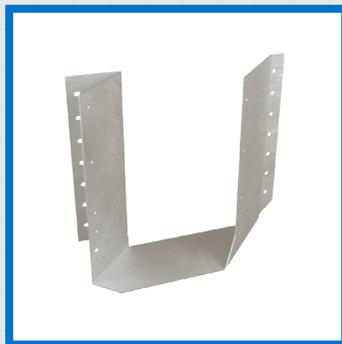
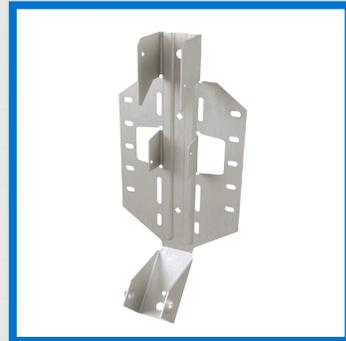


# EWP PRODUCT GUIDE

For Use With Products Manufactured by



SKH2320R-2



LSSH179



IHF35925



TH017118

## Follow these instructions to ensure the proper installation of MiTek products.

- See current MiTek USP Product Catalog for General Notes, Warranty, and installation information for hanger models, joist sizes, and header situations not shown.
- Loads listed address hanger/header/fastener limitations as well as joist hanger limitations assuming header material is Douglas Fir-Larch (DF-L), Southern Pine (SP), or Microllam® LVL, Parallam® PSL, or TimberStrand® LSL. Joist reaction should be checked by a qualified designer to ensure proper hanger selection.
- Uplift loads have been increased 60% for wind or seismic loads and no further increase shall be permitted. Reduce loads according to code for normal duration loading such as cantilever construction.
- Hangers for joists without web stiffeners must support the I-Joist's top flange and provide lateral resistance with no less than 1/8" contact. Hangers for joists with web stiffeners must support a minimum of 60% of joist depth or potential joist rotation must be addressed. See page 3.
- The type and quantity of fasteners used to install MiTek products is critical to connector performance. To achieve the allowable loads shown

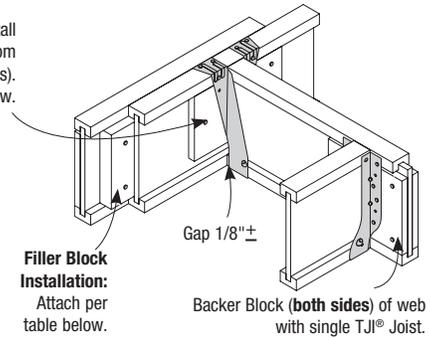
in this guide, install with the fasteners specified for that particular product. All specified fasteners must be properly installed prior to applying load of any kind to the connection.

- Throughout this guide, dimensions are expressed in inches and allowable loads in pounds, unless specifically noted otherwise.
- Load values for 10d and 16d designations in the fastener schedules throughout this guide refer to common wire nails, unless noted otherwise.
- The allowable loads shown in this guide are based on Allowable Stress Design methodology.
- **Multiple Plies of TJI® Joists:** Fasten together multiple plies of wood TJI® Joists, in accordance with Weyerhaeuser's installation guidelines, such that the joists act as a single unit.
- **Sloped TJI® Joists:** Use sloped seat hangers and beveled web stiffeners whenever the slope exceeds the following: 1/2:12 for seat bearing lengths of 2-1/2" or less; 3/8:12 for bearing lengths between 2-1/2" and 3-1/2"; and 1/4:12 for bearing lengths in excess of 3-1/2".

**Backer Blocks** – Pattern the nails used to install backer blocks or web stiffeners in wood TJI® Joists to avoid splitting the block. The nail pattern should be sufficiently spaced to avoid the same grain line, particularly with solid sawn backer blocks. Backer blocks must be installed on wood TJI® Joists acting as the header, or supporting member. Install in accordance with the Weyerhaeuser installation guidelines. The nails used to install hangers mounted to a TJI® Joist header must penetrate through the web and into the backer block on the opposite side.

**Backer Block Installation:** Install tight to top flange (tight to bottom flange with face mount hangers). Attach per table below.

With top flange hangers, backer block required only for downward loads exceeding 250 lbs or for uplift conditions



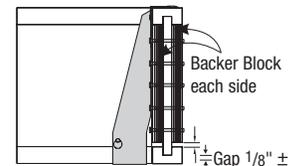
**Filler Block Installation:** Attach per table below.

## Filler and Backer Block Sizes

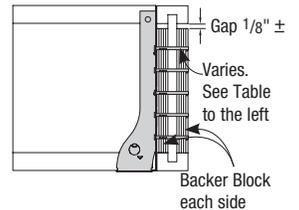
TJI®		110		210		230 or 360		360	560			560D	
Depth		9-1/2"-11-7/8"	14"-16"	9-1/2"-11-7/8"	14"-16"	9-1/2"-11-7/8"	14"-16"	18"-20"	11-7/8"	14"-16"	18"-20"	22"-24"	
Filler Block <sup>1</sup>		2x6	2x8	2x6 + 3/8" sheathing	2x8 + 3/8" sheathing	2x6 + 1/2" sheathing	2x8 + 1/2" sheathing	2x12 + 1/2" sheathing	Two 2x6	Two 2x8	Two 2x12	Four 3/4" x 15" sheathing	
Backer Block <sup>1</sup>		5/8" or 3/4"		3/4" or 7/8"		7/8" or 1" net			2x6	2x8	2x12	Two 3/4" x 15" sheathing	
Nail Size	Filler	10d (0.128" x 3")								16d (0.135" x 3-1/2")			
	Backer	10d (0.128" x 3")								10d (0.128" x 3")			
Nail Qty <sup>2</sup>	Filler	10 (15 for multi-family applications)								15	10 (15 for multi-family) each side	15 each side	25 each side
	Backer	10 (15 for multi-family applications)								15	10 (15 for multi-family)	15	15

1) If necessary, increase filler and backer block height for face mount hangers and maintain 1/8" gap at top of joist. See Web Stiffener Attachment detail. Filler and backer block dimensions should accommodate required nailing without splitting. The suggested minimum length is 24" for filler and 12" for backer blocks.

2) Clinch nails when possible.



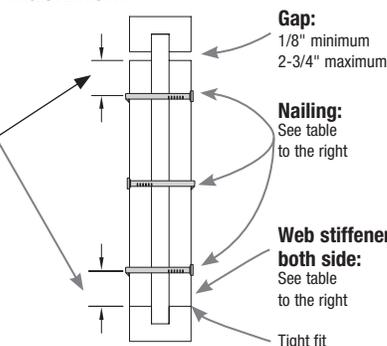
Typical Top Mount Hanger backer block installation



Typical Face Mount Hanger backer block installation

## Web Stiffener Attachment for TJI® Joists

1" for TJI® 110, 210, 230, 360 joists  
1-1/2" for TJI® 560, 560D joists



TJI®	Depth (in)	Minimum Web Stiffener Size	Nail Type	No. of Nails	
				End	Int.
110	All	5/8" x 2-5/16" <sup>1</sup>	8d (0.113" x 2-1/2")	3	3
210	All	3/4" x 2-5/16" <sup>1</sup>		3	3
230, 360	All	7/8" x 2-5/16" <sup>1</sup>		3	3
560	All	2x4 <sup>2</sup>	16d (0.135" x 3-1/2")	3	3
560D	18"	2x4 <sup>2</sup>	16d (0.135" x 3-1/2")	4	4
	20"			5	5
	22" <sup>3</sup>			6	11
	24" <sup>3</sup>			6	13

1) PS1 or PS2 sheathing, face grain vertical

2) Construction grade or better

3) Web stiffeners are always required for 22" and 24" TJI® 560D joists.

## Support Height & Lateral Stability

Hangers for joists **without web stiffeners** must support the I-Joist's top flange and provide lateral resistance with no less than 1/8" contact.

be 60% of the joist height for stability during construction. If this cannot be accomplished, potential joist rotation must be resolved by other means.

MiTek recommends that hangers for joist **with web stiffeners** should



(Top flange support requirements can be verified in EWP Top Mount Hangers charts under Web stiffener Req'd. column) of MiTek's USP Product Catalog.

## Nailer Installations

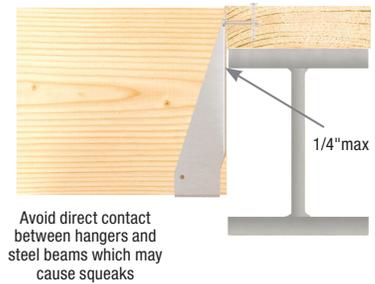
### Correct Hanger Attachment to Nailer

A nailer or sill plate is considered to be any wood member attached to a steel beam, concrete block wall, concrete stem wall, or other type of support unsuitable for nailing which is used as a nailing surface for top mount hangers to hold beams or joists.

### Nailer Sized Correctly

Top flange of hanger is fully supported and recommended nails have full penetration into nailer, resulting in a carried member hanging safely at the proper height.

The nailer must be sized to fit the support width as shown and be of sufficient thickness to satisfy recommended top flange nailing requirements. A design professional must specify nailer attachment to steel beams.



