

ENGINEERED STEEL CONNECTORS

**CLEVELAND**



## **G**ENERAL NOTES AND WARRANTY

1. Cleveland Steel Specialty Co. reserves the right to change designs and specifications without notice or liability for such changes. Some allowable loads and nailing schedules have been changed in this catalog, which supersedes all previous catalogs.
2. See products listed for BOCA, ICBO and SBCCI in NER-464 for allowable loads and/or conditions for use concerning material presented in this document.
3. Design loads are based on the Uniform Building Code (UBC) for Doug Fir-Larch or Southern Pine and must be reduced for lesser lumber grades. Nail and bolt values based on UBC.
4. No alteration of products is allowed without written permission from Cleveland Steel Specialty Co. All specified fasteners must be used according to the nail and bolt schedules if published design loads are to be achieved.
5. Materials in sheet gauges have been tested to 33,000 psi minimum yield and plate sizes meet ASTM A-36 physicals.
6. All galvanized products have corrosion resistant coatings and steel products have a black copolymer paint finish.
7. Quality Control Program for welded products is monitored by PFS Corp. Welding performed by certified welders.
8. Cleveland Steel Specialty Co. warrants its products to be free of defective materials and workmanship. Liability is limited to the repair or replacement of defective parts. Customers hereby agree that no other incidental or consequential damages are the responsibility of the Cleveland Steel Specialty Co.
9. **Allowable loads based on 1997 N.D.S.**

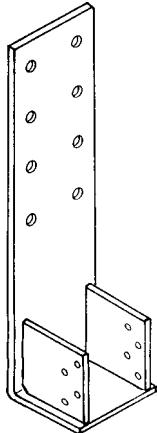
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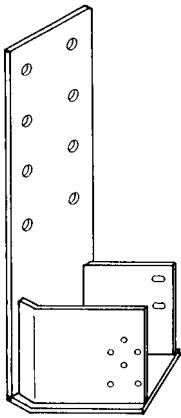


## PRODUCT INDEX

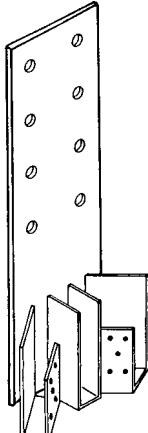
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**BUCKET HANGERS**

BH-5



BHS-5



BHT-2

**TRUSS TO TRUSS  
HEAVY LOAD HANGERS**  
**Square-Skewed-Hip & Jack-Terminal  
Radial Member**

**BH Bucket Hangers** bolt to 2x8 min. webs.

**BHR Radial Hangers** for multiple members.

**BHS Hangers** are skewed 45°, specify right or left hand.

**BHJ Hangers** carry 2 ply hip truss and end jack.

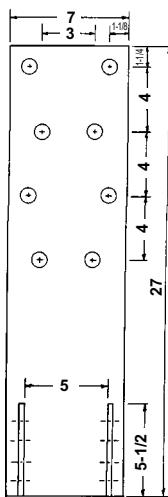
**BHT Terminal Hangers** accept 45° hips, one or two ply, plus single ply end jack. Bolting plate is 1/4 x 7 x 27 high.

**MATERIAL:** BH, BHS & BHJ all 1/4" A-36 steel. BHT pockets are 3/16" A-36 steel.

**FINISH:** Black copolymer finish.

**CAUTION** - 2 x 8 maximum bottom chord on carrying girder. Skewed version requires special location of web.

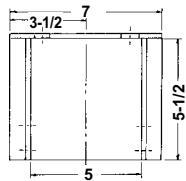
**WARNING** - all girder plies must be securely fastened together to act as one unit and the hanger bolts are not to be considered for this purpose.



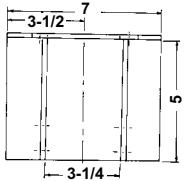
BH-5

Hanger Part No.	Bucket Hangers			Southern Pine or Douglas Fir Normal Loads*			Spruce-Pine-Fir Normal Loads*				
	Pocket Size	Pocket Nails	Girder Bolts	Length of Bolt in Carrying Member			Wind Uplift	Length of Bolt in Carrying Member			
				1-1/2	3	4-1/2		1-1/2	3	4-1/2	
BH-3	3-1/4 x 5-1/2	(8) 10d	6-3/4"	5160	8520	8960	1255	4140	6000	7260	1020
BH-5	4-3/4 x 5-1/2	(8) 10d	8-3/4"	6880	11360	12360	1255	5520	8000	11200	1020
BH-6	6-1/2 x 5-1/2	(8) 10d	8-3/4"	6880	11360	12360	1255	5520	8000	11200	1020
Micro = Lam Carried Member											
BH-3ML	3-3/4 x 5-1/2	(8) 10d	6-3/4"	5160	8520	9270	1255	4140	6000	8400	1255
BH-5ML	5-1/2 x 5-1/2	(8) 10d	8-3/4"	6880	11360	12360	1255	5520	8000	11200	1255
BHS-3	3-1/4 x 7-1/4	(8) 10d	8-3/4"	5850	8960	8960	1255	4690	6800	7260	1020
BHS-5	4-3/4 x 7-1/4	(8) 10d	8-3/4"	5850	9660	10500	1255	4690	6800	9520	1020
BHJ-3	—	—	8-3/4"	—	—	—	1540	—	—	—	1255
2 Ply Hip	3-1/4 x 7-1/4	(8) 10d	—	4390	7460	8960	1255	3520	5100	7260	1020
1 Ply Jack	1-5/8 x 7-1/4	(2) 10d	—	1460	2200	2200	285	1170	1700	1810	235
BHT-2	1-5/8 x 7-1/4	(5) 10d	8-3/4"	2290	3780	3940	715	1840	2670	3190	585
1 Ply	1-5/8 x 7-1/4	—	—	2290	3780	3940	—	1840	2670	3190	—
1 Ply	1-5/8 x 7-1/4	(5) 10d	—	2290	3780	3940	715	1840	2670	3190	585
BHT-3	3-1/4 x 7-1/4	(4) 10d	8-3/4"	2940	5080	5580	625	2160	3400	5000	510
1 Ply	1-5/8 x 7-1/4	—	—	1200	1200	1200	—	1200	1200	1200	—
2 Ply	3-1/4 x 7-1/4	(4) 10d	—	2840	5080	5580	625	2160	3400	5000	510

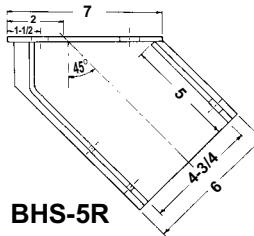
Available with or without bolts. See page 44.



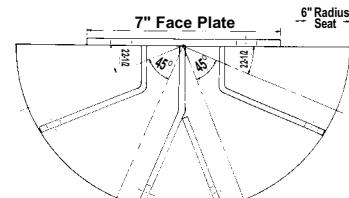
BH-5



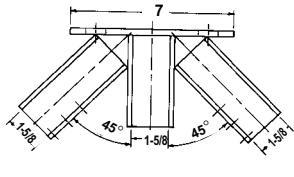
BH-3



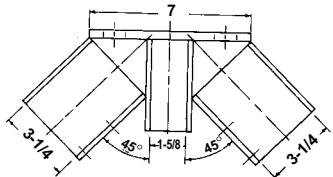
BHS-5R



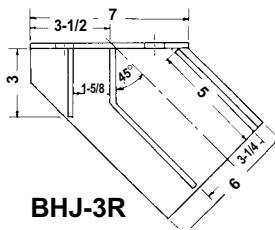
BHR-4 RADIAL



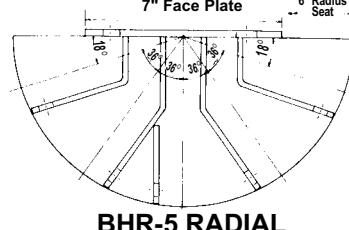
BHT-2



BHT-3



BHJ-3R

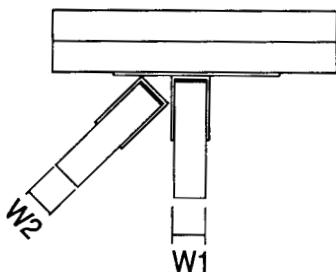


BHR-5 RADIAL

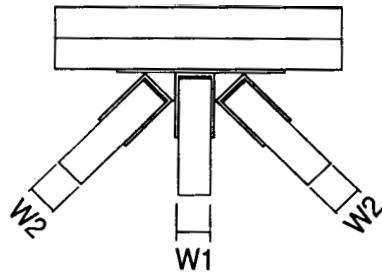


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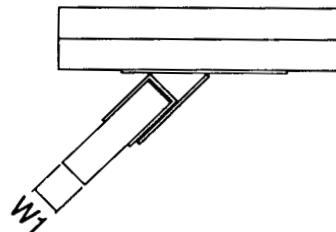
## **G**IRDER HANGERS



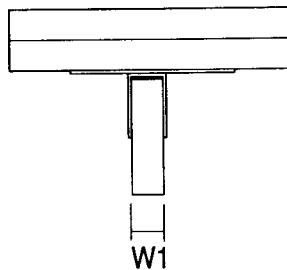
**GHTL**  
**GHTL2**  
(GHTR, and GHTR2 similar)



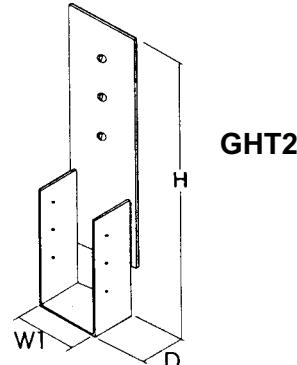
**GHLTR**  
**GH2LT2R**



**GHL**  
(GHR similar)



**GHT**



**GHT2**

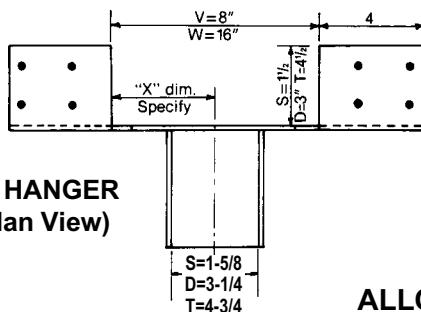
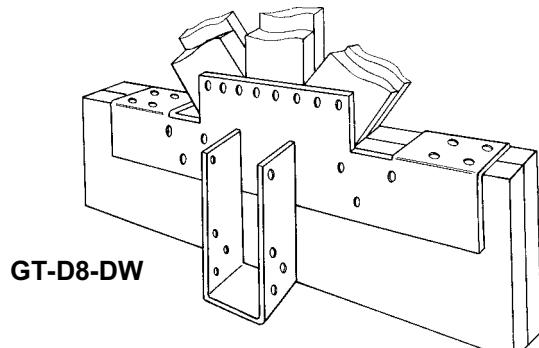
**Girder Hangers** are medium duty hangers for girder-to-girder applications.  
Bolts are listed in fastener section of catalog.

MATERIAL: Back plates are made of 3-gauge A-36 steel, stirrup seats are made of 7-gauge A-36 steel.

FINISH: Black copolymer paint.

Part Number	Dimensions				Bolts	Nails	Southern Yellow Pine				Spruce-Pine-Fur			
	W1	W2	H	D			1-Ply	2-Ply	3-Ply	Wind Uplift	1-Ply	2-Ply	3-Ply	Wind Uplift
GHT-2	3-1/4	—	21-3/4	3	(3) 3/4	(8) 10d	2400	4490	4906	1340	1925	3515	4365	1072
GHT-3	4-7/8	—	18-3/4	3	(4) 3/4	(8) 10d	3370	6175	6600	1340	2705	4830	5880	1072
GHT-4	6-1/2	—	21-1/2	3	(6) 3/4	(8) 10d	4950	9080	9800	1340	3975	7100	8730	1072
GHL GHR	3-7/8	—	18-3/4	3-1/2	(4) 3/4	(8) 10d	3405	6175	6600	1340	2730	4830	5880	1072
GHTL GHTR	1-5/8	1-5/8	18-3/4	3-1/2	(4) 3/4	(8) 10d x 1-1/2	3405	6175	6600	980	2730	4830	5880	785
GHTL2 GHTR2	1-5/8	3-1/4	18-3/4	3-1/2	(4) 3/4	(8) 10d x 1-1/2	3405	6175	6600	980	2730	4830	5880	785
GHLTR GHLT2R	1-5/8	1-5/8	18-3/4	3-1/2	(4) 3/4	(8) 10d x 1-1/2	3405	6175	6600	980	2730	4830	5880	785
GHLT2R	1-5/8	3-1/4	21-3/4	3-1/2	(6) 3/4	(8) 10d x 1-1/2	4950	9080	9800	980	3975	7100	8730	785

## GIRDER TRUSS HANGERS



**GT HANGER**  
(Plan View)

### GT GIRDER TRUSS HANGER

Cleveland heavy-duty GT Hangers are the largest capacity nail-on hangers available. Select the part number that corresponds to your pocket needs and carrier chord conditions. Specify "X" dimension for off-center applications.

MATERIAL: 3/16" A-36 steel.

FINISH: Black copolymer paint.

#### How To Order By Part Number

GT	-	D 8	-	D W	Specify "X" dimension
HJ	-	S 6	-	S W	Specify "X" dimension
					Opening Between Top Flanges
					Header Ply
					V = 8" W = 16"
					Style: GT = Girder Truss HJ = Hip & Jack
					Carrier Depth (nominal)
					Hip Ply or Carried Member



### ALLOWABLE LOADS FOR GT HANGERS

Part Number	Hanger Size	Seat Depth	Nail Schedule			Allowable Loads		
			Top Nails	Face Nails	Pocket Nails	Normal	115%	125%
GT-S6 / 8-SV	1.6 x 5-1/2 & 7-1/4	5	(4) 16d	(10) 16d	(8) 10d	*4100	*4300	*4435
GT-S6 / 8-SW	1.6 x 5-1/2 & 7-1/4	5	(4) 16d	(10) 16d	(8) 10d	*4100	*4300	*4435
GT-S10-SW	1.6 x 9-1/4	5	(4) 16d	(10) 16d	(8) 10d	*4100	*4300	*4435
GT-S6 / 8-DV	1.6 x 5-1/2 & 7-1/4	5	(8) 16d	(10) 16d	(8) 10d x 1-1/2	5060	5185	5265
GT-S6 / 8-DW	1.6 x 5-1/2 & 7-1/4	5	(8) 16d	(10) 16d	(8) 10d x 1-1/2	5060	5185	5265
GT-S10-DW	1.6 x 9-1/4	5	(8) 16d	(10) 16d	(8) 10d x 1-1/2	5060	5185	5265
GT-D6 / 8-DV	3.2 x 5-1/2 & 7-1/4	4	(8) 16d	(10) 16d	(8) 10d	5775	5775	5775
GT-D6 / 8-DW	3.2 x 5-1/2 & 7-1/4	4	(8) 16d	(10) 16d	(8) 10d	5775	5775	5775
GT-D10 / 12-DW	3.2 x 9-1/4 & 11-1/4	4	(8) 16d	(10) 16d	(8) 10d	5775	5775	5775
GT-D6 / 8-TW	3.2 x 5-1/2 & 7-1/4	4	(12) 16d	(10) 16d	(8) 10d	6460	6600	6700
GT-D10 / 12-TW	3.2 x 9-1/4 & 11-1/4	4	(12) 16d	(10) 16d	(8) 10d	6460	6600	6700
GT-T6 / 8-TW	4.7 x 5-1/2 & 7-1/4	4	(12) 16d	(10) 16d	(8) 10d	6700	6700	6700
GT-T10 / 12-TW	4.7 x 9-1/4 & 11-1/4	4	(12) 16d	(10) 16d	(8) 10d	6700	6700	6700

- The 1.6" and 3.2" sizes are plated trusses, single and double ply respectively.
- The 10d x 1-1/2" nails are No. 9 gauge joist hanger nails. All other nails are common nails.
- The appropriate allowable downward loads (Normal, 115%, and 125%) shall be selected based on duration of load in accordance with the stress increases permitted by the applicable Code.

4. Allowable loads are based on 565 psi bearing and nail values for Douglas Fir-Larch.

5. Top flanges are 4" wide x 3" long.

When the girder has only a single vertical web, change the "W" suffix to "V" for an 8" opening and cost savings.

\*Face nails must be clinched on single ply carrier chord to achieve these loads.

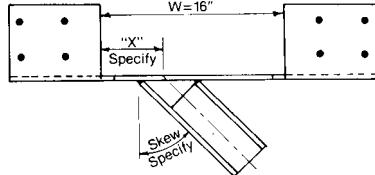
Uplift already increased 33%. No further increase allowed.

For Spruce-Pine-Fir, reduce these load ratings by 20%.

Code Report: BOCA, ICBO, SBCCI No. NER 464.

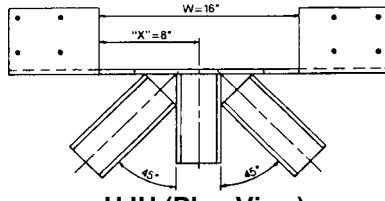
## SPECIAL APPLICATIONS

### GTS SKEWED



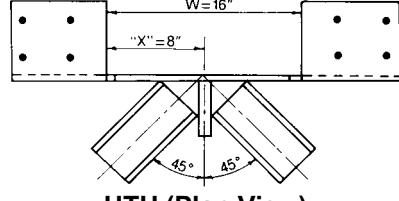
**GTS (Plan View)**

### HJH TERMINAL W/JACK



**HJH (Plan View)**

### HTH TERMINAL

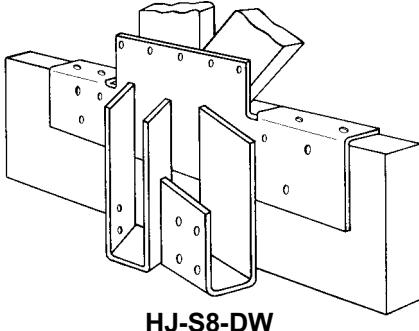


**HTH (Plan View)**



National 800-251-8351 • Phone 216-464-9400 • Fax 216-464-9404

## HIP & JACK HANGERS - HEAVY DUTY

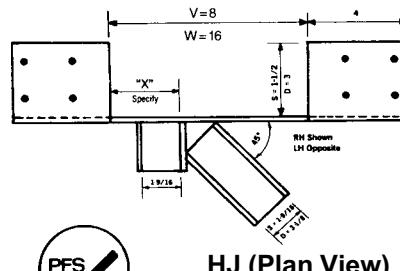


**HJ-S8-DW**

Hip and jack pockets welded to carrier plates that mount to single, double or triple ply girders. Find the part number that matches the number of plys and depth of girder chord. Specify "X" dimension if off-center arrangement desired, right or left hand.

MATERIAL: 3/16" A-36 steel.

FINISH: Black copolymer paint.



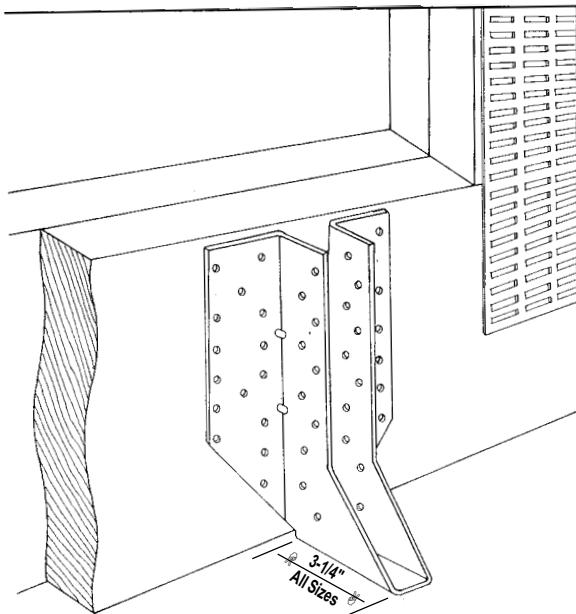
**HJ (Plan View)**

### ALLOWABLE LOADS FOR HJ HANGERS

Part Number	Hanger Size	Seat Depth	Nail Schedule			Allowable Loads		
			Top Nails	Face Nails	Pocket Nails	Normal	115%	125%
HJ-S6 / 8-SW	1.6 x 5-1/2 & 7-1/4	5	(4) 16d	(8) 16d	HIP (5) 10d x 1-1/2 JACK (2) 10d x 1-1/2	2880	3000	3000
HJ-S10 / 12-SW	1.6 X 9-1/4 & 11-1/4	4	(4) 16d	(8) 16d	HIP (5) 10d x 1-1/2 JACK (2) 10d x 1-1/2	2880	3000	3000
HJ-S6 / 8-DW	1.6 x 5-1/2 & 7-1/4	5	(8) 16d	(10) 16d	HIP (5) 10d x 1-1/2 JACK (2) 10d x 1-1/2	5650	5650	5650
HJ-S10 / 12-DW	1.6 x 5-1/2 & 7-1/4	5	(8) 16d	(10) 16d	HIP (5) 10d x 1-1/2 JACK (2) 10d x 1-1/2	5650	5650	5650
HJ-S6 / 8-TW	1.6 x 5-1/2 & 7-1/4	5	(12) 16d	(12) 16d	HIP (5) 10d x 1-1/2 JACK (2) 10d x 1-1/2	2880	3000	3000
HJ-S10 / 12-TW	1.6 x 9-1/4 & 11-1/4	5	(12) 16d	(12) 16d	HIP (5) 10d x 1-1/2 JACK (2) 10d x 1-1/2	2880	3000	3000
HJ-D6 / 8-SW	3.2 x 5-1/2 & 7-1/4	4	(4) 16d	(8) 16d	HIP (4) 10d JACK (2) 10d x 1-1/2	2880	3000	3000
HJ-D10 / 12-SW	3.2 x 9-1/4 & 11-1/4	4	(4) 16d	(8) 16d	HIP (4) 10d JACK (2) 10d x 1-1/2	2880	3000	3000
HJ-D6 / 8-DW	3.2 x 5-1/2 & 7-1/4	4	(8) 16d	(10) 16d	HIP (4) 10d JACK (2) 10d x 1-1/2	5775	5775	5775
HJ-D10 / 12-DW	3.2 x 9-1/4 & 11-1/4	4	(8) 16d	(10) 16d	HIP (4) 10d JACK (2) 10d x 1-1/2	5775	5775	5775
HJ-D6 / 8-TW	3.2 x 5-1/2 & 7-1/4	4	(12) 16d	(12) 16d	HIP (4) 10d JACK (2) 10d x 1-1/2	6580	6780	6780
HJ-D10 / 12-TW	3.2 x 9-1/4 & 11-1/4	4	(12) 16d	(12) 16d	HIP (4) 10d JACK (2) 10d x 1-1/2	6580	6780	6780
HJ-T6 / 8-SW	4.7 x 5-1/2 & 7-1/4	4	(4) 16d	(8) 16d	HIP (4) 10d JACK (2) 10d x 1-1/2	2880	3000	3000
HJ-T10 / 12-SW	4.7 x 9-1/4 & 11-1/4	4	(4) 16d	(8) 16d	HIP (4) 10d JACK (2) 10d x 1-1/2	2880	3000	3000
HJ-T6 / 8-DW	4.7 x 5-1/2 & 7-1/4	4	(8) 16d	(10) 16d	HIP (4) 10d JACK (2) 10d x 1-1/2	5775	5775	5775
HJ-T10 / 12-DW	4.7 x 9-1/4 & 11-1/4	4	(8) 16d	(10) 16d	HIP (4) 10d JACK (2) 10d x 1-1/2	5775	5775	5775
HJ-T6 / 8-TW	4.7 x 5-1/2 & 7-1/4	4	(12) 16d	(12) 16d	HIP (4) 10d JACK (2) 10d x 1-1/2	6580	6780	6780
HJ-T10 / 12-TW	4.7 x 9-1/4 & 11-1/4	4	(12) 16d	(12) 16d	HIP (4) 10d JACK (2) 10d x 1-1/2	6580	6780	6780

- The 1.6" and 3.2" sizes are plated trusses, single and double ply respectively.
  - The 10d x 1-1/2" nails are No. 9 gauge joist hanger nails. All other nails are common nails.
  - The appropriate allowable downward loads (Normal, 115%, and 125%) shall be selected based on duration of load in accordance with the stress increases permitted by the applicable Code.
  - Allowable loads reported for the HJ hangers are total loads (jack load plus hip load). Minimum hip and jack loads are 3/4 and 1/4 respectively of the tabulated total load.
  - Allowable loads are based on 565 psi bearing and nail values for Douglas Fir-Larch.
  - Top flanges are 4" wide x 3" long.
- For Spruce-Pine-Fir, reduce loads 20%. Uplift already increased by 33%, no further increase allowed.
- Seat bearing is 5" for single ply hip, 4" for double ply, 2-1/2" for all jacks.
- Code Report: BOCA, ICBO, SBCCI No. NER 464.

## HEAVY DUTY TRUSS HANGER



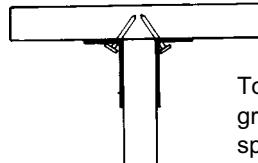
### HJU HEAVY DUTY FACEMOUNT

A facemount hanger that satisfies most truss to truss applications. Available for single, double and triple plys.

**CAUTION:** Always use a hanger that is the same depth as the girder chord. Do not use HJU 26 on 2x8 or 2x10.

MATERIAL: 16 ga. or 14 ga.

FINISH: Galvanized G60.



Toe-nail feature yields greater loads without splitting trusses.

### ALLOWABLE LOADS FOR HJU HANGER

#### Southern Yellow Pine

#### Spruce Pine-Fir

Part Number	Size	Allowable Loads (lbs.) @565 psi				Allowable Loads (lbs.) @425 psi				Steel Gauge	Nail Schedule	
		Normal 100%	115%	125%	Uplift	Normal 100%	115%	125%	Uplift		Carrying Member	Carried Member
HJU-26	1-5/8 x 5	2625	3020	3285	1355	2085	2400	2610	1090	16	(18) 16d	(10) 10d x 1-1/2
HJU-28	1-5/8 x 7	4085	4395	4540	1900	3220	3390	3505	1525	16	(28) 16d	(14) 10d x 1-1/2
HJU-210	1-5/8 x 9	4795	5100	5300	2710	3710	3955	4120	2180	16	(36) 16d	(20) 10d x 1-1/2
HJU(2)26	3-1/4 x 5	2645	3040	3305	1380	2120	2440	2655	1315	14	(18) 16d	(10) 10d
HJU(2)28	3-1/4 x 7	4115	4730	5145	1660	3300	3800	4130	1580	14	(28) 16d	(12) 10d
HJU(2)210	3-1/4 x 9	5290	6085	6615	1935	4245	4885	5310	1840	14	(36) 16d	(14) 10d
HJU(3)26	4-3/4 x 5	2645	3040	3305	1380	2120	2440	2655	1315	14	(18) 16d	(10) 10d
HJU(3)28	4-3/4 x 7	4115	4730	5145	1660	3300	3800	4130	1580	14	(28) 16d	(12) 10d
HJU(3)210	4-3/4 x 9	5290	6085	6615	1935	4245	4885	5310	1840	14	(36) 16d	(14) 10d
HJU 1.75/7.00	1-3/4 x 7	4085	4700	4995	1900	3245	3735	4060	1527	16	(28) 16d	(14) 10d x 1-1/2
HJU 1.75/9.00	1-3/4 x 9	5250	5560	5760	2710	4175	4800	5220	2181	16	(36) 16d	(20) 10d x 1-1/2
HJU 3.50/7.00	3-1/2 x 7	4115	4730	5145	1660	3300	3800	4130	1580	14	(28) 16d	(12) 10d
HJU 3.50/9.00	3-1/2 x 9	5290	6085	6615	1935	4245	4885	5310	1840	14	(36) 16d	(14) 10d
HJU 5.25/4.75	5-1/4 x 4-3/4	2645	3040	3305	1380	2120	2440	2655	1315	14	(18) 16d	(10) 10d
HJU 5.25/6.75	5-1/4 x 6-3/4	4115	4730	5145	1660	3300	3800	4130	1580	14	(28) 16d	(12) 10d
HJU 5.25/8.75	5-1/4 x 8-3/4	5290	6085	6615	1935	4245	4885	5310	1840	14	(36) 16d	(14) 10d

Code Report: BOCA, ICBO, SBCCI No. NER 464.

1. Tabulated allowed load values are based on the following:

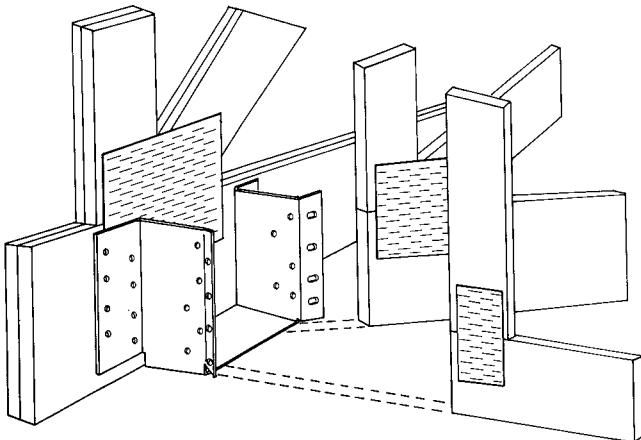
- Applicable only for Southern Yellow Pine, when connectors are used with lumber having specific gravity equal to or greater than 0.55 and an allowable compression perpendicular-to-grain value equal to or greater than 565 psi (Southern Pine except non-dense grades).
- Applicable only for Spruce-Pine Fir when connectors are used with lumber having a specific gravity equal to or greater than 0.42 and an allowable compression perpendicular-to-grain value equal to or greater than 425 psi.
- Douglas Fir-Larch lumber is permitted by reducing the values applicable to Southern Pine by 9 percent.
- For other structural wood members (LVL, PSI, ect.) the appropriate allowable load column shall be selected based on the allowable compression perpendicular-to-grain, value and the allowable nail loads of the material used as compared to sawn lumber in the column selected.

2. Uplift loads are for wind only and contain applicable stress increases (no further increases are permitted.)

- To achieve allowable load, all the 16d common nails that are specified must be used including the toe-nails in the corner holes.
- The 10d by 1-1/2 inch nails are No. 9 gauge joist hanger nails.

All other nails are common nails.

## HIP & JACK HANGERS


**THJ-26**

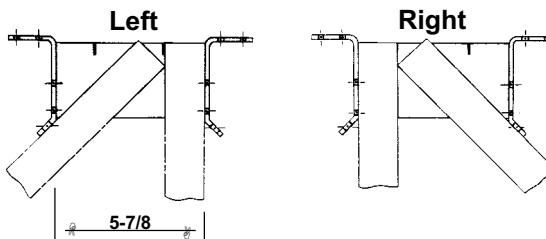
U.S. Patent No. 4,964,253

## THJ TRUSS HIP & JACK HANGER

The first hip and jack hanger that works right or left hand. Facemounts to 2x6 or 2x8 girder chord. Easy-nail flanges avoid the plated areas. Impressions in seat to align with panel point for perfect location, or hanger can be installed after corner truss is set. 3-1/4" seat bearing, tested and code approved.

MATERIAL: 12 ga.

FINISH: Galvanized G60.


***One Hanger Does It All.....At A Low, Low Cost***

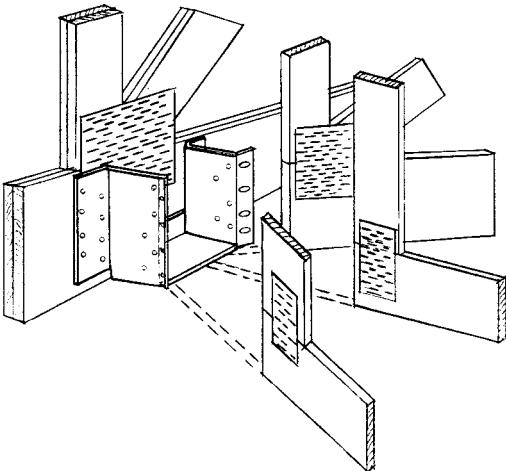
Part Number	Allowable Loads (lbs.) @565 psi								Nail Schedule		
	Hip				Jack				Header*	Hip	Jack
	Normal	115%	125%	Uplift	Normal	115%	125%	Uplift			
THJ-26	1695	1900	1900	1010	560	630	630	720	(16) 16d	(7) 10d	(5) 10d
THJ-28	2120	2440	2500	1300	700	800	830	720	(20) 16d	(9) 10d	(5) 10d

\*Header must be 2 ply for required nail penetration. Header nails may be clinched on single ply to obtain allowable loads.

\*\*For Spruce-Pine-Fir, reduce allowable loads by 20%.

Code Report: BOCA, ICBO, SBCCI No. NER 464.

## HIP & JACK & HIP HANGERS



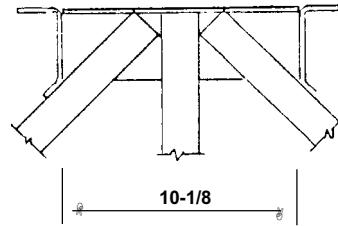
A wider opening allows for a terminal condition with two hips and a jack.

Reinforcement of the wider seat is provided by a stiffening flange at the rear of the seat.

The THJH is available in heights to accommodate 2x6 and 2x8 girder truss bottom chords.

MATERIAL: 12 ga.

FINISH: Galvanized G60.

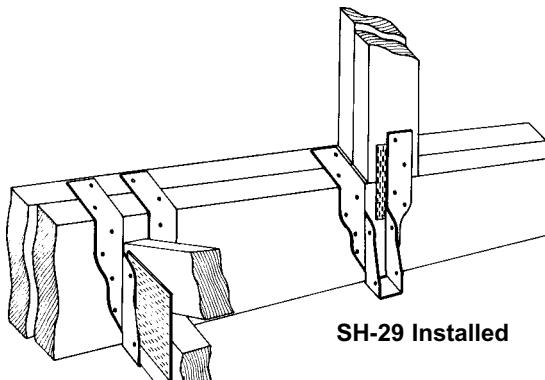


Part Number	Allowable Loads (lbs.) @565 psi								Nail Schedule		
	Hip				Jack				Header*	Hip	Jack
	Normal	115%	125%	Uplift	Normal	115%	125%	Uplift			
THJH-26	2400	2760	2760	1010	560	630	630	720	(21) 16d	(7) 10d	(2) 10d
THJH-28	2820	3250	3530	1300	700	800	830	720	(25) 16d	(9) 10d	(2) 10d

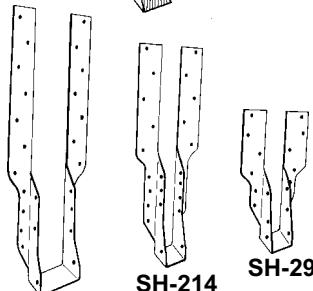
\*Header must be 2 ply for required nail penetration. Header nails may be clinched on single ply to obtain allowable loads.

