

PUNCHES/DIE BUTTONS & COMPONENTS INDEX

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GLOBAL STANDARD COMPONENTS



Stamping

04/24/15

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PUNCHES/DIE BUTTONS & COMPONENTS INDEX

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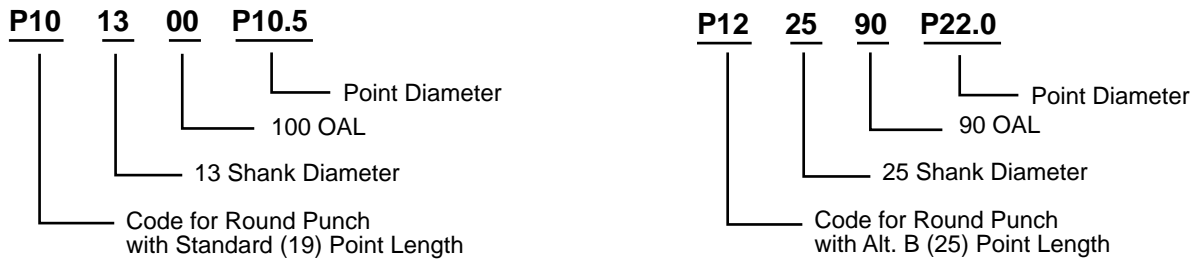
Ordering Examples for Punches and Die Buttons Using NAAMS™ Code Numbers

The NAAMS code number is used to identify various punch and die button configurations. The punch code consists of a letter followed by numbers that indicate the type of product, the point length (straight before radius or SBR), the shank diameter and the overall length. The number is not complete enough to order a punch until the point size(s) is added. A round point is specified by adding "P" to the NAAMS number and next to the "P" the point size desired. In the case of a shape punch, "P" is added for the major dimension and a "W" for the minor dimension with the size desired for each. Die buttons are ordered in a similar manner. Standard ball seat location is 90°. For alternate locations add letters BS and degrees to callout.

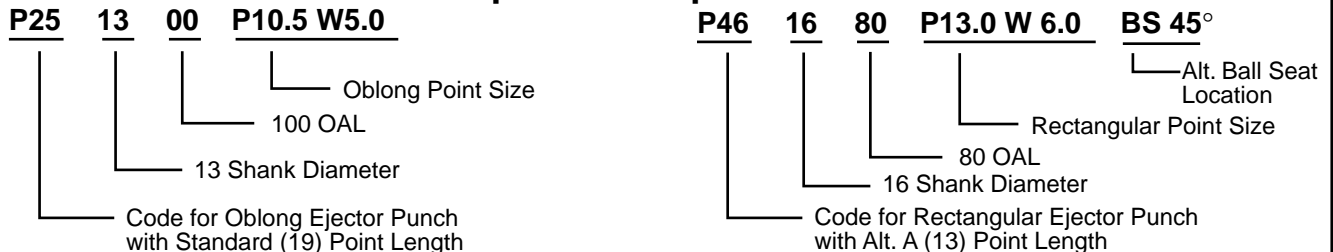
Standard dowel slot location for matrixes is 0°. For alternate location add letters DS and degrees to call out. See examples or refer to page P-10 for drawings of alternate locations.

A

Examples of Round Punches

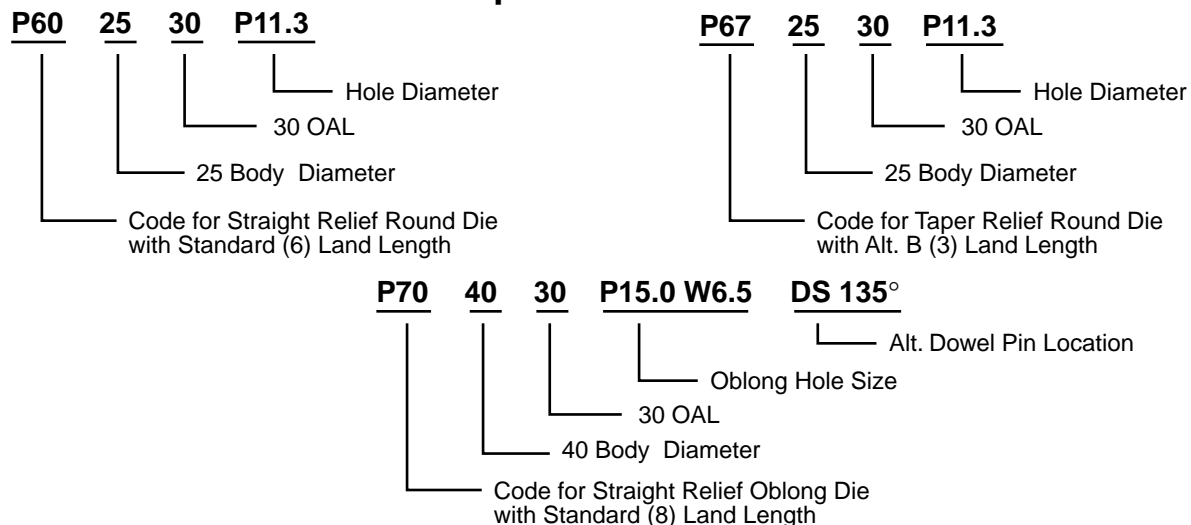


Examples of Shape Punches



A

Examples of Die Buttons



A

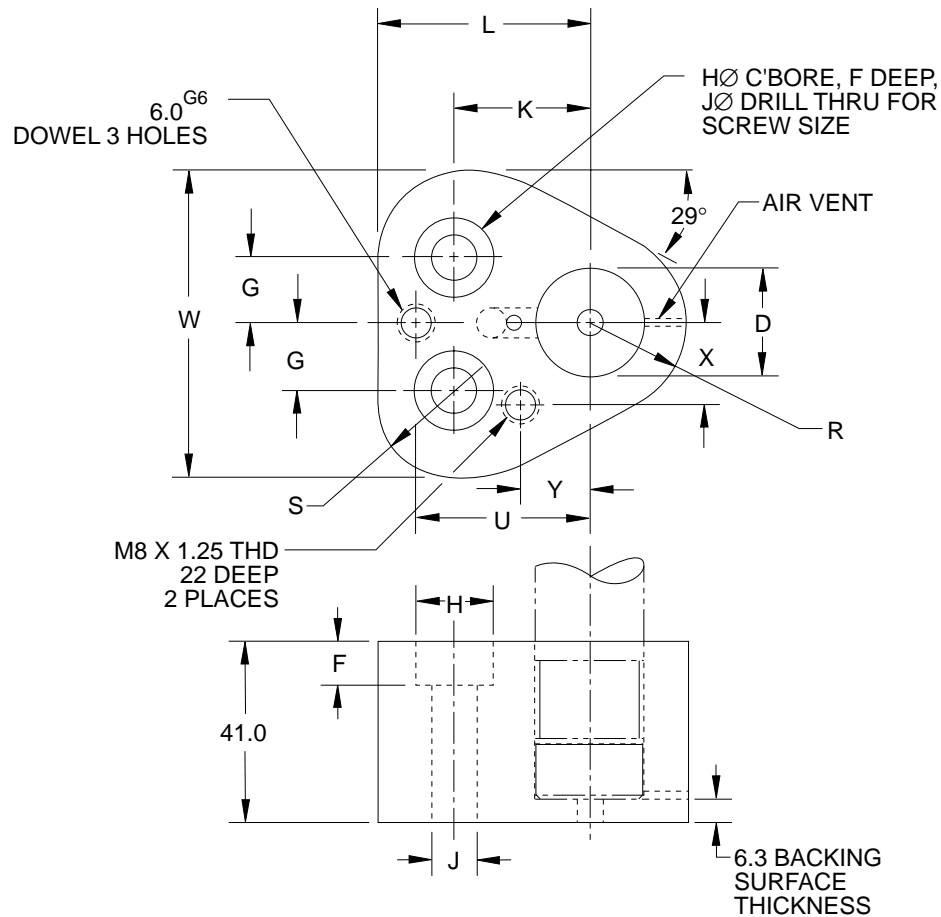
BALL LOCK PUNCH RETAINER

(P01 SERIES)

Stamping

04/22/97

HEAVY DUTY (MAXIMUM ENVELOPE SIZE)



| NAAMS CODE | D Ø H6 | G ±0.13 | F +0.40 -0.00 | H +0.40 -0.00 | J +0.25 -0.00 | K ±0.13 | L +0.8 -0.0 | R +0.25 -0.00 | S +0.25 -0.00 | U ±0.01 | W +0.8 -0.0 | X ±0.01 | Y ±0.01 | SCREW SIZE |
|---------------|-----------|------------|---------------------|---------------------|---------------------|------------|-------------------|---------------------|---------------------|------------|-------------------|------------|------------|---------------|
| P010010 | 10.00 | 11.1 | 9.5 | 14.0 | 9.0 | 19.0 | 35.0 | 9.5 | 12.0 | 26.92 | 43.7 | 9.0 | 7.5 | M8 |
| P010013 | 13.00 | 14.3 | 9.5 | 15.0 | 9.0 | 19.0 | 38.1 | 12.7 | 15.2 | 29.97 | 50.0 | 12.0 | 6.5 | M8 |
| P010016 | 16.00 | 15.9 | 9.5 | 15.0 | 9.0 | 19.0 | 39.7 | 14.3 | 16.8 | 31.75 | 53.2 | 13.5 | 6.0 | M8 |
| P010020 | 20.00 | 17.5 | 11.5 | 18.0 | 11.0 | 19.0 | 42.8 | 17.5 | 20.0 | 33.53 | 59.5 | 16.5 | 5.0 | M10 |
| P010025 | 25.00 | 19.8 | 13.5 | 20.0 | 13.5 | 23.8 | 47.7 | 22.2 | 24.7 | 40.64 | 69.1 | 22.0 | 7.0 | M12 |
| P010032 | 32.00 | 19.8 | 13.5 | 20.0 | 13.5 | 23.8 | 47.7 | 22.2 | 24.7 | 40.64 | 69.1 | 22.0 | 7.0 | M12 |
| P010040 | 40.00 | 24.0 | 13.5 | 20.0 | 13.5 | 27.0 | 51.4 | 26.0 | 28.5 | 43.99 | 76.7 | 26.0 | 10.0 | M12 |

NOTES & SPECIFICATIONS:

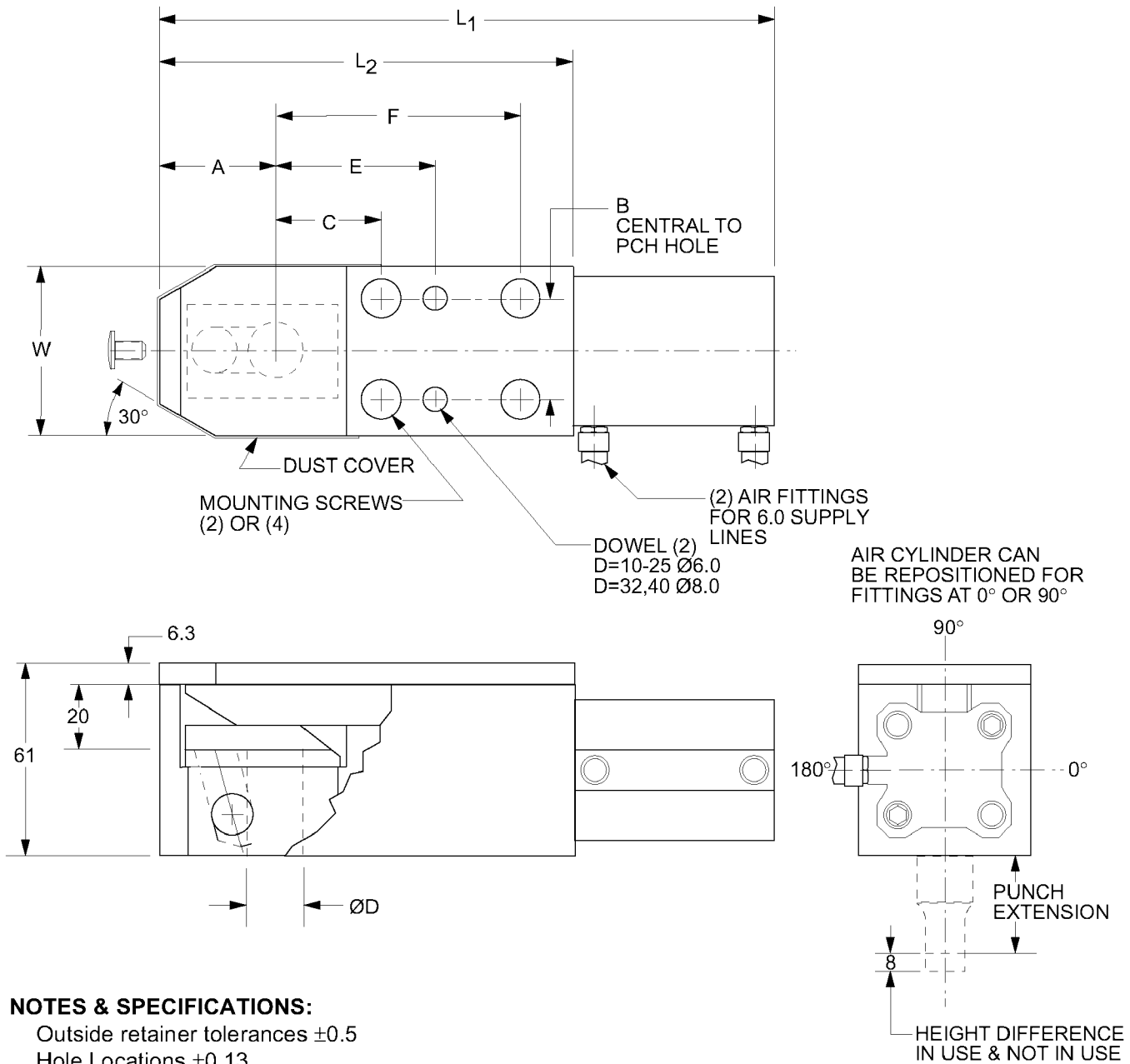
Backing surface must be of hardened steel, plug, plate, or solid.

BALL LOCK PUNCH CHANGE RETAINER

(P01 SERIES)

Stamping

03/14/03



NOTES & SPECIFICATIONS:

- Outside retainer tolerances ± 0.5
- Hole Locations ± 0.13
- Dowel holes ± 0.01 to punch hole

| NAAMS CODE | MOUNTING SCREW | DOWEL | D Ø H6 | W | L ₁ | L ₂ | A | B | C | E | F |
|------------|----------------|--------|-----------|----|----------------|----------------|----|----|----|----|-----|
| P010510 | M8 x 80 | 6 x 30 | 10 | 46 | 172 | 114 | 32 | 30 | 21 | 37 | – |
| P010513 | M10 x 80 | 6 x 30 | 13 | 50 | 183 | 120 | 34 | 30 | 25 | 41 | – |
| P010516 | M10 x 80 | 6 x 30 | 16 | 50 | 183 | 120 | 34 | 30 | 25 | 41 | – |
| P010520 | M10 x 80 | 6 x 30 | 20 | 58 | 204 | 136 | 37 | 38 | 29 | 45 | – |
| P010525 | M10 x 80 | 6 x 30 | 25 | 58 | 204 | 136 | 37 | 38 | 29 | 45 | – |
| P010532 | M12 x 80 | 8 x 30 | 32 | 80 | 257 | 174 | 44 | 56 | 38 | 60 | 100 |
| P010540 | M12 x 80 | 8 x 30 | 40 | 80 | 257 | 174 | 44 | 56 | 38 | 60 | 100 |

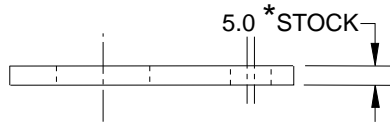
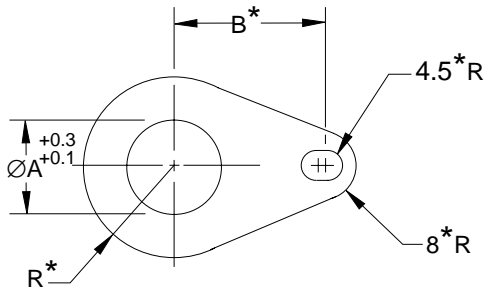
BACKING & RETAINING PLATE SET

(P02 & P03 SERIES)

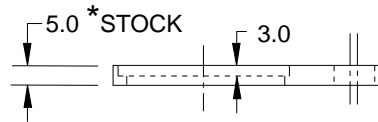
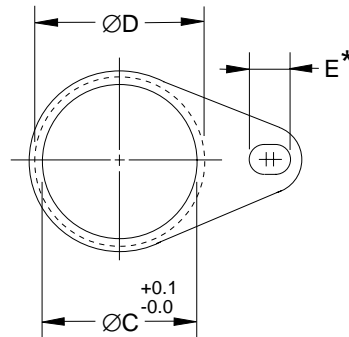
Stamping

03/13/97

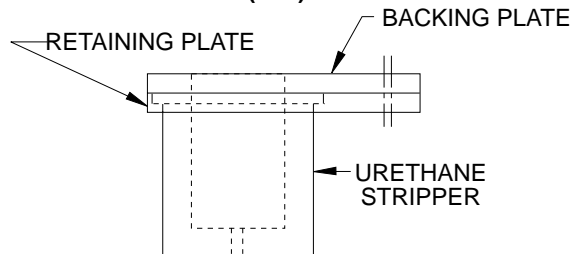
FOR URETHANE STRIPPERS



BACKING PLATE
(P02)



RETAINING PLATE
(P03)



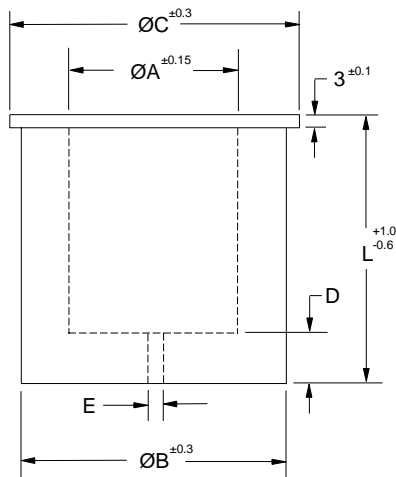
*Dimension common to both
backing and retaining plate.

| B/PLATE NAAMS CODE | R/PLATE NAAMS CODE | A | B | C | D | E | R |
|--------------------------|--------------------------|----|------|----|----|------|------|
| P020010 | P030010 | 10 | 29.0 | 19 | 22 | 11.0 | 13.0 |
| P020013 | P030013 | 13 | 32.0 | 24 | 27 | 11.0 | 15.5 |
| P020016 | P030016 | 16 | 34.0 | 29 | 32 | 11.0 | 18.0 |
| P020020 | P030020 | 20 | 36.0 | 34 | 37 | 11.5 | 20.5 |
| P020025 | P030025 | 25 | 40.6 | 41 | 44 | 10.5 | 24.0 |
| P020032 | P030032 | 32 | 42.0 | 51 | 56 | 10.5 | 31.0 |
| P020040 | P030040 | 40 | 46.0 | 61 | 66 | 11.0 | 36.0 |

NOTES & SPECIFICATIONS:

ANSI 1020 or equivalent
Burr free

HEADED URETHANE PUNCH STRIPPER (P04 SERIES)



| LOAD RATINGS IN NEWTONS | | | | |
|-------------------------|-------------------|------------|--------|--------|
| PUNCH SHANK Ø | L STRIPPER LENGTH | DEFLECTION | | |
| | | 3 | 6 | 9 |
| 10 | 43 | 1015 | 1590 | ① |
| | 52 | 930 | 1450 | 1760 |
| | 63 | 860 | 1305 | 1465 |
| | 72 | 765 | 1175 | 1215 |
| 13 | 43 | 1435 | 2645 | ① |
| | 52 | 1215 | 2240 | 2815 |
| | 63 | 1030 | 2015 | 2530 |
| | 72 | 875 | 1835 | 2300 |
| 16 | 43 | 2335 | 3525 | ① |
| | 52 | 2160 | 3310 | 4230 |
| | 63 | 1810 | 2905 | 4020 |
| | 72 | 1445 | 2510 | 3475 |
| 20 | 43 | 3075 | 4605 | ① |
| | 52 | 2845 | 4240 | 5280 |
| | 63 | 2455 | 3750 | 4860 |
| | 72 | 2085 | 3520 | 4180 |
| 25 | 43 | 4140 | 6150 | ① |
| | 52 | 3460 | 5505 | 7305 |
| | 63 | 2780 | 4860 | 6645 |
| | 72 | 2390 | 4530 | 5740 |
| 32 | 43 | 6490 | 8965 | ① |
| | 52 | 5580 | 8320 | 10,895 |
| | 63 | 4540 | 7675 | 9465 |
| | 72 | 3730 | 6980 | 8140 |
| 40 | 43 | 8335 | 12,450 | ① |
| | 52 | 7410 | 10,570 | 13,635 |
| | 63 | 6380 | 9100 | 11,730 |

| SHANK Ø OF PUNCH | OVERALL* LENGTHS L | | | | A PRESS FIT | B | C | D** | E VENT HOLE |
|------------------|--------------------|----|----|----|-------------|------|------|-----|-------------|
| | ① 43 | 52 | 63 | 72 | | | | | |
| 10.0 | X | X | X | X | 9.75 | 18.5 | 21.3 | 6 | 1.6 |
| 13.0 | X | X | X | X | 12.75 | 23.5 | 26.3 | 6 | 3.0 |
| 16.0 | X | X | X | X | 15.75 | 28.5 | 31.3 | 6 | 3.0 |
| 20.0 | X | X | X | X | 19.75 | 33.5 | 36.3 | 7 | 3.0 |
| 25.0 | X | X | X | X | 24.75 | 40.5 | 43.3 | 7 | 3.0 |
| 32.0 | X | X | X | X | 31.70 | 50.5 | 55.3 | 7 | 3.0 |
| 40.0 | X | X | X | | 39.70 | 60.5 | 65.3 | 8 | 3.0 |

NOTES & SPECIFICATIONS:

Urethane

Hardness, 95±3 shore A

* Stripper overall lengths will have 2-3 mm extension beyond point end of 80 and 100 mm OAL punches.

** Punch Point shape is to be pierced in urethane stripper before assembly.

① 43 mm long bushings should not be compressed more than 6.5 mm; more compression exceeds recommended maximum of 15%.

Replaced by P05 series; See page P-79

CODING ON FOLLOWING PAGE

HEADED URETHANE PUNCH STRIPPER CODING (P04 SERIES)

GLOBAL STANDARD COMPONENTS



Stamping

07/22/04

A

| | | |
|-------|------------|--------------|
| Style | Shank Dia. | O. A. Length |
| P04 | 10 | 43 |

EX: = HEADED URETHANE STRIPPE x 10 SHANK DIA. X 43 LG.

| NAAMS CODE | A x L |
|------------|---------|
| P041043 | 10 x 43 |
| P041052 | 10 x 52 |
| P041063 | 10 x 63 |
| P041072 | 10 x 72 |
| P041343 | 13 x 43 |
| P041352 | 13 x 52 |
| P041363 | 13 x 63 |
| P041372 | 13 x 72 |
| P041643 | 16 x 43 |
| P041652 | 16 x 52 |
| P041663 | 16 x 63 |
| P041672 | 16 x 72 |
| P042043 | 20 x 43 |
| P042052 | 20 x 52 |
| P042063 | 20 x 63 |
| P042072 | 20 x 72 |
| P042543 | 25 x 43 |
| P042552 | 25 x 52 |
| P042563 | 25 x 63 |
| P042572 | 25 x 72 |
| P043243 | 32 x 43 |
| P043252 | 32 x 52 |
| P043263 | 32 x 63 |
| P043272 | 32 x 72 |
| P044043 | 40 x 43 |
| P044052 | 40 x 52 |
| P044063 | 40 x 63 |

NOTES:

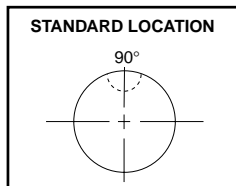
Replaced by P05 series; See page P-80

ALTERNATE BALL SEAT LOCATIONS

A

Alternate Ball Seat Locations

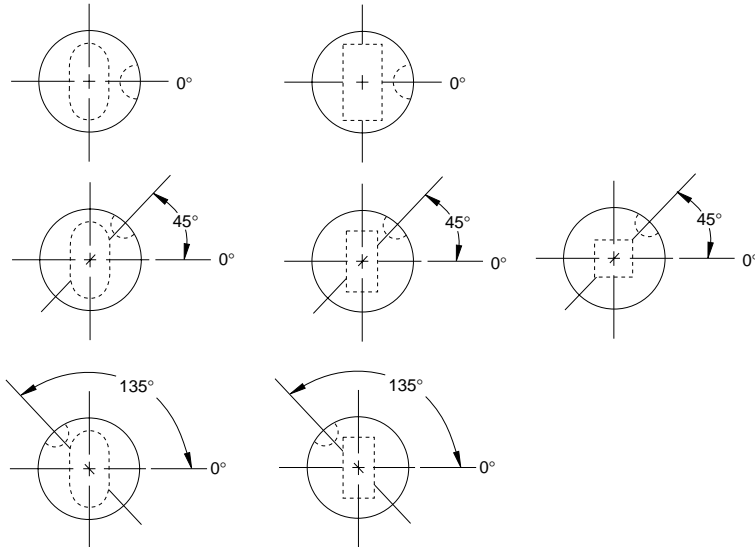
The standard ball seat location for punches is at 90° counterclockwise from 0°. Other locations must be specified by adding the angle from 0° to the specification. Acceptable alternate locations are 0°, 45°, 135° for Ball Lock punches. See page P-4 for ordering examples.



OBLONG PUNCHES

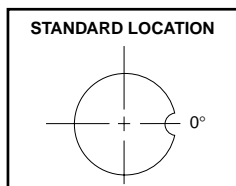
RECTANGULAR PUNCHES

SQUARE PUNCHES



Alternate Dowel Slot Locations

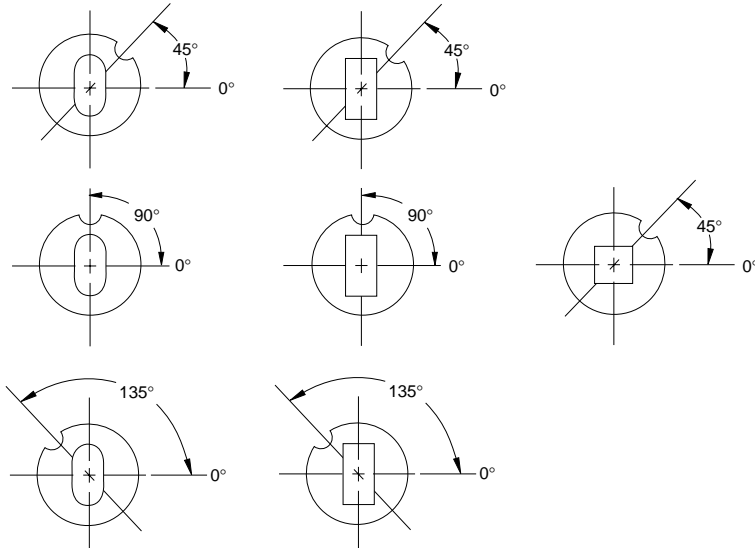
The standard dowel slot for matrixes is at 0°. Other locations must be specified by adding the angle from 0° to the specification. Acceptable alternate locations are 45°, 90°, 135° for matrixes. See page P-4 for ordering examples.



OBLONG MATRIXES

RECTANGULAR MATRIXES

SQUARE MATRIXES



ROUND BALL LOCK PUNCH

(P10 THRU P12 SERIES)

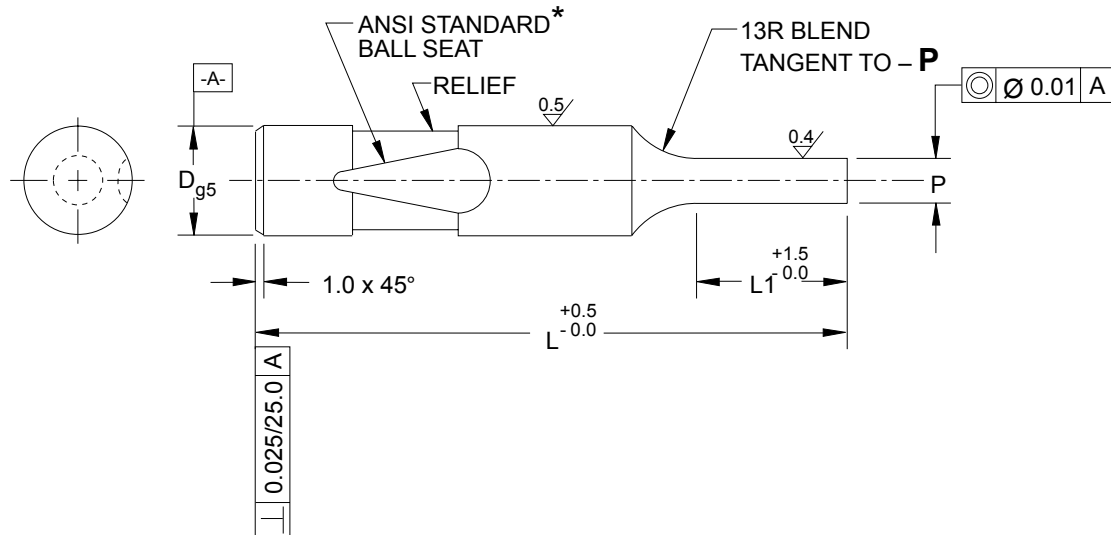
GLOBAL STANDARD COMPONENTS



Stamping

04/24/14

(HEAVY DUTY)



| D NOMINAL SHANK Ø | P PUNCH POINTS AVAILABLE 0.01 INCREMENTS | L OVERALL LENGTH | L1 POINT LENGTH | | | PUNCH RETAINER NAAMS CODE |
|----------------------------|---|------------------------|--------------------|----------|----------|------------------------------------|
| | | | STD. | ALT A | ALT B | |
| 10 | 2.5** to 9.8 | 80 | 19 | 10 | — | P010010 |
| 13 | 5.0 to 12.8 | | 19 | 13 | — | P010013 |
| 16 | 8.0 to 15.8 | | 19 | 13 | 25 | P010016 |
| 20 | 12.0 to 19.8 | 90 | 19 | 13 | 25 | P010020 |
| 25 | 16.0 to 24.8 | 100 | 19 | 13 | 25 | P010025 |
| 32 | 24.0 to 31.8 | | 19 | 13 | 25 | P010032 |
| 40 | 30.0 to 39.8 | | 25 | 19 | 30 | P010040 |

NOTES & SPECIFICATIONS:

Material, AISI-M2.

Hardness, Rc 60-63. Triple temper.

Identification, etch the word "Metric" on each piece.

* Ball Seat must conform to ANSI Standard Gages for locking location.

** Minimum "P" is 1.5 for alternate point length "A".

CODING ON FOLLOWING PAGE

A

ROUND BALL LOCK PUNCH CODING

(P10 THRU P12 SERIES)

GLOBAL STANDARD COMPONENTS



Stamping

04/16/96

(HEAVY DUTY)

| | | | | |
|---------|------------------------------|------------|-------------|--------------------------------------|
| | Shape & Pnt. Length Style | Shank Dia. | O.A. Length | |
| EX: P11 | | 10 | 80 | = ALT. "A" ROUND x 10 SHANK x 80 LG. |
| P10 | | 20 | 90 | = STD. ROUND x 20 SHANK x 90 LG. |

P10 = STD. ROUND
P11 = ALT. "A" ROUND
P12 = ALT. "B" ROUND

P10

| NAAMS CODE | D x L |
|------------|----------|
| P101080 | 10 x 80 |
| P101380 | 13 x 80 |
| P101680 | 16 x 80 |
| P102080 | 20 x 80 |
| P102580 | 25 x 80 |
| P103280 | 32 x 80 |
| P104080 | 40 x 80 |
| P101090 | 10 x 90 |
| P101390 | 13 x 90 |
| P101690 | 16 x 90 |
| P102090 | 20 x 90 |
| P102590 | 25 x 90 |
| P103290 | 32 x 90 |
| P104090 | 40 x 90 |
| P101000 | 10 x 100 |
| P101300 | 13 x 100 |
| P101600 | 16 x 100 |
| P102000 | 20 x 100 |
| P102500 | 25 x 100 |
| P103200 | 32 x 100 |
| P104000 | 40 x 100 |

P11

| NAAMS CODE | D x L |
|------------|----------|
| P111080 | 10 x 80 |
| P111380 | 13 x 80 |
| P111680 | 16 x 80 |
| P112080 | 20 x 80 |
| P112580 | 25 x 80 |
| P113280 | 32 x 80 |
| P114080 | 40 x 80 |
| P111090 | 10 x 90 |
| P111390 | 13 x 90 |
| P111690 | 16 x 90 |
| P112090 | 20 x 90 |
| P112590 | 25 x 90 |
| P113290 | 32 x 90 |
| P114090 | 40 x 90 |
| P111000 | 10 x 100 |
| P111300 | 13 x 100 |
| P111600 | 16 x 100 |
| P112000 | 20 x 100 |
| P112500 | 25 x 100 |
| P113200 | 32 x 100 |
| P114000 | 40 x 100 |

P12

| NAAMS CODE | D x L |
|------------|----------|
| P121680 | 16 x 80 |
| P122080 | 20 x 80 |
| P122580 | 25 x 80 |
| P123280 | 32 x 80 |
| P124080 | 40 x 80 |
| P121690 | 16 x 90 |
| P122090 | 20 x 90 |
| P122590 | 25 x 90 |
| P123290 | 32 x 90 |
| P124090 | 40 x 90 |
| P121600 | 16 x 100 |
| P122000 | 20 x 100 |
| P122500 | 25 x 100 |
| P123200 | 32 x 100 |
| P124000 | 40 x 100 |

OBLONG BALL LOCK PUNCH

(P20 THRU P22 SERIES)

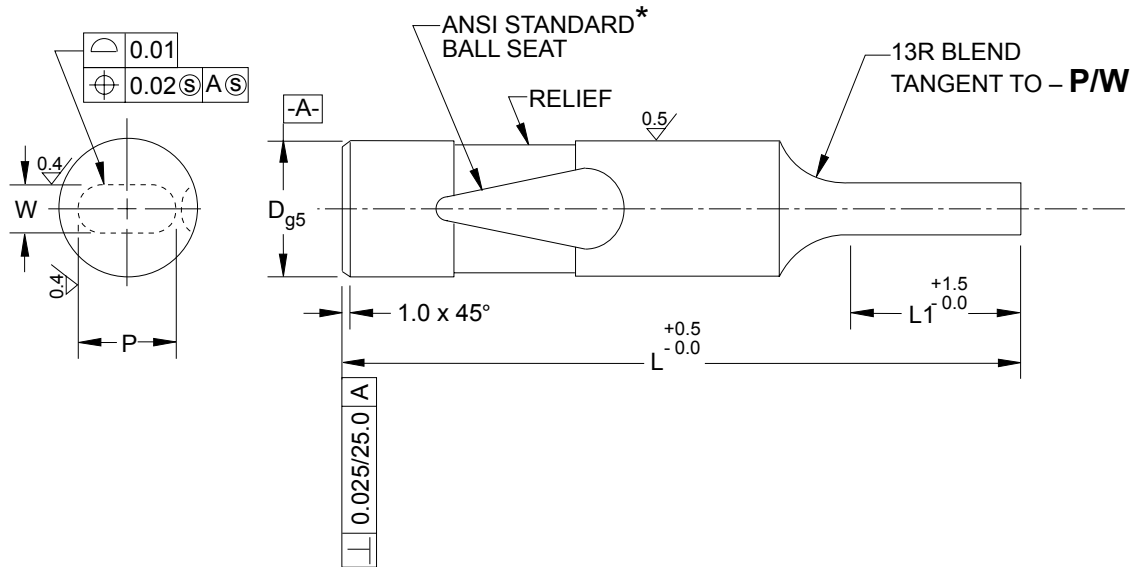
GLOBAL STANDARD COMPONENTS



Stamping

04/24/14

(HEAVY DUTY)



| D NOMINAL SHANK Ø | PUNCH POINTS AVAILABLE 0.01 INCREMENTS | | L OVERALL LENGTH | L1 POINT LENGTH | | | PUNCH RETAINER NAAMS CODE |
|----------------------------|--|-------|------------------------|--------------------|----------|----------|------------------------------------|
| | W MIN | P MAX | | STD. | ALT A | ALT B | |
| 10 | 2.5 | 9.8 | 80 | 19 | 10 | – | P010010 |
| 13 | 5.0 | 12.8 | | 19 | 13 | – | P010013 |
| 16 | 6.0 | 15.8 | | 19 | 13 | 25 | P010016 |
| 20 | 8.0 | 19.8 | 90 | 19 | 13 | 25 | P010020 |
| 25 | 10.0 | 24.8 | 100 | 19 | 13 | 25 | P010025 |
| 32 | 11.5 | 31.8 | | 19 | 13 | 25 | P010032 |
| 40 | 14.0 | 39.8 | | 25 | 19 | 30 | P010040 |

NOTES & SPECIFICATIONS:

Material, AISI-M2.

