the header can take the fasteners specified in the table.
- Web stiffeners are required for all I-joists used with these hangers.
- When a total of 20 face nails are used in THAI straps, or 30 face nails are used in THAI-2 straps, the maximum load-carrying capacity is achieved.
- Reduce load given by allowable nail shear capacity for each nail less than maximum.
- A minimum nailing configuration is shown for top nailing installations. The strap must be field-formed over the top of the header by a minimum of 2½".

CODES: See page 12 for Code Listing Key Chart.

Joist Dimensions		Model No.	Hanger Dimensions			Code Ref.
Width	Depth		W ¹	H	C	
1½	9¼-14"	THAI222	1⅞	22⅞	9⅞	8, 36, 91, 121
1¾	9¼-14"	THAI1.81/22	1⅞	22¾	9¼	
2	9¼-14"	THAI2.06/22	2⅞	22⅞	9⅞	
2⅞	9¼-14"	THAI2.1/22	2⅞	22⅞	9⅞	
2¼ to 2⅞	9¼-14"	THAI3522	2⅞	22½	9	
2½	9¼-14"	THAI322	2⅞	22⅞	8⅞	
3½	9¼-14"	THAI422	3⅞	21⅞	8⅞	
3 to 5¼	9¼-14"	THAI-2	3⅞ to 5⅞	21⅞	8⅞	121

1. The W dimension should be ordered at ⅞" to ⅞" greater than the joist width.

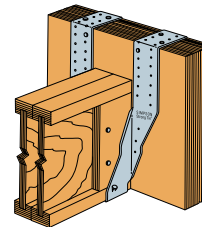


THAI
(THAI-2 similar)

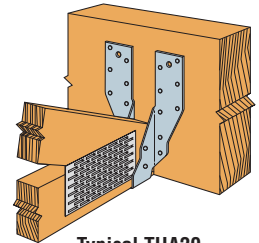
MIN. OF 2½" OF TOP FLANGE MATERIAL FOR MIN. NAILING CONFIGURATION

Do not nail within ¼" of multiple ply seam.

Typical THAI Installation with Minimum Nailing Configuration



Typical THAI-2 Installation



Typical THAI29 Installation with Maximum Nailing Configuration

Nailing Options	Fasteners			Allowable Loads										
	Top	Face	Joist	Uplift (133)	Uplift (160)	DF/SP LVL Species Header			DF/SP Species Header			SPF Species Header		
						Floor (100)	Snow (115)	Roof (125)	Floor (100)	Snow (115)	Roof (125)	Floor (100)	Snow (115)	Roof (125)
THAI Minimum	4-10dx1½	2-10dx1½	2-10dx1½	—	—	1400	1400	1400	1400	1400	1400	1060	1060	1060
	4-10d	2-10d	2-10dx1½	—	—	1715	1715	1715	1835	1835	1835	1590	1590	1590
THAI Maximum	—	20-10d	2-10dx1½	215	215	2200	2200	2200	2200	2200	2200	1920	2200	2200
THAI-2 Minimum	4-10d	2-10d	2-10dx1½	—	—	2020	2020	2020	2020	2020	2020	2020	2020	2020
THAI-2 Maximum	—	30-10d	2-10dx1½	215	215	3390	3900	4135	3390	3900	4135	2940	3310	3310

1. Uplift loads are based on Doug Fir, and have been increased 33% and 60% for earthquake or wind loading with no further increase allowed; reduce where other loads govern.
2. Roof loads are 125% of floor loads unless limited by other criteria.

3. The minimum header depth to achieve the maximum nail configuration is 16".
4. **NAILS:** 10d = 0.148" dia. x 3" long, 10dx1½ = 0.148" dia. x 1½" long.
See page 16-17 for other nail sizes and information

RC Ripper Clip

The Ripper Clip is designed to connect ripped 2x framing to the top of another wood joist.

MATERIAL: 20 gauge **FINISH:** Galvanized

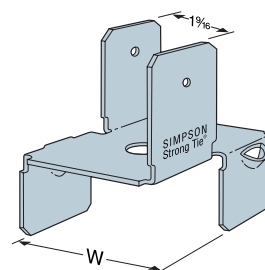
INSTALLATION: • Use all specified fasteners. Refer to General Notes.

- Attach RC to ripper, then attach ripper/RC assembly to roof joist.

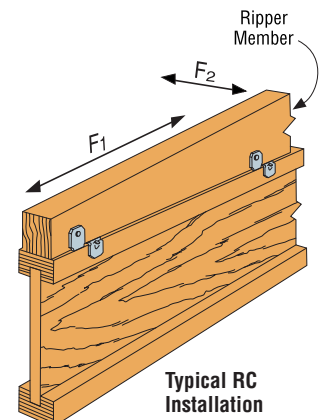
CODES: See page 12 for Code Listing Key Chart.

Model No.	W	Fasteners		Allowable Uplift Load (133)	F ₁	F ₂	Code Ref.
		Ripper	Joist				
RC1.56	1⅞						
RC1.81	1⅞	2-10dx1½	2-10dx1½	205	240	205	170
RC2.1	2⅞						

1. Allowable loads are for DFL ripper members.
2. Uplift loads have been increased 33% for earthquake or wind loading with no other increase allowed. Reduce by 33% for normal loading.
3. Designer to consider stability/blocking requirements for system, if necessary.
4. Spacing of RC per Designer.
5. **NAILS:** 10dx1½ = 0.148" dia. x 1½" long.
See page 16-17 for other nail sizes and information.



RC
U.S. Patent 5,603,580



Typical RC Installation

TOP FLANGE HANGERS ITT/MIT/HIT/ITTM

Engineered Wood Products Hangers



This product is preferable to similar connectors because of a) easier installation, b) higher loads, c) lower installed cost, or a combination of these features.

A dedicated range of Top Flange I-joint hangers meeting the unique needs of I-joists while offering superior performance and ease of installation.

ITT - Bend Tab Nailing

Nail the ITT's special bend-tab with 10d $\times$ 1 $\frac{1}{2}$ " nails at **approximately 45°** into the bottom flange of the I-joist when web stiffeners are not used. The bend tab can also be nailed directly into the web stiffener. This constrains the I-joist, helping to reduce squeaks resulting from joist movement. Reduced embossing on the ITT's top flange, and the hanger height sized less than the joist height allow easier fitting for smooth floor alignment. I-joist flange thickness for bend-tab application is **1 $\frac{1}{8}$ " to 1 $\frac{1}{2}$ "**.

MIT/HIT - Patented Positive Angle Nailing

This feature is specifically designed for wood web I-joists when used with the MIT or HIT. With Positive Angle Nailing (PAN), the slotted hole material is not removed, but is used to channel and confine the path of the nail to the optimum angle. PAN minimizes splitting of the flanges while permitting time-saving nailing from a better angle.

ITTM masonry-to-wood connectors can be directly embedded into a grouted block wall. It can also be installed on top of a masonry or concrete wall using Titen screws.

See Top Flange tables on pages 104 to 113.

MATERIAL: ITT—18 gauge; MIT, HIT—16 gauge, ITTM—12 gauge top flange and 18 gauge stirrup

FINISH: Galvanized

INSTALLATION: • Use all specified fasteners. Verify that the header can take the required fasteners specified in the table.

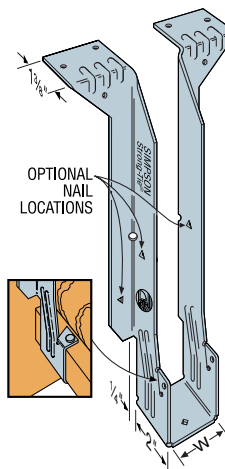
- ITT's face flange triangle hole may be used with triangle holes in the joist for additional uplift (optional); optional diamond hole in seat allows attachment of hanger to I-joist. See **T-OPTUPLIFTWP**.
- ITT's bend-tab may be nailed unbent into plywood web stiffeners.
- **ITTM installed into grouted block wall: embed into block with a minimum of one course of grouted block above and one course below the top flange. No Titen required.**
- **ITTM installed on concrete masonry wall: install 1/4"x1 3/4" Titen screws through preformed holes on the hanger.**

ALLOWABLE LOADS: • The ITT, MIT and HIT hangers have locations for optional nails if additional uplift is needed. Optional uplift nailing requires the addition of properly-secured web stiffeners. See the load tables for minimum required fasteners and allowable uplift loads.

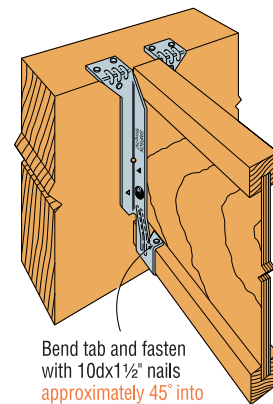
OPTIONS: • Because these hangers are fully die-formed, they cannot be modified. However these models will normally accommodate a skew of up to 5°.

- For sloped joists up to 1/4:12 there is no reduction, between 1/4:12 and up to 1/2:12, tests show a 10% reduction in ultimate hanger strength. Local crushing of the bottom flange or excessive deflection may be limiting; check with joist manufacturer for specific limitations on bearing of this type.

CODES: See page 12 for Code Listing Key Chart.

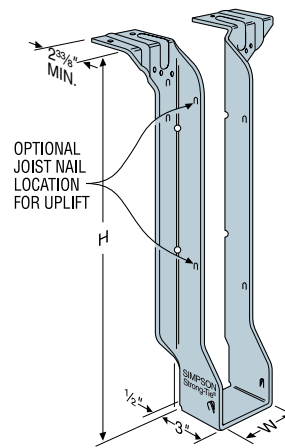


ITT

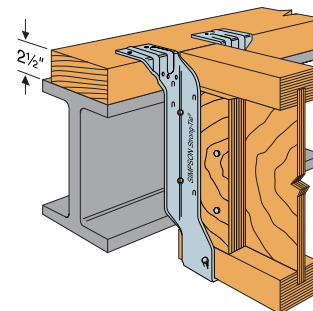


Bend tab and fasten with 10d $\times$ 1 $\frac{1}{2}$ " nails approximately 45° into the bottom flange when web stiffeners are not used.

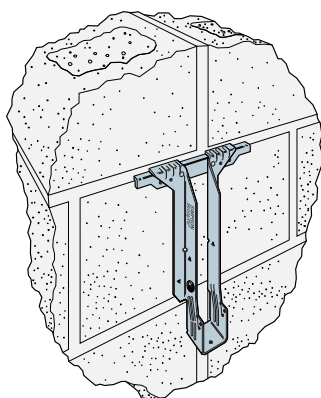
Typical ITT Installation



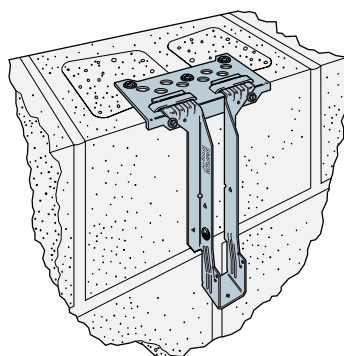
HIT



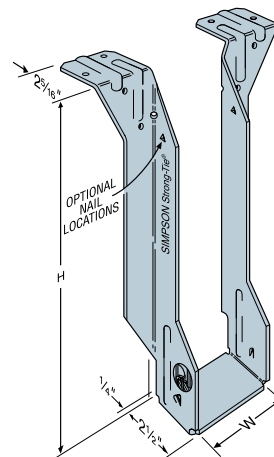
HIT Installation on a 3x Nailer mounted on a Steel Beam



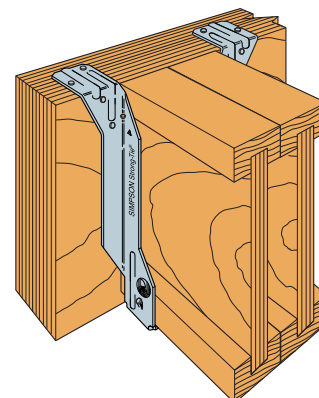
Typical Mid-Wall ITTM Installed into Concrete Block (No Titen required)



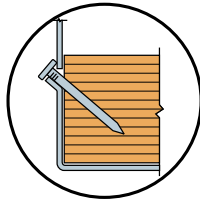
Typical Top-of-Wall ITTM Installed on a Grouted Block with Titen



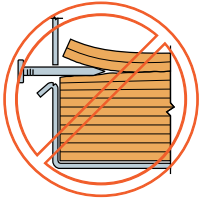
MIT



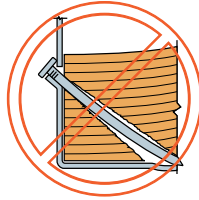
Typical MIT Installed on a Double LVL

TOP FLANGE HANGERS ITT/MIT/HIT/ITTM Engineered Wood Products Hangers**POSITIVE ANGLE NAILING**

Correct Nailing
Approx. 45° angle

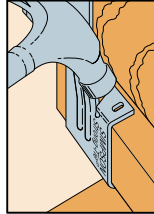


Nail at wrong angle
Do not bend tab

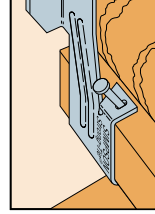


Nail too long

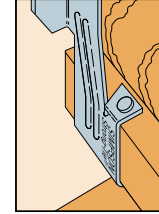
Some model configurations may differ from those shown on page 98.
Contact factory for details.

IUT & ITT INSTALLATION (VPA SIMILAR)

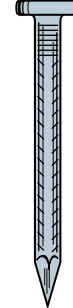
Bend the tab
with a hammer.



Hammer
the nail in at
approximately 45°.



The tab is now
correctly installed.



Use a
10d x 1 1/2 inch
(Simpson
N10 HDG
shown)

IT SERIES WITH VARIOUS HEADER APPLICATIONS

Model	Fasteners			Allowable Loads Header Type										Code Ref.
	Top	Face	Joist	Uplift ¹ (133)	Uplift ¹ (160)	DF/SP LVL ³	PSL	LSL	DF/SP	SPF	DF/SCL ⁴ I-Joist	SPF I-Joist	Masonry	
ITT Series ⁵	4-10dx1½	2-10dx1½	2-10dx1½	245	285	1235	1225	1435	1235	1065	1050	755	—	8, 36, 91, 121
	4-10d	2-10d	2-10dx1½	245	285	1450	1300	1435	1615	1200	—	—	—	
	4-16d	2-16d	2-10dx1½	245	285	1500	1535	1500	1750	1315	—	—	—	
ITTM Series	—	—	2-10dx1½	—	—	MID-WALL INSTALLATION ¹⁰							1665	170
	—	2-Titens ²	2-10dx1½	225	225	MID-WALL INSTALLATION ¹⁰							1665	
	3-Titens ²	2-Titens ²	2-10dx1½	225	225	TOP OF WALL INSTALLATION							1545	
MIT Series	4-10dx1½	4-10dx1½	2-10dx1½	240	290	2035	1500	1605	1950	1115	1230	885	—	1, 84, 121
	4-10d	4-10d	2-10dx1½	240	290	2335	2000	1605	2400	1665	—	—	—	
	4-16d	4-16d	2-10dx1½	240	290	2550	2140	2115	2400	1665	—	—	—	
HIT Series	4-16d	6-16d	2-10dx1½	240	290	2550	2050	2500	3050	1950	—	—	—	2, 40, 82, 121

- Uplift loads are based on Douglas Fir, and have been increased 33% and 60% for earthquake or wind loading with no further increase allowed. Divide by 1.33 and 1.60 for normal loading criteria like cantilever construction. For SPF use 0.86 x DF/SP uplift load.
- Titen masonry screws are ¼ x 1¼.
- Applies to LVL headers made primarily from Douglas Fir or Southern Pine. For LVL made primarily from Spruce Pine Fir or similar less dense veneers, use the values found in the SPF column.
- DF I-joists include flanges made from solid sawn Douglas Fir, LVL made primarily of Douglas Fir/Southern Pine, or LSL. For flanges with thicknesses from 1½" to 1", use 0.85 of the I-joist header load. For flanges with thicknesses from 1" to ¾", use 0.75 of the I-joist header load.
- Minimum solid header thickness to achieve ITT table loads is 1½".

- SCL, structural composite lumber, is laminated veneer lumber, Parallam® PSL and TimberStrand® LSL.
- Code Values are based on DF/SP header species.
- ITTM loads are based on 2000 psi minimum concrete or grout.
- I-joists with flanges less than 1½" thick used in combination with hangers thinner than 14 gauge may deflect an additional ½ inch beyond the standard ½" limit.
- Mid-wall installation requires minimum of one grouted course above and below the hanger.
- ITTM411.88, ITTM414, and ITTM416 models are available.

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NAILS: 16d = 0.162" dia. x 3½" long, 16dx2½ = 0.162" dia. x 2½" long,
10d = 0.148" dia. x 3" long, 10dx1½ = 0.148" dia. x 1½" long.
See page 16-17 for other nail sizes and information.

NAILER TABLE

This table indicates the maximum allowable loads for ITT/MIT/HIT hangers used on wood nailers. The header nail type must be substituted for those listed in other tables.

Model	Nailer	Header Nailing	Allowable Loads		
			DF/SP	SPF	LSL
ITT Series	2x	6-10dx1½	1215	1215	1230
	3x	6-16dx2½	1550	1550	—
	2-2x	6-10d	1215	1150	—
	4x	6-16d	1550	1550	—
MIT Series	2x	6-10dx1½	1570 ¹	1440	1605
	3x	8-16dx2½	1975 ¹	—	—
	2-2x	8-10d	1570	1255	—
	4x	8-16d	2250 ¹	—	—
HIT Series	3x	10-16dx2½	2835	—	—
	2-2x	10-10d	2525	—	—
	4x	10-16d	3050 ¹	—	—

1. These hangers may deflect an additional ½" at design load.

OPTIONAL NAILING FOR INCREASED UPLIFT

Model	Fasteners			Allowable Uplift Loads	
	Top	Face	Joist	(133)	(160)
ITT	4-10dx1½	4-10dx1½	4-10dx1½	485	575
	4-10d	4-10d	4-10dx1½	485	575
	4-16d	4-16d	4-10dx1½	485	575
MIT	4-10dx1½	4-10dx1½	4-10dx1½	480	575
	4-16d	4-16d	4-10dx1½	480	575
HIT	4-16d	6-16d	4-10dx1½	480	575
	4-16dx2½	6-16dx2½	4-10dx1½	480	575
	4-16d	6-16d	6-10dx1½	720	850

- Loads are based on Doug Fir, and have been increased 33% and 60% for wind or earthquake loading with no further increase allowed. Reduce according to the code for normal loading criteria such as in cantilever construction.
- Web stiffeners are required on I-joist for additional nailing.

TOP FLANGE HANGERS LBV/BA/B/HB I-Joist & Structural Composite Lumber Hangers

The BA hanger is a cost effective hanger targeted at high capacity I-joists and common Structural Composite Lumber applications. A min/max joist nail option gives dual use of this hanger. Minimum values featuring Positive Angle Nailing are targeted at I-joist without web stiffeners requirement and the maximum nailing generates higher loads to support structural composite lumber. The unique two level embossment provides added stiffness to the top flange.

The newly improved LBV, B and HB hangers offer wide versatility for I-joists and structural composite lumber. The enhanced load capacity widens the range of applications for these hangers. The LBV still features Positive Angle Nailing and does not require the use of web stiffeners for standard non modified I-joist installations.

See Top Flange tables on pages 104 to 113. See Hanger Options on page 188 for hanger modifications, which may result in reduced loads.

MATERIAL: See tables, pages 104 to 113.

FINISH: LBV, B, BA and HB—Galvanized; all saddle hangers and all welded sloped and special hangers—Simpson gray paint. **LBV, B, BA and HB** may be ordered hot-dip galvanized; specify HDG.

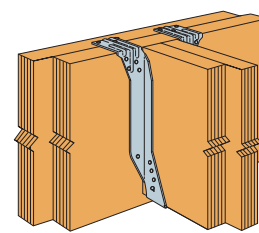
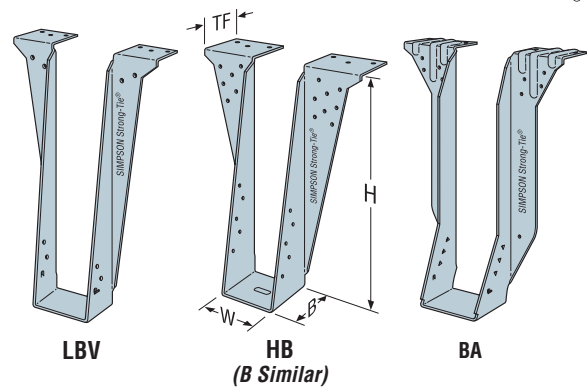
INSTALLATION: • Use specified fasteners. See General Notes and nailer table.

- LBV, B, BA and HB may be used for weld-on applications. Weld size to match material thickness (*approximate thickness shown*). The minimum required weld to the top flanges is $\frac{1}{8}$ " x 2" fillet weld to each side of each top flange tab for 14 and 12 gauge and $\frac{3}{16}$ " x 2" fillet weld to each side of each top flange tab for 7 gauge **and 10 gauge**. Distribute the weld equally on both top flanges. Welding cancels the top and face nailing requirements. Consult the code for special considerations when welding galvanized steel. The area should be well-ventilated, see page 14 for weld information. Weld on applications produce the maximum allowable **down** load listed. Uplift loads do not apply to welded applications.
- LBV hangers do not require the use of web stiffeners for non-sloped or non-skewed applications.
- B and HB hangers require the use of web stiffeners. **BA MIN nailing does not require web stiffeners. BA MAX nailing requires the use of web stiffeners.**
- Ledgers must be evaluated for each application separately. Check TF dimension, nail length and nail location on ledger.

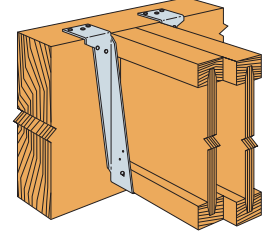
OPTIONS: • LBV, B and HB

- Other widths are available; specify W dimension (*the minimum W dimension is 1 $\frac{1}{16}$ "*).
- The finish on special B hangers will depend on the manufacturing process used. Check with your Simpson representative for details. Hot-dipped galvanized available; specify HDG.
- See Hanger Options, page 188.

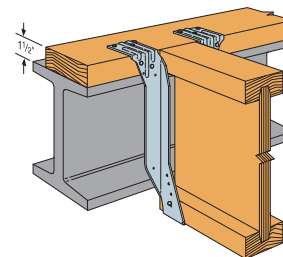
CODES: See page 12 for Code Listing Key Chart.



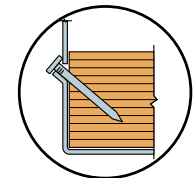
BA Installed LVL to LVL Max Nailing



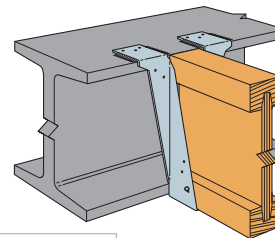
Typical Double LBV Hanger Installation



BA installed 2X nailer on steel beam minimum nailing



LBV features Positive Angle Nailing, no web stiffeners are required



BA, B, HB and LBV are acceptable for weld-on applications (*LBV shown*). See **Installation Information**.

Model No.	Nailer	Header Nails	Allowable Loads	
			DF/SP	SPF
LBV	2x	10-10dx1 $\frac{1}{2}$	2280	2085
	2-2x	10-10d	1955	1530
	3x	10-16dx2 $\frac{1}{2}$	2490	—
	4x	10-16d	2700 ¹	—
BA	2x	10-10dx1 $\frac{1}{2}$	2220	1755
	2-2x	14-10d	2695	2235
	3x	14-16dx2 $\frac{1}{2}$	3230	—
	4x	14-16d	3300 ¹	—
B	2-2x	14-10d	3615	2770
	3x	14-16dx2 $\frac{1}{2}$	3725	—
	4x	14-16d	3800	—
HB	4x	22-16d	5500	—

NAILER TABLE

This shows the maximum allowable loads for BA, LBV, B, and HB hangers used on wood nailers. Nailers are wood members attached to the top of a steel I-beam, concrete or masonry wall. This table also applies to sloped-seat hangers.

1. Based on an additional $\frac{1}{32}$ " beyond the normal $\frac{1}{8}$ " deflection limit.

NAILS: 16d = 0.162" dia. x 3 $\frac{1}{2}$ " long,
16dx2 $\frac{1}{2}$ = 0.162" dia. x 2 $\frac{1}{2}$ " long,
10d = 0.148" dia. x 3" long,
10dx1 $\frac{1}{2}$ = 0.148" dia. x 1 $\frac{1}{2}$ " long.
See page 16-17 for other nail sizes and information.

B SERIES WITH VARIOUS HEADER APPLICATIONS

Model Series	Fasteners			Allowable Loads Header Type										Code Ref.
	Top	Face	Joist	Uplift (133)	Uplift (160)	LVL ^a	PSL	LSL	DF/SP ²	SPF	I-Joist ³			
											DF/SCL	SPF		
LBV (Min)	6-10dx1½	4-10dx1½	2-10dx1½	265	265	2295	2610	2270	1790	1720	1495	1340	160	
	6-10d	4-10d	2-10dx1½	265	265	2295	2610	2645	2310	1640	—	—		
	6-16d	4-16d	2-10dx1½	265	265	2910	2885	3190	2460	1830	—	—		
LBV (Max)	6-10dx1½	4-10dx1½	6-10dx1½	530	635	2295	2610	2270	1790	1720	1495	—		
	6-10d	4-10d	6-10dx1½	655	785	2295	2610	2645	2310	1640	—	—		
	6-16d	4-16d	6-10dx1½	770	895	2910	2885	3190	2460	1830	—	—		
BA (Min)	6-10dx1½	10-10dx1½	2-10dx1½	—	—	—	—	—	—	—	1495	1495		
	6-10d	10-10d	2-10dx1½	265	315	3230	3630	4005	3080	2425	—	—		
	6-16d	10-16d	2-10dx1½	265	315	4015	3705	4005	3435	2665	—	—		
BA (Max)	6-10d	10-10d	8-10dx1½	1055	1170	3555	3630	4120	3625	2465	—	—		
	6-16d	10-16d	8-10dx1½	1055	1170	4715	4320	4500	3800	2665	—	—		
B	6-10d	8-10d	6-10dx1½	825	990	3575	3195	3640	3625	2190	—	—		
	6-16d	8-16d	6-16dx2½	1010	1010	4135	3355	4500	3800	2650	—	—		
HB	6-16d	16-16d	10-16dx2½	2170	2610	5815	5640	6395	5700	3820	—	—		

1. This table assumes joists with $F_c L = 750$ psi. For other joists, check that bearing and joist nails are adequate.
2. This table assumes joist width of 2 $\frac{1}{2}$ " or greater. See main table for loads specific to actual widths.
3. Uplift loads have been increased 33% and 60% for seismic and wind loading with no further increase allowed. Divide by 1.33 and 1.60 for normal loading such as cantilever construction.
4. Loads may not be increased for short term loading.
5. Web stiffeners required when more than two joist nails are used.
6. SCL (structural composite lumber) is LVL (laminated veneer lumber), Parallam® PSL and TimberStrand® LSL.
7. Code values are based on DF/SP header species.
8. Applies to LVL headers made primarily from Douglas Fir or Southern Pine. For LVL made primarily from Spruce-Pine-Fir or similar less dense veneers, use the values found in the SPF column.
9. DF I-joists include flanges made from solid sawn Douglas Fir, LVL made primarily of Douglas Fir/Southern Pine, or LSL. For flanges with thicknesses from $\frac{1}{16}$ to $\frac{1}{8}$ ", use 0.85 of the I-joist header load. For flanges with thicknesses from $\frac{1}{4}$ to $\frac{1}{2}$ ", use 0.75 of the I-joist header load.

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TOP FLANGE HANGERS W/WP/WPU/WM/WMU/HW/HWI/HWU I-Joist & Structural Composite Lumber Hangers

The W, WP, WPU, HWU and HW series purlin hangers offer the greatest design flexibility and versatility. WMs are designed for use on standard 8" grouted masonry block wall construction.

MATERIAL: See tables on pages 104 to 113; W, WI—12 ga. top flange and stirrup; WM, WMI, WMU—12 ga. top flange and stirrup; WPU, WP—7 ga. top flange, 12 ga. stirrup; HW, HWI—3 ga. top flange, 11 ga. stirrup; HWU—3 ga. top flange, 10 ga. stirrup.

FINISH: Simpson gray paint; hot-dipped galvanized available; specify HDG.

ALLOWABLE LOADS: For hanger heights exceeding the joist height, the allowable load is 0.50 of the table load.

INSTALLATION: • Use all specified fasteners. WM—two 16d duplex nails must be installed into the top flange and embedded into the grouted wall. Verify that the header can take the required fasteners specified in the table.

- Hangers may be welded to steel headers with $\frac{1}{8}$ " for W, WI, $\frac{3}{16}$ " for WP, WPU WPI, and $\frac{1}{4}$ " for HW, HWI, HWU by $\frac{1}{2}$ " fillet welds located at each end of the top flange, see page 14 for weld information. Weld-on applications produce maximum allowable load listed. Uplift loads do not apply to this application.
- Hangers can support multi-ply carried members; the individual members must be secured together to work as a single unit before installation into the hanger.
- Hangers can support joists sloped up to $\frac{1}{4}$:12 using table loads. For joists sloping between $\frac{1}{4}$:12 and $\frac{3}{4}$:12 use 85% of the table loads.
- Embed WM into block with a minimum of one course above and one course below the top flange with one #5 vertical rebar minimum 24" long in each cell. **Minimum grout strength is 2000 psi.**
- Web stiffeners are required for standard joist nailing configuration with these hangers.

OPTIONS: • Specify alternate nailing pattern when web stiffeners are not being used (up to 16" in depth). Add X ANP after model number for nailing into the flange, available for 90° applications only. Uplift loads do not apply to this application.

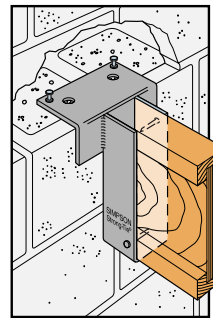
• See Hanger Options, page 188 for hanger modifications and associated load reductions.

CODES: See page 12 for Code Listing Key Chart.

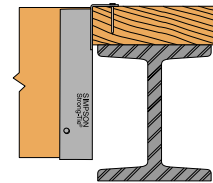
Model	Nailer	Top Flange Nailing	Allowable Loads		
			DF/SP	SPF	LSL
W	2x	2-10dx1½	1600	1600	—
	3x	2-16dx2½	1765	1740	—
	2-2x	2-10d	1665	1665	—
	4x	2-10d	2200	2200	—
WP	2x	2-10dx1½	2525	2500	3375
	3x	2-16dx2½	3000	2510	—
	2-2x	2-10d	3255	3255	—
	4x	2-10d	3255	3255	—
HW/HWI	4x	4-16d	5285	—	—
HWU	2-2x	8-16dx2½	5630	—	—

NAILER TABLE

The table indicates the maximum allowable loads for W, WP and HW hangers used on wood nailers. Nailers are wood members attached to the top of a steel I-beam, concrete or masonry wall. This table also applies to sloped-seat hangers.



Typical WM Installation with Alternate Nailing Pattern (ANP)



Correct Nailer Attachment

Some model configurations may differ from those shown. Contact factory for details.

W SERIES WITH VARIOUS HEADER APPLICATIONS

Model	Joist		Fasteners			Allowable Loads Header Type								Code Ref.
	Width	Depth	Top	Face	Joist	Uplift (133 & 160)	DF/SP LVL ⁴	PSL	LSL	DF/SP	SPF	DF/SCL I-Joist ⁵	Masonry	
W	1½ to 4	3½ to 30	2-10dx1½	—	2-10dx1½	—	1635	1740	—	1600	1415	—	—	170
	1½ to 4	3½ to 30	2-10d	—	2-10dx1½	—	2150	2020	—	2200	1435	—	—	26, 83
	1½ to 4	3½ to 30	2-16d	—	2-10dx1½	—	2335	1950	2335	1765	1435	—	—	—
WM	1½ to 4	3½ to 30	2-16d DPLX	—	2-10dx1½	—	MID-WALL INSTALLATION ⁸						4175	1, 84
	1½ to 4	3½ to 30	2-¼x1¼" Titens	—	2-10dx1½	—	TOP OF WALL INSTALLATION						3380	—
WMU	1½ to 7½	9 to 28	2-16d DPLX	4-¼x1¼" Titens	6-10dx1½	625	MID-WALL INSTALLATION ⁸						4175	170
	1½ to 7½	9 to 28	2-¼x1¼" Titens	4-¼x1¼" Titens	6-10dx1½	545	TOP OF WALL INSTALLATION						3380	—
WP	1½ to 7½	3½ to 30	3-10dx1½	—	2-10dx1½	—	2865	3250	—	2500	2000	2030	—	—
	1½ to 7½	3½ to 30	3-10d	—	2-10dx1½	—	2525	3250	3650	3255	2525	—	—	26, 83 (widths greater than 2")
	1½ to 7½	3½ to 30	3-16d	—	2-10dx1½	—	3635	3320	3650	3255	2600	—	—	—
WPU	1¾ to 5½	7¼ to 18	3-16d	4-16d	6-10dx1½	775	4700	4880	3650	4165	4165	—	—	26, 124 (widths up to 3½")
	1¾ to 5½	18½ to 22½	3-16d	4-16d	6-10dx1½	485	4700	4880	3650	4165	4165	—	—	—
	1¾ to 5½	23 to 28	3-16d	4-16d	6-10dx1½	315	4700	4880	3650	4165	4165	—	—	—
HW/HWI	1½ to 7½	3½ to 32	4-10d	—	2-10dx1½	—	3100	4000	—	5285	3100	—	—	26, 83
	1½ to 7½	3½ to 32	4-16d	—	2-10dx1½	—	5100	4000	4500	5285	3665	—	—	—
HWU	1¾ to 3½	9 to 18	4-16d	4-16d	6-10dx1½	810	6335	5500	5535	6335	5415	—	—	—
	1¾ to 3½	18½ to 22½	4-16d	4-16d	6-10dx1½	765	6335	5500	5535	6335	5415	—	—	26
	1¾ to 3½	23 to 28	4-16d	4-16d	6-10dx1½	635	6335	5500	5535	6335	5415	—	—	—
	1¾ to 3½	28½ to 32	4-16d	4-16d	8-10dx1½	1005	6335	5500	5535	6335	5415	—	—	—
	4½ to 7	9 to 18	4-16d	4-16d	6-10dx1½	810	6000	5500	5535	6000	5415	—	—	—
	4½ to 7	18½ to 22½	4-16d	4-16d	6-10dx1½	765	6000	5500	5535	6000	5415	—	—	124
	4½ to 7	23 to 28	4-16d	4-16d	6-10dx1½	635	6000	5500	5535	6000	5415	—	—	—
	4½ to 7	28½ to 32	4-16d	4-16d	8-10dx1½	1005	6000	5500	5535	6000	5415	—	—	—

- 16d sinkers (9 ga x 3") may be used where 10d commons are called out with no load reduction.
- Uplift loads are based on Doug Fir, and have been increased 33% and 60% for wind or earthquake loading; no further increase allowed. Divide by 1.33 and 1.60 for normal loading like cantilever construction.
- SCL, structural composite lumber, is laminated veneer lumber, Parallam® PSL and TimberStrand® LSL.
- Applies to LVL headers made primarily from Douglas Fir or Southern

Pine. For LVL made primarily from Spruce Pine Fir or similar less dense veneers, use the values found in the SPF column.

5. I-joist header with SPF flanges will support 2030 lbs.

6. WP/WPI quantity of nail holes in top flange varies.

7. NAILS: 16d and 16d DPLX = 0.162" dia. x 3½" long, 10d = 0.148" dia. x 3" long,

10dx1½ = 0.148" dia. x 1½" long. See page 16-17 for other nail sizes and information.

8. Mid-wall installation requires minimum of one grouted course above and below the hanger.

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GLTV/HGLTV Heavy Duty Hangers

GLTV and HGLTV hangers are designed for use with structural composite lumber headers, and may take heavy loads. The top flange nails are sized and specifically located to prevent degradation of the header due to splitting of laminations.

For heavy loads with a face-mount application, see the HGUS series.

MATERIAL: Top flange—3 gauge; Stirrups—7 gauge

FINISH: Simpson gray paint

ALLOWABLE LOADS: • For hanger heights exceeding the joist height, the allowable load is 0.50 of the table load.

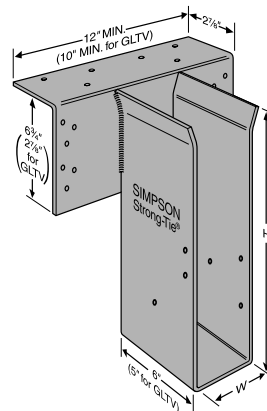
INSTALLATION: • Use all specified fasteners. Verify that the header can take the required fasteners specified in the table.

- This series may be used for weld-on applications. Minimum required weld is a 3/16" x 2 1/2" fillet weld at each end of the top flange for GLTV, and a 1/4" x 2 1/2" fillet weld at each end of the top flange for HGLTV, see page 10 for weld information. Weld-on applications produce maximum loads listed. Uplift loads do not apply to this application.
- Web stiffeners are required with I-joists using this hanger style.
- GLTV may be installed on a nailer and ledger; HGLTV may be installed on a ledger only. Nailers and ledgers must be a minimum of 4x lumber to guarantee the load values given in the tables. Thinner lumber or laminated veneer lumber used as a nailer must be evaluated by the building designer.

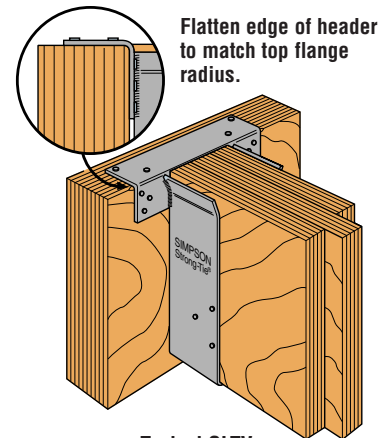
OPTIONS: • Hot-dipped galvanized; specify HDG.

- See Hanger Options, page 188.

CODES: See page 12 for Code Listing Key Chart.



HGLTV
(GLTV similar)



Typical GLTV
Installation

Model No.	Fasteners			Allowable Loads							Code Ref.
	Top	Face	Joist	Uplift (133)	Uplift (160)	DF/SP LVL ⁵	PSL ³	LSL ⁴	DF/SP	SPF	
GLTV series	4-16d	6-16d	6-16d	1370	1640	7500	7400	5750	7000	4260	7, 90, 121
HGLTV series	6-16d	12-16d	6-16d	1370	1640	10500	7800	9000	8665	6690	

1. Uplift loads have been increased 33% and 60% for wind or earthquake loading with no further increase allowed. Divide by 1.33 and 1.60 for normal loading such as in cantilever construction.
2. Uplift loads only apply when "H" is 28" or less.
3. If header is multiple plies of 1 3/4", the PSL allowable load is 6000 lbs.

4. HGLTV at maximum allowable load may have greater than 1/8" deflection.
5. Applies to LVL headers made primarily from Douglas Fir or Southern Pine. For LVL made primarily from Spruce Pine Fir or similar less dense veneers, use the values found in the SPF column.
6. **NAILS: 16d = 0.162" dia. x 3 1/2" long.**
See page 16-17 for other nail sizes and information

EGQ High Capacity Hanger



This product is preferable to similar connectors because of a) easier installation, b) higher loads, c) lower installed cost, or a combination of these features.

EGQ hanger is a high capacity top flange connector designed for use with Structural Composite Lumber beams. It utilizes Simpson Strong-Drive screws to make installation fast and easy with no drilling required. Available in standard SCL widths and made to specified heights. SDS screws are included.

MATERIAL: Top flange—3 gauge; Stirrups—7 gauge

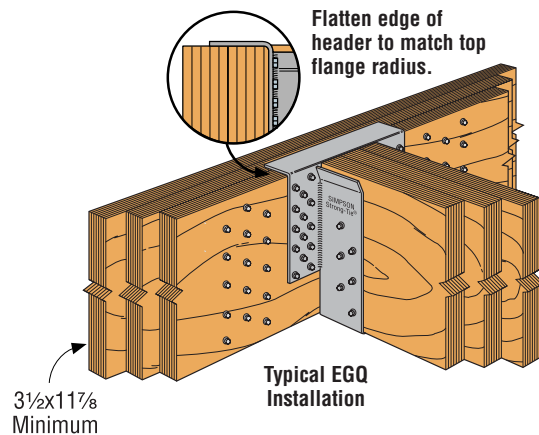
FINISH: Simpson gray paint

INSTALLATION: • Use all specified fasteners. See General Notes.

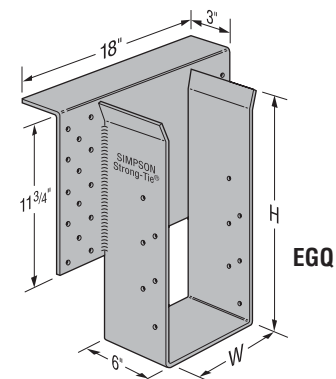
- Install with Simpson SDS1/4x3 wood screws, which are provided with the EGQ. (*Lag screws will not achieve the same load.*)
- All multiple members must be fastened together to act as a single unit.
- Multiple member headers may require additional fasteners at hanger locations. Quantity and location to be determined by designer. See SDS section for additional information, and SDS screws applications.

OPTIONS: • No modification available.

CODES: See page 12 for Code Listing Key Chart.



Typical EGQ
Installation



EGQ

Model No.	Joist or Purlin Size	Dimensions		Fasteners		Allowable Loads			Code Ref.
		W	Min H	Header	Joist	Uplift (133)	(DF/SP) LVL	PSL	
EGQ3.62-SDS3	3½	3⅝	11¼	28-SDS¼x3	12-SDS¼x3	6365	19800	18680	170
EGQ5.50-SDS3	5¼	5½	11¼	28-SDS¼x3	12-SDS¼x3	6365	19800	18680	
EGQ7.25-SDS3	7	7¼	11¼	28-SDS¼x3	12-SDS¼x3	6365	19800	18680	

1. Loads are based on 750 psi wood bearing for SCL.
2. "Min H" is the minimum H dimension that may be specified.
3. Uplift loads have been increased 33% and 60% for wind or earthquake loading with no further increase allowed. Divide by 1.33 and 1.60 for normal loading such as in cantilever construction.

LGU/MGU/HGU/HHGU High Capacity Girder Hangers

NEW! The GU hangers are a high-capacity girder hangers designed for situations where the header and joist are flush at top. This part can be used for retrofit on the framing members after they are temporarily placed in position. It uses Simpson Strong-Drive screws (SDS) to make installation fast and easy, with no pre-drilling required.

MATERIAL: See table.

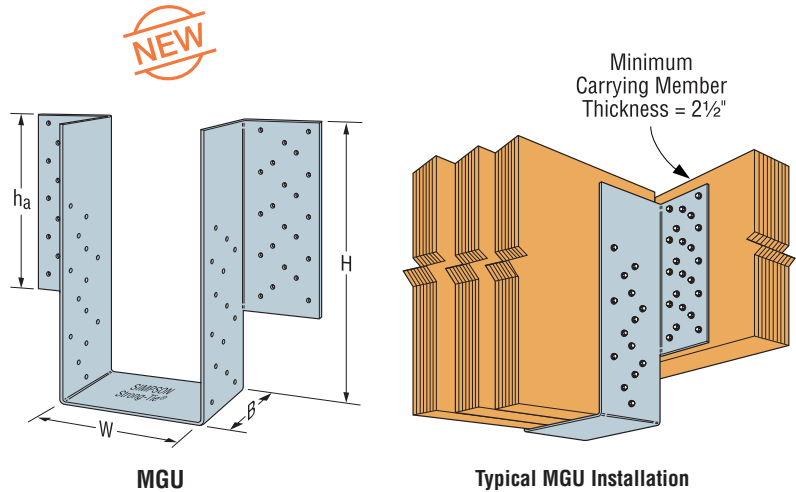
FINISH: Galvanized.

INSTALLATION:

- Use all specified fasteners. See General Notes.
- Install with Simpson's SDS $\frac{1}{4}$ x2 $\frac{1}{2}$ screws, which are provided with the GU's. (*Note: lag screws will not achieve the same loads.*)
- All multiple members must be fastened together to act as a single unit.
- Multiple member headers may require additional fasteners at the hanger locations. The quantity and location of the additional fasteners must be determined by the Designer.

OPTIONS: Not available.

CODES: See page 12 for Code Listing Key Chart.



Model No.	Ga	Dimensions			Min. Header Depth ³ h _a	Fasteners		Allowable Loads						Code Ref.
		W	H ² (min)	B		Face	Joist	DF/SP			SPF/HF			
								Uplift ¹	Download ³		Uplift ¹	Download ³		
									133/160	100		115/125	133/160	
LGU3.62	10	3⅝	7½	4½	7½	16-SDS¼x2½	12-SDS¼x2½	5380	6400	6440	4515	5375	5410	160
MGU3.62	10	3⅝	8¾	4½	8¾	24-SDS¼x2½	16-SDS¼x2½	6595	9145	9145	5540	7685	7685	
MGU5.50	10	57/16	8¾	4½	8¾	24-SDS¼x2½	16-SDS¼x2½	6595	9145	9145	5540	7685	7685	
HGU5.50	7	57/16	10⅝	5¼	10⅝	36-SDS¼x2½	24-SDS¼x2½	9895	14060	14060	8310	11810	11810	
HGU7.25	7	7¼	10⅝	5¼	10⅝	36-SDS¼x2½	24-SDS¼x2½	9895	14060	14060	8310	11810	11810	
HHGU7.25	3	7¼	12⅝	5¼	12⅝	44-SDS¼x2½	28-SDS¼x2½	13985	16700	16700	11745	14030	14030	

1. Uplift loads have been increased for earthquake and wind loading, with no further increase allowed.

2. Specify H dimension. The Designer should check the shear capacity of the carried member to make sure it matches the hanger's capacity. Maximum H = 30".

3. Minimum header is based on the size necessary to fit screw pattern. Use the next size up that meets the minimum depth requirement.

CSC Ceiling Support Clip / **FSS** Furring Stabilizer Strap

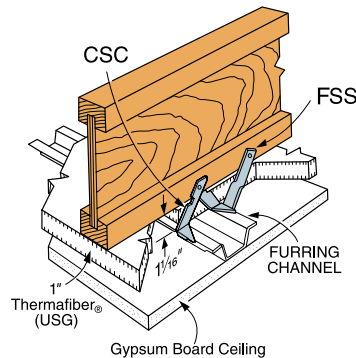
Provides 1" separation between the furring channel and joist to allow for the use of Thermafiber[®] insulation and the attachment of the furring channel to all joists. Provides an efficient sound barrier, and a one hour U.L. listed fire rating.

Field-form the FSS with the CSC to prevent furring channel rotation during installation. Furring channel must match dimensions shown to fit the CSC properly. U.L. listed. See Underwriters Laboratories, Inc, Design No. L530 for USG and TJI[®] I-joists, and No. L531 for USG and Willamette I-joists.

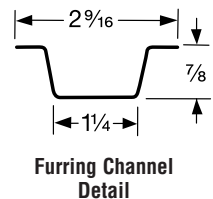
MATERIAL: 24 gauge (minimum).

FINISH: Galvanized

INSTALLATION: Use 1-8d x 1 $\frac{1}{2}$ " nail.



Typical CSC and FSS Installation



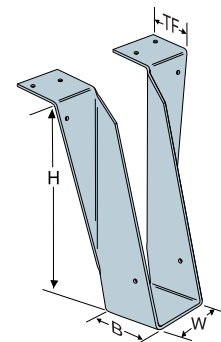
Furring Channel Detail

Thermafiber[®] and TJI[®] are registered trademarks of US Gypsum Company and Trus Joist, a company of Weyerhaeuser, respectively.

TOP FLANGE HANGERS – I-JOISTS & SCL

Actual Joist Size	Model No.	Web Stiff Req'd	Ga	Dimensions				Fasteners ^{3, 4, 7}			Allowable Loads ^{1, 4, 7}								
								Solid Header ⁴		Joist	Uplift (133)	Uplift (160)	DF/SP LVL	PSL	LSL	DF/SP	SPF	DF/SCL I-Joist ⁴	Masonry ³
				Top	Face														
1½ x 9¼	ITT29.25	—	18	1⅞	9⅞	2	1⅞	4-10d	2-10d	2-10d x 1½	245	285	1450	1300	1435	1615	1200	1050	—
	LBV1.56/9.25	—	14	1⅞	9¼	3	2½	6-16d	4-16d	2-10d x 1½	265	265	2910	2885	3190	2590	2110	1495	—
	WP29.25	✓	12	1⅞	9¼	4	2⅜	2-16d	—	2-10d x 1½	—	—	3635	3320	3635	3255	2600	2030	—
	WM29.25 ³	✓	12	1⅞	9¼	4½	3¾	2-16dDPLX	—	2-10d x 1½	—	—	—	—	—	—	—	—	4175
1½ x 9½	ITT29.5	—	18	1⅞	9⅞	2	1⅞	4-10d	2-10d	2-10d x 1½	245	285	1450	1300	1435	1615	1200	1050	—
	MIT29.5	—	16	1⅞	9½	2½	2⅝	4-16d	4-16d	2-10d x 1½	240	290	2550	2140	2115	2400	1665	1230	—
	LBV1.56/9.5	—	14	1⅞	9½	3	2½	6-16d	4-16d	2-10d x 1½	265	265	2910	2885	3190	2590	2110	1495	—
	WP29.5	✓	12	1⅞	9½	4	2⅜	2-16d	—	2-10d x 1½	—	—	3635	3320	3635	3255	2600	2030	—
	WM29.5 ³	✓	12	1⅞	9½	4½	3¾	2-16dDPLX	—	2-10d x 1½	—	—	—	—	—	—	—	—	4175
1½ x 11¼	ITT211.25	—	18	1⅞	11⅞	2	1⅞	4-10d	2-10d	2-10d x 1½	245	285	1450	1300	1435	1615	1200	1050	—
	LBV1.56/11.25	—	14	1⅞	11¼	3	2½	6-16d	4-16d	2-10d x 1½	265	265	2910	2885	3190	2590	2110	1495	—
	WP211.25	✓	12	1⅞	11¼	4	2⅜	2-16d	—	2-10d x 1½	—	—	3635	3320	3635	3255	2600	2030	—
	WM211.25 ³	✓	12	1⅞	11¼	4½	3¾	2-16dDPLX	—	2-10d x 1½	—	—	—	—	—	—	—	—	4175
1½ x 11⅞	ITT211.88	—	18	1⅞	11⅞	2	1⅞	4-10d	2-10d	2-10d x 1½	245	285	1450	1300	1435	1615	1200	1050	—
	MIT211.88	—	16	1⅞	11⅞	2½	2⅝	4-16d	4-16d	2-10d x 1½	240	290	2550	2140	2115	2400	1665	1230	—
	LBV1.56/11.88	—	14	1⅞	11⅞	3	2½	6-16d	4-16d	2-10d x 1½	265	265	2910	2885	3190	2590	2110	1495	—
	WP211.88	✓	12	1⅞	11⅞	4	2⅜	2-16d	—	2-10d x 1½	—	—	3635	3320	3635	3255	2600	2030	—
	WM211.88 ³	✓	12	1⅞	11⅞	4½	3¾	2-16dDPLX	—	2-10d x 1½	—	—	—	—	—	—	—	—	4175
1½ x 14	ITT214	—	18	1⅞	13⅞	2	1⅞	4-10d	2-10d	2-10d x 1½	245	285	1450	1300	1435	1615	1200	1050	—
	LBV1.56/14	—	14	1⅞	14	3	2½	6-16d	4-16d	2-10d x 1½	265	265	2910	2885	3190	2590	2110	1495	—
1½ x 16	LBV1.56/16	—	14	1⅞	16	3	2½	6-16d	4-16d	2-10d x 1½	265	265	2910	2885	3190	2590	2110	1495	—
1¾ x 7¼	LBV1.81/7.25	—	14	1⅞	7¼	3	2½	6-16d	4-16d	2-10d x 1½	265	265	2910	2885	3190	2590	1830	1495	—
	WP1.81/7.25	✓	12	1⅞	7¼	3½	2⅜	2-16d	—	2-10d x 1½	—	—	3635	3320	3635	3255	2600	2030	—
1¾ x 9¼	LBV1.81/9.25	—	14	1⅞	9¼	3	2½	6-16d	4-16d	2-10d x 1½	265	265	2910	2885	3190	2590	1830	1495	—
	WP9.25	✓	12	1⅞	9¼	3½	2⅜	2-16d	—	2-10d x 1½	—	—	3635	3320	3635	3255	2600	2030	—
1¾ x 9½	ITT9.5	—	18	1⅞	9⅞	2	1⅞	4-10d	2-10d	2-10d x 1½	245	285	1450	1300	1435	1615	1200	1050	—
	MIT9.5	—	16	1⅞	9½	2½	2⅝	4-16d	4-16d	2-10d x 1½	240	290	2550	2140	2115	2400	1665	1230	—
	LBV1.81/9.5	—	14	1⅞	9½	3	2½	6-16d	4-16d	2-10d x 1½	265	265	2910	2885	3190	2590	1830	1495	—
	WP9	✓	12	1⅞	9½	3½	2⅜	2-16d	—	2-10d x 1½	—	—	3635	3320	3635	3255	2600	2030	—
	WM9 ³	✓	12	1⅞	9½	4½	3¾	2-16dDPLX	—	2-10d x 1½	—	—	—	—	—	—	—	—	4175
1¾ x 11¼	LBV1.81/11.25	—	14	1⅞	11¼	3	2½	6-16d	4-16d	2-10d x 1½	265	265	2910	2885	3190	2590	1830	1495	—
1¾ x 11⅞	ITT11.88	—	18	1⅞	11⅞	2	1⅞	4-10d	2-10d	2-10d x 1½	245	285	1450	1300	1435	1615	1200	1050	—
	MIT11.88	—	16	1⅞	11⅞	2½	2⅝	4-16d	4-16d	2-10d x 1½	240	290	2550	2140	2115	2400	1665	1230	—
	BA1.81/11.88 (Min)	—	14	1⅞	11⅞	3	2½	6-16d	10-16d	2-10d x 1½	265	315	4015	3705	4005	3000	2665	1495	—
	BA1.81/11.88 (Max)	✓	14	1⅞	11⅞	3	2½	6-16d	10-16d	8-10d x 1½	1055	1170	4715	4320	4500	3625	2665	1495	—
	LBV1.81/11.88	—	14	1⅞	11⅞	3	2½	6-16d	4-16d	2-10d x 1½	265	265	2910	2885	3190	2590	1830	1495	—
	WP11	✓	12	1⅞	11⅞	3½	2⅜	2-16d	—	2-10d x 1½	—	—	3635	3320	3635	3255	2600	2030	—
	WM11 ³	✓	12	1⅞	11⅞	4½	3¾	2-16dDPLX	—	2-10d x 1½	—	—	—	—	—	—	—	—	4175

1. Loads may not be increased for short-term loading. Uplift loads are based on tests on solid wood headers.
2. Uplift loads are based on Douglas Fir, and have been increased 33% and 60% for wind or earthquake loading with no further increase allowed. Divide by 1.33 and 1.60 for normal loading such as in cantilever construction.
3. ITTM and WM loads listed are based on **embedded installation (mid-wall) into a masonry block wall**.
4. When I-joist is used as header, all nails must be 10dx1½.
5. SCL, structural composite lumber, is laminated veneer lumber, Parallam® PSL and TimberStrand® LSL.
6. I-joist headers with SPF flanges only support 755 lbs (ITT), 885 lbs (MIT), 2030 lbs (WP/WPI), 1340 lbs (LBV) and 1495 lbs (BA).
7. **DF I-joists include flanges made from solid sawn Douglas Fir, LVL made primarily of Douglas Fir/Southern Pine, or LSL. For flanges with thicknesses from 1⅞ to 1⅞, use 0.85 of the I-joist header load. For flanges with thicknesses from 1⅞ to 1¼, use 0.75 of the I-joist header load.**
8. See pages 99 to 103 for Code reference numbers.
9. Hangers sorted in order of recommended selection for best overall performance and installation value.
10. **NAILS: 16d and 16d DPLX = 0.162" dia. x 3½" long, 10d = 0.148" dia. x 3" long, 10dx1½ = 0.148" dia. x 1½" long. See page 16-17 for other nail sizes and information.**



Parallam and TimberStrand are registered trademarks of Trus Joist, a Weyerhaeuser company.

TOP FLANGE HANGERS – I-JOISTS & SCL

Actual Joist Size	Model No.	Web Stiff Req'd	Ga	Dimensions				Fasteners ^{3,4,7}			Allowable Loads ^{1,4,7}								
								Solid Header ⁴		Joist	Uplift (133)	Uplift (160)	DF/SP LVL	PSL	LSL	DF/SP	SPF	DF/SCL I-Joist ⁶	Masonry ³
				Top	Face														
1¾ x 14	ITT14	—	18	1⅜	13⅝	2	1⅜	4-10d	2-10d	2-10d x 1½	245	285	1450	1300	1435	1615	1200	1050	—
	MIT1.81/14	—	16	1⅜	14	2½	2⅝	4-16d	4-16d	2-10d x 1½	240	290	2550	2140	2115	2400	1665	1230	—
	LBV1.81/14	—	14	1⅜	14	3	2½	6-16d	4-16d	2-10d x 1½	265	265	2910	2885	3190	2590	1830	1495	—
	WP14	✓	12	1⅜	14	3½	2⅜	2-16d	—	2-10d x 1½	—	—	3635	3320	3635	3255	2600	2030	—
	WM14 ³	✓	12	1⅜	14	4½	3¾	2-16dDPLX	—	2-10d x 1½	—	—	—	—	—	—	—	—	4175
1¾ x 16	ITT16	—	18	1⅜	15⅝	2	1⅜	4-10d	2-10d	2-10d x 1½	245	285	1450	1300	1435	1615	1200	1050	—
	MIT1.81/16	—	16	1⅜	16	2½	2⅝	4-16d	4-16d	2-10d x 1½	240	290	2550	2140	2115	2400	1665	1230	—
	LBV1.81/16	—	14	1⅜	16	3	2½	6-16d	4-16d	2-10d x 1½	265	265	2910	2885	3190	2590	1830	1495	—
	B1.81/16	✓	12	1⅜	16	3	2½	6-16d	8-16d	6-10d x 1½	825	990	4135	3355	4500	3640	2650	—	—
	WP16	✓	12	1⅜	16	3½	2⅜	2-16d	—	2-10d x 1½	—	—	3635	3320	3635	3255	2600	2030	—
WM16 ³	✓	12	1⅜	16	4½	3¾	2-16dDPLX	—	2-10d x 1½	—	—	—	—	—	—	—	—	—	4175
	2 x 9½	ITT2.06/9.5	—	18	2⅞	9⅞	2	1⅜	4-10d	2-10d	2-10d x 1½	245	285	1450	1300	1435	1615	1200	1050
LBV2.06/9.5		—	14	2⅞	9½	2½	2½	6-16d	4-16d	2-10d x 1½	265	265	2910	2885	3190	2590	1830	1495	—
2 x 11⅞	ITT2.06/11.88	—	18	2⅞	11⅜	2	1⅜	4-10d	2-10d	2-10d x 1½	245	285	1450	1300	1435	1615	1200	1050	—
	LBV2.06/11.88	—	14	2⅞	11⅞	2½	2½	6-16d	4-16d	2-10d x 1½	265	265	2910	2885	3190	2590	1830	1495	—
2 x 14	ITT2.06/14	—	18	2⅞	13⅝	2	1⅜	4-10d	2-10d	2-10d x 1½	245	285	1450	1300	1435	1615	1200	1050	—
	LBV2.06/14	—	14	2⅞	14	2½	2½	6-16d	4-16d	2-10d x 1½	265	265	2910	2885	3190	2590	1830	1495	—
2 x 16	ITT2.06/16	—	18	2⅞	15⅝	2	1⅜	4-10d	2-10d	2-10d x 1½	245	285	1450	1300	1435	1615	1200	1050	—
	LBV2.06/16	—	14	2⅞	16	2½	2½	6-16d	4-16d	2-10d x 1½	265	265	2910	2885	3190	2590	1830	1495	—
2⅞ x 9½	ITT2.1/9.5	—	18	2⅞	9⅞	2	1⅜	4-10d	2-10d	2-10d x 1½	245	285	1450	1300	1435	1615	1200	1050	—
	LBV2.1/9.5	—	14	2⅞	9½	2½	2½	6-16d	4-16d	2-10d x 1½	265	265	2910	2885	3190	2590	1830	1495	—
2⅞ x 11⅞	ITT2.1/11.88	—	18	2⅞	11⅜	2	1⅜	4-10d	2-10d	2-10d x 1½	245	285	1450	1300	1435	1615	1200	1050	—
	LBV2.1/11.88	—	14	2⅞	11⅞	2½	2½	6-16d	4-16d	2-10d x 1½	265	265	2910	2885	3190	2590	1830	1495	—
2⅞ x 14	ITT2.1/14	—	18	2⅞	13⅝	2	1⅜	4-10d	2-10d	2-10d x 1½	245	285	1450	1300	1435	1615	1200	1050	—
	LBV2.1/14	—	14	2⅞	14	2½	2½	6-16d	4-16d	2-10d x 1½	265	265	2910	2885	3190	2590	1830	1495	—
2⅞ x 16	ITT2.1/16	—	18	2⅞	15⅝	2	1⅜	4-10d	2-10d	2-10d x 1½	245	285	1450	1300	1435	1615	1200	1050	—
	LBV2.1/16	—	14	2⅞	16	2½	2½	6-16d	4-16d	2-10d x 1½	265	265	2910	2885	3190	2590	1830	1495	—
2¼ - 2⅝ x 9½	ITT359.5	—	18	2⅞	9⅞	2	1⅜	4-10d	2-10d	2-10d x 1½	245	285	1450	1300	1435	1615	1200	1050	—
	LBV2.37/9.5	—	14	2⅞	9½	2½	2½	6-16d	4-16d	2-10d x 1½	265	265	2910	2885	3190	2590	1830	1495	—
2¼ - 2⅝ x 11⅞	ITT3511.88	—	18	2⅞	11⅜	2	1⅜	4-10d	2-10d	2-10d x 1½	245	285	1450	1300	1435	1615	1200	1050	—
	MIT3511.88	—	16	2⅞	11⅞	2½	2⅝	4-16d	4-16d	2-10d x 1½	240	290	2550	2140	2115	2400	1665	1230	—
	LBV2.37/11.88	—	14	2⅞	11⅞	2½	2½	6-16d	4-16d	2-10d x 1½	265	265	2910	2885	3190	2590	1830	1495	—
	W3511.88	✓	12	2⅞	11⅞	2½	2½	2-16d	—	2-10d x 1½	—	—	2335	1950	2335	1765	1435	—	—
	WM3511.88 ³	✓	12	2⅞	11⅞	3	3¾	2-16dDPLX	—	2-10d x 1½	—	—	—	—	—	—	—	—	4175
2¼ - 2⅝ x 14	ITT3514	—	18	2⅞	13⅝	2	1⅜	4-10d	2-10d	2-10d x 1½	245	285	1450	1300	1435	1615	1200	1050	—
	MIT3514	—	16	2⅞	14	2½	2⅝	4-16d	4-16d	2-10d x 1½	240	290	2550	2140	2115	2400	1665	1230	—
	LBV2.37/14	—	14	2⅞	14	2½	2½	6-16d	4-16d	2-10d x 1½	265	265	2910	2885	3190	2590	1830	1495	—
	WP3514	✓	12	2⅞	14	2½	2⅜	2-16d	—	2-10d x 1½	—	—	3635	3320	3635	3255	2600	2030	—
	WM3514 ³	✓	12	2⅞	14	3	3¾	2-16dDPLX	—	2-10d x 1½	—	—	—	—	—	—	—	—	4175
2¼ - 2⅝ x 16	MIT3516	—	16	2⅞	16	2½	2⅝	4-16d	4-16d	2-10d x 1½	240	290	2550	2140	2115	2400	1665	1230	—
	LBV2.37/16	—	14	2⅞	16	2½	2½	6-16d	4-16d	2-10d x 1½	265	265	2910	2885	3190	2590	1830	1495	—
	WP3516	✓	12	2⅞	16	2½	2⅜	2-16d	—	2-10d x 1½	—	—	3635	3320	3635	3255	2600	2030	—
	WM3516 ³	✓	12	2⅞	16	3	3¾	2-16dDPLX	—	2-10d x 1½	—	—	—	—	—	—	—	—	4175
2¼ - 2⅝ x 18	MIT3518	—	16	2⅞	18	2½	2⅝	4-16d	4-16d	2-10d x 1½	240	290	2550	2140	2115	2400	1665	1230	—
	HIT3518	—	16	2⅞	18	3	3	4-16d	6-16d	2-10d x 1½	240	290	2550	2050	2500	3050	1950	—	—
	LBV2.37/18	—	14	2⅞	18	2½	2½	6-16d	4-16d	2-10d x 1½	265	265	2910	2885	3190	2590	1830	1495	—
	WP3518	✓	12	2⅞	18	2½	2⅜	2-16d	—	2-10d x 1½	—	—	3635	3320	3635	3255	2600	2030	—
	WM3518 ³	✓	12	2⅞	18	3	3¾	2-16dDPLX	—	2-10d x 1½	—	—	—	—	—	—	—	—	4175

See footnotes on page 104.

TOP FLANGE HANGERS – I-JOISTS & SCL

Actual Joist Size	Model No.	Web Stiff Req'd	Ga	Dimensions				Fasteners ^{3,4,7}			Allowable Loads ^{1,4,7}								
								Solid Header ⁴		Joist	Uplift (133)	Uplift (160)	DF/SP LVL	PSL	LSL	DF/SP	SPF	DF/SCL I-Joist ⁴	Masonry ³
				W	H	B	TF	Top	Face										
2¼ - 2⅝ x 20	MIT3520	—	16	2⅝	20	2⅝	2⅝	4-16d	4-16d	2-10d x 1½	240	290	2550	2140	2115	2400	1665	1230	—
	HIT3520	—	16	2⅝	20	3	3	4-16d	6-16d	2-10d x 1½	240	290	2550	2050	2500	3050	1950	—	—
	LBV2.37/20	—	14	2⅝	20	2⅝	2½	6-16d	4-16d	2-10d x 1½	265	265	2910	2885	3190	2590	1830	1495	—
	WP3520	✓	12	2⅝	20	2⅝	2⅝	2-16d	—	2-10d x 1½	—	—	3635	3320	3635	3255	2600	2030	—
	WM3520 ³	✓	12	2⅝	20	3	3¾	2-16dDPLX	—	2-10d x 1½	—	—	—	—	—	—	—	—	4175
2½ x 9¼	ITT39.25	—	18	2⅝	9⅞	2	1⅝	4-10d	2-10d	2-10d x 1½	245	285	1450	1300	1435	1615	1200	1050	—
	LBV2.56/9.25	—	14	2⅝	9¼	2½	2½	6-16d	4-16d	2-10d x 1½	265	265	2910	2885	3190	2590	1830	1495	—
	WI39.25	✓	12	2⅝	9¼	2	2½	2-16d	—	2-10d x 1½	—	—	2335	1950	2335	1765	1435	—	—
2½ x 9⅜	ITT39.37	—	18	2⅝	9⅞	2	1⅝	4-10d	2-10d	2-10d x 1½	245	285	1450	1300	1435	1615	1200	1050	—
	LBV2.56/9.37	—	14	2⅝	9⅝	2½	2½	6-16d	4-16d	2-10d x 1½	265	265	2910	2885	3190	2590	1830	1495	—
2½ x 9½	ITT39.5	—	18	2⅝	9⅞	2	1⅝	4-10d	2-10d	2-10d x 1½	245	285	1450	1300	1450	1615	1200	1050	—
	LBV2.56/9.5	—	14	2⅝	9½	2½	2½	6-16d	4-16d	2-10d x 1½	265	265	2910	2885	3190	2590	1830	1495	—
	WI39.5	✓	12	2⅝	9½	2	2½	2-16d	—	2-10d x 1½	—	—	2335	1950	2335	1765	1435	—	—
2½ x 11¼	ITT311.25	—	18	2⅝	11⅞	2	1⅝	4-10d	2-10d	2-10d x 1½	245	285	1450	1300	1435	1615	1200	1050	—
	LBV2.56/11.25	—	14	2⅝	11¼	2½	2½	6-16d	4-16d	2-10d x 1½	265	265	2910	2885	3190	2590	1830	1495	—
	WI311.25	✓	12	2⅝	11¼	2	2½	2-16d	—	2-10d x 1½	—	—	2335	1950	2335	1765	1435	—	—
2½ x 11⅞	ITT311.88	—	18	2⅝	11⅞	2	1⅝	4-10d	2-10d	2-10d x 1½	245	285	1450	1300	1435	1615	1200	1050	—
	MIT311.88	—	16	2⅝	11⅞	2½	2⅝	4-16d	4-16d	2-10d x 1½	240	290	2550	2140	2115	2400	1665	1230	—
	BA2.56/11.88 (Min)	—	14	2⅝	11⅞	3	2½	6-16d	10-16d	2-10d x 1½	265	315	4015	3705	4005	3435	2665	1495	—
	BA2.56/11.88 (Max)	✓	14	2⅝	11⅞	3	2½	6-16d	10-16d	8-10d x 1½	1055	1170	4715	4320	4500	3800	2665	1495	—
	LBV2.56/11.88	—	14	2⅝	11⅞	2½	2½	6-16d	4-16d	2-10d x 1½	265	265	2910	2885	3190	2590	1830	1495	—
	WPI311.88	✓	12	2⅝	11⅞	2½	2⅝	2-16d	—	2-10d x 1½	—	—	3635	3220	3695	3255	2600	2030	—
2½ x 13	ITT313	—	18	2⅝	12⅝	2	1⅝	4-10d	2-10d	2-10d x 1½	245	285	1450	1300	1435	1615	1200	1050	—
	LBV2.56/13	—	14	2⅝	13	2½	2½	6-16d	4-16d	2-10d x 1½	265	265	2910	2885	3190	2590	1830	1495	—
2½ x 14	ITT314	—	18	2⅝	13⅝	2	1⅝	4-10d	2-10d	2-10d x 1½	245	285	1450	1300	1435	1615	1200	1050	—
	MIT314	—	16	2⅝	14	2½	2⅝	4-16d	4-16d	2-10d x 1½	240	290	2550	2140	2115	2400	1665	1230	—
	BA2.56/14 (Min)	—	14	2⅝	14	3	2½	6-16d	10-16d	2-10d x 1½	265	315	4015	3705	4005	3435	2665	1495	—
	BA2.56/14 (Max)	✓	14	2⅝	14	3	2½	6-16d	10-16d	8-10d x 1½	1055	1170	4715	4320	4500	3800	2665	1495	—
	LBV2.56/14	—	14	2⅝	14	2½	2½	6-16d	4-16d	2-10d x 1½	265	265	2910	2885	3190	2590	1830	1495	—
	WPI314	✓	12	2⅝	14	2½	2⅝	2-16d	—	2-10d x 1½	—	—	3635	3320	3635	3255	2600	2030	—
	WMI314 ³	✓	12	2⅝	14	3	3¾	2-16dDPLX	—	2-10d x 1½	—	—	—	—	—	—	—	—	4175
2½ x 16	ITT316	—	18	2⅝	15⅝	2	1⅝	4-10d	2-10d	2-10d x 1½	245	285	1450	1300	1435	1615	1200	1050	—
	MIT316	—	16	2⅝	16	2½	2⅝	4-16d	4-16d	2-10d x 1½	240	290	2550	2140	2115	2400	1665	1230	—
	BA2.56/16 (Min)	—	14	2⅝	16	3	2½	6-16d	10-16d	2-10d x 1½	265	315	4015	3705	4005	3435	2665	1495	—
	BA2.56/16 (Max)	✓	14	2⅝	16	3	2½	6-16d	10-16d	8-10d x 1½	1055	1170	4715	4320	4500	3800	2665	1495	—
	LBV2.56/16	—	14	2⅝	16	2½	2½	6-16d	4-16d	2-10d x 1½	265	265	2910	2885	3190	2590	1830	1495	—
	WPI316	✓	12	2⅝	16	2½	2⅝	2-16d	—	2-10d x 1½	—	—	3635	3320	3635	3255	2600	2030	—
	WMI316 ³	✓	12	2⅝	16	3	3¾	2-16dDPLX	—	2-10d x 1½	—	—	—	—	—	—	—	—	4175
2½ x 18	MIT318	—	16	2⅝	18	2½	2⅝	4-16d	4-16d	2-10d x 1½	240	290	2550	2140	2115	2400	1665	1230	—
	HIT318	—	16	2⅝	18	3	2⅞	4-16d	6-16d	2-10d x 1½	240	290	2550	2050	2500	3050	1950	—	—
	LBV2.56/18	—	14	2⅝	18	2½	2½	6-16d	4-16d	2-10d x 1½	265	265	2910	2885	3190	2590	1830	1495	—
	WPI318	✓	12	2⅝	18	2½	2⅝	2-16d	—	2-10d x 1½	—	—	3635	3320	3635	3255	2600	2030	—
	WMI318 ³	✓	12	2⅝	18	3	3¾	2-16dDPLX	—	2-10d x 1½	—	—	—	—	—	—	—	—	4175
2½ x 20	MIT320	—	16	2⅝	20	2½	2⅝	4-16d	4-16d	2-10d x 1½	240	290	2550	2140	2115	2400	1665	1230	—
	HIT320	—	16	2⅝	20	3	2⅞	4-16d	6-16d	2-10d x 1½	240	290	2550	2050	2500	3050	1950	—	—
	LBV2.56/20	—	14	2⅝	20	2½	2½	6-16d	4-16d	2-10d x 1½	265	265	2910	2885	3190	2590	1830	1495	—
	WPI320	✓	12	2⅝	20	2½	2⅝	2-16d	—	2-10d x 1½	—	—	3635	3320	3635	3255	2600	2030	—
	WMI320 ³	✓	12	2⅝	20	3	3¾	2-16dDPLX	—	2-10d x 1½	—	—	—	—	—	—	—	—	4175

See footnotes on page 104.

TOP FLANGE HANGERS – I-JOISTS & SCL

Actual Joist Size	Model No.	Web Stiff Req'd	Ga	Dimensions				Fasteners ^{3,4,7}			Allowable Loads ^{1,4,7}								
								Solid Header ⁴		Joist	Uplift (133)	Uplift (160)	DF/SP LVL	PSL	LSL	DF/SP	SPF	DF/SCL I-Joist ¹	Masonry ³
				Top	Face														
2½ x 22	HIT322	✓	16	2⅝	22	3	2⅝	4-16d	6-16d	2-10d x1½	240	290	2550	2050	2500	3050	1950	—	—
	LBV2.56/22	—	14	2⅝	22	2½	2½	6-16d	4-16d	2-10d x1½	265	265	2910	2885	3190	2590	1830	1495	—
	WPI322	✓	12	2⅝	22	2½	2⅝	2-16d	—	2-10d x1½	—	—	3635	3320	3635	3255	2600	2030	—
	HWI322	✓	11	2⅝	22	4	2½	4-16d	—	4-10d x1½	—	—	5100	4000	4500	5285	3665	—	—
2½ x 24	HIT324	✓	16	2⅝	24	3	2⅝	4-16d	6-16d	2-10d x1½	240	290	2550	2050	2500	3050	1950	—	—
	LBV2.56/24	—	14	2⅝	24	2½	2½	6-16d	4-16d	2-10d x1½	265	265	2910	2885	3190	2590	1830	1495	—
	WPI324	✓	12	2⅝	24	2½	2⅝	2-16d	—	2-10d x1½	—	—	3635	3320	3635	3255	2600	2030	—
2½ x 26	HIT326	✓	16	2⅝	26	3	2⅝	4-16d	6-16d	2-10d x1½	240	290	2550	2050	2500	3050	1950	—	—
	LBV2.56/26	—	14	2⅝	26	2½	2½	6-16d	4-16d	2-10d x1½	265	265	2910	2885	3190	2590	1830	1495	—
	WPI326	✓	12	2⅝	26	2½	2⅝	2-16d	—	2-10d x1½	—	—	3635	3320	3635	3255	2600	2030	—
2½ x 28	LBV2.56/28	—	14	2⅝	28	2½	2½	6-16d	4-16d	2-10d x1½	265	265	2910	2885	3190	2590	1830	1495	—
	WPI328	✓	12	2⅝	28	2½	2⅝	2-16d	—	2-10d x1½	—	—	3635	3320	3635	3255	2600	2030	—
2½ x 30	LBV2.56/30	—	14	2⅝	30	2½	2½	6-16d	4-16d	2-10d x1½	265	265	2910	2885	3190	2590	1830	1495	—
	WPI330	✓	12	2⅝	30	2½	2⅝	2-16d	—	2-10d x1½	—	—	3635	3320	3635	3255	2600	2030	—
2½ - 2⅝ ₁₆ x 9¼	WPU2.75/9.25	✓	12	2¾	9¼	3	2⅝ ₁₆	3-16d	4-16d	6-10d x1½	775	775	4700	4880	3650	4165	4165	—	—
	HWU2.75/9.25	✓	10	2¾	9¼	4	2½	4-16d	4-16d	6-10d x1½	810	810	6335	5500	5535	6335	5415	—	—
	GLTV2.75/9.25	✓	7	2¾	9¼	5	2⅝	4-16d	6-16d	6-16d x2½	1370	1640	7500	7400	5750	7000	4260	—	—
2½ - 2⅝ ₁₆ x 9½	WPU2.75/9.5	✓	12	2¾	9½	3	2⅝ ₁₆	3-16d	4-16d	6-10d x1½	775	775	4700	4880	3650	4165	4165	—	—
	HWU2.75/9.5	✓	10	2¾	9½	4	2½	4-16d	4-16d	6-10d x1½	810	810	6335	5500	5535	6335	5415	—	—
	GLTV2.75/9.5	✓	7	2¾	9½	5	2⅝	4-16d	6-16d	6-16d x2½	1370	1640	7500	7400	5750	7000	4260	—	—
2½ - 2⅝ ₁₆ x 11¼	WPU2.75/11.25	✓	12	2¾	11¼	3	2⅝ ₁₆	3-16d	4-16d	6-10d x1½	775	775	4700	4880	3650	4165	4165	—	—
	HWU2.75/11.25	✓	10	2¾	11¼	4	2½	4-16d	4-16d	6-10d x1½	810	810	6335	5500	5535	6335	5415	—	—
	GLTV2.75/11.25	✓	7	2¾	11¼	5	2⅝	4-16d	6-16d	6-16d x2½	1370	1640	7500	7400	5750	7000	4260	—	—
2½ - 2⅝ ₁₆ x 11⅞	WPU2.75/11.88	✓	12	2¾	11⅞	3	2⅝ ₁₆	3-16d	4-16d	6-10d x1½	775	775	4700	4880	3650	4165	4165	—	—
	HWU2.75/11.88	✓	10	2¾	11⅞	4	2½	4-16d	4-16d	6-10d x1½	810	810	6335	5500	5535	6335	5415	—	—
	GLTV2.75/11.88	✓	7	2¾	11⅞	5	2⅝	4-16d	6-16d	6-16d x2½	1370	1640	7500	7400	5750	7000	4260	—	—
2½ - 2⅝ ₁₆ x 14	WPU2.75/14	✓	12	2¾	14	3	2⅝ ₁₆	3-16d	4-16d	6-10d x1½	775	775	4700	4880	3650	4165	4165	—	—
	HWU2.75/14	✓	10	2¾	14	4	2½	4-16d	4-16d	6-10d x1½	810	810	6335	5500	5535	6335	5415	—	—
	GLTV2.75/14	✓	7	2¾	14	5	2⅝	4-16d	6-16d	6-16d x2½	1370	1640	7500	7400	5750	7000	4260	—	—
2½ - 2⅝ ₁₆ x 16	WPU2.75/16	✓	12	2¾	16	3	2⅝ ₁₆	3-16d	4-16d	6-10d x1½	775	775	4700	4880	3650	4165	4165	—	—
	HWU2.75/16	✓	10	2¾	16	4	2½	4-16d	4-16d	6-10d x1½	810	810	6335	5500	5535	6335	5415	—	—
	GLTV2.75/16	✓	7	2¾	16	5	2⅝	4-16d	6-16d	6-16d x2½	1370	1640	7500	7400	5750	7000	4260	—	—
3 x 9¼	LBV3.12/9.25	—	14	3⅞	9¼	2½	2½	6-16d	4-16d	2-10d x1½	265	265	2910	2885	3190	2590	1830	1495	—
	WP29.25-2	✓	12	3⅞	9¼	2½	2⅝ ₁₆	2-16d	—	2-10d x1½	—	—	3635	3320	3635	3255	2600	2030	—
	WM29.25-2 ³	✓	12	3⅞	9¼	2½	3¾	2-16dDPLX	—	2-10d	—	—	—	—	—	—	—	—	4175
3 x 9½	MIT29.5-2	—	16	3⅞	9½	2½	2⅝ ₁₆	4-16d	4-16d	2-10d x1½	240	290	2550	2000	2115	2400	1665	1230	—
	LBV3.12/9.5	—	14	3⅞	9½	2½	2½	6-16d	4-16d	2-10d x1½	265	265	2910	2885	3190	2590	1830	1495	—
	WP29.5-2	✓	12	3⅞	9½	2½	2⅝ ₁₆	2-16d	—	2-10d x1½	—	—	3635	3320	3635	3255	2600	2030	—
	WM29.5-2 ³	✓	12	3⅞	9½	2½	3¾	2-16dDPLX	—	2-10d	—	—	—	—	—	—	—	—	4175
3 x 11¼	LBV3.12/11.25	—	14	3⅞	11¼	2½	2½	6-16d	4-16d	2-10d x1½	265	265	2910	2885	3190	2590	1830	1495	—
	WP211.25-2	✓	12	3⅞	11¼	2½	2⅝ ₁₆	2-16d	—	2-10d x1½	—	—	3635	3320	3635	3255	2600	2030	—
	WM211.25-2 ³	✓	12	3⅞	11¼	2½	3¾	2-16dDPLX	—	2-10d	—	—	—	—	—	—	—	—	4175
3 x 11⅞	MIT211.88-2	—	16	3⅞	11⅞	2½	2⅝ ₁₆	4-16d	4-16d	2-10d x1½	240	290	2550	2000	2115	2400	1665	1230	—
	LBV3.12/11.88	—	14	3⅞	11⅞	2½	2½	6-16d	4-16d	2-10d x1½	265	265	2910	2885	3190	2590	1830	1495	—
	WP211.88-2	✓	12	3⅞	11⅞	2½	2⅝ ₁₆	2-16d	—	2-10d x1½	—	—	3635	3320	3635	3255	2600	2030	—
	WM211.88-2 ³	✓	12	3⅞	11⅞	2½	3¾	2-16dDPLX	—	2-10d	—	—	—	—	—	—	—	—	4175
3 x 14	LBV3.12/14	—	14	3⅞	14	2½	2½	6-16d	4-16d	2-10d x1½	265	265	2910	2885	3190	2590	1830	1495	—
3 x 16	LBV3.12/16	—	14	3⅞	16	2½	2½	6-16d	4-16d	2-10d x1½	265	265	2910	2885	3190	2590	1830	1495	—
3½ x 7¼	LBV3.56/7.25	—	14	3⅝ ₁₆	7¼	2½	2½	6-16d	4-16d	2-10d x1½	265	265	2910	2885	3190	2590	1830	1495	—
	WPU3.56/7.25	✓	12	3⅝ ₁₆	7¼	3	2⅝ ₁₆	3-16d	4-16d	6-10d x1½	775	775	4700	4880	—	4165	4165	—	—

See footnotes on page 104.

