

Self-clinching Pilot Pins

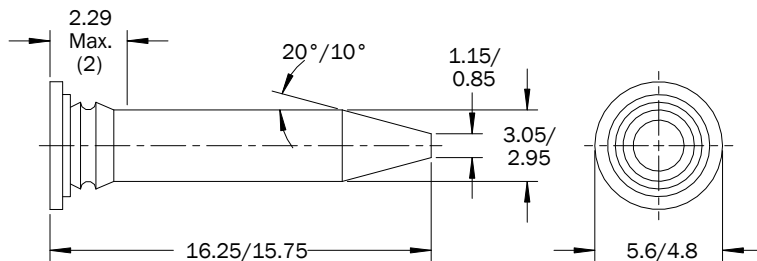
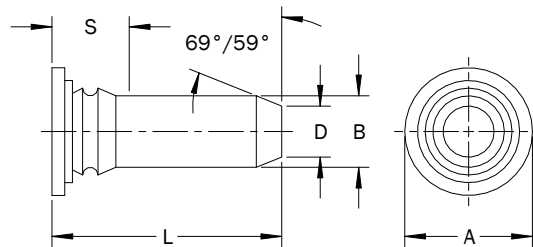
FEATURES

- Satisfy a wide variety of alignment, location and pivot applications.
- Self-clinching design installs easily and permanently with a flush appearance on the back of thin panels and sheets.
- Available in an assortment of RoHS-compliant materials and finishes.



PART DESCRIPTION EXAMPLE

GTSS — .125 — .375 — P
T **T** **T** **T**
 Material Code Pin Size Length Finish Code



(1) All dimensions in millimeters
 (2) Pin diameter may exceed max. in this region

The ATCA-style pilot pin meets the ATCA PICMG 3.0 specification and features a 15° tapered point to engage easily with the mating hole. To order use part description:

GTSS-M3-16-P-ATCA

GENERAL

All dimensions in inches

INCH	Pin Size	Sheet			B ±.002	D ±.006	A ±.015	S Max. (1)
		Minimum Thickness	Hole Size +.003 -.000	Minimum Distance Hole Center to Edge				
	.125	.040	.144	.250	.125	.090	.205	.090
	.187	.040	.205	.280	.187	.132	.270	.090
	.250	.040	.272	.310	.250	.177	.335	.090

All dimensions in millimeters

METRIC	Pin Size	Sheet			B ±0.05	D ±0.15	A ±0.4	S Max. (1)
		Minimum Thickness	Hole Size +0.08 -0.00	Minimum Distance Hole Center to Edge				
	M3	1.00	3.50	6.4	3.00	2.11	5.20	2.29
	M4	1.00	4.50	7.1	4.00	2.82	6.12	2.29
	M5	1.00	5.50	7.6	5.00	3.53	7.19	2.29
	M6	1.00	6.50	7.9	6.00	4.24	8.13	2.29

(1) Pin diameter may exceed max. in this region.

MATERIAL AND FINISH

Material Code	Material Description	Finish Code	Finish Description	For Use in Sheet Hardness	
				HRB 70 Max.	HRB 92 Max.
ST	Heat Treated Carbon Steel	Z	Zinc (SCI) with Type III clear chromate per ASTM B 633	•	
SS	300-Series Stainless Steel	P	Passivated and/or tested per ASTM A 967	•	
S4	Heat Treated 400-Series Stainless Steel	P	Passivated and/or tested per ASTM A 967		•

LENGTH

All dimensions in inches

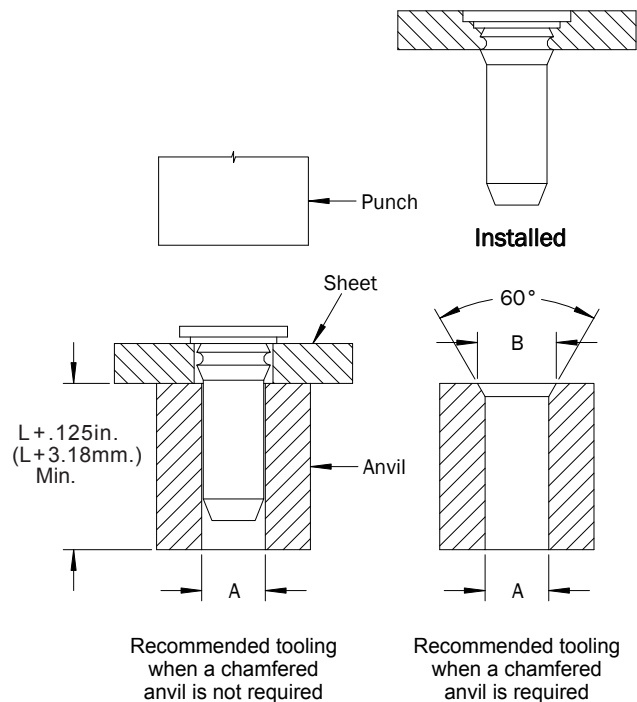
INCH	Pin Size	L (Length) ±.015				
	.125	.375	.500	.625	.750	–
	.187	.375	.500	.625	.750	1.000
	.250	–	.500	.625	.750	1.000

