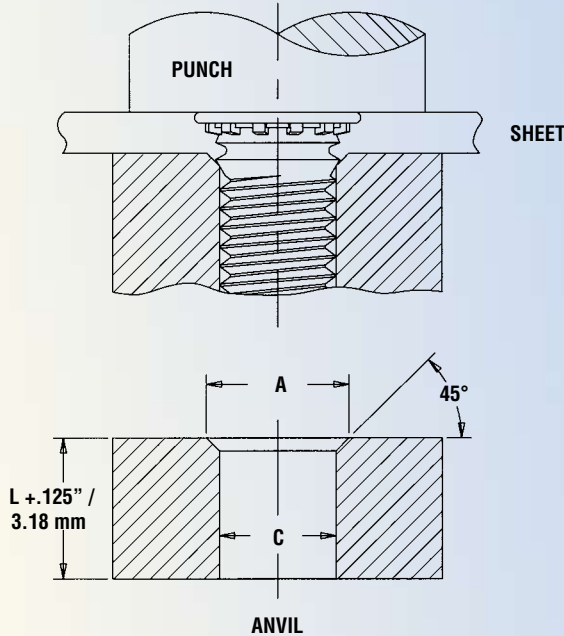


INSTALLATION (Continued)

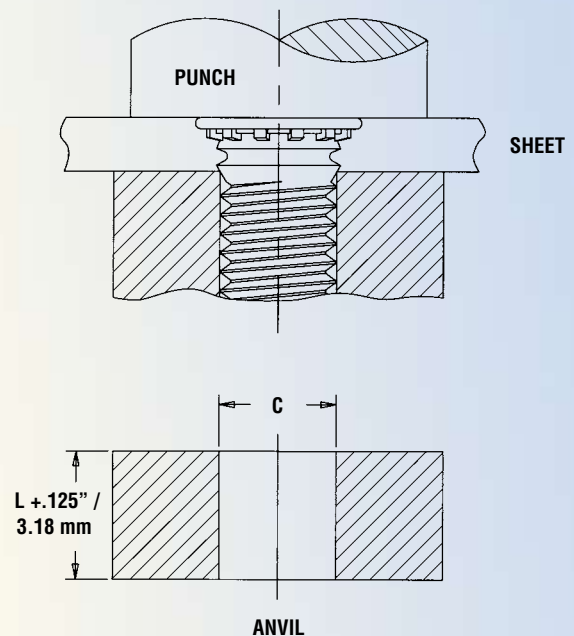
Type FH/FHN/FHS/FHA (Flush) Threaded and Unthreaded Studs

The illustrations below indicate suggested tooling for applying installation forces. Note that for sheets $.060'' / 1.51 \text{ mm}$ and thicker, the anvil requires only a straight thru hole to accommodate the stud. For sheets less than $.060'' / 1.51 \text{ mm}$, the hole requires a countersink with dimension A at the top to provide for metal flow around the shank of the stud.

Tooling for sheet thicknesses less than $.060'' / 1.51 \text{ mm}$ with #2 thru #10 / M3 thru M5 thread sizes and less than $.093'' / 2.4 \text{ mm}$ for $1/4'' / \text{M6}$ threads.



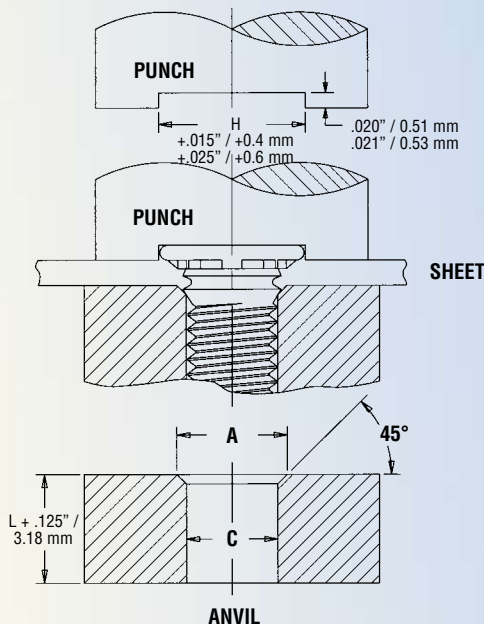
Tooling for sheet thicknesses $.060'' / 1.51 \text{ mm}$ and greater with #2 thru #10 / M3 thru M5 thread sizes and greater for $1/4''$ and $5/16'' / \text{M6}$ and M8 threads.