TOP FLANGE HANGERS – I-JOISTS & SCL

Engineered Wood & Structural Composite Lumber Connectors

Actual Joist Size	Model No.	Web Stiff Req'd	Ga	Dimensions				Fasteners ^{3,4,7}			Allowable Loads ^{1,4,7}								
								Solid Header ⁴		Joist	Uplift (133)	Uplift (160)	DF/SP LVL	PSL	LSL	DF/SP	SPF	DF/SCL I-Joist ⁴	Masonry ³
				Top	Face														
3½ x 9¼	ITT49.25	—	18	3⅞	9⅞	2	1⅞	4-10d	2-10d	2-10d x1½	245	285	1450	1300	1435	1615	1200	1050	—
	LBV3.56/9.25	—	14	3⅞	9¼	2½	2½	6-16d	4-16d	2-10d x1½	265	265	2910	2885	3190	2590	1830	1495	—
	HB3.56/9.25	✓	10	3⅞	9¼	3½	3	6-16d	16-16d	10-16d	2175	2610	5815	5640	6395	5700	3820	—	—
	WPI49.25	✓	12	3⅞	9¼	2½	2⅜	2-16d	—	2-10d x1½	—	—	3635	3320	3635	3255	2600	2030	—
	HWI49.25	✓	11	3⅞	9¼	2½	2½	4-16d	—	2-10d	—	—	5100	4000	4500	5285	3665	—	—
	HWU3.56/9.25	✓	10	3⅞	9¼	3¼	2½	4-16d	4-16d	6-10d	1020	1135	6335	5500	5535	6335	5415	—	—
	GLTV3.56/9.25	✓	7	3⅞	9¼	5	2⅞	4-16d	6-16d	6-16d	1370	1640	7500	7400	5750	7000	4260	—	—
	HGLTV3.56/9.25	✓	7	3⅞	9¼	6	2⅞	6-16d	12-16d	6-16d	1370	1640	10500	7800	9000	8665	6690	—	—
3½ x 9⅝	ITT49.37	—	18	3⅞	9⅞	2	1⅞	4-10d	2-10d	2-10d x1½	245	285	1450	1300	1435	1615	1200	1050	—
	LBV3.56/9.37	—	14	3⅞	9⅞	2½	2½	6-16d	4-16d	2-10d x1½	265	265	2910	2885	3190	2590	1830	1495	—
3½ x 9½	ITT49.5	—	18	3⅞	9⅞	2	1⅞	4-10d	2-10d	2-10d x1½	245	285	1450	1300	1435	1615	1200	1050	—
	MIT49.5	—	16	3⅞	9½	2½	2⅜	4-16d	4-16d	2-10d x1½	240	290	2550	2140	2115	2400	1665	1230	—
	LBV3.56/9.5	—	14	3⅞	9½	2½	2½	6-16d	4-16d	2-10d x1½	265	265	2910	2885	3190	2590	1830	1495	—
	HB3.56/9.5	✓	10	3⅞	9½	3½	3	6-16d	16-16d	10-16d	2175	2610	5815	5640	6395	5700	3820	—	—
	WPI49.5	✓	12	3⅞	9½	2½	2⅜	2-16d	—	2-10dx1½	—	—	3635	3320	3635	3255	2600	2030	—
	HWI49.5	✓	11	3⅞	9½	2½	2½	4-16d	—	2-10d	—	—	5100	4000	4500	5285	3665	—	—
	HWU3.56/9.5	✓	10	3⅞	9½	3¼	2½	4-16d	4-16d	6-10d	1020	1135	6335	5500	5535	6335	5415	—	—
	GLTV3.59	✓	7	3⅞	9½	5	2⅞	4-16d	6-16d	6-16d	1370	1640	7500	7400	5750	7000	4260	—	—
	HGLTV3.59	✓	7	3⅞	9½	6	2⅞	6-16d	12-16d	6-16d	1370	1640	10500	7800	9000	8665	6690	—	—
WM3.56/9.5 ³	✓	12	3⅞	9½	2½	3¼	2-16dDPLX	—	2-10d	—	—	—	—	—	—	—	—	4175	
3½ x 11¼	ITT411.25	—	18	3⅞	11⅞	2	1⅞	4-10d	2-10d	2-10dx1½	245	285	1450	1300	1435	1615	1200	1050	—
	LBV3.56/11.25	—	14	3⅞	11¼	2½	2½	6-16d	4-16d	2-10d x1½	265	265	2910	2885	3190	2590	1830	1495	—
	HB3.56/11.25	✓	10	3⅞	11¼	3½	3	6-16d	16-16d	10-16d	2175	2610	5815	5640	6395	5700	3820	—	—
	WPI411.25	✓	12	3⅞	11¼	2½	2⅜	2-16d	—	2-10dx1½	—	—	3635	3320	3635	3255	2600	2030	—
	HWI411.25	✓	11	3⅞	11¼	2½	2½	4-16d	—	2-10d	—	—	5100	4000	4500	5285	3665	—	—
	HWU3.56/11.25	✓	10	3⅞	11¼	3¼	2½	4-16d	4-16d	6-10d	1020	1135	6335	5500	5535	6335	5415	—	—
	GLTV3.56/11.25	✓	7	3⅞	11¼	5	2⅞	4-16d	6-16d	6-16d	1370	1640	7500	7400	5750	7000	4260	—	—
	HGLTV3.56/11.25	✓	7	3⅞	11¼	6	2⅞	6-16d	12-16d	6-16d	1370	1640	10500	7800	9000	8665	6690	—	—
3½ x 11⅞	ITT411.88	—	18	3⅞	11⅞	2	1⅞	4-10d	2-10d	2-10dx1½	245	285	1450	1300	1435	1615	1200	1050	—
	MIT411.88	—	16	3⅞	11⅞	2½	2⅜	4-16d	4-16d	2-10dx1½	240	290	2550	2140	2115	2400	1665	1230	—
	BA3.56/11.88 (Min)	—	14	3⅞	11⅞	3	2½	6-16d	10-16d	2-10d x1½	265	315	4015	3705	4005	3435	2665	1495	—
	BA3.56/11.88 (Max)	✓	14	3⅞	11⅞	3	2½	6-16d	10-16d	8-10d x1½	1055	1170	4715	4320	4500	3800	2665	1495	—
	LBV3.56/11.88	—	14	3⅞	11⅞	2½	2½	6-16d	4-16d	2-10d x1½	265	265	2910	2885	3190	2590	1830	1495	—
	B3.56/11.88	✓	12	3⅞	11⅞	2½	2½	6-16d	8-16d	6-16d	1010	1010	4135	3355	4500	3800	2650	—	—
	HB3.56/11.88	✓	10	3⅞	11⅞	3½	3	6-16d	16-16d	10-16d	2175	2610	5815	5640	6395	5700	3820	—	—
	WPI411.88	✓	12	3⅞	11⅞	2½	2⅜	2-16d	—	2-10dx1½	—	—	3635	3320	3635	3255	2600	2030	—
	HUI411.88TF	✓	12	3⅞	11⅞	2½	2½	4-16d	12-16d	6-10d	935	1125	4550	4550	4550	4550	—	—	—
	WPU3.56/11.88	✓	12	3⅞	11⅞	3	2⅜	3-16d	4-16d	6-10dx1½	775	775	4700	4880	—	4165	4165	—	—
	HWI411.88	✓	11	3⅞	11⅞	2½	2½	4-16d	—	2-10d	—	—	5100	4000	4500	5285	3665	—	—
	HWU3.56/11.88	✓	10	3⅞	11⅞	3¼	2½	4-16d	4-16d	6-10d	1020	1135	6335	5500	5535	6335	5415	—	—
	GLTV3.511	✓	7	3⅞	11⅞	5	2⅞	4-16d	6-16d	6-16d	1370	1640	7500	7400	5750	7000	4260	—	—
	HGLTV3.511	✓	7	3⅞	11⅞	6	2⅞	6-16d	12-16d	6-16d	1370	1640	10500	7800	9000	8665	6690	—	—
	ITTM411.88 ³	—	18	3⅞	11⅞	2	3½	—	—	2-10dx1½	—	—	—	—	—	—	—	—	1545
WM3.56/11.88 ³	✓	12	3⅞	11⅞	2½	3¼	2-16dDPLX	—	2-10d	—	—	—	—	—	—	—	—	4175	
3½ x 12	LBV3.56/12	—	14	3⅞	12	2½	2½	6-16d	4-16d	2-10d x1½	265	265	2910	2885	3190	2590	1830	1495	—
	HB3.56/12	✓	10	3⅞	12	3½	3	6-16d	16-16d	10-16d	2175	2610	5815	5640	6395	5700	3820	—	—
	WPI412	✓	12	3⅞	12	2½	2⅜	2-16d	—	2-10dx1½	—	—	3635	3320	3650	3255	2600	2030	—
	HWI412	✓	11	3⅞	12	2½	2½	4-16d	—	2-10d	—	—	5100	4000	4500	5285	3665	—	—
	GLTV3.512	✓	7	3⅞	12	5	2⅞	4-16d	6-16d	6-16d	1370	1640	7500	7400	5750	7000	4260	—	—
	HGLTV3.512	✓	7	3⅞	12	6	2⅞	6-16d	12-16d	6-16d	1370	1640	10500	7800	9000	8665	6690	—	—
	WMI412 ³	✓	12	3⅞	12	2½	3¼	2-16dDPLX	—	2-10d	—	—	—	—	—	—	—	—	4175

See footnotes on page 104.

TOP FLANGE HANGERS – I-JOISTS & SCL

Actual Joist Size	Model No.	Web Stiff Req'd	Ga	Dimensions				Fasteners ^{3,4,7}			Allowable Loads ^{1,4,7}								
								Solid Header ⁴		Joist	Uplift (133)	Uplift (160)	DF/SP LVL	PSL	LSL	DF/SP	SPF	DF/SCL I-Joist ⁴	Masonry ³
				W	H	B	TF	Top	Face										
3½ x 13	ITT413	—	18	3⅞	12½	2	1⅝	4-10d	2-10d	2-10d×1½	245	285	1450	1300	1435	1615	1200	1050	—
	LBV3.56/13	—	14	3⅞	13	2½	2½	6-16d	4-16d	2-10d×1½	265	265	2910	2885	3190	2590	1830	1495	—
3½ x 14	ITT414	—	18	3⅞	13½	2	1⅝	4-10d	2-10d	2-10d×1½	245	285	1450	1300	1435	1615	1200	1050	—
	MIT414	—	16	3⅞	14	2½	2⅝	4-16d	4-16d	2-10d×1½	240	290	2550	2140	2115	2400	1665	1230	—
	BA3.56/14 (Min)	—	14	3⅞	14	3	2½	6-16d	10-16d	2-10d×1½	265	315	4015	3705	4005	3435	2665	1495	—
	BA3.56/14 (Max)	✓	14	3⅞	14	3	2½	6-16d	10-16d	8-10d×1½	1055	1170	4715	4320	4500	3800	2665	1495	—
	LBV3.56/14	—	14	3⅞	14	2½	2½	6-16d	4-16d	2-10d×1½	265	265	2910	2885	3190	2590	1830	1495	—
	B3.56/14	✓	12	3⅞	14	2½	2½	6-16d	8-16d	6-16d	1010	1010	4135	3355	4500	3800	2650	—	—
	HB3.56/14	✓	10	3⅞	14	3½	3	6-16d	16-16d	10-16d	2175	2610	5815	5640	6395	5700	3820	—	—
	WPI414	✓	12	3⅞	14	2½	2⅝	2-16d	—	2-10d×1½	—	—	3635	3320	3650	3255	2600	2030	—
	HUI414TF	✓	12	3⅞	14	2½	2½	4-16d	14-16d	8-10d	1250	1500	4830	4830	4830	4830	—	—	—
	WPU3.56/14	✓	12	3⅞	14	3	2⅝	3-16d	4-16d	6-10d×1½	775	775	4700	4880	—	4165	4165	—	—
	HWI414	✓	11	3⅞	14	2½	2½	4-16d	—	2-10d	—	—	5100	4000	4500	5285	3665	—	—
	HWU3.56/14	✓	10	3⅞	14	3¼	2½	4-16d	4-16d	6-10d	1020	1135	6335	5500	5535	6335	5415	—	—
	GLTV3.514	✓	7	3⅞	14	5	2⅞	4-16d	6-16d	6-16d	1370	1640	7500	7400	5750	7000	4260	—	—
	HGLTV3.514	✓	7	3⅞	14	6	2⅞	6-16d	12-16d	6-16d	1370	1640	10500	7800	9000	8665	6690	—	—
	ITTM414 ³	—	18	3⅞	13½	2	3½	—	—	2-10d×1½	—	—	—	—	—	—	—	—	1545
	WMI414 ³	✓	12	3⅞	14	2½	3¼	2-16dDPLX	—	2-10d	—	—	—	—	—	—	—	—	4175
3½ x 16	ITT416	—	18	3⅞	15½	2	1⅝	4-10d	2-10d	2-10d×1½	245	285	1450	1300	1435	1615	1200	1050	—
	MIT416	—	16	3⅞	16	2½	2⅝	4-16d	4-16d	2-10d×1½	240	290	2550	2140	2115	2400	1665	1230	—
	BA3.56/16 (Min)	—	14	3⅞	16	3	2½	6-16d	10-16d	2-10d×1½	265	315	4015	3705	4005	3435	2665	1495	—
	BA3.56/16 (Max)	✓	14	3⅞	16	3	2½	6-16d	10-16d	8-10d×1½	1055	1170	4715	4320	4500	3800	2665	1495	—
	LBV3.56/16	—	14	3⅞	16	2½	2½	6-16d	4-16d	2-10d×1½	265	265	2910	2885	3190	2590	1830	1495	—
	B3.56/16	✓	12	3⅞	16	2½	2½	6-16d	8-16d	6-16d	1010	1010	4135	3355	4500	3800	2650	—	—
	HB3.56/16	✓	10	3⅞	16	3½	3	6-16d	16-16d	10-16d	2175	2610	5815	5640	6395	5700	3820	—	—
	WPI416	✓	12	3⅞	16	2½	2⅝	2-16d	—	2-10d×1½	—	—	3635	3320	3650	3255	2600	2030	—
	WPU3.56/16	✓	12	3⅞	16	3	2⅝	3-16d	4-16d	6-10d×1½	775	775	4700	4880	—	4165	4165	—	—
	HWI416	✓	11	3⅞	16	2½	2½	4-16d	—	2-10d	—	—	5100	4000	4500	5285	3665	—	—
	HWU3.56/16	✓	10	3⅞	16	3¼	2½	4-16d	4-16d	6-10d	1020	1135	6335	5500	5535	6335	5415	—	—
	GLTV3.516	✓	7	3⅞	16	5	2⅞	4-16d	6-16d	6-16d	1370	1640	7500	7400	5750	7000	4260	—	—
	ITTM416 ³	—	18	3⅞	15½	2	3½	—	—	2-10d×1½	—	—	—	—	—	—	—	—	1545
	HGLTV3.516	✓	7	3⅞	16	6	2⅞	6-16d	12-16d	6-16d	1370	1640	10500	7800	9000	8665	6690	—	—
	WMI416 ³	✓	12	3⅞	16	2½	3¼	2-16dDPLX	—	2-10d	—	—	—	—	—	—	—	—	4175
3½ x 18	MIT418	—	16	3⅞	18	2½	2⅝	4-16d	4-16d	2-10d×1½	240	290	2550	2140	2115	2400	1665	1230	—
	HIT418	—	16	3⅞	18	3	2⅝	4-16d	6-16d	2-10d×1½	240	290	2550	2050	2500	3050	1950	—	—
	LBV3.56/18	—	14	3⅞	18	2½	2½	6-16d	4-16d	2-10d×1½	265	265	2910	2885	3190	2590	1830	1495	—
	HB3.56/18	✓	10	3⅞	18	3½	3	6-16d	16-16d	10-16d	2175	2610	5815	5640	6395	5700	3820	—	—
	WPI418	✓	12	3⅞	18	2½	2⅝	2-16d	—	2-10d×1½	—	—	3635	3320	3650	3255	2600	2030	—
	WPU3.56/18	✓	12	3⅞	18	3	2⅝	3-16d	4-16d	6-10d×1½	775	775	4700	4880	—	4165	4165	—	—
	HWI418	✓	11	3⅞	18	2½	2½	4-16d	—	2-10d	—	—	5100	4000	4500	5285	3665	—	—
	HWU3.56/18	✓	10	3⅞	18	3¼	2½	4-16d	4-16d	6-10d	1020	1135	6335	5500	5535	6335	5415	—	—
	GLTV3.518	✓	7	3⅞	18	5	2⅞	4-16d	6-16d	6-16d	1370	1640	7500	7400	5750	7000	4260	—	—
	HGLTV3.518	✓	7	3⅞	18	6	2⅞	6-16d	12-16d	6-16d	1370	1640	10500	7800	9000	8665	6690	—	—
	WMI418 ³	✓	12	3⅞	18	2½	3¼	2-16dDPLX	—	2-10d	—	—	—	—	—	—	—	—	4175
3½ x 18¾	GLTV3.56/18.75	✓	7	3⅞	18¾	5	2⅞	4-16d	6-16d	6-16d	1370	1640	7500	7400	5750	7000	4260	—	—
	HGLTV3.56/18.75	✓	7	3⅞	18¾	6	2⅞	6-16d	12-16d	6-16d	1370	1640	10500	7800	9000	8665	6690	—	—
3½ x 20	MIT420	—	16	3⅞	20	2½	2⅝	4-16d	4-16d	2-10d×1½	240	290	2550	2140	2115	2400	1665	1230	—
	HIT420	—	16	3⅞	20	3	2⅝	4-16d	6-16d	2-10d×1½	240	290	2550	2050	2500	3050	1950	—	—
	LBV3.56/20	—	14	3⅞	20	2½	2½	6-16d	4-16d	2-10d×1½	265	265	2910	2885	3190	2590	1830	1495	—
	HB3.56/20	✓	10	3⅞	20	3½	3	6-16d	16-16d	10-16d	2175	2610	5815	5640	6395	5700	3820	—	—
	WPI420	✓	12	3⅞	20	2½	2⅝	2-16d	—	2-10d×1½	—	—	3635	3320	3650	3255	2600	2030	—
	WPU3.56/20	✓	12	3⅞	20	3	2⅝	3-16d	4-16d	6-10d×1½	485	485	4700	4880	—	4165	4165	—	—

See footnotes on page 104.

TOP FLANGE HANGERS – I-JOISTS & SCL

Actual Joist Size	Model No.	Web Stiff Req'd	Ga	Dimensions				Fasteners ^{3,4,7}			Allowable Loads ^{1,4,7}								
								Solid Header ⁴		Joist	Uplift (133)	Uplift (160)	DF/SP LVL	PSL	LSL	DF/SP	SPF	DF/SCL I-Joist ⁴	Masonry ³
				Top	Face	W	H	B	TF										
3½ x 20	HWI420	✓	11	3⅞	20	2½	2½	4-16d	—	2-10d	—	—	5100	4000	4500	5285	3665	—	—
	HWU3.56/20	✓	10	3⅞	20	3¼	2½	4-16d	4-16d	6-10d	765	765	6335	5500	5535	6335	5415	—	—
	GLTV3.520	✓	7	3⅞	20	5	2⅞	4-16d	6-16d	6-16d	1370	1640	7500	7400	5750	7000	4260	—	—
	HGLTV3.520	✓	7	3⅞	20	6	2⅞	6-16d	12-16d	6-16d	1370	1640	10500	7800	9000	8665	6690	—	—
	WMI420 ³	✓	12	3⅞	20	2½	3¾	2-16dDPLX	—	2-10d	—	—	—	—	—	—	—	—	4175
3½ x 22	HIT422	—	16	3⅞	22	3	2⅞	4-16d	6-16d	2-10d×1½	240	290	2550	2050	2500	3050	1950	—	—
	LBV3.56/22	—	14	3⅞	22	2½	2½	6-16d	4-16d	2-10d×1½	265	265	2910	2885	3190	2590	1830	1495	—
	HB3.56/22	✓	10	3⅞	22	3½	3	6-16d	16-16d	10-16d	2175	2610	5815	5640	6395	5700	3820	—	—
	WPI422	✓	12	3⅞	22	2½	2⅜	2-16d	—	2-10d×1½	—	—	3635	3320	3650	3255	2600	2030	—
	WPU3.56/22	✓	12	3⅞	22	3	2⅝	3-16d	4-16d	6-10d×1½	485	485	4700	4880	—	4165	4165	—	—
3½ x 24	HWI422	✓	11	3⅞	22	2½	2½	4-16d	—	4-10d	—	—	5100	4000	4500	5285	3665	—	—
	HIT424	—	16	3⅞	24	3	2⅞	4-16d	6-16d	2-10d×1½	240	290	2550	2050	2500	3050	1950	—	—
	LBV3.56/24	—	14	3⅞	24	2½	2½	6-16d	4-16d	2-10d×1½	265	265	2910	2885	3190	2590	1830	1495	—
	HB3.56/24	✓	10	3⅞	24	3½	3	6-16d	16-16d	10-16d	2175	2610	5815	5640	6395	5700	3820	—	—
	WPI424	✓	12	3⅞	24	2½	2⅜	2-16d	—	2-10d×1½	—	—	3635	3320	3650	3255	2600	2030	—
	WPU3.56/24	✓	12	3⅞	24	3	2⅝	3-16d	4-16d	6-10d×1½	315	315	4700	4880	—	4165	4165	—	—
3½ x 26	HWI424	✓	11	3⅞	24	2½	2½	4-16d	—	4-10d	—	—	5100	4000	4500	5285	3665	—	—
	HIT426	—	16	3⅞	26	3	2⅞	4-16d	6-16d	2-10d×1½	240	290	2550	2050	2500	3050	1950	—	—
	LBV3.56/26	—	14	3⅞	26	2½	2½	6-16d	4-16d	2-10d×1½	265	265	2910	2885	3190	2590	1830	1495	—
	HB3.56/26	✓	10	3⅞	26	3½	3	6-16d	16-16d	10-16d	2175	2610	5815	5640	6395	5700	3820	—	—
	WPI426	✓	12	3⅞	26	2½	2⅜	2-16d	—	2-10d×1½	—	—	3635	3320	3650	3255	2600	2030	—
	WPU3.56/26	✓	12	3⅞	26	3	2⅝	3-16d	4-16d	6-10d×1½	315	315	4700	4880	—	4165	4165	—	—
3½ x 28	HWI426	✓	11	3⅞	26	2½	2½	4-16d	—	4-10d	—	—	5100	4000	4500	5285	3665	—	—
	LBV3.56/28	—	14	3⅞	28	2½	2½	6-16d	4-16d	2-10d×1½	265	265	2910	2885	3190	2590	1830	1495	—
	HB3.56/28	✓	10	3⅞	28	3½	3	6-16d	16-16d	10-16d	2175	2610	5815	5640	6395	5700	3820	—	—
	WPI428	✓	12	3⅞	28	2½	2⅜	2-16d	—	2-10d×1½	—	—	3635	3320	3650	3255	2600	2030	—
	WPU3.56/28	✓	12	3⅞	28	3	2⅝	3-16d	4-16d	6-10d×1½	315	315	4700	4880	—	4165	4165	—	—
3½ x 30	HWI428	✓	11	3⅞	28	2½	2½	4-16d	—	4-10d	—	—	5100	4000	4500	5285	3665	—	—
	LBV3.56/30	—	14	3⅞	30	2½	2½	6-16d	4-16d	2-10d×1½	265	265	2910	2885	3190	2590	1830	1495	—
	HB3.56/30	✓	10	3⅞	30	3½	3	6-16d	16-16d	10-16d	2175	2610	5815	5640	6395	5700	3820	—	—
	WPI430	✓	12	3⅞	30	2½	2⅜	2-16d	—	2-10d×1½	—	—	3635	3320	3650	3255	2600	2030	—
3½ x 32	HWI430	✓	11	3⅞	30	2½	2½	4-16d	—	4-10d	—	—	5100	4000	4500	5285	3665	—	—
	WPI432	✓	12	3⅞	32	2½	2⅜	2-16d	—	2-10d×1½	—	—	3635	3320	3650	3255	2600	2030	—
4x9½	LBV4.12/9.5	—	14	4⅞	9½	2½	2½	6-16d	4-16d	2-10d×1½	265	265	2910	2885	3190	2590	1830	1495	—
4x11⅞	LBV4.12/11.88	—	14	4⅞	11⅞	2½	2½	6-16d	4-16d	2-10d×1½	265	265	2910	2885	3190	2590	1830	1495	—
4x14	LBV4.12/14	—	14	4⅞	14	2½	2½	6-16d	4-16d	2-10d×1½	265	265	2910	2885	3190	2590	1830	1495	—
4x16	LBV4.12/16	—	14	4⅞	16	2½	2½	6-16d	4-16d	2-10d×1½	265	265	2910	2885	3190	2590	1830	1495	—
4⅞ x 9½	MIT4.28/9.5	—	16	4⅞	9½	2½	2⅝	4-16d	4-16d	2-10d×1½	240	290	2550	2140	2115	2400	1665	1230	—
	LBV4.28/9.5	—	14	4⅞	9½	2½	2½	6-16d	4-16d	2-10d×1½	265	265	2910	2885	3190	2590	1830	1495	—
4⅞ x 11⅞	MIT4.28/11.88	—	16	4⅞	11⅞	2½	2⅝	4-16d	4-16d	2-10d×1½	240	290	2550	2140	2115	2400	1665	1230	—
	LBV4.28/11.88	—	14	4⅞	11⅞	2½	2½	6-16d	4-16d	2-10d×1½	265	265	2910	2885	3190	2590	1830	1495	—
4⅞ x 14	MIT4.28/14	—	16	4⅞	14	2½	2⅝	4-16d	4-16d	2-10d×1½	240	290	2550	2140	2115	2400	1665	1230	—
	LBV4.28/14	—	14	4⅞	14	2½	2½	6-16d	4-16d	2-10d×1½	265	265	2910	2885	3190	2590	1830	1495	—
4⅞ x 16	LBV4.28/16	—	14	4⅞	16	2½	2½	6-16d	4-16d	2-10d×1½	265	265	2910	2885	3190	2590	1830	1495	—
4½ - 4⅞ x 9½	MIT359.5-2	—	16	4¾	9½	2½	2⅝	4-16d	4-16d	2-10d×1½	240	290	2550	2140	2115	2400	1665	1230	—
	LBV4.75/9.5	—	14	4¾	9½	2½	2½	6-16d	4-16d	2-10d×1½	265	265	2910	2885	3190	2590	1830	1495	—
	WP359.5-2	✓	12	4¾	9½	2½	2⅝	3-16d	—	2-10d	—	—	3635	3320	3650	3255	2600	2030	—
4½ - 4⅞ x 11⅞	MIT3511.88-2	—	16	4¾	11⅞	2½	2⅝	4-16d	4-16d	2-10d×1½	240	290	2550	2140	2115	2400	1665	1230	—
	LBV4.75/11.88	—	14	4¾	11⅞	2½	2½	6-16d	4-16d	2-10d×1½	265	265	2910	2885	3190	2590	1830	1495	—
	WP3511.88-2	✓	12	4¾	11⅞	2½	2⅝	3-16d	—	2-10d×1½	—	—	3635	3320	3650	3255	2600	2030	—
	WM3511.88-2 ³	✓	12	4¾	11⅞	2½	3¾	2-16dDPLX	—	2-10d	—	—	—	—	—	—	—	—	4175

TOP FLANGE HANGERS – I-JOISTS & SCL

Actual Joist Size	Model No.	Web Stiff Req'd	Ga	Dimensions				Fasteners ^{3,4,7}			Allowable Loads ^{1,4,7}								
								Solid Header ⁴		Joist	Uplift (133)	Uplift (160)	DF/SP LVL	PSL	LSL	DF/SP	SPF	DF/SCL I-Joist ⁴	Masonry ³
				Top	Face														
4½ - 4⅝ x 14	MIT3514-2	—	16	4¾	14	2½	2⅝	4-16d	4-16d	2-10d×1½	240	290	2550	2140	2115	2400	1665	1230	—
	LBV4.75/14	—	14	4¾	14	2½	2½	6-16d	4-16d	2-10d×1½	265	265	2910	2885	3190	2590	1830	1495	—
	WP3514-2	✓	12	4¾	14	2½	2⅝	3-16d	—	2-10d×1½	—	—	3635	3320	3650	3255	2600	2030	—
	WM3514-2 ³	✓	12	4¾	14	2½	3¾	2-16dDPLX	—	2-10d	—	—	—	—	—	—	—	—	4175
4½ - 4⅝ x 16	LBV4.75/16	—	14	4¾	16	2½	2½	6-16d	4-16d	2-10d×1½	265	265	2910	2885	3190	2590	1830	1495	—
	WP3516-2	✓	12	4¾	16	2½	2⅝	3-16d	—	2-10d×1½	—	—	3635	3320	3650	3255	2600	2030	—
	WM3516-2	✓	12	4¾	16	2½	3¾	2-16dDPLX	—	2-10d	—	—	—	—	—	—	—	—	4175
4½ - 4⅝ x 18	LBV4.75/18	—	14	4¾	18	2½	2½	6-16d	4-16d	2-10d×1½	265	265	2910	2885	3190	2590	1830	1495	—
	WP3518-2	✓	12	4¾	18	2½	2⅝	3-16d	—	2-10d×1½	—	—	3635	3320	3650	3255	2600	2030	—
	WM3518-2 ³	✓	12	4¾	18	2½	3¾	2-16dDPLX	—	2-10d	—	—	—	—	—	—	—	—	4175
4½ - 4⅝ x 20	LBV4.75/20	—	14	4¾	20	2½	2½	6-16d	4-16d	2-10d×1½	265	265	2910	2885	3190	2590	1830	1495	—
	WP3520-2	✓	12	4¾	20	2½	2⅝	3-16d	—	2-10d×1½	—	—	3635	3320	3650	3255	2600	2030	—
	WM3520-2 ³	✓	12	4¾	20	2½	3¾	2-16dDPLX	—	2-10d	—	—	—	—	—	—	—	—	4175
5 x 9¼	LBV5.12/9.25	—	14	5½	9¼	2½	2½	6-16d	4-16d	2-10d×1½	265	265	2910	2885	3190	2460	1830	1495	—
5 x 9½	MIT39.5-2	—	16	5½	9½	2½	2⅝	4-16d	4-16d	2-10d×1½	240	290	2550	2140	2115	2400	1665	1230	—
	LBV5.12/9.5	—	14	5½	9½	2½	2½	6-16d	4-16d	2-10d×1½	265	265	2910	2885	3190	2460	1830	1495	—
	WPI39.5-2	✓	12	5½	9½	2½	2⅝	3-16d	—	2-10d×1½	—	—	3635	3320	3650	3255	2600	2030	—
5 x 11¼	LBV5.12/11.25	—	14	5½	11¼	2½	2½	6-16d	4-16d	2-10d×1½	265	265	2910	2885	3190	2460	1830	1495	—
5 x 11⅝	MIT311.88-2	—	16	5½	11⅝	2½	2⅝	4-16d	4-16d	2-10d×1½	240	290	2550	2140	2115	2400	1665	1230	—
	LBV5.12/11.88	—	14	5½	11⅝	2½	2½	6-16d	4-16d	2-10d×1½	265	265	2910	2885	3190	2460	1830	1495	—
	WPI311.88-2	✓	12	5½	11⅝	2½	2⅝	3-16d	—	2-10d×1½	—	—	3635	3320	3650	3255	2600	2030	—
5 x 14	MIT314-2	—	16	5½	14	2½	2⅝	4-16d	4-16d	2-10d×1½	240	290	2550	2140	2115	2400	1665	1230	—
	LBV5.12/14	—	14	5½	14	2½	2½	6-16d	4-16d	2-10d×1½	265	265	2910	2885	3190	2460	1830	1495	—
	WPI314-2	✓	12	5½	14	2½	2⅝	3-16d	—	2-10d×1½	—	—	3635	3320	3650	3255	2600	2030	—
5 x 16	MIT5.12/16	—	16	5½	16	2½	2⅝	4-16d	4-16d	2-10d×1½	240	290	2550	2140	2115	2400	1665	1230	—
	LBV5.12/16	—	14	5½	16	2½	2½	6-16d	4-16d	2-10d×1½	265	265	2910	2885	3190	2460	1830	1495	—
	HB5.12/16	✓	10	5½	16	3½	3	6-16d	16-16d	10-16d	2175	2610	5815	5640	6395	5700	3820	—	—
	WPI316-2	✓	12	5½	16	2½	2⅝	3-16d	—	2-10d×1½	—	—	3635	3320	3650	3255	2600	2030	—
5 x 18	B5.12/18	✓	12	5½	18	2½	2½	6-16d	8-16d	6-16d	1010	1010	4135	3355	4500	3800	2650	—	—
	HB5.12/18	✓	10	5½	18	3½	3	6-16d	16-16d	10-16d	2175	2610	5815	5640	6395	5700	3820	—	—
	WPI318-2	✓	12	5½	18	2½	2⅝	3-16d	—	2-10d×1½	—	—	3635	3320	3650	3255	2600	2030	—
5 x 20	B5.12/20	✓	12	5½	20	2½	2½	6-16d	8-16d	6-16d	1010	1010	4135	3355	4500	3800	2650	—	—
	HB5.12/20	✓	10	5½	20	3½	3	6-16d	16-16d	10-16d	2175	2610	5815	5640	6395	5700	3820	—	—
	WPI320-2	✓	12	5½	20	2½	2⅝	3-16d	—	2-10d×1½	—	—	3635	3320	3650	3255	2600	2030	—
5 x 22	B5.12/22	✓	12	5½	22	2½	2½	6-16d	8-16d	6-16d	1010	1010	4135	3355	4500	3800	2650	—	—
	HB5.12/22	✓	10	5½	22	3½	3	6-16d	16-16d	10-16d	2175	2610	5815	5640	6395	5700	3820	—	—
	WPI322-2	✓	12	5½	22	2½	2⅝	3-16d	—	2-10d×1½	—	—	3635	3320	3650	3255	2600	2030	—
5 x 24	B5.12/24	✓	12	5½	24	2½	2½	6-16d	8-16d	6-16d	1010	1010	4135	3355	4500	3800	2650	—	—
	HB5.12/24	✓	10	5½	24	3½	3	6-16d	16-16d	10-16d	2175	2610	5815	5640	6395	5700	3820	—	—
	WPI324-2	✓	12	5½	24	2½	2⅝	3-16d	—	2-10d×1½	—	—	3635	3320	3650	3255	2600	2030	—
5 x 26	B5.12/26	✓	12	5½	26	2½	2½	6-16d	8-16d	6-16d	1010	1010	4135	3355	4500	3800	2650	—	—
	HB5.12/26	✓	10	5½	26	3½	3	6-16d	16-16d	10-16d	2175	2610	5815	5640	6395	5700	3820	—	—
	WPI326-2	✓	12	5½	26	2½	2⅝	3-16d	—	2-10d×1½	—	—	3635	3320	3650	3255	2600	2030	—
5 x 28	B5.12/28	✓	12	5½	28	2½	2½	6-16d	8-16d	6-16d	1010	1010	4135	3355	4500	3800	2650	—	—
	HB5.12/28	✓	10	5½	28	3½	3	6-16d	16-16d	10-16d	2175	2610	5815	5640	6395	5700	3820	—	—
5 x 30	B5.12/30	✓	12	5½	30	2½	2½	6-16d	8-16d	6-16d	1010	1010	4135	3355	4500	3800	2650	—	—
	HB5.12/30	✓	10	5½	30	3½	3	6-16d	16-16d	10-16d	2175	2610	5815	5640	6395	5700	3820	—	—
5¼ x 7¼	HB5.50/7.25	✓	10	5½	7¼	3½	3	6-16d	16-16d	10-16d	2175	2610	5815	5640	6395	5700	3820	—	—
	WPU5.50/7.25	✓	12	5½	7¼	3	2⅝	3-16d	4-16d	6-10d	910	935	4700	4880	—	4165	4165	—	—

See footnotes on page 104.

TOP FLANGE HANGERS – I-JOISTS & SCL

Actual Joist Size	Model No.	Web Stiff Req'd	Ga	Dimensions				Fasteners ^{3,4,7}			Allowable Loads ^{1,4,7}								
								Solid Header ⁴		Joist	Uplift (133)	Uplift (160)	DF/SP LVL	PSL	LSL	DF/SP	SPF	DF/SCL I-Joist ⁴	Masonry ³
				W	H	B	TF	Top	Face										
5¼ x 9¼	HB5.50/9.25	✓	10	5½	9¼	3½	3	6-16d	16-16d	10-16d	2175	2610	5815	5640	6395	5700	3820	—	—
	HWU5.50/9.25	✓	10	5½	9¼	3¼	2½	4-16d	4-16d	6-10d	1020	1135	6000	5500	5535	6000	5415	—	—
	GLTV5.50/9.25	✓	7	5½	9¼	5	2⅞	4-16d	6-16d	6-16d	1370	1640	7500	7400	5750	7000	4260	—	—
5¼ x 9½	HB5.50/9.5	✓	10	5½	9½	3½	3	6-16d	16-16d	10-16d	2175	2610	5815	5640	6395	5700	3820	—	—
	WP5.50/9.5	✓	12	5½	9½	2½	2⅞	3-16d	—	2-10d	—	—	3635	3320	3650	3255	2600	2030	—
	HWU5.50/9.5	✓	10	5½	9½	3¼	2½	4-16d	4-16d	6-10d	1020	1135	6000	5500	5535	6000	5415	—	—
	GLTV5.59	✓	7	5½	9½	5	2⅞	4-16d	6-16d	6-16d	1370	1640	7500	7400	5750	7000	4260	—	—
	HGLTV5.59	✓	7	5½	9½	6	2⅞	6-16d	12-16d	6-16d	1370	1640	10500	7800	9000	8665	6690	—	—
	WM5.50/9.5 ³	✓	12	5½	9½	2½	3¾	2-16dDPLX	—	2-10d	—	—	—	—	—	—	—	—	4175
5¼ x 11¼	HB5.50/11.25	✓	10	5½	11¼	3½	3	6-16d	16-16d	10-16d	2175	2610	5815	5640	6395	5700	3820	—	—
	HWU5.50/11.25	✓	10	5½	11¼	3¼	2½	4-16d	4-16d	6-10d	1020	1135	6000	5500	5535	6000	5415	—	—
	GLTV5.50/11.25	✓	7	5½	11¼	5	2⅞	4-16d	6-16d	6-16d	1370	1640	7500	7400	5750	7000	4260	—	—
5¼ x 11⅞	HB5.50/11.88	✓	10	5½	11⅞	3½	3	6-16d	16-16d	10-16d	2175	2610	5815	5640	6395	5700	3820	—	—
	WP5.50/11.88	✓	12	5½	11⅞	2½	2⅞	3-16d	—	2-10d	—	—	3635	3320	3650	3255	2600	2030	—
	HWU5.50/11.88	✓	10	5½	11⅞	3¼	2½	4-16d	4-16d	6-10d	1020	1135	6000	5500	5535	6000	5415	—	—
	GLTV5.511	✓	7	5½	11⅞	5	2⅞	4-16d	6-16d	6-16d	1370	1640	7500	7400	5750	7000	4260	—	—
	HGLTV5.511	✓	7	5½	11⅞	6	2⅞	6-16d	12-16d	6-16d	1370	1640	10500	7800	9000	8665	6690	—	—
	WM5.50/11.88 ³	✓	12	5½	11⅞	2½	3¾	2-16dDPLX	—	2-10d	—	—	—	—	—	—	—	—	4175
5¼ x 12	HB5.50/12	✓	10	5½	12	3½	3	6-16d	16-16d	10-16d	2175	2610	5815	5640	6395	5700	3820	—	—
	HWU5.50/12	✓	10	5½	12	3¼	2½	4-16d	4-16d	6-10d	1020	1135	6000	5500	5535	6000	5415	—	—
	GLTV5.512	✓	7	5½	12	5	2⅞	4-16d	6-16d	6-16d	1370	1640	7500	7400	5750	7000	4260	—	—
	HGLTV5.512	✓	7	5½	12	6	2⅞	6-16d	12-16d	6-16d	1370	1640	10500	7800	9000	8665	6690	—	—
5¼ x 14	HB5.50/14	✓	10	5½	14	3½	3	6-16d	16-16d	10-16d	2175	2610	5815	5640	6395	5700	3820	—	—
	HWU5.50/14	✓	10	5½	14	3¼	2½	4-16d	4-16d	6-10d	1020	1135	6000	5500	5535	6000	5415	—	—
	GLTV5.514	✓	7	5½	14	5	2⅞	4-16d	6-16d	6-16d	1370	1640	7500	7400	5700	7000	4260	—	—
	HGLTV5.514	✓	7	5½	14	6	2⅞	6-16d	12-16d	6-16d	1370	1640	10500	7800	9000	8665	6690	—	—
5¼ x 16	HB5.50/16	✓	10	5½	16	3½	3	6-16d	16-16d	10-16d	2175	2610	5815	5640	6395	5700	3820	—	—
	HWU5.50/16	✓	10	5½	16	3¼	2½	4-16d	4-16d	6-10d	1020	1135	6000	5500	5535	6000	5415	—	—
	GLTV5.516	✓	7	5½	16	5	2⅞	4-16d	6-16d	6-16d	1370	1640	7500	7400	5750	7000	4260	—	—
	HGLTV5.516	✓	7	5½	16	6	2⅞	6-16d	12-16d	6-16d	1370	1640	10500	7800	9000	8665	6690	—	—
5¼ x 18	HB5.50/18	✓	10	5½	18	3½	3	6-16d	16-16d	10-16d	2175	2610	5815	5640	6395	5700	3820	—	—
	HWU5.50/18	✓	10	5½	18	3¼	2½	4-16d	4-16d	6-10d	1020	1135	6000	5500	5535	6000	5415	—	—
	GLTV5.518	✓	7	5½	18	5	2⅞	4-16d	6-16d	6-16d	1370	1640	7500	7400	5750	7000	4260	—	—
	HGLTV5.518	✓	7	5½	18	6	2⅞	6-16d	12-16d	6-16d	1370	1640	10500	7800	9000	8665	6690	—	—
5¼ x 18¾	GLTV5.50/18.75	✓	7	5½	18¾	5	2⅞	4-16d	6-16d	6-16d	1370	1640	7500	7400	5750	7000	4260	—	—
	HGLTV5.50/18.75	✓	7	5½	18¾	6	2⅞	6-16d	12-16d	6-16d	1370	1640	10500	7800	9000	8665	6690	—	—
5¼ x 20	HB5.50/20	✓	10	5½	20	3½	3	6-16d	16-16d	10-16d	2175	2610	5815	5640	6395	5700	3820	—	—
	HWU5.50/20	✓	10	5½	20	3¼	2½	4-16d	4-16d	6-10d	765	765	6000	5500	5535	6000	5415	—	—
	GLTV5.520	✓	7	5½	20	5	2⅞	4-16d	6-16d	6-16d	1370	1640	7500	7400	5750	7000	4260	—	—
	HGLTV5.520	✓	7	5½	20	6	2⅞	6-16d	12-16d	6-16d	1370	1640	10500	7800	9000	8665	6690	—	—
7 x 7¼	HWU7.12/7.25	✓	10	7½	7¼	3¼	2½	4-16d	4-16d	6-10d	1020	1135	6000	5500	5535	6000	5415	—	—
7 x 9¼	HB7.12/9.25	✓	10	7½	9¼	3½	3	6-16d	16-16d	10-16d	2175	2610	5815	5640	6395	5700	3820	—	—
	WPI49.25-2	✓	12	7½	9¼	2½	2⅞	3-16d	—	2-10dx1½	—	—	3635	3320	3650	3255	2600	2030	—
	HWU7.12/9.25	✓	10	7½	9¼	3¼	2½	4-16d	4-16d	6-10d	1020	1135	6000	5500	5535	6000	5415	—	—
	GLTV49.25-2	✓	7	7½	9¼	5	2⅞	4-16d	6-16d	6-16d	1370	1640	7500	7400	5750	7000	4260	—	—
7 x 9½	B7.12/9.5	✓	12	7½	9½	2½	2½	6-16d	8-16d	6-16d	1010	1010	4135	3355	4500	3800	2650	—	—
	HB7.12/9.5	✓	10	7½	9½	3½	3	6-16d	16-16d	10-16d	2175	2610	5815	5640	6395	5700	3820	—	—
	WPI49.5-2	✓	12	7½	9½	2½	2⅞	3-16d	—	2-10dx1½	—	—	3635	3320	3650	3255	2600	2030	—
	HWU7.12/9.5	✓	10	7½	9½	3¼	2½	4-16d	4-16d	6-10d	1020	1135	6000	5500	5535	6000	5415	—	—
	GLTV49.5-2	✓	7	7½	9½	5	2⅞	4-16d	6-16d	6-16d	1370	1640	7500	7400	5750	7000	4260	—	—
	WMI49.5-2 ³	✓	12	7½	9½	2½	3¾	2-16dDPLX	—	2-10d	—	—	—	—	—	—	—	—	4175
7 x 11¼	HB7.12/11.25	✓	10	7½	11¼	3½	3	6-16d	16-16d	10-16d	2175	2610	5815	5640	6395	5700	3820	—	—
	WPI411.25-2	✓	12	7½	11¼	2½	2⅞	3-16d	—	2-10dx1½	—	—	3635	3320	3650	3255	2600	2030	—
	HWU7.12/11.25	✓	10	7½	11¼	3¼	2½	4-16d	4-16d	6-10d	1020	1135	6000	5500	5535	6000	5415	—	—
	GLTV411.25-2	✓	7	7½	11¼	5	2⅞	4-16d	6-16d	6-16d	1370	1640	7500	7400	5750	7000	4260	—	—
	HGLTV411.25-2	✓	7	7½	11¼	6	2⅞	6-16d	12-16d	6-16d	1370	1640	10500	7800	9000	8665	6690	—	—
	WMI411.25-2 ³	✓	12	7½	11¼	2½	3¾	2-16dDPLX	—	2-10d	—	—	—	—	—	—	—	—	4175

See footnotes on page 104.

TOP FLANGE HANGERS – I-JOISTS & SCL

Actual Joist Size	Model No.	Web Stiff Req'd	Ga	Dimensions				Fasteners ^{3,4,7}			Allowable Loads ^{1,4,7}								
								Solid Header ⁴		Joist	Uplift (133)	Uplift (160)	DF/SP LVL	PSL	LSL	DF/SP	SPF	DF/SCL I-Joist ⁴	Masonry ³
				Top	Face	W	H	B	TF										
7 x 11½	B7.12/11.88	✓	12	7⅝	11⅞	2½	2½	6-16d	8-16d	6-16d	1010	1010	4135	3355	4500	3800	2650	—	—
	HB7.12/11.88	✓	10	7⅝	11⅞	3½	3	6-16d	16-16d	10-16d	2175	2610	5815	5640	6395	5700	3820	—	—
	WPI411.88-2	✓	12	7⅝	11⅞	2½	2⅝ ₁₆	3-16d	—	2-10dx1½	—	—	3635	3320	3650	3255	2600	2030	—
	HWU7.12/11.88	✓	10	7⅝	11⅞	3¼	2½	4-16d	4-16d	6-10d	1020	1135	6000	5500	5535	6000	5415	—	—
	GLTV411.88-2	✓	7	7⅝	11⅞	5	2⅞	4-16d	6-16d	6-16d	1370	1640	7500	7400	5750	7000	4260	—	—
	HGLTV411.88-2	✓	7	7⅝	11⅞	6	2⅞	6-16d	12-16d	6-16d	1370	1640	10500	7800	9000	8665	6690	—	—
	WMI411.88-2 ³	✓	12	7⅝	11⅞	2½	3¾	2-16dDPLX	—	2-10d	—	—	—	—	—	—	—	—	4175
7 x 14	B7.12/14	✓	12	7⅝	14	2½	2½	6-16d	8-16d	6-16d	1010	1010	4135	3355	4500	3800	2650	—	—
	HB7.12/14	✓	10	7⅝	14	3½	3	6-16d	16-16d	10-16d	2175	2610	5815	5640	6395	5700	3820	—	—
	WPI414-2	✓	12	7⅝	14	2½	2⅝ ₁₆	3-16d	—	2-10dx1½	—	—	3635	3320	3650	3255	2600	2030	—
	HWU7.12/14	✓	10	7⅝	14	3¼	2½	4-16d	4-16d	6-10d	1020	1135	6000	5500	5535	6000	5415	—	—
	GLTV414-2	✓	7	7⅝	14	5	2⅞	4-16d	6-16d	6-16d	1370	1640	7500	7400	5750	7000	4260	—	—
	HGLTV414-2	✓	7	7⅝	14	6	2⅞	6-16d	12-16d	6-16d	1370	1640	10500	7800	9000	8665	6690	—	—
	WMI414-2 ³	✓	12	7⅝	14	2½	3¾	2-16dDPLX	—	2-10d	—	—	—	—	—	—	—	—	4175
7 x 16	B7.12/16	✓	12	7⅝	16	2½	2½	6-16d	8-16d	6-16d	1010	1010	4135	3355	4500	3800	2650	—	—
	HB7.12/16	✓	10	7⅝	16	3½	3	6-16d	16-16d	10-16d	2175	2610	5815	5640	6395	5700	3820	—	—
	WPI416-2	✓	12	7⅝	16	2½	2⅝ ₁₆	3-16d	—	2-10dx1½	—	—	3635	3320	3650	3255	2600	2030	—
	HWU7.12/16	✓	10	7⅝	16	3¼	2½	4-16d	4-16d	6-10d	1020	1135	6000	5500	5535	6000	5416	—	—
	GLTV416-2	✓	7	7⅝	16	5	2⅞	4-16d	6-16d	6-16d	1370	1640	7500	7400	5750	7000	4260	—	—
	HGLTV416-2	✓	7	7⅝	16	6	2⅞	6-16d	12-16d	6-16d	1370	1640	10500	7800	9000	8665	6690	—	—
	WMI416-2 ³	✓	12	7⅝	16	2½	3¾	2-16dDPLX	—	2-10d	—	—	—	—	—	—	—	—	4175
7 x 18	B7.12/18	✓	12	7⅝	18	2½	2½	6-16d	8-16d	6-16d	1010	1010	4135	3355	4500	3800	2650	—	—
	HB7.12/18	✓	10	7⅝	18	3½	3	6-16d	16-16d	10-16d	2175	2610	5815	5640	6395	5700	3820	—	—
	HWI418-2	✓	11	7⅝	18	2½	2½	4-16d	—	2-10d	—	—	5100	4000	4500	5285	3665	—	—
	HWU7.12/18	✓	10	7⅝	18	3¼	2½	4-16d	4-16d	6-10d	1020	1135	6000	5500	5535	6000	5415	—	—
	GLTV418-2	✓	7	7⅝	18	5	2⅞	4-16d	6-16d	6-16d	1370	1640	7500	7400	5750	7000	4260	—	—
	HGLTV418-2	✓	7	7⅝	18	6	2⅞	6-16d	12-16d	6-16d	1370	1640	10500	7800	9000	8665	6690	—	—
	WMI418-2 ³	✓	12	7⅝	18	2½	3¾	2-16dDPLX	—	2-10d	—	—	—	—	—	—	—	—	4175
7 x 18¾	GLTV418.75-2	✓	7	7⅝	18¾	5	2⅞	4-16d	6-16d	6-16d	1370	1640	7500	7400	5750	7000	4260	—	—
7 x 20	B7.12/20	✓	12	7⅝	20	2½	2½	6-16d	8-16d	6-16d	1010	1010	4135	3355	4500	3800	2650	—	—
	HB7.12/20	✓	10	7⅝	20	3½	3	6-16d	16-16d	10-16d	2175	2610	5815	5640	6395	5700	3820	—	—
	HWI420-2	✓	11	7⅝	20	2½	2½	4-16d	—	2-10d	—	—	5100	4000	4500	5285	3665	—	—
	HWU7.12/20	✓	10	7⅝	20	3¼	2½	4-16d	4-16d	6-10d	765	765	6000	5500	5535	6000	5415	—	—
	GLTV420-2	✓	7	7⅝	20	5	2⅞	4-16d	6-16d	6-16d	1370	1640	7500	7400	5700	7000	4260	—	—
	HGLTV420-2	✓	7	7⅝	20	6	2⅞	6-16d	12-16d	6-16d	1370	1640	10500	7800	9000	8665	6690	—	—
	WMI420-2 ³	✓	12	7⅝	20	2½	3¾	2-16dDPLX	—	2-10d	—	—	—	—	—	—	—	—	4175
7 x 22	B7.12/22	✓	12	7⅝	22	2½	2½	6-16d	8-16d	6-16d	1010	1010	4135	3355	4500	3800	2650	—	—
	HB7.12/22	✓	10	7⅝	22	3½	3	6-16d	16-16d	10-16d	2175	2610	5815	5640	6395	5700	3820	—	—
	HWI422-2	✓	11	7⅝	22	2½	2½	4-16d	—	4-10d	—	—	5100	4000	4500	5285	3665	—	—
	GLTV422-2	✓	7	7⅝	22	5	2⅞	4-16d	6-16d	6-16d	1370	1640	7500	7400	5750	7000	4260	—	—
	HGLTV7.12/22	✓	7	7⅝	22	6	2⅞	6-16d	12-16d	6-16d	1370	1640	10500	7800	9000	8665	6690	—	—
7 x 24	B7.12/24	✓	12	7⅝	24	2½	2½	6-16d	8-16d	6-16d	1010	1010	4135	3355	4500	3800	2650	—	—
	HB7.12/24	✓	10	7⅝	24	3½	3	6-16d	16-16d	10-16d	2175	2610	5815	5640	6395	5700	3820	—	—
	HWI424-2	✓	11	7⅝	24	2½	2½	4-16d	—	4-10d	—	—	5100	4000	4500	5285	3665	—	—
	GLTV424-2	✓	7	7⅝	24	5	2⅞	4-16d	6-16d	6-16d	1370	1640	7500	7400	5750	7000	4260	—	—
	HGLTV7.12/24	✓	7	7⅝	24	6	2⅞	6-16d	12-16d	6-16d	1370	1640	10500	7800	9000	8665	6690	—	—
7 x 26	B7.12/26	✓	12	7⅝	26	2½	2½	6-16d	8-16d	6-16d	1010	1010	4135	3355	4500	3800	2650	—	—
	HB7.12/26	✓	10	7⅝	26	3½	3	6-16d	16-16d	10-16d	2175	2610	5815	5640	6395	5700	3820	—	—
	HWI426-2	✓	11	7⅝	26	2½	2½	4-16d	—	6-10d	—	—	5100	4000	4500	5285	3665	—	—
	GLTV426-2	✓	7	7⅝	26	5	2⅞	4-16d	6-16d	6-16d	1370	1640	7500	7400	5750	7000	4260	—	—
	HGLTV426-2	✓	7	7⅝	26	6	2⅞	6-16d	12-16d	6-16d	1370	1640	10500	7800	9000	8665	6690	—	—
7 x 28	B7.12/28	✓	12	7⅝	28	2½	2½	6-16d	8-16d	6-16d	1010	1010	4135	3355	4500	3800	2650	—	—
	HB7.12/28	✓	10	7⅝	28	3½	3	6-16d	16-16d	10-16d	2175	2610	5815	5640	6395	5700	3820	—	—
	HWI428-2	✓	11	7⅝	28	2½	2½	4-16d	—	6-10d	—	—	5100	4000	4500	5285	3665	—	—
	GLTV428-2	✓	7	7⅝	28	5	2⅞	4-16d	6-16d	6-16d	1370	1640	7500	7400	5750	7000	4260	—	—
	HGLTV428-2	✓	7	7⅝	28	6	2⅞	6-16d	12-16d	6-16d	1370	1640	10500	7800	9000	8665	6690	—	—
7 x 30	HWI430-2	✓	11	7⅝	30	2½	2½	4-16d	—	6-10d	—	—	5100	4000	4500	5285	3665	—	—
	GLTV430-2	✓	7	7⅝	30	5	2⅞	4-16d	6-16d	6-16d	—	—	7500	7400	5750	7000	4260	—	—
	HGLTV430-2	✓	7	7⅝	30	6	2⅞	6-16d	12-16d	6-16d	—	—	10500	7800	9000	8665	6690	—	—
7 x 32	HWI432-2	✓	11	7⅝	32	2½	2½	4-16d	—	6-10d	—	—	5100	4000	4500	5285	3665	—	—
	GLTV432-2	✓	7	7⅝	32	5	2⅞	4-16d	6-16d	6-16d	—	—	7500	7400	5750	7000	4260	—	—
	HGLTV432-2	✓	7	7⅝	32	6	2⅞	6-16d	12-16d	6-16d	—	—	10500	7800	9000	8665	6690	—	—

See footnotes on page 104.

LSU/LSSU/LSSUI Light Slopeable/Skewable U Hangers for I-Joists and SCL

This product is preferable to similar connectors because of a) easier installation, b) higher loads, c) lower installed cost, or a combination of these features.

This series attach joists or rafters to headers, sloped up or down, and skewed left or right, up to 45°.

MATERIAL: See table

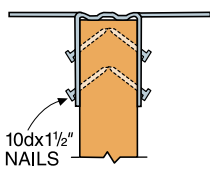
FINISH: Galvanized

INSTALLATION: • Use all specified fasteners.

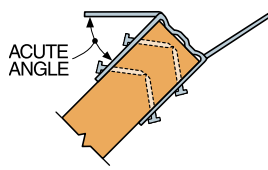
See General Notes.

- Attach the sloped joist at both ends so that the horizontal force developed by the slope is fully supported by the supporting members.
- **Web stiffeners required for I-joist applications.**

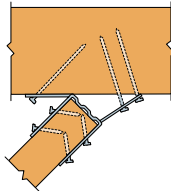
CODES: See page 12 for Code Listing Key Chart.

LSSU INSTALLATION SEQUENCE

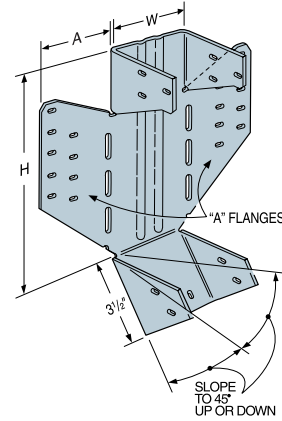
STEP 1
Nail hanger to slope-cut carried member, installing seat nail first. No bevel necessary for skewed installation.



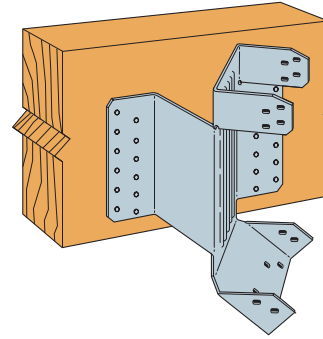
STEP 2
Skew flange to form acute angle. Bend other flange back along centerline of slots. Bend one time only.



STEP 3
Attach hanger to the carrying member, acute angle side first. Install nails at an angle.



LSSU410
(LSSU210-2,
LSSUH310
similar)



The **LSU5.12** must be factory-skewed 0° to 45°. It may be field-sloped to 45°. (LSU4.12 and LSU3510-2 similar)
Hanger shown skewed right

Available with additional corrosion protection. Check with factory.

Actual Joist Width	Model No.	Ga.	Dimensions			Fasteners		Allowable Loads										Code Ref.
			W	H	A	Face	Joist	DF/SP Species Header					SPF Species Header					
								Uplift (133)	Uplift (160)	Floor (100)	Roof		Uplift (133)	Floor (100)	Roof			
Sloped Only Hangers																		
1½	LSSU210	18	1⅞	8½	1⅝	10 - 10d	7 - 10dx1½	730	875	1110	1275	1390	625	960	1105	1200	6, 86, 121, 140	
1¾	LSSU125	18	1⅞	8½	1½	10 - 10d	7 - 10dx1½	730	875	1110	1275	1390	625	960	1105	1200		
2	LSSU2.06	18	2⅛	8½	1¾	10 - 10d	7 - 10dx1½	730	875	1110	1275	1390	625	960	1105	1200	170	
2⅛	LSSU2.1	18	2⅞	8½	1¾	10 - 10d	7 - 10dx1½	730	875	1110	1275	1390	625	960	1105	1200	6, 86, 121, 140	
2¼ - 2⅝	LSSU135	18	2⅝	8½	1⅝	10 - 10d	7 - 10dx1½	730	875	1110	1275	1390	625	960	1105	1200		
2½	LSSUH310	16	2⅞	8½	3⅞	18 - 16d	12 - 10dx1½	1150	1150	2295	2295	2295	990	1930	1930	1930	160	
3	LSSU210-2	16	3⅞	8½	2⅞	18 - 16d	12 - 10dx1½	1150	1150	2430	2795	3035	990	2160	2485	2700	4, 87, 121	
3½	LSSU410	16	3⅞	8½	2⅞	18 - 16d	12 - 10dx1½	1150	1150	2430	2795	3035	990	2160	2485	2700		
4	LSU4.12	14	4⅞	9	2¼	24 - 16d	16 - 10dx1½	1150	1150	3215	3700	4020	990	2785	3200	3480	170	
4⅞	LSU4.28	14	4¼	9	2⅜	24 - 16d	16 - 10dx1½	1150	1150	3215	3700	4020	990	2785	3200	3480		
4½ - 4¾	LSU3510-2	14	4¾	8⅞	3⅜	24 - 16d	16 - 10dx1½	1150	1150	3215	3700	4020	990	2785	3200	3480		
5	LSU5.12	14	5⅞	9	2¼	24 - 16d	16 - 10dx1½	885	885	3215	3700	3785	760	2785	3200	3280		
Skewed Only or Sloped and Skewed Hangers																		
1½	LSSU210	18	1⅞	8½	1⅝	9 - 10d	7 - 10dx1½	730	785	995	1145	1205	625	860	995	1050	6, 86, 121, 140	
1¾	LSSU125	18	1⅞	8½	1½	9 - 10d	7 - 10dx1½	730	785	995	1145	1205	625	860	995	1050		
2	LSSU2.06	18	2⅛	8½	1¾	9 - 10d	7 - 10dx1½	730	785	995	1145	1205	625	860	995	1050	170	
2⅛	LSSU2.1	18	2⅞	8½	1¾	9 - 10d	7 - 10dx1½	730	785	995	1145	1205	625	860	995	1050	6, 86, 121, 140	
2¼ - 2⅝	LSSU135	18	2⅝	8½	1⅝	9 - 10d	7 - 10dx1½	730	785	995	1145	1205	625	860	995	1050		
2½	LSSUH310	16	2⅞	8½	3⅞	14 - 16d	12 - 10dx1½	1150	1150	1600	1600	1600	990	1385	1385	1385	160	
3	LSSU210-2	16	3⅞	8½	2⅞	14 - 16d	12 - 10dx1½	1150	1150	1625	1625	1625	990	1365	1365	1365	4, 87, 121	
3½	LSSU410	16	3⅞	8½	2⅞	14 - 16d	12 - 10dx1½	1150	1150	1625	1625	1625	990	1365	1365	1365		
4	LSU4.12³	14	4⅞	9	2¼	24 - 16d	16 - 10dx1½	1150	1150	2300	2300	2300	990	1990	1990	1990	170	
4⅞	LSU4.28	14	4¼	9	2⅜	24 - 16d	16 - 10dx1½	1150	1150	2300	2300	2300	990	1990	1990	1990		
4½ - 4¾	LSU3510-2³	14	4¾	8⅞	3⅞	24 - 16d	16 - 10dx1½	1150	1150	2300	2300	2300	990	1990	1990	1990		
5	LSU5.12³	14	5⅞	9	2¼	24 - 16d	16 - 10dx1½	885	885	1790	1790	1790	760	1550	1550	1550		

1. Roof loads are 125% of floor loads unless limited by other criteria.

2. Uplift loads include a 33% and 60% increase for earthquake or wind loading; no further increase is allowed; reduce where other loads govern.

3. LSU3510-2, LSU4.12 and LSU5.12 skew option must be factory-ordered.

4. Minimum 11" joist height for LSU3510-2, LSU4.12, LSU5.12; 9 1/2" for all others.

5. **NAILS:** 16d = 0.162" dia. x 3 3/8" long, 10d = 0.148" dia. x 3" long, 10dx1 1/2 = 0.148" dia. x 1 1/2" long. See page 16-17 for other nail sizes and information.

VPA Variable Pitch Connector

The VPA is adjustable to slopes between 3:12 and 12:12, complementing the versatile LSSU.

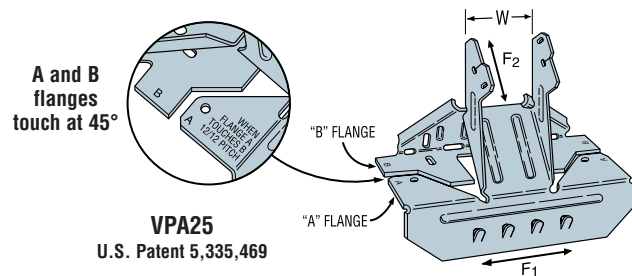
No notching is required when using the VPA. This hanger reduces the need for beveled plates and toe-nailing.

MATERIAL: 18 gauge

FINISH: Galvanized

INSTALLATION: • Use all specified fasteners. See General Notes.

CODES: See page 12 for Code Listing Key Chart.

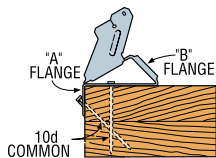


Actual Joist Width	Model No.	W	Fasteners		Allowable Loads														Code Ref.
			Carrying Member	Carried Member	Uplift				Download	Lateral									
					DF/SP Species		SPF Species			DF/SP Species				SPF Species					
					(133)		(160)			(133)		(160)		(133)		(160)			
					(133)	(160)	(133)	(160)		DF/SP	SPF	F ₁	F ₂	F ₁	F ₂	F ₁	F ₂	F ₁	
1½	VPA2	1⅞	8 - 10d	2 -10dx1½	245	295	210	250	1050	870	375	245	375	250	325	210	325	250	1, 121, 140
1¾	VPA25	1⅞	8 - 10d	2 -10dx1½	245	295	210	250	1050	870	375	245	375	250	325	210	325	250	
2	VPA2.06	2⅞	9 - 10d	2 -10dx1½	245	295	210	250	1230	1020	375	245	375	250	325	210	325	250	
2⅞	VPA2.1	2⅞	9 - 10d	2 -10dx1½	245	295	210	250	1230	1020	375	245	375	250	325	210	325	250	160
2¼ - 2⅞	VPA35	2⅞	9 - 10d	2 -10dx1½	245	295	210	250	1230	1020	375	245	375	250	325	210	325	250	
2½	VPA3	2⅞	9 - 10d	2 -10dx1½	245	295	210	250	1230	1020	375	245	375	250	325	210	325	250	
3½	VPA4	3⅞	11 - 10d	2 -10dx1½	245	295	210	250	1230	1020	375	245	375	250	325	210	325	250	1, 121, 140

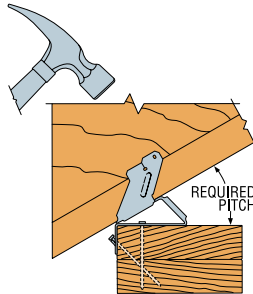
1. Uplift loads include a 33% and 60% increase for earthquake or wind loading; no further increase allowed; reduce where other loads govern.

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

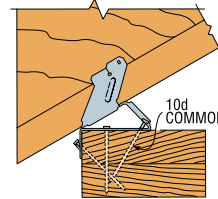
3. NAILS: 10d = 0.148" dia. x 3" long, 10dx1½ = 0.148" dia. x 1½" long. See page 16-17 for other nail sizes and information.

VPA INSTALLATION SEQUENCE

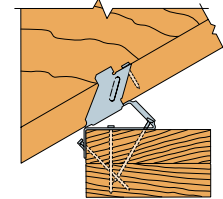
STEP 1
Install top nails and face PAN nails in "A" flange to outside wall top plate.



STEP 2
Seat rafter with a hammer, adjusting "B" flange to the required pitch.



STEP 3
Install "B" flange nails in the obround nail holes, locking the pitch.



STEP 4
Bend tab with hammer and install 10dx1½ nail into tab nail hole. Hammer nail in at an approximate 45° angle to limit splitting.

HCP Hip Corner Plates

For complementary ridge connection, see page 116

The HCP connects a rafter or joist to double top plates at a 45° angle.

MATERIAL: 18 gauge.

FINISH: galvanized.

INSTALLATION: • Use all specified fasteners. See General Notes.

- Attach HCP to double top plates; birdsmouth not required for table loads.
- Install rafter and complete nailing. Rafter may be sloped to 45°.

CODES: See page 12 for Code Listing Key Chart.

Member Size	Model No.	Fasteners		Doug-Fir-Larch/ So. Pine Allowable Loads ¹		Spruce-Pine-Fir Allowable Loads ¹		Code Ref.
				(133 & 160)		(133 & 160)		
		To Rafters	To Plates	Uplift	F ₁	Uplift	F ₁	
1¾	HCP1.81	6-10dx1½	6-10dx1½	605	300	520	260	9, 121

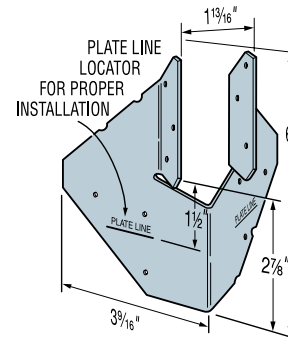
1. Loads may not be increased for short-term loading.

2. The HCP can be installed on the inside and the outside of the wall with a flat bottom chord truss and achieve twice the load capacity.

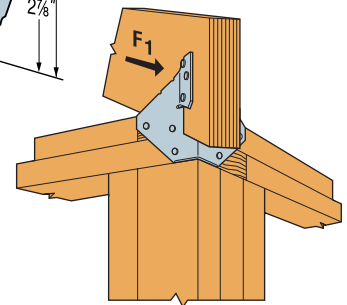
3. Uplift loads include a 33% and 60% increase for earthquake or wind loading; no further increase allowed; reduce where other loads govern.

4. NAILS: 10dx1½ = 0.148" dia. x 1½" long.

See page 16-17 for other nail sizes and information.



HCP1.81
U.S. Patent 5,380,115



Typical HCP Installation

HRC Hip Ridge Connectors

For complementary top plate connection, see page 115

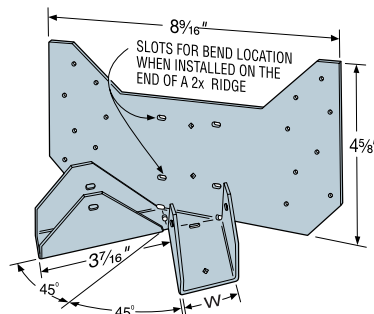
MATERIAL: 16 gauge.

FINISH: Galvanized

INSTALLATION:

- Use all specified fasteners. See General Notes.
- On end of ridge—use optional diamond holes to secure the HRC. Bend face flanges back flush with ridge, and complete nailing.
- On face of ridge—adjust to correct height and install nails.
- Double bevel-cut hip members to achieve full bearing capacity.
- The HRC may be sloped to 45° with no reduction in loads.

CODES: See page 12 for Code Listing Key Chart.



HRC1.81
U.S. Patent
5,380,116

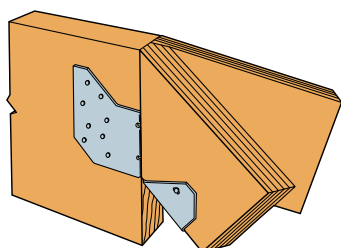
Model No.	Member Size		Fasteners		Doug Fir Larch/So. Pine Allowable Loads					Spruce-Pine-Fir Allowable Loads					Code Ref.
	W	Ridge	Carrying Member	Each Hip	Uplift (133)	Uplift (160)	Floor (100)	Snow (115)	Roof (125)	Uplift (133)	Uplift (160)	Floor (100)	Snow (115)	Roof (125)	
HRC1.81	1 13/16	2x or 1 3/4" wide	16-10dx1 1/2	2-10dx1 1/2	240	290	720	830	900	210	250	625	720	780	160

1. Allowable loads shown are for each hip. Total load carried by the connector is double this number.

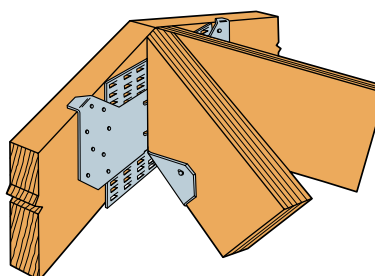
2. Uplift loads include a 33% and 60% increase for earthquake or wind loading; no further increase allowed; reduce where other loads govern.

3. Roof loads are 125% of floor loads unless limited by other criteria.

4. **NAILS:** 10dx1 1/2 = 0.148" dia. x 1 1/2" long. See page 16-17 for other nail sizes and information.



Typical HRC Installation
on the End of a Ridge



Optional
HRC1.81 Installation

SUR/SUL/HSUR/HSUL Skewed 45° Hangers for I-Joist and SCL



This product is preferable to similar connectors because of a) easier installation, b) higher loads, c) lower installed cost, or a combination of these features.

The SUR/L1.81, 2.56 and New HSUR/L4.12, 4.75 and 5.12 are improved 45° skewed hangers designed specifically to ease the installation of single and double I-Joists. In addition to Positive Angle Nailing these hanger's encapsulate the top flange of the I-Joist, so no web stiffeners are required for standard installation.

The full range of 45° skewed hangers feature obround nail holes on the acute side allowing nails to be easily installed parallel to the header and joist. Installation is further simplified with no required bevel cuts.

MATERIAL: See table. **FINISH:** Galvanized. Some products available in Z-MAX; see Corrosion-Resistance, page 6-7.

INSTALLATION: • Use all specified fasteners. See General Notes.

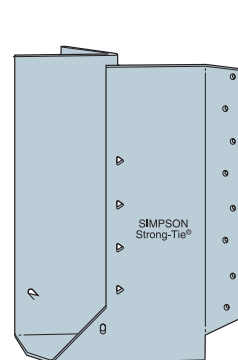
- Illustrations show left and right skews SUR/L (SUR=skewed right; SUL=skewed left).

- The joist end may be square cut or bevel cut.
- Web stiffeners are required for I-Joist applications except for the SUR/L1.81, 2.56, HSUR/L4.12, 4.75 and 5.12.
- Fill all round and obround nail holes with specified fasteners to achieve table loads. Where noted, triangle holes in the joist flange may be filled for additional uplift capacity (see Footnote 3).

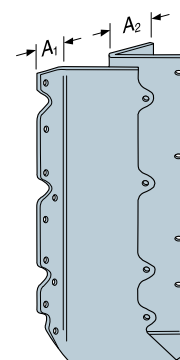
OPTIONS: • These hangers will accommodate a 40° to 50° skew.

- Available with the A₂ flange turned in on 2-2x and 4x models only (see illustration). For example, specify HSURC410, HSULC410, SURC210-2, or SULC210-2.

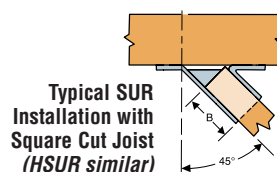
CODES: See page 12 for Code Listing Key Chart.



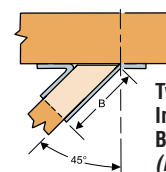
SUL2.56/11



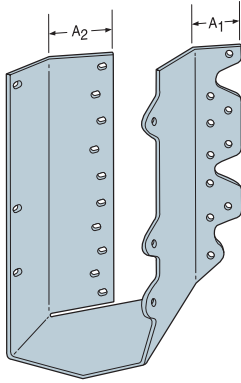
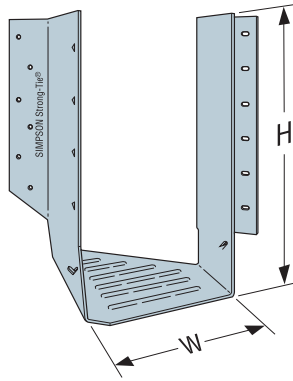
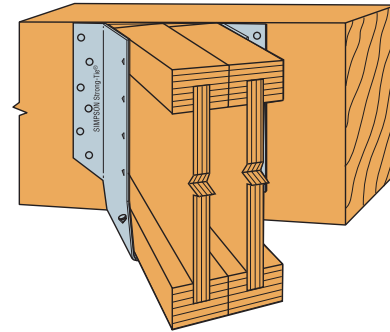
HSUR



Typical SUR
Installation with
Square Cut Joist
(HSUR similar)



Typical SUL
Installation with
Bevel Cut Joist
(HSUL similar)

SUR/SUL/HSUR/HSUL Skewed 45° Hangers for I-Joist and SCL**HSULC**
Available for 3" and 3½"
wide joists only**HSUR4.12/9**

Typical HSUR4.12/9 Installation

Available with additional corrosion protection. Check with factory.

Actual Joist Size	Model No.	Web Stiff Req'd	Ga.	Dimension					Fasteners		Allowable Loads								Code Ref.	
				W	H	B	A ₁	A ₂	Face	Joist	DF/SP Species Header				SPF Species Header					
											Uplift (133)	Uplift (160)	Floor (100)	Roof		Uplift 133/160	Floor (100)	Roof		
														Snow (115)	Const. (125)			Snow (115)		Const. (125)
1½ x 9¼ - 12	SUR/L210	✓	16	1⅞	8	2	1⅞	1⅞	10-16d	10-10dx1½	1200	1250	1330	1530	1660	1040	1150	1320	1440	26, 83, 124, 140
1½ x 10-16	SUR/L214	✓	16	1⅞	10	2	1⅞	1⅞	12-16d	12-10dx1½	1440	1730	1595	1835	1995	1250	1380	1585	1725	
1¾ x 9¼ - 9½	SUR/L1.81/9	—	16	1⅞	9	3	1⅞	2⅞	12-16d	2-10dx1½	145	145	1595	1835	1995	120	1380	1585	1690	124
1¾ x 11¼ - 11⅞	SUR/L1.81/11	—	16	1⅞	11	3	1⅞	2⅞	16-16d	2-10dx1½	145	145	2130	2350	2350	120	1690	1690	1690	
1¾ x 14	SUR/L1.81/14	—	16	1⅞	13¾	3	1⅞	2⅞	20-16d	2-10dx1½	145	145	2500	2500	2500	120	1795	1795	1795	26, 83, 124
2 x 9½ - 14	SUR/LI2.06/9	✓	16	2⅞	9	2⅞	1⅞	1¾	14-16d	6-10dx1½	720	765	1860	2140	2330	625	1610	1785	1785	
2⅞ x 9½	SUR/L2.1/9	—	16	2⅞	9	3⅞	1⅞	2⅞	12-16d	2-10dx1½	145	145	1595	1835	1995	120	1380	1585	1690	170
2⅞ x 11⅞	SUR/L2.1/11	—	16	2⅞	11⅞	3⅞	1⅞	2⅞	16-16d	2-10dx1½	145	145	2130	2130	2130	120	1690	1690	1690	
2¼-2⅞ x 9½ - 14	SUR/LI3510/12	✓	16	2⅞	9	2⅞	1⅞	1¾	14-16d	6-10dx1½	720	765	1860	2140	2330	625	1610	1785	1785	26, 83, 124
2¼-2⅞ x 14-20	SUR/LI3514/20	✓	16	2⅞	13	2⅞	1⅞	1¾	18-16d	8-10dx1½	960	1150	2395	2500	2500	830	1795	1795	1795	
2½ x 9¼ - 14	SUR/L310	✓	16	2⅞	8⅞	2⅞	1½	2	14-16d	6-10dx1½	720	765	1860	2140	2330	625	1610	1785	1785	26, 83, 124, 140
2½ x 11¼ - 11⅞	SUR/L2.56/11	—	16	2⅞	11	3	1⅞	2⅞	16-16d	2-10dx1½	145	145	2130	2130	2130	120	1535	1535	1535	124
2½ x 14-20	SUR/L314	✓	16	2⅞	13	2⅞	1½	2	18-16d	8-10dx1½	960	1150	2395	2500	2500	830	1795	1795	1795	26, 83, 124, 140
3 x 9¼ - 14	SUR/L210-2	✓	16	3⅞	8⅞	2⅞	1⅞	2⅞	14-16d	6-10dx1½	720	765	1860	2140	2330	625	1610	1785	1785	
	HSUR/L210-2	✓	14	3⅞	8⅞	2⅞	1¼	2⅞	20-16d	6-10dx1½	765	920	2680	3080	3350	930	2320	2670	2900	26, 33, 83, 122, 124
3 x 14 - 20	SUR/L214-2	✓	16	3⅞	12⅞	2⅞	1⅞	2⅞	18-16d	8-10dx1½	960	1150	2395	2500	2500	830	1795	1795	1795	26, 83, 124, 140
	HSUR/L214-2	✓	14	3⅞	12⅞	2⅞	1¼	2⅞	26-16d	8-10dx1½	1020	1230	3485	4005	4355	1235	3015	3470	3770	26, 33, 83, 122, 124
3½ x 9¼ - 14	SUR/L410	✓	16	3⅞	8½	2⅞	1	2⅞	14-16d	6-16d	1065	1275	1860	2140	2330	920	1610	1785	1785	26, 83, 124, 140
	HSUR/L410	✓	14	3⅞	8½	2⅞	1	2⅞	20-16d	6-16d	1070	1285	2680	3080	3350	930	2320	2670	2900	26, 33, 83, 122, 124
3½ x 14 - 20	SUR/L414	✓	16	3⅞	12½	2½	1	2⅞	18-16d	8-16d	1420	1700	2395	2500	2500	1225	1795	1795	1795	26, 83, 124, 140
	HSUR/L414	✓	14	3⅞	12½	2½	1	2⅞	26-16d	8-16d	1430	1715	3485	4005	4355	1235	3015	3470	3770	26, 33, 83, 122, 124
4 x 9½	HSUR/L4.12/9	—	14	4⅞	9	3	1⅞	2⅞	12-16d	2-10dx1½	145	145	1655	1905	2020	120	1440	1655	1700	170
4 x 11⅞	HSUR/L4.12/11	—	14	4⅞	11⅞	3	1⅞	2⅞	16-16d	2-10dx1½	145	145	2210	2540	2760	120	1920	2210	2400	
4 x 14	HSUR/L4.12/14	—	14	4⅞	13¾	3	1⅞	2⅞	20-16d	2-10dx1½	145	145	2760	3050	3050	120	2400	2410	2410	
4 x 16	HSUR/L4.12/16	—	14	4⅞	15¾	3	1⅞	2⅞	24-16d	2-10dx1½	145	145	3050	3050	3050	120	2410	2410	2410	
4⅞ x 9½	HSUR/L4.28/9	—	14	4⅞	9	3	1⅞	2⅞	12-16d	2-10dx1½	145	145	1655	1905	2020	120	1440	1655	1700	
4⅞ x 11⅞	HSUR/L4.28/11	—	14	4⅞	11⅞	3	1⅞	2⅞	16-16d	2-10dx1½	145	145	2210	2540	2760	120	1920	2210	2400	
4⅞ x 9½	HSUR/L4.75/9	—	14	4⅞	8⅞	2⅞	1⅞	2⅞	12-16d	2-10dx1½	145	145	1655	1905	2020	120	1440	1655	1700	
4⅞ x 11⅞	HSUR/L4.75/11	—	14	4⅞	10⅞	2⅞	1⅞	2⅞	16-16d	2-10dx1½	145	145	2210	2540	2760	120	1920	2210	2400	
4⅞ x 14	HSUR/L4.75/14	—	14	4⅞	13¾	2⅞	1⅞	2⅞	20-16d	2-10dx1½	145	145	2760	3050	3050	120	2400	2410	2410	
4⅞ x 16	HSUR/L4.75/16	—	14	4⅞	15¾	2⅞	1⅞	2⅞	24-16d	2-10dx1½	145	145	3050	3050	3050	120	2410	2410	2410	
5 x 9½	HSUR/L5.12/9	—	14	5⅞	9	2⅞	1⅞	2⅞	12-16d	2-10dx1½	145	145	1655	1905	2020	120	1440	1655	1700	
5 x 11⅞	HSUR/L5.12/11	—	14	5⅞	11	2⅞	1⅞	2⅞	16-16d	2-10dx1½	145	145	2210	2540	2760	120	1920	2210	2400	
5 x 14	HSUR/L5.12/14	—	14	5⅞	13¾	2⅞	1⅞	2⅞	20-16d	2-10dx1½	145	145	2760	3050	3050	120	2400	2410	2410	
5 x 16	HSUR/L5.12/16	—	14	5⅞	15¾	2⅞	1⅞	2⅞	24-16d	2-10dx1½	145	145	3050	3050	3050	120	2410	2410	2410	

1. Uplift loads have been increased by 33% and 60% for earthquake or wind loading with no further increase allowed; reduce where other loads govern.

2. Roof construction loads are 125% of floor loads unless limited by other criteria.

3. For additional uplift on hanger with two joist nails, use web stiffeners which extend past the edge of the hanger and fill four triangle holes with N10 nails for an allowable uplift of 480 lbs. (133).

4. For SPF uplift, use 0.86 x DF/SP uplift load.

5. NAILS: 16d = 0.162" dia. x 3½" long, 10dx1½ = 0.148" dia. x 1½" long. See page 16-17 for other nail sizes and information.

PAI/MPAI Purlin Anchors

Wood-to-concrete and -concrete block connectors that satisfy code requirements. The PA's dual embedment line allows installation in concrete or concrete block.

MATERIAL: MPAI—14 ga; PAI—12 ga.

FINISH: Galvanized. Some products available HDG or Z-MAX.

INSTALLATION: • Minimum concrete strength is 2000 psi.

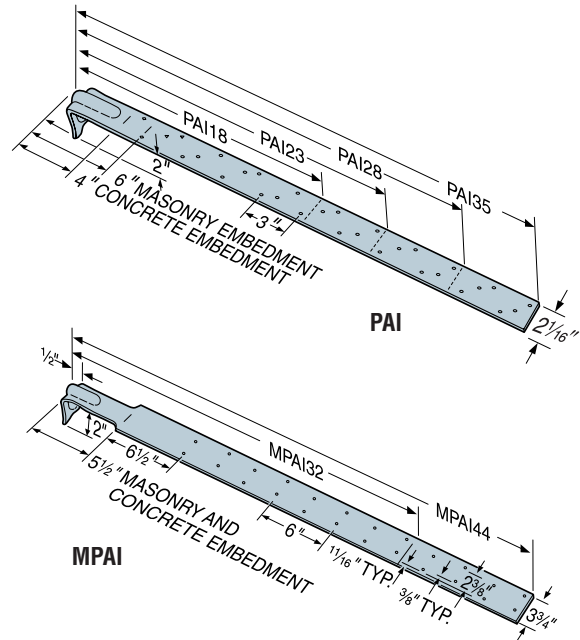
- Use all specified fasteners; some models have extra fastener holes. See General Notes.
- Wood splitting may occur when anchor is nailed to wood less than 3½" wide. To reduce splitting for widths less than 3½", fill every other nail hole with 10dx1½" nails. Reduce the allowable load based on the size and quantity of fasteners used. (See nail table on page 16-17.)
- PAI is designed for wood I-joists. Nail spacing is for 10dx1½" nails 3" on center, to minimize the chance of wood splitting. Maximum ledger width for full loads is 1½".

