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USP Series	Width	Skewed (Maximum)	Sloped Seat (Maximum)	Sloped / Skewed	Sloped Top Flange (Maximum)	Top Flange Offset	Saddle Hanger	Ridge Hanger (Maximum)	Inverted Flange	Uplift	Weldability	USP Series Catalog Page Reference
BPH	all	50°	45°	•	45°					•	•	125, 129-139
GHF	all	50°	45°	•					width ≥ 4-1/2"	•		142
HD ¹	1-3/4" or less > 1-3/4"	67-1/2° 50°	45°	•					width ≥ 2-1/4"	•		90-96, 118, 122-124
HDO	1-3/4" or less > 1-3/4"	67-1/2° 50°	45°	•					width ≥ 3-1/8"	•		98, 100-102
HJC	all	60°										175-176
HLBH	all	50°	45°	•	45°	•	•	45°		•	•	126, 131-139
HUS	all								width ≥ 2-1/4"	•		89, 91-95, 119, 123, 167
HWUH	all	45°	45°	•		•	•			•		108-109
KB	all									•	•	97, 100-102
KEG	all	45°	45°							•		143
KGB	all									•	•	144
KGH	all	45°					•					31
KGLS	all	50°	45°	•	30°	•	•			•	•	148
KGLST	all						•			•	•	148
KGLT	all	50°	45°	•	45°	•	•			•	•	145
KHB	all									•	•	97, 101
KHGB	all									•	•	144
KHGLS	all	50°	45°		30°	•	•			•	•	148
KHGLST	all						•			•	•	148
KHGLT	all	50°	45°	•	45°	•	•			•	•	145
KHHB	all									•	•	97, 101-102, 144
KHW	all	84°	45°	•	35°	•	•	45°		•		99, 101-102
KLB	all									•		97,100
KLEG	all	45°	45°			•				•		143
KMEG	all	45°	45°			•				•		143
LBH	all	50°	45°	•	45°	•	•	45°		•	•	126, 131-139
LSSH	all	45°	45°	•						•		141
MPH ²	all	60°	45°	•		•						110-111, 127-139
NFM	all	45°								•		112
PH ¹	all	84°	45°	•	35°	•	•	45°		•		127-130, 133
PH ¹	all	84°	45°	•	35°	•	•	45°		•		127-131, 133-135
PHM ²	all	84°	45°	•	35°	•	•	45°		•		127-139
PHX ²	all	84°	45°	•	35°	•	•	45°		•		127-128, 131-139
PHXU ²	all	60°	45°	•	35°	•	•			•	•	127-129, 131-139
SKH	all	45°								•		104-105
SKHH	all	45°								•		104-105
SUH	1-3/4" or less > 1-3/4"	67-1/2° 50°	45°	•						•		88, 91-96
SW ¹	all	84°	45°	•	35°	•	•	45°		•		99, 100-101
SWH ¹	all	84°	45°	•	35°	•	•	45°		•		99, 100-102
THD	all	45°	45°	•					one flange width ≥ 3"	•		120, 123-124, 166
THDH	all	45°	45°	•						•		120, 123-124, 167
THF	1-3/4" or less > 1-3/4"	67-1/2° 50°	45°	•					width ≥ 2-1/4"	•		118, 121-122

1) Skews greater than 45° will have square (butt) cut joist with back plate. Refer to Typical PH hanger skewed, left shown, Type B illustration on page 203.

The information listed only applies to hangers manufactured by USP Structural Connectors® and installed according to the instructions listed in this catalog. Some of the options listed may not have been evaluated on a single hanger. The designer must always evaluate each connection, including the joist and header capacities, before specifying a specialty connector. USP sloped hangers are manufactured with the plumb cut of the joist already calculated. If a hanger with a different height is needed, it must be specified at the time of ordering.

Materials: Steel gauge may vary from that specified depending on the specialty option and manufacturing process used. Some formed hangers may be welded when modifying the hanger. Hanger configurations, fastener schedules, and height may vary from the tables depending on the joist size, skew, and slope.

Finish: See specific hanger option tables. Welded hangers are painted with USP gray primer. Non-catalog hangers available in Hot-dip galvanized, use **HDG** after product number.

Allowable Loads: For multiple options for the same connector, use the most conservative reduction to give the lowest design load.

Installation:

- Fill all nail holes with fasteners specified in the tables.
- Fastener quantities may increase from the amount listed in the tables depending on hanger option.
- NA16D-RS, NA20D, and NA25D nails are supplied with hangers.
- For type A skewed hangers, the end of joist must be bevel cut; for type B skewed hangers, the end of joist must be butt-cut.

