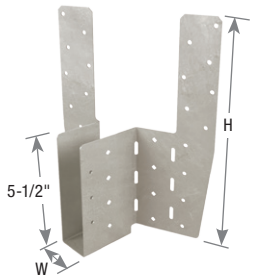
MiTek®
USP®
Structural Connectors

Adjustable Strap Skewed Hangers

MSHA series

USP's MSHA Series hanger offers the most flexible field solution for truss-to-truss connections accommodating a range of skews and challenging web-chord geometry often found in truss framing. Eliminating the need for special orders, the MSHA hanger provides economical solutions for 1-ply or 2-ply roof trusses and 1-ply floor trusses skewed between 22-1/2° to 75°. MSHA hangers can be installed in top-min, top-max, face-max or combination mounting conditions as required.



MSHA29L
left shown

MSHA29R-2
right shown

Features:

- Field adjustable straps that can be used straight or bent to accommodate web-chord geometry.
- A bend line makes field adjustments and installation quick and easy, especially for high skews.
- Eliminates the need for ordering special hangers.
- All models can be installed on 2x6 and larger carrying members.

Materials: 16 gauge
Finish: G90 galvanizing

Installation:

- Install the required number of fasteners according to the load table.
- Install fasteners into the carrying member at the locations described below based on the proper "Mounting Condition".
- Hanger is factory skewed 22-1/2° and may be field skewed from 22-1/2° to 75°. See installation sequence on back page for skews greater than 22-1/2°.
- Face-Max and Combination mounting conditions require a minimum chord or header height of 7-1/4". Top-Max and Top-Min mounting conditions require a minimum chord or header height of 5-1/2".

CONNECTION TO CARRYING MEMBER

Mounting Conditions:

Face-Max

Fill the lowest four holes nearest each side of the bucket. For a 22-1/2° skew, fill the four diamond holes on one side and 4 round holes on the other. For skews greater than 22-1/2°, fill the 4 round holes on each side.

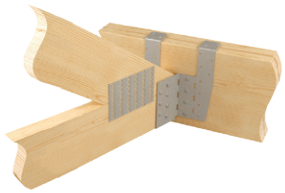
Add an equal amount of nails in each side of the hanger in any of the remaining nail holes to meet the minimum fastener requirements listed in the table.

Typical MSHA face-max installation

Top-Max

Field bend the strap over the supporting member. The bent strap must extend a minimum of 2" over the carrying member to allow for the four top flange nail holes to be filled.

Fill the lowest four nail holes nearest each side of the bucket. For a 22-1/2° skew, fill the four diamond holes on one side and 4 round holes on the other. For skews greater than 22-1/2°, fill the 4 round holes on each side.



Typical MSHA top-max installation

Top-Min

Field bend the strap over the supporting member. The bent strap must extend a minimum of 2" over the carrying member to allow for the four top flange nail holes to be filled.

Fill the four nail holes (two each strap) nearest the top of the carrying member.

Typical MSHA top-min installation

Combination Face-Max/Top-Max

Follow the Face-Max installation for one side of the connector. Follow the Top-Max installation for the opposite side of the connector. The Face-Max allowable loads apply to this type of installation.

Typical MSHA combination installation

CONNECTION TO CARRIED MEMBER

Mounting Conditions:

For the 22-1/2° skew installation, all round holes must be filled. For skews greater than 22-1/2°, only the diamond holes must be filled.

continued on back

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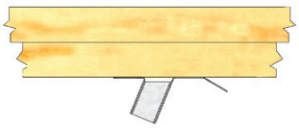
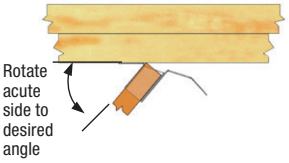
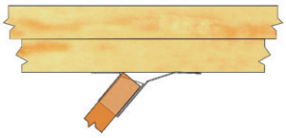
Installation Sequence for Skews > 22½°:



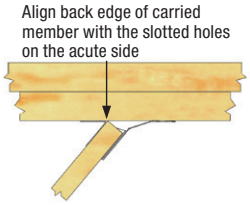
Step 1: Install acute side top and/or face header nails.



Step 2: Utilizing a piece of scrap fastened to the hanger on the obtuse side, bend the hanger to the desired angle.



Step 3: Bend the obtuse side of hanger back toward the header until the flange lies flat against the header, and install header top and/or face nails as noted below.



Step 4: Install carried truss and all required nails fasteners working from the bottom up.