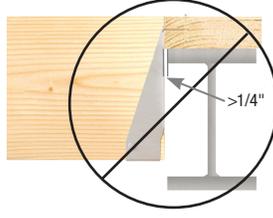
Avoid direct contact between hangers and steel beams which may cause squeaks

### Wrong Nailer Size Causes Component Failure



**! Too Narrow**

Top flange not fully supported can cause nail break-out. Or, by fully supporting top flange, hanger is tilted back, causing lifting of carried member which results in uneven surfaces and squeaky floors.



**! Too Wide**

Loading can cause cross grain breaking of nailer. The recommended nailer overhang is 1/4" maximum per side.



**! Too Thin**

Top flange nailing cannot fully penetrate nailer, causing reduced allowable loads. Never use hangers which require multiple face nails since the allowable loads are dependent on all nail holes being used.

## Top Flange Hangers

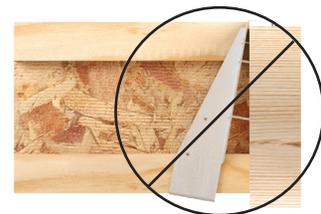
The thickness of the hanger metal and nail heads on top mount hangers must be evaluated for the effect on subsequent sheathing. Ensure the top mount hanger is installed so the flanges of the hanger are not **over-spread** which tends to elevate the supported I-Joist, causing uneven floor surfaces and squeaking. Similarly, ensure the hanger is installed plumb such that the face flanges of the hanger are mounted firmly against the wide-face surface of the header.



**Flush framing**



**! Hanger over-spread**



**! Hanger not plumb**

Joist Height	Top Mount Hangers <sup>4,7</sup>								Face Mount Hangers								
	USP Stock No. <sup>1</sup>	D Dim <sup>6</sup>	Fastener Schedule <sup>5</sup>				Uplift 160% <sup>3</sup>	Down 100% <sup>2</sup>	USP Stock No. <sup>1</sup>	D Dim <sup>6</sup>	Min / Max	Fastener Schedule <sup>5</sup>				Uplift 160% <sup>3</sup>	Down 100% <sup>2</sup>
			Header		Joist							Header		Joist			
			Qty	Type	Qty	Type						Qty	Type	Qty	Type		
<b>TJI® 110</b> Joist Width = 1-3/4"																	
9-1/2	TH017950	2	6	10d	2	10d x 1-1/2	230	955	IHFL17925	2-1/2	--	8	10d	--	--	50	960
11-7/8	TH017118	2	6	10d	2	10d x 1-1/2	230	975	IHFL17112	2-1/2	--	10	10d	--	--	50	1110
14	TFL1714	2	6	10d	2	10d x 1-1/2	130	975	IHFL1714	2-1/2	Min	12	10d	--	--	50	1110
16	TFL1716	2	6	10d	2	10d x 1-1/2	130	975	IHFL1716	2-1/2	Min	14	10d	--	--	50	1110
<b>TJI® 210</b> Joist Width = 2-1/16"																	
9-1/2	TFL2095	2	6	10d	2	10d x 1-1/2	130	1050	IHFL20925	2-1/2	--	8	10d	--	--	50	960
11-7/8	TFL20118	2	6	10d	2	10d x 1-1/2	130	1070	IHFL20112	2-1/2	--	10	10d	--	--	50	1200
14	TFL2014	2	6	10d	2	10d x 1-1/2	130	1070	IHFL2014	2-1/2	Min	12	10d	--	--	50	1200
16	TFL2016	2	6	10d	2	10d x 1-1/2	130	1070	IHFL2016	2-1/2	Min	14	10d	--	--	50	1200
<b>TJI® 230</b> Joist Width = 2-5/16"																	
9-1/2	TFL2395	2	6	10d	2	10d x 1-1/2	130	1100	IHFL23925	2-1/2	--	8	10d	--	--	50	960
11-7/8	TFL23118	2	6	10d	2	10d x 1-1/2	130	1120	IHFL23112	2-1/2	--	10	10d	--	--	50	1200
14	TFL2314	2	6	10d	2	10d x 1-1/2	130	1120	IHFL2314	2-1/2	Min	12	10d	--	--	50	1240
16	TFL2316	2	6	10d	2	10d x 1-1/2	130	1120	IHFL2316	2-1/2	Min	14	10d	--	--	50	1240
<b>TJI® 360</b> Joist Width = 2-5/16"																	
11-7/8	TFL23118	2	6	10d	2	10d x 1-1/2	130	1140	IHFL23112	2-1/2	--	10	10d	--	--	50	1200
14	TFL2314	2	6	10d	2	10d x 1-1/2	130	1140	IHFL2314	2-1/2	Min	12	10d	--	--	50	1260
16	TFL2316	2	6	10d	2	10d x 1-1/2	130	1140	IHFL2316	2-1/2	Min	14	10d	--	--	50	1260
18	TFI3518	2-1/2	6	16d	2	10d x 1-1/2	215	1260	IHFL2316	2-1/2	Min	14	10d	--	--	50	1260
20	TFI3520	2-1/2	6	16d	2	10d x 1-1/2	215	1260	IHFL2316	2-1/2	Min	14	10d	--	--	50	1260
<b>TJI® 560</b> Joist Width = 3-1/2"																	
11-7/8	TH035118	2-3/8	10	10d	2	10d x 1-1/2	230	1430	IHFL35112	2-1/2	Min	10	10d	--	--	50	1200
											Max	12					1440
14	TH035140	2-3/8	12	10d	2	10d x 1-1/2	230	1430	IHFL3514	2-1/2	Min	12	10d	--	--	50	1440
											Max	14					1460
16	TH035160	2-3/8	12	10d	2	10d x 1-1/2	230	1430	IHFL3516	2-1/2	Min	14	10d	--	--	50	1460
18	TFI418	2-1/2	6	16d	2	10d x 1-1/2	215	1460	IHFL3516	2-1/2	Min	14	10d	--	--	50	1460
20	TFI420	2-1/2	6	16d	2	10d x 1-1/2	215	1460	IHFL3516	2-1/2	Min	14	10d	--	--	50	1460
<b>TJI® 560D</b> Joist Width = 3-1/2"																	
18	TFI418	2-1/2	6	16d	2	10d x 1-1/2	215	1610	IHFL3516	2-1/2	Min	14	10d	--	--	50	1610
20	TFI420	2-1/2	6	16d	2	10d x 1-1/2	215	1610	IHFL3516	2-1/2	Min	14	10d	--	--	50	1610
22	TFI422	2-1/2	10	16d	2	10d x 1-1/2	215	2555	IHFL3516	2-1/2	Min	14	10d	--	--	50	1680
											Max	16					1920
24	TFI424	2-1/2	10	16d	2	10d x 1-1/2	215	2555	IHFL3516	2-1/2	Min	14	10d	--	--	50	1680
											Max	16					1920

- 1) Shaded hangers require web stiffeners at joist ends. Web stiffeners may be required for non-shaded hangers by Weyerhaeuser.
- 2) Loads listed are based on hanger attachment to a DF or SP species solid sawn, Microllam® LVL, Parallam® PSL, or TimberStrand® LSL header. Contact your local Weyerhaeuser or MiTek Technical Representative for additional duration of load values.
- 3) Uplift loads have been increased 60% for wind and seismic loading; no further increase shall be permitted.
- 4) Top Mount Hangers require minimum 3" header width for THO series hangers; 3-1/2" minimum header thickness for all other stock numbers.
- 5) 10d x 1-1/2 nails are 0.148" diameter x 1-1/2" long, 10d nails are 0.148" diameter x 3" long, and 16d nails are 0.162" diameter x 3-1/2" long. 16d sinkers are 0.148" diameter x 3-1/4" long and may be used where 10d nails (0.148" diameter x 3" long) are specified.
- 6) D Dim is the length of the hanger seat.
- 7) For top mount hangers supported by TJI® headers with a flange thickness less than 1-1/2", the reduction factor for a 1-1/4" flange is 0.69 and 0.84 for a 1-3/8" flange.



