

P-HFH / P-HFHS SELF CLINCHING STUDS have been designed to achieve higher levels of performance than the P-FH range of fasteners for applications that do not demand a flush finish condition.

ADVANTAGES

- EASY TO ASSEMBLE WITH ANY SQUEEZE PRESS
- HIGH TORQUE RESISTANCE
- VISUAL PROOF OF SECURITY
- ALWAYS PERPENDICULAR TO PANEL
- MADE FROM THROUGH-HARDENED STEEL FOR HIGH THREAD STRENGTH



DESIGN GUIDE

HOLE PREPARATION

It is recommended that the holes are formed using a punch operation, although drilled holes may be used.

HOLE SIZE

Holes must be held to a tolerance of $-0.00\text{mm} + 0.13\text{mm}$ ($-.000" +.005"$)

MINIMUM SHEET THICKNESS

See product data sheets and method of assembly.

MAXIMUM SHEET HARDNESS

Rb80 for Steel Studs (P-HFH)
Rb70 for Stainless Steel Studs (P-HFHS)

INSTALLATION

Using a squeeze action, apply sufficient force to fully embed the teeth into the host sheet metal, bringing the head in contact with the sheet. See PERFORMANCE DATA for recommended forces.

The head of the stud is not designed to be installed flush.

TOOLING NOTE:

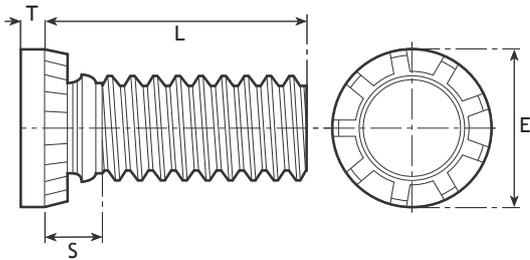
Studs are installed using a recessed top punch to control the insertion depth and a flat bottom anvil with a clearance hole to accept the threaded section of the stud.

Where the sheet material is thin, a special thin sheet bottom anvil is required which includes a countersink at the top to create space for the clinch ring and displaced sheet material.

See METHODS OF ASSEMBLY page for details

TECHNICAL DATA

METRIC



MATERIAL CODES

P-HFH - Hardened Steel Zinc Plated
P-HFHS - Stainless Steel

STANDARD PLATING FINISH

Zinc & Clear Trivalent Passivation (Z)

GENERAL DIMENSIONS

All dimensions in millimeters

THREAD SIZE / CODE	Min Sheet Thickness	Rec Hole Size - 0.00 + 0.13	Max Hole in Mating Component	Head Diameter E +/- 0.25	Max Head Height T	Max Unthreaded Length S	Minimum distance centre line hole to sheet edge
M5	0.9	5.0	6.5	7.8	1.14	2.7	10.7
M6	1.0	6.0	7.5	9.4	1.27	2.8	11.5
M8	1.5	8.0	9.5	12.5	1.78	3.5	12.7
M10	2.3	10.0	11.5	15.7	2.29	4.1	13.7



THREAD & LENGTH

THREAD SIZE / CODE	Type		Length Code "L" +/- 0.4 (Length Code in millimeters)						
	Steel	Stainless Steel							
M5	P-HFH	P-HFHS	15	20	25	30	35	40	50
M6	P-HFH	P-HFHS	15	20	25	30	35	40	50
M8	P-HFH	P-HFHS	15	20	25	30	35	40	50
M10	P-HFH	P-HFHS	15	20	25	30	35	40	50

HOW TO SPECIFY

P-HFH (Steel Standard Sizes)

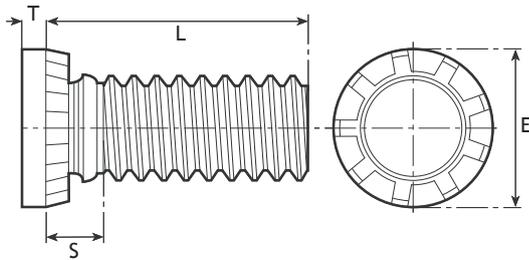
Product Code	P-HFH-M6-20-Z
Thread Code	P-HFH-M6-20-Z
Length Code	P-HFH-M6-20-Z
Plating Code	P-HFH-M6-20-Z

P-HFHS (Stainless Steel Standard Sizes)

Product Code	P-HFHS-M6-20
Thread Code	P-HFHS-M6-20
Length Code	P-HFHS-M6-20

TECHNICAL DATA

UNIFIED



MATERIAL CODES

P-HFH - Hardened Steel Zinc Plated
P-HFHS - Stainless Steel

STANDARD PLATING FINISH

Zinc & Clear Trivalent Passivation (Z)

GENERAL DIMENSIONS

All dimensions in inches

THREAD SIZE / CODE	Min Sheet Thickness	Rec Hole Size - .000 + .005	Max Hole in Mating Component	Head Diameter E +/- 0.010	Max Head Height T	Max Unthreaded Length S	Minimum distance centre line hole to sheet edge
032 / 024	.050	.190	.250	.300	.040	.105	.415
0420 / 0428	.060	.250	.312	.380	.050	.125	.460
0518 / 0524	.075	.312	.375	.480	.070	.140	.500
0616 / 0624	.090	.375	.437	.580	.085	.155	.530



