



PRODUCT CATALOG

Precision Tooling for
Stamping, Roll Forming
and Metalforming

INCH

AMERICAN PUNCH COMPANY



www.AmericanPunchCo.com • sales@AmericanPunchCo.com

800.243.1492



Precision tooling. Simply done better.

Talk to us! We can help. Nothing can replace the personal exchange of information. Call or email us to take advantage of our extensive experience and manufacturing knowhow.

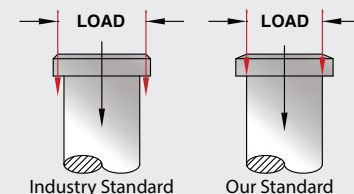
With American Punch, you get so much more than just tooling:

- Decades of manufacturing and application experience
- Talk directly to the manufacturer
- Inventory that is interchangeable with other brands
- Flexible manufacturing to meet your schedule
- Experience world-class customer service.
- No minimum orders!

Things you should know:

- A better head chamfer is standard on all headed punches manufactured by American Punch.
- In addition to punches and buttons, we manufacture custom retainers and die components manufactured to your exact specifications. Send us your drawing files to quote!

Our **STANDARD** and **DIAMOND** headed punches include something that makes them a bit better than the rest:
A MAX FORCE HEAD CHAMFER



We made the head chamfer diameter the same as the body diameter. This keeps the load down through the core of the punch for better performance and longer lasting tooling.

And we did this without having to increase the price!



Ball-Lock Tooling

	Part No.	Page
Light Duty Ball-Lock Punch	PLB	4
Light Duty Ball-Lock Ejector Punch	ELB	5
Inverted Light Duty Ball-Lock Punch	ILB	6
Inverted Light Duty Ball-Lock Ejector Punch	ILE	7
Heavy Duty Ball-Lock Punch	PHB	8
Heavy Duty Ball-Lock Ejector Punch	EHB	9
Inverted Heavy Duty Ball-Lock Punch	IHB	10
Inverted Heavy Duty Ball-Lock Ejector Punch	IHE	11
Light Duty Ball-Lock Pilot	CLB	12
Heavy Duty Ball-Lock Pilot	CHB	13
Extra Heavy Duty Ball-Lock Punch	XPHB	14

Standard Tooling

Standard Shoulder Punch	PSS	15
Standard Shoulder Ejector Punch	ESS	16
Standard Shoulder Pilot	CSS	17
Standard Compact Shoulder Pilot	CSC	18

Diamond Tooling

Diamond Shoulder Punch	PDS	19
Diamond Shoulder Ejector Punch	EDS	20
Diamond Shoulder Pilot	CDS	21
Diamond Compact Shoulder Pilot	CDC	22
Diamond Reduced Body and Ejector Punches	PDR, EDR	23

Max Force Tooling

Max Force Heavy Duty Shoulder Punch	XPS	24
Max Force Heavy Duty Shoulder Ejector Punch	XPE	25

Buttons

Ball-Lock Button	BLB	26
Wire EDM Ball-Lock Button		
with Counter Bore and Straight Thru Hole	BLC_W, BLS_W	27
Standard Button	BSS, BSP	28
Diamond Button	BDH, BDS	29
Wire EDM Button Blank Press Fit		
with Counter Bore Relief	BSC_W, BPC_W	30
Wire EDM Button Blank Press Fit		
with Straight Thru Hole	BSS_W, BPS_W	31

Options/Reference

Locating Flats and Grooves		32-33
Standard Alterations		34
Punch Shears, Back Tapers, and Ejector Punch		35
Classified Shapes		36-37
Extrusion Tools		38
Tooling Design Request Form		39



Be sure to ask about our exclusive, wear-resistant coating that increases surface hardness to improve tooling wear and greatly reduces adhesive surface buildup (galling).

PUNCH ARMOR is a multi-layer coating developed from many years of research and surpasses other Physical Vapor Deposition (PVD) products such as Titanium Nitride (TiN) and Chromium Nitride (CrN). For applications that still require a TiN coating, we offer our PUNCH ARMOR GOLD, an improved formulation of Titanium Nitride. Gold in color, it is more durable and has outperformed other TiN coatings in similar applications.

PUNCH ARMOR and PUNCH ARMOR GOLD both have base material requirements and provide the best opportunity to significantly extend tool life, available only from American Punch. Visit our website for more information.



Light Duty Ball-Lock Punch (PLB)

Standard Tolerance
ROUND P $\begin{smallmatrix} +.0005 \\ -.0000 \end{smallmatrix}$ P to D
SHAPE P,W $\pm .0005$ P to D

PLB_C
ROUND

PLB_O
OBLONG

PLB_K
KEYFLAT

PLB_D
D-SHAPE

PLB_R
RECTANGLE

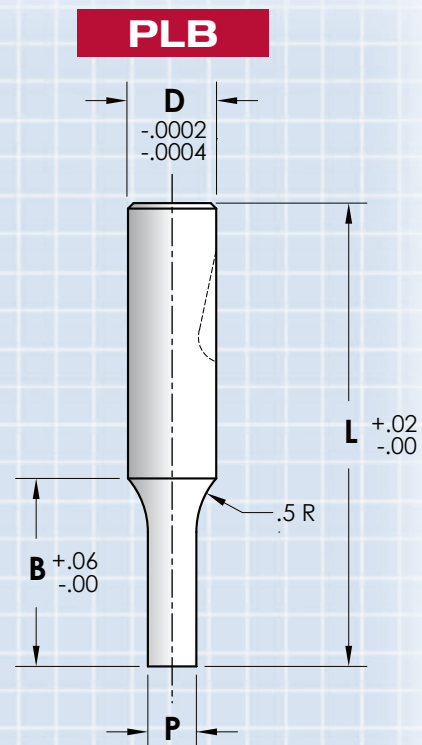
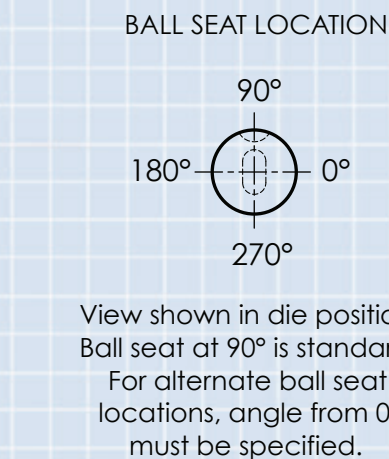
PLB_S
SQUARE

PLB_F
FLATTED RD

PLB_H
HEXAGON

Use PLB_B for blank punch
Use PLB_Z for classified shape

See pages 34-37 for standard alterations and classified shapes.



STEEL: M2 R/C 60-63							
SHANK DIA. "D"	BALL DIA.	CATALOG NUMBER	STD. POINT "B"	MIN. "P"	MIN. "W"	MAX. "P/G"	LENGTH RANGE .25 INCREMENT
.250	1/4	PLB25_	.50	.078	.078	.250	2.00 - 4.00
.375	1/4	PLB37_	.62	.125	.125	.375	2.00 - 5.00
.500	5/16	PLB50_	.75	.187	.187	.500	2.00 - 5.00
.625	5/16	PLB62_	.88	.312	.250	.625	2.25 - 5.00
.750	3/8	PLB75_	.94	.437	.312	.750	2.25 - 5.00
.875	3/8	PLB87_	.94	.625	.375	.875	2.25 - 5.00
1.000	3/8	PLB100_	.94	.750	.437	1.000	2.25 - 5.00

ALTERNATIVE "B" LENGTH

- A** = STANDARD
B = .750 PLB25 – PLB100 (MIN. L= 2.00)
C = 1.00 PLB37 – PLB100 (MIN. L= 2.25)
D = 1.25 PLB50 – PLB100 (MIN. L= 2.50)

ORDERING EXAMPLE

QTY	CAT#	SHAPE	L	B	STEEL	P	W	B/S
20	PLB75	O	2.50	A	M2	P=.625	W=.312	180°
15	PLB75	C	2.50	A	M2	P=.625	--	--

Light Duty Ball-Lock Ejector Punch (ELB)



Standard Tolerance
ROUND P $\begin{smallmatrix} +.0005 \\ -.0000 \end{smallmatrix}$ P to D
SHAPE P,W $\pm .0005$ P to D

ELB_C
ROUND

ELB_O
OBLONG

ELB_K
KEYFLAT

ELB_D
D-SHAPE

ELB_R
RECTANGLE

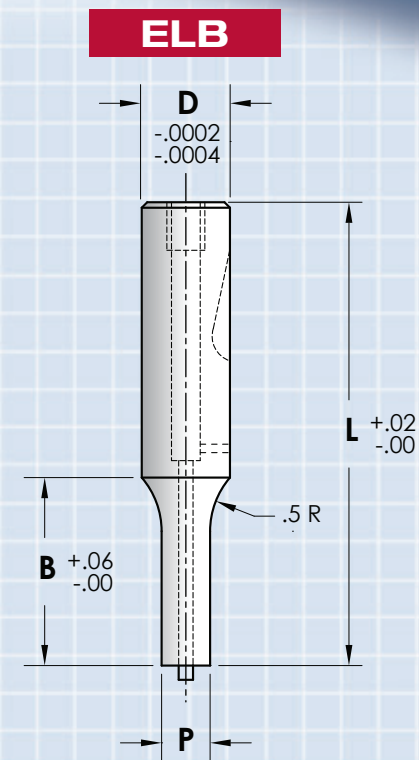
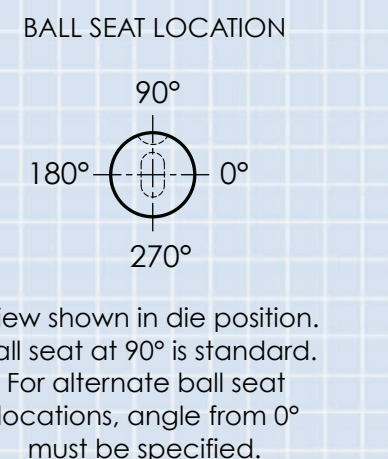
ELB_S
SQUARE

ELB_F
FLATTED RD

ELB_H
HEXAGON

Use ELB_B for blank punch
Use ELB_Z for classified shape

See pages 34-37 for standard alterations and classified shapes.



STEEL: M2 R/C 60-63								
SHANK DIA. "D"	BALL DIA.	CATALOG NUMBER	STD. POINT "B"	MIN. "P"	MIN. "W"	MAX. "P/G"	LENGTH RANGE .25 INCREMENT	EJ SIZE
.250	1/4	ELB25_	.50	.078	.078	.250	2.00 - 4.00	EJ3
.375	1/4	ELB37_	.62	.125	.125	.375	2.00 - 4.00	EJ4
.500	5/16	ELB50_	.75	.187	.187	.500	2.00 - 4.00	EJ6
.625	5/16	ELB62_	.88	.312	.250	.625	2.25 - 4.00	EJ6
.750	3/8	ELB75_	.94	.437	.312	.750	2.25 - 4.00	EJ9
.875	3/8	ELB87_	.94	.625	.375	.875	2.25 - 4.00	EJ9
1.000	3/8	ELB100_	.94	.750	.437	1.000	2.25 - 4.00	EJ9

ALTERNATIVE "B" LENGTH

- A** = STANDARD
B = .750 ELB25 – ELB100 (MIN. L= 2.00)
C = 1.00 ELB37 – ELB100 (MIN. L= 2.25)
D = 1.25 ELB50 – ELB100 (MIN. L= 2.50)

ORDERING EXAMPLE

QTY	CAT#	SHAPE	L	B	STEEL	P	W	B/S
20	ELB75	O	2.50	A	M2	P=.625	W=.312	180°
15	ELB75	C	2.50	A	M2	P=.625	--	--



Inverted Light Duty
Ball-Lock Punch
(ILB)

Standard Tolerance

ROUND P $\begin{smallmatrix} +.0005 \\ -.0000 \end{smallmatrix}$ $\text{\textcircled{C}} .0005$ P to D

SHAPE P,W $\pm .0005$ $\text{\textcircled{C}} .001$ P to D

ILB_C
ROUND

ILB_O
OBLONG

ILB_K
KEYFLAT

ILB_D
D-SHAPE

ILB_R
RECTANGLE

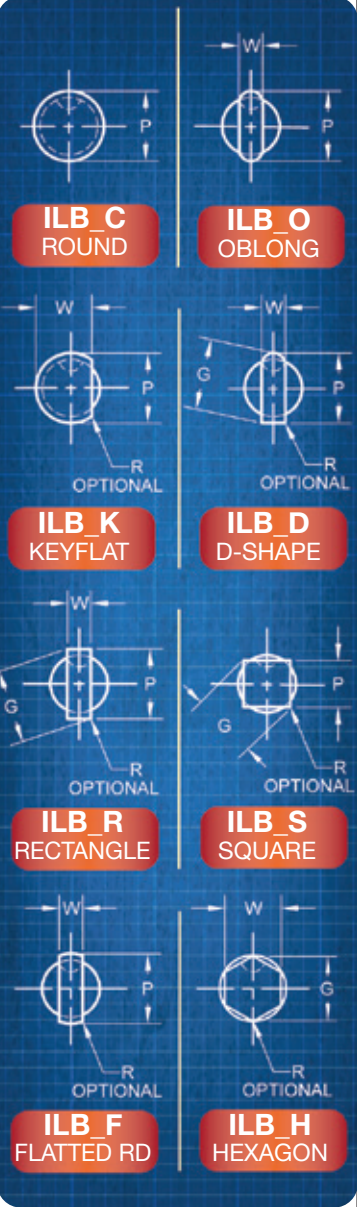
ILB_S
SQUARE

ILB_F
FLATTED RD

ILB_H
HEXAGON

Use **ILB_Z** for
classified shape

See pages 34-37 for
standard alterations
and classified shapes.



