

Top-Flange Hangers W/WP/WPU/WMU/HW/HWU/HWP/HWPH

I-Joist and Structural Composite Lumber Hangers

The W, WP, WPU, HWU and HW series are designed to hang joists, purlins or beams. WMU hangers are designed for use on standard 8"-grouted masonry block wall construction. Some models have an "I" in the model number which indicates a size specific for an I-Joist and have the same properties and modifications as the standard series. Models that have an "I" in the model number (e.g., HWI) have the same properties and modifications as the standard models without the "I" in the name (e.g., HW).

The new HWP and HWPH high-wind purlin hangers have enhanced uplift. They are ideal for high-wind applications.

Material: See tables on pp. 218–227

Finish: Simpson Strong-Tie® gray paint; HDG available. Contact Simpson Strong-Tie.

Installation:

- Use all specified fasteners.
- Hangers may be welded to steel headers with $\frac{1}{8}$ " for W, $\frac{3}{16}$ " for WP, WPU, and $\frac{1}{4}$ " for HW, HWU by $1\frac{1}{2}$ " fillet welds located at each end of the top flange, see p. 21, note m for weld information. Weld-on applications produce maximum allowable load listed. For uplift loads refer to technical bulletin T-C-WELDUPLFT at strongtie.com (WPU and HWU hangers only).
- 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.
- Web stiffeners are required for standard joist nailing configuration with these hangers.

Options:

- See Hanger Options information on pp. 121–123.
- Some models are available in Type A (bevel cut joist). All models are available in Type B style (square-cut joist). Contact Simpson Strong-Tie when ordering.
- 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 $3\frac{1}{2}$ ".
- 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.

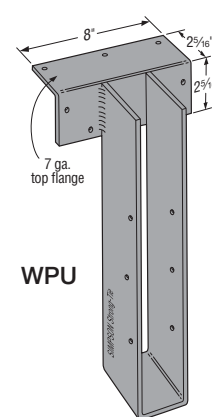
Saddle Hanger

- To order, add D to model and specify S dimension (see illustration).
- Saddle hangers achieve catalog load listed. Saddle hangers on stud walls do not achieve catalog loads.
- Recommended S dimension is $\frac{1}{16}$ " oversized for carrying members $2\frac{1}{2}$ " wide and less or $\frac{1}{8}$ " oversized for greater than $2\frac{1}{2}$ " wide.
- Saddle versions are available on the W and HW models.

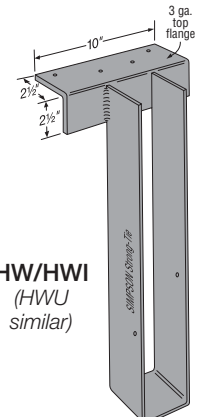
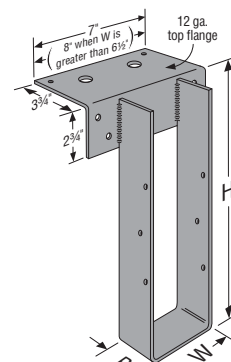
Ridge Hanger (not available for uplift models)

- 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.

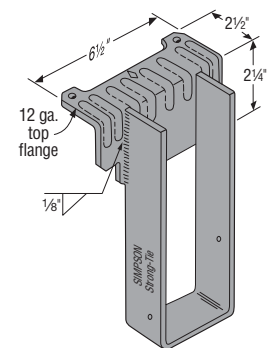
Codes: See p. 14 for Code Reference Key Chart



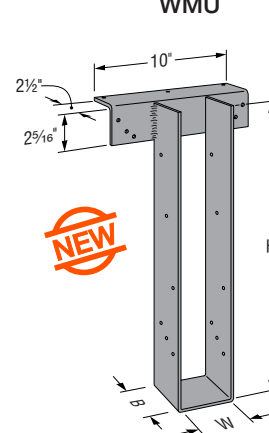
WPU

HW/HWI
(HWU similar)

