

# JB/JBA/LB/LBAZ/BA/HB

## Joist, Beam and Purlin Top-Flange 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 LBAZ and JBA hangers provide higher loads for 2x10, 2x12 and 2x14 members in 14-gauge and 18-gauge steel, respectively. The nail locations on the JBA enable effective use with nailers.

The BA hangers are cost-effective hangers featuring min./max. joist nailing option. Min. Nailing featuring Positive Angle Nailing targets moderate load conditions whereas the Max. Nailing generates capacities for higher loads. The unique two-level embossment provides added stiffness to the top flange. See tables on pp. 131–135. See Hanger Options on pp. 98–99 for hanger modifications, which may result in reduced loads.

**Material:** JB/JBA — 18 gauge; LB/LBAZ — 14 gauge; BA — 14 gauge or 12 gauge; HB — 10 gauge

For modified hangers, gauge may increase from that specified for non-modified hangers. Hanger configurations, height and fastener quantity may increase from the tables depending on joist size, skew and slope. Embossments may be omitted.

**Finish:** BA, HB, JB, JBA, LB and LBAZ — galvanized; BA, HB and LB may be ordered hot-dip galvanized; specify HDG.

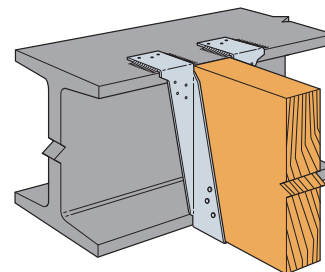
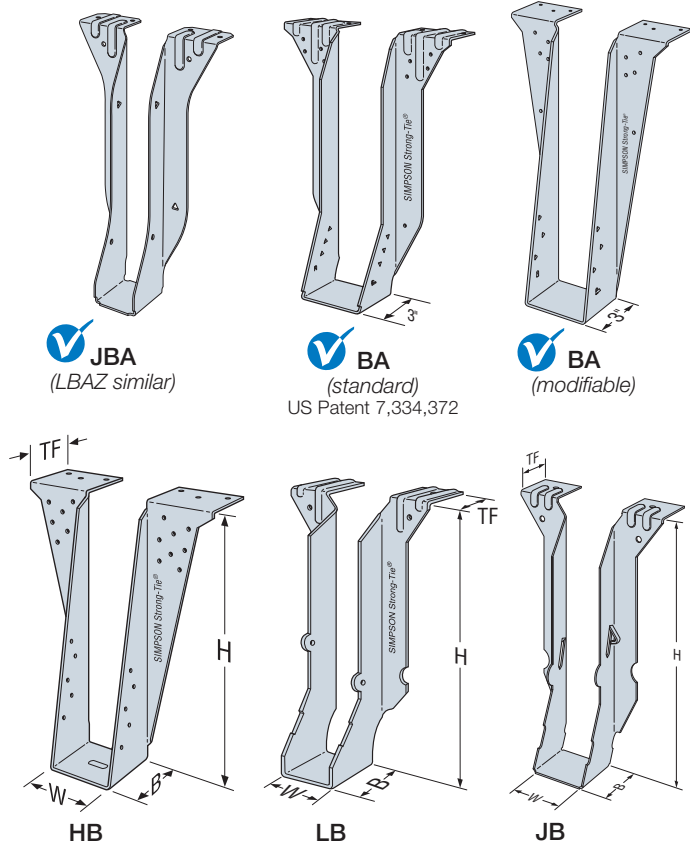
### Installation:

- Use specified fasteners; see General Notes and nailer table notes.
- LB, LBAZ, HB and BA may also be welded to steel headers with weld size to match material thickness. The minimum required weld to the top flanges is 2" (1 $\frac{1}{16}$ " for LBAZ) fillet weld to each side of each top flange tab. 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 p. 18, note k for welding information). Weld on applications produce the maximum allowable down load listed. For uplift loads refer to technical bulletin T-C-WELDUPFLT at [strongtie.com](http://strongtie.com).
- Ledgers must be evaluated for each application separately. Check TF dimension, nail length and nail location on ledger.
- For modified hangers, fastener quantity may increase from the tables depending on joist size, skew and slope.
- Bevel cut the carried member for skewed applications.