EDGE DISTANCE—Minimum concrete edge distance is 5". Minimum concrete block left-to-right edge distance is 20".

CONCRETE BLOCK WALLS—The masonry embedment line on PAI, MPAI allows for 4" of grout embedment in a standard 8" concrete masonry unit. The minimum wall specifications are: one # 4 vertical rebar, 32" long, at 32" o.c.; two courses of block above and below the anchor; a horizontal bond beam with two # 4 rebars, 40" long, a maximum of two courses above or below the anchor; all cells grouted with 2000 psi ¾" aggregate grout. Grout shall be vibrated per the 1997 UBC section 2104.6.2.

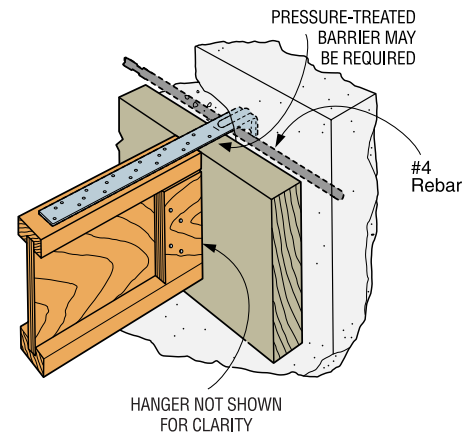
OPTIONS: See LTT and HTT Tension Ties.

CODES: See page 12 for Code Listing Key Chart.



The UBC Section 1633.2.8 and IBC 1620.2.1 state:

Diaphragm to wall anchorage using embedded straps shall have the straps attached to or hooked around the reinforcing steel, or otherwise terminated to effectively transfer forces to the reinforcing steel.



PAI Purlin to Concrete Wall (MPAI similar)

Model No.	L	Fasteners		Allowable Loads				Code Ref.
		Masonry	Concrete	Masonry		Concrete		
				(133)	(160)	(133)	(160)	
Maximum Capacity								
PAI18	18	10-10dx1½	12-10dx1½	1255	1505	1505	1805	2, 40, 121
PAI23	23	15-10dx1½	17-10dx1½	1880	2255	2130	2560	
PAI28	29	21-10dx1½	23-10dx1½	2630	2815	2885	3460	
PAI35	35	26-10dx1½	29-10dx1½	2815	2815	3635	3685	
MPAI32	32	16-10dx1½	16-10dx1½	1960	2355	1960	2355	
MPAI44	44	24-10dx1½	24-10dx1½	2865	2865	2865	2865	
1¼ LVL and 3x Ledger								
PAI18	18	8-10dx1½	10-10dx1½	1000	1205	1255	1505	2, 40, 121
PAI23	23	13-10dx1½	15-10dx1½	1630	1955	1880	2255	
PAI28	29	19-10dx1½	21-10dx1½	2380	2815	2630	3160	
PAI35	35	24-10dx1½	27-10dx1½	2815	2815	3385	3685	
MPAI32	32	16-10dx1½	16-10dx1½	1960	2355	1960	2355	
MPAI44	44	24-10dx1½	24-10dx1½	2865	2865	2865	2865	
4x Ledger								
PAI18	18	7-10dx1½	9-10dx1½	875	1055	1130	1355	2, 40, 121
PAI23	23	12-10dx1½	14-10dx1½	1505	1805	1755	2105	
PAI28	29	18-10dx1½	20-10dx1½	2255	2705	2505	3010	
PAI35	35	23-10dx1½	26-10dx1½	2815	2815	3260	3685	
MPAI32	32	16-10dx1½	16-10dx1½	1960	2355	1960	2355	
MPAI44	44	24-10dx1½	24-10dx1½	2865	2865	2865	2865	

1. Allowable loads have been increased 33% and 60% for earthquake or wind loading with no further increase allowed; reduce where other loads govern.

2. Allowable loads are for a horizontal installation into the side of a concrete or masonry wall.

3. **NAILS:** 10dx1½ = 0.148" dia. x 1½" long.

See page 16-17 for other nail sizes and information.

FACE MOUNT HANGERS HU/HGUS Glulam Beam & Double Shear Joist Hangers

See Hanger Options on page 188 for hanger modifications, which may result in reduced loads.

HU—Most models have triangle and round holes. To achieve maximum loads, fill both round and triangle holes with common nails.

HGUS hangers have the highest loads of any face mount hangers!

All hangers in this series have double shear nailing. This patented innovation distributes the load through two points on each joist nail for greater strength. It also allows the use of fewer nails, faster installation, and the use of common nails for all connections.

(Do not bend or remove tabs)

MATERIAL: See tables.

FINISH: Galvanized. Some products available in Z-MAX; see Corrosion-Resistance, page 6-7.

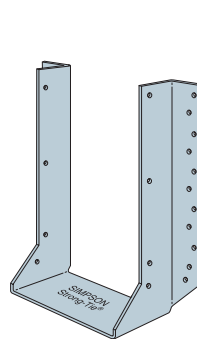
INSTALLATION: • Use all specified fasteners. See General Notes.

- HU—can be installed filling round holes only, or filling round and triangle holes for maximum values.
- HGUS—Nails must be driven at an angle through the joist or truss into the header to achieve the table loads.
- Not designed for nailer applications.
- With 3x carrying members, use 16dx2½" (0.162" dia. x 2½" long) nails into the header and 16d commons into the joist with no load reduction. With 2x carrying members, use 10dx1½" (0.148" dia. x 1½" long) nails into the header and 10d commons into the joist, and reduce the load to 0.64 of the table value.

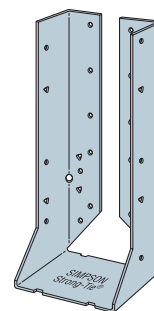
OPTIONS: • HU hangers available with the header flanges turned in for 2½" and larger widths, with no load reduction—order HUC hanger.

- See Hanger Options on page 188, for sloped and/or skewed HU models, and HUC (concealed flange) models.
- Concealed flanges are not available for HGUS.
- Other sizes available; consult Simpson.
- See also HUS series.

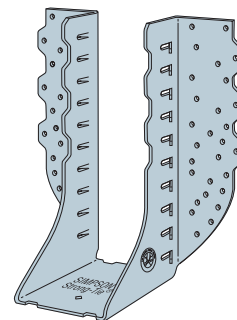
CODES: See page 12 for Code Listing Key Chart.



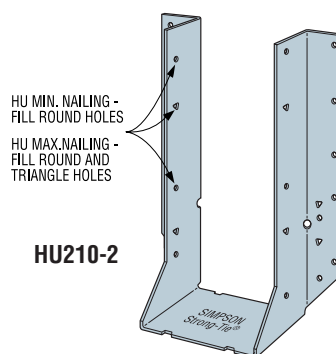
HU5.125/12



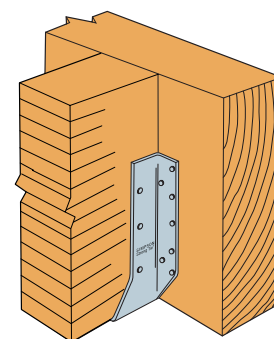
HUC210-2
Concealed Flanges



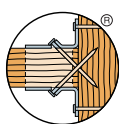
HGUS3.25/12



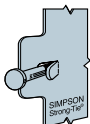
HU210-2



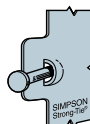
Typical HU Installation



Double Shear Nailing Top View



Double Shear Nailing Side View
Do not bend tab



Dome Double Shear Nailing Side View
(available on some models)
U.S. Patent 5,603,580

Projection seat on most models for maximum bearing and section economy.

Model configurations may differ from those shown. Some HU models do not have triangle holes. Consult factory for details.

Carried Member Width	Model No.	Ga	Dimensions			Fasteners		Allowable Loads								Code Ref.
			W	H	B	Face	Joist	DF/SP Species Header					SPF Species Header			
								Uplift (133)	Uplift (160)	Floor (100)	Snow (115)	Roof (125)	Floor (100)	Snow (115)	Roof (125)	
3½ GLULAM	HU210-2 (Min)	14	3⅜	8⅞ ₁₆	2½	14-16d	6-10d	905	1085	1875	2155	2345	1625	1870	2030	26, 83, 124
	HU210-2 (Max)		3⅜	8⅞ ₁₆	2½	18-16d	10-10d	1505	1810	2410	2775	3015	2090	2400	2610	
	HU212-2 (Min)		3⅜	10⅞ ₁₆	2½	16-16d	6-10d	905	1085	2145	2465	2680	1855	2135	2320	124
	HU212-2 (Max)		3⅜	10⅞ ₁₆	2½	22-16d	10-10d	1505	1810	2950	3390	3685	2550	2935	3190	
	HU3.25/10.5		3⅜	10¼	2½	22-16d	10-10d	1505	1810	2950	3390	3685	2550	2935	3190	160
	HU3.25/12		3⅜	11¾	2½	24-16d	12-10d	1810	2015	3215	3700	4020	2785	3200	3480	
	HU216-2 (Min)	3⅜	13¾	2½	20-16d	8-10d	1205	1445	2680	3080	3350	2320	2670	2900	26, 83, 124	
	HU216-2 (Max)	3⅜	13¾	2½	26-16d	12-10d	1810	2015	3485	4005	4355	3015	3470	3770		124
	HGUS3.25/10	12	3⅜	8⅞	4	46-16d	16-16d	3630	3630	8780	8940	8940	6725	6935	7080	133
HGUS3.25/12	3⅜		10⅞	4	56-16d	20-16d	4055	4055	9155	9155	9155	7080	7345	7520		
3½ GLULAM	See HHUS and HGUS in 3½" Structural Composite Lumber section, page 95-96. For HUCQ's see page 91.															
5½ GLULAM	HU310-2	14	5⅜	8⅞	2½	14-16d	6-10d	905	1085	1875	2155	2345	1625	1870	2030	26, 83, 124
	HU5.125/12		5⅜	10¼	2½	22-16d	8-16d	1430	1715	2950	3390	3685	2550	2935	3190	
	HU5.125/13.5		5⅜	13¼	2½	26-16d	12-16d	2145	2575	3485	4005	4355	3015	3470	3770	160
	HU5.125/16	5⅜	13¾	2½	26-16d	12-16d	2145	2575	3485	4005	4355	3015	3470	3770		
	HGUS5.25/10	12	5⅜	9⅞ ₁₆	4	46-16d	16-16d	3630	3630	8780	8940	8940	7510	7510	7510	133
	HGUS5.25/12		5⅜	10⅞ ₁₆	4	56-16d	20-16d	4055	4055	9155	9155	9155	7690	7690	7690	
5½ GLULAM	See HHUS and HGUS in 5½" Structural Composite Lumber section, page 96. For HUCQ's see page 91.															
6¾ GLULAM	HGUS6.88/10	12	6⅞	8⅞ ₁₆	4	46-16d	16-16d	3630	3630	8780	9625	9625	7595	8085	8085	133
	HGUS6.88/12		6⅞	10⅞ ₁₆	4	54-16d	20-16d	4055	4055	9835	9835	9835	8260	8260	8260	
	HGUS6.88/14		6⅞	12⅞ ₁₆	4	66-16d	22-16d	5380	5380	11110	11110	11110	9330	9330	9330	
7 GLULAM	See HHUS and HGUS in 7" Structural Composite Lumber section, page 96.															

1. 10d commons or 16d sinkers may be used instead of the specified 16d at 0.85 of the table load value.

2. 16d sinkers may be used instead of the specified 10d commons with no load reduction.

3. Uplift loads based on Douglas Fir have been increased 33% and 60% for earthquake or wind loading with no further increase allowed. Divide by 1.33 and 1.60 for normal loading such as in cantilever construction.

4. MIN nailing quantity and load values—fill all round holes;

MAX nailing quantity and load values—fill all round and triangle holes.

5. NAILS: 16d = 0.162" dia. x 3½" long, 10d = 0.148" dia. x 3" long. See page 16-17 for other nail sizes and information.

LGU/MGU/HGU/HHGU High Capacity Girder Hangers

NEW! The GU hangers are a high-capacity girder hangers designed for situations where the header and joist are flush at top. This part can be used for retrofit on the framing members after they are temporarily placed in position. It uses Simpson Strong-Drive screws (SDS) to make installation fast and easy, with no pre-drilling required.

MATERIAL: See table.

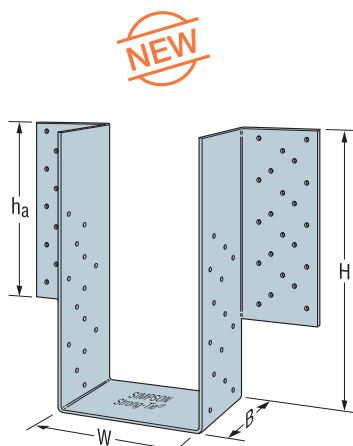
FINISH: Galvanized.

INSTALLATION:

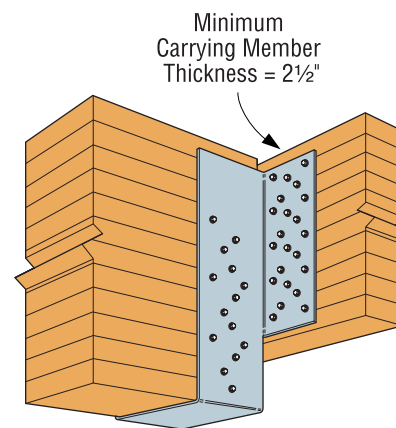
- Use all specified fasteners. See General Notes.
- Install with Simpson's SDS $\frac{1}{4}$ x2 $\frac{1}{2}$ screws, which are provided with the GU's. (*Note: lag screws will not achieve the same loads.*)
- All multiple members must be fastened together to act as a single unit.
- Multiple member headers may require additional fasteners at the hanger locations. The quantity and location of the additional fasteners must be determined by the Designer.

OPTIONS: Not available.

CODES: See page 12 for Code Listing Key Chart.



MGU



Typical MGU Installation

Model No.	Ga	Dimensions			Min. Header Depth ³ h _a	Fasteners		Allowable Loads						Code Ref.
		W	H ² (min)	B		Face	Joist	DF/SP			SPF/HF			
								Uplift ¹	Download ³	115/125	Uplift ¹	Download ³	115/125	
LGU3.25	10	3¼	7½	4½	7½	16-SDS¼x2½	12-SDS¼x2½	5380	6400	6440	4515	5375	5410	160
LGU5.25	10	5¼	7½	4½	7½	16-SDS¼x2½	12-SDS¼x2½	5380	6400	6440	4515	5375	5410	
MGU5.25	10	5¼	8¾	4½	8¾	24-SDS¼x2½	16-SDS¼x2½	6595	9145	9145	5540	7685	7685	
MGU5.50	10	5⅞	8¾	4½	8¾	24-SDS¼x2½	16-SDS¼x2½	6595	9145	9145	5540	7685	7685	
MGU7.00	10	7	8¾	4½	8¾	24-SDS¼x2½	16-SDS¼x2½	6595	9145	9145	5540	7685	7685	
HGU5.25	7	5¼	10⅝	5¼	10⅝	36-SDS¼x2½	24-SDS¼x2½	9895	14060	14060	8310	11810	11810	
HGU5.50	7	5⅞	10⅝	5¼	10⅝	36-SDS¼x2½	24-SDS¼x2½	9895	14060	14060	8310	11810	11810	
HGU7.00	7	7	10⅝	5¼	10⅝	36-SDS¼x2½	24-SDS¼x2½	9895	14060	14060	8310	11810	11810	
HGU9.00	7	9	10⅝	5¼	10⅝	36-SDS¼x2½	24-SDS¼x2½	9895	14060	14060	8310	11810	11810	
HHGU5.50	3	5⅞	12⅝	5¼	12⅝	44-SDS¼x2½	28-SDS¼x2½	13985	16700	16700	11745	14030	14030	
HHGU7.00	3	7	12⅝	5¼	12⅝	44-SDS¼x2½	28-SDS¼x2½	13985	16700	16700	11745	14030	14030	
HHGU9.00	3	9	12⅝	5¼	12⅝	44-SDS¼x2½	28-SDS¼x2½	13985	16700	16700	11745	14030	14030	

1. Uplift loads have been increased for earthquake and wind loading, with no further increase allowed.

2. Specify H dimension. The Designer should check the shear capacity of the carried member to make sure it matches the hanger's capacity. Maximum H = 30".

3. Minimum header is based on the size necessary to fit screw pattern. Use the next size up that meets the minimum depth requirement.

TOP FLANGE HANGERS HHB/GB/HGB Beam & Purlin Hangers

See table on page 123. See Hanger Options on page 188 for hanger modifications, which may result in reduced loads.

Precision forming with manufacturing quality control provides dimensional accuracy and helps ensure proper bearing area and connection.

MATERIAL: See table on page 123.

FINISH: HHB, GB, HGB, all saddle hangers and all welded sloped and special hangers—Simpson gray paint. HHB may be ordered hot-dip galvanized; specify HDG.

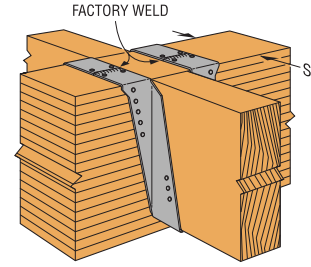
INSTALLATION: • Use specified fasteners. See General Notes.

- HHB, GB and HGB may be used for weld-on applications. The minimum required weld to the top flanges is $\frac{1}{8}$ " x 2" fillet weld to each side of each top flange tab for 14 and 12 gauge and $\frac{3}{16}$ " x 2" fillet weld to each side of each top flange tab for 7 gauge. Distribute the weld equally on both top flanges. Welding cancels the top and face nailing requirements. Consult the code for special considerations when welding galvanized steel. The area should be well-ventilated. See page 14 for weld information. Weld on applications produce the maximum allowable load listed. Uplift loads do not apply to welded applications.

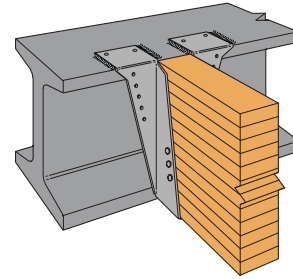
- Ledgers must be evaluated for each application separately. Check TF dimension, nail length and nail location on ledger.

OPTIONS: • HHB—other widths are available; specify W dimension (the minimum W dimension is 2½").

- Saddle hangers are made to order; add "D" to model (e.g. HHB3D); specify S (for saddle) dimension. They may be used for most conditions except at end wall locations, and are preferred for nailer applications.
- The finish on special B hangers will depend on the manufacturing process used. Check with your Simpson representative for details. Hot-dipped galvanized available; specify HDG.
- B dimensions may be increased on some models.
- See Hanger Options, page 188.



Typical HHB, GB and HGB Saddle Installation



HHB, GB and HGB are acceptable for weld-on applications. See Installation Information.

TOP FLANGE HANGERS WPU/WNP/HW/HWU

The WPU, HWU and HW series purlin hangers offer the greatest design flexibility and versatility.

MATERIAL: WNP/WPI/WPU—7 ga. top flange, 12 ga. stirrup; HW—3 ga. top flange, 11 ga. stirrup; HWU—3 ga. top flange, 10 ga. stirrup.

FINISH: Simpson gray paint; hot-dipped galvanized available; specify HDG.

ALLOWABLE LOADS: For hanger heights exceeding the joist height, the allowable load is 0.50 of the table load.

INSTALLATION: • Hangers may be welded to steel headers with $\frac{3}{16}$ " for WPU/WNP/WPI, and $\frac{1}{4}$ " for HW/HWU, by 1½" fillet welds located at each end of the top flange. Weld-on applications produce maximum allowable load listed. See page 14 for weld information. Uplift loads do not apply to this application.

- Hangers can support multi-ply carried members; the individual members must be secured together to work as a single unit before installation into the hanger.

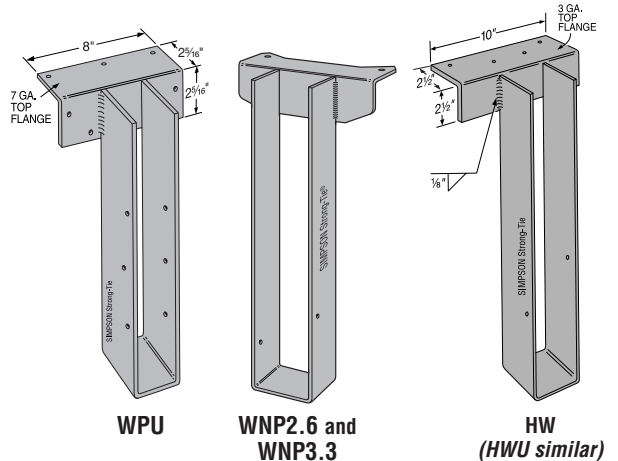
OPTIONS: • See Hanger Options, page 188, for hanger modifications and associated load reductions.

CODES: See page 12 for Code Listing Key Chart.

Model	Nailer	Top Flange Nailing	Allowable Loads		
			DF/SP	SPF	LSL
WNP/ WP	2x	2-10dx1½	2525	2500	3375
	3x	2-16dx2½	3000	2510	—
	2-2x	2-10d	3255	3255	—
	4x	2-10d	3255	3255	—
HW	4x	4-16d	5285	—	—

NAILER TABLE

The table indicates the maximum allowable loads for WNP hanger used on wood nailers. Nailers are wood members attached to the top of a steel I-beam, concrete or masonry wall. This table also applies to sloped-seat hangers.



Some model configurations may differ from those shown. Contact factory for details.

Model	Joist		Fasteners			Allowable Loads Header Type								Code Ref.
	Width	Depth	Top	Face	Joist	Uplift (133 & 160)	LVL	PSL	LSL	DF/SP	SPF	I-Joist	Masonry	
WNP/ WP	1½ to 7½	3½ to 30	3-10dx1½	—	2-10dx1½	—	2865	3250	—	2500	2000	2030	—	124
	1½ to 7½	3½ to 30	3-10d	—	2-10dx1½	—	2525	3250	3650	3255	2525	—	—	26, 83, 124, 140
	1½ to 7½	3½ to 30	3-16d	—	2-10dx1½	—	3635	3320	3650	3255	2600	—	—	
WPU	1¾ to 5½	7¼ to 18	3-16d	4-16d	6-10dx1½	775	4700	4880	3650	4165	4165	—	—	
	1¾ to 5½	18½ to 22½	3-16d	4-16d	6-10dx1½	485	4700	4880	3650	4165	4165	—	—	
	1¾ to 5½	23 to 28	3-16d	4-16d	6-10dx1½	315	4700	4880	3650	4165	4165	—	—	
HW	1½ to 7½	3½ to 32	4-10d	—	2-10dx1½	—	3100	4000	—	5285	3100	—	—	
	1½ to 7½	3½ to 32	4-16d	—	2-10dx1½	—	5100	4000	4500	5285	3665	—	—	
	1¾ to 3½	9 to 18	4-16d	4-16d	6-10dx1½	810	6335	5500	5535	6335	5415	—	—	
HWU	1¾ to 3½	18½ to 22½	4-16d	4-16d	6-10dx1½	765	6335	5500	5535	6335	5415	—	—	26, 124
	1¾ to 3½	23 to 28	4-16d	4-16d	6-10dx1½	635	6335	5500	5535	6335	5415	—	—	
	1¾ to 3½	28½ to 32	4-16d	4-16d	8-10dx1½	1005	6335	5500	5535	6335	5415	—	—	
	4½ to 7	9 to 18	4-16d	4-16d	6-10dx1½	810	6000	5500	5535	6000	5415	—	—	
	4½ to 7	18½ to 22½	4-16d	4-16d	6-10dx1½	765	6000	5500	5535	6000	5415	—	—	
	4½ to 7	23 to 28	4-16d	4-16d	6-10dx1½	635	6000	5500	5535	6000	5415	—	—	
	4½ to 7	28½ to 32	4-16d	4-16d	8-10dx1½	1005	6000	5500	5535	6000	5415	—	—	
	4½ to 7	28½ to 32	4-16d	4-16d	8-10dx1½	1005	6000	5500	5535	6000	5415	—	—	

1. 16d sinkers (0.148" dia. x 3¾" long) may be used where 10d commons are called out with no load reduction.

2. Uplift loads are based on Doug Fir and have been increased 33% and 60% for earthquake or wind loading; no further increase allowed. Divide by 1.33 and 1.60 for normal loading like cantilever construction.

3. NAILS: 16d = 0.162" dia. x 3½" long, 10d = 0.148" dia. x 1½" long, 10dx1½ = 0.148" dia. x 1½" long.

See page 16-17 for other nail sizes and information.

TOP FLANGE HANGERS GLS/HGLS/GLT/HGLT

Beam & Glulam Saddle Hangers

See table on page 123. See Hanger Options on page 188 for hanger modifications, which may result in reduced loads.

GLT and HGLT accommodate typical structural requirements for timber and glulam beams. GLT top flange depth allows installation on minimum 4x ledger (3½" net). Not acceptable for nailer applications. Funnel flanges allow easy installation of beams.

GLS and HGLS are heavy glulam saddle hangers. Tested and code-listed seismic tie provisions are added to the GLS or HGLS—order GLST or HGLST. **The seismic tie models use three extra ¾" bolts through each carried member and two ¾" bolts through the supporting member.** Bolt holes shall be a minimum of ⅛" to a maximum of ⅜" larger than the bolt diameter (1997 NDS, sec. 8.1.2.1.).

MATERIAL: See table on page 123.

FINISH: Simpson gray paint. Hot-dip galvanized available; specify HDG.

INSTALLATION: • Use all specified fasteners. See General Notes.

GLT/HGLT • All GLTs used with sawn timbers have a 12" L dimension.

• Fasteners are included.

• GLT may be attached to steel headers by ⅜" x 2½" fillet welds at each end of the header angle to obtain the tabulated loads. HGLT may be attached to steel headers by ¼" x 2½" fillet welds at each end of the header angle to obtain the lesser of the tabulated loads or 12,000 lbs. Uplift loads do not apply to this weld-on application. See page 10 for weld information.

• Not for use with SCL or LVL headers.

See GLTV, HGLTV.

GLS/HGLS • N54A nails are included with the hangers.

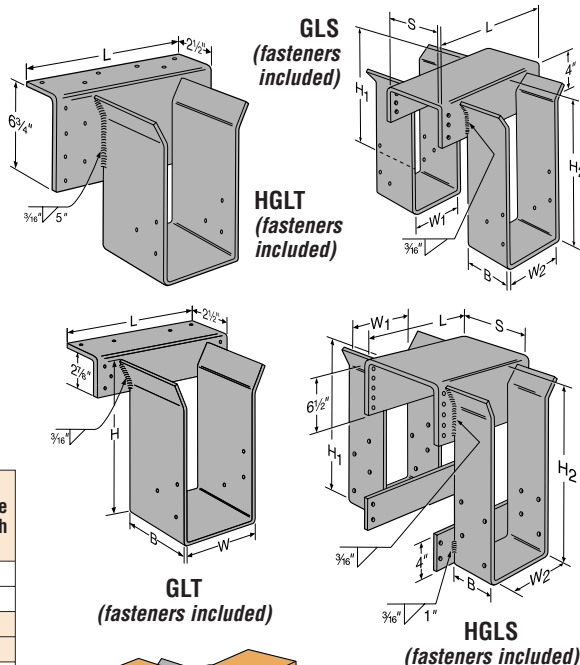
• Seismic Ties: the carried member bolts should be located in the upper half of the ⅜" x 1½" slotted holes. Standard washers must be used with all bolts.

• Loads listed are per stirrup.

TO ORDER: GLS/HGLS—Specify H1, H2, and S dimensions (see illustration).

OPTIONS: See Hanger Options page 188.

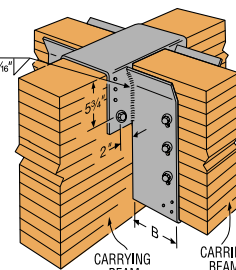
Funnel Flanges ease installation



GLST Installed with Glulam Beams (HGLST similar)

When H dimension is less than 18", product is supplied with seismic straps. No options on GLST and HGLST.

Model	Top Flange Ga	Stirrup Width (W)	Top Flange Length (L)
GLT	3	2⅝ - 5½	10
		5⅞ - 6⅞	12
HGLT	3	2⅝ - 8¼	12
		8⅞	14
GLS	3	3¼	6
		5¼	9
		6⅞	12
HGLS	3	5¼ - 8⅞	12
GLST	3	3¼	10⅞
		5¼	12⅞
		6⅞	13¾
HGLST	3	5¼	12⅞
		6⅞	13¾
		8⅞	15¾



TOP FLANGE HANGERS LEG/MEG/EG

Beam & Glulam Hangers

See Hanger Options on page 188 for hanger modifications, which may result in reduced loads.

This whole series has precision fabrication which offers dimensional accuracy, and the funnel flanges which aid installation.

MATERIAL: See table.

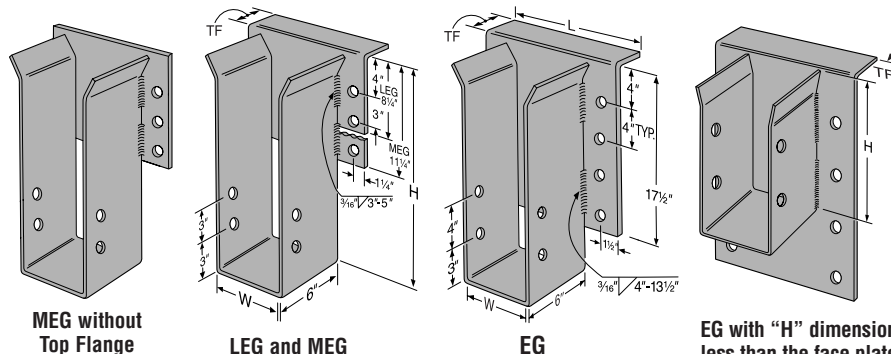
FINISH: Simpson gray paint. Hot-dip galvanized available; specify HDG.

INSTALLATION: • Use all specified fasteners. See General Notes.

OPTIONS: • See Hanger Options, page 188.

• Models available without top flanges; see table loads.

CODES: See page 12 for Code Listing Key Chart.



EG with "H" dimension less than the face plate height. The EG's back plate is always 17½", regardless of the stirrup height.

Joist or Purlin Size	Model No.	Stirrup Ga	Dimensions			Min. Header Depth	Bolts				Allowable Loads						Code Ref.
			W	Min ³ H	TF		Header		Joist		Without Top Flange		Top Flange No Triangle Theory		Top Flange Triangle Theory		
							Qty	Dia	Qty	Dia	Floor (100)	Roof (125)	Floor (100)	Roof (125)	Floor (100)	Roof (125)	
3⅝ LAM	LEG3	7	3¼	9	2½	10	4	¾	2	¾	3465	4330	12675	13215	11865	12730	26, 83, 124
5⅝ LAM	LEG5	7	5¼	9	2½	10	4	¾	2	¾	3465	4330	16290	16290	11865	12730	
	MEG5	7	5¼	9	2½	13	6	¾	2	¾	5170	6460	19710	19710	13570	14865	
	EG5	7	5¼	11	2½	20	8	1	2	1	8870	11085	20895	21815	17095	19310	
6⅝ LAM	LEG7	7	6⅞	9	2½	10	4	¾	2	¾	3465	4330	16290	16290	11865	12730	
	MEG7	7	6⅞	9	2½	13	6	¾	2	¾	5170	6460	19710	19710	13570	14865	
	EG7	7	6⅞	11	2½	20	8	1	2	1	8870	11085	25320	25835	17095	19310	
8⅝ LAM	EG9	7	8⅞	11	2½	20	8	1	2	1	8870	11085	25320	25835	17095	19310	

1. Roof loads are 125% of floor loads unless limited by other criteria.
 2. Allowable loads assume a carrying member of 5½".
 3. Specify H dimension.

4. Triangle Theory: Some code jurisdictions allow only half of the top flange bearing area to be calculated when there are no fasteners in the top of hanger. Testing has shown that the LEG/MEG and EG hangers will develop the full bearing area with a reduction factor of 3.

Model	Top Flange Ga	Top Flange Length (L)
LEG/MEG	7	12
EG5		11¾
EG7	3	13½
EG9		15½

TOP FLANGE HANGERS – GLULAM BEAM

Joist or Purlin Size	Model No.	Ga	Dimensions				Fasteners		Allowable Loads					Code Ref.
			W	H	B	TF	Header	Joist	Uplift (133)	Uplift (160)	Floor (100)	Snow (115)	Roof (125)	
3½ LAM	GLT3	7	3¼	7½ MIN	5	2½	10-N54A	6-N54A	1455	1745	8165	8165	8165	26, 83, 124
	HGLT3	7	3¼	7½ MIN	6	2½	18-N54A	6-N54A	1455	1745	11590	11755	11865	
	GLS3-5 ⁸	7	3¼	8½ MIN	5	5¼	6-N54A	6-N54A	1455	1745	9790	9965	10080	
	GLST3-5 ⁸	7	3¼	9 MIN	6½	5¼	6-N54A	6-N54A	1455	1745	12465	12630	12740	
	GLS3-7 ⁸	7	3¼	8½ MIN	5	6¾	6-N54A	6-N54A	1455	1745	9840	10005	10115	
	GLST3-7 ⁸	7	3¼	9 MIN	6½	6¾	6-N54A	6-N54A	1455	1745	12465	12630	12740	
	GLS3-9 ⁸	7	3¼	8½ MIN	5	8¾	6-N54A	6-N54A	1455	1745	9840	10005	10115	
	GLST3-9 ⁸	7	3¼	9 MIN	6½	8¾	6-N54A	6-N54A	1455	1745	12465	12630	12740	
	HW3.25	11	3¼	5 MIN	4	2½	4-10d	2-10d	—	—	5285	5285	5285	26, 124
	HHB3	7	3¼	7½ MIN	3	2½	10-N54A	6-N54A	1455	1745	6105	6235	6235	26, 83, 124
	GB3	7	3¼	7½ MIN	3½	2½	14-N54A	6-N54A	1455	1745	7215	7380	7490	
	HU3.25/12TF	12	3¼	12	2½	2½	16-16d	6-10d	935	1125	4310	4335	4335	
	HU3.25/16.5TF	12	3¼	16½	2½	2½	20-16d	8-10d	1250	1500	4860	5275	5545	
3½ LAM	GLTV4	7	3¾	7½ MIN	5	2¾	10-16d	6-16d	1370	1640	7000	7000	7000	160
	HGLTV4	7	3¾	7½ MIN	6	2¾	18-16d	6-16d	1370	1640	8665	8665	8665	
5½ LAM	GLT5	7	5¼	7½ MIN	5	2½	10-N54A	6-N54A	1455	1745	8165	8165	8165	26, 83, 124
	HGLT5	7	5¼	7½ MIN	6	2½	18-N54A	6-N54A	1455	1745	11930	12455	12750	
	GLS5-5 ⁸	7	5¼	8½ MIN	5	5¼	6-N54A	6-N54A	1455	1745	13080	13080	13080	
	GLST5-5 ⁸	7	5¼	9 MIN	6½	5¼	6-N54A	6-N54A	1455	1745	14685	14685	14685	
	GLS5-7 ⁸	7	5¼	8½ MIN	5	6¾	6-N54A	6-N54A	1455	1745	13080	13080	13080	
	GLST5-7 ⁸	7	5¼	9 MIN	6½	6¾	6-N54A	6-N54A	1455	1745	14685	14685	14685	
	HGLS5 ⁸	7	5¼	10½ MIN	6	SPEC	14-N54A	8-N54A	1940	2330	16835	16835	16835	
	HGLST5 ⁸	7	5¼	10½ MIN	6½	SPEC	14-N54A	8-N54A	1940	2330	16835	16835	16835	
	HW5.25	11	5¼	5 MIN	2½	2½	4-10d	2-10d	—	—	5285	5285	5285	26
	HHB5	7	5¼	7½ MIN	3	2½	10-N54A	6-N54A	1455	1745	6105	6235	6235	26, 83, 124
	GB5	7	5¼	7½ MIN	3½	2½	14-N54A	6-N54A	1455	1745	7370	7640	8005	
	HGB5	7	5¼	7½ MIN	4	2½	14-N54A	6-N54A	1455	1745	7885	8265	8520	
	HU5.25/12TF	12	5¼	12	2½	2½	16-16d	6-16d	1105	1325	4310	4335	4335	
	HU5.25/16.5TF	12	5¼	16½	2½	2½	20-16d	8-16d	1470	1765	4860	5275	5550	
	GLTV6	7	5¾	7½ MIN	5	2¾	10-16d	6-16d	1370	1640	7000	7000	7000	160
	HGLTV6	7	5¾	7½ MIN	6	2¾	18-16d	6-16d	1370	1640	8665	8665	8665	
6¾ LAM	HHB7	7	6¾	7½ MIN	3	2½	10-N54A	6-N54A	1455	1745	6105	6235	6235	26, 83, 124
	GB7	7	6¾	7½ MIN	3½	2½	14-N54A	6-N54A	1455	1745	7370	7750	8005	
	HGB7	7	6¾	7½ MIN	4	2½	14-N54A	6-N54A	1455	1745	7885	8265	8520	
	GLT7	7	6¾	7½ MIN	5	2½	10-N54A	6-N54A	1455	1745	8165	8165	8165	
	HGLT7	7	6¾	7½ MIN	6	2½	18-N54A	6-N54A	1455	1745	11930	12455	12750	
	GLS7-7 ⁸	7	6¾	8½ MIN	5	6¾	6-N54A	6-N54A	1455	1745	14040	14040	14040	
	GLST7-7 ⁸	7	6¾	9 MIN	6½	6¾	6-N54A	6-N54A	1455	1745	14685	14685	14685	
	GLS7-9 ⁸	7	6¾	8½ MIN	5	8¾	6-N54A	6-N54A	1455	1745	14040	14040	14040	
	GLST7-9 ⁸	7	6¾	9 MIN	6½	8¾	6-N54A	6-N54A	1455	1745	14685	14685	14685	
	HGLS7 ⁸	7	6¾	10½ MIN	6	SPEC	14-N54A	8-N54A	1940	2330	16835	16835	16835	
7 LAM	GLTV7.12	7	7¾	7½ MIN	5	2¾	10-16d	6-16d	1370	1640	7000	7000	7000	170
	HGLTV7.12	7	7¾	7½ MIN	6	2¾	18-16d	6-16d	1370	1640	8665	8665	8665	
8¾ LAM	HGLT9	7	8¾	7½ MIN	6	2½	18-N54A	6-N54A	1455	1745	12750	12750	12750	26, 83, 124
	HGLS9 ⁸	7	8¾	10½ MIN	6	SPEC	14-N54A	8-N54A	1940	2330	16835	16835	16835	
	HGLST9 ⁸	7	8¾	10½ MIN	6½	SPEC	14-N54A	8-N54A	1940	2330	16835	16835	16835	

- N54A fasteners are supplied with hangers.
- Roof loads are 125% of floor loads unless limited by other criteria.
- Uplift loads have been increased 33% and 60% for earthquake or wind loading with no further increase allowed. Divide by 1.33 and 1.60 for normal loading such as in cantilever construction.
- GLT, HGLT, GLS, HGLS uplift loads only apply when "H" is 28" or less.
- Allowable loads for glulam sizes are based on 560 psi wood bearing.
- Maximum allowable horizontal load for the GLST/HGLST is 13080 lbs (133) and 14580 lbs (160). Load is horizontal across the supporting member and independent of vertical loads and includes a 33% and 60% increase for earthquake or wind loading with no further increase allowed.

- "Min H" is the minimum H dimension that may be specified.
- GLS, GLST, HGLS and HGLST loads must be distributed evenly on each side of the header, as they are saddle-style hangers.** Loads shown are for each stirrup.
- GLS, GLST, HGLS, HGLST fasteners listed are for one side only. Fasteners supplied are for both sides of the saddle.
- SPEC: Specify the header dimensions for the saddle hangers. ("S" dimension is illustrated on page 122.)
- NAILS: 16d = 0.162" dia. x 3½" long, 10d = 0.148" dia. x 3" long, N54A = 0.250" dia. x 2½" long - annular ring.**
See page 16-17 for other nail sizes and information.

CODES: See page 12 for Code Listing Key Chart.

HCA Hinge Connectors

HCA's offer single-piece side plates, for fewer welds and higher horizontal loads. The Horizontal Load Table gives comparable HC models.

MATERIAL: Side plates—7 gauge;

Top and bottom plates—see PT dimensions in table.

FINISH: Simpson gray paint

INSTALLATION: • Use all specified fasteners. See General Notes.

- Bolt holes shall be a minimum of $\frac{1}{32}$ " and a maximum of $\frac{1}{16}$ " larger than the bolt diameter (*per 2001 NDS*).
- The model number column in the Allowable Download Table gives the basic HCA model with two rotation bolts.
- Contact Simpson for heights greater than 60".
- Position $\frac{3}{4}$ " dia. machine bolts in slots away from bearing seat to allow for wood shrinkage.

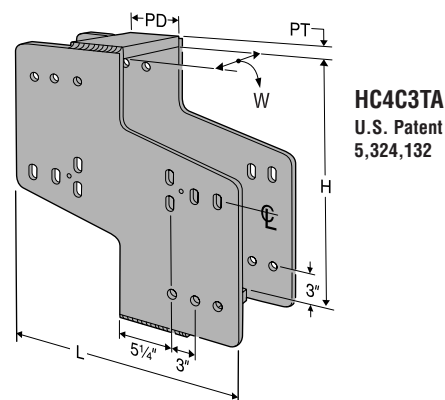
OPTIONS: The Horizontal Load Table gives other bolt options. To order, add the width and bearing plate size designation after the model name. Specify the H dimension. For dapped beams, reduce the H dimension by the PT dimension for each dap.

ORDERING: Specify **Model No., Model Size, and height H.**

Ordering Example: HC4C3TA5-6 H-18".

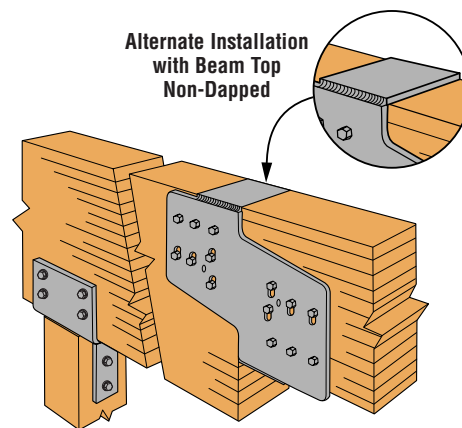
CODES: See page 12 for Code Listing Key Chart.

See F-HCAGUIDE for specification examples and additional information.



HC4C3TA
U.S. Patent
5,324,132

Alternate Installation
with Beam Top
Non-Dapped



Typical HC4C3TA Installation
with Beam Top Dapped

HORIZONTAL LOAD TABLE

Model No. (Prefix)	L	H ³ Min	H Max	Rotation Bolts Per Beam	Slotted Tension Bolts	Allowable Horizontal Loads ^{2,3}	
						(133)	(160)
HCA	19½	8	60	2	—	—	—
HC2CTA	19½	14	60	2	2	8265	9920
HCCTA	19½	14	60	2	3	12375	14850
HC4CTA	25½	14	60	2	4	16430	19720
HC3A	25½	8	60	3	—	—	—
HCC3TA	25½	14	60	3	3	12375	14850
HC4C3TA	25½	14	60	3	4	16430	19720

1. Loads include a 33% and 60% increase for earthquake or wind loading with no further increase allowed.

2. Horizontal loads are for Doug Fir-larch glulams minimum W = 3½". For other wood types, adjust the load according to the code.

3. H MIN is the absolute minimum height. Reduce downloads according to footnote 1 in the Allowable Download Table.

ALLOWABLE DOWNLOAD TABLE

Model Size (Suffix)	Dimensions				Bolt Dia.	Two Rotation Bolts Per Beam				Three Rotation Bolts Per Beam ⁴				Code Ref.
	Beam Width	W	PT	PD		H1	H1 Allowable Roof Loads (125) ^{2,3}	Min H	Min H Allowable Roof Loads (125)	H1	H1 Allowable Roof Loads (125) ^{2,3}	Min H	Min H Allowable Roof Loads (125)	
3-5	3½	3¼	¾	5	¾	12	8750	8	3070	10	8750	8	4465	23, 94
3-6	3½	3¼	¾	6	¾	15	10500	8	2570	12	10500	8	3735	
3-7	3½	3¼	¾	7	¾	18	12250	8	2210	14	12250	8	3210	
3-9	3½	3¼	¾	9	¾	25	15750	8	1725	19	15750	8	2510	
5-5	5½	5¼	¾	5	¾	16	14350	8	3100	13	14350	8	4560	
5-6	5½	5¼	¾	6	¾	20	17220	8	2595	16	17220	8	3815	
5-7	5½	5¼	¾	7	¾	25	20090	8	2230	19	20090	8	3280	
5-9	5½	5¼	¾	9	¾	36	25830	8	1740	27	25830	8	2560	
7-5	6¾	6⅝	1	5	¾	19	18900	8	3100	15	18900	8	4605	23, 94, 126
7-6	6¾	6⅝	1	6	¾	24	22680	8	2595	18	22680	8	3855	
7-7	6¾	6⅝	1	7	¾	30	26460	8	2230	22	26460	8	3315	
7-9	6¾	6⅝	1	9	¾	40	29615	8	1740	33	34020	8	2585	
9-5	8¾	8⅝	1¼	5	¾	22	24500	8	3100	17	24500	8	4605	
9-6	8¾	8⅝	1¼	6	¾	29	29400	8	2595	22	29400	8	3855	
9-7	8¾	8⅝	1¼	7	¾	37	34300	8	2230	27	34300	8	3315	
9-9	8¾	8⅝	1¼	9	¾	40	29615	8	1740	40	43975	8	2585	
11-5	10¾	10⅝	1½	5	¾	26	30100	8	3100	20	30100	8	4605	
11-6	10¾	10⅝	1½	6	¾	34	36120	8	2595	25	36120	8	3855	
11-7	10¾	10⅝	1½	7	¾	40	37925	8	2230	32	42140	8	3315	
11-9	10¾	10⅝	1½	9	¾	40	29615	8	1740	40	43975	8	2585	

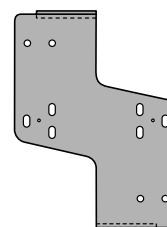
1. For H dimension between H1 and Minimum H, decrease allowable loads in direct proportion to depth.

2. Loads include a 25% increase for roof live loads; reduce for other load durations according to the code.

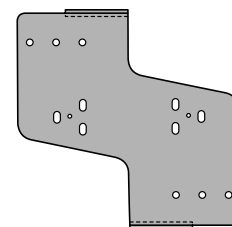
3. Loads are for 560 psi wood bearing.

4. See Horizontal Load Table for models with three rotation bolts.

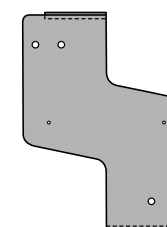
5. Other widths are available for structural composite lumber. Contact factory.



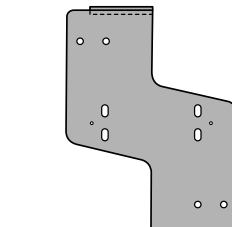
HCCTA



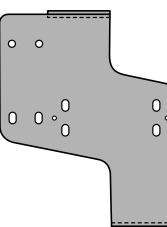
HCC3TA



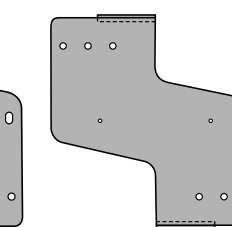
HCA



HC2CTA



HC4CTA



HC3A

THA/THAC Adjustable Truss Hangers

This product is preferable to similar connectors because of a) easier installation, b) higher loads, c) lower installed cost, or a combination of these features.

The THA series' extra long straps allow full nailing and can be field-formed to give top flange hanger convenience.

MATERIAL: See table.

FINISH: Galvanized. Some products available in Z-MAX; see Corrosion-Resistance, page 6-7.

INSTALLATION: • Use all specified fasteners. See General Notes.

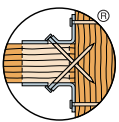
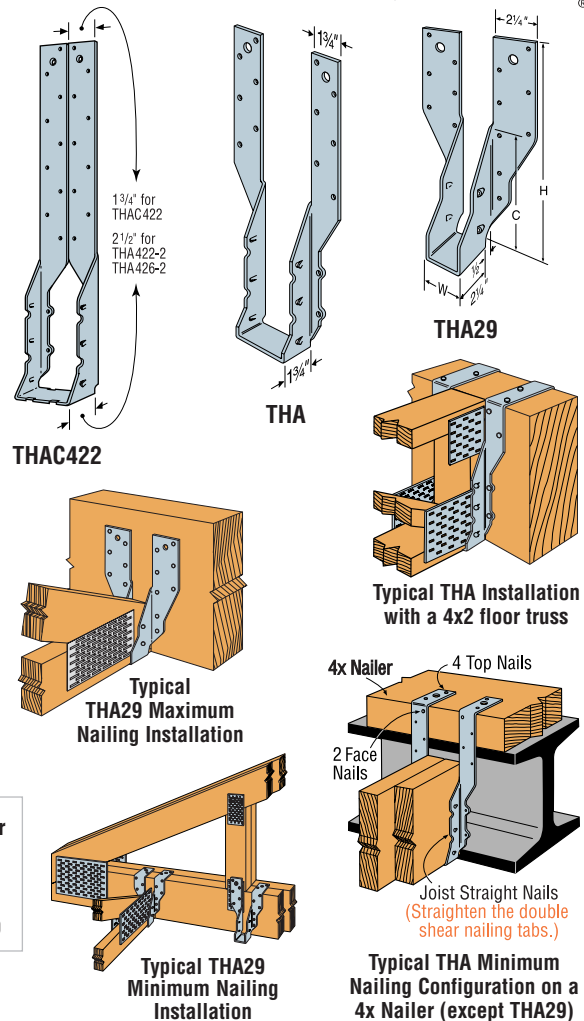
• **Two different installation methods may be used:**

Maximum nailing—Install all face nails according to the table. Nails used for the joist attachment must be driven at an angle so that they penetrate through the corner of the joist into the header. With single 2x carrying members, use 10dx1½" nails into the carrying member, and 10d or 16d commons into the carried member, and use 0.81 of the table value for 18 gauge, and 0.68 of the table value for 16 gauge.

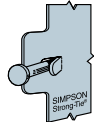
Minimum nailing—For the THA29, the minimum nailing schedule requires the use of joist double shear nailing as detailed above, and that the strap be field-formed over the header a minimum of 2½". A minimum of four top and four face nails must be used. For all models except the THA29, the minimum nailing schedule may be followed where double shear nailing is not possible, provided the strap is field-formed over the top of the header a minimum of 1½" for the THA213 and THA413, and 2" for all others, and a minimum of four top and two face nails are used.

OPTIONS: • THA hangers available with the header flanges turned in for 3% (except THA413) and larger, with no load reduction – order THAC hanger.

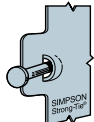
CODES: See page 12 for Code Listing Key Chart.



Double Shear Nailing Top View



Double Shear Nailing Side View
Do not bend tab



Dome Double Shear Nailing Side View
(available on some models)
U.S. Patent 5,603,580

Available with additional corrosion protection. Check with factory.

Minimum Carried Member	Model No.	Ga	Dimensions			Fasteners ¹				Doug-Fir-Larch/Southern Pine Allowable Loads					Spruce-Pine-Fir Allowable Loads					Code Ref.
			W	H	C	Carrying Member		Carried Member		Uplift ² (133 & 160)	Floor (100)	Snow (115)	Roof (125)	Wind (133)	Uplift ² (133 & 160)	Floor (100)	Snow (115)	Roof (125)	Wind (133)	
						Top	Face	Straight	Slant											
MINIMUM NAILING—TOP FLANGE																				
2x4	THA29	18	1½	9¼	5½	4-10d	4-10d	—	4-10d	750	2260	2310	2350	2350	645	1740	1785	1815	1815	1, 84, 121, 140
2x6	THA213	18	1½	13⅝	5½	4-10d	2-10d	4-10dx1½	—	—	1615	1615	1615	1615	—	1280	1280	1280	1280	
2x6	THA218	18	1½	17⅜	5½	4-10d	2-10d	4-10dx1½	—	—	1615	1615	1615	1615	—	1280	1280	1280	1280	
(2)2x10	THA218-2	16	3⅜	17¼	8	4-16d	2-16d	6-16dx2½	—	—	1635	1635	1635	1635	—	1465	1465	1465	1465	
(2)2x10	THA222-2	16	3⅜	22⅜	8	4-16d	2-16d	6-16dx2½	—	—	1635	1635	1635	1635	—	1465	1465	1465	1465	1,84,121,129,140
4x6	THA413	18	3⅝	13⅝	4½	4-10d	2-10d	4-10d	—	—	1615	1615	1615	1615	—	1280	1280	1280	1280	1, 84, 121, 140
4x10	THA418	16	3⅝	17½	7⅞	4-16d	2-16d	6-16d	—	—	1635	1635	1635	1635	—	1465	1465	1465	1465	
4x2 truss	THA422	16	3⅝	22	7⅞	4-16d	2-16d	6-16d	—	—	1635	1635	1635	1635	—	1465	1465	1465	1465	1, 84, 121, 140
4x2 truss	THA426	14	3⅝	26	7⅞	4-16d	4-16d	6-16d	—	—	2425	2425	2425	2425	—	1940	1940	1940	1940	170
(2)4x2 truss	THA422-2	14	7¼	22¼	9¾	4-16d	4-16d	6-16d	—	—	2810	2810	2810	2810	—	2260	2260	2260	2260	129
(2)4x2 truss	THA426-2	14	7¼	26⅝	9¾	4-16d	4-16d	6-16d	—	—	2810	2810	2810	2810	—	2260	2260	2260	2260	170
MAXIMUM NAILING—ALL NAIL HOLES FILLED																				
2x4	THA29	18	1½	9¼	5½	—	16-10d	—	4-10d	750	2125	2310	2350	2350	645	1740	1785	1815	1815	1, 84, 121, 140
2x6	THA213	18	1½	13⅝	5½	—	14-10d	—	4-10d	930	1795	1840	1870	1870	780	1385	1425	1450	1450	
2x6	THA218	18	1½	17⅜	5½	—	18-10d	—	4-10d	930	1795	1840	1870	1870	780	1385	1425	1450	1450	
(2)2x10	THA218-2	16	3⅜	17¼	8	—	16-16d	—	6-16d	1550	2830	3050	3050	3050	1355	2385	2740	2820	2820	
(2)2x10	THA222-2	16	3⅜	22⅜	8	—	22-16d	—	6-16d	1550	3510	3595	3650	3650	1355	2705	2775	2820	2820	1,84,121,129,140
4x6	THA413	18	3⅝	13⅝	4½	—	14-10d	—	4-10d	930	1940	2235	2400	2400	780	1660	1910	2075	2210	1, 84, 121, 140
4x10	THA418	16	3⅝	17½	7⅞	—	16-16d	—	6-16d	1550	2830	3050	3050	3050	1355	2385	2740	2980	3050	
4x2 truss	THA422	16	3⅝	22	7⅞	—	22-16d	—	6-16d	1550	3630	4090	4145	4145	1355	3075	3145	3195	3195	1, 84, 121, 140
4x2 truss	THA426	14	3⅝	26	7⅞	—	30-16d	—	6-16d	1715	4020	4625	4655	4655	1355	3480	4000	4030	4030	170
(2)4x2 truss	THA422-2	14	7¼	22¼	9¾	—	30-16d	—	6-16d	1715	4720	5430	5525	5525	1395	4025	4420	4420	4420	129
(2)4x2 truss	THA426-2	14	7¼	26⅝	9¾	—	38-16d	—	6-16d	1715	4695	4695	4695	4695	1395	3255	3255	3255	3255	170

- 16d sinkers may be used to replace 16d commons at 0.85 of table load.
- Uplift has been increased 33% and 60% for earthquake or wind loading with no further increase allowed; reduce where other loads govern.
- Wind (133) is a download rating.
- 160% uplift load for THA422-2 and THAC422-2 is 2060 lbs.

- For single 4x2 top chord carrying members, THA 4x hangers can be used with 10dx1½" nails and a reduced load to 0.83 of the table value. Loads are based on hanger installations at panel points.
- NAILS: 16d = 0.162" dia. x 3 3/8" long, 10d = 0.148" dia. x 3" long, 10dx1½" = 0.148" dia. x 1 1/2" long. See page 16-17 for other nail sizes and information.

LUS/MUS/HUS/HHUS/HGUS Double Shear Joist Hangers



This product is preferable to similar connectors because of a) easier installation, b) higher loads, c) lower installed cost, or a combination of these features.

MUS completes the Simpson Strong-Tie line of face mount truss to truss connectors. The MUS has increased load capacity and bearing compared to LUS connectors for medium load truss applications.

All hangers in this series have double shear nailing. This patented innovation distributes the load through two points on each joist nail for greater strength. It also allows the use of fewer nails, faster installation, and the use of common nails for all connections. (Do not bend or remove tabs)

MATERIAL: See tables on page 126 and 127.

FINISH: Galvanized. Some products available in stainless steel or Z-MAX; see Corrosion-Resistance, page 6-7.

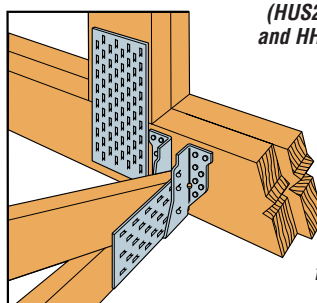
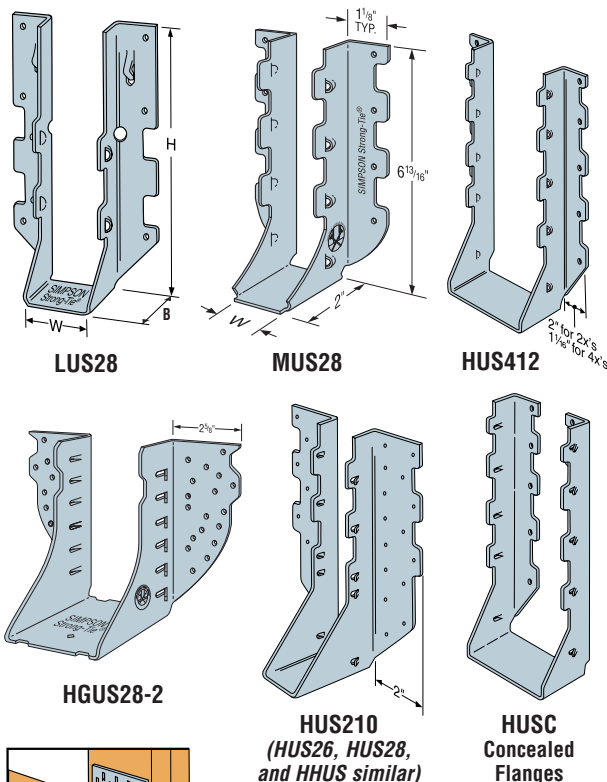
INSTALLATION: • Use all specified fasteners. See General Notes.

- Nails must be driven at an angle through the joist or truss into the header to achieve the table loads.
- Not designed for welded or nailer applications.
- 16d sinkers (0.148" dia. x 3 1/4" long) may be used where 10d commons are specified with no reduction in load. Where 16d commons are specified, 10d commons or 16d sinkers (0.148" dia. x 3 1/4" long) may be used at 0.85 of the table load.
- With 3x carrying members, use 16dx2 1/2" nails into the header and 16d commons into the joist with no load reduction. With single 2x carrying members, use 10dx1 1/2" nails into the header and 10d commons into the joist, and reduce the load to 0.64 of the table value.

OPTIONS: • LUS and MUS hangers cannot be modified.

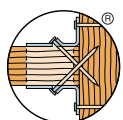
- HUS hangers available with the header flanges turned in for 2-2x (3 1/8") and 4x only, with no load reduction. See HUSC Concealed Flange illustration.
- Concealed flanges are not available for HGUS and HHUS.
- See Hanger Options, page 188, for sloped and/or skewed HHUS models.
- Other sizes available; consult your Simpson representative.

CODES: See page 12 for Code Listing Key Chart.

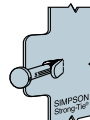


Typical HUS26 with Reduced Heel Height
(Truss Designer to provide fastener quantity for connecting multiple members together)

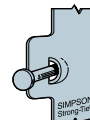
1. See table on page 127 for allowable loads.



Double Shear Nailing Top View



Double Shear Nailing Side View
Do not bend tab



Dome Double Shear Nailing Side View
(available on some models)
U.S. Patent 5,603,580

Available with additional corrosion protection. Check with factory.

Model No.	Min. Heel Height	Ga	Dimensions			Fasteners	
			W	H	B	Carrying Member	Carried Member
SINGLE 2x SIZES							
LUS24	2⅝	18	1⅞	3⅝	1¾	4-10d	2-10d
LUS26	4¼		1⅞	4¾	1¾	4-10d	4-10d
MUS26	4⅞	18	1⅞	5⅜	2	6-10d	6-10d
HUS26	4⅞	16	1⅝	5⅜	3	14-16d	6-16d
HGUS26	4⅞	12	1⅝	5⅜	5	20-16d	8-16d
LUS28	4⅞	18	1⅞	6⅝	1¾	6-10d	4-10d
MUS28	6⅞	18	1⅞	6⅞	2	8-10d	8-10d
HUS28	6½	16	1⅝	7	3	22-16d	8-16d
HGUS28	6⅞	12	1⅝	7⅝	5	36-16d	12-16d
LUS210	4¼	18	1⅞	7⅞	1¾	8-10d	4-10d
HUS210	8⅝	16	1⅝	9	3	30-16d	10-16d

REDUCED HEEL HEIGHT ALLOWABLE LOADS - DF/SP (See illustration above)

Model No.	Reduced Heel Height	No. of Carrying Member Pys	Joist Nails	Face Nails	Uplift		2x6 Carrying Member					2x8 Carrying Member				
							Floor	Snow	Roof	Wind	Wind	Floor	Snow	Roof	Wind	Wind
					(133)	(160)	(100)	(115)	(125)	(133)	(160)	(100)	(115)	(125)	(133)	(160)
LUS26	3 1/2"	1	3-10d	4-10d	730	875	700	805	875	935	1000	700	805	875	935	1000
		2	3-10d	4-10d	730	875	775	890	970	1030	1235	775	890	970	1030	1235
MUS26	3 1/2"	1	4-10d	6-10d	725	725	1000	1150	1250	1330	1390	1000	1150	1250	1330	1390
		2	4-10d	6-10d	725	725	1110	1280	1390	1420	1420	1110	1280	1390	1420	1420
HUS26	3 1/2"	1	4-10d	14-10d	865	865	1760	1950	1950	1950	1950	1500	1725	1880	1950	1950
			4-16d	14-16d	1035	1035	1980	2155	2155	2155	2155	1500	1725	1880	2000	2155
		2	4-10d	14-10d	865	865	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
			4-16d	14-16d	1035	1035	2425	2695	2695	2695	2695	2425	2695	2695	2695	2695
HGUS26	3 3/16"	2	6-10d	20-10d	1510	1510	2350	2350	2350	2350	2350	2350	2350	2350	2350	2350
			6-16d	20-16d	1745	1745	2830	2830	2830	2830	2830	2830	2830	2830	2830	2830
LUS28	3 1/2"	1	3-10d	6-10d	730	875	700	805	875	935	1000	900	1035	1125	1200	1245
		2	3-10d	6-10d	730	875	775	890	970	1030	1235	1010	1160	1260	1340	1480
MUS28	3 1/2"	1	4-10d	8-10d	775	775	1000	1150	1250	1330	1390	1200	1300	1300	1300	1300
		2	4-10d	8-10d	775	775	1110	1280	1390	1420	1420	1345	1550	1685	1690	1690
HUS28	3 1/2"	1	4-10d	22-10d	835	835	1760	1950	1950	1950	1950	1980	1980	1980	1980	1980
			4-16d	22-16d	1000	1000	1980	2155	2155	2155	2155	2810	2980	2980	2980	2980
		2	4-10d	22-10d	835	835	1950	1950	1950	1950	1950	2475	2475	2475	2475	2475
			4-16d	22-16d	1000	1000	2425	2695	2695	2695	2695	3210	3270	3310	3340	3450
HGUS28	3 3/16"	2	6-10d	36-10d	1395	1395	2350	2350	2350	2350	2350	3105	3105	3105	3105	3105
			6-16d	36-16d	1610	1610	2830	2830	2830	2830	2830	3740	3740	3740	3740	3740

- Allowable loads shown consider ANSI/TPI 1-2002 member design criteria.
- For allowable loads on 2x10 girder bottom chords, multiple ply hangers and on SPF/HF header wood species, see Technical Bulletin T-REDHEEL.
- HGUS, HHUS and HGUQ hangers installed with the joist fastener quantities shown above are recommended for installation on minimum 2-ply 2x girder bottom chords. See T-REDHEEL for HHUS and HGUQ allowable loads.
- Allowable loads are based on the lowest joist fastener holes filled. For the LUS, fill the two lowest joist fasteners holes on the right side of the hanger and the single lowest joist fastener hole on the left side of the hanger.
- Wind (133) and (160) is a download rating.
- NAILS:** 16d = 0.162" dia. x 3 1/4" long, 16dx2 1/2" = 0.162" dia. x 2 1/2" long, 10d = 0.148" dia. x 3" long, 10dx1 1/2" = 0.148" dia. x 1 1/2" long, See page 16-17 for other nail sizes and information.

FACE MOUNT HANGERS

Available with additional corrosion protection. Check with factory.

Model No.	Doug Fir-Larch Allowable Loads						Southern Pine Allowable Loads						Spruce-Pine-Fir/Hem Fir Allowable Loads						Code Ref.
	Uplift ¹ (133)	Uplift ¹ (160)	Floor (100)	Snow (115)	Roof (125)	Wind (133)	Uplift ¹ (133)	Uplift ¹ (160)	Floor (100)	Snow (115)	Roof (125)	Wind (133)	Uplift ¹ (133)	Uplift ¹ (160)	Floor (100)	Snow (115)	Roof (125)	Wind (133)	
SINGLE 2x SIZES																			
LUS24	465	490	640	735	800	850	490	490	690	795	865	920	390	465	540	625	675	730	4, 37, 87, 121, 133, 140
LUS26	930	1115	830	955	1040	1110	1010	1165	900	1035	1115	1200	780	935	700	805	875	950	
MUS26	1090	1090	1310	1505	1640	1740	1090	1090	1425	1640	1780	1740	915	915	1100	1265	1380	1465	47, 133
HUS26	1550	1550	2565	2950	3205	3335	1550	1550	2785	3200	3325	3335	1465	1550	2210	2490	2540	2580	4, 37, 87, 121, 133
HGUS26	1765	1765	3750	3750	3750	3750	1765	1765	3750	3750	3750	3750	1520	1520	3480	3480	3480	3480	133
LUS28	930	1115	1055	1210	1320	1405	1010	1165	1140	1310	1425	1520	780	935	890	1025	1115	1185	4, 37, 87, 121, 133, 140
MUS28	1555	1555	1750	2010	2185	2325	1555	1555	1900	2185	2375	2325	1305	1305	1470	1690	1835	1955	47, 133
HUS28	2000	2000	3585	3700	3775	3840	2000	2000	3380	3505	3585	3655	1720	1720	2580	2680	2745	2800	4, 37, 87, 121, 133
HGUS28	3015	3015	5720	5720	5720	5720	3015	3015	5720	5720	5720	5720	2595	2595	4920	4920	4920	4920	133
LUS210	930	1115	1275	1470	1595	1700	1010	1165	1380	1590	1725	1840	780	935	1085	1245	1355	1445	4, 37, 87, 121, 133, 140
HUS210	2845	3000	3775	3920	4020	4100	3000	3000	3585	3745	3850	3935	2320	2780	2745	2870	2955	3025	4, 37, 87, 121, 133

1. For dimensions and fastener information, see table on page 117.

Model No.	Min. Heel Height	Ga	Dimensions			Fasteners		Doug Fir-Larch/Southern Pine Allowable Loads						Spruce-Pine-Fir/Hem Fir Allowable Loads						Code Ref.
			W	H	B	Carrying Member	Carried Member	Uplift ¹ (133)	Uplift ¹ (160)	Floor (100)	Snow (115)	Roof (125)	Wind (133)	Uplift ¹ (133)	Uplift ¹ (160)	Floor (100)	Snow (115)	Roof (125)	Wind (133)	
DOUBLE 2x SIZES																				
LUS24-2	2¼	18	3⅜	3⅜	2	4-16d	2-16d	565	565	765	880	960	1020	465	555	640	735	800	880	1, 84, 121, 133
LUS26-2	4⅞	18	3⅜	4⅞	2	4-16d	4-16d	1140	1165	1000	1150	1250	1335	925	1115	820	945	1025	1145	
HHUS26-2	4⅞	14	3⅞	5⅜	3	14-16d	6-16d	1550	1550	2580	2965	3225	3440	1395	1550	2165	2490	2710	2960	4, 37, 121, 133, 140
HGUS26-2	4⅞	12	3⅞	5⅜	4	20-16d	8-16d	2325	2325	3940	4535	4930	5240	1995	1995	3410	3920	4260	4535	3, 39, 121, 133, 140
LUS28-2	4⅞	18	3⅜	7	2	6-16d	4-16d	1140	1165	1265	1455	1585	1690	925	1115	1050	1210	1315	1450	1, 84, 121, 133
HHUS28-2	6⅞	14	3⅞	6⅞	3	22-16d	8-16d	2000	2000	3885	4465	4855	5180	1860	2000	3275	3765	4095	4355	4, 37, 121, 133, 140
HGUS28-2	6⅞	12	3⅞	7⅞	4	36-16d	12-16d	3220	3220	6805	7830	7925	7925	2705	2705	5890	6320	6425	6575	3, 39, 121, 133, 140
LUS210-2	6⅞	18	3⅜	9	2	8-16d	6-16d	1550	1550	1765	2030	2210	2355	1390	1550	1465	1680	1830	1950	1, 84, 121, 133
HHUS210-2	8⅜	14	3⅞	8⅞	3	30-16d	10-16d	2855	3430	5190	5900	5900	5900	2330	2795	4385	4795	4875	4945	4, 37, 121, 133, 140
HGUS210-2	8⅞	12	3⅞	9⅞	4	46-16d	16-16d	3630	3630	8650	8940	8940	8940	3050	3050	6515	6775	6865	7065	3, 39, 121, 133, 140
TRIPLE 2x SIZES																				
HGUS26-3	4⅞	12	4⅞	4½	4	20-16d	8-16d	2325	2325	3940	4535	4930	5240	1995	1995	3410	3920	4260	4535	129, 133
HGUS28-3	6⅞	12	4⅞	7⅞	4	36-16d	12-16d	3220	3220	6805	7830	7925	7925	2705	2705	5890	6655	6655	6655	
HGUS210-3	8⅞	12	4⅞	9⅞	4	46-16d	16-16d	3630	3630	8780	8940	8940	8940	3050	3050	7510	7510	7510	7510	133
HHUS210-3	8⅞	14	4⅞	9	3	30-16d	10-16d	2855	3430	5190	5900	5900	5900	2330	2795	4385	5040	5075	5075	
HGUS212-3	10⅞	12	4⅞	10½	4	56-16d	20-16d	4055	4055	9155	9155	9155	9155	3405	3405	7690	7690	7690	7690	
HGUS214-3	12⅞	12	4⅞	12½	4	66-16d	22-16d	5380	5380	10015	10015	10015	10015	4520	4520	8415	8415	8415	8415	
QUADRUPLE 2x SIZES																				
HGUS26-4	5½	12	6⅞	5⅞	4	20-16d	8-16d	2325	2325	3940	4535	4930	5240	1955	1955	3410	3920	4260	4535	133
HGUS28-4	7¼	12	6⅞	7⅞	4	36-16d	12-16d	3220	3220	6805	7830	7925	7925	2705	2705	5890	6655	6655	6655	
HGUS210-4	9¼	12	6⅞	9⅞	4	46-16d	16-16d	3630	3630	8780	8940	8940	8940	3050	3050	7510	7510	7510	7510	
HHUS210-4	8¼	14	6⅞	8⅞	3	30-16d	10-16d	2855	3430	5190	5970	6490	6920	2450	2940	4475	5145	5595	5970	
HGUS212-4	10⅞	12	6⅞	10½	4	56-16d	20-16d	4055	4055	9155	9155	9155	9155	3405	3405	7690	7690	7690	7690	
HGUS214-4	12⅞	12	6⅞	12½	4	66-16d	22-16d	5380	5380	10015	10015	10015	10015	4520	4520	8415	8415	8415	8415	
4x SIZES																				
LUS46	4⅞	18	3⅞	4¾	2	4-16d	4-16d	1140	1165	1000	1150	1250	1335	925	1115	820	945	1025	1145	1, 84, 121, 133
HGUS46	4⅞	12	3⅞	4⅞	4	20-16d	8-16d	2325	2325	3940	4535	4930	5240	1995	1995	3410	3920	4260	4535	3, 39, 121, 133, 140
HHUS46	4⅞	14	3⅞	5⅞	3	14-16d	6-16d	1550	1550	2580	2965	3225	3440	1395	1550	2165	2490	2710	2960	4, 37, 121, 133, 140
LUS48	4⅞	18	3⅞	6¾	2	6-16d	4-16d	1140	1165	1265	1455	1585	1690	925	1115	1050	1210	1315	1450	1, 84, 121, 133
HUS48	6⅞	14	3⅞	7	2	6-16d	6-16d	1550	1550	1505	1730	1885	2010	1315	1550	1240	1425	1550	1650	
HHUS48	6½	14	3⅞	7	3	22-16d	8-16d	2000	2000	3885	4465	4855	5180	1860	2000	3275	3765	4095	4355	4, 37, 121, 133, 140
HGUS48	6⅞	12	3⅞	7⅞	4	36-16d	12-16d	3220	3220	6805	7830	7925	7925	2705	2705	5890	6655	6655	6655	3, 39, 121, 133, 140
LUS410	6¼	18	3⅞	8¾	2	8-16d	6-16d	1550	1550	1765	2030	2210	2265	1390	1550	1465	1680	1830	2025	1, 84, 121, 133
HHUS410	8⅞	14	3⅞	9	3	30-16d	10-16d	2855	3430	5190	5900	5900	5900	2330	2795	4385	5040	5075	5075	4, 37, 121, 133, 140
HGUS410	8⅞	12	3⅞	9	4	46-16d	16-16d	3630	3630	8780	8940	8940	8940	3050	3050	7365	7510	7510	7510	3, 39, 121, 133, 140
HGUS412	10⅞	12	3⅞	10⅞	4	56-16d	20-16d	4055	4055	9155	9155	9155	9155	3405	3405	7690	7690	7690	7690	133
HGUS414	11⅞	12	3⅞	12⅞	4	66-16d	22-16d	5380	5380	10015	10015	10015	10015	4520	4520	7890	8185	8380	8380	

- Uplift loads have been increased 33% and 60% for earthquake or wind loading with no further increase allowed. Divide by 1.33 and 1.60 for normal loading as in cantilever construction.
- Wind (133) is a download rating.
- Minimum heel height shown is required to achieve full table loads. For less than minimum heel height, see Allowable Loads with Reduced Heel Height on page 126.
- Truss chord cross-grain tension may limit allowable loads. Refer to Technical Bulletins

T-ANSITPISPF, T-ANSITPISP and T-ANSITPIDF for allowable loads that consider ANSI/TPI 1-2002 wood member design criteria.

- Loads shown are based on minimum of 2-ply 2x girder bottom chords.
 - See installation notes on page 119 for fastener load modifications.
 - NAILS: 16d = 0.162" dia. x 3 1/2" long.
- See page 16-17 for other nail sizes and information.

HTU Face Mount Truss Hangers

The new HTU face mount truss hangers have nail patterns designed specifically for shallow heel heights, so that full allowable loads (*with minimum nailing*) apply to heel heights as low as 3/8". Minimum and maximum nailing options provide solutions for varying heel heights and end conditions.

Alternate allowable loads are provided for gaps between the end of the truss and the carrying member greater than 1/8" (*maximum gap for standard allowable loads is 1/8" per ASTM D-1761*).

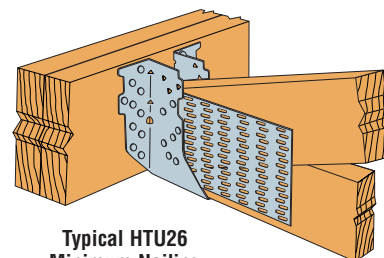
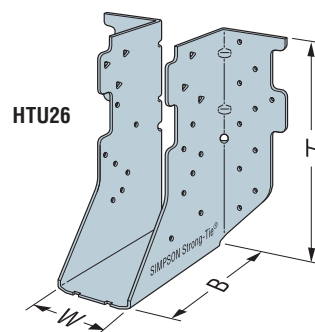
MATERIAL: 16 gauge

FINISH: Galvanized

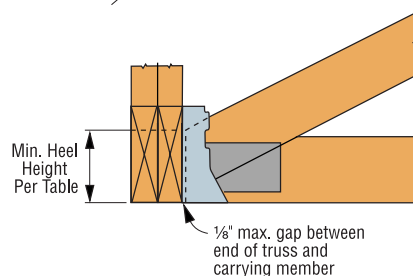
INSTALLATION:

- Use all specified fasteners. See General Notes.
- Can be installed filling round holes only, or filling round and triangle holes for maximum values.
- For single 2x carrying members, use N10 (10dx1½") nails into the header and reduce the allowable download to 0.70 of the table value. The allowable uplift is 100% of the table load.
- See alternate installation for applications using the HTU28 or HTU210 on a 2x6 carrying member for additional uplift capacity.

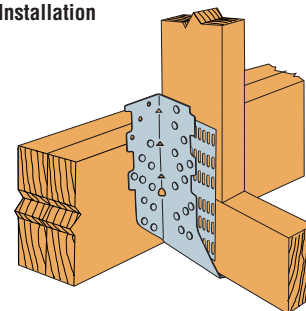
CODES: See page 12 for Code Listing Key Chart.



Typical HTU26
Minimum Nailing
Installation



HTU Installation for Standard Allowable Loads
(For 1/2" maximum gap,
use Alternate Allowable Loads.)



Alternate Installation –
HTU28 installed on
2x6 carrying member
(HTU210 similar)

Standard Allowable Loads (1/8" Maximum Hanger Gap)

Model No.	Min. Heel Height	Dimensions			Fasteners		Doug Fir-Larch/Southern Pine Allowable Loads					Spruce-Pine-Fir/Hem Fir Allowable Loads					Code Ref.
		W	H	B	Carrying Member	Carried Member	Uplift (133/160)	Floor (100)	Snow (115)	Roof (125)	Wind (133)	Uplift (133/160)	Floor (100)	Snow (115)	Roof (125)	Wind (133)	
SINGLE 2x SIZES																	
HTU26 ⁸	3½	1%	5¼ ₁₆	3½	20-16d	11-10dx1½	730	2880	3045	3045	3045	630	1815	1920	1920	1920	133
HTU26 (Min)	3⅞	1%	5¼ ₁₆	3½	20-16d	14-10dx1½	1250	2880	3200	3200	3200	1075	2015	2015	2015	2015	
HTU26 (Max)	5½	1%	5¼ ₁₆	3½	20-16d	20-10dx1½	1555	2880	3310	3600	3840	1335	2480	2850	3120	3320	
HTU28 (Min)	3⅞	1%	7¼ ₁₆	3½	26-16d	14-10dx1½	1235	3745	3895	3895	3895	1060	2920	2920	2920	2920	
HTU28 (Max)	7¼	1%	7¼ ₁₆	3½	26-16d	26-10dx1½	2140	3745	4305	4680	4990	1840	3225	3710	4055	4315	
HTU210 (Min)	3¾	1%	9¼ ₁₆	3½	32-16d	14-10dx1½	1330	4355	4355	4355	4355	1145	3265	3265	3265	3265	
HTU210 (Max)	9¼	1%	9¼ ₁₆	3½	32-16d	32-10dx1½	3315	4610	5300	5760	5995	2850	3970	4565	4990	5155	
DOUBLE 2x SIZES																	
HTU26-2 (Min)	3⅞	3¼ ₁₆	5¼ ₁₆	3½	20-16d	14-10d	1515	2880	3310	3600	3840	1305	2465	2465	2465	2465	133
HTU26-2 (Max)	5½	3¼ ₁₆	5¼ ₁₆	3½	20-16d	20-10d	2175	2880	3310	3600	3840	1870	2480	2825	3120	3310	
HTU28-2 (Min)	3⅞	3¼ ₁₆	7¼ ₁₆	3½	26-16d	14-10d	1530	3745	4305	4305	4305	1315	3225	3235	3235	3235	
HTU28-2 (Max)	7¼	3¼ ₁₆	7¼ ₁₆	3½	26-16d	26-10d	3485	3745	4305	4680	4990	2995	3225	3710	4055	4315	
HTU210-2 (Min)	3¾	3¼ ₁₆	9¼ ₁₆	3½	32-16d	14-10d	1540	4610	4815	4815	4815	1325	3610	3610	3610	3610	
HTU210-2 (Max)	9¼	3¼ ₁₆	9¼ ₁₆	3½	32-16d	32-10d	4110	4610	5300	5760	6145	3535	3970	4565	4990	5310	

1. The maximum hanger gap is measured between the joist (or truss) end and the carrying member.
2. Minimum heel heights required for full table loads are based on a minimum 2:12 pitch.
3. Allowable load calculations are based on the 2001 NDS.
4. Uplift has been increased 33% and 60% for earthquake or wind loading with no further increase allowed; reduce where other loads govern.
5. Wind (133) is a download rating.
6. For hanger gaps between 1/8" and 1/2" use the Alternate Allowable Loads.

7. Truss chord cross-grain tension may limit allowable loads. Refer to Technical Bulletins T-ANSITPISPF, T-ANSITPISP and T-ANSITPIDF for allowable loads that consider ANSI/TPI 1-2002 wood member design criteria.
8. Loads shown are based on truss or joist with 3½" minimum heel height.
9. NAILS: 16d = 0.162" dia. x 3½" long, 10d = 0.148" dia. x 3" long, 10dx1½" = 0.148" dia. x 1½" long. See page 16-17 for other nail sizes and information.

Alternate Installation Table for 2x4 and 2x6 Carrying Member

Model No.	Min. Heel Height (in.)	Minimum Carrying Member	Fasteners		Doug Fir-Larch/Southern Pine Allowable Loads					Spruce-Pine-Fir/Hem Fir Allowable Loads					Code Ref.
			Carrying Member	Carried Member	Uplift (133/160)	Floor (100)	Snow (115)	Roof (125)	Wind (133)	Uplift (133/160)	Floor (100)	Snow (115)	Roof (125)	Wind (133)	
HTU26 (Min)	3¾"	2-2x4	10-16d	14-10dx1½"	925	1440	1660	1800	1915	795	1245	1430	1555	1655	133
HTU26 (Max)	5½"	2-2x4	10-16d	20-10dx1½"	1310	1440	1660	1800	1915	1125	1245	1430	1555	1655	
HTU28 (Max)	7¼"	2-2x6	20-16d	26-10dx1½"	2205	2880	3310	3600	3840	1895	2480	2850	2925	2925	
HTU210 (Max)	9¼"	2-2x6	20-16d	32-10dx1½"	3155	2880	3310	3600	3840	2715	2480	2850	2925	2925	

1. See table footnotes above.
2. Maximum hanger gap for the alternate installation is 1/2".

3. NAILS: 16d = 0.162" dia. x 3½" long, 10dx1½" = 0.148" dia. x 1½" long. See page 16-17 for other nail sizes and information.