Joist Height	Adjustable Height								Skewed 45° Hangers													
	USP Stock No. <sup>1,8</sup>	D Dim <sup>7</sup>	Fastener Schedule <sup>4</sup>				Uplift 160% <sup>3</sup>	Down 100% <sup>2</sup>	USP Stock No. <sup>1,6</sup>	D Dim <sup>7</sup>	Min / Max	Fastener Schedule <sup>4,7</sup>				Uplift 160% <sup>3</sup>	Down 100% <sup>2</sup>					
			Header		Joist							Header		Joist								
			Qty	Type	Qty	Type						Qty	Type	Qty	Type							
<b>TJI® 110</b>																			<b>Joist Width = 1-3/4"</b>			
9-1/2	MSH1722 <sup>10</sup>	1-3/4	6	10d	4	10d x 1-1/2	--	910	SKH1720L/R	1-7/8	--	14	10d	10	10d x 1-1/2	1565	930					
11-7/8	MSH1722	1-3/4	6	10d	4	10d x 1-1/2	--	910	SKH1720L/R	1-7/8	--	14	10d	10	10d x 1-1/2	1565	945					
14	MSH1722	1-3/4	6	10d	4	10d x 1-1/2	--	910	SKH1724L/R	1-7/8	--	16	10d	10	10d x 1-1/2	1565	945					
16	MSH1722	1-3/4	6	10d	4	10d x 1-1/2	--	910	SKH1724L/R	1-7/8	--	16	10d	10	10d x 1-1/2	1565	945					
<b>TJI® 210</b>																			<b>Joist Width = 2-1/16"</b>			
9-1/2	MSH2022 <sup>10</sup>	1-3/4	6	10d	4	10d	--	1005	SKH2020L/R	1-7/8	--	14	10d	10	10d x 1-1/2	1565	1030					
11-7/8	MSH2022	1-3/4	6	10d	4	10d	--	1005	SKH2020L/R	1-7/8	--	14	10d	10	10d x 1-1/2	1565	1040					
14	MSH2022	1-3/4	6	10d	4	10d	--	1005	SKH2024L/R	1-7/8	--	16	10d	10	10d x 1-1/2	1565	1040					
16	MSH2022	1-3/4	6	10d	4	10d	--	1005	SKH2024L/R	1-7/8	--	16	10d	10	10d x 1-1/2	1565	1040					
<b>TJI® 230</b>																			<b>Joist Width = 2-5/16"</b>			
9-1/2	MSH2322 <sup>10</sup>	1-3/4	6	10d	4	10d x 1-1/2	--	1060	SKH2320L/R	1-7/8	--	14	10d	10	10d x 1-1/2	1565	1080					
11-7/8	MSH2322	1-3/4	6	10d	4	10d x 1-1/2	--	1060	SKH2320L/R	1-7/8	--	14	10d	10	10d x 1-1/2	1565	1090					
14	MSH2322	1-3/4	6	10d	4	10d x 1-1/2	--	1060	SKH2324L/R	1-7/8	--	16	10d	10	10d x 1-1/2	1565	1090					
16	MSH2322	1-3/4	6	10d	4	10d x 1-1/2	--	1060	SKH2324L/R	1-7/8	--	16	10d	10	10d x 1-1/2	1565	1090					
<b>TJI® 360</b>																			<b>Joist Width = 2-5/16"</b>			
11-7/8	MSH2322	1-3/4	6	10d	4	10d x 1-1/2	--	1080	SKH2320L/R	1-7/8	--	14	10d	10	10d x 1-1/2	1565	1110					
14	MSH2322	1-3/4	6	10d	4	10d x 1-1/2	--	1080	SKH2324L/R	1-7/8	--	16	10d	10	10d x 1-1/2	1565	1110					
16	MSH2322	1-3/4	6	10d	4	10d x 1-1/2	--	1080	SKH2324L/R	1-7/8	--	16	10d	10	10d x 1-1/2	1565	1110					
18	MSH2322	1-3/4	6	10d	4	10d x 1-1/2	--	1080	SKH2324L/R	1-7/8	--	16	10d	10	10d x 1-1/2	1565	1110					
20	MSH2322	1-3/4	6	10d	4	10d x 1-1/2	--	1080	SKH2324L/R <sup>5</sup>	1-7/8	--	16	10d	10	10d x 1-1/2	1565	1110					
<b>TJI® 560</b>																			<b>Joist Width = 3-1/2"</b>			
11-7/8	MSH422	1-3/4	6	10d	6	10d	--	1265	HD410_SK45L/R_BV <sup>5,9</sup>	2-1/2	Min	14	16d	6	10d	880	1460					
14	MSH422	1-3/4	6	10d	6	10d	--	1265	HD414_SK45L/R_BV <sup>5,9</sup>	2-1/2	Min	18	16d	8	10d	1165	1460					
16	MSH422	1-3/4	6	10d	6	10d	--	1265	HD414_SK45L/R_BV <sup>5,9</sup>	2-1/2	Min	18	16d	8	10d	1165	1460					
18	MSH422	1-3/4	6	10d	6	10d	--	1265	HD414_SK45L/R_BV <sup>5,9</sup>	2-1/2	Min	18	16d	8	10d	1165	1460					
20	MSH422	1-3/4	6	10d	6	10d	--	1265	HD414_SK45L/R_BV <sup>5,9</sup>	2-1/2	Min	18	16d	8	10d	1165	1460					
<b>TJI® 560D</b>																			<b>Joist Width = 3-1/2"</b>			
18	MSH422	1-3/4	6	10d	6	10d	--	1400	HD414_SK45L/R_BV <sup>5,9</sup>	2-1/2	Min	18	16d	8	10d	1165	1610					
20	MSH422	1-3/4	6	10d	6	10d	--	1400	HD414_SK45L/R_BV <sup>5,9</sup>	2-1/2	Min	18	16d	8	10d	1165	1610					
22	MSH422	1-3/4	6	10d	6	10d	--	2345	HD416_SK45L/R_BV <sup>5,9</sup>	2-1/2	Min	22	16d	10	10d	1465	2555					
24	MSH422	1-3/4	6	10d	6	10d	--	2345	HD416_SK45L/R_BV <sup>5,9</sup>	2-1/2	Min	22	16d	10	10d	1465	2555					

- 1) Shaded hangers require web stiffeners at joist ends.
- 2) Loads listed are based on hanger attachment to a DF or SP species solid sawn, Microllam® LVL, Parallam® PSL, or TimberStrand® LSL header. Contact your local Weyerhaeuser or MiTek Technical Representative for additional duration of load values.
- 3) Uplift loads have been increased 60% for wind and seismic loading; no further increase shall be permitted.
- 4) 10d x 1-1/2 nails are 0.148" diameter x 1-1/2" long, 10d nails are 0.148" diameter x 3" long, and 16d nails are 0.162" diameter x 3-1/2" long.
- 5) Miter cut required for SKH hangers and bevel cut required for HD hangers on end of joist to achieve design loads.
- 6) For additional sizes, stock numbers, and modifications not shown, refer to MiTek's USP Product Catalog.
- 7) D Dim is the length of the hanger seat.
- 8) MSH allowable loads listed in this table assume Top-Min mounting condition installed with 4 - 10d top nails and 2 - 10d face nails. For MSH Face-Max and Top-Max mounting conditions not included in this table, refer to the current MiTek USP Product Catalog.
- 9) Hangers are special order. Contact MiTek for pricing and lead times.
- 10) Flanges on the bucket of the hanger may extend above the top of the joist.