\*\*For Spruce-Pine-Fir, reduce allowable loads by 20%.

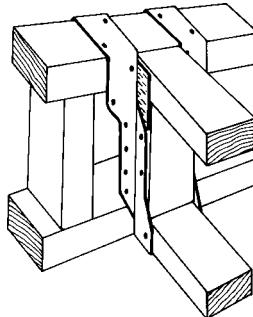
## **S TRAP HANGERS**



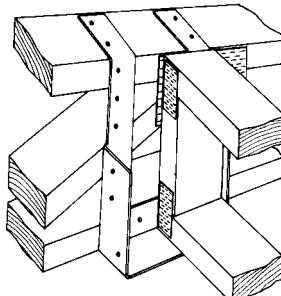
**SH-29 Installed**



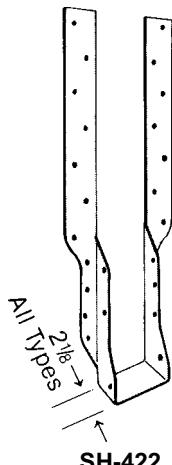
SH-214



**Typical SH-422  
Installed on Open  
Web Floor Truss**



**\*\* 2 Ply SH(2) 420  
Installed on Open  
Web Truss**



SH-422

## **ALLOWABLE LOADS FOR STYLE SH STRAP HANGERS**

Style	Hang Dimensions		Steel Gauge	Header Height	Nail Schedule			Allowable Loads			
	Width	Height			Top	Face	Joist	Normal	115%	125%	Uplift
TOP & FACE NAILS	SH-29	1.6	9.88	18	5-1/2 7-1/4	(4) 10d (4) 10d	(6) 10d (8) 10d	(6) 10d x 1-1/2 (6) 10d x 1-1/2	1850	1850	1850
	SH-214	1.6	13.25	18	5-1/2 7-1/4	(4) 10d (4) 10d	(6) 10d (8) 10d	(6) 10d x 1-1/2 (6) 10d x 1-1/2	2250	2250	2250
	SH-217	1.6	17.5	18	9-1/4 11-1/4	(4) 10d (2) 10d	(8) 10d (10) 10d	(6) 10d x 1-1/2 (6) 10d x 10-1/2	2250	2250	2250
	SH-218	1.75	17.5	18	9-1/4 11-1/4	(4) 10d (2) 10d	(8) 10d (10) 10d	(6) 10d x 1-1/2 (6) 10d x 1-1/2	2250	2250	2250
	SH-322	2.6	22	18	9-1/4 10	(4) 10d (2) 10d	(4) 10d (10) 10d	(6) 10d x 1-1/2 (6) 10d x 1-1/2	2250	2250	2250
	SH-322ML	2.3	22	18	9-1/4 12	(4) 10d (2) 10d	(4) 10d (10) 10d	(6) 10d x 1-1/2 (6) 10d x 1-1/2	2250	2250	2250
	SH-418	3.56	18	16	9-1/4 10	(4) 16d (2) 16d	(2) 16d (12) 16d	(5) 16d (5) 16d	2050	2050	2050
	SH-422	3.56	22	16	9-1/4 12	(4) 16d (2) 16d	(2) 16d (12) 16d	(5) 16d (5) 16d	3040	3040	3040
	SH-428	3.56	27.62	16	9-1/4 12	(4) 16d (2) 16d	(2) 16d (12) 16d	(5) 16d (5) 16d	2050	2050	2050
	SH(2)222	3.12	22	16	9-1/4 12	(4) 16d (2) 16d	(2) 16d (12) 16d	(5) 16d (5) 16d	2050	2050	2050
FACE NAILS ONLY	SH(2)420	7.25	20	14	9-1/4 11-1/4	(4) 16d	(10) 16d (14) 16d	(6) 16d (6) 16d	4570	4770	4905
	SH-29	1.6	9.88	18	10	—	(16) 10d	(6) 10d x 1-1/2	1790	2060	2250
	SH-214	1.6	13.25	18	10	—	(16) 10d	(6) 10d x 1-1/2	1790	2060	2250
	SH-322	2.6	22	18	22	—	(20) 10d	(6) 10d x 1-1/2	2200	2200	2200
	SH-322ML	2.3	22	18	22	—	(20) 10d	(6) 10d x 1-1/2	2200	2200	2200
	SH-217	1.6	17.5	18	18	—	(18) 10d	(6) 10d x 1-1/2	2015	2250	2250
	SH-418	3.56	18	16	18	—	(18) 16d	(5) 16d	2430	2795	3040
	SH-422	3.56	22	16	22	—	(22) 16d	(5) 16d	2970	3040	3040
	SH-428	3.56	27.62	16	22	—	(22) 16d	(5) 16d	2970	3040	3040
	SH(2)222	3.12	22	16	22	—	(22) 16d	(5) 16d	2970	3040	3040
	SH(2)420	7.25	20	14	20	—	(24) 16d	(6) 16d	3240	3725	4050

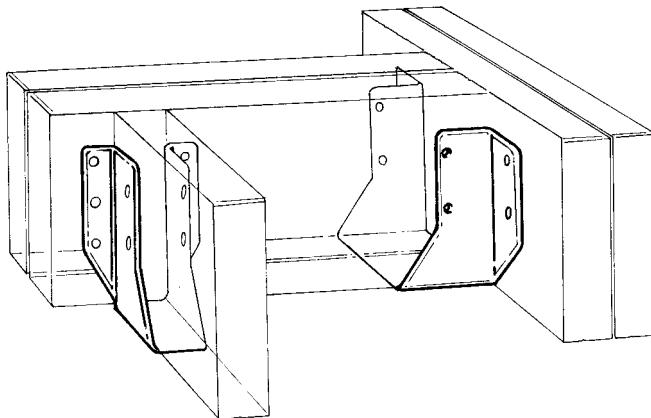
- 1. The 1.6" wide hangers are for 2" nominal lumber, the 1.75" are for LVL or wood I-beams. The 3.12" wide are for 2 ply 2" nominal lumber, the 3.56" wide are for 4" nominal lumber. The 7.25" wide are for 2 ply 4" nominal lumber.
  - 2. The 10d x 1-1/2 nails are 9 gauge joist hanger nails. The 10d and 16d are common nails.
  - 3. Hanger nail values are based on unit stresses for Douglas Fir-Larch and bearing based on Southern Pine and are to be adjusted for other species of wood in accordance with relative group classification in U.B.C. Standard No. 25-17.
  - The heights shown permit the required number of nails for the design loads listed. For installation where one strap cannot be formed over the top, the design load is limited to the design load of a face nailed hanger, i.e. no top nails. Material is 18 gauge galvanized steel except as noted
  - Truss to Truss application assumes open-web girder and the maximum height shown permits sufficient strap length to field bend and install top nails.
  - Truss to Beam application assumes a solid, nailable surface sufficient for the face nails and top nails required. All nails must be installed to achieve design loads shown. Hanger bearing and nail values are based on unit stresses for Douglas-Fir-Larch or Southern Pine, and must be reduced 20% for Spruce-Pine-Fir. Hangers are made from 16 gauge galvanized steel except SH(2)420 which is 14 gauge galvanized.

**Code Report" BOCA, ICBO, SBCCI No. NER 464**



National 800-251-8351 • Phone 216-464-9400 • Fax 216-464-9404

## POCKET HANGER



**Cleveland pocket hangers** are made in standard and heavy gauges in popular sizes for residential and heavier construction. Designed for use with all floor joists and roof purlins as well as other framing applications.

Immediately available from stock in all sizes listed in the table below. Packed in heavy corrugated containers for easy handling and convenient warehousing. Short, heavy nails designed for joist hangers are packed in each carton. Refer to tables for dimensions, nail sizes, packaging details and other information.

MATERIAL: 18 ga. and 16 ga.

FINISH: Galvanized G60.

**When ordering hangers without nails, add suffix "S"**

**Made with AMERICAN steel**

Part No.	PH 24	PH 26	PH 28	PH 210	PH 51	PH 52	PH 53	PH 54	PH 36	PH 310	PH 46	PH 410
Joist Size		2 x 6 2 x 8	2 x 8 2 x 10	2 x 10 2 x 12 2 x 14	2 x 6 2 x 8	2 x 10 2 x 12 (2) 2 x 6 (2) 2 x 8	(2) 2 x 10 (2) 2 x 12	3 x 6	3 x 10 3 x 12 3 x 14	4 x 6	4 x 10 4 x 12 4 x 8	4 x 14
Actual Hanger Size	1-1/2 x 3-5/16	1-1/2 x 4-3/4	1-1/2 x 6	1-1/2 x 8-9/16	1-1/2 x 4-3/4	1-1/2 x 8 9/16	3 x 5-1/8	3 x 8-5/16	2-1/2 x 5-3/8	2-1/2 x 8-9/16	3-1/2 x 5-5/16	3-1/2 x 8-3/8
Material	18 ga.galv.	18 ga.galv.	18 ga.galv.	18 ga.galv.	16 ga.galv.	16 ga.galv.	16 ga.galv.	16 ga.galv.	18 ga.galv.	18 ga.galv.	16 ga.galv.	16 ga. galv.
Design Load per Hanger	450 lbs.	800 lbs.	1070 lbs.	1605 lbs.	1080 lbs.	1890 lbs.	1620 lbs.	2915 lbs.	1795 lbs.	2690 lbs.	1795 lbs.	2690 lbs.
Nail Size	N-51	*	*	*	*	*	N-53	N-53	N-53	N-53	N-53	N-53
Nail Type	Ringed	Ringed	Ringed	Ringed	Ringed	Ringed	Ringed	Ringed	Ringed	Ringed	Ringed	Ringed
Nails Into Header	4	6	8	12	8	14	10	18	12	18	12	18
Nails Into Joist	2	4	5	6	4	6	4	6	4	6	4	6

The following PH Hangers also packaged without nails (add suffix "S")

Less Nails	PH 24S	PH26S	PH 28S	PH 210S			PH 53S	PH 54S	PH 36S	PH 310S	PH 46S	PH 410S
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\*N-51 nails in joist, N-8 nails in header.

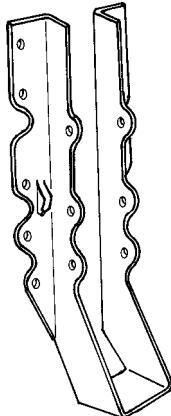
## ECONOMY POCKET HANGER

### Low Cost Hangers for General Framing

**EPH Economy Pocket Hangers** are engineered with less metal for lower cost, but full 1-1/2" seat bearing for allowable loads below. Speed prong aids installation.

MATERIAL: 20 ga.

FINISH: Galvanized G60.



Hanger Part Number	Hanger Size	Allowable Loads - So. Yellow Pine*				Wind Uplift	Nail Schedule	
		10d Nails	16d Nails	Normal	115%		Header	Joist
PH-24S	1-1/2 x 3-5/16	450	517	—	—	245	(4) 8d	(2) 8d x 1-1/4
EPH-26	1-9/16 x 4-3/4	670	770	800	915	500	(6) 16d	(4) 10d x 1-1/2
EPH-28	1-9/16 x 6-3/8	895	1035	1065	1220	750	(8) 16d	(6) 10d x 1-1/2
EPH-210	1-9/16 x 7-7/8	1120	1285	1330	1435	750	(10) 16d	(6) 10d x 1-1/2

\*Loads based on UBC values for So. Yellow Pine & Douglas Fir; multiply by .80 for Spruce-Pine-Fir. Uplift includes 33% short term increase and must be reduced for cantilever loads. PH-24S will accept 8d nail, or order as PH-24 which includes .125 x 1-1/4 nails.

## CLEVELAND HANGERS FOR WOOD I-BEAMS

**There's a Cleveland Hanger to fit  
ALL Manufactured Wood I-Beams**

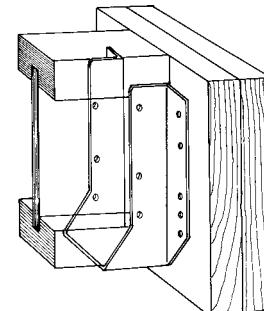
**Facemount** and **Topmount** hangers provide a low cost connection for the manufactured wood I-Beam industry.

**Facemount (FM)** hangers are deep enough for the side flanges to secure the top chords of the I-Beams.

- 2-1/8" seat bearing

MATERIAL: 18 ga. and 16 ga.

FINISH: Galvanized G60.



**Facemount**

### RECOMMENDED FACEMOUNT HANGERS FOR I-BEAM APPLICATIONS

Topmount Part Number	I-Beam Size	Allowable Loads (lbs.)				Nail Schedule Face	Joist
		Gauge	Normal	115%	125%		
PH 210 S	1-1/2 x 9-1/4	18	750	865	940	(8)10d x 1-1/2	(2)10d x 1-1/2
FM 1.50 / 9.50	1-1/2 x 9-1/2	18	750	865	940	(8)10d x 1-1/2	(2)10d x 1-1/2
FM 1.50 / 11.25	1-1/2 x 11-7/8	18	940	1080	1175	(10)10d x 1-1/2	(2)10d x 1-1/2
FM 1.50 / 13.50	1-1/2 x 13-1/2	18	940	1080	1175	(10)10d x 1-1/2	(2)10d x 1-1/2
FM 1.50 / 15.50	1-1/2 x 15-1/2	18	940	1080	1175	(10)10d x 1-1/2	(2)10d x 1-1/2
FM 1.50 / 17.50	1-1/2 x 17-1/2	18	940	1080	1175	(10)10d x 1-1/2	(2)10d x 1-1/2
FM 1.62 / 8.68	1.6 x 9-1/4	18	750	865	940	(8)10d x 1-1/2	(2)10d x 1-1/2
FM 1.62 / 8.68	1.6 x 9-1/2	18	750	865	940	(8)10d x 1-1/2	(2)10d x 1-1/2
FM 1.62 / 11.12	1.6 x 11-1/4	18	940	1080	1175	(10)10d x 1-1/2	(2)10d x 1-1/2
FM 1.62 / 11.12	1.6 x 12	18	940	1080	1175	(10)10d x 1-1/2	(2)10d x 1-1/2
FM 1.62 / 13.50	1.6 x 14	18	940	1080	1175	(10)10d x 1-1/2	(2)10d x 1-1/2
FM 1.62 / 15.50	1.6 x 16	18	940	1080	1175	(10)10d x 1-1/2	(2)10d x 1-1/2
FM 1.62 / 17.50	1.6 x 18	18	940	1080	1175	(10)10d x 1-1/2	(2)10d x 1-1/2
FM 1.75 / 8.62	1-3/4 x 9-1/4	18	750	865	940	(8)10d x 1-1/2	(2)10d x 1-1/2
FM 1.75 / 8.62	1-3/4 x 9-1/2	18	750	865	940	(8)10d x 1-1/2	(2)10d x 1-1/2
FM 1.75 / 11.25	1-3/4 x 11-7/8	18	940	1080	1175	(10)10d x 1-1/2	(2)10d x 1-1/2
FM 1.75 / 13.50	1-3/4 x 14	18	940	1080	1175	(10)10d x 1-1/2	(2)10d x 1-1/2
FM 1.75 / 15.50	1-3/4 x 16	18	940	1080	1175	(10)10d x 1-1/2	(2)10d x 1-1/2
FM 1.75 / 17.50	1-3/4 x 18	18	940	1080	1175	(10)10d x 1-1/2	(2)10d x 1-1/2
FM 2.31 / 9.25	2.3 x 9-1/4	18	940	1080	1175	(10)10d x 1-1/2	(2)10d x 1-1/2
FM 2.31 / 9.25	2.3 x 9-1/2	18	940	1080	1175	(10)10d x 1-1/2	(2)10d x 1-1/2
FM 2.31 / 9.25	2.3 x 10	18	940	1080	1175	(10)10d x 1-1/2	(2)10d x 1-1/2
FM 2.31 / 11.50	2.3 x 11-7/8	18	940	1080	1175	(10)10d x 1-1/2	(2)10d x 1-1/2
FM 2.31 / 13.50	2.3 x 14	18	940	1080	1175	(10)10d x 1-1/2	(2)10d x 1-1/2
FM 2.31 / 15.50	2.3 x 16	18	940	1080	1175	(10)10d x 1-1/2	(2)10d x 1-1/2
FM 2.31 / 17.50	2.3 x 18	18	940	1080	1175	(10)10d x 1-1/2	(2)10d x 1-1/2
PH 310 S	2-1/2 x 9-1/4	18	750	865	940	(8)10d x 1-1/2	(2)10d x 1-1/2
PH 310 S	2-1/2 x 9-1/2	18	750	865	940	(8)10d x 1-1/2	(2)10d x 1-1/2
PH 310 S	2-1/2 x 10	18	750	865	940	(8)10d x 1-1/2	(2)10d x 1-1/2
FM 2.50 / 11.12	2-1/2 x 11-1/2	18	940	1080	1175	(10)10d x 1-1/2	(2)10d x 1-1/2
FM 2.50 / 11.12	2-1/2 x 11-7/8	18	940	1080	1175	(10)10d x 1-1/2	(2)10d x 1-1/2
FM 2.50 / 11.12	2-1/2 x 12-1/2	18	940	1080	1175	(10)10d x 1-1/2	(2)10d x 1-1/2
FM 2.50 / 13.44	2-1/2 x 14	18	940	1080	1175	(10)10d x 1-1/2	(2)10d x 1-1/2
FM 2.50 / 15.50	2-1/2 x 16	18	940	1080	1175	(10)10d x 1-1/2	(2)10d x 1-1/2
FM 2.50 / 17.50	2-1/2 x 18	18	940	1080	1175	(10)10d x 1-1/2	(2)10d x 1-1/2
FM 2.50 / 19.50	2-1/2 x 20	18	940	1080	1175	(10)10d x 1-1/2	(2)10d x 1-1/2

1. These hangers are intended for use with wood I-beams as made by various manufacturers.
2. The 10d x 1-1/2" nails are No. 9 gauge joist hanger nails. The 10d nails are common nails.
3. Hanger bearing is based on 565 psi for Southern Pine and nail value based on Douglas Fir-Larch and must be adjusted for other species of wood in accordance with U.B.C. Standard No. 25-17.

Code Report: BOCA, ICBO, SBCCI No. NER 464.



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## CLEVELAND HANGERS FOR WOOD I-BEAMS

Topmount Part Number	I-Beam Size	Allowable Loads (lbs.)				Nail Schedule Face	Joist
		Gauge	Normal	115%	125%		
FM 2.68 / 8.12	2.6 x 9-1/4	18	750	865	940	(8) 10d x 1-1/2	(2) 10d x 1-1/2
FM 2.68 / 11.12	2.6 x 11-1/4	18	940	1080	1175	(10) 10d x 1-1/2	(2) 10d x 1-1/2
FM 2.68 / 11.12	2.6 x 12	18	940	1080	1175	(10) 10d x 1-1/2	(2) 10d x 1-1/2
FM 2.68 / 13.44	2.6 x 14	18	940	1080	1175	(10) 10d x 1-1/2	(2) 10d x 1-1/2
FM 2.68 / 15.50	2.6 x 16	18	940	1080	1175	(10) 10d x 1-1/2	(2) 10d x 1-1/2
FM 2.68 / 17.50	2.6 x 18	18	940	1080	1175	(10) 10d x 1-1/2	(2) 10d x 1-1/2
FM 2.68 / 19.50	2.6 x 20	18	940	1080	1175	(10) 10d x 1-1/2	(2) 10d x 1-1/2
FM 3.12 / 9.25	(2) 1-1/2 x 9-1/4	16	1355	1580	1695	(12) 10d	(6) 10d
FM 3.12 / 9.25	(2) 1-1/2 x 9-1/2	16	1355	1580	1695	(12) 10d	(6) 10d
FM 3.12 / 9.25	(2) 1-1/2 x 10	16	1355	1580	1695	(12) 10d	(6) 10d
FM 3.12 / 11.12	(2) 1-1/2 x 11-1/8	16	1580	1820	1980	(14) 10d	(6) 10d
FM 3.12 / 11.12	(2) 1-1/2 x 11-1/4	16	1580	1820	1980	(14) 10d	(6) 10d
FM 3.12 / 11.12	(2) 1-1/2 x 12	16	1580	1820	1980	(14) 10d	(6) 10d
FM 3.12 / 13.50	(2) 1-1/2 x 14	16	1580	1820	1980	(14) 10d	(6) 10d
FM 3.12 / 15.50	(2) 1-1/2 x 16	16	1580	1820	1980	(14) 10d	(6) 10d
FM 3.12 / 17.50	(2) 1-1/2 x 18	16	1580	1820	1980	(14) 10d	(6) 10d
PH 410 S	3-1/2 x 9-1/4	18	1120	1288	1400	(10) 10d	(2) 10d x 1-1/2
PH 410 S	3-1/2 x 9-1/2	18	1120	1288	1400	(10) 10d	(2) 10d x 1-1/2
PH 410 S	3-1/2 x 10	18	1120	1288	1400	(10) 10d	(2) 10d x 1-1/2
FM 3.50 / 11.25	3-1/2 x 11-1/4	18	1345	1545	1680	(12) 10d	(2) 10d x 1-1/2
FM 3.50 / 11.25	3-1/2 x 11-1/2	18	1345	1545	1680	(12) 10d	(2) 10d x 1-1/2
FM 3.50 / 11.25	3-1/2 x 11-7/8	18	1345	1545	1680	(12) 10d	(2) 10d x 1-1/2
FM 3.50 / 11.25	3-1/2 x 12	18	1345	1545	1680	(12) 10d	(2) 10d x 1-1/2
FM 3.50 / 11.25	3-1/2 x 12-1/2	18	1345	1545	1680	(12) 10d	(2) 10d x 1-1/2
FM 3.50 / 13.50	3-1/2 x 14	18	1565	1800	1960	(14) 10d	(4) 10d
FM 3.50 / 15.50	3-1/2 x 16	18	1565	1800	1960	(14) 10d	(4) 10d
FM 3.50 / 17.50	3-1/2 x 18	18	1565	1800	1960	(14) 10d	(4) 10d
FM 3.50 / 19.50	3-1/2 x 20	18	1565	1800	1960	(14) 10d	(4) 10d
FM 4.60 / 9.25	(2) 2-5/16 x 9-1/4	16	1580	1820	1960	(14) 10d	(4) 10d
FM 4.60 / 9.25	(2) 2-5/16 x 9-1/2	16	1580	1820	1960	(14) 10d	(4) 10d
FM 4.60 / 9.25	(2) 2-5/16 x 10	16	1580	1820	1960	(14) 10d	(4) 10d
FM 4.60 / 11.12	(2) 2-5/16 x 11-1/8	16	1810	2080	2260	(16) 10d	(4) 10d
FM 4.60 / 11.12	(2) 2-5/16 x 11-7/8	16	1810	2080	2260	(16) 10d	(4) 10d
FM 4.60 / 11.12	(2) 2-5/16 x 12	16	1810	2080	2260	(16) 10d	(4) 10d
FM 4.60 / 13.50	(2) 2-5/16 x 14	16	1810	2080	2260	(16) 10d	(4) 10d
FM 4.60 / 15.50	(2) 2-5/16 x 16	16	1810	2080	2260	(16) 10d	(4) 10d
FM 4.60 / 17.50	(2) 2-5/16 x 18	16	1810	2080	2260	(16) 10d	(4) 10d
FM 5.12 / 9.25	(2) 2-1/2 x 9-1/4	16	1580	1820	1960	(14) 10d	(4) 10d
FM 5.12 / 9.25	(2) 2-1/2 x 9-1/2	16	1580	1820	1960	(14) 10d	(4) 10d
FM 5.12 / 9.25	(2) 2-1/2 x 10	16	1580	1820	1960	(14) 10d	(4) 10d
FM 5.12 / 11.12	(2) 2-1/2 x 11-1/8	16	1810	2080	2260	(16) 10d	(4) 10d
FM 5.12 / 11.12	(2) 2-1/2 x 11-1/4	16	1810	2080	2260	(16) 10d	(4) 10d
FM 5.12 / 11.12	(2) 2-1/2 x 12	16	1810	2080	2260	(16) 10d	(4) 10d
FM 5.12 / 13.50	(2) 2-1/2 x 14	16	1810	2080	2260	(16) 10d	(4) 10d
FM 5.12 / 15.50	(2) 2-1/2 x 16	16	1810	2080	2260	(16) 10d	(4) 10d
FM 5.12 / 17.50	(2) 2-1/2 x 18	16	1810	2080	2260	(16) 10d	(4) 10d
FM 5.31 / 9.25	(2) 2-5/8 x 9-1/4	16	1580	1820	1960	(14) 10d	(4) 10d
FM 5.31 / 9.25	(2) 2-5/8 x 9-1/2	16	1580	1820	1960	(14) 10d	(4) 10d
FM 5.31 / 9.25	(2) 2-5/8 x 10	16	1580	1820	1960	(14) 10d	(4) 10d
FM 5.31 / 11.12	(2) 2-5/8 x 11-1/8	16	1810	2080	2260	(16) 10d	(4) 10d
FM 5.31 / 11.12	(2) 2-5/8 x 11-1/4	16	1810	2080	2260	(16) 10d	(4) 10d
FM 5.31 / 11.12	(2) 2-5/8 x 12	16	1810	2080	2260	(16) 10d	(4) 10d
FM 5.31 / 13.50	(2) 2-5/8 x 14	16	1810	2080	2260	(16) 10d	(4) 10d
FM 5.31 / 15.50	(2) 2-5/8 x 16	16	1810	2080	2260	(16) 10d	(4) 10d
FM 5.31 / 17.50	(2) 2-5/8 x 18	16	1810	2080	2260	(16) 10d	(4) 10d

## CLEVELAND HANGERS FOR WOOD I-BEAMS

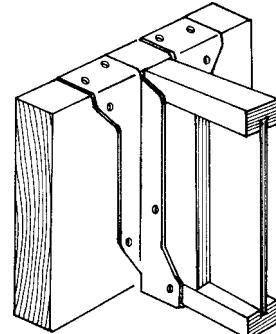
**Topmount (TM)** hangers have side flanges that hold the top chords of the I-Beams and factory bent top flanges for fast, uniform installation.

- 2-1/8" seat bearing

MATERIAL: 18 ga. and 16 ga.

FINISH: Galvanized G60.

For greater load capacities, refer to the SH Strap Hanger or the DS Deep Seat Hanger.



**Topmount**

### RECOMMENDED TOPMOUNT FOR I-BEAM APPLICATIONS

Topmount Part Number	I-Beam Size	Allowable Loads (lbs.)				Nail Schedule		
		Gauge	Normal	115 %	125 %	Top	Face	Joist
TM 1.50 / 9.25	1-1/2 x 9-1/4	18	1030	1030	1030	(2) 10d x 1-1/2	(2) 10d x 1-1/2	(2) 10d x 1-1/2
TM 1.50 / 9.50	1-1/2 x 9-1/2	18	1355	1355	1355	(4) 10d x 1-1/2	(2) 10d x 1-1/2	(2) 10d x 1-1/2
TM 1.50 / 11.88	1-1/2 x 11-7/8	18	1355	1355	1355	(4) 10d x 1-1/2	(2) 10d x 1-1/2	(2) 10d x 1-1/2
TM 1.50 / 14.00	1-1/2 x 14	18	1355	1355	1355	(4) 10d x 1-1/2	(2) 10d x 1-1/2	(2) 10d x 1-1/2
TM 1.50 / 16.00	1-1/2 x 16	18	1355	1355	1355	(4) 10d x 1-1/2	(2) 10d x 1-1/2	(2) 10d x 1-1/2
TM 1.50 / 18.00	1-1/2 x 18	18	1355	1355	1355	(4) 10d x 1-1/2	(2) 10d x 1-1/2	(2) 10d x 1-1/2
TM 1.62 / 9.25	1.6 x 9-1/4	18	1030	1030	1030	(2) 10d x 1-1/2	(2) 10d x 1-1/2	(2) 10d x 1-1/2
TM 1.62 / 11.25	1.6 x 11-1/4	18	1355	1355	1355	(4) 10d x 1-1/2	(2) 10d x 1-1/2	(2) 10d x 1-1/2
TM 1.62 / 12.00	1.6 x 12	18	1355	1355	1355	(4) 10d x 1-1/2	(2) 10d x 1-1/2	(2) 10d x 1-1/2
TM 1.62 / 14.00	1.6 x 14	18	1355	1355	1355	(4) 10d x 1-1/2	(2) 10d x 1-1/2	(2) 10d x 1-1/2
TM 1.62 / 16.00	1.6 x 16	18	1355	1355	1355	(4) 10d x 1-1/2	(2) 10d x 1-1/2	(2) 10d x 1-1/2
TM 1.62 / 18.00	1.6 x 18	18	1355	1355	1355	(4) 10d x 1-1/2	(2) 10d x 1-1/2	(2) 10d x 1-1/2
TM 1.75 / 9.25	1-3/4 x 9-1/4	18	1030	1030	1030	(2) 10d x 1-1/2	(2) 10d x 1-1/2	(2) 10d x 1-1/2
TM 1.75 / 9.50	1-3/4 x 9-1/2	18	1355	1355	1355	(4) 10d x 1-1/2	(2) 10d x 1-1/2	(2) 10d x 1-1/2
TM 1.75 / 11.88	1-3/4 x 11-7/8	18	1355	1355	1355	(4) 10d x 1-1/2	(2) 10d x 1-1/2	(2) 10d x 1-1/2
TM 1.75 / 14.00	1-3/4 x 14	18	1355	1355	1355	(4) 10d x 1-1/2	(2) 10d x 1-1/2	(2) 10d x 1-1/2
TM 1.75 / 16.00	1-3/4 x 16	18	1355	1355	1355	(4) 10d x 1-1/2	(2) 10d x 1-1/2	(2) 10d x 1-1/2
TM 1.75 / 18.00	1-3/4 x 18	18	1355	1355	1355	(4) 10d x 1-1/2	(2) 10d x 1-1/2	(2) 10d x 1-1/2
TM 2.31 / 10.00	2-5/16 x 10	18	1715	1715	1715	(4) 10d x 1-1/2	(4) 10d x 1-1/2	(2) 10d x 1-1/2
TM 2.31 / 11.88	2-5/16 x 11-7/8	18	1715	1715	1715	(4) 10d x 1-1/2	(4) 10d x 1-1/2	(2) 10d x 1-1/2
TM 2.31 / 12.00	2-5/16 x 12	18	1715	1715	1715	(4) 10d x 1-1/2	(4) 10d x 1-1/2	(2) 10d x 1-1/2
TM 2.31 / 14.00	2-5/16 x 14	18	1715	1715	1715	(4) 10d x 1-1/2	(4) 10d x 1-1/2	(2) 10d x 1-1/2
TM 2.31 / 16.00	2-5/16 x 16	18	1715	1715	1715	(4) 10d x 1-1/2	(4) 10d x 1-1/2	(2) 10d x 1-1/2
TM 2.31 / 18.00	2-5/16 x 18	18	1715	1715	1715	(4) 10d x 1-1/2	(4) 10d x 1-1/2	(2) 10d x 1-1/2
TM 2.50 / 9.25	2-1/2 x 9-1/4	18	1715	1715	1715	(4) 10d x 1-1/2	(4) 10d x 1-1/2	(2) 10d x 1-1/2
TM 2.50 / 9.37	2-1/2 x 9-3/8	18	1715	1715	1715	(4) 10d x 1-1/2	(4) 10d x 1-1/2	(2) 10d x 1-1/2
TM 2.50 / 9.50	2-1/2 x 9-1/2	18	1715	1715	1715	(4) 10d x 1-1/2	(4) 10d x 1-1/2	(2) 10d x 1-1/2
TM 2.50 / 11.50	2-1/2 x 11-1/2	18	1715	1715	1715	(4) 10d x 1-1/2	(4) 10d x 1-1/2	(2) 10d x 1-1/2
TM 2.50 / 11.88	2-1/2 x 11-7/8	18	1715	1715	1715	(4) 10d x 1-1/2	(4) 10d x 1-1/2	(2) 10d x 1-1/2
TM 2.50 / 12.50	2-1/2 x 12-1/2	18	1715	1715	1715	(4) 10d x 1-1/2	(4) 10d x 1-1/2	(2) 10d x 1-1/2
TM 2.50 / 13.00	2-1/2 x 13	18	1715	1715	1715	(4) 10d x 1-1/2	(4) 10d x 1-1/2	(2) 10d x 1-1/2
TM 2.50 / 14.00	2-1/2 x 14	18	1715	1715	1715	(4) 10d x 1-1/2	(4) 10d x 1-1/2	(2) 10d x 1-1/2
TM 2.50 / 16.00	2-1/2 x 16	18	1715	1715	1715	(4) 10d x 1-1/2	(4) 10d x 1-1/2	(2) 10d x 1-1/2
TM 2.50 / 18.00	2-1/2 x 18	18	1715	1715	1715	(4) 10d x 1-1/2	(4) 10d x 1-1/2	(2) 10d x 1-1/2
TM 2.50 / 20.00	2-1/2 x 20	18	1715	1715	1715	(4) 10d x 1-1/2	(4) 10d x 1-1/2	(2) 10d x 1-1/2

1. These hangers are intended for use with wood I-beams as made by various manufacturers.
2. The 10d x 1-1/2" nails are No. 9 gauge joist hanger nails. The 10d nails are common nails.
3. Hanger bearing is based on 565 psi for Southern Pine and nail value based on Douglas Fir-Larch and must be adjusted for other species of wood in accordance with U.B.C. Standard No. 25-17.

Code Report: BOCA, ICBO, SBCCI No. NER 464.