ILB_C
ROUND

ILB_O
OBLONG

ILB_K
KEYFLAT

ILB_D
D-SHAPE

ILB_R
RECTANGLE

ILB_S
SQUARE

ILB_F
FLATTED RD

ILB_H
HEXAGON

Use **ILB_Z** for
classified shape

See pages 34-37 for
standard alterations
and classified shapes.

Inverted Light Duty
Ball-Lock Ejector Punch
(ILE)



Standard Tolerance

ROUND P $\begin{smallmatrix} +.0005 \\ -.0000 \end{smallmatrix}$ $\text{\textcircled{C}} .0005$ P to D

SHAPE P,W $\pm .0005$ $\text{\textcircled{C}} .001$ P to D

ILE_C
ROUND

ILE_O
OBLONG

ILE_K
KEYFLAT

ILE_D
D-SHAPE

ILE_R
RECTANGLE

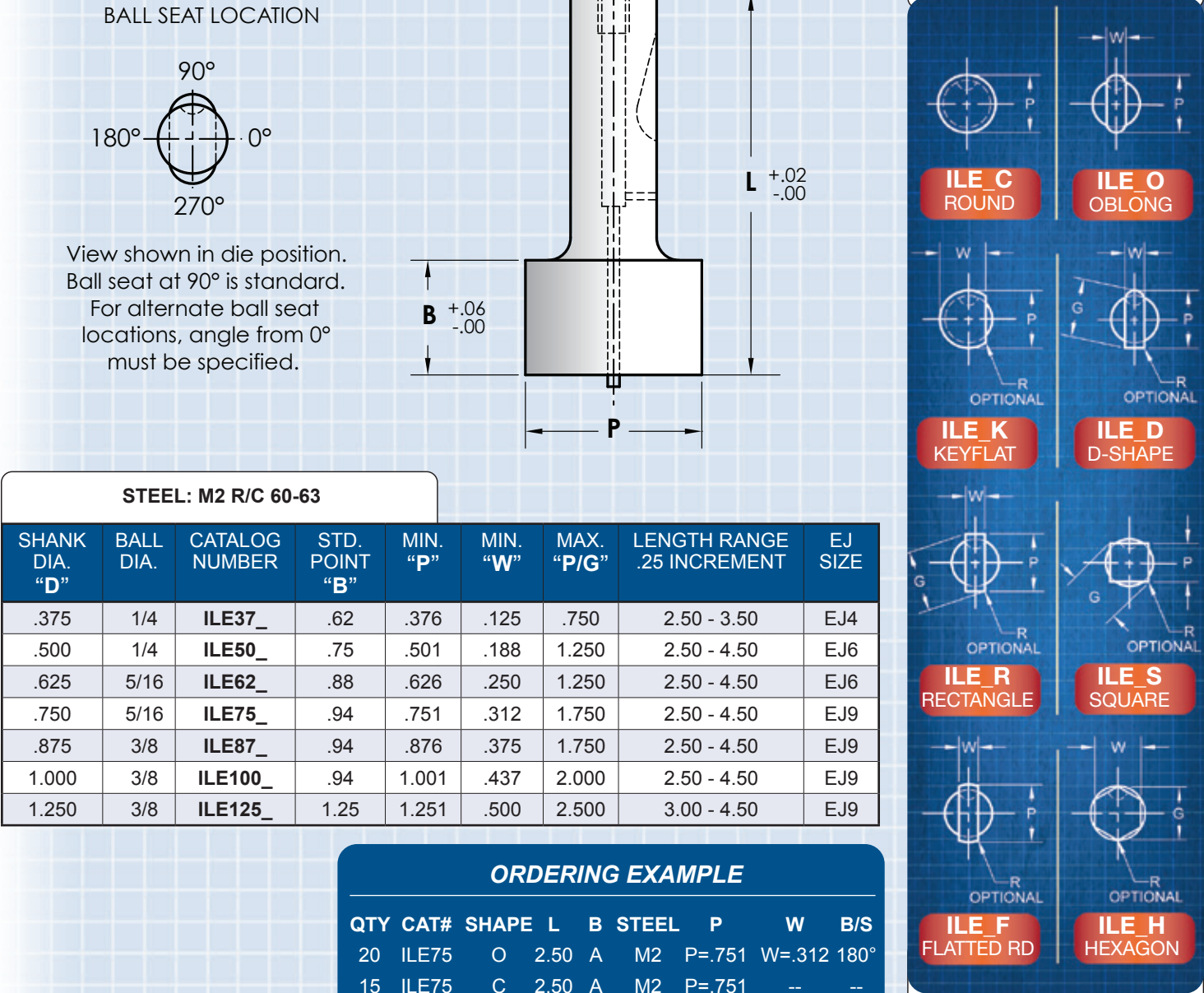
ILE_S
SQUARE

ILE_F
FLATTED RD

ILE_H
HEXAGON

Use **ILE_Z** for
classified shape

See pages 34-37 for
standard alterations
and classified shapes.



ILE_C
ROUND

ILE_O
OBLONG

ILE_K
KEYFLAT

ILE_D
D-SHAPE

ILE_R
RECTANGLE

ILE_S
SQUARE

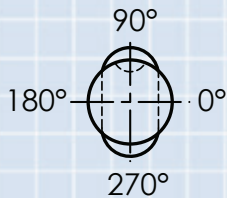
ILE_F
FLATTED RD

ILE_H
HEXAGON

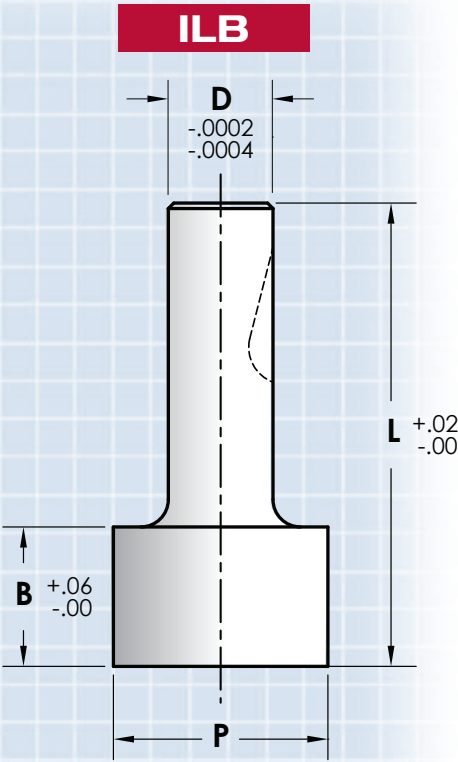
Use **ILE_Z** for
classified shape

See pages 34-37 for
standard alterations
and classified shapes.

BALL SEAT LOCATION



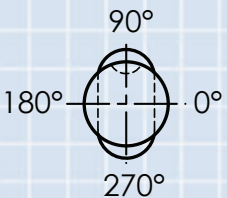
View shown in die position.
Ball seat at 90° is standard.
For alternate ball seat
locations, angle from 0°
must be specified.



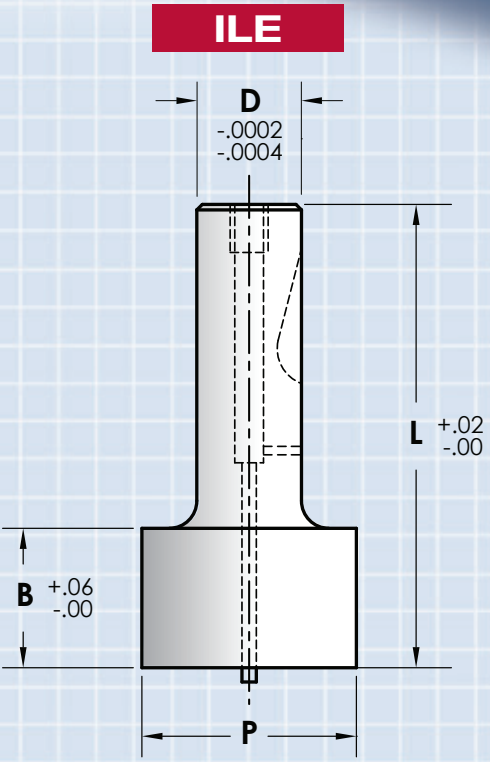
STEEL: M2 R/C 60-63							
SHANK DIA. "D"	BALL DIA.	CATALOG NUMBER	STD. POINT "B"	MIN. "P"	MIN. "W"	MAX. "P/G"	LENGTH RANGE .25 INCREMENT
.375	1/4	ILB37_	.62	.376	.125	.750	2.50 - 3.50
.500	1/4	ILB50_	.75	.501	.188	1.250	2.50 - 4.50
.625	5/16	ILB62_	.88	.626	.250	1.250	2.50 - 4.50
.750	5/16	ILB75_	.94	.751	.312	1.750	2.50 - 4.50
.875	3/8	ILB87_	.94	.876	.375	1.750	2.50 - 4.50
1.000	3/8	ILB100_	.94	1.001	.437	2.000	2.50 - 4.50
1.250	3/8	ILB125_	1.25	1.251	.500	2.500	3.00 - 4.50

ORDERING EXAMPLE								
QTY	CAT#	SHAPE	L	B	STEEL	P	W	B/S
20	ILB75	O	2.50	A	M2	P=.751	W=.312	180°
15	ILB75	C	2.50	A	M2	P=.751	--	--

BALL SEAT LOCATION



View shown in die position.
Ball seat at 90° is standard.
For alternate ball seat
locations, angle from 0°
must be specified.



STEEL: M2 R/C 60-63								
SHANK DIA. "D"	BALL DIA.	CATALOG NUMBER	STD. POINT "B"	MIN. "P"	MIN. "W"	MAX. "P/G"	LENGTH RANGE .25 INCREMENT	EJ SIZE
.375	1/4	ILE37_	.62	.376	.125	.750	2.50 - 3.50	EJ4
.500	1/4	ILE50_	.75	.501	.188	1.250	2.50 - 4.50	EJ6
.625	5/16	ILE62_	.88	.626	.250	1.250	2.50 - 4.50	EJ6
.750	5/16	ILE75_	.94	.751	.312	1.750	2.50 - 4.50	EJ9
.875	3/8	ILE87_	.94	.876	.375	1.750	2.50 - 4.50	EJ9
1.000	3/8	ILE100_	.94	1.001	.437	2.000	2.50 - 4.50	EJ9
1.250	3/8	ILE125_	1.25	1.251	.500	2.500	3.00 - 4.50	EJ9

ORDERING EXAMPLE								
QTY	CAT#	SHAPE	L	B	STEEL	P	W	B/S
20	ILE75	O	2.50	A	M2	P=.751	W=.312	180°
15	ILE75	C	2.50	A	M2	P=.751	--	--

Standard Tolerance

ROUND P $\begin{smallmatrix} +.0005 \\ -.0000 \end{smallmatrix}$ $\text{\textcircled{C}} .0005$ P to D

SHAPE P,W $\pm .0005$ $\text{\textcircled{C}} .001$ P to D

PHB_C

ROUND

PHB_O

OBLONG

PHB_K

KEYFLAT

PHB_D

D-SHAPE

PHB_R

RECTANGLE

PHB_S

SQUARE

PHB_F

FLATTED RD

PHB_H

HEXAGON

Use PHB_B for blank punch

Use PHB_Z for classified shape

See pages 34-37 for standard alterations and classified shapes.