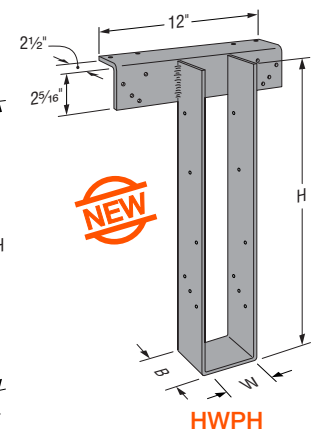
WMU



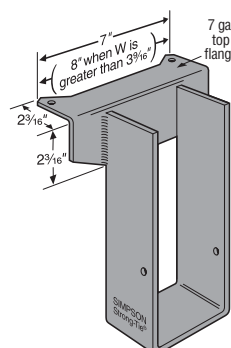
W/WI



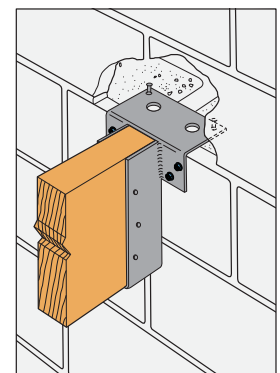
HWP



HWPH



WP/WPI



WMU Mid-Wall Installation
See pp. 276–277 for models and more information

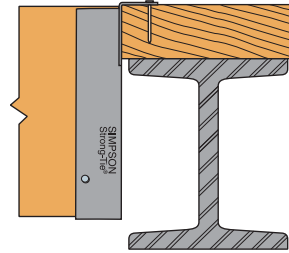
Top-Flange Hangers W/WP/WPU/WMU/HW/HWU/HWP/HWPH

I-Joist and Structural Composite Lumber Hangers (cont.)

Model	Nailer	Top Flange Nailing	Uplift ¹ (160)	Allowable Loads	
				DF/SP	SPF/HF
W	2x	(2) 10d x 1 1/2"	—	1,600	1,600
	(2) 2x	(2) 10d	—	1,665	—
	3x	(2) 16d x 2 1/2"	—	1,765	—
	4x	(2) 10d	—	2,200	—
WP	2x	(2) 10d x 1 1/2"	—	2,525	2,500
	(2) 2x	(2) 10d	—	3,255	3,255
	3x	(2) 16d x 2 1/2"	—	3,000	2,510
	4x	(2) 10d	—	3,255	3,255
WPU	(2) 2x	(7) 10d	710	3,255	—
	3x	(7) 16d x 2 1/2"	970	3,000	—
	4x	(7) 16d	1,095	3,255	—
HWP	(2) 2x	(3) 10d	710	4,615	—
	3x	(3) 16d x 2 1/2"	970	4,615	—
	4x	(3) 16d x 2 1/2"	1,535	5,045	—
HW	(2) 2x	(4) 10d	—	4,860	—
	3x	(4) 16d x 2 1/2"	—	4,845	—
	4x	(4) 16d	—	5,285	—
HWU	(2) 2x	(8) 16d x 2 1/2"	710	5,430	—
	3x	(8) 16d x 2 1/2"	970	5,430	—
	4x	(8) 16d	1,160	5,430	—
HWPH	(2) 2x	(4) 16d x 2 1/2"	710	6,400	—
	3x	(4) 16d x 2 1/2"	970	6,470	—
	4x	(4) 16d	1,550	6,470	—

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.



Installation on Wood Nailer

- Uplift values for the WPU and HWU hangers are for depths ≤ 18" and are for DF/SP values only. Refer to uplift values in table below for taller depths.
- Attachment of nailer to supporting member is the responsibility of the Designer.