Hardness, Rc 60-63. Triple temper.

Identification, etch the word "Metric" on each piece.

* Ball Seat must conform to ANSI Standard gages for locking location. Functional axis of Ball Seat must be parallel to axis of punch shank within 0.025 per 50 mm on shape punches.

CODING ON FOLLOWING PAGE

A

OBLONG BALL LOCK PUNCH CODING

(P20 THRU P22 SERIES)

GLOBAL STANDARD COMPONENTS



Stamping

04/16/96

(HEAVY DUTY)

EX:

| | | | | | |
|------------------------------|-----|------------|----|-------------|----|
| Shape & Pnt. Length Style | P20 | Shank Dia. | 32 | O.A. Length | 80 |
|------------------------------|-----|------------|----|-------------|----|

 = OBLONG, STD. PNT. x 32 SHANK x 80 LG.

P20 = STD. OBLONG
 P21 = ALT. "A" OBLONG
 P22 = ALT. "B" OBLONG

P20

| NAAMS CODE | D x L |
|------------|----------|
| P201080 | 10 x 80 |
| P201380 | 13 x 80 |
| P201680 | 16 x 80 |
| P202080 | 20 x 80 |
| P202580 | 25 x 80 |
| P203280 | 32 x 80 |
| P204080 | 40 x 80 |
| P201090 | 10 x 90 |
| P201390 | 13 x 90 |
| P201690 | 16 x 90 |
| P202090 | 20 x 90 |
| P202590 | 25 x 90 |
| P203290 | 32 x 90 |
| P204090 | 40 x 90 |
| P201000 | 10 x 100 |
| P201300 | 13 x 100 |
| P201600 | 16 x 100 |
| P202000 | 20 x 100 |
| P202500 | 25 x 100 |
| P203200 | 32 x 100 |
| P204000 | 40 x 100 |

P21

| NAAMS CODE | D x L |
|------------|----------|
| P211080 | 10 x 80 |
| P211380 | 13 x 80 |
| P211680 | 16 x 80 |
| P212080 | 20 x 80 |
| P212580 | 25 x 80 |
| P213280 | 32 x 80 |
| P214080 | 40 x 80 |
| P211090 | 10 x 90 |
| P211390 | 13 x 90 |
| P211690 | 16 x 90 |
| P212090 | 20 x 90 |
| P212590 | 25 x 90 |
| P213290 | 32 x 90 |
| P214090 | 40 x 90 |
| P211000 | 10 x 100 |
| P211300 | 13 x 100 |
| P211600 | 16 x 100 |
| P212000 | 20 x 100 |
| P212500 | 25 x 100 |
| P213200 | 32 x 100 |
| P214000 | 40 x 100 |

P22

| NAAMS CODE | D x L |
|------------|----------|
| P221680 | 16 x 80 |
| P222080 | 20 x 80 |
| P222580 | 25 x 80 |
| P223280 | 32 x 80 |
| P224080 | 40 x 80 |
| P221690 | 16 x 90 |
| P222090 | 20 x 90 |
| P222590 | 25 x 90 |
| P223290 | 32 x 90 |
| P224090 | 40 x 90 |
| P221600 | 16 x 100 |
| P222000 | 20 x 100 |
| P222500 | 25 x 100 |
| P223200 | 32 x 100 |
| P224000 | 40 x 100 |

SQUARE BALL LOCK PUNCH

(P30 THRU P32 SERIES)

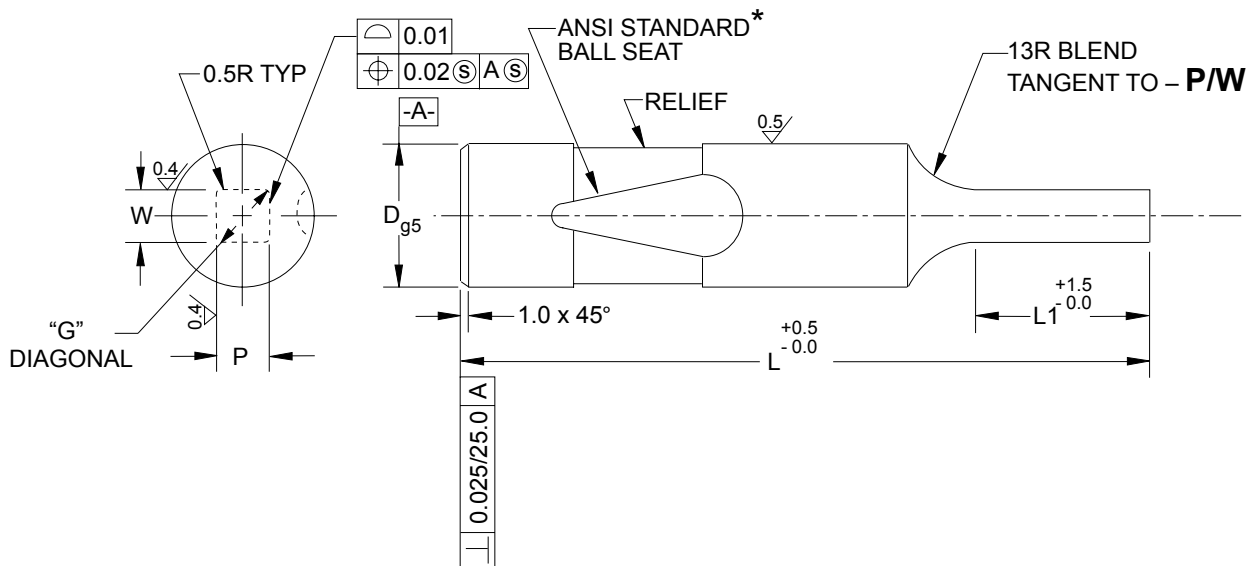
GLOBAL STANDARD COMPONENTS



Stamping

04/24/14

(HEAVY DUTY)



| D NOMINAL SHANK Ø | POINTS AVAILABLE IN 0.01 INCREMENTS | | L OVERALL LENGTH | L1 POINT LENGTH | | | PUNCH RETAINER NAAMS CODE |
|----------------------------|--|-------|------------------------|--------------------|----------|----------|------------------------------------|
| | W MIN | G MAX | | STD. | ALT A | ALT B | |
| 10 | 2.5 | 9.8 | 80 | 19 | 10 | — | P010010 |
| 13 | 5.0 | 12.8 | | 19 | 13 | — | P010013 |
| 16 | 6.0 | 15.8 | | 19 | 13 | 25 | P010016 |
| 20 | 8.0 | 19.8 | | 19 | 13 | 25 | P010020 |
| 25 | 10.0 | 24.8 | | 19 | 13 | 25 | P010025 |
| 32 | 11.5 | 31.8 | | 19 | 13 | 25 | P010032 |
| 40 | 14.0 | 39.8 | | 25 | 19 | 30 | P010040 |

$$G = 2\sqrt{(P/2-R)^2 + (W/2-R)^2 + R}$$

NOTES & SPECIFICATIONS $G_{MAX} = D - 0.2$

Material, AISI-M2.

Hardness, Rc 60-63. Triple temper.

Identification, etch the word "Metric" on each piece.

* Ball Seat must conform to ANSI Standard gages for locking location. Functional axis of Ball Seat must be parallel to axis of punch shank within 0.025 per 50 mm on shape punches.

CODING ON FOLLOWING PAGE

A

SQUARE BALL LOCK PUNCH CODING

(P30 THRU P32 SERIES)



Stamping

04/16/96

(HEAVY DUTY)

EX:

| | |
|------------------------------|-----|
| Shape & Pnt. Length Style | P30 |
|------------------------------|-----|

| | |
|------------|----|
| Shank Dia. | 32 |
|------------|----|

| | |
|-------------|----|
| O.A. Length | 80 |
|-------------|----|

 = SQUARE, STD. PNT. x 32 SHANK x 80 LG.

P30 = STD. SQUARE
 P31 = ALT. "A" SQUARE
 P32 = ALT. "B" SQUARE

P30

| NAAMS CODE | D x L |
|------------|----------|
| P301080 | 10 x 80 |
| P301380 | 13 x 80 |
| P301680 | 16 x 80 |
| P302080 | 20 x 80 |
| P302580 | 25 x 80 |
| P303280 | 32 x 80 |
| P304080 | 40 x 80 |
| P301090 | 10 x 90 |
| P301390 | 13 x 90 |
| P301690 | 16 x 90 |
| P302090 | 20 x 90 |
| P302590 | 25 x 90 |
| P303290 | 32 x 90 |
| P304090 | 40 x 90 |
| P301000 | 10 x 100 |
| P301300 | 13 x 100 |
| P301600 | 16 x 100 |
| P302000 | 20 x 100 |
| P302500 | 25 x 100 |
| P303200 | 32 x 100 |
| P304000 | 40 x 100 |

P31

| NAAMS CODE | D x L |
|------------|----------|
| P311080 | 10 x 80 |
| P311380 | 13 x 80 |
| P311680 | 16 x 80 |
| P312080 | 20 x 80 |
| P312580 | 25 x 80 |
| P313280 | 32 x 80 |
| P314080 | 40 x 80 |
| P311090 | 10 x 90 |
| P311390 | 13 x 90 |
| P311690 | 16 x 90 |
| P312090 | 20 x 90 |
| P312590 | 25 x 90 |
| P313290 | 32 x 90 |
| P314090 | 40 x 90 |
| P311000 | 10 x 100 |
| P311300 | 13 x 100 |
| P311600 | 16 x 100 |
| P312000 | 20 x 100 |
| P312500 | 25 x 100 |
| P313200 | 32 x 100 |
| P314000 | 40 x 100 |

P32

| NAAMS CODE | D x L |
|------------|----------|
| P321680 | 16 x 80 |
| P322080 | 20 x 80 |
| P322580 | 25 x 80 |
| P323280 | 32 x 80 |
| P324080 | 40 x 80 |
| P321690 | 16 x 90 |
| P322090 | 20 x 90 |
| P322590 | 25 x 90 |
| P323290 | 32 x 90 |
| P324090 | 40 x 90 |
| P321600 | 16 x 100 |
| P322000 | 20 x 100 |
| P322500 | 25 x 100 |
| P323200 | 32 x 100 |
| P324000 | 40 x 100 |

RECTANGULAR BALL LOCK PUNCH

(P40 THRU P42 SERIES)

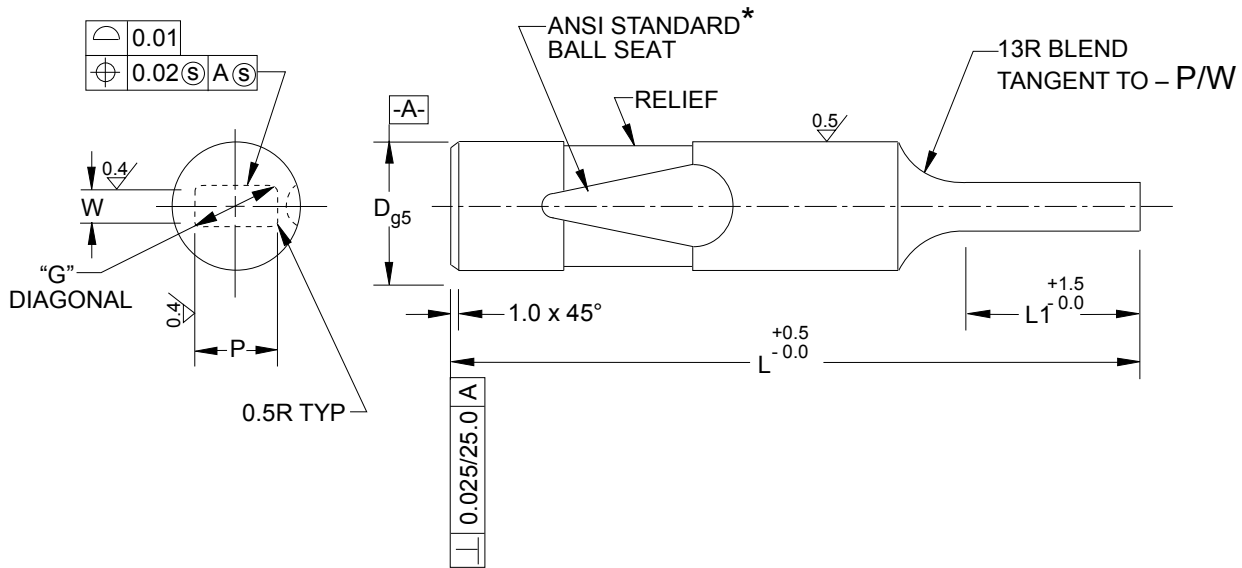
GLOBAL STANDARD COMPONENTS



Stamping

04/25/14

(HEAVY DUTY)



| D NOMINAL SHANK Ø | PUNCH POINTS AVAILABLE 0.01 INCREMENTS | | L OVERALL LENGTH | L1 POINT LENGTH | | | PUNCH RETAINER NAAMS CODE |
|----------------------------|--|-------|------------------------|--------------------|----------|----------|------------------------------------|
| | W MIN | G MAX | | STD. | ALT A | ALT B | |
| 10 | 2.5 | 9.8 | 80 | 19 | 10 | — | P010010 |
| 13 | 5.0 | 12.8 | | 19 | 13 | 25 | P010013 |
| 16 | 6.0 | 15.8 | | 19 | 13 | 25 | P010016 |
| 20 | 8.0 | 19.8 | 90 | 19 | 13 | 25 | P010020 |
| 25 | 10.0 | 24.8 | | 19 | 13 | 25 | P010025 |
| 32 | 11.5 | 31.8 | 100 | 19 | 13 | 25 | P010032 |
| 40 | 14.0 | 39.8 | | 25 | 19 | 30 | P010040 |

$$G = 2\sqrt{(P/2-R)^2 + (W/2-R)^2 + R}$$

NOTES & SPECIFICATIONS: $G_{MAX} = D - 0.2$

Material, AISI-M2.

Hardness, Rc 60-63. Triple temper.

Identification, etch the word "Metric" on each piece.

* Ball Seat must conform to ANSI Standard gages for locking location. Functional axis of Ball Seat must be parallel to axis of punch shank within 0.025 per 50 mm on shape punches.

CODING ON FOLLOWING PAGE

A

RECTANGULAR BALL LOCK PUNCH CODING

(P40 THRU P42 SERIES)



Stamping

04/16/96

(HEAVY DUTY)

| | | | |
|-----|------------------------------|------------|-------------|
| | Shape & Pnt. Length Style | Shank Dia. | O.A. Length |
| EX: | P40 | 32 | 80 |

= RECTANGULAR, STD. PNT. x 32 SHANK x 80 LG.

P40 = STD. RECTANGULAR
 P41 = ALT. "A" RECTANGULAR
 P42 = ALT. "B" RECTANGULAR

P40

| NAAMS CODE | D x L |
|------------|----------|
| P401080 | 10 x 80 |
| P401380 | 13 x 80 |
| P401680 | 16 x 80 |
| P402080 | 20 x 80 |
| P402580 | 25 x 80 |
| P403280 | 32 x 80 |
| P404080 | 40 x 80 |
| P401090 | 10 x 90 |
| P401390 | 13 x 90 |
| P401690 | 16 x 90 |
| P402090 | 20 x 90 |
| P402590 | 25 x 90 |
| P403290 | 32 x 90 |
| P404090 | 40 x 90 |
| P401000 | 10 x 100 |
| P401300 | 13 x 100 |
| P401600 | 16 x 100 |
| P402000 | 20 x 100 |
| P402500 | 25 x 100 |
| P403200 | 32 x 100 |
| P404000 | 40 x 100 |

P41

| NAAMS CODE | D x L |
|------------|----------|
| P411080 | 10 x 80 |
| P411380 | 13 x 80 |
| P411680 | 16 x 80 |
| P412080 | 20 x 80 |
| P412580 | 25 x 80 |
| P413280 | 32 x 80 |
| P414080 | 40 x 80 |
| P411090 | 10 x 90 |
| P411390 | 13 x 90 |
| P411690 | 16 x 90 |
| P412090 | 20 x 90 |
| P412590 | 25 x 90 |
| P413290 | 32 x 90 |
| P414090 | 40 x 90 |
| P411000 | 10 x 100 |
| P411300 | 13 x 100 |
| P411600 | 16 x 100 |
| P412000 | 20 x 100 |
| P412500 | 25 x 100 |
| P413200 | 32 x 100 |
| P414000 | 40 x 100 |

P42

| NAAMS CODE | D x L |
|------------|----------|
| P421680 | 16 x 80 |
| P422080 | 20 x 80 |
| P422580 | 25 x 80 |
| P423280 | 32 x 80 |
| P424080 | 40 x 80 |
| P421690 | 16 x 90 |
| P422090 | 20 x 90 |
| P422590 | 25 x 90 |
| P423290 | 32 x 90 |
| P424090 | 40 x 90 |
| P421600 | 16 x 100 |
| P422000 | 20 x 100 |
| P422500 | 25 x 100 |
| P423200 | 32 x 100 |
| P424000 | 40 x 100 |

ROUND BALL LOCK EJECTOR PUNCH

(P15 THRU P17 SERIES)

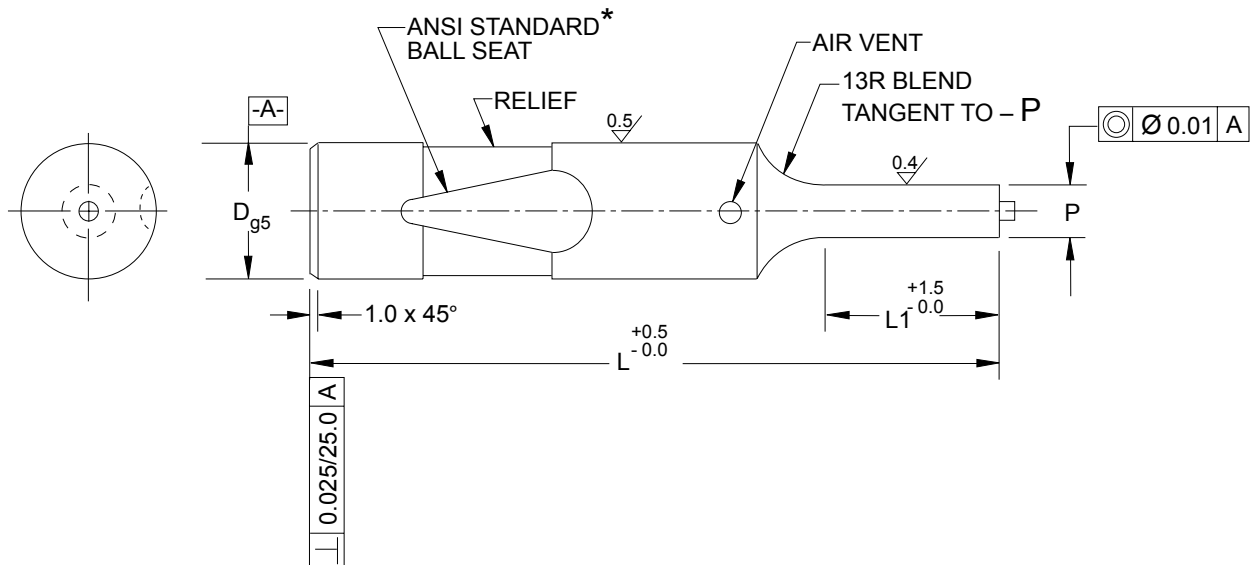
GLOBAL STANDARD COMPONENTS



Stamping

04/24/14

(HEAVY DUTY)



| D NOMINAL SHANK Ø | P PUNCH POINTS AVAILABLE 0.01 INCREMENTS | L OVERALL LENGTH | L1 POINT LENGTH | | | PUNCH RETAINER NAAMS CODE |
|----------------------------|---|------------------------|--------------------|----------|----------|------------------------------------|
| | | | STD. | ALT A | ALT B | |
| 10 | 2.5** to 9.8 | 80 | 19 | 10 | – | P010010 |
| 13 | 5.0 to 12.8 | | 19 | 13 | – | P010013 |
| 16 | 8.0 to 15.8 | | 19 | 13 | 25 | P010016 |
| 20 | 12.0 to 19.8 | 90 | 19 | 13 | 25 | P010020 |
| 25 | 16.0 to 24.8 | 100 | 19 | 13 | 25 | P010025 |
| 32 | 24.0 to 31.8 | | 19 | 13 | 25 | P010032 |
| 40 | 30.0 to 39.8 | | 25 | 19 | 30 | P010040 |

NOTES & SPECIFICATIONS:

Material, AISI-M2.

Hardness, Rc 60-63. Triple temper.

Identification, etch the word "Metric" on each piece.

* Ball Seat must conform to ANSI Standard gages for locking location.

** Minimum "P" is 1.5 for alternate point length "A".

CODING ON FOLLOWING PAGE

A

ROUND BALL LOCK EJECTOR PUNCH CODING

(P15 THRU P17 SERIES)

GLOBAL STANDARD COMPONENTS



Stamping

04/16/96

(HEAVY DUTY)

EX:

| | |
|------------------------------|-----|
| Shape & Pnt. Length Style | P15 |
|------------------------------|-----|

| | |
|------------|----|
| Shank Dia. | 32 |
|------------|----|

| | |
|-------------|----|
| O.A. Length | 80 |
|-------------|----|

 = ROUND, STD. PNT. x 32 SHANK x 80 LG.

P15 = STD. ROUND
 P16 = ALT. "A" ROUND
 P17 = ALT. "B" ROUND

P15

| NAAMS CODE | D x L |
|------------|----------|
| P151080 | 10 x 80 |
| P151380 | 13 x 80 |
| P151680 | 16 x 80 |
| P152080 | 20 x 80 |
| P152580 | 25 x 80 |
| P153280 | 32 x 80 |
| P154080 | 40 x 80 |
| P151090 | 10 x 90 |
| P151390 | 13 x 90 |
| P151690 | 16 x 90 |
| P152090 | 20 x 90 |
| P152590 | 25 x 90 |
| P153290 | 32 x 90 |
| P154090 | 40 x 90 |
| P151000 | 10 x 100 |
| P151300 | 13 x 100 |
| P151600 | 16 x 100 |
| P152000 | 20 x 100 |
| P152500 | 25 x 100 |
| P153200 | 32 x 100 |
| P154000 | 40 x 100 |

P16

| NAAMS CODE | D x L |
|------------|----------|
| P161080 | 10 x 80 |
| P161380 | 13 x 80 |
| P161680 | 16 x 80 |
| P162080 | 20 x 80 |
| P162580 | 25 x 80 |
| P163280 | 32 x 80 |
| P164080 | 40 x 80 |
| P161090 | 10 x 90 |
| P161390 | 13 x 90 |
| P161690 | 16 x 90 |
| P162090 | 20 x 90 |
| P162590 | 25 x 90 |
| P163290 | 32 x 90 |
| P164090 | 40 x 90 |
| P161000 | 10 x 100 |
| P161300 | 13 x 100 |
| P161600 | 16 x 100 |
| P162000 | 20 x 100 |
| P162500 | 25 x 100 |
| P163200 | 32 x 100 |
| P164000 | 40 x 100 |

P17

| NAAMS CODE | D x L |
|------------|----------|
| P171680 | 16 x 80 |
| P172080 | 20 x 80 |
| P172580 | 25 x 80 |
| P173280 | 32 x 80 |
| P174080 | 40 x 80 |
| P171690 | 16 x 90 |
| P172090 | 20 x 90 |
| P172590 | 25 x 90 |
| P173290 | 32 x 90 |
| P174090 | 40 x 90 |
| P171600 | 16 x 100 |
| P172000 | 20 x 100 |
| P172500 | 25 x 100 |
| P173200 | 32 x 100 |
| P174000 | 40 x 100 |

OBLONG BALL LOCK EJECTOR PUNCH

(P25 THRU P27 SERIES)

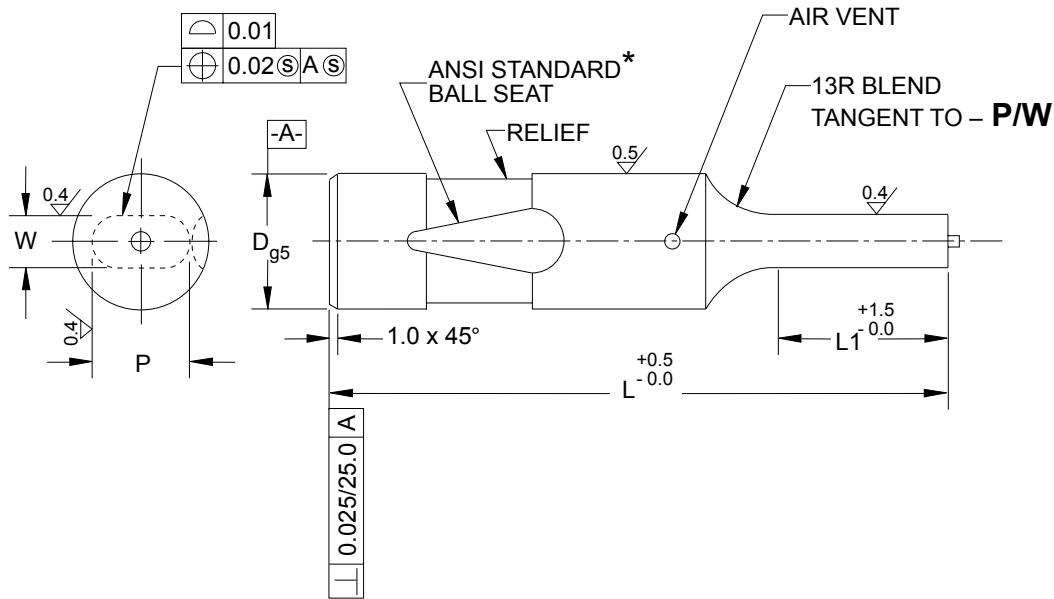
GLOBAL STANDARD COMPONENTS



Stamping

04/24/14

(HEAVY DUTY)



| D NOMINAL SHANK Ø | PUNCH POINTS AVAILABLE 0.01 INCREMENTS | | L OVERALL LENGTH | L1 POINT LENGTH | | | PUNCH RETAINER NAAMS CODE |
|----------------------------|--|-------|------------------------|--------------------|----------|----------|------------------------------------|
| | W MIN | P MAX | | STD. | ALT A | ALT B | |
| 10 | 2.5 | 9.8 | 80 90 100 | 19 | 10 | — | P010010 |
| 13 | 5.0 | 12.8 | | 19 | 13 | — | P010013 |
| 16 | 6.0 | 15.8 | | 19 | 13 | 25 | P010016 |
| 20 | 8.0 | 19.8 | | 19 | 13 | 25 | P010020 |
| 25 | 10.0 | 24.8 | | 19 | 13 | 25 | P010025 |
| 32 | 11.5 | 31.8 | | 19 | 13 | 25 | P010032 |
| 40 | 14.0 | 39.8 | | 25 | 19 | 30 | P010040 |

NOTES & SPECIFICATIONS:

Material, AISI-M2.

Hardness, Rc 60-63. Triple temper.

Identification, etch the word "Metric" on each piece.

* Ball Seat must conform to ANSI Standard gages for locking location. Functional axis of Ball Seat must be parallel to axis of punch shank within 0.025 per 50 mm on shape punches.

CODING ON FOLLOWING PAGE

A

OBLONG BALL LOCK EJECTOR PUNCH CODING

(P25 THRU P27 SERIES)



Stamping

04/16/96

(HEAVY DUTY)

EX:

| | | | | | |
|------------------------------|-----|------------|----|-------------|----|
| Shape & Pnt. Length Style | P25 | Shank Dia. | 32 | O.A. Length | 80 |
|------------------------------|-----|------------|----|-------------|----|

 = OBLONG, STD. PNT. x 32 SHANK x 80 LG.

P25 = STD. OBLONG
P26 = ALT. "A" OBLONG
P27 = ALT. "B" OBLONG

P25

| NAAMS CODE | D x L |
|------------|----------|
| P251080 | 10 x 80 |
| P251380 | 13 x 80 |
| P251680 | 16 x 80 |
| P252080 | 20 x 80 |
| P252580 | 25 x 80 |
| P253280 | 32 x 80 |
| P254080 | 40 x 80 |
| P251090 | 10 x 90 |
| P251390 | 13 x 90 |
| P251690 | 16 x 90 |
| P252090 | 20 x 90 |
| P252590 | 25 x 90 |
| P253290 | 32 x 90 |
| P254090 | 40 x 90 |
| P251000 | 10 x 100 |
| P251300 | 13 x 100 |
| P251600 | 16 x 100 |
| P252000 | 20 x 100 |
| P252500 | 25 x 100 |
| P253200 | 32 x 100 |
| P254000 | 40 x 100 |

P26

| NAAMS CODE | D x L |
|------------|----------|
| P261080 | 10 x 80 |
| P261380 | 13 x 80 |
| P261680 | 16 x 80 |
| P262080 | 20 x 80 |
| P262580 | 25 x 80 |
| P263280 | 32 x 80 |
| P264080 | 40 x 80 |
| P261090 | 10 x 90 |
| P261390 | 13 x 90 |
| P261690 | 16 x 90 |
| P262090 | 20 x 90 |
| P262590 | 25 x 90 |
| P263290 | 32 x 90 |
| P264090 | 40 x 90 |
| P261000 | 10 x 100 |
| P261300 | 13 x 100 |
| P261600 | 16 x 100 |
| P262000 | 20 x 100 |
| P262500 | 25 x 100 |
| P263200 | 32 x 100 |
| P264000 | 40 x 100 |

P27

| NAAMS CODE | D x L |
|------------|----------|
| P271680 | 16 x 80 |
| P272080 | 20 x 80 |
| P272580 | 25 x 80 |
| P273280 | 32 x 80 |
| P274080 | 40 x 80 |
| P271690 | 16 x 90 |
| P272090 | 20 x 90 |
| P272590 | 25 x 90 |
| P273290 | 32 x 90 |
| P274090 | 40 x 90 |
| P271600 | 16 x 100 |
| P272000 | 20 x 100 |
| P272500 | 25 x 100 |
| P273200 | 32 x 100 |
| P274000 | 40 x 100 |

SQUARE BALL LOCK EJECTOR PUNCH

(P35 THRU P37 SERIES)

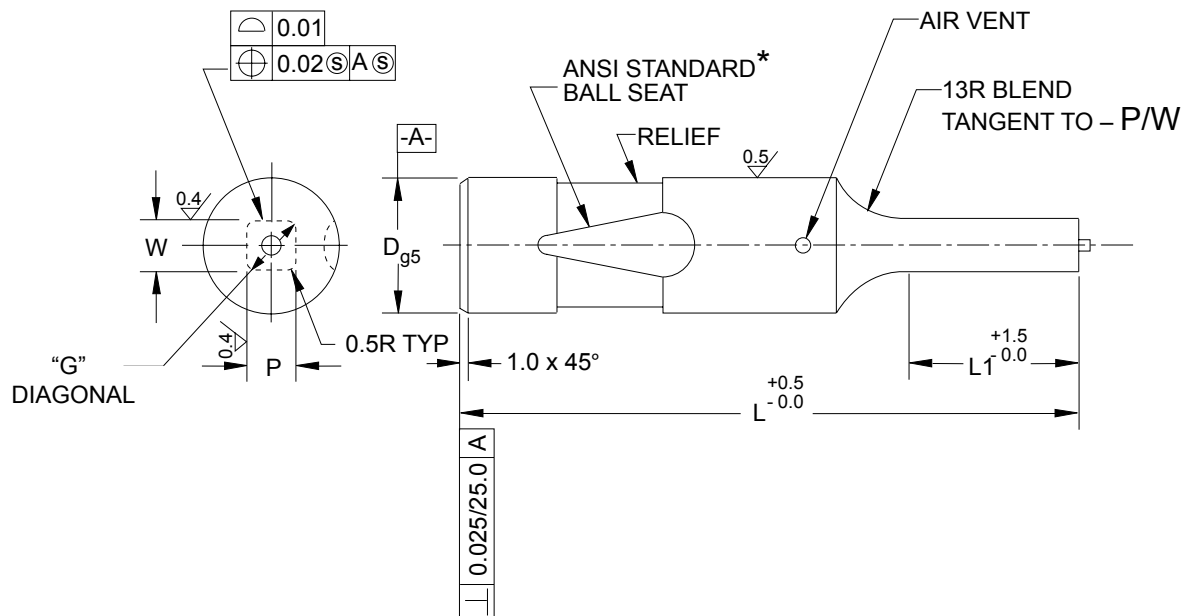
GLOBAL STANDARD COMPONENTS



Stamping

04/24/14

(HEAVY DUTY)



| D NOMINAL SHANK Ø | POINTS AVAILABLE IN 0.01 INCREMENTS | | L OVERALL LENGTH | L1 POINT LENGTH | | | PUNCH RETAINER NAAMS CODE | |
|----------------------------|--|-------|------------------------|--------------------|----------|----------|------------------------------------|---------|
| | W MIN | G MAX | | STD. | ALT A | ALT B | | |
| 10 | 2.5 | 9.8 | 80 | 19 | 10 | — | P010010 | |
| 13 | 5.0 | 12.8 | | 19 | 13 | — | P010013 | |
| 16 | 6.0 | 15.8 | | 19 | 13 | 25 | P010016 | |
| 20 | 8.0 | 19.8 | | 90 | 19 | 13 | 25 | P010020 |
| 25 | 10.0 | 24.8 | | 100 | 19 | 13 | 25 | P010025 |
| 32 | 11.5 | 31.8 | | 19 | 13 | 25 | P010032 | |
| 40 | 14.0 | 39.8 | | 25 | 19 | 30 | P010040 | |

$$G = 2 \left[\sqrt{(P/2-R)^2 + (W/2-R)^2} + R \right]$$

NOTES & SPECIFICATIONS: $G_{MAX} = D - 0.2$

Material, AISI-M2.

Hardness, Rc 60-63. Triple temper.

Identification, etch the word "Metric" on each piece.

* Ball Seat must conform to ANSI Standard gages for locking location. Functional axis of Ball Seat must be parallel to axis of punch shank within 0.025 per 50 mm on shape punches.

CODING ON FOLLOWING PAGE

A

SQUARE BALL LOCK EJECTOR PUNCH CODING

(P35 THRU P37 SERIES)



Stamping

04/16/96

(HEAVY DUTY)

EX:

| | |
|------------------------------|-----|
| Shape & Pnt. Length Style | P35 |
|------------------------------|-----|

| | |
|------------|----|
| Shank Dia. | 32 |
|------------|----|

| | |
|-------------|----|
| O.A. Length | 80 |
|-------------|----|

 = SQUARE, STD. PNT. x 32 SHANK x 80 LG.