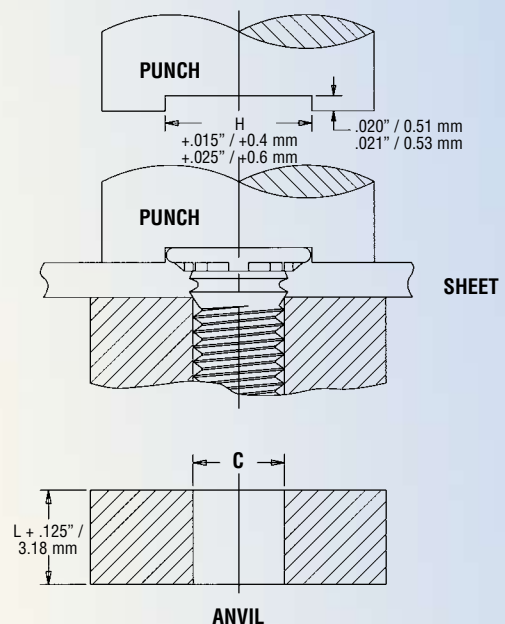
Type TFH/TFHS (Non-Flush) Studs

The illustrations below indicate suggested tooling for type TFH studs. Note that for sheets $.030'' / 0.76 \text{ mm}$ and thicker, the anvil requires only a straight thru hole to accommodate the stud. For sheets less than $.030'' / 0.76 \text{ mm}$ down to $.020'' / 0.51 \text{ mm}$, the hole requires a countersink with dimension A at the top to provide for metal flow around the shank of the stud. The standard punch design below provides clearance for the stud head and reduces chances of over squeezing the head of the stud into the sheet metal. When installed, the stud head is not flush but will protrude approximately $.025'' / 0.64 \text{ mm}$.

Tooling for sheet thicknesses less than $.030'' / 0.76 \text{ mm}$ down to $.020'' / 0.51 \text{ mm}$.



Tooling for sheet thicknesses $.030'' / 0.76 \text{ mm}$ and greater.