PHB

D

$\begin{smallmatrix} -.0002 \\ -.0004 \end{smallmatrix}$

L

$\begin{smallmatrix} +.02 \\ -.00 \end{smallmatrix}$

B

$\begin{smallmatrix} +.06 \\ -.00 \end{smallmatrix}$

P

.5 R

BALL SEAT LOCATION

90°

180°

0°

270°

View shown in die position. Ball seat at 90° is standard. For alternate ball seat locations, angle from 0° must be specified.

STEEL: M2 R/C 60-63

SHANK DIA. "D"	BALL DIA.	CATALOG NUMBER	STD. POINT "B"	MIN. "P"	MIN. "W"	MAX. "P/G"	LENGTH RANGE .25 INCREMENT
.375	3/8	PHB37_	.62	.125	.125	.375	2.50 - 6.00
.500	1/2	PHB50_	.81	.187	.187	.500	2.50 - 7.00
.625	1/2	PHB62_	.94	.250	.250	.625	2.50 - 7.00
.750	1/2	PHB75_	1.06	.437	.312	.750	2.50 - 7.00
.875	1/2	PHB87_	1.19	.625	.375	.875	2.50 - 7.00
1.000	1/2	PHB100_	1.25	.750	.437	1.000	3.00 - 7.00
1.250	1/2	PHB125_	1.44	1.000	.500	1.250	3.00 - 7.00

ALTERNATIVE "B" LENGTH

A = STANDARD

B = .750 PHB37 – PHB125 (MIN. L= 2.50)

C = 1.00 PHB37 – PHB125 (MIN. L= 2.75)

D = 1.25 PHB50 – PHB125 (MIN. L= 3.00)

E = 1.50 PHB75 – PHB125 (MIN. L= 3.25)

ORDERING EXAMPLE

QTY	CAT#	SHAPE	L	B	STEEL	P	W	B/S
20	PHB75	O	2.50	A	M2	P=.625	W=.312	180°
15	PHB75	C	2.50	A	M2	P=.625	--	--

EHB

D

$\begin{smallmatrix} -.0002 \\ -.0004 \end{smallmatrix}$

L

$\begin{smallmatrix} +.02 \\ -.00 \end{smallmatrix}$

B

$\begin{smallmatrix} +.06 \\ -.00 \end{smallmatrix}$

P

.5 R

BALL SEAT LOCATION

90°

180°

0°

270°

View shown in die position. Ball seat at 90° is standard. For alternate ball seat locations, angle from 0° must be specified.

STEEL: M2 R/C 60-63

SHANK DIA. "D"	BALL DIA.	CATALOG NUMBER	STD. POINT "B"	MIN. "P"	MIN. "W"	MAX. "P/G"	LENGTH RANGE .25 INCREMENT	EJ SIZE
.375	3/8	EHB37_	.62	.125	.125	.375	2.50 - 5.00	EJ4
.500	1/2	EHB50_	.81	.187	.187	.500	2.50 - 5.00	EJ6
.625	1/2	EHB62_	.94	.250	.250	.625	2.50 - 5.00	EJ6
.750	1/2	EHB75_	1.06	.437	.312	.750	2.50 - 5.00	EJ9
.875	1/2	EHB87_	1.19	.625	.375	.875	2.75 - 5.00	EJ9
1.000	1/2	EHB100_	1.25	.750	.437	1.000	3.00 - 5.00	EJ9
1.250	1/2	EHB125_	1.44	1.000	.500	1.250	3.00 - 5.00	EJ9

ALTERNATIVE "B" LENGTH

A = STANDARD

B = .750 EHB37 – EHB125 (MIN. L= 2.50)

C = 1.00 EHB37 – EHB125 (MIN. L= 2.75)

D = 1.25 EHB50 – EHB125 (MIN. L= 3.00)

E = 1.50 EHB75 – EHB125 (MIN. L= 3.25)

ORDERING EXAMPLE

QTY	CAT#	SHAPE	L	B	STEEL	P	W	B/S
20	EHB75	O	2.50	A	M2	P=.625	W=.312	180°
15	EHB75	C	2.50	A	M2	P=.625	--	--

8

AMERICAN PUNCH

COMPANY

www.AmericanPunchCo.com
info@AmericanPunchCo.com

P: 800.243.1492

F: 800.261.6270

AMERICAN PUNCH

COMPANY

9

Standard Tolerance

ROUND P $\begin{smallmatrix} +.0005 \\ -.0000 \end{smallmatrix}$ $\text{\textcircled{C}} \begin{smallmatrix} .0005 \\ .0005 \end{smallmatrix}$ P to D

SHAPE P,W $\pm .0005$ $\text{\textcircled{C}} \begin{smallmatrix} .001 \\ .001 \end{smallmatrix}$ P to D



IHB_C
ROUND



IHB_O
OBLONG



IHB_K
KEYFLAT



IHB_D
D-SHAPE



IHB_R
RECTANGLE



IHB_S
SQUARE



IHB_F
FLATTED RD

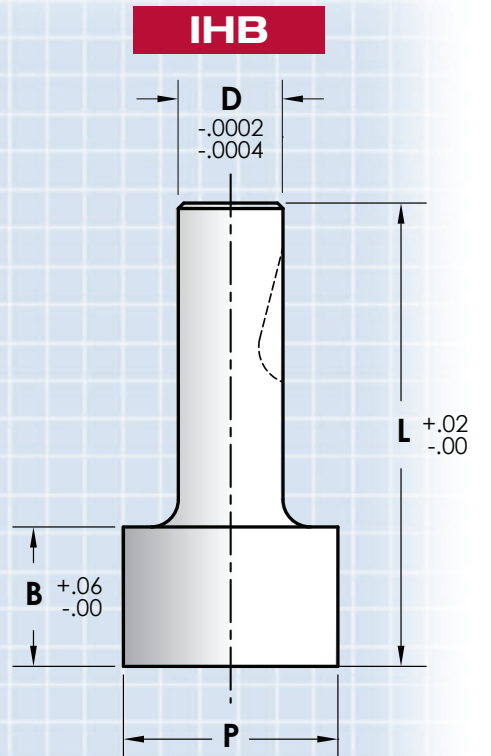


IHB_H
HEXAGON

Use **IHB_Z** for classified shape

See pages 34-37 for standard alterations and classified shapes.

IHB



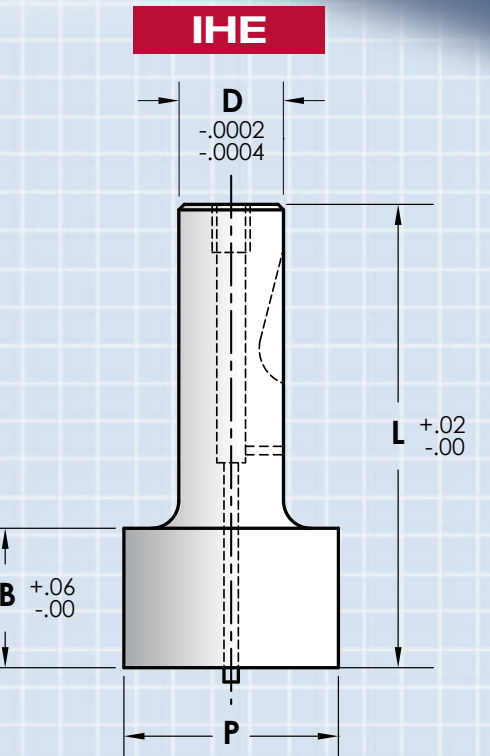
STEEL: M2 R/C 60-63

SHANK DIA. "D"	BALL DIA.	CATALOG NUMBER	STD. POINT "B"	MIN. "P"	MIN. "W"	MAX. "P/G"	LENGTH RANGE .25 INCREMENT
.375	3/8	IHB37_	.62	.376	.125	.75	2.50 - 3.50
.500	1/2	IHB50_	.75	.501	.188	1.250	2.50 - 4.50
.625	1/2	IHB62_	.88	.626	.250	1.250	2.50 - 4.50
.750	1/2	IHB75_	.94	.751	.312	1.750	2.50 - 4.50
.875	1/2	IHB87_	.94	.876	.375	1.750	2.50 - 4.50
1.000	1/2	IHB100_	.94	1.001	.437	2.000	2.50 - 4.50
1.250	1/2	IHB125_	1.25	1.251	.500	2.500	3.00 - 4.50

ORDERING EXAMPLE

QTY	CAT#	SHAPE	L	B	STEEL	P	W	B/S
20	IHB75	O	2.50	A	M2	P=.751	W=.312	180°
15	IHB75	C	2.50	A	M2	P=.751	--	--

IHE



STEEL: M2 R/C 60-63

SHANK DIA. "D"	BALL DIA.	CATALOG NUMBER	STD. POINT "B"	MIN. "P"	MIN. "W"	MAX. "P/G"	LENGTH RANGE .25 INCREMENT	EJ SIZE
.375	3/8	IHE37_	.62	.376	.125	.75	2.50 - 3.50	EJ4
.500	1/2	IHE50_	.75	.501	.188	1.250	2.50 - 4.50	EJ6
.625	1/2	IHE62_	.88	.626	.250	1.250	2.50 - 4.50	EJ6
.750	1/2	IHE75_	.94	.751	.312	1.750	2.50 - 4.50	EJ9
.875	1/2	IHE87_	.94	.876	.375	1.750	2.50 - 4.50	EJ9
1.000	1/2	IHE100_	.94	1.001	.437	2.000	2.50 - 4.50	EJ9
1.250	1/2	IHE125_	1.25	1.251	.500	2.500	3.00 - 4.50	EJ9

ORDERING EXAMPLE

QTY	CAT#	SHAPE	L	B	STEEL	P	W	B/S
20	IHE75	O	2.50	A	M2	P=.751	W=.312	180°
15	IHE75	C	2.50	A	M2	P=.751	--	--

Standard Tolerance

ROUND P $\begin{smallmatrix} +.0005 \\ -.0000 \end{smallmatrix}$ $\text{\textcircled{C}} \begin{smallmatrix} .0005 \\ .0005 \end{smallmatrix}$ P to D

SHAPE P,W $\pm .0005$ $\text{\textcircled{C}} \begin{smallmatrix} .001 \\ .001 \end{smallmatrix}$ P to D



IHE_C
ROUND



IHE_O
OBLONG



IHE_K
KEYFLAT



IHE_D
D-SHAPE



IHE_R
RECTANGLE



IHE_S
SQUARE



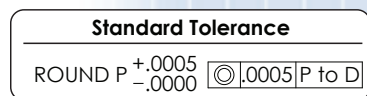
IHE_F
FLATTED RD



IHE_H
HEXAGON

Use **IHE_Z** for classified shape

See pages 34-37 for standard alterations and classified shapes.