P35 = STD. SQUARE
 P36 = ALT. "A" SQUARE
 P37 = ALT. "B" SQUARE

P35

| NAAMS CODE | D x L |
|------------|----------|
| P351080 | 10 x 80 |
| P351380 | 13 x 80 |
| P351680 | 16 x 80 |
| P352080 | 20 x 80 |
| P352580 | 25 x 80 |
| P353280 | 32 x 80 |
| P354080 | 40 x 80 |
| P351090 | 10 x 90 |
| P351390 | 13 x 90 |
| P351690 | 16 x 90 |
| P352090 | 20 x 90 |
| P352590 | 25 x 90 |
| P353290 | 32 x 90 |
| P354090 | 40 x 90 |
| P351000 | 10 x 100 |
| P351300 | 13 x 100 |
| P351600 | 16 x 100 |
| P352000 | 20 x 100 |
| P352500 | 25 x 100 |
| P353200 | 32 x 100 |
| P354000 | 40 x 100 |

P36

| NAAMS CODE | D x L |
|------------|----------|
| P361080 | 10 x 80 |
| P361380 | 13 x 80 |
| P361680 | 16 x 80 |
| P362080 | 20 x 80 |
| P362580 | 25 x 80 |
| P363280 | 32 x 80 |
| P364080 | 40 x 80 |
| P361090 | 10 x 90 |
| P361390 | 13 x 90 |
| P361690 | 16 x 90 |
| P362090 | 20 x 90 |
| P362590 | 25 x 90 |
| P363290 | 32 x 90 |
| P364090 | 40 x 90 |
| P361000 | 10 x 100 |
| P361300 | 13 x 100 |
| P361600 | 16 x 100 |
| P362000 | 20 x 100 |
| P362500 | 25 x 100 |
| P363200 | 32 x 100 |
| P364000 | 40 x 100 |

P37

| NAAMS CODE | D x L |
|------------|----------|
| P371680 | 16 x 80 |
| P372080 | 20 x 80 |
| P372580 | 25 x 80 |
| P373280 | 32 x 80 |
| P374080 | 40 x 80 |
| P371690 | 16 x 90 |
| P372090 | 20 x 90 |
| P372590 | 25 x 90 |
| P373290 | 32 x 90 |
| P374090 | 40 x 90 |
| P371600 | 16 x 100 |
| P372000 | 20 x 100 |
| P372500 | 25 x 100 |
| P373200 | 32 x 100 |
| P374000 | 40 x 100 |

RECTANGULAR BALL LOCK EJECTOR PUNCH

(P45 THRU P47 SERIES)

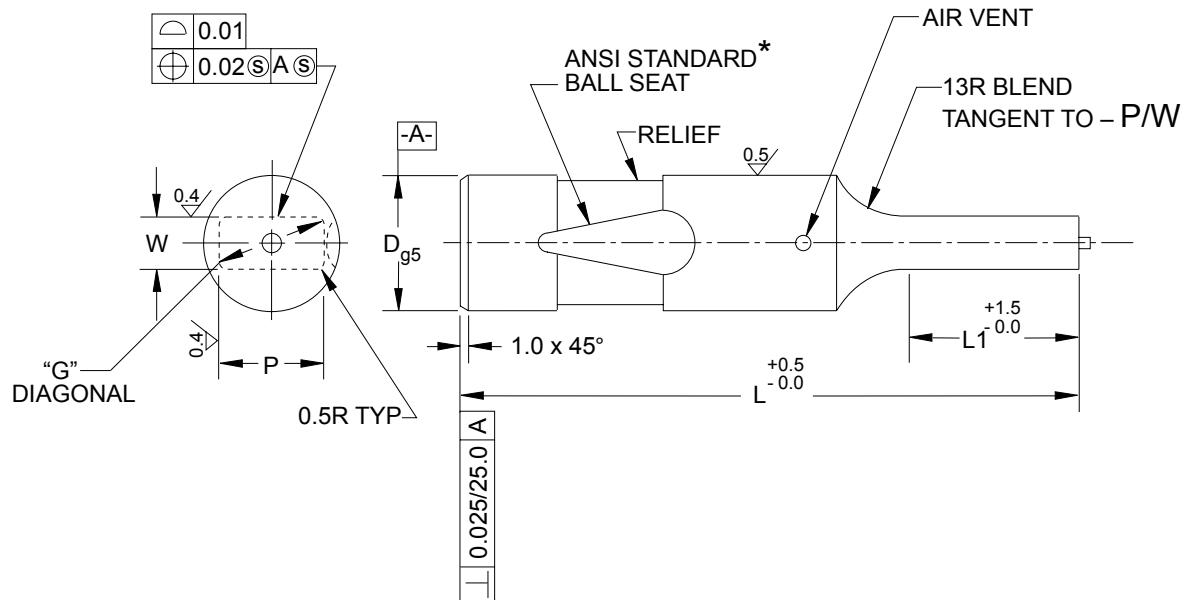
GLOBAL STANDARD COMPONENTS



Stamping

04/24/14

(HEAVY DUTY)



| D NOMINAL SHANK Ø | PUNCH POINTS AVAILABLE 0.01 INCREMENTS | | L OVERALL LENGTH | L1 POINT LENGTH | | | PUNCH RETAINER NAAMS CODE |
|----------------------------|--|-------|------------------------|--------------------|----------|----------|------------------------------------|
| | W MIN | G MAX | | STD. | ALT A | ALT B | |
| 10 | 2.5 | 9.8 | 80 90 100 | 19 | 10 | — | P010010 |
| 13 | 5.0 | 12.8 | | 19 | 13 | — | P010013 |
| 16 | 6.0 | 15.8 | | 19 | 13 | 25 | P010016 |
| 20 | 8.0 | 19.8 | | 19 | 13 | 25 | P010020 |
| 25 | 10.0 | 24.8 | | 19 | 13 | 25 | P010025 |
| 32 | 11.5 | 31.8 | | 19 | 13 | 25 | P010032 |
| 40 | 14.0 | 39.8 | | 25 | 19 | 30 | P010040 |

$$G = 2\left[\sqrt{(P/2-R)^2 + (W/2-R)^2} + R\right]$$

NOTES & SPECIFICATIONS: $G_{MAX} = D - 0.2$

Material, AISI-M2.

Hardness, Rc 60-63. Triple temper.

Identification, etch the word "Metric" on each piece.

*Ball Seat must conform to ANSI Standard gages for locking location. Functional axis of Ball Seat must be parallel to axis of punch shank within 0.025 per 50mm on shape punches.

CODING ON FOLLOWING PAGE

A

RECTANGULAR BALL LOCK EJECTOR PUNCH CODING

(P45 THRU P47 SERIES)

(HEAVY DUTY)

EX:

| | |
|------------------------------|-----|
| Shape & Pnt. Length Style | P45 |
|------------------------------|-----|

| | |
|------------|----|
| Shank Dia. | 32 |
|------------|----|

| | |
|-------------|----|
| O.A. Length | 80 |
|-------------|----|

 = RECTANGULAR, STD. PNT. x 32 SHANK x 80 LG.

P45 = STD. RECTANGULAR
P46 = ALT. "A" RECTANGULAR
P47 = ALT. "B" RECTANGULAR

P45

| NAAMS CODE | D x L |
|------------|----------|
| P451080 | 10 x 80 |
| P451380 | 13 x 80 |
| P451680 | 16 x 80 |
| P452080 | 20 x 80 |
| P452580 | 25 x 80 |
| P453280 | 32 x 80 |
| P454080 | 40 x 80 |
| P451090 | 10 x 90 |
| P451390 | 13 x 90 |
| P451690 | 16 x 90 |
| P452090 | 20 x 90 |
| P452590 | 25 x 90 |
| P453290 | 32 x 90 |
| P454090 | 40 x 90 |
| P451000 | 10 x 100 |
| P451300 | 13 x 100 |
| P451600 | 16 x 100 |
| P452000 | 20 x 100 |
| P452500 | 25 x 100 |
| P453200 | 32 x 100 |
| P454000 | 40 x 100 |

P46

| NAAMS CODE | D x L |
|------------|----------|
| P461080 | 10 x 80 |
| P461380 | 13 x 80 |
| P461680 | 16 x 80 |
| P462080 | 20 x 80 |
| P462580 | 25 x 80 |
| P463280 | 32 x 80 |
| P464080 | 40 x 80 |
| P461090 | 10 x 90 |
| P461390 | 13 x 90 |
| P461690 | 16 x 90 |
| P462090 | 20 x 90 |
| P462590 | 25 x 90 |
| P463290 | 32 x 90 |
| P464090 | 40 x 90 |
| P461000 | 10 x 100 |
| P461300 | 13 x 100 |
| P461600 | 16 x 100 |
| P462000 | 20 x 100 |
| P462500 | 25 x 100 |
| P463200 | 32 x 100 |
| P464000 | 40 x 100 |

P47

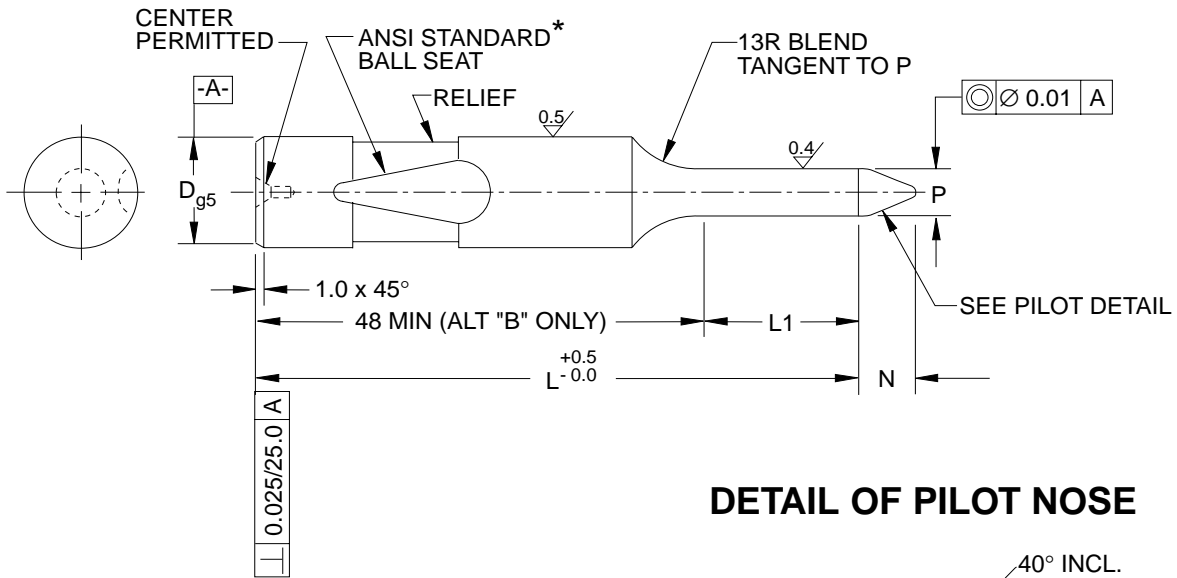
| NAAMS CODE | D x L |
|------------|----------|
| P471680 | 16 x 80 |
| P472080 | 20 x 80 |
| P472580 | 25 x 80 |
| P473280 | 32 x 80 |
| P474080 | 40 x 80 |
| P471690 | 16 x 90 |
| P472090 | 20 x 90 |
| P472590 | 25 x 90 |
| P473290 | 32 x 90 |
| P474090 | 40 x 90 |
| P471600 | 16 x 100 |
| P472000 | 20 x 100 |
| P472500 | 25 x 100 |
| P473200 | 32 x 100 |
| P474000 | 40 x 100 |

BALL LOCK PILOT PUNCH

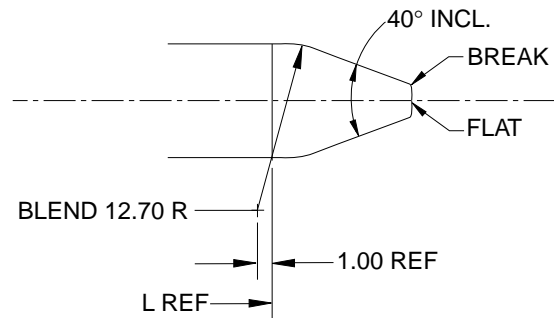
(P55 THRU P57 SERIES)

A

(HEAVY DUTY)



DETAIL OF PILOT NOSE



| D NOMINAL SHANK Ø | P PUNCH POINT | | L OVERALL LENGTH | | | | | | | L1 POINT LENGTH | | | PUNCH RETAINER NAAMS CODE |
|----------------------------|------------------|------|---------------------|-----|-----|-----|-----|-----|-----|--------------------|-----------|--------------------|------------------------------------|
| | AVAILABLE | N | 80 | 90 | 100 | 110 | 125 | 140 | 150 | STD. | ALT. A | ALT. B | |
| | | | | | | | | | | | | | |
| 10 | 5.90 – 9.98 | 8.0 | X | X | X | X | | | | 19 | 32 | "L" MINUS 48 | P010010 |
| 13 | 9.90 – 12.98 | 10.0 | X | X | X | X | X | X | | 19 | 32 | | P010013 |
| 16 | 12.90 – 15.98 | 15.0 | (X) | X | X | X | X | X | X | 25 | 38 | | P010016 |
| 20 | 15.90 – 19.98 | 20.0 | (X) | X | X | X | X | X | X | 25 | 38 | | P010020 |
| 25 | 19.90 – 24.98 | 25.0 | (X) | X | X | X | X | X | X | 25 | 38 | | P010025 |
| 32 | 24.90 – 31.98 | 30.0 | (X) | X | X | X | X | X | X | 25 | 38 | | P010032 |
| 40 | 31.90 – 39.98 | 40.0 | (X) | (X) | X | X | X | X | X | 30 | 45 | | P010040 |

(X) Available in Std & Alt "B"

NOTES & SPECIFICATIONS:

Material, AISI-M2.

Hardness, Rc 60-63. Triple temper.

Identification, etch the word "Metric" on each piece.

*Ball Seat must conform to ANSI Standard gages for locking location.

CODING ON FOLLOWING PAGE

BALL LOCK PILOT PUNCH CODING

(P55 THRU P57 SERIES)



Stamping

07/26/99

A

(HEAVY DUTY)

| D x L | NAAMS CODES FOR POINT LENGTH | | |
|----------|------------------------------|------------------|------------------|
| | STANDARD | ALTERNATE "A" | ALTERNATE "B" |
| 10 x 80 | P551008 | P561008 | P571008 |
| 10 x 90 | P551009 | P561009 | P571009 |
| 10 x 100 | P551010 | P561010 | P571010 |
| 10 x 110 | P551011 | P561011 | P571011 |
| 13 x 80 | P551308 | P561308 | P571308 |
| 13 x 90 | P551309 | P561308 | P571309 |
| 13 x 100 | P551310 | P561310 | P571310 |
| 13 x 110 | P551311 | P561311 | P571311 |
| 13 x 125 | P551312 | P561312 | P571312 |
| 13 x 140 | P551314 | P561314 | P571314 |
| 16 x 80 | P551608 | --- | P571608 |
| 16 x 90 | P551609 | P561609 | P571609 |
| 16 x 100 | P551610 | P561610 | P571610 |
| 16 x 110 | P551611 | P561611 | P571611 |
| 16 x 125 | P551612 | P561612 | P571612 |
| 16 x 140 | P551614 | P561614 | P571614 |
| 16 x 150 | P551615 | P561615 | P571615 |
| 20 x 80 | P552008 | --- | P572008 |
| 20 x 90 | P552009 | P562009 | P572009 |
| 20 x 100 | P552010 | P562010 | P572010 |
| 20 x 110 | P552011 | P562011 | P572011 |
| 20 x 125 | P552012 | P562012 | P572012 |
| 20 x 140 | P552014 | P562014 | P572014 |
| 20 x 150 | P552015 | P562015 | P572015 |
| 25 x 80 | P552508 | --- | P57208 |
| 25 x 90 | P552509 | P562509 | P572509 |
| 25 x 100 | P552510 | P562510 | P572510 |
| 25 x 110 | P552511 | P562511 | P572511 |
| 25 x 125 | P552512 | P562512 | P572512 |
| 25 x 140 | P552514 | P562514 | P572514 |
| 25 x 150 | P552515 | P562515 | P572515 |
| 32 x 80 | P553208 | --- | P573208 |
| 32 x 90 | P553209 | P563209 | P573209 |
| 32 x 100 | P553210 | P563210 | P573210 |
| 32 x 110 | P553211 | P563211 | P573211 |
| 32 x 125 | P553212 | P563212 | P573212 |
| 32 x 140 | P553214 | P563214 | P573214 |
| 32 x 150 | P553215 | P563215 | P573215 |
| 40 x 80 | P554008 | --- | P574008 |
| 40 x 90 | P554009 | --- | P574009 |
| 40 x 100 | P554010 | P564010 | P574010 |
| 40 X 110 | P554011 | P564011 | P574011 |
| 40 X 125 | P554012 | P564012 | P574012 |
| 40 X 140 | P554014 | P564014 | P574014 |
| 40 X 150 | P554015 | P564015 | P574015 |

EXAMPLE

| | | |
|------------------------------|------------|-------------|
| Shape & Pnt. Length Style | Shank Dia. | O.A. Length |
| P55 | 25 | 12 |

= STD. PNT. PILOT
x 25 mm SHANK
x 125 mm LG.

STRAIGHT RELIEF ROUND DIE BUTTON PRESS FIT, DOWEL SLOT LOCKING DEVICE

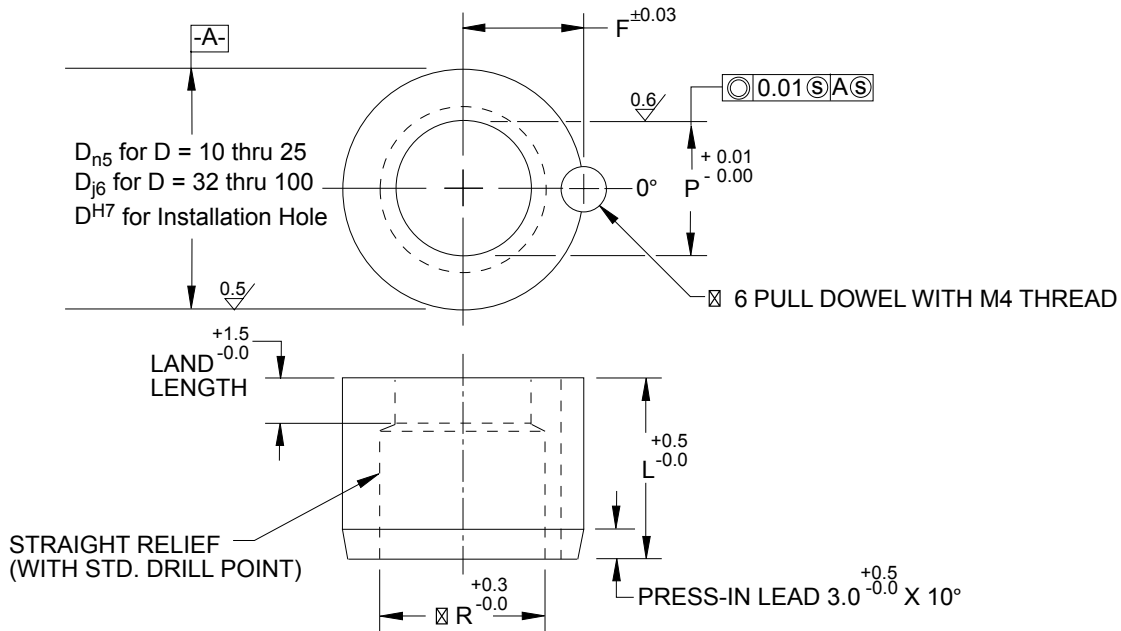
(P60 THRU P62 SERIES)

GLOBAL STANDARD COMPONENTS



Stamping

04/24/14



| D STANDARD BODY Ø | HOLE SIZE RANGE 0.01 INCREMENTS P Ø | L OVERALL LENGTH | | | | | LAND LENGTHS | | | RELIEF HOLE Ø R MAX | F |
|----------------------------|--|------------------------|----|----|----|----|-----------------|-----|-----|------------------------------|-------|
| | | 25 | 28 | 30 | 32 | 35 | STD | ALT | ALT | | |
| | | | | | | | S | A | B | | |
| 10 | 1.5 to 5.0 | x | x | x | x | x | 4 | 8 | - | 6.0 | 7.00 |
| 13 | 1.5 to 7.2 | x | x | x | x | x | 5 | 8 | - | 8.0 | 8.20 |
| 16 | 5.0 to 8.8 | x | x | x | x | x | 5 | 8 | - | 9.5 | 9.00 |
| 20 | 5.6 to 11.0 | x | x | x | x | x | 5 | 12 | 20 | 12.0 | 11.00 |
| 22 | 9.0 to 14.0 | x | x | x | x | x | 6 | 12 | 20 | 15.0 | 12.00 |
| 25 | 10.6 to 16.6 | x | x | x | x | x | 6 | 12 | 20 | 17.5 | 13.50 |
| 32 | 13.0 to 20.0 | x | x | x | x | x | 6 | 12 | 20 | 21.0 | 16.00 |
| 38 | 16.0 to 26.0 | x | x | x | x | x | 8 | 12 | 20 | 27.0 | 19.00 |
| 40 | 16.0 to 26.0 | x | x | x | x | x | 8 | 12 | 20 | 27.0 | 20.00 |
| 45 | 19.0 to 35.0 | x | x | x | x | x | 8 | 12 | 20 | 36.0 | 22.50 |
| 50 | 22.0 to 40.0 | x | x | x | x | x | 8 | 12 | 20 | 41.0 | 25.00 |
| 56 | 25.0 to 45.0 | x | x | x | x | x | 8 | 12 | 20 | 46.0 | 28.00 |
| 63 | 28.0 to 50.0 | x | x | x | x | x | 8 | 12 | 20 | 51.0 | 31.50 |
| 71 | 31.0 to 56.0 | x | x | x | x | x | 8 | 12 | 20 | 57.0 | 35.50 |
| 76 | 39.0 to 60.0 | x | x | x | x | x | 8 | 12 | 20 | 61.0 | 38.00 |
| 85 | 43.0 to 66.0 | x | x | x | x | x | 8 | 12 | 20 | 67.0 | 42.50 |
| 90 | 45.0 to 70.0 | x | x | x | x | x | 8 | 12 | 20 | 71.0 | 45.00 |
| 100 | 50.0 to 78.0 | x | x | x | x | x | 8 | 12 | 20 | 79.0 | 50.00 |

NOTES & SPECIFICATIONS:

Material, AISI – A2

Hardness, Rc 60-63

Identification, etch word "Metric" on each piece

CODING ON FOLLOWING PAGE

A

B

C

D

STRAIGHT RELIEF ROUND DIE BUTTON PRESS FIT, DOWEL SLOT LOCKING DEVICE

(P60 SERIES)

EX:

| | | |
|------------------|-----------|--------------|
| Shape & Style | Body Dia. | O. A. Length |
| P60 | 32 | 30 |

 = ROUND x 32 BODY DIA. x 30 LG.

| NAAMS CODE | D x L |
|------------|---------|
| P601025 | 10 x 25 |
| P601028 | 10 x 28 |
| P601030 | 10 x 30 |
| P601325 | 13 x 25 |
| P601328 | 13 x 28 |
| P601330 | 13 x 30 |
| P601625 | 16 x 25 |
| P601628 | 16 x 28 |
| P601630 | 16 x 30 |
| P601635 | 16 x 35 |
| P602025 | 20 x 25 |
| P602028 | 20 x 28 |
| P602030 | 20 x 30 |
| P602035 | 20 x 35 |
| P602225 | 22 x 25 |
| P602228 | 22 x 28 |
| P602230 | 22 x 30 |
| P602235 | 22 x 35 |
| P602525 | 25 x 25 |
| P602528 | 25 x 28 |
| P602530 | 25 x 30 |
| P602535 | 25 x 35 |

| NAAMS CODE | D x L |
|------------|---------|
| P603225 | 32 x 25 |
| P603228 | 32 x 28 |
| P603230 | 32 x 30 |
| P603235 | 32 x 35 |
| P603825 | 38 x 25 |
| P603828 | 38 x 28 |
| P603830 | 38 x 30 |
| P603835 | 38 x 35 |
| P604025 | 40 x 25 |
| P604028 | 40 x 28 |
| P604030 | 40 x 30 |
| P604035 | 40 x 35 |
| P604525 | 45 x 25 |
| P604528 | 45 x 28 |
| P604530 | 45 x 30 |
| P604535 | 45 x 35 |
| P605025 | 50 x 25 |
| P605028 | 50 x 28 |
| P605030 | 50 x 30 |
| P605035 | 50 x 35 |
| P605625 | 56 x 25 |
| P605628 | 56 x 28 |
| P605630 | 56 x 30 |
| P605635 | 56 x 35 |

| NAAMS CODE | D x L |
|------------|----------|
| P606325 | 63 x 25 |
| P606328 | 63 x 28 |
| P606330 | 63 x 30 |
| P606335 | 63 x 35 |
| P607125 | 71 x 25 |
| P607128 | 71 x 28 |
| P607130 | 71 x 30 |
| P607135 | 71 x 35 |
| P607625 | 76 x 25 |
| P607628 | 76 x 28 |
| P607630 | 76 x 30 |
| P607635 | 76 x 35 |
| P608525 | 85 x 25 |
| P608528 | 85 x 28 |
| P608530 | 85 x 30 |
| P608535 | 85 x 35 |
| P609025 | 90 x 25 |
| P609028 | 90 x 28 |
| P609030 | 90 x 30 |
| P609035 | 90 x 35 |
| P600025 | 100 x 25 |
| P600028 | 100 x 28 |
| P600030 | 100 x 30 |
| P600035 | 100 x 35 |

CODING CONTINUED ON FOLLOWING PAGE

STRAIGHT RELIEF ROUND DIE BUTTON PRESS FIT, DOWEL SLOT LOCKING DEVICE

(P61 SERIES)

TM

Stamping

04/16/96

| | | | |
|-----|---------------|-----------|--------------|
| | Shape & Style | Body Dia. | O. A. Length |
| EX: | P61 | 32 | 30 |

= ROUND ALT "A" x 32 BODY DIA. x 30 LG.

| NAAMS CODE | D x L |
|------------|---------|
| P611025 | 10 x 25 |
| P611028 | 10 x 28 |
| P611030 | 10 x 30 |
| P611325 | 13 x 25 |
| P611328 | 13 x 28 |
| P611330 | 13 x 30 |
| P611625 | 16 x 25 |
| P611628 | 16 x 28 |
| P611630 | 16 x 30 |
| P611635 | 16 x 35 |
| P612025 | 20 x 25 |
| P612028 | 20 x 28 |
| P612030 | 20 x 30 |
| P612035 | 20 x 35 |
| P612225 | 22 x 25 |
| P612228 | 22 x 28 |
| P612230 | 22 x 30 |
| P612235 | 22 x 35 |
| P612525 | 25 x 25 |
| P612528 | 25 x 28 |
| P612530 | 25 x 30 |
| P612535 | 25 x 35 |

| NAAMS CODE | D x L |
|------------|---------|
| P613225 | 32 x 25 |
| P613228 | 32 x 28 |
| P613230 | 32 x 30 |
| P613235 | 32 x 35 |
| P613825 | 38 x 25 |
| P613828 | 38 x 28 |
| P613830 | 38 x 30 |
| P613835 | 38 x 35 |
| P614025 | 40 x 25 |
| P614028 | 40 x 28 |
| P614030 | 40 x 30 |
| P614035 | 40 x 35 |
| P614525 | 45 x 25 |
| P614528 | 45 x 28 |
| P614530 | 45 x 30 |
| P614535 | 45 x 35 |
| P615025 | 50 x 25 |
| P615028 | 50 x 28 |
| P615030 | 50 x 30 |
| P615035 | 50 x 35 |
| P615625 | 56 x 25 |
| P615628 | 56 x 28 |
| P615630 | 56 x 30 |
| P615635 | 56 x 35 |

| NAAMS CODE | D x L |
|------------|----------|
| P616325 | 63 x 25 |
| P616328 | 63 x 28 |
| P616330 | 63 x 30 |
| P616335 | 63 x 35 |
| P617125 | 71 x 25 |
| P617128 | 71 x 28 |
| P617130 | 71 x 30 |
| P617135 | 71 x 35 |
| P617625 | 76 x 25 |
| P617628 | 76 x 28 |
| P617630 | 76 x 30 |
| P617635 | 76 x 35 |
| P618525 | 85 x 25 |
| P618528 | 85 x 28 |
| P618530 | 85 x 30 |
| P618535 | 85 x 35 |
| P619025 | 90 x 25 |
| P619028 | 90 x 28 |
| P619030 | 90 x 30 |
| P619035 | 90 x 35 |
| P610025 | 100 x 25 |
| P610028 | 100 x 28 |
| P610030 | 100 x 30 |
| P610035 | 100 x 35 |

CODING CONTINUED ON FOLLOWING PAGE

STRAIGHT RELIEF ROUND DIE BUTTON PRESS FIT, DOWEL SLOT LOCKING DEVICE

(P62 SERIES)

EX:

| | |
|---------------|-----|
| Shape & Style | P62 |
|---------------|-----|

| | |
|-----------|----|
| Body Dia. | 32 |
|-----------|----|

| | |
|--------------|----|
| O. A. Length | 30 |
|--------------|----|

 = ROUND ALT "B" x 32 BODY DIA. x 30 LG.

| NAAMS CODE | D x L |
|------------|---------|
| P622025 | 20 x 25 |
| P622028 | 20 x 28 |
| P622030 | 20 x 30 |
| P622035 | 20 x 35 |
| P622225 | 22 x 25 |
| P622228 | 22 x 28 |
| P622230 | 22 x 30 |
| P622235 | 22 x 35 |
| P622525 | 25 x 25 |
| P622528 | 25 x 28 |
| P622530 | 25 x 30 |
| P622535 | 25 x 35 |
| P623225 | 32 x 25 |
| P623228 | 32 x 28 |
| P623230 | 32 x 30 |
| P623235 | 32 x 35 |
| P623825 | 38 x 25 |
| P623828 | 38 x 28 |
| P623830 | 38 x 30 |
| P623835 | 38 x 35 |

| NAAMS CODE | D x L |
|------------|---------|
| P624025 | 40 x 25 |
| P624028 | 40 x 28 |
| P624030 | 40 x 30 |
| P624035 | 40 x 35 |
| P624525 | 45 x 25 |
| P624528 | 45 x 28 |
| P624530 | 45 x 30 |
| P624535 | 45 x 35 |
| P625025 | 50 x 25 |
| P625028 | 50 x 28 |
| P625030 | 50 x 30 |
| P625035 | 50 x 35 |
| P625625 | 56 x 25 |
| P625628 | 56 x 28 |
| P625630 | 56 x 30 |
| P625635 | 56 x 35 |
| P626325 | 63 x 25 |
| P626328 | 63 x 28 |
| P626330 | 63 x 30 |
| P626335 | 63 x 35 |

| NAAMS CODE | D x L |
|------------|----------|
| P627125 | 71 x 25 |
| P627128 | 71 x 28 |
| P627130 | 71 x 30 |
| P627135 | 71 x 35 |
| P627625 | 76 x 25 |
| P627628 | 76 x 28 |
| P627630 | 76 x 30 |
| P627635 | 76 x 35 |
| P628525 | 85 x 25 |
| P628528 | 85 x 28 |
| P628530 | 85 x 30 |
| P628535 | 85 x 35 |
| P629025 | 90 x 25 |
| P629028 | 90 x 28 |
| P629030 | 90 x 30 |
| P629035 | 90 x 35 |
| P620025 | 100 x 25 |
| P620028 | 100 x 28 |
| P620030 | 100 x 30 |
| P620035 | 100 x 35 |

STRAIGHT RELIEF OBLONG DIE BUTTON PRESS FIT, DOWEL SLOT LOCKING DEVICE

(P70 SERIES)

Shape & Style: **P70** Body Dia.: **32** O.A. Length: **30** = OBLONG STD. x 32 BODY DIA. x 30 LG.

| NAAMS CODE | D x L |
|------------|---------|
| P701025 | 10 x 25 |
| P701028 | 10 x 28 |
| P701030 | 10 x 30 |
| P701325 | 13 x 25 |
| P701328 | 13 x 28 |
| P701330 | 13 x 30 |
| P701625 | 16 x 25 |
| P701628 | 16 x 28 |
| P701630 | 16 x 30 |
| P701635 | 16 x 35 |
| P702025 | 20 x 25 |
| P702028 | 20 x 28 |
| P702030 | 20 x 30 |
| P702035 | 20 x 35 |
| P702225 | 22 x 25 |
| P702228 | 22 x 28 |
| P702230 | 22 x 30 |
| P702235 | 22 x 35 |
| P702525 | 25 x 25 |
| P702528 | 25 x 28 |
| P702530 | 25 x 30 |
| P702535 | 25 x 35 |

| NAAMS CODE | D x L |
|------------|---------|
| P703225 | 32 x 25 |
| P703228 | 32 x 28 |
| P703230 | 32 x 30 |
| P703235 | 32 x 35 |
| P703825 | 38 x 25 |
| P703828 | 38 x 28 |
| P703830 | 38 x 30 |
| P703835 | 38 x 35 |
| P704025 | 40 x 25 |
| P704028 | 40 x 28 |
| P704030 | 40 x 30 |
| P704035 | 40 x 35 |
| P704525 | 45 x 25 |
| P704528 | 45 x 28 |
| P704530 | 45 x 30 |
| P704535 | 45 x 35 |
| P705025 | 50 x 25 |
| P705028 | 50 x 28 |
| P705030 | 50 x 30 |
| P705035 | 50 x 35 |
| P705625 | 56 x 25 |
| P705628 | 56 x 28 |
| P705630 | 56 x 30 |
| P705635 | 56 x 35 |

| NAAMS CODE | D x L |
|------------|----------|
| P706325 | 63 x 25 |
| P706328 | 63 x 28 |
| P706330 | 63 x 30 |
| P706335 | 63 x 35 |
| P707125 | 71 x 25 |
| P707128 | 71 x 28 |
| P707130 | 71 x 30 |
| P707135 | 71 x 35 |
| P707625 | 76 x 25 |
| P707628 | 76 x 28 |
| P707630 | 76 x 30 |
| P707635 | 76 x 35 |
| P708525 | 85 x 25 |
| P708528 | 85 x 28 |
| P708530 | 85 x 30 |
| P708535 | 85 x 35 |
| P709025 | 90 x 25 |
| P709028 | 90 x 28 |
| P709030 | 90 x 30 |
| P709035 | 90 x 35 |
| P700025 | 100 x 25 |
| P700028 | 100 x 28 |
| P700030 | 100 x 30 |
| P700035 | 100 x 35 |

CODING CONTINUED ON FOLLOWING PAGE

STRAIGHT RELIEF OBLONG DIE BUTTON PRESS FIT, DOWEL SLOT LOCKING DEVICE

(P71 SERIES)

EX:

| | |
|------------------|-----|
| Shape & Style | P71 |
|------------------|-----|

| | |
|-----------|----|
| Body Dia. | 32 |
|-----------|----|

| | |
|-------------|----|
| O.A. Length | 30 |
|-------------|----|

 = OBLONG ALT "A" x 32 BODY DIA. x 30 LG.

| NAAMS CODE | D x L |
|------------|---------|
| P711025 | 10 x 25 |
| P711028 | 10 x 28 |
| P711030 | 10 x 30 |
| P711325 | 13 x 25 |
| P711328 | 13 x 28 |
| P711330 | 13 x 30 |
| P711625 | 16 x 25 |
| P711628 | 16 x 28 |
| P711630 | 16 x 30 |
| P711635 | 16 x 35 |
| P712025 | 20 x 25 |
| P712028 | 20 x 28 |
| P712030 | 20 x 30 |
| P712035 | 20 x 35 |
| P712225 | 22 x 25 |
| P712228 | 22 x 28 |
| P712230 | 22 x 30 |
| P712235 | 22 x 35 |
| P712525 | 25 x 25 |
| P712528 | 25 x 28 |
| P712530 | 25 x 30 |
| P712535 | 25 x 35 |

| NAAMS CODE | D x L |
|------------|---------|
| P713225 | 32 x 25 |
| P713228 | 32 x 28 |
| P713230 | 32 x 30 |
| P713235 | 32 x 35 |
| P713825 | 38 x 25 |
| P713828 | 38 x 28 |
| P713830 | 38 x 30 |
| P713835 | 38 x 35 |
| P714025 | 40 x 25 |
| P714028 | 40 x 28 |
| P714030 | 40 x 30 |
| P714035 | 40 x 35 |
| P714525 | 45 x 25 |
| P714528 | 45 x 28 |
| P714530 | 45 x 30 |
| P714535 | 45 x 35 |
| P715025 | 50 x 25 |
| P715028 | 50 x 28 |
| P715030 | 50 x 30 |
| P715035 | 50 x 35 |
| P715625 | 56 x 25 |
| P715628 | 56 x 28 |
| P715630 | 56 x 30 |
| P715635 | 56 x 35 |

| NAAMS CODE | D x L |
|------------|----------|
| P716325 | 63 x 25 |
| P716328 | 63 x 28 |
| P716330 | 63 x 30 |
| P716335 | 63 x 35 |
| P717125 | 71 x 25 |
| P717128 | 71 x 28 |
| P717130 | 71 x 30 |
| P717135 | 71 x 35 |
| P717625 | 76 x 25 |
| P717628 | 76 x 28 |
| P717630 | 76 x 30 |
| P717635 | 76 x 35 |
| P718525 | 85 x 25 |
| P718528 | 85 x 28 |
| P718530 | 85 x 30 |
| P718535 | 85 x 35 |
| P719025 | 90 x 25 |
| P719028 | 90 x 28 |
| P719030 | 90 x 30 |
| P719035 | 90 x 35 |
| P710025 | 100 x 25 |
| P710028 | 100 x 28 |
| P710030 | 100 x 30 |
| P710035 | 100 x 35 |

