

PEM[®] Self-Clinching Nuts and Studs for Use in High-Strength Thin Steel Sheets Provide Permanent Threads for Automotive Component Attachment Applications

PEM[®] self-clinching SHT[™] nuts and HFLH[™] studs from PennEngineering[®] can successfully install in high-strength thin steel sheets to provide permanent threads for mating hardware in automotive component attachment applications. These hard panel nuts and studs manufactured from hardened alloy steel ultimately exhibit stronger thread strength compared with conventional fasteners. The fasteners additionally eliminate the environmental-related issues typically associated with alternative thin-sheet fastening devices.

Due to a lightweight design and reduced need for loose hardware such as washers, these fasteners can contribute to overall weight reductions in vehicle assemblies. Lower installed cost can be gained from the elimination of embossing operations and the capability to install automatically using a standard press or in-die technology. Small outer diameters of the fasteners enable close-to-edge mounting without risking sheet buckling and, upon installation, the reverse side of the host sheet will remain flush and unmarred for a clean appearance.

PEM SH nuts are engineered to install into high-strength steel sheets at 975MPa maximum ultimate tensile and as hard as HRC 30 or less on the Rockwell “C” scale. Host panels can be as thin as 1.4 mm / .056”. Standard thread sizes are M6, M8, and M10 for metric nuts and ¼-20, 5/16-18, and 3/8-16 for unified versions.

PEM HFLH studs will install successfully into high-strength steel sheets at 700MPa maximum ultimate tensile and as hard as HRB 91 or less on the Brinell scale. Host panels can be as thin as 1mm / .040”. Standard thread sizes are M5, M6, and M8 for metric studs and #10-32, ¼-20, and 5/16-18 for unified versions.

Detailed specifications, fastener drawings and 3D models, and performance data (Bulletin HPF) for these RoHS-compliant fasteners can be viewed and downloaded for free at www.pemnet.com.

Founded in 1942, PennEngineering (Danboro, PA, USA) is a global leader in the fastening industry with technical and manufacturing facilities in North America, Europe, and Asia supported by a global engineering-focused sales force and a worldwide network of authorized distributors.

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