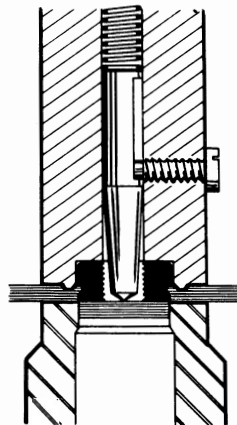
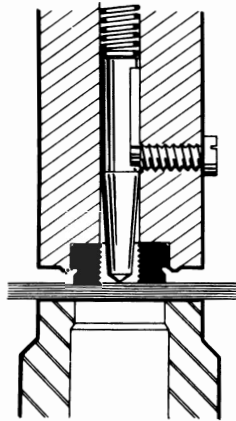
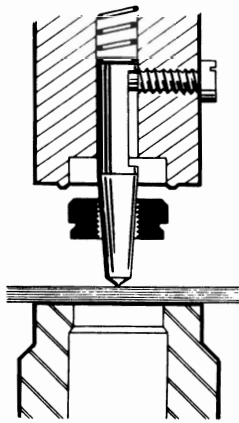


# PRESTINCERT MECHANICAL FASTENINGS

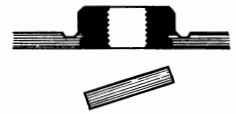
COMPONENTS PUNCHED DIRECTLY INTO SHEET METAL — NO FIXING HOLES REQUIRED



## Prestincert Steel Bushes *PUNCH* their *OWN* Holes

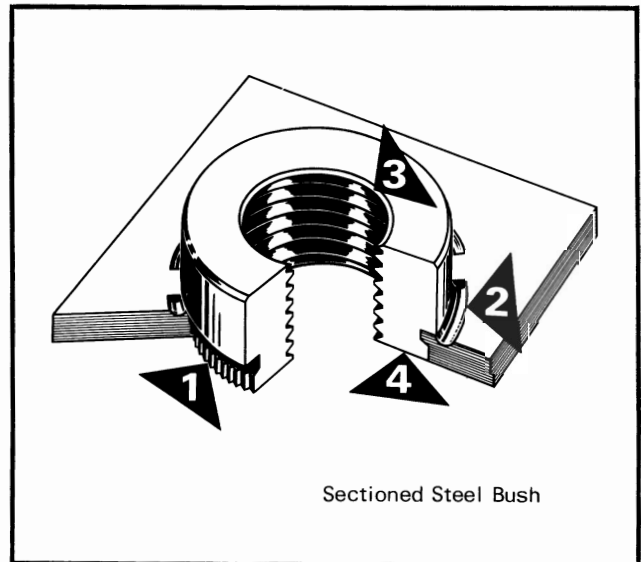
INSERTED AND FIXED  
IN ONE OPERATION

NO FIXING HOLES  
REQUIRED



### STRONG TWO-WAY FIXTURE —

- 1) Knurled to prevent rotation.
- 2) Swaged for maximum strength  
PLUS
- 3) Deep thread security — over the  
full component length.
- 4) Commercially flush finish.



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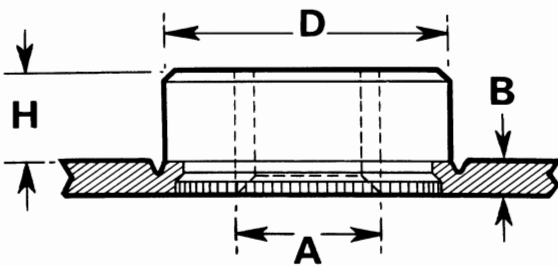
# PRESTINCERT STANDARD STEEL BUSHES

PUNCHED DIRECTLY INTO SHEET STEEL — NO FIXING HOLES REQUIRED

## Six basic Shapes

Suitable for use with steel and aluminium sheet of tensile strength up to 30 tons per square inch (47 Kp/mm<sup>2</sup>) 20-14 swg (1mm-2mm).

\* Refer to Prestincert Ltd. for minimum manufacturing quantity.  
CP Cadmium & Passivated Finish.