CODING CONTINUED ON FOLLOWING PAGE

STRAIGHT RELIEF OBLONG DIE BUTTON PRESS FIT, DOWEL SLOT LOCKING DEVICE

(P72 SERIES)

EX:

| |
|------------------|
| Shape & Style |
| P72 |

| |
|-----------|
| Body Dia. |
| 32 |

| |
|-------------|
| O.A. Length |
| 30 |

 = OBLONG ALT "B" x 32 BODY DIA. x 30 LG.

| NAAMS CODE | D x L |
|------------|---------|
| P722025 | 20 x 25 |
| P722028 | 20 x 28 |
| P722030 | 20 x 30 |
| P722035 | 20 x 35 |
| P722225 | 22 x 25 |
| P722228 | 22 x 28 |
| P722230 | 22 x 30 |
| P722235 | 22 x 35 |
| P722525 | 25 x 25 |
| P722528 | 25 x 28 |
| P722530 | 25 x 30 |
| P722535 | 25 x 35 |
| P723225 | 32 x 25 |
| P723228 | 32 x 28 |
| P723230 | 32 x 30 |
| P723235 | 32 x 35 |
| P723825 | 38 x 25 |
| P723828 | 38 x 28 |
| P723830 | 38 x 30 |
| P723835 | 38 x 35 |

| NAAMS CODE | D x L |
|------------|---------|
| P724025 | 40 x 25 |
| P724028 | 40 x 28 |
| P724030 | 40 x 30 |
| P724035 | 40 x 35 |
| P724525 | 45 x 25 |
| P724528 | 45 x 28 |
| P724530 | 45 x 30 |
| P724535 | 45 x 35 |
| P725025 | 50 x 25 |
| P725028 | 50 x 28 |
| P725030 | 50 x 30 |
| P725035 | 50 x 35 |
| P725625 | 56 x 25 |
| P725628 | 56 x 28 |
| P725630 | 56 x 30 |
| P725635 | 56 x 35 |
| P726325 | 63 x 25 |
| P726328 | 63 x 28 |
| P726330 | 63 x 30 |
| P726335 | 63 x 35 |

| NAAMS CODE | D x L |
|------------|----------|
| P727125 | 71 x 25 |
| P727128 | 71 x 28 |
| P727130 | 71 x 30 |
| P727135 | 71 x 35 |
| P727625 | 76 x 25 |
| P727628 | 76 x 28 |
| P727630 | 76 x 30 |
| P727635 | 76 x 35 |
| P728525 | 85 x 25 |
| P728528 | 85 x 28 |
| P728530 | 85 x 30 |
| P728535 | 85 x 35 |
| P729025 | 90 x 25 |
| P729028 | 90 x 28 |
| P729030 | 90 x 30 |
| P729035 | 90 x 35 |
| P720025 | 100 x 25 |
| P720028 | 100 x 28 |
| P720030 | 100 x 30 |
| P720035 | 100 x 35 |

STRAIGHT RELIEF SQUARE DIE BUTTON PRESS FIT, DOWEL SLOT LOCKING DEVICE

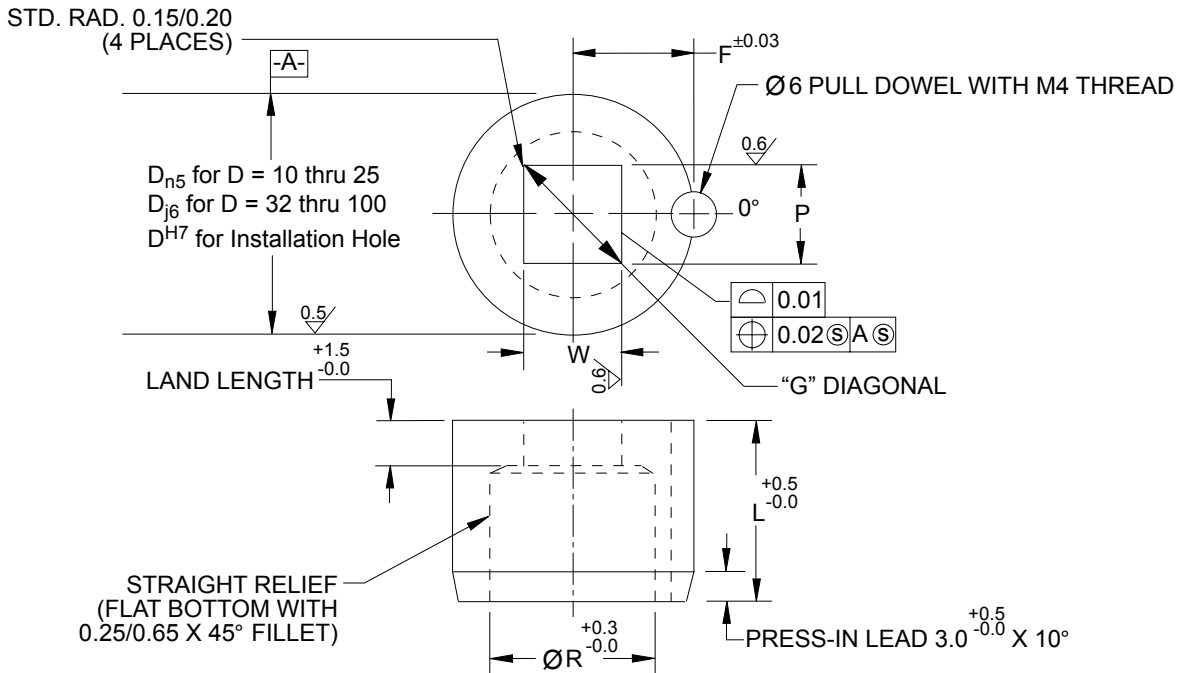
(P80 THRU P82 SERIES)

GLOBAL STANDARD COMPONENTS



Stamping

04/24/14



| D STANDARD BODY | HOLE SIZE RANGE 0.01 INCREMENTS | | L OVERALL LENGTH | | | | | LAND LENGTHS | | | RELIEF HOLE Ø R MAX | F |
|-----------------------|------------------------------------|-------|------------------------|----|----|----|----|-----------------|----------|----------|------------------------------|-------|
| | W MIN | G MAX | 25 | 28 | 30 | 32 | 35 | STD S | ALT A | ALT B | | |
| 10 | 1.5 to | 5.0 | x | x | x | x | x | 4 | 8 | - | 6.0 | 7.00 |
| 13 | 1.5 to | 7.2 | x | x | x | x | x | 5 | 8 | - | 8.0 | 8.20 |
| 16 | 2.5 to | 8.8 | x | x | x | x | x | 5 | 8 | - | 9.5 | 9.00 |
| 20 | 3.2 to | 11.0 | x | x | x | x | x | 5 | 12 | 20 | 12.0 | 11.00 |
| 22 | 4.0 to | 14.0 | x | x | x | x | x | 6 | 12 | 20 | 15.0 | 12.00 |
| 25 | 4.0 to | 16.5 | x | x | x | x | x | 6 | 12 | 20 | 17.5 | 13.50 |
| 32 | 5.5 to | 20.0 | x | x | x | x | x | 6 | 12 | 20 | 21.0 | 16.00 |
| 38 | 6.4 to | 26.0 | x | x | x | x | x | 8 | 12 | 20 | 27.0 | 19.00 |
| 40 | 6.4 to | 26.0 | x | x | x | x | x | 8 | 12 | 20 | 27.0 | 20.00 |
| 45 | 8.0 to | 35.0 | x | x | x | x | x | 8 | 12 | 20 | 36.0 | 22.50 |
| 50 | 9.0 to | 45.0 | x | x | x | x | x | 8 | 12 | 20 | 41.0 | 25.00 |
| 56 | 10.0 to | 45.0 | x | x | x | x | x | 8 | 12 | 20 | 46.0 | 28.00 |
| 63 | 11.0 to | 50.0 | x | x | x | x | x | 8 | 12 | 20 | 51.0 | 31.50 |
| 71 | 12.0 to | 56.0 | x | x | x | x | x | 8 | 12 | 20 | 57.0 | 35.50 |
| 76 | 15.0 to | 60.0 | x | x | x | x | x | 8 | 12 | 20 | 61.0 | 38.00 |
| 85 | 21.0 to | 66.0 | x | x | x | x | x | 8 | 12 | 20 | 67.0 | 42.50 |
| 90 | 25.0 to | 70.0 | x | x | x | x | x | 8 | 12 | 20 | 71.0 | 45.00 |
| 100 | 33.0 to | 70.0 | x | x | x | x | x | 8 | 12 | 20 | 79.0 | 50.00 |

$$G = 2\sqrt{(P/2-R)^2 + (W/2-R)^2} + R$$

NOTES & SPECIFICATIONS: $G_{MAX} = D - 0.2$

Material, AISI – A2

Hardness, Rc 60-63

Identification, etch word "Metric" on each piece

CODING ON FOLLOWING PAGE

A

B

C

STRAIGHT RELIEF SQUARE DIE BUTTON PRESS FIT, DOWEL SLOT LOCKING DEVICE

(P80 SERIES)

EX:

| | |
|------------------|-----|
| Shape & Style | P80 |
|------------------|-----|

| | |
|-----------|----|
| Body Dia. | 32 |
|-----------|----|

| | |
|-------------|----|
| O.A. Length | 30 |
|-------------|----|

 = SQUARE STD. x 32 BODY DIA. x 30 LG.

| NAAMS CODE | D x L |
|------------|---------|
| P801025 | 10 x 25 |
| P801028 | 10 x 28 |
| P801030 | 10 x 30 |
| P801325 | 13 x 25 |
| P801328 | 13 x 28 |
| P801330 | 13 x 30 |
| P801625 | 16 x 25 |
| P801628 | 16 x 28 |
| P801630 | 16 x 30 |
| P801635 | 16 x 35 |
| P802025 | 20 x 25 |
| P802028 | 20 x 28 |
| P802030 | 20 x 30 |
| P802035 | 20 x 35 |
| P802225 | 22 x 25 |
| P802228 | 22 x 28 |
| P802230 | 22 x 30 |
| P802235 | 22 x 35 |
| P802525 | 25 x 25 |
| P802528 | 25 x 28 |
| P802530 | 25 x 30 |
| P802535 | 25 x 35 |

| NAAMS CODE | D x L |
|------------|---------|
| P803225 | 32 x 25 |
| P803228 | 32 x 28 |
| P803230 | 32 x 30 |
| P803235 | 32 x 35 |
| P803825 | 38 x 25 |
| P803828 | 38 x 28 |
| P803830 | 38 x 30 |
| P803835 | 38 x 35 |
| P804025 | 40 x 25 |
| P804028 | 40 x 28 |
| P804030 | 40 x 30 |
| P804035 | 40 x 35 |
| P804525 | 45 x 25 |
| P804528 | 45 x 28 |
| P804530 | 45 x 30 |
| P804535 | 45 x 35 |
| P805025 | 50 x 25 |
| P805028 | 50 x 28 |
| P805030 | 50 x 30 |
| P805035 | 50 x 35 |
| P805625 | 56 x 25 |
| P805628 | 56 x 28 |
| P805630 | 56 x 30 |
| P805635 | 56 x 35 |

| NAAMS CODE | D x L |
|------------|----------|
| P806325 | 63 x 25 |
| P806328 | 63 x 28 |
| P806330 | 63 x 30 |
| P806335 | 63 x 35 |
| P807125 | 71 x 25 |
| P807128 | 71 x 28 |
| P807130 | 71 x 30 |
| P807135 | 71 x 35 |
| P807625 | 76 x 25 |
| P807628 | 76 x 28 |
| P807630 | 76 x 30 |
| P807635 | 76 x 35 |
| P808525 | 85 x 25 |
| P808528 | 85 x 28 |
| P808530 | 85 x 30 |
| P808535 | 85 x 35 |
| P809025 | 90 x 25 |
| P809028 | 90 x 28 |
| P809030 | 90 x 30 |
| P809035 | 90 x 35 |
| P800025 | 100 x 25 |
| P800028 | 100 x 28 |
| P800030 | 100 x 30 |
| P800035 | 100 x 35 |

CODING CONTINUED ON FOLLOWING PAGE

STRAIGHT RELIEF SQUARE DIE BUTTON PRESS FIT, DOWEL SLOT LOCKING DEVICE

(P81 SERIES)

EX:

| | |
|------------------|-----|
| Shape & Style | P81 |
|------------------|-----|

| | |
|-----------|----|
| Body Dia. | 32 |
|-----------|----|

| | |
|-------------|----|
| O.A. Length | 30 |
|-------------|----|

 = SQUARE ALT "A" x 32 BODY DIA. x 30 LG.

| NAAMS CODE | D x L |
|------------|---------|
| P811025 | 10 x 25 |
| P811028 | 10 x 28 |
| P811030 | 10 x 30 |
| P811325 | 13 x 25 |
| P811328 | 13 x 28 |
| P811330 | 13 x 30 |
| P811625 | 16 x 25 |
| P811628 | 16 x 28 |
| P811630 | 16 x 30 |
| P811635 | 16 x 35 |
| P812025 | 20 x 25 |
| P812028 | 20 x 28 |
| P812030 | 20 x 30 |
| P812035 | 20 x 35 |
| P812225 | 22 x 25 |
| P812228 | 22 x 28 |
| P812230 | 22 x 30 |
| P812235 | 22 x 35 |
| P812525 | 25 x 25 |
| P812528 | 25 x 28 |
| P812530 | 25 x 30 |
| P812535 | 25 x 35 |

| NAAMS CODE | D x L |
|------------|---------|
| P813225 | 32 x 25 |
| P813228 | 32 x 28 |
| P813230 | 32 x 30 |
| P813235 | 32 x 35 |
| P813825 | 38 x 25 |
| P813828 | 38 x 28 |
| P813830 | 38 x 30 |
| P813835 | 38 x 35 |
| P814025 | 40 x 25 |
| P814028 | 40 x 28 |
| P814030 | 40 x 30 |
| P814035 | 40 x 35 |
| P814525 | 45 x 25 |
| P814528 | 45 x 28 |
| P814530 | 45 x 30 |
| P814535 | 45 x 35 |
| P815025 | 50 x 25 |
| P815028 | 50 x 28 |
| P815030 | 50 x 30 |
| P815035 | 50 x 35 |
| P815625 | 56 x 25 |
| P815628 | 56 x 28 |
| P815630 | 56 x 30 |
| P815635 | 56 x 35 |

| NAAMS CODE | D x L |
|------------|----------|
| P816325 | 63 x 25 |
| P816328 | 63 x 28 |
| P816330 | 63 x 30 |
| P816335 | 63 x 35 |
| P817125 | 71 x 25 |
| P817128 | 71 x 28 |
| P817130 | 71 x 30 |
| P817135 | 71 x 35 |
| P817625 | 76 x 25 |
| P817628 | 76 x 28 |
| P817630 | 76 x 30 |
| P817635 | 76 x 35 |
| P818525 | 85 x 25 |
| P818528 | 85 x 28 |
| P818530 | 85 x 30 |
| P818535 | 85 x 35 |
| P819025 | 90 x 25 |
| P819028 | 90 x 28 |
| P819030 | 90 x 30 |
| P819035 | 90 x 35 |
| P810025 | 100 x 25 |
| P810028 | 100 x 28 |
| P810030 | 100 x 30 |
| P810035 | 100 x 35 |

CODING CONTINUED ON THE FOLLOWING PAGE

STRAIGHT RELIEF SQUARE DIE BUTTON PRESS FIT, DOWEL SLOT LOCKING DEVICE

(P82 SERIES)



Stamping

04/16/96

EX:

| | |
|------------------|-----|
| Shape & Style | P82 |
|------------------|-----|

| | |
|-----------|----|
| Body Dia. | 32 |
|-----------|----|

| | |
|-------------|----|
| O.A. Length | 30 |
|-------------|----|

 = SQUARE ALT "B" x 32 BODY DIA. x 30 LG.

| NAAMS CODE | D x L |
|------------|---------|
| P822025 | 20 x 25 |
| P822028 | 20 x 28 |
| P822030 | 20 x 30 |
| P822035 | 20 x 35 |
| P822225 | 22 x 25 |
| P822228 | 22 x 28 |
| P822230 | 22 x 30 |
| P822235 | 22 x 35 |
| P822525 | 25 x 25 |
| P822528 | 25 x 28 |
| P822530 | 25 x 30 |
| P822535 | 25 x 35 |
| P823225 | 32 x 25 |
| P823228 | 32 x 28 |
| P823230 | 32 x 30 |
| P823235 | 32 x 35 |
| P823825 | 38 x 25 |
| P823828 | 38 x 28 |
| P823830 | 38 x 30 |
| P823835 | 38 x 35 |

| NAAMS CODE | D x L |
|------------|---------|
| P824025 | 40 x 25 |
| P824028 | 40 x 28 |
| P824030 | 40 x 30 |
| P824035 | 40 x 35 |
| P824525 | 45 x 25 |
| P824528 | 45 x 28 |
| P824530 | 45 x 30 |
| P824535 | 45 x 35 |
| P825025 | 50 x 25 |
| P825028 | 50 x 28 |
| P825030 | 50 x 30 |
| P825035 | 50 x 35 |
| P825625 | 56 x 25 |
| P825628 | 56 x 28 |
| P825630 | 56 x 30 |
| P825635 | 56 x 35 |
| P826325 | 63 x 25 |
| P826328 | 63 x 28 |
| P826330 | 63 x 30 |
| P826335 | 63 x 35 |

| NAAMS CODE | D x L |
|------------|----------|
| P827125 | 71 x 25 |
| P827128 | 71 x 28 |
| P827130 | 71 x 30 |
| P827135 | 71 x 35 |
| P827625 | 76 x 25 |
| P827628 | 76 x 28 |
| P827630 | 76 x 30 |
| P827635 | 76 x 35 |
| P828525 | 85 x 25 |
| P828528 | 85 x 28 |
| P828530 | 85 x 30 |
| P828535 | 85 x 35 |
| P829025 | 90 x 25 |
| P829028 | 90 x 28 |
| P829030 | 90 x 30 |
| P829035 | 90 x 35 |
| P820025 | 100 x 25 |
| P820028 | 100 x 28 |
| P820030 | 100 x 30 |
| P820035 | 100 x 35 |

STRAIGHT RELIEF RECTANGULAR DIE BUTTON PRESS FIT, DOWEL SLOT LOCKING DEVICE

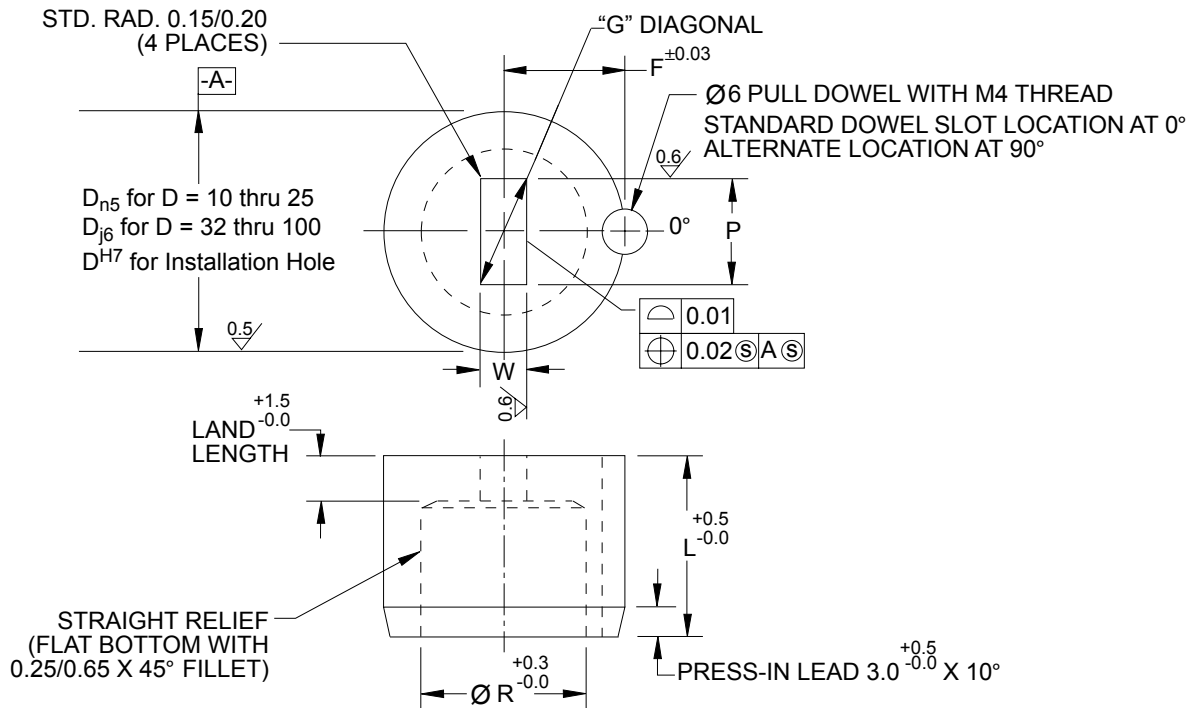
(P90 THRU P92 SERIES)

GLOBAL STANDARD COMPONENTS



Stamping

04/24/14



| D STANDARD BODY Ø | HOLE SIZE RANGE 0.01 INCREMENTS | | L OVERALL LENGTH | | | | | LAND LENGTHS | | | RELIEF HOLE Ø OR MAX | F |
|----------------------------|------------------------------------|-------|------------------------|----|----|----|----|-----------------|-----|-----|-------------------------------|-------|
| | W MIN | G MAX | 25 | 28 | 30 | 32 | 35 | STD | ALT | ALT | | |
| | | | | | | | | S | A | B | | |
| 10 | 1.5 | 5.0 | x | x | x | x | x | 4 | 8 | - | 6.0 | 7.00 |
| 13 | 1.5 | 7.2 | x | x | x | x | x | 5 | 8 | - | 8.0 | 8.20 |
| 16 | 2.5 | 8.8 | x | x | x | x | x | 5 | 8 | - | 9.5 | 9.00 |
| 20 | 3.2 | 11.0 | x | x | x | x | x | 5 | 12 | 20 | 12.0 | 11.00 |
| 22 | 4.0 | 14.0 | x | x | x | x | x | 6 | 12 | 20 | 15.0 | 12.00 |
| 25 | 4.0 | 16.5 | x | x | x | x | x | 6 | 12 | 20 | 17.5 | 13.50 |
| 32 | 5.5 | 20.0 | x | x | x | x | x | 6 | 12 | 20 | 21.0 | 16.00 |
| 38 | 6.4 | 26.0 | x | x | x | x | x | 8 | 12 | 20 | 27.0 | 19.00 |
| 40 | 6.4 | 26.0 | x | x | x | x | x | 8 | 12 | 20 | 27.0 | 20.00 |
| 45 | 8.0 | 35.0 | x | x | x | x | x | 8 | 12 | 20 | 36.0 | 22.50 |
| 50 | 9.0 | 45.0 | x | x | x | x | x | 8 | 12 | 20 | 41.0 | 25.00 |
| 56 | 10.0 | 45.0 | x | x | x | x | x | 8 | 12 | 20 | 46.0 | 28.00 |
| 63 | 11.0 | 50.0 | x | x | x | x | x | 8 | 12 | 20 | 51.0 | 31.50 |
| 71 | 12.0 | 56.0 | x | x | x | x | x | 8 | 12 | 20 | 57.0 | 35.50 |
| 76 | 15.0 | 60.0 | x | x | x | x | x | 8 | 12 | 20 | 61.0 | 38.00 |
| 85 | 21.0 | 66.0 | x | x | x | x | x | 8 | 12 | 20 | 67.0 | 42.50 |
| 90 | 25.0 | 70.0 | x | x | x | x | x | 8 | 12 | 20 | 71.0 | 45.00 |
| 100 | 33.0 | 70.0 | x | x | x | x | x | 8 | 12 | 20 | 79.0 | 50.00 |

$$G = 2\sqrt{(P/2-R)^2 + (W/2-R)^2 + R}$$

NOTES & SPECIFICATIONS: $G_{MAX} = D - 0.2$

Material, AISI – A2

Hardness, Rc 60-63

Identification, etch word “Metric” on each piece

CODING ON FOLLOWING PAGE

STRAIGHT RELIEF RECTANGULAR DIE BUTTON PRESS FIT, DOWEL SLOT LOCKING DEVICE

(P90 SERIES)

GLOBAL STANDARD COMPONENTS



Stamping

04/16/96

| | |
|---------------|-----|
| Shape & Style | P90 |
|---------------|-----|

| | |
|-----------|----|
| Body Dia. | 32 |
|-----------|----|

| | |
|-------------|----|
| O.A. Length | 30 |
|-------------|----|

 = RECTANGULAR x 32 BODY DIA. x 30 LG.

| NAAMS CODE | D x L |
|------------|---------|
| P901025 | 10 x 25 |
| P901028 | 10 x 28 |
| P901030 | 10 x 30 |
| P901325 | 13 x 25 |
| P901328 | 13 x 28 |
| P901330 | 13 x 30 |
| P901625 | 16 x 25 |
| P901628 | 16 x 28 |
| P901630 | 16 x 30 |
| P901635 | 16 x 35 |
| P902025 | 20 x 25 |
| P902028 | 20 x 28 |
| P902030 | 20 x 30 |
| P902035 | 20 x 35 |
| P902225 | 22 x 25 |
| P902228 | 22 x 28 |
| P902230 | 22 x 30 |
| P902235 | 22 x 35 |
| P902525 | 25 x 25 |
| P902528 | 25 x 28 |
| P902530 | 25 x 30 |
| P902535 | 25 x 35 |

| NAAMS CODE | D x L |
|------------|---------|
| P903225 | 32 x 25 |
| P903228 | 32 x 28 |
| P903230 | 32 x 30 |
| P903235 | 32 x 35 |
| P903825 | 38 x 25 |
| P903828 | 38 x 28 |
| P903830 | 38 x 30 |
| P903835 | 38 x 35 |
| P904025 | 40 x 25 |
| P904028 | 40 x 28 |
| P904030 | 40 x 30 |
| P904035 | 40 x 35 |
| P904525 | 45 x 25 |
| P904528 | 45 x 28 |
| P904530 | 45 x 30 |
| P904535 | 45 x 35 |
| P905025 | 50 x 25 |
| P905028 | 50 x 28 |
| P905030 | 50 x 30 |
| P905035 | 50 x 35 |
| P905625 | 56 x 25 |
| P905628 | 56 x 28 |
| P905630 | 56 x 30 |
| P905635 | 56 x 35 |

| NAAMS CODE | D x L |
|------------|----------|
| P906325 | 63 x 25 |
| P906328 | 63 x 28 |
| P906330 | 63 x 30 |
| P906335 | 63 x 35 |
| P907125 | 71 x 25 |
| P907128 | 71 x 28 |
| P907130 | 71 x 30 |
| P907135 | 71 x 35 |
| P907625 | 76 x 25 |
| P907628 | 76 x 28 |
| P907630 | 76 x 30 |
| P907635 | 76 x 35 |
| P908525 | 85 x 25 |
| P908528 | 85 x 28 |
| P908530 | 85 x 30 |
| P908535 | 85 x 35 |
| P909025 | 90 x 25 |
| P909028 | 90 x 28 |
| P909030 | 90 x 30 |
| P909035 | 90 x 35 |
| P900025 | 100 x 25 |
| P900028 | 100 x 28 |
| P900030 | 100 x 30 |
| P900035 | 100 x 35 |

CODING CONTINUED ON FOLLOWING PAGE

STRAIGHT RELIEF RECTANGULAR DIE BUTTON PRESS FIT, DOWEL SLOT LOCKING DEVICE

(P91 SERIES)

GLOBAL STANDARD COMPONENTS



Stamping

04/16/96

EX:

| | | |
|------------------|-----------|-------------|
| Shape & Style | Body Dia. | O.A. Length |
| P91 | 32 | 30 |

 = RECTANGULAR ALT "A" x 32 BODY DIA. x 30 LG.

| NAAMS CODE | D x L |
|------------|---------|
| P911025 | 10 x 25 |
| P911028 | 10 x 28 |
| P911030 | 10 x 30 |
| P911325 | 13 x 25 |
| P911328 | 13 x 28 |
| P911330 | 13 x 30 |
| P911625 | 16 x 25 |
| P911628 | 16 x 28 |
| P911630 | 16 x 30 |
| P911635 | 16 x 35 |
| P912025 | 20 x 25 |
| P912028 | 20 x 28 |
| P912030 | 20 x 30 |
| P912035 | 20 x 35 |
| P912225 | 22 x 25 |
| P912228 | 22 x 28 |
| P912230 | 22 x 30 |
| P912235 | 22 x 35 |
| P912525 | 25 x 25 |
| P912528 | 25 x 28 |
| P912530 | 25 x 30 |
| P912535 | 25 x 35 |

| NAAMS CODE | D x L |
|------------|---------|
| P913225 | 32 x 25 |
| P913228 | 32 x 28 |
| P913230 | 32 x 30 |
| P913235 | 32 x 35 |
| P913825 | 38 x 25 |
| P913828 | 38 x 28 |
| P913830 | 38 x 30 |
| P913835 | 38 x 35 |
| P914025 | 40 x 25 |
| P914028 | 40 x 28 |
| P914030 | 40 x 30 |
| P914035 | 40 x 35 |
| P914525 | 45 x 25 |
| P914528 | 45 x 28 |
| P914530 | 45 x 30 |
| P914535 | 45 x 35 |
| P915025 | 50 x 25 |
| P915028 | 50 x 28 |
| P915030 | 50 x 30 |
| P915035 | 50 x 35 |
| P915625 | 56 x 25 |
| P915628 | 56 x 28 |
| P915630 | 56 x 30 |
| P915635 | 56 x 35 |

| NAAMS CODE | D x L |
|------------|----------|
| P916325 | 63 x 25 |
| P916328 | 63 x 28 |
| P916330 | 63 x 30 |
| P916335 | 63 x 35 |
| P917125 | 71 x 25 |
| P917128 | 71 x 28 |
| P917130 | 71 x 30 |
| P917135 | 71 x 35 |
| P917625 | 76 x 25 |
| P917628 | 76 x 28 |
| P917630 | 76 x 30 |
| P917635 | 76 x 35 |
| P918525 | 85 x 25 |
| P918528 | 85 x 28 |
| P918530 | 85 x 30 |
| P918535 | 85 x 35 |
| P919025 | 90 x 25 |
| P919028 | 90 x 28 |
| P919030 | 90 x 30 |
| P919035 | 90 x 35 |
| P910025 | 100 x 25 |
| P910028 | 100 x 28 |
| P910030 | 100 x 30 |
| P910035 | 100 x 35 |

CODING CONTINUED ON FOLLOWING PAGE

STRAIGHT RELIEF RECTANGULAR DIE BUTTON PRESS FIT, DOWEL SLOT LOCKING DEVICE

(P92 SERIES)

GLOBAL STANDARD COMPONENTS



Stamping

04/16/96

EX:

| | |
|---------------|-----|
| Shape & Style | P92 |
|---------------|-----|

| | |
|-----------|----|
| Body Dia. | 32 |
|-----------|----|

| | |
|-------------|----|
| O.A. Length | 30 |
|-------------|----|

 = RECTANGULAR ALT "B" x 32 BODY DIA. x 30 LG.

| NAAMS CODE | D x L |
|------------|---------|
| P922025 | 20 x 25 |
| P922028 | 20 x 28 |
| P922030 | 20 x 30 |
| P922035 | 20 x 35 |
| P922225 | 22 x 25 |
| P922228 | 22 x 28 |
| P922230 | 22 x 30 |
| P922235 | 22 x 35 |
| P922525 | 25 x 25 |
| P922528 | 25 x 28 |
| P922530 | 25 x 30 |
| P922535 | 25 x 35 |
| P923225 | 32 x 25 |
| P923228 | 32 x 28 |
| P923230 | 32 x 30 |
| P923235 | 32 x 35 |
| P923825 | 38 x 25 |
| P923828 | 38 x 28 |
| P923830 | 38 x 30 |
| P923835 | 38 x 35 |

| NAAMS CODE | D x L |
|------------|---------|
| P924025 | 40 x 25 |
| P924028 | 40 x 28 |
| P924030 | 40 x 30 |
| P924035 | 40 x 35 |
| P924525 | 45 x 25 |
| P924528 | 45 x 28 |
| P924530 | 45 x 30 |
| P924535 | 45 x 35 |
| P925025 | 50 x 25 |
| P925028 | 50 x 28 |
| P925030 | 50 x 30 |
| P925035 | 50 x 35 |
| P925625 | 56 x 25 |
| P925628 | 56 x 28 |
| P925630 | 56 x 30 |
| P925635 | 56 x 35 |
| P926325 | 63 x 25 |
| P926328 | 63 x 28 |
| P926330 | 63 x 30 |
| P926335 | 63 x 35 |

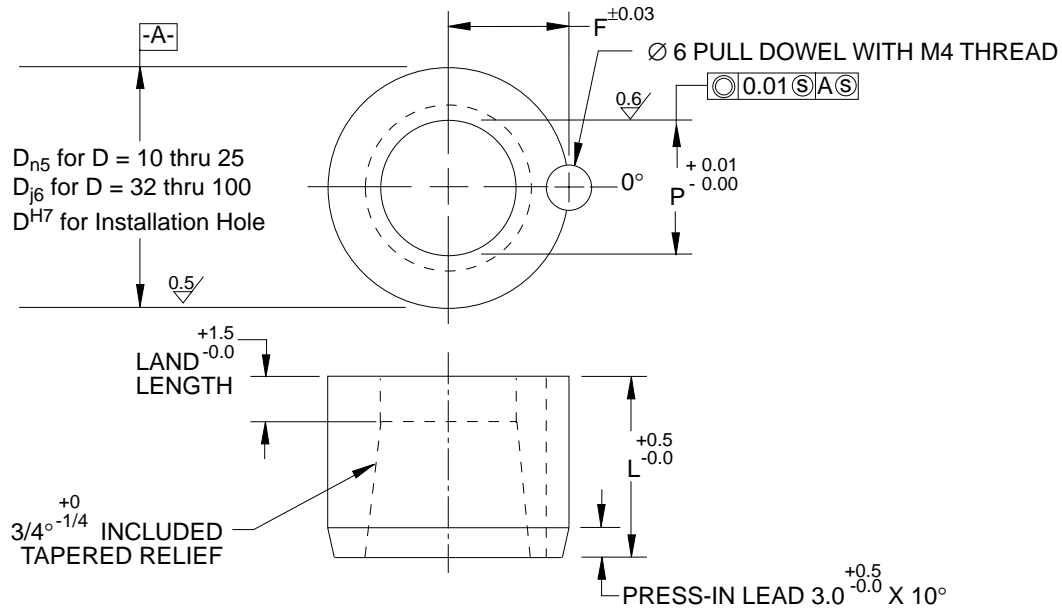
| NAAMS CODE | D x L |
|------------|----------|
| P927125 | 71 x 25 |
| P927128 | 71 x 28 |
| P927130 | 71 x 30 |
| P927135 | 71 x 35 |
| P927625 | 76 x 25 |
| P927628 | 76 x 28 |
| P927630 | 76 x 30 |
| P927635 | 76 x 35 |
| P928525 | 85 x 25 |
| P928528 | 85 x 28 |
| P928530 | 85 x 30 |
| P928535 | 85 x 35 |
| P929025 | 90 x 25 |
| P929028 | 90 x 28 |
| P929030 | 90 x 30 |
| P929035 | 90 x 35 |
| P920025 | 100 x 25 |
| P920028 | 100 x 28 |
| P920030 | 100 x 30 |
| P920035 | 100 x 35 |

TAPERED RELIEF ROUND DIE BUTTON

(P64 THRU P67 SERIES)

Stamping

07/01/99



A

| D STANDARD BODY Ø | HOLE SIZE RANGE 0.01 INCREMENTS | | L OVERALL LENGTH | | | | LAND LENGTHS | | | F |
|----------------------------|------------------------------------|-------|------------------------|----|----|----|-----------------|-----|-----|-------|
| | | | | | | | STD | ALT | ALT | |
| | MIN P | MAX P | 25 | 28 | 30 | 35 | S | A | B | |
| 10 | 1.60 | 3.19 | x | x | | | 4 | - | 3 | 7.00 |
| 10 | 3.20 | 6.80 | x | x | x | x | 5 | - | 3 | 7.00 |
| 13 | 3.20 | 8.80 | x | x | x | x | 5 | - | 3 | 8.20 |
| 13 | 5.40 | 8.80 | x | x | x | x | - | 8 | - | 8.20 |
| 16 | 7.40 | 10.80 | x | x | x | x | 5 | 8 | 3 | 9.00 |
| 20 | 9.50 | 13.60 | x | x | x | x | 5 | 10 | 3 | 11.00 |
| 22 | 10.50 | 15.00 | x | x | x | x | 6 | 10 | 3 | 12.00 |
| 25 | 12.00 | 17.00 | x | x | x | x | 6 | 10 | 3 | 13.50 |
| 32 | 16.00 | 22.00 | x | x | x | x | 6 | 12 | 3 | 16.00 |
| 38 | 18.00 | 27.00 | x | x | x | x | 8 | 12 | 3 | 19.00 |
| 40 | 18.00 | 27.00 | x | x | x | x | 8 | 12 | 3 | 20.00 |
| 45 | 22.00 | 31.00 | x | x | x | x | 8 | 12 | 3 | 22.50 |
| 50 | 24.00 | 34.00 | x | x | x | x | 8 | 12 | 3 | 25.00 |
| 56 | 26.00 | 38.00 | x | x | x | x | 8 | 12 | 3 | 28.00 |
| 63 | 30.00 | 43.00 | x | x | x | x | 8 | 12 | 3 | 31.50 |
| 71 | 34.00 | 48.00 | x | x | x | x | 8 | 12 | 3 | 35.50 |
| 76 | 36.00 | 52.00 | x | x | x | x | 8 | 12 | 3 | 38.00 |
| 85 | 40.00 | 58.00 | x | x | x | x | 8 | 12 | 3 | 42.50 |
| 90 | 43.00 | 61.00 | x | x | x | x | 8 | 12 | 3 | 45.00 |
| 100 | 48.00 | 68.00 | x | x | x | x | 8 | 12 | 3 | 50.00 |

NOTES & SPECIFICATIONS:

Material, AISI – A2

Hardness, Rc 60-63

Identification, etch word "Metric" on each piece

CODING ON FOLLOWING PAGE

TAPERED RELIEF ROUND DIE BUTTON CODING

(P64 & P65 SERIES)

GLOBAL STANDARD COMPONENTS



Stamping

04/16/96

(P64 SERIES 4 mm LAND) (P65 SERIES STD. LAND)

EX:

| | | |
|------------------|-----------|-------------|
| Shape & Style | Body Dia. | O.A. Length |
| P64 | 10 | 25 |
| P65 | 32 | 30 |

= SOLID ROUND 4 mm STD. x 10 BODY DIA. x 25 LG.