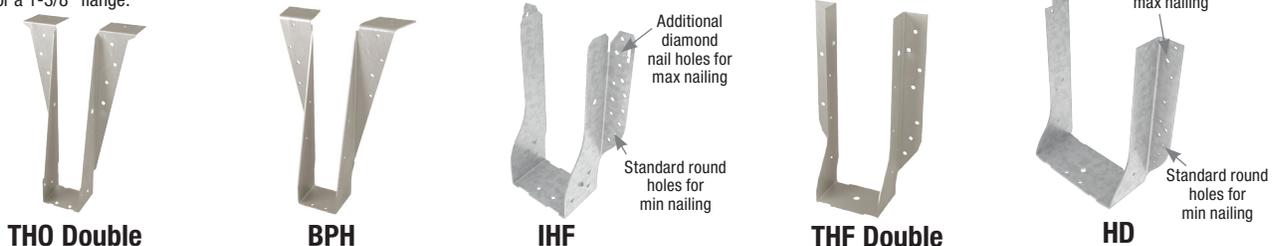


MSH

SKH\_L  
left shown

Joist Height	Top Mount Hangers <sup>4,8</sup>								Face Mount Hangers								
	USP Stock No. <sup>1</sup>	D Dim <sup>6</sup>	Fastener Schedule <sup>5</sup>				Uplift 160% <sup>3</sup>	Down 100% <sup>2</sup>	USP Stock No. <sup>1</sup>	D Dim <sup>6</sup>	Min / Max	Fastener Schedule <sup>5</sup>				Uplift 160% <sup>3</sup>	Down 100% <sup>2</sup>
			Header		Joist							Header		Joist			
			Qty	Type	Qty	Type						Qty	Type	Qty	Type		
<b>Double TJI® 110</b> Joist Width = 3-1/2"																	
9-1/2	TH035950	2	10	10d	2	10d x 1-1/2	230	2040	IHF35925	2-1/2	Min	10	10d	2	10d x 1-1/2	330	1250
											Max	24	16d				2085
11-7/8	TH035118	2-3/8	10	10d	2	10d x 1-1/2	230	2150	IHF35112	2-1/2	Min	10	10d	2	10d x 1-1/2	330	1250
											Max	24	16d				2220
14	TH035140	2-3/8	12	10d	2	10d x 1-1/2	230	2150	IHF3514	2-1/2	Min	12	10d	2	10d x 1-1/2	330	1500
											Max	28	16d				2220
16	TH035160	2-3/8	12	10d	2	10d x 1-1/2	230	2150	IHF3516	2-1/2	Min	14	10d	2	10d x 1-1/2	330	1750
											Max	30	16d				2220
<b>Double TJI® 210</b> Joist Width = 4-1/8"																	
9-1/2	TH020950-2	3	10	16d	6	10d	1135	2475	IHF20925-2	2-1/2	Min	10	10d	2	10d x 1-1/2	330	1250
											Max	24	16d				2290
11-7/8	TH020118-2	3	10	16d	6	10d	1135	2660	IHF20112-2	2-1/2	Min	10	10d	2	10d x 1-1/2	330	1250
											Max	24	16d				2400
14	TH020140-2	3	10	16d	6	10d	1145	2660	IHF2014-2	2-1/2	Min	12	10d	2	10d x 1-1/2	330	1500
											Max	28	16d				2400
16	TH020160-2	3	10	16d	6	10d	1145	2660	IHF2014-2	2-1/2	Min	12	10d	2	10d x 1-1/2	330	1500
											Max	28	16d				2400
<b>Double TJI® 230</b> Joist Width = 4-5/8"																	
9-1/2	TH023950-2	3	10	16d	6	10d	1145	2505	IHF23925-2	2-1/2	Min	10	10d	2	10d x 1-1/2	330	1250
											Max	24	16d				2350
11-7/8	TH023118-2	3	10	16d	6	10d	1145	2725	THF23118-2	2-1/2	--	16	10d	6	10d	1135	1890
14	TH023140-2	3	12	16d	6	10d	1145	2725	THF23140-2	2-1/2	--	20	10d	6	10d	1275	2485
16	TH023160-2	3	12	16d	6	10d	1145	2725	THF23160-2	2-1/2	--	24	10d	6	10d	1275	2485
<b>Double TJI® 360</b> Joist Width = 4-5/8"																	
11-7/8	TH023118-2	3	10	16d	6	10d	1145	2765	THF23118-2	2-1/2	--	16	10d	6	10d	1135	1890
14	TH023140-2	3	12	16d	6	10d	1145	2765	THF23140-2	2-1/2	--	20	10d	6	10d	1275	2525
16	TH023160-2	3	12	16d	6	10d	1145	2765	THF23160-2	2-1/2	--	24	10d	6	10d	1275	2525
18	TH023180-2	3	14	16d	6	10d	1145	2765	THF23160-2	2-1/2	--	24	10d	6	10d	1275	2525
20	TH023200-2	3	14	16d	6	10d	1145	2765	THF23160-2	2-1/2	--	24	10d	6	10d	1275	2525
<b>Double TJI® 560</b> Joist Width = 7"																	
11-7/8	BPH71118	3	10	16d	6	10d	1275	3075	HD7120	2-1/2	Min	16	16d	6	16d	1305	2465
											Max	22	16d	8	16d	1845	2925
14	BPH7114	3	10	16d	6	10d	1275	3075	HD7140	2-1/2	Min	20	16d	8	16d	1845	2925
16	BPH7116	3	10	16d	6	10d	1275	3075	HD7160	2-1/2	--	24	16d	8	10d	1560	2925
18	BPH7118	3	10	16d	6	10d	1275	3075	HD7160	2-1/2	--	24	16d	8	10d	1560	2925
20	BPH7120	3	10	16d	6	10d	1275	3075	HD7160	2-1/2	--	24	16d	8	10d	1560	2925
<b>Double TJI® 560D</b> Joist Width = 7"																	
18	BPH7118	3	10	16d	6	10d	1275	3075	HD7160	2-1/2	--	24	16d	8	10d	1560	3215
20	BPH7120	3	10	16d	6	10d	1275	3075	HD7160	2-1/2	--	24	16d	8	10d	1560	3215
22	BPH7122	3	10	16d	6	10d	1275	3075	HD7160	2-1/2	--	24	16d	8	10d	1560	3695
24	BPH7124	3	10	16d	6	10d	1275	3075	HD7160	2-1/2	--	24	16d	8	10d	1560	3695

- 1) Shaded hangers require web stiffeners at joist ends. Web stiffeners may be required for non-shaded hangers by Weyerhaeuser.
- 2) Loads listed are based on hanger attachment to a DF or SP species solid sawn, Microllam® LVL, Parallam® PSL, or TimberStrand® LSL header. Contact your local Weyerhaeuser or MiTek Technical Representative for additional duration of load values.
- 3) Uplift loads have been increased 60% for wind and seismic loading; no further increase shall be permitted.
- 4) Top Mount Hangers require minimum 3" header width for THO series hangers; 3-1/2" minimum header thickness for all other stock numbers.
- 5) 10d x 1-1/2 nails are 0.148" diameter x 1-1/2" long, 10d nails are 0.148" diameter x 3" long, and 16d nails are 0.162" diameter x 3-1/2" long. 16d sinkers are 0.148" diameter x 3-1/4" long and may be used where 10d nails (0.148" diameter x 3" long) are specified.
- 6) D Dim is the length of the hanger seat.
- 7) For top mount hangers supported by TJI® headers with a flange thickness less than 1-1/2", the reduction factor for a 1-1/4" flange is 0.69 and 0.84 for a 1-3/8" flange.



Joist Height	Adjustable Height								Skewed 45° Hangers								
	USP Stock No. <sup>1,5,9</sup>	D Dim <sup>6</sup>	Fastener Schedule <sup>4</sup>				Uplift 160% <sup>3</sup>	Down 100% <sup>2</sup>	USP Stock No. <sup>1</sup>	D Dim <sup>6</sup>	Min / Max	Fastener Schedule <sup>4</sup>				Uplift 160% <sup>3</sup>	Down 100% <sup>2</sup>
			Header		Joist							Header		Joist			
			Qty	Type	Qty	Type						Qty	Type	Qty	Type		
<b>Double TJI® 110</b> Joist Width = 3-1/2"																	
9-1/2	MSH422 <sup>10</sup>	1-3/4	6	10d	6	10d	--	1820	HD410_SK45L/R_BV <sup>7,8</sup>	2-1/2	Min	14	16d	6	10d	880	2085
11-7/8	MSH422	1-3/4	6	10d	6	10d	--	1820	HD410_SK45L/R_BV <sup>7,8</sup>	2-1/2	Max	20	16d	10	10d	1465	2220
14	MSH422	1-3/4	6	10d	6	10d	--	1820	HD414_SK45L/R_BV <sup>7,8</sup>	2-1/2	Min	18	16d	8	10d	1165	2220
16	MSH422	1-3/4	6	10d	6	10d	--	1820	HD414_SK45L/R_BV <sup>7,8</sup>	2-1/2	Min	18	16d	8	10d	1165	2220
<b>Double TJI® 210</b> Joist Width = 4-1/8"																	
9-1/2	See current MiTek USP Product Catalog or Weyerhaeuser software for specialty hanger options								SKH2020L/R-2 <sup>7</sup>	3-1/2	--	14	10d	10	10d	1905	1665
11-7/8									SKH2024L/R-2 <sup>7</sup>	3-1/2	--	16	10d	10	10d	1905	1905
14									SKH2024L/R-2 <sup>7</sup>	3-1/2	--	16	10d	10	10d	1905	1905
16									SKH2024L/R-2 <sup>7</sup>	3-1/2	--	16	10d	10	10d	1905	1905
<b>Double TJI® 230</b> Joist Width = 4-5/8"																	
9-1/2	MSH2322-2	1-3/4	6	10d	4	10d	--	2120	SKH2320L/R-2 <sup>7</sup>	3-1/2	--	14	10d	10	10d	1905	1665
11-7/8	MSH2322-2	1-3/4	6	10d	4	10d	--	2120	SKH2324L/R-2 <sup>7</sup>	3-1/2	--	16	10d	10	10d	1905	1905
14	MSH2322-2	1-3/4	6	10d	4	10d	--	2120	SKH2324L/R-2 <sup>7</sup>	3-1/2	--	16	10d	10	10d	1905	1905
16	MSH2322-2	1-3/4	6	10d	4	10d	--	2120	SKH2324L/R-2 <sup>7</sup>	3-1/2	--	16	10d	10	10d	1905	1905
<b>Double TJI® 360</b> Joist Width = 4-5/8"																	
11-7/8	MSH2322-2	1-3/4	6	10d	4	10d	--	2160	SKH2324L/R-2 <sup>7</sup>	3-1/2	--	16	10d	10	10d	1905	1905
14	MSH2322-2	1-3/4	6	10d	4	10d	--	2160	SKH2324L/R-2 <sup>7</sup>	3-1/2	--	16	10d	10	10d	1905	1905
16	MSH2322-2	1-3/4	6	10d	4	10d	--	2160	SKH2324L/R-2 <sup>7</sup>	3-1/2	--	16	10d	10	10d	1905	1905
18	MSH2322-2	1-3/4	6	10d	4	10d	--	2160	SKH2324L/R-2 <sup>7</sup>	3-1/2	--	16	10d	10	10d	1905	1905
20	MSH2322-2	1-3/4	6	10d	4	10d	--	2160	--	--	--	--	--	--	--	--	
<b>Double TJI® 560</b> Joist Width = 7"																	
11-7/8	MSH422-2	2	8	16d	6	16d	--	2660	HD7120-SK45L/R_BV <sup>7,8</sup>	2-1/2	Min	16	16d	6	16d	980	2465
14	MSH422-2	2	8	16d	6	16d	--	2660	HD7140-SK45L/R_BV <sup>7,8</sup>	2-1/2	Min	20	16d	8	16d	1385	2925
16	MSH422-2	2	8	16d	6	16d	--	2660	HD7140-SK45L/R_BV <sup>7,8</sup>	2-1/2	Min	20	16d	8	16d	1385	2925
18	MSH422-2	2	8	16d	6	16d	--	2660	HD7180-SK45L/R_BV <sup>7,8</sup>	2-1/2	--	28	16d	8	10d	1170	2925
20	MSH422-2	2	8	16d	6	16d	--	2660	HD7180-SK45L/R_BV <sup>7,8</sup>	2-1/2	--	28	16d	8	10d	1170	2925
<b>Double TJI® 560D</b> Joist Width = 7"																	
18	MSH422-2	2	8	16d	6	16d	--	2940	HD7180-SK45L/R_BV <sup>7,8</sup>	2-1/2	--	28	16d	8	10d	1170	3215
20	MSH422-2	2	8	16d	6	16d	--	2940	HD7180-SK45L/R_BV <sup>7,8</sup>	2-1/2	--	28	16d	8	10d	1170	3215
22	MSH422-2	2	8	16d	6	16d	--	3740	HD7180-SK45L/R_BV <sup>7,8</sup>	2-1/2	--	28	16d	8	10d	1170	4310
24	MSH422-2	2	8	16d	6	16d	--	3740	HD7180-SK45L/R_BV <sup>7,8</sup>	2-1/2	--	28	16d	8	10d	1170	4310