Codes: Modified hangers are not code evaluated due to their numerous variations.

See the Specialty Options Chart for each hanger series for load reductions and hanger maximum range of skew, slope, etc.

Skewed Hanger:

- Consider SKH or SKHH hangers for 45° skews.
- Joist nails may be located on obtuse side to ensure proper nailing.
- Specify skew angle, type (A or B), and direction when ordering.

Sloped Seat Hanger:

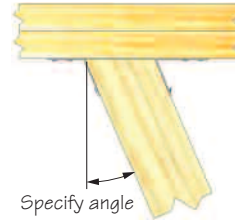
- Consider LSSH series for sloped applications.
- Additional nail holes may be added to joist flanges.
- Specify slope angle and direction when ordering.

Sloped/Skewed Hanger:

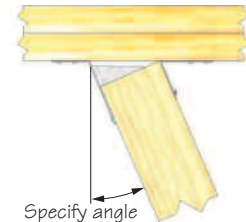
- See nailing notes for both skewed and sloped hangers.
- Specify skew and slope angles as well as skew/slope directions and skew type (A or B) when ordering.

Inverted Flange Hanger:

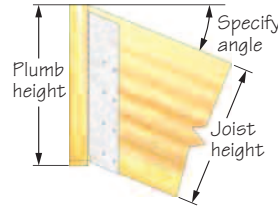
- For skewed-only hangers, the flange on the cut side can be inverted at 100% of the table load. Consult USP for skew limitations.
- When nailing into the carrying member's end grain, the allowable load is 0.65 of the table load.
- Hangers with one flange inverted achieve 100% of listed table load.
- Specify right or left flange when inverting only one flange.



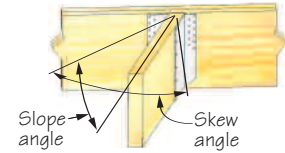
Typical SUH hanger skewed, right shown Type A (bevel cut required)



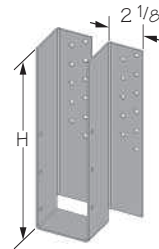
Typical SUH formed hanger skewed, right shown Type B



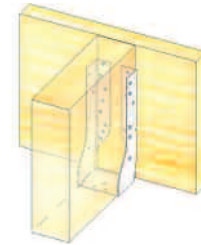
Typical HD hanger sloped seat, down shown



Typical HD hanger sloped down, skewed left shown



Typical GHF hanger one flange inverted, left shown



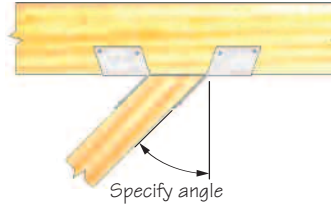
Typical HD hanger inverted flange



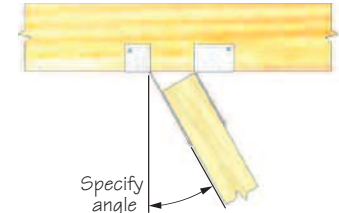
See Specialty Options Chart for each hanger series for load reductions and hanger maximum range of skew, slope, etc.

Skewed Hanger:

- Joist nails may be located on obtuse side to ensure proper nailing.
- Specify skew angle, type (A or B), and direction when ordering.



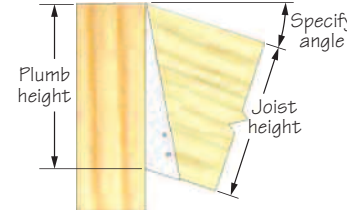
Typical BPH hanger skewed, left shown Type A (bevel cut required)



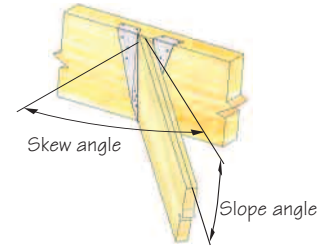
Typical BPH hanger skewed, right shown Type B

Sloped Seat Hanger:

- Additional nail holes may be added to joist flanges.
- Specify slope angle, direction, and joist height when ordering.