Joist Material & Width	USP Stock No.	Ref. No.	Dimensions (in) W	Dimensions (in) H	Min H_{eff}[2] (in)	Mounting Condition[4]	Skew Angle (degrees)	Fastener Schedule[2,4] Carrying Member Top Qty	Carrying Member Face Qty	Carrying Member Type	Carried Member Qty	Carried Member Type	DF/SP Allowable Loads (Lbs.) Floor 100%	DF/SP Roof 115%	DF/SP Roof 125%	DF/SP Uplift[1] 160%	S-P-F Allowable Loads (Lbs.) Floor 100%	S-P-F Roof 115%	S-P-F Roof 125%	S-P-F Uplift[1] 160%	Ctn Qty
2x Trusses	MSHA29L/R	THASR/L29	1-5/8	10-3/4	7-1/4	face-max	22-1/2	--	12	10d	7	10d x 1-1/2	1500	1615	1615	975	1250	1275	1275	770	25
							23 to 45	--	12	10d	4	10d x 1-1/2	1485	1485	1485	560	1250	1350	1350	435	
							46 to 75	--	12	10d	4	10d x 1-1/2	1500	1615	1615	720	1250	1315	1315	560	
					5-1/2	top-max	22-1/2	4	8	10d	7	10d x 1-1/2	1985	1985	1985	975	1510	1510	1510	745	
							23 to 45	4	8	10d	4	10d x 1-1/2	1705	1705	1705	560	1255	1255	1255	415	
							46 to 75	4	8	10d	4	10d x 1-1/2	1605	1605	1605	720	1605	1605	1605	560	
						top-min	22-1/2	4	4	10d	7	10d x 1-1/2	1350	1350	1350	--	1045	1045	1045	--	
							23 to 45	4	4	10d	4	10d x 1-1/2	1335	1335	1335	--	1060	1060	1060	--	
							46 to 75	4	4	10d	4	10d x 1-1/2	695	695	695	--	695	695	695	--	
2-2x Trusses	MSHA29L/R-2	THASR/L29-2	3-1/8	10-3/4	7-1/4	face-max	22-1/2	--	12	10d	7	10d	1500	1615	1615	975	1215	1215	1215	735	
							23 to 45	--	12	10d	4	10d	1485	1485	1485	560	1210	1260	1260	405	
							46 to 75	--	12	10d	4	10d	1500	1615	1615	720	1250	1300	1300	555	
					5-1/2	top-max	22-1/2	4	8	10d	7	10d	1985	1985	1985	975	1495	1495	1495	735	
							23 to 45	4	8	10d	4	10d	1705	1705	1705	560	1275	1275	1275	420	
							46 to 75	4	8	10d	4	10d	1605	1605	1605	720	1565	1565	1565	535	
						top-min	22-1/2	4	4	10d	7	10d	1350	1350	1350	--	1040	1040	1040	--	
							23 to 45	4	4	10d	4	10d	1335	1335	1335	--	1060	1060	1060	--	
							46 to 75	4	4	10d	4	10d	695	695	695	--	695	695	695	--	
4x Trusses	MSHA422L/R	THASR/L422	3-5/8	22	7-1/4	face-max	22-1/2	--	12	10d	7	10d	1500	1590	1590	960	1250	1250	1250	755	
							23 to 45	--	12	10d	4	10d	1485	1485	1485	550	1250	1335	1335	430	
							46 to 75	--	12	10d	4	10d	1500	1615	1615	705	1250	1300	1300	555	
					5-1/2	top-max	22-1/2	4	8	10d	7	10d	1955	1955	1955	960	1490	1490	1490	735	
							23 to 45	4	8	10d	4	10d	1680	1680	1680	550	1270	1270	1270	420	
							46 to 75	4	8	10d	4	10d	1605	1605	1605	705	1565	1565	1565	535	
						top-min	22-1/2	4	4	10d	7	10d	1330	1330	1330	--	1040	1040	1040	--	
							23 to 45	4	4	10d	4	10d	1335	1335	1335	--	1060	1060	1060	--	
							46 to 75	4	4	10d	4	10d	695	695	695	--	695	695	695	--	

1) Uplift loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
2) H_{eff} is the minimum distance from the top of the hanger seat to the top of the carrying member.
3) For tabulated top-mount installation loads, the straps must be wrapped over the header a minimum of 2".
4) **NAILS:** 10d x 1-1/2" nails are 0.148" dia. x 1-1/2" long, 10d nails are 0.148" dia. x 3" long.