- 1) Shaded hangers require web stiffeners at joist ends.
- 2) Loads listed are based on hanger attachment to a DF or SP species solid sawn, Microllam® LVL, Parallam® PSL, or TimberStrand® LSL header. Contact your local Weyerhaeuser or MiTek Technical Representative for additional duration of load values.
- 3) Uplift loads have been increased 60% for wind and seismic loading; no further increase shall be permitted.
- 4) 10d nails are 0.148" diameter x 3" long, and 16d nails are 0.162" diameter x 3-1/2" long.  
16d sinkers are 0.148" diameter x 3-1/4" long and may be used where 10d nails (0.148" diameter x 3" long) are specified.
- 5) For additional sizes, stock numbers, and modifications not shown, refer to MiTek's USP Product Catalog.
- 6) D Dim is the length of the hanger seat.
- 7) Miter cut required for SKH hangers and bevel cut required for HD hangers on end of joist to achieve design loads.
- 8) Hangers are special order. Consult MiTek to for pricing and lead times.
- 9) MSH allowable loads listed in this table assume Top-Min mounting condition installed with 4 - 10d top nails and 2 - 10d face nails. For MSH Face-Max and Top-Max mounting conditions not included in this table, refer to the current MiTek USP Product Catalog.
- 10) Flanges on the bucket of the hanger may extend above the top of the joist.



SKH L Double  
Left shown

MSH

# Microllam® LVL, Parallam® PSL, or Timberstrand® LSL Beams & Headers



Joist Height	Top Mount Hangers <sup>3</sup>										Face Mount Hangers								
	USP Stock No.	D Dim <sup>6</sup>	Fastener Schedule <sup>4</sup>				Uplift 160% <sup>2</sup>	Down 100% <sup>1</sup>			USP Stock No.	D Dim <sup>6</sup>	Min / Max	Fastener Schedule <sup>4</sup>				Uplift 160% <sup>2</sup>	Down 100% <sup>1</sup>
			Header		Joist			LVL	PSL	LSL				Header		Joist			
			Qty	Type	Qty	Type								Qty	Type	Qty	Type		
<b>1-3/4" Microllam® LVL or Timberstrand® LSL</b>																			
7-1/4	PHXU17725	3-1/4	8	16d	6	10d x 1-1/2	930	4350	4350	4350	HD1770	2-1/2	Min	12	16d	4	10d x 1 1/2	760	1850
													Max	16	16d	8	10d x 1 1/2	1180	2465
9-1/4	BPH17925	2-3/8	10	16d	4	10d x 1-1/2	850	2970	2970	2970	HD17925	2-1/2	Min	18	16d	6	10d x 1 1/2	1170	2770
	PHXU17925	3-1/4	8	16d	6	10d x 1-1/2	930	4350	4350	4350	HUS179 <sup>5</sup>	3	--	30	16d	10	10d x 1 1/2	1900	3695
9-1/2	THO17950	2	6	10d	2	10d x 1-1/2	230	1235	1235	1235	HD17925	2-1/2	Min	18	16d	6	10d x 1 1/2	1170	2770
	PHXU1795	3-1/4	8	16d	6	10d x 1-1/2	930	4350	4350	4350	HUS179 <sup>5</sup>	3	--	30	16d	10	16d	4110	5580
11-1/4	BPH17112	2-3/8	10	16d	4	10d x 1-1/2	850	2970	2970	2970	HD17112	2-1/2	Min	22	16d	6	10d x 1 1/2	1170	3390
	PHXU17112	3-1/4	8	16d	6	10d x 1-1/2	930	4350	4350	4350	HUS179 <sup>5</sup>	3	--	30	16d	10	16d	4110	5580
11-7/8	THO17118	2	6	10d	2	10d x 1-1/2	230	1235	1235	1235	HD17112	2-1/2	Min	22	16d	6	10d x 1 1/2	1170	3390
	PHXU17118	3-1/4	8	16d	6	10d x 1-1/2	930	4350	4350	4350	HUS179 <sup>5</sup>	3	--	30	16d	10	16d	4110	5580
14	BPH1714	2-3/8	10	16d	4	10d x 1-1/2	850	2970	2970	2970	HD1714	2-1/2	Min	28	16d	8	10d x 1 1/2	1550	3790
	PHXU1714	3-1/4	8	16d	6	10d x 1-1/2	930	4350	4350	4350	HUS179 <sup>5</sup>	3	--	30	16d	10	16d	4110	5580
<b>2 Ply 1-3/4" or 3-1/2" Microllam® LVL or Parallam® PSL or Timberstrand® LSL</b>																			
7-1/4	PHXU35725	3-1/4	8	16d	6	10d	1120	5910	5910	5910	THD48	3	--	28	16d	16	10d	2595	4310
9-1/4	HBPH35925	3-1/2	22	16d	10	16d	2705	6310	6310	6310	THD410	3	--	38	16d	20	10d	3905	5850
	HLBH35925	6	15	NA16D-RS	6	16d	1420	10045	10045	10045	THDH410 <sup>5</sup>	4	--	46	16d	12	16d	4445	9020
9-1/2	HBPH3595	3-1/2	22	16d	10	16d	2705	6310	6310	6310	THD410	3	--	38	16d	20	10d	3905	5850
	HLBH3595	6	15	NA16D-RS	6	16d	1420	10045	10045	10045	THDH410 <sup>5</sup>	4	--	46	16d	12	16d	4445	9020
11-1/4	HBPH35112	3-1/2	22	16d	10	16d	2705	6310	6310	6310	THD410	3	--	38	16d	20	10d	3905	5850
	HLBH35112	6	15	NA16D-RS	6	16d	1420	10045	10045	10045	THDH412 <sup>5</sup>	4	--	56	16d	14	16d	5260	9710
11-7/8	HBPH35118	3-1/2	22	16d	10	16d	2705	6310	6310	6310	THD410	3	--	38	16d	20	10d	3905	5850
	HLBH35118	6	15	NA16D-RS	6	16d	1420	10045	10045	10045	THDH412 <sup>5</sup>	4	--	56	16d	14	16d	5260	9710
14	HBPH3514	3-1/2	22	16d	10	16d	2705	6310	6310	6310	THD410	3	--	38	16d	20	10d	3905	5850
	HLBH3514	6	15	NA16D-RS	6	16d	1420	10045	10045	10045	THDH414 <sup>5</sup>	4	--	66	16d	16	16d	5655	11760
16	HBPH3516	3-1/2	22	16d	10	16d	2705	6310	6310	6310	THD412	3	--	48	16d	20	10d	3905	7045
	HLBH3516	6	15	NA16D-RS	6	16d	1420	10045	10045	10045	THDH414 <sup>5</sup>	4	--	66	16d	16	16d	5655	11760
18	HBPH3518	3-1/2	22	16d	10	16d	2705	6310	6310	6310	THD412	3	--	48	16d	20	10d	3905	7045
	HLBH3518	6	15	NA16D-RS	6	16d	1420	10045	10045	10045	THDH414 <sup>5</sup>	4	--	66	16d	16	16d	5655	11760
20	HBPH3520	3-1/2	22	16d	10	16d	2705	6310	6310	6310	THD414	3	--	58	16d	20	10d	3905	7045
	HLBH3520	6	15	NA16D-RS	6	16d	1420	10045	10045	10045	THDH414 <sup>5,7</sup>	4	--	66	16d	16	16d	5655	11760
22	PHXU3522	3-1/4	8	16d	6	10d	1120	5910	5910	5910	HD418		--	28	16d	8	10d	1560	4310
	HBPH3522	3-1/2	22	16d	10	16d	2705	6310	6310	6310	THDH414 <sup>5,7</sup>	4	--	66	16d	16	16d	5655	11760
24	HBPH3524	3-1/4	22	16d	10	16d	2705	6310	6310	6310	HD418		--	28	16d	8	10d	1560	4310

1) Loads listed are based on hanger attachment to a DF or SP species solid sawn, Microllam® LVL, Parallam® PSL, or Timberstrand® LSL header.

Contact your local Weyerhaeuser or MiTek Technical Representative for additional duration of load values.

2) Uplift loads have been increased 60% for wind and seismic loading; no further increase shall be permitted.

3) Top Mount Hangers require a minimum 3" header width for THO series hangers; 3-1/2" minimum header thickness for all other stock numbers.