W Series with Various Header Applications

Model	Joist (in.)		Fasteners			Allowable Loads Header Type							Code Ref.	
	Width	Depth	Top	Face	Joist	Uplift (160)	LVL ⁴	PSL	LSL	DF/SP	SPF/HF	I-Joist		Masonry ⁵
W	1 1/2 to 4	3 1/2 to 30	(2) 10d x 1 1/2"	—	(2) 10d x 1 1/2"	—	1,635	1,740	—	1,600	1,415	—	—	170
	1 1/2 to 4	3 1/2 to 30	(2) 10d	—	(2) 10d x 1 1/2"	—	2,150	2,020	—	2,200	1,435	—	—	119, L14, FL
	1 1/2 to 4	3 1/2 to 30	(2) 16d	—	(2) 10d x 1 1/2"	—	2,335	1,950	2,335	1,765	1,435	—	—	170
WMU	1 1/2 to 1 3/4	9 to 28	(2) 16d DPLX	(4) 1/4" x 1 3/4" Titens	(6) 10d x 1 1/2"	625	Mid-Wall Installation						3,380	170
	2 1/2 to 7 1/2	9 to 28	(2) 16d DPLX	(4) 1/4" x 1 3/4" Titens	(6) 10d x 1 1/2"	625	Top-of-Wall Installation						4,175	
	1 1/2 to 7 1/2	9 to 28	(2) 1/4" x 1 3/4" Titens	(4) 1/4" x 1 3/4" Titens	(6) 10d x 1 1/2"	545	Top-of-Wall Installation						3,380	
WP	1 1/2 to 7 1/2	3 1/2 to 30	(2) 10d x 1 1/2"	—	(2) 10d x 1 1/2"	—	2,865	3,250	—	2,500	2,000	2,030	—	119, L14, FL
	1 1/2 to 7 1/2	3 1/2 to 30	(2) 10d	—	(2) 10d x 1 1/2"	—	2,525	3,250	3,650	3,255	2,525	—	—	
	1 1/2 to 7 1/2	3 1/2 to 30	(2) 16d	—	(2) 10d x 1 1/2"	—	3,635	3,320	3,650	3,255	2,600	—	—	
WPU	1 1/2 to 5 1/2	7 1/2 to 18	(3) 16d	(4) 16d	(6) 10d x 1 1/2"	1,095	4,700	4,880	3,650	4,165	4,165	—	—	119, L14, FL
	1 1/2 to 5 1/2	18 1/2 to 28	(3) 16d	(4) 16d	(6) 10d x 1 1/2"	390	4,700	4,880	3,650	4,165	4,165	—	—	
HWP	1 1/2 to 7		(3) 16d	(6) 16d	(10) 10d x 1 1/2"	1,535	3,995	4,500	4,350	3,955	3,955	—	—	119, L14, FL
	1 1/2 to 7		(3) 16d	(6) 16d	(12) 10d x 1 1/2"	1,570	3,995	4,500	4,350	3,955	3,955	—	—	
HW	1 1/2 to 7 1/2	3 1/2 to 32	(4) 10d	—	(2) 10d x 1 1/2"	—	3,100	4,000	—	5,285	3,100	—	—	119, L14, FL
	1 1/2 to 7 1/2	3 1/2 to 32	(4) 16d	—	(2) 10d x 1 1/2"	—	5,100	4,000	4,500	5,285	3,665	—	—	
HWU	1 3/4 to 3 1/2	9 to 18	(4) 16d	(4) 16d	(6) 10d x 1 1/2"	1,160	6,335	5,500	5,535	6,335	5,415	—	—	119, L14, FL
	1 3/4 to 3 1/2	18 1/2 to 28	(4) 16d	(4) 16d	(6) 10d x 1 1/2"	965	6,335	5,500	5,535	6,335	5,415	—	—	
	1 3/4 to 3 1/2	28 1/2 to 32	(4) 16d	(4) 16d	(8) 10d x 1 1/2"	985	6,335	5,500	5,535	6,335	5,415	—	—	
	4 1/2 to 7	9 to 18	(4) 16d	(4) 16d	(6) 10d x 1 1/2"	1,160	6,000	5,500	5,535	6,000	5,415	—	—	
	4 1/2 to 7	18 1/2 to 28	(4) 16d	(4) 16d	(6) 10d x 1 1/2"	965	6,000	5,500	5,535	6,000	5,415	—	—	
HWPH	2 1/2 to 7		(4) 16d	(8) 16d	(10) 10d x 1 1/2"	1,685	6,595	7,025	5,450	5,920	4,740	—	—	119, L14, FL
	2 1/2 to 7		(4) 16d	(8) 16d	(12) 10d x 1 1/2"	2,075	6,595	7,025	5,450	5,920	4,740	—	—	

- Uplift loads are based on DF/SP lumber and have been increased 60% for wind or earthquake loading with no further increase allowed. For normal loading applications such as cantilever construction refer to Simpson Strong-Tie® Connector Selector™ software or conservatively divide the uplift load by 1.6. For SPF/HF use 0.86 x DF/SP uplift load.
- 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/HF column.
- WP quantity of nail holes in top flange varies.

- Top-flange hangers on the following pages with "I" in the model name (e.g. HWI) use the same design information in the above tables for the models without the "I" in the name (e.g. HW).
- Minimum $f_m = 1,500$ psi. See Installation Notes on pp. 276–277.
- For hanger heights exceeding the joist height, the allowable load is 0.50 of the table load.
- Nails:** 16d and 16d DPLX = 0.162" dia. x 3 1/2" long, 10d = 0.148" dia. x 3" long, 10d x 1 1/2" = 0.148" dia. x 1 1/2" long. See pp. 26–27 for other nail sizes and information.

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Top-Flange Hangers W/WP/WPU/WMU/HW/HWU/HWP/HWPH

I-Joist and Structural Composite Lumber Hangers (cont.)