HTU Face Mount Truss Hangers

Alternate Allowable Loads (1/2" Maximum Hanger Gap)

Model No.	Min. Heel Height	Dimensions			Fasteners		Doug Fir-Larch/Southern Pine Allowable Loads					Spruce-Pine-Fir/Hem Fir Allowable Loads					Code Ref.
		W	H	B	Carrying Member	Carried Member	Uplift (133/160)	Floor (100)	Snow (115)	Roof (125)	Wind (133)	Uplift (133/160)	Floor (100)	Snow (115)	Roof (125)	Wind (133)	
SINGLE 2x SIZES																	
HTU26 ^a	3½	1⅝	5⅞	3½	20-16d	11-10dx1½	670	2735	2735	2735	2735	575	1725	1725	1725	1725	133
HTU26 (Min)	3⅞	1⅝	5⅞	3½	20-16d	14-10dx1½	1175	2880	3100	3100	3100	1010	1955	1955	1955	1955	
HTU26 (Max)	5½	1⅝	5⅞	3½	20-16d	20-10dx1½	1215	2880	3290	3580	3760	1045	2370	2370	2370	2370	
HTU28 (Min)	3⅞	1⅝	7⅞	3½	26-16d	14-10dx1½	1125	3720	3770	3770	3770	965	2830	2830	2830	2830	
HTU28 (Max)	7¼	1⅝	7⅞	3½	26-16d	26-10dx1½	2140	3720	4275	4655	4965	1840	3225	3710	3760	3760	
HTU210 (Min)	3⅞	1⅝	9⅞	3½	32-16d	14-10dx1½	1250	3600	3600	3600	3600	1075	2700	2700	2700	2700	
HTU210 (Max)	9¼	1⅝	9⅞	3½	32-16d	32-10dx1½	3255	4575	5020	5020	5020	2800	3765	3765	3765	3765	
DOUBLE 2x SIZES																	
HTU26-2 (Min)	3⅞	3⅞	5⅞	3½	20-16d	14-10d	1515	2860	3290	3500	3500	1305	2205	2205	2205	2205	133
HTU26-2 (Max)	5½	3⅞	5⅞	3½	20-16d	20-10d	1910	2860	3290	3500	3500	1645	2205	2205	2205	2205	
HTU28-2 (Min)	3⅞	3⅞	7⅞	3½	26-16d	14-10d	1490	3720	3980	3980	3980	1280	2985	2985	2985	2985	
HTU28-2 (Max)	7¼	3⅞	7⅞	3½	26-16d	26-10d	3035	3720	4275	4655	4965	2610	3225	3710	4055	4165	
HTU210-2 (Min)	3⅞	3⅞	9⅞	3½	32-16d	14-10d	1540	4255	4255	4255	4255	1275	3190	3190	3190	3190	
HTU210-2 (Max)	9¼	3⅞	9⅞	3½	32-16d	32-10d	3855	4575	5260	5730	6110	3315	3970	4565	4855	4855	

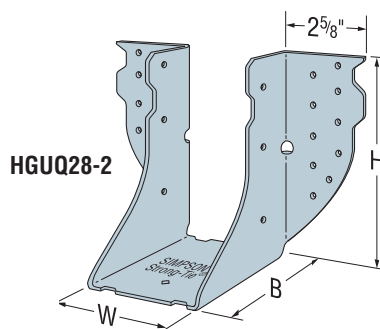
See table footnotes on page 128.

HGUQ Multi-Ply Girder Truss Hangers

HGUQ hangers are designed for connections to multi-ply girder trusses. Installation using Simpson's SDS wood screws will provide an improved distribution of load between all plys of the supporting girder truss. Using SDS screws results in a faster and easier installation compared to nails.

MATERIAL: 12 gauge**FINISH:** Galvanized.**INSTALLATION:** • Use all specified fasteners. See General Notes.

- SDS screws supplied.
- Not designed for welded or nailer applications.
- For solid sawn lumber (header and joist).

OPTIONS: These hangers cannot be modified.**CODES:** See page 12 for Code Listing Key Chart.

See page 126 for an example of product installation on a truss.

Model No.	Ga	Dimensions			Quantity Fasteners SDS		Doug Fir-Larch/Southern Pine Allowable Loads						Spruce-Pine-Fir Allowable Loads						Code Ref.
		W	H	B	Carrying Member	Carried Member	Uplift ¹ (133)	Uplift ¹ (160)	Floor (100)	Snow (115)	Roof (125)	Wind (133)	Uplift ¹ (133)	Uplift ¹ (160)	Floor (100)	Snow (115)	Roof (125)	Wind (133)	
DOUBLE 2x SIZES																			
HGUQ26-2-SDS3	12	3 ⁷ / ₁₆	5	4	(12) 1/4x3	(4) 1/4x3	1635	1635	3695	4250	4620	4930	1415	1635	3180	3655	3975	4240	129,
HGUQ28-2-SDS3	12	3 ⁷ / ₁₆	7	4	(20) 1/4x3	(6) 1/4x3	2465	2565	6160	7085	7330	7330	2120	2545	5300	6095	6625	6625	133
HGUQ210-2-SDS3	12	3 ⁷ / ₁₆	9	4	(28) 1/4x3	(8) 1/4x3	3285	3440	7415	7415	7415	7415	2825	3390	7220	7415	7415	7415	133
TRIPLE 2x SIZES																			
HGUQ26-3-SDS4.5	12	5 ¹ / ₈	5 ¹ / ₈	4	(12) 1/4x4 ¹ / ₂	(4) 1/4x4 ¹ / ₂	1635	1635	3695	4250	4620	4930	1415	1635	3180	3655	3975	4240	129,
HGUQ28-3-SDS4.5	12	5 ¹ / ₈	7 ¹ / ₈	4	(20) 1/4x4 ¹ / ₂	(6) 1/4x4 ¹ / ₂	2465	2565	6160	7085	7700	8215	2120	2545	5300	6095	6625	7065	133
HGUQ210-3-SDS4.5	12	5 ¹ / ₈	9 ¹ / ₈	4	(28) 1/4x4 ¹ / ₂	(8) 1/4x4 ¹ / ₂	3285	3440	8625	9745	9745	9745	2825	3390	7420	8535	9275	9275	133
QUADRUPLE 2x SIZES																			
HGUQ26-4-SDS6	12	6 ¹ / ₁₆	5 ⁵ / ₁₆	4	(12) 1/4x6	(4) 1/4x6	1645	1970	3695	4250	4620	4930	1415	1695	3180	3655	3975	4240	133
HGUQ28-4-SDS6	12	6 ¹ / ₁₆	7 ⁵ / ₁₆	4	(20) 1/4x6	(6) 1/4x6	2465	2955	6160	7085	7700	8215	2120	2545	5300	6095	6625	7065	
HGUQ210-4-SDS6	12	6 ¹ / ₁₆	9 ⁵ / ₁₆	4	(28) 1/4x6	(8) 1/4x6	3285	3940	8625	9920	10260	10260	2825	3390	7420	8535	9275	9275	
4x SIZES																			
HGUQ46-SDS3	12	3 ⁵ / ₈	4 ⁷ / ₈	4	(12) 1/4x3	(4) 1/4x3	1635	1635	3695	4250	4620	4930	1415	1635	3180	3655	3975	4240	133
HGUQ48-SDS3	12	3 ⁵ / ₈	6 ⁷ / ₈	4	(20) 1/4x3	(6) 1/4x3	2465	2565	6160	7085	7330	7330	2120	2545	5300	6095	6625	6625	
HGUQ410-SDS3	12	3 ⁵ / ₈	8 ⁷ / ₈	4	(28) 1/4x3	(8) 1/4x3	3285	3440	7415	7415	7415	7415	2825	3390	7415	7415	7415	7415	

1. Uplift loads have been increased 33% and 60% for earthquake or wind loading with no further increase allowed. Divide by 1.33 and 1.60 for normal loading as in cantilever construction.
2. Wind (133) is a download rating.
3. Truss chord cross-grain tension may limit allowable loads. Refer to Technical Bulletins T-ANSITPISPF, T-ANSITPISP and T-ANSITPIDF for allowable loads that consider ANSI/TPI 1 wood member design criteria.

4. Strong-Drive® screws are permitted to be installed through metal truss plates as approved by the Truss Designer, provided the requirements of ANSI/TPI 1-2002 Section 8.10 are met (pre-drilling required).

W/WP/WM Plated Truss Top Flange Hangers

MATERIAL: W, WM—12 gauge top flange and stirrup,
WP—7 gauge top flange and 12 gauge stirrup.

FINISH: Simpson gray paint; hot-dipped galvanized available; specify HDG.

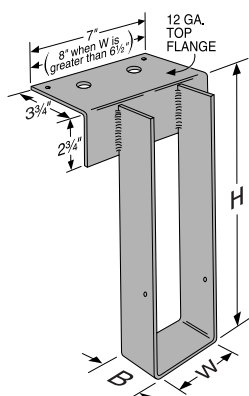
ALLOWABLE LOADS: For hanger heights exceeding the joist height, the allowable load is 0.50 of the table load.

INSTALLATION: • Use all specified fasteners.

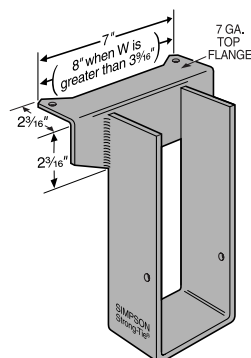
- Hangers may be welded to steel headers with $\frac{1}{8}$ " for W, and $\frac{3}{16}$ " for WP, by $1\frac{1}{2}$ " fillet welds located at each end of the top flange. Weld-on applications produce maximum allowable load listed. Uplift loads do not apply to this application.
- Hangers can support multi-ply carried members; the individual members must be secured together to work as a single unit before installation into the hanger.
- For 4x2 trusses specify "alternate nail pattern" which relocates the nails to the bottom of the joist.

OPTIONS: See Hanger Options, page 188.

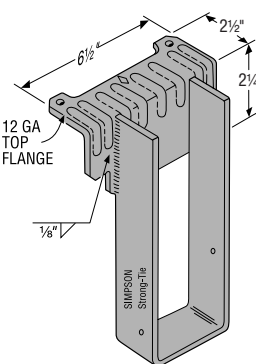
CODES: See page 12 for Code Listing Key Chart.



WM



WP

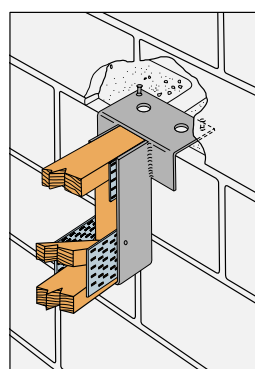


W

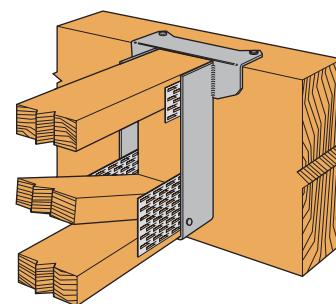
Model	Nailer	Top Flange Nailing	Allowable Loads		
			DF/SP	SPF	LSL
W	2x	2-10dx1½	1600	1600	—
	3x	2-16dx2½	1765	1740	—
	2-2x	2-10d	1665	1665	—
	4x	2-10d	2200	2200	—
WP	2x	2-10dx1½	2525	2500	3375
	3x	2-16dx2½	3000	2510	3375
	2-2x	2-10d	3255	3255	—
	4x	2-10d	3255	3255	—

NAILER TABLE

The table indicates the maximum allowable loads for W and WP hangers used on wood nailers. Nailers are wood members attached to the top of a steel I-beam, concrete or masonry wall. This table also applies to sloped-seat hangers.



Typical WM Installation


 Typical WP
 Truss Installation with
 Alternate Nailing Pattern (ANP)

W SERIES WITH VARIOUS HEADERS

Model	Joist		Fasteners			Allowable Loads Header Type								Code Ref.
	Width ⁴	Depth	Top	Face	Joist	Uplift (133/160)	LVL	PSL	LSL	DF/SP	SPF	I-Joist	Masonry	
W	1½ to 3½	3½ to 30	2-10dx1½	—	2-10dx1½	—	1635	1740	—	1600	1415	—	—	170
	1½ to 3½	3½ to 30	2-10d	—	2-10dx1½	—	2150	2020	—	2200	1435	—	—	26, 83
	1½ to 3½	3½ to 30	2-16d	—	2-10dx1½	—	2335	1950	2335	1765	1435	—	—	—
	1½ to 7	3½ to 30	2-16d DPLX	—	2-10dx1½	—	—	—	—	—	—	—	4175	1, 84
WP	1½ to 7	3½ to 30	2-10dx1½	—	2-10dx1½	—	2865	3250	—	2500	2000	2030	—	170
	1½ to 7	3½ to 30	2-10d	—	2-10dx1½	—	2525	3250	3650	3255	2600	—	—	26, 83
	1½ to 7	3½ to 30	2-16d	—	2-10dx1½	—	3635	3320	3650	3255	2600	—	—	—
	1½ to 7	3½ to 30	2-16d	—	2-10dx1½	—	—	—	—	—	—	—	—	—

1. 16d sinkers (9 ga x 3") may be used where 10d commons are called out with no load reduction.

2. Uplift loads have been increased 33% and 60% for wind or earthquake loading; no further increase allowed. Divide by 1.33 and 1.60 for normal loading like cantilever construction.

3. WM hangers are limited based on joist bearing capacity for the specific wood species, up to the maximum test value of 4175 lbs. All headers are grouted masonry block.

4. Joist dimensions do not include truss plate thickness.

5. NAILS: 16d and 16d DPLX = 0.162" dia. x 3½" long, 10d = 0.148" dia. x 3" long, 10dx1½ = 0.148" dia. x 1½" long. See page 16-17 for other nail sizes and information.

Model No.	Ga	Dimensions				Fasteners		Doug-Fir-Larch/Southern Pine Allowable Loads				Spruce-Pine-Fir Allowable Loads			
		W	Min. ³ H	B	TF	Carrying Member	Carried Member	Floor (100)	Snow (115)	Roof (125)	Wind (133)	Floor (100)	Snow (115)	Roof (125)	Wind (133)
W1.62x	12	1½	4	2½	2½	2-10d	2-10dx1½	2200	2200	2200	2200	1435	1435	1435	1435
WM1.62x	12	1½	4	2	¾	2-16d DPLX	2-10dx1½	1890	1920	1940	1955	1445	1470	1485	1500
WP3.31x	12	¾	4	2½	¾	2-10d	2-10d	3255	3255	3255	3255	2600	2600	2600	2600
WM3.31x	12	¾	4	2	¾	2-16d DPLX	2-10d	3635	3675	3700	3720	2765	2795	2820	2835
W3.62x	12	¾	4	2½	¾	2-10d	2-10d	2200	2200	2200	2200	1435	1435	1435	1435
WP3.62x	12	¾	4	2½	¾	2-10d	2-10d	3255	3255	3255	3255	2600	2600	2600	2600
WM3.62x	12	¾	4	2	¾	2-16d DPLX	2-10d	4175	4175	4175	4175	3190	3220	3240	3260
WP7.25x	12	¾	4	2½	¾	2-10d	2-10d	3255	3255	3255	3255	2600	2600	2600	2600
WM7.25x	12	¾	4	2	¾	2-16d DPLX	2-10d	4175	4175	4175	4175	4175	4175	4175	4175

1. WM hangers are limited based on joist bearing capacity for the specific wood species, up to the maximum test value of 4175 lbs. All headers are grouted masonry block.

2. Wind (133) is a download rating.

3. Specify "H" dimension. "Min H" is the minimum H dimension that may be ordered.

4. NAILS: 16d DPLX = 0.162" dia. x 3½" long, 10d = 0.148" dia. x 3" long, 10dx1½ = 0.148" dia. x 1½" long. See page 16-17 for other nail sizes and information.

THAR/L422 Skewed Truss Hangers

Designed for 4x2 floor trusses and 4x beams, the new THAR/L422 has a standard skew of 45 degrees. **Straps must be bent for top flange installation.** PAN nailing helps eliminate splitting of 4x2 truss bottom chords.

MATERIAL: 16 gauge

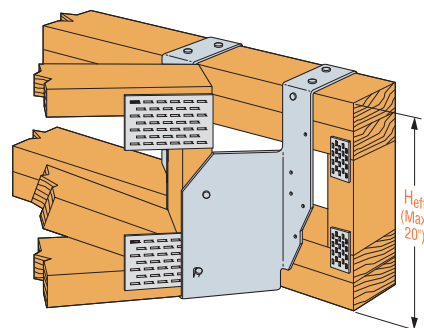
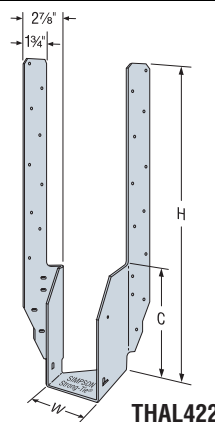
FINISH: Galvanized.

INSTALLATION: • Use all specified fasteners. See General Notes.

Two different installation methods may be used:

- **Maximum Nailing**—A minimum of four top and 12 face nails must be used. Straps must be field-formed over the header a minimum of 2½". Install 10dx1½" nails into carried member PAN nail holes and 10d common nail into round nail hole. Install 10d common nails into carrying member.
- **Minimum Nailing**—A minimum of four top and 2 face nails must be used. Straps must be field-formed over the header a minimum of 2½". Install nails as detailed above. For single 4x carrying members, use 10dx1½" nails and refer to the table for reduced loads.

CODES: See page 12 for Code Listing Key Chart.



Typical THAR/L422 installed on 4x2 wood truss.

Model No.	Ga	Dimensions (in.)			Minimum Carrying Member	Effective Height H _{eff} ³	Fasteners				Doug-Fir-Larch/Southern Pine Allowable Loads				Spruce-Pine-Fir Allowable Loads				Code Ref.
		W	H	C			Carrying Member		Carried Member		Uplift (133 & 160)	Floor (100)	Snow (115)	Roof (125)	Uplift (133 & 160)	Floor (100)	Snow (115)	Roof (125)	
							Top	Face	Straight	Slant									
THAL/R422 (Min)	16	3½	22½	8	Single 4x2	9 min.	4-10dx1½	2-10dx1½	1-10dx1½	2-10dx1½	—	880	880	880	—	775	775	775	47, 134
					Double 4x2	9 to 12	4-10d	2-10d	1-10d	2-10dx1½	—	1440	1440	1440	—	1210	1210	1210	
						> 12	4-10d	12-10d	1-10d	2-10dx1½	—	1090	1090	1090	—	915	915	915	
THAL/R422 (Max)	16	3½	22½	8	Double 4x2	9 min.	4-10d	12-10d	1-10d	2-10dx1½	310	1675	1675	1675	260	1405	1405	1405	

1. Uplift has been increased 33% and 60% for earthquake or wind loading with no further increase allowed; reduce where other loads govern.

2. Roof loads are 125% of floor loads unless limited by other criteria. Floor loads may be adjusted for load durations according to the code provided they do not exceed those in the roof column.

3. Where the top of the carried member is flush with the top of the carrying member, H_{eff} is equal to the depth of the carried member. Otherwise, H_{eff} shall be measured from the top of the bearing seat to the top of the carrying member.

4. NAILS: 10d = 0.148" dia. x 3" long, 10dx1½ = 0.148" dia. x 1½" long. See page 16-17 for other nail sizes and information.

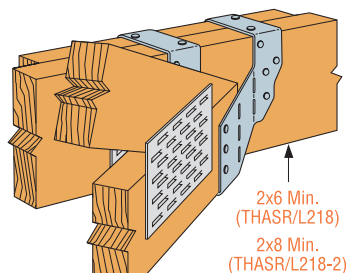
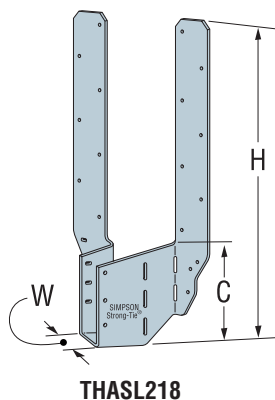
THASR/L Adjustable Truss Hangers

Field skewable from 46° to 84°. No special order needed.

MATERIAL: 16 gauge

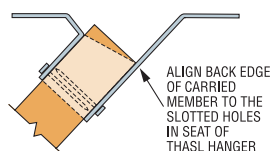
FINISH: Galvanized.

CODES: See page 12 for Code Listing Key Chart.

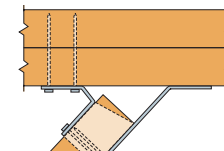


Typical THASR/L218 Installation
(L in model name = Left, R in model name = Right)

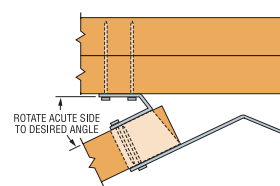
INSTALLATION SEQUENCE:



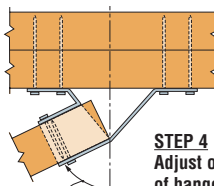
STEP 1
Install carried member into the seat of the hanger. Secure with 4-10dx1½" nails.



STEP 2
Install 10d nails into header on the acute angle side first.



STEP 3
Adjust acute side of hanger to the desired angle.



STEP 4
Adjust obtuse side of hanger flush with the carrying member. Install 10d nails into header on obtuse side.

Minimum Carried Member	Model No.	Dimensions			Fasteners			Doug-Fir-Larch/Southern Pine Allowable Loads					Spruce-Pine-Fir Allowable Loads					Code Ref.	
		W	H	C	Carrying Member		Carried Member	Uplift (133 & 160)	Floor (100)	Snow (115)	Roof (125)	Wind (133)	Uplift (133 & 160)	Floor (100)	Snow (115)	Roof (125)	Wind (133)		
					Top	Face	Straight												
FACTORY SKEW 45°																			129
2x Truss	THASR/L218	1½	18	5½	4-10d	6-10d	6-10dx1½	380	1605	1605	1605	1605	325	1380	1380	1380	1380		
2-2x Truss	THASR/L218-2	3½	18	5%	4-10d	8-10d	6-10dx1½	425	1465	1465	1465	1465	365	1260	1260	1260	1260		
FIELD SKEW 46° TO 84°																			
2x Truss	THASR/L218	1½	18	5½	4-10d	6-10d	6-10dx1½	490	1475	1475	1475	1475	420	1270	1270	1270	1270		
2-2x Truss	THASR/L218-2	3½	18	5%	4-10d	8-10d	6-10dx1½	540	1465	1465	1465	1465	465	1260	1260	1260	1260		

1. Wind (133) is a download rating.

2. NAILS: 10d = 0.148" dia. x 3" long, 10dx1½ = 0.148" dia. x 1½" long. See page 16-17 for other nail sizes and information.

TJC37 Jack Truss Connector

NEW! TJC37 is a versatile connector for jack trusses. Adjustable from 0 to 67.5 degree (*shipped with 67.5 degree bend*). Nail hole locations allow for easy installation. Minimum nailing option provides faster installation and lower installed cost.

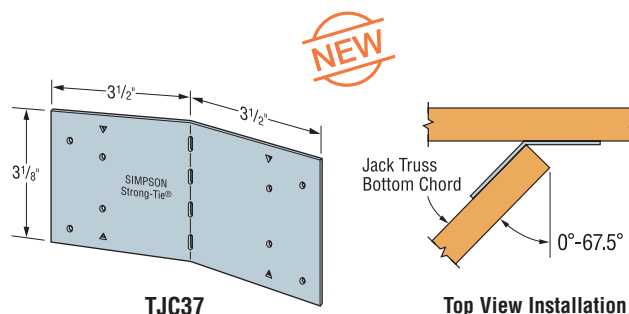
MATERIAL: 16 gauge.

FINISH: Galvanized

INSTALLATION: • Use all specified fasteners; see General Notes.

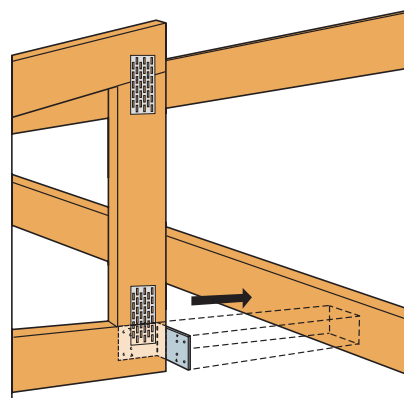
- Can be installed filling round holes only, or filling round and triangle holes for maximum values.
- To reduce the potential for splitting, install the TJC37 with a minimum $\frac{3}{16}$ " edge distance on the chord members (*must be centered on 2x4 chords*).
- Position the jack truss on the inside of the bend line with the end of the jack truss flush with the bend line.
- Bend the TJC37 to the desired position (*one bend cycle only*).
- No bevel cut required.
- Applications involving attachment of TJC37 to the top chord requires minimum 2x6 carrying member for jack truss pitches up to 7:12, and 2x8 or larger for pitches greater than 7:12.

CODES: See page 12 for Code Listing Key Chart.



TJC37

Top View Installation



Typical TJC37 Installation

Model No.	Fasteners		Allowable Loads						Code Ref.
	Carrying Member	Carried Member	DF/SP			SPF/HF			
			0°	1°-60°	61°-67.5°	0°	1°-60°	61°-67.5°	
TJC37 (min)	4-8dx1½	4-8dx1½	340	320	320	285	270	270	160
TJC37 (max)	6-8dx1½	6-8dx1½	580	485	425	485	405	355	

1. No load duration increase allowed.

2. Allowable loads are for upward or downward direction.

3. NAILS: 8dx1½ = 0.131" dia. x 1½" long.

See page 16-17 for other nail sizes and information.

LTHMA Multiple Truss Hangers

A single-piece connector designed to carry multiple truss members off girder trusses with 2x4 or 2x6 bottom chords.

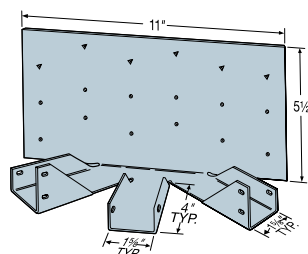
MATERIAL: 16 gauge.

FINISH: Galvanized.

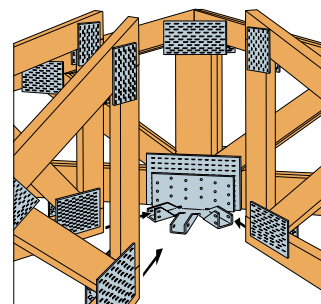
INSTALLATION: • Use all specified fasteners. See General Notes.

- The total load must be symmetrically distributed about the centerline to avoid eccentric loading of the connector.
- Fill round holes for girder trusses with 2x4 bottom chords.
- Fill round and triangle holes for girder trusses with 2x6 bottom chords.

CODES: See page 12 for Code Listing Key Chart.



LTHMA



Typical LTHMA Installation

Model No.	Header	Fasteners			Doug-Fir-Larch/So. Pine Allowable Loads												Code Ref.
		Header	Hips (total)	Jack	Uplift (133 & 160)			Floor (100)			Snow (115)			Roof (125/133/160)			
					Hip	Jack	Total	Hip	Jack	Total	Hip	Jack	Total	Hip	Jack	Total	
LTHMA	1 ply 2x4	12-10dx1½	6-10dx1½	2-10dx1½	55	20	130	485	110	1080	540	125	1205	540	125	1205	6, 121
	2 ply 2x4	12-10d	6-10dx1½	2-10dx1½	55	20	130	600	130	1330	675	150	1500	675	150	1500	
	1 ply 2x6	18-10dx1½	6-10dx1½	2-10dx1½	55	20	130	635	140	1410	635	140	1410	635	140	1410	
	2 ply 2x6	18-10d	6-10dx1½	2-10dx1½	85	25	195	900	200	2000	1035	230	2300	1050	240	2340	

Model No.	Header	Fasteners			Spruce-Pine-Fir Allowable Loads												Code Ref.
		Header	Hips (total)	Jack	Uplift (133 & 160)			Floor (100)			Snow (115)			Roof (125/133/160)			
					Hip	Jack	Total	Hip	Jack	Total	Hip	Jack	Total	Hip	Jack	Total	
LTHMA	1 ply 2x4	12-10dx1½	6-10dx1½	2-10dx1½	50	10	110	440	55	935	485	65	1035	485	65	1035	6, 121
	2 ply 2x4	12-10d	6-10dx1½	2-10dx1½	50	10	110	540	70	1150	570	75	1215	570	75	1215	
	1 ply 2x6	18-10dx1½	6-10dx1½	2-10dx1½	50	10	110	570	75	1215	570	75	1215	570	75	1215	
	2 ply 2x6	18-10d	6-10dx1½	2-10dx1½	85	15	185	815	100	1730	930	125	1985	940	120	2000	

1. Allowable loads have been increased 33% and 60% for earthquake or wind loading with no further increase allowed; reduce where other loads govern.

2. Hip loads are for each hip.

3. Other hip/jack load distributions are allowed if the sum of all three carried members does not exceed the total load and the hip members are equally loaded.

4. Load distribution is 45% for each hip and 10% for jack.

5. Wind (133) is a download rating.

6. Truss chord cross-grain tension may limit allowable loads. Refer to Technical Bulletins T-ANSITPISP, T-ANSITPIDF and T-ANSITPIDF for allowable loads that consider ANSI/TPI 1-2002 wood member design criteria.

7. NAILS: 10d = 0.148" dia. x 3" long, 10dx1½ = 0.148" dia. x 1½" long. See page 16-17 for other nail sizes and information.

LTHJ Truss Hip/Jack Hangers

Single piece, non-welded truss hip/jack connector.

MATERIAL: 18 gauge.

FINISH: Galvanized; also available in Z-MAX coating. See Corrosion Resistance, page 6-7.

INSTALLATION: • Use all specified fasteners. See General Notes.

- All multiple members must be fastened together to act as a single unit.
- The two 10d common nails into the jack must be driven at an angle through the side plate slot and jack, and into the carrying member; see HUS for double shear nailing details. The end of the jack cannot be more than $\frac{1}{8}$ " from the back plate to meet required nail penetration.
- Should be attached to a double girder truss to allow for code-required minimum nail penetration.
- Distribute 75% of the total load to the hip member.
- With single 2x carrying members, use 10dx1½" nails and use 0.82 of the table value.

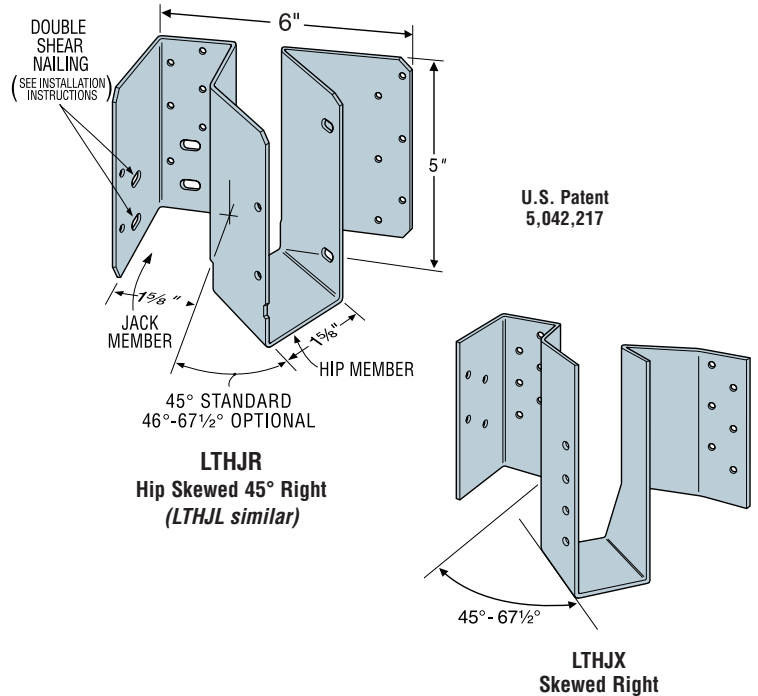
TO ORDER: Specify LTHJL for left 45° skewed hip truss and LTHJR for right 45° skewed hip truss.

OPTIONS: SLOPE AND/OR SKEW

- Available in hip slopes up to 45° and/or skews left or right from 46° to 67°.
- For optional configurations, loads are 100% of table loads.
- To order, specify degree of slope and/or skew left or right.

Example: To order an LTHJ sloped down 45° and skewed right 55°, order an LTHJXD45 R55.

CODES: See page 12 for Code Listing Key Chart.



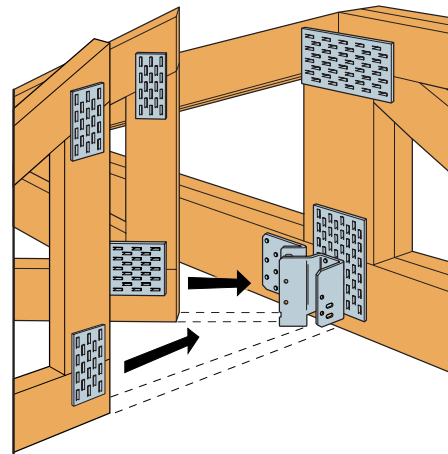
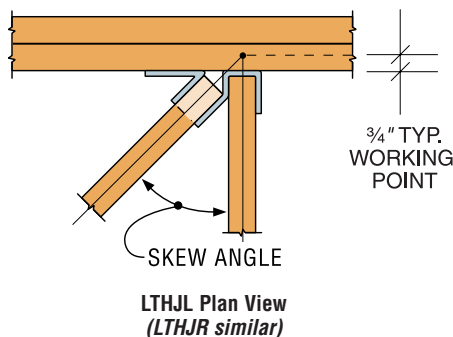
Available with additional corrosion protection. Check with factory.

Model No.	Fasteners			Carried Member	Doug Fir-Larch/Southern Pine Allowable Loads						Spruce-Pine-Fir Allowable Loads						Code Ref.
	Carrying Member	Hip	Jack		Uplift ¹ (133)	Uplift ¹ (160)	Floor (100)	Snow (115)	Roof (125)	Wind (133)	Uplift ¹ (133)	Uplift ¹ (160)	Floor (100)	Snow (115)	Roof (125)	Wind (133)	
LTHJR/L	12-10d	4-10dx1½	2-10dx1½ and 2-10d	Hip	485	580	1135	1310	1420	1425	415	500	980	1130	1225	1225	6, 121
				Jack	250	250	380	435	475	475	215	215	330	380	410	410	
				Total	735	830	1515	1745	1895	1900	630	715	1310	1510	1635	1635	

1. Uplift loads include a 33% and 60% increase for earthquake or wind loading with no further increase allowed; reduce where other loads govern.
2. Allowable loads for 10d commons also apply when 16d sinkers are used.
3. Combine hip and jack loads for total capacity.
4. Wind (133) is a download rating.

5. Truss chord cross-grain tension may limit allowable loads. Refer to Technical Bulletins T-ANSITPSPF, T-ANSITPISP and T-ANSITPIDF for allowable loads that consider ANSI/TPI 1-2002 wood member design criteria.

6. **NAILS:** 10d = 0.148" dia. x 3" long, 10dx1½ = 0.148" dia. x 1½" long. See page 16-17 for other nail sizes and information.



Typical LTHJL Installation

LTHJA26 Truss Hip/Jack Girders



This product is preferable to similar connectors because of a) easier installation, b) higher loads, c) lower installed cost, or a combination of these features.

The LTHJA26 is the lighter capacity version of the THJA26. The LTHJA26 is designed for the common 8 foot hip girder setback. Consult with truss engineer or refer to Truss Engineering for actual demand load information.

MATERIAL: 18 gauge.

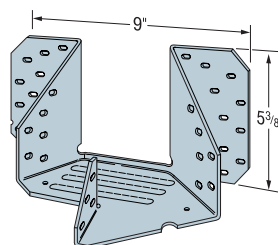
FINISH: Galvanized. See Corrosion-Resistance, page 6-7.

INSTALLATION: • Use all specified fasteners. See General Notes.

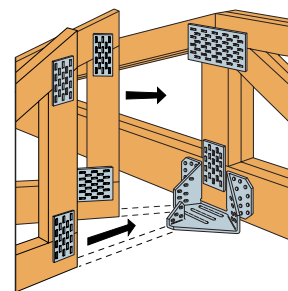
- All multiple members must be fastened together to act as a single unit.
- Should be attached to a double girder truss to allow for required minimum nail penetration.
- With single 2x carrying members, use 10dx1½" nails and use 0.67 of the table value.
- For hip and jack combinations, distribute 65% to 85% of the total load to the hip member.
- **10dx1½" nails must be installed into bottom of hip members through bottom of hanger seat for table loads.**

OPTIONS: These hangers can not be modified.

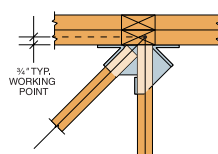
CODES: See page 12 for Code Listing Key Chart.



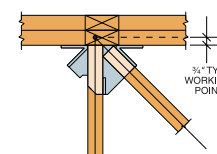
LTHJA26
U.S. Patent 5,253,465
and other Patent Pending



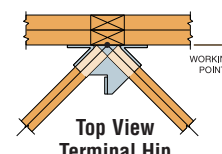
Typical LTHJA26 Installation



Top View
Left Hand Hip Installation



Top View
Right Hand Hip Installation



Top View
Terminal Hip
without Center
Common Jack

Model No.	Carried Member Combination	Fasteners			Total Avg Ult	Carried Member	Doug-Fir-Larch/So. Pine Allowable Loads					Spruce-Pine-Fir Allowable Loads					Code Ref.
		Carrying Member	Hip ² (each)	Jack			Uplift (133&160)	Floor (100)	Snow (115)	Roof (125)	Wind (133)	Uplift (133&160)	Floor (100)	Snow (115)	Roof (125)	Wind (133)	
LTHJA26	Side Hip & Center Jack	20-10d	7-10dx1½	4-10dx1½	3733	Jack	75	290	290	290	290	65	245	245	245	245	47, 134
						Hip	220	875	875	875	875	185	735	735	735	735	
						Hip & Jack	295	1165	1165	1165	1165	250	980	980	980	980	
	Double (Terminal) Hip	20-10d	7-10dx1½	—	3852	Hip (each)	290	635	635	635	635	245	535	535	535	535	
						Two Hips	585	1270	1270	1270	1270	490	1065	1065	1065	1065	

1. Uplift loads have been increased 33% and 60% for earthquake or wind loading with no further increase allowed; reduce where other loads govern.
2. One 10dx1½" nail must be installed into bottom of each hip member through bottom of hanger seat.
3. For a 2-2x4 bottom chord, multiply the down load by 0.50.

4. Wind (133) is a download rating.
5. Truss chord cross-grain tension may limit allowable loads. Refer to Technical Bulletins T-ANSITPISPF, T-ANSITPISP and T-ANSITPIDF for allowable loads that consider ANSI/TPI 1-2002 wood member design criteria.
6. **NAILS: 10d = 0.148" dia. x 3" long, 10dx1½ = 0.148" dia. x 1½" long. See page 16-17 for other nail sizes and information.**

THJA26 Truss Hip/Jack Girders

The versatile THJA26 can accommodate right or left hand hips, and can be installed before or after the hip and jack. Provides side flange support for the component with the heaviest load and can be used for some terminal hip conditions.

MATERIAL: 14 gauge

FINISH: Galvanized

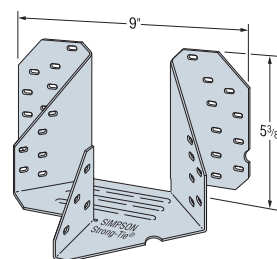
INSTALLATION: • Use all specified fasteners.

See General Notes.

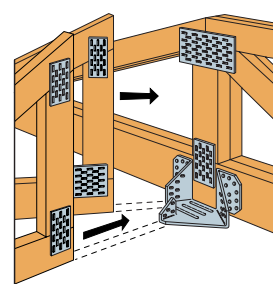
- All multiple members must be fastened together to act as a single unit.
- Should be attached to a double girder truss to allow for required minimum nail penetration.
- With single 2x carrying members, use 10dx1½" nails and use 0.67 of the table value.
- Distribute 65% to 85% of the total load to the hip member.

OPTIONS: These hangers cannot be modified.

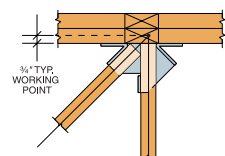
CODES: See page 12 for Code Listing Key Chart.



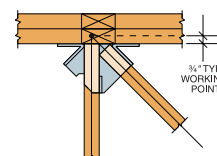
THJA26
U.S. Patent 5,253,465



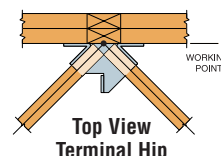
Typical THJA26 Installation



Top View
Left Hand Hip Installation



Top View
Right Hand Hip Installation



Top View
Terminal Hip
without Center
Common Jack

Model No.	Fasteners ¹			Carried Member	Doug-Fir-Larch/So. Pine Allowable Loads					Spruce-Pine-Fir Allowable Loads					Code Ref.
	Carrying Member	Hip	Jack		Uplift (133) & (160)	Floor (100)	Snow (115)	Roof (125)	Wind (133)	Uplift (133) & (160)	Floor (100)	Snow (115)	Roof (125)	Wind (133)	
THJA26	20-16d	6-10dx1½	4-10dx1½	Hip	720	2010	2310	2450	2450	590	1740	2000	2100	2100	8, 36, 121, 140
				Jack	240	670	770	815	815	195	580	670	700	700	
				Total	960	2680	3080	3265	3265	785	2320	2670	2800	2800	

1. 16d sinkers (0.148" dia. x 3½" long) may be substituted for the specified 16d commons at 0.85 of the table load.
2. Combine hip and jack loads for total capacity (for terminal hip, add hip and jack loads then divide by two for each member).
3. For a 2-2x4 bottom chord, multiply the down load by 0.50.
4. Uplift loads have been increased 33% and 60% for earthquake or wind loading with no further increase allowed; reduce where other loads govern.
5. Wind (133) is a download rating.
6. Truss chord cross-grain tension may limit allowable loads. Refer to Technical Bulletins T-ANSITPISPF, T-ANSITPISP and T-ANSITPIDF for allowable loads that consider ANSI/TPI 1-2002 wood member design criteria.
7. **NAILS: 16d = 0.162" dia. x 3½" long, 10dx1½ = 0.148" dia. x 1½" long. See page 16-17 for other nail sizes and information.**

MTHM/MTHM-2 Multiple Truss Hangers

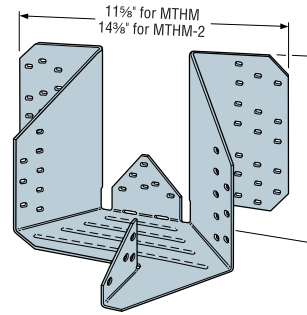
Medium to high load capacity single-piece connectors designed to carry multiple truss members. Can be used for both terminal and right or left hand hip applications.

MATERIAL: 12 gauge. **FINISH:** Galvanized

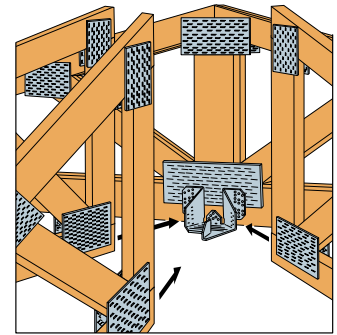
INSTALLATION: • Use all specified fasteners. See General Notes.

- All multiple members must be fastened together to act as a single unit.
- Should be attached to a double girder truss to allow for required minimum nail penetration.
- With single 2x carrying members, use 10dx1½" nails with 0.67 of the table values.
- For terminal installation, distribute 40% of total load to each hip member and 20% to the jack.
- For left or right hand hip installation, distribute 65% to 85% of total load to the hip member.

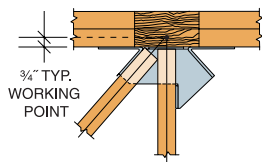
CODES: See page 12 for Code Listing Key Chart.



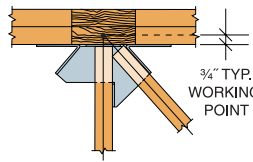
MTHM
(MTHM-2 similar)
U.S. Patent 5,253,465



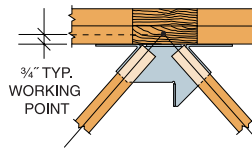
Typical MTHM Installation
(2 Hips and a Jack to Girder Truss)



MTHM
Top View
Left Hand Hip
Installation



MTHM
Top View
Right Hand Hip
Installation

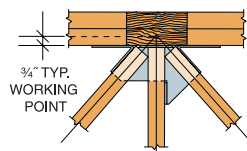


MTHM Top View
Terminal Installation
Without Center
Common Jack

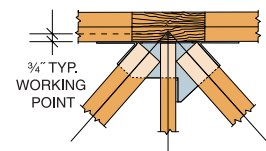
Right or Left Hand Hip Installation (Two Member Connection)

Model No.	Header	Fasteners			Doug-Fir-Larch/So. Pine Allowable Loads												Code Ref.
		Carrying Member	Hip	Jack	Uplift (133 & 160)			Floor (100)			Snow (115)			Roof (125/133/160)			
					Hip	Jack	Total	Hip	Jack	Total	Hip	Jack	Total	Hip	Jack	Total	
MTHM	2 ply 2x4	22-16d	8-10dx1½	4-10dx1½	805	270	1075	2185	730	2915	2185	730	2915	2185	730	2915	140
	2 ply 2x6	34-16d	8-10dx1½	4-10dx1½	805	270	1075	2630	875	3505	2630	875	3505	2630	875	3505	
	2 ply 2x8	42-16d	8-10dx1½	4-10dx1½	805	270	1075	3250	1085	4335	3250	1085	4335	3250	1085	4335	
MTHM-2	2 ply 2x6	39-16d	8-10dx1½	4-10dx1½	835	280	1115	2800	935	3735	2800	935	3735	2800	935	3735	
	2 ply 2x8	47-16d	8-10dx1½	4-10dx1½	835	280	1115	3375	1125	4500	3375	1125	4500	3375	1125	4500	

Model No.	Header	Fasteners			Spruce-Pine-Fir Allowable Loads												Code Ref.
		Carrying Member	Hip	Jack	Uplift (133 & 160)			Floor (100)			Snow (115)			Roof (125/133/160)			
					Hip	Jack	Total	Hip	Jack	Total	Hip	Jack	Total	Hip	Jack	Total	
MTHM	2 ply 2x4	22-16d	8-10dx1½	4-10dx1½	655	220	875	1880	625	2505	1880	625	2505	1880	625	2505	140
	2 ply 2x6	34-16d	8-10dx1½	4-10dx1½	655	220	875	2260	755	3015	2260	755	3015	2260	755	3015	
	2 ply 2x8	42-16d	8-10dx1½	4-10dx1½	655	220	875	2795	930	3725	2795	930	3725	2795	930	3725	
MTHM-2	2 ply 2x6	39-16d	8-10dx1½	4-10dx1½	680	225	905	2510	835	3345	2510	835	3345	2510	835	3345	
	2 ply 2x8	47-16d	8-10dx1½	4-10dx1½	680	225	905	2905	970	3875	2905	970	3875	2905	970	3875	



MTHM
Top View
Installation



MTHM-2
Top View
Installation

Terminal Installation (Three Member Connection)

Model No.	Header	Fasteners			Doug-Fir-Larch/So. Pine Allowable Loads												Code Ref.
		Carrying Member	Hips (total)	Jack	Uplift (133 & 160)			Floor (100)			Snow (115)			Roof (125/133/160)			
					Hip	Jack	Total	Hip	Jack	Total	Hip	Jack	Total	Hip	Jack	Total	
MTHM	2 ply 2x4	22-16d	16-10dx1½	4-10dx1½	715	360	1790	1215	605	3035	1395	700	3490	1520	760	3800	140
	2 ply 2x6	34-16d	16-10dx1½	4-10dx1½	715	360	1790	1860	930	4650	1860	930	4650	1860	930	4650	
	2 ply 2x8	42-16d	16-10dx1½	4-10dx1½	715	360	1790	2010	1005	5025	2010	1005	5025	2010	1005	5025	
MTHM-2	2 ply 2x6	39-16d	16-10dx1½	4-10dx1½	745	370	1860	1955	980	4890	1955	980	4890	1955	980	4890	
	2 ply 2x8	47-16d	16-10dx1½	4-10dx1½	745	370	1860	2470	1235	6175	2470	1235	6175	2470	1235	6175	

Model No.	Header	Fasteners			Spruce-Pine-Fir Allowable Loads												Code Ref.
		Carrying Member	Hips (total)	Jack	Uplift (133 & 160)			Floor (100)			Snow (115)			Roof (125/133/160)			
					Hip	Jack	Total	Hip	Jack	Total	Hip	Jack	Total	Hip	Jack	Total	
MTHM	2 ply 2x4	22-16d	16-10dx1½	4-10dx1½	580	290	1450	1055	530	2640	1215	605	3035	1320	660	3300	140
	2 ply 2x6	34-16d	16-10dx1½	4-10dx1½	580	290	1450	1600	800	4000	1600	800	4000	1600	800	4000	
	2 ply 2x8	42-16d	16-10dx1½	4-10dx1½	580	290	1450	1730	865	4325	1730	865	4325	1730	865	4325	
MTHM-2	2 ply 2x6	39-16d	16-10dx1½	4-10dx1½	600	300	1500	1680	840	4200	1680	840	4200	1680	840	4200	
	2 ply 2x8	47-16d	16-10dx1½	4-10dx1½	600	300	1500	2125	1060	5310	2125	1060	5310	2125	1060	5310	

1. Allowable loads have been increased 33% and 60% for earthquake or wind loading with no further increase allowed; reduce where other loads govern.
2. Hip loads are for each hip.
3. Wind (133) is a download rating.
4. Other hip/jack load distributions are allowed if the sum of all three carried members does not exceed the total load and the hip members are equally loaded.

5. Combine hip and jack loads for total capacity. For terminal hips divide the total allowable load by 2 to determine the allowable load for each hip.
6. Truss chord cross-grain tension may limit allowable loads. Refer to Technical Bulletins T-ANSITPISP, T-ANSITPISP and T-ANSITPIDF for allowable loads that consider ANSI/TPI 1-2002 wood member design criteria.
7. **NAILS:** 16d = 0.162" dia. x 3½" long, 10dx1½ = 0.148" dia. x 1½" long.
See page 16-17 for other nail sizes and information.

MSCPT Multiple Truss Hangers

The MSCPT is a welded hanger designed to carry up to three trusses intersecting at one point into a double ply girder truss. The top flange is notched at the center to accommodate vertical and diagonal web members in the girder truss.

MATERIAL: Top flange—3 gauge; stirrup—11 gauge (MSCPT2, MSCPT2N), 7 gauge (MSCPT2-2, MSCPT2-2N).

FINISH: Simpson gray paint.

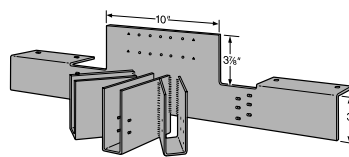
INSTALLATION: • Use all specified fasteners. See General Notes.

- The total load must be evenly distributed about the centerline to avoid eccentric loading.
- All multiple members must be fastened together to act as a single unit.
- Minimum vertical carrying member sizes are 2x6 for MSCPT2 and MSCPT2N, and 2x8 for MSCPT2-2 and MSCPT2-2N.
- Minimum carrying member bottom chord is 2x6.

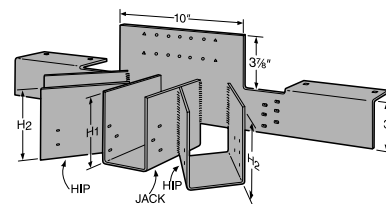
OPTIONS: • H_1 and H_2 may be increased for alignment with larger bottom chords.

- Hip stirrups can be skewed from 25° to 45°.
- The W_1 and W_2 of the MSCPT2 may be increased up to $3\frac{7}{16}$ ", provided the stirrups' configuration remains symmetrical.

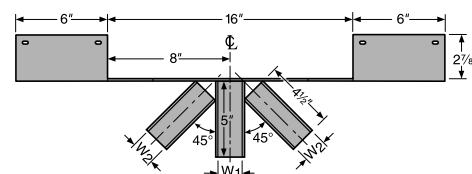
CODES: See page 12 for Code Listing Key Chart.



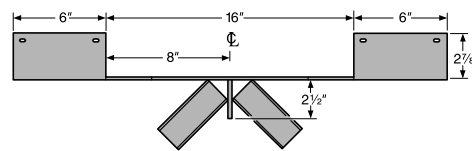
MSCPT2



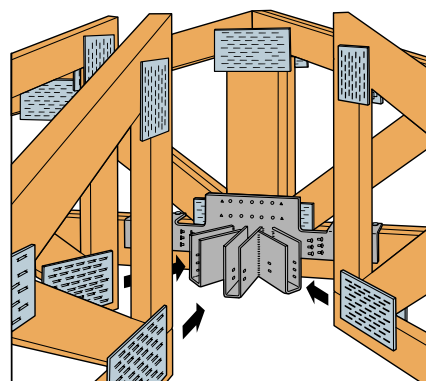
MSCPT2-2



MSCPT2 Top View (MSCPT2-2 similar)



MSCPT2N Top View (MSCPT2-2N similar)



Typical MSCPT2 Installation

Model No.	Dimensions			Fasteners		Doug-Fir-Larch/So. Pine Allowable Loads ^{1,2}						Code Ref.
	W ₁ & W ₂	H ₁ & H ₂ (min.)	TF	Header	Joists	Uplift (133/160)			Floor/Snow/Roof/Wind (100/115/125/133)			
						Hip	Jack	Total	Hip	Jack	Total	
MSCPT2	1½	5¼	2⅞	26-16d	18-10dx1½	750	370	1870	3145	1570	7860	170
MSCPT2N	1½	5¼	2⅞	26-16d	14-10dx1½	750	—	1500	3930	—	7860	
MSCPT2-2	3⅞	5¼	2⅞	30-16d	20-10d	750	370	1870	3470	1735	8675	
MSCPT2-2N	3⅞	5¼	2⅞	30-16d	14-10d	750	—	1500	4335	—	8675	

Model No.	Dimensions			Fasteners		Spruce-Pine-Fir Allowable Loads ^{1,2}						Code Ref.
	W ₁ & W ₂	H ₁ & H ₂ (min.)	TF	Header	Joists	Uplift (133/160)			Floor/Snow/Roof/Wind (100/115/125/133)			
						Hip	Jack	Total	Hip	Jack	Total	
MSCPT2	1⅝	5¼	2⅞	26-16d	18-10dx1½	645	320	1610	3000	1500	7500	170
MSCPT2N	1⅝	5¼	2⅞	26-16d	14-10dx1½	645	—	1290	3470	—	6940	
MSCPT2-2	3⅞ ₁₆	5¼	2⅞	30-16d	20-10d	645	320	1610	3000	1500	7500	
MSCPT2-2N	3⅞ ₁₆	5¼	2⅞	30-16d	14-10d	645	—	1290	3750	—	7500	

1. For MSCPT2 and MSCPT2-2 models, allowable hip loads are 0.40 x Total Loads, and Jack Loads are 0.20 x Total Loads.

2. Uplift loads include a 33% and 60% increase for earthquake or wind loading, with no further

increase allowed; reduce where other loads govern.

3. Wind (133) is a download rating.

4. **NAILS:** 16d = 0.162" dia. x 3 $\frac{1}{2}$ " long,

10d = 0.148" dia. x 3" long, 10dx1 $\frac{1}{2}$ = 0.148" dia. x 1 $\frac{1}{2}$ " long.

See page 16-17 for other nail sizes and information.

DSC Drag Strut Connector

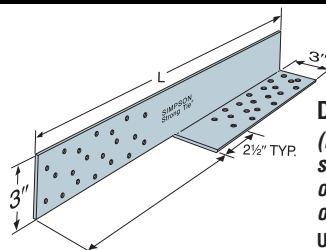
MATERIAL: 3 gauge

FINISH: Galvanized

INSTALLATION:

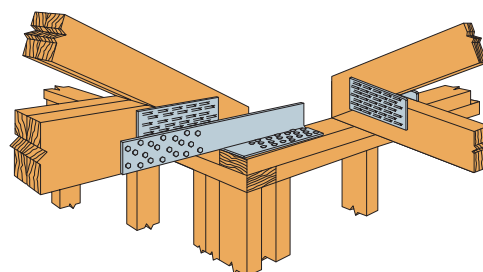
- Use all specified fasteners; see General Notes.
- Screws are provided.

CODES: See page 12 for Code Listing Key Chart.



DSC4R/L-SDS3
 (Right hand DSC shown; specify right or left hand when ordering)

U.S. Patent 6,655,096



Typical DSC4R-SDS3 Installation

Model No.	L	Fasteners	Avg Ult Comp.	Avg Ult Tension	Doug Fir Allowable Loads		Spruce-Pine-Fir/Hem Fir Allowable Loads		Code Ref.
					Comp. (133)	Tension (133)	Comp. (133)	Tension (133)	
DSC4R/L-SDS3	21	40-SDS $\frac{1}{4}$ x3	16,600	14,033	4935	4235	4035	3500	160

1. Allowable loads have been increased 33% for earthquake and wind loading with no further increase allowed; reduce where other loads govern.

2. Comp. = Compression.

3. SDS screws minimum penetration is 1 $\frac{1}{4}$ ", minimum end distance is 2 $\frac{1}{2}$ " and minimum edge distance is $\frac{5}{8}$ " for full load values.

4. Lag screws will not achieve table loads.

5. Strong-Drive® screws are permitted to be installed through metal truss plates as approved by the Truss Designer, provided the requirements of ANSI/TPI 1-2002 Section 8.10 are met (pre-drilling required).

THGQ/THGQH Truss Girder Hangers

NEW! The THGQ and THGQH hangers for multi-ply girder trusses use SDS screws to provide high load capacities and easier installation compared to bolts. Both models offer minimum and optional maximum fastener quantities to accommodate varying design needs. Allowable loads for various girder web member sizes provide additional installation options.

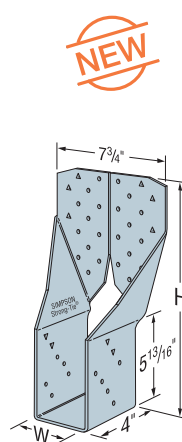
MATERIAL: THGQ - 7 gauge, THGQH - 3 gauge

FINISH: Galvanized

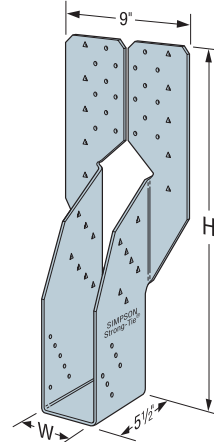
INSTALLATION:

- Use all specified fasteners. See General Notes.
- Can be installed filling round holes only, or filling round and triangle holes for maximum values.
- SDS screws supplied for all round and triangle holes. Installation may not require use of all SDS screws.
- All multiple members must be fastened together to act as a single unit.
- Girders must be adequately laterally braced to prevent excessive displacement due to secondary torsional stresses (Ref ANSI/TPI 1-2002 Section 7.4.3.5).

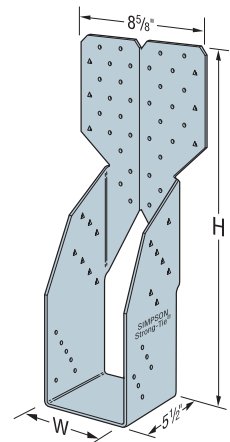
CODES: See page 12 for Code Listing Key Chart.



THGQ2-SDS3
(THGQ3-SDS3 Similar)



THGQH2-SDS3

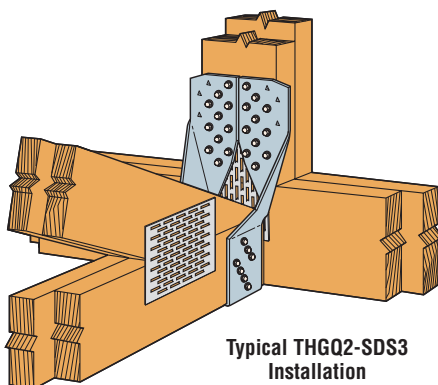


THGQH3-SDS3
(THGQH4-SDS3 Similar)

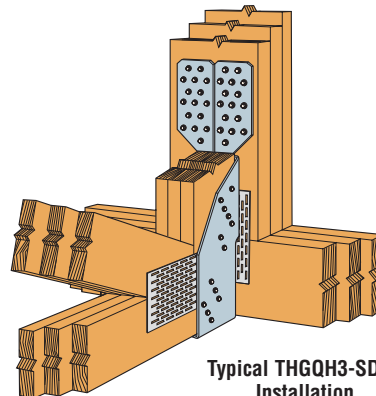
Model No.	Dim. (in.)		Max. B.C. Depth	Min. Vert. Web Size ³	Fasteners ² SDS 1/4x3		Allowable Loads Doug Fir-Larch/Southern Pine					Allowable Loads Spruce-Pine-Fir/Hem-Fir					Code Ref.
	W	H			Face	Joist	Uplift (133/160)	Floor (100)	Snow (115)	Roof (125)	Wind Down (133/160)	Uplift (133/160)	Floor (100)	Snow (115)	Roof (125)	Wind Down (133/160)	
THGQ2-SDS3 (Min)	3 5/16	16	2x8	2x6	22	10	3600	7920	7920	7920	7920	3025	6655	6655	6655	6655	160
				2x8	28		3600	10080	10080	10080	10080	3025	8220	8465	8465	8465	
THGQ2-SDS3 (Max)	3 5/16	16	2x8	2x6	22	14	4400	8800	9140	9140	9140	3695	7390	7680	7680	7680	
				2x8	28		4400	11200	11635	11635	11635	3695	9410	9770	9770	9770	
THGQH2-SDS3 (Min)	3 5/16	25	2x10	2x6	18	12	3725	7200	7385	7385	7385	3130	6050	6205	6205	6205	
				2x8	28		3725	11200	11485	11485	11485	3130	9410	9650	9650	9650	
THGQH2-SDS3 (Max)	3 5/16	25	2x10	2x6	18	26	6770	7200	7560	7560	7560	5685	6050	6350	6350	6350	
				2x8	28		9900	11200	11755	11755	11755	8320	9410	9875	9875	9875	
THGQ3-SDS3 (Min)	4 15/16	16	2x8	2x6	22	10	3600	7920	7920	7920	7920	3025	6655	6655	6655	6655	
				2x8	28		3600	10080	10080	10080	10080	3025	8465	8465	8465	8465	
THGQ3-SDS3 (Max)	4 15/16	16	2x8	2x6	22	14	4400	8800	9140	9140	9140	3695	7390	7680	7680	7680	
				2x8	28		4400	11200	11635	11635	11635	3695	9410	9770	9770	9770	
THGQH3-SDS3 (Min)	4 15/16	25	2x10	2x8	32	12	3725	10255	10255	10255	10255	3130	8615	8615	8615	8615	
				2x10	38		3725	12175	12175	12175	12175	3130	10230	10230	10230	10230	
THGQH3-SDS3 (Max)	4 15/16	25	2x10	2x8	32	26	9900	10595	10595	10595	10595	8320	8900	8900	8900	8900	
				2x10	38		9900	12585	12585	12585	12585	8320	10570	10570	10570	10570	
THGQH4-SDS3 (Min)	6 9/16	25	2x12	2x8	34	12	3725	13600	13655	13655	13655	3130	11425	11470	11470	11470	
				2x10	40		3725	16000	16600	16600	16600	3130	13440	13945	13945	13945	
THGQH4-SDS3 (Max)	6 9/16	25	2x12	2x8	34	26	9900	13600	14110	14110	14110	8320	11425	11850	11850	11850	
				2x10	40		9900	16000	16600	16600	16600	8320	13440	13945	13945	13945	

1. Allowable loads have been increased 33% and 60% for earthquake or wind load with no further increase allowed; reduce where other loads govern.
2. Minimum 2-ply girder required for SDS 1/4x3 screws.
3. Connector must be installed centered on girder vertical webs.

4. Strong-Drive screws are permitted to be installed through metal truss plates as approved by the Truss Designer, provided the requirements of ANSI/TPI 1-2002 Section 8.10 are met (*pre-drilling required*).



Typical THGQ2-SDS3 Installation



Typical THGQH3-SDS3 Installation

THGB/THGBH/THGW Truss Girder Hangers

Two models offer higher design load values and optional installation with the SDS Strong-Drive screw.

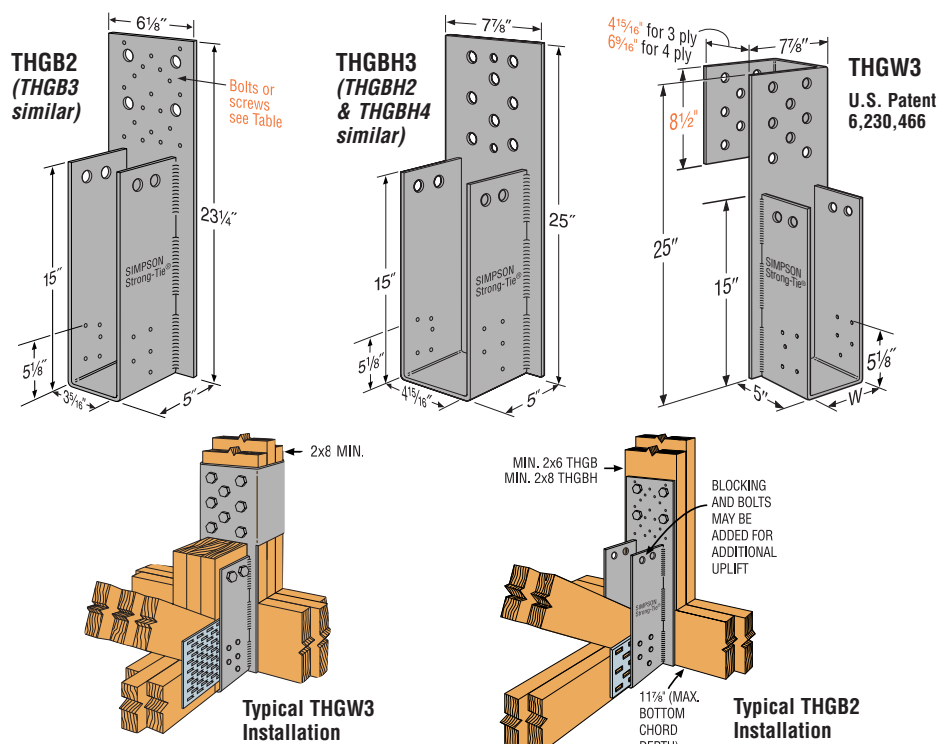
MATERIAL: 3 gauge

FINISH: Simpson gray paint.

INSTALLATION:

- Use all specified fasteners. See General Notes.
- All multiple members must be fastened together to act as a single unit.
- Maximum $11\frac{7}{8}$ " bottom chord in the carrying member to allow for the minimum bolt end distance.
- See page 20 for SDS screws.
- For optional installations see page 188.

CODES: See page 12 for Code Listing Key Chart.



Model No.	Width (W)	Fasteners		Length of Fastener in Carrying Member	Doug-Fir/So. Pine Allowable Loads					Spruce-Pine-Fir Allowable Loads					Code Ref.
		Carried Member	Carrying Member		Uplift ¹ (133/160)	Floor (100)	Snow (115)	Roof (125)	Wind (133)	Uplift ¹ (133/160)	Floor (100)	Snow (115)	Roof (125)	Wind (133)	
THGB2	3 ⁵ / ₁₆	10-10d & 2-3/4" MB	4-3/4" MB	3	7540	5655	6505	7070	7540	6400	4800	5520	6000	6400	160
				4 1/2	8010	6235	7170	7795	8315	6650	5775	6640	7220	7235	
				6		6235	7170	7795	8315		5775	6640	7220	7235	
THGB2	3 ⁵ / ₁₆	10-10d & 2-3/4" MB	19-SDS ¹ / ₄ x3 ²	3		6385	7340	7980	8510		5550	6380	6935	7200	
				4 1/2	8010	6385	7340	7980	8510	6650	5550	6380	6935	7200	
				6		6385	7340	7980	8510		5550	6380	6935	7200	
THGBH2	3 ⁵ / ₁₆	10-10d & 2-3/4" MB	8-3/4" MB	3		10010	10010	10010	10010		7745	7950	8090	8200	
				4 1/2	8010	10010	10010	10010	10010	6650	7745	7950	8090	8200	
				6		10010	10010	10010	10010		7745	7950	8090	8200	
THGB3	4 ¹⁵ / ₁₆	10-10d & 2-3/4" MB	4-3/4" MB	3	7540	5655	6505	7070	7540	6400	4800	5520	6000	6400	
				4 1/2		6235	7170	7795	8315	6650	5775	6640	7220	7235	
				6	8010	6230	7165	7795	8315		5775	6640	7220	7235	
THGB3	4 ¹⁵ / ₁₆	10-10d & 2-3/4" MB	19-SDS ¹ / ₄ x3 ²	3		6385	7340	7980	8510		5550	6380	6935	7200	
				4 1/2	8010	6385	7340	7980	8510	6650	5550	6380	6935	7200	
				6		6385	7340	7980	8510		5550	6380	6935	7200	
THGBH3	4 ¹⁵ / ₁₆	10-10d & 2-3/4" MB	8-3/4" MB	3		10010	10010	10010	10010		8310	8310	8310	8310	
				4 1/2	8010	12000	12000	12000	12000	6650	9960	9960	9960	9960	
				6		12335	12335	12335	12335		10240	10240	10240	10240	
THGBH4	6 ⁹ / ₁₆	10-10d & 2-3/4" MB ³	4-3/4" MB ³	3	7540	5655	6505	7070	7540	6400	4800	5520	6000	6400	
				4 1/2		6235	7170	7795	8315	6650	5775	6640	7220	7235	
				6	8010	6235	7170	7795	8315		5775	6640	7220	7235	
THGBH4	6 ⁹ / ₁₆	10-10d & 2-3/4" MB	6-3/4" MB ³	3		8410	9565	9565	9565		7135	7940	7940	7940	
				4 1/2	8010	9310	9565	9565	9565	6650	7940	7940	7940	7940	
				6		9280	9565	9565	9565		7940	7940	7940	7940	
THGBH4	6 ⁹ / ₁₆	10-10d & 2-3/4" MB	8-3/4" MB	3		10010	10010	10010	10010		8310	8310	8310	8310	
				4 1/2	8010	12425	14050	14050	14050	6650	11510	11660	11660	11660	
				6		12425	14050	14050	14050		11510	11660	11660	11660	
THGW3-3 ⁴	4 ¹⁵ / ₁₆	10-10d & 2-3/4" MB	8-3/4" MB	4 1/2		21830	21830	21830	21830		18120	18120	18120	18120	
THGW3-4 ⁴				6	8010	21830	21830	21830	21830	6650	18120	18120	18120	18120	
THGW4-3 ⁴	6 ⁹ / ₁₆	10-10d & 2-3/4" MB	8-3/4" MB	4 1/2		24165	24165	24165	24165		20055	20055	20055	20055	
THGW4-4 ⁴				6	8010	24165	24165	24165	24165	6650	20055	20055	20055	20055	

1. Allowable loads have been increased 33% and 60% for earthquake or wind loading with no further increase allowed; reduce where other loads govern. A 2 ply minimum truss is required. When using 10-10d nails only for carried member, uplift is 1960 lbs for Doug-Fir/So. Pine and 1625 lbs for Spruce-Pine-Fir.

2. SDS¹/₄x3 must have a minimum 2 ply member.

3. Bolts must be installed symmetrically when using less than 8 bolts on the 8-bolt backplate.

4. Loads for THGW models are based on end grain bearing.

5. Minimum fasteners 10-10d will achieve the down loads and the corresponding uplift (see footnote 1). To achieve maximum uplift, install nails and bolts listed in the table.

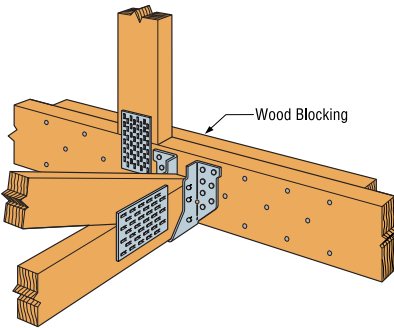
6. Wind (133) is a download rating.
 7. NAILS: 10d = 0.148" dia. x 3" long.

See page 16-17 for other nail sizes and information.

ALTERNATE INSTALLATIONS

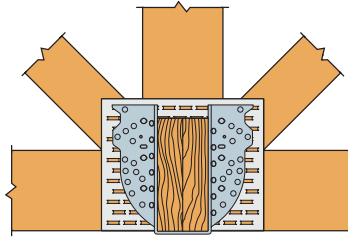
- Block(s) should be of similar size/grade as the truss member to which it is attached. Blocking should be designed to act as one unit with the truss members.
- Block(s) should be of sufficient size to accept all carried/carrying member nails, and develop full seat bearing as specified in Simpson Strong-Tie publications.

- Truss Designer is to confirm blocking size/grade, fasteners required and application.
- Fasteners used to attach the additional blocking should be independent of the truss hanger fasteners.



- 1** Use of Wood Blocking to Achieve the Full Design Load Value of a Face Mount Hanger Attached to a Single Ply Carrying (Girder) Member. (Block designed by Engineer of Record or Truss Designer)

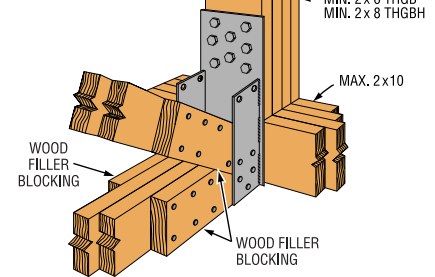
Example shown: HGUS210-2 installed on a 2x6 bottom chord (other applications similar)



- 2** Connection Design to Achieve Specified Nailing of a Face Mount Hanger at a Panel Point.

Nails located in joints formed by the intersection of wood members have no load resistance. The hanger allowable load value shall be reduced by the nail shear value for each header nail less than the specified quantity. **Connection shall be approved by the Truss Designer.**

Example shown: THGBH4 installed



- 3** Use of Wood Filler Blocking for Carried Member Width Less than Hanger Width. (Block designed by Designer or Truss Designer)

MULTI-PLY WOOD TRUSS APPLICATIONS

TWO-PLY 4X2 FLOOR TRUSSES

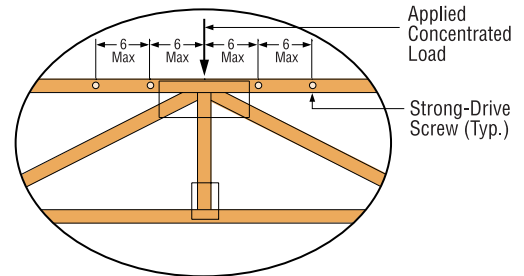
For more information, request T-SDSCREWAPPS.

The use of Strong-Drive screws insures that loads are adequately supported by both trusses. (Testing has shown that most currently available light gauge steel connectors do not uniformly distribute applied loads to both trusses.) In addition differential deflection between the two trusses is reduced.

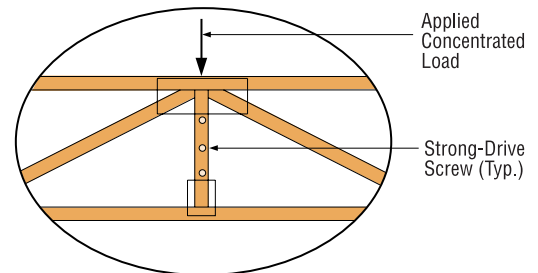
1. Screw spacing shall not exceed 24" o.c. and shall not be less than 4" o.c. A minimum end distance of 3" shall be provided at all truss members.
2. Gap between the trusses shall not exceed 1/8".
3. Floor sheathing shall be screwed (or nailed) to each truss top chord. (Fastener spacing per the applicable Code requirements, or 12" o.c. max.)
4. Strong-Drive screws shall be installed with the screw heads in the loaded truss. If the screws are installed in the wrong truss face, install additional screws in the correct face with a maximum spacing of 2x the required spacing, not to exceed 24" o.c. Offset the additional screws from the existing screws to prevent splitting.
5. Strong-Drive screws are permitted to be installed through metal truss plates as approved by the Truss Designer, provided the requirements of ANSI/TPI 1-2002 Section 8.10 are met (pre-drilling required).
6. The Truss Designer shall ensure that each truss is designed for the appropriate load(s) considering the location of the applied load(s) and the location of the Strong-Drive screws.
7. The Truss Designer shall design all trusses and the truss system to meet all Code and ANSI-TPI requirements.
8. Individual screw locations may be adjusted up to 3" to avoid conflicts with other hardware or to avoid lumber defects.
9. Strong-Drive screws shall not be installed in areas where lumber wane exceeds 1/4".
10. All concentrated loads were assumed to be applied at truss panel points.

Model No.	Allowable Shear Loads	
	DFL & SP (G = 0.50 min)	SPF (G = 0.42)
	Floor (100)	Floor (100)
SDS1/4x6	240	200

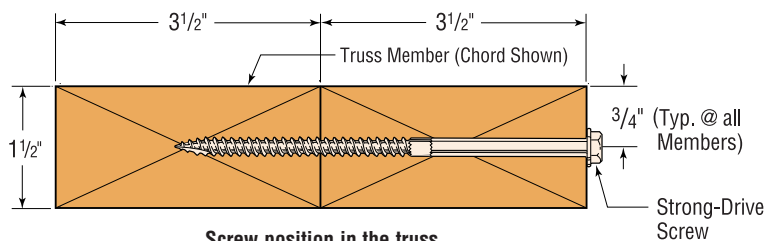
1. Allowable loads are based on testing per ASTM D1761. No further increase allowed.
2. Method 1—To be considered effective all Strong-Drive screws shall be installed within 12" of the applied concentrated load.
3. Method 1 and Method 2 screws can be combined as required to transfer half of the applied load to the supporting truss.
4. For uniform top chord loads, space Strong-Drive screws as required to transfer half of the applied load to the supporting truss.
5. Web configurations other than those shown above may be used as allowed by the Truss Designer.



Installation Method 1 - Top Chord



Installation Method 2 - Vertical Web



Screw position in the truss

MULTI-PLY WOOD TRUSS APPLICATIONS

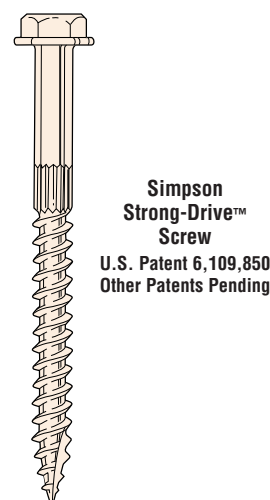
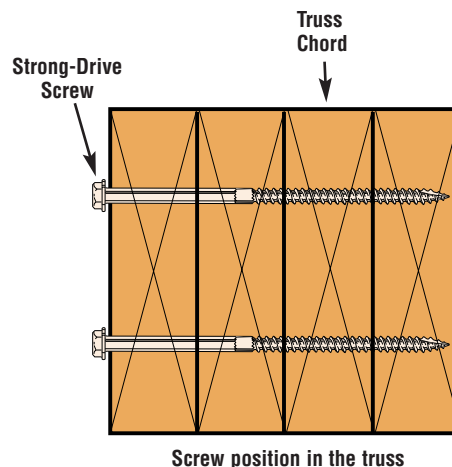
GIRDER TRUSSES

For more information, request *T-SDSCREWAPPS*.

1. Install Strong-Drive screws a minimum of 1 inch into the last truss ply, with a maximum gap of $\frac{1}{8}$ " allowed between each truss ply.
2. Screw spacing shall not exceed 24" o.c.
3. Hanger load spacing on the multi-ply truss shall not exceed 24" o.c.
4. The Truss Designer shall ensure that adequate lateral bracing is provided to prevent displacement of the truss and the truss bottom chord due to the torsion created by the structural members framing into the side of the multi-ply girder truss.
5. If Strong-Drive Screws are installed in the wrong truss face, install additional screws in the correct face with maximum spacing of 2x the required spacing, not to exceed 24" o.c. Offset the additional screws from the existing screws to prevent splitting.
6. Do not install Strong-Drive Screws through metal truss plates unless approved by the Truss Designer – pre-drilling is required.
7. The Truss Designer shall ensure that the use of Strong-Drive Screws for joining multi-ply trusses is allowed by the Building Official before the truss design is completed.
8. Use 1 row of SDS's in 2x4 members, 2 rows in 2x6 and 2x8 members, 3 rows in 2x10 members. Rows should be staggered.
9. Individual screw locations may be adjusted up to $\frac{1}{2}$ of the required screw spacing to avoid conflicts with other hardware or to avoid lumber defects.

Model No.	Allowable Shear Loads								
	Doug-Fir Larch (G = 0.50)			Southern Pine (G = 0.55)			Spruce-Pine-Fir (G = 0.42)		
	Floor (100)	Snow (115)	Roof (125)	Floor (100)	Snow (115)	Roof (125)	Floor (100)	Snow (115)	Roof (125)
SDS $\frac{1}{4}$ x4 $\frac{1}{2}$	260	300	325	260	300	325	220	245	270
SDS $\frac{1}{4}$ x6	260	300	325	260	300	325	220	245	270

1. Allowable loads are based on testing per ASTM D1761.
2. The Truss Designer shall apply all adjustment factors required per 2001 NDS.
3. Loads are based on 1 $\frac{1}{2}$ " thick wood side members and apply to 3 and 4 ply wood truss applications. (Side and main members of same wood species.) Contact Simpson for other applications.



TSB Truss Spacer Bracer

The TSB2 is an innovative product that meets or exceeds current lateral bracing methods.

- FEATURES:**
- This is the only product of its type that “captures” the on-center spacing of the trusses, allowing quicker installation.
 - Resists tension and compression loads equal to or greater than **BCSI 1-03** prescriptive requirements.
 - Does not require any field modification prior to installation.
 - Can be used as Permanent Lateral Bracing and as Temporary Erection Bracing.
 - Has a low profile that can be sheathed over when used as erection bracing, eliminating the need to remove bracing prior to sheathing.
 - The TSB2 allowable loads are working loads with a **reduction** factor of 3 applied. The Designer or Engineer of Record does not have to apply **reduction** factors.

MATERIAL: 22 gauge. **FINISH:** Galvanized

INSTALLATION: • Use all specified fasteners; see General Notes.

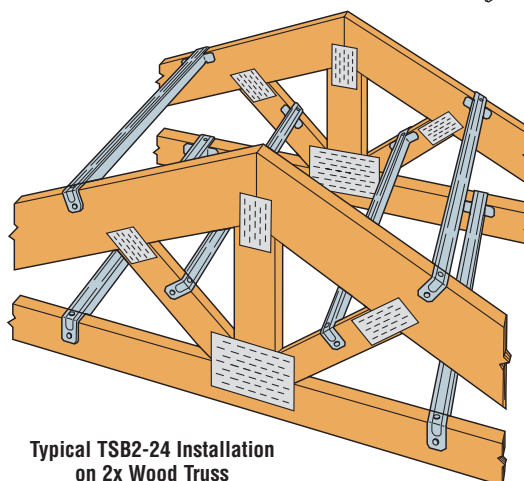
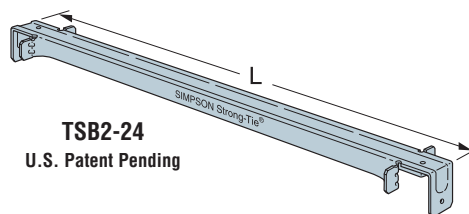
CODES: See page 12 for Code Listing Key Chart.

Model No.	Fasteners	L	Maximum Allowable Loads ¹		Code Ref.
			Compression	Tension	
TSB2-16	4-10d x 1 $\frac{1}{2}$	17 $\frac{1}{2}$	540	365	47, 134
TSB2-24	4-10d x 1 $\frac{1}{2}$	25 $\frac{1}{2}$	540	365	

1. No load duration increase allowed.

2. **NAILS:** 10d x 1 $\frac{1}{2}$ = 0.148" dia. x 1 $\frac{1}{2}$ " long.

See page 16-17 for other nail sizes and information.



TSF Truss Spacer

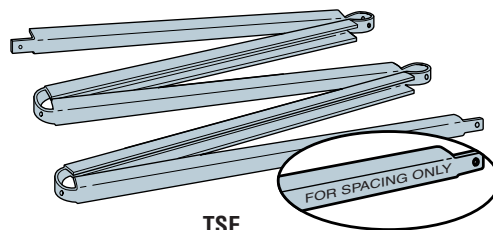
The TSF is a fast and accurate method for spacing trusses that eliminates layout marking of top plates and can be left in place under the sheathing. Accuracy is improved, spacing errors are minimized, and it is easy to use.

MATERIAL: 24 gauge. **FINISH:** Galvanized.

INSTALLATION: • See Installation Sequence below.

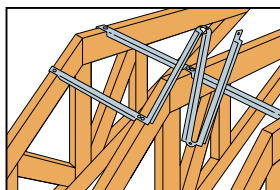
- **TSF Truss Spacers do not provide bracing of any kind and are not structural members. The TSF is for spacing only.** Refer to instructions from architect, engineer, truss manufacturer or other for bracing and installation information.

CODES: See page 12 for Code Listing Key Chart.

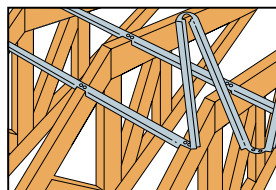


TSF

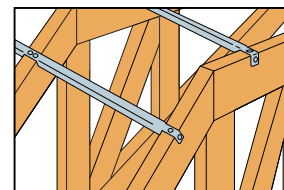
Model No.	Dimensions			Code Ref.
	W	O.C. Spacing	Total Length	
TSF2-16	1½	16	8'	180
TSF2-24	1½	24	10'	



STEP 1
Nail starting notch to first member.



STEP 2
As each successive member is positioned, unfold TSF to next notch. The notch teeth grip member and align it for nailing.



STEP 3
If spacer does not align with end truss, break spacer off at notch. Then, hammer spacer flat, fold it under and nail.

TBD20 Diagonal Truss Bracer

The TBD20 is a temporary truss bracing strap system used in conjunction with TSB2 to meet or exceed TPI/WTCA **BCSI 1-03** recommendations. When installed on the top and bottom, TBD20 captures the top and bottom truss chords lateral construction and wind forces delivered by TSB2 and transfers it diagonally in tension to the edge of the braced truss system.