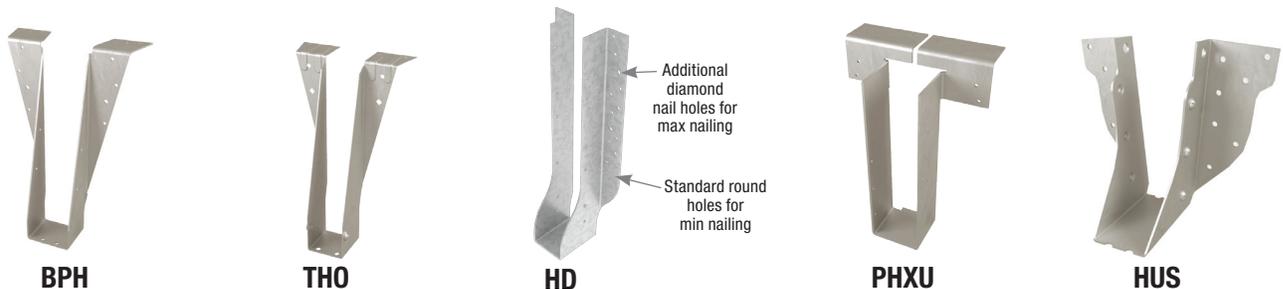
4) 10d x 1-1/2 nails are 0.148" diameter x 1-1/2" long, 10d nails are 0.148" diameter x 3" long, and 16d nails are 0.162" diameter x 3-1/2" long.

16d sinkers are 0.148" diameter x 3-1/4" long and may be used where 10d nails (0.148" diameter x 3" long) are specified.

5) Joist nails need to be toe nailed at a 30° to 45° angle with the carried member to achieve listed loads for THDH and HUS models.

6) D Dim is the length of the hanger seat.

7) Supplemental lateral support connection recommended when hanger height is less than 60% of joist height.



# Microllam® LVL, Parallam® PSL, or Timberstrand® LSL Beams & Headers



Joist Height	Top Mount Hangers <sup>3</sup>										Face Mount Hangers								
	USP Stock No. <sup>6</sup>	D Dim <sup>7</sup>	Fastener Schedule <sup>4</sup>				Uplift 160% <sup>2</sup>	Down 100% <sup>1</sup>			USP Stock No.	D Dim <sup>7</sup>	Min / Max	Fastener Schedule <sup>4</sup>				Uplift 160% <sup>2</sup>	Down 100% <sup>1</sup>
			Header		Joist			LVL	PSL	LSL				Header		Joist			
			Qty	Type	Qty	Type								Qty	Type	Qty	Type		
<b>3 Ply 1-3/4" or 5-1/4" Microllam® LVL or Parallam® PSL or TimberStrand® LSL</b>																			
7-1/4	BPH55725	2-1/4	10	16d	6	10d	850	3065	3065	3065	HD68	2-1/2	Min 10 Max 14	10	16d	4	16d	920 1305	1540 2155
9-1/4	HBPH55925	3-1/2	22	16d	10	16d	2705	6235	6235	6235	THD610	3	--	38	16d	20	10d	4010	6535
	HLBH55925	6	15	NA16D-RS	6	16d	1580	10045	10045	10045	THDH610 <sup>5</sup>	4	--	46	16d	16	16d	5260	9020
9-1/2	HBPH5595	3-1/2	22	16d	10	16d	2705	6235	6235	6235	THD610	3	--	38	16d	20	10d	4010	6535
	HLBH5595	6	15	NA16D-RS	6	16d	1580	10045	10045	10045	THDH610 <sup>5</sup>	4	--	46	16d	16	16d	5260	9020
11-1/4	HBPH55112	3-1/2	22	16d	10	16d	2705	6235	6235	6235	THD610	3	--	38	16d	20	10d	4010	6535
	HLBH55112	6	15	NA16D-RS	6	16d	1580	10045	10045	10045	THDH612 <sup>5</sup>	4	--	56	16d	20	16d	5260	9740
11-7/8	HBPH55118	3-1/2	22	16d	10	16d	2705	6235	6235	6235	THD610	3	--	38	16d	20	10d	4010	6535
	HLBH55118	6	15	NA16D-RS	6	16d	1580	10045	10045	10045	THDH612 <sup>5</sup>	4	--	56	16d	20	16d	5260	9740
14	HBPH5514	3-1/2	22	16d	10	16d	2705	6235	6235	6235	THD610	3	--	38	16d	20	10d	4010	6535
	HLBH5514	6	15	NA16D-RS	6	16d	1580	10045	10045	10045	THDH614 <sup>5</sup>	4	--	66	16d	22	16d	5655	11760
16	HBPH5516	3-1/2	22	16d	10	16d	2705	6235	6235	6235	THD612	3	--	48	16d	20	10d	4010	8255
	HLBH5516	6	15	NA16D-RS	6	16d	1580	10045	10045	10045	THDH614 <sup>5</sup>	4	--	66	16d	22	16d	5655	11760
18	HBPH5518	3-1/2	22	16d	10	16d	2705	6235	6235	6235	THD612	3	--	48	16d	20	10d	4010	8255
	HLBH5518	6	15	NA16D-RS	6	16d	1580	10045	10045	10045	THDH614 <sup>5</sup>	4	--	66	16d	22	16d	5655	11760
20	HBPH5520	3-1/2	22	16d	10	16d	2705	6235	6235	6235	THD614 <sup>9</sup>	3	--	58	16d	20	10d	4010	8860
	HLBH5520	6	15	NA16D-RS	6	16d	1580	10045	10045	10045	THDH614 <sup>5</sup>	4	--	66	16d	22	16d	5655	11760
22	XHLBH5522 <sup>8</sup>	6	15	NA16D-RS	6	16d	1580	10045	10045	10045	THD614 <sup>9</sup>	3	--	58	16d	20	10d	4010	8860
	--	--	--	--	--	--	--	--	--	--	THDH614 <sup>5</sup>	4	--	66	16d	22	16d	5655	11760
24	XHLBH5524 <sup>8</sup>	6	15	NA16D-RS	6	16d	1580	10045	10045	10045	THD614 <sup>9</sup>	3	--	58	16d	20	10d	4010	8860
	--	--	--	--	--	--	--	--	--	--	THDH614 <sup>5</sup>	4	--	66	16d	22	16d	5655	11760
<b>4 Ply 1-3/4" or 7" Microllam® LVL or Parallam® PSL or TimberStrand® LSL</b>																			
9-1/4	HBPH71925	3-1/2	22	16d	10	16d	2705	6235	6235	6235	THD7210	3	--	38	16d	20	10d	4010	6535
	HLBH71925	6	15	NA16D-RS	6	16d	1580	10045	10045	10045	THDH7210 <sup>5</sup>	4	--	46	16d	12	16d	4445	9020
9-1/2	HBPH7195	3-1/2	22	16d	10	16d	2705	6235	6235	6235	THD7210	3	--	38	16d	20	10d	4010	6535
	HLBH7195	6	15	NA16D-RS	6	16d	1580	10045	10045	10045	THDH7210 <sup>5</sup>	4	--	46	16d	12	16d	4445	9020
11-1/4	HBPH71112	3-1/2	22	16d	10	16d	2705	6235	6235	6235	THD7210	3	--	38	16d	20	10d	4010	6535
	HLBH71112	6	15	NA16D-RS	6	16d	1580	10045	10045	10045	THDH7212 <sup>5</sup>	4	--	56	16d	14	16d	5260	9020
11-7/8	HBPH71118	3-1/2	22	16d	10	16d	2705	6235	6235	6235	THD7210	3	--	38	16d	20	10d	4010	6535
	HLBH71118	6	15	NA16D-RS	6	16d	1580	10045	10045	10045	THDH7212 <sup>5</sup>	4	--	56	16d	14	16d	5260	9020
14	HBPH7114	3-1/2	22	16d	10	16d	2705	6235	6235	6235	THD7210	3	--	38	16d	20	10d	4010	6535
	HLBH7114	6	15	NA16D-RS	6	16d	1580	10045	10045	10045	THDH7214 <sup>5</sup>	4	--	66	16d	16	16d	5655	11760
16	HBPH7116	3-1/2	22	16d	10	16d	2705	6235	6235	6235	HD7120	2-1/2	Min 16 Max 22	16d	6	16d	1305	2465	
	HLBH7116	6	15	NA16D-RS	6	16d	1580	10045	10045	10045	THDH7214 <sup>5</sup>	4	--	66	16d	16	16d	5655	11760
18	HBPH7118	3-1/2	22	16d	10	16d	2705	6235	6235	6235	HD7140	2-1/2	Min 20 Max 26	16d	8	16d	1845	3080	
	HLBH7118	6	15	NA16D-RS	6	16d	1580	10045	10045	10045	THDH7214 <sup>5</sup>	4	--	66	16d	16	16d	5655	11760
20	HBPH7120	3-1/2	22	16d	10	16d	2705	6235	6235	6235	HD7140	2-1/2	Min 20 Max 26	16d	8	16d	1845	3080	
	HLBH7120	6	15	NA16D-RS	6	16d	1580	10045	10045	10045	THDH7214 <sup>5</sup>	4	--	66	16d	16	16d	5655	11760
22	HBPH7122	3-1/2	22	16d	10	16d	2705	6235	6235	6235	HD7180	2-1/2	--	28	16d	8	10d	1560	4310
	HLBH7122	6	15	NA16D-RS	6	16d	1580	10045	10045	10045	THDH7214 <sup>5</sup>	4	--	66	16d	16	16d	5655	11760
24	HBPH7124	3-1/2	22	16d	10	16d	2705	6235	6235	6235	HD7180	2-1/2	--	28	16d	8	10d	1560	4310
	HLBH7124	6	15	NA16D-RS	6	16d	1580	10045	10045	10045	THDH7214 <sup>5</sup>	4	--	66	16d	16	16d	5655	11760