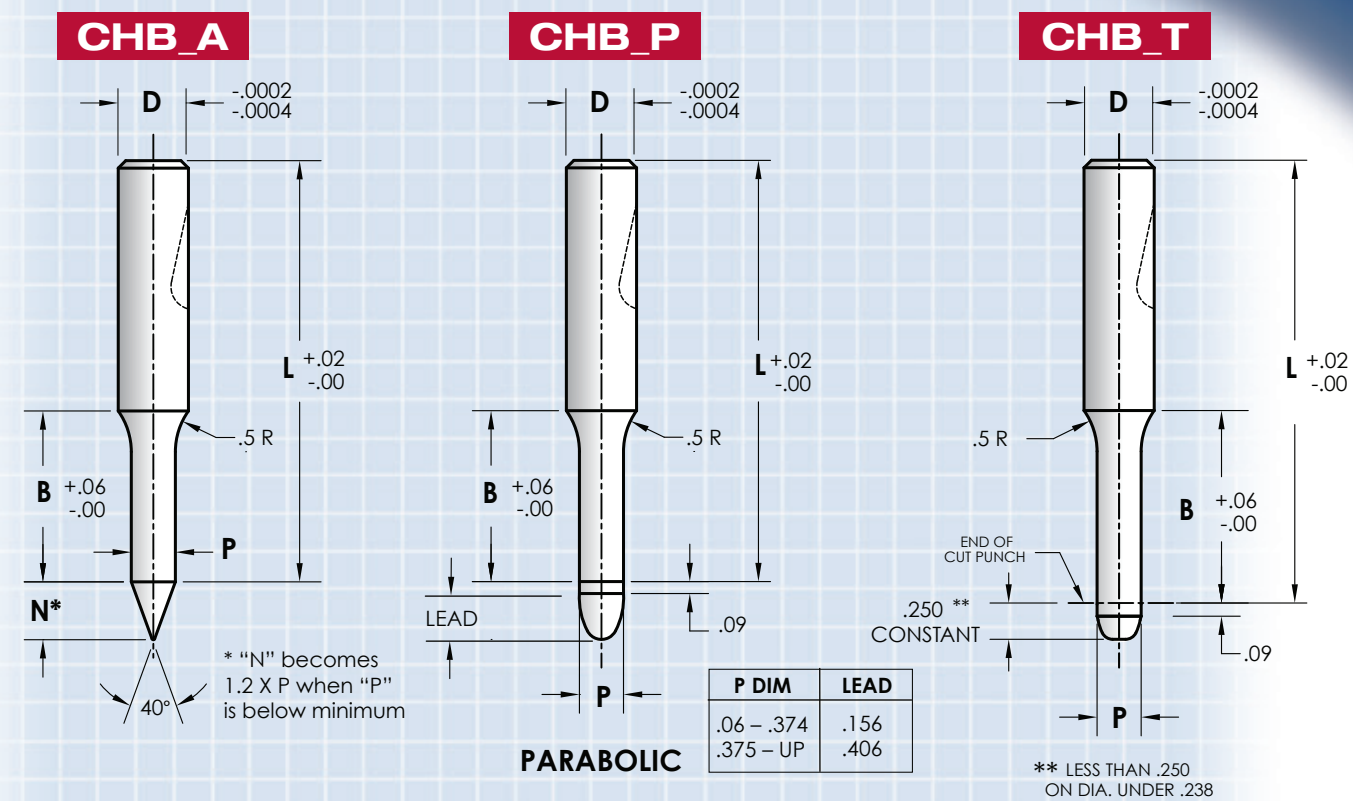
STEEL: M2 R/C 60-63								
SHANK DIA. "D"	BALL DIA.	CATALOG NUMBER	STD. POINT "B"	"N"	MIN. "P" DIM. FOR "N" LEAD	MIN. "P"	MAX. "P"	"L" LENGTH RANGE .25 INCREMENT
.250	1/4	CLB25_	.50	.25	.175	.078	.250	2.00 - 4.00
.375	1/4	CLB37_	.62	.37	.260	.125	.375	2.00 - 5.00
.500	5/16	CLB50_	.75	.50	.360	.187	.500	2.00 - 5.00
.625	5/16	CLB62_	.88	.62	.445	.312	.625	2.00 - 5.00
.750	3/8	CLB75_	.94	.75	.540	.437	.750	2.25 - 5.00
.875	3/8	CLB87_	.94	.87	.625	.625	.875	2.25 - 5.00
1.000	3/8	CLB100_	.94	1.00	.720	.750	1.000	2.25 - 5.00

ALTERNATIVE "B" LENGTH

A = STANDARD
B = .750 CLB25-CLB100 (MIN. L= 2.00)
C = 1.00 CLB37-CLB100 (MIN. L= 2.25)
D = 1.25 CLB50-CLB100 (MIN. L= 2.50)

ORDERING EXAMPLE

QTY	CAT#	L	B	STEEL	P/W
20	CLB75T	2.50	A	M2	P=.437



STEEL: M2 R/C 60-63									
SHANK DIA. “D”	BALL DIA.	CATALOG NUMBER	STD. POINT “B”	“N”	MIN. “P” DIM. FOR “N” LEAD	MIN. “P”	MAX. “P”	“L” LENGTH RANGE .25 INCREMENT	
.375	3/8	CHB37_	.62	.37	.260	.125	.375	2.50 - 5.50	
.500	1/2	CHB50_	.81	.50	.360	.187	.500	2.50 - 6.00	
.625	1/2	CHB62_	.94	.62	.445	.312	.625	2.50 - 6.00	
.750	1/2	CHB75_	1.06	.75	.540	.437	.750	2.50 - 6.00	
.875	1/2	CHB87_	1.19	.87	.625	.625	.875	2.75 - 6.00	
1.000	1/2	CHB100_	1.25	1.00	.720	.750	1.000	3.00 - 6.00	
1.250	1/2	CHB125_	1.44	1.25	.900	1.00	1.250	3.00 - 6.00	

ALTERNATIVE "B" LENGTH

A = STANDARD
B = .750 CHB37-CHB125 (MIN. L= 2.50)
C = 1.00 CHB37-CHB125 (MIN. L= 2.75)
D = 1.25 CHB50-CHB125 (MIN. L= 3.00)

ORDERING EXAMPLE

QTY	CAT#	L	B	STEEL	P/W
20	CHB75T	2.50	A	M2	P=.437

Standard Tolerance

ROUND P $\begin{smallmatrix} +.0005 \\ -.0000 \end{smallmatrix}$ $\text{\textcircled{C}}\text{\textcircled{D}}$.0005 | P to D

SHAPE P,W $\pm .0005$ $\text{\textcircled{C}}\text{\textcircled{D}}$.001 | P to D

XPHB_C

ROUND

XPHB_O

OBLONG

OPTIONAL

XPHB_K

KEYFLAT

OPTIONAL

XPHB_D

D-SHAPE

OPTIONAL

XPHB_R

RECTANGLE

OPTIONAL

XPHB_S

SQUARE

OPTIONAL

XPHB_F

FLATTED RD

OPTIONAL

XPHB_H

HEXAGON

See pages 34-37 for standard alterations and classified shapes.

XPHB

90°

180°

0°

270°

View shown in die position. Ball seat at 90° is standard. For alternate ball seat locations, angle from 0° must be specified.

D

L $\begin{smallmatrix} +.02 \\ -.00 \end{smallmatrix}$

B $\begin{smallmatrix} +.06 \\ -.00 \end{smallmatrix}$

P

.5 R

STEEL: M2 R/C 60-63

SHANK DIA. "D"	CATALOG NUMBER	BALL DIA.	SHANK TOOL	"B" LENGTH	"P" RANGE	MIN. "W"	MAX. "P/G"	O.A.L.			
								4.50	5.00	5.50	
1.00	XPHB100_	3/4	-.0003/-0.006	1.31	.625 - .999	.437	1.000	X	X	X	
1.25	XPHB125_	3/4	-.0004/-0.007	1.62	.875 - 1.249	.500	1.250	X	X	X	
1.50	XPHB150_	3/4	-.0005/-0.008	1.62	1.125 - 1.499	.625	1.500	X	X	X	
1.75	XPHB175_	3/4	-.0006/-0.009	1.62	1.375 - 1.749	.750	1.750	X	X	X	
2.00	XPHB200_	3/4	-.0007/-0.010	1.62	1.625 - 1.999	.875	2.000		X	X	
2.25	XPHB225_	3/4	-.0007/-0.010	1.87	1.875 - 2.249	1.000	2.250		X	X	
2.50	XPHB250_	3/4	-.0007/-0.010	1.87	2.125 - 2.499	1.125	2.500		X	X	

ORDERING EXAMPLE

QTY	CAT#	SHAPE	L	STEEL	P	W	B/S
20	XPHB100	O	4.50	M2	P=1.00	W=.500	180°
15	XPHB100	C	4.50	M2	P=1.00	--	--

PSS

90°

180°

0°

270°

View shown in die position. Flat at 0° is standard. For alternate location, angle from 0° must be specified.

D $\begin{smallmatrix} +.125 \\ +.000 \\ -.010 \end{smallmatrix}$

T $\begin{smallmatrix} +.005 \\ +.010 \end{smallmatrix}$

.010
.020 R

D $\begin{smallmatrix} +.0002 \\ +.0005 \end{smallmatrix}$

L $\begin{smallmatrix} +.010 \\ +.020 \end{smallmatrix}$

.5 R

PRESS IN LEAD

B $\begin{smallmatrix} +.06 \\ -.00 \end{smallmatrix}$

P

STEEL: M2 R/C 60-63

HEAD: R/C 40-55

SHANK DIA. "D"	CATALOG NUMBER	HEAD "T"	STD. POINT "B"	MIN. "P"	MIN. "W"	MAX. "P/G"	LENGTH RANGE .25" INCREMENT
.1875	PSS18_	.125	.44	.062	.062	.1875	1.50 - 3.50
.250	PSS25_	.125	.50	.078	.078	.250	1.50 - 4.00
.3125	PSS31_	.125	.56	.093	.093	.3125	1.50 - 4.50
.375	PSS37_	.188	.62	.125	.125	.375	1.50 - 5.00
.4375	PSS43_	.188	.75	.187	.187	.4375	1.75 - 6.00
.500	PSS50_	.188	.81	.250	.187	.500	2.00 - 6.00
.625	PSS62_	.250	.94	.375	.250	.625	2.00 - 6.00
.750	PSS75_	.250	1.06	.500	.312	.750	2.25 - 6.00
.875	PSS87_	.250	1.12	.562	.312	.875	2.25 - 6.00
1.000	PSS100_	.250	1.25	.687	.375	1.000	2.50 - 6.00
1.250	PSS125_	.250	1.50	.937	.500	1.250	3.00 - 6.00

ALTERNATIVE "B" LENGTH

A = STANDARD

B = .750 PSS18 – PSS125 (MIN. L= 1.75)

C = 1.00 PSS18 – PSS125 (MIN. L= 2.00)

D = 1.25 PSS31 – PSS125 (MIN. L= 2.25)

E = 1.50 PSS31 – PSS125 (MIN. L= 2.50)

ORDERING EXAMPLE

QTY	CAT#	SHAPE	L	B	STEEL	P
20	PSS75	C	2.50	A	M2	P=.500

Standard Tolerance

ROUND P $\begin{smallmatrix} +.0005 \\ -.0000 \end{smallmatrix}$ $\text{\textcircled{C}}\text{\textcircled{D}}$.0005 | P to D

SHAPE P,W $\pm .0005$ $\text{\textcircled{C}}\text{\textcircled{D}}$.001 | P to D

PSS_C

ROUND

PSS_O

OBLONG

OPTIONAL

PSS_K

KEYFLAT

OPTIONAL

PSS_D

D-SHAPE

OPTIONAL

PSS_R

RECTANGLE

OPTIONAL

PSS_S

SQUARE

OPTIONAL

PSS_F

FLATTED RD

OPTIONAL

PSS_H

HEXAGON

Use PSS_B for blank punch

Use PSS_Z for classified shape

See pages 34-37 for standard alterations and classified shapes.

14

AMERICAN PUNCH COMPANY

www.AmericanPunchCo.com

info@AmericanPunchCo.com

P: 800.243.1492

F: 800.261.6270

AMERICAN PUNCH COMPANY

15



Standard Shoulder
Ejector Punch (ESS)

Standard Shoulder
Pilot (CSS)



Standard Tolerance

ROUND P $\pm .0005$
SHAPE P, W $\pm .0005$

© .0005 P to D
© .001 P to D

ESS_C
ROUND

ESS_O
OBLONG

ESS_K
KEYFLAT

ESS_D
D-SHAPE

ESS_R
RECTANGLE

ESS_S
SQUARE

ESS_F
FLATTED RD

ESS_H
HEXAGON

Use **ESS_B** for blank punch

Use **ESS_Z** for classified shape

See pages 34-37 for standard alterations and classified shapes.