Bush Shape	Height 'H'	Diameter 'D'	Bush Shape	Height 'H'	Diameter 'D'
01	0.064" (1,63mm)	0.250" (6,35mm)	11	0.157" (3,99mm)	0.437" (11,10mm)
02	0.079" (2,01mm)	0.312" (7,94mm)	12	0.177" (4,50mm)	0.562" (14,28mm)
03	0.110" (2,80mm)	0.375" (9,53mm)	13	0.203" (5,16mm)	0.625" (15,88mm)

## BA THREADS

The first TWO digits of the part number indicate the Bush Shape (See Table above)

Thread X Sheet SWG	Sheet Thickness Inches (mm)	Finish	Part Number	Single Point Insertion Tool Number	Thread X Sheet SWG	Sheet Thickness Inches (mm)	Finish	Part Number	Single Point Insertion Tool Number
6BA x 20	0.036" (0,91)	CP	01-20-006-31	C7001/01A	2 BA x 20	0.036" (0,91)	CP	03-20-002-31	C7003/03B
18	0.048" (1,2)	CP	01-18-006-31	C7001/01A	18	0.048" (1,2)	CP	03-18-002-31	C7003/03B
16	0.064" (1,6)	CP	01-16-006-31	C7001/01A	16	0.064" (1,6)	CP	03-16-002-31	C7003/03B
					14	0.080" (2,03)	Clean	11-14-002-30	C7011/11B
4 BA x 20	0.036" (0,91)	CP	02-20-004-31	C7002/02B	0 BA x 20	0.036" (0,91)	Clean	11-20-000-30*	C7011/11C
18	0.048" (1,2)	CP	02-18-004-31	C7002/02B	18	0.048" (1,2)	Clean	11-18-000-30*	C7011/11C
16	0.064" (1,6)	CP	02-16-004-31	C7002/02B	16	0.064" (1,6)	Clean	11-16-000-30*	C7011/11C
14	0.080" (2,03)	CP	03-14-004-31	C7003/03E	14	0.080" (2,03)	Clean	12-14-000-30*	C7012/12C

## BSW THREADS

The first TWO digits of the part number indicate the Bush Shape (See Table above)

3/16" x 20	0.036" (0,91)	CP	03-20-188-11	C7003/03B	3/16" x 20	0.036" (0,91)	Clean	12-20-313-10	C7014/12D
BSW 18	0.048" (1,2)	CP	03-18-188-11	C7003/03B	BSW 18	0.048" (1,2)	Clean	12-18-313-10	C7012/12D
16	0.064" (1,6)	CP	02-16-188-11	C7003/03B	16	0.064" (1,6)	Clean	11-16-313-10	C7012/12D
14	0.080" (2,03)	Clean	11-14-188-10*	C7011/11B	14	0.080" (2,03)	Clean	13-14-313-10	C7013/13C
1/4" x 20	0.036" (0,91)	Clean	11-20-250-10	C7011/11C	3/8" x 20	0.036" (0,91)	Clean	13-20-375-10*	C7015/13D
BSW 18	0.048" (1,2)	Clean	11-18-250-10	C7011/11C	BSW 18	0.048" (1,2)	Clean	13-18-375-10	C7013/13D
16	0.064" (1,6)	Clean	11-16-250-10	C7011/11C	16	0.064" (1,6)	Clean	13-16-375-10	C7013/13D
14	0.080" (2,03)	Clean	12-14-250-10	C7012/12C	14	0.080" (2,03)	Clean	13-14-375-10	C7013/13D

## BSF THREADS

The first TWO digits of the part number indicate the Bush Shape (See Table above)