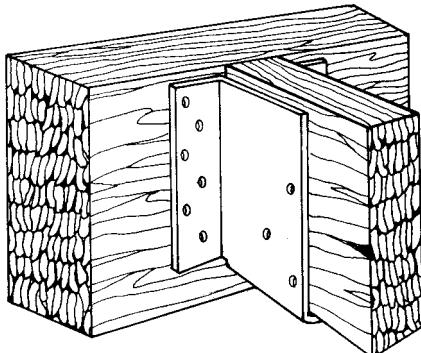


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## CLEVELAND HANGERS FOR WOOD I-BEAMS

Topmount Part Number	I-Beam Size	Allowable Loads (lbs.)				Nail Schedule		
		Gauge	Normal	115 %	125 %	Top	Face	Joist
TM 2.68 / 10.00	2-5/8 x 10	18	1715	1715	1715	(4) 10d x 1-1/2	(4) 10d x 1-1/2	(2) 10d x 1-1/2
TM 2.68 / 11.25	2-5/8 x 11-1/4	18	1715	1715	1715	(4) 10d x 1-1/2	(4) 10d x 1-1/2	(2) 10d x 1-1/2
TM 2.68 / 12.00	2-5/8 x 12	18	1715	1715	1715	(4) 10d x 1-1/2	(4) 10d x 1-1/2	(2) 10d x 1-1/2
TM 2.68 / 14.00	2-5/8 x 14	18	1715	1715	1715	(4) 10d x 1-1/2	(4) 10d x 1-1/2	(2) 10d x 1-1/2
TM 2.68 / 16.00	2-5/8 x 16	18	1715	1715	1715	(4) 10d x 1-1/2	(4) 10d x 1-1/2	(2) 10d x 1-1/2
TM 2.68 / 18.00	2-5/8 x 18	18	1715	1715	1715	(4) 10d x 1-1/2	(4) 10d x 1-1/2	(2) 10d x 1-1/2
TM 2.68 / 20.00	2-5/8 x 20	18	1715	1715	1715	(4) 10d x 1-1/2	(4) 10d x 1-1/2	(2) 10d x 1-1/2
TM 3.12 / 9.25	(2) 1-1/2 x 9-1/4	16	1715	1715	1715	(4) 10d x 1-1/2	(4) 10d x 1-1/2	(2) 10d x 1-1/2
TM 3.12 / 9.50	(2) 1-1/2 x 9-1/2	16	1715	1715	1715	(4) 10d x 1-1/2	(4) 10d x 1-1/2	(2) 10d x 1-1/2
TM 3.12 / 10.00	(2) 1-1/2 x 10	16	1715	1715	1715	(4) 10d x 1-1/2	(4) 10d x 1-1/2	(2) 10d x 1-1/2
TM 3.12 / 11.12	(2) 1-1/2 x 11-1/8	16	1715	1715	1715	(4) 10d x 1-1/2	(4) 10d x 1-1/2	(2) 10d x 1-1/2
TM 3.12 / 11.88	(2) 1-1/2 x 11-7/8	16	1715	1715	1715	(4) 10d x 1-1/2	(4) 10d x 1-1/2	(2) 10d x 1-1/2
TM 3.12 / 12.00	(2) 1-1/2 x 12	16	1715	1715	1715	(4) 10d x 1-1/2	(4) 10d x 1-1/2	(2) 10d x 1-1/2
TM 3.12 / 14.00	(2) 1-1/2 x 14	16	1715	1715	1715	(4) 10d x 1-1/2	(4) 10d x 1-1/2	(2) 10d x 1-1/2
TM 3.12 / 16.00	(2) 1-1/2 x 16	16	1715	1715	1715	(4) 10d x 1-1/2	(4) 10d x 1-1/2	(2) 10d x 1-1/2
TM 3.12 / 18.00	(2) 1-1/2 x 18	16	1715	1715	1715	(4) 10d x 1-1/2	(4) 10d x 1-1/2	(2) 10d x 1-1/2
TM 3.50 / 9.25	3-1/2 x 9-1/4	18	1715	1715	1715	(4) 10d x 1-1/2	(4) 10d x 1-1/2	(2) 10d x 1-1/2
TM 3.50 / 9.37	3-1/2 x 9-3/8	18	1715	1715	1715	(4) 10d x 1-1/2	(4) 10d x 1-1/2	(2) 10d x 1-1/2
TM 3.50 / 9.50	3-1/2 x 9-1/2	18	1715	1715	1715	(4) 10d x 1-1/2	(4) 10d x 1-1/2	(2) 10d x 1-1/2
TM 3.50 / 11.25	3-1/2 x 11-1/4	18	1715	1715	1715	(4) 10d x 1-1/2	(4) 10d x 1-1/2	(2) 10d x 1-1/2
TM 3.50 / 11.50	3-1/2 x 11-1/2	18	1715	1715	1715	(4) 10d x 1-1/2	(4) 10d x 1-1/2	(2) 10d x 1-1/2
TM 3.50 / 11.88	3-1/2 x 11-7/8	18	1715	1715	1715	(4) 10d x 1-1/2	(4) 10d x 1-1/2	(2) 10d x 1-1/2
TM 3.50 / 12.00	3-1/2 x 12	18	1715	1715	1715	(4) 10d x 1-1/2	(4) 10d x 1-1/2	(2) 10d x 1-1/2
TM 3.50 / 12.50	3-1/2 x 12-1/2	18	1715	1715	1715	(4) 10d x 1-1/2	(4) 10d x 1-1/2	(2) 10d x 1-1/2
TM 3.50 / 13.00	3-1/2 x 13	18	1715	1715	1715	(4) 10d x 1-1/2	(4) 10d x 1-1/2	(2) 10d x 1-1/2
TM 3.50 / 14.00	3-1/2 x 14	18	2200	2200	2200	(4) 10d	(6) 10d	(4) 10d
TM 3.50 / 16.00	3-1/2 x 16	18	2200	2200	2200	(4) 10d	(6) 10d	(4) 10d
TM 4.62 / 1.00	(2) 2-5/16 x 10	16	2900	2900	2900	(4) 16d	(6) 16d	(6) 16d
TM 4.62 / 11.88	(2) 2-5/16 x 11-7/8	16	2900	2900	2900	(4) 16d	(6) 16d	(6) 16d
TM 4.62 / 12.00	(2) 2-5/16 x 12	16	2900	2900	2900	(4) 16d	(6) 16d	(6) 16d
TM 4.62 / 14.00	(2) 2-5/16 x 14	16	2900	2900	2900	(4) 16d	(6) 16d	(6) 16d
TM 4.62 / 16.00	(2) 2-5/16 x 16	16	2900	2900	2900	(4) 16d	(6) 16d	(6) 16d
TM 4.62 / 18.00	(2) 2-5/16 x 18	16	2900	2900	2900	(4) 16d	(6) 16d	(6) 16d
TM 5.12 / 9.25	(2) 2-1/2 x 9-1/4	16	2900	2900	2900	(4) 16d	(6) 16d	(6) 16d
TM 5.12 / 9.37	(2) 2-1/2 x 9-3/8	16	2900	2900	2900	(4) 16d	(6) 16d	(6) 16d
TM 5.12 / 9.50	(2) 2-1/2 x 9-1/2	16	2900	2900	2900	(4) 16d	(6) 16d	(6) 16d
TM 5.12 / 11.50	(2) 2-1/2 x 11-1/2	16	2900	2900	2900	(4) 16d	(6) 16d	(6) 16d
TM 5.12 / 11.88	(2) 2-1/2 x 11-7/8	16	2900	2900	2900	(4) 16d	(6) 16d	(6) 16d
TM 5.12 / 12.50	(2) 2-1/2 x 12-1/2	16	2900	2900	2900	(4) 16d	(6) 16d	(6) 16d
TM 5.12 / 13.00	(2) 2-1/2 x 13	16	2900	2900	2900	(4) 16d	(6) 16d	(6) 16d
TM 5.12 / 14.00	(2) 2-1/2 x 14	16	2900	2900	2900	(4) 16d	(6) 16d	(6) 16d
TM 5.12 / 16.00	(2) 2-1/2 x 16	16	2900	2900	2900	(4) 16d	(6) 16d	(6) 16d
TM 5.12 / 18.00	(2) 2-1/2 x 18	16	2900	2900	2900	(4) 16d	(6) 16d	(6) 16d
TM 5.12 / 20.00	(2) 2-1/2 x 20	16	2900	2900	2900	(4) 16d	(6) 16d	(6) 16d
TM 5.31 / 9.25	(2) 2-5/8 x 9-1/4	16	2900	2900	2900	(4) 16d	(6) 16d	(6) 16d
TM 5.31 / 10.00	(2) 2-5/8 x 10	16	2900	2900	2900	(4) 16d	(6) 16d	(6) 16d
TM 5.31 / 11.25	(2) 2-5/8 x 11-1/4	16	2900	2900	2900	(4) 16d	(6) 16d	(6) 16d
TM 5.31 / 12.00	(2) 2-5/8 x 12	16	2900	2900	2900	(4) 16d	(6) 16d	(6) 16d
TM 5.31 / 14.00	(2) 2-5/8 x 14	16	2900	2900	2900	(4) 16d	(6) 16d	(6) 16d
TM 5.31 / 16.00	(2) 2-5/8 x 16	16	2900	2900	2900	(4) 16d	(6) 16d	(6) 16d
TM 5.31 / 18.00	(2) 2-5/8 x 18	16	2900	2900	2900	(4) 16d	(6) 16d	(6) 16d
TM 5.31 / 20.00	(2) 2-5/8 x 20	16	2900	2900	2900	(4) 16d	(6) 16d	(6) 16d

## **FACEMOUNT HANGERS**



**JUX Hanger**

**JUX Hangers** are recommended for facemounting to LVL or PSL headers.

MATERIAL: 16 ga. and 12 ga.

FINISH: Galvanized G60.

Code Report: BOCA, ICBO, SBCCI No. NER 464.

Hanger Part No.	Allowable Load (lbs.)			Steel Gauge	Seat Bearing	Nail Schedule	
	Normal	115%	125%			Header	Pocket
JUX 1.75 / 6.50	1500	1725	1875	14	3"	(10) N53	(4) 10d x 1-1/2"
HJU 1.75 / 9.00	5250	5560	5760	16	3-1/4"	(35) 16d	(20) 10d x 1-1/2"
JUX 1.75 / 11.00	2700	3105	3375	14	3"	(18) N53	(8) 10d x 1-1/2"
JUX 1.75 / 13.50	3300	3795	4125	14	3"	(22) N53	(10) 10d x 1-1/2"
JUX 2.69 / 11.00	2700	3105	3375	14	2-1/2"	(18) N53	(6) N53
JUX 2.69 / 13.50	3300	3795	4125	14	2-1/2"	(22) N53	(7) N53
JUX 2.69 / 15.50	3900	4485	4875	14	2-1/2"	(26) N53	(8) N53
JUX 3.50 / 6.50	1500	1725	1875	14	2-1/2"	(10) N53	(4) N53
HJU 3.50 / 9.00	5290	6085	6615	14	3-1/4"	(36) 16d	(14) 10d
JUX 3.50 / 11.00	2700	3105	3375	14	2-1/2"	(18) N53	(6) N53
JUX 3.50 / 13.50	3300	3795	4125	14	2-1/2"	(22) N53	(7) N53
JUX 3.50 / 15.50	3900	4485	4875	14	2-1/2"	(26) N53	(8) N53
HJU 5.25 / 9.00	5290	6085	6615	14	3-1/4"	(36) 16d	(14) 10d
JUX 5.25 / 11.00	2790	3205	3485	12	2-1/2"	(18) N53	(6) N53
JUX 5.25 / 13.50	3410	3920	4260	12	2-1/2"	(22) N53	(8) N53
JUX 5.25 / 15.50	4030	4635	5035	12	2-1/2"	(26) N53	(8) N53

1. These hangers are intended for use with parallel strand lumber (PSL) or laminated veneer lumber (LVL).
2. The 10d x 1-1/2" nails are No. 9 gauge joist hanger nails. The N53 nail is a 6 gauge x 2-1/8" long ring shank nail.
3. The appropriate allowable downward loads (Normal, 115%, and 125%) shall be selected based on duration of load in accordance with the stress increases permitted by the applicable code.
4. Allowable loads are based on 565 psi compression and nail values for Douglas Fir-Larch.

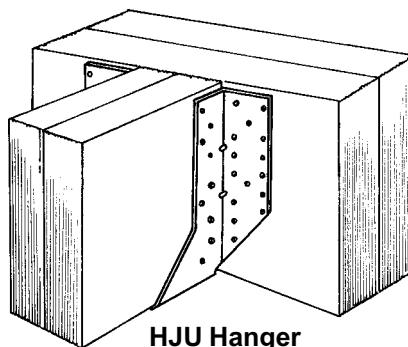
Choose  
Either Hanger

### **HJU**

A 9" high facemount hanger that can carry 4860 lbs., enough for most applications.

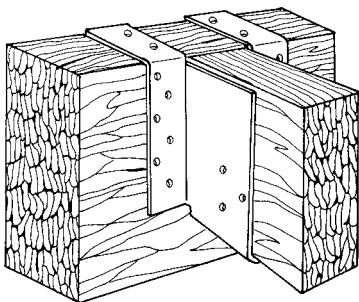
### **JUX**

Full depth facemount hanger for normal loads with minimum nailing required.



**HJU Hanger**

## DEEP SEAT



## HANGERS FOR

**MICRO=LAM®  
PARALLAM®  
GANG-LAM®**

**DS Deep Seat Hangers** carry heavy loads obtained with Micro=Lam, Parallam and Gang-Lam products. Top flanges are 3-3/8" long with 2 nail holes per flange spaced for 3-1/2" minimum header, except DS 2.69 hangers have 2-1/2" top flanges.

Load charts are based on seat compression of 600 psi. Solid header required. Consult your wood product manufacturer for limitations when LVL headers have top edge nailing.

**Code Report: BOCA, ICBO, SBCCI No. NER 464.**

**MATERIAL:** 12 ga.

**FINISH:** Galvanized G60.

Part Number	Size	Steel Gauge	Nail Schedule			Allowable Load (lbs.)			Seat Bearing
			Top	Face	Joist	Normal	115%	125%	
DS-24	1-5/8 x 3-1/2	12	(4) 16d	(4) 16d	(3) 10d x 1-1/2	2630	2630	2630	4"
DS-26	1-5/8 x 5-1/2	12	(4) 16d	(6) 16d	(4) 10d x 1-1/2	3315	3335	3335	4"
DS-28	1-5/8 x 7-1/4	12	(4) 16d	(8) 16d	(6) 10d x 1-1/2	3595	3765	3880	4"
DS-210	1-5/8 x 9-1/4	12	(4) 16d	(10) 16d	(7) 10d x 1-1/2	3880	4090	4230	4"
DS-212	1-5/8 x 11-1/4	12	(4) 16d	(12) 16d	(10) 10d x 1-1/2	4160	4415	4585	4"
DS(2)26	3-1/8 x 5-1/2	12	(4) 16d	(6) 16d	(3) 10d	3315	3335	3335	3"
DS(2)28	3-1/8 x 7-1/4	12	(4) 16d	(8) 16d	(4) 10d	3595	3765	3880	3"
DS(2)210	3-1/8 x 9-1/4	12	(4) 16d	(10) 16d	(5) 10d	3880	4090	4230	3"
DS(2)212	3-1/8 x 11-1/4	12	(4) 16d	(14) 16d	(6) 10d	4445	4740	4940	3"
DS 1.50 / 9.50	1-9/16 x 9-1/2	12	(4) 16d	(10) 16d	(7) 10d x 1-1/2	3880	4090	4230	4"
DS 1.50 / 11.88	1-9/16 x 11-7/8	12	(4) 16d	(12) 16d	(10) 10d x 1-1/2	4160	4415	4585	4"
DS 1.75 / 7.00	1-3/4 x 7	12	(4) 16d	(6) 16d	(4) 10d x 1-1/2	3335	3335	3335	3"
DS 1.75 / 7.25	1-3/4 x 7-1/4	12	(4) 16d	(6) 16d	(4) 10d x 1-1/2	3335	3335	3335	3"
DS 1.75 / 9.25	1-3/4 x 9-1/4	12	(4) 16d	(6) 16d	(4) 10d x 1-1/2	3335	3335	3335	3"
DS 1.75 / 9.50	1-3/4 x 9-1/2	12	(4) 16d	(6) 16d	(4) 10d x 1-1/2	3335	3335	3335	3"
DS 1.75 / 11.25	1-3/4 x 11-1/4	12	(4) 16d	(14) 16d	(6) 10d x 1-1/2	4600	4895	5090	3"
DS 1.75 / 11.50	1-3/4 x 11.50	12	(4) 16d	(14) 16d	(6) 10d x 1-1/2	4600	4895	5090	3"
DS 1.75 / 11.88	1-3/4 x 11-7/8	12	(4) 16d	(8) 16d	(6) 10d x 1-1/2	4175	4175	4175	3-1/2"
DS 1.75 / 12.00	1-3/4 x 12	12	(4) 16d	(12) 16d	(10) 10d x 1-1/2	4160	4415	4585	3"
DS 1.75 / 12.50	1-3/4 x 12-1/2	12	(4) 16d	(12) 16d	(10) 10d x 1-1/2	4160	4415	4585	3"
DS 1.75 / 14.00	1-3/4 x 14	12	(4) 16d	(10) 16d	(8) 10d x 1-1/2	4340	4340	4340	3-1/2"
DS 1.75 / 16.00	1-3/4 x 16	12	(4) 16d	(10) 16d	(9) 10d x 1-1/2	4340	4340	4340	3-1/2"
DS 1.75 / 18.00	1-3/4 x 18	12	(4) 16d	(10) 16d	(10) 10d x 1-1/2	4340	4340	4340	3-1/2"
DS 2.69 / 9.25	2-11/16 x 9-1/4	12	(4) 16d	(12) 16d	(5) 10d	4315	4570	4740	3"
DS 2.69 / 11.50	2-11/16 x 11-1/2	12	(4) 16d	(14) 16d	(6) 10d	4600	4895	5090	3"
DS 2.69 / 14.00	2-11/16 x 14	12	(4) 16d	(16) 16d	(6) 10d	4880	5220	5445	3"
DS 2.69 / 16.00	2-11/16 x 16	12	(4) 16d	(18) 16d	(8) 10d	5160	5545	5795	3"
DS 3.50 / 7.00	3-1/2 x 7	12	(4) 16d	(8) 16d	(4) 10d	4175	4175	4175	3"
DS 3.50 / 7.25	3-1/2 x 7-1/4	12	(4) 16d	(8) 16d	(4) 10d	4175	4175	4175	3"
DS 3.50 / 9.25	3-1/2 x 9-1/4	12	(4) 16d	(12) 16d	(5) 10d	5000	5000	5000	3"
DS 3.50 / 9.50	3-1/2 x 9-1/2	12	(4) 16d	(12) 16d	(5) 10d	5000	5000	5000	3"
DS 3.00 / 9.50	3 x 9-1/2	12	(4) 16d	(12) 16d	(5) 10d	5000	5000	5000	3"
DS 3.50 / 11.25	3-1/2 x 11-1/4	12	(4) 16d	(16) 16d	(6) 10d	5800	6135	6135	3"
DS 3.50 / 11.50	3-1/2 x 11-1/2	12	(4) 16d	(16) 16d	(6) 10d	5800	6135	6135	3"
DS 3.50 / 11.88	3-1/2 x 11-7/8	12	(4) 16d	(16) 16d	(6) 10d	5800	6135	6360	3"
DS 3.50 / 12.00	3-1/2 x 12	12	(4) 16d	(16) 16d	(6) 10d	5800	6135	6360	3"
DS 3.50 / 12.50	3-1/2 x 12-1/2	12	(4) 16d	(16) 16d	(6) 10d	5800	6135	6360	3"
DS 3.00 / 11.88	3 x 11-7/8	12	(4) 16d	(16) 16d	(6) 10d	5800	6135	6360	3"
DS 3.50 / 14.00	3-1/2 x 14	12	(4) 16d	(18) 16d	(8) 10d	6080	6460	6715	3"
DS 3.50 / 16.00	3-1/2 x 16	12	(4) 16d	(20) 16d	(10) 10d	6360	6785	6875	3"
DS 3.50 / 18.00	3-1/2 x 18	12	(4) 16d	(22) 16d	(12) 10d	6645	6875	6875	3"
DS 5.25 / 9.25	5-1/4 x 9-1/4	12	(4) 16d	(12) 16d	(5) 16d	5000	5000	5000	2-1/2"
DS 5.25 / 11.88	5-1/4 x 11-7/8	12	(4) 16d	(16) 16d	(6) 16d	5800	6135	6360	2-1/2"
DS 5.25 / 14.00	5-1/4 x 14	12	(4) 16d	(18) 16d	(8) 16d	6080	6460	6715	2-1/2"
DS 5.25 / 16.00	5-1/4 x 16	12	(4) 16d	(20) 16d	(8) 16d	6360	6785	6875	2-1/2"
DS 5.25 / 18.00	5-1/4 x 18	12	(4) 16d	(22) 16d	(8) 16d	6645	6875	6875	2-1/2"

1. The 1-5/8" and 3-1/8" sizes are for 1 ply and 2 ply nominal lumber respectively. Other sizes are for LVL and PSL lumber.

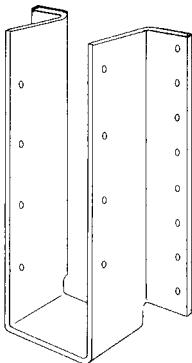
2. The 10d x 1-1/2" nails are No. 9 gauge joist hanger nails. All other nails are common nails.

3. The appropriate allowable downward loads (Normal, 115%, and 125%) shall be selected based on duration of load in accordance with the stress increases permitted by the applicable Code.

4. Allowable loads are based on nail values for Douglas Fir-Larch. LVL and PSL hangers are based on 600 psi compression perpendicular to the grain, nominal lumber sizes are based on 565 psi compression.

**Code Report: BOCA, ICBO, SBCCI No. NER 464.**

## FACEMOUNT GLULAM HANGERS



**Cleveland JU Glulam Hangers** are made to order for sizes as shown. Also available for any size sawn timber, laminated beam or special beam in any design load. Prompt shipment.

MATERIAL: 11 ga. and 7 ga.  
FINISH: Black copolymer paint.  
OPTION: Hot-dip galvanized or stainless steel, available as a special order.

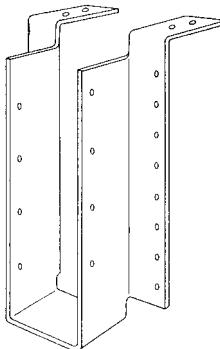
## JU GLULAM HANGERS

Part Number	Purlin Size	Design Load		Uplift	Steel Thickness	Seat Depth	Nails		Lbs.
		Normal	115%				Header	Purlin	
JU 3.12 / 6.00	3-1/8 x 6	1500	1730	750	11 ga.	1-7/8	(8) N4	(3) N4	1.8
JU 3.12 / 7.50	3-1/8 x 7-1/2	1880	2160	1000	11 ga.	1-7/8	(10) N4	(4) N4	2.1
JU 3.12 / 9.00	3-1/8 x 9	2630	3085	1000	11 ga.	1-7/8	(14) N4	(4) N4	2.5
JU 3.12 / 10.50	3-1/8 x 10-1/2	3000	3450	1500	11 ga.	1-7/8	(16) N4	(6) N4	2.8
JU 3.12 / 12.00	3-1/8 x 12	3000	3450	1500	11 ga.	1-7/8	(16) N4	(6) N4	3.2
JU 3.12 / 13.50	3-1/8 x 13-1/2	3385	3890	1500	11 ga.	2-3/8	(18) N4	(6) N4	4.3
JU 3.12 / 15.00	3-1/8 x 15	3760	4300	1500	11 ga.	2-3/8	(20) N4	(6) N4	4.7
JU 3.12 / 16.50	3-1/8 x 16-1/2	4135	4750	2000	11 ga.	2-3/8	(22) N4	(8) N4	5.2
JU 3.12 / 18.00	3-1/8 x 18	4500	5785	2500	11 ga.	2-3/8	(24) N4	(10) N4	5.6
JU 5.12 / 6.00	5-1/8 x 6	1500	1730	750	11 ga.	1-7/8	(8) N4	(3) N4	2.0
JU 5.12 / 7.50	5-1/8 x 7-1/2	1880	2160	1000	11 ga.	1-7/8	(10) N4	(4) N4	2.4
JU 5.12 / 9.00	5-1/8 x 9	2630	3025	1000	11 ga.	1-7/8	(14) N4	(4) N4	2.7
JU 5.12 / 10.50	5-1/8 x 10-1/2	3000	3450	1500	7 ga.	1-7/8	(16) N4	(6) N4	3.0
JU 5.12 / 12.00	5-1/8 x 12	3385	3890	1500	7 ga.	2-3/8	(18) N4	(6) N4	6.3
JU 5.12 / 13.50	5-1/8 x 13-1/2	3760	4300	1500	7 ga.	2-3/8	(20) N4	(6) N4	6.9
JU 5.12 / 15.00	5-1/8 x 15	4135	4750	2000	7 ga.	2-3/8	(22) N4	(8) N4	7.5
JU 5.12 / 16.50	5-1/8 x 16-1/2	4510	5185	2500	7 ga.	2-3/8	(24) N4	(10) N4	8.2
JU 5.12 / 18.00	5-1/8 x 18	4880	5610	3000	7 ga.	2-3/8	(26) N4	(12) N4	8.8
JU 5.12 / 19.50	5-1/8 x 19-1/2	4880	5610	3000	7 ga.	2-3/8	(26) N4	(12) N4	9.4
JU 5.12 / 21.00	5-1/8 x 21	5260	6050	3000	7 ga.	2-3/8	(28) N4	(12) N4	10.1
JU 5.12 / 22.50	5-1/8 x 22-1/2	5260	6050	3000	7 ga.	2-3/8	(28) N4	(12) N4	10.7
JU 5.12 / 24.00	5-1/8 x 24	5260	6050	3000	7 ga.	2-3/8	(28) N4	(12) N4	1.3

Bulk packed in cartons.  
N4 Nails are 40d x 2-1/2" ring shank.  
Larger and special sizes available.

Made with AMERICAN steel

## TOPMOUNT GLULAM HANGERS



**Cleveland JE Glulam Hangers** are made to order for sizes as shown. Also available for 6-3/4 and 8-3/4 wide laminated timbers. Prompt shipment.

MATERIAL: 11 ga. and 7 ga.  
FINISH: Black copolymer paint.  
OPTION: Hot-dip galvanized or stainless steel, available as a special order.

## JE GLULAM HANGERS

Part Number	Purlin Size	Design Load		Uplift	Steel Thickness	Seat Depth	Nails			Lbs.
		Normal	115%				Header	Purlin	Top	
JE 3.12 / 6.00	3-1/8 x 6	2800	2885	750	11 ga.	1-7/8	(6) N4	(3) N4	(2) N4	2.0
JE 3.12 / 7.50	3-1/8 x 7-1/2	3180	3290	1000	11 ga.	1-7/8	(8) N4	(4) N4	(4) N4	2.6
JE 3.12 / 9.00	3-1/8 x 9	3560	3670	1000	11 ga.	1-7/8	(10) N4	(4) N4	(4) N4	3.0
JE 3.12 / 10.50	3-1/8 x 10-1/2	3940	4050	1000	11 ga.	1-7/8	(12) N4	(4) N4	(4) N4	3.3
JE 3.12 / 12.00	3-1/8 x 12	4315	4425	1500	11 ga.	1-7/8	(12) N4	(6) N4	(4) N4	3.7
JE 3.12 / 13.50	3-1/8 x 13-1/2	5160	5330	1500	11 ga.	2-3/8	(14) N4	(6) N4	(4) N4	4.9
JE 3.12 / 15.00	3-1/8 x 15	5160	5330	2000	11 ga.	2-3/8	(14) N4	(8) N4	(4) N4	5.3
JE 3.12 / 16.50	3-1/8 x 16-1/2	5540	5760	2000	11 ga.	2-3/8	(16) N4	(8) N4	(4) N4	5.7
JE 3.12 / 18.00	3-1/8 x 18	5915	6195	2500	11 ga.	2-3/8	(18) N4	(10) N4	(4) N4	6.2
JE 5.12 / 6.00	5-1/8 x 6	2800	2885	750	11 ga.	1-7/8	(6) N4	(3) N4	(2) N4	2.3
JE 5.12 / 7.50	5-1/8 x 7-1/2	3180	3290	1000	11 ga.	1-7/8	(8) N4	(4) N4	(4) N4	2.9
JE 5.12 / 9.00	5-1/8 x 9	3560	3670	1000	11 ga.	1-7/8	(10) N4	(4) N4	(4) N4	3.2
JE 5.12 / 10.50	5-1/8 x 10-1/2	3940	4050	1000	11 ga.	1-7/8	(12) N4	(4) N4	(4) N4	3.6
JE 5.12 / 12.00	5-1/8 x 12	4315	4425	1500	7 ga.	2-3/8	(14) N4	(6) N4	(4) N4	7.3
JE 5.12 / 13.50	5-1/8 x 13-1/2	4315	4425	1500	7 ga.	2-3/8	(14) N4	(6) N4	(4) N4	7.9
JE 5.12 / 15.00	5-1/8 x 15	5540	5760	2000	7 ga.	2-3/8	(18) N4	(8) N4	(6) N4	9.0
JE 5.12 / 16.50	5-1/8 x 16-1/2	6250	7185	2000	7 ga.	2-3/8	(20) N4	(8) N4	(6) N4	9.6
JE 5.12 / 18.00	5-1/8 x 18	7130	8200	2500	7 ga.	2-3/8	(24) N4	(10) N4	(6) N4	10.3
JE 5.12 / 19.50	5-1/8 x 19-1/2	7570	8705	2500	7 ga.	2-3/8	(26) N4	(10) N4	(6) N4	10.9
JE 5.12 / 21.00	5-1/8 x 21	8000	9200	3000	7 ga.	2-3/8	(28) N4	(12) N4	(6) N4	11.5
JE 5.12 / 22.50	5-1/8 x 22-1/2	8000	9200	3000	7 ga.	2-3/8	(28) N4	(12) N4	(6) N4	12.2
JE 5.12 / 24.00	5-1/8 x 24	8000	9200	3000	7 ga.	2-3/8	(28) N4	(12) N4	(6) N4	12.8

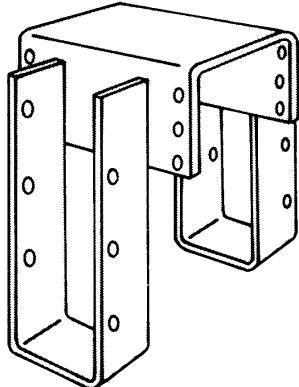
Bulk packed in cartons.  
N4 Nails are 40d x 2-1/2" ring shank.  
Larger and special sizes available.

Made with AMERICAN steel



National 800-251-8351 • Phone 216-464-9400 • Fax 216-464-9404

## WELDED GLULAM SADDLE HANGERS



**WGS**  
Welded Saddle



**Welded Glulam Saddle Hangers** are made from ASTM A-36 steel, welded by certified welders. When ordering advise load, uplift and header conditions.

WGS and WGH saddle hangers are stock items.

MATERIAL: ASTM A-36 steel.

FINISH: Black copolymer paint .

OPTION: Hot-dip galvanized or stainless steel, available as a special order.

### **WELDED GLULAM SADDLE HANGERS & HOOKOVER STYLE\***

Part Number	Purlin Size	Design Load Lbs.		Uplift	Nails		A	C	F	PL
		Normal	115%		Purlin	Header				
WGS 3.1 / 9	3-1/8x9	4000	4600	1170	4-N4	8-N4	12 ga.	2-1/2	3-1/8	6
WGS 3.1 / 10.5	3-1/8x10-1/2	5100	5370	1755	6-N4	12-N4	11 ga.	3-1/4	3-1/8	6
WGS 3.1 / 12	3-1/8x12	5100	5370	1755	6-N4	12-N4	11 ga.	3-1/4	3-1/8	6
WGS 3.1 / 13-1/2	3-1/8x13-1/2	6360	6720	1755	6-N4	12-N4	3/16	4	5-1/8	8
WGS 3.1 / 15	3-1/8x15	6360	6720	1755	6-N4	12-N4	3/16	4	5-1/8	8
WGS 3.1 / 16-1/2	3-1/8x16-1/2	7700	8070	1755	6-N4	12-N4	3/16	5	5-1/8	12
WGS 3.1 / 18	3-1/8x18	8070	8070	1755	6-N4	12-N4	3/16	5	5-1/8	12
WGS 5.1 / 9	5-1/8x9	6500	6500	1170	4-N4	12-N4	3/16	2-1/2	5-1/8	8
WGS 5.1 / 10.5	5-1/8x10-1/2	8070	8070	1755	6-N4	12-N4	3/16	3	5-1/8	12
WGS 5.1 / 12	5-1/8x12	9100	10320	1755	6-N4	12-N4	1/4	4	5-1/8	12
WGS 5.1 / 13-1/2	5-1/8x13-1/2	9800	11270	1755	6-N4	16-N4	1/4	4	5-1/8	12
WGS 5.1 / 15	5-1/8x15	11200	12570	1755	6-N4	16-N4	1/4	5	5-1/8	12
WGS 5.1 / 16-1/2	5-1/8x16-1/2	11900	12570	2340	8-N4	16-N4	1/4	5	5-1/8	12
WGS 5.1 / 18	5-1/8x18	12570	12570	2340	8-N4	16-N4	1/4	5	5-1/8	12
WGS 6.7 / 9	6-3/4x9	8400	9300	1170	4-N4	8-N4	1/4	3	6-3/4	12
WGS 6.7 / 10.5	6-3/4x10-1/2	9800	10430	1755	6-N4	12-N4	1/4	3	6-3/4	12
WGS 6.7 / 12	6-3/4x12	11200	12400	1755	6-N4	12-N4	1/4	4	6-3/4	12
WGS 6.7 / 13-1/2	6-3/4x13-1/2	11900	13470	1755	6-N4	12-N4	1/4	4	6-3/4	12
WGS 6.7 / 15	6-3/4x15	13300	15500	1755	6-N4	12-N4	1/4	5	6-3/4	12
WGS 6.7 / 16-1/2	6-3/4x16-1/2	14000	16950	2340	8-N4	12-N4	1/4	5	6-3/4	12
WGS 6.7 / 18	6-3/4x18	15400	16950	2340	8-N4	12-N4	1/4	5	6-3/4	12

\*Any size or load not shown is available upon request. Uplift value cannot be increased.

N4 nails are 40d x 2-1/2 Ring Shank rated at 220 lbs. lateral strength.

GLULAM compression perpendicular to grain is 465 lbs. S.Y.P.

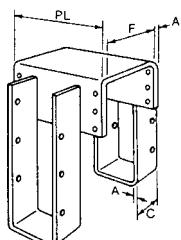
Design loads consider Triangles Bearing Theory and reduce to 50% the compression of hookover plates.

Header nails shown for WGS Saddle Style. WGH Hookover Style require fewer nails.

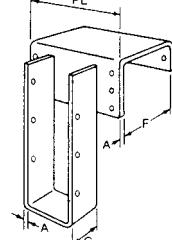
Design loads shown are for each pocket.

Loads exceeding 10,000 lbs. have a stiffener tab across the back of the pocket at the seat.

**WGS and WGH Style Hangers** are designed to UBC values.



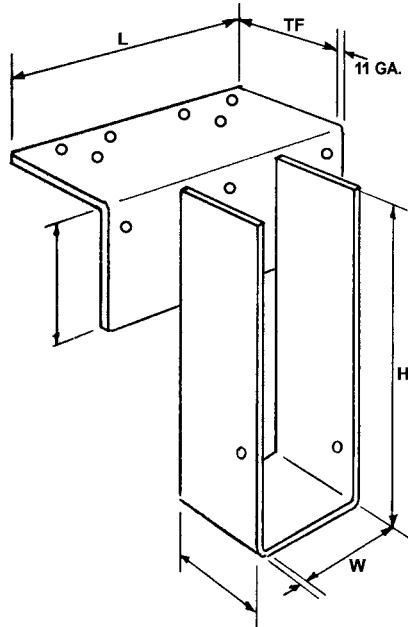
**WGS**  
Welded Glulam  
Saddle



**WGH**  
Welded Glulam  
Hookover

Made with AMERICAN steel

## WELDED SOLID-SAWN HANGERS



A wide range of sizes for solid-sawn nominal members is included. Full (rough) sizes are available; precede part no. with (RS) for ordering. Allowable loads are based on group II species (SYP, DFL).