ESS

STEEL: M2 R/C 60-63
HEAD: R/C 40-55

SHANK DIA. "D"	CATALOG NUMBER	HEAD "T"	STD. POINT "B"	MIN. "P"	MIN. "W"	MAX. "P/G"	LENGTH RANGE .25 INCREMENT	EJ SIZE
.1875	ESS18_	.125	.44	.062	.062	.1875	1.50 - 3.00	EJ2
.250	ESS25_	.125	.50	.078	.078	.250	1.50 - 3.50	EJ3
.3125	ESS31_	.125	.56	.093	.093	.3125	1.50 - 4.00	EJ4
.375	ESS37_	.188	.62	.125	.125	.375	1.50 - 5.00	EJ6
.4375	ESS43_	.188	.75	.187	.187	.4375	1.75 - 5.00	EJ6
.500	ESS50_	.188	.81	.250	.187	.500	2.00 - 5.00	EJ6
.625	ESS62_	.250	.94	.375	.250	.625	2.00 - 5.00	EJ9
.750	ESS75_	.250	1.06	.500	.312	.750	2.25 - 5.00	EJ9
.875	ESS87_	.250	1.12	.562	.312	.875	2.25 - 5.00	EJ9
1.000	ESS100_	.250	1.25	.687	.375	1.000	2.50 - 5.00	EJ9
1.250	ESS125_	.250	1.50	.937	.500	1.250	3.00 - 5.00	EJ9

ALTERNATIVE "B" LENGTH

A = STANDARD

B = .750 ESS18 – ESS125 (MIN. L= 1.75)

C = 1.00 ESS25 – ESS125 (MIN. L= 2.00)

D = 1.25 ESS31 – ESS125 (MIN. L= 2.25)

E = 1.50 ESS31 – ESS125 (MIN. L= 2.50)

ORDERING EXAMPLE

QTY CAT# SHAPE L B STEEL P

20 ESS75 C 2.50 A M2 P=.500

CSS_A

CSS_P

CSS_T

STEEL: M2 R/C 60-63
HEAD: R/C 40-55

SHANK DIA. "D"	CATALOG NUMBER	HEAD "T"	STD. POINT "B"	"N"	MIN. "P" DIM. FOR "N" LEAD	MIN. "P"	MAX. "P"	LENGTH RANGE .25 INCREMENT
.1875	CSS18_	.125	.44	.19	.125	.062	.1875	1.50 - 3.50
.250	CSS25_	.125	.50	.25	.175	.080	.250	1.50 - 4.00
.3125	CSS31_	.125	.56	.31	.220	.093	.3125	1.50 - 4.50
.375	CSS37_	.188	.62	.37	.260	.125	.375	1.75 - 6.00
.4375	CSS43_	.188	.75	.44	.305	.187	.4375	1.75 - 6.00
.500	CSS50_	.188	.81	.50	.360	.250	.500	2.00 - 6.00
.625	CSS62_	.250	.94	.62	.445	.375	.625	2.00 - 6.00
.750	CSS75_	.250	1.06	.75	.540	.500	.750	2.25 - 6.00
.875	CSS87_	.250	1.12	.87	.625	.562	.875	2.50 - 6.00
1.000	CSS100_	.250	1.25	1.00	.720	.687	1.000	2.50 - 6.00
1.250	CSS125_	.250	1.50	1.25	.900	.937	1.250	3.00 - 6.00

ALTERNATIVE "B" LENGTH

A = STANDARD

B = .750 CSS25 – CSS125 (MIN. L= 1.75)

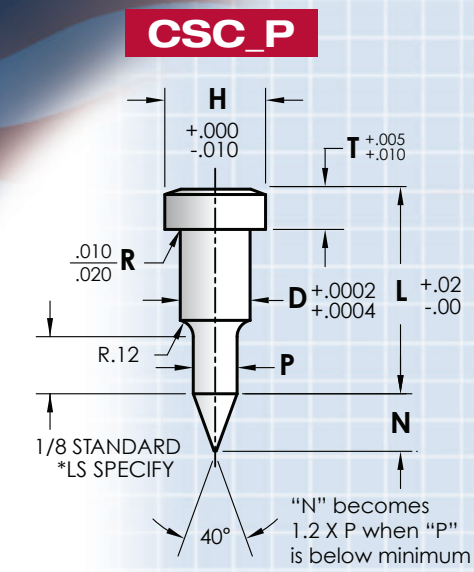
C = 1.00 CSS25 – CSS125 (MIN. L= 2.00)

D = 1.25 CSS37 – CSS125 (MIN. L= 2.25)

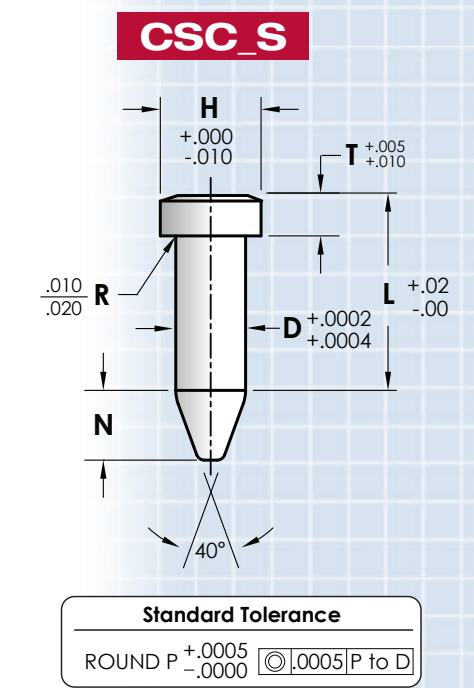
ORDERING EXAMPLE

QTY CAT# L B STEEL P/W

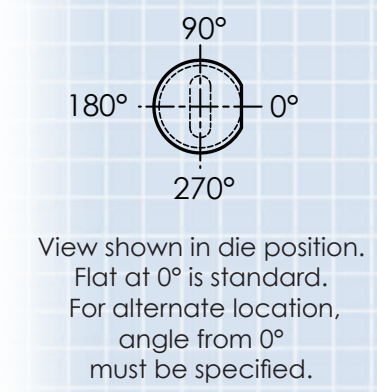
20 CSS75T 2.50 A M2 P=.500



STEEL: M2 R/C 60-63 HEAD: R/C 40-55						
SHANK DIA. "D"	CATALOG NUMBER	"P" RANGE	"N"	"T"	"H"	LENGTH RANGE .125" INCREMENTS
0.2500	CSC25P	0.1400 - 0.2499	0.25	0.125	0.375	.62 - 1.37
0.3125	CSC31P	0.1840 - 0.3124	0.31	0.125	0.438	.62 - 1.37
0.3750	CSC37P	0.2620 - 0.3749	0.37	0.188	0.500	.62 - 1.37
0.4375	CSC43P	0.2280 - 0.4374	0.43	0.188	0.562	.62 - 1.37
0.5000	CSC50P	0.2700 - 0.4999	0.50	0.188	0.625	.62 - 1.37
0.6250	CSC62P	0.4050 - 0.6249	0.62	0.250	0.750	.75 - 1.37
0.7500	CSC75P	0.5040 - 0.7499	0.75	0.250	0.875	.75 - 1.37
0.8750	CSC87P	0.5920 - 0.8749	0.87	0.250	1.000	.75 - 1.37
1.0000	CSC10P	0.6860 - 0.9999	1.00	0.250	1.125	.75 - 1.37



STEEL: M2 R/C 60-63 HEAD: R/C 40-55						
CATALOG NUMBER	"D" RANGE	"N"	"T"	"H"		LENGTH RANGE .125" INCREMENTS
CSC25S	0.1876 - 0.2500	0.25	0.125	0.375		.62 - 1.37
CSC31S	0.2501 - 0.3125	0.31	0.125	0.438		.62 - 1.37
CSC37S	0.3126 - 0.3750	0.37	0.188	0.500		.62 - 1.37
CSC43S	0.3751 - 0.4375	0.43	0.188	0.562		.62 - 1.37
CSC50S	0.4375 - 0.5000	0.50	0.188	0.625		.62 - 1.37
CSC62S	0.5001 - 0.6250	0.62	0.250	0.750		.75 - 1.37
CSC75S	0.6251 - 0.7500	0.75	0.250	0.875		.75 - 1.37
CSC87S	0.7501 - 0.8750	0.87	0.250	1.000		.75 - 1.37
CSC10S	0.8751 - 1.0000	1.00	0.250	1.125		.75 - 1.37



STEEL: M2 R/C 60-63 HEAD: R/C 40-55							
SHANK DIA. "D"	CATALOG NUMBER	HEAD "T"	STD. POINT "B"	MIN. "P"	MIN. "W"	MAX. "P/G"	LENGTH RANGE .25" INCREMENT
.125	PDS12_	.125	.44	.062	.062	.1250	1.50 - 3.00
.1875	PDS18_	.125	.44	.062	.062	.1875	1.50 - 3.50
.250	PDS25_	.188	.50	.080	.080	.250	1.50 - 4.00
.3125	PDS31_	.188	.56	.093	.093	.3125	1.50 - 4.50
.375	PDS37_	.188	.62	.125	.125	.375	1.75 - 7.00
.4375	PDS43_	.188	.75	.187	.187	.4375	1.75 - 7.00
.500	PDS50_	.188	.81	.250	.187	.500	2.00 - 7.00
.625	PDS62_	.188	.94	.375	.250	.625	2.00 - 7.00
.750	PDS75_	.188	1.06	.500	.312	.750	2.25 - 7.00
.875	PDS87_	.188	1.12	.562	.312	.875	2.50 - 7.00
1.000	PDS100_	.188	1.25	.687	.375	1.000	2.50 - 7.00
1.250	PDS125_	.188	1.50	.937	.500	1.250	3.00 - 7.00

ALTERNATIVE "B" LENGTH

A = STANDARD

B = .750 PDS18 – PDS125 (MIN. L= 1.75)

C = 1.00 PDS18 – PDS125 (MIN. L= 2.00)

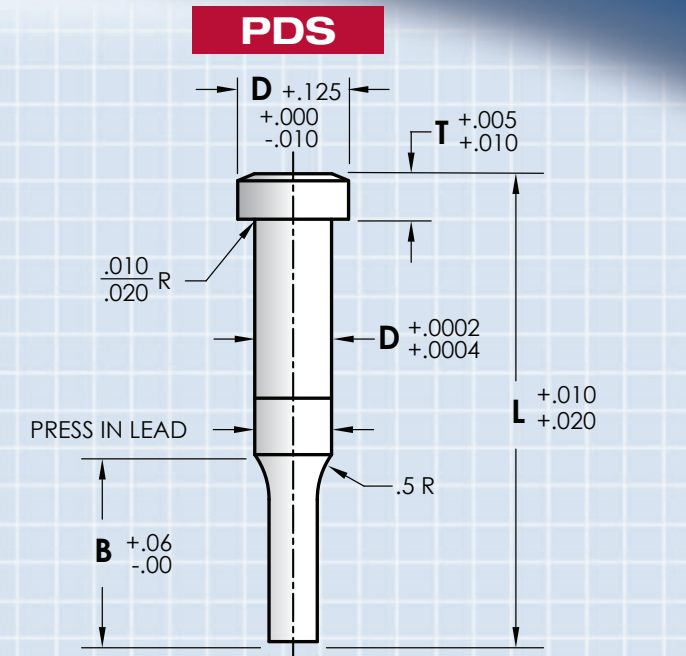
D = 1.25 PDS31 – PDS125 (MIN. L= 2.25)

E = 1.50 PDS37 – PDS125 (MIN. L= 2.50)

ORDERING EXAMPLE

QTY CAT# SHAPE L B STEEL P

20 PDS75 C 2.50 A M2 P=.500



Standard DIAMOND Tolerance

ROUND P +.0005 / -.0000 [Symbol] .0005 P to D

SHAPE P,W ±.0005 [Symbol] .001 P to D

Exact Point Tolerance Specify - TT

P,W +.0002 / -.0000 [Symbol] .0003 P to D

PDS_C ROUND

PDS_O OBLONG

PDS_K KEYFLAT

PDS_D D-SHAPE

PDS_R RECTANGLE

PDS_S SQUARE

PDS_F FLATTED RD

PDS_H HEXAGON

Use PDS_B for blank punch

Use PDS_Z for classified shape

See pages 34-37 for standard alterations and classified shapes.

Standard DIAMOND Tolerance

ROUND P $\pm .0005$
SHAPE P,W $\pm .0005$

Exact Point Tolerance Specify - TT

P,W $\pm .0002$



EDS_C
ROUND



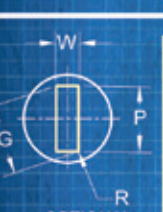
EDS_O
OBLONG



EDS_K
KEYFLAT



EDS_D
D-SHAPE



EDS_R
RECTANGLE



EDS_S
SQUARE



EDS_F
FLATTED RD



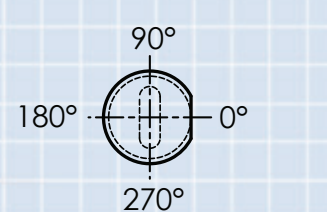
EDS_H
HEXAGON

Use **EDS_B** for blank punch

Use **EDS_Z** for classified shape

See pages 34-37 for standard alterations and classified shapes.

EDS



View shown in die position. Flat at 0° is standard. For alternate location, angle from 0° must be specified.

