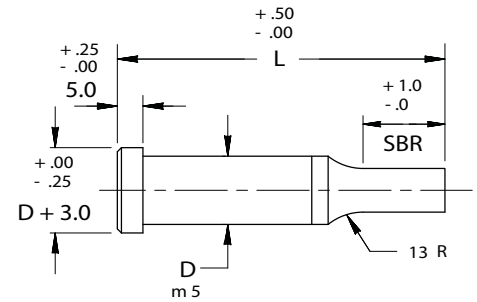
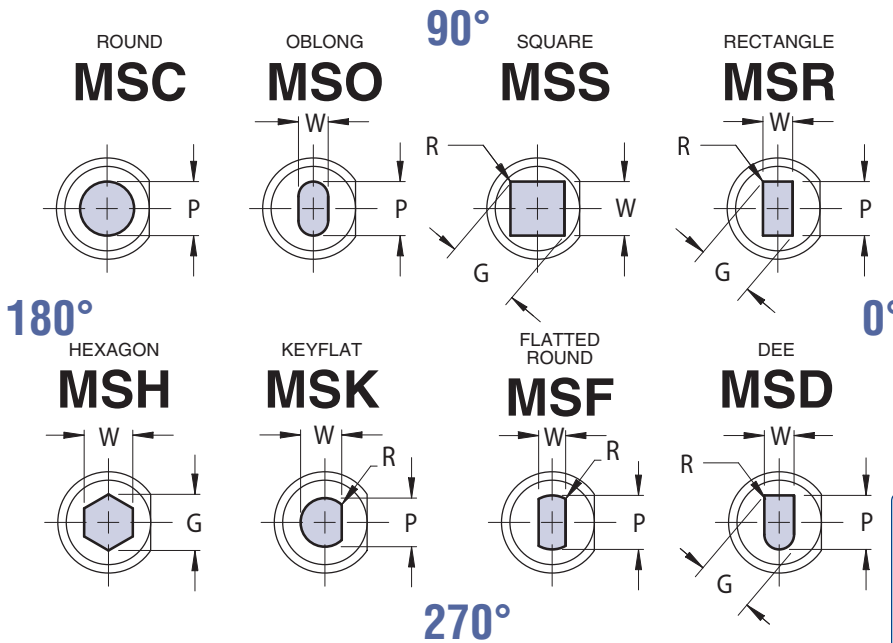


# SHOULDER PUNCHES



## SOLID



**ORDER EXAMPLE:**  
 (Reference page 4)

SPECIFY:	QTY:	TYPE	"D"	"L"	LENGTH	P(OR P&W) DIMENSIONS	ALTERATION CODE	ALTERNATE POINT TOLERANCE
EXAMPLE:	6	MSC	13	90	13	10.0	F1	T2
EXAMPLE:	6	MSO	16	80	STD	14.0 x 8.0	F1	STD

Note: When ordering, standard quantity breaks are: 1, 2-3, 4-11, 12-23, 24-49, 50-99

VIEWS ARE SHOWN LOOKING THROUGH THE SHANK BUT DRAWN WITH SOLID LINES FOR CLARITY.

Complete design & CAD files visit [WWW.MOELLERMCAD.COM](http://WWW.MOELLERMCAD.COM)

FOR STANDARD ALTERATIONS SEE PAGES 59-63.

CATALOG TYPE	SHANK DIA D	ROUND RANGE P	SHAPE		OVERALL LENGTH "L"										
			MIN W	MAX G/P	40	50	56	60	63	70	71	80	90	100	
MS_04	4	1.60 - 3.99	1.60	4.00	X	X	X	X	X	X	X	X	X	X	X
MS_05	5	1.60 - 4.99	1.60	5.00	X	X	X	X	X	X	X	X	X	X	X
MS_06	6	1.60 - 5.99	1.60	6.00		X	X	X	X	X	X	X	X	X	X
MS_08	8	2.50 - 7.99	2.50	8.00		X	X	X	X	X	X	X	X	X	X
MS_10	10	3.20 - 9.99	3.20	10.00		X	X	X	X	X	X	X	X	X	X
MS_13	13	5.00 - 12.99	4.50	13.00		X	X	X	X	X	X	X	X	X	X
MS_16	16	8.00 - 15.99	6.00	16.00		X	X	X	X	X	X	X	X	X	X
MS_20	20	10.00 - 19.99	8.00	20.00			X	X	X	X	X	X	X	X	X
MS_25	25	12.00 - 24.99	9.00	25.00			X	X	X	X	X	X	X	X	X
MS_32	32	16.00 - 31.99	10.00	32.00				X	X	X	X	X	X	X	X
MS_40	40	30.00 - 39.99	14.00	40.00					X	X	X	X	X	X	X

NOTE: FOR EXTENDED RANGE SHANK DIAMETERS OF 45, 50, 56 & 63, SEE PAGE NO. 20, 21

**Material**  
 Steel: M2, HRC 60-63  
 Heads HRC 45-55

**Standard Point Tolerance**

Round P  $\begin{matrix} +.01 \\ -.00 \end{matrix}$   $\text{Ⓞ} \begin{matrix} .01 \\ P \text{ to } D \end{matrix}$

Shape P, W  $\pm .01$   $\text{Ⓞ} \begin{matrix} .02 \\ P \text{ to } D \end{matrix}$

Alternate Point Tolerance **T2**

P, W TOLERANCE  $\begin{matrix} +.005 \\ -.000 \end{matrix}$   
 P to D  $\begin{matrix} .008 \\ \text{Ⓞ} \end{matrix}$

CATALOG TYPE	SHANK D	SBR		
		NAPMA STD	ALTERNATES	
		B	C	
MS_04	4	8	10	—
MS_05	5	13	10	—
MS_06	6	13	10	—
MS_08	8	19	13	—
MS_10	10	19	13	25
MS_13	13	19	13	25
MS_16	16	19	13	25
MS_20	20	19	13	25
MS_25	25	19	13	25
MS_32	32	25	19	30
MS_40	40	25	19	30

STANDARD FLAT LOCATION IS AT 0° AS SHOWN.  
 AVAILABLE AT 90°, 180°, 270°, FOR SAME ALTERATION PRICE.

L=50 SBR MAX=13 L=60 SBR MAX=19  
 L=56 SBR MAX=19 L=63 SBR MAX=25