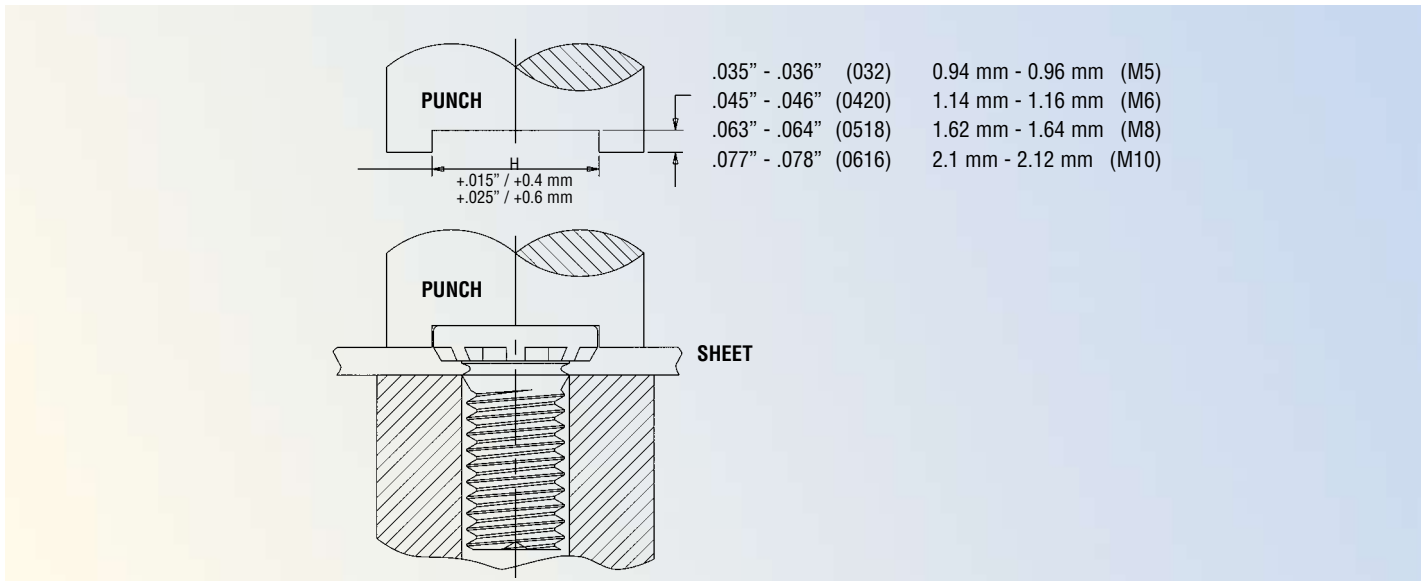


INSTALLATION (Continued)

Type HFH/HFHB/HFHS Studs

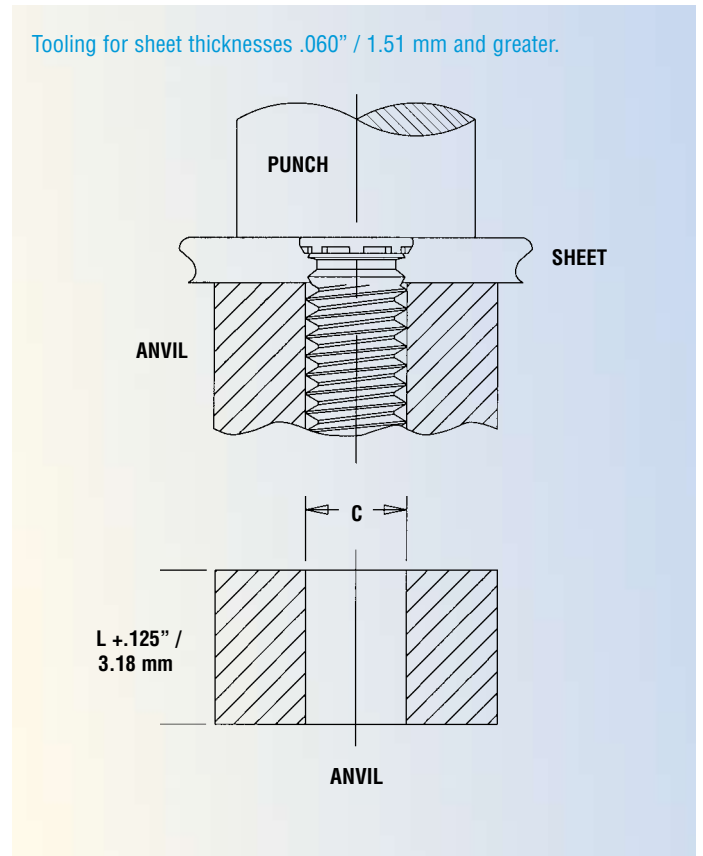
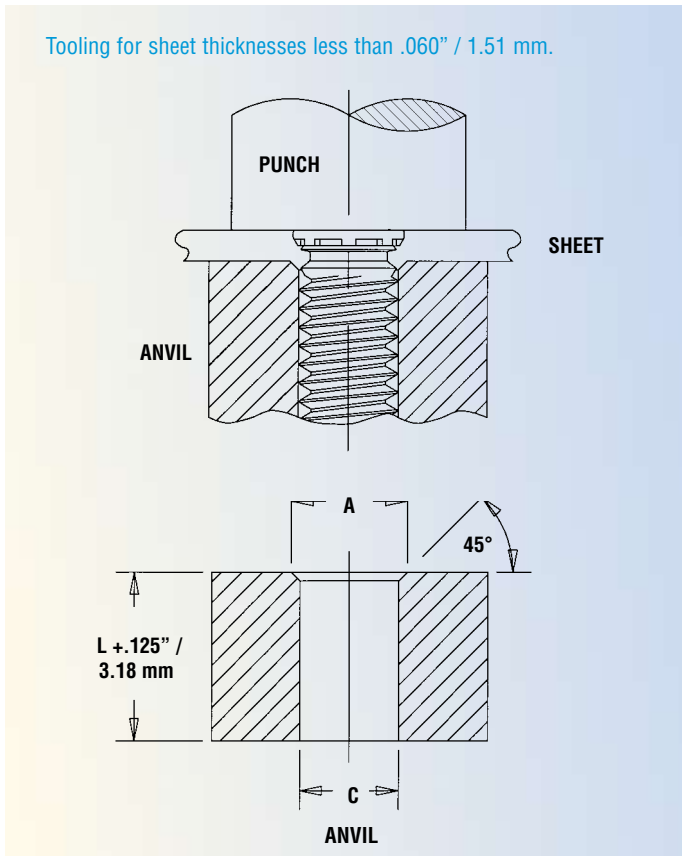
Apply squeezing force on the punch sufficient only to embed the ribs on the head of the stud into the sheet.