3/16" x 20	0.036" (0,91)	CP	03-20-188-21*	C7003/03B	3/16" x 20	0.036" (0,91)	Clean	12-20-313-20	C7014/12D
BSF 18	0.048" (1,2)	CP	03-18-188-21*	C7003/03B	BSF 18	0.048" (1,2)	Clean	12-18-313-20	C7012/12D
16	0.064" (1,6)	CP	03-16-188-21*	C7003/03B	16	0.064" (1,6)	Clean	12-16-313-20	C7012/12D
14	0.080" (2,03)	Clean	11-14-188-20*	C7011/11B	14	0.080" (2,03)	Clean	13-14-313-20	C7013/13C
1/4" x 20	0.036" (0,91)	Clean	11-20-250-20	C7011/11C	3/8" x 20	0.036" (0,91)	Clean	13-20-375-20*	C7015/13D
BSF 18	0.048" (1,2)	Clean	11-18-250-20	C7011/11C	BSF 18	0.048" (1,2)	Clean	13-18-375-20	C7013/13D
16	0.064" (1,6)	Clean	11-16-250-20	C7011/11C	16	0.064" (1,6)	Clean	13-16-375-20	C7013/13D
14	0.080" (2,03)	Clean	12-14-250-20	C7012/12C	14	0.080" (2,03)	Clean	13-14-375-20	C7013/13D



**PRESTINCERT**  
LIMITED  
540 GREAT CAMBRIDGE ROAD  
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# PRESTINCERT STANDARD STEEL BUSHES

PUNCHED DIRECTLY INTO SHEET STEEL — NO FIXING HOLES REQUIRED

Suitable for use with steel and aluminium sheet of tensile strength up to 30 tons per square inch (47 Kp/mm<sup>2</sup>) 20-14 swg (1mm-2mm). Metric & Unified Bushes have coding ring on external diameter.

\*Refer to Prestincert Limited for minimum manufacturing quantity.

CP Cadmium & Passivated Finish.