THREAD & LENGTH DATA

THREAD SIZE / CODE	Type		Length Code "L" +/- .015 (Length Code in 16ths of an inch)						
	Steel	Stainless Steel	1/2 .500	3/4 .750	1 1.00	1.1/4 1.25	1.1/2 1.50	1.3/4 1.75	2 2.00
032 / 024	P-HFH	P-HFHS	8	12	16	20	24	28	32
0420 / 0428	P-HFH	P-HFHS	8	12	16	20	24	28	32
0518 / 0524	P-HFH	P-HFHS	8	12	16	20	24	28	32
0616 / 0624	P-HFH	P-HFHS	N/A	12	16	20	24	28	32

HOW TO SPECIFY

P-HFH (Steel Standard Sizes)

Product Code	P-HFH-0420-20-Z
Thread Code	P-HFH-0420-20-Z
Length Code	P-HFH-0420-20-Z
Plating Code	P-HFH-0420-20-Z

P-HFHS (Stainless Steel Standard Sizes)

Product Code	P-HFHS-0420-20
Thread Code	P-HFHS-0420-20
Length Code	P-HFHS-0420-20



PERFORMANCE DATA (METRIC)

Thread Code	Stud Type	Max Nut Tightening Torque (Nm)	Test Sheet Material					
			Cold Rolled Steel			Aluminum		
			Installation (kN)	Pushout (N)	Torque-out (Nm)	Installation (kN)	Pushout (N)	Torque-out (Nm)
M5	Steel	4.5	25	1600	9	15	1000	6
	Stainless Steel				7			
M6	Steel	10	30	2200	15	20	1500	13
	Stainless Steel				11			11
M8	Steel	22	45	3500	35	30	2000	28
	Stainless Steel				20			20
M10	Steel	37	55	5000	55	40	3000	35
	Stainless Steel				35			

PERFORMANCE DATA (UNIFIED)

Thread Code	Stud Type	Max Nut Tightening Torque (ft/lbs)	Test Sheet Material					
			Cold Rolled Steel			Aluminum		
			Installation (lbs)	Pushout (lbs)	Torque-out (ft/lbs)	Installation (lbs)	Pushout (lbs)	Torque-out (ft/lbs)
10	Steel	3.5	5500	350	6	3300	200	4
	Stainless Steel				4			
1/4	Steel	10	7000	520	11	4500	320	10
	Stainless Steel				8			8
5/16	Steel	17	10000	700	23	7000	450	22
	Stainless Steel				16			16
3/8	Steel	26	12000	900	35	8300	600	25
	Stainless Steel				24			

Note: The above values are averages when correct installation is performed. Variations in holes size, material and installation will affect these results. For specific advice we strongly recommend consultation with your PSM Technology Centre.



P-HFH / P-HFHS SELF CLINCHING STUDS are easy to install because only simple tooling is required. However, it is very important to note that they must always be installed by a squeeze action press rather than a hammer blow.

Punched holes are recommended.

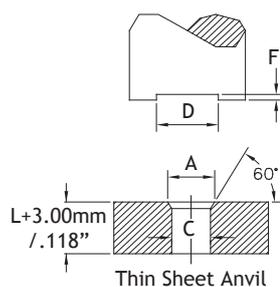
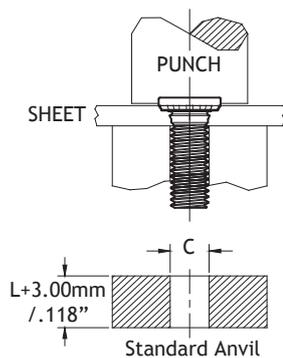
METHOD OF ASSEMBLY

Punch a hole in the metal sheet to the size recommended in our technical data table. De-burring of the hole is not recommended.

Insert the stud through the hole in sheet and into the appropriate anvil as detailed below.

Apply squeezing pressure sufficient to fully embed the teeth, bringing the head into contact with the sheet.

METHOD OF ASSEMBLY



Thread Size	Punch		Anvil			
	Recess Width D	Recess Depth F	Min Die Length	Bore Diameter C	Thin Sheet	
Metric	mm	mm		mm	C/sink Dia A mm	Sheet Thickness mm
M5	8.2 - 8.4	0.99 - 1.04	L	5.1 - 5.15	5.8 - 5.9	0.90 - 1.29
M6	9.8 - 10.0	1.12 - 1.17	L	6.1 - 6.15	7.0 - 7.1	1.00 - 1.49
M8	12.9 - 13.1	1.63 - 1.68	L	8.1 - 8.15	9.0 - 9.1	1.50 - 1.99
M10	16.1 - 16.3	2.10 - 2.12	L	10.1 - 10.15	-	-

Thread Size	Punch		Anvil			
	Recess Width D	Recess Depth F	Min Die Length	Bore Diameter C	Thin Sheet	
Unified	inch	inch		inch	C/sink Dia A inch	Sheet Thickness inch
10	.315 - .325	.035 - .036	L	.191 - .194	.216 - .220	.036 - .049
1/4	.395 - .405	.045 - .046	L	.250 - .253	.286 - .296	.040 - .059
5/6	.495 - .505	.063 - .064	L	.313 - .316	.350 - .354	.060 - .074
3/8	.595 - .605	.077 - .078	L	.376 - .379	-	-