= STD. LAND x 32 BODY DIA. x 30 LONG

| NAAMS CODE | D x L |
|------------|---------|
| P641025 | 10 x 25 |
| P641028 | 10 x 28 |
| P651025 | 10 x 25 |
| P651028 | 10 x 28 |
| P651030 | 10 x 30 |
| P651035 | 10 x 35 |
| P651325 | 13 x 25 |
| P651328 | 13 x 28 |
| P651330 | 13 x 30 |
| P651335 | 13 x 35 |
| P651625 | 16 x 25 |
| P651628 | 16 x 28 |
| P651630 | 16 x 30 |
| P651635 | 16 x 35 |
| P652025 | 20 x 25 |
| P652028 | 20 x 28 |
| P652030 | 20 x 30 |
| P652035 | 20 x 35 |
| P652225 | 22 x 25 |
| P652228 | 22 x 28 |
| P652230 | 22 x 30 |
| P652235 | 22 x 35 |

| NAAMS CODE | D x L |
|------------|---------|
| P652525 | 25 x 25 |
| P652528 | 25 x 28 |
| P652530 | 25 x 30 |
| P652535 | 25 x 35 |
| P653225 | 32 x 25 |
| P653228 | 32 x 28 |
| P653230 | 32 x 30 |
| P653235 | 32 x 35 |
| P653825 | 38 x 25 |
| P653828 | 38 x 28 |
| P653830 | 38 x 30 |
| P653835 | 38 x 35 |
| P654025 | 40 x 25 |
| P654028 | 40 x 28 |
| P654030 | 40 x 30 |
| P654035 | 40 x 35 |
| P654525 | 45 x 25 |
| P654528 | 45 x 28 |
| P654530 | 45 x 30 |
| P654535 | 45 x 35 |
| P655025 | 50 x 25 |
| P655028 | 50 x 28 |
| P655030 | 50 x 30 |
| P655035 | 50 x 35 |

| NAAMS CODE | D x L |
|------------|----------|
| P655625 | 56 x 25 |
| P655628 | 56 x 28 |
| P655630 | 56 x 30 |
| P655635 | 56 x 35 |
| P656325 | 63 x 25 |
| P656328 | 63 x 28 |
| P656330 | 63 x 30 |
| P656335 | 63 x 35 |
| P657125 | 71 x 25 |
| P657128 | 71 x 28 |
| P657130 | 71 x 30 |
| P657135 | 71 x 35 |
| P657625 | 76 x 25 |
| P657628 | 76 x 28 |
| P657630 | 76 x 30 |
| P657635 | 76 x 35 |
| P658525 | 85 x 25 |
| P658528 | 85 x 28 |
| P658530 | 85 x 30 |
| P658535 | 85 x 35 |
| P659025 | 90 x 25 |
| P659028 | 90 x 28 |
| P659030 | 90 x 30 |
| P659035 | 90 x 35 |
| P650025 | 100 x 25 |
| P650028 | 100 x 28 |
| P650030 | 100 x 30 |
| P650035 | 100 x 35 |

CODING CONTINUED ON FOLLOWING PAGE

TAPERED RELIEF ROUND DIE BUTTON CODING

(P66 SERIES)



Stamping

04/16/96

EX:

| | | |
|------------------|-----------|-------------|
| Shape & Style | Body Dia. | O.A. Length |
| P66 | 32 | 30 |

 = SOLID ROUND ALT "A" x 32 BODY DIA. x 30 LG.

| NAAMS CODE | D x L |
|------------|---------|
| P661325 | 13 x 25 |
| P661328 | 13 x 28 |
| P661330 | 13 x 30 |
| P661335 | 13 x 35 |
| P661625 | 16 x 25 |
| P661628 | 16 x 28 |
| P661630 | 16 x 30 |
| P661635 | 16 x 35 |
| P662025 | 20 x 25 |
| P662028 | 20 x 28 |
| P662030 | 20 x 30 |
| P662035 | 20 x 35 |
| P662225 | 22 x 25 |
| P662228 | 22 x 28 |
| P662230 | 22 x 30 |
| P662235 | 22 x 35 |
| P662525 | 25 x 25 |
| P662528 | 25 x 28 |
| P662530 | 25 x 30 |
| P662535 | 25 x 35 |

| NAAMS CODE | D x L |
|------------|---------|
| P663225 | 32 x 25 |
| P663228 | 32 x 28 |
| P663230 | 32 x 30 |
| P663235 | 32 x 35 |
| P663825 | 38 x 25 |
| P663828 | 38 x 28 |
| P663830 | 38 x 30 |
| P663835 | 38 x 35 |
| P664025 | 40 x 25 |
| P664028 | 40 x 28 |
| P664030 | 40 x 30 |
| P664035 | 40 x 35 |
| P664525 | 45 x 25 |
| P664528 | 45 x 28 |
| P664530 | 45 x 30 |
| P664535 | 45 x 35 |
| P665025 | 50 x 25 |
| P665028 | 50 x 28 |
| P665030 | 50 x 30 |
| P665035 | 50 x 35 |
| P665625 | 56 x 25 |
| P665628 | 56 x 28 |
| P665630 | 56 x 30 |
| P665635 | 56 x 35 |

| NAAMS CODE | D x L |
|------------|----------|
| P666325 | 63 x 25 |
| P666328 | 63 x 28 |
| P666330 | 63 x 30 |
| P666335 | 63 x 35 |
| P667125 | 71 x 25 |
| P667128 | 71 x 28 |
| P667130 | 71 x 30 |
| P667135 | 71 x 35 |
| P667625 | 76 x 25 |
| P667628 | 76 x 28 |
| P667630 | 76 x 30 |
| P667635 | 76 x 35 |
| P668525 | 85 x 25 |
| P668528 | 85 x 28 |
| P668530 | 85 x 30 |
| P668535 | 85 x 35 |
| P669025 | 90 x 25 |
| P669028 | 90 x 28 |
| P669030 | 90 x 30 |
| P669035 | 90 x 35 |
| P660025 | 100 x 25 |
| P660028 | 100 x 28 |
| P660030 | 100 x 30 |
| P660035 | 100 x 35 |

CODING CONTINUED ON FOLLOWING PAGE

TAPERED RELIEF ROUND DIE BUTTON CODING

(P67 SERIES)



Stamping

04/16/96

| | | | |
|-----|---------------|-----------|--------------|
| EX: | Shape & Style | Body Dia. | O. A. Length |
| | P67 | 32 | 30 |
| | | | |

= SOLID ROUND ALT "B" x 32 BODY DIA. x 30 LG.

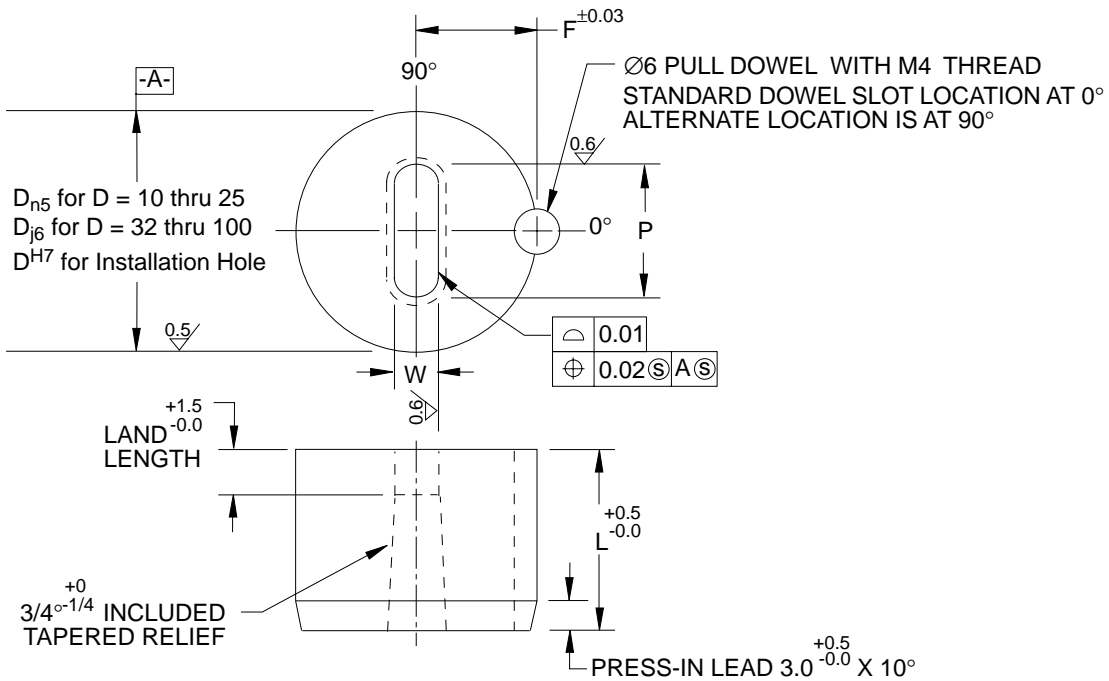
| NAAMS CODE | D x L |
|------------|---------|
| P671025 | 10 x 25 |
| P671028 | 10 x 28 |
| P671030 | 10 x 30 |
| P671035 | 10 x 35 |
| P671325 | 13 x 25 |
| P671328 | 13 x 28 |
| P671330 | 13 x 30 |
| P671335 | 13 x 35 |
| P671625 | 16 x 25 |
| P671628 | 16 x 28 |
| P671630 | 16 x 30 |
| P671635 | 16 x 35 |
| P672025 | 20 x 25 |
| P672028 | 20 x 28 |
| P672030 | 20 x 30 |
| P672035 | 20 x 35 |
| P672225 | 22 x 25 |
| P672228 | 22 x 28 |
| P672230 | 22 x 30 |
| P672235 | 22 x 35 |

| NAAMS CODE | D x L |
|------------|---------|
| P672525 | 25 x 25 |
| P672528 | 25 x 28 |
| P672530 | 25 x 30 |
| P672535 | 25 x 35 |
| P673225 | 32 x 25 |
| P673228 | 32 x 28 |
| P673230 | 32 x 30 |
| P673235 | 32 x 35 |
| P673825 | 38 x 25 |
| P673828 | 38 x 28 |
| P673830 | 38 x 30 |
| P673835 | 38 x 35 |
| P674025 | 40 x 25 |
| P674028 | 40 x 28 |
| P674030 | 40 x 30 |
| P674035 | 40 x 35 |
| P674525 | 45 x 25 |
| P674528 | 45 x 28 |
| P674530 | 45 x 30 |
| P674535 | 45 x 35 |
| P675025 | 50 x 25 |
| P675028 | 50 x 28 |
| P675030 | 50 x 30 |
| P675035 | 50 x 35 |

| NAAMS CODE | D x L |
|------------|----------|
| P675625 | 56 x 25 |
| P675628 | 56 x 28 |
| P675630 | 56 x 30 |
| P675635 | 56 x 35 |
| P676325 | 63 x 25 |
| P676328 | 63 x 28 |
| P676330 | 63 x 30 |
| P676335 | 63 x 35 |
| P677125 | 71 x 25 |
| P677128 | 71 x 28 |
| P677130 | 71 x 30 |
| P677135 | 71 x 35 |
| P677625 | 76 x 25 |
| P677628 | 76 x 28 |
| P677630 | 76 x 30 |
| P677635 | 76 x 35 |
| P678525 | 85 x 25 |
| P678528 | 85 x 28 |
| P678530 | 85 x 30 |
| P678535 | 85 x 35 |
| P679025 | 90 x 25 |
| P679028 | 90 x 28 |
| P679030 | 90 x 30 |
| P679035 | 90 x 35 |
| P670025 | 100 x 25 |
| P670028 | 100 x 28 |
| P670030 | 100 x 30 |
| P670035 | 100 x 35 |

TAPERED RELIEF OBLONG DIE BUTTON

(P75 THRU P77 SERIES)



A

| D STANDARD BODY Ø | HOLE SIZE RANGE 0.01 INCREMENTS | | L OVERALL LENGTH | | | | LAND LENGTHS | | | F |
|----------------------------|------------------------------------|---------------|------------------------|----|----|----|-----------------|-----|-----|-------|
| | | | | | | | STD | ALT | ALT | |
| | W | P | 25 | 28 | 30 | 35 | S | A | B | |
| 10 | 1.30 to 6.70 | 1.40 to 6.80 | x | x | x | x | 5 | 8 | 3 | 7.00 |
| 13 | 1.90 to 8.70 | 2.00 to 8.80 | x | x | x | x | 5 | 8 | 3 | 8.20 |
| 16 | 1.90 to 10.70 | 2.00 to 10.80 | x | x | x | x | 5 | 8 | 3 | 9.00 |
| 20 | 1.90 to 13.50 | 2.00 to 13.60 | x | x | x | x | 5 | 10 | 3 | 11.00 |
| 22 | 1.90 to 14.90 | 2.00 to 15.00 | x | x | x | x | 6 | 10 | 3 | 12.00 |
| 25 | 1.90 to 16.90 | 2.00 to 17.00 | x | x | x | x | 6 | 10 | 3 | 13.50 |
| 32 | 1.90 to 21.90 | 2.00 to 22.00 | x | x | x | x | 6 | 12 | 3 | 16.00 |
| 38 | 1.90 to 26.90 | 2.00 to 27.00 | x | x | x | x | 8 | 12 | 3 | 19.00 |
| 40 | 1.90 to 26.90 | 2.00 to 27.00 | x | x | x | x | 8 | 12 | 3 | 20.00 |
| 45 | 2.40 to 30.90 | 2.50 to 31.00 | x | x | x | x | 8 | 12 | 3 | 22.50 |
| 50 | 4.00 to 33.90 | 4.10 to 34.00 | x | x | x | x | 8 | 12 | 3 | 25.00 |
| 56 | 4.00 to 37.90 | 4.10 to 38.00 | x | x | x | x | 8 | 12 | 3 | 28.00 |
| 63 | 4.00 to 42.90 | 4.10 to 43.00 | x | x | x | x | 8 | 12 | 3 | 31.50 |
| 71 | 4.00 to 47.90 | 4.10 to 48.00 | x | x | x | x | 8 | 12 | 3 | 35.50 |
| 76 | 5.60 to 51.90 | 5.70 to 52.00 | x | x | x | x | 8 | 12 | 3 | 38.00 |
| 85 | 5.60 to 57.90 | 5.70 to 58.00 | x | x | x | x | 8 | 12 | 3 | 42.50 |
| 90 | 5.60 to 60.90 | 5.70 to 61.00 | x | x | x | x | 8 | 12 | 3 | 45.00 |
| 100 | 5.60 to 67.90 | 5.70 to 68.00 | x | x | x | x | 8 | 12 | 3 | 50.00 |

NOTES & SPECIFICATIONS:

- Material, AISI – A2
- Hardness, Rc 60-63
- Identification, etch word "Metric" on each piece

CODING ON FOLLOWING PAGE

TAPERED RELIEF OBLONG DIE BUTTON CODING

(P75 SERIES)

EX:

| | |
|------------------|-----|
| Shape & Style | P75 |
|------------------|-----|

| | |
|-----------|----|
| Body Dia. | 32 |
|-----------|----|

| | |
|-------------|----|
| O.A. Length | 30 |
|-------------|----|

 = SOLID OBLONG STD. x 32 BODY DIA. x 30 LG.

| NAAMS CODE | D x L |
|------------|---------|
| P751025 | 10 x 25 |
| P751028 | 10 x 28 |
| P751030 | 10 x 30 |
| P751035 | 10 x 35 |
| P751325 | 13 x 25 |
| P751328 | 13 x 28 |
| P751330 | 13 x 30 |
| P751335 | 13 x 35 |
| P751625 | 16 x 25 |
| P751628 | 16 x 28 |
| P751630 | 16 x 30 |
| P751635 | 16 x 35 |
| P752025 | 20 x 25 |
| P752028 | 20 x 28 |
| P752030 | 20 x 30 |
| P752035 | 20 x 35 |
| P752225 | 22 x 25 |
| P752228 | 22 x 28 |
| P752230 | 22 x 30 |
| P752235 | 22 x 35 |
| P752525 | 25 x 25 |
| P752528 | 25 x 28 |
| P752530 | 25 x 30 |
| P752535 | 25 x 35 |

| NAAMS CODE | D x L |
|------------|---------|
| P753225 | 32 x 25 |
| P753228 | 32 x 28 |
| P753230 | 32 x 30 |
| P753235 | 32 x 35 |
| P753825 | 38 x 25 |
| P753828 | 38 x 28 |
| P753830 | 38 x 30 |
| P753835 | 38 x 35 |
| P754025 | 40 x 25 |
| P754028 | 40 x 28 |
| P754030 | 40 x 30 |
| P754035 | 40 x 35 |
| P754525 | 45 x 25 |
| P754528 | 45 x 28 |
| P754530 | 45 x 30 |
| P754535 | 45 x 35 |
| P755025 | 50 x 25 |
| P755028 | 50 x 28 |
| P755030 | 50 x 30 |
| P755035 | 50 x 35 |
| P755625 | 56 x 25 |
| P755628 | 56 x 28 |
| P755630 | 56 x 30 |
| P755635 | 56 x 35 |

| NAAMS CODE | D x L |
|------------|----------|
| P756325 | 63 x 25 |
| P756328 | 63 x 28 |
| P756330 | 63 x 30 |
| P756335 | 63 x 35 |
| P757125 | 71 x 25 |
| P757128 | 71 x 28 |
| P757130 | 71 x 30 |
| P757135 | 71 x 35 |
| P757625 | 76 x 25 |
| P757628 | 76 x 28 |
| P757630 | 76 x 30 |
| P757635 | 76 x 35 |
| P758525 | 85 x 25 |
| P758528 | 85 x 28 |
| P758530 | 85 x 30 |
| P758535 | 85 x 35 |
| P759025 | 90 x 25 |
| P759028 | 90 x 28 |
| P759030 | 90 x 30 |
| P759035 | 90 x 35 |
| P750025 | 100 x 25 |
| P750028 | 100 x 28 |
| P750030 | 100 x 30 |
| P750035 | 100 x 35 |

CODING CONTINUED ON FOLLOWING PAGE

TAPERED RELIEF OBLONG DIE BUTTON CODING

(P76 SERIES)

EX:

| | |
|------------------|-----|
| Shape & Style | P76 |
|------------------|-----|

| | |
|-----------|----|
| Body Dia. | 32 |
|-----------|----|

| | |
|-------------|----|
| O.A. Length | 30 |
|-------------|----|

 = SOLID OBLONG ALT "A" x 32 BODY DIA. x 30 LG.

| NAAMS CODE | D x L |
|------------|---------|
| P761025 | 10 x 25 |
| P761028 | 10 x 28 |
| P761030 | 10 x 30 |
| P761035 | 10 x 35 |
| P761325 | 13 x 25 |
| P761328 | 13 x 28 |
| P761330 | 13 x 30 |
| P761335 | 13 x 35 |
| P761625 | 16 x 25 |
| P761628 | 16 x 28 |
| P761630 | 16 x 30 |
| P761635 | 16 x 35 |
| P762025 | 20 x 25 |
| P762028 | 20 x 28 |
| P762030 | 20 x 30 |
| P762035 | 20 x 35 |
| P762225 | 22 x 25 |
| P762228 | 22 x 28 |
| P762230 | 22 x 30 |
| P762235 | 22 x 35 |
| P762525 | 25 x 25 |
| P762528 | 25 x 28 |
| P762530 | 25 x 30 |
| P762535 | 25 x 35 |

| NAAMS CODE | D x L |
|------------|---------|
| P763225 | 32 x 25 |
| P763228 | 32 x 28 |
| P763230 | 32 x 30 |
| P763235 | 32 x 35 |
| P763825 | 38 x 25 |
| P763828 | 38 x 28 |
| P763830 | 38 x 30 |
| P763835 | 38 x 35 |
| P764025 | 40 x 25 |
| P764028 | 40 x 28 |
| P764030 | 40 x 30 |
| P764035 | 40 x 35 |
| P764525 | 45 x 25 |
| P764528 | 45 x 28 |
| P764530 | 45 x 30 |
| P764535 | 45 x 35 |
| P765025 | 50 x 25 |
| P765028 | 50 x 28 |
| P765030 | 50 x 30 |
| P765035 | 50 x 35 |
| P765625 | 56 x 25 |
| P765628 | 56 x 28 |
| P765630 | 56 x 30 |
| P765635 | 56 x 35 |

| NAAMS CODE | D x L |
|------------|----------|
| P766325 | 63 x 25 |
| P766328 | 63 x 28 |
| P766330 | 63 x 30 |
| P766335 | 63 x 35 |
| P767125 | 71 x 25 |
| P767128 | 71 x 28 |
| P767130 | 71 x 30 |
| P767135 | 71 x 35 |
| P767625 | 76 x 25 |
| P767628 | 76 x 28 |
| P767630 | 76 x 30 |
| P767635 | 76 x 35 |
| P768525 | 85 x 25 |
| P768528 | 85 x 28 |
| P768530 | 85 x 30 |
| P768535 | 85 x 35 |
| P769025 | 90 x 25 |
| P769028 | 90 x 28 |
| P769030 | 90 x 30 |
| P769035 | 90 x 35 |
| P760025 | 100 x 25 |
| P760028 | 100 x 28 |
| P760030 | 100 x 30 |
| P760035 | 100 x 35 |

CODING CONTINUED ON FOLLOWING PAGE

TAPERED RELIEF OBLONG DIE BUTTON CODING

(P77 SERIES)

EX:

| | |
|---------------|-----|
| Pnt. Style | P77 |
|---------------|-----|

| | |
|-----------|----|
| Body Dia. | 32 |
|-----------|----|

| | |
|-------------|----|
| O.A. Length | 30 |
|-------------|----|

 = SOLID OBLONG ALT "B" x 32 BODY DIA. x 30 LG.

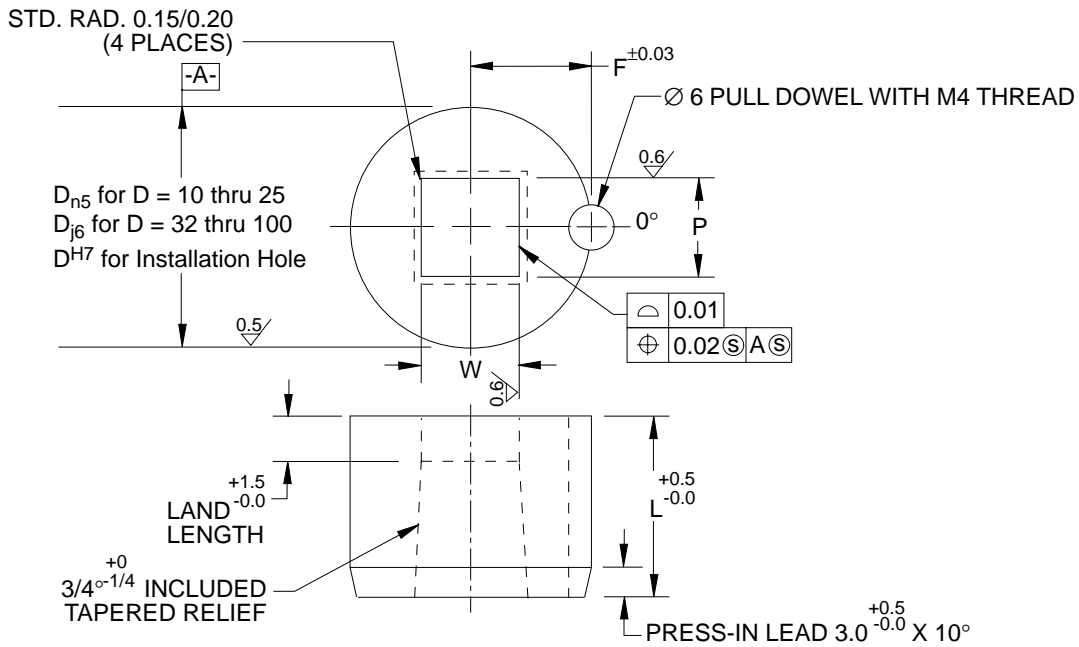
| NAAMS CODE | D x L |
|------------|---------|
| P771025 | 10 x 25 |
| P771028 | 10 x 28 |
| P771030 | 10 x 30 |
| P771035 | 10 x 35 |
| P771325 | 13 x 25 |
| P771328 | 13 x 28 |
| P771330 | 13 x 30 |
| P771335 | 13 x 35 |
| P771625 | 16 x 25 |
| P771628 | 16 x 28 |
| P771630 | 16 x 30 |
| P771635 | 16 x 35 |
| P772025 | 20 x 25 |
| P772028 | 20 x 28 |
| P772030 | 20 x 30 |
| P772035 | 20 x 35 |
| P772225 | 22 x 25 |
| P772228 | 22 x 28 |
| P772230 | 22 x 30 |
| P772235 | 22 x 35 |
| P772525 | 25 x 25 |
| P772528 | 25 x 28 |
| P772530 | 25 x 30 |
| P772535 | 25 x 35 |

| NAAMS CODE | D x L |
|------------|---------|
| P773225 | 32 x 25 |
| P773228 | 32 x 28 |
| P773230 | 32 x 30 |
| P773235 | 32 x 35 |
| P773825 | 38 x 25 |
| P773828 | 38 x 28 |
| P773830 | 38 x 30 |
| P773835 | 38 x 35 |
| P774025 | 40 x 25 |
| P774028 | 40 x 28 |
| P774030 | 40 x 30 |
| P774035 | 40 x 35 |
| P774525 | 45 x 25 |
| P774528 | 45 x 28 |
| P774530 | 45 x 30 |
| P774535 | 45 x 35 |
| P775025 | 50 x 25 |
| P775028 | 50 x 28 |
| P775030 | 50 x 30 |
| P775035 | 50 x 35 |
| P775625 | 56 x 25 |
| P775628 | 56 x 28 |
| P775630 | 56 x 30 |
| P775635 | 56 x 35 |

| NAAMS CODE | D x L |
|------------|----------|
| P776325 | 63 x 25 |
| P776328 | 63 x 28 |
| P776330 | 63 x 30 |
| P776335 | 63 x 35 |
| P777125 | 71 x 25 |
| P777128 | 71 x 28 |
| P777130 | 71 x 30 |
| P777135 | 71 x 35 |
| P777625 | 76 x 25 |
| P777628 | 76 x 28 |
| P777630 | 76 x 30 |
| P777635 | 76 x 35 |
| P778525 | 85 x 25 |
| P778528 | 85 x 28 |
| P778530 | 85 x 30 |
| P778535 | 85 x 35 |
| P779025 | 90 x 25 |
| P779028 | 90 x 28 |
| P779030 | 90 x 30 |
| P779035 | 90 x 35 |
| P770025 | 100 x 25 |
| P770028 | 100 x 28 |
| P770030 | 100 x 30 |
| P770035 | 100 x 35 |

TAPERED RELIEF SQUARE DIE BUTTON

(P85 THRU P87 SERIES)



A

| D STANDARD BODY Ø | P=W HOLE SIZE RANGE 0.01 INCREMENTS | | L OVERALL LENGTH | | | | LAND LENGTHS | | | F |
|----------------------------|---|----------|------------------------|----|----|----|-----------------|-----|-----|-------|
| | | | 25 | 28 | 30 | 35 | STD | ALT | ALT | |
| | | | | | | | S | A | B | |
| 10 | 1.30 | to 4.80 | x | x | x | x | 5 | 8 | 3 | 7.00 |
| 13 | 1.90 | to 6.20 | x | x | x | x | 5 | 8 | 3 | 8.20 |
| 16 | 1.90 | to 7.60 | x | x | x | x | 5 | 8 | 3 | 9.00 |
| 20 | 1.90 | to 9.60 | x | x | x | x | 5 | 10 | 3 | 11.00 |
| 22 | 1.90 | to 10.60 | x | x | x | x | 6 | 10 | 3 | 12.00 |
| 25 | 1.90 | to 12.00 | x | x | x | x | 6 | 10 | 3 | 13.50 |
| 32 | 1.90 | to 15.50 | x | x | x | x | 6 | 12 | 3 | 16.00 |
| 38 | 1.90 | to 19.10 | x | x | x | x | 8 | 12 | 3 | 19.00 |
| 40 | 1.90 | to 19.10 | x | x | x | x | 8 | 12 | 3 | 20.00 |
| 45 | 2.40 | to 21.90 | x | x | x | x | 8 | 12 | 3 | 22.50 |
| 50 | 4.00 | to 24.00 | x | x | x | x | 8 | 12 | 3 | 25.00 |
| 56 | 4.00 | to 26.90 | x | x | x | x | 8 | 12 | 3 | 28.00 |
| 63 | 4.00 | to 30.40 | x | x | x | x | 8 | 12 | 3 | 31.50 |
| 71 | 4.00 | to 34.00 | x | x | x | x | 8 | 12 | 3 | 35.50 |
| 76 | 5.60 | to 36.80 | x | x | x | x | 8 | 12 | 3 | 38.00 |
| 85 | 5.60 | to 41.00 | x | x | x | x | 8 | 12 | 3 | 42.50 |
| 90 | 5.60 | to 43.10 | x | x | x | x | 8 | 12 | 3 | 45.00 |
| 100 | 5.60 | to 48.10 | x | x | x | x | 8 | 12 | 3 | 50.00 |

NOTES & SPECIFICATIONS:

- Material, AISI – A2
- Hardness, Rc 60-63
- Identification, etch word “Metric” on each piece

CODING ON FOLLOWING PAGE

TAPERED RELIEF SQUARE DIE BUTTON CODING

(P85 SERIES)

| | | | |
|-----|---|-----------|-------------|
| EX: | Shape & Style | Body Dia. | O.A. Length |
| | P85 | 32 | 30 |
| | = SOLID SQUARE STD. x 32 BODY DIA. x 30 LG. | | |

| NAAMS CODE | D x L |
|------------|---------|
| P851025 | 10 x 25 |
| P851028 | 10 x 28 |
| P851030 | 10 x 30 |
| P851035 | 10 x 35 |
| P851325 | 13 x 25 |
| P851328 | 13 x 28 |
| P851330 | 13 x 30 |
| P851335 | 13 x 35 |
| P851625 | 16 x 25 |
| P851628 | 16 x 28 |
| P851630 | 16 x 30 |
| P851635 | 16 x 35 |
| P852025 | 20 x 25 |
| P852028 | 20 x 28 |
| P852030 | 20 x 30 |
| P852035 | 20 x 35 |
| P852225 | 22 x 25 |
| P852228 | 22 x 28 |
| P852230 | 22 x 30 |
| P852235 | 22 x 35 |
| P852525 | 25 x 25 |
| P852528 | 25 x 28 |
| P852530 | 25 x 30 |
| P852535 | 25 x 35 |

| NAAMS CODE | D x L |
|------------|---------|
| P853225 | 32 x 25 |
| P853228 | 32 x 28 |
| P853230 | 32 x 30 |
| P853235 | 32 x 35 |
| P853825 | 38 x 25 |
| P853828 | 38 x 28 |
| P853830 | 38 x 30 |
| P853835 | 38 x 35 |
| P854025 | 40 x 25 |
| P854028 | 40 x 28 |
| P854030 | 40 x 30 |
| P854035 | 40 x 35 |
| P854525 | 45 x 25 |
| P854528 | 45 x 28 |
| P854530 | 45 x 30 |
| P854535 | 45 x 35 |
| P855025 | 50 x 25 |
| P855028 | 50 x 28 |
| P855030 | 50 x 30 |
| P855035 | 50 x 35 |
| P855625 | 56 x 25 |
| P855628 | 56 x 28 |
| P855630 | 56 x 30 |
| P855635 | 56 x 35 |

| NAAMS CODE | D x L |
|------------|----------|
| P856325 | 63 x 25 |
| P856328 | 63 x 28 |
| P856330 | 63 x 30 |
| P856335 | 63 x 35 |
| P857125 | 71 x 25 |
| P857128 | 71 x 28 |
| P857130 | 71 x 30 |
| P857135 | 71 x 35 |
| P857625 | 76 x 25 |
| P857628 | 76 x 28 |
| P857630 | 76 x 30 |
| P857635 | 76 x 35 |
| P858525 | 85 x 25 |
| P858528 | 85 x 28 |
| P858530 | 85 x 30 |
| P858535 | 85 x 35 |
| P859025 | 90 x 25 |
| P859028 | 90 x 28 |
| P859030 | 90 x 30 |
| P859035 | 90 x 35 |
| P850025 | 100 x 25 |
| P850028 | 100 x 28 |
| P850030 | 100 x 30 |
| P850035 | 100 x 35 |

CODING CONTINUED ON FOLLOWING PAGE

TAPERED RELIEF SQUARE DIE BUTTON CODING

(P86 SERIES)



Stamping

04/16/96

| | | | |
|-----|---------------|-----------|-------------|
| EX: | Shape & Style | Body Dia. | O.A. Length |
| | P86 | 32 | 30 |
| | | | |

= SOLID SQUARE ALT "A" x 32 BODY DIA. x 30 LG.

| NAAMS CODE | D x L |
|------------|---------|
| P861025 | 10 x 25 |
| P861028 | 10 x 28 |
| P861030 | 10 x 30 |
| P861035 | 10 x 35 |
| P861325 | 13 x 25 |
| P861328 | 13 x 28 |
| P861330 | 13 x 30 |
| P861335 | 13 x 35 |
| P861625 | 16 x 25 |
| P861628 | 16 x 28 |
| P861630 | 16 x 30 |
| P861635 | 16 x 35 |
| P862025 | 20 x 25 |
| P862028 | 20 x 28 |
| P862030 | 20 x 30 |
| P862035 | 20 x 35 |
| P862225 | 22 x 25 |
| P862228 | 22 x 28 |
| P862230 | 22 x 30 |
| P862235 | 22 x 35 |
| P862525 | 25 x 25 |
| P862528 | 25 x 28 |
| P862530 | 25 x 30 |
| P862535 | 25 x 35 |

| NAAMS CODE | D x L |
|------------|---------|
| P863225 | 32 x 25 |
| P863228 | 32 x 28 |
| P863230 | 32 x 30 |
| P863235 | 32 x 35 |
| P863825 | 38 x 25 |
| P863828 | 38 x 28 |
| P863830 | 38 x 30 |
| P863835 | 38 x 35 |
| P864025 | 40 x 25 |
| P864028 | 40 x 28 |
| P864030 | 40 x 30 |
| P864035 | 40 x 35 |
| P864525 | 45 x 25 |
| P864528 | 45 x 28 |
| P864530 | 45 x 30 |
| P864535 | 45 x 35 |
| P865025 | 50 x 25 |
| P865028 | 50 x 28 |
| P865030 | 50 x 30 |
| P865035 | 50 x 35 |
| P865625 | 56 x 25 |
| P865628 | 56 x 28 |
| P865630 | 56 x 30 |
| P865635 | 56 x 35 |

| NAAMS CODE | D x L |
|------------|----------|
| P866325 | 63 x 25 |
| P866328 | 63 x 28 |
| P866330 | 63 x 30 |
| P866335 | 63 x 35 |
| P867125 | 71 x 25 |
| P867128 | 71 x 28 |
| P867130 | 71 x 30 |
| P867135 | 71 x 35 |
| P867625 | 76 x 25 |
| P867628 | 76 x 28 |
| P867630 | 76 x 30 |
| P867635 | 76 x 35 |
| P868525 | 85 x 25 |
| P868528 | 85 x 28 |
| P868530 | 85 x 30 |
| P868535 | 85 x 35 |
| P869025 | 90 x 25 |
| P869028 | 90 x 28 |
| P869030 | 90 x 30 |
| P869035 | 90 x 35 |
| P860025 | 100 x 25 |
| P860028 | 100 x 28 |
| P860030 | 100 x 30 |
| P860035 | 100 x 35 |

CODING CONTINUED ON FOLLOWING PAGE

TAPERED RELIEF SQUARE DIE BUTTON CODING

(P87 SERIES)

| | | | |
|-----|---------------|-----------|--------------|
| EX: | Shape & Style | Body Dia. | O. A. Length |
| | P87 | 32 | 30 |

= SOLID SQUARE ALT "B" x 32 BODY DIA. x 30 LG.