- FEATURES:** • Higher capacity for wind applications than traditional wood lateral systems.
- Strap clip system introduces innovative single and double shear combination to achieve higher capacity.
 - Has a low profile that can be sheathed over, eliminating the need to remove bracing prior to sheathing.
 - TBD20 and TSB2, sheathed over, can be a supplemental permanent bracing system to the roof sheathing.

MATERIAL: 20 gauge. **FINISH:** Galvanized

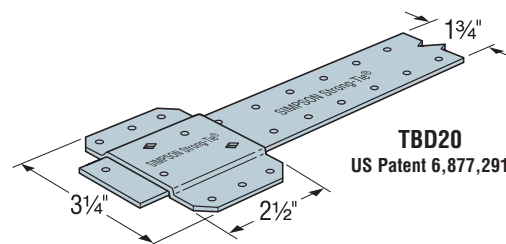
INSTALLATION: • Use all specified fasteners; see General Notes.

- TBD20 straps span diagonally at approximately 45° between parallel TSB-2 bracers.
- Strap shall not be slack, but tight and ready to engage in tension.
- TBD20 tension straps shall be installed for each direction, thus creating an X-bracing system.
- To resist construction forces, refer to TPI/WTCA BCSI-03 for location and frequency of X-braced sections.
- To resist wind forces, the designer of record shall evaluate the structure to determine the location and frequency of X-braced sections.
- For wind applications, solid blocking between X-braced trusses with LTP5 or RBC to top plate and H2.5 or H2.5A at each strap clip end from truss to top plate are recommended to resist lateral and uplift forces respectively.
- Design of lateral and vertical load path to deliver forces to ground is by designer of record.

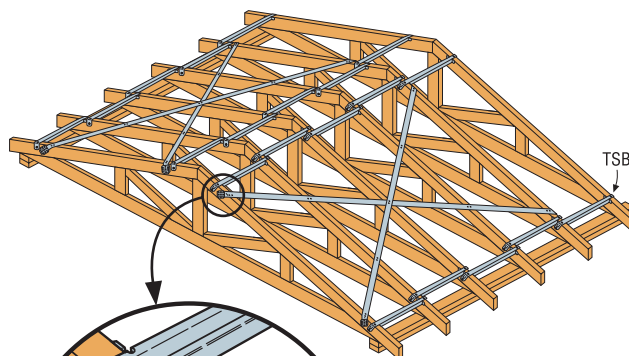
CODES: See page 12 for Code Listing Key Chart.

Model No.	Fasteners		Allow. Tension Loads ^{1,3}		Code Ref.
	Strap End & Bracket ²	At Intermediate Trusses	DFL/SP	SPF/HF	
TBD20	6-10dx1½	1-10dx1½	755	650	170

- Allowable loads have been increased for construction and wind loading with no further increase allowed.
- 4-10dx1½ nails at exterior clip section and 2-10dx1½ at interior clip section.
- Allowable tension loads are based on a 2.5 reduction factor.
- NAILS: 10dx1½ = 0.148" dia. x 1½" long.**
See page 16-17 for other nail sizes and information.



TBD20
US Patent 6,877,291



Typical TBD20
Top Chord Installation

Each carton contains 12 straps (each 13' long) and 24 clips.

TBE Truss Bearing Enhancers

One size works with any number of girder plys. The TBE transfers load from the truss or girder to plates for bearing-limited conditions, and provides exceptional uplift capacity. Replaces nail-on scabs that provide lower load transfer, or in some cases, an additional ply when needed for bearing.

The table lists allowable loads for TBE4 used on 2x4 and TBE6 used on 2x6 top plates. The table gives the different loads calculated for TBE with and without wood bearing. See Fastener Schedule below and page 143 for Alternate Installation.

MATERIAL: 18 gauge.

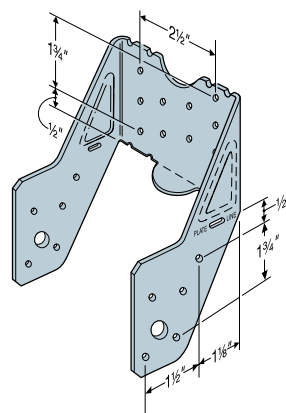
FINISH: Galvanized. See Corrosion-Resistance, page 6-7.

INSTALLATION: • Use all specified fasteners. See General Notes.

• TBE must be installed in pairs.

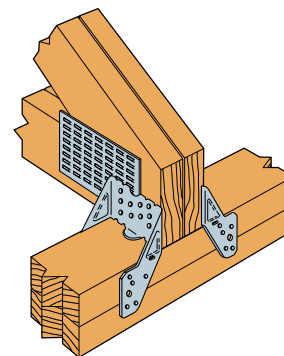
• Top plate size is 2x4 for TBE4, 2x6 for TBE6. Use alternate installation for TBE4 and TBE6 on larger plates or pre-sheathed walls. See page 143.

CODES: See page 12 for Code Listing Key Chart.



TBE4
(TBE6 similar)

U.S. Patent 5,109,646
Canada Patent 2,044,440



Two TBE installed
with two ply girder truss

TBE FASTENER SCHEDULE

Model No.	Truss Plys	Fasteners per each TBE	
		Rafter	Plate
TBE4	1	10-10dx1½	10-10dx1½
	2 or more	10-10d	10-10d
TBE6	1	10-10dx1½	10-10dx1½
	2 or more	10-10d	10-10d

Available with additional
corrosion protection.
Check with factory.

NAILS:
10d = 0.148" dia. x 3" long,
10dx1½ = 0.148" dia. x 1½" long.
See page 16-17 for other nail sizes
and information.

No. of Truss Plys	Top Plate or Truss Wood Species ⁷	TBE Only Allowable Loads ^{1,4}							TBE & Wood Bearing Allowable Loads & Total Bearing Length (TBL) ^{1,4,8}								Code Ref.
		Download				Uplift ³	Lateral (133)		(100)	TBL (in)	(115)	TBL (in)	(125)	TBL (in)	(133/160)	TBL (in)	
		(100)	(115)	(125)	(133)	(133 & 160)	Parallel to Plate ⁶	Perp to Plate ⁵									
TBE4 ON 2x4 TOP PLATE																	
1	Doug-Fir-larch	1820	2095	2230	2230	850	400	1000	5100	5.44	5375	5.73	5510	5.88	5510	5.88	33, 122, 140
	Southern Pine	1820	2095	2230	2230	850	400	1000	4785	5.65	5060	5.97	5195	6.13	5195	6.13	
	Spruce-Pine-Fir	1560	1795	1950	2080	850	375	1000	3790	5.95	4025	6.32	4180	6.56	4310	6.76	
	Hem Fir	1560	1795	1950	2080	850	375	1000	3885	6.07	3920	6.45	4075	6.71	4205	6.92	
2	Doug-Fir-Larch	2220	2230	2230	2230	850	400	1000	8785	4.68	8795	4.69	8795	4.69	8795	4.69	
	Southern Pine	2220	2230	2230	2230	850	400	1000	8155	4.81	8165	4.82	8165	4.82	8165	4.82	
	Spruce-Pine-Fir	1920	2100	2100	2100	850	375	1000	6385	5.01	6565	5.15	6565	5.15	6565	5.15	
	Hem Fir	1920	2100	2100	2100	850	375	1000	6175	5.08	6355	5.23	6355	5.23	6355	5.23	
3	Doug-Fir-Larch	2220	2230	2230	2230	850	400	1000	12065	4.29	12075	4.29	12075	4.29	12075	4.29	
	Southern Pine	2220	2230	2230	2230	850	400	1000	11120	4.37	11130	4.38	11130	4.38	11130	4.38	
	Spruce-Pine-Fir	1920	2100	2100	2100	850	375	1000	8615	4.50	8795	4.60	8795	4.60	8795	4.60	
	Hem Fir	1920	2100	2100	2100	850	375	1000	8300	4.55	8480	4.65	8480	4.65	8480	4.65	
4	Doug-Fir-Larch	2220	2230	2230	2230	850	400	1000	15345	4.09	15355	4.09	15355	4.09	15355	4.09	
	Southern Pine	2220	2230	2230	2230	850	400	1000	14085	4.15	14095	4.16	14095	4.16	14095	4.16	
	Spruce-Pine-Fir	1920	2100	2100	2100	850	375	1000	10845	4.25	11025	4.32	11025	4.32	11025	4.32	
	Hem Fir	1920	2100	2100	2100	850	375	1000	10425	4.29	10605	4.36	10605	4.36	10605	4.36	
TBE6 ON 2x6 TOP PLATE																	
1	Doug-Fir-Larch	1820	2095	2275	2425	935	300	1000	6975	7.44	7250	7.73	7430	7.93	7580	8.09	33, 122, 127, 140
	Southern Pine	1820	2095	2275	2425	935	300	1000	6480	7.65	6755	7.97	6935	8.18	7085	8.36	
	Spruce-Pine-Fir	1560	1795	1950	2080	935	300	965	5065	7.95	5300	8.32	5455	8.55	5585	8.76	
	Hem Fir	1560	1795	1950	2080	935	300	965	4900	8.07	5135	8.45	5290	8.70	5420	8.92	
2	Doug-Fir-Larch	2220	2555	2735	2735	935	300	1000	12535	6.68	12870	6.86	13050	6.96	13050	6.96	
	Southern Pine	2220	2555	2735	2735	935	300	1000	11545	6.81	11880	7.01	12060	7.11	12060	7.11	
	Spruce-Pine-Fir	1920	2210	2400	2560	935	300	965	8935	7.01	9225	7.23	9415	7.38	9575	7.51	
	Hem Fir	1920	2210	2400	2560	935	300	965	8605	7.08	8895	7.32	9085	7.48	9245	7.61	
3	Doug-Fir-Larch	2220	2555	2735	2735	935	300	1000	17690	6.29	18025	6.41	18205	6.47	18205	6.47	
	Southern Pine	2220	2555	2735	2735	935	300	1000	16205	6.37	16540	6.50	16720	6.58	16720	6.58	
	Spruce-Pine-Fir	1920	2210	2400	2560	935	300	965	12440	6.50	12730	6.66	12920	6.75	13080	6.84	
	Hem Fir	1920	2210	2400	2560	935	300	965	11945	6.55	12235	6.71	12425	6.82	12585	6.90	
4	Doug-Fir-Larch	2220	2555	2735	2735	935	300	1000	22845	6.09	23180	6.18	23360	6.23	23360	6.23	
	Southern Pine	2220	2555	2735	2735	935	300	1000	20865	6.15	21200	6.25	21380	6.31	21380	6.31	
	Spruce-Pine-Fir	1920	2210	2400	2560	935	300	965	15945	6.25	16235	6.37	16425	6.44	16585	6.50	
	Hem Fir	1920	2210	2400	2560	935	300	965	15285	6.29	15575	6.41	15765	6.49	15925	6.55	

1. Loads are for two TBEs only. Allowable wood bearing load may be added as shown in the table.
2. Allowable loads for four wood species at Fc⊥ for Douglas Fir-Larch = 625, Southern Pine = 565; Spruce-Pine-Fir = 425; Hem Fir = 405.
3. Allowable loads have been increased 33% and 60% for earthquake or wind loading with no further increase allowed; reduce where other loads govern.
4. Allowable loads are determined only by nail shear calculations or tests of the metal connectors based on the lowest of 0.125" of deflection or the ultimate load with a 3 times factor of safety. The attached wood members must be designed to withstand the loads imposed by the nails.

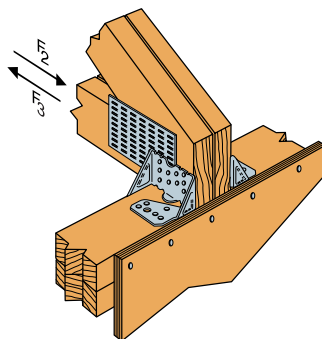
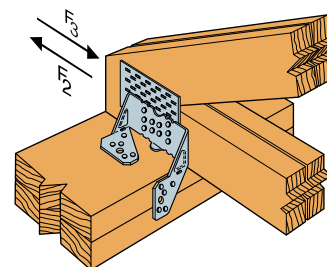
5. Perpendicular to Plate loads are reduced for Alternate Installation.
6. Parallel to Plate loads are not reduced for Alternate Installation.
7. Use lower of top plate or truss wood species.
8. Total bearing length, TBL, equals the plate width plus simulated bearing length provided by the TBE.
TBE4 = 3½" plate width; TBE6 = 5½".

ALTERNATE INSTALLATION

(See illustrations at right)

Model No.	Alternate Installation Allowable Loads ^{5,6}			
	Doug-Fir-Larch/So. Pine (133/160)		Spruce-Pine-Fir (133/160)	
	F ₂	F ₃	F ₂	F ₃
TBE4	1000	300	860	260
TBE6				

See table footnotes on opposite page.

Pre-sheathed shearwall.
Bend tab along slot and nail
one leg to top of the plate.TBE6 Installed
on Double 2x8 Top PlateAlternate Installation Allowable Down Loads are
0.80 of the TBE only table loads on page 142.**TC** Truss Connectors

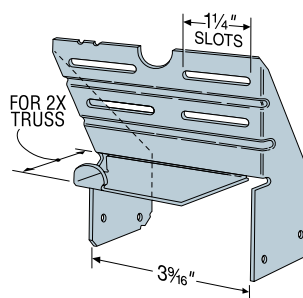
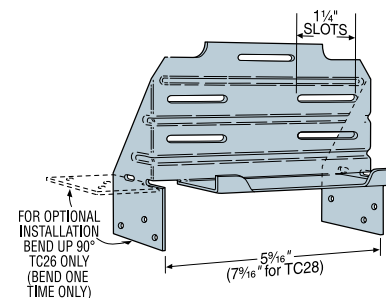
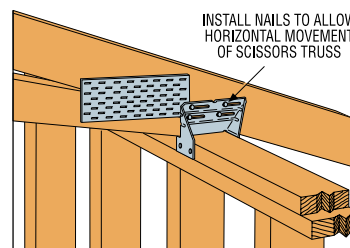
The TC truss connector is an ideal connector for scissor trusses and can allow horizontal movement up to 1/4". The TC also attaches plated trusses to top plates or sill plates to resist uplift forces. Typically used on one or both ends of truss as determined by the **Designer**.

MATERIAL: 16 gauge**FINISH:** Galvanized**INSTALLATION:**

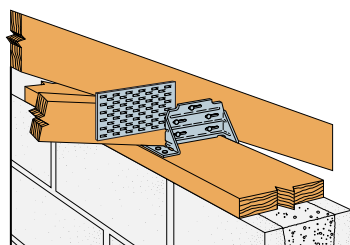
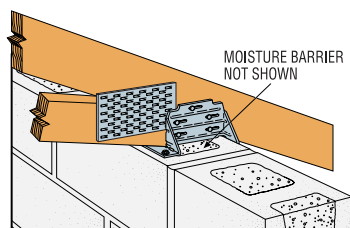
- Use all specified fasteners. See General Notes.
- Drive 10d nails into the truss at the inside end of the slotted holes (*inside end is towards the center of the truss*). Do not seat these nails into the truss—allow room under the nail head for movement of the truss with respect to the wall.
- After installation of roofing materials nails may be required to be fully seated into the truss.
(As required by the Designer or Truss Designer.)

Optional TC Installation

- Bend one flange up 90°. Drive specified nails into the top and face of the top plates or install Titen® screws into the top and face of masonry wall. See optional load tables and installation details.

CODES: See page 12 for Code Listing Key Chart.**TC24**
U.S. Patent 4,932,173**TC26**
(TC28 similar)

Typical TC24 Installation

Optional TC26 Installation for Grouted
Concrete Block using a Wood Nailer
(8", 10", 12" Wall Installation similar)Optional TC26 Installation for Grouted
Concrete Block using Titen® Screws

Model No.	Fasteners		Doug-Fir-Larch/So. Pine Allowable Loads		Spruce-Pine-Fir Allowable Loads		Code Ref.
	Truss	Plate	Uplift (133)	Uplift (160)	Uplift (133)	Uplift (160)	
TC24	4-10d	4-10d	500	600	410	410	3, 39,
TC26	5-10d	6-10d	625	750	540	550	121, 140
TC28	5-10d	6-10d	625	750	540	550	39, 140

See footnotes below.

OPTIONAL TC INSTALLATION TABLE

Model No.	Fasteners		Doug-Fir-Larch/So. Pine Allowable Loads		Spruce-Pine-Fir Allowable Loads		Masonry Allowable Loads		Code Ref.
	Truss	Plate	Uplift (133)	Uplift (160)	Uplift (133)	Uplift (160)	Uplift (133)	Uplift (160)	
TC26	5-10dx1½	6-10dx1½	360	430	310	350	—	—	121
	5-10d	6-10d	375	450	325	390	—	—	
	5-10d	6-3/16x2¼ Titen	—	—	—	—	195	195	

- Loads have been increased 33% and 60% for earthquake or wind loading; no further increase allowed; reduce where other loads govern.
- Grout strength is 2000 psi minimum.
- Nail values based on single 2x truss.
- Optional TC26 installation with 10d nails requires minimum 3" top plate thickness.
- NAILS:** 10d = 0.148" dia. x 3" long, 10dx1½ = 0.148" dia. x 1½" long.
See page 16-17 for other nail sizes and information.

HTC Heavy Truss Clips

MATERIAL: 18 gauge

FINISH: Galvanized

INSTALLATION: • Use all specified fasteners; see General Notes.

- The HTC has a 2½" slot to accommodate truss movement
- The S/HTC is available for steel truss applications.
- This connector has high lateral capacity.

CODES: See page 12 for Code Listing Key Chart.

Model No.	Dimensions		Fasteners		Allowable Loads ¹ (133 & 160)				Code Ref.
	Top Plate	Base	Slot	Without Gap ²		With 1¼" Gap ³			
				F ₁	F ₂	F ₁	F ₂		
HTC4	2x4 Plate	6-10d	3-10d	390	305	85	280	160	
	2x6 Plate	6-10d	3-10d	485	280	155	280		

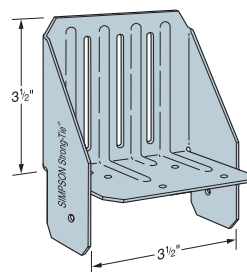
1. Loads may not be increased for short-term loading.

2. Truss or rafter must be bearing on top plate to achieve the allowable loads under "WITHOUT GAP."

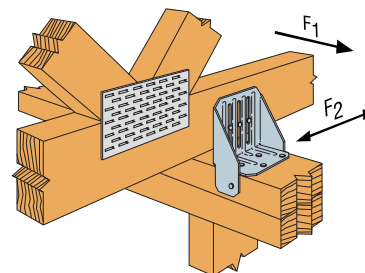
3. When installed with maximum 1¼" space between rafter or truss and top plate use loads under "WITH 1¼ GAP." Where loads are not required, space is not limited to 1¼".

4. **NAILS:** 10d = 0.148" dia. x 3" long.

See page 16-17 for other nail sizes and information.

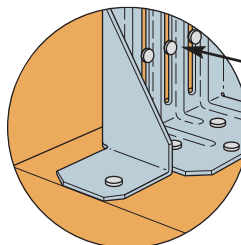


HTC4



Typical HTC4 Installation on a 2x4 Plate

Allow 1/16" gap between nailhead and truss clip to help prevent squeaking



Nails should not be driven completely flush against the connector, to allow vertical truss movement.

Typical HTC4 Installation on a 2x6 Plate

STC/STCT/DTC Roof Truss Clips

For alignment control between a roof truss and nonbearing walls; the 1½" slot permits vertical truss chord movement when loads are applied.

MATERIAL: 18 gauge

FINISH: Galvanized

INSTALLATION: • Use all specified fasteners; see General Notes.

- Use STC or DTC depending on required loads. STC, installed with Drywall Stop (DS), helps prevent fasteners tearing through the ceiling sheetrock (see illustration).
- Use STCT where truss or rafter is separated from the top plate of the nonbearing wall.
- Install slot nails in the middle of the slot.

CODES: See page 12 for Code Listing Key Chart.

Model No.	Fasteners		Allowable Loads ¹ (133 & 160)				Code Ref.
	Base	Slot	Without Gap ²		With ¼" Gap ³		
			F ₁	F ₂	F ₁	F ₂	
STC	2-8d	1-8d	85	50	35	35	170
STCT	2-8d	1-8d	—	—	—	—	
DTC	4-8d	2-8d	125	210	85	135	

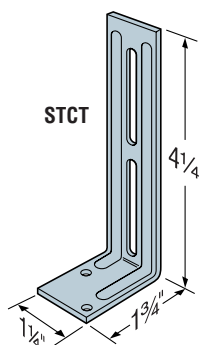
1. Loads may not be increased for short-term loading.

2. Truss or rafter must be bearing on top plate to achieve the allowable loads under "WITHOUT GAP."

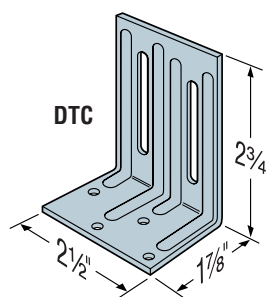
3. When installed with maximum ¼" space between rafter or truss and top plate, use loads listed under "WITH ¼ GAP." Where loads are not required, space is not limited to ¼".

4. **NAILS:** 8d = 0.131" dia. x 2½" long.

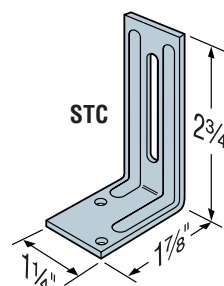
See page 16-17 for other nail sizes and information.



STCT

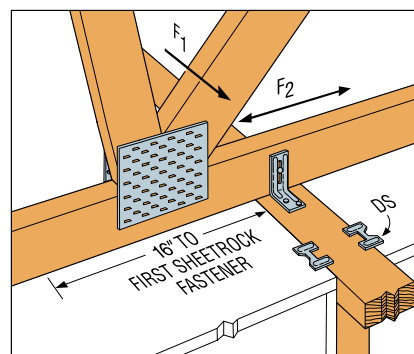


DTC



STC

Nails should not be driven completely flush against the connector, to allow vertical truss movement.



Typical STC Installation with DS

VTC2 Valley Truss Clip


This product is preferable to similar connectors because of a) easier installation, b) higher loads, c) lower installed cost, or a combination of these features.

VTC2 is a valley truss to common truss connector. VTC2 is installed on top of the roof sheathing. It provides a positive connection and eliminates the costly support wedge underneath the valley truss or valley truss bottom chord bevel cutting. VTC2 is adjustable to slopes between 2:12 to 8:12.

MATERIAL: 18 gauge **FINISH:** Galvanized.

INSTALLATION: • See installation sequence below.

- Use all specified fasteners. See General Notes.
- The dome nail holes assist in installing the common truss fasteners slanted at an angle approximately 55° from the horizontal level line.
- Install **two 10d x 1½" nails** in one vertical stirrup and **three 10d x 1½" nails** in the other vertical stirrup to the valley truss bottom chord.

CODES: See page 12 for Code Listing Key Chart.

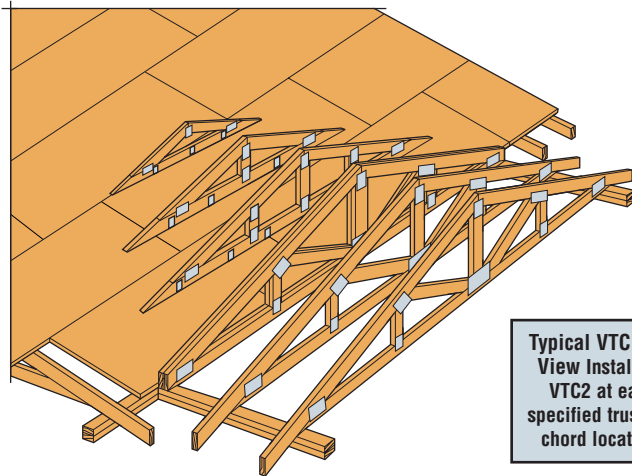
Model No.	Fasteners		2x Truss Chord Material	Allowable Loads ^{1,2}					Code Ref.
	Common Truss	Valley Truss		Uplift		Download		Wind	
				(133/160)	(100)	(115)	(125)	(133)	
VTC2	4-10d	5-10dx1½	Doug Fir Larch	330	480	550	600	640	47, 134
			Southern Pine	405	520	600	650	690	
			Spruce-Pine-Fir	310	415	475	520	550	

1. Uplift loads have been increased 33% and 60% for earthquake and wind loading with no further increase allowed; reduce where other loads govern.

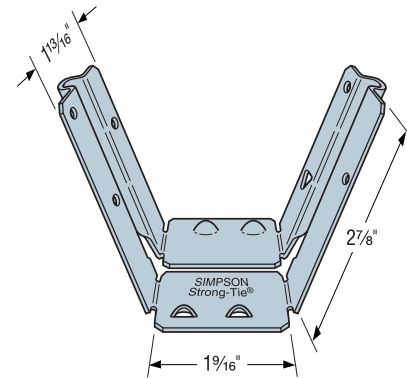
2. Wind (133) is a download rating.

3. **NAILS:** 10d = 0.148" dia. x 3" long, 10dx1½" = 0.148" dia. x 1½" long.

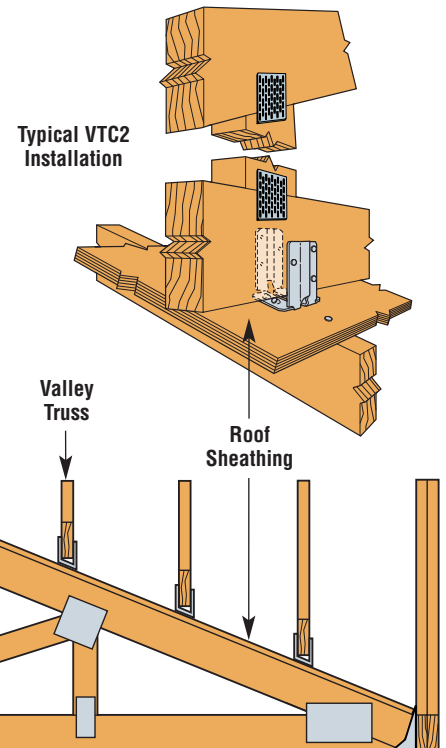
See page 16-17 for other nail sizes and information.



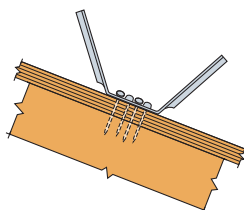
Typical VTC Roof View
Install the VTC2 at each specified truss top chord location.



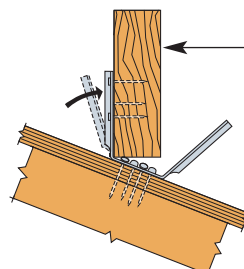
VTC2
US Patent Pending



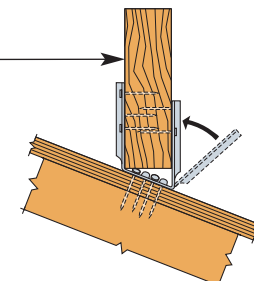
Typical VTC2 Side View

VTC2 INSTALLATION SEQUENCE


STEP 1:
Align the centerline of VTC2 with the common truss top chord centerline. Attach through the roof sheathing to the common truss top chord.



STEP 2:
Adjust the upslope stirrup vertically and attach to valley truss bottom chord.



STEP 3:
Adjust the downslope stirrup vertically and attach to bottom chord.
Bend stirrups one time only.



This product is preferable to similar connectors because of a) easier installation, b) higher loads, c) lower installed cost, or a combination of these features.

The GBC provides improved anchorage of gable bracing to the exterior wall. Installation flexibility for brace angle. GBC has tension and compression capacities.

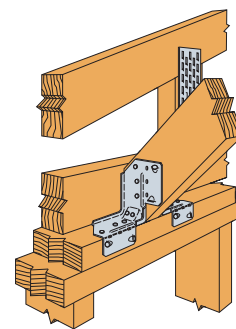
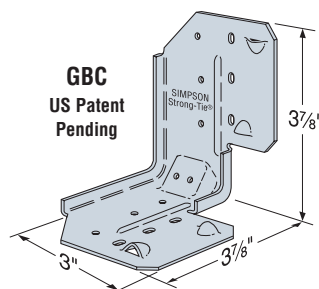
MATERIAL: 16 gauge

FINISH: Galvanized

INSTALLATION:

- Use all specified fasteners. See General Notes.
- The GBC must be installed in pairs to achieve full load capacity.

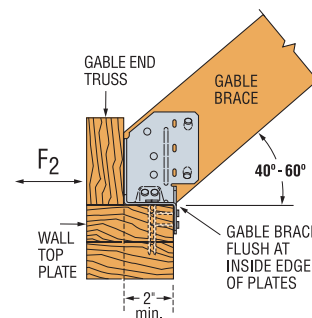
CODES: See page 12 for Code Listing Key Chart.



Typical GBC Installation

Model No.	Qty Req'd	Fasteners per Connector		DF/SP Allowable Loads (133/160) Perp to Endwall (F ₂)				SPF Allowable Loads (133/160) Perp to Endwall (F ₂)				Code Ref.
				Toward Anchors		Away from Anchors		Toward Anchors		Away from Anchors		
		Gable Brace	Top Plates	Gable Brace Angle		Gable Brace Angle		Gable Brace Angle		Gable Brace Angle		
				40-45°	46-60°	40-45°	46-60°	40-45°	46-60°	40-45°	46-60°	
GBC	2	5-8dx1½	7-8d	635	570	425	325	535	480	355	275	47, 134

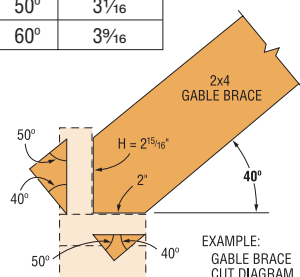
- For 1½ x 3½ (or larger) LVL gable brace, the allowable load at 40° to 45° is 635 lbs towards anchors, 515 lbs away from anchors.
- Loads have been increased 33% and 60% for earthquake or wind loading with no further increase allowed; reduce where other loads govern.
- Use a minimum 2x4 gable brace. Larger members may be used.
- NAILS: 8d = 0.131" dia. x 2½" long, 8dx1½ = 0.131" dia. x 1½" long.
See page 16-17 for other nail sizes and information.



Typical Sloped Installation

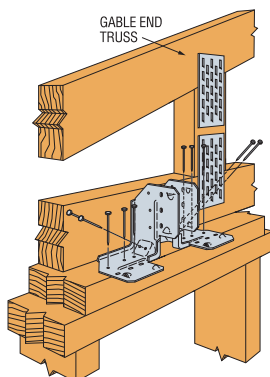
GBC INSTALLATION SEQUENCE

Slope	H Dimension
40°	2 15/16
50°	3 1/4
60°	3 9/16



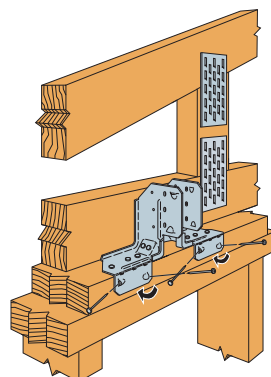
STEP 1

Double angle cut the gable brace to sit flat on the wall double top plate and flush against the gable end truss for 2x4 top plate. The double angle cuts should form a 90° angle on the end of the gable brace.



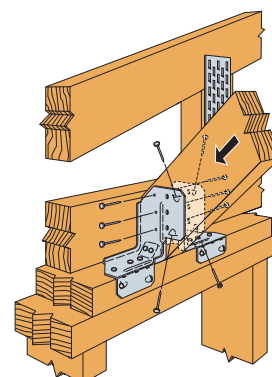
STEP 2

Set each GBC on top of the double top plate so that the bend line slots are flush with the inside edge of the double top plate. Install fasteners into the top of the double top plate.



STEP 3

Bend GBC legs (one time only) over the inside of the double top plate and install fasteners.

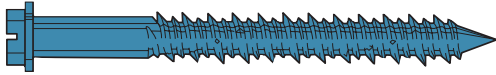


STEP 4

Install fasteners into the gable brace.

NOTE: Attach the other end of the gable brace to blocking at the roof diaphragm as directed by the Designer.

TITEN Screws



Titen Hex Head

WARNING: Industry studies show that hardened fasteners can experience performance problems in wet or **corrosive** environments. Accordingly, use this product in dry, interior, and **noncorrosive environments** only.

Titen Screw Anchors for Concrete

Titen Dia. (in)	Drill Bit Dia. (in)	Embed. Depth (in)	Critical Spacing (in)	Critical Edge Dist. (in)	Tension Load		Shear Load	Code Ref.
					f' _c ≥ 2000 psi (13.8 MPa) Concrete	f' _c ≥ 4000 psi (27.6 MPa) Concrete	f' _c ≥ 2000 psi (13.8 MPa) Concrete	
					Allowable lbs.	Allowable lbs.	Allowable lbs.	
3/16 ¹	5/32	1	2 1/4	1 1/8	125	160	255	131
3/16	5/32	1 1/2	2 1/4	1 1/8	305	460	415	
1/4 ¹	3/16	1	3	1 1/2	145	180	225	
1/4	3/16	1 1/2	3	1 1/2	365	500	400	

- These loads also apply to masonry. 1" embed. table loads apply to masonry applications except 3/16" shear load shall be 225 lbs.
- Refer to page 20 for additional information.
- The attached member or element may govern the allowable load. The Designer shall verify allowable load.



Titen Drill Bit

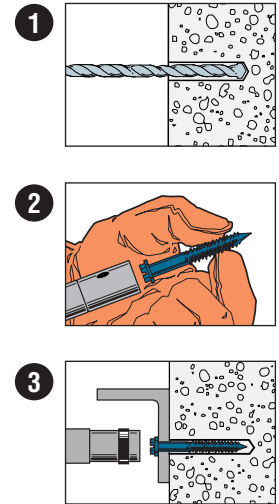


Titen Drill Bit / Driver



Special hex adaptor on the bit allows the Titen Installation Tool to slide over the bit and lock in, ready to drive screws.

Titen Installation Sequence



WM/WMI/WMU Hangers

See pages 104-113 for sizes, fasteners and load information.

WMs are designed for use on standard 8" grouted masonry block wall construction.

MATERIAL: See tables on pages 104-113;

WM, WMI, WMU—12 ga. top flange and stirrup

FINISH: Simpson gray paint; hot-dipped galvanized available; specify HDG.

ALLOWABLE LOADS: For hanger heights exceeding the joist height, the allowable load is 0.50 of the table load.

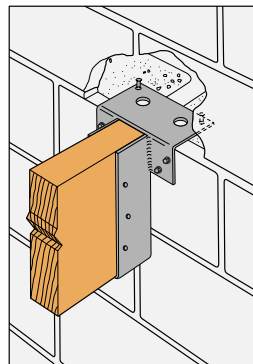
INSTALLATION: • Use all specified fasteners.

- WM—two 16d duplex nails must be installed into the top flange and embedded into the grouted wall. Verify that the grouted wall can take the required fasteners specified in the table.
- Embed WM into block with a minimum of one course above and one course below the top flange with one #5 vertical rebar minimum 24" long in each cell. Minimum grout strength is 2000 psi.
- When installed on top of masonry wall, use 2-Titen 1/4x1 1/4 masonry screws (see Titen screws above) after predrilling into minimum 2000 psi grout.

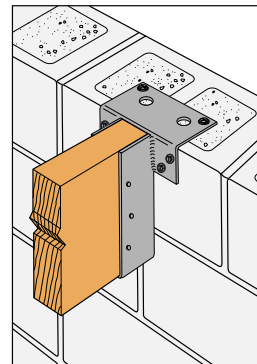
OPTIONS: • See Hanger Options, page 188 for hanger modifications and associated load reductions.

- WMU may not be modified.

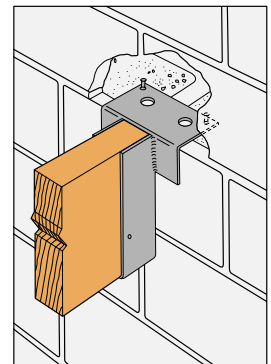
CODES: See page 12 for Code Listing Key Chart.



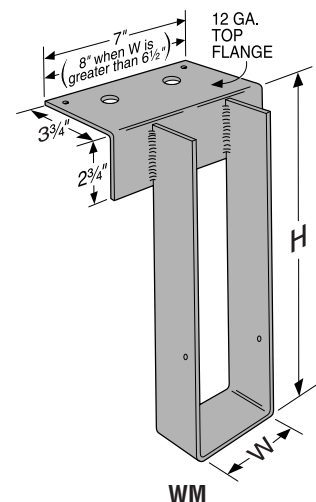
WMU Mid-Wall Installation



WMU Top of Wall Installation



WM Mid-Wall Installation



WM

Model	Joist		Fasteners			Masonry Allowable Loads		Code Ref.
	W	H	Top	Face	Joist	Uplift (133 & 160)	Download (100/115/125)	
WM/WMI	1 1/2 to 7 1/2	3 1/2 to 30	2-16d DPLX	—	2-10dx1 1/2	—	4175 ³	1, 84, 121, 140
			2-1/4x1 1/4 Titen ²	—	2-10dx1 1/2	—	3380 ⁴	
WMU	1 1/2 to 7 1/2	9 to 28	2-16d DPLX	4-1/4x1 1/4 Titen	6-10dx1 1/2	625	4175 ³	
			2-1/4x1 1/4 Titen	4-1/4x1 1/4 Titen	6-10dx1 1/2	545	3380 ⁴	

1. Uplift loads have been increased 33% and 60% for earthquake or wind loading; no further increase allowed.

Divide by 1.33 and 1.60 for normal loading, for example, in cantilever construction.

2. Titen 1/4x1 1/4 installed on top of wall after grout has cured.

3. Mid-Wall Installation — requires minimum of one grouted course above and below the hanger.

4. Top of Wall Installation.

5. NAILS: 16d DPLX = 0.162" dia. x 3 1/2" long, 10dx1 1/2 = 0.148" dia. x 1 1/2" long. See page 16-17 for other nail sizes and information.

HU/HUC/HSUR/L Hangers

HU and HUC products are heavy duty face mount joist hangers made from 14 gauge galvanized steel.

- The HUC is a concealed flange version of the HU. Concealed flange hangers have the face flanges turned in.
- HU is available with A flanges concealed, provided the W dimension is 2 $\frac{5}{16}$ " or greater, at 100% of the table load. Specify HUC.**
- HU is available with one flange concealed when the W dimension is less than 2 $\frac{5}{16}$ " at 100% of the table load.
- For allowable loads on HU products not listed in the table request T-HUHUCTTN.**

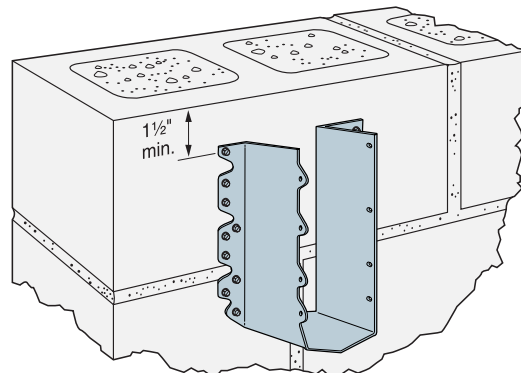
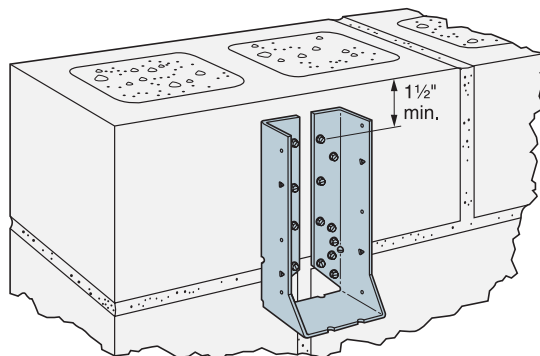
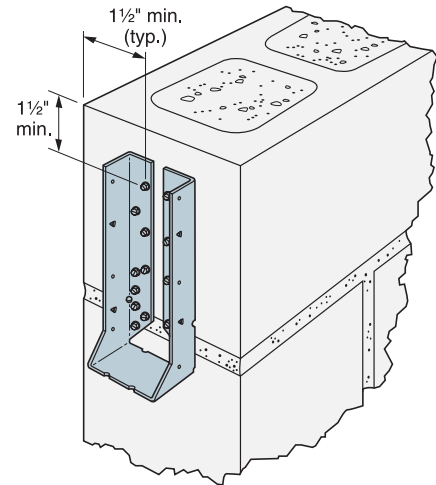
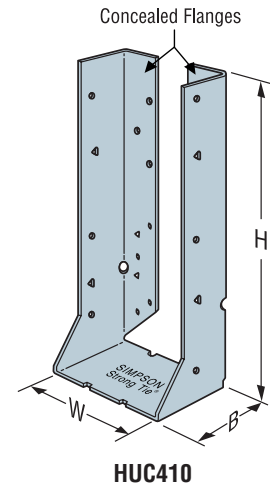
INSTALLATION:

- These hangers are attached to grouted CMU walls using $\frac{1}{4}$ " x 2 $\frac{3}{4}$ " hex head Titen screws or for concrete walls using $\frac{1}{4}$ " x 1 $\frac{3}{4}$ " Titen screws. Titen screws are not provided.
- Drill the $\frac{3}{16}$ " diameter hole to the specified embedment depth plus $\frac{1}{2}$ ".
- Alternatively, drill the $\frac{3}{16}$ " diameter hole to the specified embedment depth and blow it clean using compressed air.
- Caution:** Oversized holes in the base material will reduce or eliminate the mechanical interlock of the threads with the base material and will reduce the anchor's load capacity.
- The hangers should be installed such that a minimum end and edge distance of 1 $\frac{1}{2}$ " is maintained.
- Not recommended for exposed external applications.

CODES: See page 12 for Code Listing Key Chart.

Model No.	Fasteners			Allowable Loads			Code Ref.
	CMU	Concrete	Joist	Uplift (133)	Down (160)	Down (100/115/125)	
HU26	4 - Titen $\frac{1}{4}$ x 2 $\frac{3}{4}$	4 - Titen $\frac{1}{4}$ x 1 $\frac{3}{4}$	2-10dx1 $\frac{1}{2}$	240	290	1545	170
HU28	6 - Titen $\frac{1}{4}$ x 2 $\frac{3}{4}$	6 - Titen $\frac{1}{4}$ x 1 $\frac{3}{4}$	4-10dx1 $\frac{1}{2}$	480	575	2400	
HU210	8 - Titen $\frac{1}{4}$ x 2 $\frac{3}{4}$	8 - Titen $\frac{1}{4}$ x 1 $\frac{3}{4}$	4-10dx1 $\frac{1}{2}$	480	575	2400	
HU46	12 - Titen $\frac{1}{4}$ x 2 $\frac{3}{4}$	12 - Titen $\frac{1}{4}$ x 1 $\frac{3}{4}$	6-10d	905	1085	3950	
HU26-2	12 - Titen $\frac{1}{4}$ x 2 $\frac{3}{4}$	12 - Titen $\frac{1}{4}$ x 1 $\frac{3}{4}$	6-10d	905	1085	3950	
HU48	14 - Titen $\frac{1}{4}$ x 2 $\frac{3}{4}$	14 - Titen $\frac{1}{4}$ x 1 $\frac{3}{4}$	6-10d	905	1085	4350	
HU28-2	14 - Titen $\frac{1}{4}$ x 2 $\frac{3}{4}$	14 - Titen $\frac{1}{4}$ x 1 $\frac{3}{4}$	6-10d	905	1085	4350	
HU410	18 - Titen $\frac{1}{4}$ x 2 $\frac{3}{4}$	18 - Titen $\frac{1}{4}$ x 1 $\frac{3}{4}$	10-10d	1505	1810	5085	
HU210-2	18 - Titen $\frac{1}{4}$ x 2 $\frac{3}{4}$	18 - Titen $\frac{1}{4}$ x 1 $\frac{3}{4}$	10-10d	1505	1810	5085	
HSUR/L26-2	12 - Titen $\frac{1}{4}$ x 2 $\frac{3}{4}$	12 - Titen $\frac{1}{4}$ x 1 $\frac{3}{4}$	4-16dx2 $\frac{1}{2}$	715	815	2625 ^B	

- Uplift loads have been increased 33% and 60% for earthquake or wind duration. No further increase is allowed.
- Grout strength for concrete masonry installation shall be 2500 psi minimum.
- Contact Simpson for loads on other models.
- The HU28 can be ordered skewed 45° and achieve the same loads.
- See page 147 for Titen screw information.
- Loads for the HSUR/L shall be 0.8 the table loads for concrete applications.
- Table allowable loads were determined using test ultimate/3 or nail calculation values.
- NAILS:** 16dx2 $\frac{1}{2}$ = 0.162" dia. x 2 $\frac{1}{2}$ " long, 10d = 0.148" dia. x 3" long, 10dx1 $\frac{1}{2}$ = 0.148" dia. x 1 $\frac{1}{2}$ " long. See page 16-17 for other nail sizes and information.



HUC410 Installed on Masonry Block Sidewall

HSUR/L26-2 Installed on Masonry Block Sidewall

MBHA Masonry Hangers

The MBHA is a single piece, non-welded connector available for solid sawn, truss and engineered wood products.

MATERIAL: 10 gauge

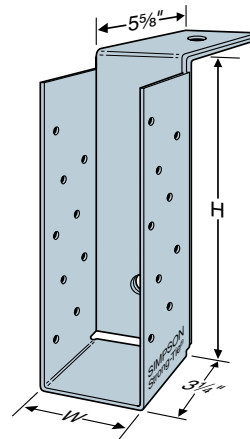
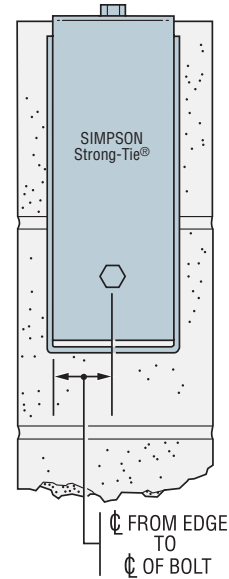
FINISH: Galvanized

INSTALLATION: • Use all specified fasteners. See General Notes.

OPTIONS: See Hanger Options, page 188.

CODES: See page 12 for Code Listing Key Chart.

Model No.	C	Dimensions	
		W	H
MBHA3.12/9.25	1 $\frac{1}{16}$	3 $\frac{1}{8}$	9 $\frac{1}{4}$
MBHA3.12/11.25	1 $\frac{1}{16}$	3 $\frac{1}{8}$	11 $\frac{1}{4}$
MBHA3.56/7.25	1 $\frac{3}{4}$	3 $\frac{3}{16}$	7 $\frac{1}{4}$
MBHA3.56/9.25	1 $\frac{3}{4}$	3 $\frac{3}{16}$	9 $\frac{1}{4}$
MBHA3.56/11.25	1 $\frac{3}{4}$	3 $\frac{3}{16}$	11 $\frac{1}{4}$
MBHA3.56/11.88	1 $\frac{3}{4}$	3 $\frac{3}{16}$	11 $\frac{7}{8}$
MBHA3.56/14	1 $\frac{3}{4}$	3 $\frac{3}{16}$	14
MBHA3.56/16	1 $\frac{3}{4}$	3 $\frac{3}{16}$	16
MBHA3.56/18	1 $\frac{3}{4}$	3 $\frac{3}{16}$	18
MBHA5.50/7.25	2 $\frac{3}{4}$	5 $\frac{1}{2}$	7 $\frac{1}{4}$
MBHA5.50/9.25	2 $\frac{3}{4}$	5 $\frac{1}{2}$	9 $\frac{1}{4}$
MBHA5.50/11.25	2 $\frac{3}{4}$	5 $\frac{1}{2}$	11 $\frac{1}{4}$
MBHA5.50/11.88	2 $\frac{3}{4}$	5 $\frac{1}{2}$	11 $\frac{7}{8}$
MBHA5.50/14	2 $\frac{3}{4}$	5 $\frac{1}{2}$	14
MBHA5.50/16	2 $\frac{3}{4}$	5 $\frac{1}{2}$	16
MBHA5.50/18	2 $\frac{3}{4}$	5 $\frac{1}{2}$	18

**MBHA****Typical MBHA Installation**

Model No.	Fasteners ¹			Solid Concrete Allowable Loads			Grouted CMU Allowable Loads			Code Ref
	Header		Joist	Uplift ⁷		Maximum Down Load	Uplift ⁷		Maximum Down Load	
	Top	Face		(133)	(160)		(133)	(160)		
MBHA	1-ATR¾x8	1-ATR¾x 8	18-10d	3145	3775	6050	3145	3475	5330	62, 123
MBHA models with H = 7¼	1-ATR¾x8	1-ATR¾x 4¾	18-10d	1885	1885	4380	1885	1885	4380	

1. ATR is all threaded rod.

2. Allowable loads are based on a minimum of 2500 psi concrete and 2500 psi grout with one #5 horizontal rebar in the shear cone.

3. Uplift loads have been increased 33% and 60% for earthquake or wind loading with no further increase allowed; reduce where other loads govern.

4. Loads are based on installation using Simpson ET22 Epoxy-Tie 6 $\frac{3}{4}$ " minimum embedment required. All thread rods and/or machine bolts to be $\frac{3}{4}$ " diameter x 8" long, grade A307 or better. Refer to the Anchoring Systems catalog.

5. MBHA hangers with height of 7 $\frac{1}{4}$ " require a 3 $\frac{1}{2}$ " minimum embedment of the face bolt using ET22 Epoxy-Tie. All thread rods and/or machine bolts to be $\frac{3}{4}$ " diameter x 4 $\frac{3}{4}$ " long, grade A307 or better.

6. Additional anchorage products to be designed by others.

7. Uplift loads are for Southern Pine. For Doug Fir use 2930 lbs (133) and 3515 lbs (160).

8. Table allowable loads were determined using test ultimate/3 or nail calculation values.

9. NAILS: 10d = 0.148" dia. x 3" long.

See page 16-17 for other nail sizes and information.

LTA1 Lateral Truss Anchor

The LTA1 develops high uplift and lateral loads at a minimum heel height. Great in areas where a strap over the heel is not required. The side tabs act as a locator in the block and the four embedded hooks provide for a positive bond in the concrete.

MATERIAL: 18 gauge

FINISH: Galvanized

INSTALLATION: • Use all specified fasteners. See General Notes.

CODES: See page 12 for Code Listing Key Chart.

Model No.	Fasteners	Doug-Fir Larch/So. Pine Allowable Loads			Spruce-Pine-Fir Allowable Loads			Code Ref.
		Uplift		Lateral (133/160)	Uplift		Lateral (133/160)	
		133/160	F ₁	F ₂	133/160	F ₁	F ₂	
LTA1	12-10dx1 $\frac{1}{2}$	1420	485	1425	1220	415	1225	125

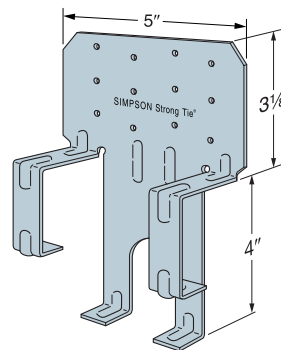
1. Allowable loads are based on a minimum of 2500 psi grout strength with one #5 horizontal rebar in the shear cone.

2. Uplift loads have been increased 33% and 60% for earthquake or wind loading with no further increase allowed; reduce where other loads govern.

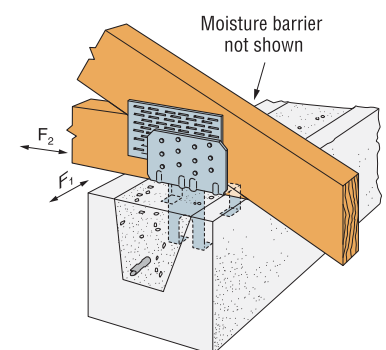
4. Table allowable loads were determined using test ultimate/3 or nail calculation values.

3. NAILS: 10dx1 $\frac{1}{2}$ = 0.148" dia. x 1 $\frac{1}{2}$ " long.

See page 16-17 for other nail sizes and information.

**LTA1**

U.S. Patent 6,560,943

**Typical LTA1 Installation**

META/HETA/HHETA/HETAL/TSS Embedded Truss Anchors and Truss Seat Snap-In

The embedded truss anchor series provides an engineered method to properly attach roof trusses to concrete and masonry walls. The products are designed with staggered nail patterns for greater uplift resistance. Information regarding the use of two anchors on single- and multi-ply trusses is included.

The TSS, a companion product of the META, provides a moisture barrier between the concrete and truss. The preassembled unit is riveted with no height adjustment.

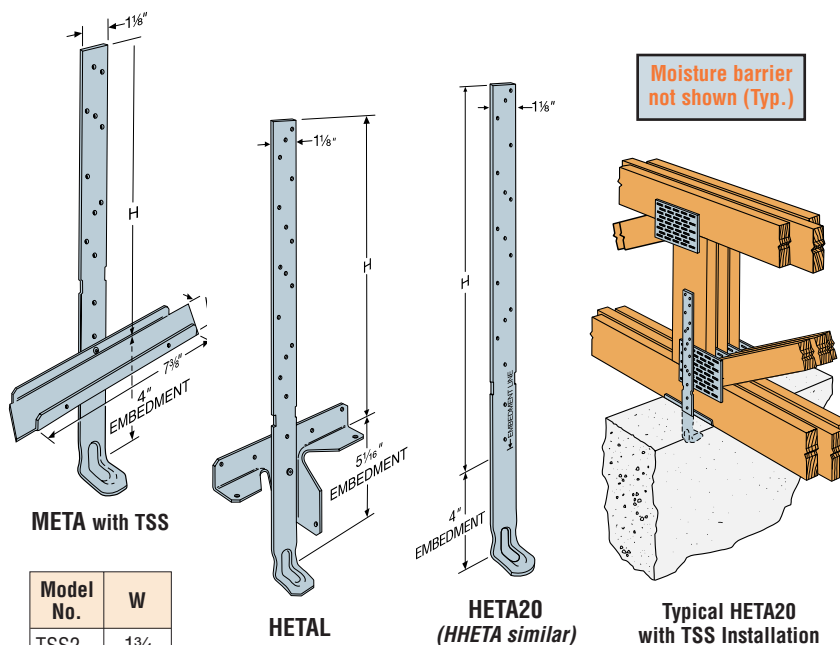
MATERIAL: HHETA—14 gauge; HETA—16 gauge; HETAL—strap 16 gauge, truss seat 18 gauge; META—18 gauge; TSS—22 gauge.

FINISH: Galvanized. Some products available in Z-MAX; see Corrosion Resistance, page 6-7.

INSTALLATION:

- Use all specified fasteners. See General Notes.
- The META, HETA and HHETA are embedded 4" into a concrete beam or grouted block wall; HETAL is embedded 5½".
- Do not drive nails through the truss plate on the opposite side of the truss, which could force the plate off the truss.
- The TSS moisture barrier may be preattached to the truss using 6d commons.

CODES: See page 12 for Code Listing Key Chart.



META with TSS

HETA

HETA20
(HHETA similar)Typical HETA20
with TSS Installation

Model No.	W
TSS2	1¾
TSS2-2	3½
TSS4	3¾

Available with additional corrosion protection. Check with factory.

Model No.	H	Uplift Load 133 Load Duration Increase				Uplift Load 160 Load Duration Increase				Lateral Loads (133 & 160)		Code Ref.
		10dx1½		16d		10dx1½		16d				
		Quantity	Load	Quantity	Load	Quantity	Load	Quantity	Load	F ₁	F ₂	
META12	8	7	1240	7	1450	7	1450	6	1450	65	85	128
META14	10	9	1450	7	1450	7	1450	6	1450	65	85	
META16	12	9	1450	7	1450	7	1450	6	1450	335 ⁴	635 ⁴	
META18	14	9	1450	7	1450	7	1450	6	1450	335 ⁴	635 ⁴	
META20 ⁶	16	9	1450	7	1450	7	1450	6	1450	335 ⁴	635 ⁴	
META22	18	9	1450	7	1450	7	1450	6	1450	335 ⁴	635 ⁴	
META24	20	9	1450	7	1450	7	1450	6	1450	335 ⁴	635 ⁴	
META40	36	9	1450	7	1450	7	1450	6	1450	335 ⁴	635 ⁴	8, 62, 121, 128
HETA12	8	7	1265	7	1475	7	1520	7	1780	65	85	
HETA16	12	10	1805	9	1810	9	1810	8	1810	335 ⁴	730 ⁴	
HETA20 ⁶	16	10	1805	9	1810	9	1810	8	1810	335 ⁴	730 ⁴	
HETA24	20	10	1805	9	1810	9	1810	8	1810	335 ⁴	730 ⁴	128
HETA40	36	10	1805	9	1810	9	1810	8	1810	335 ⁴	730 ⁴	
HHETA12	8	7	1305	7	1520	7	1565	7	1820	65	85	128
HHETA16	12	12	2235	11	2235	10	2235	9	2235	335 ⁴	730 ⁴	
HHETA20 ⁶	16	12	2235	11	2235	10	2235	9	2235	335 ⁴	730 ⁴	
HHETA24	20	12	2235	11	2235	10	2235	9	2235	335 ⁴	730 ⁴	
HHETA40	36	12	2235	11	2235	10	2235	9	2235	335 ⁴	730 ⁴	
HETAL12	7	11	1265	11	1475	11	1515	11	1770	415	1100	8, 62, 121, 128
HETAL16	11	15	1810	13	1810	14	1810	12	1810	415	1100	
HETAL20	15	15	1810	13	1810	14	1810	12	1810	415	1100	

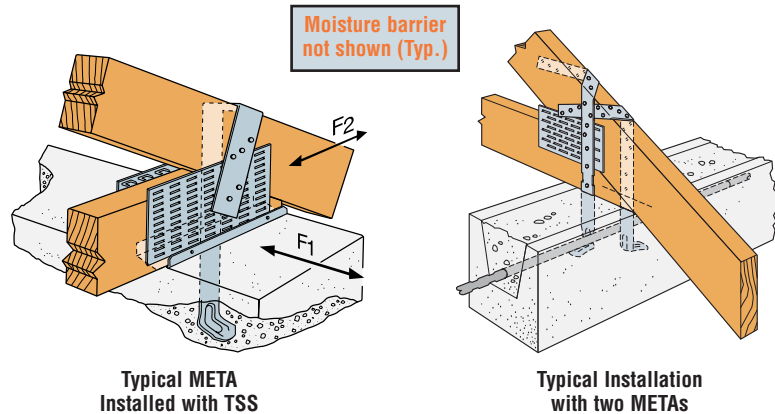
1. Loads include a 33% or 60% load duration increase on the fasteners for seismic or wind loading, but do not include a 33% stress increase on the steel capacity. Refer to page 13 for further explanation.
2. Five nails must be installed into the truss seat of the HETAL.
3. Parallel-to-plate load towards face of HETAL is 1975 lbs.
4. Lateral loads for products noted in the table are based on a minimum installation of 12 nails and the strap wrapped over the heel.
5. Minimum f'c is 2,000psi.

6. On the META20, HETA20 and HHETA20, it is acceptable to use a reduced number of fasteners provided that there is a reduction in uplift load capacity. See example on page 158. **Lateral loads do not apply for reduced nailing.**
7. Minimum spacing is 2 times the embedment depth for full load.
8. See instruction to the Designer page 15 for loads in multiple directions.
9. **Single ply trusses may use either 10dx1½ (0.148 dia. x 1½) or 16d (0.162 dia. x 3½) nails. 2 or 3 ply trusses shall use 16d (0.162 dia. x 3½) nails.**
10. **NAILS: 16d = 0.162" dia. x 3½" long, 10dx1½ = 0.148" dia. x 1½" long. See page 16-17 for other nail sizes and information.**

META/HETA/HHETA/HETAL/TSS Embedded Truss Anchors and Truss Seat Snap-In

Model No.	Double Embedded Anchor Installation Into Grouted CMU Bond Beam								Lateral Loads (133 & 160)		Code Ref.
	Uplift (133)				Uplift (160)						
	1 Ply So. Pine Truss		2 or 3 Ply So. Pine Truss		1 Ply So. Pine Truss		2 or 3 Ply So. Pine Truss		SP		
	Fasteners	Load	Fasteners	Load	Fasteners	Load	Fasteners	Load	F ₁	F ₂	
META	12-10dx1½	1985	14-16d	1900	10-10dx1½	1985	14-16d	1900	1040	1000	128
HETA	12-10dx1½	2035	14-16d	2500	10-10dx1½	2035	12-16d	2500	1055	1305	121, 128

- For concrete tie beam applications for 2 or 3 ply trusses, increase the META load 35% and the HETA load 8%.
- Divide total number of fasteners equally between both straps.
- Minimum f'c is 2,500 psi.
- See instruction to the Designer page 15 for loads in multiple directions.
- Lateral loads are based on a minimum installation of 12 nails and the strap wrapped over the heel.
- Loads include a 33% or 60% load duration increase on the fasteners for seismic or wind loading, but do not include a 33% stress increase on the steel capacity. Refer to page 13 for further explanation.
- NAILS: 16d = 0.162" dia. x 3½" long, 10dx1½ = 0.148" dia. x 1½" long. See page 16-17 for other nail sizes and information.

**MSTAM/MSTCM** Straps Ties

MSTAM and MSTCM models are designed for wood to masonry applications.

The MSTC series has countersunk nail slots for a lower nailing profile. Coined edges ensure safer handling.

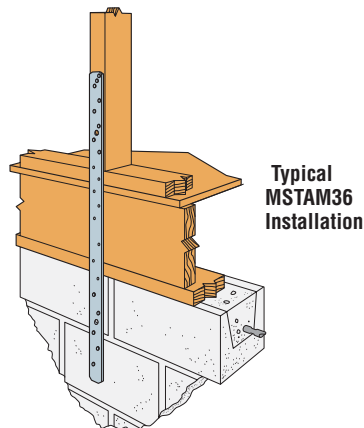
FINISH: Galvanized.

Some products are available in stainless steel or Z-MAX; see Corrosion-Resistance, page 6-7.

INSTALLATION:

- Use all specified fasteners. See General Notes.
- Attach to grouted concrete block.

CODES: See page 12 for Code Listing Key Chart.

**Masonry Application**

Available with additional corrosion protection. Check with factory.

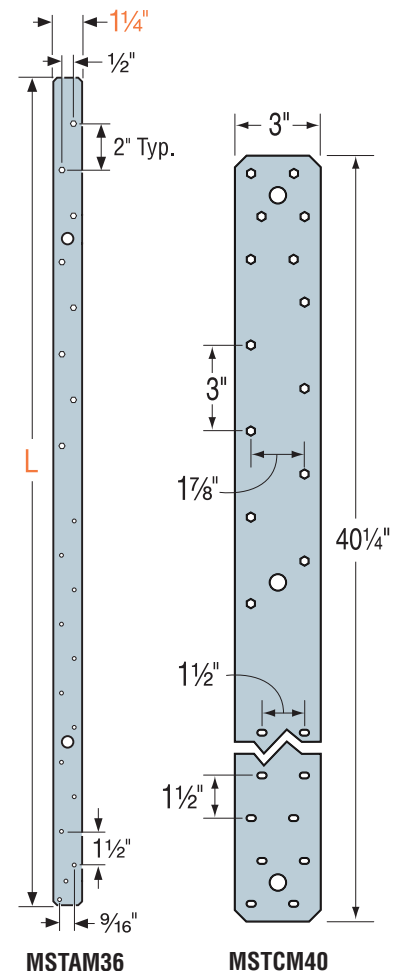
Model No.	Ga	Dimensions		Fasteners (Total)			Allowable Tension Loads				Code Ref.
							DF/SP		SPF/HF		
		W	L	Nails	CMU	Concrete	(133)	(160)	(133)	(160)	
MSTAM24	18	1¼	24	9-10d	5-¼x2¼ Titen	5-¼x1¾ Titen	1465	1500	1270	1500	128
MSTAM36	16	1¼	36	13-10d	8-¼x2¼ Titen	8-¼x1¾ Titen	1870	1870	1870	1870	
MSTCM40	16	3	40¼	26-16d sinkers	14-¼x2¼ Titen	14-¼x1¾ Titen	4250	4250	3745	4250	

- Loads include a 33% or 60% load duration increase on the fasteners for earthquake or wind loading, but **DO NOT** include a 33% stress increase on the steel capacity. Refer to page 13 for further explanation.
- Minimum edge distance 1½" using Titen screws.
- NAILS: 16d Sinker = 0.148" dia. x 3¼" long, 10d = 0.148" dia. x 3" long. See page 16-17 for other nail sizes and information.

Floor-to-Floor Clear Span Table

Model No.	Clear Span	Fasteners (Total)			Allowable Tension Loads				Code Ref.
					(DF/SP)		SPF/HF		
		Nails	CMU	Concrete	(133)	(160)	(133)	(160)	
MSTAM36	16 or 18	8-10d	4- ¼ x 2 ¼ Titen	4- ¼ x 1 ¾ Titen	1335	1600	1150	1380	128
MSTCM40	16 or 18	14-16d Sinkers	10- ¼ x 2 ¼ Titen	10- ¼ x 1 ¾ Titen	2335	2800	2015	2420	151

- NAILS: 16d Sinker = 0.148" dia. x 3¼" long, 10d = 0.148" dia. x 3" long. See page 16-17 for other nail sizes and information.



H Seismic & Hurricane Ties

The HM9 is designed to retrofit roof truss/rafters for block construction. The HM9 hurricane tie provides high uplift and lateral capacity using Simpson concrete fasteners.

The presloped 5:12 seat of the H16 provides for a tight fit and reduced deflection. The strap length provides for various truss height up to a maximum of 13½". Minimum heel height for H16 series is 4".

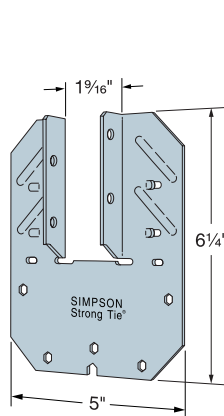
MATERIAL: See table.

FINISH: Galvanized; see Corrosion-Resistance, page 6-7.

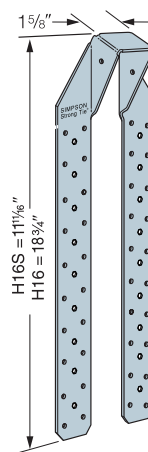
INSTALLATION: • Use all specified fasteners. See General Notes.

- HGAM10 can be installed into grouted concrete block. Screws are provided.
- Hurricane Ties do not replace solid blocking.
- Attach to grouted concrete block with a minimum one #5 rebar horizontal in the top lintel block.

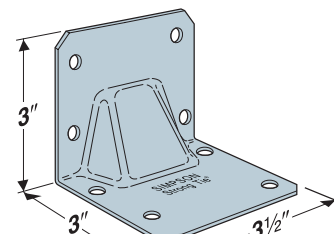
CODES: See page 12 for Code Listing Key Chart.



HM9

H16
(H16-2 similar)

Presloped at 5:12. Pitch of 3:12 to 7:12 is acceptable



HGAM10

Model No.	Ga	W	L	Fasteners			Doug-Fir Larch/So. Pine Allowable Loads ^{1,2}				Spruce-Pine-Fir Allowable Loads ^{1,2}				Code Ref
				To Rafters/ Truss	To CMU	To Concrete	Uplift ⁴		Lateral (133/160)		Uplift ⁴		Lateral (133/160)		
							(133)	(160)	F ₁	F ₂	(133)	(160)	F ₁	F ₂	
HM9KT ³	18	1⅞	6¼	4-SDS¼x1½	5-¼ x2¼ Titen	5-¼x1¾ Titen	595	595	425	200	595	595	425	200	125
HGAM10KTA ^{3,4}	14	—	—	4-SDS¼x1½	4-¼ x2¾ Titen	4-¼x1¾ Titen	850	850	1005	1105	850	850	870	815	
H16	18	1⅝	18¾	2-10dx1½	6-¼x2¼ Titen	6-¼x1¾ Titen	1470	1470	—	—	1265	1265	—	—	
H16S	18	1⅝	11⅞	2-10dx1½	6-¼x2¼ Titen	6-¼x1¾ Titen	1470	1470	—	—	1265	1265	—	—	
H16-2	18	3¼	18¾	2-10dx1½	6-¼x2¼ Titen	6-¼x1¾ Titen	1470	1470	—	—	1265	1265	—	—	
H16-2S	18	3¼	11⅞	2-10dx1½	6-¼x2¼ Titen	6-¼x1¾ Titen	1470	1470	—	—	1265	1265	—	—	

1. Loads have been increased 33% and 60% for earthquake or wind loading with no further increase allowed; reduce where other loads govern.

2. Allowable loads are for one anchor. A minimum rafter thickness of 2½" must be used when framing anchors are installed on each side of the joist and on the same side of the plate.

3. The HM9KT and HGAM10KTA come with SDS and Titen screws.

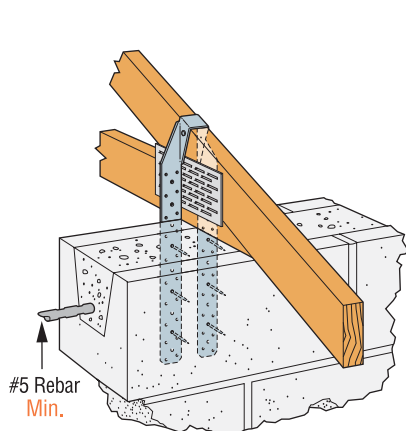
4. Minimum edge distance 1½" using Titen screws.

5. See page 147 for Titen screw information.

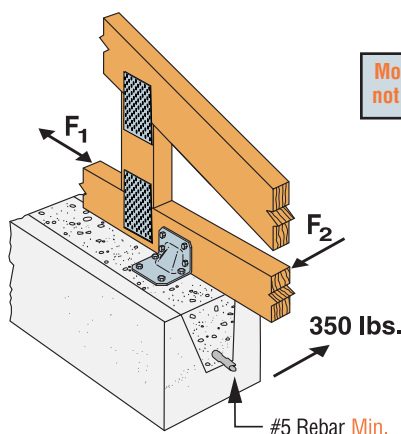
6. Table allowable loads were determined using test ultimate/3 or nail calculation values.

7. NAILS: 10dx1 1/2 = 0.148" dia. x 1 1/2" long.

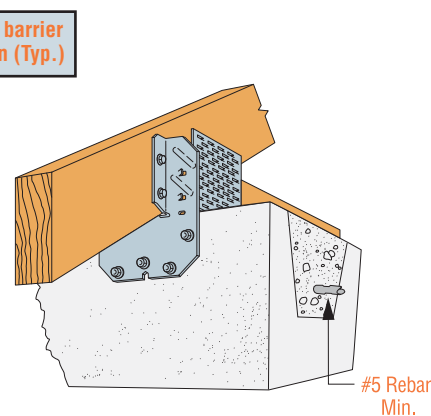
See page 16-17 for other nail sizes and information.



1 H16S Installed into Masonry



2 HGAM10 Installed into Masonry



3 HM9 Attaching Truss to Masonry

LGT3-SDS2.5/LGT2/MGT/HGT Heavy Girder Tiedowns

NEW! LGT3-SDS2.5 is a heavy girder truss tiedown for 3-ply Girder Trusses. Featuring SDS screws into the truss for higher load capacity.

The LGT2 and MGT provide lighter load alternatives for girder tiedowns. The HGT-4 is sized for 4-2x widths. This series provides high uplift resistance for wood frame and concrete block construction. The HGT can be installed on trusses and beams with top chord slopes from 3:12 to 8:12. Available in 2-ply, 3-ply and 4-ply widths.

MATERIAL: LGT2—14 ga; LGT3, MGT—12 ga; HGT—7 ga.

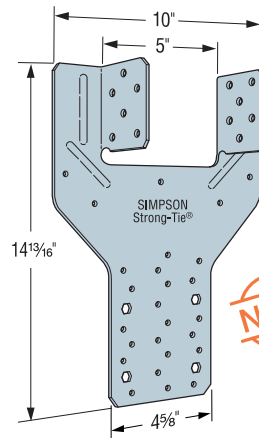
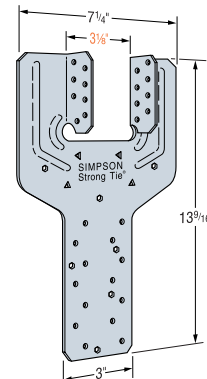
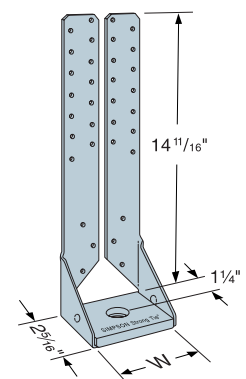
FINISH: HGT—Simpson gray paint;

LGT, MGT—galvanized

INSTALLATION:

- When the HGT-3 is used with a 2-ply girder or beam, shimming is required. Fasten to act as one unit.
- Attach to grouted concrete block with a minimum one #5 rebar horizontal in the top lintel block.
- Minimum $f'_c = 2500$ psi maximum aggregate $\frac{3}{8}$ ".
- See page 167 for wood applications.

CODES: See page 12 for Code Listing Key Chart.

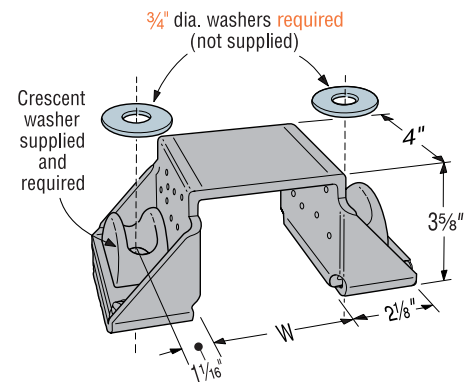
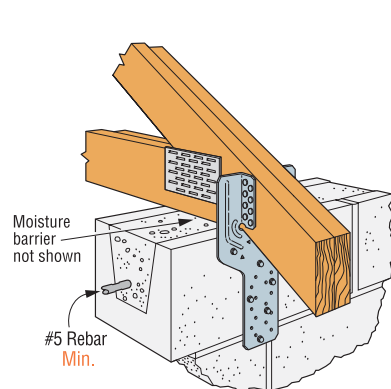
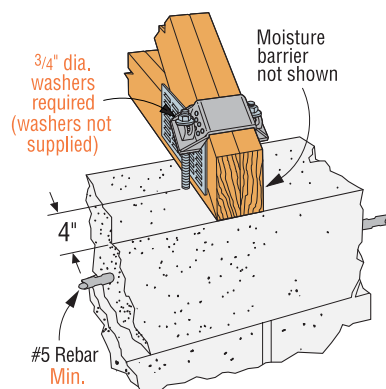
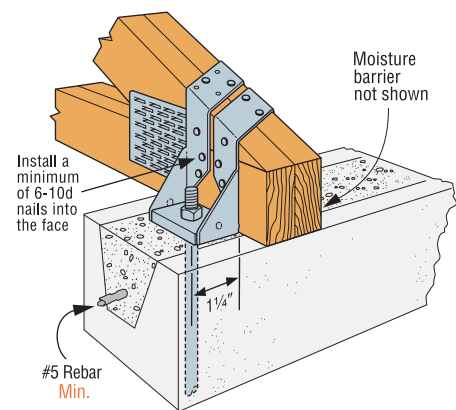
**LGT3-SDS2.5****LGT2****MGT**

Model No.	W	O.C. Dim Between Anchors	Fasteners		DF/SP Allowable Uplift Loads (133/160)	SPF Allowable Uplift Loads (133/160)	Code Ref.
			Anchor Dia.	Girder			
MGT	3 3/4	—	1-5/8	22-10d	3965	3330	125
HGT-2	3 5/16	5 3/4	2-3/4	16-10d	10980	6485	6, 62, 121
HGT-3	4 15/16	7 3/8	2-3/4	16-10d	10530	9035	
HGT-4	6 9/16	9	2-3/4	16-10d	9250	9250	

Masonry Application

Model No.	W	O.C. Dim Between Anchors	Fasteners			DF/SP Allowable Uplift Loads (133/160)	SPF Allowable Uplift Loads (133/160)	Code Ref.
			CMU	Concrete	Girder			
LGT2	3 3/8	—	7-1/4x2 1/4 Titen	7-1/4x1 3/4 Titen	16-16d Sinker	2150	1850	125
NEW LGT3-SDS2.5	5	—	4-3/8x5 Titen HD	4-3/8x5 Titen HD	12-SDS1/4x2 1/2	3685	3170	160

1. Attached members must be designed to resist applied loads.
2. To achieve the loads listed, anchorage into a concrete block bond beam shall be designed by the Designer.
3. To achieve the loads listed for the **MGT and HGT**, anchorage into a 8" wide concrete tie-beam **or grouted and reinforced CMU tie-beam** can be made using Simpson SET epoxy with a 3/4" diameter anchor and a minimum embedment depth of 12". **Vertical reinforcement may be required to transfer the loads per Designer.**
4. Allowable loads have been increased for earthquake or wind loading; no further increase allowed; reduce where other loads govern.
5. LGT2: F_1 load = 700, F_2 load = 170.
6. LGT3-SDS2.5: F_1 load = 795, F_2 load = 410 (DF/SP).
7. See page 147 for Titen screw information.
8. The MGT can be installed with straps vertical for full table load provided all specified nails are installed to either a solid header or minimum double 2x6 web.
9. Table allowable loads were determined using test ultimate/3 or nail calculation values.
10. **NAILS:** 16d Sinker = 0.148" dia. x 3 3/4" long, 10d = 0.148" dia. x 3" long.
See page 16-17 for other nail sizes and information.

**HGT-2 (HGT-3 and HGT-4 similar)****Typical LGT2 Installation into Masonry****Typical HGT-2 Installation into Concrete****Typical MGT Installation**

FGTR Face Mount Girder Tiedown – Retrofit

The Face Mount Girder Tiedown (FGTR) is a non-pitch specific girder tiedown that can be used in new construction or retrofit applications to tie down a girder to a concrete or masonry wall. The product can be installed in a single application or in pairs to achieve a higher uplift capacity.

See T-FGTRWOOD for wood installation.

MATERIAL: Straps—7 gauge; Plate—3 gauge

FINISH: Powder coated

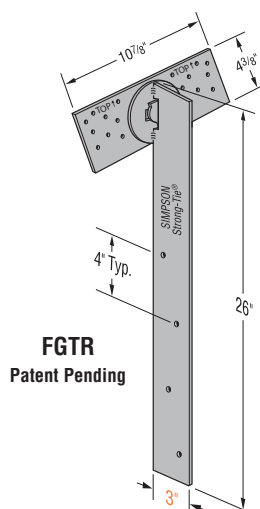
INSTALLATION:

- Use all specified fasteners. See General Notes.
- Product shall be installed to a minimum of a two-ply truss.
- To achieve the loads listed in the table below, the product shall be attached to a grouted and reinforced block wall or a reinforced concrete wall designed by others to transfer the high concentrated uplift loads to the foundation.
- Screw holes are configured to allow for double installation on a two-ply **minimum** truss.
- Only 2 of the 4 holes provided on each strap are required to be filled to achieve the catalog loads. The first Titen HD screw $\frac{1}{2}$ "x5" (THD) shall be installed a minimum of 4" from the top of the wall. Fasteners shall not be installed in adjacent holes.
- **Can be installed on roof pitches up to 8:12 or on a bottom chord designed to transfer the loads.**
- **Minimum grout or concrete compressive strength = 2500 psi.**

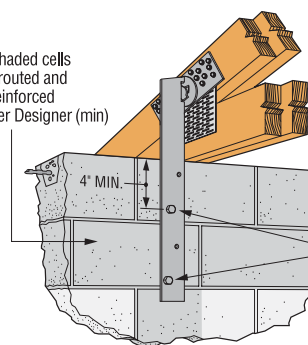
CODES: See page 12 for Code Listing Key Chart.

Model No.	Qty.	Fasteners		Allowable Uplift Load (133/160)	Code Ref.
		To Block and Concrete Wall	To Truss		
FGTR	1	2- $\frac{1}{2}$ "x5" Titen HD	18-SDS $\frac{1}{4}$ x3	5000	133
	2	4- $\frac{1}{2}$ "x5" Titen HD	36-SDS $\frac{1}{4}$ x3	9400	
FGTRHL/R	1	2- $\frac{1}{2}$ "x5" Titen HD	18-SDS $\frac{1}{4}$ x3	3850	

1. Loads have been increased 33% and 60% for wind loading; no further increase allowed.
2. Minimum edge distance for Titen HD is 4".
3. THD's should be spaced in every other hole on the part.
4. The THD's and SDS are provided with the part.
5. Attached members must be designed to resist applied loads.
6. **Table allowable loads were determined using test ultimate/3 or nail calculation values.**

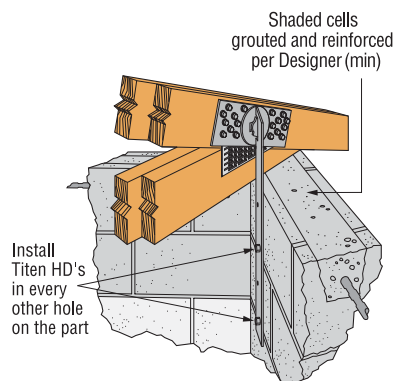


Shaded cells grouted and reinforced per Designer (min)

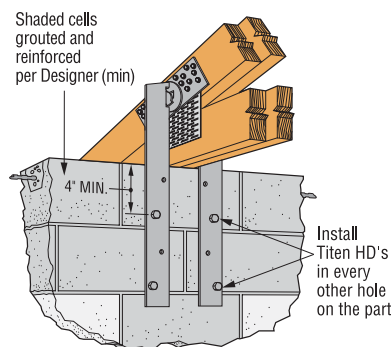


Typical FGTR Single Installation

NOTE: Moisture barrier not shown (Typical)



FGTRHL Installation (FGTRHR similar)



Typical FGTR Double Installation

MTSM/HTSM Twist Straps

The MTSM and HTSM offer high strength truss to masonry connections.

MATERIAL: MTSM—16 gauge; HTSM—14 gauge

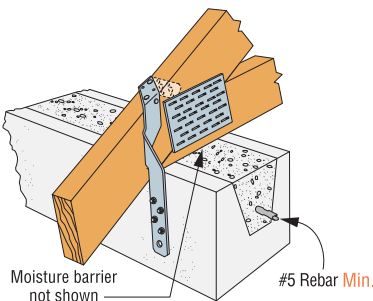
FINISH: Galvanized. See Corrosion-Resistance, page 6-7.

INSTALLATION:

- Use all specified fasteners. See General Notes.
- Attach to either side of grouted concrete block with a minimum one #5 rebar horizontal.
- Minimum f'_c = 2500 psi maximum aggregate $\frac{3}{8}$ ".

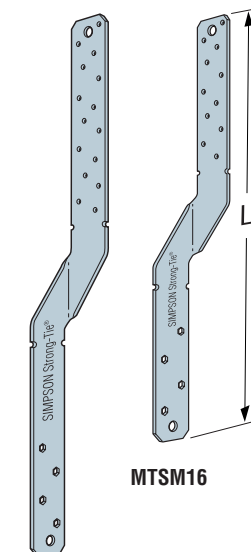
CODES: See page 12 for Code Listing Key Chart.

Typical MTSM20 Installation



Model No.	L	Fasteners ²			Doug-Fir-Larch/So Pine Allowable Uplift Loads ¹			Spruce-Pine-Fir Allowable Uplift Loads ¹			Code Ref.
		Truss	CMU	Concrete	10d	10dx1 $\frac{1}{2}$ "		10d	10dx1 $\frac{1}{2}$ "		
					(133/160)	(133)	(160)	(133/160)	(133)	(160)	
MTSM16	16	7-10d	4- $\frac{1}{4}$ x2 $\frac{1}{4}$ Titen	4- $\frac{1}{4}$ x1 $\frac{3}{4}$ Titen	860	840	860	750	730	750	125
MTSM20	20	7-10d	4- $\frac{1}{4}$ x2 $\frac{1}{4}$ Titen	4- $\frac{1}{4}$ x1 $\frac{3}{4}$ Titen	860	840	860	750	730	750	
HTSM16	16	8-10d	4- $\frac{1}{4}$ x2 $\frac{1}{4}$ Titen	4- $\frac{1}{4}$ x1 $\frac{3}{4}$ Titen	1175	1045	1175	1020	905	1020	
HTSM20	20	10-10d	4- $\frac{1}{4}$ x2 $\frac{1}{4}$ Titen	4- $\frac{1}{4}$ x1 $\frac{3}{4}$ Titen	1175	1045	1175	1020	1020	1020	

1. Loads have been increased 33% and 60% for earthquake or wind loading; no further increase allowed; reduced where other loads govern.
2. Twist straps do not have to be wrapped over the truss to achieve the allowable load.
3. Minimum edge distance for Titen is 1 $\frac{1}{2}$ ".
4. **See page 147 for Titen screw information.**
5. **Table allowable loads were determined using test ultimate/3 or nail calculation values.**
6. **NAILS: 10d = 0.148" dia. x 3" long, 10dx1 $\frac{1}{2}$ = 0.148" dia. x 1 $\frac{1}{2}$ " long. See page 16-17 for other nail sizes and information.**



MTSM20

MTSM16

HRS/ST/FHA/PS/HST/LSTA/LSTI/MST/MSTA/MSTC/MSTI *Strap Ties*

The HRS, a heavy 12 gauge strap tie, provides greater support in construction and repair of home projects. Straight lines and chamfered edges for better appearance. Easy nailing pattern for connecting the sides of 2x members.