MATERIAL: 11 ga.

FINISH: Black copolymer paint.

OPTION: Hot-dip galvanized or stainless steel, available as a special order.

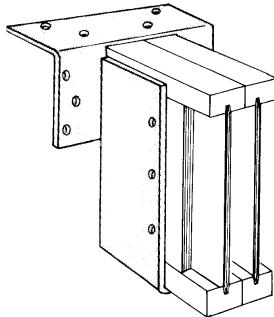
Part Number	Beam/Joist Size	Dimensions				Fastener Schedule		Allowable Loads (lbs.)		
		W	H	L	TF	Header	Joist	100%	115%	125%
WSS 26	2 x 6	1-9/16	5-3/8	6-1/2	2-1/2	(2) 10d	(2) 10d x 1-1/2	2345	2345	2345
WSS 28	2 x 8	1-9/16	7-1/8	6-1/2	2-1/2	(2) 10d	(2) 10d x 1-1/2	2345	2345	2345
WSS 210	2 x 10	1-9/16	9-1/8	6-1/2	2-1/2	(2) 10d	(2) 10d x 1-1/2	2345	2345	2345
WSS 212	2 x 12	1-9/16	11-1/8	6-1/2	2-1/2	(2) 10d	(2) 10d x 1-1/2	2345	2345	2345
WSS 214	2 x 14	1-9/16	13-1/8	6-1/2	2-1/2	(2) 10d	(2) 10d x 1-1/2	2345	2345	2345
WSS 216	2 x 16	1-9/16	15-1/8	6-1/2	2-1/2	(2) 10d	(2) 10d x 1-1/2	2345	2345	2345
WSS 26-2	(2) 2 x 6	3-1/8	5-3/8	7	2-1/2	(2) 10d	(2) 10d	3375	3375	3375
WSS 28-2	(2) 2 x 8	3-1/8	7-1/8	7	2-1/2	(2) 10d	(2) 10d	3375	3375	3375
WSS 210-2	(2) 2 x 10	3-1/8	9-1/8	7	2-1/2	(2) 10d	(2) 10d	3375	3375	3375
WWS 212-2	(2) 2 x 12	3-1/8	11-1/8	7	2-1/2	(2) 10d	(2) 10d	3375	3375	3375
WSS 214-2	(2) 2 x 14	3-1/8	13-1/8	7	2-1/2	(2) 10d	(2) 10d	3375	3375	3375
WSS 216-2	(2) 2 x 16	3-1/8	15-1/8	7	2-1/2	(2) 10d	(2) 10d	3375	3375	3375
WSS 36	3 x 6	2-9/16	5-3/8	6-1/2	2-1/2	(2) 10d	(2) 10d x 1-1/2	2345	2345	2345
WSS 38	3 x 8	2-9/16	7-1/8	6-1/2	2-1/2	(2) 10d	(2) 10d x 1-1/2	2345	2345	2345
WSS 310	3 x 10	2-9/16	9-1/8	6-1/2	2-1/2	(2) 10d	(2) 10d x 1-1/2	2345	2345	2345
WSS 312	3 x 12	2-9/16	11-1/8	7	2-1/2	(2) 10d x 1-1/2	(2) 10d x 1-1/2	3375	3375	3375
WSS 314	3 x 14	2-9/16	13-1/8	7	2-1/2	(2) 10d x 1-1/2	(2) 10d x 1-1/2	3375	3375	3375
WSS 316	3 x 16	2-9/16	15-1/8	7	2-1/2	(2) 10d x 1-1/2	(2) 10d x 1-1/2	3375	3375	3375
WSS 46	4 x 6	3-9/16	5-3/8	6-1/2	2-1/2	(2) 10d	(2) 10d	2345	2345	2345
WSSH 46	4 x 6	3-9/16	5-3/8	10	2-1/2	(4) N53	(2) 10d	5345	5345	5345
WSS 48	4 x 8	3-9/16	7-1/8	6-1/2	2-1/2	(2) 10d	(2) 10d	2345	2345	2345
WSSH 48	4 x 8	3-9/16	7-1/8	10	2-3/4	(4) N53	(2) 10d	5345	5345	5345
WSS 410	4 x 10	3-9/16	9-1/8	6-1/2	2-1/2	(2) 10d	(2) 10d	2345	2345	2345
WSSH 410	4 x 10	3-9/16	9-1/8	7	2-1/2	(2) 10d x 1-1/2	(2) 10d	3375	3375	3375
WSSH 410H	4 x 10	3-9/16	9-1/8	10	2-3/4	(4) N53	(2) 10d	5345	5345	5345
WSSH 412	4 x 12	3-9/16	11-1/8	7	2-1/2	(2) 10d x 1-1/2	(2) 10d	3375	3375	3375
WSSH 412H	4 x 12	3-9/16	11	10	2-3/4	(4) N53	(2) 10d	5345	5345	5345
WSSH 414	4 x 14	3-9/16	13-1/8	7	2-1/2	(2) 10d x 1-1/2	(2) 10d	3375	3375	3375
WSSH 414H	4 x 14	3-9/16	13	10	2-3/4	(4) N53	(2) 10d	5345	5345	5345
WSSH 416	4 x 16	3-9/16	15-1/8	7	2-1/2	(2) 10d x 1-1/2	(2) 10d	3375	3375	3375
WSSH 416H	4 x 16	3-9/16	15	10	2-3/4	(4) N53	(2) 10d	5345	5345	5345
WSSH 66	6 x 6	5-1/2	5-3/8	7	2-1/2	(2) 10d x 1-1/2	(2) 10d	3375	3375	3375
WSSH 66H	6 x 6	5-1/2	5-3/8	10	2-3/4	(4) N53	(2) 10d	5345	5345	5345
WSSH 68	6 x 8	5-1/2	7-1/8	7	2-1/2	(2) 10d x 1-1/2	(2) 10d	3375	3375	3375
WSSH 68H	6 x 8	5-1/2	7-1/8	10	2-3/4	(4) N53	(2) 10d	5345	5345	5345
WSSH 610	6 x 10	5-1/2	9-1/8	7	2-1/2	(2) 10d x 1-1/2	(2) 10d	3375	3375	3375
WSSH 610H	6 x 10	5-1/2	9-1/8	10	2-3/4	(4) N53	(2) 10d	5345	5345	5345
WSSH 612H	6 x 12	5-1/2	11	10	2-3/4	(4) N53	(2) 10d	5345	5345	5345
WSSH 614H	6 x 14	5-1/2	13	10	2-3/4	(4) N53	(2) 10d	5345	5345	5345
WSSH 616H	6 x 16	5-1/2	15	10	2-3/4	(4) N53	(2) 10d	5345	5345	5345
WSSH 86H	8 x 6	7-1/2	5-3/8	10	2-3/4	(4) N53	(2) 10d	5345	5345	5345
WSSH 88H	8 x 8	7-1/2	7-1/8	10	2-3/4	(4) N53	(2) 10d	5345	5345	5345
WSSH 810H	8 x 10	7-1/2	9-1/8	10	2-3/4	(4) N53	(2) 10d	5345	5345	5345
WSSH 812H	8 x 12	7-1/2	11	10	2-3/4	(4) N53	(2) 10d	5345	5345	5345
WSSH 814H	8 x 14	7-1/2	13	10	2-3/4	(4) N53	(2) 10d	5345	5345	5345
WSSH 816H	8 x 16	7-1/2	15	10	2-3/4	(4) N53	(2) 10d	5345	5345	5345
3.12 GL	3.12 LAM	3-1/8	*	10	2-1/2	(4) N4	(2) 10d	5185	—	—
5.12GL	5.12 LAM	5-1/8	*	10	2 1/2	(4) N4	(2) 10d	5185	—	—

\*Specify Depth

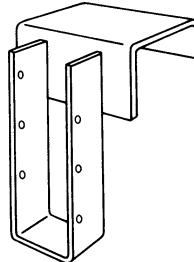


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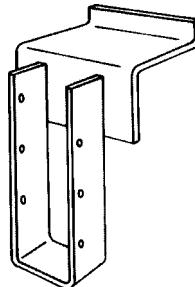
## WELDED MASONRY HANGERS



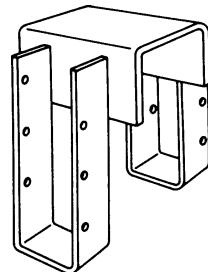
**WP**  
Welded Masonry



**WMH**  
Welded Masonry  
Hookover



**WMR**  
Welded Masonry  
Return



**WMS**  
Welded Masonry  
Saddle

**WP Style Hangers** are designed to UBC values. Made from ASTM A-36 steel, welded by certified welders.

**Welded Masonry Hangers** are placed in block under construction, eliminating the need for beam pockets. Anchorage is made by inserting two 16d duplex nails through the tabs into the cavity and grout.

**Welded Masonry Hookover, Return, and Saddle type hangers** are available on request.

MATERIAL: 11 ga.

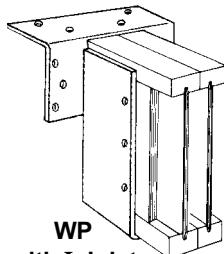
FINISH: Black copolymer paint.

OPTION: Hot-dip galvanized or stainless steel, available as a special order.

Part Number	Beam/ Joist Size	Steel Gauge	Dimensions		Fastener Schedule		Allowable Loads (lbs.)		
			W	H	Block	Joist	Floor	Roof	100%
							115%	125%	
WP-210	2 x 10	11	1-9/16	9-1/4	(2) 16d duplex	(2) 10d x 1-1/2	2545	2575	2595
WP-212	2 x 12	11	1-9/16	11-1/4	(2) 16d duplex	(2) 10d x 1-1/2	2545	2575	2595
WP-214	2 x 14	11	1-9/16	13-1/8	(2) 16d duplex	(2) 10d x 1-1/2	2545	2575	2595
WP-216	2 x 16	11	1-9/16	15-1/8	(2) 16d duplex	(2) 10d x 1-1/2	2575	2575	2595
WP-210-2	(2) 2 x 10	11	3-1/8	9-1/4	(2) 16d duplex	(2) 10d	4225	4225	4225
WP-212-2	(2) 2 x 12	11	3-1/8	11-1/4	(2) 16d duplex	(2) 10d	4225	4225	4225
WP-214-2	(2) 2 x 14	11	3-1/8	13-1/8	(2) 16d duplex	(2) 10d	4225	4225	4225
WP-216-2	(2) 2 x 16	11	3-1/8	15-1/8	(2) 16d duplex	(2) 10d	4225	4225	4225
WP-310	3 x 10	11	2-9/16	9-1/4	(2) 16d duplex	(2) 10d x 1-1/2	4105	4135	4155
WP-312	3 x 12	11	2-9/16	11-1/4	(2) 16d duplex	(2) 10d x 1-1/2	4105	4135	4155
WP-314	3 x 14	11	2-9/16	13-1/8	(2) 16d duplex	(2) 10d x 1-1/2	4105	4135	4155
WP-316	3 x 16	11	2-9/16	15-1/8	(2) 16d duplex	(2) 10d x 1-1/2	4105	4135	4155
WP-410	4 x 10	11	3-9/16	9-1/4	(2) 16d duplex	(2) 10d	4225	4225	4225
WP-412	4 x 12	11	3-9/16	11-1/4	(2) 16d duplex	(2) 10d	4225	4225	4225
WP-414	4 x 14	11	3-9/16	13-1/8	(2) 16d duplex	(2) 10d	4225	4225	4225
WP-416	4 x 16	11	3-9/16	15-1/8	(2) 16d duplex	(2) 10d	4225	4225	4225
WP-610	6 x 10	11	5-9/16	9-1/4	(2) 16d duplex	(2) 10d	4225	4225	4225
WP-612	6 x 12	11	5-9/16	11-1/4	(2) 16d duplex	(2) 10d	4225	4225	4225
WP-614	6 x 14	11	5-9/16	13-1/8	(2) 16d duplex	(2) 10d	4225	4225	4225
WP-616	6 x 16	11	5-9/16	15-1/8	(2) 16d duplex	(2) 10d	4225	4225	4225
WP-810	8 x 10	11	7-9/16	9-1/4	(2) 16d duplex	(2) 10d	4225	4225	4225
WP-812	8 x 12	11	7-9/16	11-1/4	(2) 16d duplex	(2) 10d	4225	4225	4225
WP-814	8 x 14	11	7-9/16	13-1/8	(2) 16d duplex	(2) 10d	4225	4225	4225
WP-816	8 x 16	11	7-9/16	15-1/8	(2) 16d duplex	(2) 10d	4225	4225	4225
3.15 GLM	3-1/8 x glulam	11	3-1/4	*	(2) 16d duplex	(2) 10d	4225	4225	4225
5.12 GLM	5-1/8 x glulam	11	5-1/4	*	(2) 16d duplex	(2) 10d	4225	4225	4225

\*Specify Depth

## WELDED HANGERS FOR SPECIAL APPLICATIONS



WP  
with I-Joist

**W Style Hangers** are made to order for your load and application. Cleveland designs special hangers to UBC requirements. When ordering advise load, uplift and header conditions.



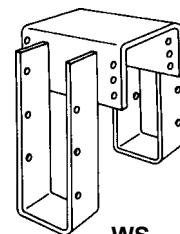
**WP** Welded Plate Hangers are designed for masonry applications, heavy LVL loads or multiple ply I-joists and LVL. All sizes available, each with bearing length and steel gauge to fit the load requirements.

WGS and WGH saddle hangers are stock items.

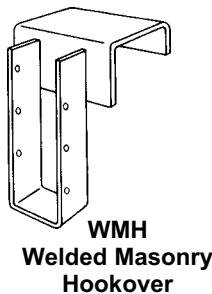
MATERIAL: ASTM A-36 11 ga., 3/16 and 1/4 ga.

FINISH: Black copolymer paint.

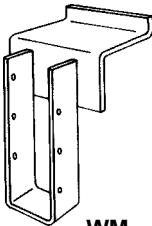
OPTION: Hot-dip galvanized or stainless steel, available as a special order.



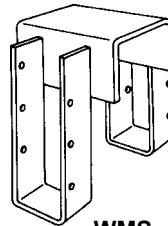
WS  
Welded Saddle



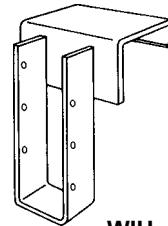
WMH  
Welded Masonry  
Hookover



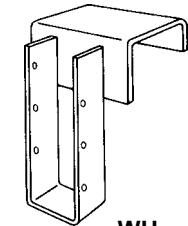
WM  
Welded Masonry



WMS  
Welded Masonry  
Saddle



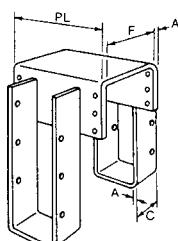
WIH  
Welded I-Beam  
Hookover



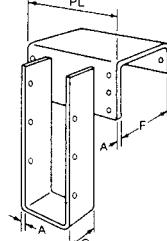
WH  
Welded  
Hookover

### WELDED GLULAM SADDLE HANGERS & HOOKOVER STYLE FOR STEEL I-BEAM\*

**WGS and WGH Style Hangers** are designed to UBC values. These hangers are welded by certified welders.



WGS  
Welded Glulam  
Saddle



WGH  
Welded Glulam  
Hookover

Part Number	Purlin Size	Design Load Lbs.		Uplift	Nails		A	C	F	PL
		Normal	115%		Purlin	Header				
WGS 3.1 / 9	3-1/8x9	4000	4600	1170	4-N4	8-N4	11 ga.	2-1/2	3-1/4	6
WGS 3.1 / 10.5	3-1/8x10-1/2	5100	5370	1755	6-N4	12-N4	11 ga.	3-1/4	3-1/4	6
WGS 3.1 / 12	3-1/8x12	5100	5370	1755	6-N4	12-N4	11 ga.	3-1/4	4	8
WGS 3.1 / 13-1/2	3-1/8x13-1/2	6360	6720	1755	6-N4	12-N4	3/16	4	4	8
WGS 3.1 / 15	3-1/8x15	6360	6720	1755	6-N4	12-N4	3/16	5	5	12
WGS 3.1 / 16-1/2	3-1/8x16-1/2	7700	8070	1755	6-N4	12-N4	3/16	5	5	12
WGS 3.1 / 18	3-1/8x18	8070	8070	1755	6-N4	12-N4	3/16	5	5	12
WGS 5.1 / 9	5-1/8x9	6500	6500	1170	4-N4	12-N4	3/16	2-1/2	3	8
WGS 5.1 / 10.5	5-1/8x10-1/2	8070	8070	1755	6-N4	12-N4	3/16	3	4	12
WGS 5.1 / 12	5-1/8x12	9100	10320	1755	6-N4	12-N4	1/4	4	4	12
WGS 5.1 / 13-1/2	5-1/8x13-1/2	9800	11270	1755	6-N4	16-N4	1/4	4	5	12
WGS 5.1 / 15	5-1/8x15	11200	12570	1755	6-N4	16-N4	1/4	5	5	12
WGS 5.1 / 16-1/2	5-1/8x16-1/2	11900	12570	2340	8-N4	16-N4	1/4	5	5	12
WGS 5.1 / 18	5-1/8x18	12570	12570	2340	8-N4	16-N4	1/4	5	5	12
WGS 6.7 / 9	6-3/4x9	8400	9300	1170	4-N4	8-N4	1/4	3	3	12
WGS 6.7 / 10.5	6-3/4x10-1/2	9800	10430	1755	6-N4	12-N4	1/4	3	4	12
WGS 6.7 / 12	6-3/4x12	11200	12400	1755	6-N4	12-N4	1/4	4	4	12
WGS 6.7 / 13-1/2	6-3/4x13-1/2	11900	13470	1755	6-N4	12-N4	1/4	4	4	12
WGS 6.7 / 15	6-3/4x15	13300	15500	1755	6-N4	12-N4	1/4	5	5	12
WGS 6.7 / 16-1/2	6-3/4x16-1/2	14000	16950	2340	8-N4	12-N4	1/4	5	5	12
WGS 6.7 / 18	6-3/4x18	15400	16950	2340	8-N4	12-N4	1/4	5	5	12

\*Any size or load not shown is available upon request. Uplift value cannot be increased.

N4 nails are 40d x 2-1/2 Ring Shank rated at 220 lbs. lateral strength.

GLULAM compression perpendicular to grain is 465 lbs. S.Y.P.

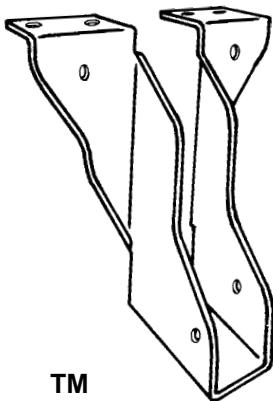
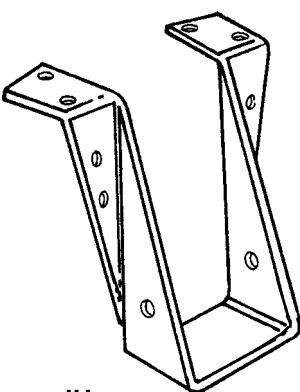
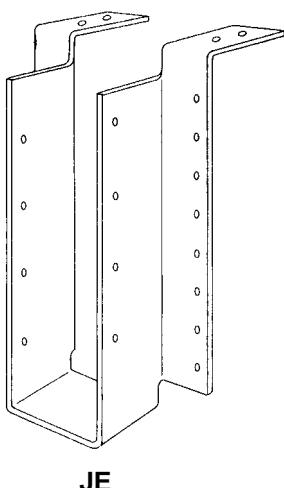
Design loads consider Triangles Bearing Theory and reduce to 50% the compression of hookover plates.

Header nails shown for WGS Saddle Style. WGH Hookover Style require fewer nails.

Design loads shown are for each pocket.

Loads exceeding 10,000 lbs. have a stiffener tab across the back of the pocket at the seat.

## TOPMOUNT HANGERS


**TM**

**JH**

**JE**

Nail these **TM Hangers** to ledgers, headers, trusses and carry 1350 lb. safe load. Top flanges 2-1/8" x 1-7/16" and deep 2-1/8" seats.

MATERIAL: 18 ga.

FINISH: Galvanized G60.

**Code Report:**

BOCA, ICBO, SBCCI No. NER 464.

### ADVANTAGE . . . TOPMOUNT They Install Fast, Plumb & True

Part Number	Joist Size	Design Load	Nailing*		Per Carton
			Header	Joist	
TM-26	2 x 6	1350	(6) 10d x 1-1/2	(2) 10d x 1-1/2	50
TM-28	2 x 8	1350	(6) 10d x 1-1/2	(2) 10d x 1-1/2	36
TM-210	2 x 10	1350	(6) 10d x 1-1/2	(2) 10d x 1-1/2	30
TM-212	2 x 12	1350	(6) 10d x 1-1/2	(2) 10d x 1-1/2	30

\*Nails not included.

### HEAVY DUTY

**JH Hangers** are the original heavy-duty design pioneered by Cleveland. The JH hanger may be field welded at the top flange and carry the charted loads.

MATERIAL: 11 ga. FINISH: Black copolymer paint.

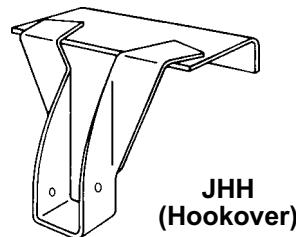
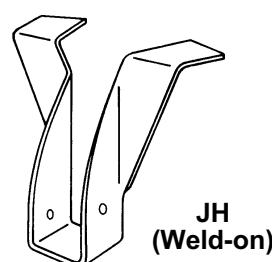
### JH / JE HANGERS FOR NOMINAL LUMBER

Part Number	Actual Size	Design Load		Seat Depth	Nailing		Top Flange	Lbs. Each
		Normal	115%		Header	Joist		
JH-26	1-1/2 x 5-3/8	1845	1870	1-3/4	(6) 16d	(2) 10d x 1-1/2	2-1/2	1.0
JH-28	1-1/2 x 7-1/8	2080	2110	2	(8) 16d	(2) 10d x 1-1/2	2-1/2	1.3
JH-210	1-1/2 x 9-1/8	2080	2110	2	(8) 16d	(2) 10d x 1-1/2	2-1/2	1.6
JH-212	1-1/2 x 11-1/8	2080	2110	2	(8) 16d	(2) 10d x 1-1/2	2-1/2	1.8
JH-36	2-1/2 x 5-3/8	3330	3360	2	(8) 16d	(2) 10d x 1-1/2	3	1.2
JH-38	2-1/2 x 7-1/8	3330	3360	2	(10) 16d	(2) 10d x 1-1/2	3	1.4
JH-310	2-1/2 x 9-1/8	3530	3590	2	(12) 16d	(4) 10d x 1-1/2	3	1.8
JE-312	2-1/2 x 11-1/8	4335	4430	2-3/8	(14) 16d	(6) 10d x 1-1/2	2-11/16	4.2
JH (D) 26	3 x 5-3/8	3955	3985	2	(8) 16d	(2) 10d	2-3/4	1.2
JH (D) 28	3 x 7-1/8	3955	3985	2	(10) 16d	(2) 10d	2-3/4	1.4
JH (D) 210	3 x 9-1/8	4155	4220	2	(12) 16d	(4) 10d	2-3/4	1.8
JH (D) 212	3 x 11-1/8	4415	5075	2-3/8	(16) 16d	(8) 10d	2-7/16	4.2
JE- (T) 210	4-5/8 x 9-1/8	5620	6460	2-3/8	(18) 16d	(6) 16d	3-1/2	3.9
JE (T) 212	4-5/8 x 11-1/8	6490	7460	2-3/8	(24) 16d	(8) 16d	3-1/2	4.2
JH-46	3-1/2 x 5-3/8	4255	4420	2	(8) 16d	(2) 16d	2-1/2	1.2
JH-48	3-1/2 x 7-1/8	4535	4710	2	(10) 16d	(2) 16d	2-1/2	1.4
JH-410	3-1/2 x 9-1/8	4815	5025	2	(12) 16d	(4) 16d	2-1/2	1.8
JE-412	3-1/2 x 11-1/8	4940	5375	2-3/8	(20) 16d	(8) 16d	2-1/2	4.3
JE-414	3-1/2 x 13-1/8	5535	5710	2-3/8	(24) 16d	(8) 16d	2-1/2	4.9
JE-68	5-1/2 x 7-3/8	4180	4480	2-3/8	(14) 16d	(4) 16d	2-1/2	3.5
JE-610	5-1/2 x 9-3/8	5910	6345	2-3/8	(20) 16d	(6) 16d	3-1/2	4.3
JE-612	5-1/2 x 11-3/8	6435	6955	2-3/8	(24) 16d	(8) 16d	3-7/16	4.9
JHS-28	(2) 1-1/2 x 7-1/8	4160	4784	2	—	(2) 10d x 1-1/2	2-1/2	3.0
JHS-210	(2) 1-1/2 x 9-1/8	4160	4784	2	—	(2) 10d x 1-1/2	2-1/2	3.2
JHH-28	1-1/2 x 7-1/8	2080	2392	2	—	(2) 10d x 1-1/2	2-1/2	2.5
JHH-210	1-1/2 x 9-1/8	2080	2392	2	—	(2) 10d x 1-1/2	2-1/2	2.8

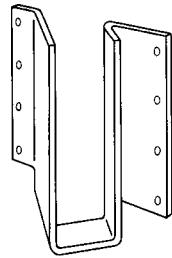
### SADDLE and HOOKOVER HANGERS for MASONRY

**JHS Saddle Hangers** straddle party walls in town houses and condos. Two JH hangers are butt welded (or strap welded) and install quickly at the job site.

**JHH Hookover Hangers** used at end walls speed installation. Plate (or straps) welded to JH hangers can hook into or over masonry and save labor.



## SKewed HANGERS

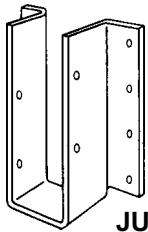
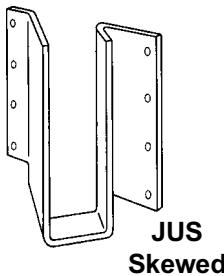
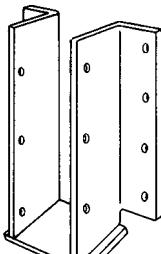
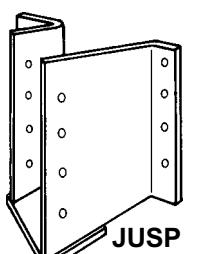
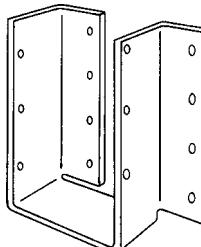
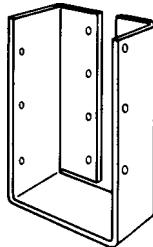


**SK Hangers** are skewed right (SKR) and left (SKL) in standard skews of 22-1/2 deg., 30 deg. 45 deg., 60 deg., and 67-1/2 deg. Excellent for hip roof framing of jacks and hip jack trusses. Full seat, slotted acute angle nailing. Other sizes and skews available as a special order.

MATERIAL: 16 ga.  
FINISH: Galvanized G60.

Skew Rt. Product Number	Skew Lt. Product Number	Skew Angle	Ga.	Dimensions			Fasteners		Allowable Loads					
				W	H	D	Header No. Size	Joist No. Size	Floor 1.00	Snow 1.15	Roof 1.25	Roof 1.33	Uplift 1.33	Uplift 1.60
SKR242	SKL242	22-1/2	16	1-9/16	3-1/4	2	(6) 16d	(3) 10d x 1-1/2	810	930	1010	1010	380	455
SKR262	SKL262	22-1/2	16	1-9/16	4-3/4	2	(8) 16d	(4) 10d x 1-1/2	1080	1240	1350	1350	505	610
SKR282	SKL282	22-1/2	16	1-9/16	6	2	(10) 16d	(5) 10d x 1-1/2	1350	1550	1660	1660	635	760
SKR2102	SKL2102	22-1/2	16	1-9/16	8-1/2	2	(14) 16d	(7) 10d x 1-1/2	1890	2175	2360	2360	885	1065
SKR2142	SKL2142	22-1/2	16	1-9/16	12-1/2	2	(18) 16d	(11) 10d x 1-1/2	2430	2795	3035	3035	1395	1670
SKR(2)262	SKL(2)262	22-1/2	16	3-1/16	4-3/4	2	(8) 16d	(4) 10d	1080	1120	1220	1220	540	660
SKR(2)282	SKL(2)282	22-1/2	16	3-1/16	6	2	(10) 16d	(5) 10d	1350	1400	1525	1525	675	825
SKR(2)2102	SKL(2)2102	22-1/2	16	3-1/16	8-1/2	2	(14) 16d	(7) 10d	1890	1960	2135	2135	945	1155
SKR(2)2142	SKL(2)2142	22-1/2	16	3-1/16	12-1/2	2	(18) 16d	(11) 10d	2430	2795	3035	3035	1655	1990
SKR4102	SKL4102	22-1/2	16	3-9/16	8-1/2	2	(14) 16d	(7) 10d	1890	1960	2135	2135	945	1155
SKR4142	SKL4142	22-1/2	16	3-9/16	12-1/2	2	(18) 16d	(11) 10d	2430	2795	3035	3035	1655	1990
SKR243	SKL1243	30	16	1-9/16	3-1/4	2	(6) 16d	(3) 10d x 1-1/2	810	930	1010	1010	380	455
SKR263	SKL263	30	16	1-9/16	4-3/4	2	(8) 16d	(4) 10d x 1-1/2	1080	1240	1350	1350	505	610
SKR283	SKL283	30	16	1-9/16	6	2	(10) 16d	(5) 10d x 1-1/2	1350	1550	1660	1660	635	760
SKR2103	SKI 2103	30	16	1-9/16	8-1/2	2	(14) 16d	(7) 10d x 1-1/2	1890	2175	2360	2360	885	1065
SKR2143	SKL2143	30	16	1-9/16	12-1/2	2	(18) 16d	(11) 10d x 1-1/2	2430	2795	3035	3035	1395	1670
SKR(2)263	SKL(2)263	30	16	3-1/16	4-3/4	2	(8) 16d	(4) 10d	1080	1120	1220	1220	540	660
SKR(2)283	SKL(2)283	30	16	3-1/16	6	2	(10) 16d	(5) 10d	1350	1400	1525	1525	675	825
SKR(2)2103	SKL(2)2103	30	16	3-1/16	8-1/2	2	(14) 1f;d	(7) 10d	1890	1960	2135	2135	945	1155
SKR(2)2143	SKL(2)2143	30	16	3-1/16	12-1/2	2	(18) 16d	(11) 10d	2430	2795	3035	3035	1655	1990
SKR4103	SKL4103	30	16	3-9/16	8-1/2	2	(14) 16d	(7) 10d	1890	1960	2135	2135	945	1155
SKR4143	SKL4143	30	16	3-9/16	12-1/2	2	(18) 16d	(11) 10d	2430	2795	3035	3035	1655	1990
SKR244	SKL244	45	16	1-9/16	3-1/4	2	(6) 16d	(3) 10d x 1-1/2	810	930	1010	1010	380	455
SKR264	SKL264	45	16	1-9/16	4-3/4	2	(8) 16d	(4) 10d x 1-1/2	1080	1240	1350	1350	505	610
SKR284	SKL284	45	16	1-9/16	6	2	(10) 16d	(5) 10d x 1-1/2	1350	1550	1660	1660	635	760
SKR2104	SKL2104	45	16	1-9/16	8-1/2	2	(14) 16d	(7) 10d x 1-1/2	1890	2175	2360	2360	885	1065
SKR2144	SKL2144	45	16	1-9/16	12-1/2	2	(18) 16d	(11) 10d x 1-1/2	2430	2795	3035	3035	1395	1670
SKR(2)264	SKL(2)264	45	16	3-1/16	4-3/4	2	(8) 16d	(4) 10d	1080	1120	1220	1220	540	660
SKR(2)284	SKL(2)284	45	16	3-1/16	6	2	(10) 16d	(5) 10d	1350	1400	1525	1525	675	825
SKR(2)2104	SKL(2)2104	45	16	3-1/16	8-1/2	2	(14) 16d	(7) 10d	1890	1960	2135	2135	945	1155
SKR(2)2144	SKL(2)2144	45	16	3-1/16	12-1/2	2	(18) 16d	(11) 10d	2430	2795	3035	3035	1655	1990
SKR4104	SKL4104	45	16	3-9/16	8-1/2	2	(14) 16d	(7) 10d	1890	1960	2135	2135	945	1155
SKR4144	SKL4144	45	16	3-9/16	12-1/2	2	(18) 16d	(11) 10d	2430	2795	3035	3035	1655	1990
SKR246	SKL246	60	16	1-9/16	3-1/4	2	(6) 16d	(3) 10d x 1-1/2	810	930	1010	1010	380	455
SKR266	SKL266	60	16	1-9/16	4-3/4	2	(8) 16d	(4) 10d x 1-1/2	1080	1240	1350	1350	505	610
SKR286	SKL286	60	16	1-9/16	6	2	(10) 16d	(5) 10d x 1-1/2	1350	1550	1660	1660	635	760
SKR2106	SKL2106	60	16	1-9/16	8-1/2	2	(14) 16d	(7) 10d x 1-1/2	1890	2175	2360	2360	885	1065
SKR2146	SKL2146	60	16	1-9/16	12-1/2	2	(18) 16d	(11) 10d x 1-1/2	2430	2795	3035	3035	1395	1670
SKR(2)266	SKL(2)266	60	16	3-1/16	4-3/4	2	(8) 16d	(4) 10d	1080	1120	1220	1220	540	660
SKR(2)286	SKL(2)286	60	16	3-1/16	6	2	(10) 16d	(5) 10d	1350	1400	1525	1525	675	825
SKR(2)2106	SKL(2)2106	60	16	3-1/16	8-1/2	2	(14) 16d	(7) 10d	1890	1960	2135	2135	945	1155
SKR(2)2146	SKL(2)2146	60	16	3-1/16	12-1/2	2	(18) 16d	(11) 10d	2430	2795	3035	3035	1655	1990
SKR4106	SKL4106	60	16	3-9/16	8-1/2	2	(14) 16d	(7) 10d	1890	1960	2135	2135	945	1155
SKR4146	SKL4146	60	16	3-9/16	12-1/2	2	(18) 16d	(11) 10d	2430	2795	3035	3035	1655	1990
SKR247	SKL247	67-1/2	16	1-9/16	3-1/4	2	(6) 16d	(3) 10d x 1-1/2	810	930	1010	1010	380	455
SKR267	SKL267	67-1/2	16	1-9/16	4-3/4	2	(8) 16d	(4) 10d x 1-1/2	1080	1240	1350	1350	505	610
SKR287	SKL287	67-1/2	16	1-9/16	6	2	(10) 16d	(5) 10d x 1-1/2	1350	1550	1660	1660	635	760
SKR2107	SKL2107	67-1/2	16	1-9/16	8-1/2	2	(14) 16d	(7) 10d x 1-1/2	1890	2175	2360	2360	885	1065
SKR2147	SKL2147	67-1/2	16	1-9/16	12-1/2	2	(18) 16d	(11) 10d x 1-1/2	2430	2795	3035	3035	1395	1670
SKR(2)267	SKL(2)267	67-1/2	16	3-1/16	4-3/4	2	(8) 16d	(4) 10d	1080	1120	1220	1220	540	660
SKR(2)287	SKL(2)287	67-1/2	16	3-1/16	6	2	(10) 16d	(5) 10d	1350	1400	1525	1525	675	825
SKR(2)2107	SKL(2)2107	67-1/2	16	3-1/16	8-1/2	2	(14) 16d	(7) 10d	1890	1960	2135	2135	945	1155
SKR(2)2147	SKL(2)2147	67-1/2	16	3-1/16	12-1/2	2	(18) 16d	(11) 10d	2430	2795	3035	3035	1655	1990
SKR4107	SKL4107	67-1/2	16	3-9/16	8-1/2	2	(14) 16d	(7) 10d	1890	1960	2135	2135	945	1155
SKR4147	SKL4147	67-1/2	16	3-9/16	12-1/2	2	(18) 16d	(11) 10d	2430	2795	3035	3035	1655	1990

## SPECIAL HANGERS


**JU**

**JUS  
Skewed**

**JUP  
Pitched Seat**

**JUSP  
Skewed &  
Pitched**

**JUO Offset  
(LH Shown)**

**JUR  
Reverse**

**JU Hangers** are a versatile, facemount style. They can be skewed up to 50°. Pitched seats —up or down— have neat corner welds. Welded seat hangers are made from 3/16" steel for loads greater than 2,000 lbs.