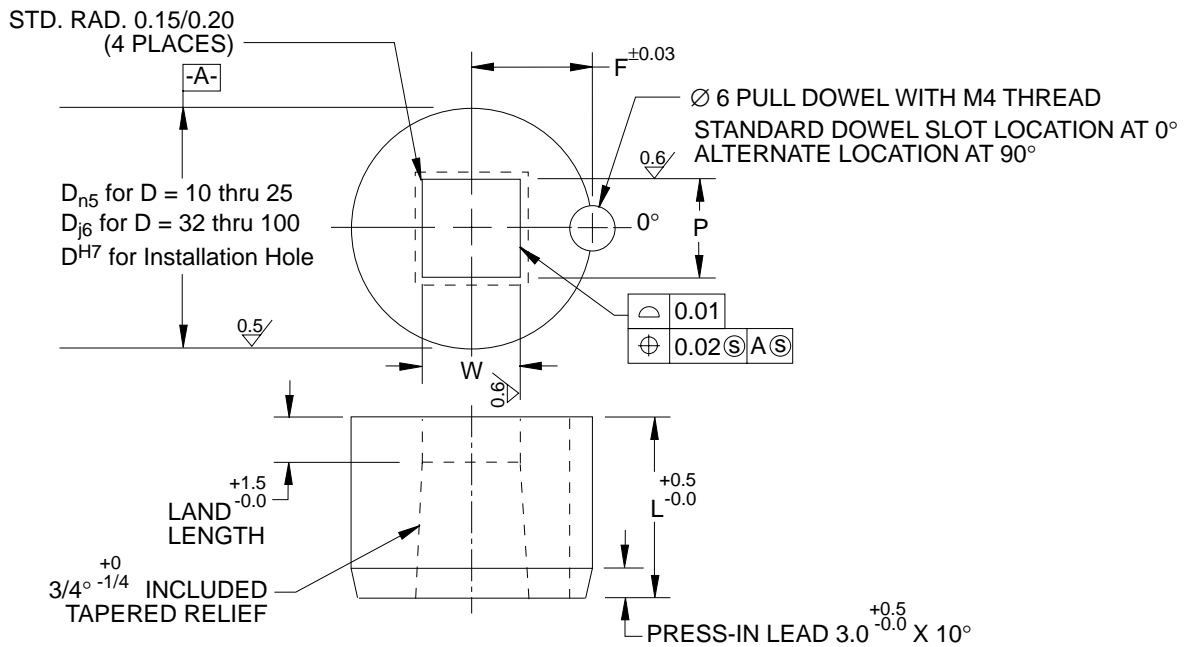
| NAAMS CODE | D x L |
|------------|---------|
| P871025 | 10 x 25 |
| P871028 | 10 x 28 |
| P871030 | 10 x 30 |
| P871035 | 10 x 35 |
| P871325 | 13 x 25 |
| P871328 | 13 x 28 |
| P871330 | 13 x 30 |
| P871335 | 13 x 35 |
| P871625 | 16 x 25 |
| P871628 | 16 x 28 |
| P871630 | 16 x 30 |
| P871635 | 16 x 35 |
| P872025 | 20 x 25 |
| P872028 | 20 x 28 |
| P872030 | 20 x 30 |
| P872035 | 20 x 35 |
| P872225 | 22 x 25 |
| P872228 | 22 x 28 |
| P872230 | 22 x 30 |
| P872235 | 22 x 35 |
| P872525 | 25 x 25 |
| P872528 | 25 x 28 |
| P872530 | 25 x 30 |
| P872535 | 25 x 35 |

| NAAMS CODE | D x L |
|------------|---------|
| P873225 | 32 x 25 |
| P873228 | 32 x 28 |
| P873230 | 32 x 30 |
| P873235 | 32 x 35 |
| P873825 | 38 x 25 |
| P873828 | 38 x 28 |
| P873830 | 38 x 30 |
| P873835 | 38 x 35 |
| P874025 | 40 x 25 |
| P874028 | 40 x 28 |
| P874030 | 40 x 30 |
| P874035 | 40 x 35 |
| P874525 | 45 x 25 |
| P874528 | 45 x 28 |
| P874530 | 45 x 30 |
| P874535 | 45 x 35 |
| P875025 | 50 x 25 |
| P875028 | 50 x 28 |
| P875030 | 50 x 30 |
| P875035 | 50 x 35 |
| P875625 | 56 x 25 |
| P875628 | 56 x 28 |
| P875630 | 56 x 30 |
| P875635 | 56 x 35 |

| NAAMS CODE | D x L |
|------------|----------|
| P876325 | 63 x 25 |
| P876328 | 63 x 28 |
| P876330 | 63 x 30 |
| P876335 | 63 x 35 |
| P877125 | 71 x 25 |
| P877128 | 71 x 28 |
| P877130 | 71 x 30 |
| P877135 | 71 x 35 |
| P877625 | 76 x 25 |
| P877628 | 76 x 28 |
| P877630 | 76 x 30 |
| P877635 | 76 x 35 |
| P878525 | 85 x 25 |
| P878528 | 85 x 28 |
| P878530 | 85 x 30 |
| P878535 | 85 x 35 |
| P879025 | 90 x 25 |
| P879028 | 90 x 28 |
| P879030 | 90 x 30 |
| P879035 | 90 x 35 |
| P870025 | 100 x 25 |
| P870028 | 100 x 28 |
| P870030 | 100 x 30 |
| P870035 | 100 x 35 |

TAPERED RELIEF RECTANGULAR DIE BUTTON

(P95 THRU P97 SERIES)



A

| D STANDARD BODY Ø | HOLE SIZE RANGE 0.01 INCREMENTS | | L OVERALL LENGTH | | | | LAND LENGTHS | | | F |
|----------------------------|------------------------------------|---------------|------------------------|----|----|----|-----------------|-----|-----|-------|
| | | | | | | | STD | ALT | ALT | |
| | W | P | 25 | 28 | 30 | 35 | S | A | B | |
| 10 | 1.30 to 4.00 | 1.40 to 5.50 | x | x | x | x | 5 | 8 | 3 | 7.00 |
| 13 | 1.90 to 5.30 | 2.00 to 7.00 | x | x | x | x | 5 | 8 | 3 | 8.20 |
| 16 | 1.90 to 6.70 | 2.00 to 8.50 | x | x | x | x | 5 | 8 | 3 | 9.00 |
| 20 | 1.90 to 8.00 | 2.00 to 11.00 | x | x | x | x | 5 | 10 | 3 | 11.00 |
| 22 | 1.90 to 8.30 | 2.00 to 12.50 | x | x | x | x | 6 | 10 | 3 | 12.00 |
| 25 | 1.90 to 8.80 | 2.00 to 14.50 | x | x | x | x | 6 | 10 | 3 | 13.50 |
| 32 | 1.90 to 12.60 | 2.00 to 18.00 | x | x | x | x | 6 | 12 | 3 | 16.00 |
| 38 | 1.90 to 14.10 | 2.00 to 23.00 | x | x | x | x | 8 | 12 | 3 | 19.00 |
| 40 | 1.90 to 14.10 | 2.00 to 23.00 | x | x | x | x | 8 | 12 | 3 | 20.00 |
| 45 | 2.40 to 21.00 | 2.50 to 28.00 | x | x | x | x | 8 | 12 | 3 | 22.50 |
| 50 | 4.00 to 22.60 | 4.10 to 33.00 | x | x | x | x | 8 | 12 | 3 | 25.00 |
| 56 | 4.00 to 24.10 | 4.10 to 38.00 | x | x | x | x | 8 | 12 | 3 | 28.00 |
| 63 | 4.00 to 26.30 | 4.10 to 42.50 | x | x | x | x | 8 | 12 | 3 | 31.50 |
| 71 | 4.00 to 28.80 | 4.10 to 48.00 | x | x | x | x | 8 | 12 | 3 | 35.50 |
| 76 | 5.60 to 31.60 | 5.70 to 51.00 | x | x | x | x | 8 | 12 | 3 | 38.00 |
| 85 | 5.60 to 34.90 | 5.70 to 56.00 | x | x | x | x | 8 | 12 | 3 | 42.50 |
| 90 | 5.60 to 36.00 | 5.70 to 60.00 | x | x | x | x | 8 | 12 | 3 | 45.00 |
| 100 | 5.60 to 41.50 | 5.70 to 66.00 | x | x | x | x | 8 | 12 | 3 | 50.00 |

NOTES & SPECIFICATIONS:

- Material, AISI – A2
- Hardness, Rc 60-63
- Identification, etch word "Metric" on each piece

CODING ON FOLLOWING PAGE

TAPERED RELIEF RECTANGULAR DIE BUTTON CODE

(P95 SERIES)



Stamping

04/16/96

| | | | |
|-----|---------------|-----------|--------------|
| EX: | Shape & Style | Body Dia. | O. A. Length |
| | P95 | 32 | 30 |

= SOLID RECTANGULAR STD. x 32 BODY DIA. x 30 LG.

| NAAMS CODE | D x L |
|------------|---------|
| P951025 | 10 x 25 |
| P951028 | 10 x 28 |
| P951030 | 10 x 30 |
| P951035 | 10 x 35 |
| P951325 | 13 x 25 |
| P951328 | 13 x 28 |
| P951330 | 13 x 30 |
| P951335 | 13 x 35 |
| P951625 | 16 x 25 |
| P951628 | 16 x 28 |
| P951630 | 16 x 30 |
| P951635 | 16 x 35 |
| P952025 | 20 x 25 |
| P952028 | 20 x 28 |
| P952030 | 20 x 30 |
| P952035 | 20 x 35 |
| P952225 | 22 x 25 |
| P952228 | 22 x 28 |
| P952230 | 22 x 30 |
| P952235 | 22 x 35 |
| P952525 | 25 x 25 |
| P952528 | 25 x 28 |
| P952530 | 25 x 30 |
| P952535 | 25 x 35 |

| NAAMS CODE | D x L |
|------------|---------|
| P953225 | 32 x 25 |
| P953228 | 32 x 28 |
| P953230 | 32 x 30 |
| P953235 | 32 x 35 |
| P953825 | 38 x 25 |
| P953828 | 38 x 28 |
| P953830 | 38 x 30 |
| P953835 | 38 x 35 |
| P954025 | 40 x 25 |
| P954028 | 40 x 28 |
| P954030 | 40 x 30 |
| P954035 | 40 x 35 |
| P954525 | 45 x 25 |
| P954528 | 45 x 28 |
| P954530 | 45 x 30 |
| P954535 | 45 x 35 |
| P955025 | 50 x 25 |
| P955028 | 50 x 28 |
| P955030 | 50 x 30 |
| P955035 | 50 x 35 |
| P955625 | 56 x 25 |
| P955628 | 56 x 28 |
| P955630 | 56 x 30 |
| P955635 | 56 x 35 |

| NAAMS CODE | D x L |
|------------|----------|
| P956325 | 63 x 25 |
| P956328 | 63 x 28 |
| P956330 | 63 x 30 |
| P956335 | 63 x 35 |
| P957125 | 71 x 25 |
| P957128 | 71 x 28 |
| P957130 | 71 x 30 |
| P957135 | 71 x 35 |
| P957625 | 76 x 25 |
| P957628 | 76 x 28 |
| P957630 | 76 x 30 |
| P957635 | 76 x 35 |
| P958525 | 85 x 25 |
| P958528 | 85 x 28 |
| P958530 | 85 x 30 |
| P958535 | 85 x 35 |
| P959025 | 90 x 25 |
| P959028 | 90 x 28 |
| P959030 | 90 x 30 |
| P959035 | 90 x 35 |
| P950025 | 100 x 25 |
| P950028 | 100 x 28 |
| P950030 | 100 x 30 |
| P950035 | 100 x 35 |

CODING CONTINUED ON FOLLOWING PAGE

TAPERED RELIEF RECTANGULAR DIE BUTTON CODING

(P96 SERIES)



Stamping

04/16/96

| | | | |
|-----|------------------|-----------|-------------|
| EX: | Shape & Style | Body Dia. | O.A. Length |
| | P96 | 32 | 30 |

= SOLID RECTANGULAR ALT "A" x 32 BODY DIA. x 30 LG.

| NAAMS CODE | D x L |
|------------|---------|
| P961025 | 10 x 25 |
| P961028 | 10 x 28 |
| P961030 | 10 x 30 |
| P961035 | 10 x 35 |
| P961325 | 13 x 25 |
| P961328 | 13 x 28 |
| P961330 | 13 x 30 |
| P961335 | 13 x 35 |
| P961625 | 16 x 25 |
| P961628 | 16 x 28 |
| P961630 | 16 x 30 |
| P961635 | 16 x 35 |
| P962025 | 20 x 25 |
| P962028 | 20 x 28 |
| P962030 | 20 x 30 |
| P962035 | 20 x 35 |
| P962225 | 22 x 25 |
| P962228 | 22 x 28 |
| P962230 | 22 x 30 |
| P962235 | 22 x 35 |
| P962525 | 25 x 25 |
| P962528 | 25 x 28 |
| P962530 | 25 x 30 |
| P962535 | 25 x 35 |

| NAAMS CODE | D x L |
|------------|---------|
| P963225 | 32 x 25 |
| P963228 | 32 x 28 |
| P963230 | 32 x 30 |
| P963235 | 32 x 35 |
| P963825 | 38 x 25 |
| P963828 | 38 x 28 |
| P963830 | 38 x 30 |
| P963835 | 38 x 35 |
| P964025 | 40 x 25 |
| P964028 | 40 x 28 |
| P964030 | 40 x 30 |
| P964035 | 40 x 35 |
| P964525 | 45 x 25 |
| P964528 | 45 x 28 |
| P964530 | 45 x 30 |
| P964535 | 45 x 35 |
| P965025 | 50 x 25 |
| P965028 | 50 x 28 |
| P965030 | 50 x 30 |
| P965035 | 50 x 35 |
| P965625 | 56 x 25 |
| P965628 | 56 x 28 |
| P965630 | 56 x 30 |
| P965635 | 56 x 35 |

| NAAMS CODE | D x L |
|------------|----------|
| P966325 | 63 x 25 |
| P966328 | 63 x 28 |
| P966330 | 63 x 30 |
| P966335 | 63 x 35 |
| P967125 | 71 x 25 |
| P967128 | 71 x 28 |
| P967130 | 71 x 30 |
| P967135 | 71 x 35 |
| P967625 | 76 x 25 |
| P967628 | 76 x 28 |
| P967630 | 76 x 30 |
| P967635 | 76 x 35 |
| P968525 | 85 x 25 |
| P968528 | 85 x 28 |
| P968530 | 85 x 30 |
| P968535 | 85 x 35 |
| P969025 | 90 x 25 |
| P969028 | 90 x 28 |
| P969030 | 90 x 30 |
| P969035 | 90 x 35 |
| P960025 | 100 x 25 |
| P960028 | 100 x 28 |
| P960030 | 100 x 30 |
| P960035 | 100 x 35 |

CODING CONTINUED ON FOLLOWING PAGE

TAPERED RELIEF RECTANGULAR DIE BUTTON CODING

(P97 SERIES)



Stamping

04/16/96

| | | | |
|-----|---------------|-----------|-------------|
| EX: | Shape & Style | Body Dia. | O.A. Length |
| | P97 | 32 | 30 |
| | | | |

= SOLID RECTANGULAR ALT "B" x 32 BODY DIA. x 30 LG.

| NAAMS CODE | D x L |
|------------|---------|
| P971025 | 10 x 25 |
| P971028 | 10 x 28 |
| P971030 | 10 x 30 |
| P971035 | 10 x 35 |
| P971325 | 13 x 25 |
| P971328 | 13 x 28 |
| P971330 | 13 x 30 |
| P971335 | 13 x 35 |
| P971625 | 16 x 25 |
| P971628 | 16 x 28 |
| P971630 | 16 x 30 |
| P971635 | 16 x 35 |
| P972025 | 20 x 25 |
| P972028 | 20 x 28 |
| P972030 | 20 x 30 |
| P972035 | 20 x 35 |
| P972225 | 22 x 25 |
| P972228 | 22 x 28 |
| P972230 | 22 x 30 |
| P972235 | 22 x 35 |
| P972525 | 25 x 25 |
| P972528 | 25 x 28 |
| P972530 | 25 x 30 |
| P972535 | 25 x 35 |

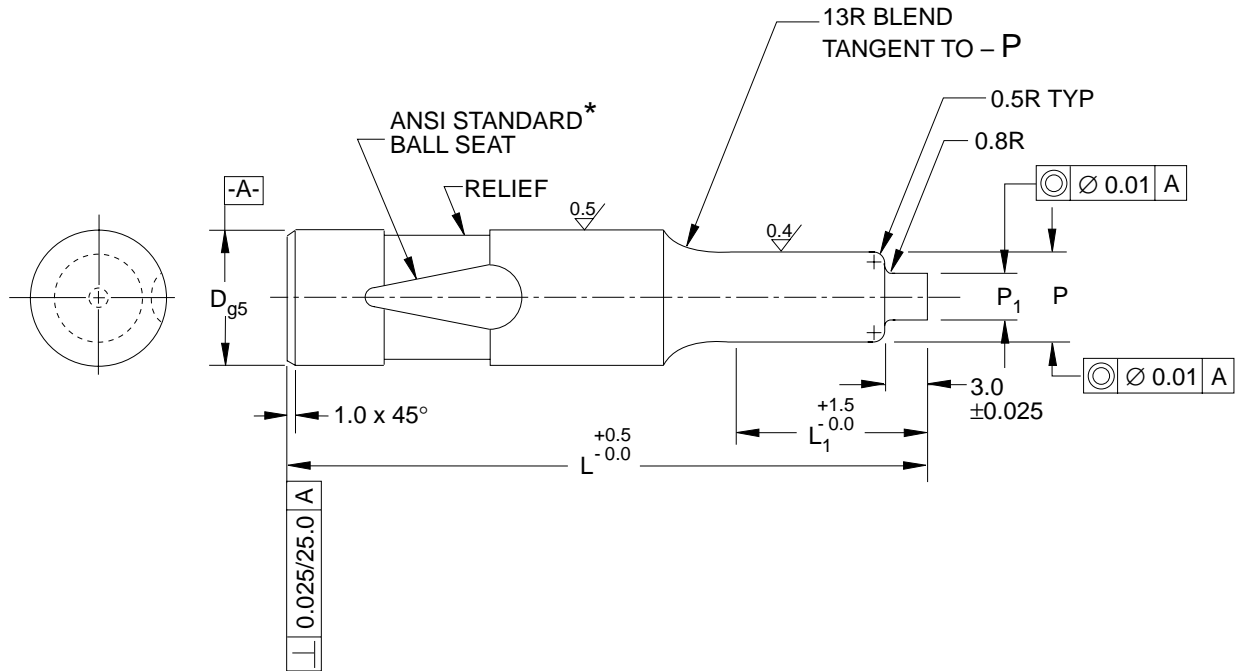
| NAAMS CODE | D x L |
|------------|---------|
| P973225 | 32 x 25 |
| P973228 | 32 x 28 |
| P973230 | 32 x 30 |
| P973235 | 32 x 35 |
| P973825 | 38 x 25 |
| P973828 | 38 x 28 |
| P973830 | 38 x 30 |
| P973835 | 38 x 35 |
| P974025 | 40 x 25 |
| P974028 | 40 x 28 |
| P974030 | 40 x 30 |
| P974035 | 40 x 35 |
| P974525 | 45 x 25 |
| P974528 | 45 x 28 |
| P974530 | 45 x 30 |
| P974535 | 45 x 35 |
| P975025 | 50 x 25 |
| P975028 | 50 x 28 |
| P975030 | 50 x 30 |
| P975035 | 50 x 35 |
| P975625 | 56 x 25 |
| P975628 | 56 x 28 |
| P975630 | 56 x 30 |
| P975635 | 56 x 35 |

| NAAMS CODE | D x L |
|------------|----------|
| P976325 | 63 x 25 |
| P976328 | 63 x 28 |
| P976330 | 63 x 30 |
| P976335 | 63 x 35 |
| P977125 | 71 x 25 |
| P977128 | 71 x 28 |
| P977130 | 71 x 30 |
| P977135 | 71 x 35 |
| P977625 | 76 x 25 |
| P977628 | 76 x 28 |
| P977630 | 76 x 30 |
| P977635 | 76 x 35 |
| P978525 | 85 x 25 |
| P978528 | 85 x 28 |
| P978530 | 85 x 30 |
| P978535 | 85 x 35 |
| P979025 | 90 x 25 |
| P979028 | 90 x 28 |
| P979030 | 90 x 30 |
| P979035 | 90 x 35 |
| P970025 | 100 x 25 |
| P970028 | 100 x 28 |
| P970030 | 100 x 30 |
| P970035 | 100 x 35 |

PIERCE AND EXTRUDE BALL LOCK PUNCH

(P51, P52, P53 SERIES)

(HEAVY DUTY)



| D NOMINAL SHANK Ø | PUNCH POINTS AVAILABLE 0.01 INCREMENTS | | L OVERALL LENGTH | L1 POINT LENGTH | | | PUNCH RETAINER NAAMS CODE | |
|----------------------------|--|--------------|------------------------|--------------------|----------|----------|------------------------------------|---------|
| | P | P1 | | STD. | ALT A | ALT B | | |
| 10 | 3.0 to 9.9 | 1.5 to 7.0 | 80 | 19 | 10 | – | P010010 | |
| 13 | 5.0 to 12.9 | 2.5 to 9.0 | | 19 | 13 | – | P010013 | |
| 16 | 8.0 to 15.9 | 4.0 to 11.5 | | 19 | 13 | 25 | P010016 | |
| 20 | 12.0 to 19.9 | 6.0 to 14.0 | | 90 | 19 | 13 | 25 | P010020 |
| 25 | 16.0 to 24.9 | 8.0 to 17.5 | | 100 | 19 | 13 | 25 | P010025 |
| 32 | 24.0 to 31.9 | 12.0 to 22.5 | | 19 | 13 | 25 | P010032 | |
| 40 | 30.0 to 39.9 | 15.0 to 28.0 | | 25 | 19 | 30 | P010040 | |

NOTES & SPECIFICATIONS:

Material, AISI-M2.

Hardness, Rc 60-63. Triple temper.

Identification, etch the word "Metric" on each piece.

* Ball Seat must conform to ANSI Standard gages for locking location.

When P-P1 is less than 2.3 per side, reduce radius sizes keeping the 2:1 ratio.

PIERCE AND EXTRUDE BALL LOCK PUNCH CODING

(P51, P52, P53 SERIES)



Stamping

05/14/97

| | |
|----------------------------|-----|
| Shape & Point Length Style | P52 |
|----------------------------|-----|

| | |
|------------|----|
| Shank Dia. | 25 |
|------------|----|

| | |
|-------------|----|
| O.A. Length | 90 |
|-------------|----|

 = PIERCE & EXTRUDE, ALT A, 25 SHANK X 90 LG.

P51 = STD.
 P52 = ALT. "A"
 P53 = ALT. "B"

P51

| NAAMS CODE | D x L |
|------------|----------|
| P511080 | 10 x 80 |
| P511380 | 13 x 80 |
| P511680 | 16 x 80 |
| P512080 | 20 x 80 |
| P512580 | 25 x 80 |
| P513280 | 32 x 80 |
| P514080 | 40 x 80 |
| P511090 | 10 x 90 |
| P511390 | 13 x 90 |
| P511690 | 16 x 90 |
| P512090 | 20 x 90 |
| P512590 | 25 x 90 |
| P513290 | 32 x 90 |
| P514090 | 40 x 90 |
| P511000 | 10 x 100 |
| P511300 | 13 x 100 |
| P511600 | 16 x 100 |
| P512000 | 20 x 100 |
| P512500 | 25 x 100 |
| P513200 | 32 x 100 |
| P514000 | 40 x 100 |

P52

| NAAMS CODE | D x L |
|------------|----------|
| P521080 | 10 x 80 |
| P521380 | 13 x 80 |
| P521680 | 16 x 80 |
| P522080 | 20 x 80 |
| P522580 | 25 x 80 |
| P523280 | 32 x 80 |
| P524080 | 40 x 80 |
| P521090 | 10 x 90 |
| P521390 | 13 x 90 |
| P521690 | 16 x 90 |
| P522090 | 20 x 90 |
| P522590 | 25 x 90 |
| P523290 | 32 x 90 |
| P524090 | 40 x 90 |
| P521000 | 10 x 100 |
| P521300 | 13 x 100 |
| P521600 | 16 x 100 |
| P522000 | 20 x 100 |
| P522500 | 25 x 100 |
| P523200 | 32 x 100 |
| P524000 | 40 x 100 |

P53

| NAAMS CODE | D x L |
|------------|----------|
| P531680 | 16 x 80 |
| P532080 | 20 x 80 |
| P532580 | 25 x 80 |
| P533280 | 32 x 80 |
| P534080 | 40 x 80 |
| P531690 | 16 x 90 |
| P532090 | 20 x 90 |
| P532590 | 25 x 90 |
| P533290 | 32 x 90 |
| P534090 | 40 x 90 |
| P531600 | 16 x 100 |
| P532000 | 20 x 100 |
| P532500 | 25 x 100 |
| P533200 | 32 x 100 |
| P534000 | 40 x 100 |

ROUND POINT LARGER BALL LOCK PUNCH

(P13 STANDARD – P14 ALTERNATE)

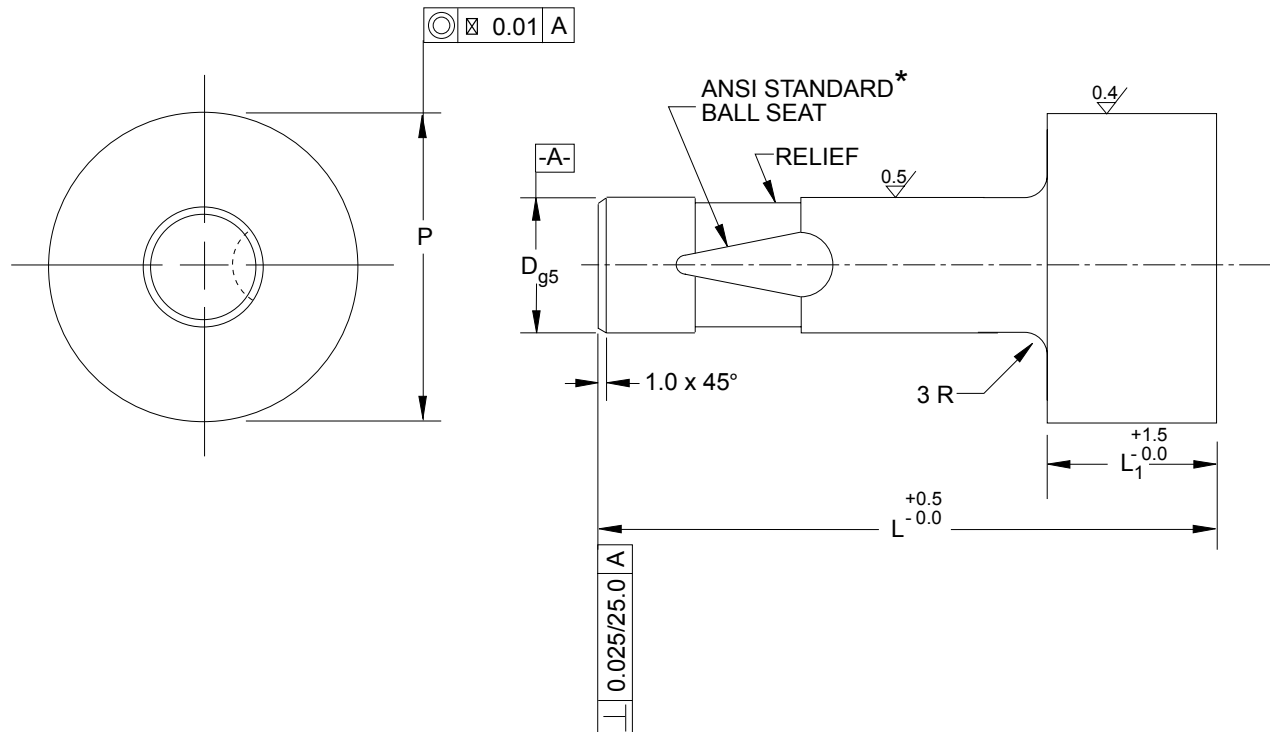
GLOBAL STANDARD COMPONENTS



Stamping

04/24/14

(HEAVY DUTY)



| D NOMINAL SHANK Ø | P PUNCH POINTS AVAILABLE 0.01 INCREMENTS | L OVERALL LENGTH | | | | L1 POINT LENGTH | | PUNCH RETAINER NAAMS CODE |
|----------------------------|---|------------------------|----|----|-----|--------------------|------------|------------------------------------|
| | | 71 | 80 | 90 | 100 | P13 STD. | P14 ALT | |
| 10 | 10.1 to 25.0 | X | X | X | X | 16 | 30 | P010010 |
| 13 | 13.1 to 32.0 | X | X | X | X | 19 | 30 | P010013 |
| 16 | 16.1 to 38.0 | X | X | X | X | 19 | 30 | P010016 |
| 20 | 20.1 to 40.0 | X | X | X | X | 19 | 30 | P010020 |
| 25 | 25.1 to 47.0 | X | X | X | X | 19 | 30 | P010025 |
| 32 | 32.1 to 63.0 | X | X | X | X | 19 | 30 | P010032 |
| 40 | 40.1 to 63.0 | X | X | X | X | 19 | 30 | P010040 |

NOTES & SPECIFICATIONS:

Material, AISI-M2.

Hardness, Rc 60-63. Triple temper.

Identification, etch the word "Metric" on each piece.

* Ball Seat must conform to ANSI Standard gages for locking location.

CODING ON FOLLOWING PAGE

A

ROUND POINT LARGER BALL LOCK PUNCH

(P13 STANDARD – P14 ALTERNATE)

| P13 STANDARD | |
|-------------------|----------|
| NAAMS CODE NO. | D X L |
| P131380 | 13 X 80 |
| P131680 | 16 X 80 |
| P132080 | 20 X 80 |
| P132580 | 25 X 80 |
| P133280 | 32 X 80 |
| P134080 | 40 X 80 |
| P131390 | 13 X 90 |
| P131690 | 16 X 90 |
| P132090 | 20 X 90 |
| P132590 | 25 X 90 |
| P133290 | 32 X 90 |
| P134090 | 40 X 90 |
| P131300 | 13 X 100 |
| P131600 | 16 X 100 |
| P132000 | 20 X 100 |
| P132500 | 25 X 100 |
| P133200 | 32 X 100 |
| P134000 | 40 X 100 |

| P14 ALTERNATE | |
|-------------------|----------|
| NAAMS CODE NO. | D X L |
| P141380 | 13 X 80 |
| P141680 | 16 X 80 |
| P142080 | 20 X 80 |
| P142580 | 25 X 80 |
| P143280 | 32 X 80 |
| P144080 | 40 X 80 |
| P141390 | 13 X 90 |
| P141690 | 16 X 90 |
| P142090 | 20 X 90 |
| P142590 | 25 X 90 |
| P143290 | 32 X 90 |
| P144090 | 40 X 90 |
| P141300 | 13 X 100 |
| P141600 | 16 X 100 |
| P142000 | 20 X 100 |
| P142500 | 25 X 100 |
| P143200 | 32 X 100 |
| P144000 | 40 X 100 |

OBLONG POINT LARGER BALL LOCK PUNCH

(P23 STANDARD – P24 ALTERNATE)

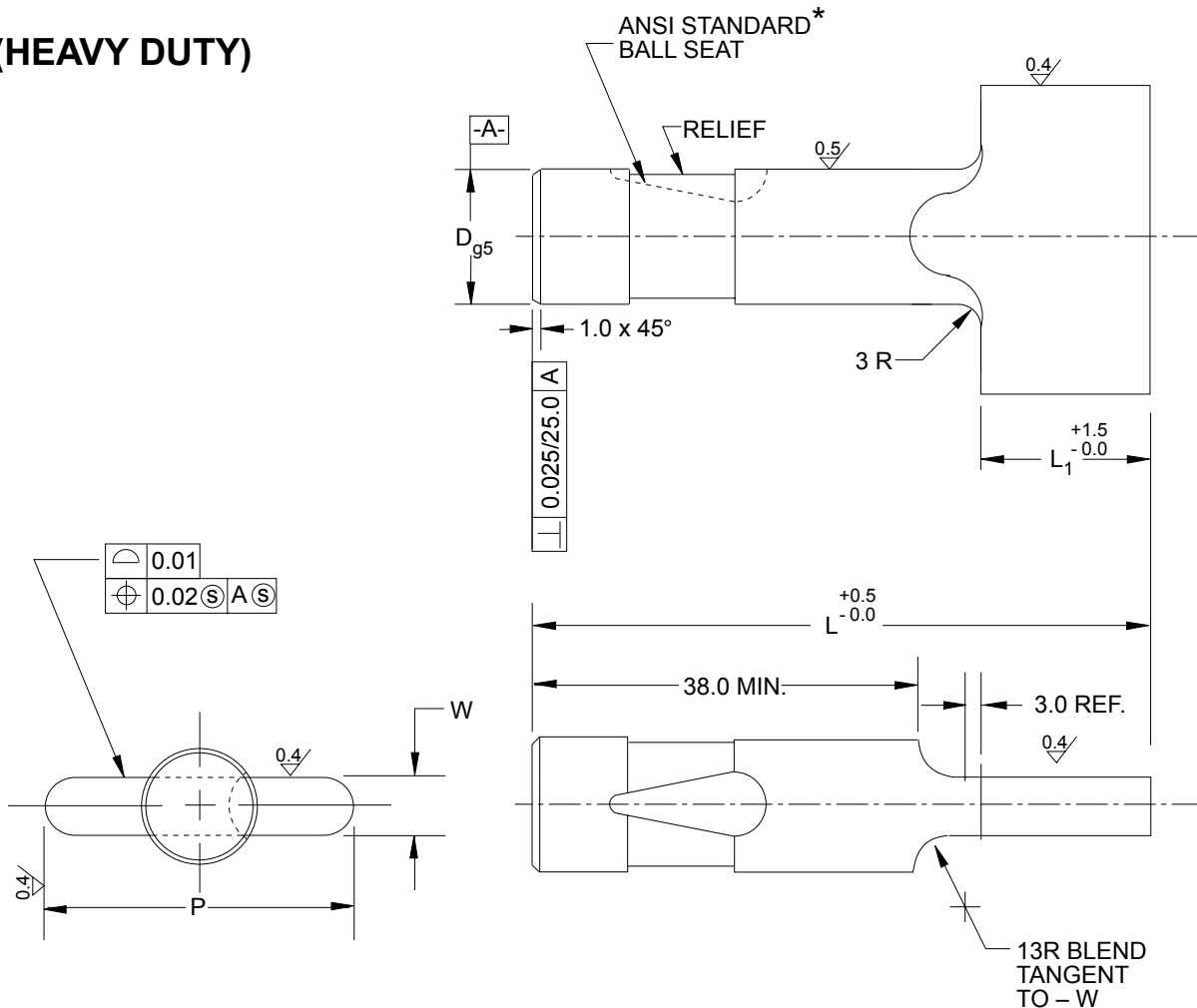
GLOBAL STANDARD COMPONENTS



Stamping

04/24/14

(HEAVY DUTY)



| D NOMINAL SHANK Ø | PUNCH POINTS AVAILABLE 0.01 INCREMENTS | | L OVERALL LENGTH | | | | L1 POINT LENGTH | | PUNCH RETAINER NAAMS CODE |
|----------------------------|--|-------|------------------------|----|----|-----|--------------------|-----------|------------------------------------|
| | W MIN | P MAX | 71 | 80 | 90 | 100 | P23 STD. | P2 ALT | |
| 10 | 3.0 | 25.0 | X | X | X | X | 16 | 30 | P010010 |
| 13 | 5.0 | 32.0 | X | X | X | X | 19 | 30 | P010013 |
| 16 | 6.0 | 38.0 | X | X | X | X | 19 | 30 | P010016 |
| 20 | 8.0 | 40.0 | X | X | X | X | 19 | 30 | P010020 |
| 25 | 10.0 | 47.0 | X | X | X | X | 19 | 30 | P010025 |
| 32 | 11.5 | 63.0 | | X | X | X | 19 | 30 | P010032 |
| 40 | 14.0 | 63.0 | | X | X | X | 19 | 30 | P010040 |

NOTES & SPECIFICATIONS:

- Material, AISI-M2.
- Hardness, Rc 60-63. Triple temper.
- Identification, etch the word "Metric" on each piece.
- * Ball Seat must conform to ANSI Standard gages for locking location.