Typical BPH hanger sloped seat, down shown



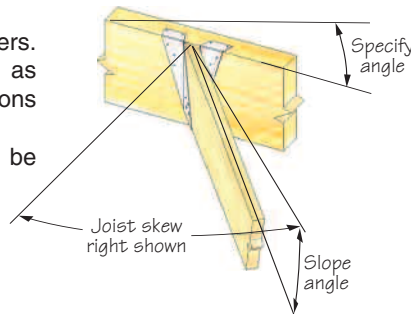
Typical BPH hanger sloped down, skewed right, low side flush shown

Sloped/Skewed Hanger:

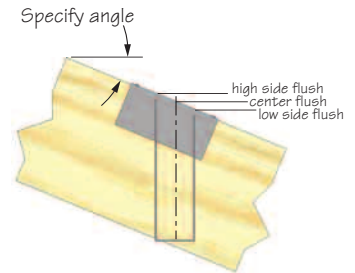
- See nailing notes for both skewed and sloped hangers.
- Specify skew and slope angles as well as skew/slope directions, and skew type (A or B) when ordering.
- Similar to face mount skewed/sloped hanger, refer to illustration on page 202: Typical HD hanger sloped down, skewed left shown.
- Specify if hanger is to be high side flush, low side flush, or center flush.

Sloped/Skewed/Sloped Top Flange Hanger:

- See nailing notes for both skewed and sloped hangers.
- Specify skew, slope, and top flange slope angles as well as skew/slope and top flange slope directions when ordering.
- Skewed/sloped/top flange sloped hangers can be made galvanized or painted.



Typical BPH hanger skewed right, sloped down, top flange sloped



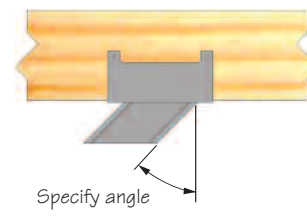
Typical LBH hanger sloped top flange right shown

SOLID TOP FLANGE HANGER SPECIALTY DETAILS

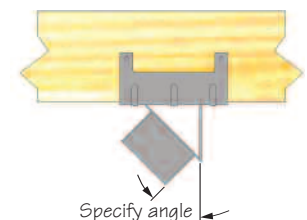
See Specialty Options Chart for each hanger series for load reductions and hanger maximum range of skew, slope, etc.

Skewed Hanger:

- Joist nails may be located on obtuse side to ensure proper nailing.
- Specify skew angle, type (A or B), and direction when ordering.



Typical PH hanger skewed, left shown Type A (bevel cut required)



Typical PH hanger skewed, left shown Type B

Sloped Seat Hanger:

- Additional nail holes may be added to joist flanges.
- Specify slope angle, direction, and joist height when ordering.

Sloped/Skewed Hanger:

- See nailing notes for both skewed and sloped hangers.
- Specify skew and slope angles as well as skew/slope directions, and skew type (A or B) when ordering.
- Specify if hanger is to be high side flush, low side flush, or center flush.

continued on next page

Sloped Top Flange Hanger:

- Additional nail holes may be added to top angle.
- Specify top flange slope and direction when ordering.
- Specify if hanger is to be high side flush, low side flush, or center flush.

Ridge Hanger:

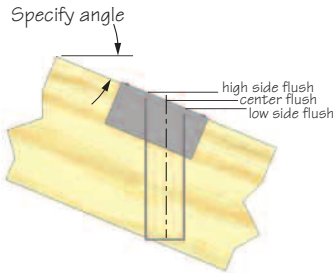
- Specify flush top of beam at center, right side, or left side.
- Specify angle of slope when ordering.

Top Flange Offset Hanger:

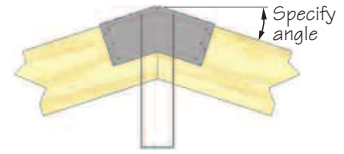
- Specify offset, left (L) or right (R), when ordering.

Saddle Hanger:

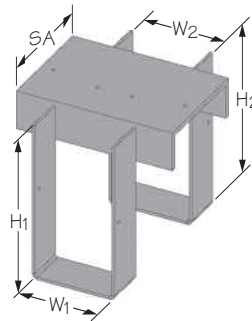
- Specify saddle width, "SA" when ordering. Allow clearance for saddled member.