STEEL: M2 R/C 60-63
HEAD: R/C 40-55

SHANK DIA. "D"	CATALOG NUMBER	HEAD "T"	STD. POINT "B"	MIN. "P"	MIN. "W"	MAX. "P/G"	LENGTH RANGE .25" INCREMENT	EJ SIZE
.1875	EDS18_	.125	.44	.062	.062	.1875	1.50 - 3.00	EJ2
.250	EDS25_	.188	.50	.080	.080	.250	1.50 - 4.00	EJ3
.3125	EDS31_	.188	.56	.093	.093	.3125	1.50 - 4.00	EJ4
.375	EDS37_	.188	.62	.125	.125	.375	1.75 - 5.00	EJ6
.4375	EDS43_	.188	.75	.187	.187	.4375	1.75 - 5.00	EJ6
.500	EDS50_	.188	.81	.250	.187	.500	2.00 - 5.00	EJ6
.625	EDS62_	.188	.94	.375	.250	.625	2.00 - 5.00	EJ9
.750	EDS75_	.188	1.00	.500	.312	.750	2.25 - 5.00	EJ9
.875	EDS87_	.188	1.12	.562	.312	.875	2.50 - 5.00	EJ9
1.000	EDS100_	.188	1.25	.687	.375	1.000	2.50 - 5.00	EJ9
1.250	EDS125_	.188	1.50	.937	.500	1.250	3.00 - 5.00	EJ9

ALTERNATIVE "B" LENGTH

A = STANDARD

B = .750 EDS18 – EDS125 (MIN. L= 1.75)

C = 1.00 EDS18 – EDS125 (MIN. L= 2.00)

D = 1.25 EDS31 – EDS125 (MIN. L= 2.25)

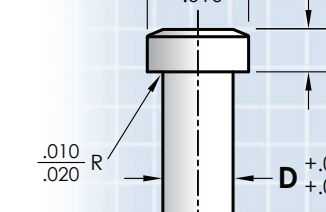
E = 1.50 EDS31 – EDS125 (MIN. L= 2.50)

ORDERING EXAMPLE

QTY CAT# SHAPE L B STEEL P

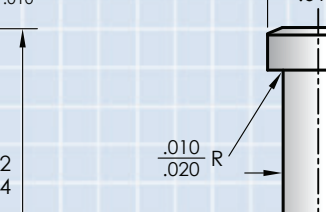
20 EDS75 C 2.50 A M2 P=.500

CDS_A



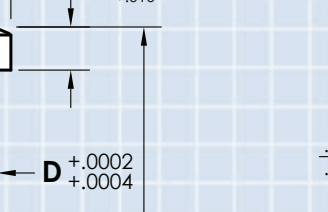
PARABOLIC

CDS_P



PARABOLIC

CDS_T



PARABOLIC

STEEL: M2 R/C 60-63 | HEAD: R/C 40-55

SHANK DIA. "D"	CATALOG NUMBER	HEAD "T"	STD. POINT "B"	"N"	MIN. "P" DIM. FOR "N" LEAD	MIN. "P"	MAX. "P"	LENGTH RANGE .25" INCREMENT
.125	CDS12_	.125	.44	.15	.062	.062	.1250	1.50 - 3.00
.1875	CDS18_	.125	.44	.19	.125	.062	.1875	1.50 - 3.50
.250	CDS25_	.188	.50	.25	.175	.080	.250	1.50 - 4.00
.3125	CDS31_	.188	.56	.31	.220	.093	.3125	1.50 - 4.50
.375	CDS37_	.188	.62	.37	.260	.125	.375	1.75 - 6.00
.4375	CDS43_	.188	.75	.44	.305	.187	.4375	1.75 - 6.00
.500	CDS50_	.188	.81	.50	.360	.250	.500	2.00 - 6.00
.625	CDS62_	.188	.94	.62	.445	.375	.625	2.00 - 6.00
.750	CDS75_	.188	1.06	.75	.540	.500	.750	2.25 - 6.00
.875	CDS87_	.188	1.12	.87	.625	.562	.875	2.50 - 6.00
1.000	CDS100_	.188	1.25	1.00	.720	.687	1.000	2.50 - 6.00
1.250	CDS125_	.188	1.50	1.25	.900	.937	1.250	3.00 - 6.00

ALTERNATIVE "B" LENGTH

A = STANDARD

B = .750 CDS25-CDS125 (MIN. L= 1.75)

C = 1.00 CDS25-CDS125 (MIN. L= 2.00)

D = 1.25 CDS37-CDS125 (MIN. L= 2.25)

E = 1.50 CDS37-CDS125 (MIN. L= 2.50)

ORDERING EXAMPLE

QTY CAT# L B STEEL P

20 CDS75 2.50 A M2 P=.500

Standard Tolerance

ROUND P $\pm .0005$
SHAPE P,W $\pm .0005$

Exact Point Tolerance Specify - TT

P Tolerance $\pm .0002$



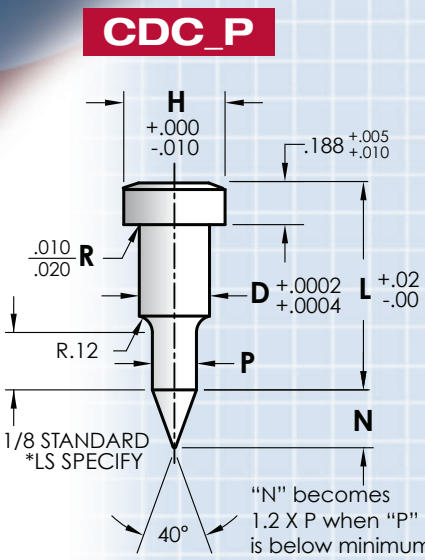
20

www.AmericanPunchCo.com
info@AmericanPunchCo.com

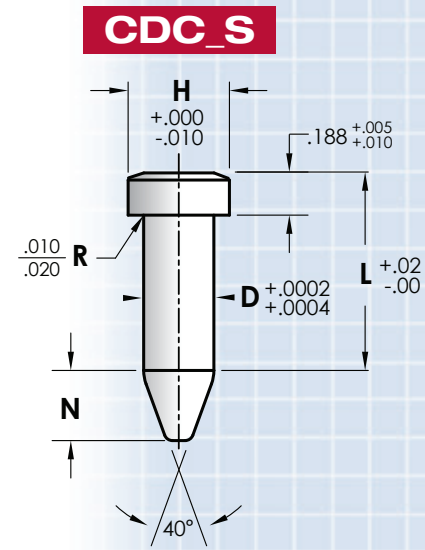
P: 800.243.1492
F: 800.261.6270



21



STEEL: M2 R/C 60-63 HEAD: R/C 40-55						
SHANK DIA. "D"	CATALOG NUMBER	"P" RANGE	"N"	"T"	"H"	LENGTH RANGE .125" INCREMENTS
0.2500	CDC25P	0.1400 - 0.2499	0.25	0.188	0.375	.62 - 1.37
0.3125	CDC31P	0.1840 - 0.3124	0.31	0.188	0.438	.62 - 1.37
0.3750	CDC37P	0.2620 - 0.3749	0.37	0.188	0.500	.62 - 1.37
0.4375	CDC43P	0.2280 - 0.4374	0.43	0.188	0.562	.62 - 1.37
0.5000	CDC50P	0.2700 - 0.4999	0.50	0.188	0.625	.62 - 1.37
0.6250	CDC62P	0.4050 - 0.6249	0.62	0.188	0.750	.75 - 1.37
0.7500	CDC75P	0.5040 - 0.7499	0.75	0.188	0.875	.75 - 1.37
0.8750	CDC87P	0.5920 - 0.8749	0.87	0.188	1.000	.75 - 1.37
1.0000	CDC10P	0.6860 - 0.9999	1.00	0.188	1.125	.75 - 1.37



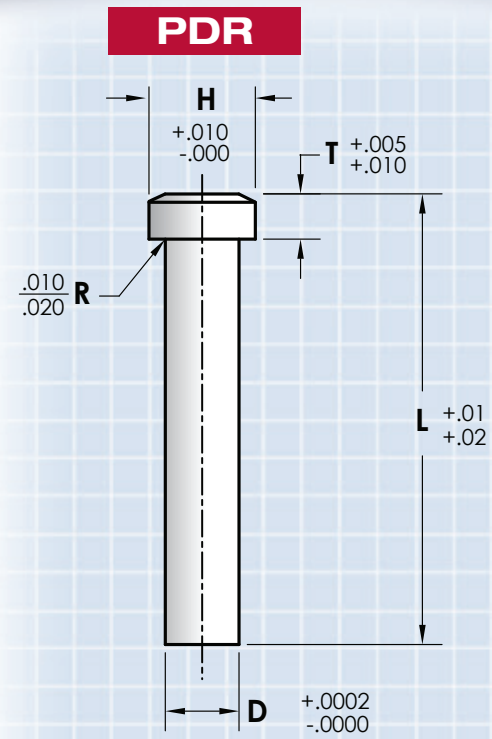
STEEL: M2 R/C 60-63 HEAD: R/C 40-55					
CATALOG NUMBER	"D" RANGE	"N"	"T"	"H"	LENGTH RANGE .125" INCREMENTS
CDC25S	0.1876 - 0.2500	0.25	0.188	0.375	.62 - 1.37
CDC31S	0.2501 - 0.3125	0.31	0.188	0.438	.62 - 1.37
CDC37S	0.3126 - 0.3750	0.37	0.188	0.500	.62 - 1.37
CDC43S	0.3751 - 0.4375	0.43	0.188	0.562	.62 - 1.37
CDC50S	0.4375 - 0.5000	0.50	0.188	0.625	.62 - 1.37
CDC62S	0.5001 - 0.6250	0.62	0.188	0.750	.62 - 1.37
CDC75S	0.6251 - 0.7500	0.75	0.188	0.875	.62 - 1.37
CDC87S	0.7501 - 0.8750	0.87	0.188	1.000	.62 - 1.37
CDC10S	0.8751 - 1.0000	1.00	0.188	1.125	.62 - 1.37

Standard Tolerance

ROUND P $\begin{smallmatrix} +.0005 \\ -.0000 \end{smallmatrix}$ $\text{\textcircled{C}} \begin{smallmatrix} .0005 \\ .0005 \end{smallmatrix}$ P to D

Exact Point Tolerance Specify - TT

P Tolerance $\begin{smallmatrix} +.0002 \\ -.0000 \end{smallmatrix}$ $\text{\textcircled{C}} \begin{smallmatrix} .0003 \\ .0003 \end{smallmatrix}$ P to D

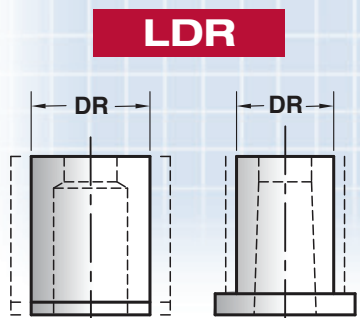
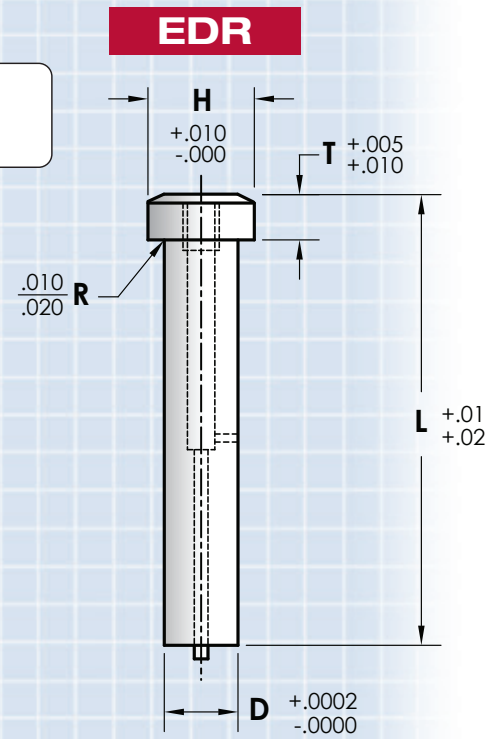


STEEL: M2 R/C 60-63 HEAD: R/C 40-55				
SHANK DIA. "D"	CATALOG NUMBER	HEAD DIA. "H"	HEAD DIA. "T"	LENGTH RANGE .25" INCREMENTS
.1251-.1875	PDR18	0.312	0.125	1.50 - 4.00
.1876-.2500	PDR25	0.375	0.188	1.50 - 4.25
.2501-.3125	PDR31	0.437	0.188	1.50 - 5.00
.3126-.3750	PDR37	0.500	0.188	1.75 - 6.00
.3751-.4375	PDR43	0.562	0.188	1.75 - 6.00
.4376-.5000	PDR50	0.625	0.188	2.00 - 6.00
.5001-.6250	PDR62	0.750	0.188	2.00 - 6.00

See pages 32-38 for standard alterations and classified shapes.

STEEL: M2 R/C 60-63 HEAD: R/C 40-55					
SHANK DIA. "D"	CATALOG NUMBER	HEAD DIA. "H"	HEAD DIA. "T"	LENGTH RANGE .25" INCREMENTS	EJ SIZE
.1876-.2500	EDR25	0.375	0.188	1.50 - 4.00	EJ3
.2501-.3125	EDR31	0.437	0.188	1.50 - 5.00	EJ4
.3126-.3750	EDR37	0.500	0.188	1.75 - 5.00	EJ6
.3751-.4375	EDR43	0.562	0.188	1.75 - 5.00	EJ6
.4376-.5000	EDR50	0.625	0.188	2.00 - 5.00	EJ6
.5001-.6250	EDR62	0.750	0.188	2.00 - 5.00	EJ9

See pages 20 for Ejector Punch SBR limits.