CODING ON FOLLOWING PAGE

A

OBLONG POINT LARGER BALL LOCK PUNCH

(P23 STANDARD – P24 ALTERNATE)



Stamping

10/30/96

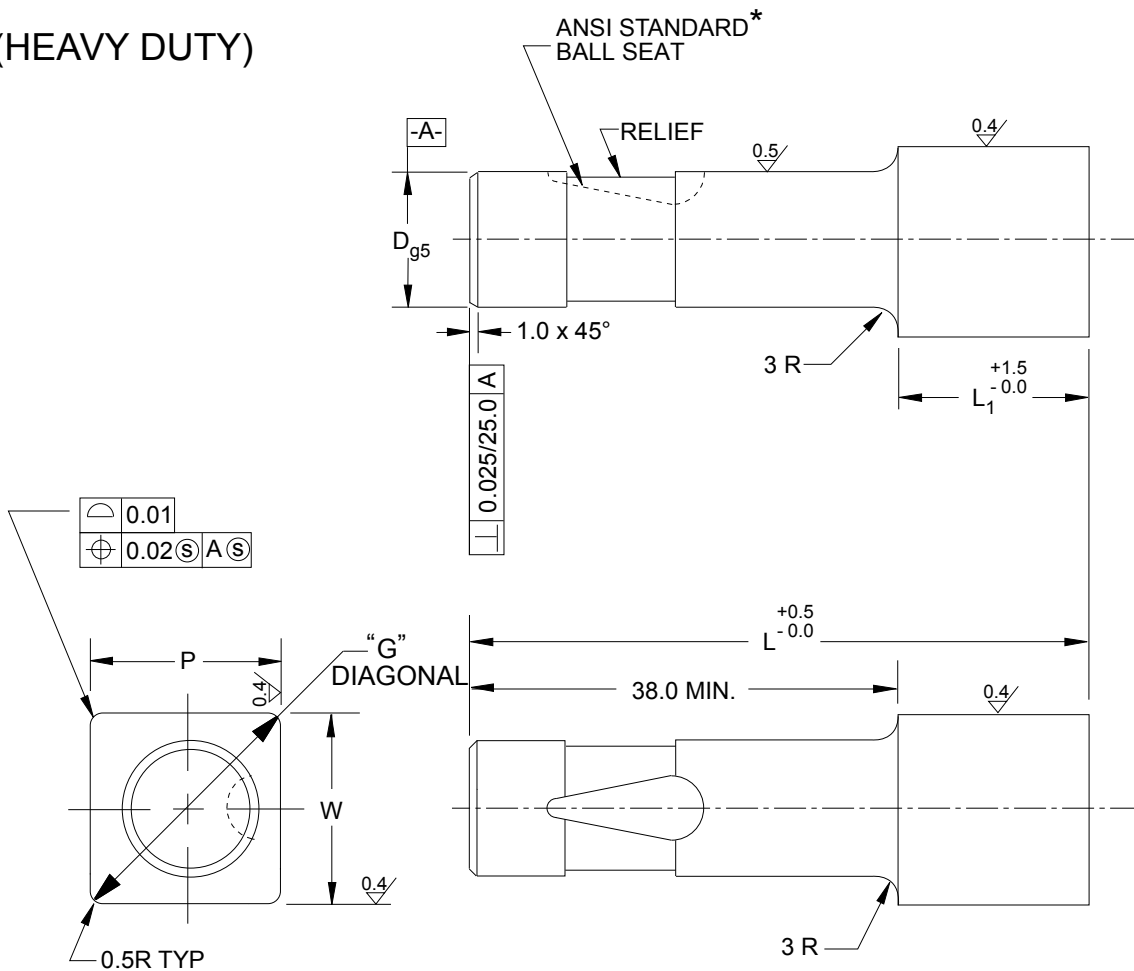
| P23 STANDARD | |
|-------------------|----------|
| NAAMS CODE NO. | D X L |
| P231380 | 13 X 80 |
| P231680 | 16 X 80 |
| P232080 | 20 X 80 |
| P232580 | 25 X 80 |
| P233280 | 32 X 80 |
| P234080 | 40 X 80 |
| P231390 | 13 X 90 |
| P231690 | 16 X 90 |
| P232090 | 20 X 90 |
| P232590 | 25 X 90 |
| P233290 | 32 X 90 |
| P234090 | 40 X 90 |
| P231300 | 13 X 100 |
| P231600 | 16 X 100 |
| P232000 | 20 X 100 |
| P232500 | 25 X 100 |
| P233200 | 32 X 100 |
| P234000 | 40 X 100 |

| P24 ALTERNATE | |
|-------------------|----------|
| NAAMS CODE NO. | D X L |
| P241380 | 13 X 80 |
| P241680 | 16 X 80 |
| P242080 | 20 X 80 |
| P242580 | 25 X 80 |
| P243280 | 32 X 80 |
| P244080 | 40 X 80 |
| P241390 | 13 X 90 |
| P241690 | 16 X 90 |
| P242090 | 20 X 90 |
| P242590 | 25 X 90 |
| P243290 | 32 X 90 |
| P244090 | 40 X 90 |
| P241300 | 13 X 100 |
| P241600 | 16 X 100 |
| P242000 | 20 X 100 |
| P242500 | 25 X 100 |
| P243200 | 32 X 100 |
| P244000 | 40 X 100 |

SQUARE POINT LARGER BALL LOCK PUNCH

(P33 STANDARD – P34 ALTERNATE)

(HEAVY DUTY)



| D NOMINAL SHANK Ø | PUNCH POINTS AVAILABLE 0.01 INCREMENTS | | L OVERALL LENGTH | | | | L1 POINT LENGTH | | PUNCH RETAINER NAAMS CODE |
|----------------------------|--|-------|------------------------|----|----|-----|--------------------|-----|------------------------------------|
| | W MIN | G MAX | 71 | 80 | 90 | 100 | P33 | P34 | |
| | | | | | | | STD. | ALT | |
| 10 | 3.0 | 25.0 | X | X | X | X | 16 | 30 | P010010 |
| 13 | 5.0 | 32.0 | X | X | X | X | 19 | 30 | P010013 |
| 16 | 6.0 | 38.0 | X | X | X | X | 19 | 30 | P010016 |
| 20 | 8.0 | 40.0 | X | X | X | X | 19 | 30 | P010020 |
| 25 | 10.0 | 47.0 | X | X | X | X | 19 | 30 | P010025 |
| 32 | 11.50 | 63.0 | | X | X | X | 19 | 30 | P010032 |
| 40 | 14.0 | 63.0 | | X | X | X | 19 | 30 | P010040 |

$$G = 2\sqrt{(P/2-R)^2 + (W/2-R)^2} + R$$

NOTES & SPECIFICATIONS: $G_{MAX} = D - 0.2$

Material, AISI-M2.

Hardness, Rc 60-63. Triple temper.

Identification, etch the word "Metric" on each piece.

* Ball Seat must conform to ANSI Standard gages for locking location.

CODING ON FOLLOWING PAGE

A

SQUARE POINT LARGER BALL LOCK PUNCH

(P33 STANDARD – P34 ALTERNATE)



Stamping

10/30/96

| P33 STANDARD | |
|-------------------|----------|
| NAAMS CODE NO. | D X L |
| P331380 | 13 X 80 |
| P331680 | 16 X 80 |
| P332080 | 20 X 80 |
| P332580 | 25 X 80 |
| P333280 | 32 X 80 |
| P334080 | 40 X 80 |
| P331390 | 13 X 90 |
| P331690 | 16 X 90 |
| P332090 | 20 X 90 |
| P332590 | 25 X 90 |
| P333290 | 32 X 90 |
| P334090 | 40 X 90 |
| P331300 | 13 X 100 |
| P331600 | 16 X 100 |
| P332000 | 20 X 100 |
| P332500 | 25 X 100 |
| P333200 | 32 X 100 |
| P334000 | 40 X 100 |

| P34 ALTERNATE | |
|-------------------|----------|
| NAAMS CODE NO. | D X L |
| P341380 | 13 X 80 |
| P341680 | 16 X 80 |
| P342080 | 20 X 80 |
| P342580 | 25 X 80 |
| P343280 | 32 X 80 |
| P344080 | 40 X 80 |
| P341390 | 13 X 90 |
| P341690 | 16 X 90 |
| P342090 | 20 X 90 |
| P342590 | 25 X 90 |
| P343290 | 32 X 90 |
| P344090 | 40 X 90 |
| P341300 | 13 X 100 |
| P341600 | 16 X 100 |
| P342000 | 20 X 100 |
| P342500 | 25 X 100 |
| P343200 | 32 X 100 |
| P344000 | 40 X 100 |

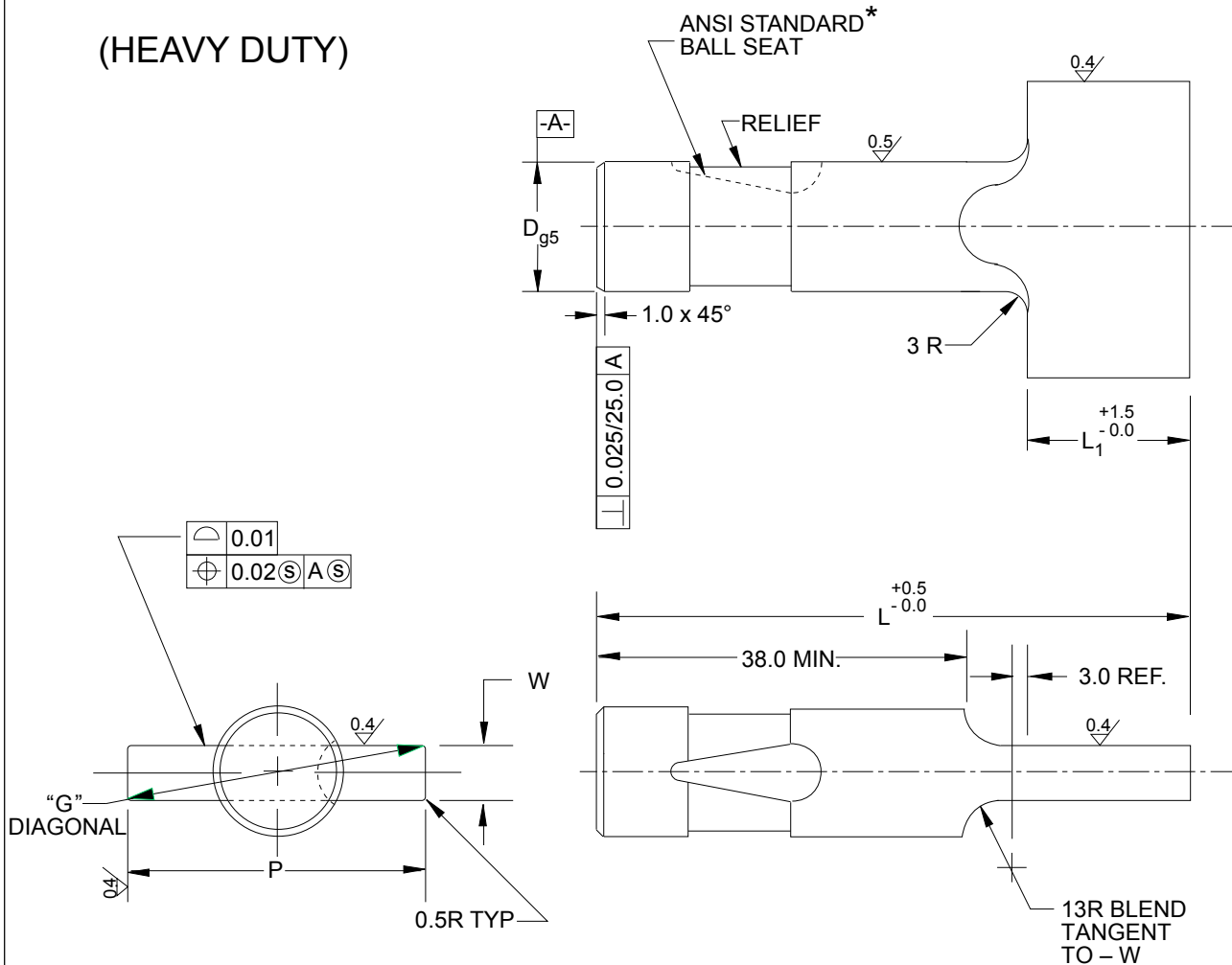
RECTANGLE POINT LARGER BALL LOCK PUNCH

(P43 STANDARD – P44 ALTERNATE)

Stamping

04/24/14

(HEAVY DUTY)



| D NOMINAL SHANK Ø | PUNCH POINTS AVAILABLE 0.01 INCREMENTS | | L OVERALL LENGTH | | | | L1 POINT LENGTH | | PUNCH RETAINER NAAMS CODE |
|----------------------------|--|-------|------------------------|----|----|-----|--------------------|------------|------------------------------------|
| | W MIN | G MAX | 71 | 80 | 90 | 100 | P43 STD. | P44 ALT | |
| 10 | 3.0 | 25.0 | X | X | X | X | 16 | 30 | P010010 |
| 13 | 5.0 | 32.0 | X | X | X | X | 19 | 30 | P010013 |
| 16 | 6.0 | 38.0 | X | X | X | X | 19 | 30 | P010016 |
| 20 | 8.0 | 40.0 | X | X | X | X | 19 | 30 | P010020 |
| 25 | 10.0 | 47.0 | X | X | X | X | 19 | 30 | P010025 |
| 32 | 11.5 | 63.0 | | X | X | X | 19 | 30 | P010032 |
| 40 | 14.0 | 63.0 | | X | X | X | 19 | 30 | P010040 |

$$G = 2 \sqrt{[(P/2-R)^2 + (W/2-R)^2 + R]}$$

NOTES & SPECIFICATIONS: $G_{MAX} = D - 0.2$

Material, AISI-M2.

Hardness, Rc 60-63. Triple temper.

Identification, etch the word "Metric" on each piece.

* Ball Seat must conform to ANSI Standard gages for locking location.

CODING ON FOLLOWING PAGE

RECTANGLE POINT LARGER BALL LOCK PUNCH

(P43 STANDARD – P44 ALTERNATE)

| P43 STANDARD | |
|-------------------|----------|
| NAAMS CODE NO. | D X L |
| P431380 | 13 X 80 |
| P431680 | 16 X 80 |
| P432080 | 20 X 80 |
| P432580 | 25 X 80 |
| P433280 | 32 X 80 |
| P434080 | 40 X 80 |
| P431390 | 13 X 90 |
| P431690 | 16 X 90 |
| P432090 | 20 X 90 |
| P432590 | 25 X 90 |
| P433290 | 32 X 90 |
| P434090 | 40 X 90 |
| P431300 | 13 X 100 |
| P431600 | 16 X 100 |
| P432000 | 20 X 100 |
| P432500 | 25 X 100 |
| P433200 | 32 X 100 |
| P434000 | 40 X 100 |

| P44 ALTERNATE | |
|-------------------|----------|
| NAAMS CODE NO. | D X L |
| P441380 | 13 X 80 |
| P441680 | 16 X 80 |
| P442080 | 20 X 80 |
| P442580 | 25 X 80 |
| P443280 | 32 X 80 |
| P444080 | 40 X 80 |
| P441390 | 13 X 90 |
| P441690 | 16 X 90 |
| P442090 | 20 X 90 |
| P442590 | 25 X 90 |
| P443290 | 32 X 90 |
| P444090 | 40 X 90 |
| P441300 | 13 X 100 |
| P441600 | 16 X 100 |
| P442000 | 20 X 100 |
| P442500 | 25 X 100 |
| P443200 | 32 X 100 |
| P444000 | 40 X 100 |

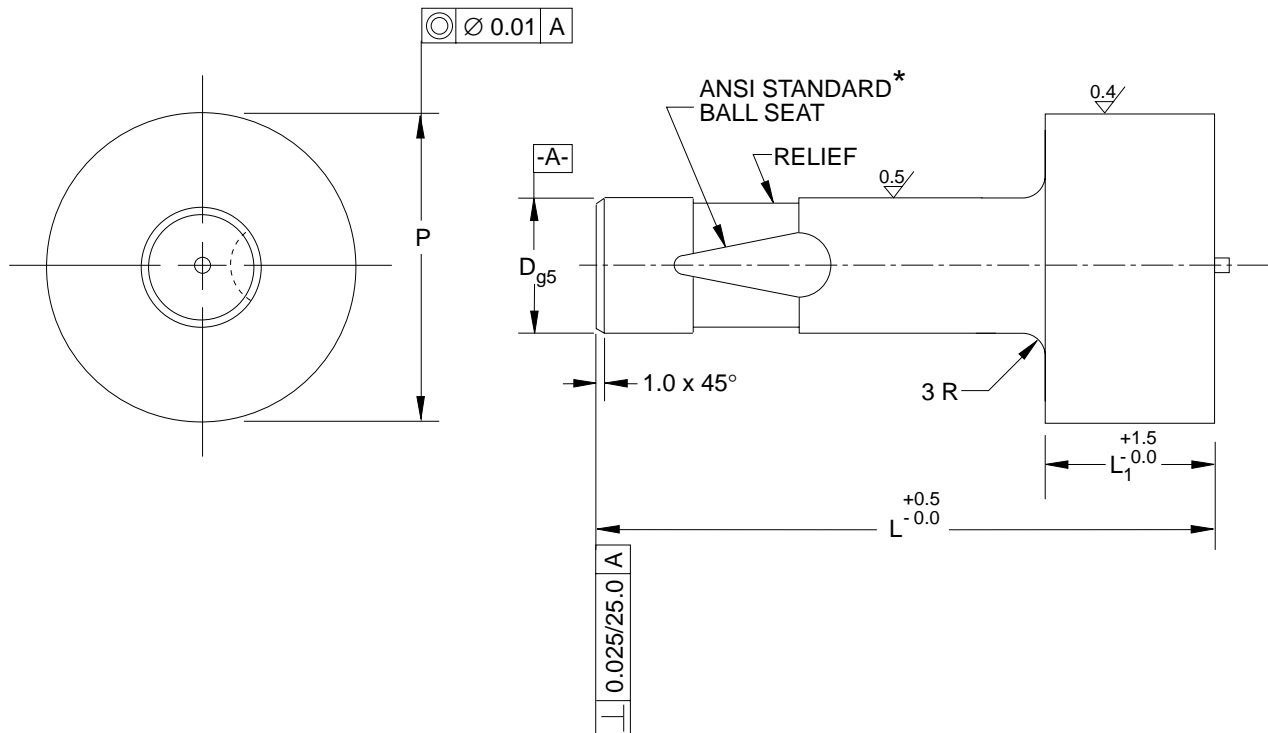
ROUND POINT LARGER BALL LOCK EJECTOR PUNCH

(P18 STANDARD – P19 ALTERNATE)

Stamping

03/13/97

(HEAVY DUTY)



| D NOMINAL SHANK Ø | P PUNCH POINTS AVAILABLE 0.01 INCREMENTS | L OVERALL LENGTH | L1 POINT LENGTH | | PUNCH RETAINER NAAMS CODE |
|----------------------------|---|------------------------|--------------------|------------|------------------------------------|
| | | | P18 STD. | P19 ALT | |
| 13 | 13.1 to 32.0 | 80 | 19 | 30 | P010013 |
| 16 | 16.1 to 38.0 | | 19 | 30 | P010016 |
| 20 | 20.1 to 40.0 | | 19 | 30 | P010020 |
| 25 | 25.1 to 44.0 | 90 | 19 | 30 | P010025 |
| 32 | 32.1 to 50.0 | 100 | 19 | 30 | P010032 |
| 40 | 40.1 to 56.0 | | 19 | 30 | P010040 |

NOTES & SPECIFICATIONS:

- Material, AISI-M2.
- Hardness, Rc 60-63. Triple temper.
- Identification, etch the word "Metric" on each piece.
- * Ball Seat must conform to ANSI Standard gages for locking location.

CODING ON FOLLOWING PAGE

ROUND POINT LARGER BALL LOCK EJECTOR PUNCH

(P18 STANDARD – P19 ALTERNATE)



Stamping

10/30/96

| P18 STANDARD | |
|-------------------|----------|
| NAAMS CODE NO. | D X L |
| P181380 | 13 X 80 |
| P181680 | 16 X 80 |
| P182080 | 20 X 80 |
| P182580 | 25 X 80 |
| P183280 | 32 X 80 |
| P184080 | 40 X 80 |
| P181390 | 13 X 90 |
| P181690 | 16 X 90 |
| P182090 | 20 X 90 |
| P182590 | 25 X 90 |
| P183290 | 32 X 90 |
| P184090 | 40 X 90 |
| P181300 | 13 X 100 |
| P181600 | 16 X 100 |
| P182000 | 20 X 100 |
| P182500 | 25 X 100 |
| P183200 | 32 X 100 |
| P184000 | 40 X 100 |

| P19 ALTERNATE | |
|-------------------|----------|
| NAAMS CODE NO. | D X L |
| P191380 | 13 X 80 |
| P191680 | 16 X 80 |
| P192080 | 20 X 80 |
| P192580 | 25 X 80 |
| P193280 | 32 X 80 |
| P194080 | 40 X 80 |
| P191390 | 13 X 90 |
| P191690 | 16 X 90 |
| P192090 | 20 X 90 |
| P192590 | 25 X 90 |
| P193290 | 32 X 90 |
| P194090 | 40 X 90 |
| P191300 | 13 X 100 |
| P191600 | 16 X 100 |
| P192000 | 20 X 100 |
| P192500 | 25 X 100 |
| P193200 | 32 X 100 |
| P194000 | 40 X 100 |

OBLONG POINT LARGER BALL LOCK EJECTOR PUNCH

(P28 STANDARD – P29 ALTERNATE)

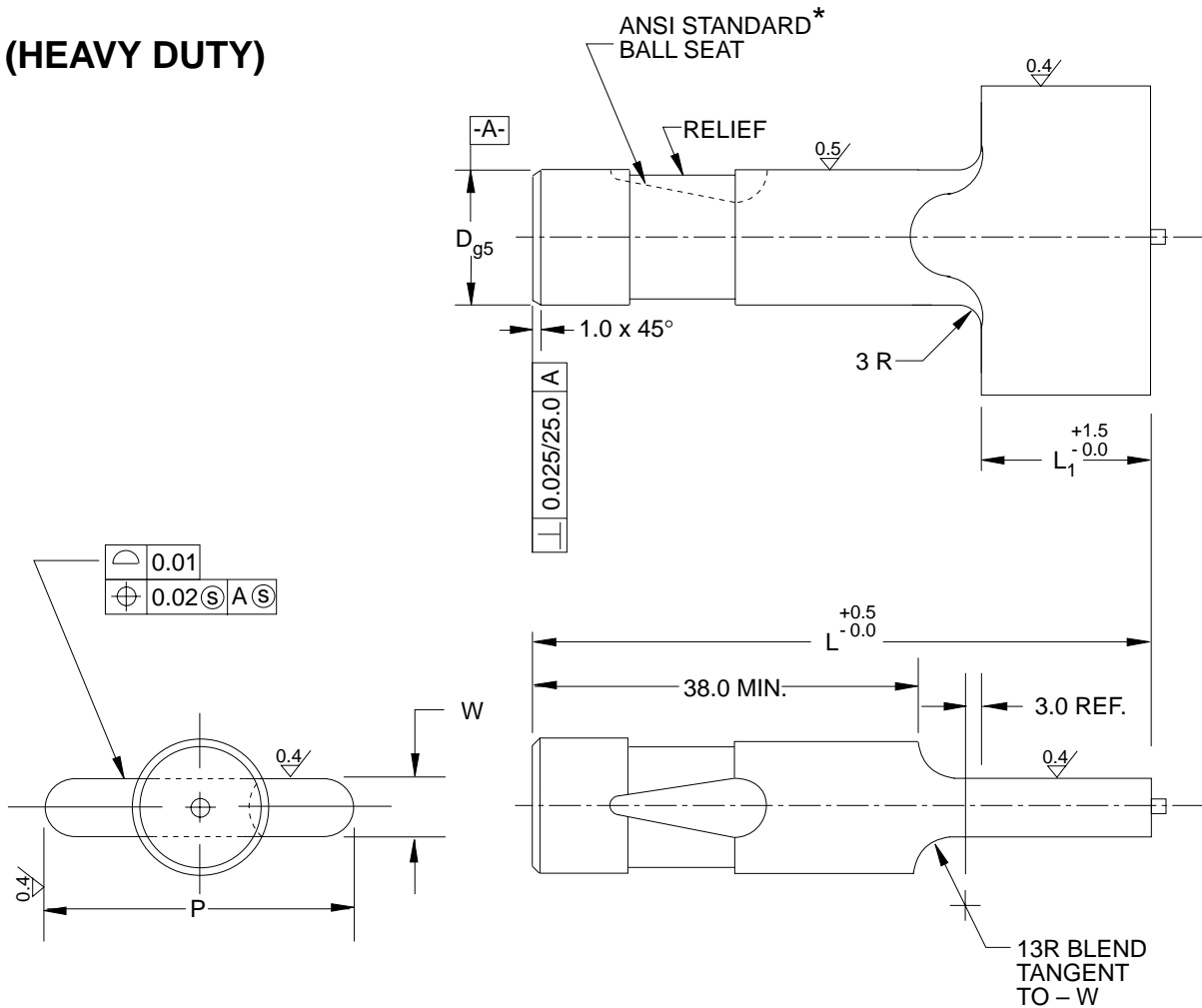
GLOBAL STANDARD COMPONENTS



Stamping

05/14/97

(HEAVY DUTY)



| D NOMINAL SHANK Ø | PUNCH POINTS AVAILABLE 0.01 INCREMENTS | | L OVERALL LENGTH | L1 POINT LENGTH | | PUNCH RETAINER NAAMS CODE |
|----------------------------|--|--------------|------------------------|--------------------|------------|------------------------------------|
| | W | P | | P28 STD. | P29 ALT | |
| 13 | 5.0 to 31.9 | 13.1 to 32.0 | 80 | 19 | 30 | P010013 |
| 16 | 6.0 to 37.9 | 16.1 to 38.0 | | 19 | 30 | P010016 |
| 20 | 8.0 to 39.9 | 20.1 to 40.0 | | 19 | 30 | P010020 |
| 25 | 10.0 to 43.9 | 25.1 to 44.0 | 90 | 19 | 30 | P010025 |
| 32 | 11.5 to 49.9 | 32.1 to 50.0 | 100 | 19 | 30 | P010032 |
| 40 | 14.0 to 55.9 | 40.1 to 56.0 | | 19 | 30 | P010040 |

NOTES & SPECIFICATIONS:

Material, AISI-M2.

Hardness, Rc 60-63. Triple temper.

Identification, etch the word "Metric" on each piece.

* Ball Seat must conform to ANSI Standard gages for locking location.

CODING ON FOLLOWING PAGE

OBLONG POINT LARGER BALL LOCK EJECTOR PUNCH

(P28 STANDARD – P29 ALTERNATE)

GLOBAL STANDARD COMPONENTS



Stamping

10/30/96

| P28 STANDARD | |
|-------------------|----------|
| NAAMS CODE NO. | D X L |
| P281380 | 13 X 80 |
| P281680 | 16 X 80 |
| P282080 | 20 X 80 |
| P282580 | 25 X 80 |
| P283280 | 32 X 80 |
| P284080 | 40 X 80 |
| P281390 | 13 X 90 |
| P281690 | 16 X 90 |
| P282090 | 20 X 90 |
| P282590 | 25 X 90 |
| P283290 | 32 X 90 |
| P284090 | 40 X 90 |
| P281300 | 13 X 100 |
| P281600 | 16 X 100 |
| P282000 | 20 X 100 |
| P282500 | 25 X 100 |
| P283200 | 32 X 100 |
| P284000 | 40 X 100 |

| P29 ALTERNATE | |
|-------------------|----------|
| NAAMS CODE NO. | D X L |
| P291380 | 13 X 80 |
| P291680 | 16 X 80 |
| P292080 | 20 X 80 |
| P292580 | 25 X 80 |
| P293280 | 32 X 80 |
| P294080 | 40 X 80 |
| P291390 | 13 X 90 |
| P291690 | 16 X 90 |
| P292090 | 20 X 90 |
| P292590 | 25 X 90 |
| P293290 | 32 X 90 |
| P294090 | 40 X 90 |
| P291300 | 13 X 100 |
| P291600 | 16 X 100 |
| P292000 | 20 X 100 |
| P292500 | 25 X 100 |
| P293200 | 32 X 100 |
| P294000 | 40 X 100 |

SQUARE POINT LARGER BALL LOCK EJECTOR PUNCH

GLOBAL STANDARD COMPONENTS

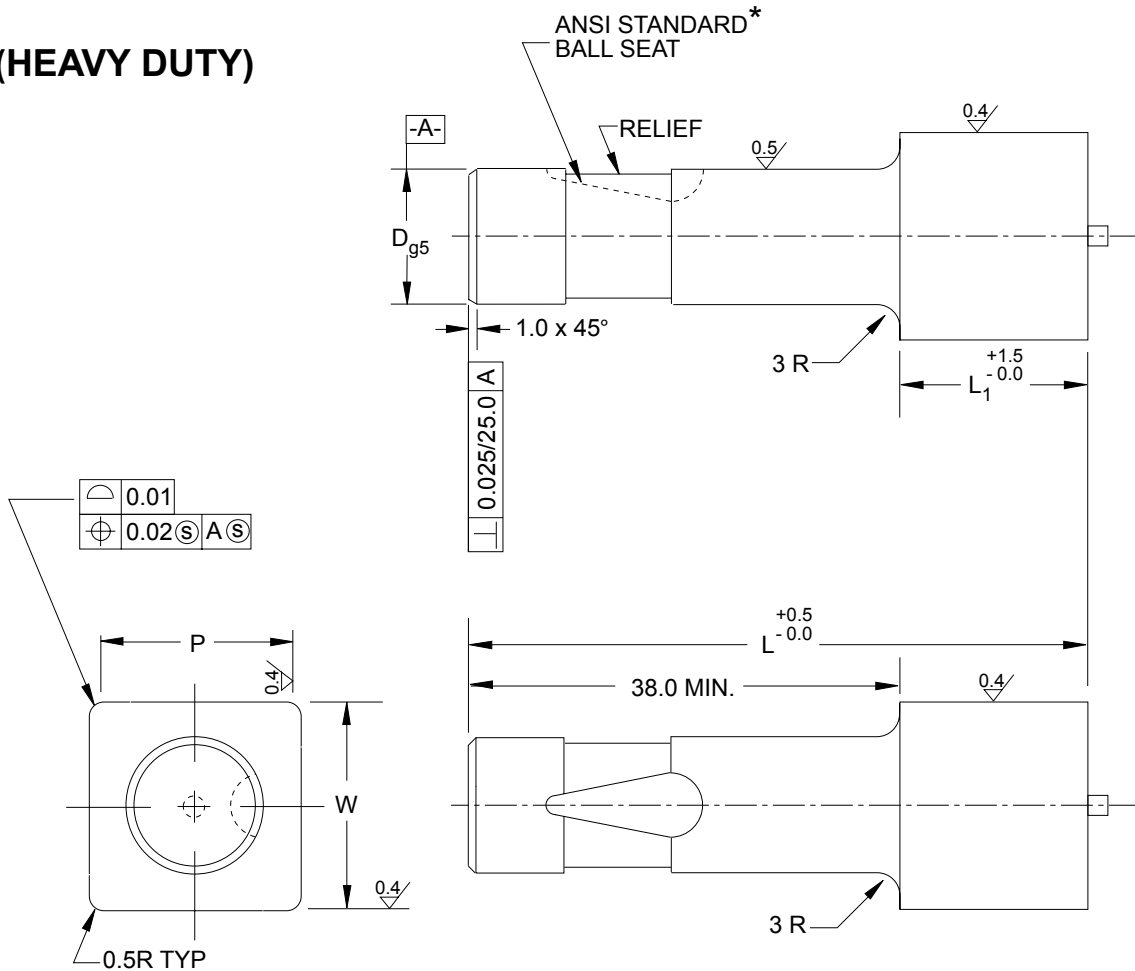


(P38 STANDARD – P39 ALTERNATE)

Stamping

05/14/97

(HEAVY DUTY)



| D NOMINAL SHANK Ø | P=W PUNCH POINTS AVAILABLE 0.01 INCREMENTS | L OVERALL LENGTH | L1 POINT LENGTH | | PUNCH RETAINER NAAMS CODE | |
|----------------------------|---|------------------------|--------------------|------------|------------------------------------|---------|
| | | | P38 STD. | P39 ALT | | |
| 13 | 9.6 to 22.8 | 80 | 19 | 30 | P010013 | |
| 16 | 11.7 to 27.1 | | 19 | 30 | P010016 | |
| 20 | 14.5 to 28.5 | | 19 | 30 | P010020 | |
| 25 | 18.1 to 31.4 | | 90 | 19 | 30 | P010025 |
| 32 | 23.0 to 35.6 | | 100 | 19 | 30 | P010032 |
| 40 | 28.7 to 39.8 | | | 19 | 30 | P010040 |

NOTES & SPECIFICATIONS:

Material, AISI-M2.

Hardness, Rc 60-63. Triple temper.

Identification, etch the word "Metric" on each piece.

* Ball Seat must conform to ANSI Standard gages for locking location.