### JU/JUO/JUP/JUR/JUS/JUSP

Part Number	Size	Nail Schedule		Seat Depth	Normal Load	115% Load
		Face	Pocket			
JU 26	1.6 x 5	(8) 16d	(4) 10d x 1-1/2	2"	1125	1295
JU 28	1.6 x 6-1/2	(10) 16d	(5) 10d x 1-1/2	2"	1410	1620
JU 210	1.6 X 8-1/2	(14) 16d	(6) 10d x 1-1/2	2"	1970	2270
JU 212	1.6 x 11-1/4	(16) 16d	(6) 10d x 1-1/2	2-1/2"	2250	2590
JU 212I	1-3/4 x 11-1/8	(16) 16d	(6) 10d x 1-1/2	2-1/2"	2250	2590
JU 214I	1-3/4 x 13-1/2	(18) 16d	(8) 10d x 1-1/2	2-1/2"	2530	2910
JU 216I	1-3/4 x 15-1/2	(20) 16d	(8) 10d x 1-1/2	2-1/2"	2820	3240
JU (2) 26	3-1/4 x 5	(8) 16d	(4) 10d	2"	1130	1295
JU (2) 28	3-1/4 x 7	(12) 16d	(5) 10d	2"	1690	1945
JU (2) 210	3-1/4 x 9	(14) 16d	(6) 10d	2"	1970	2270
JU (2) 212	3-1/4 x 10-1/2	(16) 16d	(6) 10d	2-1/2"	2250	2590
JU 46	3-9/16 x 4-1/2	(8) 16d	(4) 10d	2"	1125	1295
JU 48	3-9/16 x 6-1/2	(12) 16d	(5) 10d	2"	1690	1945
JU 410	3-9/16 x 8-1/2	(14) 16d	(6) 10d	2"	1970	2270
JU 412	3-9/16 x 10-1/2	(16) 10d	(6) 10d	2-1/2"	2250	2590
JU 414	3-9/16 x 13-1/2	(18) 16d	(8) 10d	2-1/2"	2530	2910
JU 416	3-9/16 x 15-1/2	(20) 16d	(8) 10d	2-1/2"	2820	3240

**JUO Offset** hangers are made with either the right or left flange formed inward. This style attaches at the end of a header or in tight areas.

**JUP Pitched** hangers are made with the seat either sloped up or down.

**JUR Reverse** hangers conceal the flanges or permit attachment at either end of the header. They are made for 3" and wider.

**JUS Skewed** hangers are made with the pocket either angled toward the right or the left. This allows for angled members to be supported.

**JUSP Skewed and Pitched** hangers incorporate both the skewed and pitched characteristics.

MATERIAL: 12 ga. and 7 ga.

FINISH: Galvanized G60 and black copolymer paint.

## SEVERE SKEW

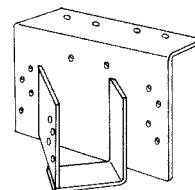
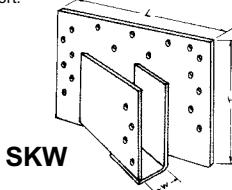
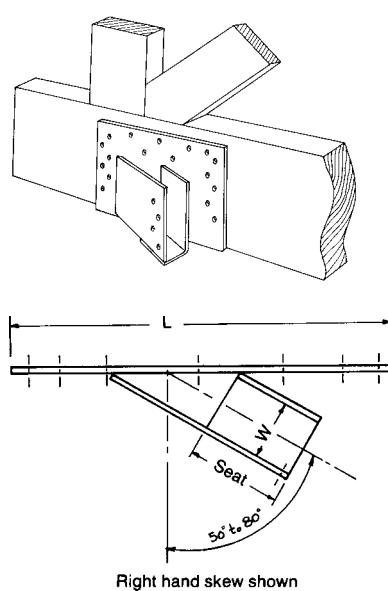
### SKW Hangers 50° to 80° Hangers

Specify the skew angle off of 90°; right hand or left hand. SKW style are face mount. Charted sizes are for single ply pockets. Other pocket widths available with same allowable loads. Heavy 11 gauge or 3/16" steel, black copolymer paint finish. Heavier loads may require SKWE style with top flange bearing. MATERIAL: 11 ga. and 7 ga. FINISH: Black copolymer paint.

Part Number	Dimensions			Seat Brdg.	Steel Gauge	Allowable Loads (lbs.)			Nail Schedule	
	W	H	L			Normal	115%	Uplift	Header	Joist
SKW 26	1-5/8	5	9	2-1/2	11 ga.	1030	1185	545	(10) 10d x 1-1/2	(4) 10d x 1-1/2
						1230	1415	545	(10) 10d	(4) 10d x 1-1/2
						1450	1665	545	(10) 16d	(4) 10d x 1-1/2
SKW 28	1-5/8	6	10-1/2	2-1/2	11 ga.	1315	1510	545	(15) 10d x 1-1/2	(4) 10d x 1-1/2
						1565	1800	545	(15) 10d	(4) 10d x 1-1/2
						1845	2125	545	(15) 16d	(4) 10d x 1-1/2
SKW 210	1-5/8	8-1/4	10-1/2	3	3/16	1750	2010	545	(20) 10d x 1-1/2	(4) 10d x 1-1/2
						2090	2400	545	(20) 10d	(4) 10d x 1-1/2
						2465	2830	545	(20) 16d	(4) 10d x 1-1/2

\*Allowable load when attaching to single ply girder is limited to 10d x 1-1/2 load.

Hangers are designed to UBC Standards but due to their numerous configurations, skewed hangers do not appear on a code report.

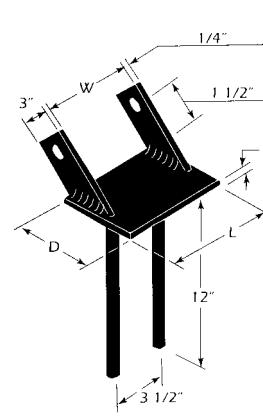
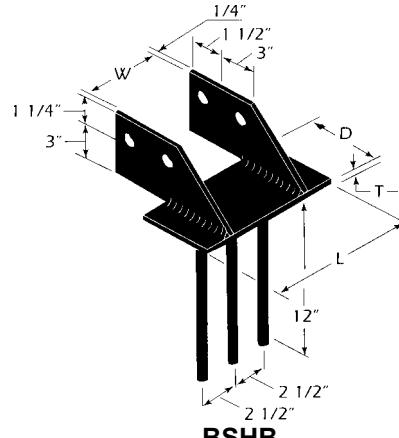
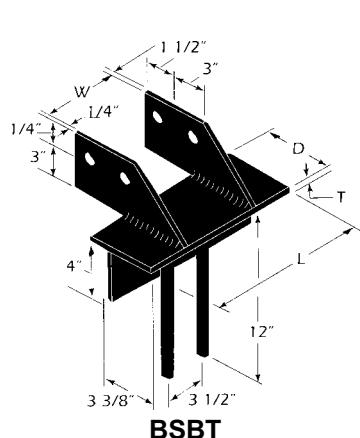


# BEAM SEATS

**Beam Seats** anchor glulam beams to concrete and masonry supports. Seismic and wind resistance is provided. Special types are available.

MATERIAL: 3 ga., 5/16" and 3/8". FINISH: Black copolymer paint.

OPTIONAL: Hot-dip galvanized or stainless steel, available as a special order.



Duration of load increases of 33% and 60% are listed. Further increases are not allowed. Allowable loads for concrete, masonry, and wood to be verified by design engineer.

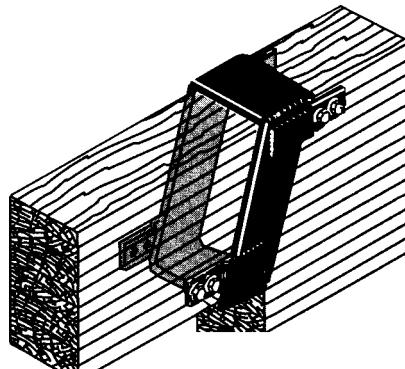
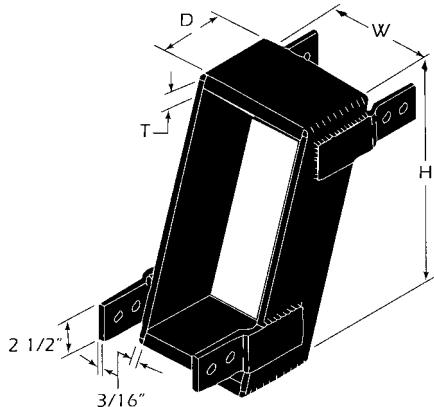
## **BEAM SEATS**

Part Number	Dimensions			Bolts Schedule	Allowable Loads (lbs.)							
	W	L	T		Masonry F'm=172.5 PSI	Masonry F'm=390 PSI	Concrete F'c=750 PSI	Horizontal		Uplift		
			D					133%	160%	133%	160%	
BSB-5A	5-1/4	7	3 ga.	5	(1) 5/8	6040	12075	12075	2885	3460	1705	2045
BSB-5B	5-1/4	7	3 ga.	6	(1) 5/8	7245	14490	14490	2885	3460	1705	2045
BSB-5C	5-1/4	7	3 ga.	7	(1) 5/8	8455	16905	16905	2885	3460	1705	2045
BSB-5D	5-1/4	7	3 ga.	8	(1) 5/8	9660	19320	19320	2885	3460	1705	2045
BSB-7A	6-7/8	9	3 3/8"	5	(1) 3/4	7765	15525	15525	4100	4920	2330	2800
BSB-7B	6-7/8	9	3 3/8"	6	(1) 3/4	9315	18630	18630	4100	4920	2330	2800
BSB-7C	6-7/8	9	3 3/8"	7	(1) 3/4	10870	21735	21735	4100	4920	2330	2800
BSB-7D	6-7/8	9	3 3/8"	8	(1) 3/4	12420	24840	24840	4100	4920	2330	2800

# **BEAM SEATS**

Part Number	W	D	L	T	Bolt Schedule	Beam Width (W)								Horizontal		Uplift 133%						
						3-1/8	3-1/2	5-1/8	5-1/2	6-3/4	7-1/2	8-3/8	10-3/4	133%	160%	Beam Width (W)		Beam Width (W)				
						3-1/8	3-1/2	>4-1/2	3-1/8	3-1/2	>4-1/2	3-1/8	3-1/2	>4-1/2	3-1/8	3-1/2	>4-1/2					
<b>Masonry Bearing F'm = 172.5 psi</b>																						
BSBT-512	spec	5-1/4	12	5/16	(2) 3/4	7575	8450	10870	10870	10870	10870	10870	10870	8195	9835	3250	3640	4665	3900	4370	5595	
BSBT-516	spec	5-1/4	16	5/16	(2) 3/4	7575	8450	12375	13285	14490	14490	14490	14490	8195	9835	3250	3640	4665	3900	4370	5595	
BSBT-520	spec	5-1/4	20	5/16	(2) 3/4	7575	8450	12375	13285	16300	18115	18115	18115	8195	9835	3250	3640	4665	3900	4370	5595	
BSBT-612	spec	6-1/2	12	3/8	(2) 3/4	9345	10465	13455	13455	13455	13455	13455	13455	8195	9835	3250	3640	4665	3900	4370	5595	
BSBT-616	spec	6-1/2	16	3/8	(2) 3/4	9345	10465	15325	16455	17940	17940	17940	17940	8195	9835	3250	3640	4665	3900	4370	5595	
BSBT-620	spec	6-1/2	20	3/8	(2) 3/4	9345	10465	15325	16445	20185	22425	22425	22425	8195	9835	3250	3640	4665	3900	4370	5595	
BSHB A	spec	5	10	3/8	(2) 3/4	7190	8050	8625	8625	8625	8625	8625	8625	—	8195	9835	3250	3640	4665	3900	4370	5595
BSHB B	spec	6	10	3/8	(2) 3/4	8625	9660	10350	10350	10350	10350	10350	10350	—	8195	9835	3250	3640	4665	3900	4370	5595
BSHB C	spec	7	10	3/8	(2) 3/4	10065	11270	12075	12075	12075	12075	12075	12075	—	8195	9835	3250	3640	4665	3900	4370	5595
BSHB D	spec	8	10	3/8	(2) 3/4	11500	12880	13800	13800	13800	13800	13800	13800	—	8195	9835	3250	3640	4665	3900	4370	5595
<b>Masonry Bearing F'm = 390 psi and Greater Concrete Bearing F'c = 750 psi and Greater</b>																						
BSBT-512	spec	5-1/4	12	5/16	(2) 3/4	7575	8450	12375	13285	16300	18115	21130	25960	8195	9835	3250	3640	4665	3900	4370	5595	
BSBT-516	spec	5-1/4	16	5/16	(2) 3/4	7575	8450	12375	13285	16300	18115	21130	25960	8195	9835	3250	3640	4665	3900	4370	5595	
BSBT-520	spec	5-1/4	20	5/16	(2) 3/4	7575	8450	12375	13285	16300	18115	21130	25960	8195	9835	3250	3640	4665	3900	4370	5595	
BSBT-612	spec	6-1/2	12	3/8	(2) 3/4	9345	10465	15325	16445	20185	22425	26160	32145	8195	9835	3250	3640	4665	3900	4370	5595	
BSBT-616	spec	6-1/2	16	3/8	(2) 3/4	9345	10465	15325	16445	20185	22425	26160	32145	8195	9835	3250	3640	4665	3900	4370	5595	
BSBT-620	spec	6-1/2	20	3/8	(2) 3/4	9345	10465	15325	16445	20185	22425	26160	32145	8195	9835	3250	3640	4665	3900	4370	5595	
BSHB A	spec	5	10	3/8	(2) 3/4	7190	8050	11790	12650	15525	17250	19500	—	8195	9835	3250	3640	4665	3900	4370	5595	
BSHB B	spec	6	10	3/8	(2) 3/4	8625	9660	14145	15180	18630	20700	23400	—	8195	9835	3250	3640	4665	3900	4370	5595	
BSHB C	spec	7	10	3/8	(2) 3/4	10065	11270	16500	17710	21735	24150	27300	—	8195	9835	3250	3640	4665	3900	4370	5595	
BSHB D	spec	8	10	3/8	(2) 3/4	11500	12800	18860	20240	24480	27600	31200	—	8195	9835	3250	3640	4665	3900	4370	5595	

## G LULAM HINGE CONNECTORS



**Glulam Hinge Connectors** provide a high capacity connection between the cantilevered member and the supported member in positive vs negative moment situations. Members must be of equal width. Special configurations can be furnished to your specifications.

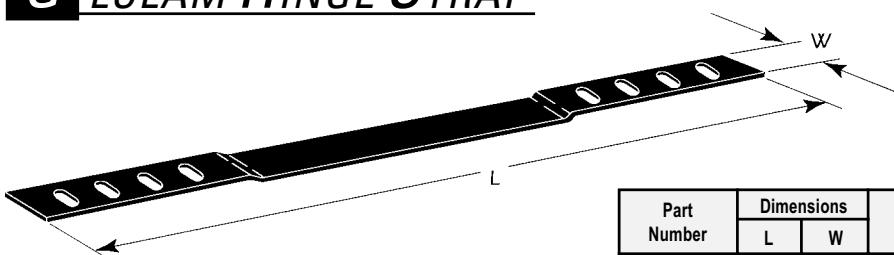
MATERIAL: ASTM A-36 3/4", 1", and 1 1/4".

FINISH: Black copolymer paint.  
OPTION: Hot-dip galvanized available as a special order.

Part Number	Beam Width	Dimensions				Bolt Schedule		Allowable Loads (lbs.)		
		W	Min. H	D	T	Carrying Member	Carried Member	Floor	Roof	
								100%	Snow	Non-Snow
GHC-55	5-1/8	5-1/4	9	5	3/4	(2) 3/4	(2) 3/4	14415	14415	14415
GHC-56	5-1/8	5-1/4	9	6	3/4	(2) 3/4	(2) 3/4	17300	17300	17300
GHC-57	5-1/8	5-1/4	9	7	3/4	(2) 3/4	(2) 3/4	20180	20180	20180
GHC-59	5-1/8	5-1/4	9	9	3/4	(2) 3/4	(2) 3/4	25945	25945	25945
GHC-75	6-3/4	6-7/8	9	5	1	(2) 3/4	(2) 3/4	18985	18985	18985
GHC-76	6-3/4	6-7/8	9	6	1	(2) 3/4	(2) 3/4	22780	22780	22780
GHC-77	6-3/4	6-7/8	9	7	1	(2) 3/4	(2) 3/4	26580	26580	26580
GHC-79	6-3/4	6-7/8	9	9	1	(2) 3/4	(2) 3/4	34170	34170	34170
GHC-95	8-3/4	8-7/8	9	5	1-1/4	(2) 3/4	(2) 3/4	24610	24610	24610
GHC-96	8-3/4	8-7/8	9	6	1-1/4	(2) 3/4	(2) 3/4	29530	29530	29530
GHC-97	8-3/4	8-7/8	9	7	1-1/4	(2) 3/4	(2) 3/4	34450	34450	34450
GHC-99	8-3/4	8-7/8	9	9	1-1/4	(2) 3/4	(2) 3/4	44300	44300	44300

Allowable loads assume 565 psi bearing; no increase is permitted.

## G LULAM HINGE STRAP



Part Number	Dimensions		Bolt Schedule	Allowable Loads (lbs.)	
	L	W		133%	160%
GHS-2	22	3-1/2	(4) 3/4	8040	9650
GHS-3	28	3-1/2	(6) 3/4	11815	14180
GHS-4	34	3-1/2	(8) 3/4	15265	16130

**GHS** provide additional lateral load capacity when used with GHC connectors. The offset center section provides clearance for hinge connectors.

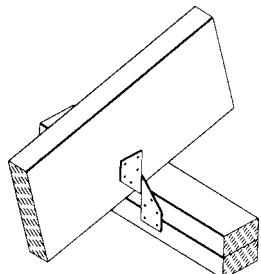
MATERIAL: 7 ga.

FINISH: Black copolymer paint.

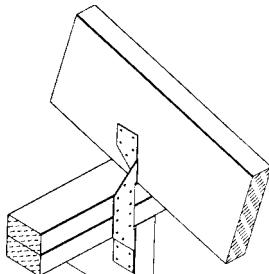
OPTION: Hot-dip galvanized available as a special order.

**GHS Straps** are installed in pairs in conjunction with glulam hinge connectors. Seismic load duration of load increases of 33% and 60% are listed; no additional increases are permitted. Minimum member width = 5-1/8". Add "R" to part number if round holes are required, i.e., GHS 2R.

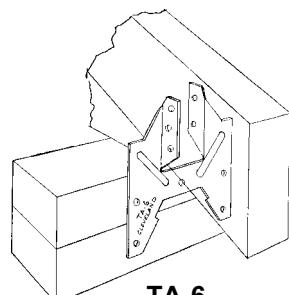
## WIND ANCHORS



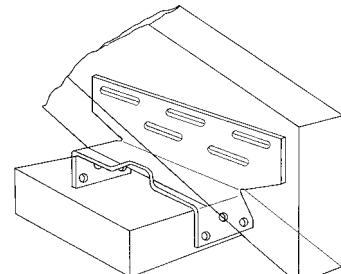
TA-4



TA-5



TA-6



STC

**TA-4 Truss Anchor** attaches to double wall plate. May be used back to back for greater uplift value. Available as TA-4N (packaged with nails).

**TA-5 Truss Anchor** ties a truss to wall plate and stud.

**TA-6 Truss Anchor** provides high uplift rating. Attaches to double wall plate. Truss flanges formed in opposite directions to accept 8d nails.

**FA-1 Framing Anchor** ties a truss to single wall plate. Available right or left hand. Must use same hand for back to back installation. Nails included.

**STC** anchor scissor trusses while permitting the truss to move outward reducing wall buckle. The STC base reduces friction 20%. Slotted holes allow a full 1" movement and the formed lip retains the truss during nailing. Heavy-duty 16 gauge galvanized steel. Made for nominal 4", 6" and 8" wall plates.

MATERIAL: 18 ga. FINISH: Galvanized G60

## CLEVELAND TRUSS ANCHORS

Part Number	Uplift Max.*	Nail Schedule			Gauge	Width	Height
		Truss	Plate	Stud			
TA-4	430	(4) 8d x 1-1/4"	(4) 8d x 1-1/4"	—	18	1-1/2"	5-3/4"
TA-5	400	(4) 8d	(2) 8d	(4) 8d	18	1-1/2"	10-1/2"
TA-6	550	(5) 8d	(5) 8d	—	18	4	4-7/8"
STC-4	500	(4) 8d	(5) 8d	—	16	3-1/2"	3-9/16"
STC-6	500	(5) 8d	(6) 8d	—	16	5-1/2"	3-9/16"
STC-8	500	(5) 8d	(6) 8d	—	16	7-1/4"	3-9/16"
FA-1	315	(3) 8d x 1-1/4"	(3) 8d x 1-1/4"	—	18	1-1/2"	4-3/4"
FA-2	315	(3) 8d x 1-1/4"	(3) 8d x 1-1/4"	—	18	1-1/2"	4-3/4"
FA-3	630	(3) 8d x 1-1/4"	(3) 8d x 1-1/4"	—	18	1-1/2"	4-3/4"

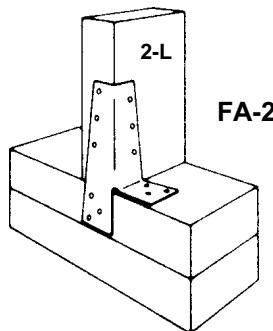
\*Uplift has been increased 33% for wind. No further increase allowed

Code Report: BOCA, ICBO, SBCCI No. NER 464

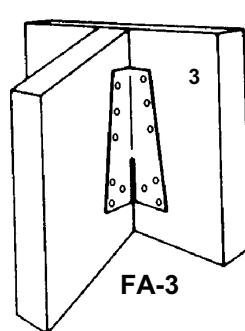
## FRAMING ANCHORS

**Framing Anchors** are designed for proper nail location to avoid splitting. They solve many framing conditions where a better than toenail connection is desired. FA-1, FA-2 and FA-3 are 4-3/4" high with 15/16" x 15/16" top angle and 1-1/2" x 1-1/2" lower flanges. Tabs are 1-1/2" long. Special 11 gauge x 1-1/4" nails packed in all cartons. FA-1 and FA-2 are available in right or left hand. Packed 100 per carton including nails. MATERIAL: 18 ga. FINISH: Galvanized G60.

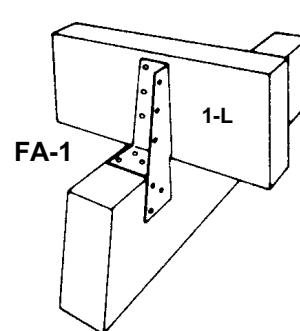
2" x 1-1/2" lower flanges. Tabs are 1-1/2" long. Special 11 gauge x 1-1/4" nails packed in all cartons. FA-1 and FA-2 are available in right or left hand. Packed 100 per carton including nails. MATERIAL: 18 ga. FINISH: Galvanized G60.



FA-2



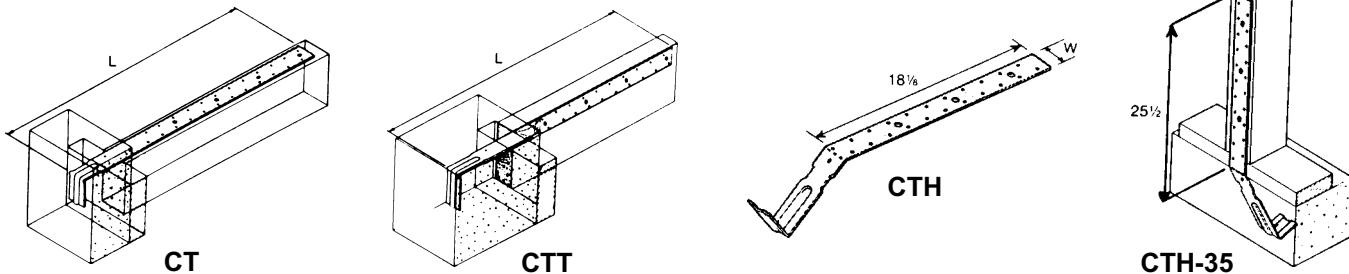
FA-3



FA-1

## C CONCRETE TIES

**Concrete Ties** provide wind and seismic anchorage.



Part Number	Steel Gauge	Dimensions	Fastener Schedule		Minimum Embedded.	Allowable Loads (lbs.)				
						Nails		Bolts		
			133%	160%		133%	160%	133%	160%	
CT-18	12	2-1/16 x 18-1/2	(12) 16d	(2) 1/2	4	2240	2690	1235	1485	
CT-23	12	2-1/16 x 23-3/4	(18) 16d	(3) 1/2	4	3360	3435	1790	2150	
CT-28	12	2-1/16 x 29	(24) 16d	(4) 1/2	4	3435	3435	2260	2710	
CT-35	12	2-1/16 x 35	(24) 16d	(4) 1/2	4	3435	3435	2260	2710	
CTT-18	12	2-1/16 x 18-1/2	(8) 16d	(2) 1/2	4	1495	1790	1235	1485	
CTT-23	12	2-1/16 x 23-3/4	(14) 16d	(3) 1/2	4	2615	3135	1790	2150	
CTT-28	12	2-1/16 x 29	(20) 16d	(4) 1/2	4	3435	3435	2260	2710	
CTT-35	12	2-1/16 x 35	(24) 16d	(4) 1/2	4	3435	3435	2260	2710	
CTH-28	10	2-1/16 x 29	(24) 16d	(4) 1/2	6	4705	5645	3240	3885	
CTH-35	10	2-1/16 x 35	(30) 16d	(4) 1/2	6	5695	5695	3240	3885	

Duration of load increases of 33% and 60% are listed. Further increases are not allowed. Bolt and Nail loads are not additive. Allowable loads are predicated on: parallel to grain bolt loading; main member thickness of 3" for CT and 3-1/2" for CTH, and 2" nail penetration; concrete embedment of 4" for CT and 6" for CTH.

MATERIAL: 12 ga. and 10 ga.

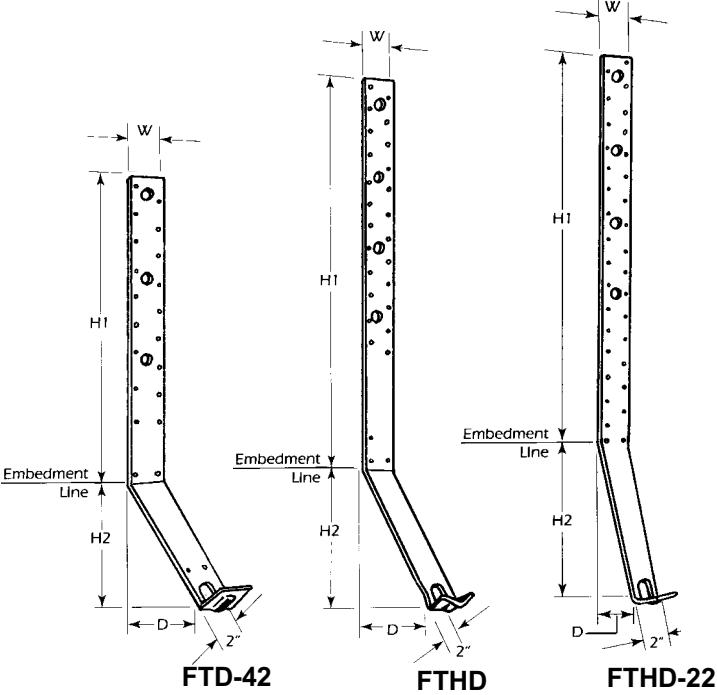
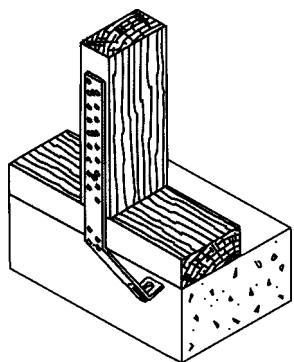
FINISH: Galvanized G60 and black copolymer paint.

## F OUNDATION TIES

**Foundation Ties** provide deep embedment in concrete footings for anchorage of wood members.

MATERIAL: 12 ga. and 10 ga.

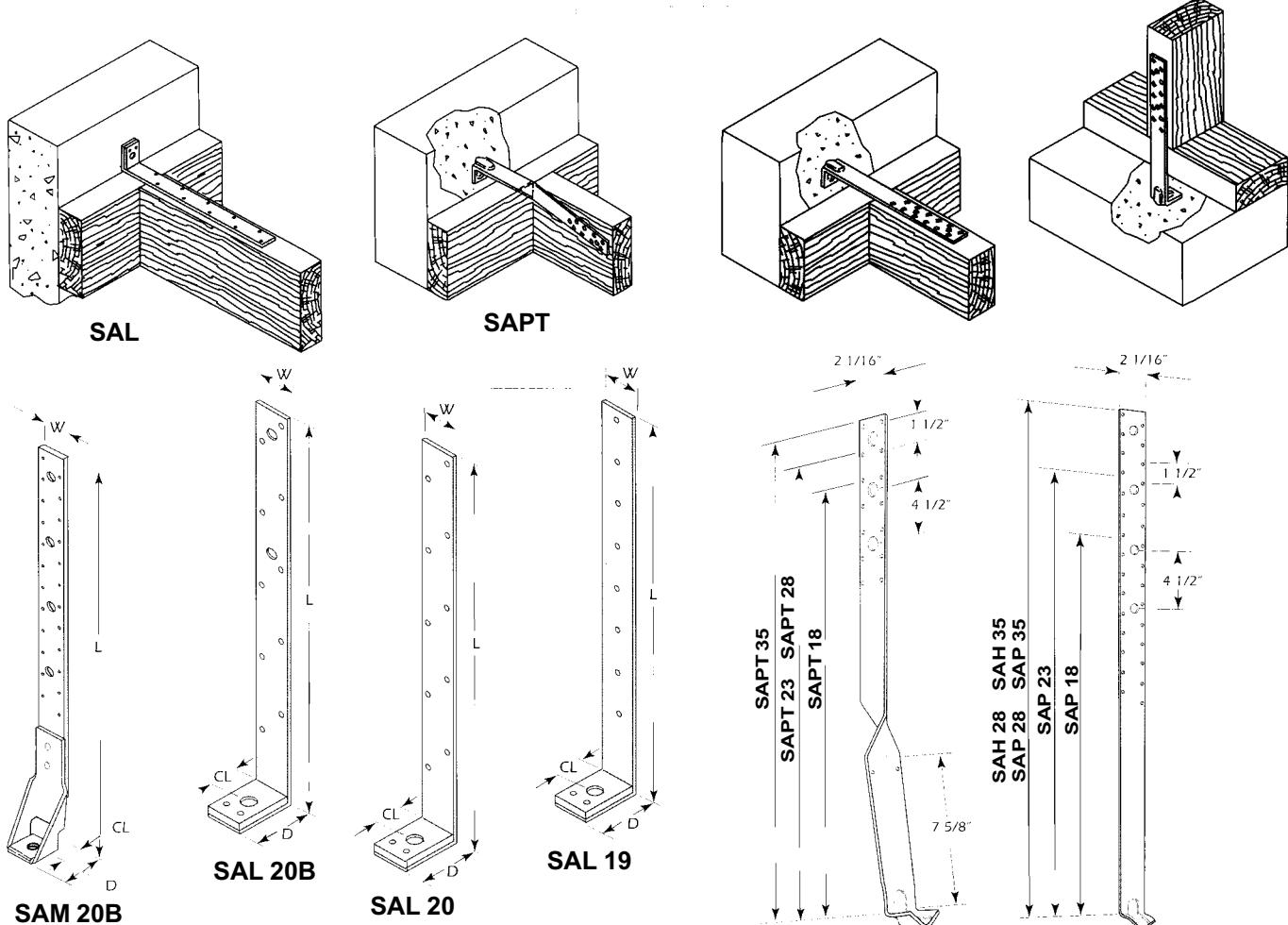
FINISH: Galvanized G60.



Part Number	Steel Gauge	Dimensions				Fastener Schedule		Minimum Embedded.	Allowable Loads (lbs.)				
		W	H1	H2	D				Nails		Bolts		
						133%	160%		133%	160%	133%	160%	
FTD-42	12	2-1/16	16-5/8	6	6	(18) 16d	(3) 1/2	6	3360	3435	1790	2150	
FTHD	12	2-1/16	24-3/4	9-1/4	10-1/4	(22) 16d	(4) 1/2	8	3435	3435	2260	2710	
FTHD-22	10	2-1/16	24-3/4	10	6-1/4	(24) 16d	(4) 1/2	10	4705	5645	3240	3885	
FTHD-222	10	2	29-1/2	11	6-1/4	(24) 16d	(4) 1/2	14	4320	4320	3770	3770	

## S TRAP ANCHORS

**Strap Anchors** secure joists, beams and studs to concrete walls and footings to resist wind and seismic forces. Designed primarily for new construction, they are also used for upgrade of existing structures.