The MSTC series has countersunk nail slots for a lower nailing profile.

Install Strap Ties where plates or soles are cut, at wall intersections, and as ridge ties. LSTA and MSTA straps are engineered for use on 1½" members. The 3" center-to-center nail spacing reduces the possibility of splitting. For the MST, this may be a problem on lumber narrower than 3½"; either fill every nail hole with 10d x 1½" nails or fill every other nail hole with 16d commons. Reduce the allowable load based on the size and quantity of fasteners used. The LSTI light strap ties are suitable where gun-nailing is necessary through diaphragm decking and wood chord open web trusses.

FINISH: PS—HDG; **HST—gray paint**; all others—galvanized.

Some products are available in stainless steel or Z-MAX;
see Corrosion-Resistance, page 6-7.

INSTALLATION: Use all specified fasteners. See General Notes.

OPTIONS: Special sizes can be made to order. **Contact factory.**

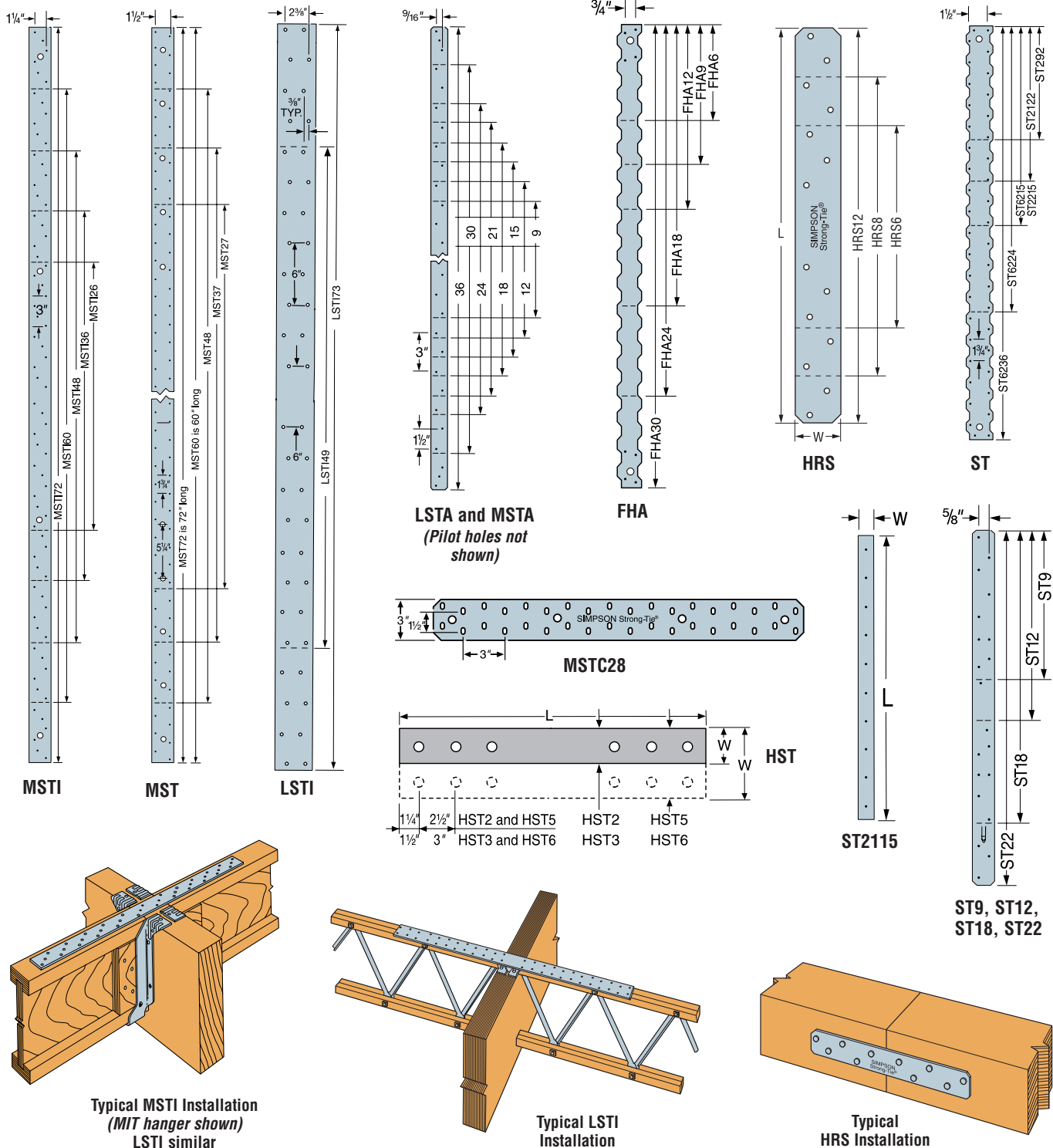
CODES: See page 12 for Code Listing Key Chart.

MSTC and RPS meet code requirements for reinforcing cut members (16 gauge) at top plate and RPS at sill plate.

International Residential Code® - 2000/2003 R602.6.1

International Building Code® - 2000/2003 2308.9.8

(For RPS, refer to page 174.)



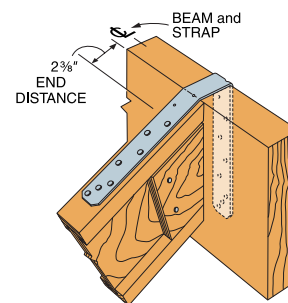
HRS/ST/FHA/PS/HST/LSTA/LSTI/MST/MSTA/MSTC/MSTI Strap Ties

CODES: See page 12 for Code Listing Key Chart.

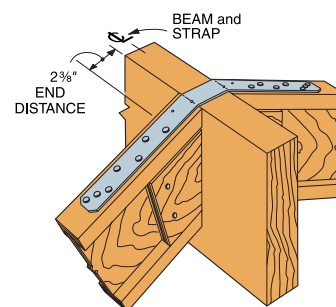
Available with additional corrosion protection. Check with factory.

Model No.	Ga	Dimensions		Fasteners (Total)	Allowable Tension Loads (DF/SP)		Allowable Tension Loads (SPF/HF)		Code Ref.
		W	L		(133)	(160)	(133)	(160)	
LSTA9	20	1¼	9	8-10d	645	775	555	665	7, 62, 90, 128
LSTA12		1¼	12	10-10d	805	970	695	830	
LSTA15		1¼	15	12-10d	970	1160	830	1000	
LSTA18		1¼	18	14-10d	1130	1235	970	1165	
LSTA21		1¼	21	16-10d	1235	1235	1110	1235	
LSTA24		1¼	24	18-10d	1235	1235	1235	1235	3, 28, 39, 88, 104, 121, 128
ST292		2½	9½	12-16d	1120	1265	970	1160	
ST2122		2½	12½	16-16d	1505	1535	1290	1535	
ST2115		¾	16½	8-16d	665	665	665	665	
ST2215		2½	16½	20-16d	1880	1880	1625	1880	
LSTA30	18	1¼	30	22-10d	1640	1640	1555	1640	7, 62, 90, 128
LSTA36		1¼	36	24-10d	1640	1640	1640	1640	
LSTI49		3¾	49	32-10dx1½	2580	3100	2220	2660	9, 121, 128
LSTI73		3¾	73	48-10dx1½	3870	4215	3330	3995	9, 128
MSTA9		1¼	9	8-10d	650	780	565	680	7, 62, 90, 123, 128
MSTA12		1¼	12	10-10d	815	975	705	850	
MSTA15		1¼	15	12-10d	975	1170	850	1020	
MSTA18		1¼	18	14-10d	1140	1365	990	1185	
MSTA21		1¼	21	16-10d	1300	1560	1130	1355	
MSTA24		1¼	24	18-10d	1465	1640	1270	1525	7, 62, 90, 128
MSTA30		1¼	30	22-10d	1835	2050	1585	1900	
MSTA36		1¼	36	26-10d	2050	2050	1870	2050	
ST6215		2½	16½	20-16d	1895	2095	1640	1970	
ST6224		2½	23½	28-16d	2540	2540	2315	2540	
ST9	16	1¼	9	8-16d	755	910	655	785	3, 39, 88, 104, 121, 128
ST12		1¼	11½	10-16d	945	1135	820	985	3, 39, 88, 121, 128
ST18		1¼	17¾	14-16d	1325	1420	1150	1380	
ST22		1¼	21½	18-16d	1420	1420	1420	1420	
MSTC28		3	28¼	36-16d sinkers	3000	3600	2590	3110	9, 23, 121, 128
MSTC40		3	40¼	52-16d sinkers	4335	4585	3745	4495	9, 23, 128
MSTC52		3	52¼	62-16d sinkers	4585	4585	4465	4585	
MSTC66		3	65¾	76-16d sinkers	5660	5660	5660	5660	
MSTC78		3	77¾	76-16d sinkers	5660	5660	5660	5660	
ST6236		2½	33½	40-16d	3845	3845	3465	3845	3, 28, 39, 88, 104, 121, 128
HRS6	12	1½	6	6-10d	525	630	455	545	128
HRS8		1½	8	10-10d	875	1050	760	910	
HRS12		1½	12	14-10d	1225	1465	1065	1275	
FHA6		1½	6¾	8-16d	810	975	705	845	3, 39, 88, 121, 128
FHA9		1½	9	8-16d	810	975	705	845	
FHA12		1½	11½	8-16d	810	975	705	845	
FHA18		1½	17¾	8-16d	810	975	705	845	
FHA24		1½	23½	8-16d	810	975	705	845	
FHA30		1½	30	8-16d	810	975	705	845	
MSTI26		2½	26	26-10dx1½	2355	2830	2045	2455	
MSTI36		2½	36	36-10dx1½	3265	3915	2830	3400	
MSTI48		2½	48	48-10dx1½	4350	5080	3775	4530	
MSTI60		2½	60	60-10dx1½	5080	5080	4720	5080	
MSTI72		2½	72	64-10dx1½	5080	5080	5080	5080	3, 39, 121, 128

1. Loads include a 33% or 60% load duration increase on the fasteners for earthquake or wind loading, but DO NOT include a 33% stress increase on the steel capacity. Refer to page 13 for further explanation.
2. 10dx1½ nails may be substituted where 16d sinkers or 10d are specified at 100% of the table loads.
3. 10d commons may be substituted where 16d sinkers are specified at 100% of table loads.
4. 16d sinkers (0.148" dia. x 3¾" long) or 10d commons may be substituted where 16d commons are specified at 0.85 of the table loads.
5. Use half of the nails in each member being connected to achieve the listed loads.
6. PS strap design loads must be determined by the Designer for each installation. Bolts are installed both perpendicular and parallel-to-grain. Hole diameter in the part may be oversized to accommodate the HDG. Designer must determine if the oversize creates an unacceptable installation.
7. For overlap splice details, refer to T-CMST.
8. Straps with 10d (0.148 dia. x 3) nails specified may be substituted with 10dx1½ (0.148 dia. x 1½) with no reduction in load.
9. NAILS: 16d = 0.162" dia. x 3½" long, 16d Sinker = 0.148" dia. x 3¾" long, 10d = 0.148" dia. x 3" long. 10dx1½ = 0.148" dia. x 1½" long. See page 16-17 for other nail sizes and information.

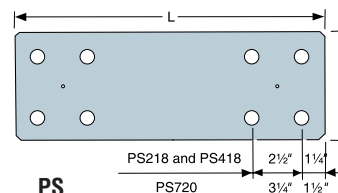
Typical LSTA Installation
(hanger not shown)

Bend strap one time only

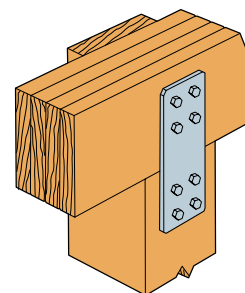
Typical LSTA Installation
(hanger not shown)

Bend strap one time only

Model No.	Material Thickness mil (ga)	Dim.		Bolts Qty	Dia	Code Ref.
		W	L			
PS218 [®]	171 mil (7 ga)	2	18	4	¾	180
PS418 [®]		4	18	4	¾	
PS720 [®]		6¾	20	8	½	



PS

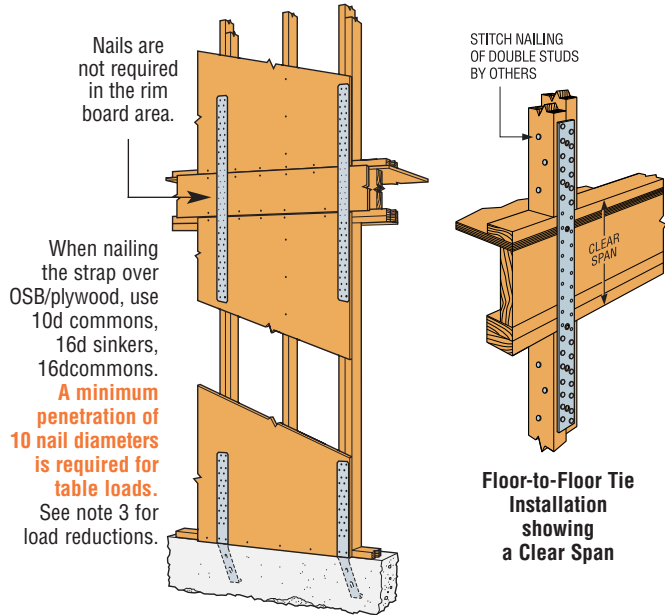


Typical PS720 Installation

HST/MST/MSTC/MSTI Strap Ties

Floor-to-Floor Clear Span Table

Model No.	Clear Span	Fasteners (Total)	Allowable Tension Loads (DF/SP)		Allowable Tension Loads (SPF/HF)	
			(133)	(160)	(133)	(160)
MSTC28	18	12-16d sinker	1000	1200	865	1035
	16	16-16d sinker	1335	1600	1150	1380
MSTC40	18	28-16d sinker	2335	2800	2015	2420
	16	36-16d sinker	3000	3600	2590	3110
MSTC52	18	44-16d sinker	3665	4400	3170	3800
	16	48-16d sinker	4000	4585	3455	4145
MSTC66	18	64-16d sinker	5505	5660	4780	5660
	16	68-16d sinker	5660	5660	5075	5660
MSTC78	18	76-16d sinker	5660	5660	5660	5660
	16	76-16d sinker	5660	5660	5660	5660
MST37	18	20-16d	2095	2510	1825	2190
	16	22-16d	2305	2765	2010	2410
MST48	18	32-16d	3370	3695	2925	3505
	16	34-16d	3580	3695	3105	3635
MST60	18	46-16d	4830	4830	4600	4830
	16	48-16d	4830	4830	4800	4830
MST72	18	46-16d	4830	4830	4600	4830
	16	48-16d	4830	4830	4800	4830
MSTI36	18	14-10dx1½	1270	1525	1100	1320
	16	16-10dx1½	1450	1740	1260	1510
MSTI48	18	26-10dx1½	2355	2830	2045	2455
	16	28-10dx1½	2540	3045	2205	2645
MSTI60	18	38-10dx1½	3445	4135	2990	3585
	16	40-10dx1½	3625	4350	3145	3775
MSTI72	18	50-10dx1½	4535	5080	3935	4720
	16	52-10dx1½	4715	5080	4090	4910



CODES:
See page 12 for Code Listing Key Chart.

Available with additional corrosion protection. Check with factory.

Typical Detail with Strap Installed Over Sheathing

1. Loads include a 33% or 60% load duration increase on the fasteners for earthquake or wind loading, but **DO NOT** include a 33% stress increase on the steel capacity. Refer to page 13 for further explanation.
2. 10d commons may be substituted where 16d sinkers are specified at 100% of the table loads.
3. 16d sinkers (0.148" dia. x 3¼" long) or 10d commons may be substituted where 16d commons are specified at 0.85 of the table loads.
4. Allowable bolt loads are based on parallel-to-grain loading and these minimum member thicknesses: MST-2½"; HST2 and HST5-4"; HST3 and HST6-4½".
5. Use half of the **required** nails in each member being connected to achieve the listed loads.
6. For overlap splice details, refer to T-CMST.
7. Straps with 10d (0.148 dia. x 3) nails specified may be substituted with 10dx1½ (0.148 dia. x 1½) with no reduction in load.
8. NAILS: 16d = 0.162" dia. x 3½" long, 16d Sinker = 0.148" dia. x 3½" long, 10dx1½ = 0.148" dia. x 1½" long. See page 16-17 for other nail sizes and information.

	Model No.	Ga	Dimensions		Fasteners (Total)			Allowable Tension Loads (DF/SP)				Allowable Tension Loads (SPF/HF)				Code Ref.
			W	L	Nails	Bolts		Nails		Bolts		Nails		Bolts		
						Qty	Dia	(133)	(160)	(133)	(160)	(133)	(160)	(133)	(160)	
	MST27	12	2½	27	30-16d	4	½	3140	3770	1800	2165	2740	3290	1665	2000	3, 39, 88, 121, 128
	MST37		2½	37½	42-16d	6	½	4395	5080	2525	3025	3835	4605	2335	2805	
	MST48		2½	48	46-16d	8	½	4845	5310	3065	3675	4200	5040	2840	3410	
	MST60	10	2½	60	56-16d	10	½	6420	6760	3740	4485	5600	6510	3480	4175	3,39,121,128
	MST72		2½	72	56-16d	10	½	6420	6760	3740	4485	5600	6510	3480	4175	
	HST2	7	2½	21¼	—	6	⅝	—	—	4350	5220	—	—	4030	4835	3, 39, 88, 121
	HST5		5	21¼	—	12	⅝	—	—	8875	10650	—	—	8225	9870	
	HST3	3	3	25½	—	6	¾	—	—	6400	7680	—	—	5550	6660	
	HST6		6	25½	—	12	¾	—	—	12890	15470	—	—	11100	13320	

SA/HSA Strap Connectors

A high value seismic tie for horizontal ties across intervening members.

FINISH: Galvanized

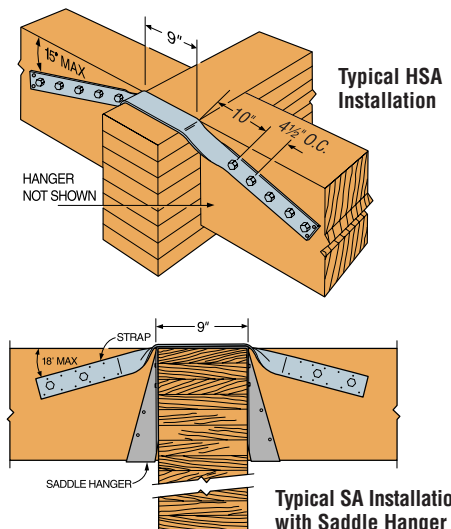
INSTALLATION: • Use all specified fasteners. See General Notes.

• May not be suitable for floor diaphragms which protrude above beams.

CODES: See page 12 for Code Listing Key Chart.

Model No.	Strap Section	L	Total Fasteners			Allowable Horizontal Loads			Code Ref.
			Nails	Bolts		Nails (133 & 160)	Bolts		
				Qty	Dia		(133)	(160)	
SA36	12 ga x 2½ ₁₆	36	22-16d	4	½	1900	1605	1900	3, 39, 88, 121
HSA32	3 ga x 3	32	—	2	¾	—	1910	2290	
HSA41	3 ga x 3	41	—	4	¾	—	3770	4520	
HSA50	3 ga x 3	50	—	6	¾	—	5470	6400	
HSA59	3 ga x 3	59	—	8	¾	—	6940	8330	
HSA68	3 ga x 3½	68	—	10	¾	—	8350	10020	

1. Allowable loads have been increased 33% and 60% for earthquake or wind loading with no further increase allowed; reduce where other loads govern.
2. Allowable loads assume a restrained member of 3½" min. thickness with bolts in single shear.
3. Bolt and nail values may not be combined.
4. Only SA36 can be field-bent for other intermediate beam widths.
5. NAILS: 16d = 0.162" dia. x 3½" long. See page 16-17 for other nail sizes and information.



CS/CMST Coiled Straps

CMSTC provides nail slots for easy installation and coiled edges for safe handling; it can be cut to length. CS are continuous utility straps which can be cut to length on the job site. Packaged in lightweight (about 40 pounds) cartons.

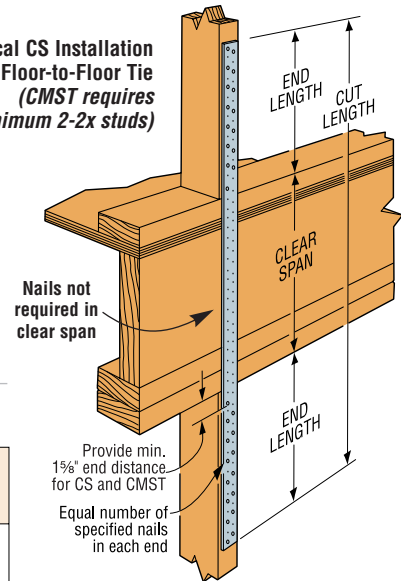
FINISH: Galvanized. Some products available in Z-MAX; see Corrosion-Resistance, page 6-7.

INSTALLATION: • Use all specified fasteners. See General Notes.

- Wood shrinkage after strap installation across horizontal wood members may cause strap to buckle outward.
- Refer to the applicable code for minimum nail penetration and minimum wood edge and end distances.
- The table shows the maximum allowable loads and the nails required to obtain them. Fewer nails may be used; reduce the allowable load **as shown in footnote #3**.
- CMST only—Use every other round hole if the wood tends to split. Use round and triangle holes for comparable MST loads, providing wood does not tend to split.
- For lap splice **and alternate nailing** information, request Technical Bulletin T-CMST.

CODES: See page 12 for Code Listing Key Chart.

Typical CS Installation
as a Floor-to-Floor Tie
(CMST requires
minimum 2-2x studs)



Available with additional corrosion protection. Check with factory.

Model No.	Total L	Ga	DF/SP			SPF/HF			Allowable Tension Loads (133)	Nail Spacing o.c. (in a row)	Code Ref.
			End L	Cut Length	Fasteners	End L	Cut Length	Fasteners			
CMST12	40'	12	39"	Clear Span + 78"	86-16d	45"	Clear span + 90"	100-16d	9235	1¾"	3, 28, 39, 97, 104, 121, 128
			45"	Clear Span + 90"	100-10d	51"	Clear span + 102"	114-10d	9235	1¾"	
			76"	Clear Span + 152"	86-16d	89"	Clear span + 178"	100-16d	9235	3½"	
			89"	Clear Span + 178"	100-10d	101"	Clear span + 202"	114-10d	9235	3½"	
CMST14	52½'	14	30"	Clear Span + 60"	66-16d	35"	Clear span + 70"	76-16d	6490	1¾"	128
			34"	Clear Span + 68"	76-10d	40"	Clear span + 80"	88-10d	6490	1¾"	
			59"	Clear Span + 118"	66-16d	68"	Clear span + 136"	76-16d	6490	3½"	
			68"	Clear Span + 136"	76-10d	78"	Clear span + 156"	88-10d	6490	3½"	
CMSTC16	54'	16	23"	Clear Span + 46"	56-16d sinkers	27"	Clear span + 54"	66-16d sinkers	4585	1½"	170
			45"	Clear Span + 90"	56-16d sinkers	52"	Clear span + 104"	66-16d sinkers	4585	3"	
CS14	100'	14	16"	Clear Span + 32"	30-10d	19"	Clear span + 38"	34-10d	2490	2½"	3, 9, 39, 62, 104, 128
CS14-R	25'		16"	Clear Span + 32"	30-10d	19"	Clear span + 38"	34-10d	2490		
CS16	150'	16	14"	Clear Span + 28"	26-8d	17"	Clear span + 34"	30-8d	1705	2½"	
CS16-R	25'		12"	Clear Span + 24"	22-10d	15"	Clear span + 30"	26-10d	1705		
CS18S	100'	18	12"	Clear Span + 24"	22-8d	15"	Clear span + 30"	26-8d	1370		
CS18	200'		10"	Clear Span + 20"	18-10d	12"	Clear span + 24"	20-10d	1370		
CS18-R	25'	10"	Clear Span + 20"	18-10d	12"	Clear span + 24"	20-10d	1370			
CS20	250'	20	10"	Clear Span + 20"	18-8d	12"	Clear span + 24"	20-8d	1030		
CS20-R	25'		8"	Clear Span + 16"	14-10d	10"	Clear span + 20"	16-10d	1030		
CS22	300'	22	8"	Clear Span + 16"	14-8d	10"	Clear span + 20"	16-8d	845		
CS22-R	25'		7"	Clear Span + 14"	12-10d	9"	Clear span + 18"	14-10d	845		

1. Loads include a 33% or 60% load duration increase on the fasteners for seismic or wind loading, but DO NOT include a 33% stress increase on the steel capacity. Refer to page 13 for further explanation.

2. Use half of the **required** nails in each member being connected to achieve the listed loads.

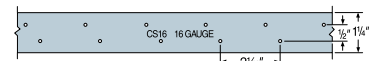
3. Calculate the connector value for a reduced number of nails as follows: Allowable Load = $\frac{\text{No. of Nails Used}}{\text{No. of Nails in Table}} \times \text{Table Load}$

Example: CMSTC16 in DF/SP with 48 nails total.

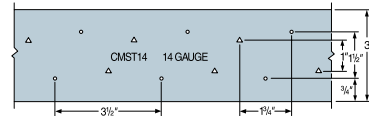
(Half of the nails in each member being connected) Allowable Load = $\frac{48 \text{ Nails (Used)}}{56 \text{ Nails (Table)}} \times 4585 \text{ lbs} = 3930 \text{ lbs}$

4. **NAILS:** 16d = 0.162" dia. x 3 1/2" long, 16d Sinker = 0.148" dia. x 3 3/4" long, 10d = 0.148" dia. x 3" long.

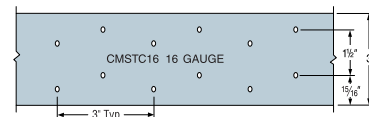
See page 16-17 for other nail sizes and information.



CS16 Hole Pattern
(all other CS straps similar)



CMST14 Hole Pattern
(CMST12 similar)



CMSTC16 Hole Pattern

Gauge stamped on part for
easy identification

TS Twist Straps

Twist straps provide a tension connection between two wood members.

An equal number of right and left hand units are supplied in each carton.

MATERIAL: 16 gauge. **FINISH:** Galvanized. See Corrosion-Resistance, page 6-7.

INSTALLATION: • Use all specified fasteners. See General Notes.

- TS should be installed in pairs to reduce eccentricity.

CODES: See page 12 for Code Listing Key Chart.

Model No.	L	Fasteners (Total)	Allowable Loads (133 & 160)	Code Ref
TS9	9	8-16d	530	170
TS12	11 5/8"	10-16d	665	
TS18	17 3/4"	14-16d	930	
TS22	21 1/8"	18-16d	1215	

1. Install half of the fasteners on each end of the strap to achieve full loads.

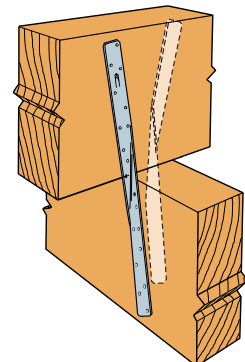
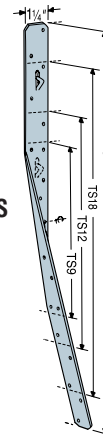
2. Loads have been increased for earthquake or wind loading; no further increase allowed; reduce where other loads govern.

3. 16d sinkers (0.148" dia. x 3 3/4") may be substituted for the specified 16d commons at 0.84 of the table loads.

4. Loads are for a single TS.

5. **NAILS:** 16d = 0.162" dia. x 3 1/2" long. See page 16-17 for other nail sizes and information.

TS



Typical TS Installation

FSC Floor Span Connector

NEW! As an alternative to coil strap, our new FSC-Floor Span Connector, connects upper floors to lower floors from the inside of the wall. The convenient obround holes make installation in narrow wall cavities easy. Installs with a $\frac{3}{8}$ " all thread rod, nut and washer (not included).

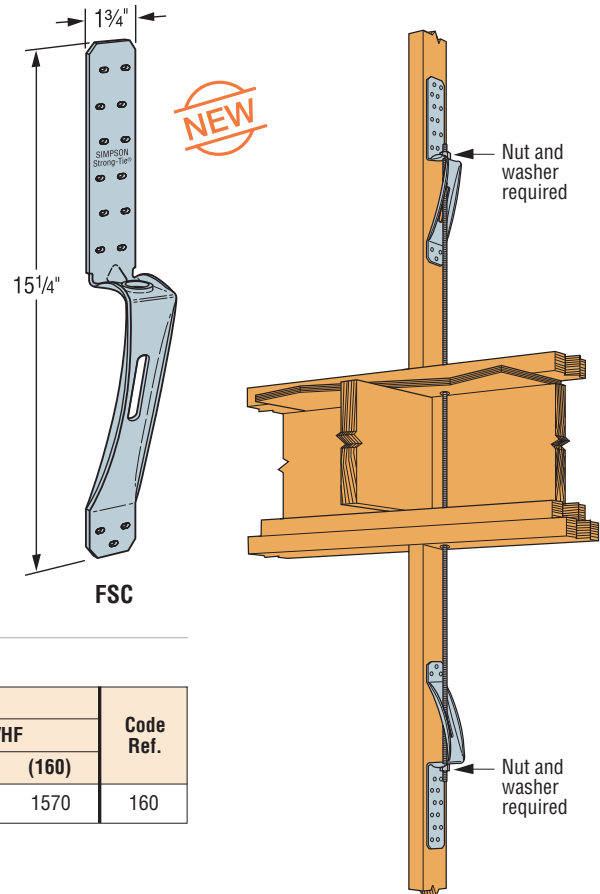
MATERIAL: See Table

FINISH: Galvanized

INSTALLATION:

- Can be used on a single 2x stud.
- Threaded rod, washers and nuts are not supplied with the FSC.
- Use $\frac{3}{8}$ " threaded rod between 4' to 5' long, grade A307 or better, with matching nuts and cut washers.
- FSC maybe installed off the sill plate up to 18".
- Drill $\frac{1}{2}$ " to $\frac{3}{4}$ " diameter hole through the plates for threaded rod access, hole should be located approximately $1\frac{1}{2}$ " away from the face of stud used for FSC attachment.
- Nails can be installed up to 30 degree angle with no reduction in load capacity.

CODES: See page 12 for Code Listing Key Chart.



Model No.	Ga	Fasteners		Allowable Tension Load				Code Ref.
		Stud	Anchor	DF/SP		SPF/HF		
				(133)	(160)	(133)	(160)	
FSC	12	15-10dx1 1/2"	3/8" ATR	1830	1830	1570	1570	160

1. The allowable loads have been increased 33% and 60% for earthquake or wind loading with no further increase allowed; reduce where other loads govern.
2. Load values are based on a minimum lumber thickness of $1\frac{1}{2}$ ".
3. Standard cut washer is required with the $\frac{3}{8}$ " all thread rod.
4. FSC's shall be offset no more than 3" horizontally from each other.
5. NAILS: 10dx1 $\frac{1}{2}$ " = 0.148" dia. x 1 $\frac{1}{2}$ " long. See page 16-17 for other nail sizes and information.

Typical FSC Installation

MSTC48B3/MSTC66B3 Pre-Bent Straps

The MSTC48B3 and MSTC66B3 are pre-bent straps designed to transfer tension load from an upper story shearwall to a beam on the story below.

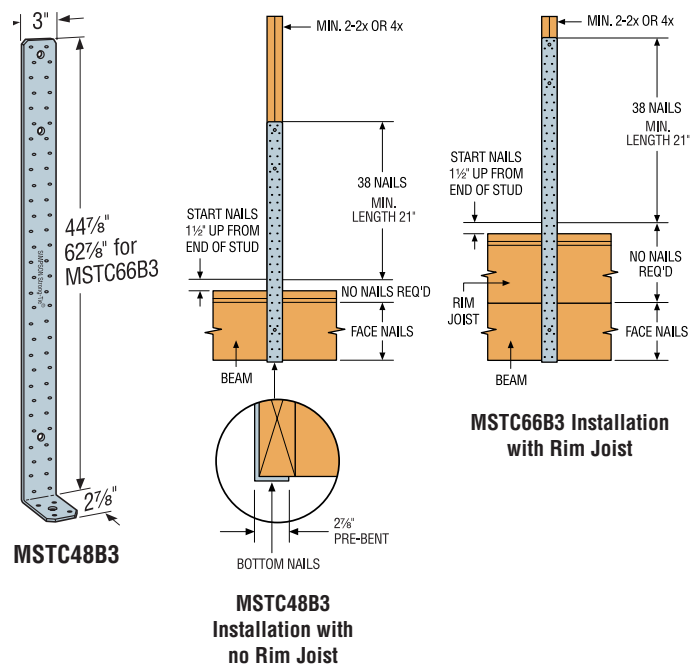
MATERIAL: 14 gauge

FINISH: Galvanized

CODES: See page 12 for Code Listing Key Chart.

Model No.	Dimensions		Fasteners			Allowable Tension Loads		Code Ref.
	Beam		Beam		Studs/ Post	DF/SP 133/160%	SPF/HF 133/160%	
	Width (min)	Depth (min)	Face	Bottom				
MSTC48B3	3	9¼	12-10d	4-10d	38-10d	3930	3380	128
MSTC66B3	3½	11¼	14-10d			4440	3820	

1. Using fewer than 38 nails in the studs/post will reduce the capacity of the connection. To calculate a reduced capacity use 129 lb. per nail for DFL/SYP or 112 lb. per nail for HF/SPF.
2. Nails in studs/post shall be installed symmetrically. Nails may be installed over the entire length of the strap over the studs/post.
3. The 3" wide beam may be double 2x members.
4. MSTC48B3 and MSTC66B3 installed over sheathing up to $\frac{1}{2}$ " thick achieve 0.85 of table loads.
5. Loads govern by the lower of .125" deflection from static tests on wood members, steel ultimate divided by 2, or the calculated nail values.
6. **NAILS:** 16d = 0.162" dia. x 3 $\frac{1}{2}$ " long, 10d = 0.148" dia. x 3" long. See page 16-17 for other nail sizes and information.



FTA/LFTA Floor Tie Anchors

Designed for use as a floor-to-floor tension tie, one FTA replaces two comparably sized **holdowns** and the threaded rod.

The LFTA Light Floor Tie Anchor is for nailed installations.

MATERIAL: See table

FINISH: LFTA—galvanized; FTA—Simpson gray paint

INSTALLATION: • Use all specified fasteners.

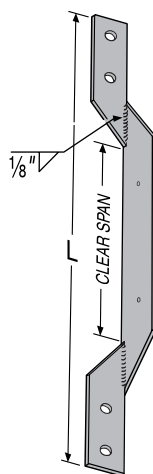
See General Notes.

- Washers required on side opposite FTA for full loads.
- Nail holes between floors allow preattachment to the joist during installation; these nails are not required.

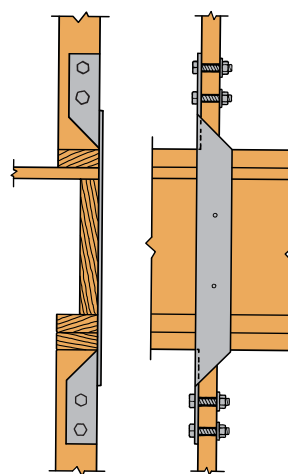
OPTIONS: • FTA may be hot-dip galvanized; specify HDG.

- The standard model's clear span of 17" will accommodate up to a 12" joist. The clear span of the FTA may be increased with a corresponding increase in overall length.

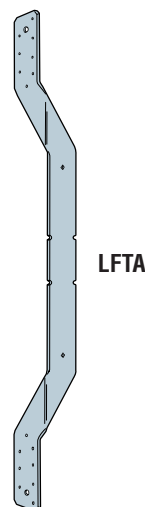
CODES: See page 12 for Code Listing Key Chart.



FTA



Typical FTA Installation



LFTA

Model No.	Ga	Dimensions			Fasteners (Total)		Allowable Uplift Loads ¹ (133)						Allowable Uplift Loads ¹ (160)						Code Ref.
		Max Width	Clear Span	L	Qty	Dia	Vertical Member Thickness					LFTA ²	Vertical Member Thickness					LFTA ²	
							1½	2	2½	3	3½		1½	2	2½	3	3½		
LFTA	16	2¼	17	38¾	16-10d	—	—	—	—	—	—	1205	—	—	—	—	—	1400	5, 41, 85, 121
FTA2	10	3	17	37½	4	⅝	1575	2095	2600	2820	2820	—	1890	2510	3120	3385	3385	—	20, 80, 124
FTA5	10	3½	17	45½	4	¾	1865	2500	3125	3725	4050	—	2240	3000	3750	4400	4400	—	
FTA7	3	3½	17	56	6	⅞	3095	4185	5175	6360	7395	—	3715	5020	6210	7600	7600	—	

1. Allowable loads have been increased 33% and 60% for earthquake or wind loading with no further increase allowed; reduce where other loads govern.

2. Reduce the allowable load for the LFTA according to the code when nails penetrate wood less than 1 3/4".

3. **NAILS:** 10d = 0.148" dia. x 3" long. See page 16-17 for other nail sizes and information.

T and L Strap Ties

FINISH: Galvanized. See Corrosion-Resistance, page 6-7.

CODES: See page 12 for Code Listing Key Chart.

Model No.	Ga	Dimensions			Fasteners		Code Ref.
		L	H	B	Nails	Bolts Qty Dia	
55L	16	4 3/4	4 3/4	1 1/4	5-10d	—	180
66L	14	6	6	1 1/2	10-16d	3 5/8	
88L	14	8	8	2	12-16d	3 1/2	
1212L	14	12	12	2	14-16d	3 1/2	
66T	14	6	5	1 1/2	8-16d	3 3/8	
128T	14	12	8	2	12-16d	3 1/2	
1212T	14	12	12	2	12-16d	3 1/2	

1. Connectors are not load-rated.

2. The 55L is available in Z-MAX.

3. **NAILS:** 16d = 0.162" dia. x 3 1/2" long, 10d = 0.148" dia. x 3" long. See page 16-17 for other nail sizes and information.

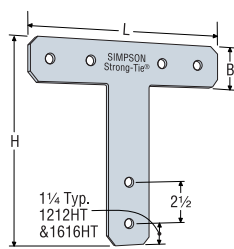
Available with additional corrosion protection. Check with factory.

Model No.	Ga	Dimensions			Minimum Bolt End & Edge Distances		Bolts		Allowable Loads ^{1,2}		Code Ref.
		W	H	L	d ₁	d ₂	Qty	Dia	Tension/Uplift (100/133/160)	F ₁ (100/133/160)	
1212HL	7	2 1/2	12	12	2 1/2	4 3/8	5	5/8	1535	565	170
1616HL	7	2 1/2	16	16	2 1/2	4 3/8	5	5/8	1535	565	
1212HT	7	2 1/2	12	12	2 1/2	4 3/8	6	5/8	2585	795	
1616HT	7	2 1/2	16	16	2 1/2	4 3/8	6	5/8	2585	795	

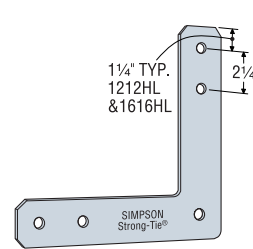
1. 1212HL, 1616HL, 1212HT and 1616HT are to be installed in pairs with machine bolts in double shear. A single part with machine bolts in single shear is not load-rated.

2. Allowable loads are based on a minimum member thickness of 3 1/2".

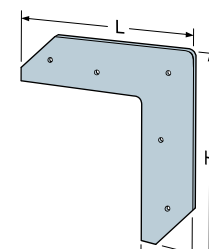
3. 1212HT, 1616HT loads assume a continuous beam.



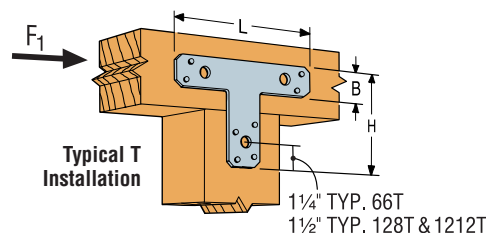
1212HT



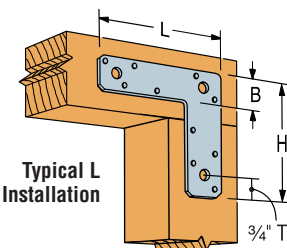
1212HL



55L



Typical T Installation



Typical L Installation

1 1/4" TYP. 1212HL & 1616HL
1 1/4" TYP. 66T
1 1/2" TYP. 128T & 1212T
3/4" TYP. 66L
1" TYP. 88L & 1212L

PCT Purlin Cross Tie

Designed using a section that works in both tension and compression.

MATERIAL: 1½" square tube steel
ASTM A500 Grade B.

FINISH: Galvanized.

INSTALLATION: • Use all specified fasteners.

See General Notes.

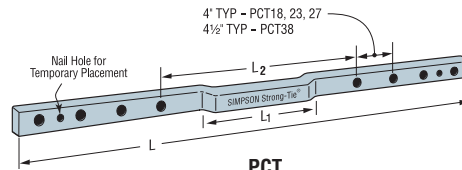
- PCT18 and 23 are sized to span a maximum hanger seat depth ("B" dimension) of 4".

PCT27 and 38 are sized to span a maximum hanger seat depth ("B" dimension) of 6".

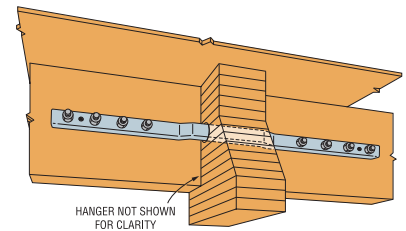
- Tube section helps with drilling alignment, through the purlin.
- Offset angle to allow drilling access through glulam.
- 2½" or a 2¾" diameter hole required.
- Install in pairs.

OPTIONS: Contact the factory or other lengths.

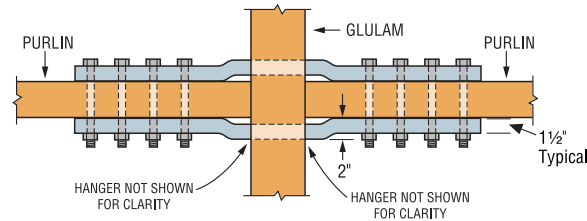
CODES: See page 12 for Code Listing Key Chart.



PCT
Patent Pending



Typical PCT
Installation



PCT Installed in Pairs
(Top View)

Model No.	Tube Thick-ness	Total Length L	L ₁	L ₂	No. and Size of Fasteners	Allowable Loads Per Pair of PCTs							Code Ref.
						Steel Tension	Steel Compression	Bolts (Double Shear) (133) Length of Bolt in Purlin - DF/SP					
								3½"	3½"	5½"	5½"	6¾"	
PCT18	⅛	44¾	14	17¾	8 – ⅝MB	24665	19165	14365	15925	15925	15905	15875	45, 106, 126
PCT23	⅛	52¾	14	17¾	10 – ⅝MB	24665	19165	17720	19705	19705	19685	19600	
PCT27	⅜ ₁₆	66⅝	19½	23½	12 – ⅝MB	39665	28665	20715	23085	23670	23690	23545	
PCT38	⅜ ₁₆	71⅝	19½	23½	12 – ¾ MB	35365	26030	24255	27520	33735	33805	33490	

1. Allowable loads have been increased 33% for earthquake or wind loading.

No further increase allowed; reduce where other loads govern.

2. Install in pairs.

3. Minimum bolt length is (Purlin width + 3" (PCT) + 1" (nut).

4. Bolt value assume minimum 10½" deep purlin.

5. Engineer of record is responsible for evaluating the glulam.

HCSTR Hinge Connector Straps

Use Hinge connector straps for retrofit applications to strap horizontal wood members together where a hinge connector interferes.

All bolt holes shall be 1/32" (minimum) and 1/16" (maximum) larger than the bolt diameter (2001 NDS).

MATERIAL: HCSTR2, HCSTR3-7 gauge; HCSTR4-3 gauge.

FINISH: HCSTR4-Simpson gray paint

OPTIONS: • Where wood is subject to shrinkage, order an HCSTR2, HCSTR3 or HCSTR4 for straps with obround holes.

- Contact factory for longer lengths.

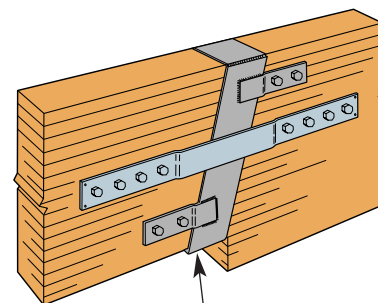
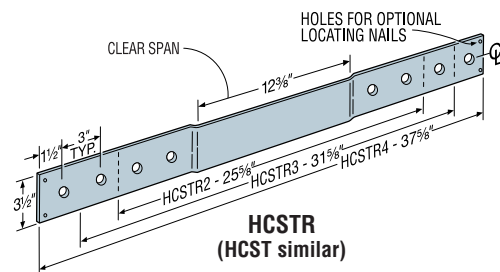
CODES: See page 12 for Code Listing Key Chart.

Model No.	Fasteners (Total)		Allowable Loads		Code Ref
	Qty	Dia	(133)	(160)	
HCSTR2	4	3/4	8100	9725	170
HCSTR3	6	3/4	11805	14170	
HCSTR4	8	3/4	15640	18770	

1. Allowable loads are for straps used in pairs and include a 33% and 60% increase for earthquake or wind loading; no further increase allowed; reduce where other loads govern.

2. Allowable loads assume a carrying member of 5½" minimum thickness with bolts in double shear.

3. Designed for HC style hinge connectors; consult factory for lengths for HCA and HC3A (only) style hinge connectors.



HC Style Hinge
Connector shown

Typical HCSTR4
Installation

H Seismic & Hurricane Ties

NEW! The H2.5T's truncated design was developed to accommodate trusses with 2x4 bottom chords. The easy to install, five nail pattern is stronger and gets better uplift loads than our popular H2.5 hurricane tie.

The H14 is the high uplift hurricane tie. It can be installed with rafter nailing flanges facing inwards or outwards.

The H2.5A is designed for easy installation, with higher uplift loads to meet new code requirements. H5A has installed cost benefit, it only requires 6 nails, to meet lower uplift requirements.

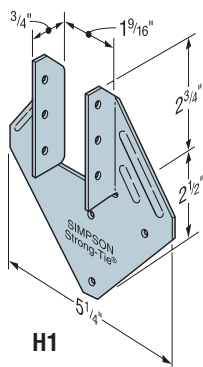
MATERIAL: See table.

FINISH: Galvanized. H7Z and H11Z-Z-MAX. Some models available in stainless steel or Z-MAX; see Corrosion-Resistance, page 6-7.

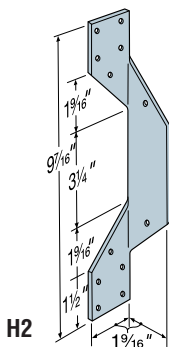
INSTALLATION: • Use all specified fasteners. See General Notes.

- H1 can be installed with flanges facing inwards (*reverse of H1 drawing number 1*).
- H2.5, H3, H4, H5, H5A and H6 ties are only shipped in equal quantities of rights and lefts. (**Rights shown.**)
- Hurricane Ties do not replace solid blocking.

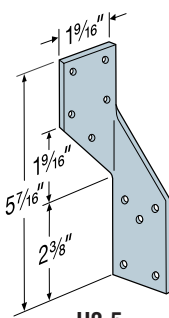
CODES: See page 12 for Code Listing Key Chart.



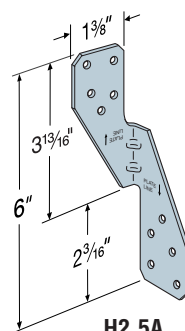
H1



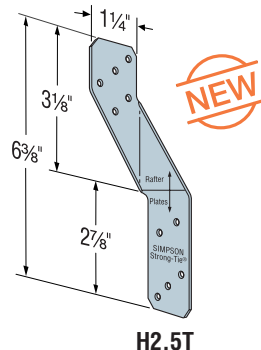
H2



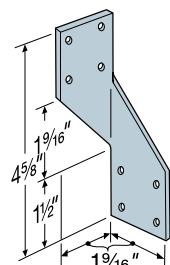
H2.5



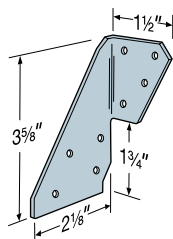
H2.5A



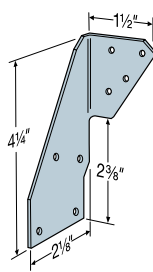
H2.5T



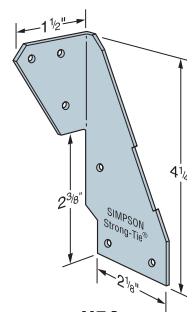
H3



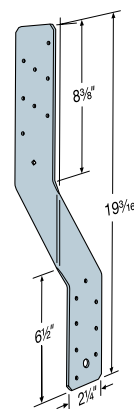
H4
U.S. Patent
4,714,372



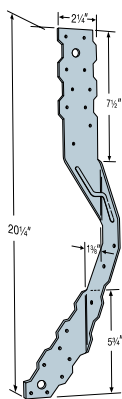
H5
U.S. Patent
4,714,372



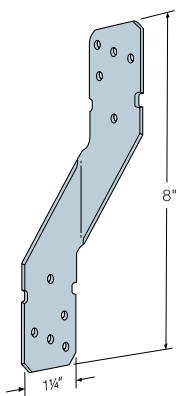
H5A
U.S. Patent 4,714,372



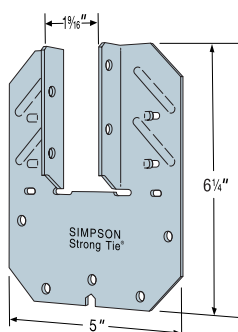
H6



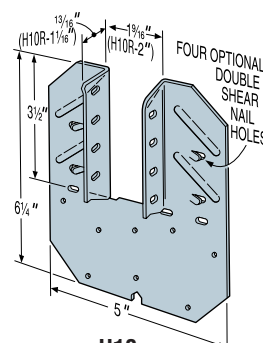
H7Z



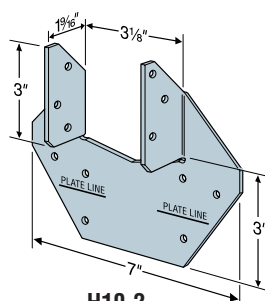
H8



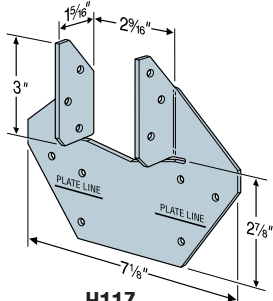
H9



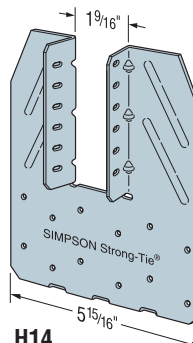
H10
(H10R similar)



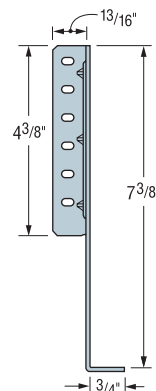
H10-2



H11Z



H14



H14
Profile

H Seismic & Hurricane Ties

Strong-Tie

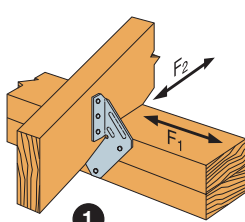
Available with additional corrosion protection. Check with factory.

	Model No.	Ga	Fasteners			DF/SP Allowable Loads				Uplift Load with 8dx1½" Nails (133 & 160)	SPF/HF Allowable Loads				Uplift Load with 8dx1½" Nails (133 & 160)	Code Ref.
			To Rafter/ Truss	To Plates	To Studs	Uplift		Lateral (133/160)			Uplift		Lateral (133/160)			
						(133)	(160)	F ₁	F ₂		(133)	(160)	F ₁	F ₂		
	H1	18	6-8dx1½	4-8d	—	490	585	485	165	455	400	400	415	140	370	2, 40, 82, 121, 140
	H2	18	5-8d	—	5-8d	335	335	—	—	335	230	230	—	—	230	
	H2.5	18	5-8d	5-8d	—	415	415	150	150	415	365	365	130	130	365	
	H2.5A	18	5-8d	5-8d	—	600	600	110	110	480	520	535	110	110	480	40, 122
NEW	H2.5T	18	5-8d	5-8d	—	545	545	135	145	425	545	545	135	145	425	
	H3	18	4-8d	4-8d	—	455	455	125	160	415	320	320	105	140	290	2, 40, 82, 121, 140
	H4	20	4-8d	4-8d	—	360	360	165	160	360	235	235	140	135	235	2, 40, 121, 140
	H5	18	4-8d	4-8d	—	455	465	115	200	455	265	265	100	170	265	2, 40, 82, 121, 140
	H5A	18	3-8d	3-8d	—	350	420	115	180	290	245	245	100	120	170	10
	H6	16	—	8-8d	8-8d	915	950	650	—	—	785	820	560	—	—	5, 41, 121, 140
	H7Z	16	4-8d	2-8d	8-8d	930	985	400	—	—	800	845	345	—	—	
	H8	18	5-10dx1½	5-10dx1½	—	620	745	75	—	—	530	565	75	—	—	125
	H9KT	18	4-SDS¼x1½	5-SDS¼x1½	—	875	875	680	125	—	755	755	680	125	—	170
	H10	18	8-8dx1½	8-8dx1½	—	905	990	585	525	—	780	850	505	450	—	9, 121
	H10R	18	8-8dx1½	8-8dx1½	—	905	990	585	525	—	780	850	505	450	—	
	H10-2	18	6-10d	6-10d	—	760	760	455	395	—	655	655	390	340	—	6, 121
	H11Z	18	6-16dx2½	6-16dx2½	—	830	830	525	760	—	715	715	450	655	—	170
	H14	18	1 12-8dx1½	13-8d	—	1350	1350	515	265	—	1050	1050	480	245	—	125
			2 12-8dx1½	15-8d	—	1350	1350	515	265	—	1050	1050	480	245	—	

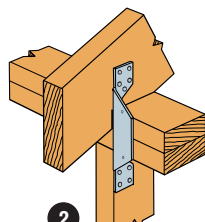
1. Loads have been increased 33% and 60% for earthquake or wind loading with no further increase allowed; reduce where other loads govern.
2. Allowable loads are for one anchor. A minimum rafter thickness of 2½" must be used when framing anchors are installed on each side of the joist and on the same side of the plate (**exception: H2.5A**).
3. Allowable uplift load for stud to bottom plate installation is 400 lbs (H2.5); 390 lbs (H2.5A); 360 lbs (H4) and 310 lbs (H8).
4. Allowable loads in the F₁ direction are not intended to replace diaphragm boundary members or prevent cross grain bending of the truss or rafter members. Additional shear transfer elements

shall be considered where there may be effects of cross grain bending or tension.

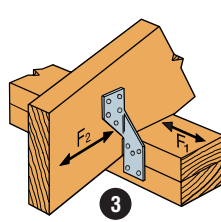
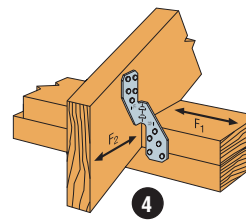
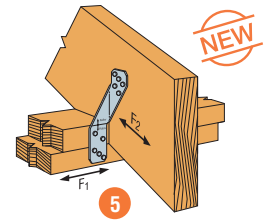
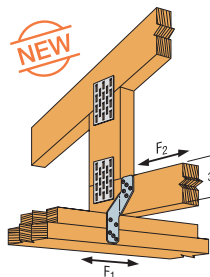
5. Hurricane Ties are shown installed on the outside of the wall for clarity. Installation on the inside of the wall is acceptable. For uplift Continuous Load Path, connections **in the same area (i.e. truss to plate and plate to stud)** must be on same side of the wall.
6. Southern Pine allowable loads for H14: 1465 lbs (133/160), 560 lbs (F₁ Lateral 133/160) and 285 lbs (F₂ Lateral 133/160).
7. Refer to T-HTIEBEARING for selected hurricane ties allowable bearing enhancement loads.
8. NAILS: 16dx2½ = 0.162" dia. x 2½" long, 10d = 0.148" dia. x 3" long, 10dx1½ = 0.148" dia. x 1½" long, 8d = 0.131" dia. x 2½" long, 8dx1½ = 0.131" dia. x 1½" long. See page 16-17 for other nail sizes and information.



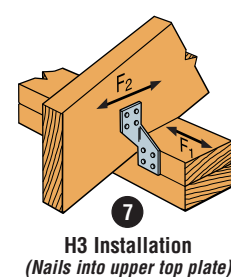
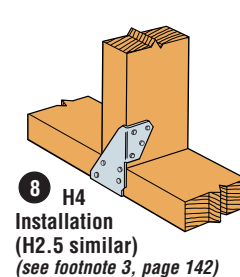
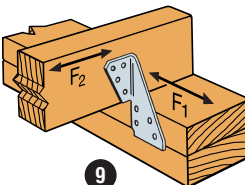
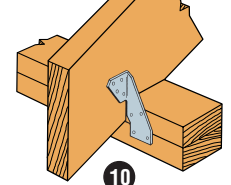
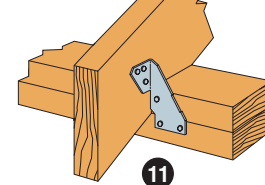
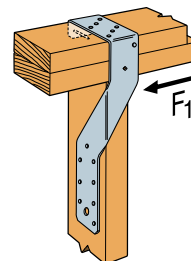
H1 Installation



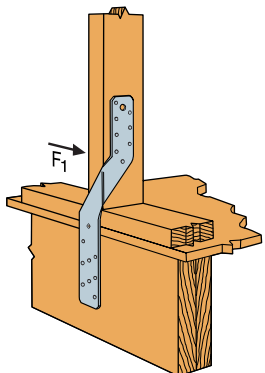
H2 Installation

H2.5 Installation
(Nails into both top plates)H2.5A Installation
(Nails into both top plates)H2.5T Installation
(Nails into both top plates)

H2.5T Installation

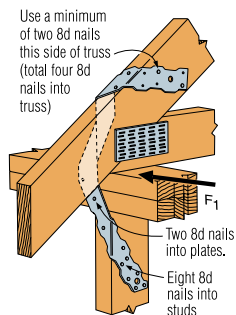
H3 Installation
(Nails into upper top plate)H4 Installation
(H2.5 similar)
(see footnote 3, page 142)H4 Installation
(Nails into upper top plate)H5 Installation
(Nails into both top plates)H5A Installation
(Nails into both top plates)

H6 Stud to Top Plate Installation

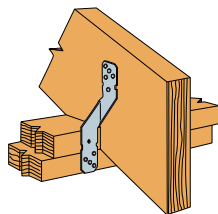


H6 Stud to Band Joist Installation

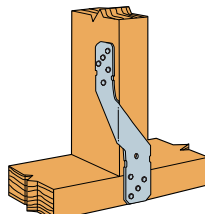
H Seismic & Hurricane Ties



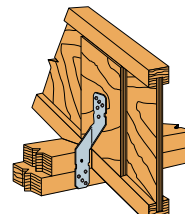
14 H7Z Installation



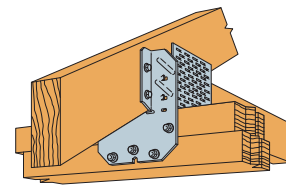
15 H8 attaching rafter to double top plates



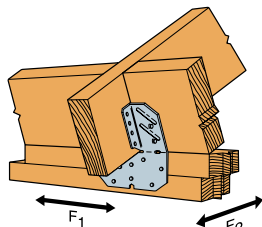
16 H8 attaching stud to sill (4-8d into plate, 5-8d into stud)



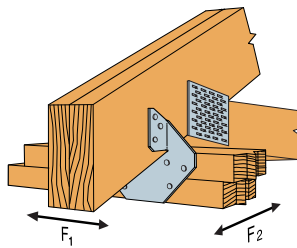
17 H8 attaching I-joist to double top plates



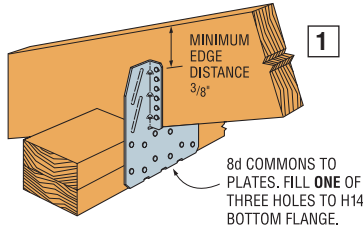
18 H9 attaching truss to top plates



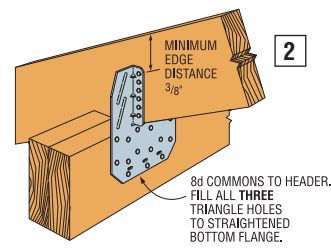
19 H10 Installation



20 H10-2 Installation (H11Z similar)



21 H14 Installation to double top plates



22 H14 Installation to double 2x header

H9, H10 and H10R optional positive angle nailing connects shear blocking to rafter. Use 8d common nails. Slot allows maximum field-bending up to a pitch of 6/12, use 75% of the table uplift load; bend one time only.

Considerations for Hurricane Tie Selection

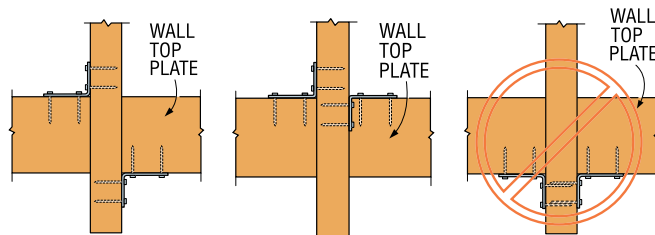
1. What is the uplift load?
2. What is the parallel-to-plate load?
3. What is the perpendicular-to-plate load?
4. What is the species of wood used for the rafter and the top plates? (Select the load table based on the lowest performing species of wood.)
5. Will the hurricane tie be nailed into both top plates or the upper top plate only?
6. What load or loads will the hurricane tie be taking?

Allowable simultaneous loads in more than one direction on a single connector must be evaluated as follows:

Design Uplift/Allowable Uplift + Design Lateral Parallel to Plate / Allowable Lateral Parallel to Plate + Design Lateral Perpendicular to Plate / Allowable Lateral Perpendicular to Plate < 1.0.

7. Select hurricane tie based on performance, application, installed cost and ease of installation.

Hurricane Tie Installations to Achieve Twice the Load (Top View)



Install diagonally across from each other for minimum 2x truss.

For H2.5A only – Products can be on the same side of the wall provided they are configured as shown.

Nailing into both sides of a single ply 2x truss may cause the wood to split.

VB Knee Braces

The VB provides lateral resistance force at the bottom of beams when installed approximately 45° or more to the vertical plane.

MATERIAL: 12 gauge. **FINISH:** Galvanized

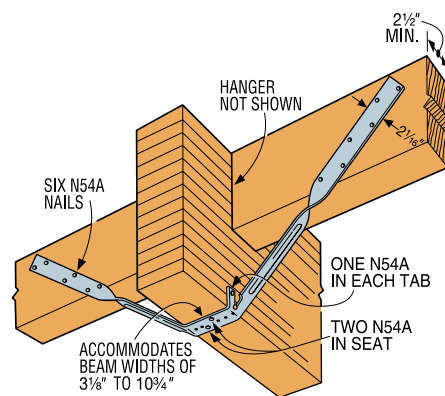
INSTALLATION: • Use specified fasteners. See General Notes.

- 16-N54A fasteners are included with the brace.

CODES: See page 12 for Code Listing Key Chart.

Model No.	H (Beam Depth)	L	Fasteners (Total)	Allowable Tension Loads ¹		Code Ref.
				Floor (100)	Roof (125)	
VB5	10" - 15"	5'	16-N54A	990	1240	3, 39, 88, 121
VB7	15" - 22½"	7'	16-N54A	990	1240	
VB8	22½" - 28½"	8'	16-N54A	990	1240	
VB10	28½" - 36"	10'	16-N54A	990	1240	
VB12	36" - 42"	12'	16-N54A	990	1240	

1. Roof loads have been increased 25% with no further increase allowed.



Typical VB Installation

H Seismic & Hurricane Ties

The H16-2 series has a presloped seat of 5:12 for double trusses.

The H connector series provides wind and seismic ties for trusses and rafters.

The presloped 5/12 seat of the H16 provides for a tight fit and reduced deflection. The strap length provides for various truss height up to a maximum of 13 1/2" (H16 series). Minimum heel height for H16 series is 4".

The HGA10 attaches to gable trusses and provides good lateral wind resistance. The HS24 attaches the bottom chord of a truss or rafter at pitches from 0:12 to 4:12 to double 2x4 top plates. Double shear nailing allows for higher lateral resistance.

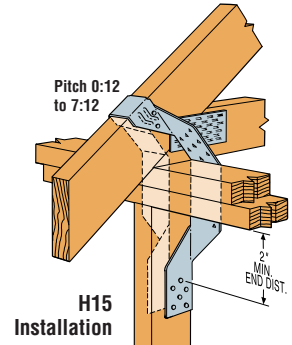
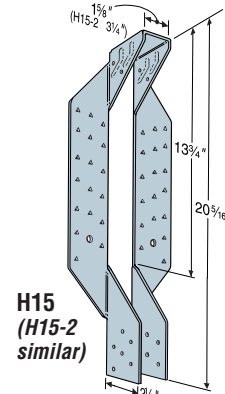
MATERIAL: See table

FINISH: Galvanized. See Corrosion-Resistance, page 6-7.

INSTALLATION: • Use all specified fasteners. See General Notes.

- The HGA10KT: screws are provided.
- HS24 requires slant nailing only when bottom chord of truss or rafter has no slope.
- Hurricane Ties do not replace solid blocking.

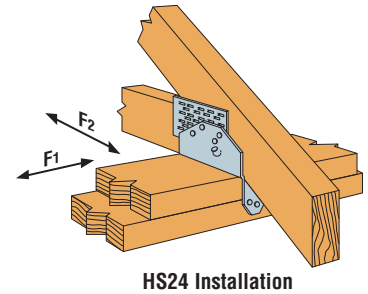
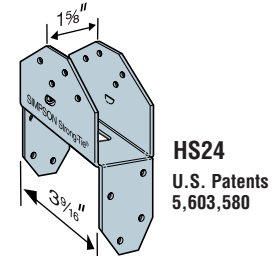
CODES: See page 12 for Code Listing Key Chart.



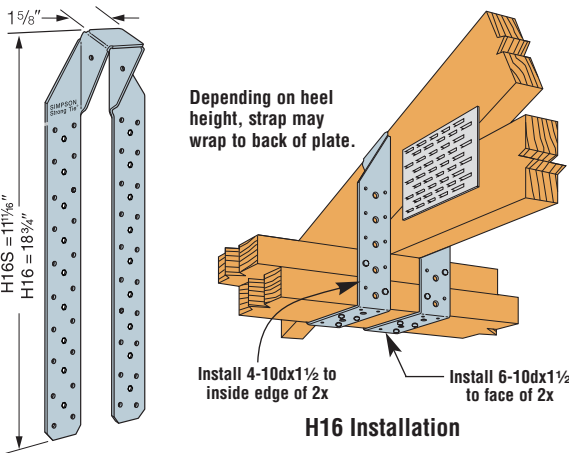
Model No.	Ga	Fasteners			DF/SP Allowable Loads ¹				SPF/HF Allowable Loads ¹				Code Ref.
		To Rafters/Truss	To Plates	To Studs	Uplift		Lateral (133/160)		Uplift		Lateral (133/160)		
					(133)	(160)	F ₁	F ₂	(133)	(160)	F ₁	F ₂	
HGA10KT	14	4-SDS 1/4x1 1/2	4-SDS 1/4x3	—	695	695	1165	940	595	595	870	815	125
HS24	18	8-8dx1 1/2 & 2-8d slant	8-8d	—	605 ³	605 ³	645 ³	1025 ³	520	520	555	880	9, 62, 121
H15	16	4-10dx1 1/2	4-10dx1 1/2	12-10dx1 1/2	1300	1300	480	—	1120	1120	410	—	6, 121
H15-2	16	4-10dx1 1/2	4-10dx1 1/2	12-10dx1 1/2	1300	1300	480	—	1120	1120	410	—	
H16	18	2-10dx1 1/2	10-10dx1 1/2	—	1470	1470	—	—	1265	1265	—	—	125
H16S	18	2-10dx1 1/2	10-10dx1 1/2	—	1470	1470	—	—	1265	1265	—	—	
H16-2	18	2-10dx1 1/2	10-10dx1 1/2	—	1470	1470	—	—	1265	1265	—	—	
H16-2S	18	2-10dx1 1/2	10-10dx1 1/2	—	1470	1470	—	—	1265	1265	—	—	

1. Loads have been increased for earthquake or wind loading with no further increase allowed; reduce where other loads govern.
2. When cross-grain bending or cross-grain tension cannot be avoided, mechanical reinforcement to resist such forces should be considered.
3. HS24 allowable loads without slant nailing are 625 lbs (uplift), 590 lbs (F₁), 640 lbs (F₂).

4. For H16-2S, S = short.
5. NAILS: 10dx1 1/2 = 0.148" dia. x 1 1/2" long, 8d = 0.131" dia. x 2 1/2" long, 8dx1 1/2 = 0.131" dia. x 1 1/2" long. See page 16-17 for other nail sizes and information.

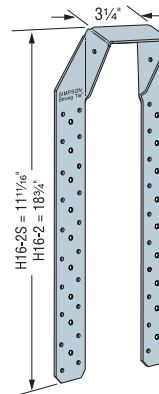


HS24 Installation



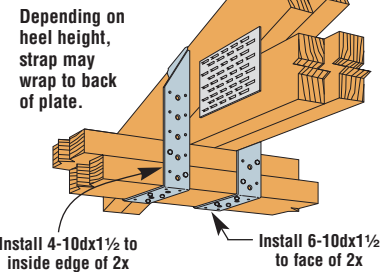
H16 and H16S
Presloped at 5:12. Pitch of 3:12 to 7:12 is acceptable

H16 Installation

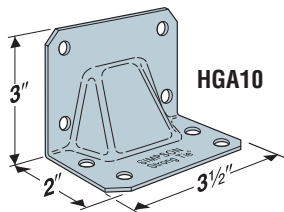


H16-2 and H16-2S

Presloped at 5:12. Pitch of 3:12 to 7:12 is acceptable



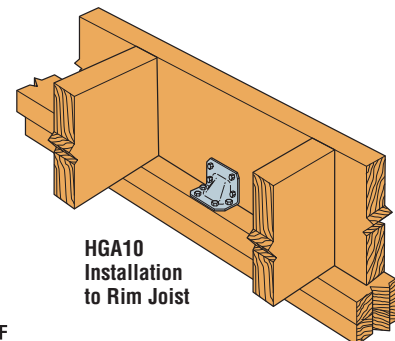
H16-2 Installation



HGA10

HGA10 Installation to Double Top Plates

780 lbs. DF/SP
495 lbs. SPF/HF



HGA10 Installation to Rim Joist

LTS/MTS/HTS Twist Straps

Twist straps provide a tension connection between two wood members. They resist uplift at the heel of a truss economically. The 3" bend section eliminates interference at the transition points between wood members.

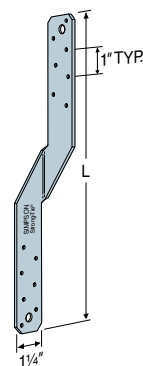
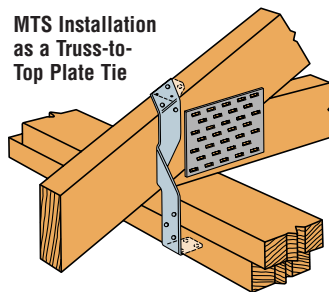
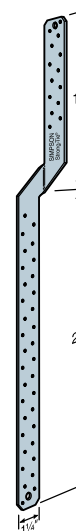
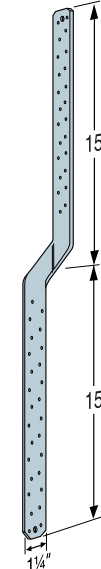
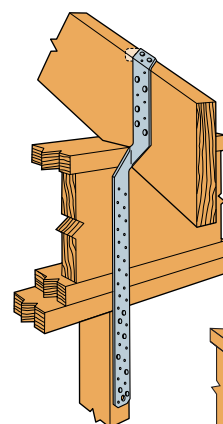
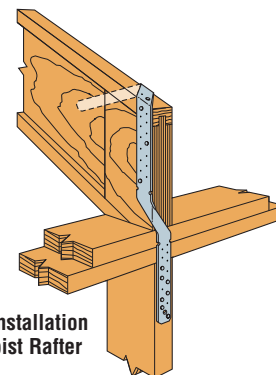
MATERIAL: LTS—18 gauge; MTS—16 gauge; HTS—14 gauge

FINISH: Galvanized. Some products available in stainless steel and Z-MAX; see Corrosion-Resistance, page 6-7.

INSTALLATION:

- Use all specified fasteners. See General Notes.

CODES: See page 12 for Code Listing Key Chart.

MTS Installation as a Truss-to-Top Plate Tie**LTS12**
(MTS and HTS similar)**MTS30**
(HTS30 similar)**MTS30C**
(HTS30C similar)**Typical MTS30 Installation****MTS30 Installation with I-joist Rafter**

Available with additional corrosion protection. Check with factory.

Model No.	L	Fasteners ²		Doug-Fir-Larch/So Pine Allowable Uplift Loads ³			Spruce-Pine-Fir Allowable Uplift Loads			Code Ref.
		10d	10dx1 1/2"	10d	10dx1 1/2"		10d	10dx1 1/2"		
				(133/160)	(133)	(160)	(133/160)	(133)	(160)	
LTS12	12	12-10d	12-10dx1 1/2"	775	720	720	665	620	620	3, 28, 39, 104, 121, 140
LTS16	16	12-10d	12-10dx1 1/2"	775	720	720	665	620	620	3, 39, 104, 121, 140
LTS18	18	12-10d	12-10dx1 1/2"	775	720	720	665	620	620	
LTS20	20	12-10d	12-10dx1 1/2"	775	720	720	665	620	620	
MTS12	12	14-10d	14-10dx1 1/2"	1000	840	1000	860	730	860	3, 28, 39, 104, 121, 140
MTS16	16	14-10d	14-10dx1 1/2"	1000	840	1000	860	730	860	3, 39, 121, 140
MTS18	18	14-10d	14-10dx1 1/2"	1000	840	1000	860	730	860	
MTS20	20	14-10d	14-10dx1 1/2"	1000	840	1000	860	730	860	
MTS30	30	14-10d	—	995	—	—	720	—	—	125
MTS24C	24	14-10d	14-10dx1 1/2"	1000	840	1000	860	730	860	
MTS30C	30	14-10d	14-10dx1 1/2"	1000	840	1000	860	730	860	
HTS16	16	16-10d	16-10dx1 1/2"	1260	1005	1150	1085	865	990	62, 123, 140
HTS20	20	20-10d	24-10dx1 1/2"	1450	1450	1450	1245	1245	1245	
HTS24	24	20-10d	24-10dx1 1/2"	1450	1450	1450	1245	1245	1245	
HTS28	28	20-10d	24-10dx1 1/2"	1450	1450	1450	1245	1245	1245	
HTS30	30	20-10d	24-10dx1 1/2"	1450	1450	1450	1245	1245	1245	
HTS30C	30	20-10d	24-10dx1 1/2"	1450	1450	1450	1245	1245	1245	

1. LTS12 thru LTS20, MTS16 through MTS30, HTS24 through HTS30C (except HTS30) have additional nail holes.

2. Install half of the fasteners on each end of strap to achieve full loads.

3. Loads have been increased for earthquake or wind loading; no further increase allowed; reduce where other loads govern.

4. All straps except the MTS30 and HTS30 have the twist in the center of the strap.

5. Twist straps do not have to be wrapped over the truss to achieve the load.

6. May be installed on the inside face of the stud.

7. NAILS: 10d = 0.148" dia. x 3" long, 10dx1 1/2" = 0.148" dia. x 1 1/2" long. See page 16-17 for other nail sizes and information.

HH Header Hangers

For fast, accurate installation of door and window headers and other cross member details. HH header hangers can speed up the job, strengthen the frame, and eliminate the need for trimmers.

MATERIAL: 16 gauge.

FINISH: Galvanized

INSTALLATION: Use all specified fasteners. See General Notes.

CODES: See page 12 for Code Listing Key Chart.

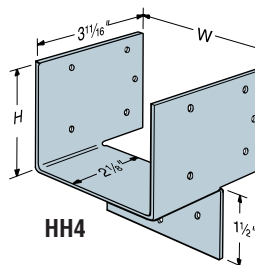
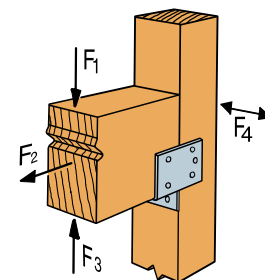
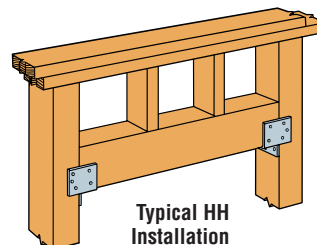
Model No.	W	H	Fasteners		Allowable Loads				Code Ref.
			Stud	Header	(100)	(133)			
					F ₁	F ₂	F ₃	F ₄	
HH4	3 1/2"	2 19/16"	9-16d	4-16d	1195	710	710	1085	3, 39, 88, 121
HH6	5 1/2"	5 5/8"	12-16d	6-16d	1595	1065	1065	1085	

1. F₁ Loads may be increased up to 25% for short-term loading in accordance with the code.

2. A 2 1/2" minimum lumber thickness is required.

3. NAILS: 16d = 0.162" dia. x 3 1/2" long.

See page 16-17 for other nail sizes and information.

**HH4****HH Load Directions****Typical HH Installation**

LGT3-SDS2.5/LGT2/MGT/HGT Heavy Girder Tiedowns

NEW! LGT3-SDS2.5 is a heavy girder truss tiedown for 3-ply Girder Trusses. Featuring SDS screws into the truss for higher load capacity. Low profile connection to studs ensures easy installation of drywall. Simple to install and can be installed on the inside or outside of wall. It provides additional bearing enhancement for heavy download applications.

This series provides high uplift resistance for wood frame and concrete block construction. The HGT series can be installed on trusses and beam with top chord slopes from 3:12 to 8:12. Available in 2-ply, 3-ply and 4-ply widths.

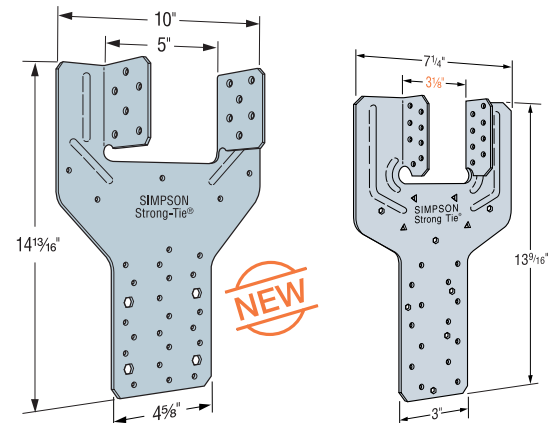
MATERIAL: HGT—7 gauge, **LGT2**—14 gauge, MGT, **LGT3-SDS2.5**—12 gauge.

FINISH: HGT—Simpson gray paint; LGT, MGT—Galvanized

INSTALLATION: • When the HGT-3 is used with a 2-ply girder or beam, shimming is required. Fasten to act as one unit.

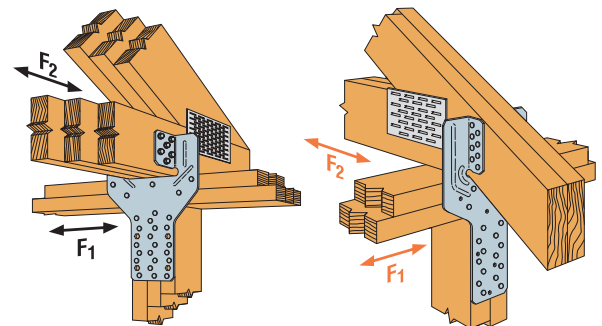
- Before installing fasteners, ensure **LGT3-SDS2.5** makes complete contact with bottom of truss.
- **LGT3-SDS2.5**—The four large hexagon holes are intended for CMU and concrete applications.
- See page 153 for masonry applications.

CODES: See page 12 for Code Listing Key Chart.



LGT3-SDS2.5

LGT2



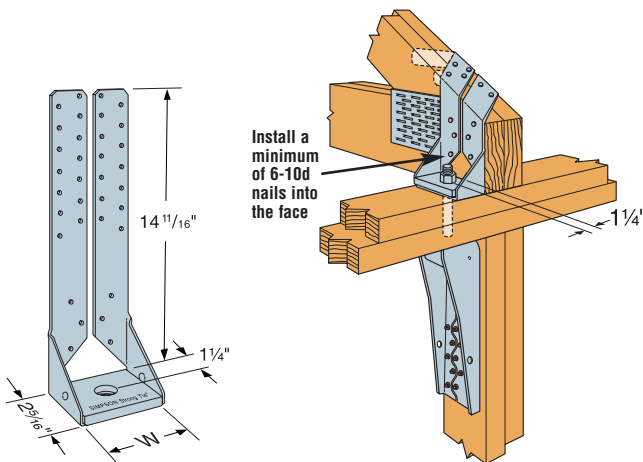
Typical LGT3-SDS2.5 Installation

Typical LGT2 Installation

Model No.	W	O.C. Dim. Between Anchors	Fasteners		Doug-Fir-Larch/So. Pine Allowable Uplift Loads (133/160)	Spruce-Pine-Fir Allowable Uplift Loads (133/160)	Code Ref.
			Nails to Studs or Anchor Diameter	Girder			
LGT2	3 1/8	—	14-16d Sinkers	16-16d Sinkers	2050	1785	125
LGT3-SDS2.5	5	—	21-16d Sinkers	12-SDS 1/4x2 1/2	3685	3170	160
MGT	3 3/4	—	1-5/8	22-10d	3965	3330	125
HGT-2	3 5/16	5 3/4	2-5/8	16-10d	10980	6485	6, 62, 121
HGT-3	4 15/16	7 3/8	2-5/8	16-10d	10530	9035	
HGT-4	6 9/16	9	2-5/8	16-10d	9250	9250	

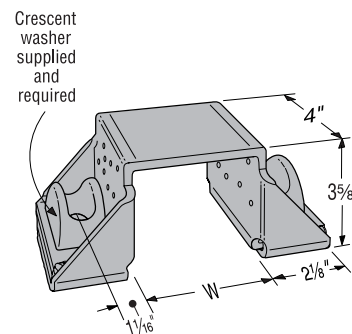
1. Attached members must be designed to resist applied loads.
2. HGT additional anchorage products to be designed by others.
3. Allowable loads have been increased 33% and 60% for earthquake or wind loading; no further increase allowed; reduce where other loads govern.
4. LGT2: F_1 load = 700, F_2 load = 170.
5. LGT3-SDS2.5: F_1 load = 795, F_2 load = 410 (DF/SP)
6. MGT can be installed with straps vertical for full table load provided all specified nails are installed to either a solid header or minimum double 2x6 web.
7. Refer to T-HTIEBEARING for LGT allowable bearing enhancement loads.
8. NAILS: 16d Sinker = 0.148" dia. x 3 3/4" long, 10d = 0.148" dia. x 3" long.
See page 16-17 for other nail sizes and information.

Install two LBP 5/8" washers on top of each crescent washer (total four 5/8" washers) for wood installation. All washers and crescent washers are required. Crescent washers are supplied.

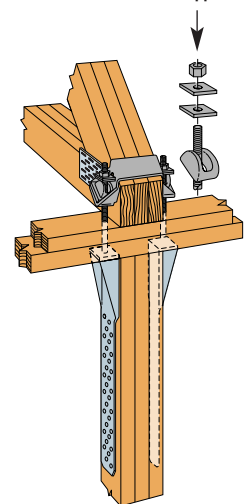


MGT

Typical MGT Installation with HDU4



HGT-2 (HGT-3, HGT-4 similar)



Typical HGT-3 Installation with HTT22s

DSP/SSP/SP/SPH/RSP4 Stud Plate Ties

This product is preferable to similar connectors because of a) easier installation, b) higher loads, c) lower installed cost, or a combination of these features.

DSP and SSP provide flexibility in the field – can be used as a plate to stud connection **AND** top plate to stud connection.

The RSP4 is a reversible stud plate tie with locating tabs, which aid placement on double top plates or a single bottom plate.

MATERIAL: DSP/SSP/SPH–18 gauge, all others–20 gauge

FINISH: Galvanized. Some products available in Z-MAX;

see Corrosion-Resistance, page 6-7.

INSTALLATION: • Use all specified fasteners; see General Notes.

• DSP/SSP–sill plate installation–fill all round holes.

• DSP/SSP–top plate installation–fill all round and triangle holes

• SP–one of the 10d common stud nails is driven at a 45° angle through the stud into the plate.

CODES: See page 12 for Code Listing Key Chart.

Available with additional corrosion protection. Check with factory.