The illustration below indicates suggested tooling for Type HFH self-clinching studs. The standard punch design provides clearance for the stud head and reduces chances of over squeezing.



Type FHL/FHLS Studs

The illustrations below indicate suggested tooling for applying installation forces. Note that for sheets .060" / 1.51 mm and thicker, the anvil requires only a straight thru hole to accommodate the stud. For sheets less than .060" / 1.51 mm, the hole requires a countersink with dimension A at the top to provide for metal flow around the shank of the stud.



INSTALLATION (Continued)

Type FH4 and FHP Self-Clinching Studs for Stainless Steel

For Type FH4 studs, a special anvil with a raised ring is required to create a proper installation. The raised ring acts as a second displacer of the stainless sheet material, thereby ensuring that the annular groove is filled. We do not recommend the use of FH4 studs in sheet thicknesses greater than .095" / 2.41 mm.

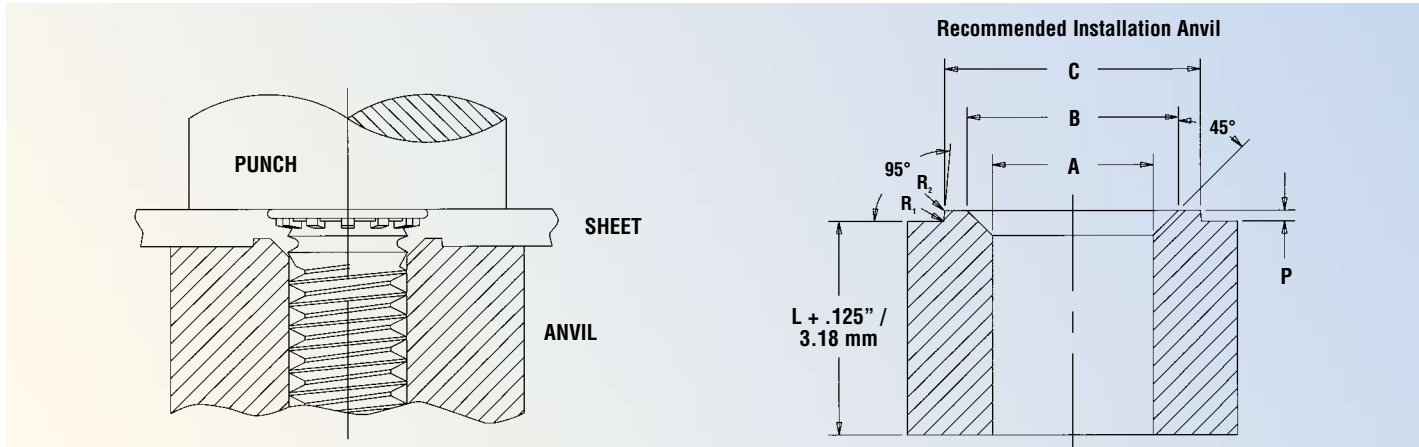
The special anvils are available from PEM stock or can be machined from suitable tool steel. A hardness of Rc55 minimum is required to provide long anvil life. We recommend measuring the "P" dimension every 5000 installations to ensure that the anvil remains within specification.

All dimensions are in inches.