<b>UNF THREADS</b>						The first two digits of the part number indicate the Bush shape (see Table Page 3)					
Thread X Sheet SWG	Sheet Thickness Inches (mm)	Finish	Part Number	Single Point Insertion Tool Number		Thread X Sheet SWG	Sheet Thickness Inches (mm)	Finish	Part Number	Single Point Insertion Tool Number	
10-32 x 20 UNF	0.036" (0,91)	CP	03-20-010-51	C7003/03D		5/16" x 20 UNF	0.036" (0,91)	Clean	12-20-313-50	C7014/12D	
	0.048" (1,2)	CP	03-18-010-51	C7003/03D			0.048" (1,2)	Clean	12-18-313-50	C7012/12D	
	0.064" (1,6)	CP	03-16-010-51	C7003/03D			0.064" (1,6)	Clean	12-16-313-50	C7012/12D	
	0.080" (2,03)	Clean	11-14-010-50*	C7011/11B			0.080" (2,03)	Clean	13-14-313-50	C7013/13C	
1/4" x 20 UNF	0.036" (0,91)	Clean	11-20-250-50	C7011/11C		3/8" x 20 UNF	0.036" (0,91)	Clean	13-20-375-50*	C7015/13D	
	0.048" (1,2)	Clean	11-18-250-50	C7011/11C			0.048" (1,2)	Clean	13-18-375-50	C7013/13D	
	0.064" (1,6)	Clean	11-16-250-50	C7011/11C			0.064" (1,6)	Clean	13-16-375-50	C7013/13D	
	0.080" (2,03)	Clean	12-14-250-50	C7012/12C			0.080" (2,03)	Clean	13-14-375-50	C7013/13D	
<b>UNC THREADS</b>						The first two digits of the part number indicate the Bush shape (see Table Page 3)					
4-40 x 20 UNC	0.036" (0,91)	CP	01-20-004-61	C7001/01A		1/4" x 20 UNC	0.036" (0,91)	Clean	11-20-250-60	C7011/11C	
	0.048" (1,2)	CP	01-18-004-61	C7001/01A			0.048" (1,2)	Clean	11-18-250-60	C7011/11C	
	0.064" (1,6)	CP	01-16-004-61	C7001/01A			0.064" (1,6)	Clean	11-16-250-60	C7011/11C	
							0.080" (2,03)	Clean	12-14-250-60	C7012/12C	
6-32 x 20 UNC	0.036" (0,91)	CP	02-20-006-61	C7002/02B		5/16" x 20 UNC	0.036" (0,91)	Clean	12-20-313-60	C7014/12D	
	0.048" (1,2)	CP	02-18-006-61	C7002/02B			0.048" (1,2)	Clean	12-18-313-60	C7012/12D	
	0.064" (1,6)	CP	02-16-006-61	C7002/02B			0.064" (1,6)	Clean	12-16-313-60	C7012/12D	
	0.080" (2,03)	CP	03-14-006-61*	C7003/03E			0.080" (2,03)	Clean	13-14-313-60	C7013/13C	
10-24 x 20 UNC	0.036" (0,91)	CP	03-20-010-61*	C7003/03B		3/8" x 20 UNC	0.036" (0,91)	Clean	13-20-375-60*	C7015/13D	
	0.048" (1,2)	CP	03-18-010-61*	C7003/03B			0.048" (1,2)	Clean	13-18-375-60	C7013/13D	
	0.064" (1,6)	CP	03-16-010-61*	C7003/03B			0.064" (1,6)	Clean	13-16-375-60	C7013/13D	
	0.080" (2,03)	Clean	11-14-010-60*	C7011/11B			0.080" (2,03)	Clean	13-14-375-60	C7013/13D	
<b>METRIC THREADS</b>											
Thread mm	Sheet Thickness	Finish	Bush Shape	Part Number	Single Point Insertion Tool Number	Thread mm	Sheet Thickness	Finish	Bush Shape	Part Number	Single Point Insertion Tool Number
M2,5	1,0mm	CP	01	M25 10	C7001/01A	M7	1,0mm	Clean	12	M70 10*	C7014/12D
M2,5	1,5mm	CP	01	M25 15	C7001/01A	M7	1,5mm	Clean	12	M70 15*	C7012/12D
M2,5	2,0mm	CP	02	M25 20*	C7002/2,5	M7	2,0mm	Clean	12	M70 20*	C7012/12D
M3	1,0mm	CP	02	M30 10	C7002/02A	M8	1,0mm	Clean	12	M80 10	C7014/12D
M3	1,5mm	CP	02	M30 15	C7002/02A	M8	1,5mm	Clean	12	M80 15	C7012/12D
M3	2,0mm	CP	03	M30 20*	C7003/03C	M8	2,0mm	Clean	13	M80 20	C7013/13C
M4	1,0mm	CP	03	M40 10	C7003/03A	M9	1,0mm	Clean	13	M90 10*	C7015/13D
M4	1,5mm	CP	03	M40 15	C7003/03A	M9	1,5mm	Clean	13	M90 15*	C7013/13D
M4	2,0mm	Clean	11	M40 20	C7011/11B	M9	2,0mm	Clean	13	M90 20*	C7013/13D
M5	1,0mm	Clean	11	M50 10	C7011/11B	M10	1,0mm	Clean	13	M100 10*	C7015/13D
M5	1,5mm	Clean	11	M50 15	C7011/11B	M10	1,5mm	Clean	13	M100 15*	C7013/13D
M5	2,0mm	Clean	12	M50 20	C7012/12B	M10	2,0mm	Clean	13	M100 20*	C7013/13D
M6	1,0mm	Clean	11	M60 10	C7011/11C	(Metric threaded bushes for British sheet manufactured upon request)					
M6	1,5mm	Clean	11	M60 15	C7011/11C						
M6	2,0mm	Clean	12	M60 20	C7012/12C						



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# PRESTIN CERT STANDARD STEEL BUSHES