Model No.	Dim.		Fasteners			Allowable Uplift Loads (133/160)			Code Ref.
	W	L	Studs	Double Top Plate	Single Sill Plate	Double Top Plate	Single Sill Plate		
						DF/SP/SPF	DF/SP	SPF/HF	
SSP	1⅝	6⅞	4-10dx1½	3-10dx1½	—	350	—	—	62, 125
				—	1-10dx1½	—	420	325	
			4-10d	3-10d	—	435	—	—	
				—	1-10d	—	455	420	
DSP	2¾	6⅞	8-10dx1½	6-10dx1½	—	775	—	—	
				—	2-10dx1½	—	660	545	
			8-10d	6-10d	—	825	—	—	
				—	2-10d	—	825	600	

1. Allowable loads have been increased 33% and 60% for earthquake or wind loading; no further increase allowed.

2. When cross-grain bending or cross-grain tension cannot be avoided, mechanical reinforcement to resist such forces should be considered.

3. Allowable loads for DSP installed to a rim joist are 660 lbs. (DF/SP), 545 lbs. (SPF/HF).

4. NAILS: 10d = 0.148" dia. x 3" long, 10dx1 1/2 = 0.148" dia. x 1 1/2" long.

See page 16-17 for other nail sizes and information.

Model No.	Dim.		Stud	Plate Width	Fasteners		Allowable Uplift Loads				Code Ref.
	W	L			Stud ¹	Plate	DF/SP		SPF		
							(133) ²	(160) ²	(133)	(160)	
SP1	3½	5⅛	2x	—	6-10d	4-10d	585	585	535	535	6, 121
SP2	3½	6⅞	2x	—	6-10d	6-10d	890	1065	605	605	
SP3	4½	6⅞	3x	—	6-10d	6-10d	890	1065	605	605	
SP4	3⅞	7¼	2x	4x	6-10dx1½	—	735	885	630	760	7, 121
SP5	4½	5⅛	3x	—	6-10d	4-10d	585	585	535	535	160
SP6	5⅛	7¾	2x	6x	6-10dx1½	—	735	885	630	760	7, 121
SP8	7⅛	8⅝	2x	8x	6-10dx1½	—	735	885	630	760	
SPH4	3⅞	8¾	2x	4x	10-10dx1½	—	1240	1240	1065	1065	
SPH6	5⅛	9¼	2x	6x	12-10dx1½	—	1360	1360	1170	1170	62, 123
					10-10dx1½	—	1240	1240	1065	1065	
					12-10dx1½	—	1360	1360	1170	1170	
SPH8	7⅛	8⅞	2x	8x	10-10dx1½	—	1240	1240	1065	1065	
RSP4(1)	2⅝	4½	2x	—	4-8dx1½	4-8dx1½	1360	1360	1170	1170	6, 30, 99, 121
							315	315	285	285	
RSP4(2)	2⅝	4½	2x	—	4-8dx1½	4-8dx1½	450	450	370	370	

1. SP1, 2, 3 and SP5: drive one stud nail at an angle through the stud into the plate to achieve the table load (see illustration).

2. Allowable loads have been increased for earthquake or wind loading; no further increase allowed. Reduce where other loads govern.

3. RSP4–see Installation details (1) and (2) for reference.

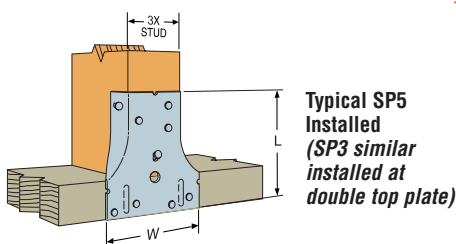
4. RSP4 F2 is 280 lbs (installation 1) and 305 lbs (installation 2). F1 load is 210 lbs for both installations.

5. Maximum load for SPH in Southern Yellow Pine is 1490 lbs.

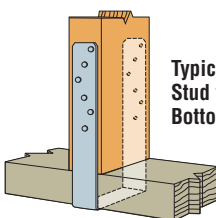
6. When cross-grain bending or cross-grain tension cannot be avoided, mechanical reinforcement to resist such forces should be considered.

7. For retrofit application see T-STRAP.

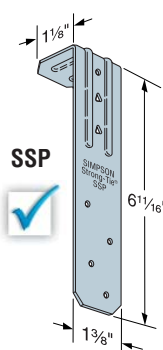
8. NAILS: 10d = 0.148" dia. x 3" long, 10dx1 1/2 = 0.148" dia. x 1 1/2" long, 8dx1 1/2 = 0.131" dia. x 1 1/2" long. See page 16-17 for other nail sizes and information.



Typical SP5 Installed (SP3 similar installed at double top plate)



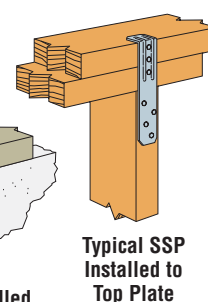
Typical SPH4 Stud to Single Bottom Plate



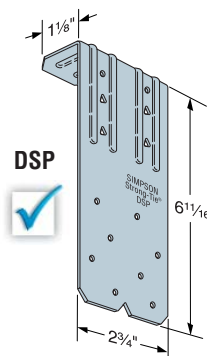
SSP



Typical SSP Installed to Sill Plate



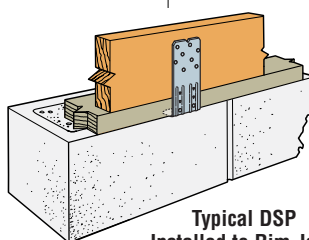
Typical SSP Installed to Top Plate



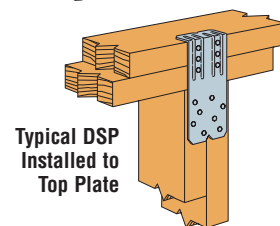
DSP



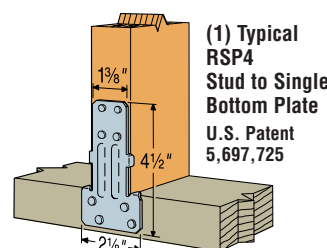
Typical DSP Installed to Sill Plate



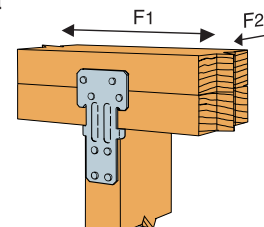
Typical DSP Installed to Rim Joist



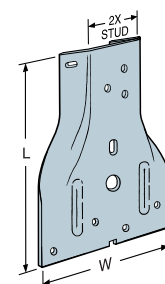
Typical DSP Installed to Top Plate



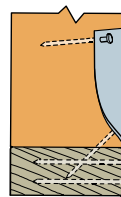
(1) Typical RSP4 Stud to Single Bottom Plate
U.S. Patent 5,697,725



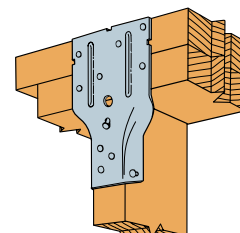
(2) Typical RSP4 Stud to Double Top Plate
(See footnote 4)



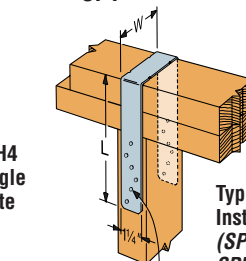
SP1



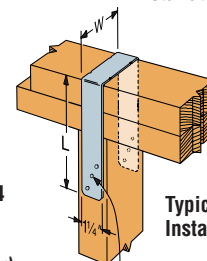
SP1 Nailing Profile



Typical SP2 Installation



Typical SPH4 Installation (SPH6 and SPH8 similar)



Typical SP4 Installation

LTP4/LTP5/A34/A35 Framing Angles & Plates

The larger LTP5 spans subfloor at the top of the blocking or rim joist. The embossments enhance performance and the min/max nailing option allows for design flexibility.

The LTP4 Lateral Tie Plate transfers shear forces for top plate-to-rim joist or blocking connections. Nail holes are spaced to prevent wood splitting for single and double top plate applications. May be installed over plywood sheathing.

The A35 anchor's exclusive bending slot allows instant, accurate field bends for all two- and three-way ties. Balanced, completely reversible design permits the A35 to secure a great variety of connections.

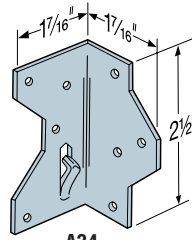
MATERIAL: LTP4/LTP5—20 gauge; all others—18 gauge

FINISH: Galvanized. Some products available in stainless steel or Z-MAX; see Corrosion-Resistance, page 6-7.

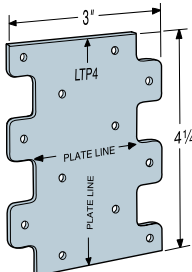
INSTALLATION: • Use all specified fasteners. See General Notes.

- A34—Use 8-8dx1½" nails.
- A35—Use 12-8dx1½" nails.
- A35—Use 9-8dx1½" nails for connection types A1, E, C1.
- A35—Bend one time only.
- LTP4—Use 12-8dx1½" nails.
- LTP5—Use 12-8dx1½" nails; G Max use 14-8dx1½" nails.

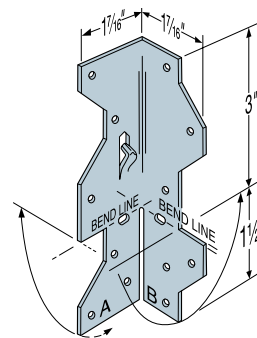
CODES: See page 12 for Code Listing Key Chart.



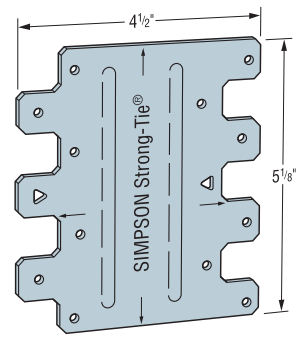
A34



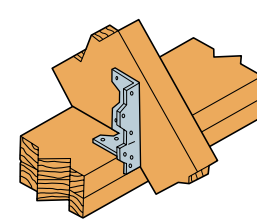
LTP4



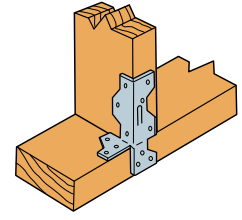
A35



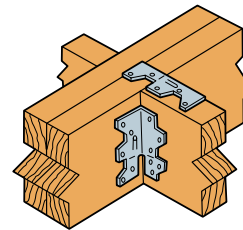
LTP5



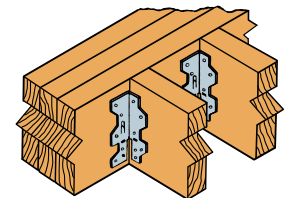
Joists to Plate
with A Leg Inside



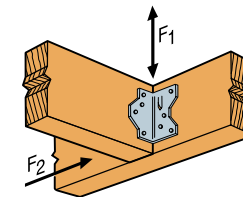
Studs to Plate
with B Leg Outside



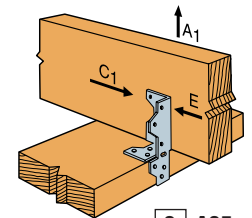
Joists to Beams



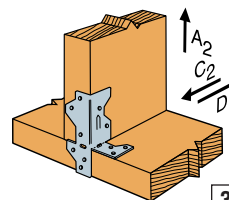
Ceiling Joists to Beam



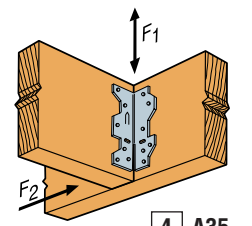
1 A34



2 A35

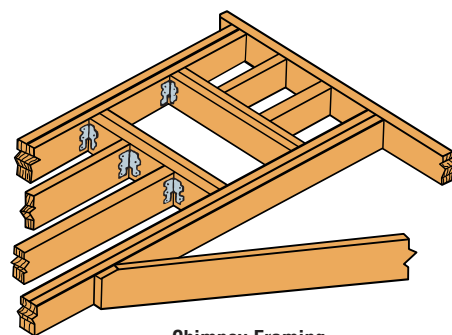


3 A35

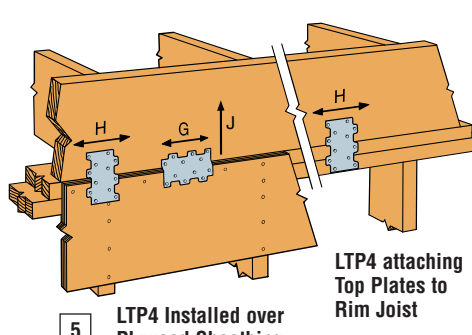


4 A35

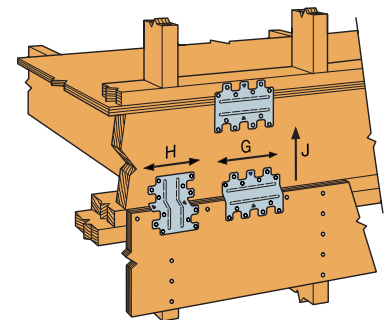
1. Allowable loads are for one anchor. When anchors are installed on each side of the joist, the minimum joist thickness is 3".
2. Roof loads are 125% of floor loads unless limited by other criteria.
3. Some illustrations show connections that could cause cross-grain tension or bending of the wood during loading if not reinforced sufficiently. In this case, mechanical reinforcement should be considered.
4. G and H direction only: LTP4 can be installed over 3/8" plywood with 8dx1½" nails and achieve .72 of the listed load, or over 1/2" and achieve .64 of the listed load. 8d commons will achieve 100% load.
5. The LTP5 may be installed over sheathing up to 1/2" thick with no reduction in load when 8d common (0.131" dia. x 2½") nails are used.
6. **NAILS:** 8dx1½" = 0.131" dia. x 1½" long.
See page 16-17 for other nail sizes and information.



Chimney Framing



5 LTP4 Installed over
Plywood Sheathing



6 LTP5 Installed over Plywood Sheathing

RBC Roof Boundary Clip

The RBC Roof Boundary Clip is designed to aid installation and transfer shear loads between the roof diaphragm and wall top plates. The locator tabs make proper location of the clip easy. The RBC can be used on wood or masonry walls and will handle roof pitches from 0:12 to 12:12.

MATERIAL: 20 gauge **FINISH:** Galvanized

INSTALLATION: • Use all specified fasteners. See General Notes.

- Field bend to desired angle – one time only.
- See flier F-RBC04 for more information on installation and code requirements.

CODES: See page 12 for Code Listing Key Chart.

The RBC installed to blocking resists rotation and lateral displacement of rafter or truss.

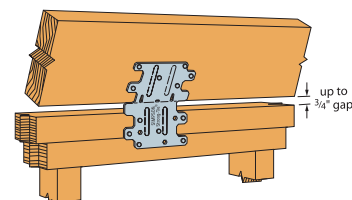
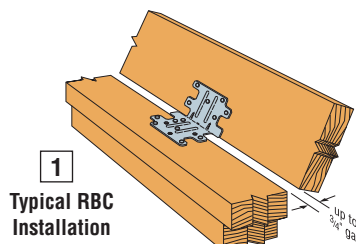
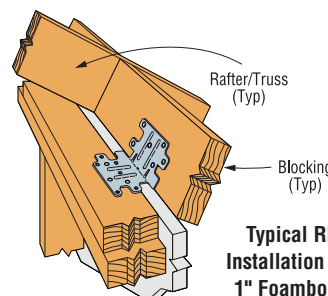
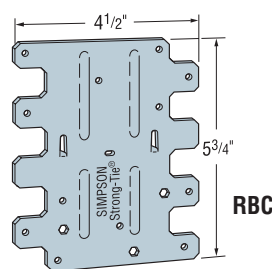
Code references:

- IRC 2000/2003, R802.10.3 Lateral Support
- IBC 2000/2003, 2308.10.6 Blocking
- UBC 1997, 2320.12.8 Blocking

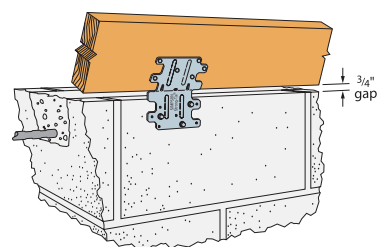
Blocking allows proper edge nailing of sheathing.

Code references:

- IRC 2000/2003, Table R602.3(1), footnote i
- IBC 2000/2003, 2305.1.4 Shear Panel Connections
- UBC 1997, 2315.1 General



2 Typical RBC Installation



3 Typical RBC Installation to CMU Block

Model No.	Type of Connection	Bending Angle	Fasteners		Doug-Fir-Larch/ So. Pine Allowable Loads	Spruce-Pine-Fir Allowable Loads	Code Ref.
			To Plate	To Blocking			
RBC	1	45° to 90°	6-10dx1½	6-10dx1½	440	380	160
	2	0° to 30°	6-10dx1½	6-10dx1½	485	420	
	3	0° to 45°	3-¼"x2¼" Titen ⁴	6-10dx1½	350	350	

1. Allowable loads are for one anchor attached to blocking minimum 1½" thick.

2. RBC can be installed with up to ¾" gap and achieve 100% of the listed load.

3. Allowable loads have been increased 33% and 60% for earthquake or wind loading with no further increase allowed; reduce where other loads govern.

4. When attaching to concrete use 3-¼"x1¾" Titen⁴.

5. RBC installed over 1" foamboard has a load of 395 lb. (133/160%) in a parallel to wall (F₁) load direction for Douglas Fir. For SPF, the load is 340 lb.

6. **NAILS:** 10dx1½ = 0.148" dia. x 1½" long. See page 16-17 for other nail sizes and information.

A Angles and **Z** Clips

Z2 clips secure 2x4 flat blocking between joists or trusses to support sheathing.

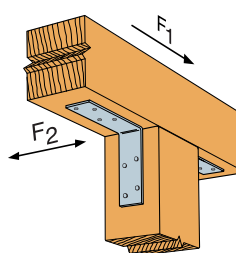
MATERIAL: Z clips—see table. A21 and A23—18 ga.; all other A angles—12 ga.

FINISH: Galvanized. Some products available in stainless steel or Z-MAX; see Corrosion-Resistance, page 6-7.

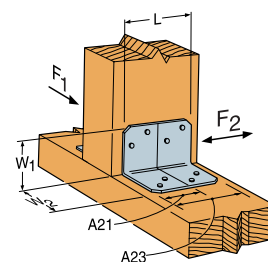
INSTALLATION: • Use all specified fasteners. See General Notes.

- Z clips do not provide lateral stability. Do not walk on stiffeners or apply load until diaphragm is installed and nailed to stiffeners.

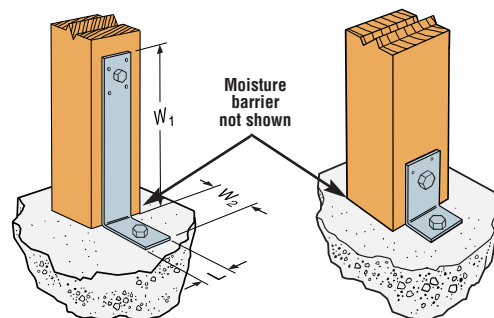
CODES: See page 12 for Code Listing Key Chart.



A44 Installation
(A33 similar)



A21/A23
Installation



A311 Installation

A24 Installation

Available with additional corrosion protection. Check with factory.

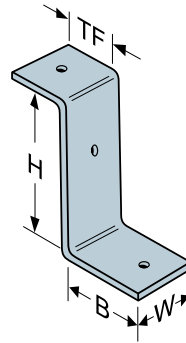
Model No.	Dimensions			Fasteners				Allowable Loads ² DF/SP				Code Ref.
	W ₁	W ₂	L	Base		Post		(133)		(160)		
				Bolts	Nails	Bolts	Nails	F ₁	F ₂	F ₁	F ₂	
A21	2	1½	1¾	—	2-10dx1½	—	2-10dx1½	180	175	245	175	4, 28, 37, 87, 104, 121
A23	2	1½	2¾	—	4-10dx1½	—	4-10dx1½	485	485	585	565	
A33	3	3	1½	—	4-10d	—	4-10d	625	330	750	330	170
A44	4⅞	4¾	1½	—	4-10d	—	4-10d	625	295	750	295	
A66	5⅞	5⅞	1½	2-¾	—	2-¾	—	—	—	—	—	
A88	8	8	2	3-¾	—	3-¾	—	—	—	—	—	
A24	3⅞	2	2½	1-½	—	1-½	2-10d	—	—	—	—	
A311	11	3⅞	2	1-½	—	1-½	4-10d	—	—	—	—	

See footnotes on page 171.

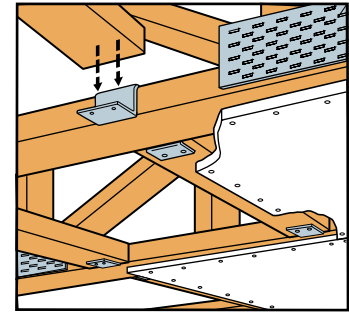
A Angles and Z Clips

Model No.	Ga	Dimensions				Fasteners ¹ (Total)	Allowable ² Download (125)	Code Ref.
		W	H	B	TF			
Z2	20	2 $\frac{5}{16}$	1 $\frac{1}{2}$	1 $\frac{3}{8}$	1 $\frac{3}{8}$	4-10d x 1 $\frac{1}{2}$	465	170
Z4	12	1 $\frac{1}{2}$	3 $\frac{1}{2}$	2 $\frac{1}{8}$	1 $\frac{3}{4}$	2-16d	465	4, 37,
Z6	12	1 $\frac{1}{2}$	5 $\frac{1}{8}$	2	1 $\frac{3}{8}$	2-16d	485	87, 121
Z28	28	2 $\frac{5}{16}$	1 $\frac{1}{2}$	1 $\frac{3}{8}$	1 $\frac{3}{8}$	10d x 1 $\frac{1}{2}$ ¹	—	170
Z38	28	2 $\frac{5}{16}$	2 $\frac{1}{2}$	1 $\frac{3}{8}$	1 $\frac{3}{8}$	10d x 1 $\frac{1}{2}$ ¹	—	
Z44	12	2 $\frac{1}{2}$	3 $\frac{1}{2}$	2	1 $\frac{3}{8}$	4-16d	865	4, 37, 121

- Z28 and Z38 do not have nail holes. Fastener quantities are as required.
- Allowable loads have been increased 25% for roof loading (Z clips), 33% and 60% for earthquake or wind loading (A angles); no further increase allowed; reduce where other loads govern.
- Z4 and Z6 loads apply with a nail into the top and a nail into the seat.
- NAILS:** 16d = 0.162" dia. x 3 $\frac{1}{2}$ " long, 10d x 1 $\frac{1}{2}$ " = 0.148" dia. x 1 $\frac{1}{2}$ " long.
See page 16-17 for other nail sizes and information.



Z4
(others similar)



Typical Z2 Installation

L/LS/GA Reinforcing and Skewable Angles

The GA Gusset Angles' embossed bend section provides added strength.

L—Staggered nail pattern reduces the possibility for splitting. LS—Field-adjustable 0° to 135° angles.

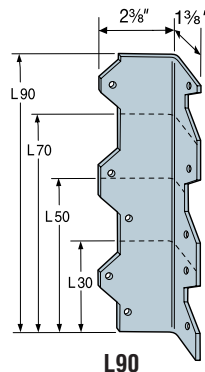
MATERIAL: L—16 gauge; GA and LS—18 gauge

FINISH: Galvanized. Some products available in stainless steel or Z-MAX; see Corrosion-Resistance, page 6-7.

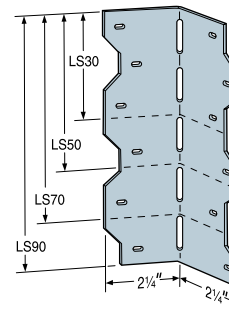
INSTALLATION:

- Use all specified fasteners; see General Notes.
- LS—field skewable; bend one time only.
- Joist must be constrained against rotation (for example, with solid blocking) when using a single LS per connection.

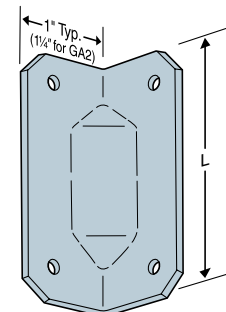
CODES: See page 12 for Code Listing Key Chart.



L90



LS

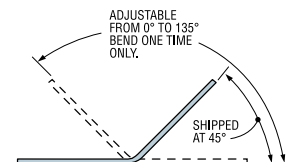


GA1

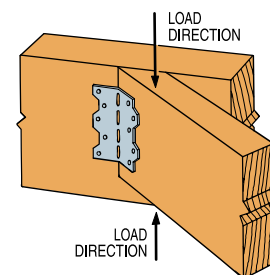
Available with additional corrosion protection. Check with factory.

Model No.	L	Fasteners	Doug-Fir-Larch/So. Pine Allowable Loads ^{1,2,3,4}				Spruce-Pine-Fir Allowable Loads ¹				Code Ref.
			Floor (100)	Snow (115)	Roof (125)	133/ 160	Floor (100)	Snow (115)	Roof (125)	133/ 160	
GA1	2 $\frac{3}{4}$	4-10d	185	185	185	185	160	160	160	160	33, 122
GA2	3 $\frac{1}{4}$	6-10d	335	385	415	490	290	335	335	335	
L30	3	4-10d	220	240	240	240	190	205	205	205	3, 28, 39, 88, 104, 121
L50	5	6-10d	335	385	420	445	290	335	360	385	
L70	7	8-10d	445	510	555	565	380	435	475	485	
L90	9	10-10d	555	640	695	740	480	550	600	640	3, 39, 88, 121
LS30	3 $\frac{3}{8}$	6-10d	335	385	420	420	290	335	335	335	
LS50	4 $\frac{7}{8}$	8-10d	450	520	560	600	390	450	485	520	7, 90, 121, 140
LS70	6 $\frac{3}{4}$	10-10d	560	645	675	675	485	560	580	580	
LS90	7 $\frac{7}{8}$	12-10d	670	770	840	890	580	670	730	770	

- Use a minimum lumber thickness of 1 $\frac{1}{4}$ ".
For 1 $\frac{1}{2}$ " lumber, use 0.81 of table load, except GA1 in F1 direction, use 185 lbs.
- L angles—loads are for condition F1 or F2; LS angles—loads are for condition F1 only.
- GA1 and GA2 angles table loads are F1 — loads for F2 are 220 and 335 lbs (100) and 280 and 415 lbs (125), respectively.
- Roof loads are 125% of floor loads unless limited by other criteria.
- NAILS:** 16d = 0.162" dia. x 3 $\frac{1}{2}$ " long, 10d = 0.148" dia. x 3" long, 10d x 1 $\frac{1}{2}$ " = 0.148" dia. x 1 $\frac{1}{2}$ " long.
See page 16-17 for other nail sizes and information.

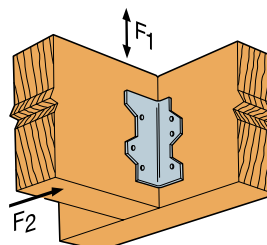


LS Top View

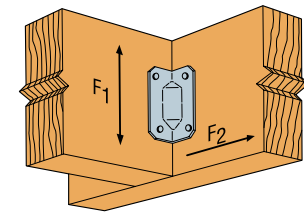


Typical LS70 Installation

Nail the L angle's wider leg into the joist to ensure table loads and allow correct nailing.



Typical L50 Installation



Typical GA Installation

ICFVL Ledger Connector System

NEW! The ICFVL Ledger Connector System is engineered to solve the challenges of mounting wood or steel ledgers to insulated concrete form (ICF) walls. Simpson's new ICF component of the system, the ICFVL, is designed to provide both vertical and lateral, in-plane performance. The system is still quick, versatile and easy to use but now provides so much more! There are many benefits over traditional anchor bolting, including better on center spacing in most cases, faster installation and no protrusions.

Simpson's ICFVL is made from galvanized, 14 gauge steel. The embedded legs are embossed for additional stiffness and the hole allows for concrete to flow through and around the connector. The exposed flange on the face of the ICF provides a structural surface for mounting either a wood or steel ledger.

MATERIAL: ICFVL—14 gauge; ICFVL-CW and ICFVL-W—16 gauge

FINISH: Galvanized

INSTALLATION: ICFVL in ICF

- Snap a chalk line for the bottom of the ledger.
- Mark required on center spacing.
- Use ICFVL to mark kerfs locations.
- Cut kerfs as marked.
- Insert ICFVL flush to the face of the ICF.
- Place concrete.

Wood Ledger Attachment – ICFVL-W or -CW

- Slip appropriate ledger connector underneath the ledger.
- Install the eight ICF-D3 screws partially into the ledger.
- Position the ledger level to the chalk line and drive the screws through the wood and into the ICFVL.

Steel Ledger Attachment

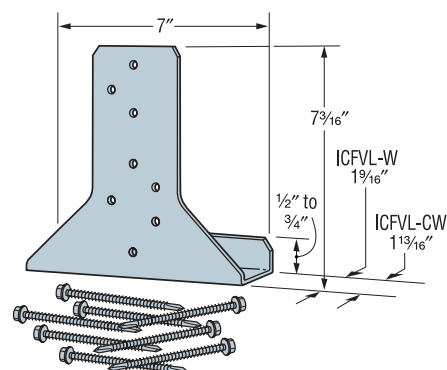
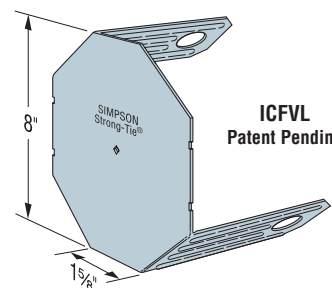
- Position the ledger level to the chalk line and against the ICFVL.
- Attach with four 1/4"-14x3/4", #3 drill point screws (*not provided*).
- All screws should be located at least 1/2" from the edge of the ICFVL.
- Space screws evenly.

CODES: See page 12 for Code Listing Key Chart.

WARNING:

Industry studies show that hardened fasteners can experience performance problems in wet environments. Accordingly, use this product in dry environments only.

NEW



ICFVL-W and ICFVL-CW

Ledger Type	Fasteners	Allowable Load (lbs)	
		Download (100/115/125)	Lateral F ₁ (133/160)
Wood	8-ICF D3	1940	1905
Steel	4 - 1/4x3/4 ³	1660	1525

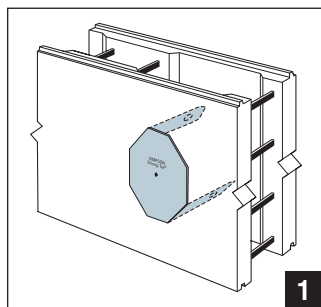
1. Fasteners for wood ledger (D3) are provided with the part and fasteners for steel ledger are not provided.
2. Loads apply to ICF foam thicknesses of 2 3/8" or less. Contact Simpson for allowable loads on thicker walls.
3. Alternately, #14 x 3/4" fastener may be used.
4. Tabulated loads may not be increased.

5. Concrete f'_c = 2500 psi minimum.
6. When combining download and lateral loads, Designer shall evaluate as follows:
Design Download/Allowable Download + Design Lateral Load/Allowable Lateral Load.

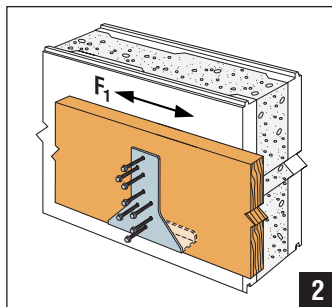
These tables address vertical load applications only.

Ledger Type	Connector Type	ICFVL SPACING TO REPLACE ANCHOR BOLTS (in.) ^{1,2,3}																Code Ref.
		½" Dia. Anchors at				⅝" Dia. Anchors at				(2)-⅝" Dia. Anchors at				¾" Dia. Anchors at				
		12" o.c.	24" o.c.	36" o.c.	48" o.c.	12" o.c.	24" o.c.	36" o.c.	48" o.c.	12" o.c.	24" o.c.	36" o.c.	48" o.c.	12" o.c.	24" o.c.	36" o.c.	48" o.c.	
WOOD LEDGERS																		
DF/SP/SPF	ICFVL w/ ICFVL-W	48	48	48	48	43	48	48	48	21	42	48	48	39	48	48	48	160
LVL	ICFVL w/ ICFVL-CW	48	48	48	48	43	48	48	48	21	42	48	48	39	48	48	48	
STEEL LEDGERS																		
68 mils (0.068")	ICFVL	11	22	33	44	9	18	27	36	—	—	—	—	—	—	—	—	160
54 mils (0.054")	ICFVL	15	30	45	48	12	24	36	48	—	—	—	—	—	—	—	—	

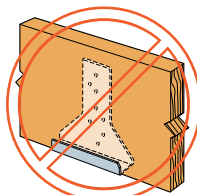
1. The Designer may specify different spacing based on the load requirements.
2. Spacings are based on perpendicular to grain capacity of bolt in wood ledger compared to tested value of ICFVL.
3. See F-ICFVL flir for additional connection details.
4. For steel ledgers, the 68 mil ledger spacing is closer than the 54 mil ledger because the calculated load of a bolt is higher in a thicker piece of steel.
5. Steel ledger values are based on steel. F_u = 60 ksi.



ICFVL

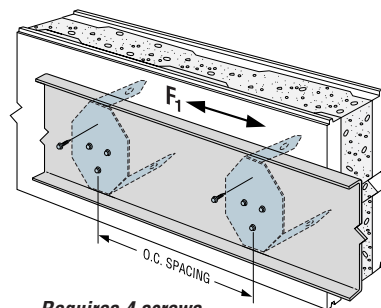


Typical Wood Ledger Installation with ICFVL and ICFVL-W



MISINSTALLATION!

Typical Steel Ledger Installation with ICFVL (minimum 16 ga steel ledger)



Requires 4 screws at each location. Table provides on center spacing.

S/HJCT, S/JCT, S/JCT8-14 Cold Formed Steel Joist Hangers

New improved higher load capacity joist hangers. Additional fasteners in the new S/JCT and the increased thickness of the S/HJCT increase the allowable load capacity for use with C-Joists.

S/JCT8-14 hanger offers flexibility in design and ease of installation for use with C-Joists from 8" to 14" deep. For higher capacity joist hangers see S/JCT and S/HJCT.

Joists can be attached from either side, or doubled up. These hangers can be used with either steel or wood headers.

FEATURES:

- Uni-directional: Joist can be attached from left or right
- One size fits joists 8" through 14" deep.
- Optional holes for additional load capacity.
- Simplicity of design.
- Quick and easy installation.
- Field skewable up to 45° left or right.

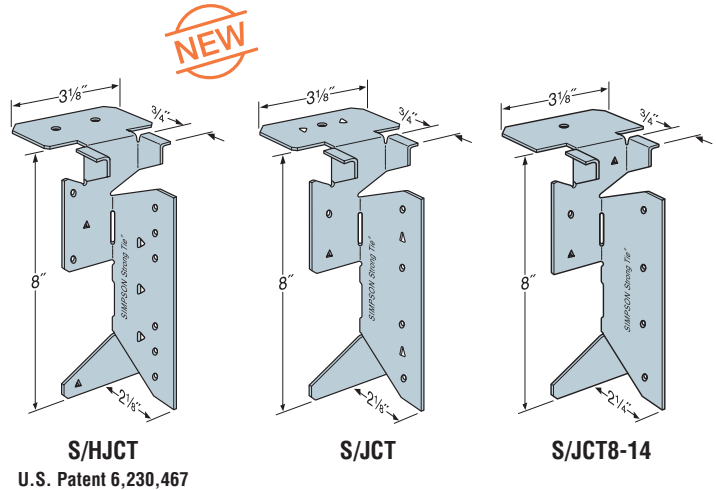
MATERIAL: S/JCT8-14, S/JCT, -14 gauge; S/HJCT-12 gauge

FINISH: Galvanized

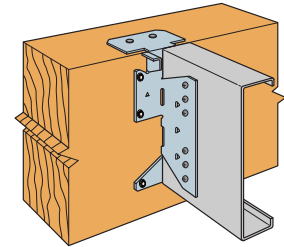
INSTALLATION:

- Attach hanger with specified fasteners. Use round holes for minimum load, use round and triangle holes for maximum load.
- May be used for weld-on applications. The minimum required weld to the top flange is $\frac{1}{8}$ " x $2\frac{1}{2}$ " fillet weld to each side of top flange. Consult the code for special considerations when welding galvanized steel.
- Web stiffeners may be required by specifier—install hanger first.
- For more connectors, consult the Cold-Formed Steel catalog, C-CFS.

CODES: See page 12 for Code Listing Key Chart.



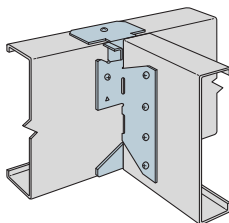
S/JCT and S/HJCT
available
2nd Quarter 2006



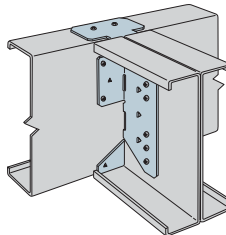
S/HJCT Installation with
a 4x10 wood header
(others similar)

Model No.	Fasteners			Allowable Load ^{1,6}	Fasteners			Allowable Load ^{2,6}	Code Ref.
	Steel Header		Joist		Wood Header		Joist		
	Top	Face			Top	Face			
Straight Hanger					Straight Hanger				
S/JCT8-14 (min)	1- #8	2- #10	4- #10	1045	1- 10d	2-10d	4- #10	880	28
S/JCT8-14 (max)	1- #8	4- #10	4- #10	1510	1- 10d	4-10d	4- #10	1280	
S/JCT (min)	1- #10	2- #10	4- #10	1195	1- 10d	2-10d	4- #10	880	160
S/JCT (max)	1- #10	4- #10	6- #10	2105	1- 10d	4-10d	6- #10	1280	
S/HJCT (min)	2- #10	4- #14	6- #14	2920	2- 10d	4-SDS¼x3	6- #14	2490	
S/HJCT (max)	2- #10	8- #14	9- #14	3015	2- 10d	8-SDS¼x3	9- #14	2490	
Skew Hanger					Skew Hanger				
S/JCT8-14 (min)	1- #8	2- #10	4- #10	965	1-10d	2-10d	4- #10	840	28
S/JCT (min)	1- #10	2- #10	4- #10	965	1-10d	2-10d	4- #10	840	160
S/JCT (max)	1- #10	4- #10	6- #10	1185	1-10d	4-10d	6- #10	920	
S/HJCT (min)	2- #10	4- #14	6- #14	1515	2-10d	4-SDS¼x3	6- #14	1935	
Welded Hanger				Steel Header					170
S/JCT8-14 (min)	½" x 2½" fillet weld to each side of top		4- #10	745					
S/JCT (min)			4- #10	940					
S/HJCT (min)			4- #14	1450					

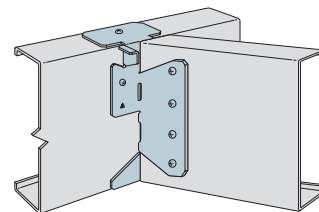
1. Allowable loads for CFS headers are based on a single 16 gauge steel.
2. Allowable loads for wood headers are based on 4x10 minimum DFL, specific gravity = 0.50.
3. Steel header must be braced to prevent web buckling per Designer specification.
4. Steel joist shall be laterally braced per Designer specification.
5. Screws shall be installed using joist hanger holes screwing through the hanger into the joist.
6. Tabulated loads may not be increased for load duration or $\frac{1}{3}$ stress increase.
7. NAILS: 10d = 0.148" dia. x 3" long. See page 16-17 for other nail sizes and information.



S/JCT8-14 Installation
with a steel header
(others similar)



S/HJCT Double Joist
Installation
(others similar)



S/JCT8-14
Skewed 45° Installation
Bevel cut the joist.
(others similar)

HSS/SS Stud Shoes

Stud Shoes reinforce studs notched in construction. They are NOT a total replacement of removed material. Installs over pipe up to 2 3/8" outside diameter.

HSS2-3 is designed for triple 2x studs.

HSS Stud Shoes provide tension load capacity as well as increased compression loads. Flared flange provides greater strength.

MATERIAL: 16 gauge. **FINISH:** Galvanized.

INSTALLATION: Use all specified fasteners. See General Notes.

- HSS: Bend flanges at 90° angle during installation, then bend back and screw into position (**screws supplied**).
- Bend flanges one cycle only.

CODES: See page 12 for Code Listing Key Chart.

HSS2-SDS1.5 (16 gauge) Heavy stud shoe to reinforce and protect single 2x studs where pipe is located. Uses 12 SDS 3/4 x 1 1/2 screws (**included**).

International Residential Code® - 2000/2003 R602.6 and P2603.2.1

International Building Code® - 2000/2003 2308.9.10 & 2308.9.11

I.C.B.O.-Uniform Building Code - 1997 2320.11.9 & 2320.11.10

International Plumbing Code - 2000/2003 305.8

HSS2-3-SDS3 (16 gauge) Heavy stud shoe for triple 2x stud.

Uses 12 SDS 3/4 x 2 screws (**included**).

International Residential Code® - 2000/2003 R602.6 and P2603.2.1

International Building Code® - 2000/2003 2308.9.10 & 2308.9.11

International Plumbing Code - 2000/2003 305.8

I.C.B.O.-Uniform Building Code - 1997 2320.11.9 & 2320.11.10

SS1.5 (16 gauge) stud shoes reinforce and protect plumbing in 2x.

International Residential Code® - 2000/2003 R602.6 and P2603.2.1

International Building Code® - 2000/2003 2308.9.10 & 2308.9.11

International Plumbing Code - 2000/2003 305.8

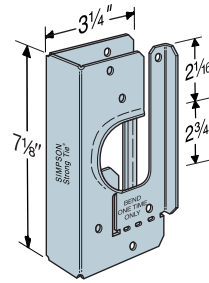
I.C.B.O.-Uniform Building Code - 1997 2320.11.9 & 2320.11.10

Model No.	Stud Size	Fasteners	Allowable Loads ¹			Code Ref.
			DF/SP			
			Compression		Tension	
			Floor (100)	Roof (125)		
SS1.5	2x	12-10dx1½	500	500	—	6, 121
SS2.5	3x	12-10dx1½	500	500	—	
SS3	2-2x	12-10d	665	785	—	
SS4.5	3-2x	14-10d	665	785	—	
HSS2-SDS1.5	2x	12-SDS¾x1½	1200	1200	1000	
HSS2-2-SDS3	2-2x	12-SDS¾x3	1200	1200	1000	6
HSS2-3-SDS3	3-2x	12-SDS¾x3	1000	1000	970	
HSS4-SDS3	4x	12-SDS¾x3	1200	1200	1000	6, 121

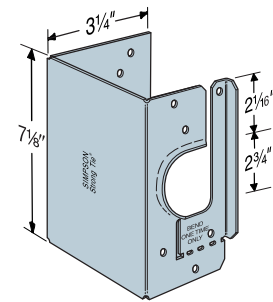
1. Roof loads are 125% of floor loads unless limited by other criteria. Floor loads may be adjusted for other load durations according to the code, provided they do not exceed roof loads.

2. **NAILS:** 10d = 0.148" dia. x 3" long, 10d x 1 1/2 = 0.148" dia. x 1 1/2" long.

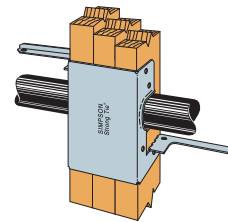
See page 16-17 for other nail sizes and information.



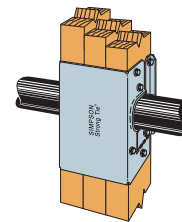
HSS
US Patent 6,176,057



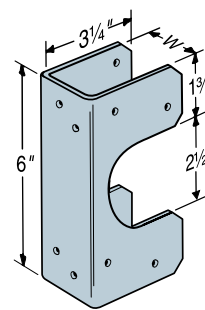
HSS2-3



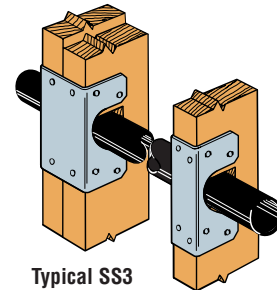
STEP 1
Install HSS (HSS2-3 shown) over stud with flanges bent at a 90° angle.



STEP 2
Bend HSS (HSS2-3 shown) flanges one time only. Screw into position.



SS



Typical SS3 Installation

Typical SS1 Installation

RPS Strap Ties

The RPS meets IBC, IRC, UBC and City of Los Angeles code requirements for HVAC and pipes in walls.

FINISH: Galvanized, some products available in ZMAX.

See Corrosion-Resistance, page 6-7.

INSTALLATION: Use all specified fasteners. See General Notes.

CODES: See page 12 for Code Listing Key Chart.

RPS28 (16 gauge) to reinforce top plate, and

RPS28Z (16 gauge ZMAX™) to reinforce sill plate.

International Residential Code® - 2000/2003 R602.6.1

International Building Code® - 2000/2003 2308.9.8

I.C.B.O.- Uniform Building Code - 1997 2320.11.7

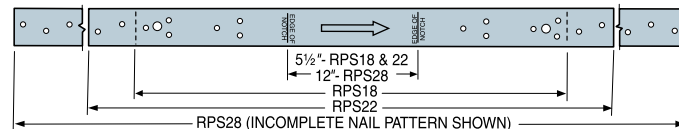
Available with additional corrosion protection. Check with factory.

Model No.	Ga	Dimensions		Notch Width	Fasteners (Total)	Allowable Tension Loads (DF/SP)		Allowable Tension Loads (SPF/HF)		Code Ref.
		W	L			Nails	(133)	(160)	(133)	(160)
RPS18	16	1 1/2	18 9/16	≤ 5 1/2"	12-16d	1150	1380	990	1190	33, 96, 122, 128
RPS22		1 1/2	22 9/16	≤ 5 1/2"	12-16d	1150	1380	990	1190	
		1 1/2	22 9/16	≤ 5 1/2"	16-16d	1535	1805	1325	1585	
		1 1/2	28 9/16	≤ 12"	12-16d	1150	1380	990	1190	
RPS28		1 1/2	28 9/16	≤ 12"	16-16d	1535	1805	1325	1585	

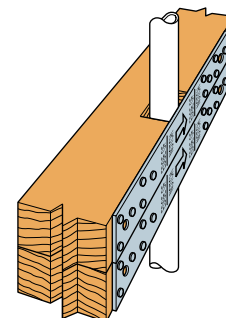
1. Loads include a 33% or 60% load duration increase on the fasteners for earthquake or wind loading, but **DO NOT** include a 33% stress increase on the steel capacity. Refer to page 13 for further explanation.

2. To meet the prescriptive IRC requirement 16d box nails (0.135" dia x 3 1/2") may be used at 0.75 of the table load.

3. **NAILS:** 16d = 0.162" dia. x 3 1/2" long. See page 16-17 for other nail sizes and information.



RPS



Typical RPS Installation
(Only one strap may be necessary to meet IRC requirements)

NS/NSP/PSPNZ Nail Stoppers

PSPN516Z and PSPN58Z Protecting Shield Plate Nail Stoppers meet IRC, IBC and the International Plumbing Code. PSPN516Z meets structural and protection requirements with one strap.

Nail Stoppers help prevent nails from piercing pipes and electrical lines. Installed over utilities that pass through framing members. 16 gauge steel conforms to the National Electric Code.

MATERIAL: 16 gauge **FINISH:** Galvanized, PSPN-ZMAX.

INSTALLATION: PSPN – 16d commons.

- Other models – 8d commons or prongs.
- For more information request F-PLUMBING.

CODES: See page 12 for Code Listing Key Chart.

PSPN516Z (16 gauge ZMAX™) at top plates
International Residential Code®- 2000/2003 P2603.2.1
and R602.6.1

International Building Code®- 2000/2003 2308.9.8
International Plumbing Code - 2000/2003 305.8

PSPN516Z (16 gauge ZMAX™) at bottom plate.
International Building Code®- 2000/2003 2308.9.8
International Plumbing Code - 2000/2003 305.8

PSPN58Z (16 gauge ZMAX™) at top plates and bottom plate.
International Plumbing Code - 2000/2003 305.8
International Residential Code®- 2000/2003 P2603.2.1

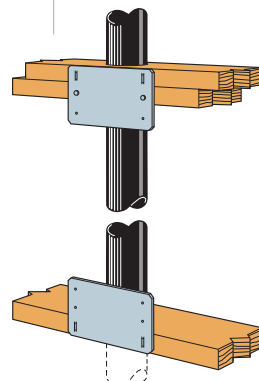
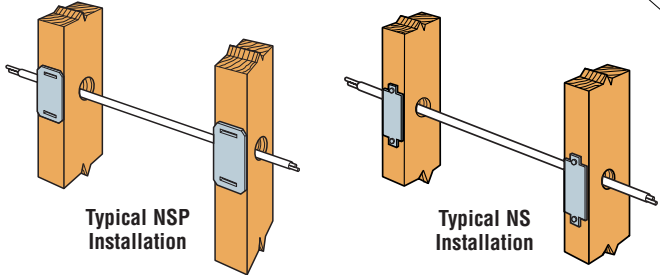
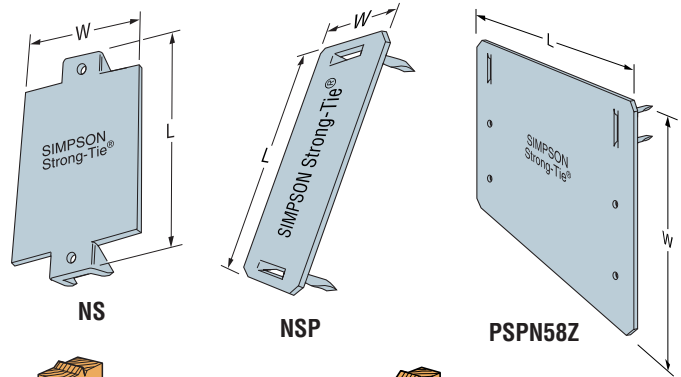
NS1 - nail stops to protect supply lines from drywall nails or screws.

International Residential Code®- 2000/2003 Table E3702.1
Chapter 3 of the National Electric Code – “...bored holes for wiring shall be 1.25” from the edge of a joist, stud or rafter or shall be protected with a 16 gauge (.0625 thick) steel plate.”

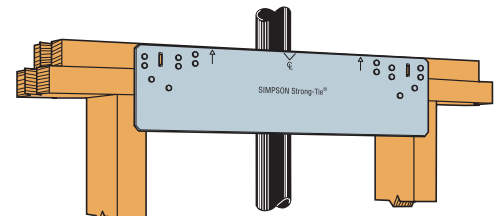
Available with additional corrosion protection.
 Check with factory.

Model No.	W	L	Code Ref.
NS1	1½	3	190
NS2	1½	6	
NSP1	1½	2½	
NSP2	1½	5	
PSPN58Z	5	8	
PSPN516Z	5	16⅞	

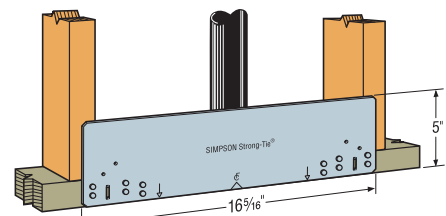
- PSPN516Z:** 12-16d nails into sill plate achieves 1135 lbs (133), 1365 lbs (160) for DF/SP, and 985 lbs (133), 1180 lbs (160) for SPF/HF. 16-16d nails in to top plates achieves 1515 lbs (133), 1820 lbs (160) for DF/SP, and 1310 lbs (133), 1575 lbs (160) for SPF/HF.
- To meet the prescriptive IRC requirement 16d box nails (0.135" dia. x 3½") may be used.
- NAILS: 16d = 0.162" dia. x 3½" long, 8d = 0.131" dia. x 2½" long.**
 See page 16-17 for other nail sizes and information.



Typical PSPN58Z Installation



PSPN516Z Installed to Double Top Plates



PSPN516Z Installation to Sill Plate

RCBZ Rigid Corner Bracket – ZMAX™

The RCBZ is a rigid corner bracket for strengthening a 90° angle. RCBZ can be used anywhere to strengthen a 90° angle and can be used with some types of pressure-treated wood.

MATERIAL: 20 gauge

FINISH: Z-MAX; see Corrosion Resistance, page 6-7.

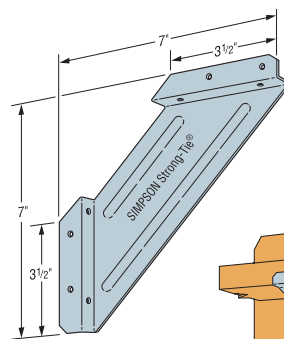
INSTALLATION:

- Use all specified HDG fasteners. See General Notes.
- If using pressure treated wood, fasteners need to be minimum of HDG.

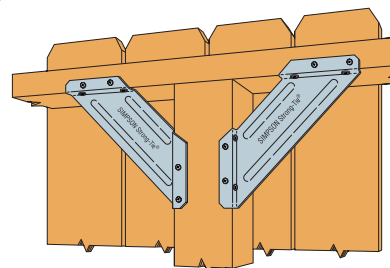
CODES: See page 12 for Code Listing Key Chart.

Available with additional corrosion protection. Check with factory.

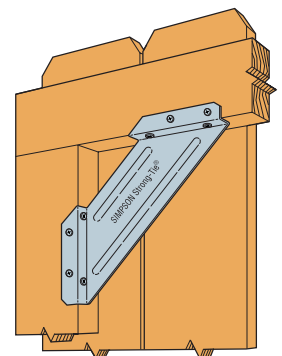
Model No.	Fasteners	Code Ref.
RCBZ	8-#8 Wood Screws	180



RCBZ



Typical RCBZ Fence Installation



Typical RCBZ Gate Installation

DBT1Z/DJT14Z/DPTZ Deck-Tie® Connectors**SAFE DECK BUILDING PROCEDURES**

Always comply with building codes, which may regulate distances, foundation materials, spacing, loads, etc. Consult a professional for a high-level or cantilevered deck, or one over unstable soil or water. Minimize wood splitting by flattening nail points or drilling pilot holes. Follow the manufacturer's guidelines for tools and materials.

MATERIAL: DBT1Z–18 gauge; DPT5Z, DPT7Z, DJT14Z–14 gauge

FINISH: Z-MAX; see Corrosion Resistance, page 6-7.

INSTALLATION: • Use specified HDG fasteners. See General Notes.

- **DBT1Z** Deck Board Tie: Position the DBT1Z with the locator prongs and install with a single 10d $\times$ 1½" HDG nail. Using dry lumber will minimize deck board movement after installation. Works with 2x deck boards. **Predrilling recommended for 5/4 deck boards.** To check number of DBT1Z multiply number of joists by number of deck boards. **The DBT1Z will not prevent cupping, bowing or warping of deck boards.**
- **DPT5Z, DPT7Z** Deck Post Ties: Testing shows similar strength and deflection limits when compared with 4x4 posts attached to 2x8 rim joists with two ½" machine bolts placed 3½" apart.
- **DPT5Z and DPT7Z:** Install in pairs at a recommended minimum center-to-center spacing of 5". Use two ¾" through bolts and 10d $\times$ 1½" HDG nails for DPT5Z (5–10d commons for DPT7Z) per tie.
- Recommended: install on post and then attach to deck. Post size: DPT5Z, 2x4; DPT7Z, 4x4. Check with local building officials for minimum post spacing.
- **DJT14Z** Deck Joist Tie: Recommended: install on post first. Minimum 2x4 joist, 4x4 post.

CODES: See page 12 for Code Listing Key Chart.

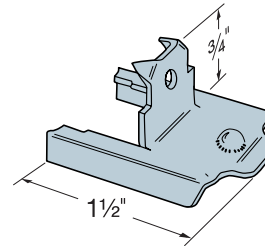
Available with additional corrosion protection. Check with factory.

Model No.	Fasteners			Allowable Loads				Code Ref.
	Nails	Bolts		Nails		Bolts		
		Qty	Dia	Floor (100)	Roof (125)	Floor (100)	Roof (125)	
DJT14Z	8-16d	2	5/8 MB	1100	1375	1400	1400	7, 121

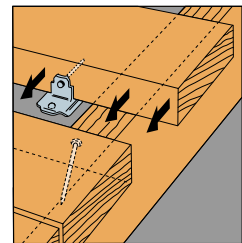
1. Loads are for one DJT14Z.

2. Roof loads are 125% of floor loads. Floor loads may be adjusted for other load durations according to the code, provided they do not exceed the roof loads.

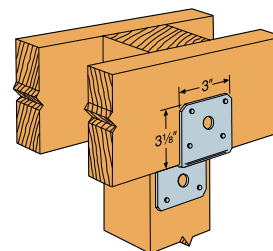
3. **NAILS:** 16d = 0.162" dia. x 3½" long,
See page 16-17 for other nail sizes and information.

**DBT1Z**

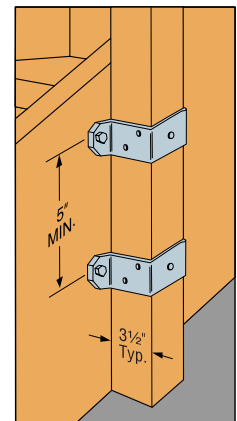
U.S. Patent 5,027,573
Canada Patent 2,015,733



Typical DBT1Z Installation.
Connectors slide under anchored deck board.



Typical DJT14Z Installation



Typical DPT5Z Stairway Installation
(DPT7Z similar)
U.S. Patent 5,150,982

PGT® Pipe Grip Ties®

The PGTIC2Z-R is an interior corner pipe grip tie.

No more rotted and failed fence posts! The PGT pipe grip tie handles corners, splices and uneven terrain, replacing wood posts.

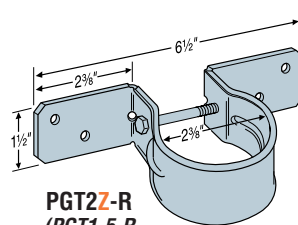
The PGT1.5Z-R is for 1½" pipe (1¾" outside diameter), and the PGT2Z-R for 2" pipe (2¾" outside diameter).

MATERIAL: 12 gauge.

FINISH: Z-MAX.

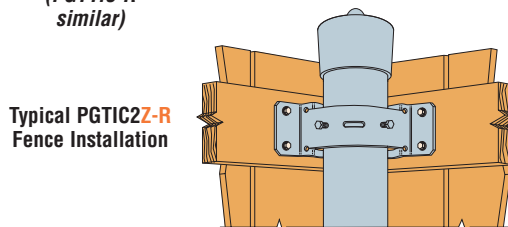
INSTALLATION: • Use all specified fasteners.
See General Notes.

- PGTIC2Z-R to Post – Install two set screws (supplied) with ¾" socket in predrilled holes.
- PGTIC2Z-R to Rails – Use SDS¼ $\times$ 1½" wood screws (not supplied).
- Install on vertical pipes, offsetting corners to allow for the correct rail alignment.
- Use 3 to 4 PGTs per pipe; line up to stringline.
- Fasten PGT with ¼" hex head bolt (supplied).
- PGT attaches to rails with four SDS¼ $\times$ 1½" HDG wood screws (not supplied). See page 20 for SDS screw information.
- ¼" lag bolts may be used. Follow the code requirements for predrilling.
- Nail fence boards to rails.

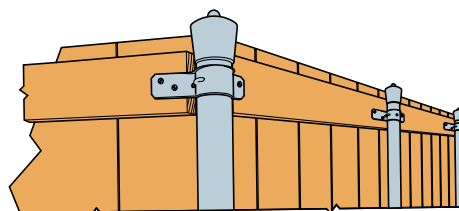


PGT2Z-R
(PGT1.5-R similar)

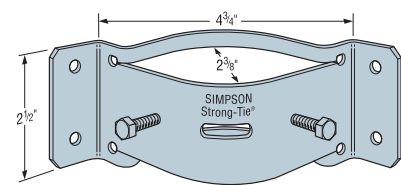
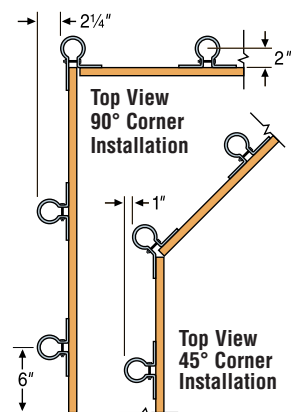
U.S. Patent 5,297,890



Typical PGTIC2Z-R Fence Installation



Typical PGT2Z-R Fence Installation

**PGTIC2Z-R**

Termination Top View

FB/FBR Fence Brackets

The FB26 attaches standard 8 foot lengths of 2x6 wood rails to the center of 4x4 or larger posts to create a symmetrical fence design. The split rail design gives equal lateral strength to both sides of the fence.

Quick connections allow easier planning and building of porches, patios, fences, and louvers.

MATERIAL: See table. **FINISH:** Galvanized. Some products available in Z-MAX; see Corrosion-Resistance, page 6-7.

INSTALLATION: • Holes are sized for 8d $\times$ 1½", 8d commons or #6 wood screws into the supporting member. FBR24 and FBL24 are sized for 10d $\times$ 1½".

CODES: See page 12 for Code Listing Key Chart.

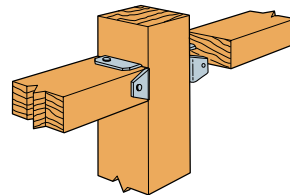
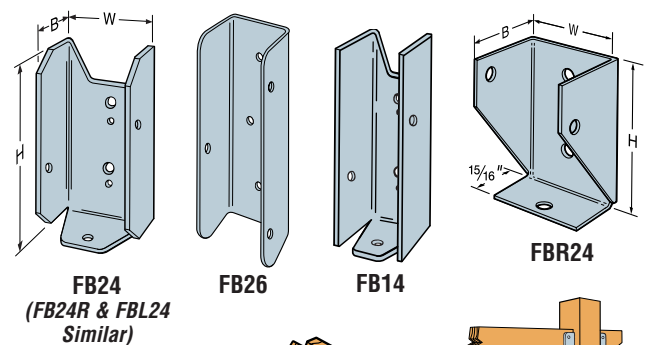
Available with additional corrosion protection. Check with factory.

Model No.	Ga	Member Size	Dimensions			Code Ref.
			W	H	B	
FBL24	22	2x4	1⅞	2⅝	¾	180
FB14	20	1x4	¾	3⅞	¾	
FB24	20	2x4	1⅞	3⅞	¾	
FB24R	20	2x4 RGH	2	3⅞	¾	
FBR24	18	2x4	1⅞	27⅞	1½	
FB26	18	2x6	1⅞	5	1½	

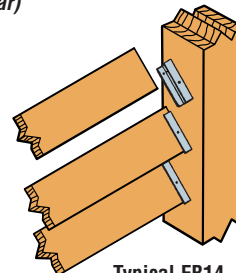
1. FB26 has an allowable load for F1 of 365 lbs.

2. FBR24 – R = rail (not rough).

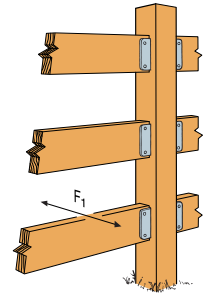
3. **NAILS:** 10d $\times$ 1½" = 0.148" dia. x 1½" long,
8d = 0.131" dia. x 2½" long, 8d $\times$ 1½" = 0.131" dia. x 1½" long.
See page 16-17 for other nail sizes and information.



Typical FB24 Installation



Typical FB14 Louver Installation



Typical FB26 Fencing Installation

TAZ Staircase Angles

For use in structurally-sound staircase framing. The TA eliminates costly conventional notching.

MATERIAL: 12 gauge. **FINISH:** Z-MAX; see Corrosion-Resistance, page 6-7.

ORDER: May be ordered TA9ZKT and TA10ZKT include Z-MAX TA and HDG SDS¼ $\times$ 1½ fasteners.

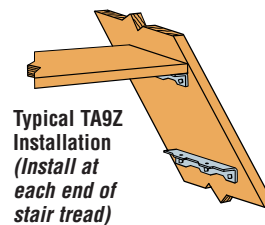
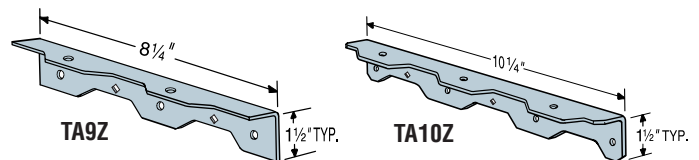
CODES: See page 12 for Code Listing Key Chart.

Available with additional corrosion protection. Check with factory.

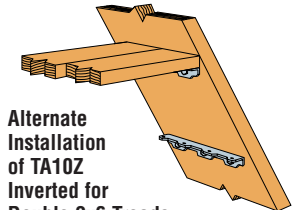
Model No.	Fasteners		Allowable Download DF/SP (100)	Code Ref.
	Stringer	Tread		
TA9Z	3-SDS¼ $\times$ 1½	2-SDS¼ $\times$ 1½	885	170
TA10Z	3-SDS¼ $\times$ 1½	4-SDS¼ $\times$ 1½	885	
TA10Z	4-SDS¼ $\times$ 1½	3-SDS¼ $\times$ 1½	1180	

1. Loads may be adjusted for other load durations according to the code.

2. See page 20 for SDS information.



Typical TA9Z Installation (Install at each end of stair tread)



Alternate Installation of TA10Z Inverted for Double 2x6 Treads

SBV/CF-R Shelf Brackets/Concrete Form Angles

Use the SBV for shelving, counter brackets, window ledge supports, at a very competitive price.

The CF-R is used where a moderate size shelf bracket and reinforcing angle is needed. When used for tilt-up perimeter forming, the nail hole placement ensures substantial re-use.

The Color Systems Innovative Shelving Solutions brings color to your home. Request Color Systems information on our decorative line of color shelf brackets.

MATERIAL: 16 gauge. **FINISH:** Galvanized

INSTALLATION: • Use all specified fasteners. See General Notes.

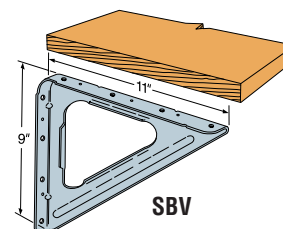
• SBV—Reversible for nominal 10" or 12" shelves of any thickness.

• CF-R (Retail Pack)—Recommended spacing is 36" for 2x's and 18" for 1x's. Use the 5" leg for 6" lumber and the 6" leg for 8" lumber.

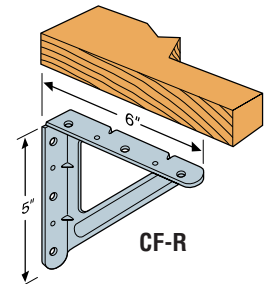
Holes are sized for ¼" fasteners or 10d commons.

CODES: See page 12 for Code Listing Key Chart.

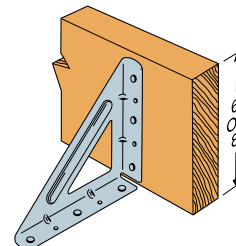
Model No.	Fasteners		Allowable Downloads DF/SP (100)	Code Ref.
	Stud			
CF-R	3-SDS¼ $\times$ 2		135	170
SBV	4-SDS¼ $\times$ 2		145	



SBV



CF-R



Typical CF-R Form Installation

RTC/FWH/FWL Rigid Tie™ Connectors

The **RTC** series secures two wood members forming a 90° corner to a vertical post. The **RTC42** and **RTC44** are heavy-duty structural connectors. Based on loads of 40 lbs per sq ft, a 10' x 10' deck can be built using 2x8 joists and 4 RTC42s. See the table for Post and Joist sizes. The **RTCH** is hidden inside the connection, and secures three 2x members at 90° angles.

RTB—a bracket for intersecting 2x members.

FWH and **FWL**—4 way connectors for 2x members with bendable flanges.

RTA—connects two 2x wood members at a 90° angle.

RTF—connects two members in a “pass-through” application.

RTR and **RTU**—a 2x member crosses another.

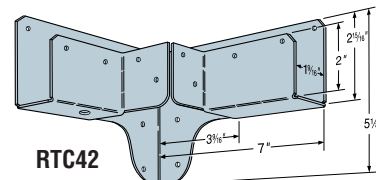
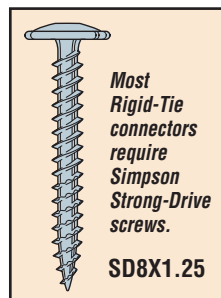
MATERIAL: RTC44—14 gauge; RTA2—16 gauge; RTCH, **RTR**, **FWL** and **RTB**—20 gauge; all others—18 gauge

FINISH: Galvanized. Some products available in stainless steel or Z-MAX; see Corrosion-Resistance, page 6-7.

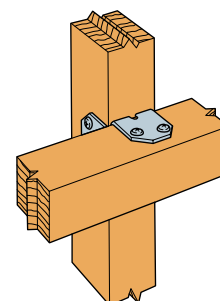
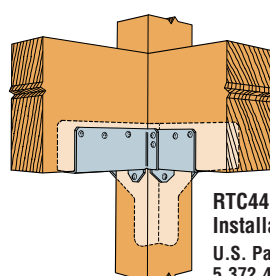
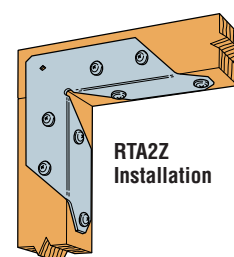
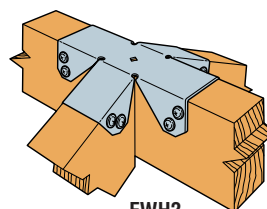
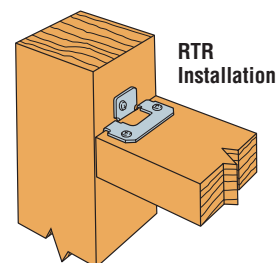
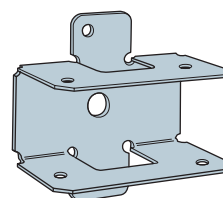
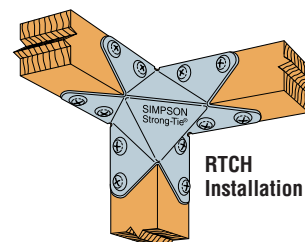
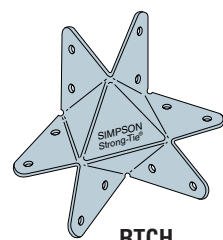
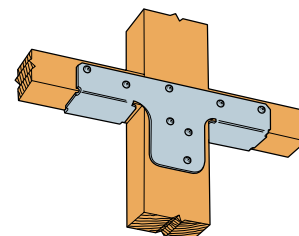
INSTALLATION:

- Use all specified fasteners. See General Notes.
- Install vertical members first, then attach horizontal members for easier alignment.
- Seat wood member in bracket with a C-clamp before securing to aid positioning and prevent skewing.
- Always follow manufacturer's instructions when using power tools and building equipment.

CODES: See page 12 for Code Listing Key Chart.



WARNING: Industry studies show that hardened fasteners can experience performance problems in wet and corrosive environments. Accordingly, use the SD8X1.25 screw in dry, interior, and non-corrosive environments only.



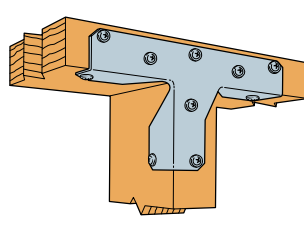
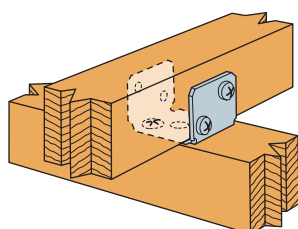
Available with additional corrosion protection. Check with factory.

Model No.	Post Size	Joist Size	Fasteners (Total)		Allowable Downloads ¹		Code Ref.
			Post	Joist	Floor (100)	Roof (125)	
FWL2	2x	2x	4-SD8x1.25	4-SD8x1.25	N/A	N/A	180
FWH2	2x	2x	8-SD8x1.25	8-SD8x1.25	N/A	N/A	
RTA12	1x	1x	4-SD8x1.25	4-SD8x1.25	N/A	N/A	
RTA2Z	2x	2x	4-SD8x1.25	4-SD8x1.25	N/A	N/A	
RTA4	4x	4x	7-SD8x1.25	5-SD8x1.25	N/A	N/A	
RTB22	2x	2x	4-SD8x1.25	4-SD8x1.25	N/A	N/A	170
RTC22Z	2x	2x	5-SD8x1.25	6-SD8x1.25	N/A	N/A	
RTCH	2x	2x	4-SD8x1.25	4-SD8x1.25	200	250	4, 37, 121
RTC42	2x4	2x	9-SD8x1.25	11-SD8x1.25	450	560	
		4x4	14-SD8x1.25	8-SD8x1.25	650	810	
		4x4	14-16d Sinkers	8-10dx1 1/2	1445	1805	
RTC44	4x4	2x	14-16d	8-10dx1 1/2	1730	2160	
		4x	14-16d Sinkers	15-16d Sinkers	1580	1980	170
RTU2	2x	2x	2-SD8x1.25	4-SD8x1.25	N/A	N/A	
RTF2Z	2x4	2x	4-SD8x1.25	8-SD8x1.25	N/A	N/A	180
RTT22	2x	2x	3-SD8x1.25	7-SD8x1.25	N/A	N/A	170
RTR	2x	2x	2-SD8x1.25	4-SD8x1.25	N/A	N/A	
RTU2	2x	2x	2-SD8x1.25	4-SD8x1.25	N/A	N/A	

1. Allowable loads must be equally distributed on both joists.

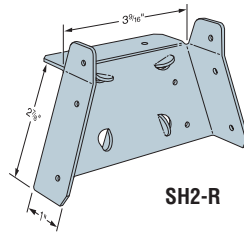
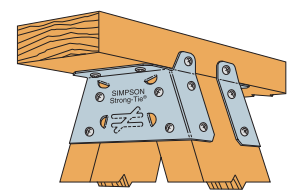
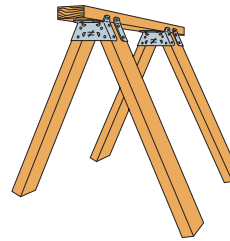
2. Loads are for Doug Fir-Larch.

3. **NAILS:** 16d = 0.162" dia. x 3 1/2" long, 16d Sinker = 0.148" dia. x 3 3/4" long, 10dx1 1/2 = 0.148" dia. x 1 1/2" long. See page 16-17 for other nail sizes and information.



SH2 Sawhorse Brackets**MATERIAL:** 18 gauge**FINISH:** Galvanized**INSTALLATION:** • Install in pairs.

- SH2-R contains four parts.
- No angle cuts required.
- Allows for square cut lumber
- Remove cross brace for easy storage.
- Install with SD8x1.25 screws (*not included*).

**SH2-R****Typical SH2-R Installation****RR Ridge Rafter Connector**

An interlock provides alignment control and correct nailing locations. For a rafter-to-face connector, flatten the top flange into the face plane. The RR may be used with any rafter sloped up to 30°.

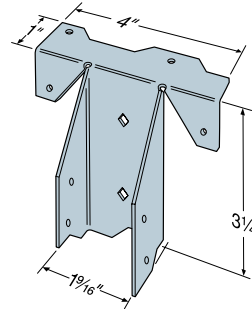
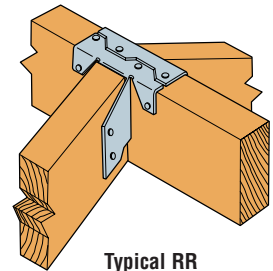
MATERIAL: 18 gauge **FINISH:** Galvanized**INSTALLATION:** Use all specified fasteners. See General Notes.**CODES:** See page 12 for Code Listing Key Chart.

Model No.	Min. Rafter Size	Fasteners		Uplift (133/160)	Allowable Loads ¹		Code Ref.
		Header	Rafter		DF/SP		
					Floor (100)	Roof (125)	
RR	2x6	4-10dx1½	4-10dx1½	130	365	415	4, 37, 87, 121

1. Floor loads may be adjusted for other load durations according to the code, provided they do not exceed the table roof loads.

2. **NAILS:** 10dx1½ = 0.148" dia. x 1½" long.

See page 16-17 for other nail sizes and information.

**RR****Typical RR Installation****FC Framing Clips**

For fast, accurate framing. Three-dimensional nailing pattern results in high-strength joint values. Ideal for fence construction.

MATERIAL: 16 gauge **FINISH:** Galvanized**INSTALLATION:** Use all specified fasteners. See General Notes.**CODES:** See page 12 for Code Listing Key Chart.

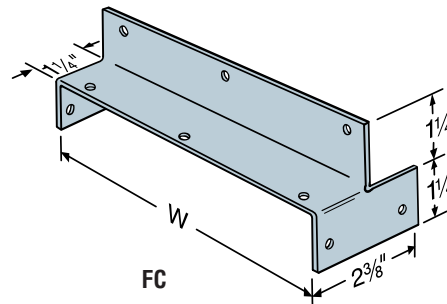
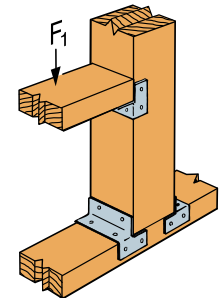
Model No.	W	Fasteners	Allowable F ₁ Loads (100)	Code Ref.
FC4	3 9/16	8-16d	800	3, 39, 88, 121
FC6	5 1/2	10-16d	920	

1. Loads may not be increased for short-term loading.

2. A 2½" minimum lumber thickness is required to achieve the full load.

3. **NAILS:** 16d = 0.162" dia. x 3½" long.

See page 16-17 for other nail sizes and information.

**FC****Typical FC Load Installation****PSCL Panel Sheathing Clips**

Steel panel sheathing clips include model sizes PSCL¾, PSCL7/16, PSCL15/32, PSCL1/2, PSCL5/8, PSCL19/32, PSCL3/4.

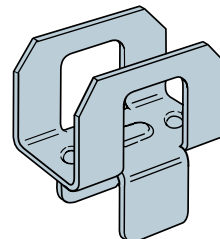
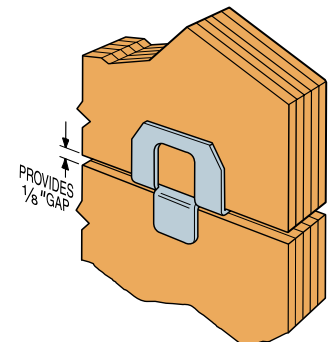
MATERIAL: 20 gauge **FINISH:** Galvanized**INSTALLATION:** Use the same size sheathing clip as the panel thickness.

- Spans may be reduced for low slopes (*per the APA Residential Design/Construction Guide*).

CODES: See page 12 for Code Listing Key Chart.

Span Rating	Panel Thickness	Maximum Roof Sheathing Span		PSCLs Per Span	Code Ref.
		With PSCL	Without PSCL		
24/0	¾	24	20	1	180
24/16	7/16	24	24	1	
32/16	15/32, 1/2	32	28	1	
40/20	5/8, 19/32	40	32	1	
48/24	¾	48	36	2	

1. Reference 1997 UBC Table 23-II-E-1 and 2000 IBC Table 2304.7 (3) for span rating.

**PSCL****Typical PSCL Installation**

NCA/TB/LTB Bridging

NCA—Nailless installation eliminates callbacks for nail squeaks. Designed for secure grip before the drive-home blow, and deeper prong penetration. Precision-formed into a rigid “V” section.

TB—Tension-type bridging with maximum nailing flexibility. Use just two of the seven nail holes at each end.

LTB—Staggered nail pattern accommodates 2x8 and 2x10 joists. Use just two of the six nail holes at each end. LTB40 has rigid prongs that install easily into the joist, and embossments that allow crisp bends.

MATERIAL: LTB—22 gauge; NCA and TB—20 gauge
(except NCA2x12-16—18 gauge).

FINISH: Galvanized

INSTALLATION: • Support floor joists with a depth-to-thickness ratio of six or more with bridging at intervals not exceeding 8'. If span is greater than 8', install on 2x8 or larger joists. If span is greater than 16', use more than one pair.

- Tension bridging works only in tension, so must be used in cross pairs.
- Install bridging tightly; loose installation may allow floor movement.
- NCA may be installed before or after sheathing, from the top or bottom. Simply locate the bend line approximately 1" from the joist edge.
- NCA has nail holes in one end for use if a prong is bent during installation. Fully seat nails if they are used; otherwise, they may lead to squeaks.
- TB requires two 10d x 1½" fasteners per end.
- LTB requires two 6d commons per end.

CODES: See page 12 for Code Listing Key Chart.

Code Reference: IRC 2003, R502.7.1

TENSION BRIDGING FOR I-JOISTS

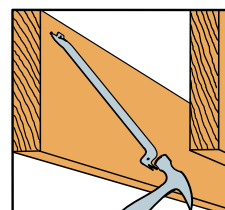
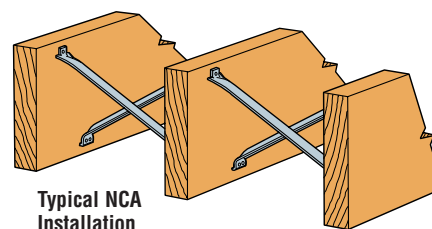
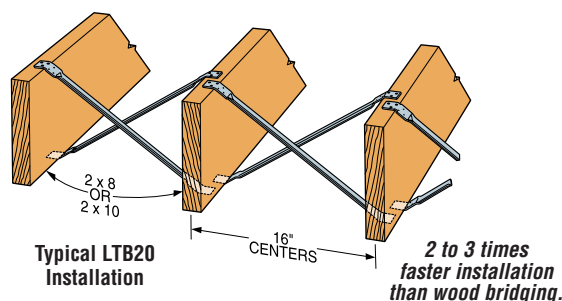
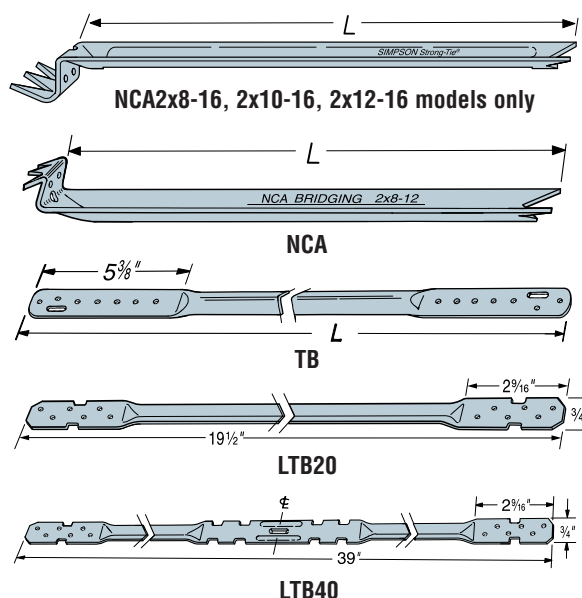
Joist Height	Joist Spacing (Inches)								
	12	16	19.2	24	30	32	36	42	48
9½	TB20	TB27	TB27	TB30	TB36	TB36	TB42	TB48	TB54
10	TB20	TB27	TB27	TB30	TB36	TB36	TB42	TB48	TB54
11⅞	TB20	TB27	TB27	TB30	TB36	TB36	TB42	TB48	TB54
12	TB20	TB27	TB27	TB30	TB36	TB36	TB42	TB48	TB54
14	TB27	TB27	TB27	TB36	TB36	TB42	TB42	TB48	TB54
16	TB27	TB27	TB30	TB36	TB42	TB42	TB42	TB48	TB54
18	TB27	TB30	TB30	TB36	TB42	TB42	TB48	TB54	TB56
20	TB30	TB30	TB36	TB36	TB42	TB42	TB48	TB54	TB56
22	TB30	TB36	TB36	TB36	TB42	TB42	TB48	TB54	TB56
24	TB36	TB36	TB36	TB42	TB42	TB48	TB48	TB54	TB56
26	TB36	TB36	TB36	TB42	TB48	TB48	TB48	TB54	TB60
28	TB36	TB36	TB42	TB42	TB48	TB48	TB54	TB54	TB60
30	TB36	TB42	TB42	TB42	TB48	TB48	TB54	TB56	TB60
32	TB42	TB42	TB42	TB42	TB48	TB48	TB54	TB56	TB60

TENSION BRIDGING FOR SOLID SAWN LUMBER

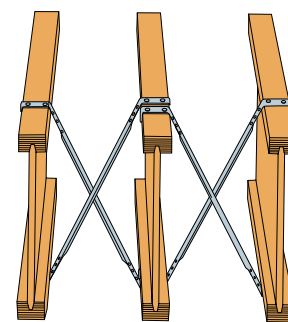
Joist Size	Spacing	NCA		TB		LTB	Code Ref.
		Model No.	L	Model No.	L	Model No.	
2x8	12" o.c.	NCA2x8-12	11⅞	TB20	20	—	3, 39, 88, 121
2x10	12" o.c.	NCA2x10-12	12½	TB20	20	—	
2x12	12" o.c.	NCA2x12-12	13⅝	TB20	20	—	
2x14	12" o.c.	NCA2x8-16	15¼	TB27	27	—	
2x16	12" o.c.	NCA2x10-16	15⅜	TB27	27	—	
2x8	16" o.c.	NCA2x8-16	15¼	TB27	27	LTB20 or 40	LTB = 7, 104, 121 TB = 3, 28, 39, 88, 104
2x10	16" o.c.	NCA2x10-16	15⅜	TB27	27	LTB20 or 40	
2x12	16" o.c.	NCA2x12-16	16⅞	TB27	27	—	3, 28, 39, 88, 104

Joist Size	Spacing	Model No.	L	Code Ref.
2x14, 2x16	16" o.c.	TB27	27	3, 28, 39, 88, 104
2x10 through 2x16	24" o.c.	TB36	36	

Space bridging to avoid contact noises.