Modifications and Associated Load Reductions for W/WP/WPU/WMU/HW/HWU

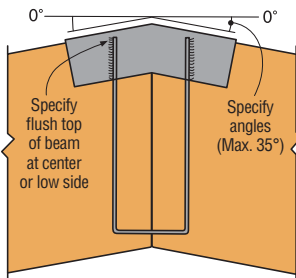
Seat			Top Flange				Joist Height	
Seat Sloped Up or Down 45° Max.	Seat Skewed Left or Right 84° Max. ¹	Seat Sloped and Skewed	Top Flange ² Sloped 30° Max.	Top Flange Bent ² Open or Closed 30° Max.	Top Flange Offset	Top Flange Offset and Skewed Seat	Joist Shorter Than Hanger	
1.00	1.00	1.00	(90-x) / 90	(90-a) / 90 HW cannot be bent closed	0.50	Use the lower of the factor or max. load W ≤ 3½" use 0.25 / 1,335 lb. max. W > 3½" use 0.30 / 1,620 lb. max.	By more than ½"	0.50
							By ½" or less	1.00

1. WPU, WNPW, HWU have a maximum skew of 45° and can only be skewed when $W \leq 3\frac{1}{2}$ ".
2. For straight-line interpolation, "a" is the specified angle.
3. For skewed and offset top flange hangers, the maximum allowable load is 0.50 of the table load or 2,000 lb., whichever is lower.
4. For type B hangers skewed and top flange offset in the opposite direction, hangers 3½" and less wide have allowable load of 25% of the table load or 1,335 lb., whichever is lower, and for hangers wider than 3½", the allowable load is 30% of the table load or 1,620 lb., whichever is lower.
5. Reduction factors are not cumulative. Use the lowest factor that applies.

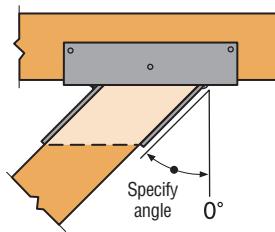
Reduction Factor Instructions

Allowable Download = (lowest of Seat, Top Flange, or Joist Height) × (Table Load)

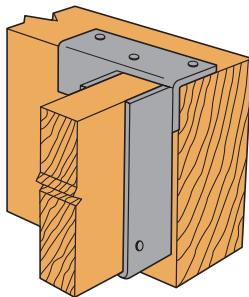
Allowable Uplift = as noted in table per height. (WPU, WNPW, HWU only)



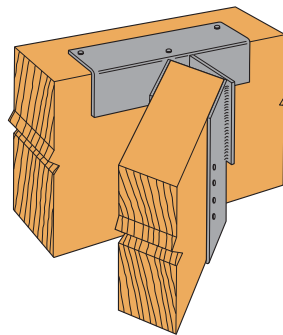
Typical W Ridge Installation



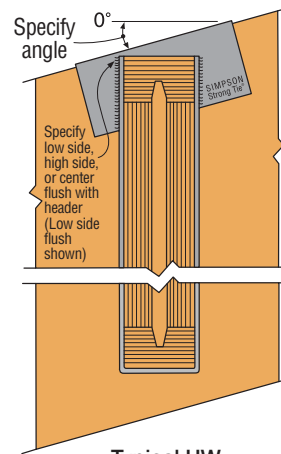
Typical W Top View Skewed Left Type A Hanger (Bevel-cut joist shown)



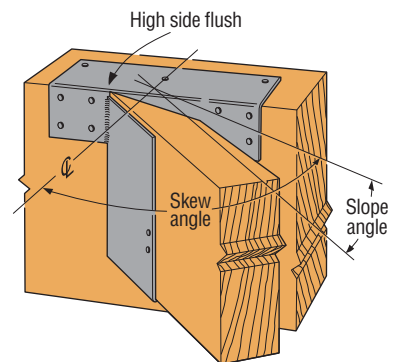
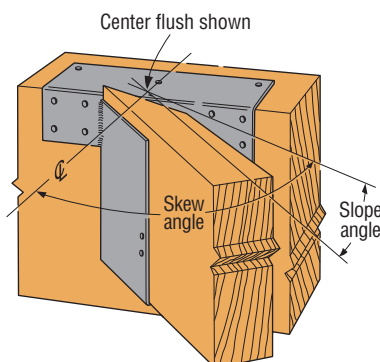
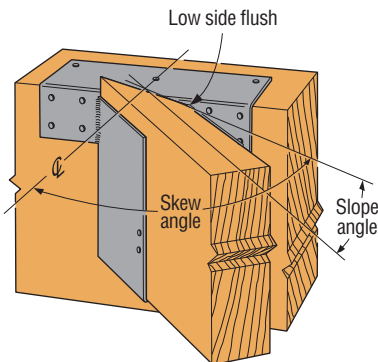
Typical W Top Flange Offset Left



Typical W Skewed Left Type B Hanger (Square-cut joist shown)



Typical HW Top Flange Sloped Down Left with Low Side Flush



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.