All dimensions in millimeters

METRIC	Pin Size	L (Length) ±0.40				
	M3	8	10	12	16	–
	M4	8	10	12	16	–
	M5	–	10	12	16	20
	M6	–	–	12	16	20

INSTALLATION

1. Punch or drill hole in sheet. Do not deburr edges.
2. Insert pilot pin through hole in sheet and into the anvil as shown.
3. Squeeze the sheet and pilot pin head between parallel punch and anvil surfaces. Use only enough pressure to seat the pin head flush with the sheet. Punch and anvil may be ordered using the PENCOM part numbers shown in the tables on the next page, or made from hardened tool steel.
4. A chamfered anvil is required for sheets .060in (1.7mm) thick or less only.



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INSTALLATION (CONTINUED)

All dimensions in inches

INCH	Pin Size	Sheet Thickness	Anvil Dimensions		Anvil Part Number	Punch Part Number
			A ±.002	B ±.002		
	.125	.040-.060	.130	.160	TL1346	TL1287
		Over .060		(1)	TL1347	
	.187	.040-.065	.192	.220	TL1348	TL1287
		Over .065		(1)	TL1349	
	.250	.040-.075	.255	.285	TL1350	TL1287
		Over .075		(1)	TL1351	

All dimensions in millimeters

METRIC	Pin Size	Sheet Thickness	Anvil Dimensions		Anvil Part Number	Punch Part Number
			A ±0.05	B ±0.05		
	M3	1.0-1.7	3.11	3.88	TL1355	TL1287
		Over 1.7		(1)	TL1356	
	M4	1.0-1.7	4.11	4.88	TL1357	TL1287
		Over 1.7		(1)	TL1358	
	M5	1.0-1.8	5.13	5.89	TL1359	TL1287
		Over 1.8		(1)	TL1360	
	M6	1.0-1.9	6.12	6.89	TL1361	TL1287
		Over 1.9		(1)	TL1362	

(1) A chamfered anvil is not required.

PERFORMANCE

INCH (MATERIAL CODES - ST & SS)	Pin Size	Test Sheet		Installation (lbs)	Push-out (lbs)
		Material	Hardness HRB		
	.125	Aluminum	20	4500	150
		Cold-rolled Steel	62	6500	250
	.187	Aluminum	18	6500	230
		Cold-rolled Steel	60	8000	400
	.250	Aluminum	18	7000	270
		Cold-rolled Steel	62	9000	500

PERFORMANCE (CONTINUED)

METRIC (MATERIAL CODES - ST & SS)	Pin Size	Test Sheet		Installation (kN)	Push-out (kN)
		Material	Hardness HRB		
M3		Aluminum	22	12.0	0.56
		Cold-rolled Steel	65	22.0	0.98
M4		Aluminum	19	22.0	0.89
		Cold-rolled Steel	66	26.4	1.54
M5		Aluminum	18	28.6	1.01
		Cold-rolled Steel	60	35.2	1.76
M6		Aluminum	18	30.8	1.10
		Cold-rolled Steel	62	39.6	2.10

INCH (MATERIAL CODE - S4)	Pin Size	Test Sheet Material	Installation (lbs)	Push-out (lbs)
	.125	300-Series Stainless Steel	8000	350
	.187	300-Series Stainless Steel	12000	570
	.250	300-Series Stainless Steel	14000	650

METRIC (MATERIAL CODE - S4)	Pin Size	Test Sheet Material	Installation (kN)	Push-out (N)
	M3	300-Series Stainless Steel	35.0	1556
	M4	300-Series Stainless Steel	45.0	2335
	M5	300-Series Stainless Steel	54.0	2535
	M6	300-Series Stainless Steel	60.0	2891

- (1) Performance data are reference averages based on commonly reported industry values when all installation specifications are strictly followed. Variations such as sheet material type, hardness and thickness; hole diameter; method of hole manufacture; size and location of hole burr if any; and amount of installation load will affect the data. PENCOM strongly encourages testing in the application.