Part Number	Steel Gauge	Dimensions				Nail Spacing	Fastener Schedule		Allowable Loads (lbs.)					
							Anchor Bolts	Straps		Nuts		Bolts		
		W	L	D	CL		Nails	Bolts	133%	160%	133%	160%		
SAL 19	16	3	3-1/4	22-1/4	3	1-1/2	2-1/2	(1) 3/4	(8) 10d	—	1205	1390	—	—
SAL 20	12	3	2	20	3	1-1/2	3-3/4	(1) 1/2	(10) 10d	—	1865	1910	—	—
SAL 20B	12	3	2	20	3	1-1/2	3-3/4	(1) 3/4	(10) 10d	(2) 1/2	1865	1910	1230	1480
SAM 27B	10	3	2-1/16	27	2-3/4	1-5/8	1-1/2	(1) 3/4	(24) 16d	(4) 1/2	3745	3745	2375	2850

Duration of load increases of 33% and 60% are listed. Further increases are not allowed. Bolt and nail loads are not additive.

MATERIAL: See chart.

FINISH: Galvanized G60 and black copolymer paint.

Part Number	Steel Gauge	Dimensions		Fastener Schedule		Minimum Embedded.	Allowable Loads (lbs.)			
							Nuts		Bolts	
		W	L	Nails	Bolts		133%	160%	133%	160%
SAP 18	12	2-1/16	18-1/2	(12) 16d	(2) 12	4	2240	2690	1235	1485
SAP 23	12	2-1/16	23-3/4	(18) 16d	(3) 1/2	4	3360	3435	1790	2150
SAP 28	12	2-1/16	29	(24) 16d	(4) 1/2	4	3435	3435	2260	2710
SAP 35	12	2-1/16	35	(24) 16d	(4) 1/2	4	3435	3435	2260	2710
SAPT 18	12	2-1/16	18-1/2	(8) 16d	(2) 1/2	4	1495	1790	1235	1485
SAPT 23	12	2-1/16	23-3/4	(14) 16d	(3) 1/2	4	2615	3135	1790	2150
SAPT 28	12	2-1/16	29	(20) 16d	(4) 1/2	4	3435	3435	2260	2710
SAPT 35	12	2-1/16	35	(24) 16d	(4) 1/2	4	3435	3435	2260	2710
SAH 28	10	2-1/16	29	(24) 16d	(4) 1/2	6	4705	5645	3240	3885
SAH 35	10	2-1/16	35	(30) 16d	(4) 1/2	6	5695	5695	3240	3885



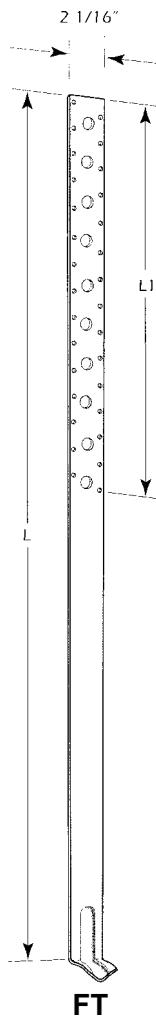
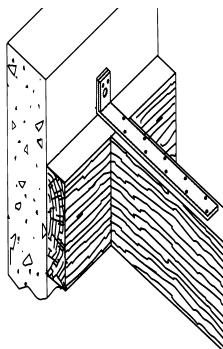
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## FOUNDATION TIES

**Foundation Ties** are especially designed for anchorage in crawl spaces. They provide a positive anchorage to footings for wind and seismic loadings.

MATERIAL: 12 ga. and 10 ga.

FINISH: Galvanized G60.



Part No.	Dimensions		Nail Uplift Values and Schedules for RIM Joist Sizes Below										
			2 x 8		2 x 10		2 x 12		2 x 14				
	L	L1	Nails		Uplift		Nails		Uplift		Nails		
			133%	160%	133%	160%	133%	160%	133%	160%	133%	160%	
FT 41	38-1/4	17-5/8	(8) 10d x 1-1/2	1065	1280	(10) 10d x 1-1/2	1335	1600	(14) 10d x 1-1/2	1865	2220	(16) 10d x 1-1/2	2135 2220
FT 51	48-1/4	22-1/8	(8) 10d x 1-1/2	1065	1280	(10) 10d x 1-1/2	1335	1600	(14) 10d x 1-1/2	1865	2200	(16) 10d x 1-1/2	2135 2220
FT 61	58-1/4	22-1/8	(8) 10d x 1-1/2	1065	1280	(10) 10d x 1-1/2	1335	1600	(14) 10d x 1-1/2	1865	2220	(16) 10d x 1-1/2	2135 2220
FT 71	68-1/4	22-1/8	(8) 10d x 1-1/2	1065	1280	(10) 10d x 1-1/2	1335	1600	(14) 10d x 1-1/2	1865	2200	(16) 10d x 1-1/2	2135 2220

Part No.	Dimensions		Bolt Uplift Values and Schedules for RIM Joist Sizes Below											
			2 x 8		2 x 10		2 x 12		2 x 14					
	L	L1	Nails		Uplift		Nails		Uplift		Nails		Uplift	
			133%	160%	133%	160%	133%	160%	133%	160%	133%	160%	133%	160%
FT 41	38-1/4	17-5/8	(2) 1/2	535	645	(3) 1/2	765	915	(4) 1/2	935	1125	(6) 1/2	1140	1370
FT 51	48-1/4	22-1/8	(2) 1/2	535	645	(3) 1/2	765	915	(4) 1/2	935	1125	(6) 1/2	1140	1370
FT 61	58-1/4	22-1/8	(2) 1/2	535	645	(3) 1/2	765	915	(4) 1/2	935	1125	(6) 1/2	1140	1370
FT 71	68-1/4	22-1/8	(2) 1/2	535	645	(3) 1/2	765	915	(4) 1/2	935	1125	(6) 1/2	1140	1370

Duration of load increases of 33% and 60% are listed; further increases are not allowed. Bolt and nail allowable loads are not additive. Bolt values are for perpendicular to grain loading. Nails are 10d x 1-1/2" (diameter 0.148").

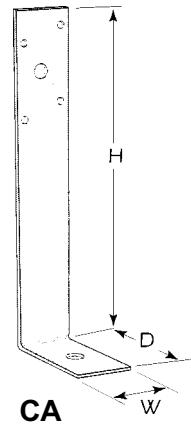
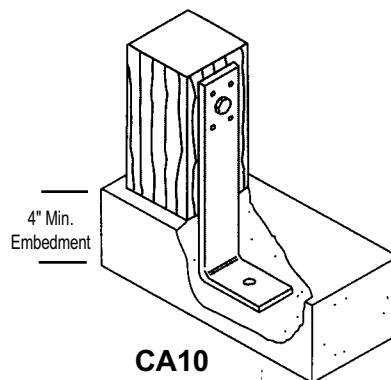
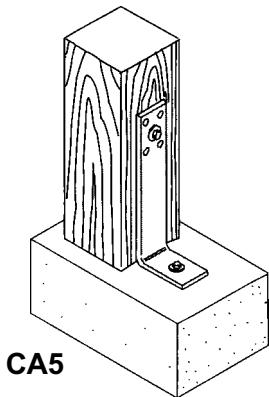
Fc=2000 PSI minimum for concrete.

## CONCRETE ANGLES

**Concrete Angles** provide a fast and economical anchorage to concrete footers and foundations. The CA-5 is for use with expansion shields or other approved anchors. The CA-10 is for direct embedment in concrete.

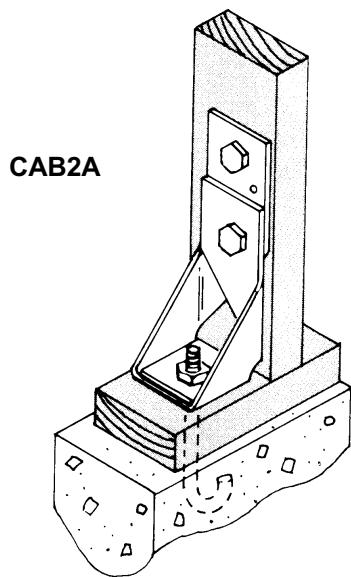
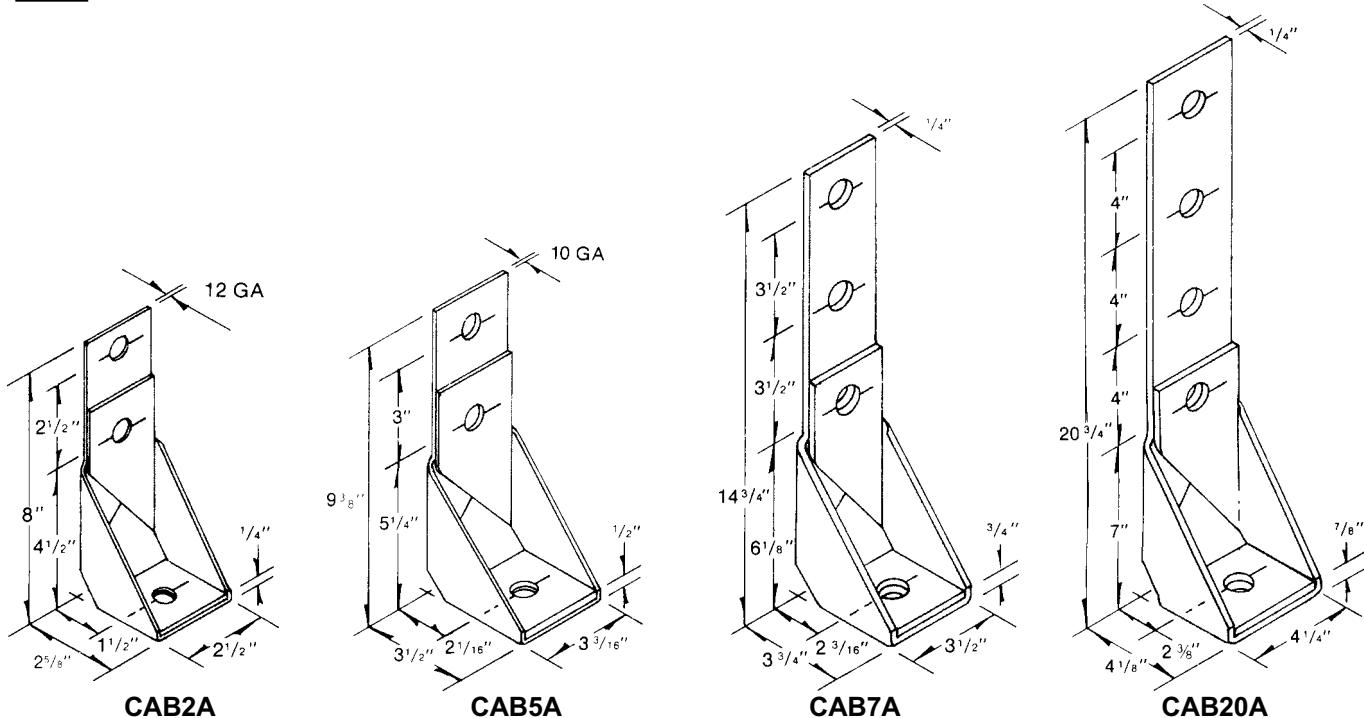
MATERIAL: 12 ga.

FINISH: Galvanized G60.



Part Number	Steel Gauge	Dimensions			Fastener Schedule		Allowable Loads (lbs.)	
		D	W	H	Nails	Bolts	Nails	Bolts
CA-5	12	2	2	5	(4) 16d	(1) 1/2	540	490
CA-10	12	2-1/4	2	10-1/2	(4) 16d	(1) 1/2	540	1110

Allowable nail and bolt loads are not additive. Galvanized.

**BOLTED ANCHORS****ALLOWABLE VERTICAL LOAD  
FOR ABA BOLTED ANCHORS**

Part Number	Number and Diameter of Bolts to Wood (Inches)	Bolt Diameter to Concrete (Inches)	Suggested Minimum Embedment (Inches)	Allowable Load Thickness				
				1-1/2	2	2-1/2	3	3-1/2
CAB-2A	(2) 5/8 M.B.	5/8	13	1960	2495	3025	3160	3290
CAB-5A	(2) 3/4 M.B.	3/4	15	2360	3100	3840	4250	4655
CAB-7A	(3) 7/8 M.B.	1-1/8	19	3230	4280	5810	6700	7590
CAB-20A	(4) 1 M.B.	1-1/4	27	3935	5320	7645	9005	10365

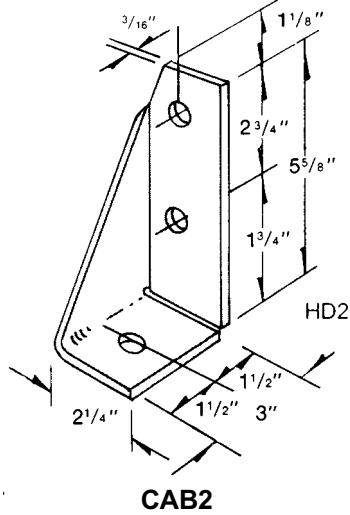
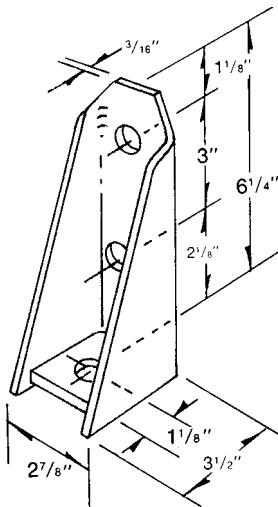
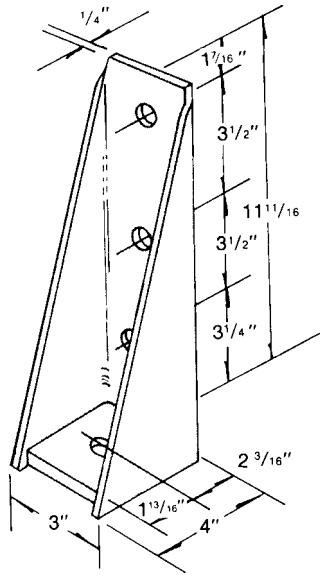
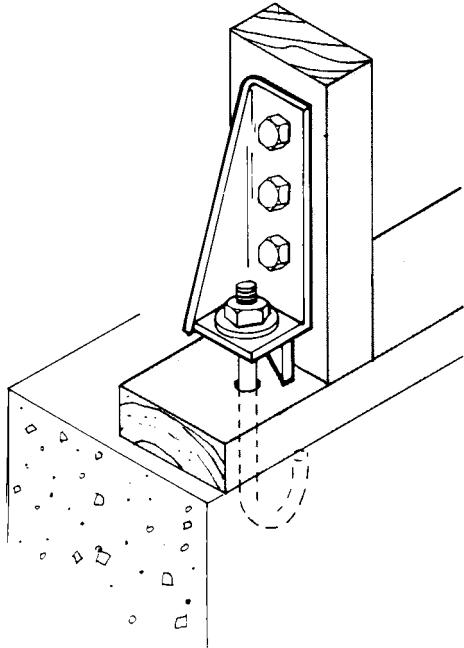
**Installation Notes:**

Standard washers are required for CAB series; washers are not required for ABA series, however washers are necessary under nuts for both types. Maintain 7 bolt diameter spacing on CAB types: measured from top of plate to center of first bolt. Match drill bolt holes to avoid splitting wood.

MATERIAL: 12 ga., 10 ga., and 3 ga.

FINISH: Galvanized G60 and black copolymer paint.

## BOLTED ANCHORS


**CAB2**

**CAB5**

**CAB7**


### ALLOWABLE VERTICAL LOAD FOR AB BOLTED ANCHORS

Part Number	Number and Diameter of Bolts to Wood <sup>2</sup>	Bolt Diameter to Concrete (In Inches)	Suggested Minimum Embedment <sup>3</sup> (In Inches)	Height (In Inches)	Allowable Load Thickness			Steel Thickness
					1-1/2	2-1/2	3-1/2	
CAB 2	(2) 5/8 M.B.	5/8	6.5	5-5/8	1961	3025	3242	3/16"
CAB 5	(2) 3/4 M.B.	3/4	8.5	6-1/4	2360	3841	4655	3/16"
CAB 6	(3) 3/4 M.B.	1	11.5	12-1/2	3541	5760	6982	1/4"
CAB 7	(3) 7/8 M.B.	1-1/8	15.0	11-11/16	4185	6833	8928	1/4"
CAB 9	(3) 1 M.B.	1-1/8	15.0	16-1/2	—	—	10647	1/4"

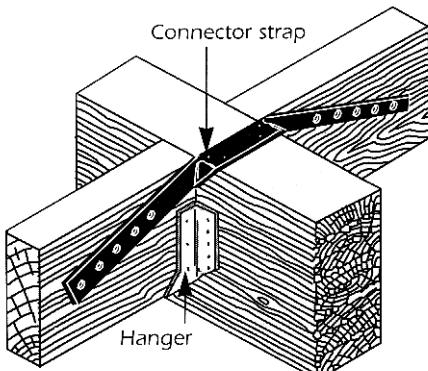
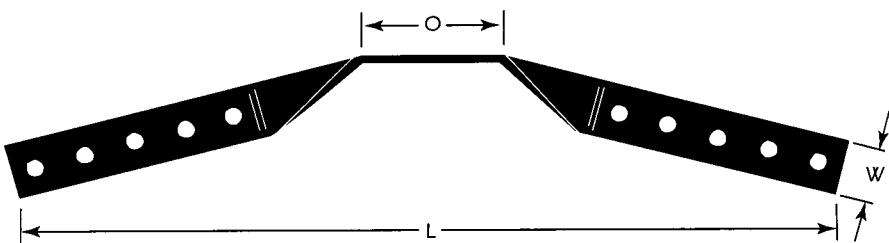
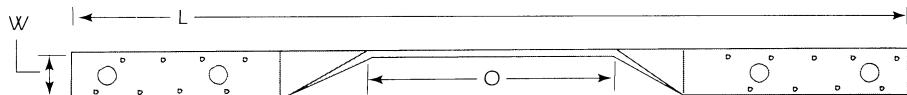
**Design Notes:**

Allowable loads are predicated on group II wood (SYP/DFL). Duration of load increases of 33-1/3% are included. Minimum end distance of 7 bolt diameters is required. Bolt holes are 1/16" larger than bolt diameter. Vertical members must be checked for net section reduction. Embedment assumes standard J-anchor bolt with 4d return. Embedment can also be met with L-bolt and 12d extension. Bottom plates (mud sills) must be checked for perpendicular-to-grain loading.

MATERIAL: 7 ga. and 3 ga.

FINISH: Black copolymer paint.

## LATERAL CONNECTOR STRAPS



**Lateral Connector Straps** prevent separation of purlins from beams and girders under seismic loading.

Part Number	Steel Gauge	Dimensions			Fastener Schedule		*Allowable Loads	
		W	L	O	Nails	Bolts	133% Nails	133% Bolts
LCS-34	7	2	34	9	(22) 16d	(4) 3/4	1975	3830
LCS-36	11	2	36	9	(28) 16d	—	2520	—
LCS-45	7	2	45	19-1/2	(22) 16d	(4) 3/4	1975	3830
LCSF-1	3	3	26	9	—	(2) 3/4	—	2420
LCSF-2	3	3	32	9	—	(4) 3/4	—	4845
LCSF-3	3	3	38	9	—	(6) 3/4	—	6905
LCSF-4	3	3	44	9	—	(8) 3/4	—	8620
LCSF-5	3	3	50	9	—	(10) 3/4	—	9930

Seismic duration of load increases of 33% are listed; no additional increases are allowed. Nail and bolt values are not additive.

Minimum member widths are: bolts: 3", nails 2".

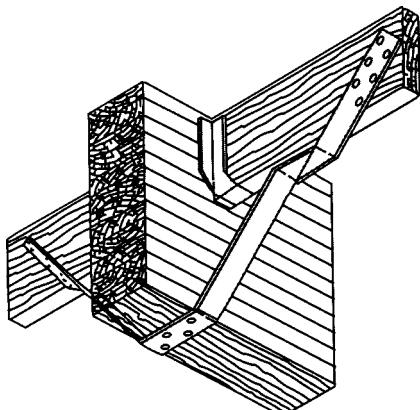
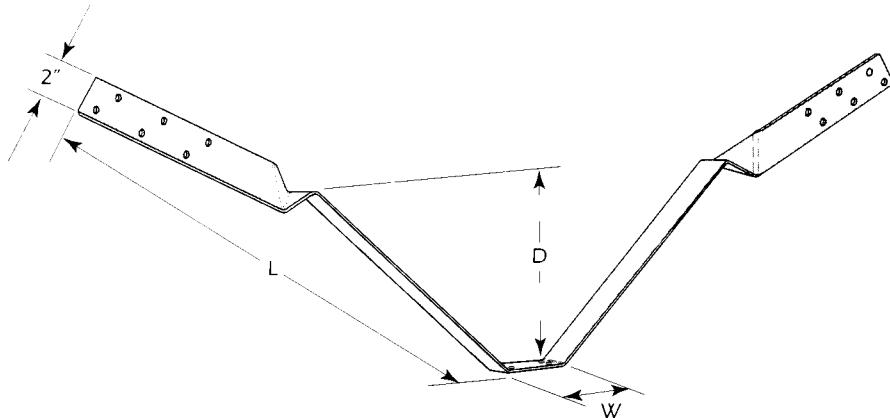
MATERIAL: 11 ga., 7 ga. and 3 ga.

FINISH: Black copolymer paint.



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## **K NEE BRACE STRAPS**



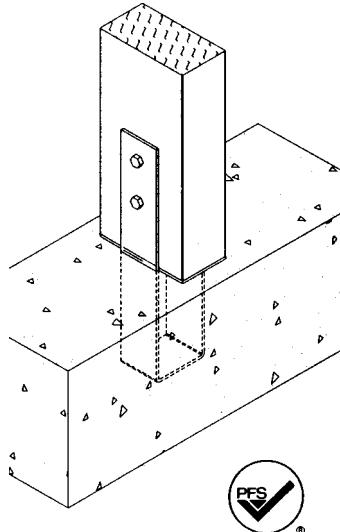
**Knee Brace Straps** counteract lateral movement and torquing of beams and girders under seismic loading. They are easily attached to members during or after construction.

Seismic duration of load increases are listed; no additional increases are allowed.

MATERIAL: 12 ga.

FINISH: Galvanized G60.

Part Number	Dimensions			Fastener Schedule		Allowable Loads (lbs.)				
	D	W	L	Beam	Joist	100%	115%	125%	133%	160%
KBS-5	10 - 15 Beam Depth	3-1/4	28-5/16	(4) N-4	(12) N4	1050	1210	1315	1400	1680
KBS-7	15 - 22 Beam Depth	5-1/4	39-5/16	(6) N-4	(12) N4	1050	1210	1315	1400	1680
KBS-8	22-1/2 - 28-1/2 Beam Depth	5-1/4	45-5/16	(6) N-4	(12) N4	1050	1210	1315	1400	1680
KBS-10	28-1/2 x 36 Beam Depth	6-7/8	56-5/16	(6) N-4	(12) N4	1050	1210	1315	1400	1680
KBS-12	36 - 42 Beam Depth	6-7/8	68-5/16	(6) N-4	(12) N4	1050	1210	1315	1400	1680

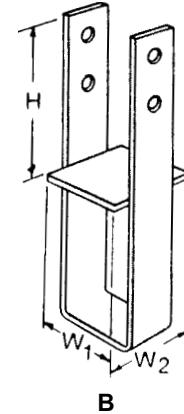
**COLUMN BASE**

**Heavy Duty B Bases** for columns that require a rugged connection to concrete for uplift forces. BE bases are economy version for lighter duty residential applications. Charted sizes are for sawn lumber and Parallam columns. Other sizes available, specify W1 & W2.

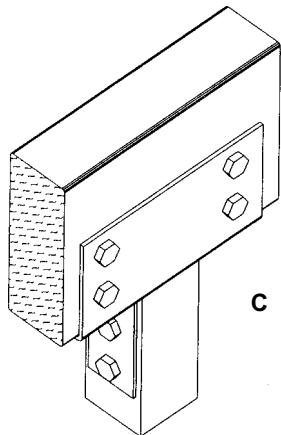
Heavy duty version made from 3/16" A36 steel (except B-77 & B-88 are 1/4") and provide 7-1/2" embedment. Light duty made from 11 gauge steel and provide 5-1/2" embedment.

MATERIAL: See chart. FINISH: Black copolymer paint. OPTION: Hot-dip galvanized.

Part Number	Column Size	Dimensions			Material		Bolt	Uplift
		W1	W2	H	Strap	Base		
<b>ECONOMY LIGHT DUTY</b>								
BE-44	3-1/2 x 3 1/2	3-9/16	3-1/2	7-1/2	11ga x 2	11 ga	(2) 1/2"	3550
BE-66	5-1/2 x 5 1/2	5-9/16	5-1/2	7-1/2	11ga x 2	11 ga	(2) 1/2"	3550
<b>SDT. HEAVY DUTY</b>								
B-44	3-1/2 x 3-1/2	3-9/16	3 1/2	8-1/2	3/16 x 2	3/16	(2) 5/8"	4200
B-46	3-1/2 x 5-1/2	3-9/16	5-1/2	8-1/2	3/16 x 2	3/16	(2) 5/8"	4200
B-48	3-1/2 x 7-1/2	3-9/16	7-1/2	8-1/2	3/16 x 2	3/16	(2) 5/8"	4200
B-66	5-1/2 x 5-1/2	5-9/16	5-1/2	8-1/2	3/16 x 3	3/16	(2) 5/8"	4200
B-68	5-1/2 x 7-1/2	5-9/16	7-1/2	8-1/2	3/16 x 3	3/16	(2) 5/8"	4200
B-88	7-1/2 x 7-1/2	7-9/16	7-1/2	9-3/4	1/4 x 3	1/4	(2) 3/4"	6600
<b>PARALLAM® COLUMNS</b>								
B-55	5-1/4 x 5-1/4	5-5/16	5-1/4	8-1/2	3/16 x 3	3/16	(2) 5/8"	4200
B-57	5-1/4 x 7	5-5/16	7	8-1/2	3/16 x 3	3/16	(2) 5/8"	4200
B-77	7 x 7	7-1/16	7	9-3/4	1/4 x 3	1/4	(2) 3/4"	6600



Uplift loads have been increased for wind or earthquake and must be reduced for cantilever Consult factory.  
Available with or without bolts. See page 44.

**HEAVY-DUTY COLUMN CAP**

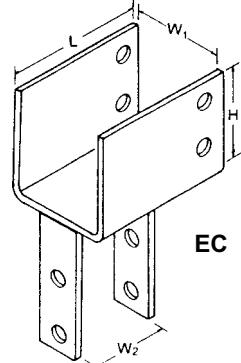
**Heavy Duty Column Caps** provide a rugged connection between columns and beams. Charted sizes are for heavy timber and Parallam®. Also available for glulam, LVL and rough sawn timber. Specify W1 & W2 dimensions.

Precision punched and formed for good fit and alignment.

MATERIAL: 7 ga. and 3 ga. FINISH: Black copolymer paint. OPTION: Hot-dip galvanized.

Options: Straps may be rotated if W2 is smaller than W1. Hot dip galvanized, specify HDG.  
Available with or without bolts. See page 44.

Part Number	Beam W1	Column W2	L	H	Bolt Schedule		Wind Uplift	Seat Bearing
					Beam	Column		
<b>PARALLAM® BEAMS</b>								
C-34	3	3-1/2	11	4	(4) 5/8"	(2) 5/8"	5600	18,654
C-44	3-1/2	3-1/2	11	4	(4) 5/8"	(2) 5/8"	6000	21,750
C-46	3-1/2	5-1/2	11	6-1/4	(4) 5/8"	(2) 5/8"	6000	21,750
C-66	5-1/2	5-1/2	13	7-1/2	(4) 3/4"	(2) 3/4"	8450	40,400
C-68	5-1/2	7-1/2	13	7-1/2	(4) 3/4"	(2) 3/4"	8450	40,400
C-88	7-1/2	7-1/2	13	7-1/2	(4) 3/4"	(2) 3/4"	8450	55,000
<b>CCC for crossing</b>								
C-45	3-1/2	5-1/4	11	6-1/4	(4) 5/8"	(2) 5/8"	5600	21,560
C-47	3-1/2	7	11	6-1/4	(4) 5/8"	(2) 5/8"	5600	21,560
C-54	5-1/4	3-1/2	13	7-1/2	(4) 3/4"	(2) 3/4"	6000	38,220
C-55	5-1/4	5-1/4	13	7-1/2	(4) 3/4"	(2) 3/4"	7075	38,220
C-57	5-1/4	7	13	7-1/2	(4) 3/4"	(2) 3/4"	8430	38,220
C-77	7	7	13	7-1/2	(4) 3/4"	(2) 3/4"	8430	50,960

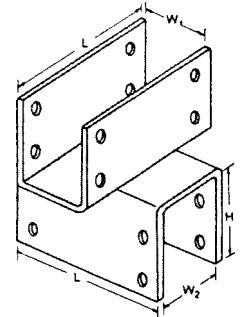
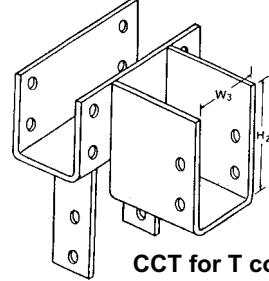
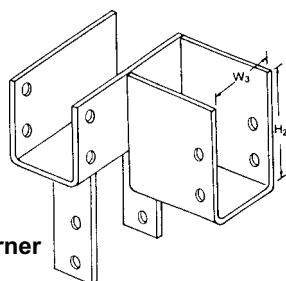
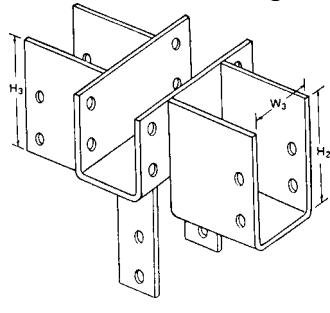


Uplift loads based on NDS 1991 for wind or earthquake and must be reduced for cantilever; consult factory.

Seat Bearing based on 460 psi for nominal and 560 psi for Parallam®;

End Column Caps have "L" dimension 4" shorter Add "E" prefix to part number and consult factory for uplift and loads.

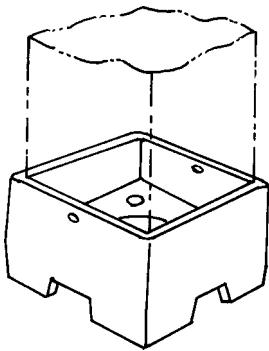
Check parallel to grain bearing for species and grade being used for column.





National 800-251-8351 • Phone 216-464-9400 • Fax 216-464-9404

## ALUMINUM Post BASE



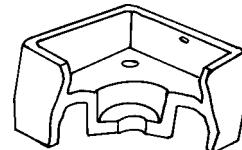
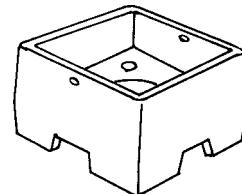
Attractive Cast Aluminum

Rugged Appearance • Weather Resistant

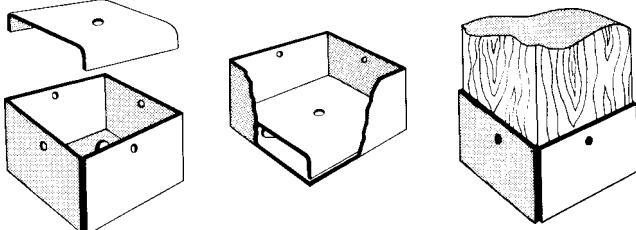
**AL44 for 4 x 4 post      AL66 for 6 x 6 post**

Heavy cast aluminum post base. May be secured to concrete with 1/2" anchor bolt, dowel or other type of fastener. Secure post to base with wood screws or nails. The center recess accommodates the fastener head or nut and washer. Weep holes provide drainage and air circulation. Sand blasted finish requires no paint. Dimensioned for 3-1/2" x 3-1/2" or 5-1/2" x 5-1/2" net size posts.

MATERIAL: Aluminum FINISH: Plain



## ECONOMY Post BASE



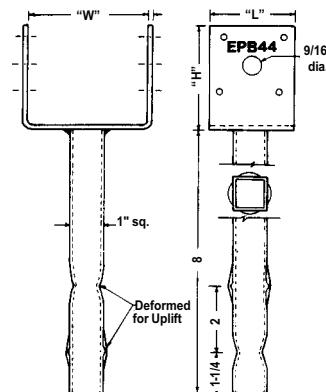
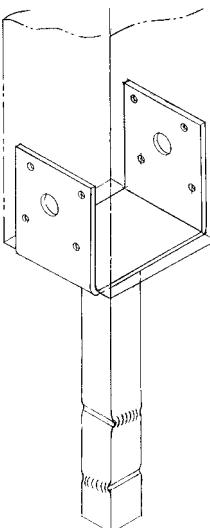
**Post Base** for porches and car ports. Secure base to masonry with 1/2" anchor bolts and to post with screws or nails. Insert separates post from masonry, provides drainage. Slotted hole in base permits lateral positioning. Dimensioned for 3-1/2" x 3-1/2" or 5-1/2" x 5-1/2" net size posts.

MATERIAL: 16 ga. (Base) 14 ga. (Insert) FINISH: Galvanized G60.

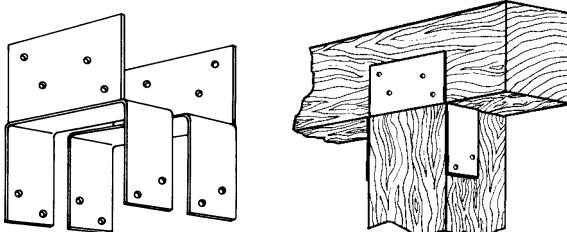
Number	Post Size	Per Carton	Wt. Per Carton
ST44	4 x 4	12	13 lbs.
ST66	6 x 6	12	33 lbs.

Supplied in full cartons only.

## ELEVATED Post BASE



## Post CAP



**Post Cap** for porches, car ports and other columns. Secure with nails or screws to join post and beam without toenailing or splitting. May be used in pairs for extra strong connections.

MATERIAL: 16 ga. FINISH: Galvanized G60.

Number	Post Size	Per Carton	Wt. Per Carton
PC-44	4 x 4	12	6 lbs.
PC-66	6 x 6	12	12 lbs.

Supplied in full cartons only.