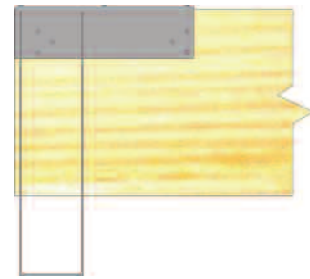
Typical LBH hanger sloped top flange, right shown



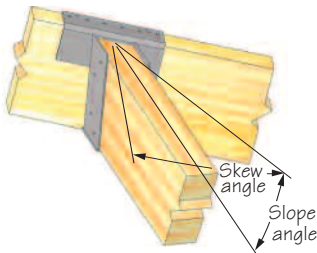
Typical LBH hanger ridge, top flange slope



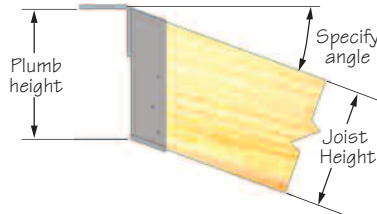
Typical PH hanger saddle option



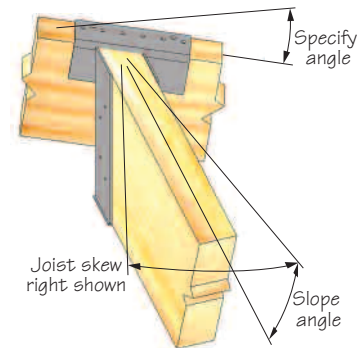
Typical LBH hanger top flange offset, right shown



Typical LBH hanger sloped down, skewed right, low side flush shown



Typical LBH hanger sloped seat, down shown



Typical LBH hanger skewed right, sloped down, top flange sloped

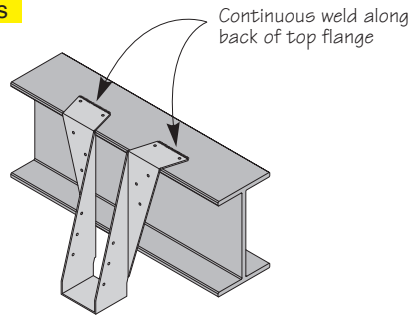
- Weld sizes and lengths shown on chart.
- Weld-on applications produce maximum allowable load listed. **Uplift loads do not apply to this application.**

Top Angle Weld Length chart

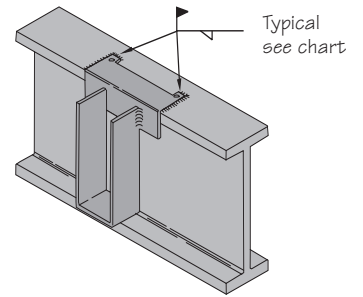
USP Welded Hanger Series	Weld Length
PH, PHI, SW	3"
BPH, PHM, SWH	4"
KLB, KHW, PHX, PHXU	6"
KB, KHB, LBH, KGB, KHGB, KHHB, KGLS, KGLST, KGLT, KHGLS, KHGLST	8"
HLBH, KHGLT	10"

Top Angle Steel Gauge	Weld Size
10 gauge or lighter	1/8"
7 gauge	3/16"
3 gauge	1/4"

Weld shall be distributed evenly.



Typical Top Flange welded installation



Typical Top Angle welded installation

PART NUMBER SYSTEM

Part Numbers assigned to *TFL*, *THO*, and *THF* I-Joist hangers reveal the I-Joist sizes to be used with the specific hanger. This guide will teach you how to recognize I-Joist dimensions in the part numbers.

1st, 3rd, and sometimes 4th digits are whole numbers
 (This example denotes 2 and 11)
 4th digit may be part of a decimal –
 ex.: THO16925



2nd and 5th digits are decimals
 (see guide below)
 (This example denotes .3125
 [5/16] and .875 [7/8])
 5th digit may be (0) or dropped if
 height is even

Part Number Guide for Decimals		
1	= .125	or 1/8 inch
2 or 25	= .25	or 1/4 inch
3	= .3125	or 5/16 inch
5	= .5	or 1/2 inch
6	= .625	or 5/8 inch
7	= .75	or 3/4 inch
8	= .875	or 7/8 inch

THO35925-2

THO

Letters refer to Hanger Series
ex.: THO

35

First (2) Digits refer to Member Width
ex.: 3.5 inches

925

Last (2) or (3) Digits refer to Member Height
ex.: 9.25 inches

-2

Digits after Dash refer to Number of Plys
ex.: 2 ply

Some Examples:

- THO159501-1/2" x 9-1/2"
- THF179251-3/4" x 9-1/4"
- THO16925-2.....double 1-5/8" x 9-1/4"
- THF23140-2.....double 2-5/16" x 14"

Note: USP's *Full Line Catalog* lists a range of heights for *THF* hangers. Face mount hangers can usually accommodate more than one I-Joist height. The hanger height must be tall enough to support the top chord of the I-Joist to eliminate web stiffener requirements on solid sawn or joists with web stiffeners. The *THF* hanger must be a minimum of 60% of the joist height.