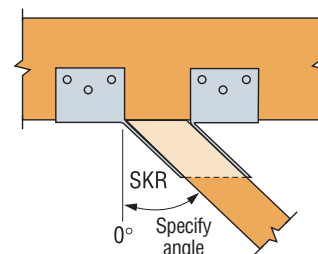
### Options:

- See modification tables for allowed options and associated load reductions on p. 126

**Codes:** See p. 11 for Code Reference Key Chart



LBAZ and BA are acceptable for weld-on applications. See Installation Information.



Top View BA Hanger Skewed Right

## JB/JBA/LB/LBAZ/BA/HB

## Joist, Beam and Purlin Top-Flange Hangers (cont.)

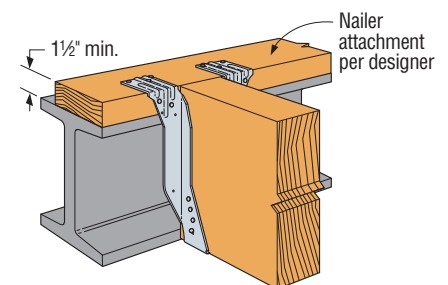
## Various Header Applications

Joist or Purlin Size	Model No.	Ga.	Dimensions (in.)				Fasteners (in.)		Allowable Loads by Header Type and Fastener					Code Ref.				
			W	H	B	TF	Header	Joist	Uplift (160)	LVL	PSL	DF/SP	SPF/HF					
2x	JB26	18	1 9/16	See p. 131	1 1/2	1 5/16	(4) 0.148 x 3	(2) Prong	—	—	—	995	780	IBC, FL, LA				
	JB28				1 1/2	1 5/16	(4) 0.148 x 3	(2) Prong	—	—	—	995	775					
	JB210A JB212A JB214A				2	1 7/16	(6) 0.162 x 3 1/2	(2) 0.148 x 1 1/2	260	—	—	1,685	1,190					
							(6) 0.148 x 3	(2) 0.148 x 1 1/2	260	—	—	1,445	1,015					
2x	LB26	14	1 9/16	See p. 131	1 1/2	1 1/2	(4) 0.162 x 3 1/2	(2) 0.148 x 1 1/2	380	—	—	1,135	705					
	LB28				1 1/2	1 1/2	(4) 0.162 x 3 1/2	(2) 0.148 x 1 1/2	380	—	—	1,135	710					
	LB210AZ LB212AZ LB214AZ				2	1 7/16	(6) 0.162 x 3 1/2	(2) 0.148 x 1 1/2	355	—	—	1,865	1,330					
							(6) 0.148 x 3	(2) 0.148 x 1 1/2	355	—	—	1,705	1,220					
4x	BA min.	12 and 14	3 9/16	3	2 7/16	7 1/4 to <11	(16) 0.148 x 3	(2) 0.148 x 1 1/2	255	3,230	3,630	2,980	2,980					
						11 to 30	(16) 0.148 x 3	(2) 0.148 x 1 1/2	255	3,230	3,630	3,870	2,980					
						7 1/4 to <11	(16) 0.162 x 3 1/2	(2) 0.148 x 1 1/2	255	4,015	3,705	3,205	2,660					
						11 to 30	(16) 0.162 x 3 1/2	(2) 0.148 x 1 1/2	255	4,015	3,705	3,780	3,095					
	BA max.					(16) 0.148 x 3	(8) 0.148 x 1 1/2	1,275	3,555	3,630	3,625	3,550						
						(16) 0.162 x 3 1/2	(8) 0.148 x 1 1/2	1,275	4,715	4,320	4,720	4,005						
						HB	10	3 3/16	11 to 16	3 1/2	3	(22) 0.162 x 3 1/2	(10) 0.162 x 3 1/2	2,075	5,818	5,640	5,395	3,820

- Uplift loads have been increased for earthquake or wind loading with no further increase allowed. Reduce where other loads govern.
- Uplift loads are based on DF/SP lumber. For SPF/HF, use 0.86 x DF/SP uplift load.
- Where noted for single-ply joist hangers, use (6) 0.148" x 1 1/2" nails.
- Fasteners:** Nail dimensions are listed diameter by length. See pp. 21–22 for fastener information.