UNIFIED	Thread Code	Anvil Dimensions						Anvil Part No.
		A +.003 -.000	B ±.002	C ±.002	P ±.001	R ₁ Max.	R ₂ Max.	
	440	.113	.144	.174	.010	.003	.005	8001645
	632	.140	.170	.200	.010	.003	.005	8001644
	832	.166	.202	.236	.010	.003	.005	8001643
	032	.191	.235	.275	.010	.003	.005	8001642
	0420	.252	.324	.360	.020	.003	.005	8002535

All dimensions are in millimeters.

METRIC	Thread Code	Anvil Dimensions						Anvil Part No.
		A +0.08	B ±0.05	C ±0.05	P ±0.025	R ₁ Max.	R ₂ Max.	
	M3	3.05	3.81	4.57	0.25	0.08	0.13	8001678
	M4	4.04	4.95	5.82	0.25	0.08	0.13	8001677
	M5	5.08	6.15	7.16	0.25	0.08	0.13	8001676
	M6	6.05	7.87	8.79	0.51	0.08	0.13	8002536



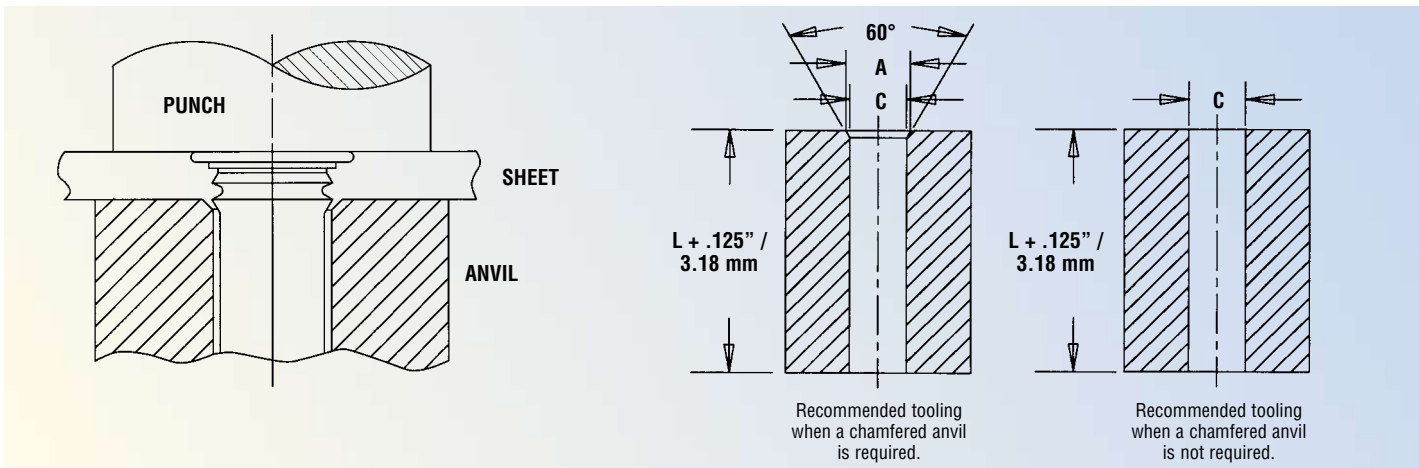
Type TPS Flush-Mounted, Self-Clinching Pilot Pins

All dimensions are in inches.

UNIFIED	Pin Dia. Code	Test Sheet Thickness	Anvil Dimensions	
			A ±.002	C ±.002
	125	.040 - .060	.160	.130
		Over .060	(1)	
	187	.040 - .065	.220	.192
		Over .065	(1)	
	250	.040 - .075	.285	.255
		Over .075	(1)	

All dimensions are in millimeters.

METRIC	Pin Dia. Code	Test Sheet Thickness	Anvil Dimensions	
			A ±0.05	C ±0.05
	3mm	1 - 1.7	3.88	3.11
		Over 1.7	(1)	
	4mm	1 - 1.7	4.88	4.11
		Over 1.7	(1)	
	5mm	1 - 1.8	5.89	5.13
		Over 1.8	(1)	
	6mm	1 - 1.9	6.89	6.12
		Over 1.9	(1)	



(1) Chamfered anvil not required.