PUNCHED DIRECTLY INTO SHEET STEEL — NO FIXING HOLES REQUIRED

**TEST RESULTS** using standard steel bushes and steel sheet of 25-30 tons per square inch tensile strength (B.S.1449)

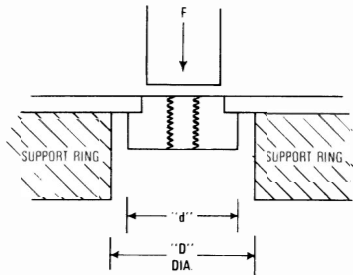
BUSH SHAPE X SWG	MINIMUM INSERTION FORCE	PUSH-OUT FORCE (F)	TORQUE (T) REQUIRED TO TURN BUSH IN SHEET	BUSH SHAPE X SWG	MINIMUM INSERTION FORCE	PUSH-OUT FORCE (F)	TORQUE (T) REQUIRED TO TURN BUSH IN SHEET
01 x 20 SWG	3½ tons	224 lbs.	65 lbs. ins.	11 x 20 SWG	5 tons	303 lbs.	156 lbs. ins.
01 x 18 SWG	3½ tons	285 lbs.	82 lbs. ins.	11 x 18 SWG	5 tons	333 lbs.	204 lbs. ins.
01 x 16 SWG	4 tons	308 lbs.	106 lbs. ins.	11 x 16 SWG	5½ tons	467 lbs.	293 lbs. ins.
				11 x 14 SWG	5 tons	574 lbs.	325 lbs. ins.
02 x 20 SWG	4 tons	246 lbs.	76 lbs. ins.	12 x 20 SWG	6 tons	285 lbs.	276 lbs. ins.
02 x 18 SWG	4 tons	294 lbs.	137 lbs. ins.	12 x 18 SWG	7 tons	468 lbs.	306 lbs. ins.
02 x 16 SWG	4½ tons	320 lbs.	188 lbs. ins.	12 x 16 SWG	7 tons	579 lbs.	432 lbs. ins.
				12 x 14 SWG	6 tons	764 lbs.	546 lbs. ins.
03 x 20 SWG	4½ tons	288 lbs.	120 lbs. ins.	13 x 20 SWG	7 tons	280 lbs.	300 lbs. ins.
03 x 18 SWG	4½ tons	327 lbs.	187 lbs. ins.	13 x 18 SWG	8 tons	427 lbs.	312 lbs. ins.
03 x 16 SWG	5 tons	341 lbs.	251 lbs. ins.	13 x 16 SWG	9 tons	495 lbs.	426 lbs. ins.
				13 x 14 SWG	8 tons	682 lbs.	540 lbs. ins.

**INSERTION FORCE**

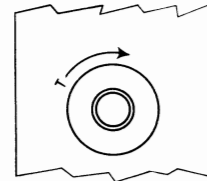
IN PRODUCTION WE WOULD RECOMMEND AN INCREASE OF 10-15% ON THE MINIMUM FIGURES SHOWN.

**WITHDRAWAL AND TORQUE**

OWING TO TOLERANCE OF SHEET THICKNESS, ETC., ONLY AVERAGE FIGURES CAN BE GIVEN.



**TORSIONAL STRENGTH**



"D" = (2 x sheet thickness) + 'd'

**TEST RESULTS** using standard steel bushes and steel sheet of 40-47 Kp/mm<sup>2</sup> tensile strength.

BUSH SHAPE SHEET X THICKNESS	MINIMUM INSERTION FORCE	PUSH-OUT FORCE (F)	TORQUE (T) REQUIRED TO TURN BUSH IN SHEET	BUSH SHAPE SHEET X THICKNESS	MINIMUM INSERTION FORCE	PUSH-OUT FORCE (F)	TORQUE (T) REQUIRED TO TURN BUSH IN SHEET
01 x 1,00mm	3556 kg	102 kg	0.755 kpm	11 x 1,00mm	5080 kg	138 kg	1.80 kpm
01 x 1,50mm	4064 kg	140 kg	1.244 kpm	11 x 1,50mm	5080 kg	212 kg	2.49 kpm
				11 x 2,00mm	4572 kg	261 kg	3.37 kpm
02 x 1,00mm	4064 kg	112 kg	0.865 kpm	12 x 1,00mm	6096 kg	129 kg	3.29 kpm
02 x 1,50mm	4572 kg	145 kg	2.176 kpm	12 x 1,50mm	7112 kg	263 kg	4.98 kpm
02 x 2,00mm	4600 kg	155 kg	2.400 kpm	12 x 2,00 mm	6096 kg	347 kg	6.29 kpm
03 x 1,00mm	4572 kg	131 kg	1.382 kpm	13 x 1,00mm	7112 kg	127 kg	3.46 kpm
03 x 1,50mm	5080 kg	155 kg	2.764 kpm	13 x 1,50mm	9144 kg	225 kg	4.90 kpm
03 x 2,00mm	5080 kg	167 kg	3.290 kpm	13 x 2,00mm	8128 kg	310 kg	6.22 kpm