## Nailer Table

Model No.	Nailer	Top Flange Nailing (in.)	Joist Nailing (in.)	Allowable Loads		
				Uplift (160)	DF/SP	SPF/HF
JB210A JB212A JB214A	2x	(6) 0.148 x 1 1/2	(2) 0.148 x 1 1/2	260	1,265	965
	3x	(6) 0.162 x 2 1/2	(2) 0.148 x 1 1/2	260	1,290	—
LB26	2x	(4) 0.148 x 1 1/2	(2) 0.148 x 1 1/2	—	850	—
LB28	2x	(4) 0.148 x 1 1/2	(2) 0.148 x 1 1/2	—	915	—
LB210AZ LB212AZ LB214AZ	2x	(6) 0.148 x 1 1/2	(2) 0.148 x 1 1/2	355	1,265	1,065
	3x	(6) 0.162 x 2 1/2	(2) 0.148 x 1 1/2	355	1,290	—
LB216	2x	(4) 0.148 x 1 1/2	(2) 0.148 x 1 1/2	—	1,150	—
BA	2x	(10) 0.148 x 1 1/2	(2) 0.148 x 1 1/2	255	1,970	1,875
	(2) 2x	(14) 0.148 x 3	(2) 0.148 x 1 1/2	255	2,695	2,235
	3x	(14) 0.162 x 2 1/2	(2) 0.148 x 1 1/2	255	3,230	—
	4x	(14) 0.162 x 3 1/2	(2) 0.148 x 1 1/2	255	3,230	—
	Steel	(6) PDPAT-62KP	(2) 0.148 x 1 1/2	—	3,695	3,695
HB	4x	(22) 0.162 x 3 1/2	(10) 0.162 x 3 1/2	1,465	5,200	—



Typical BA Installation on Wood Nailer (LB similar)

- Uplift values are for DF/SP nailers only.
- See technical bulletin T-C-NAILUPLFT at [strongtie.com](http://strongtie.com) for SP/HF loads and increased uplift loads with alternative nailing.
- Attachment of nailer to supporting member is by the designer.
- Fasteners:** Nail dimensions are listed diameter by length. See pp. 21–22 for fastener information.

# JB/JBA/LB/LBAZ/BA/HB

## Joist, Beam and Purlin Top-Flange Hangers (cont.)

### Modifications and Associated Load Reductions

Solid Sawn Joist Hangers

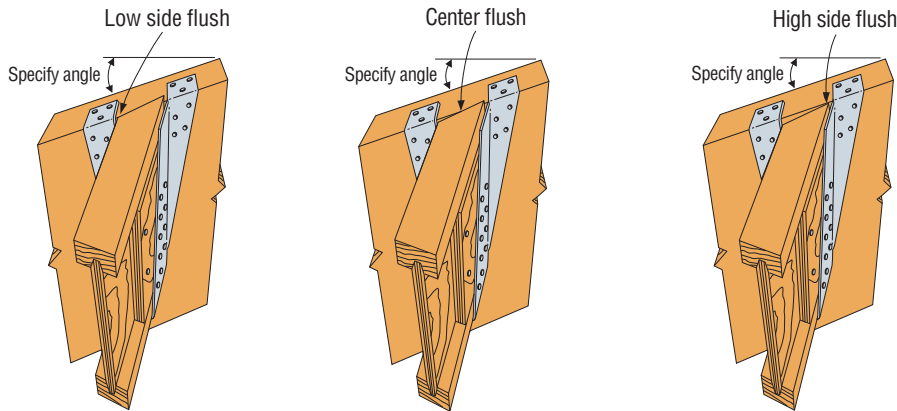
Hanger	Condition	Seat						Top Flange		
		Sloped Down 45° Max.	Sloped Up 45° Max.	Skewed 45° Max.	Sloped Down and Skewed	Sloped Up and Skewed	Top Flange Sloped 35° Max.	Top Flange Bent Open or Closed 30° Max.		
BA	Min. height →	6	6	6	9¼	14	9¼	14	14 <sup>3</sup>	9¼
	W < 2½"	0.82	0.66	0.95	0.54	0.82	0.64	0.64	(90 - a) / 90	(90 - a) / 90
	W ≥ 2½"	0.8	0.95	1	0.7	1	0.8	0.8	(90 - a) / 90	(90 - a) / 90
HB	Min. height →	8	8	8	11¼	14	11¼	14	14	11¼
	W < 2½"	0.84	0.7	1	0.47	0.84	0.62	0.69	(90 - a) / 90	(90 - a) / 90
	W ≥ 2½"	0.87	0.7	0.96	0.59	0.87	0.7	0.7	(90 - a) / 90	(90 - a) / 90

- Reduction factors are not cumulative. Use the lowest factors that apply.
- For straight-line interpolation, "a" is the specified angle.
- The sloped top flange option is permitted for BA hangers with a minimum height of 11 ¼" when the load reduction factor is applied to the tabulated BA allowable loads for the minimum installation.