For all bridging avoid contact between steel members (this may cause squeaks).



Typical TB Installation

WB/WBC/TWB/CWB/RCWB Wall Bracing

Simpson Wall Bracing products offer effective options to resist racking during construction. Additionally the RCWB, CWB and WB/WBC can be used to fulfill the same code bracing requirements as a 1x4 let-in brace, but are cost effective and faster to install. **Not designed to replace structural panel shearwall load-carrying component.**

The WBC (coiled WB) multiple product dispenser pack weighs less than 40 pounds, making storage and transportation easy. WB106C – 15 pieces per roll, WB126C – 12 pieces per roll, WB143C – 10 pieces per roll.

The RCWB features a rolled edge (the TWB has two rolled edges) for extra strength and safety.

MATERIAL: WB and WBC–16 gauge; CWB–18 gauge; TWB–22 gauge; RCWB–20 gauge

FINISH: Galvanized

INSTALLATION: • Use all specified fasteners. See General Notes.

WB and WBC: • Install in “X” pairs or in opposing “V” fashion.

• Use with 16” or 24” o.c. **2x4 (min.)** studs.

CWB, RCWB and TWB: • Use with 16” o.c. studs.

• **Use minimum of 2x4 studs with CWB and TWB.**

• **Use minimum of 2x6 studs with RCWB (2x4 min. for interior, non-bearing wall).**

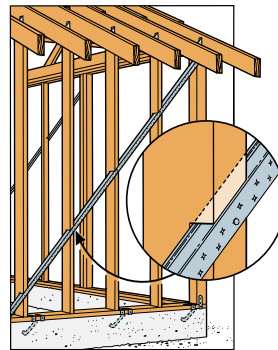
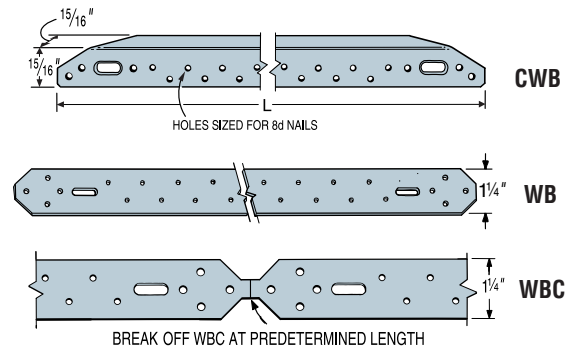
• Establish a run-line using the bracing as a straight edge. Single cut a saw kerf $\frac{5}{8}$ ” deep (TWB), $\frac{7}{8}$ ” deep (CWB) or $1\frac{1}{8}$ ” deep (RCWB) along the run line. If the wall is pre-framed on the floor, place the part into the saw kerf, and put one nail into the top plate. Tilt the wall up and plumb before nailing off top plate, bottom plate and studs according to the nailing schedule.

CODES: See page 12 for Code Listing Key Chart.

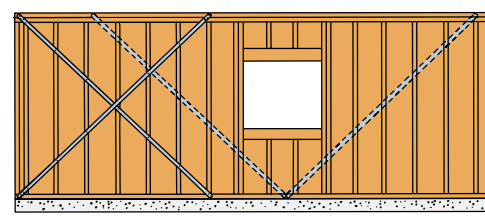
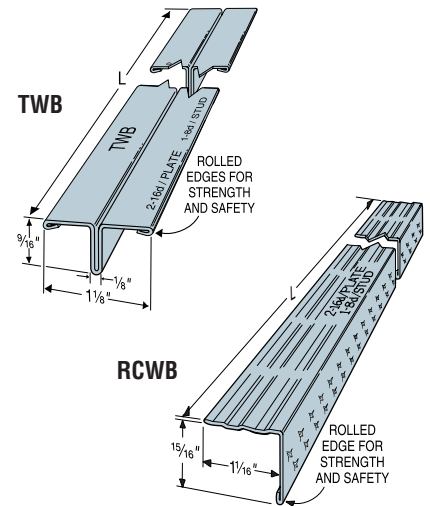
Model No.	L	Angle and Wall Size	Fasteners		Code Ref.
			Plates	Studs	
RCWB10	9'-9"	8' @ 55	2-16d	1-8d	5, 121
WB106	9'-5 $\frac{1}{2}$ "	8' @ 60	2-16d	1-8d	7, 121
WB106C	9'-6"	8' @ 60	2-16d	1-8d	7, 88, 121
CWB106	9'-5 $\frac{3}{4}$ "	8' @ 60	2-16d	1-8d	7, 90, 121
TWB10	9'-9"	8' @ 55	2-16d	1-8d	6, 86, 121
RCWB12	11'-4"	8' @ 45	2-16d	1-8d	5, 121
WB126	11'-4 $\frac{3}{8}$ "	8' @ 45	2-16d	1-8d	7, 121
WB126C	11'-4 $\frac{3}{4}$ "	8' @ 45	2-16d	1-8d	7, 88, 121
CWB126	11'-4 $\frac{3}{8}$ "	8' @ 45	2-16d	1-8d	7, 90, 121
TWB12	11'-4"	8' @ 45	2-16d	1-8d	6, 86, 121
RCWB12	11'-4"	9' @ 53	2-16d	1-8d	170
WB126	11'-4 $\frac{3}{8}$ "	9' @ 53	2-16d	1-8d	
WB126C	11'-4 $\frac{3}{4}$ "	9' @ 53	2-16d	1-8d	
CWB126	11'-4 $\frac{3}{8}$ "	9' @ 53	2-16d	1-8d	
TWB12	11'-4"	9' @ 53	2-16d	1-8d	6
WB143C	14'-3"	10' @ 45	2-16d	1-8d	7, 88, 121
RCWB14	14'-2"	10' @ 45	2-16d	1-8d	5, 121
TWB14	14'-2"	10' @ 45	2-16d	1-8d	6, 121

1. **NAILS:** 16d = 0.162" dia. x 3 $\frac{1}{2}$ " long, 8d = 0.131" dia. x 2 $\frac{1}{2}$ " long. See page 16-17 for other nail sizes and information.

For personal safety, install the CWB with sheared edges down.



Typical RCWB Installation



WB or WBC Wall Bracing “X” and “V” Applications

The WBC Handy Carry Carton is convenient to store, transport and use.

J/JP Floor Beam Levelers

Jack piers and standard floor beam levelers offer unique leveling simplicity during and after construction.

MATERIAL: 12 gauge plates, $\frac{3}{4}$ " threaded rod, $1\frac{1}{16}$ " O.D. steel pipe

FINISH: None. Connectors installed in damp areas, or corrosive environments that are not exposed to rain or periodic washing, will deteriorate at a faster rate. Corrosion-resistant finishes and maintenance can improve the connector's service life.

INSTALLATION: • Use all specified fasteners. See General Notes.

- Holes are provided for installation with 4-10d x $1\frac{1}{2}$ " nails.
- Do not use J/JPs for dynamic jacking of structures, such as houses.

CODES: See page 12 for Code Listing Key Chart.

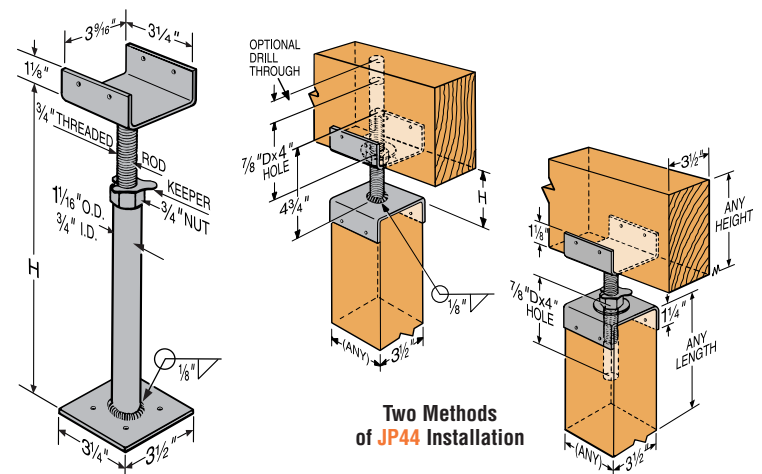
Model No.	Dimensions		Allowable Bearing Loads (100)	Code Ref.
	H (inches) (Min–Max)	Threaded Rod Length		
JP44	2-4	4 $\frac{3}{4}$	4440 ¹	3, 39, 88, 121
J57	5-7	4	4380	
J813	8-13	8	4380	

1. Consider allowable loads for 4x4 post.

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

3. **NAILS:** 10d x $1\frac{1}{2}$ " = 0.148" dia. x 1 $\frac{1}{2}$ " long.

See page 16-17 for other nail sizes and information.



Two Methods of JP44 Installation

J Floor Beam Leveler

DS Drywall Stop

Eliminates costly blocking at top plate, end walls, and corners. A typical residence will use several hundred of these inexpensive clips with a substantial savings in blocking and labor.

The installation prongs provide even more labor savings.

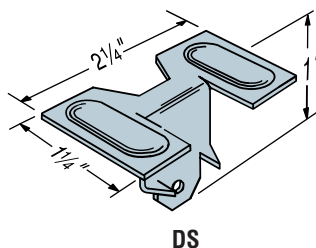
MATERIAL: 20 gauge

FINISH: Galvanized

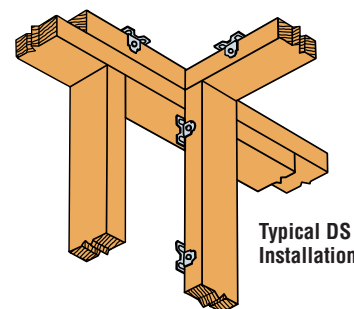
INSTALLATION:

- 16" on center or less, using 8d commons.
- DS should not be used where gypsum board is used for structural loads.

CODE: ICC NER-413, ICC-ER 5672.



DS



Typical DS Installation

BT Brick Ties

MATERIAL: 22 gauge

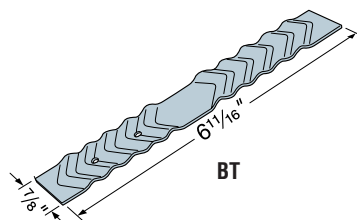
FINISH: Galvanized

INSTALLATION:

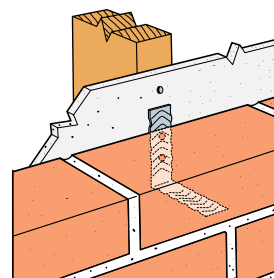
- Holes sized for 10d commons.
- See code for spacing requirements.

TO ORDER: BTB = Bulk - 500 per box

Code Reference: IRC 2003, R703.7.4



BT



Typical BT Installation

MP Mending Plates

Versatile and easy-to-use mending plates for wood-to-wood connections. No nails or notching of wood required. **For non-structural applications only; and not for truss applications.**

MATERIAL: 20 gauge. **FINISH:** Galvanized

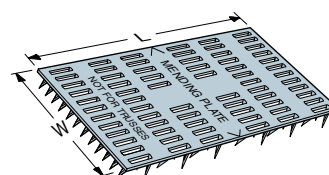
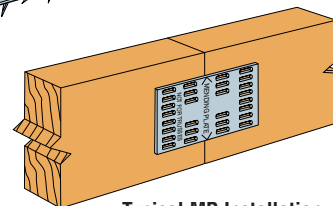
INSTALLATION: • Place plate over two pieces of aligned wood with arrows aligned at joint.

- Hammer the plate to embed the prongs.

CODES: See page 12 for Code Listing Key Chart.

Model No.	Dimensions		Code Ref.
	W	L	
MP14	1	4	180
MP24	2	4	
MP36	3	6	

1. Connectors are not load rated.

MP36
(other sizes similar)

Typical MP Installation

TP/TPA Tie Plates

TPs are nail-on tie plates. TPAs are flanged for added support.

MATERIAL: 20 gauge.

FINISH: Galvanized

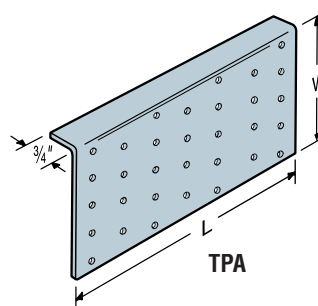
INSTALLATION:

- Holes are sized for 8d common or 8dx1 1/2" nails.

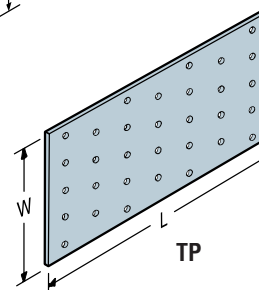
CODES: See page 12 for Code Listing Key Chart.

Model No.	Dimensions		Number of Nail Holes	Code Ref.
	W	L		
TP15	1 13/16	5	13	180
TPA37	3 1/2	7	32	
TPA39	3 1/2	9	41	
TP35	3 1/8	5	23	
TP37	3 1/8	7	32	
TP39	3 1/8	9	41	
TP311	3 1/8	11	50	
TP45	4 1/8	5	30	
TP47	4 1/8	7	42	
TP49	4 1/8	9	54	
TP411	4 1/8	11	66	
TP57	5 3/4	7	60	
TPA57	5	7	49	

1. Connectors are not load rated.



TPA



TP

The **Architectural Products Group** consists of aesthetically pleasing, pre-finished connectors and innovative concealed joist ties designed for exposed wood applications. These connectors provide structural performance and, at the same time, add a unique appearance feature to a project. Refer to Simpson's C-APG catalog.

• ARCHITECTURAL FINISHES

Eliminate time consuming prep work and costly field painting. Available finishes include textured powder-coated flat black paint, gray paint and hot dipped galvanized coating.

• OFF-THE-SHELF AVAILABILITY

Minimizes fabrication and ordering lead time since **select** products are pre-finished and in stock.

• PRE-ENGINEERED AND TESTED

Load-rated products are verified to perform to design loads, unlike custom designed and fabricated connectors.

• QUALITY ASSURANCE

No-Equal quality-controlled manufacturing ensures product consistency and high quality.



Products shown in this section come with textured powder-coated flat black paint unless otherwise noted. Most are also available with a galvanized finish or gray primer. Check factory for availability.

www.strongtie.com/apg

BP – BEARING PLATES

Bearing Plates give greater bearing surface than standard cut washers, and help distribute the load at these critical connections.

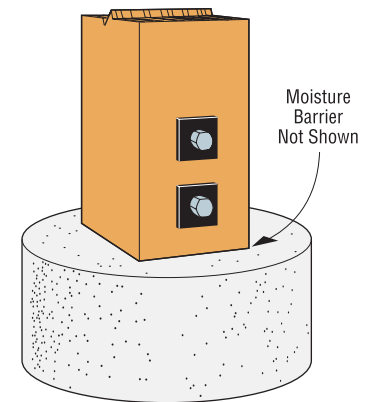
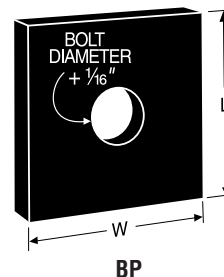
MATERIAL: See table

FINISH: Textured powder-coated flat black paint

INSTALLATION: See General Notes.

CODES: See page 12 for Code Listing Key Chart.

Model No.	Thickness	Dimensions		Bolt Dia.	Code Ref.
		W	L		
BP½PC	¾	2	2	½	97
BP¾-2PC	¾	2	2	⅝	190
BP¾PC	¼	2½	2½	⅝	97
BP¾PC	⅝	2¾	2¾	¾	
BP¾PC	¾	3	3	7/8	
BP1PC	¾	3½	3½	1	



Typical BP Installation

CUSTOM PLATES

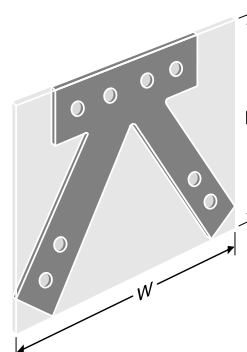
Simpson makes a variety of flat and bent steel shapes, which include gusset plates for heavy timber trusses, custom ornamental shapes and retaining plates.

MATERIAL: 3 gauge maximum

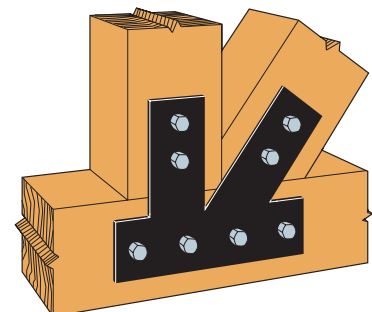
FINISH: Galvanized, textured powder-coated flat black, gray **paint**, stainless steel

TO ORDER:

- Supply a CAD drawing in DXF format with complete details of hole shapes, hole sizes, and hole patterns (approx. 1/16" tolerance), scale 1:1.
- Total plate shape and size up to max. dimensions of 48" x 48" (approx. 1/16" tolerance).
- Simpson does not provide product engineering or load values for Custom Steel Plates.
- Contact Simpson for pricing information.



"W" and "H" indicate the envelope size of the steel shape.



Typical Installation
(Plate shown has black powder coated finish)

ARCHITECTURAL PRODUCTS GROUP

RUSTIC COLLECTION

MATERIAL: As noted in tables

FINISH: Textured powder-coated flat black paint

INSTALLATION: • Use all specified fasteners. See General Notes.

CODES: See page 12 for Code Listing Key Chart.

Model No.	Ga	Dimensions		Fasteners		Allowable Loads ^{1,2}		Code Ref.
		W	L	Qty	Dia	(133)	(160)	
STRAP TIES								
OS	12	2	12	4	1/2	1305	1565	170
OHS	7	2½	12	4	5/8	1680	2015	
OHS135	7	6	13½	4	¾	4205	5045	
OHS195	7	6	19½	8	¾	8405	10085	

1. Allowable loads have been increased 33% and 60% for earthquake or wind loading with no further increase allowed; reduce where other loads govern.
2. OS and OHS loads are based on parallel-to-grain loading and a minimum member thickness of 3 1/2" with machine bolts in single shear. Straps must be centered about splice joint and bolt edge distances must meet NDS minimum requirements.

Model No.	Ga	Dimensions			Minimum Bolt End & Edge Distances		Bolts		Allowable Loads ^{1,2,3}		Code Ref.
									Tension/Uplift	F ₁	
		W	H	L	d ₁	d ₂	Qty	Dia	(100/133/160)	(100/133/160)	
OL	12	2	12	12	2	3½	5	½	1435	565	170
OHL	7	2½	12	12	2½	4⅝	5	⅝	1535	565	
OT	12	2	12	12	2	3½	6	½	2585	815	
OHT	7	2½	12	12	2½	4⅝	6	⅝	2585	815	

Model No.	Ga	Dimensions		Fasteners		Code Ref.
		W	L	Qty	Dia	
HEAVY ANGLES						
OHA33	7	3½	3	2	¾	180
OHA36	7	3½	6	4	¾	

2. Allowable loads are based on a minimum member thickness of 3 1/2".
3. OT, OHT loads assume a continuous beam.

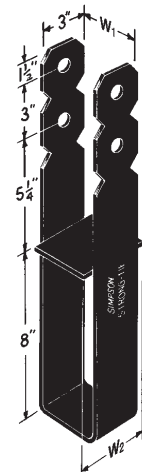
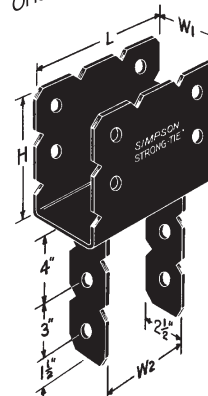
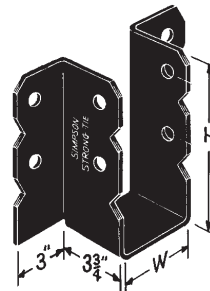
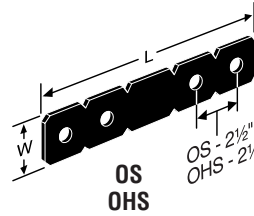
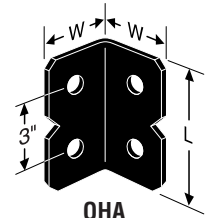
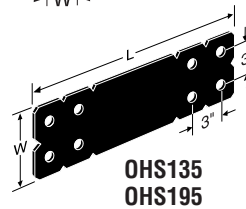
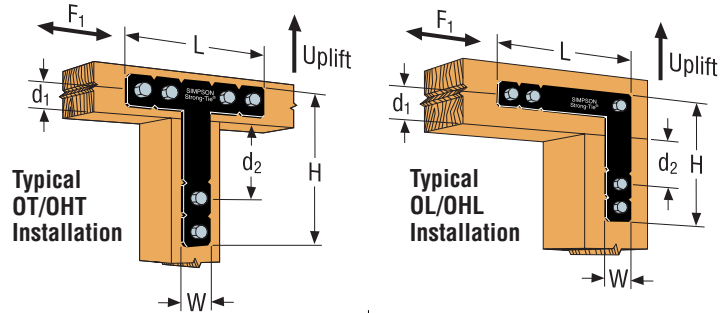
COLUMN BASES

Model No.	Ga	Dimensions		Bolts		Allowable Uplift Loads (133/160)	Code Ref.
		W ₁	W ₂	Qty	Dia		
OCB44	3	3 3/16	3 1/2	2	5/8	4200	2, 40, 82
OCB46	3	3 3/16	5 1/2	2	5/8	4200	
OCB48	3	3 3/16	7 1/2	2	5/8	4200	
OCB66	3	5 1/2	5 1/2	2	5/8	4200	
OCB68	3	5 1/2	7 1/2	2	5/8	4200	
OCB88	3	7 1/2	7 1/2	2	3/4	6650	
OCB810	3	7 1/2	9 1/2	2	3/4	6650	

COLUMN CAPS

Model No.	Ga	Dimensions				Bolts				Allowable Loads			Code Ref.
		W ₁	W ₂	L	H	Beam		Post		Uplift		Down	
						Qty	Dia	Qty	Dia	(133)	(160)	(100)	
OCC44	3	3 3/8	3 3/8	9	4 1/2	2	5/8	2	5/8	1220	1465	15310	20, 80
OCC46	3	3 3/8	5 1/2	12	7 1/2	4	5/8	2	5/8	2330	2800	24060	
OCC66	3	5 1/2	5 1/2	12	7 1/2	4	5/8	2	5/8	3365	4040	37810	
OCC68	3	5 1/2	7 1/2	12	7 1/2	4	5/8	2	5/8	3365	4040	37810	
OCC88	3	7 1/2	7 1/2	15	7 1/2	4	3/4	2	3/4	6200	7440	54600	

1. Uplift loads have been increased 33% and 60% for earthquake or wind loading and apply only to continuous beams; reduce for other loading conditions in accordance with code.
2. Downloads are determined by nominal sawn beam allowable bearing at 625psi on seat area; reduce where shear value of beam, end bearing value of post, L/R of post, or other criteria are limiting.
3. Post sides are assumed to lie in the same vertical plane as the beam sides.
4. For end conditions specify OECC.



OU (7 ga)

OCC (3 ga)

OCB (3 ga)

JOIST HANGERS

Model No.	Dimensions		Bolts		Allowable Loads ^{1,2}			Code Ref.
	W	H	Header	Joist	Uplift (133)	Floor (100)	Roof ² (125)	
OU46	3 3/16	5	2-3/4	1-3/4	685	1270	1590	170
OU48	3 3/16	7	4-3/4	2-3/4	1365	2545	3175	
OU410	3 3/16	9	4-3/4	2-3/4	1365	2545	3175	
OU412	3 3/16	11	6-3/4	3-3/4	2050	3815	4765	
OU414	3 3/16	13	6-3/4	3-3/4	2050	3815	4765	
OU68	5 1/2	7	4-3/4	2-3/4	1365	2545	3175	
OU610	5 1/2	9	4-3/4	2-3/4	1365	2545	3175	
OU612	5 1/2	11	6-3/4	3-3/4	2050	3815	4765	
OU614	5 1/2	13	6-3/4	3-3/4	2050	3815	4765	
OU810	7 1/2	9	4-3/4	2-3/4	1365	2545	3175	
OU812	7 1/2	11	6-3/4	3-3/4	2050	3815	4765	
OU814	7 1/2	13	6-3/4	3-3/4	2050	3815	4765	

1. Load values allowed assume a carrying member of not less than 3 1/2".
2. Roof loads are 125% of floor loads unless a limited by other criteria. Floor loads may be adjusted for other load durations according to the code provided they do not exceed those in the roof column.
3. Glulam beam sizes are available. Add an "X" to the name and specify width, i.e. OU68X, W = 5.25.

ARCHITECTURAL PRODUCTS GROUP

CLASSIC COLLECTION

MATERIAL: As noted in tables

FINISH: Textured powder-coated flat black paint

INSTALLATION: • Use all specified fasteners. See General Notes.

CODES: See page 12 for Code Listing Key Chart.

STRAP TIES

Model No.	Ga	Dimensions		Bolts		Allowable Tension Loads ^{1,2}		Code Ref.
		W	L	Qty	Dia	(133)	(160)	
HST2PC	7	2½	21¼	6	⅝	4350	5220	3, 39, 88, 121
HST5PC	7	5	21¼	12	⅝	8875	10650	
HST3PC	3	3	25½	6	¾	6400	7680	
HST6PC	3	6	25½	12	¾	12890	15470	
PS218PC	7	2	18	4	¾	4155	4990	180
PS418PC	7	4	18	4	¾	4190	5030	
PS720PC	7	6¾	20	8	½	3900	4685	

1. Allowable loads have been increased 33% and 60% for earthquake or wind loading with no further increase allowed; reduce where other loads govern.
2. Allowable loads are based on parallel-to-grain loading and a minimum member thickness of $3/2$ " with machine bolts in single shear. Straps must be centered about splice joint and bolt edge distances must meet NDS minimum requirements.
3. **Designer** must determine allowable loads when combining bolts parallel and perpendicular to grain.

Model No.	Ga	Dimensions			Minimum Bolt End & Edge Distances		Bolts		Allowable Loads ^{1,2}		Code Ref.
									Tension/Uplift	F ₁	
		W	H	L	d ₁	d ₂	Qty	Dia	(100/133/160)	(100/133/160)	
1212HLPC	7	2½	12	12	2½	4¾	5	⅝	1535	565	170
1616HLPC	7	2½	16	16	2½	4¾	5	⅝	1535	565	
1212HTPC	7	2½	12	12	2½	4¾	6	⅝	2585	815	
1616HTPC	7	2½	16	16	2½	4¾	6	⅝	2585	815	

1. 1212HL, 1616HL, 1212HT and 1616HT are to be installed in pairs with machine bolts in double shear. A single part with machine bolts in single shear is not load-rated.
2. Allowable loads are based on a minimum member thickness of 3½".
3. 1212HT, 1616HT loads assume a continuous beam.

COLUMN BASES

INSTALLATION: • Minimum side cover for full loads is 3" for CB's.

- Install with bottom of base flush with concrete.
- Post bases do not provide adequate resistance to prevent members from rotating about the base and therefore are not recommended for non top-supported installations (*such as fences or unbraced carports*).

Model No.	Ga	Dimensions		Bolts		Allowable Tension Loads	Code Ref.
		W ₁	W ₂	Qty	Dia	(133/160)	
CB44PC	7	3 ⁹ / ₁₆	3½	2	⅝	4200	2, 40, 82, 121
CB46PC	7	3 ⁹ / ₁₆	5½	2	⅝	4200	
CB48PC	7	3 ⁹ / ₁₆	7½	2	⅝	4200	
CB66PC	7	5½	5½	2	⅝	4200	
CB68PC	7	5½	7½	2	⅝	4200	
CB88PC	3	7½	7½	2	¾	6650	
CB810PC	3	7½	9½	2	¾	6650	

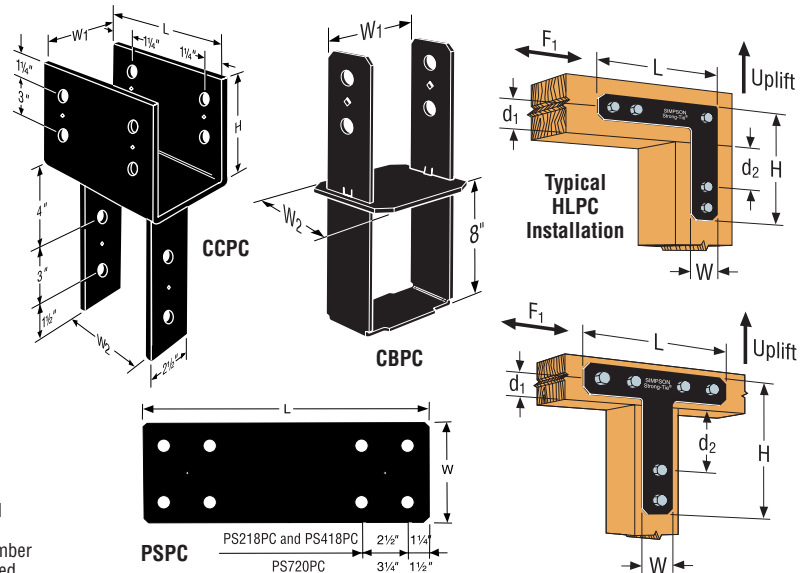
1. Allowable loads have been increased 33% and 60% for earthquake or wind loading. No further increase allowed; reduce where other loads govern.
2. See page 50 for glulam beam sizes. Add PC to the model, i.e. CB5-6PC

BEAM HANGERS

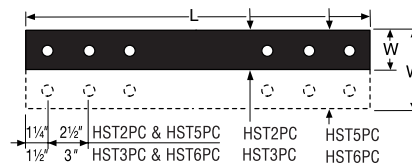
MATERIAL:
Top flange—7 ga,
Stirrups—7 ga.

Model No.	Dimensions			Bolts				Allowable Loads						Code Ref.
	W	Min. H	TF	Header		Joist		Without Top Flange		No Triangle Theory		Triangle Theory		
				Qty	Dia	Qty	Dia	(100)	(125)	(100)	(125)	(100)	(125)	
LEG3PC	3¼	9	2½	4	¾	2	¾	3465	4330	12675	13215	11865	12730	26, 83 124
LEG5PC	5¼	9	2½	4	¾	2	¾	3465	4330	16290	16290	11865	12730	
MEG5PC	5¼	9	2½	6	¾	2	¾	5170	6460	19710	19710	13570	14865	
LEG7PC	6⅞	9	2½	4	¾	2	¾	3465	4330	16290	16290	11865	12730	
MEG7PC	6⅞	9	2½	6	¾	2	¾	5170	6460	19710	19710	13570	14865	

1. Allowable loads assume a 5½" carrying member.
2. Specify desired height, minimum height listed in the table.
3. Glulam widths listed in table.
To specify other widths add an X to the name and specify.
4. See Glulam Connectors section of this catalog for additional information on these products.



Typical HTPC Installation
(1616HTPC does not have chamfered corners)

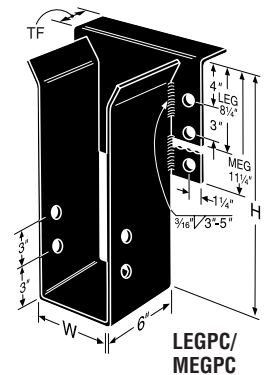


COLUMN CAPS

INSTALLATION: • Bolt holes shall be a minimum of $\frac{1}{32}$ " to a maximum of $\frac{1}{16}$ " larger than the specified bolt's diameter (*2001 NDS, Section 11.1.2*).

Model No.	Ga	Dimensions				Bolts				Allowable Tension Loads			Code Ref.
						Beam		Post		Uplift		Down	
		W ₁	W ₂	L	H	Qty	Dia	Qty	Dia	(133)	(160)	(100)	
CC44PC	7	3½	3¾	7	4	2	⅝	2	⅝	1220	1465	15310	20, 80, 124
CC46PC	7	3½	5½	11	6½	4	⅝	2	⅝	2330	2800	24060	
CC66PC	7	5½	5½	11	6½	4	⅝	2	⅝	3365	4040	37810	
CC68PC	7	5½	7½	11	6½	4	⅝	2	⅝	3365	4040	37810	
CC88PC	3	7½	7½	13	8	4	¾	2	¾	6200	7440	54600	

1. Allowable loads have been increased 33% and 60% for earthquake or wind loading. No further increase allowed; reduce where other loads govern.
2. Post sides are assumed to lie in the same vertical plane as the beam sides.
3. Downloads are determined using F_c perpendicular equal to 625 psi on seat area; reduce where end bearing value of post, L/R of post, or other criteria are limiting.
4. See pages 54 and 55 for glulam beam sizes and end conditions. Add PC to the model, i.e. CC3¼-4PC.



**LEGPC/
MEGPC**

ARCHITECTURAL PRODUCTS GROUP

CONCEALED JOIST TIES

The **CJT** is a concealed connector. It can be installed three ways: with no routing of header/post or beam; a routed header/post, or a routed beam.

MATERIAL: 12 gauge. **FINISH:** Galvanized

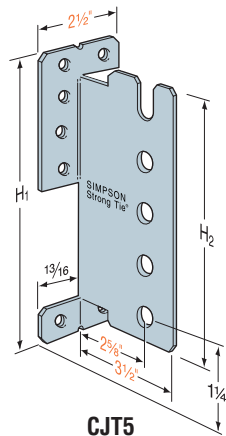
INSTALLATION: • Use all specified fasteners.

See General Notes.

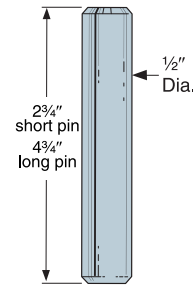
- The CJT Pack is supplied with all pins and screws required. Screws require a **hex head** driver.
- **Router end of beam for screw heads for flush installation.**
- The joist/beam may be sloped to 45° with full table loads.
- **To provide maximum beam width for use with short pins, center in beam.**
- Request F-CJT flier for installation instructions and ordering information.

OPTIONS: See Technical Bulletin T-CJT.

CODES: See page 12 for Code Listing Key Chart.



CJT5
(others similar)



Chamfered Steel Pin (Galvanized)

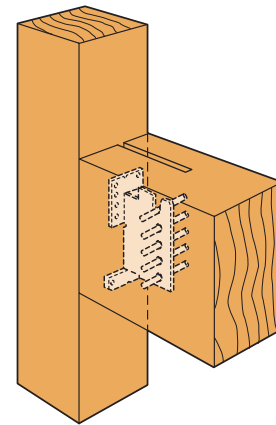
WARNING: Take special care installing this connector. The beam must be installed perpendicular to the support member. The connection's components may be damaged if the beam is rotated from its opposite end during or after installation. Damaged components may not be noticeable and may reduce the connector's load carrying capacity.

Model No.	Min. Joist Size	Dimensions		Fasteners		Allowable Loads				Code Ref.
		H ₁	H ₂	SDS	Pins (2¾" or 3¾") ²	Uplift (133)	Floor (100)	Snow (115)	Roof (125)	
DOUGLAS-FIR										
CJT3	4x8	5⅞	4⅞	6	3	1655	1050	1050	1050	35, 126
CJT4	4x10	7	5⅞	8	4	2460	2440	2805	2815	
CJT5	4x12	8⅞	7⅞	10	5	3255	3005	3455	3755	
CJT6	4x12	10	8⅞	12	6	4005	3535	3990	3990	
GLULAM BEAM										
CJT3	3⅝x7½	5⅞	4⅞	6	3	1655	1240	1240	1240	35, 126
CJT4	3⅝x9	7	5⅞	8	4	2460	2440	2805	2900	
CJT5	3⅝x10½	8⅞	7⅞	10	5	3255	3005	3455	3755	
CJT6	3⅝x12	10	8⅞	12	6	4005	3535	4065	4420	
PSL										
CJT3	3½x9½	5⅞	4⅞	6	3	1655	1840	2115	2160	35, 126
CJT4	3½x9½	7	5⅞	8	4	2460	2145	2145	2145	
CJT5	3½x9½	8⅞	7⅞	10	5	3255	3005	3455	3755	
CJT6	3½x11⅞	10	8⅞	12	6	4005	3535	4065	4420	

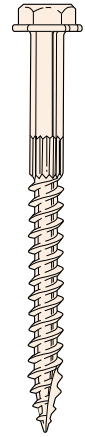
1. Center pin in beam. Short pin (2 3/4") for use with 3 1/8" GLB, 4x sawn lumber or 3 1/2" wide PSL.

Long pin (4 3/4") for use with 5 1/8" GLB, 6x sawn lumber or greater widths.

2. See T-CJT for additional load information with long pins.



Typical CJT Installation
(Note that pins should be centered within beam)



SDS 1/4x3
U.S. Patent
6,109,850

ORNAMENTAL – JOIST HANGER

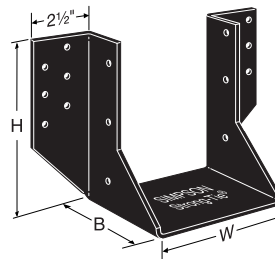
The **OHU** Ornamental Joist Hangers are heavy duty, load-rated joist hangers that are attached with Simpson 1/4x3 SDS yellow zinc finish wood screws (supplied with product).

MATERIAL: 12 gauge

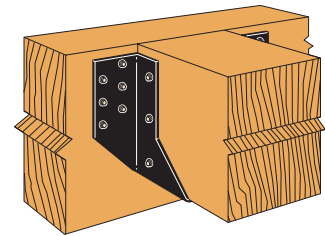
FINISH: Textured powder-coated flat black paint.

OPTIONS: No modifications.

CODES: See page 12 for Code Listing Key Chart.



OHU



Typical OHU Installation

Model No.	Joist Size	Ga	W	H	B	No. of SDS 1/4x3 Wood Screws		Douglas Fir					Spruce Pine Fir					Code Ref.
						Face	Joist	Uplift (133)	Uplift (160)	Floor (100)	Snow (115)	Roof (125)	Uplift (133)	Uplift (160)	Floor (100)	Snow (115)	Roof (125)	
OHU46-SDS3	4x6	12	3 9/16	5	4	6	4	1535	1535	1840	2120	2305	1290	1290	1585	1820	1980	170
OHU48-SDS3	4x8	12	3 9/16	6 3/4	4	8	6	1535	1535	2455	2675	2675	1290	1290	2110	2245	2245	
OHU410-SDS3	4x10	12	3 9/16	8 3/4	4	12	6	2455	2525	3685	4235	4605	2110	2120	3170	3645	3960	
OHU412-SDS3	4x12	12	3 9/16	10 3/4	4	12	8	2525	2525	3685	4235	4605	2120	2120	3170	3645	3960	
OHU414-SDS3	4x14	12	3 9/16	12 3/4	4	14	10	2525	2525	4300	4945	5375	2120	2120	3695	4250	4620	
OHU66-SDS3	6x6	12	5 1/2	5	4	6	4	1535	1535	1840	2120	2305	1290	1290	1585	1820	1980	
OHU68-SDS3	6x8	12	5 1/2	7	4	12	6	2455	2525	3685	4235	4605	2110	2120	3170	3645	3960	
OHU610-SDS3	6x10	12	5 1/2	9	4	14	6	2455	2525	4300	4945	5375	2110	2120	3695	4250	4620	
OHU612-SDS3	6x12	12	5 1/2	11	4	16	8	2525	2525	4910	5630	5630	2120	2120	4225	4730	4730	
OHU614-SDS3	6x14	12	5 1/2	13	4	18	10	3950	3950	5525	6355	6860	3320	3320	4750	5465	5765	

1. Allowable loads have been increased 33% and 60% for earthquake or wind loading with no further increase allowed; reduce where other loads govern.

ARCHITECTURAL PRODUCTS GROUP

STANDOFF BASES

The **PBV** is a hidden standoff post base. Two different sizes fit a variety of posts shapes.

MATERIAL: 14 gauge galvanized steel

FINISH: Textured powder-coated flat black paint or galvanized

ORDER: For powder coated finished, order **PBV6PC** or **PBV10PC**. For galvanized finish order **PBV6** or **PBV10**. For kit containing **SDS screws**, **RFB bolt**, **SET 1.7**, and powder coated **PBV**, order **PBV6KT** or **PBV10KT**.

The **CPS** is a Composite Plastic Standoff designed for increased concrete surface area.

MATERIAL: Engineered composite plastic

INSTALLATION: PBV and CPS

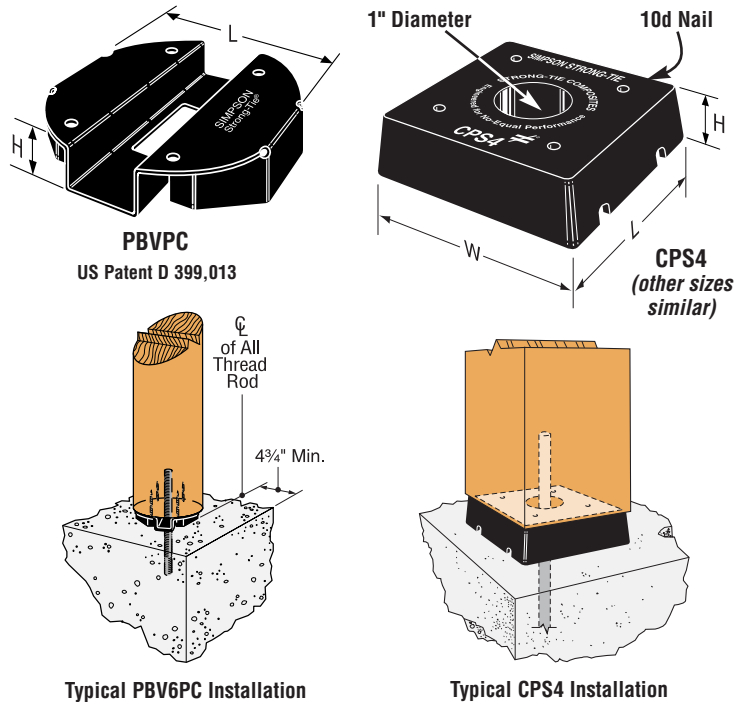
Post:

- Drill a $\frac{3}{4}$ " diameter hole, 10" into the center of the post.
- Clean out dust. Fill hole halfway with Simpson SET epoxy.
- Insert all-thread rod and allow epoxy to set and cure.
- Secure standoff to post using four 10d nails except PBV which uses four SDS screws.

Concrete:

- Drill a $\frac{3}{4}$ " diameter hole per anchor design (see footnote 2 below).
- Clean out dust. Fill hole halfway with Simpson SET epoxy. Insert post subassembly into hole and allow epoxy to set and cure.

CODES: See page 12 for Code Listing Key Chart.



Model No.	Post or Column Size	Dimensions			Fasteners		Allowable Loads		Code Ref
		L	W	H	Post	Anchor Bolt	Uplift	Down ³	
CPS4	4x4	3 1/4	3 1/4	1	4-10d	5/8"	4490	5195	170
CPS46	4x6	5 5/16	3 5/16	1	4-10d	5/8"	4490	5865	
CPS5	5x5	4 1/8	4 1/8	1	4-10d	5/8"	4490	5865	
CPS6	6x6	5 5/16	5 5/16	1	4-10d	5/8"	4490	7745	
CPS7	8x8	7 1/4	7 1/4	1 1/4	4-10d	5/8"	4490	8315	
PBV6PC	6" Dia	5 1/4	—	1	4-SDS 1/4X3	5/8"	3800	9250	
PBV10PC	10" Dia	9 3/16	—	1	4-SDS 1/4X3	5/8"	3800	19225	9

1. Allowable uplift load capacities are for solid sawn posts with specific gravity of 0.36 minimum except the PBV, which is based on round "Viga" (*Ponderosa Pine*) wood posts.
2. All allowable uplift loads are based on a lowest ultimate load from testing divided by a reduction factor of 4. Concrete anchorage to be designed by others, refer to Simpson Strong-Tie Anchor Systems catalog. Allowable uplift capacities shall not exceed those shown in the table.
3. Download capacities are calculated based on the standoff bearing area and a concrete strength of 2500 psi except the PBV, which is based on the wood bearing strength (700 psi for *Ponderosa Pine*).
4. Allowable loads may not be increased for short term loading.
5. **NAILS:** 10d = 0.148" dia. x 3" long.
See page 16-17 for other nail sizes and information.

HL – HEAVY ANGLES & GUSSETS

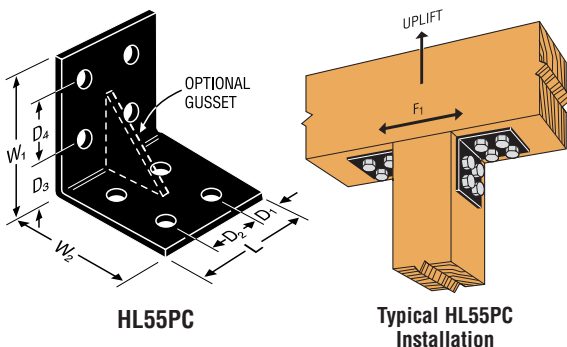
Versatile angle gussets and heavy angles promote standardization and construction economy, and are compatible with Strong-Tie structural hardware.

FINISH: Textured powder-coated flat black paint, **gray paint** or galvanized

TO ORDER: All products with **PC** suffix are textured powder coated flat black paint. 7 gauge products without the **PC** suffix are galvanized. 3 gauge products without the **PC** suffix are gray paint.

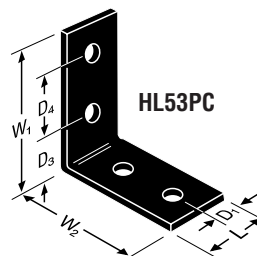
OPTIONS: Gussets may be added to HL models when $L \geq 5"$. Specify G after numbers in model number as in HL46GPC.

CODES: See page 12 for Code Listing Key Chart.



Available with additional corrosion protection. Check with factory.

	Model No.	Ga	Dimensions						Bolts (Total)		Allowable Loads ^{1,2,3,4}		Code Ref
			W ₁ & W ₂	L	D ₁	D ₂	D ₃	D ₄	Qty	Dia	Uplift ⁵	F ₁	
▶	HL33PC	7	3¼	2½	1¼	—	2	—	2	½	910	1580	170
▶	HL35PC	7	3¼	5	1¼	2½	2	—	4	½	910	1580	
▶	HL37PC	7	3¼	7½	1¼	2½	2	—	6	½	910	1580	
▶	HL53PC	7	5¾	2½	1¼	—	2	2½	4	½	910	1580	
▶	HL55PC	7	5¾	5	1¼	2½	2	2½	8	½	910	1580	
▶	HL57PC	7	5¾	7½	1¼	2½	2	2½	12	½	910	1580	
▶	HL43PC	3	4¼	3	1½	—	2¾	—	2	¾	1555	1580	
▶	HL46PC	3	4¼	6	1½	3	2¾	—	4	¾	1555	2025	
▶	HL49PC	3	4¼	9	1½	3	2¾	—	6	¾	1555	2025	
▶	HL73PC	3	7¼	3	1½	—	2¾	3	4	¾	1555	2025	
▶	HL76PC	3	7¼	6	1½	3	2¾	3	8	¾	2115	3800	
▶	HL79PC	3	7¼	9	1½	3	2¾	3	12	¾	2115	3800	



1. Allowable loads have been increased 33% and 60% for earthquake or wind loading. No further increase allowed; reduce where other loads govern.
2. Use 0.85 times table load for Hem Fir.
3. Parts should be centered on the face of the member to which they are attached.
4. Wood members for the '3' and '5' series must have a minimum width and thickness of 3 1/2" for table loads to apply.
5. Wood members for the '4' and '7' series must have a minimum width and thickness of 5 1/8" for table loads to apply.
6. For Uplift loads, parts must be used in pairs. Lag bolts of equal diameter (minimum 5" long) may be substituted for machine bolts into beam with no reduction in load.

HANGER OPTIONS MATRIX

BASE MODEL SERIES	SKWELED SEAT (MAXIMUM) 	SLOPED SEAT (MAXIMUM) 	SKWELED & SLOPED SEAT 	SLOPED TOP FLANGE 	OPEN TOP FLANGE 	CLOSED TOP FLANGE 	OFFSET TOP FLANGE 	SADDLE HANGER 	RIDGE HANGER 	CONCEALED FLANGE 	UPLIFT 	WELDABILITY 	NON-BACKED (Backing reduces possible hanger rotation) 	BEVEL CUT JOIST 	SQUARE (BUTT) CUT JOIST 
B	45°	45°	•	•	•	•		•			•	•	•	•	
EG	45°	45°													•
GB		45°						•			•	•		•	
GH	45°							•						•	
GLS	50°	45°	•	•			•	•			•	•			
GLT/GLTV	50°	45°	•	•			•				•	•	•	•	
HB	45°	45°	•	•	•	•		•			•	•	•	•	
HGB		45°						•			•	•		•	
HGLS	50°	45°		•			•	•			•	•			
HGLT/HGLTV	50°	45°		•			•				•	•	•	•	
HGUS	45°													•	•
HHB		45°						•			•	•		•	
HHUS	45°	45°	•								•			•	
HSUR/L ^{1,8}	45°									• ⁸	•			•	•
HTU											•				•
HU ⁷	67½°	45°	•							•	•	•		•	•
HUS										• ⁶	•				
HUSTF										•					
HUTF ^{5,7}	45°	45°	•							•	•			•	•
HW/HW ³	84°	45°	•	•	•		•	•	•			•	•	•	•
HWU ⁴	45°	45°	•								•			•	
LBV ²	45°	45°	•	•	•	•		•			•	•	•	•	
LEG	45°	45°					•							•	
LSU/LSSU	45°	45°	•								•				•
LTHJR/L	67½°	45°	•												•
MBHA	45°														•
MEG	45°	45°					•							•	
MSC	45°	45°	•									•			•
SUR/L ^{1,8}	45°									• ⁸	•			•	•
THASR/L	84°														•
THGB/THGBH	45°	45°													•
U ⁷	67½°	45°	•								•			•	•
W/W ³	84°	45°	•	•	•	•	•	•	•			•	•	•	•
WM/WMI	45°	45°	•				•							•	
WNP/WP/WPI ³	84°	45°	•	•	•	•	•	•	•			•	•	•	•
WPU/WNPU ⁴	45°	45°	•								•	•		•	

NOTE: No uplift loads are allowed for welded header attachments.

- Available in 45° only.
- JB/LB cannot be modified, use LBV.
- Available in bevel cut or square cut joist.
- HWU, WPU and WNPU cannot be skewed when the hanger width is greater than 3½".
- Slope and skew combination is for down slope only.
- Refer to page 63 for loads.
- For U and HU type hangers, bevel or square cut available up to 50°. Greater than 50° square cut required.
- Available on double 2x and 4x models only (only with acute flange concealed).

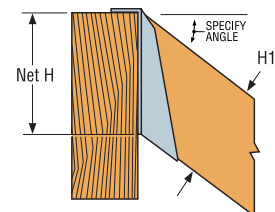
HEIGHT FOR SLOPED HANGERS:

Height 1 (H1) is the joist height before the slope cut has been made.

Net Height (Net H) is the joist height after the slope cut has been made.

Provide **H1** when ordering a connector. Connectors are made assuming dry lumber is being used in continuously dry conditions.

Simpson Strong-Tie will calculate the **Net H** dimension based on the mathematical formula of $H1/\cos$ angle.



HANGER OPTIONS GENERAL NOTES

This information applies only to the hangers manufactured by Simpson Strong-Tie and installed per our instructions. **Some combinations of these options on a single hanger have not been evaluated. In some cases, combinations of these options cannot be manufactured. A qualified designer must always evaluate each connection, including header and joist limitations, before specifying the product.**

Testing is performed using a standardized hanger test method. The joist in the test setup may include the minimum amount of structural stability where appropriate. For example, the sloped down hanger tests are assembled with a joist cut on the lower end to lie flush with a wood member attached with three 8d common toenails. Header and other attached structural members are assumed fixed in actual installations. Horizontal loads induced by sloped joists must be resisted by other members in the structural system.

MATERIAL: Gauge may vary from that specified depending on the manufacturing process used. U, HU, HUTF, W and B hangers normally have single-piece stirrups; occasionally, the seat may be welded. Hanger configurations, height and fastener schedules may vary from the tables depending on the joist size, skew and slope.

FINISH: See specific hanger tables. Welded specials: Simpson gray paint. Specials that are not galvanized before fabrication can be hot-dip galvanized after fabrication; specify HDG.

CODES: Modified hangers, due to their numerous variations, are not on code reports, except U/HU (NER-499).

LOADS: For multiple options on the same connector, use the smallest reduction factor to give the lowest design loads.

TO ORDER: Use the abbreviations below to order specials. The example shows a W410 hanger and illustrates most available options; most special hangers have only a few of these features.

INSTALLATION: • Fastener quantities may be increased beyond the amount specified in the standard hanger table.

• Fill all holes with the table-specified fastener types.

• N54A fasteners are supplied with hangers.

• B, W and GLT hangers for sloped seat installations are assumed backed.

To order a custom, non-backed hanger, contact factory.

• Bevel-cut the wood member's end for skewed type A hangers; butt-cut wood members for skewed type B hangers.

W410 X	SLD30	SKL20	TFDL20	TFO20	OSR
Base Model	D = Seat Sloped Down (30°) (U = Seat Up)	L = Skewed Left (20°) (R = Skewed Right)	Top Flange Down Left (20°)	TF = Top Flange Open (20°)	Offset Top Flange Right (OSL = Offset Top Flange Left)

X = Modification

HHUS/HHUS

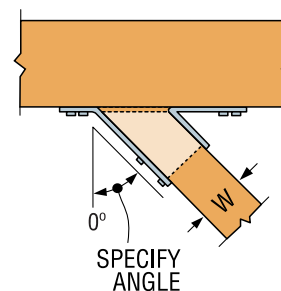
See Hanger Options General Notes.

SLOPED AND/OR SKEWED SEAT

- HHUS hangers can be skewed to a maximum of 45° and/or sloped to a maximum of 45°.
- HHUS skew only, maximum allowable download is 0.85 of the table load.
- For sloped only or sloped and skewed hangers, the maximum allowable download is 0.65 for HHUS.
- Not all slope and skew combinations are available; consult the factory for information.
- The joist must be bevel-cut to allow for double shear nailing.
- Uplift loads for sloped/skewed conditions are 0.72 of the table load, not to exceed 2475 lbs for HHUS hangers.

HHUS hangers can be skewed only to a maximum of 45°. Allowable loads are:

Models	Down Load	Uplift
W < 2" bevel or square	0.62 of table load	0.46 of table load
2" < W < 6" beveled	0.67 of table load	0.41 of table load
2" < W < 6" square cut	0.46 of table load	0.41 of table load
W > 6" bevel or square	0.40 of table load	0.41 of table load



Top View HHUS Hanger Skewed Right
(joist must be bevel cut)
All joist nails installed on the outside angle.

LEG/MEG/EG

See Hanger Options General Notes.

SKEWED SEAT — TOP FLANGE MODELS ONLY

- The LEG/MEG/EG series can be skewed up to 45°. The maximum allowable load is 10,000 lbs. for LEG and MEG, 14,250 lbs. for EG.

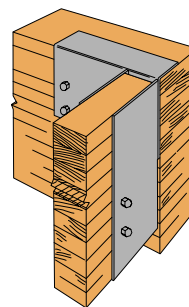
SLOPED SEAT — TOP FLANGE MODELS ONLY

- The LEG/MEG/EG series can be sloped up to 45°. The maximum allowable load is 9665 lbs; see illustration.

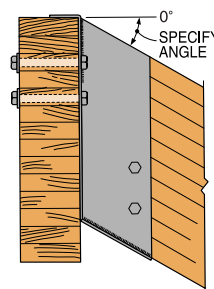
NO SLOPED AND SKEWED COMBO AVAILABLE.

OFFSET TOP FLANGE

- The LEG/MEG (only) top flange may be offset left or right for placement at the end of a header (see illustration). The maximum allowable load is 5665 lbs. (Min. H = 11" for MEG, 9" for LEG)
- No skews allowed on offset hangers.



Typical LEG/MEG
Top Flange Offset Left



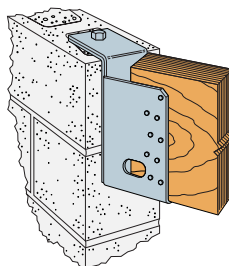
Typical LEG
Sloped Down Installation
(MEG/EG similar)

MBHA

See Hanger Options General Notes.

SKEWED SEAT

- Seat can be skewed at 45° only. The maximum allowable download is 3495 lbs and 1585 lbs uplift for Height 7¼". For all other models, use the table listed download and uplift of 2390 lbs.



Typical MBHA
Skewed Right
Installation

HANGER OPTIONS

W/WI/WNP/WP/WPI/HW/HWI

See Hanger Options General Notes.

INSTALLATION: • Some models are available in Type A (*Bevel Cut*) and Type B (*Butt Cut*) styles; all models are available in Type B style.

Check factory when ordering.

- **Bevel-cut the joist for skewed Type A hangers (see illustration). Butt-cut the joist for Type B hangers.**
- Hangers with a skew greater than 15° may have all the joist nails on the outside angle.
- Skewed HWs have face nails and require a minimum header depth of 3½".

HANGER HEIGHT

- For hanger heights exceeding the joist height by more than ½", the allowable load is 0.50 of the table load.

SLOPED AND/OR SKEWED SEAT

- Non-skewed hangers can carry the design load when the seat slope is within ¼:12 of the joist slope. Designer must check that wood bearing is not limiting.
- W/WNP/WP/HW series may be skewed to a maximum of 84° and/or sloped to a maximum of 45°.
- For slope only, skew only, or slope and skew combinations, the allowable load is 100% of the table load.

UPLIFT LOADS (*limited options are available for uplift hangers—check the Hanger Options Matrix*)

- Hangers can be sloped to 45° and/or skewed 45° at 100% of the uplift load.
- **Skew option is only on hangers with "W" 3⅞" or less.**
- For skews greater than 45° there is no uplift load.
- Specify the slope up or down in degrees from the horizontal plane and/or the skew right or left in degrees from the perpendicular vertical plane. Specify whether low side, high side or center of joist will be flush with the top of the header (see illustration).
- **Uplift loads are not available for open/closed TF, TF sloped, and offset options.**

SLOPED TOP FLANGE

- A top flange may be ordered sloped down left or down right to 35° with or without a sloped and/or skewed seat (see illustration). Reduce allowable table loads using straight-line interpolation (see open/closed top flange).

OFFSET TOP FLANGE

- The top flange may be offset left or right for placement at the end of a header (see illustration). The allowable load is 0.50 of the table load.
- For skewed and offset top flange hangers, the maximum allowable load is 0.50 of the table load or 2000 lbs., whichever is lower.

OPEN/CLOSED TOP FLANGE

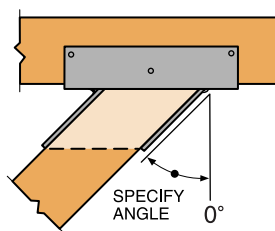
- The top flange may be opened more or closed less than the standard 90° (see illustration) to a maximum of 30°, except the HW which cannot be closed. Reduce allowable loads using straight-line interpolation.
- Example: For a top flange open 30°, reduce load to [(90-30)/90] x table load.

SADDLE HANGER

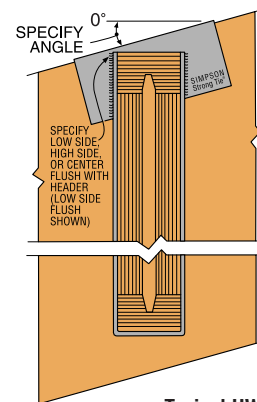
- To order, add D to model and specify S dimension (see illustration).

RIDGE HANGER (*not available for uplift models*)

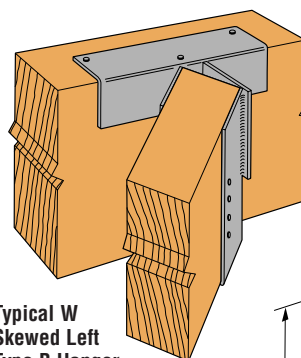
- Top flange may be sloped to a maximum of 35° to accommodate a ridge (see illustration). Specify angle of the slope. Reduce allowable load using straight-line interpolation. See Open/Closed example.



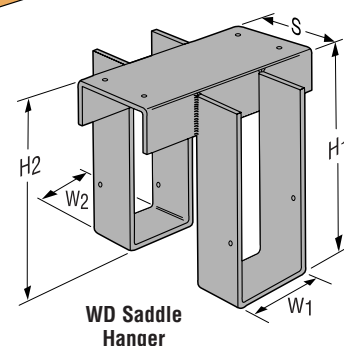
Typical W Top View
Skewed Left Type A Hanger
(Bevel Cut Joist Shown)



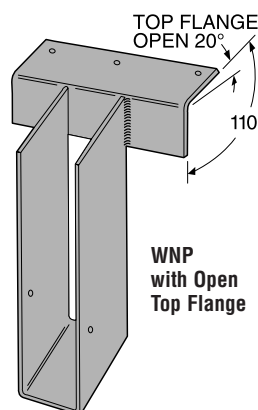
Typical HW
Top Flange Sloped Down
Left with Low Side Flush



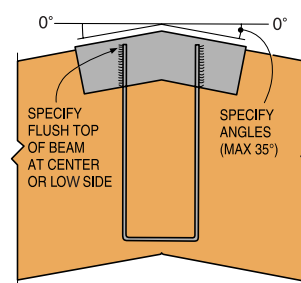
Typical W
Skewed Left
Type B Hanger
(Square Cut Joist Shown)



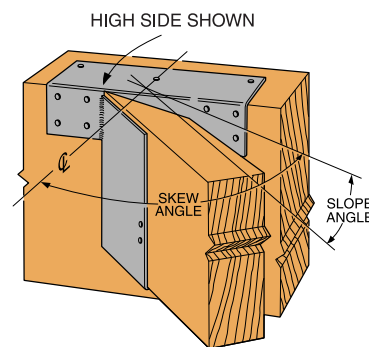
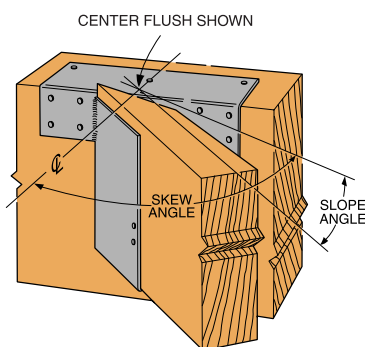
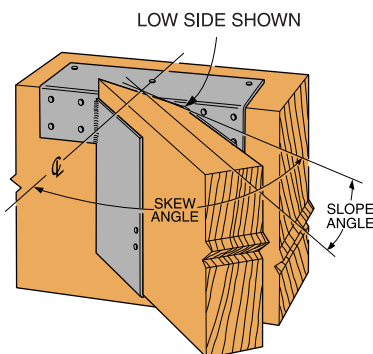
WD Saddle
Hanger



WNP
with Open
Top Flange



Typical W Ridge Installation



Typical HW Sloped Down, Skewed Right with Type A Hanger (Joist end must be bevel cut)
When ordering, specify Low Side Flush, Center Flush or High Side Flush

HANGER OPTIONS

WM/WMI/WMU

See Hanger Options General Notes.

INSTALLATION: • Bevel-cut the joist for skewed hangers (see illustration).

HANGER HEIGHT

- For hanger heights exceeding the joist height, the allowable load is 0.50 of the table load.

SLOPED AND/OR SKEWED SEAT

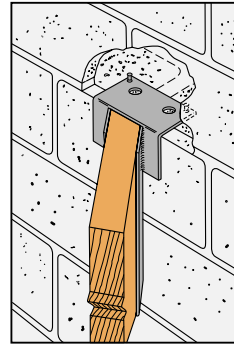
- WM/WMI may be skewed and/or sloped to 45° maximum.
- The allowable load is 100% of the table load.

OFFSET TOP FLANGE

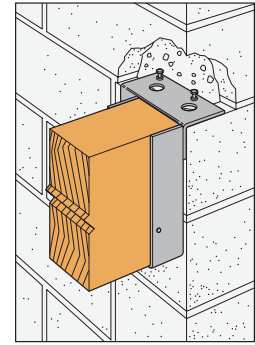
- The top flange may be offset left or right for placement at the end of a header. The allowable load is 0.50 of the table roof load.

UPLIFT

- No modifications on WMU.



Typical WM Sloped Down,
Skewed Right Block Wall Installation



Typical WM
Top Flange Offset Left

U/HU

See Hanger Options General Notes.

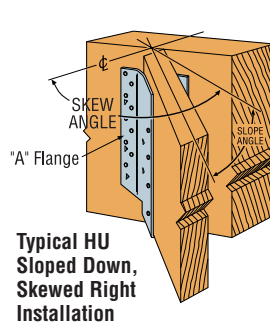
Not all Slope and Skew Combinations are available.

SLOPED AND/OR SKEWED

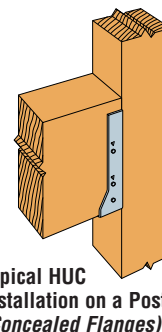
- For low-cost, code-reported 45° skews, see SUR/SUL and HSUR/HSUL. See also LSU/LSSU connectors.
- U/HU may be skewed to a maximum of 67½° and sloped to a maximum of 45°. Hangers skewed 51°-67½° require a square cut.
- For all options, uplift loads are 0.75 of table loads.
- For combined slopes and skews, the maximum allowable download is 0.80 of the table load.
- For slope only or skew only, the allowable download is 100% of the table load.

STRAIGHT OR CONCEALED FLANGE

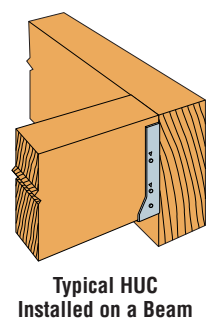
- HU is available with the A flanges straight at 100% of the table loads if $W \geq 3\frac{1}{2}"$.
- If $W < 3"$, use N10 nails at 0.64 of the table load.
- If $W \geq 3"$, use 10d nails at 0.84 of the table load.
- HU is available with A flanges concealed, provided the W dimension is $2\frac{9}{16}"$ or greater, at 100% of the table load. Specify HUC.
- HU is available with one flange concealed when the W dimension is less than $2\frac{9}{16}"$ at 100% of the table load.
- For skewed only HUC hangers, the flange on the acute side can be concealed at 100% of the table load. **See table for skew limitations.**
- For sloped only hangers, flanges can be concealed at 100% of the table load.
- For sloped and skewed hangers, the flange on the acute side can be concealed at 0.80 of the table load. **Consult the factory for skew limitations.**
- When nailing into the carrying member's end grain, the allowable load is 0.67 of the table load.
- For welding see Technical Bulletin T-HUHUC-W.



Typical HU
Sloped Down,
Skewed Right
Installation



Typical HUC
Installation on a Post
(Concealed Flanges)

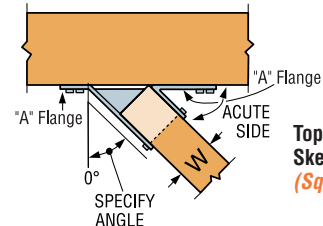


Typical HUC
Installed on a Beam

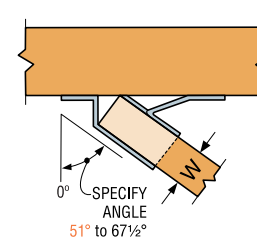
Maximum Skew Degree
for Skewed HUC Hangers

Hanger Width	Maximum Skew
$2\frac{5}{16}"$	26°
$2\frac{3}{8}"$	26°
$2\frac{9}{16}"$	29°
$2\frac{3}{4}"$	29°
$3\frac{1}{8}"$	37°
$3\frac{1}{4}"$	38°
$3\frac{5}{16}"$	39°
$3\frac{9}{16}"$	42°

1. Widths greater than $3\frac{9}{16}"$ maximum skew is 45°.



Top View U Hanger
Skewed Right > 51°
(Square Cut)



Top View U Hanger
Skewed Right > 50°
(Square Cut)

HUTF

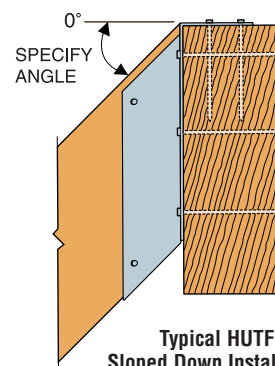
See Hanger Options General Notes.

SLOPED AND/OR SKEWED SEAT

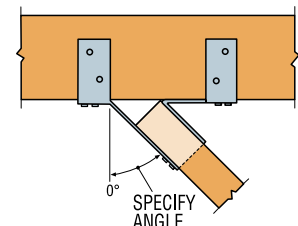
- HUTF can be skewed to a maximum of 45° or sloped to a maximum of 45°. HUTF can be skewed and sloped down only, provided $W \geq 2\frac{3}{8}"$. Hangers with a skew greater than 15° may have all the joist nailing on the outside angle. No skew with slope up options available.
- For the skewed-only HU34TF, HU24-2TF and HU44TF, the allowable loads are 0.50 of the table load. All other models have a maximum allowable load of 0.60 of the table loads.
- For skews greater than 15°, uplift loads are 0.75 of the table loads.
- For sloped and skewed hangers, the allowable loads are 0.70 of the table loads.
- For sloped down only hangers, allowable load is 0.78 of the table load.

CONCEALED FLANGE

- HUTF is available with one A flange concealed provided the W dimension is $2\frac{9}{16}"$ or greater, at 0.85 of the table load. Specify HUCTF. No skew options available.



Typical HUTF
Sloped Down Installation



Top View HUTF Hanger
Skewed Right

HANGER OPTIONS

B/BA/LBV/HB/HHB/GB/HGB

MATERIAL:

- Gauge may vary from that specified depending on the manufacturing process used. **Hanger configurations, height and fastener schedules may vary from the tables depending on the joist size, skew and slope.**

CODES:

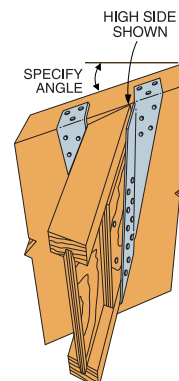
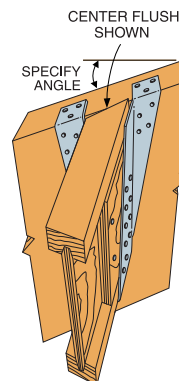
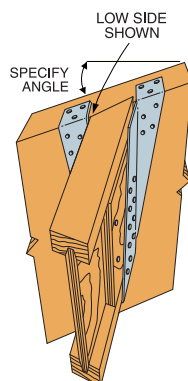
- Modified hangers, due to their numerous variations, are not in code reports.

LOADS:

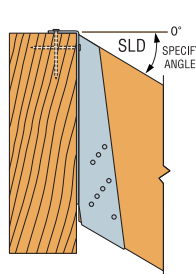
- For multiple modifications on the same connector, use the smallest reduction factor that yields the lowest design loads.

INSTALLATION:

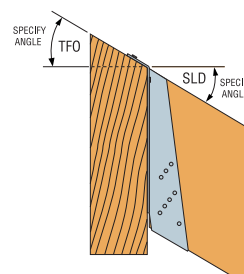
- Fastener quantities will typically increase beyond the amount specified in the standard hanger tables.
- Web stiffeners are required for I-joists.
- Fill all holes with the table-specified fastener types.
- Bevel cut the carried member for skewed applications.
- B hangers for sloped seat installations are assumed backed. For non-backed nailer applications see Hanger Modification Reduction Factors table.



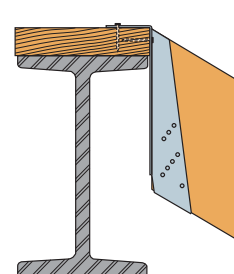
B Hanger Sloped Down and Skewed Left with Sloped Top Flange Installation
When ordering, specify Low Side Flush, Center Flush or High Side Flush



Typical LBV Sloped Down Installation with Full Backing



Typical LBV Sloped Down with Top Flange Open



Typical LBV Sloped Down on Nailer

Hanger Modification Reduction Factors

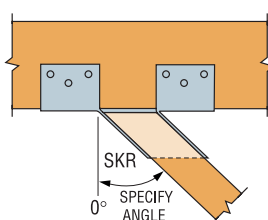
Model No.	Sloped Only	Skewed Only	Sloped & Skewed	TF Down	TF Open/Closed
LBV	Angle Limit	45°	45°	45°	35°
	Min. Height ³	9¼	9¼	14	9¼
	Download	1.00	1.00	1.00	(90-x)/90
	Uplift	1.00	1.00	0.90 ⁵	1.00
B	Angle Limit	45°	45°	45°	35°
	Min. Height ³	9¼	14	14	9¼
	Download	0.90	0.95	0.90	(90-x)/90
	Uplift	1.00	1.00	0.90 ⁵	1.00
HB	Angle Limit	45°	45°	45°	35°
	Min. Height ³	9¼	14	14	9¼
	Download	0.90	0.95	0.90	(90-x)/90
	Uplift	1.00	0.80	0.80	1.00
HHB, GB, HGB	Angle Limit	45°	—	—	—
	Min. Height ³	9¼	—	—	—
	Download	0.70	—	—	—
	Uplift	1.00	—	—	—

Nailers⁵

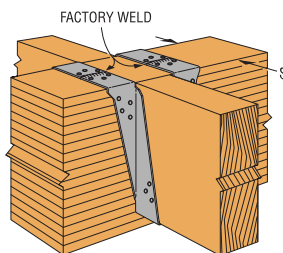
Sloped Only ⁴ or Sloped & Skewed	
Backed	Non-Backed
45°	45°
14	14
1.00	1.00
No Uplift	No Uplift
45°	45°
14	14
1.00	1.00
No Uplift	No Uplift
45°	45°
14	14
1.00	0.85
No Uplift	No Uplift
—	—
—	—
—	—
—	—

- Use this table to calculate allowable loads for modified hangers.
- Examples: LBV with top flange sloped down right 30°, reduce download to [(90-30)/90] x table load.
B skewed right 25° (download), multiply .95 x table load.

- For hangers with heights **less** than Min. Height shown, use the lower of 0.75 (reduction factor) or the reduction factor shown in the table.
- For sloped-only, minimum height is 9¼".
- Reduction factors shown in this table apply to the Nailer Table on page 100.
- For heights 22" and less, use 1.00.



Top View B Hanger Skewed Right



Typical BD Saddle Installation

SADDLE HANGER

Saddle hangers are made to order; add "D" to model (e.g. BD412); specify S (for saddle) dimension. They may be used for most conditions except at end wall locations and are preferred for nailer applications. Minimum S dimension (saddle width) is 3¼". Minimum member width is 3½". Minimum nailer thickness apply (see page 77). Saddle hangers achieve catalog load listed. Saddle hangers on stud walls **do not** achieve catalog loads.

HANGER OPTIONS

GLT/HGLT/GLS/HGLS/GLTV/HGLTV

See Hanger Options General Notes.

INSTALLATION: • Bevel-cut the carried beam for skewed hangers.

HANGER HEIGHT

- For hangers exceeding the joist height by $\frac{1}{2}$ ", allowable load is 50% of the table roof load.

SLOPED AND/OR SKEWED SEAT

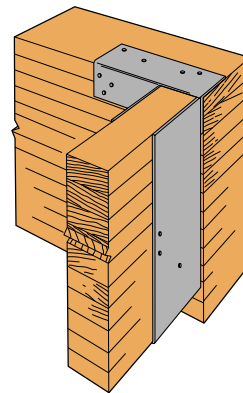
- GLT/GLTV/HGLT/HGLTV and GLS/HGLS series may be skewed to a maximum of 50° or sloped to a maximum of 45° .
- For skews greater than 15° , multiply the table uplift load by 0.50.
- For sloped only, the maximum allowable load is 6500 lbs. for the GLT/GLS/GLTV, 9165 lbs. for the HGLT/HGLS/HGLTV.
- For skewed only, the maximum allowable load is 6550 lbs. for the GLT/GLS/GLTV, 7,980 lbs. for the HGLT/HGLS/HGLTV. The deflection at full loading may reach $\frac{1}{4}$ ".
- Sloped and skewed GLT/GLS/GLTV configurations have a maximum allowable load of 5500 lbs.
- Sloped and skewed combinations are not allowed for the HGLT/HGLS/HGLTV.**

SLOPED TOP FLANGE

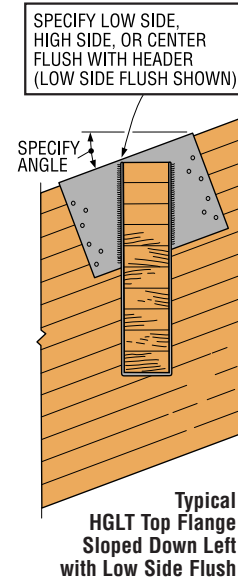
- A top flange may be sloped down left or down right to 30° with or without a sloped and/or skewed seat (see illustration). Reduce allowable table loads using straight-line interpolation (see page 190).

OFFSET TOP FLANGE

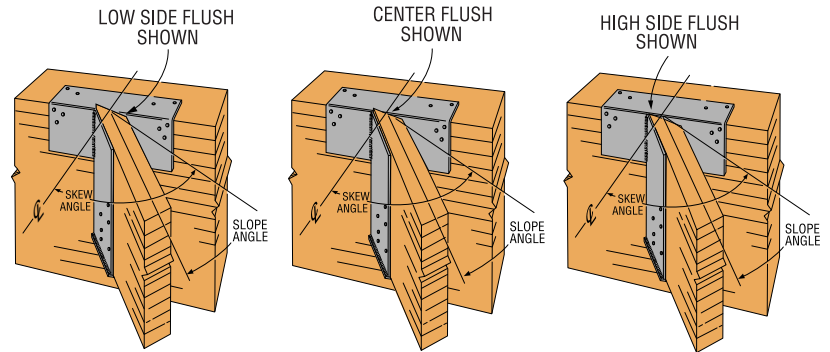
- The top flange may be offset left or right for placement at the end of a header. **Minimum seat width $3\frac{1}{4}$ ".** The maximum allowable load is 0.50 of the table roof load for the GLT/GLS/GLTV, and 0.45 for the HGLT/HGLS/HGLTV.
- For skewed and offset top flange hangers, the maximum allowable load is 3500 lbs.
- No uplift load.



**Typical GLT
Top Flange Offset Left
(HGLT similar)**



**Typical
HGLT Top Flange
Sloped Down Left
with Low Side Flush**



Typical GLT Sloped Down, Skewed Right
When ordering, specify Low Side Flush, Center Flush or High Side Flush

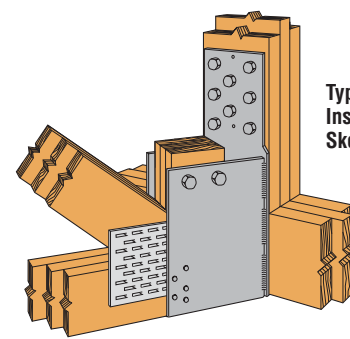
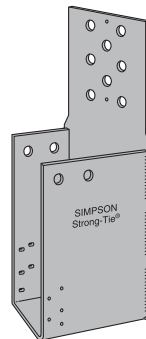
THGB/THGBH

See Hanger Options General Notes.

SLOPED OR SKEWED SEAT, 45° MAXIMUM

- The maximum allowable down load and uplift load for slope is .74 of the table load.
- The maximum allowable down load and uplift load for skew is .87 of the table load.

**THGBH3
(Skewed Left)**



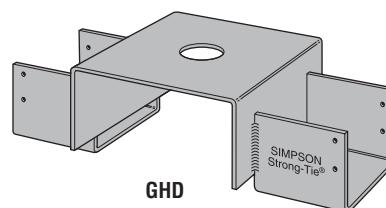
**Typical THGBH
Installation
Skewed Left**

GH Girder Hanger

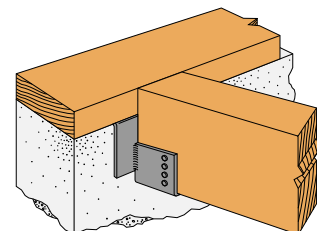
See Hanger Options General Notes.

SKEWED SEAT

- GH hangers may be skewed to a maximum of 45° ; bevel cut required.
- The allowable loads are 100% of the table load.
- Specify GHD for saddle-style hangers. GHD may not be skewed.



GHD



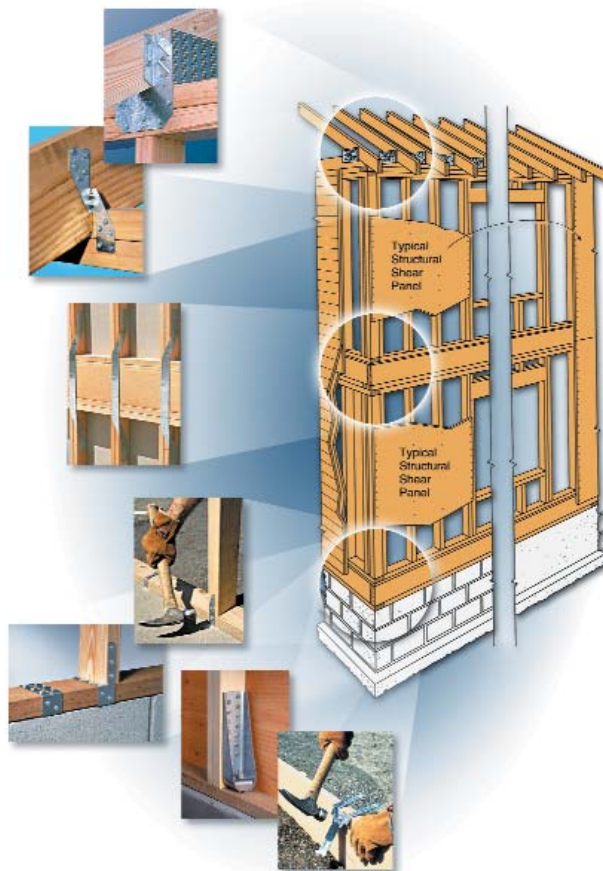
**Typical GH
Installation
Skewed Right**

CONTINUOUS LOAD TRANSFER PATH

This drawing shows the connection points for a continuous load transfer path from the rafters to the foundation of a two-story house.

Building with a continuous load path is an essential part of creating a structure better able to withstand the forces of mother nature.

This drawing is for illustrative purposes only and should not be considered an engineered system. Refer to the page numbers for the full range of Simpson Strong-Tie connectors. Consult a qualified Designer to ensure that correct connector quantities and installation methods are used to achieve the full design load values.



► **TYPICAL ROOF CONNECTIONS**

Pages
162 to 168

► **TYPICAL FLOOR-TO-FLOOR CONNECTIONS**

Pages
35 to 45, 155 to 160

► **TYPICAL FOUNDATION CONNECTIONS**

Pages
23 to 34

TECHNICAL PUBLICATIONS & SOFTWARE



Anchor Systems*

Includes application information, specifications and load values for adhesive and mechanical anchors, PAT and carbide drill bits. A binder version is also available.

*Available in English and Spanish versions.

High Wind-Resistant Structural Connectors

For builders and homeowners on retrofitting and new construction in highwind areas.

Anchor Tiedown Systems

This System is designed to provide the over-turning holdown capacity for multi-story commercial buildings. This holdown application is easy to specify, install and inspect.

Canadian Limit States Design Catalog

Specifications, loads and fasteners information provided in metric and imperial.

Cold-Formed Steel Connectors Catalog

30 products have been developed and tested using screw fasteners to obtain actual load values. Includes installation requirements and illustrations.

Spanish Catalog

Includes product information for wood-to-wood, light gauge steel, concrete, and masonry construction, as well as Do-It-Yourself projects.

Stainless Steel Connectors

Featuring stainless steel connectors for using in high exposure and some outdoor environments to protect against corrosion and some pressure-treated woods.

Do-It-Yourself Connectors Catalog

Suitable for a wide range of capabilities, this catalog includes ideas for home projects. This catalog includes connectors for Decks, Patio Covers, Fences and Garage Organization.

Anchor Systems Specifications for Simpson Strong-Tie Connectors Catalog

Simpson Anchor Systems specifications with our connector line. It should be used in conjunction with the current connector and anchor systems catalogs.

Simpson's Free CD-ROM

Our CD-ROM features our latest catalogs, fliers, technical bulletins, code reports, product list prices, UPC information, and the Simpson Connector Selector program. It also includes the Drawing Library.

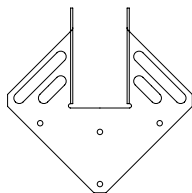
*This catalog reflects changes in the allowable loads and configurations of some Simpson Strong-Tie Company Inc. products. **This catalog is effective until December 31, 2006**, and supersedes all information in all earlier publications, including catalogs, brochures, fliers, technical bulletins, etc. Use this edition as a current printed reference. Information on allowable loads and configurations is updated annually.*

***We post our catalogs on www.strongtie.com. Please visit our site, and sign up for any information updates.** Allowable loads in this catalog are for the described specific applications of properly-installed products. Product modifications, improper loading or installation procedures, or deviations from recommended applications will affect connector allowable load-carrying capacities.*

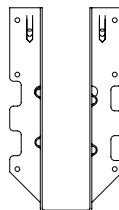


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