HYS Hybrid Strut for Cold-Formed Steel Framing

The Only CFS Strut Tested for Both Slide- and Fixed-Clip Applications

The HYS hybrid strut is the only CFS strut on the market designed and tested for use as either a slide or a rigid clip. Commonly used at the bottom of a steel beam to accommodate large standoff conditions, the HYS strut attaches to the structure with screws, powder-actuated fasteners or welds.

For installation as a slide connection, attach the HYS using shouldered screws through the slotted holes. Precision-manufactured shouldered screws provided with the HYS are designed to prevent over-driving and to ensure that the clip functions properly in the slide application. For installation as a rigid connection to support gravity and lateral loading, attach the clip using the small predrilled holes with #10 screws.

The HYS has undergone comprehensive component, assembly and anchor testing. Tabulated loads were developed from these tests and include capacities based on strength and deflection to assist in mitigating design risk. You can count on the HYS dual-application strut for its versatility and test-verified performance.

Features

- Available in lengths of 12", 15", 24" and 30" (for 18" lengths, use SSB and FSB struts)
- · Slots are positioned to minimize eccentric load and maximize capacity
- Slide application allows up to 1" of vertical moment in each direction when shouldered screws are used through the center of the slot
- Simpson Strong-Tie® No-Equal® stamps mark the center of the slots to help ensure correct placement of shouldered screws
- Supports gravity and lateral loads when using #10 screws through small predrilled holes

Codes: Testing performed in accordance with ICC-ES AC 261. Visit **strongtie.com** for the latest load values and testing information.

Material: HYS12/68, HYS15/68, HYS24/68 — 68 mil (14 ga.), 50 ksi HYS30/97 — 97 mil (12 ga.), 40 ksi

Finish: Galvanized (G90)



XLSH78B1414 #14 Shouldered Screw for Attachment to Stud Framing (included)

Ordering Information and Dimensions

Model	Ordering SKU	Length (in.)	Connectors	Shoulder Screws
HYS12/68	HYS12-68-KT25	12	25	83
HYS15/68	HYS15-68-KT25	15	25	83
HYS24/68	HYS24-68-KT15	24	15	55
HYS30/97	HYS30-97-KT10	30	10	55

1. Replacement or additional shoulder screws for HYS connectors in slide application are XLSH78B1414-RP83.





HYS Slide-Clip Application



HYS Fixed-Clip Application





HYS Hybrid Strut

Slide-Clip Allowable Loads

		Stud Thickness mil (ga.)	No. of #14 Shoulder Screws (Pattern)	Allowable Loads (lb.)			
	Model No.			In-Plane Load F ₁	Tension Load F ₂	Comp. Load F ₃	
	11/010/00	33 (20)	2 (S1)	100	520	520	
	H1512/08		3 (S2)	100	815	815	
			2 (S1)	100	520	520	
	111313/00		3 (S2)	100	815	815	
	HV\$24/68		2 (S1)	100	520	460	
	111324/00		3 (S2)	100	815	690	
	HV\$30/07		2 (S1)	100	520	530	
	111330/37		3 (S2)	100	815	795	
	LIV010/60		2 (S1)	150	845	620	
	111312/00		3 (S2)	150	1,285	1,260	
	LIV015/60		2 (S1)	150	845	620	
	43 (18) HYS24/68	43 (18)	3 (S2)	150	1,285	1,260	
			2 (S1)	150	845	950	
			3 (S2)	150	1,285	1,420	
	HV\$30/07		2 (S1)	150	845	1,100	
	111330/97		3 (S2)	150	1,285	1,640	
	HVS12/68		2 (S1)	240	1,040	995	
	111312/00		3 (S2)	240	1,585	1,550	
		54 (16)	2 (S1)	240	1,040	995	
	111313/00		3 (S2)	240	1,585	1,550	
	HYS24/68		2 (S1)	240	1,040	1,170	
			3 (S2)	240	1,585	1,755	
			2 (S1)	240	1,040	1,355	
	111030/37		3 (S2)	240	1,585	2,020	
	HVS12/68		2 (S1)	300	1,165	995	
	H1512/08		3 (S2)	300	1,775	1,550	
	HV\$15/68	68 (14)	2 (S1)	300	1,165	995	
	H1212/08		3 (S2)	300	1,775	1,550	
	HVS24/68		2 (S1)	300	1,165	1,170	
	11024/00		3 (S2)	300	1,775	1,755	
	HYS30/07		2 (S1)	300	1,520	1,520	
	11030/37		3 (S2)	300	2,265	2,265	