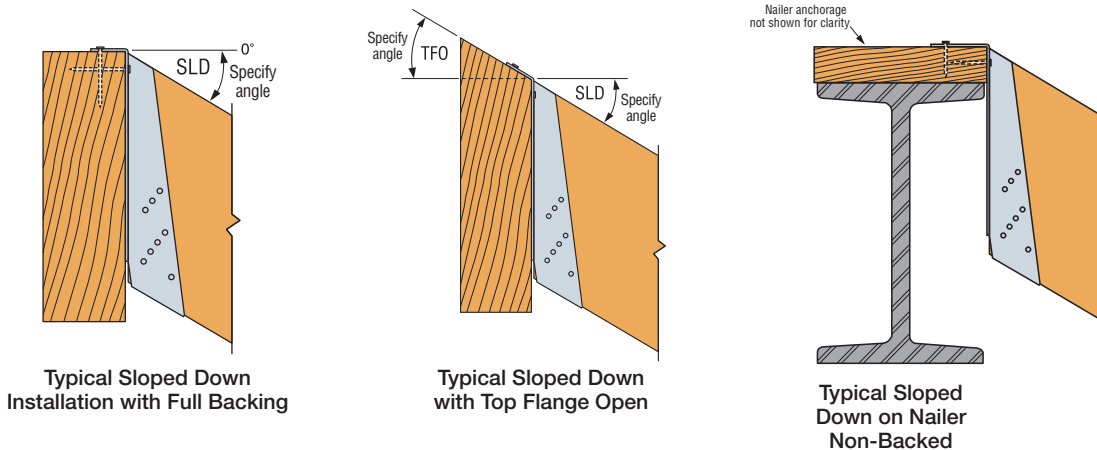
### Reduction Factor Instructions

**Allowable Download** = Lower of (Seat or Top Flange) × (Table Load)

**Allowable Uplift** = 0.90 × (Table Load) for BA with W < 2½"  
 = 0.71 × (Table Load) for HB with W < 2½"  
 = 1.00 × (Table Load) for all others



Sloped down and skewed left with sloped top flange installation. When ordering, specify low side flush, center flush or high side flush.



# BA/HB

## Top-Flange 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 BA hanger is a cost-effective hanger used for structural composite lumber and high-capacity I-joists. When used with I-joists, the positive angle nailing at the joist seat allows the hanger to be used without web stiffeners.

The HB hanger is also available with higher capacity for structural composite lumber and heavier I-joist applications.

See top flange tables on pp. 175–184.

**Material:** See tables on pp. 175–184.

- For modified hangers, gauge may increase from that specified for non-modified hangers. Hanger configurations, height and fastener quantity may increase from the tables depending on joist size, skew and slope.

**Finish:** BA and HB — Galvanized; BA and HB may be ordered hot-dip galvanized; specify HDG.

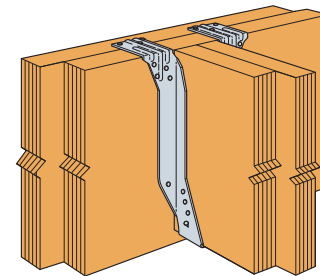
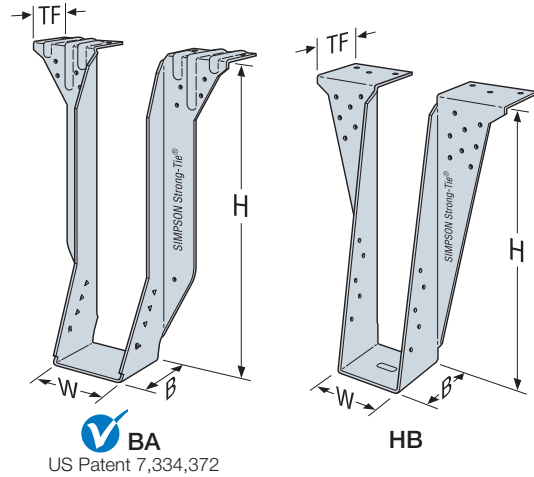
### Installation:

- Use all specified fasteners; see General Notes and nailer table.
- BA and HB may be used for weld-on applications. The minimum size weld is a 2"-long fillet weld to each side of each top flange; weld size to match hanger material thickness. 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 p. 18, note k for weld information. Weld on applications produce the maximum allowable down load listed. For additional load information, refer to technical bulletin T-C-WELDUPFLT at [strongtie.com](http://strongtie.com).
- HB hanger requires 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.
- Refer to technical bulletin T-C-SLOPEJST at [strongtie.com](http://strongtie.com) for information regarding load reductions on selected hangers which can be used without modification to support joists which have shallow slopes ( $\leq 3/4:12$ ).
- Bevel cut the carried member for skewed applications.

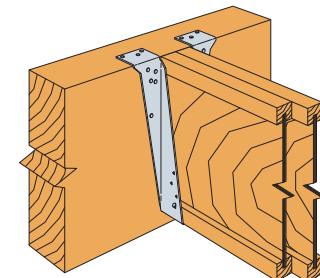
### Options:

- Other widths are available; specify W dimension (the minimum W dimension is 1 $\frac{1}{16}$ ").
- The coating on special BA hangers will depend on the manufacturing process used. Check with your Simpson Strong-Tie representative for details. Hot-dip galvanized available: specify HDG.
- For modified hangers, fastener quantity may increase from the tables depending on joist size, skew and slope. All modified hangers are 12 gauge.
- The BA and HB hangers may be modified for slopes and/or skews up to 45°. The top flanges may be sloped up to 35° and may be open or closed up to 30°. See associated load reduction on p. 166.

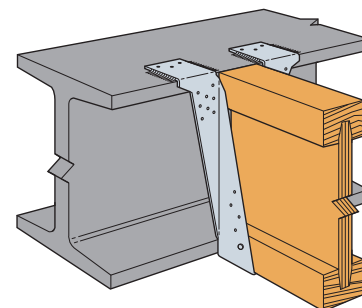
**Codes:** See p. 11 for Code Reference Key Chart



BA Supporting  
Double LVL



Typical Double  
BA Hanger Installation.  
BA Supporting Double I-Joist.



BA and HB are acceptable  
for weld-on applications.  
See Installation Information.  
(HB shown)

# BA/HB

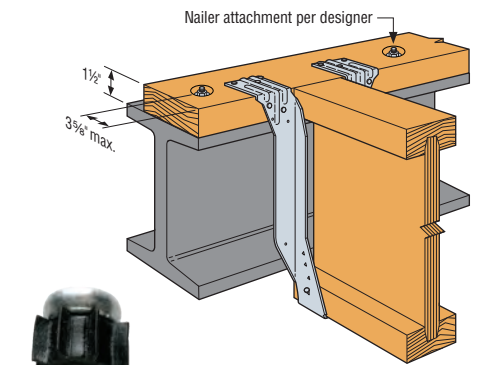
## Top-Flange Hangers (cont.)

Model No.	Nailer	Fasteners (in.)		DF/SP Allowable Loads		SPF/HF Allowable Loads	
		Header	Joist	Uplift (160)	Download (100)	Uplift (160)	Download (100)
BA	2x	(10) 0.148 x 1 1/2	(2) 0.148 x 1 1/2	255	1,970	220	1,875
	(2) 2x	(14) 0.148 x 3	(2) 0.148 x 1 1/2	255	2,695	220	2,235
	3x	(14) 0.162 x 2 1/2	(2) 0.148 x 1 1/2	255	3,230	220	2,650
	4x	(14) 0.162 x 3 1/2	(2) 0.148 x 1 1/2	255	3,230	—	—
	Steel	(6) 0.157 x 5/8 PAT	(2) 0.148 x 1 1/2	—	3,695	—	3,695
HB	(2) 2x	(18) 0.148 x 3	(10) 0.148 x 1 1/2	585	3,680	505	3,000
	3x	(18) 0.162 x 2 1/2	(10) 0.148 x 1 1/2	885	3,680	765	3,000
	4x	(22) 0.162 x 3 1/2	(10) 0.148 x 1 1/2	1,465	5,200	—	—