**PRESTIN CERT LIMITED**  
540 GREAT CAMBRIDGE ROAD  
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# PRESTINCERT TYPICAL TOOLING FOR STEEL BUSHES

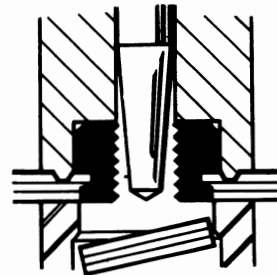
COMPONENTS PUNCHED DIRECTLY INTO SHEET STEEL — NO FIXING HOLES REQUIRED

## SIMPLE INSERTION TOOLS

for 'DOWNWARD' Bush Insertion.

Normally used on manual presses

See Page 6

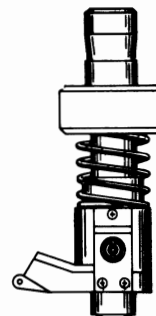


## AUTOMATIC INSERTION SYSTEM

for SPEEDY 'DOWNWARD' Bush Insertion.

Normally used on power presses

See Page 12



## PRESTINCERT—REDMAN UNIT TOOLING

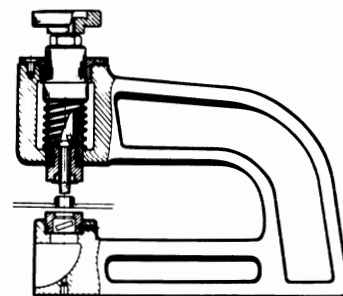
Pre-aligned for use on Brake Presses and other types of presses.

PR1 for 'DOWNWARD' Bush Insertion

PR2 for 'UPWARD' Bush Insertion

PR3 for AUTOMATIC Bush Insertion

See Page 10



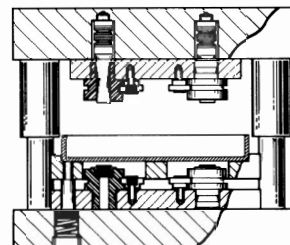
## MULTI-INSERTION TOOLING

Manufactured to customer's requirements

for either 'DOWNWARD' or 'UPWARD' Bush Insertion.

Normally used on manual or power presses

See Page 9

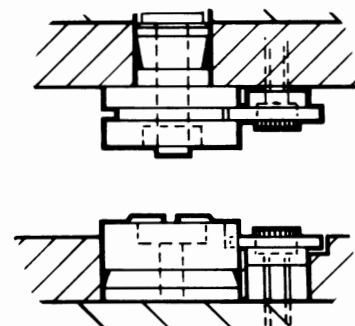


## TOOLING INSERTS

for incorporation into die sets, tool holders.

Available for either 'DOWNWARD' or 'UPWARD' Bush Insertion

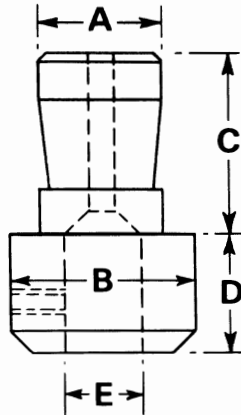
See Page 8



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### TOP ADAPTOR



### INSERTION TOOLS

(comprising Top Ringstake Tool with component retaining pin, and Base Die)

	E DIA.	F DIA.	G	H	I	J DIA.	K	L DIA.
C7001	0.311"	5/8"	3/4"	2 1/8"	29/64"	5/8"	1 3/8"	0.750"
C7002	(7,90 mm)	(15,9 mm)	(19,05 mm)	(54mm)	(11,5 mm)	(15,9 mm)	(34,9 mm)	(19,05 mm)
C7003								
C7011*	0.625"	1 1/8"	7/8"	2 5/8"	—	1 1/8"	1"	1,125"
C7012*	(15,90 mm)	(28,6 mm)	(22,2 mm)	(66,67 mm)		(28,6 mm)	(25,4 mm)	(28,60 mm)
C7013*								
C7014*								
C7015*								

\* Setting piece supplied.