1. For additional important information, see General Notes on p. 4.

 HYS Allowable Connector Loads are also limited by the HYS Anchorage Load table on p. 4. Use the minimum tabulated values from the connector and anchorage load tables as applicable.

3. See illustrations on the side for fastener placement to stud framing.

4. Tabulated $\rm F_1$ loads are based on assembly tests with the load through the centerline of the stud. Tests are governed by fastener connections.

Figure Fi





Slide Screw Pattern S1 (no screws required in small round holes in slide application)



Slide Screw Pattern S2 (no screws required in small round holes in slide application)

HYS Hybrid Strut

Fixed-Clip Allowable Loads

	Stud Thickness mil (ga.)	No. of #10 Screws (Pattern)	Allowable Loads (lb.)			
Model No.			In-Plane Load F ₁	Tension Load F ₂	Comp. Load F ₃	Shear Load F₄
HVS12/68		4 (R1)	100	705	705	365
111012/00		6 (R2)	110	1,060	1,060	365
HV\$15/68	33 (20)	4 (R1)	100	705	705	340
111313/00		6 (R2)	110	1,060	1,060	340
HVS2/1/68		4 (R1)	100	705	705	140
111024700		6 (R2)	110	1,060	1,060	175
HV\$30/07		4 (R1)	100	705	705	135
111030797		6 (R2)	110	1,060	1,060	135
HV\$12/68		4 (R1)	125	1,040	1,050	525
111012700		6 (R2)	155	1,520	1,580	525
LIV015/60		4 (R1)	125	1,040	1,050	445
111313/00	40 (10)	6 (R2)	155	1,520	1,580	445
UVC04 /60	43 (10)	4 (R1)	115	1,040	1,050	180
111324700		6 (R2)	125	1,520	1,580	230
HVC30/07		4 (R1)	115	1,045	1,050	175
111030797		6 (R2)	125	1,580	1,580	175
HVS12/68		4 (R1)	145	2,110	1,800	560
111012/00		6 (R2)	285	3,085	1,800	710
HV\$15/68		4 (R1)	145	2,110	2,135	560
111010/00	54 (16)	6 (R2)	285	3,085	2,630	560
HVC24 /68	34 (10)	4 (R1)	150	2,110	2,135	225
111324700		6 (R2)	165	3,085	2,315	290
HVC30/07		4 (R1)	150	2,125	2,135	220
111030797		6 (R2)	165	3,190	3,205	220
HVS12/68		4 (R1)	195	2,110	1,800	550
111012/00		6 (R2)	385	3,085	1,800	710
HVS15/68		4 (R1)	195	2,110	2,160	560
11010/00	68 (14)	6 (R2)	385	3,085	2,630	560
HYS24/68		4 (R1)	190	2,110	2,160	225
11024700		6 (R2)	210	3,085	2,315	290
HV\$30/07		4 (R1)	190	2,125	2,160	220
11030/9/		6 (R2)	210	3,190	3,240	220

1. For additional important information, see General Notes on p. 4.

 HYS Allowable Connector Loads are also limited by the HYS Anchorage Load table on p. 4. Use the minimum tabulated values from the connector and anchorage load tables as applicable.

3. See illustrations on the side for screw fastener placement to stud framing. 4. Tabulated F_1 loads are based on assembly tests with the load through the

centerline of the stud. Tests are governed by fastener connections.