**HBPH**



**HLBH**



**THD**



**THDH**

- 1) Loads listed are based on hanger attachment to a DF or SP species solid sawn, Microllam® LVL, Parallam® PSL, or TimberStrand® LSL header. Contact your local Weyerhaeuser or MiTek Technical Representative for additional duration of load values.
- 2) Uplift loads have been increased 60% for wind and seismic loading; no further increase shall be permitted.
- 3) Top Mount Hangers require a minimum 3" header width for THO series hangers; 3-1/2" minimum header thickness for all other stock numbers.
- 4) 10d nails are 0.148" diameter x 3" long, and 16d nails are 0.162" diameter x 3-1/2" long.  
16d sinkers are 0.148" diameter x 3-1/4" long and may be used where 10d nails (0.148" diameter x 3" long) are specified.
- 5) Joist nails need to be toe nailed at a 30° to 45° angle with the carried member to achieve listed loads for THDH models.
- 6) For additional sizes, stock numbers, and modifications not shown, refer to MiTek's USP Product Catalog.
- 7) D Dim is the length of the hanger seat.
- 8) Hangers are special order. Consult MiTek for pricing and lead times.
- 9) Supplemental lateral support connection recommended when hanger height is less than 60% of joist height.

# Variable Slope Seat Joist Hangers



The LSSH series connects rafters to ridge beams in vaulted roof structures. This series is field adjustable to meet a variety of skew and/or slope applications. Slopes and skews 0° to 45°.

## Installation:

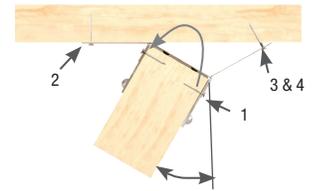
- Use all specified fasteners.

### Steps: (See LSSH Figure 1)

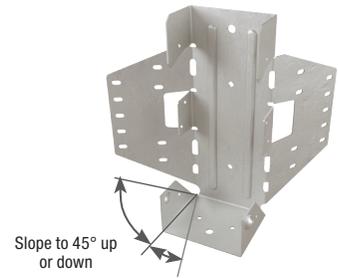
1. Position LSSH connector against plumb-cut end of joist. Fasten joist side flanges on both sides with 10d (0.148") x 1-1/2" nails. Bend seat up to fit against joist bottom and drive (1) 10d (0.148") x 1-1/2" nail through bottom seat into joist bottom flange. Drive (2) 10d (0.148") x 1-1/2" nail at downward angle through dimpled nailing guides.
  2. Lean connector and rafter end against ridge beam at desired position. Install 10d (0.148" x 3") or 16d (0.162" x 3-1/2") nails through nail holes into ridge beam at right 90° angle. If skewing the rafter, only drive nails into ridge beam on inside flange.
  3. Bend flange to desired angle.
  4. Hammer outside flange until edge touches header. Fasten outside flange to ridge by driving 10d (0.148" x 3") or 16d (0.162" x 3-1/2") nails through nail holes.
- Web stiffeners are required for all wood I-Joist installations.
  - Designer may consider adding a tension restraint for the supported member for roof slopes exceeding 6/12.



Typical LSSH installation



Skew to 45° maximum  
LSSH Figure 1



Slope to 45° up or down

LSSH

Rafter Width (in)	USP Stock No. <sup>1</sup>	D Dim <sup>5</sup>	Installation Type	Fastener Schedule <sup>4</sup>				Uplift <sup>3</sup> 160%	Down <sup>2</sup> 100%
				Header		Rafter			
				Qty	Type	Qty	Type		
<b>TJI® 110</b>									
Joist Width = 1-3/4"									
9-1/2" - 16"	LSSH179 <sup>6</sup>	1-13/16	Sloped Only	10	10d	7	10d x 1-1/2	880	1200
			Skewed Only or Sloped & Skewed	10	10d	7	10d x 1-1/2	880	1200
<b>TJI® 210</b>									
Joist Width = 2-1/16"									
9-1/2" - 16"	LSSH20 <sup>6</sup>	2-1/8	Sloped Only	10	10d	7	10d x 1-1/2	795	1200
			Skewed Only or Sloped & Skewed	10	10d	7	10d x 1-1/2	795	1200
<b>TJI® 230</b>									
Joist Width = 2-5/16"									
9-1/2" - 16"	LSSH23 <sup>6</sup>	2-5/16	Sloped Only	10	10d	7	10d x 1-1/2	795	1200
			Skewed Only or Sloped & Skewed	10	10d	7	10d x 1-1/2	795	1200
<b>TJI® 360</b>									
Joist Width = 2-5/16"									
11-7/8" - 20"	LSSH23 <sup>6</sup>	2-5/16	Sloped Only	10	10d	7	10d x 1-1/2	795	1200
			Skewed Only or Sloped & Skewed	10	10d	7	10d x 1-1/2	795	1200
<b>TJI® 560</b>									
Joist Width = 3-1/2"									
11-7/8" - 20"	LSSH35 <sup>6</sup>	3-9/16	Sloped Only	18	16d	12	10d x 1-1/2	1310	2645
			Skewed Only or Sloped & Skewed	14	16d	12	10d x 1-1/2	1310	1610
<b>TJI® 560D</b>									
Joist Width = 3-1/2"									
18" - 24"	LSSH35 <sup>6</sup>	3-9/16	Sloped Only	18	16d	12	10d x 1-1/2	1310	2645
			Skewed Only or Sloped & Skewed	14	16d	12	10d x 1-1/2	1310	1610

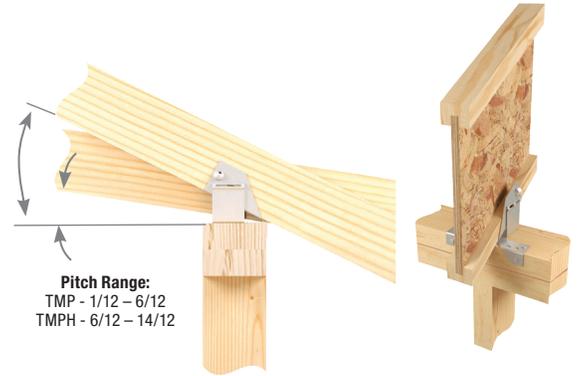
- 1) Shaded hangers require web stiffeners at joist ends.
- 2) Loads listed are based on hanger attachment to a DF or SP species solid sawn, Microllam® LVL, Parallam® PSL, or TimberStrand® LSL header. Loads are governed by test results; no further increase shall be permitted.
- 3) Uplift loads have been increased 60% for wind and seismic loading; no further increase shall be permitted.
- 4) 10d x 1-1/2" nails are 0.148" diameter x 1-1/2" long and 10d nails are 0.148" diameter x 3" long.
- 5) D Dim is the length of the hanger seat.
- 6) Supplemental lateral support connection recommended when hanger height is less than 60% of joist height.

# Variable Slope Seat Connectors

The TMP and TMPH are designed to make rafter-to-plate connections and eliminate time-consuming bird's-mouth notching or bevel plate installation.

### Installation:

- Use all specified fasteners.
- Position connector on top plate. Fasten connector to outside of top plate with specified nails. Insert rafter into rafter pocket. Adjust rafter and pocket to correct pitch. Fasten rafter to connector with specified nails. For **TMP**: drive specified nails through the opposing slots in the pocket. For **TMPH**: slide the fulcrum until it supports the pocket at the desired pitch and nailing down through the fulcrum base into the top plate to lock the fulcrum into position.



Typical TMP installation

### TMP chart

Joist	USP Stock No. <sup>1</sup>	Fastener Schedule <sup>4</sup>				Uplift <sup>3</sup> 160%	Down <sup>2</sup> 100%
		Plate		Rafter			
TJI®		Qty	Type	Qty	Type		
110	TMP175	6	10d	4	10d x 1-1/2	220	1150
210	TMP21	6	10d	4	10d x 1-1/2	220	1290
230	TMP23	6	10d	4	10d x 1-1/2	220	1970
360	TMP23	6	10d	4	10d x 1-1/2	220	1970
560, 560D	TMP4	6	10d	4	10d x 1-1/2	220	1970

- 1) Web stiffeners may be required for hanger by Weyerhaeuser.
- 2) Loads listed are based on hanger attachment to a DF or SP species solid sawn, Microllam® LVL, Parallam® PSL, or TimberStrand® LSL header. Contact your local Weyerhaeuser or MiTek Technical Representative for additional duration of load values.
- 3) Uplift loads have been increased 60% for wind and seismic loading; no further increase shall be permitted.
- 4) 10d x 1-1/2 nails are 0.148" diameter x 1-1/2" long, 10d nails are 0.148" diameter x 3" long.