## **NEW STYLING-SQUARE POST**

**BLACK COPOLYMER FINISH**

**IDEAL FOR PORCH, DECK, CARPORT**

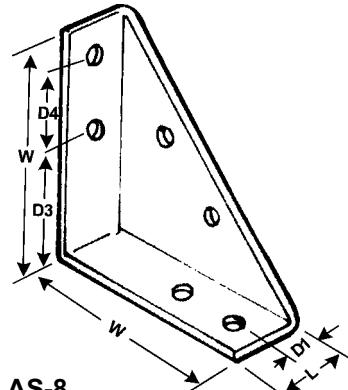
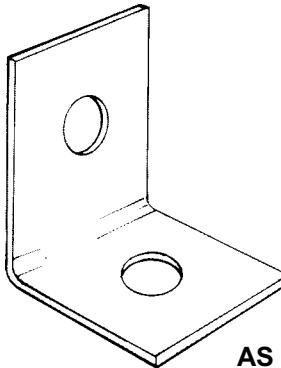
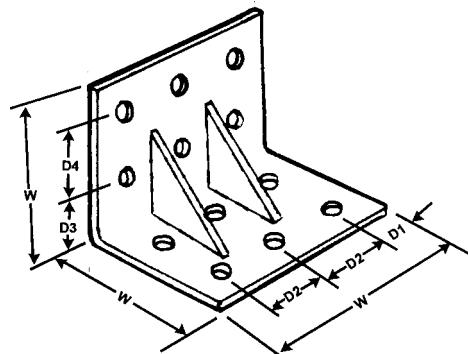
**EPB Elevated Post Bases** provide anchorage for wind uplift, lateral and gravity loads. Elevated posts prevent wood rot and permit easy cleaning.

**Installation:** Set in wet concrete after screeding. Limit post seat to less than 3" above concrete. Square post will not rotate or withdraw.

MATERIAL: 11 ga. FINISH: Black copolymer paint.

Part No.	Post Size	W	L	H	Square Tube	Nails
EPB 34	Dbl. 2 x 4	3-1/8	2-1/2	3-1/4	1" x 14 ga.	(8) 16d
EPB 44	4 x 4	3-9/16	2-1/2	3-1/16	1" x 14 ga.	(8) 16d
EPB 46	4 x 6	5-9/16	2-1/2	3-1/8	1" x 14 ga.	(8) 16d
EPB 66	6 x 6	5-9/16	4-1/2	3-1/8	1-1/2" x 14 ga.	(12) 16d

## ANGLE STIFFENERS

AS-8  
AS-9AS 33, 35  
AS 33S, AS 35S  
with gussetAS 55, AS 57,  
AS 55S, AS 57S  
with gusset

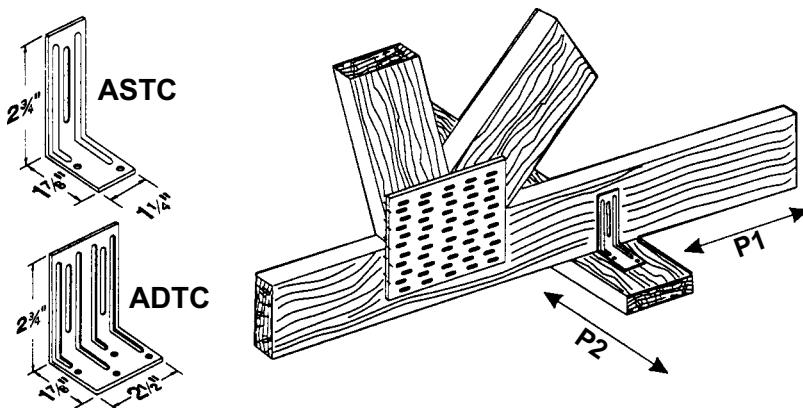
**Angle Stiffeners** improve the rigidity of any 90° wood connection. They develop the full allowable capability of bolts. Angle stiffeners also function as heavy-duty truss tie-downs. Because of the wide range of allowable loads for bolts when loaded parallel and perpendicular to grain, and at intermediate angles, load values are not listed. These can be obtained from National Design Specification for Wood Construction, published by American Forest and Paper Association.

MATERIAL: 7 ga. and 3 ga. ASTM A36. FINISH: Black copolymer paint.

Part Number	Gauge	Dimensions						Strut Plates
		W	L	D1	D2	D3	D4	
AS-8	7	8-1/8	2-11/16	1-11/32	—	4-3/8	2 1/2	(4) 5/8
AS-9	3	9-5/16	3	1-1/2	—	4-13/16	3	(4) 3/4
AS-33	7	3-1/4	2-1/2	1-1/4	—	2	—	(2) 5/8
AS-35	7	3-1/4	5	1-1/4	2-1/2	2	—	(4) 5/8
AS-35S	7	3-1/4	5	1-1/4	2-1/2	2	—	(4) 5/8
AS-37	7	3-1/4	7-1/2	1-1/4	2-1/2	2	—	(6) 5/8
AS-37S	7	3-1/4	7-1/2	1-1/4	2-1/2	2	—	(6) 5/8
AS-43	3	4-1/4	3	1-1/2	—	2-3/4	—	(2) 3/4
AS-46	3	4-1/4	6	1-1/2	3	2-3/4	—	(4) 3/4
AS-46S	3	4-1/4	6	1-1/2	3	2-3/4	—	(4) 3/4
AS-48	3	4-1/4	9	1-1/2	3	2-3/4	—	(6) 3/4
AS-49S	3	4-1/4	9	1-1/2	3	2-3/4	—	(6) 3/4
AS-53	3	5-3/4	2-1/2	1-1/4	—	2	2-1/2	(4) 5/8
AS-55	3	5-3/4	5	1-1/4	2-1/2	2	2-1/2	(8) 5/8
AS-55S	3	5-3/4	5	1-1/4	2-1/2	2	2-1/2	(8) 5/8
AS-57	3	5-3/4	7-1/2	1-1/4	2-1/2	2	2-1/2	(12) 5/8
AS-57S	3	5-3/4	7-1/2	1-1/4	2-1/2	2	2-1/2	(12) 5/8
AS-73	3	7-1/4	3	1-1/2	—	3	3	(4) 3/4
AS-76	3	7-1/4	6	1-1/2	3	3	3	(8) 3/4
AS-76S	3	7-1/4	6	1-1/2	3	3	3	(8) 3/4
AS-79	3	7-1/4	9	1-1/2	3	3	3	(12) 3/4
AS-79S	3	7-1/4	9	1-1/2	3	3	3	(12) 3/4
AS-4TS	3	4-1/4	6	1-1/8	3-3/4	3-1/4	—	(2) 3/4*
AS-6TS	3	6-1/4	6	1-1/8	3-3/4	5-1/4	—	(2) 3/4*
AS-14TS	3	13-3/4	6	1-1/8	3-3/4	12-3/4	—	(2) 3/4*

\*Plus (4) 1/2" anchor bolts.

## I NTERIOR LIFT ANCHOR



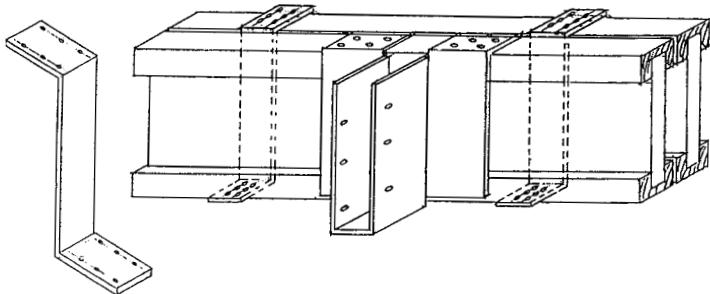
**Interior Lift Anchors** provide lateral support for interior non-load bearing walls. Slots permit bottom chords to lift without lifting walls.

MATERIAL: 20 ga.

FINISH: Galvanized G60.

Part Number	Description	Fasteners		Allowable Loads 133% and 160%	
		Wall	Truss	P1	P2
ASTC	Truss Clip Single	(2) 8d	(1) 8d	80	50
ADTC	Truss Clip Double	(4) 8d	(2) 8d	120	200

## L OAD SHARE CLIP



Designed for point loads on floor trusses, open joists, and engineered wood beams.

By transferring load from the bottom chord or flange to the top chord or flange of adjacent girder plies, the load is shared equally and applied in the manner in which the girder was designed. Overstress of plated joints or glue-lines is eliminated.

Available for all standard member widths and depths.

MATERIAL: 18 ga. and 16 ga. FINISH: Galvanized G60.

### Allowable Loads (SPF)

2 x 3 Flange	1390# Normal	(8) 10d x 1-1/2 Nails
2 x 4 Flange	1980# Normal	(12) 10d x 1-1/2 Nails

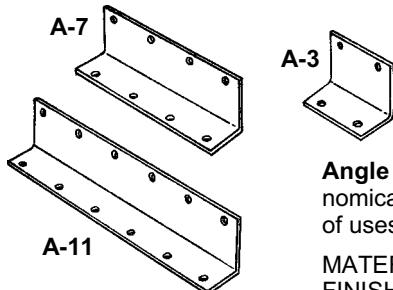
### Load Share Clip=LSC

Floor/Truss	
Part Number	Size
LSC3512	3.50/12.00
LSC3514	3.50/14.00
LSC3516	3.50/16.00
LSC3518	3.50/18.00
LSC3520	3.50/20.00
LSC3522	3.50/22.00
LSC3524	3.50/24.00
Open Joist	
LSC2593	2.50/9.37
LSC2511	2.50/11.88
LSC2513	2.50/13.00
LSC2516	2.50/16.00
LSC3593	3.50/9.37
LSC3511	3.50/11.88
LSC3513	3.50/13.00
LSC3516	3.50/16.00
LSC3518	3.50/18.00

I-Beam	
Part Number	Size
LSC1592	1.50/9.25
LSC1595	1.50/9.50
LSC1511	1.50/11.88
LSC1514	1.50/14.00
LSC1516	1.50/16.00
LSC1518	1.50/18.00
LSC1792	1.75/9.25
LSC1795	1.75/9.50
LSC1711	1.75/11.88
LSC1714	1.75/14.00
LSC1716	1.75/16.00
LSC1718	1.75/18.00
LSC2310	2.31/10.00
LSC2311	2.31/11.88
LSC2312	2.31/12.00
LSC2314	2.31/14.00
LSC2316	2.31/16.00
LSC2318	2.31/18.00

I-Beam (cont.)	
Part Number	Size
LSC2592	2.50/9.25
LSC2593	2.50/9.37
LSC2595	2.50/9.50
LSC25115	2.50/11.50
LSC25118	2.50/11.88
LSC2512	2.50/12.50
LSC2513	2.50/13.00
LSC2514	2.50/14.00
LSC2516	2.50/16.00
LSC2518	2.50/18.00
LSC2520	2.50/20.00
LSC2610	2.68/10.00
LSC2611	2.68/11.25
LSC2612	2.68/12.00
LSC2614	2.68/14.00
LSC2616	2.68/16.00
LSC2618	2.68/18.00
LSC2620	2.68/20.00
LSC3192	3.12/9.25

I-Beam (cont.)	
Part Number	Size
LSC3195	3.12/9.50
LSC3110	3.12/10.00
LSC3111	3.12/11.12
LSC3118	3.12/11.88
LSC3112	3.12/12.00
LSC3114	3.12/14.00
LSC3116	3.12/16.00
LSC3118	3.12/18.00
LSC3592	3.50/9.50
LSC3593	3.50/9.37
LSC3595	3.50/9.50
LSC35112	3.50/11.25
LSC35115	3.50/11.50
LSC35118	3.50/11.88
LSC35120	3.50/12.00
LSC35125	3.50/12.50
LSC3513	3.50/13.00
LSC3514	3.50/14.00
LSC3516	3.50/16.00

**A NGLE CLIPS**

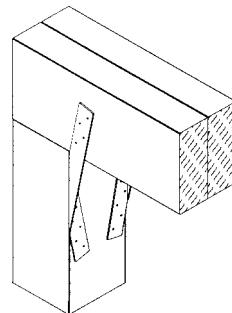
**Angle Clips** are strong, economical connectors. Hundreds of uses for five sizes.

MATERIAL: 16 ga.

FINISH: Galvanized G60.

Model	Size	Design Load	Nails*	Pieces Per Carton
A-3	2-1/2 x 1-1/2 x 3"	225	(4) 10d	100
A-5	2-1/2 x 1-1/2 x 5"	340	(6) 10d	100
A-7	2-1/2 x 1-1/2 x 7"	450	(8) 10d	50
A-9	2-1/2 x 1-1/2 x 9"	565	(10) 10d	50
A-11	2-1/2 x 1-1/2 x 11"	675	(12) 10d	50

\*N-26 nails available (10d x 1-1/2").

**T WIST STRAPS**

**Twist Straps** secure crossing members. Can hold up or tie down intersections. Generally used in pairs. Half RH and half LH in each carton.

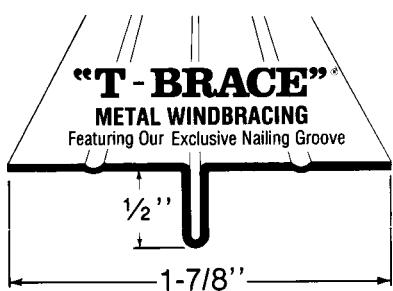
MATERIAL: 16 ga.

FINISH: Galvanized G60.

Style	Steel Size	Nails*	Design** Load	Pieces Per Carton
TS-10	#16 ga. x 1-1/4 x 9-5/8	(8) 16d	540	50
TS-12	#16 ga. x 1-1/4 x 11-5/8	(10) 16d	675	50
TS-14	#16 ga. x 1-1/4 x 13-5/8	(12) 16d	810	50

\*\*Design load assumes half the nails at each end of load. Values can be increased for short term loads and doubled if used in pairs.

\*N-8 nail (1-3/4" lg.) can be substituted for 16 d. See page 2.

**T -BRACE WINDBRACING****Lowest Cost and Most Efficient Method to Brace Walls**

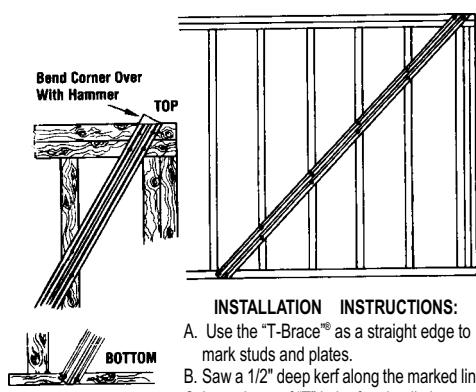
Designed to give 8' walls the required code bracing to prevent racking. Quicker to install than 1 x 4 let-in wood bracing. Use T-9 for 60° angle and T-11 for 45° angle. Packed 20 pieces per carton.

MATERIAL: 20 ga.

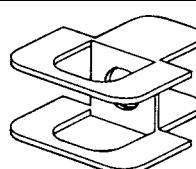
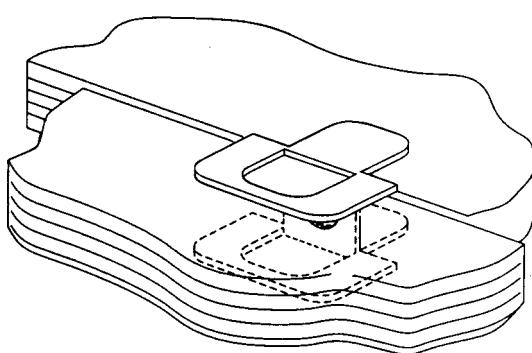
FINISH: Galvanized.

Part Number	Length	Nails Schedule	
		Plates	Studs
TS-9	9'3"	(2) 16d	(1) 8d
TS-11	11'3-5/8"	(2) 16d	(1) 8d

Code Reports: BOCA #78-78  
SBCCI #80109, DADE CTY #84-0515.3  
FHA/HUD material release 1043



- INSTALLATION INSTRUCTIONS:**
- Use the "T-Brace"® as a straight edge to mark studs and plates.
  - Saw a 1/2" deep kerf along the marked line.
  - Insert base of "T" in kerf and nail along grooves in face of "T-Brace".

**P LYWOOD CLIPS**

**PHC Steel**  
20 ga. galv. ASTM A446

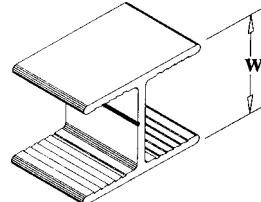
Part Number	Description
PHC-438	7/16"
PHC-469	15/32"
PHC-500	1/2"
PHC-625	5/8"
PHC-750	3/4"

250 pcs / carton

**PWC Aluminum Alloy 6061-T6**

Part Number	Size
PWC-375	3/8"
PWC-438	7/16"
PWC-469	15/32"
PWC-500	1/2"
PWC-625	5/8"

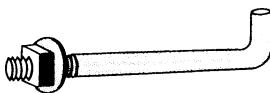
250 pcs / carton



Used in place of wood blocking on roof sheathing of plywood or waferboard.

MATERIAL: Steel or aluminum.

## A ANCHOR BOLT



For anchoring sills to masonry walls. 2" thread one end. Opposite end bent 1-1/2" on inside. Nuts and washers included.

MATERIAL: 1/2" and 3/8" Diam. round bar stock.  
FINISH: Mill.

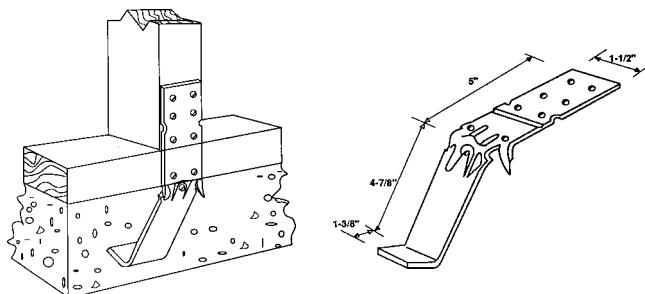
Part Number	Size	Part Number	Size
AB-6	1/2 x 6	AB-14	1/2 x 14
AB-8	1/2 x 8	AB-16	1/2 x 16
AB-10	1/2 x 10	AB-18	1/2 x 18
AB-12	1/2 x 12		
FB-6	3/8 x 6	FB-10	3/8 x 10
FB-8	3/8 x 8	FB-12	3/8 x 12

Packaged 50 pcs / carton

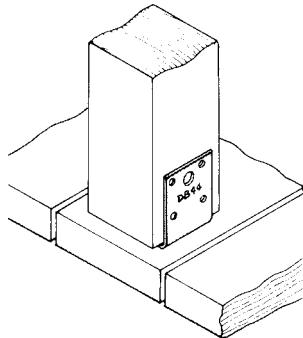
## MUDSILL ANCHOR

Anchors mudsill and/or stud to slab or footer. Hammer prongs into form before pour or MS-10 can be positioned after pour. Easy to screed concrete and wrap around sill or nail to stud. Excellent 1100 lb. uplift rating.

MATERIAL: 16 ga. FINISH: Galvanized.



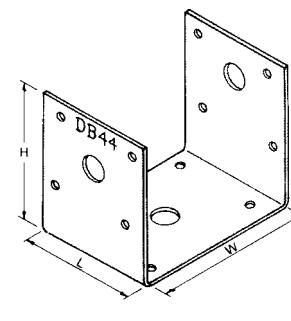
## DECK BRACKET



**DB Deck Brackets** are handy for light-duty connections as a base or cap. Anchors rail posts to deck or cross members to beam. Four sizes in stock. Special sizes made to order.

MATERIAL: 18 ga. FINISH: Galvanized.

Part Number	Post Size	W	L	H	Nails		Lateral Loads Lbs.
					Base	Sides	
DB-34	Dbl. 2 x 4	3-1/8	2-1/2	3-1/4	(4) 16d	(8)10d	540
DB-44	4 x 4	3-9/16	2-1/2	3	(4) 16d	(8)10d	540
DB-46	4 x 6	5-9/16	2-1/2	3	(4) 16d	(8)16d	540
DB-66	6 x 6	5=9/16	4-1/2	3-1/8	(4) 16d	(12)16d	540

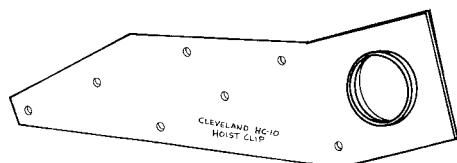


DB

## H HOIST CLIP

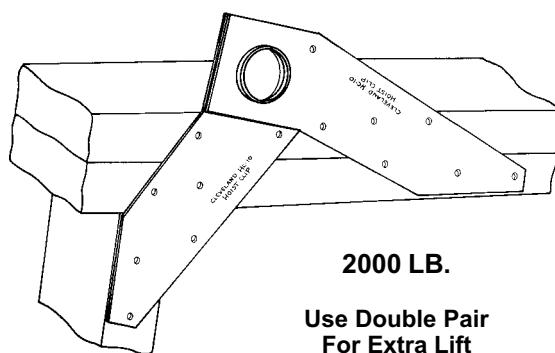
**HC-10 Hoist Clip** attaches to wall panels for overhead crane lifting. Offset design avoids interference when a roof truss locates over the stud. HC-10 installs three ways; to a stud with double plate; a stud with single plate; or a double plate only.

MATERIAL: 14 ga. FINISH: Galvanized G60.



1000 LB.

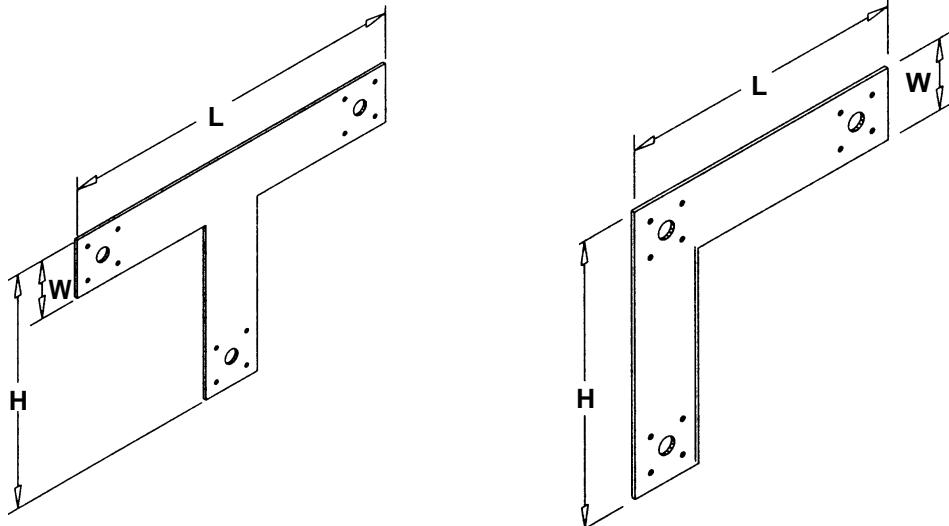
**1000 lb. LIFT RATING REINFORCED  
HOLE. (6) 16d COMMON OR  
DUPLEX NAILS**



2000 LB.

Use Double Pair  
For Extra Lift

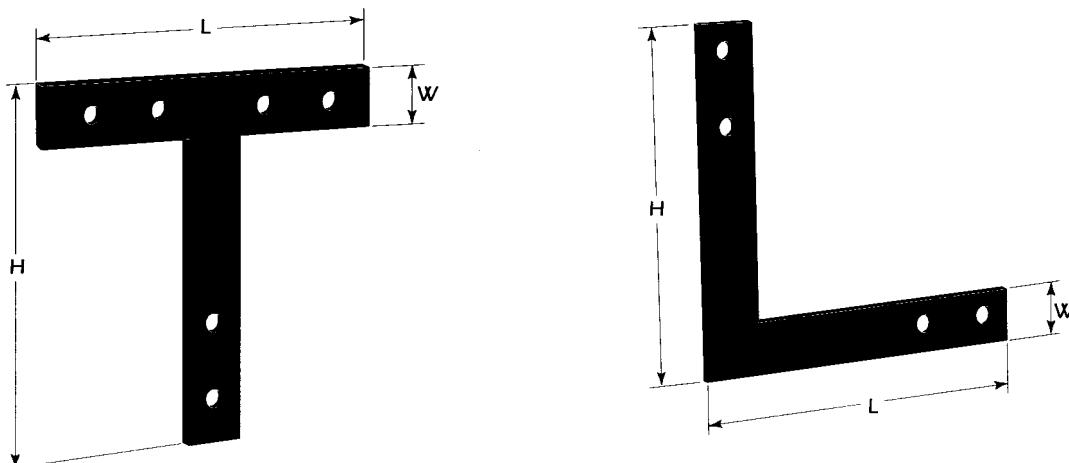
## TEES & ELLS



Part Number	Gauge	Dimensions			Fasteners	
		H	L	W	Bolts	Nails
TEE-6	14	5	6	1-1/2	(3) 1/2	(12) 16d
TEE-8	14	8	8-1/2	2	(3) 1/2	(12) 16d
TEE-12	14	8	12	2	(3) 1/2	(12) 16d
TEE-16	14	11	15-3/4	3	(3) 1/2	(12) 16d
TEE-12/12	14	12	12	2	(3) 1/2	(12) 16d
ELL-6	14	6	6	1-1/2	(2) 1/2	(8) 16d
ELL-8	14	8	8	3	(2) 1/2	(8) 16d
ELL-12/12	14	12	12	2	(3) 1/2	(12) 16d

MATERIAL: 14 ga.

FINISH: Galvanized G60



**Note:** Although Tees & Ells provide stiffness to joints, they should not be used as moment-resisting connectors, nor as substitutions for X and K bracing.

MATERIAL: 7 ga.

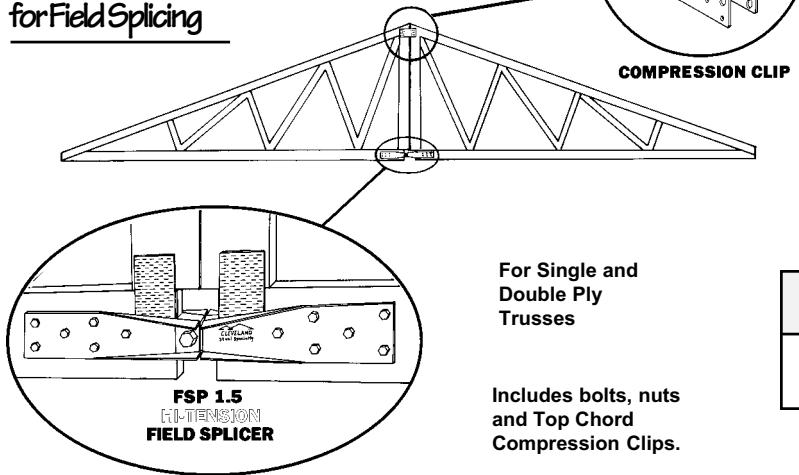
Part Number	Gauge	Dimensions			Fasteners
		H	L	W	
TEE-12H	7	12	12	2-1/2	(4) 5/8
TEE-16H	7	16	16-1/4	2-1/2	(6) 5/8
ELL-12H	7	12	12	2-1/2	(5) 5/8
ELL-16H	7	16	16	2-1/2	(7) 5/8

FINISH: Black copolymer paint.

OPTION: Hot-dip galvanized, available as a special order.

## FIELD SPLICER

Engineered Product  
for Field Splicing



### HI-TENSION FIELD SPLICER

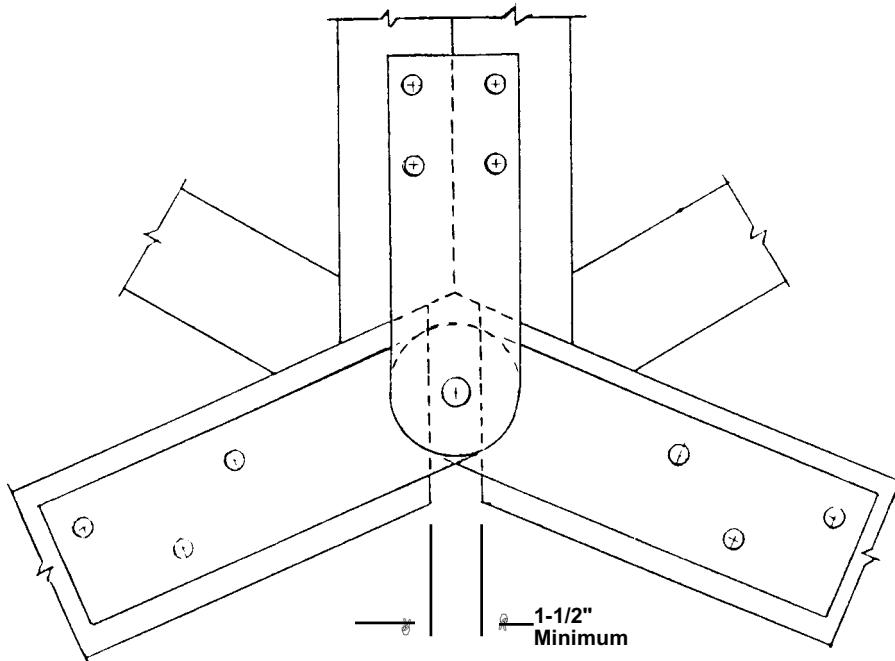
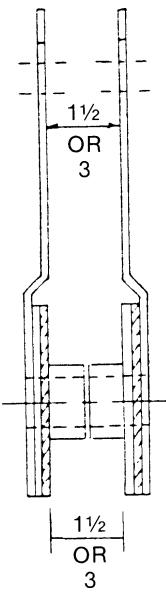
**FSP Splicer** has been laboratory tested in tension for use on single and double ply mono pitch trusses. Consult the factory for use with scissor trusses. The Compression Clip was designed to align the Top Chord in compression. Each clip has a tension rating of 1,400 lbs. with S.Y.P. for short term wind conditions.

MATERIAL: 7 ga. and 3 ga.

FINISH: Black copolymer paint.

Part Number	Tension Rating	
	S.Y.P.	S.P.F.
FSP 1.5 (Single Ply)	10,380 lbs.	7,920 lbs.
FSP 3.0 (Double Ply)	15,650 lbs.	12,090 lbs.

### FIELD SPLICER FOR SCISSORS TRUSSES



### SCISSORS TRUSS FIELD SPLICER

Part Number	Tension Rating			
	S.Y.P.		S.P.F.	
	Tens. Web.	Bot. Chord	Tens. Web.	Bot. Chord
SFPS 1.5 (Single Ply)	2,880 lbs.	4,320 lbs.	2,200 lbs.	3,300 lbs.
SFPS 3.0 (Double Ply)	4,700 lbs.	7,050 lbs.	4,180 lbs.	6,270 lbs.

HIGHER LOADS CAN BE ATTAINED WITH CUSTOM VERSIONS THAT INCREASE BOLT QUANTITIES AND DIAMETERS.

## TRUSS SPACER

**ACCURATE - QUICK - ECONOMICAL**

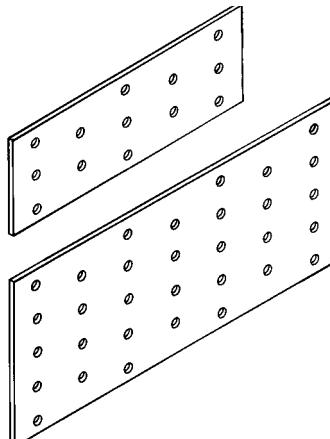
**Truss Spacers** speed the placing of roof trusses, eliminates need to cut and remove spacer blocks. End flanges accurately locate each truss top and bottom chords at 24" center to center spacing. **WARNING: Not to be used as bracing.** TSP-24 has no structural value. Wood bracing must be added in accordance with truss manufacturers recommendation.

**TSP-24**

50 pcs / bundle

MATERIAL: 18 ga. FINISH: Galvanized.

## tie plates



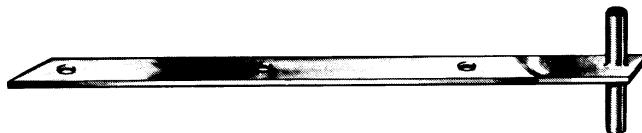
**Tie Plates** have many applications. Nail onto intersection walls, mend weak sections and use as splice plates. Holes for 8d nails. Other sizes available on special order.

MATERIAL: 20 ga.

FINISH: Galvanized.

Part Number	Width x Length	Holes
TP-15	1-13/16" x 5"	13
TP-37	3-1/8" x 7"	32

## JOIST ANCHORS



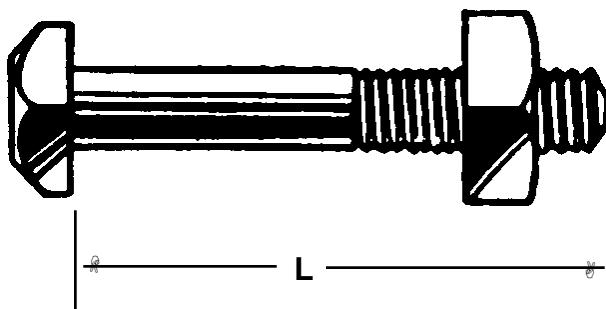
**Joist Anchor** No. T18A, T18B and T24 normally used every fourth joist to anchor end of joist to masonry wall. No. T40 and T48 are used on 8 foot centers to anchor joists to parallel masonry wall. Pins are 1/2 x 5 welded in place. Bulk packed, plain finish, other finishes available. Special sizes made to order.

### **T-ANCHORS**

**for end & side wall anchoring**

Part Number	Size (inches)	Hole Spacing	Wt. per 100
T18A	3/16 x 1 x 18	3" centers	125 lbs.
T18B	1/14 x 1-1/4 x 18	3" centers	190 lbs.
T24	3/16 x 1 x 24	6" centers	156 lbs.
T40	3/16 x 1 x 40	16" centers	241 lbs.
T48	1/14 x 1-1/4 x 48	16" centers	460 lbs.

## BOLTS-NUTS-WASHERS



Part Number	Nut Size
NT-50	1/2"-13NC Hex Nut
NT-63	5/8"-11NC Hex Nut
NT-75	3/4"-10NC Hex Nut

Part Number	Washers
WA-50	1/2" Flat
WA-50	5/8" Flat
WA-75	3/4" Flat
WA-75G	3/4" O.G.

Available in 6, 8, and 10 bolt packages (3/4" diameter) for Bucket Hangers. Add "P" to nomenclature, i.e., PBT 75-3.0. Includes washers and nuts.

MATERIAL: A 325 FINISH: Plain

OPTION: Hot-dip galvanized, zinc or stainless steel are available as a special order.