- Uplift loads have been increased for earthquake or wind loading with no further increase allowed. Reduce where other loads govern. BA hangers resist more uplift when web stiffeners are used. Refer to technical bulletin T-C-NAILUPLFT at [strongtie.com](http://strongtie.com) for additional information.
- Steel nailer allowable loads apply to steel header material with thickness between 1/4" and 3/4" with minimum F<sub>y</sub> = 36 ksi. Design of steel header by designer.
- 0.157"-diameter x 5/8"-long powder-actuated fastener = PDPAT-62KP. A red (level 5) or purple (level 6) load may be required to achieve specified penetration.
- Fasteners:** Nail dimensions are listed diameter by length. See pp. 21–22 for fastener information.

### Nailer Table

The table indicates the maximum allowable loads for BA and HB hangers used on wood nailers. Nailers are wood members attached to the top of a steel I-beam, concrete or masonry wall.



PDPAT

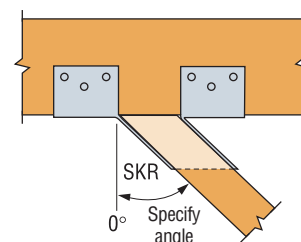
BA and HB are acceptable for nailer applications. (BA shown on 2x nailer)

I-Joist, Glulam and Structural Composite Lumber Connectors

## Various Header Applications

Model Series	W	H	Fasteners (in.)			Allowable Loads Header Type										Code Ref.
			Top	Face	Joist	Uplift (160)	LVL	PSL	LSL	DF/SP	SPF/HF	I-Joist				
												DF/SCL	SPF/HF			
BA (Min.)	1 1/2–7 1/2	7 1/2 to <11	(6) 0.148 x 1 1/2	(4) 0.148 x 1 1/2	(2) 0.148 x 1 1/2	255	2,295	2,610	2,270	1,970	1,875	1,495	1,495	IBC, FL, LA		
			(6) 0.148 x 3	(10) 0.148 x 3	(2) 0.148 x 1 1/2	255	3,230	3,630	4,005	2,980	2,980	—	—			
			(6) 0.162 x 3 1/2	(10) 0.162 x 3 1/2	(2) 0.148 x 1 1/2	255	4,015	3,705	4,005	3,205	2,660	—	—			
		11 to 30	(6) 0.148 x 1 1/2	(4) 0.148 x 1 1/2	(2) 0.148 x 1 1/2	255	2,295	2,610	2,270	1,970	1,875	1,495	1,495			
			(6) 0.148 x 3	(10) 0.148 x 3	(2) 0.148 x 1 1/2	255	3,230	3,630	4,005	3,800	2,980	—	—			
			(6) 0.162 x 3 1/2	(10) 0.162 x 3 1/2	(2) 0.148 x 1 1/2	255	4,015	3,705	4,005	3,780	3,095	—	—			
BA (Max.)	1 1/2–7 1/2	7 1/2 to 30	(6) 0.148 x 3	(10) 0.148 x 3	(8) 0.148 x 1 1/2	1,275	3,555	3,630	4,120	3,625	3,550	—	—			
			(6) 0.162 x 3 1/2	(10) 0.162 x 3 1/2	(8) 0.148 x 1 1/2	1,275	4,715	4,320	4,500	4,720	4,005	—	—			
HB	1 1/2–2 1/2	8 to 33	(6) 0.162 x 3 1/2	(16) 0.162 x 3 1/2	(10) 0.148 x 1 1/2	2,210	5,815	5,640	6,395	5,810	3,820	—	—			
			(6) 0.162 x 3 1/2	(16) 0.162 x 3 1/2	(10) 0.162 x 2 1/2	1,560	5,815	5,640	6,395	5,650	3,820	—	—			
			(6) 0.162 x 3 1/2	(16) 0.162 x 3 1/2	(10) 0.162 x 3 1/2	2,075	5,815	5,640	6,395	5,395	3,820	—	—			