 $5.\,\rm XLSH78B1414$ #14 should ered screw may be used to replace #10 screws in a fixed application.

6. Minimum stud width for fixed application is 6".



Typical HYS (Fixed-Clip Application)

Fixed Screw Pattern R1 (no screws required in slot in fixed application)



Fixed Screw Pattern R2 (no screws required in slot in fixed application) F_2

F₃

HYS Hybrid Strut

HYS Allowable Anchorage Loads

	No. of Anchore	Allowable Loads		
Anchorage Type	NO. OF AIICHOIS	F_2 and F_3	F ₄	
	2	1,595	565	
#12-24 self-drilling screws	3	2,395	845	
	4	3,190	1,125	
Simpson Strong-Tie®	2	820	—	
0.157" PDPAT	3	1,230	520	
powder-actuated fasteners	4	1,640	780	
Wold	Hard side 2", Free side 1"	2,455	1,125	
weiu	Hard side 4", Free side 1"	3,190	1,125	

1. For additional important information, see General Notes below

2. Allowable loads are for the clip anchorage only. The capacity of the connection system will be the minimum of the tabulated value and the allowable load from the HYS Allowable Connector Loads on page 2 for slide applications and page 3 for fixed applications.



General Notes for Allowable Connector Load Tables

- 1. Allowable loads are for use when utilizing the traditional Allowable Stress Design methodology. Contact Simpson Strong-Tie® for LRFD loads unless otherwise noted.
- 2. Allowable loads are based on cold-formed steel members with a minimum yield strength, F_{v} , of 33 ksi and tensile strength, F_{u} , of 45 ksi for 43 mil (18 ga.) and thinner, and a minimum yield strength of 50 ksi and tensile strength of 65 ksi for 54 mil (16 ga.) and thicker.
- 3. Allowable loads may not be increased for wind or seismic load.
- Allowable loads for #12 self-drilling screws are based on a minimum nominal shear strength, P_{ss}, of 2,520 lb. and nominal tension strength, Pts, of 2,535 lb. and the allowable loads for #10 self-drilling screws are based on a minimum nominal shear strength, Pss, of 1,620 lb. and nominal tension strength, P_{ts} , of 2,460 lb.
- 5. It is the responsibility of the Designer to select the proper length fasteners based on installation need. Screw length must ensure fastener extends through the connection a minimum of three exposed threads.
- Allowable loads for Simpson Strong-Tie PDPAT-62KP powder-actuated 6. "tophat" fasteners also apply to alternate fasteners with a minimum shank 0.157", a minimum head diameter of 0.300", a minimum allowable shear

of 410 lb. and tension strength of 260 lb. for A36 steel, and a minimum allowable shear of 420 lb. and tension strength of 305 lb. for A572 or A992 steel per ESR-2138. "Tophat" fasteners are recommended to ensure adequate clamping force and consistent installations

- 7. Allowable loads for welded connections require E70XX electrodes with a minimum throat size equal to the clip thickness. Welding shall be in compliance with AWS D1.3. Welding galvanized steel may produce harmful fumes; follow proper welding procedures and precautions.
- Clips do not replace lateral or stability bracing. Design of bracing is the 8. responsibility of the Designer.
- It is the responsibility of the Designer to verify the adequacy of the stud. Allowable loads are based on clips installed an adequate distance away from penetrations, notches, ends of studs and other conditions that may affect the clip performance.
- 10. It is the responsibility of the Designer to check the adequacy of the supporting structure for loads imposed by connectors.
- 11. Industry studies show that hardened fasteners can experience performance problems in wet or corrosive environments. Accordingly, use these products in dry and non-corrosive environments only.

This flier is effective until December 31, 2021, and reflects information available as of September 1, 2019. This information is updated periodically and should not be relied upon after December 31, 2021. Contact Simpson Strong-Tie for current information and limited warranty or see strongtie.com

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