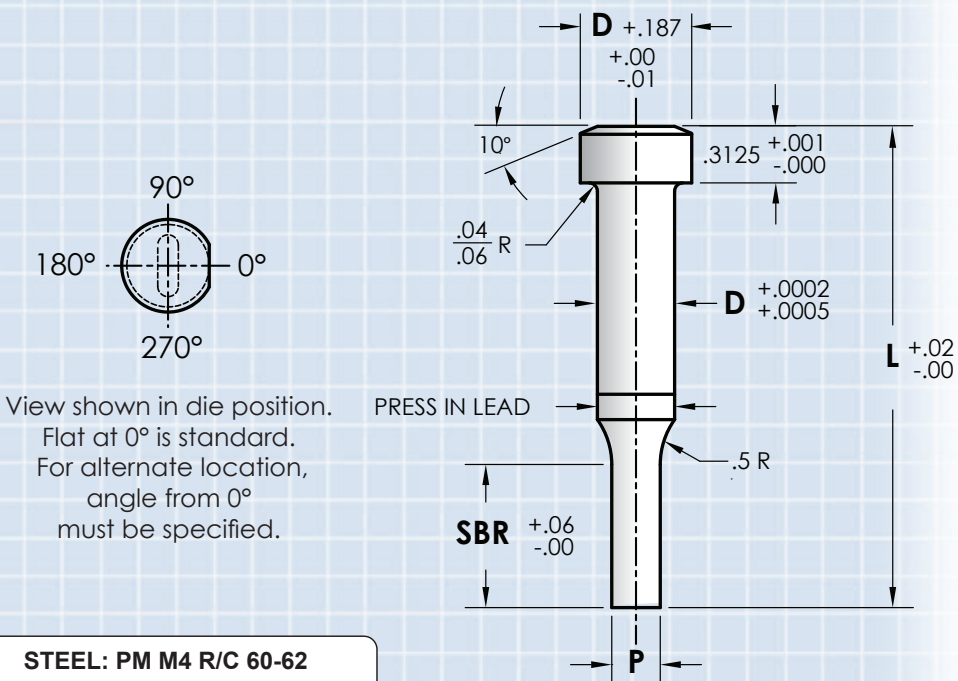
BODY	25	31	37	43	50	62	75	87	100	125	150
BUTTON MIN "D"	.230	.282	.344	.407	.470	.583	.688	.813	.938	1.125	1.375



MAX FORCE Heavy Duty
Shoulder Punch (XPS)



XPS



STEEL: PM M4 R/C 60-62
HEAD: R/C 40-55

SHANK DIA. "D"	CATALOG NUMBER	STANDARD "SBR"	MIN. "P"	MIN. "W"	MAX. "P/G"	LENGTH RANGE .25" INCREMENT
.375	XPS37_	.500	.158	.158	.375	2.50 - 5.00
.4375	XPS43_	.500	.187	.187	.4375	2.50 - 5.00
.500	XPS.50_	.500	.250	.187	.500	2.50 - 5.00
.625	XPS62_	.500	.375	.250	.625	2.50 - 5.00
.750	XPS75_	.500	.500	.312	.750	2.50 - 5.00
.875	XPS87_	.500	.562	.312	.875	2.50 - 5.00
1.000	XPS100_	.500	.687	.375	1.000	2.50 - 5.00

ALTERNATIVE "SBR" LENGTH

A = STANDARD
B = .750
C = 1.00

ORDERING EXAMPLE

QTY CAT# SHAPE L SBR P STEEL
20 XPS75 C 2.50 A P=.500 PMM4

Standard Tolerance

ROUND P $\begin{smallmatrix} +.0005 \\ -.0000 \end{smallmatrix}$ P to D

SHAPE P,W $\pm .0005$ P to D

XPS_C ROUND

XPS_O OBLONG

XPS_K KEYFLAT

XPS_D D-SHAPE

XPS_R RECTANGLE

XPS_S SQUARE

XPS_F FLATTED RD

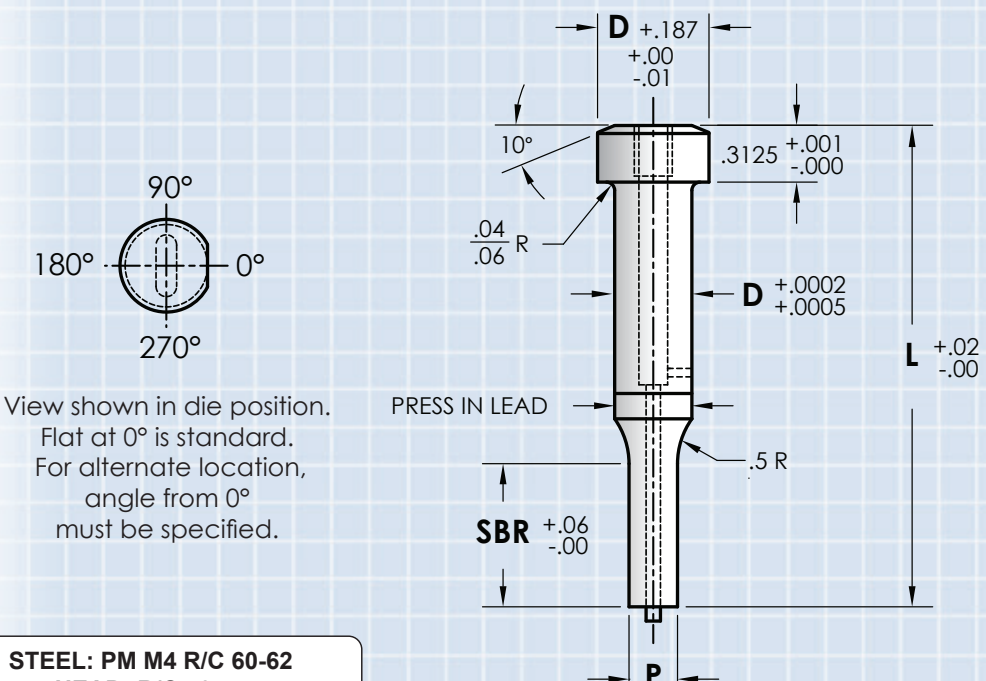
XPS_H HEXAGON

See pages 34-37 for standard alterations and classified shapes.

MAX FORCE Heavy Duty
Shoulder Ejector Punch (XPE)



XPE



STEEL: PM M4 R/C 60-62
HEAD: R/C 40-55

SHANK DIA. "D"	CATALOG NUMBER	STANDARD "SBR"	MIN. "P"	MIN. "W"	MAX. "P/G"	LENGTH RANGE .25" INCREMENT	EJ SIZE
.375	XPE37_	.500	.158	.158	.375	2.50 - 5.00	EJ6
.4375	XPE43_	.500	.187	.187	.4375	2.50 - 5.00	EJ6
.500	XPE50_	.500	.250	.187	.500	2.50 - 5.00	EJ6
.625	XPE62_	.500	.375	.250	.625	2.50 - 5.00	EJ9
.750	XPE75_	.500	.500	.312	.750	2.50 - 5.00	EJ9
.875	XPE87_	.500	.562	.312	.875	2.50 - 5.00	EJ9
1.000	XPE100_	.500	.687	.375	1.000	2.50 - 5.00	EJ9

ALTERNATIVE "SBR" LENGTH

A = STANDARD
B = .750
C = 1.00

ORDERING EXAMPLE

QTY CAT# SHAPE L SBR P STEEL
20 XPE75 C 2.50 A P=.500 PMM4

Standard Tolerance

ROUND P $\begin{smallmatrix} +.0005 \\ -.0000 \end{smallmatrix}$ P to D

SHAPE P,W $\pm .0005$ P to D

XPE_C ROUND

XPE_O OBLONG

XPE_K KEYFLAT

XPE_D D-SHAPE

XPE_R RECTANGLE

XPE_S SQUARE

XPE_F FLATTED RD

XPE_H HEXAGON

See pages 34-37 for standard alterations and classified shapes.

Standard Tolerance

ROUND P $+0.0005$
 -0.0000

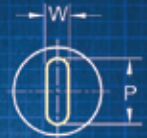
SHAPE P,W $+0.001$
 -0.000

Ⓢ .0005 P to D

Ⓢ .001 P to D



BLB_C
ROUND



BLB_O
OBLONG



BLB_K
KEYFLAT



BLB_D
D-SHAPE



BLB_R
RECTANGLE



BLB_S
SQUARE



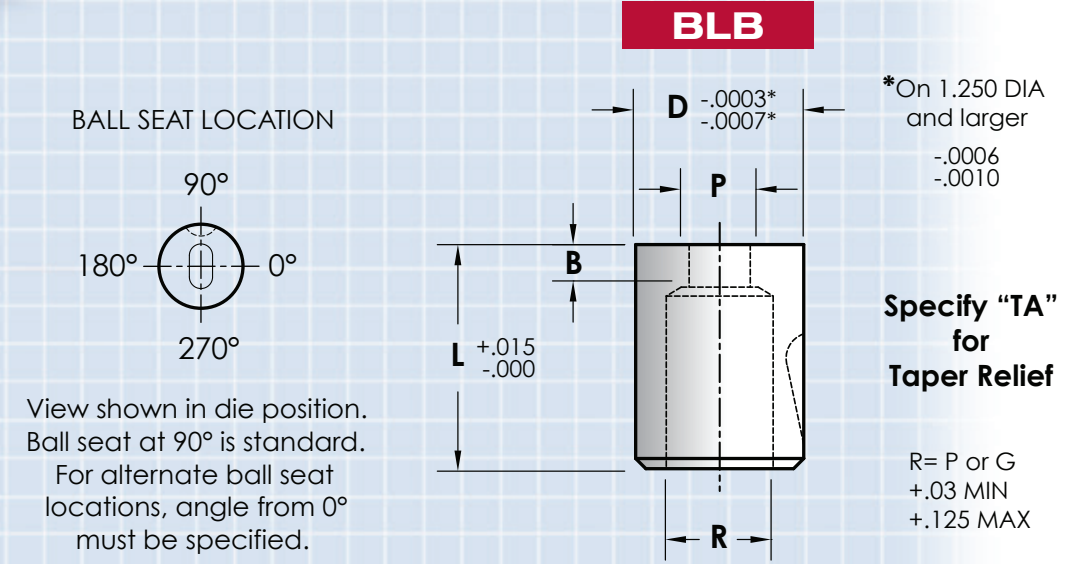
BLB_F
FLATTED RD



BLB_H
HEXAGON

Use **BLB_Z** for classified shape

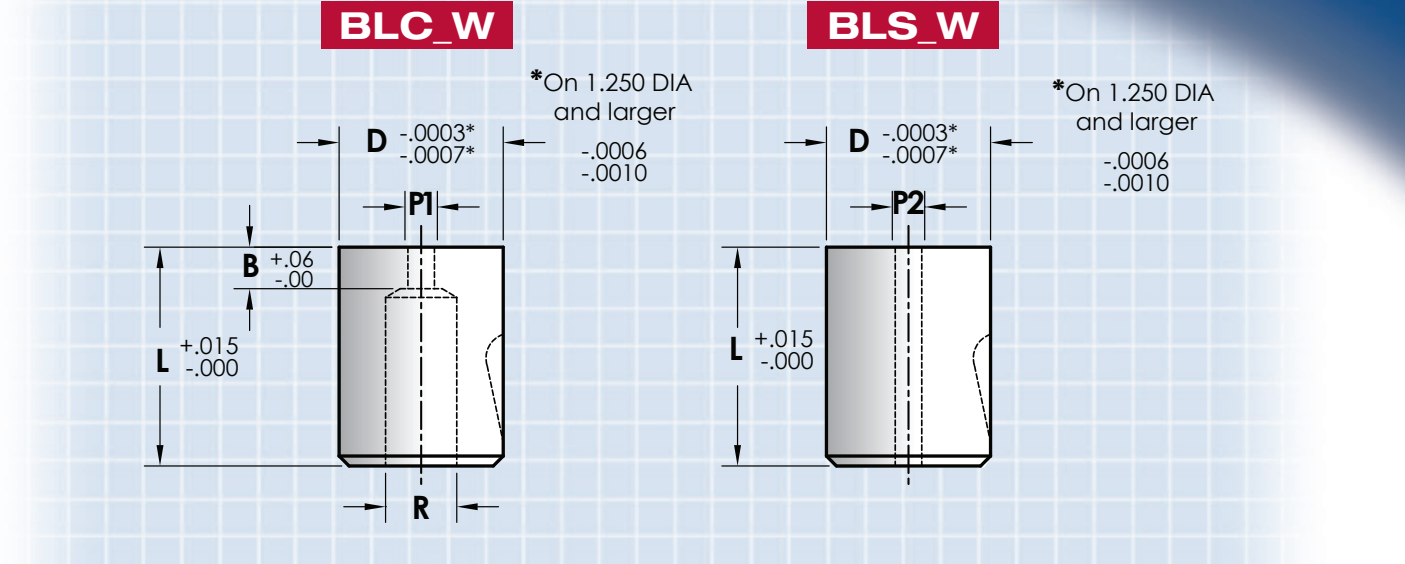
See pages 34-37 for standard alterations and classified shapes.