**Bolt Lengths for Girder Trusses**

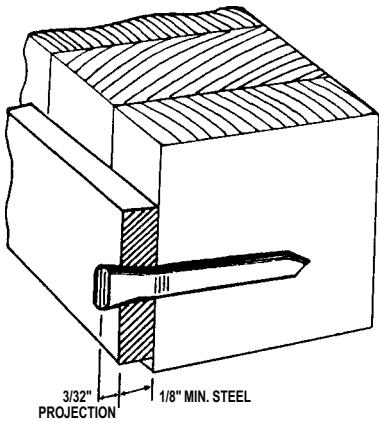
1-Ply	3.0"
2-Ply	4.5"
3-Ply	6.0"
4-Ply	7.5"
5-Ply	9.0"

Part Number	Bolt Size
BT 50-3.0	1/2"-13NC x 3" Hex Hd.
BT 50-4.5	1/2"-13NC x 4-1/2" Hex Hd.
BT 50-6.0	1/2"-13NC x 6" Hex Hd.
BT 50-7.5	1/2"-13NC x 7-1/2" Hex Hd.
BT 50-9.0	1/2"-13NC x 9" Hex Hd.
BT 50-10.5	1/2"-13NC x 10-1/2" Hex Hd.
BT 63-3.0	5/8"-11NC x 3" Hex Hd.
BT 63-4.5	5/8"-11NC x 4-1/2" Hex Hd.
BT 63-6.0	5/8"-11NC x 6" Hex Hd.
BT 63-7.5	5/8"-11NC x 7-1/2" Hex Hd.
BT 63-9.0	5/8"-11NC x 9" Hex Hd.
BT 63-10.5	5/8"-11NC x 10-1/2" Hex Hd.
BT 75-3.0	3/4"-10NC x 3" Hex Hd.
BT 75-4.5	3/4"-10NC x 4-1/2" Hex Hd.
BT 75-6.0	3/4"-10NC x 6" Hex Hd.
BT 75-7.5	3/4"-10NC x 7-1/2" Hex Hd.
BT 75-9.0	3/4"-10NC x 9" Hex Hd.



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## G LULAM RIVET



The glulam rivet is a "flattened oval" nail driven through 1/4" diameter predrilled holes in steel side plates.

### 3 Lengths

- 1-1/2" (40 mm)
- 2-1/2" (65 mm)
- 3-1/2" (90 mm)

### TECHNICAL REFERENCE

NATIONAL DESIGN  
SPECIFICATION® FOR WOOD CONSTRUCTION  
(NDS®)  
1997 REVISED EDITION  
AMERICAN FOREST &  
PAPER ASSOCIATION

1111 19th STREET NW, SUITE 800, WASHINGTON, DC 20036  
PHONE: (202) 463-2700  
DEPARTMENT FAX: (202) 463-2791

**Glulam Rivets** are high strength fasteners developed specifically for glued lamination timber construction. They have a flattened oval shank with a wedge shaped head. Rivets must be installed with the flat face parallel to grain. Steel side plates must be 1/8" A-36 or thicker and have 1/4" diameter holes into which the wedge head is driven with 3/32" of head protruding.

### Advantages

Glulam rivets (commonly marketed as Griplam Nails) have many advantages over bolts and other connectors. These include:

- Glulam rivet connections are much stiffer and transfer greater loads for a given connector area than any other limber fastener.
- The wood members need not be predrilled. This reduces shop fabrication time and costs. It also permits the integration of stock glulam beams into site-framed projects. Glulam fabricators are able to provide assistance in the design and sourcing of connection hardware.
- Ease of adjustment of connections readily accommodates discrepancies on the site.
- The typically smaller connection size is considered a favorable feature by many architects.
- The ease of on-site installation of the rivet permits glulam trusses to be shipped knocked-down and assembled by the contractor.

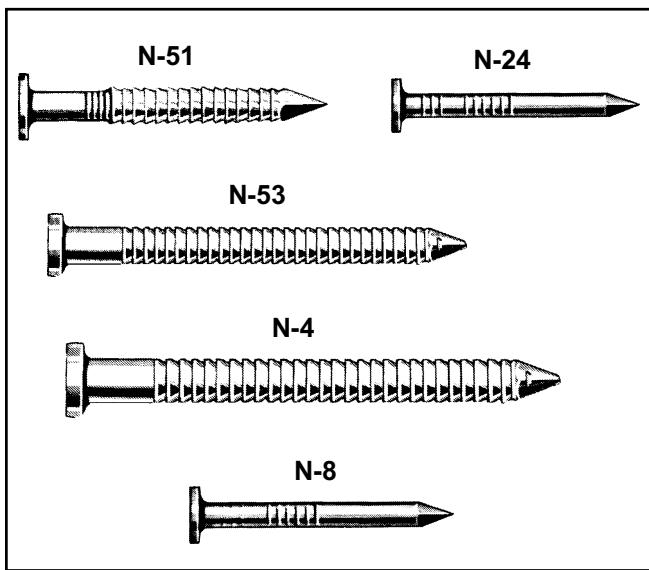
Glulam rivets have become the fastener of choice for the glulam industry.

Custom Made gussets and truss plates (both utilitarian and decorative) available. Contact factory for quotation.

MATERIAL: 1/8" x 1/4" tempered steel.

FINISH: Hot-dip galvanized.

## HANGER NAILS



**Cleveland Hanger Nails** were developed and tested to meet code specifications. Annular ring shanks provide extra resistance to withdrawal. Strength value for Group II lumber.

OPTION: Zinc plated or hot-dip galvanized.

Nails made in U.S.A.

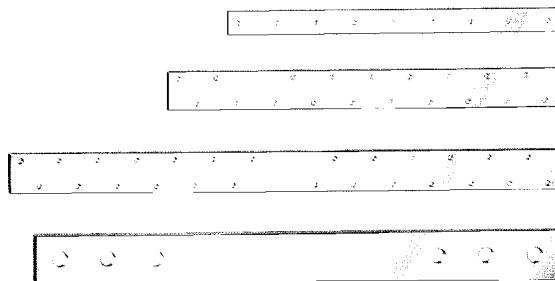
10d = 0.148   20d = 0.192

Part Number	Description	Fasteners	Pcs. Per Ctn.
N-24	.125 x 1-1/4"	Smooth	10000
N-26	9 ga. (10d) x 1-1/2"	Smooth	6200
N-51	9 ga. (10d) x 1-1/2"	Ring	6200
N-53	6 ga. (20d) x 2-1/8"	Ring	2500
N-4	4 ga. (.225") x 2-1/2"	Ring	1600
N-8	8 ga. (.162") x 1-3/4"	Smooth	4200

Stainless Steel - ring shank, flat head, type 304 and 316

Part Number	Description	Pcs. Per Ctn.
N-51-304	9 ga. (10d) x 1-3/8"	100
N-51-316	9 ga. (10d) x 1-3/8"	100
N-6-304	6 ga. (20d) x 2-1/2"	44
N-6-316	6 ga. (20d) x 2-1/2"	42

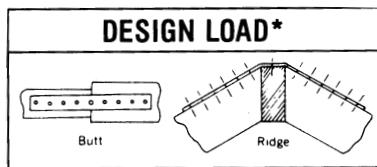
## S TRAP TIES



**Strap Ties** are used for butt joints, ridge ties, post and beam connections. Can anchor studs to sill, rafters to plate and frame over girders. Convenient sizes with shear values charted.

MATERIAL: See chart.

FINISH: Galvanized G60 or black copolymer paint.

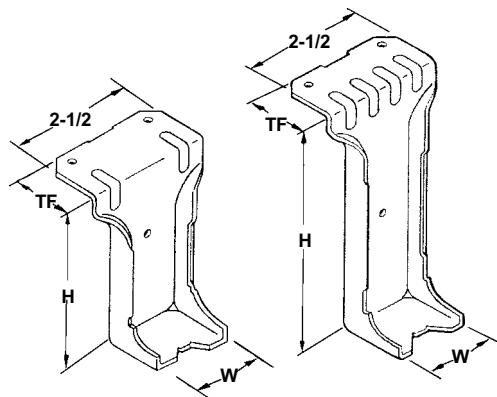


\*Design load assumes half of nails on each side of load and allows no value for center hole(s).

Bolt loads can double with strap on each side.

Part Number	Material Gauge & Size	Fasteners Nails / Bolts	Design Load	
			Normal Floor 100%	Wind / Seismic 133%
S-2009	20 ga. x 1-1/4 x 9	(8) 10d	448	597
S-2012	20 ga. x 1-1/4 x 12	(10) 10d	560	746
S-2015	20 ga. x 1-1/4 x 15	(12) 10d	672	895
S-2018	20 ga. x 1-1/4 x 18	(14) 10d	784	1045
S-2021	20 ga. x 1-1/4 x 21	(16) 10d	896	1194
S-2024	20 ga. x 1-1/4 x 24	(18) 10d	1008	1343
S-1617	16 ga. x 1-1/4 x 17	(8) 16d	530	706
S-1621	16 ga. x 1-1/4 x 21	(10) 16d	665	886
S-1618	16 ga. x 1-1/4 x 18	(16) 16d	1070	1426
S-1620	16 ga. x 1-1/4 x 20	(18) 16d	1200	1600
S-1206	12 ga. x 1-1/2 x 6	(8) 16d	564	752
S-1209	12 ga. x 1-1/2 x 9	(8) 16d	564	752
S-1211	12 ga. x 1-1/2 x 11-1/2	(8) 16d	564	752
S-1217	12 ga. x 1-1/2 x 18	(8) 16d	564	752
S-1223	12 ga. x 1-1/2 x 24	(8) 16d	564	752
S-1230	12 ga. x 1-1/2 x 30	(8) 16d	564	752
SB-1217	12 ga. x 2-1/2 x 17	(6) 1/2q	2250	3000
SB-1223	12 ga. x 2-1/2 x 23	(6) 1/2q	2250	3000
SB-1230	12 ga. x 2-1/2 x 30	(6) 1/2q	2250	3000
SB-1242	12 ga. x 2-1/2 x 42	(8) 1/2q	3345	4460
SB-1246	12 ga. x 2-1/2 x 46	(10) 1/2q	4350	5800
SB-0721	7 ga. x 2-1/2 x 21-1/2	(6) 5/8q	3360	4480
SB-0727	7 ga. x 2-1/2 x 27	(6) 5/8q	3360	4480
SB-0325	1/4 x 3 x 25-1/2	(6) 3/4q	4290	5720
SB-0330	1/4 x 3 x 30-1/2	(6) 3/4q	4290	5720

## A FN PANEL HANGERS



**AFN** series panel hangers are used in panelized wood roof systems to connect the 2x4 or 2x6 stiffeners to the purlins. The precision formed grippers on each side of the panel hanger are pressed into the wood providing a high-strength connection without the use of nails.

**CODE ACCEPTANCE:** ICBO accepted: See Evaluation Report No. 4531.

MATERIAL: 18 ga.

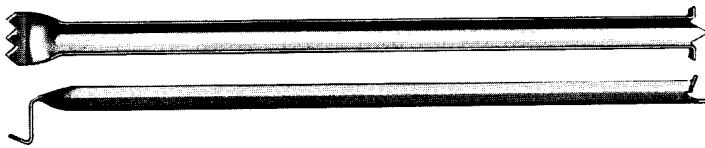
FINISH: Galvanized.

Part Number	Joist Size	Dimensions			Header Fasteners	Allowable Loads
		W	H	TF		
AF24N	2 x 4	1-9/16	3-3/8	1-1/8	(2) 8d	660
AF26N	2 x 6	1-9/16	5-3/8	1-1/8	(2) 8d	660



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## COMPRESSION BRIDGING



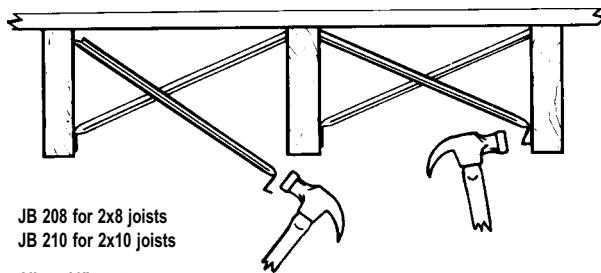
**Compression Bridging** installs very quickly after sub-flooring is in place. No nails required, only a hammer needed. Reduces labor cost by 75%.

Steel formed into a rigid channel shape. Single sharp barb penetrates readily at top, two ears bear cross-grain to limit penetration. Dogleg drives into joist to anchor lower end.

MATERIAL: 18 ga.

FINISH: Galvanized G60.

## COMPRESSION CROSS BRIDGING FAST! EASY! PERMANENT!

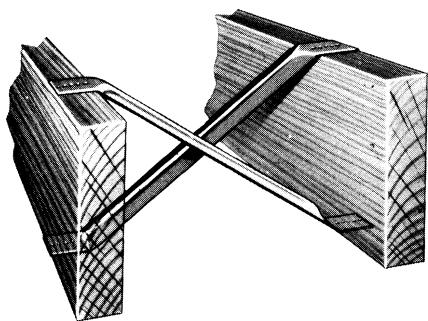


JB 208 for 2x8 joists

JB 210 for 2x10 joists

All on 16" centers.

## TENSION BRIDGING



- TESTED
- STRONGER
- VERSATILE
- SAVES LABOR
- NEAT APPEARANCE

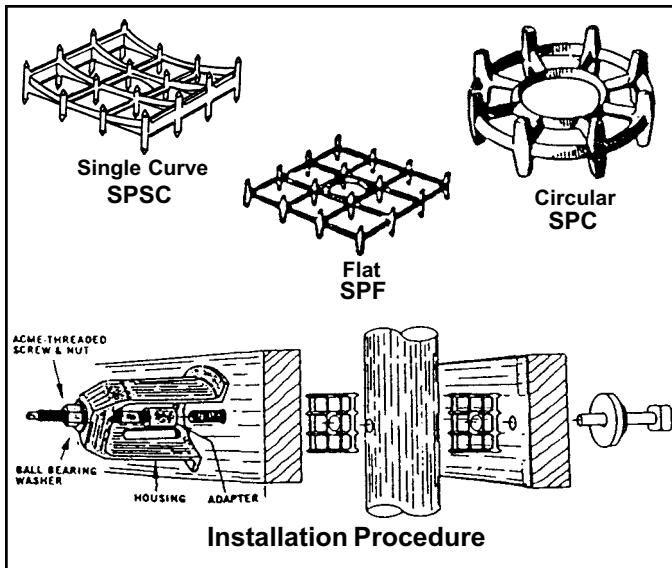
Joist Size	12" C-C	16" C-C	24" C-C
2 x 6	JB 20	JB 20	JB 27
2 x 8	JB 20	JB 20	JB 27
2 x 10	JB 20	JB 20	JB 27
2 x 12	JB 20	JB 20	JB 27
2 x 14	JB 20	JB 27	
4 x 8	JB 20	JB 20	JB 27
4 x 10	JB 20	JB 20	JB 27
4 x 12	JB 20	JB 20	
4 x 14	JB 20	JB 27	
4 x 16	JB 20	JB 27	

Joist Bridging	Steel Size	Recommended Nails Each End
JB 20E	22 ga. x 3/4"	(2) 10d

Two pieces make one X-set or pair.

All joist bridging is formed from galvanized steel.

## SPIKE GRID TIMBER CONNECTOR



**Spike Grids** are used primarily in pole construction, docks, piling, wharves, and railroad and highway bridges or trestles. Flat and circular grids are used between sawn timbers, while single curve grids are used between round piles or poles and sawn members.

Manufactured from malleable iron in accordance with current ASTM Specification A-47, Grade 32510.

Spike Grids are available in 3 types: flat, single curve, and circular. Single curve fits between one rounded and one flat member. Circular fits between two flat or curved members. Flat fits between two flat members. Also available galvanized to ASTM A-153.

Install with grid applicator or hydraulically, cannot be installed by tightening standard nut.

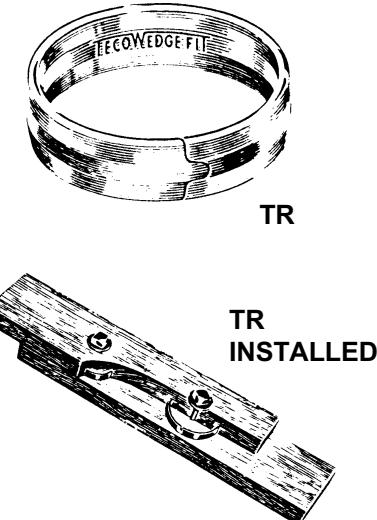
Type	Size	Depth	Bolt Hole Dia. (max.)	Lumber Min. Dimensions	
				Grid in One Face	Grid in Both Face
Flat	4-1/8" x 4-1/8"	1"	1.06	1"	1-5/8" x 5-1/2"
Single Curve	4-1/8" x 4-1/8"	1.38"	1.06	1"	1-5/8" x 5-1/2"
Circular	3-1/4" dia.	1.20"	1.33	1"	1-5/8" x 5-1/2"
					2-5/8" x 5-1/2"

## TECO SPLIT RINGS (TIMBER RINGS)

**Material:** Hot-rolled SAE 1010 carbon steel. Standard or galvanized. (see footnote)

**Use:** Split Rings are used primarily in the assembly of clear spans ranging from 20' to 250' and are available in 2-1/2" and 4" diameters. They are placed in specially made groove in overlapping members, and thus, the rings develop maximum strength in the joints by distributing the stress over a greater area. The special wedge shape of the ring section provides maximum tolerance for easy insertion, at the same time insuring a tight-fitting joint when the ring is fully inserted in the conforming groove. Generally, the 2-1/2" diameter ring is used for lighter trusses and trussed rafters utilizing 2" lumber; the 4" diameter ring is used for heavier trusses using 3" and heavier material. A separate publication for engineering design use data is available.

Conforming grooves for TECO Split Rings are cut with precision made grooving tools, available from CCS, which can be used in heavy duty 3/4" drills or in drill presses with 1/2" minimum chucks.



Parts Number	Inside Diameter	Depth	Bolt Diam.	Lumber Min. Dimensions		Weight Per Carton	Pcs. Per Carton
				Ring In 1 Face	Ring In Bolt Face		
TECO-2.5	2-1/2"	3/4"	1/2"	1" x 3-1/2"	1-1/2" x 3-1/2"	40 lbs.	150
TECO-2.5G	2-1/2"	3/4"	1/2"	1" x 3-1/2"	1-1/2" x 3-1/2"	42 lbs.	150
TECO-4	4"	1"	3/4"	1" x 5-1/2"	1-1/2" x 5-1/2"	34 lbs.	50
TECO-4G	4"	1"	3/4"	1" x 5-1/2"	1-1/2" x 5-1/2"	35 lbs.	50

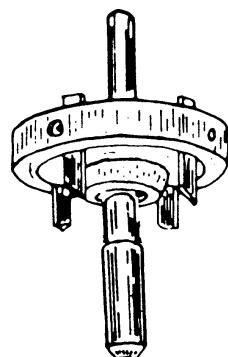
All Timber Connectors are also available when specified, with a hot-dip galvanized coating. The galvanizing specification for the malleable iron shear plates and spike grids is ASTM A-153, for Split Rings the specification is ASTM A-123.

Some connectors are available in other metals on special inquiry basis.

When making grooves or daps for galvanized connectors, it may be necessary to increase the width and depth of the groove to compensate for the galvanized coating. This is accomplished as follows: (1) loosen the socket set screw on the cutter blade(s) that cut outside diameter of groove, (2) insert shim material (try approx. 0.010") under cutter(s), (3) lower cutting depth of blade(s) approx. 0.010" and tighten set screw, (4) lower the other groove cutting blades the same amount, (5) check connector for good fit in grooves of mating pieces, adjust further if needed.

## TECO INSTALLATION TOOLS

To cut groove or dap with either cutterhead:	Tools Needed to Groove for 2-1/2" Split Rings	Tools Needed to Groove for 4" Split Rings
Bolt holes are already drilled in the wood, insert a PILOT into the cutterhead: (A pilot is simply a guiding or centering device.)	TECO-301 Cutterhead (containing 4 blades)	TECO-302 Cutterhead (containing 6 blades)
Replacement cutter blade sets are available for all cutterheads.	TE12-MRC Cutters for Teco 301 PILOT 562 Pilot for 301	TE14-MRC Cutters for Teco 302 PILOT 813 13/16" Pilot for 302 PILOT 938 15/16" Pilot for 302 TE7-M 3/4" Pilot for 302
All pilots have 1/2" machine shank for use in power drill.	Pilot sizes given in above tables are for the standard bolt for the connectors and standard practice hole diameters for the bolts.	

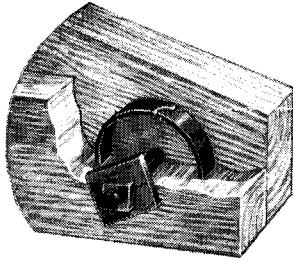


The cutterhead can be used in heavy duty 3/4" power drill with a torsion bar or in a drill press with minimum 1/2" chuck to cut grooves and daps for TECO split rings.

## TIMBER RINGS

Cleveland timber rings are used in the assembly of clear span roof trusses. Rings are placed in pre-cut grooves to spread the load and avoid crushing the wood. Joint is completed with

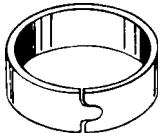
a bolt and square washer. The 2-1/2" ring is used in nominal 2" lumber and the 4" ring in nominal 3" and heavier lumber. Timber rings are used in residential, farm building and heavier construction. When 4" rings are used in 2" nominal lumber, with rings in both faces, the allowable load is reduced approximately 20%.



TR2.5 (2-1/2")



TR4 (4")



Inside Diameter	Steel Size	Bolt Size	Minimum Lumber Sizes	
			Ring 1 Side	Rings in Both Sides
2-1/2"	3/4" x 5/32"	1/2"	1" x 3-1/2"	1-1/2" x 3-1/2"
4	1" x 3/16"	3/4"	1" x 5-1/2"	1-1/2" x 5-1/2"

Includes pilot and blades.

**HOT-DIP GALVANIZED:** Shear Plates and Timber Rings available in galvanized coating to ASTM A-153.

## GROOVING TOOLS

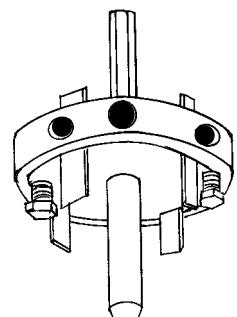
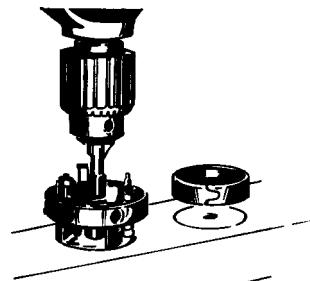
Used to cut grooves for Timber Rings, high speed steel blades, depth gage and pilot to fit in bolt hole. May be used in 3/4" portable drill or drill press. Blades may be resharpened per instructions packed with tool.

Part Number	Drilled Ring Size	Hole Size
TOOL 301	TR2.5	9/16" dia.
TOOL 302	TR4	13/16" dia.

Includes pilot and blades.

### Extra Blades - Pilots

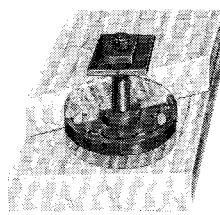
Blade 301, set of 4 for Tool 301  
 Blade 302, set of 6 for Tool 302  
 PILOT 562 9/16" Pilot for 1/2" bolt  
 PILOT 813 13/16" Pilot for 3/4" bolt  
 PILOT 938 15/16" Pilot for 7/8" bolt



Tool  
301

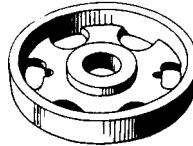
## SHARP PLATES

Are set in pre-cut daps in wood timbers, flush with the face of the wood. The shear plate spreads the load and reduces the number of bolts required. Made of malleable Iron to ASTM Specification A-47, Grade 325.10. Shear plates may be secured with nails for security in handling and transit.



Shear plates are used in connections between wood and steel, such as steel tie plates, arch shoes and truss heel joints.

Also used in demountable joints in scaffolding, bleacher seats, and other knockdown wood structures.



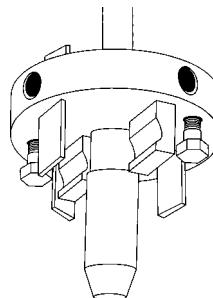
Made in U.S.A.

Part Number	Outside Diameter	Bolt Size
SP2.6	2-5/8"	3/4"
SP4	4"	3/4"
SP4S	4"	7/8"

Includes pilot and blades.

## DAPPING TOOLS

Tools are designed with several blades and cutters to produce a dap of the same shape as the shear plate. Insert the pilot in a predrilled hole or a drill bit may be used to drill and dap.



Tool  
303

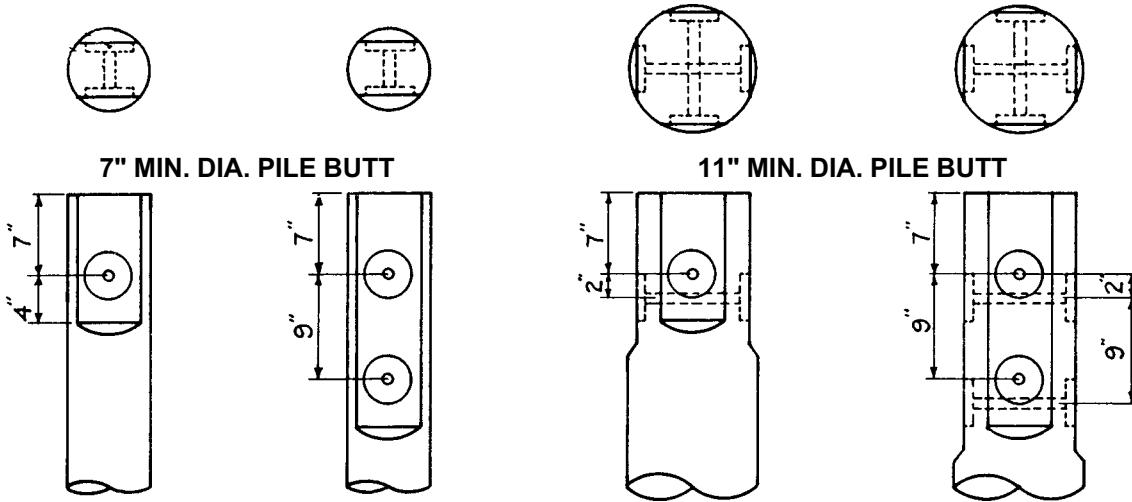
Part Number	Shear Plate	Drilled Hole Size
TOOL 303	SP2.6	13/16" dia.
TOOL 304	SP4	13/16" dia.
TOOL 304S	SP4S	15/16" dia.

Includes pilot and blades.

### Extra Blades - Pilots

PILOT 813 13/16" Pilot for 3/4" bolt  
 PILOT 938 15/16" Pilot for 7/8" bolt  
 Blade 303, set of 4 for Tool 303  
 Blade 304, set of 5 for Tool 304

## SHEAR PLATE DESIGN SUGGESTIONS



### UPLIFT

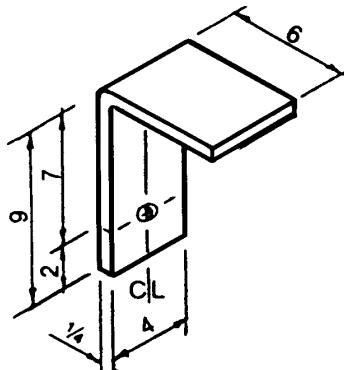
SHEAR PLATE DESIGN LOADS (7/8q BOLT)			
2 Shear Plates	4 Shear Plates (Vertical)	4 Shear Plates (Transverse)	8 Shear Plates
Group "B" Wet Use 7,716 lbs.	Group "B" Wet Use 15,432 lbs.	Group "B" Wet Use 15,432 lbs.	Group "B" Wet Use 30,864 lbs.
Group "C" Wet Use 6,430 lbs.	Group "C" Wet Use 12,860 lbs.	Group "C" Wet Use 12,860 lbs.	Group "C" Wet Use 25,720 lbs.
Group "B" Dry Use 9,214 lbs.	Group "B" Dry Use 18,428 lbs.	Group "B" Dry Use 18,428 lbs.	Group "B" Dry Use 36,856 lbs.
Group "C" Dry Use 7,678 lbs.	Group "C" Dry Use 15,356 lbs.	Group "C" Dry Use 15,356 lbs.	Group "C" Dry Use 30,712 lbs.

#### DESIGN NOTES:

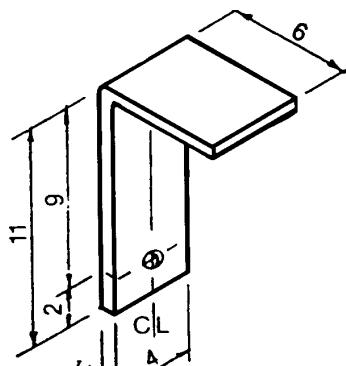
1. Tabular values are intended as a guide, and should be checked by the design engineer for conformance with current edition of N.D.S.\*
2. A 33-1/3% Duration of Load increase is included.
3. Typical Group "B" species include Douglas Fir-Larch and Southern Yellow Pine.
4. Typical Group "C" species include Hem-Fir and Spruce-Pine-Fir.
5. Applicable load adjustment factors are: Load Duration, Wet Service, Temperature, Group Action, Geometry, Penetration and Metal Side Plates.
6. Shear plates are 4" diameter, SP4S.
7. Slab cuts should be parallel, plumb, and a minimum of 5-1/2" in width.
8. Shear plate daps to be made with Tool 304S.

\*"National Design Specification for Wood Construction" published by American Forest & Paper Association, Washington, D.C.

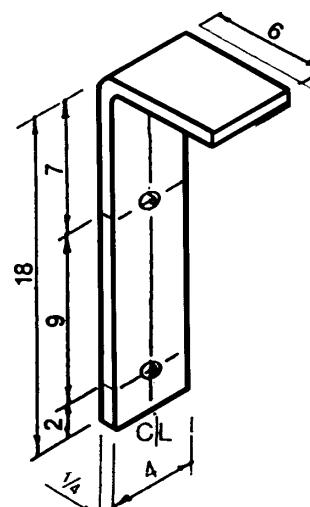
## PILE CAP CONNECTORS



PCC-1



PCC-2



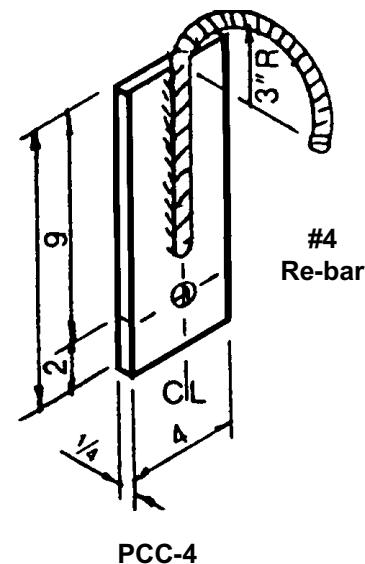
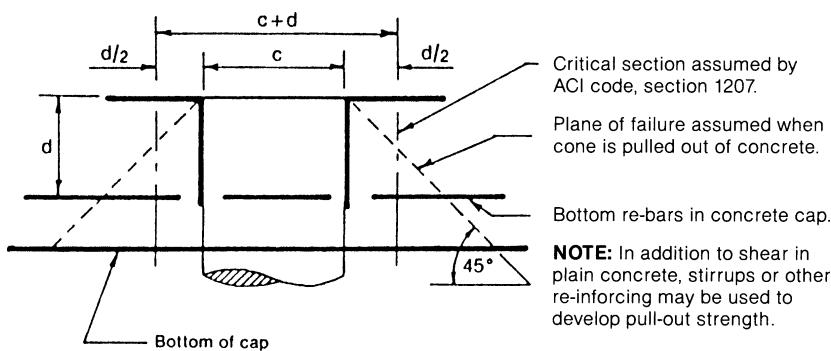
PCC-3

All bolt holes 15/16" diameter.

Custom connectors are available as a special order.

### SUGGESTED CONCRETE DESIGN PROCEDURES

Analysis by the Portland Cement Association for the development of connector design value in pullout strength in concrete cap.



#### EXAMPLE: Given:

$V = 9,214\#$  (allowable uplift load for 2 connector plates to pile)

$d = 7\text{-}1/2"$   $c = 10\text{-}1/2"$

$$b_0 = \pi (c + d) / 2$$

$$= 3.14 \times 18 \times 0.5 = 28.2"$$

$$V_c = \frac{V}{b_0 d} = \text{unit shear stress in concrete}$$

$V$  = total load

$d$  = depth to reinforcing steel

$c$  = pile diameter

#### Solve:

$$V_c = \frac{V}{b_0 d} = \frac{9,214}{28.2 \times 7.5} = 43.6 \text{ psi}$$

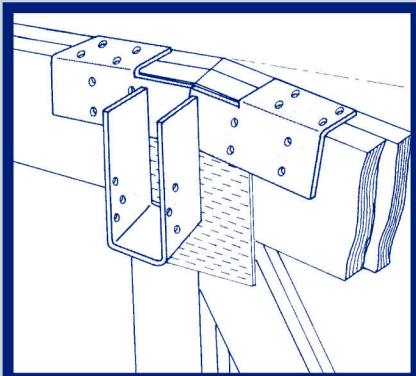
$$V_c = \text{allowable for concrete} \\ = 100 \text{ psi.}$$

$b_0 = \pi (c + d) = \text{circumference at critical section}$

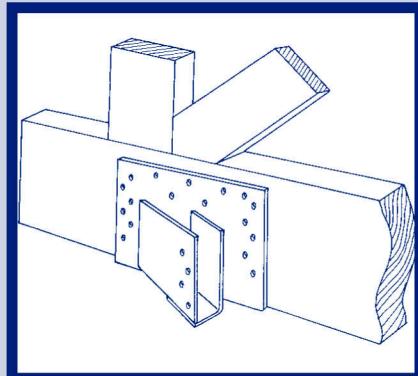
**NOTE ABOUT  $b_0$ :** Where only two plates are used,  $b_0$  might be assumed to be equivalent to one half a full circumference, or some other fraction thereof. The quantity  $b_0$  should be established through experience and engineering judgment.

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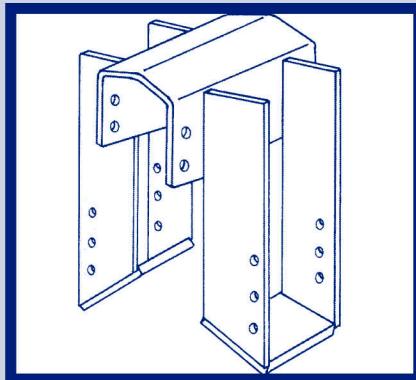
# CUSTOM HANGERS



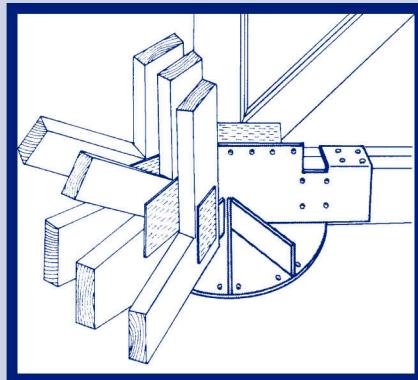
**CUSTOM DESIGN**



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