CODING ON FOLLOWING PAGE

SQUARE POINT LARGER BALL LOCK EJECTOR PUNCH

(P38 STANDARD – P39 ALTERNATE)



Stamping

10/30/96

| P38 STANDARD | |
|-------------------|----------|
| NAAMS CODE NO. | D X L |
| P381380 | 13 X 80 |
| P381680 | 16 X 80 |
| P382080 | 20 X 80 |
| P382580 | 25 X 80 |
| P383280 | 32 X 80 |
| P384080 | 40 X 80 |
| P381390 | 13 X 90 |
| P381690 | 16 X 90 |
| P382090 | 20 X 90 |
| P382590 | 25 X 90 |
| P383290 | 32 X 90 |
| P384090 | 40 X 90 |
| P381300 | 13 X 100 |
| P381600 | 16 X 100 |
| P382000 | 20 X 100 |
| P382500 | 25 X 100 |
| P383200 | 32 X 100 |
| P384000 | 40 X 100 |

| P39 ALTERNATE | |
|-------------------|----------|
| NAAMS CODE NO. | D X L |
| P391380 | 13 X 80 |
| P391680 | 16 X 80 |
| P392080 | 20 X 80 |
| P392580 | 25 X 80 |
| P393280 | 32 X 80 |
| P394080 | 40 X 80 |
| P391390 | 13 X 90 |
| P391690 | 16 X 90 |
| P392090 | 20 X 90 |
| P392590 | 25 X 90 |
| P393290 | 32 X 90 |
| P394090 | 40 X 90 |
| P391300 | 13 X 100 |
| P391600 | 16 X 100 |
| P392000 | 20 X 100 |
| P392500 | 25 X 100 |
| P393200 | 32 X 100 |
| P394000 | 40 X 100 |

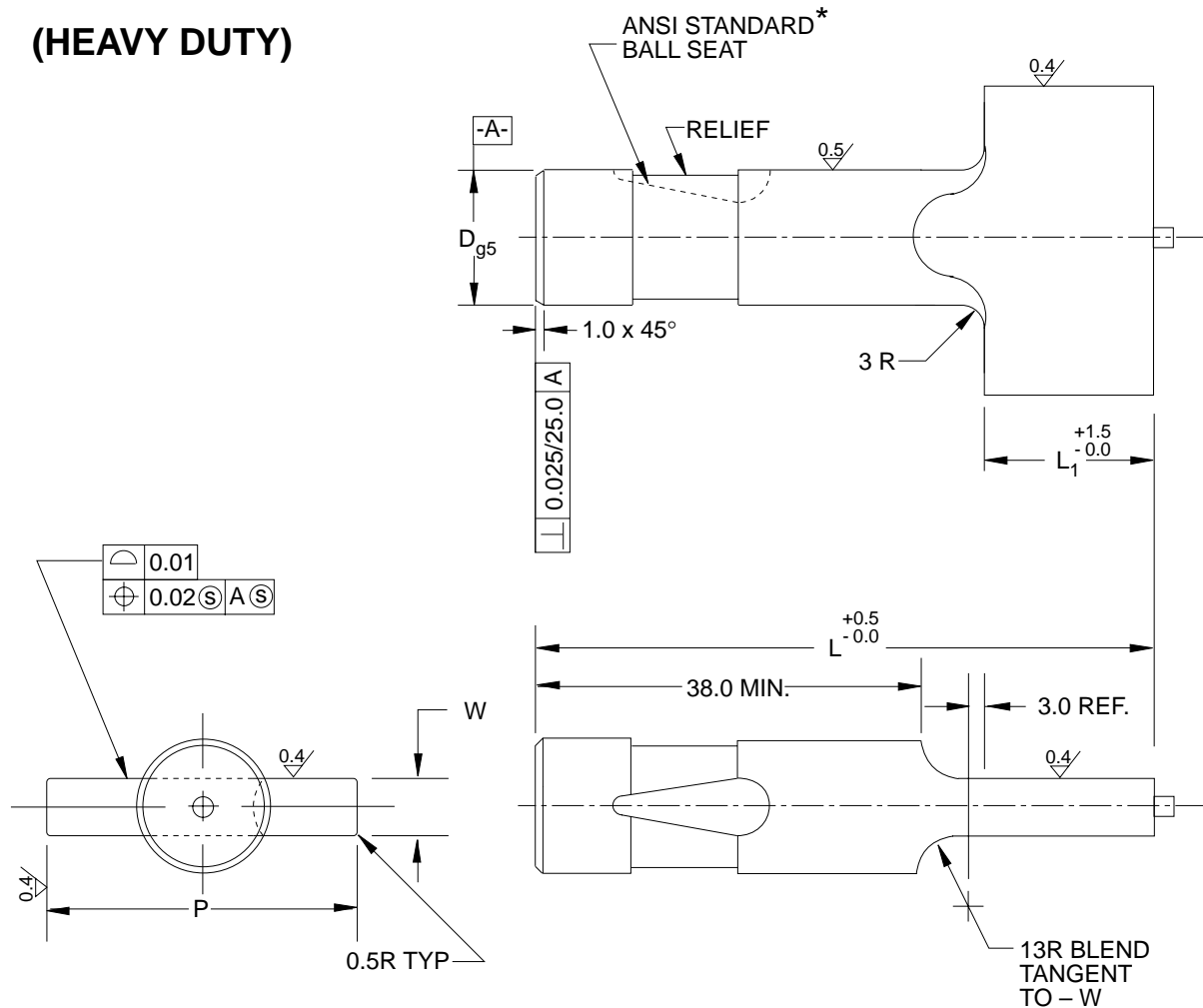
RECTANGLE POINT LARGER BALL LOCK EJECTOR PUNCH

(P48 STANDARD – P49 ALTERNATE)

Stamping

05/14/97

(HEAVY DUTY)



| D NOMINAL SHANK Ø | PUNCH POINTS AVAILABLE 0.01 INCREMENTS | | L OVERALL LENGTH | L1 POINT LENGTH | | PUNCH RETAINER NAAMS CODE |
|----------------------------|--|--------------|------------------------|--------------------|------------|------------------------------------|
| | W | P | | P48 STD. | P49 ALT | |
| 13 | 5.0 to 14.0 | 12.4 to 29.0 | 80 | 19 | 30 | P010013 |
| 16 | 6.0 to 15.0 | 15.2 to 35.2 | | 19 | 30 | P010016 |
| 20 | 8.0 to 17.0 | 18.7 to 36.5 | | 19 | 30 | P010020 |
| 25 | 10.0 to 19.0 | 23.3 to 40.0 | 90 | 19 | 30 | P010025 |
| 32 | 11.5 to 20.5 | 30.2 to 45.9 | 100 | 19 | 30 | P010032 |
| 40 | 14.0 to 23.0 | 37.8 to 51.3 | | 19 | 30 | P010040 |

NOTES & SPECIFICATIONS:

Material, AISI-M2.

Hardness, Rc 60-63. Triple temper.

Identification, etch the word "Metric" on each piece.

* Ball Seat must conform to ANSI Standard gages for locking location.

CODING ON FOLLOWING PAGE

RECTANGLE POINT LARGER BALL LOCK EJECTOR PUNCH

(P48 STANDARD – P49 ALTERNATE)



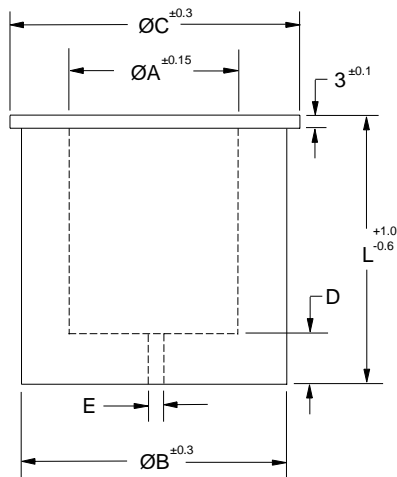
Stamping

10/30/96

| P48 STANDARD | |
|-------------------|----------|
| NAAMS CODE NO. | D X L |
| P481380 | 13 X 80 |
| P481680 | 16 X 80 |
| P482080 | 20 X 80 |
| P482580 | 25 X 80 |
| P483280 | 32 X 80 |
| P484080 | 40 X 80 |
| P481390 | 13 X 90 |
| P481690 | 16 X 90 |
| P482090 | 20 X 90 |
| P482590 | 25 X 90 |
| P483290 | 32 X 90 |
| P484090 | 40 X 90 |
| P481300 | 13 X 100 |
| P481600 | 16 X 100 |
| P482000 | 20 X 100 |
| P482500 | 25 X 100 |
| P483200 | 32 X 100 |
| P484000 | 40 X 100 |

| P49 ALTERNATE | |
|-------------------|----------|
| NAAMS CODE NO. | D X L |
| P491380 | 13 X 80 |
| P491680 | 16 X 80 |
| P492080 | 20 X 80 |
| P492580 | 25 X 80 |
| P493280 | 32 X 80 |
| P494080 | 40 X 80 |
| P491390 | 13 X 90 |
| P491690 | 16 X 90 |
| P492090 | 20 X 90 |
| P492590 | 25 X 90 |
| P493290 | 32 X 90 |
| P494090 | 40 X 90 |
| P491300 | 13 X 100 |
| P491600 | 16 X 100 |
| P492000 | 20 X 100 |
| P492500 | 25 X 100 |
| P493200 | 32 X 100 |
| P494000 | 40 X 100 |

HEADED URETHANE PUNCH STRIPPER (P05 SERIES)



| PUNCH SHANK Ø | L STRIPPER LENGTH | FORCE REQUIRED TO DEFLECT (NEWTONS) | | |
|---------------|-------------------|---------------------------------------|-------|--------|
| | | 3 mm | 6 mm | 9 mm |
| 10 | 44 | 720 | 1,400 | ① |
| | 54 | 690 | 1,180 | 1,510 |
| | 64 | 670 | 1,060 | 1,270 |
| | 74 | 650 | 1,020 | 1,220 |
| 13 | 44 | 1,300 | 2,180 | ① |
| | 54 | 1,180 | 2,030 | 2,470 |
| | 64 | 1,020 | 1,780 | 2,160 |
| | 74 | 810 | 1,510 | 2,140 |
| 16 | 44 | 1,550 | 2,660 | ① |
| | 54 | 1,410 | 2,400 | 3,690 |
| | 64 | 1,260 | 2,280 | 3,200 |
| | 74 | 1,120 | 1,870 | 2,810 |
| 20 | 44 | 2,140 | 3,680 | ① |
| | 54 | 2,000 | 3,390 | 4,580 |
| | 64 | 1,860 | 3,210 | 4,230 |
| | 74 | 1,730 | 2,940 | 3,980 |
| 25 | 44 | 2,870 | 4,950 | ① |
| | 54 | 2,660 | 4,550 | 6,670 |
| | 64 | 2,460 | 4,110 | 5,980 |
| | 74 | 2,220 | 3,800 | 5,500 |
| 32 | 44 | 4,390 | 7,560 | ① |
| | 54 | 4,020 | 6,920 | 10,010 |
| | 64 | 3,480 | 6,060 | 8,120 |
| | 74 | 3,260 | 5,660 | 7,570 |
| 40 | 44 | 5,390 | 9,830 | ① |
| | 54 | 4,920 | 8,650 | 12,740 |
| | 64 | 4,450 | 7,950 | 11,450 |

A

| SHANK Ø OF PUNCH | OVERALL* LENGTHS L | | | | A PRESS FIT | B | C | D** | E VENT HOLE |
|------------------|--------------------|----|----|----|-------------|------|------|-----|-------------|
| | ① 44 | 54 | 64 | 74 | | | | | |
| 10.0 | X | X | X | X | 9.75 | 18.5 | 21.3 | 6 | 1.6 |
| 13.0 | X | X | X | X | 12.75 | 23.5 | 26.3 | 6 | 3.0 |
| 16.0 | X | X | X | X | 15.75 | 28.5 | 31.3 | 6 | 3.0 |
| 20.0 | X | X | X | X | 19.75 | 33.5 | 36.3 | 7 | 3.0 |
| 25.0 | X | X | X | X | 24.75 | 40.5 | 43.3 | 7 | 3.0 |
| 32.0 | X | X | X | X | 31.70 | 50.5 | 55.3 | 7 | 3.0 |
| 40.0 | X | X | X | | 39.70 | 60.5 | 65.3 | 8 | 3.0 |

NOTES & SPECIFICATIONS:

Urethane

Hardness, 95±2 shore A

* Stripper overall lengths will result in a 3-4 mm extension beyond punch point end of 80, 90, 100 and 110 mm OAL punch lengths.

** Punch Point shape is to be pierced in urethane stripper before assembly.

①44 mm long bushings should not be compressed more than 6.6 mm; more compression exceeds recommended maximum of 15%.

Set length at final deflections of 3, 6 and 9 mm will be 1, 2 and 3 mm respectively.

CODING ON FOLLOWING PAGE

HEADED URETHANE PUNCH STRIPPER CODING (P05 SERIES)

GLOBAL STANDARD COMPONENTS



Stamping

07/22/04

| | | |
|-------|------------|--------------|
| Style | Shank Dia. | O. A. Length |
| P05 | 10 | 44 |

EX: = HEADED URETHANE STRIPPE x 10 mm SHANK DIA. X 44 mm LG.

| NAAMS CODE | A x L |
|------------|---------|
| P051044 | 10 x 44 |
| P051054 | 10 x 54 |
| P051064 | 10 x 64 |
| P051074 | 10 x 74 |
| P051344 | 13 x 44 |
| P051354 | 13 x 54 |
| P051364 | 13 x 64 |
| P051374 | 13 x 74 |
| P051644 | 16 x 44 |
| P051654 | 16 x 54 |
| P051664 | 16 x 64 |
| P051674 | 16 x 74 |
| P052044 | 20 x 44 |
| P052054 | 20 x 54 |
| P052064 | 20 x 64 |
| P052074 | 20 x 74 |
| P052544 | 25 x 44 |
| P052554 | 25 x 54 |
| P052564 | 25 x 64 |
| P052574 | 25 x 74 |
| P053244 | 32 x 44 |
| P053254 | 32 x 54 |
| P053264 | 32 x 64 |
| P053274 | 32 x 74 |
| P054044 | 40 x 44 |
| P054054 | 40 x 54 |
| P054064 | 40 x 64 |

COMPACT BALL LOCK PUNCH CHANGE RETAINER

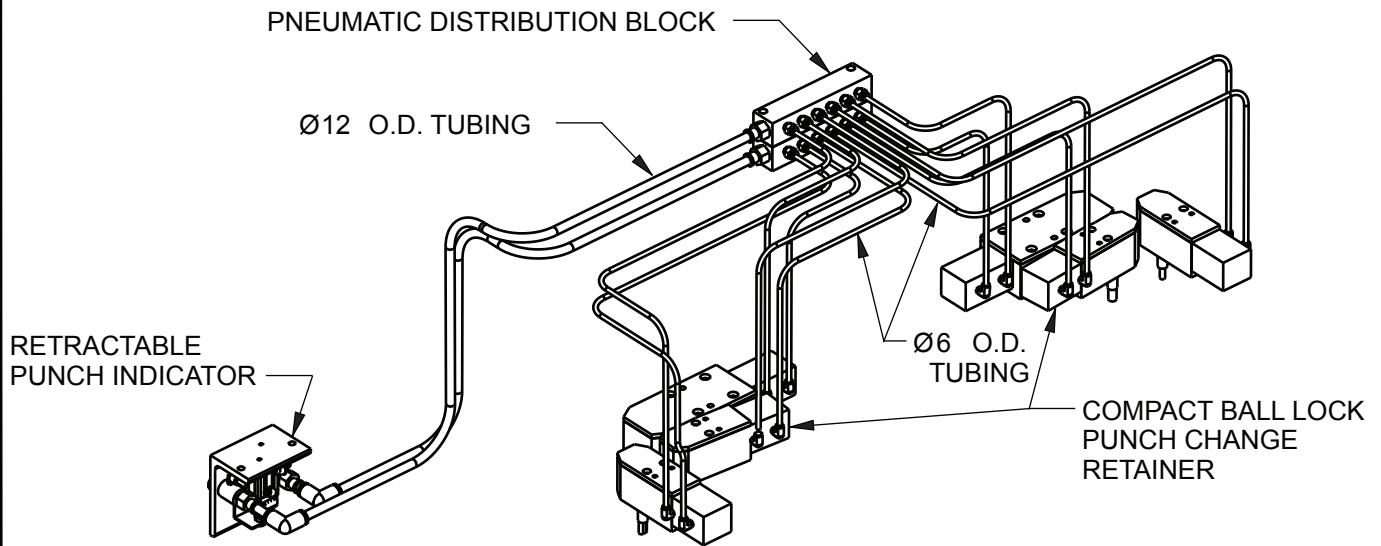
INSTALLATION

GLOBAL STANDARD COMPONENTS



Stamping

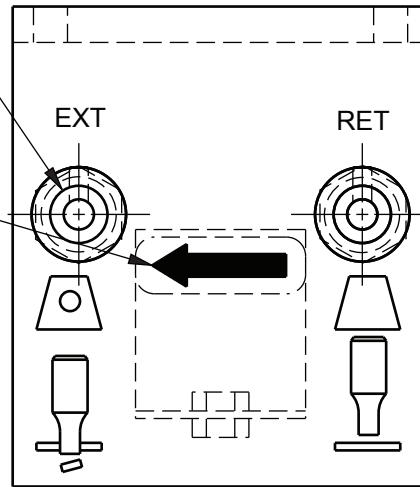
10/20/10



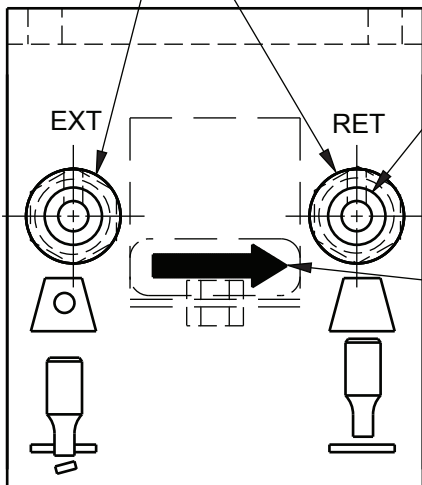
TYPICAL COMPACT BALL LOCK PUNCH CHANGE RETAINER SETUP

MOMENTARILY HOOK SHOP AIR HOSE TO THIS FITTING TO EXTEND PIERCE PUNCHES - REMOVE AIR HOSE BEFORE RUNNING PRESS.

ARROW WILL POINT TO EXTENDED PUNCH SYMBOL PUNCHES ARE NOW IN POSITION TO PIERCE HOLES.



ISO G1/2" THREAD
INSTALL SHOP AIR FITTINGS



MOMENTARILY HOOK SHOP AIR HOSE TO THIS FITTING TO RETRACT PIERCE PUNCHES - REMOVE AIR HOSE BEFORE RUNNING PRESS.

ARROW WILL POINT TO RETRACTED PUNCH SYMBOL - PUNCHES ARE NOW IN POSITION TO NOT PIERCE HOLES.

COMPACT BALL LOCK PUNCH CHANGE RETAINER

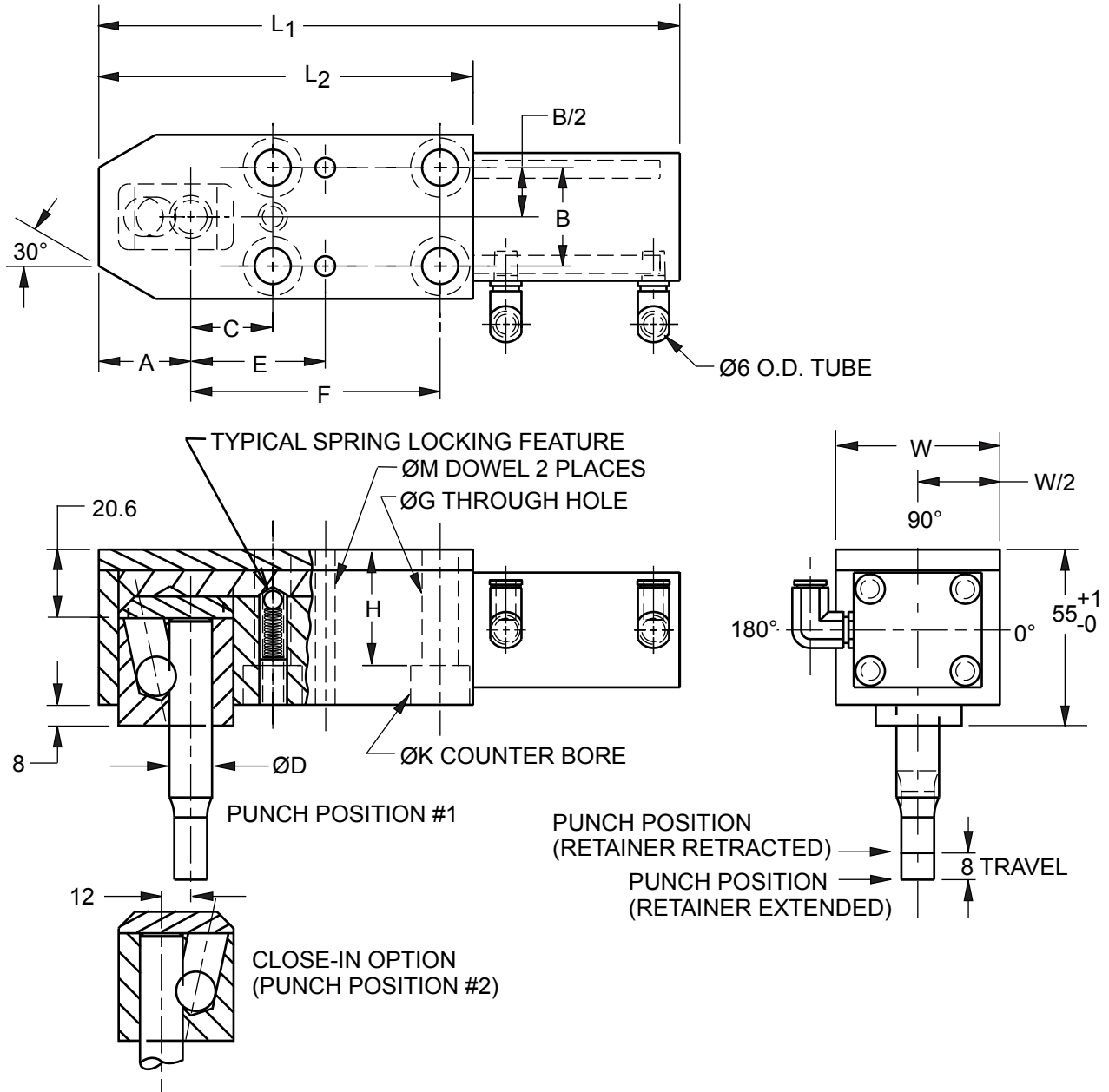
(P98 SERIES)

GLOBAL STANDARD COMPONENTS



Stamping

10/20/10



| PUNCH SHANK ØD H6 | MOUNTING SCREWS | DOWEL SIZE | W MAX | L ₁ MAX | L ₂ MAX | A MAX | B ±0.01 | C ±0.13 | E ±0.01 | F ±0.13 | G | H | K | ØM H7 |
|-------------------|-----------------|------------|-------|--------------------|--------------------|-------|---------|---------|---------|---------|------|----|----|-------|
| 10 | M8 X 60 | 6 X 30 | 46 | 161 | 100 | 28 | 30 | 21 | 37 | - | 9 | 38 | 15 | 6.0 |
| 13 | M10 X 60 | 6 X 30 | 50 | 173 | 100 | 28 | 30 | 25 | 41 | - | 11 | 36 | 18 | 6.0 |
| 16 | M10 X 60 | 6 X 30 | 50 | 182 | 114 | 31 | 30 | 25 | 41 | - | 11 | 36 | 18 | 6.0 |
| 20 | M10 X 60 | 6 X 30 | 58 | 192 | 114 | 33 | 38 | 29 | 45 | - | 11 | 36 | 18 | 6.0 |
| 25 | M10 X 60 | 6 X 30 | 58 | 207 | 124 | 35 | 38 | 29 | 45 | - | 11 | 36 | 18 | 6.0 |
| 32 | M12 X 60 | 8 X 30 | 80 | 260 | 156 | 44 | 56 | 38 | 60 | 100 | 13.5 | 34 | 20 | 8.0 |
| 40 | M12 X 60 | 8 X 30 | 80 | 264 | 156 | 44 | 56 | 38 | 60 | 100 | 13.5 | 34 | 20 | 8.0 |

CODING ON FOLLOWING PAGE

COMPACT BALL LOCK PUNCH CHANGE RETAINER

(P98 SERIES)

GLOBAL STANDARD COMPONENTS

NAAMS



Stamping

10/20/10

| Complete NAAMS Code | Punch Shank \bar{y} D | Punch Position "#1" | Punch Position "#2" | Straight Air Fittings (Option #1) | 90 Degree Air Fittings (Option #2) |
|---------------------|-------------------------|---------------------|---------------------|-----------------------------------|------------------------------------|
| P981011 | 10 | X | | X | |
| P981012 | 10 | X | | | X |
| P981021 | 10 | | X | X | |
| P981022 | 10 | | X | | X |
| P981311 | 13 | X | | X | |
| P981312 | 13 | X | | | X |
| P981321 | 13 | | X | X | |
| P981322 | 13 | | X | | X |
| P981611 | 16 | X | | X | |
| P981612 | 16 | X | | | X |
| P981621 | 16 | | X | X | |
| P981622 | 16 | | X | | X |
| P982011 | 20 | X | | X | |
| P982012 | 20 | X | | | X |
| P982021 | 20 | | X | X | |
| P982022 | 20 | | X | | X |
| P982511 | 25 | X | | X | |
| P982512 | 25 | X | | | X |
| P982521 | 25 | | X | X | |
| P982522 | 25 | | X | | X |
| P983211 | 32 | X | | X | |
| P983212 | 32 | X | | | X |
| P983221 | 32 | | X | X | |
| P983222 | 32 | | X | | X |
| P984011 | 40 | X | | X | |
| P984012 | 40 | X | | | X |
| P984021 | 40 | | X | X | |
| P984022 | 40 | | X | | X |

BALL LOCK PUNCH CHANGE INDICATOR

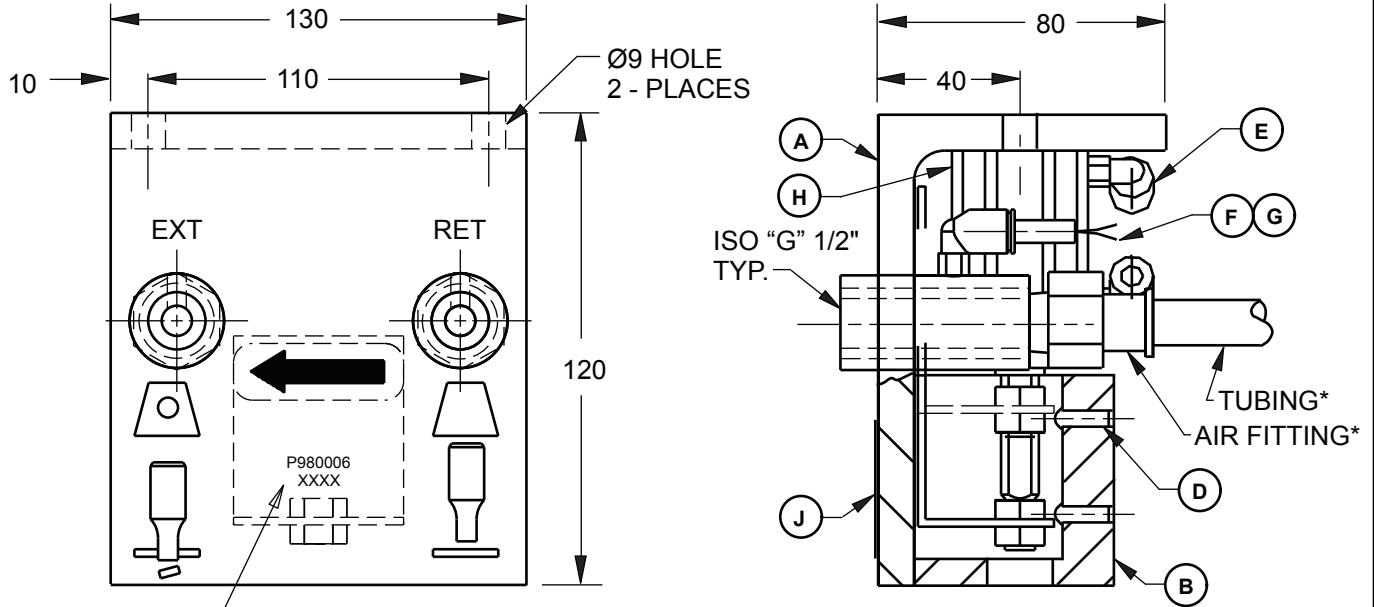
(P980006)

GLOBAL STANDARD COMPONENTS



Stamping

10/20/10



Mark with NAAMS Code and Manufacturer's Logo in 6 mm High Lettering.

*ORDER SEPARATELY

RETRACTABLE PUNCH INDICATOR

NAAMS CODE
P980006

| DET. | QUAN. | DESCRIPTION |
|------|-------|---|
| A | 1 | MAIN BODY - ALUMINUM ANGLE 6061-T6 MEDIUM BLUE ANODIZED |
| B | 1 | FLAG COVER - ALUMINUM 6061-T6 MEDIUM BLUE ANODIZED |
| C | 1 | INDICATOR FLAG - ALUMINUM ANGLE 6061-T6 |
| D | 2 | BALL PLUNGER #56422 |
| E | 4 | AIR FITTINGS SMC - KQ2L06-M5 |
| F | 1 | Ø6 POLYURETHANE TUBING - RED |
| G | 1 | Ø6 POLYURETHANE TUBING - GREEN |
| H | 1 | AIR CYLINDER SMC - CQ2KB20 - 30DM |
| J | 1 | DECAL (AS SHOWN) |

BALL LOCK PUNCH CHANGE INDICATOR

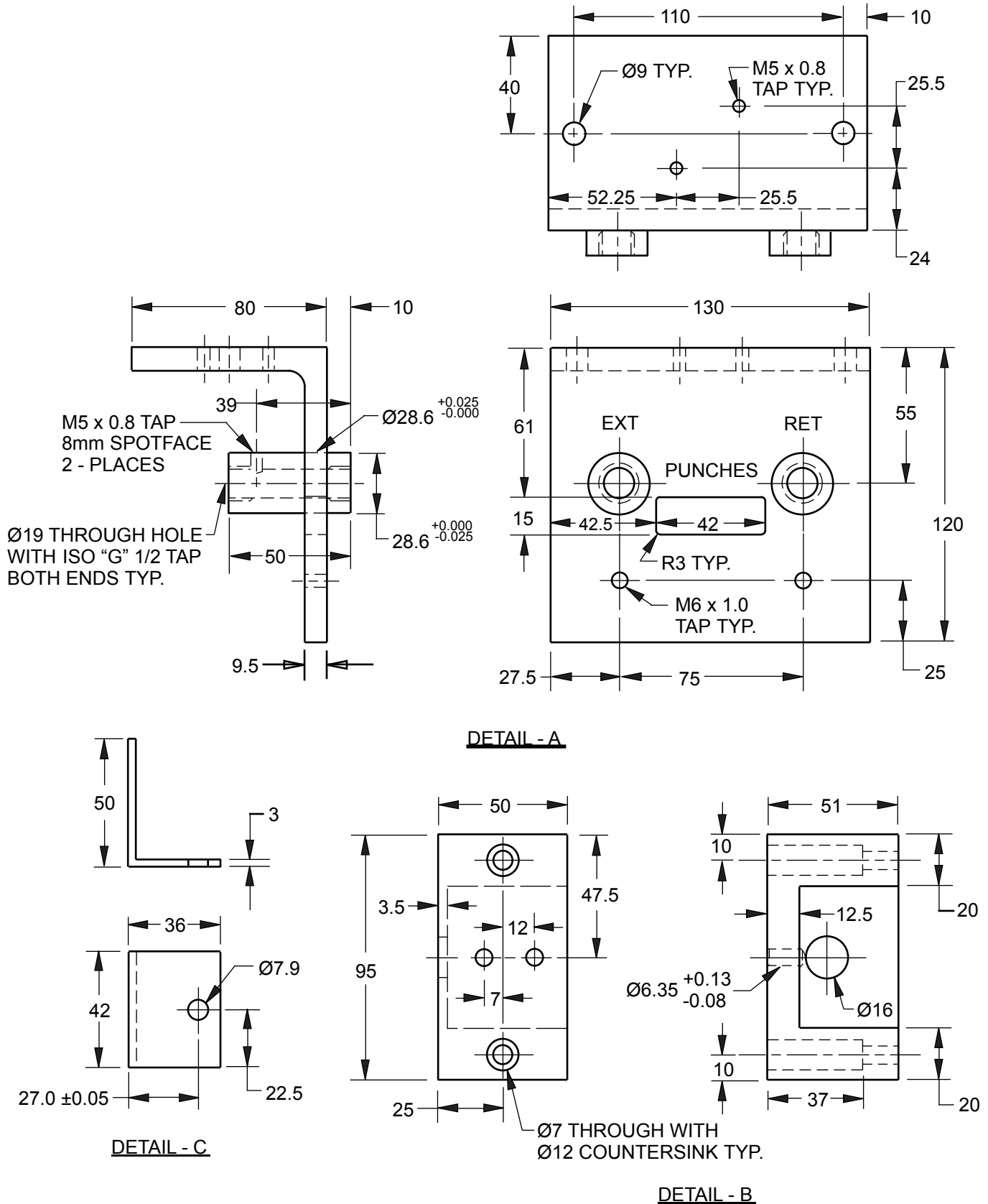
(P980006)

GLOBAL STANDARD COMPONENTS



Stamping

10/20/10



PNEUMATIC DISTRIBUTION BLOCK

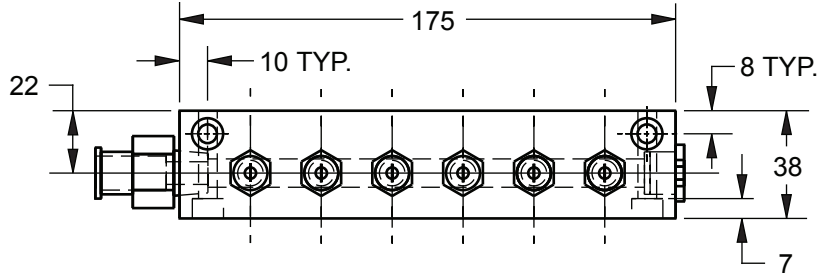
(P980007)

GLOBAL STANDARD COMPONENTS



Stamping

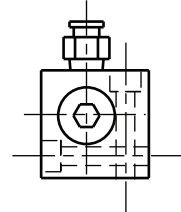
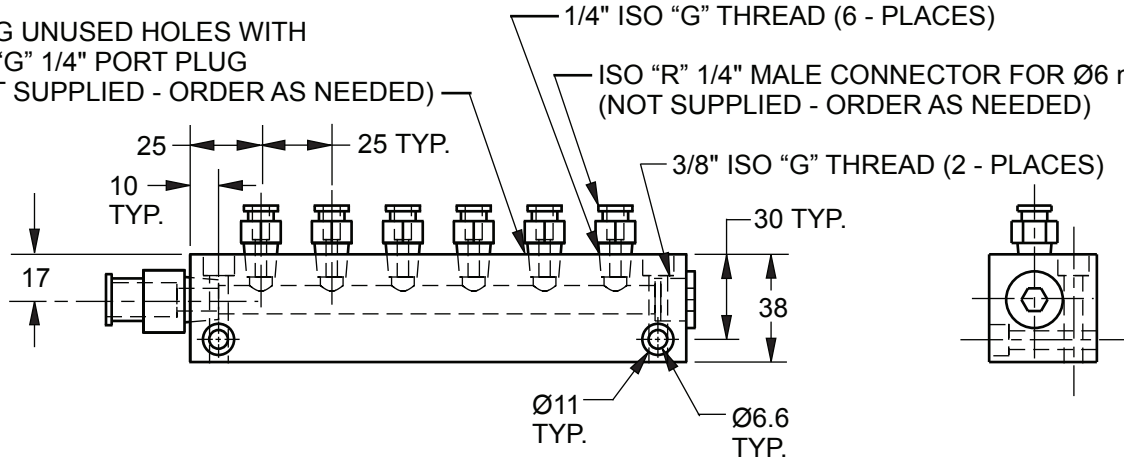
10/20/10



PLUG UNUSED HOLES WITH ISO "G" 1/4" PORT PLUG (NOT SUPPLIED - ORDER AS NEEDED)

1/4" ISO "G" THREAD (6 - PLACES)

ISO "R" 1/4" MALE CONNECTOR FOR Ø6 mm O.D. TUBE (NOT SUPPLIED - ORDER AS NEEDED)



PNEUMATIC DISTRIBUTION BLOCK

NOTES & SPECIFICATIONS

MATERIAL: ANSI 6061-T6
FINISH: MEDIUM BLUE ANODIZED
BREAK ALL EDGES