

(NOW AVAILABLE)



PEM® IFH™ STUD

Ingress protection capable flush-head, self clinching stud

Newly developed type IFH™ studs are an improved version of PennEngineering’s type FH studs offering the same mechanical performance plus the added benefit of ingress protection. The IFH™ stud clinch feature design maximizes the flow of sheet material into the stud undercut to create a water tight seal. Tighter tolerances and process controls produce a consistent reliable ingress repellent result every time.



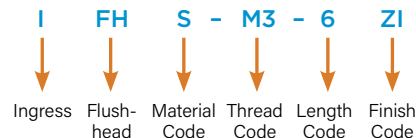
- Meets ISO:20653-2014 ingress protection levels
- Ingress protection capable, meeting IPX7 and IPX9K IP ratings
- No rubber gasket or sealants needed
- Water and helium testing completed in CR4 steel, 6082-T6 aluminum, and 304 stainless steel

Metric	Thread Size x Pitch	Thread Code	Type			
			Steel	Stainless Steel		Aluminum
	M2.5 x 0.45	M2.5	IFH	IFHS	—	IFHA
	M3 x 0.5	M3	IFH	IFHS	IFHP	IFHA
	M3.5 x 0.6	M3.5	IFH	IFHS	—	IFHA
	M4 x 0.7	M4	IFH	IFHS	IFHP	IFHA
	M5 x 0.8	M5	IFH	IFHS	IFHP	IFHA
	M6 x 1	M6	IFH	IFHS	—	IFHA

Metric	Type	Material	Finish	Max. Sheet Hardness
	IFH	Hardened Carbon Steel	Zinc plated per ASTM B633, SC1, (5µm), Type III, Colorless	HRB 80 / HB 150 or less
	IFHS	300 Series Stainless Steel	Passivated and/or tested per ASTM A380	HRB 70 / HB 125 or less
	IFHP	Aged Hardened A286 Stainless	Passivated and/or tested per ASTM A380	HRB 92 / HB 195 or less
	IFHA	Aluminum	No Finish	HRB 150 / HB 82 or less

Overview: The IFH is PennEngineering's first component to achieve ingress protection, meeting IPX7 and IPX9K IP ratings. By following the guidelines below for the application and installation of self-clinching fasteners in IP-rated enclosures, you can ensure the best chance of success. Published leak test results are available to compare various combinations of fastener types and materials. [Contact us](#) for more information.

Part Number Designation



NOTES:

Application Details

- Sheet hardness must be consistently below maximum panel hardness published for the fastener type.
- Published minimum centerline to edge distance must be maintained on all sides.
- Secondary operations such as sheet bending after fastener installation should be avoided, as they may cause deformed material to be pulled out of the joint, leading to a leak path
- For more information on proximity to bends and distance to other clinch hardware, see [PEM® Tech Sheet C/L To Edge](#).

Installation Details

- Any contaminations of the sheet or fastener could lead to insufficient material flow movement, leading to a leak point.
- Lubricants on the panel could leave leak paths after they evaporate.
- Installation in the punch side on minimum diameter punched holes is preferred. Punch to die clearance can follow industry standards.
- Ingress protection joint is formed directly after proper installation – no secondary sealing is required.



For questions, e-mail techsupport@pemnet.com

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