The following supplementary Adaptors and Bolsters can be supplied:

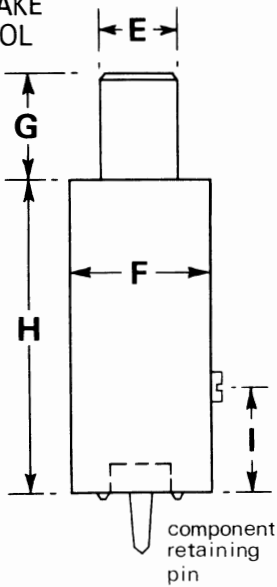
### TOP ADAPTORS

	A DIA.	B DIA.	C	D	E DIA.
T23078/A	1"	1 1/4"	1 1/2"	7/8"	0.314" (7,98mm)
T26861	1"	1 1/2"	1 1/2"	1"	0.627" (15,93mm)
T27338	(16mm)	(31,8mm)	(38,1mm)	(25,4mm)	0.314" (7,98mm)
T27339	(20mm)	(31,8mm)	(38,1mm)	(25,4mm)	0.314" (7,98mm)
T27340	(20mm)	(38,1mm)	(38,1mm)	(25,4mm)	0.627" (15,93mm)
T27341	(25mm)	(38,1mm)	(38,1mm)	(25,4mm)	0.627" (15,93mm)

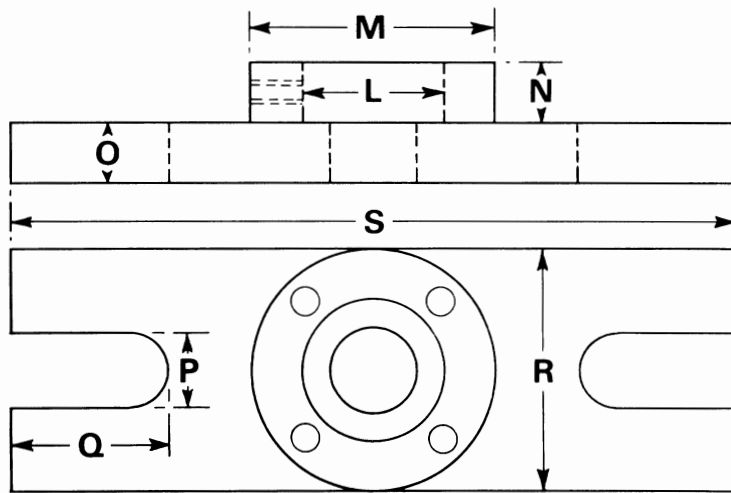
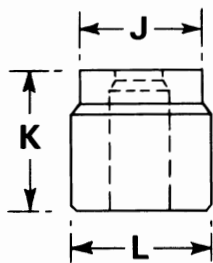
### BASE BOLSTERS

	L DIA.	M DIA.	N	O	P	Q	R	S
T23076/D	0.752"	1 3/4"	1/2"	1/2"	5/8"	1"	2"	6"
	(19,10 mm)	(44,5 mm)	(12,7 mm)	(12,7 mm)	(15,9 mm)	(25,4 mm)	(50,8 mm)	(142,4 mm)
T23076/E	1.128"	2"	1/2"	1/2"	5/8"	1"	2"	6"
	(28,65 mm)	(50,8 mm)	(12,7 mm)	(12,7 mm)	(15,9 mm)	(25,4 mm)	(50,8 mm)	(142,4 mm)

### TOP RING-STAKE TOOL



### BASE DIE



### BASE BOLSTER



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ENFIELD · MIDDLESEX · ENGLAND