- This table assumes joists with F<sub>c</sub> ⊥ = 750 psi. For other joists, check that bearing and joist nails are adequate.
- Uplift loads have been increased for earthquake or wind loading with no further increase allowed. Reduce where other loads govern.
- Uplift loads are based on DF/SP lumber. For SPF/HF, use 0.86 x DF/SP uplift load.
- Loads may not be increased for duration of load.
- SCL (structural composite lumber) is LVL (laminated veneer lumber), LSL (laminated strand lumber), and Parallam® PSL.
- LVL headers are assumed to be made primarily from Douglas fir or southern pine. For LVL made from spruce-pine-fir or similar less-dense veneers, use the values found in the SPF/HF column.
- DF I-joists headers include flanges made from solid sawn Douglas fir, LVL made primarily of DF/SP, or LSL. For I-joist header flanges with thicknesses from 1 1/2" to 1 3/4", use 0.85 of the I-joist header load. For I-joist header flanges with thicknesses from 1 1/8" to 1 1/4", use 0.75 of the I-joist header load.
- Fasteners:** Nail dimensions are listed diameter by length. See pp. 21–22 for fastener information.



Top View BA Hanger Skewed Right

# BA/HB

## Top-Flange Hangers (cont.)

### Modifications and Associated Load Reductions<sup>1</sup>

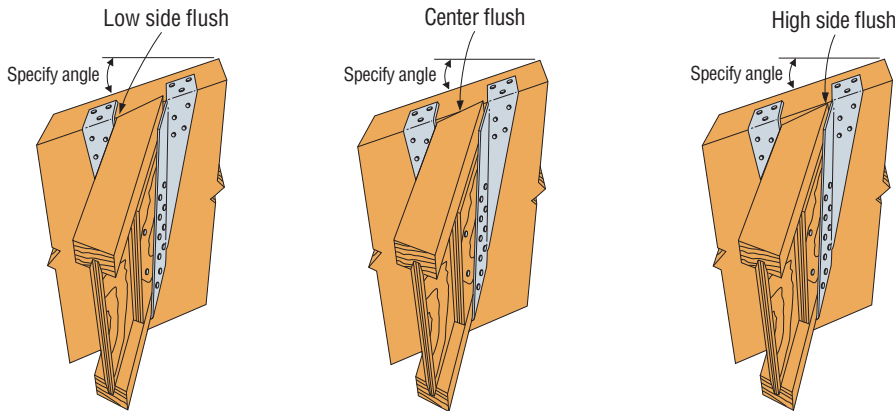
Hanger	Condition	Seat						Top Flange		
		Sloped Down 45° Max.	Sloped Up 45° Max.	Skewed 45° Max.	Sloped Down and Skewed		Sloped Up and Skewed		Top Flange Sloped 35° Max.	Top Flange Bent Open or Closed 30° Max.
BA	Min. height →	7¼	7¼	7¼	9¼	14	9¼	14	14 <sup>4</sup>	9¼
	W < 2½"	0.82	0.66	0.95	0.54	0.82	0.64	0.64	(90 - a) / 90	(90 - a) / 90
	W ≥ 2½"	0.8	0.95	1	0.7	1	0.8	0.8	(90 - a) / 90	(90 - a) / 90
HB	Min. height →	8	8	8	11¼	14	11¼	14	14	11¼
	W < 2½"	0.84	0.7	1	0.47	0.84	0.62	0.69	(90 - a) / 90	(90 - a) / 90
	W ≥ 2½"	0.87	0.7	0.96	0.59	0.87	0.7	0.7	(90 - a) / 90	(90 - a) / 90

1. Reduction factors are not cumulative. Use the lowest factors that apply.
2. Web stiffeners are required for sloped or skewed conditions.
3. For straight-line interpolation, "a" is the specified angle.
4. The sloped top flange option is permitted for BA hangers with a minimum height of 11¼" when the load reduction factor is applied to the tabulated BA allowable loads for the minimum installation.

### Reduction Factor Instructions

**Allowable Download** = Lower of (Seat or Top Flange) × (Table Load)

**Allowable Uplift** = 0.90 × (Table Load) for BA with W < 2½"  
 = 0.71 × (Table Load) for HB with W < 2½"  
 = 1.00 × (Table Load) for all others



**Sloped down and skewed left with sloped top flange Installation.**  
 When ordering, specify low side flush, center flush or high side flush.