TMP



Typical TMPH installation



TMPH

### TMPH chart

Joist	USP Stock No. <sup>1</sup>	Fastener Schedule <sup>4</sup>				Uplift <sup>3</sup> 160%	According to Pitch <sup>2</sup>									
		Plate		Rafter			6/12	7/12	8/12	9/12	10/12	11/12	12/12	13/12	14/12	
TJI®		Top Qty	Side Qty	Type	Qty	Type										
110	TMPH175	8	2	10d	8	10d x 1-1/2	200	3190	3290	3390	3140	2900	2710	2520	2230	1950
210	TMPH21	8	2	10d	8	10d x 1-1/2	200	3190	3290	3390	3140	2900	2710	2520	2230	1950
230	TMPH23	8	2	10d	8	10d x 1-1/2	200	3190	3290	3390	3140	2900	2710	2520	2230	1950
360	TMPH23	8	2	10d	8	10d x 1-1/2	200	3190	3290	3390	3140	2900	2710	2520	2230	1950
560, 560D	TMPH4	8	2	10d	8	10d x 1-1/2	200	3190	3290	3390	3140	2900	2710	2520	2230	1950

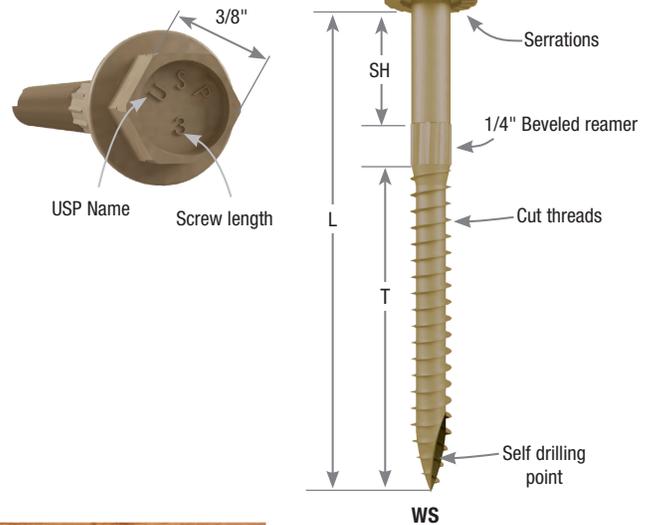
- 1) Web stiffeners are required for all Wood I-Joist installations.
- 2) Loads listed are based on hanger attachment to a DF or SP species solid sawn, Microllam® LVL, Parallam® PSL, or TimberStrand® LSL header. Contact your local Weyerhaeuser or MiTek Technical Representative for additional duration of load values.
- 3) Uplift loads have been increased 60% for wind and seismic loading; no further increase shall be permitted.
- 4) 10d x 1-1/2 nails are 0.148" diameter x 1-1/2" long, 10d nails are 0.148" diameter x 3" long.

# WS Series Wood Screw Applications - Joining 2, 3, or 4 Ply Microllam® LVL Members



## Installation:

- Screws are self-drilling.
- Install using a low speed clutch drill with 3/8" hex head driver. The washer head should be flat to the surface and the serrations will oppose turning and release the clutch. Do not over-tighten the screws.
- For 2 ply members, wood screws shall be installed with the screw heads in the loaded ply.
- For 3 or 4 ply members, wood screws shall be installed in both outer plies.
- Designer shall specify all wood screws locations.
- Increase edge and end distances if wood splitting occurs.
- Stagger all screws installed into the opposite face.
- A minimum of 2 rows of screws shall be used for all members with  $H = 5\text{-}1/2\text{'}$  and larger.



## Recommended Row Guidelines

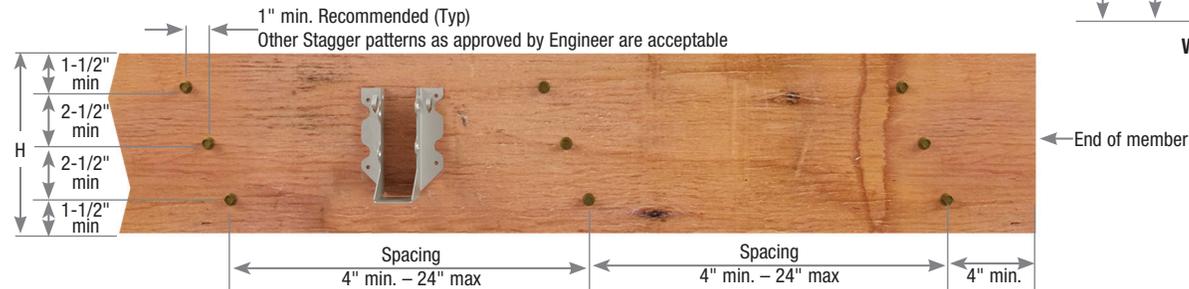


Figure 1



WS35 installed  
in (2) 1-3/4" Ply

Figure 2



WS35 installed  
in (3) 1-3/4" Ply

Figure 3



WS6 installed  
in (4) 1-3/4" Ply

Figure 4



WS35 installed  
in (1) 1-3/4",  
(1) 3-1/2" Ply

Figure 5



WS35 installed  
in (2) 1-3/4",  
(1) 3-1/2" Ply

Figure 6



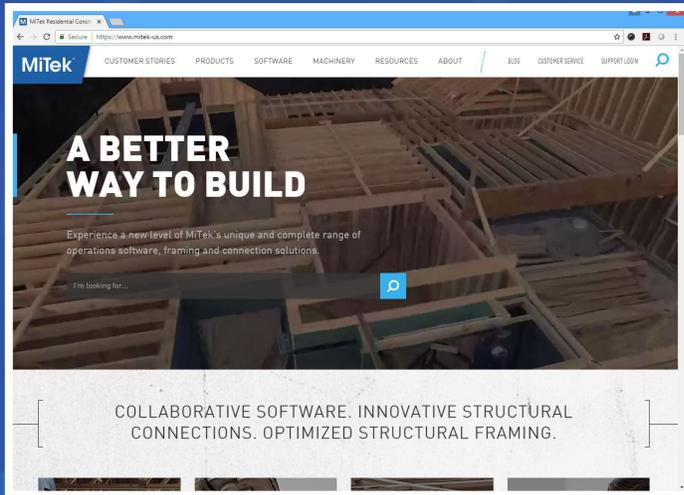
WS6 installed  
in (2) 3-1/2" Ply

Size (in)	USP Stock No.	Dimensions (in)			Multiple Members Installation Figure <sup>2,8</sup>	DF/SP Maximum Allowable Uniform Loads that can be applied to either outside member (Lbs. Per Lineal Ft.) <sup>1,3,4,5,6</sup>					
		L	SH	T		12" O.C.		18" O.C.		24" O.C.	
						2 Rows	3 Rows	2 Rows	3 Rows	2 Rows	3 Rows
1/4 x 3-1/2	WS35	3-1/2	3/4	2-1/2	1	970	1460	650	970	485	730
					2	730	1095	485	730	365	545
					4	730	1095	485	730	365	545
					5	650	970	430	650	325	485
1/4 x 6	WS6 <sup>7</sup>	6	1-3/4	4	3	650	970	430	650	325	485
					6	1940	2920	1300	1940	970	1460

- 1) Based on Zscrew = 243 pounds in Douglas Fir-Larch with a side member thickness of not less than 1-3/4".
- 2) Load values depicted assume all uniform load is applied to the most narrow outside ply only.
- 3) Except for Figure 6 installation, load values neglect any contribution of screws installed to opposite side, even if they extend significantly into the loaded ply.
- 4) Loads are for normal (100%) duration of load, and may be increased in accordance with the code.
- 5) Uniform loads in table represent the capacity of the fasteners. The capacity of the LVL or PSL beam may be less and should be checked by a qualified designer or with the manufacturer's literature.
- 6) A qualified designer shall ensure the adequacy of a 7" wide beam to resist the applied load on one edge; otherwise, the loads shall be uniformly distributed across the width or applied equally on both sides.
- 7) Wood screws longer than 3-1/2" are not recommended for use with Parallam® PSL or TimberStrand® LSL.
- 8) For Figures 2, 3, 5, and 6: Stagger the screws on opposite face by half minimum spacing requirements.

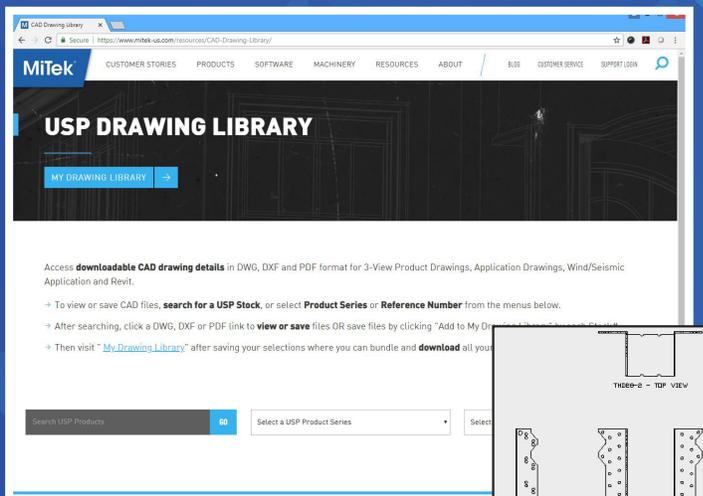
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