STEEL: A2 R/C 58-60 OPTIONAL: M2 R/C 60-63								
BODY DIA. "D"	CATALOG NUMBER	BALL DIA.	DIE LAND "B"	MIN. "P"	MIN. "W"	MAX "P/W"	MAX "R"	LENGTH "L"
.500	BLB50_	5/16	.190	.065	.050	.220	.250	1.187
.625	BLB62_	5/16	.190	.126	.060	.282	.312	1.187
.750	BLB75_	3/8	.250	.140	.093	.390	.420	1.187
.875	BLB87_	3/8	.312	.190	.125	.515	.545	1.187
1.000	BLB100_	3/8	.312	.340	.156	.656	.687	1.187
*1.250	BLB125_	3/8	.312	.470	.187	.780	.810	1.187
*1.500	BLB150_	3/8	.375	.629	.250	.970	1.00	1.187
*1.750	BLB175_	3/8	.375	.800	.460	1.06	1.09	1.187

* MADE TO ORDER

ORDERING EXAMPLE								
QTY	CAT#	SHAPE	L	B	STEEL	P	W	B/S
20	BLB75	O	1.187	A	A2	P=.390	W=.250	180°
15	BLB75	C	1.187	A	A2	P=.390	--	--



STEEL: A2 R/C 58-60							STEEL: M2 R/C 60-63				
BODY DIA. "D"	CATALOG NUMBER	BALL DIA.	DIE LAND "B"	RLF DIA. "R"	DRILL SIZE "P1"	LENGTH "L"	BODY DIA. "D"	CATALOG NUMBER	BALL DIA.	DRILL SIZE "P2"	LENGTH "L"
.500	BLC50W	5/16	.188	.250	.046	1.187	.500	BLS50W	5/16	.062	1.187
.625	BLC62W	5/16	.188	.312	.046	1.187	.625	BLS62W	5/16	.062	1.187
.750	BLC75W	3/8	.250	.420	.046	1.187	.750	BLS75W	3/8	.093	1.187
.875	BLC87W	3/8	.312	.545	.109	1.187	.875	BLS87W	3/8	.093	1.187
1.000	BLC100W	3/8	.312	.689	.125	1.187	1.000	BLS100W	3/8	.093	1.187
*1.250	BLC125W	3/8	.312	.840	.171	1.187	*1.250	BLS125W	3/8	.093	1.187
*1.500	BLC150W	3/8	.375	1.00	.218	1.187	*1.500	BLS150W	3/8	.093	1.187
*1.750	BLC175W	3/8	.375	1.09	.437	1.187	*1.750	BLS175W	3/8	.093	1.187

* MADE TO ORDER

ORDERING EXAMPLE				
QTY	CAT#	L	P	
20	BLC50W	1.187	P= p ¹	

ORDERING EXAMPLE				
QTY	CAT#	L	P	
20	BLC50W	1.187	P= p ²	

Standard Tolerance	
ROUND P	$\begin{matrix} +.0005 \\ -.0000 \end{matrix}$ [.0005] P to D
SHAPE P,W	$\begin{matrix} +.001 \\ -.000 \end{matrix}$ [.001] P to D



BS_C

ROUND



BS_O

OBLONG



BS_K

KEYFLAT



BS_D

D-SHAPE



BS_R

RECTANGLE



BS_S

SQUARE



BS_F

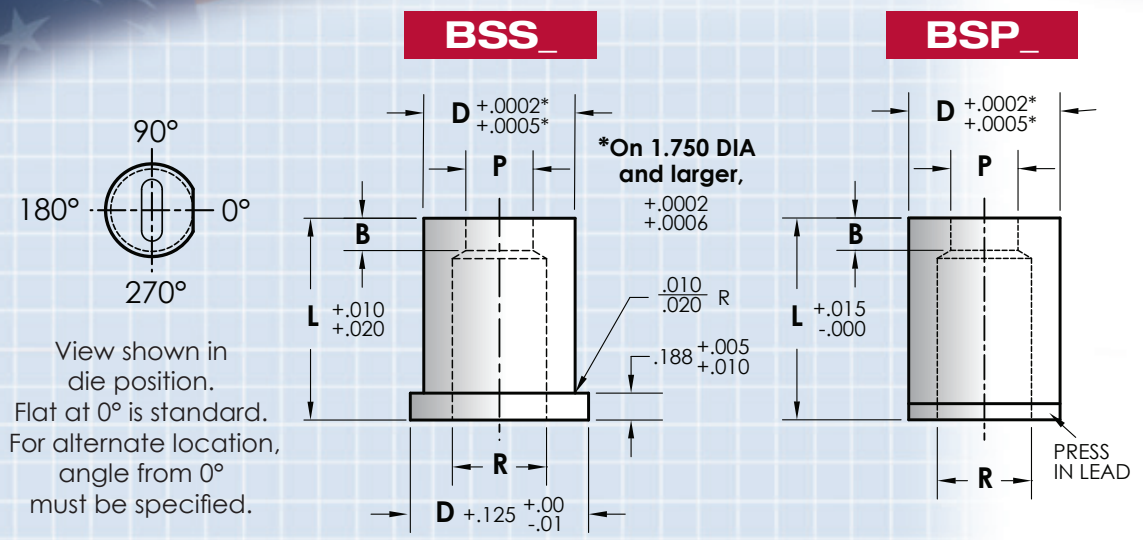
FLATTED RD



BS_H

HEXAGON

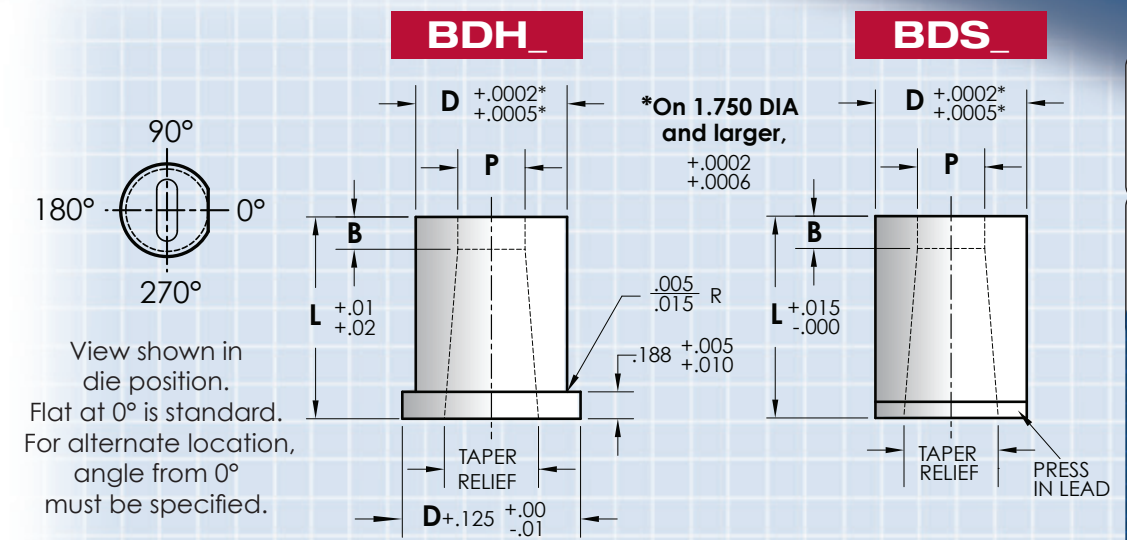
See pages 32-33 for locating flats and grooves.



STEEL: A2 R/C 58-60		R= P or G +.03 MIN					
OPT'L STEEL: M2 R/C 60-63							
BODY DIA. "D"	CATALOG NUMBER BSS_ BSP_	DIE LAND "B"	MAX. "R"	RANGE "P"	MIN. "W"	MAX. "P/G"	LENGTH RANGE .125" INCREMENT
.250	25	.16	.15	.060	.048	.135	.75 - 1.50
.3125	31	.16	.19	.060	.048	.171	.75 - 1.50
.375	37	.16	.23	.060	.048	.195	.75 - 1.50
.4375	43	.16	.28	.135	.048	.250	.75 - 1.50
.500	50	.16	.31	.135	.064	.285	.75 - 1.50
.625	62	.19	.39	.135	.095	.365	.75 - 1.50
.750	75	.19	.47	.135	.118	.435	.75 - 1.50
.875	87	.19	.58	.250	.125	.545	.75 - 1.50
1.000	100	.25	.70	.350	.125	.675	.75 - 1.50
1.250	125	.31	.83	.500	.187	.800	.75 - 1.50
1.500	150	.31	1.09	.615	.187	1.05	.75 - 1.50
*1.750	BSP175	.31	1.44	.750	.187	1.400	1.00 - 1.50
*2.000	BSP200	.31	1.62	.875	.187	1.600	1.00 - 1.50
*2.250	BSP225	.31	1.84	1.00	.187	1.800	1.00 - 1.50
*2.500	BSP250	.31	2.04	1.12	.187	2.000	1.00 - 1.50
*2.750	BSP275	.31	2.37	1.25	.187	2.200	1.00 - 1.50
*3.000	BSP300	.31	2.54	1.375	.187	2.500	1.00 - 1.50

* MADE TO ORDER

ORDERING EXAMPLE							
QTY	CAT#	SHAPE	L	STEEL	P	W	B/S
15	BSS75	C	1.50	A2	P=.435	--	--



STEEL: M2 R/C 60-63		WHEN "TT" IS SPECIFIED B=.125				
BODY DIA. "D"	CATALOG NUMBER BDH_ BDS_	DIE LAND "B"	MIN. "P"	MIN. "W"	MAX. "P/G"	LENGTH RANGE .125" INCREMENT
.250	25	.156	.060	.048	.135	.75 - 1.50
.3125	31	.156	.060	.048	.171	.75 - 1.50
.375	37	.156	.060	.048	.195	.75 - 1.50
.4375	43	.156	.135	.048	.250	.75 - 1.50
.500	50	.156	.135	.064	.285	.75 - 1.50
.625	62	.187	.135	.095	.365	.75 - 1.50
.750	75	.187	.135	.118	.435	.75 - 1.50
.875	87	.187	.250	.125	.545	.75 - 1.50
1.000	100	.250	.350	.125	.675	.75 - 1.50
1.250	125	.312	.500	.187	.800	.75 - 1.50
1.500	150	.312	.615	.187	1.05	.75 - 1.50
*1.750	BDS175	.312	.750	.187	1.400	1.00 - 1.50
*2.000	BDS200	.312	.875	.187	1.600	1.00 - 1.50
*2.250	BDS225	.312	1.00	.187	1.800	1.00 - 1.50
*2.500	BDS250	.312	1.12	.187	2.000	1.00 - 1.50
*2.750	BDS275	.312	1.25	.187	2.200	1.00 - 1.50
*3.000	BDS300	.312	1.375	.187	2.500	1.00 - 1.50

* MADE TO ORDER

ORDERING EXAMPLE						
QTY	CAT#	L	STEEL	P	W	B/S
20	BDH100C	112	M2	P=.450	--	--

Standard Tolerance	
ROUND P	$\begin{matrix} +.0005 \\ -.0000 \end{matrix}$ [.0005] P to D
SHAPE P,W	$\begin{matrix} +.001 \\ -.000 \end{matrix}$ [.001] P to D

Exact Point Tolerance Specify - TT	
P,W	$\begin{matrix} +.0002 \\ -.0000 \end{matrix}$ [.0003] P to D



BD_C

ROUND



BD_O

OBLONG



BD_K

KEYFLAT



BD_D

D-SHAPE



BD_R

RECTANGLE



BD_S

SQUARE



BD_F

FLATTED RD

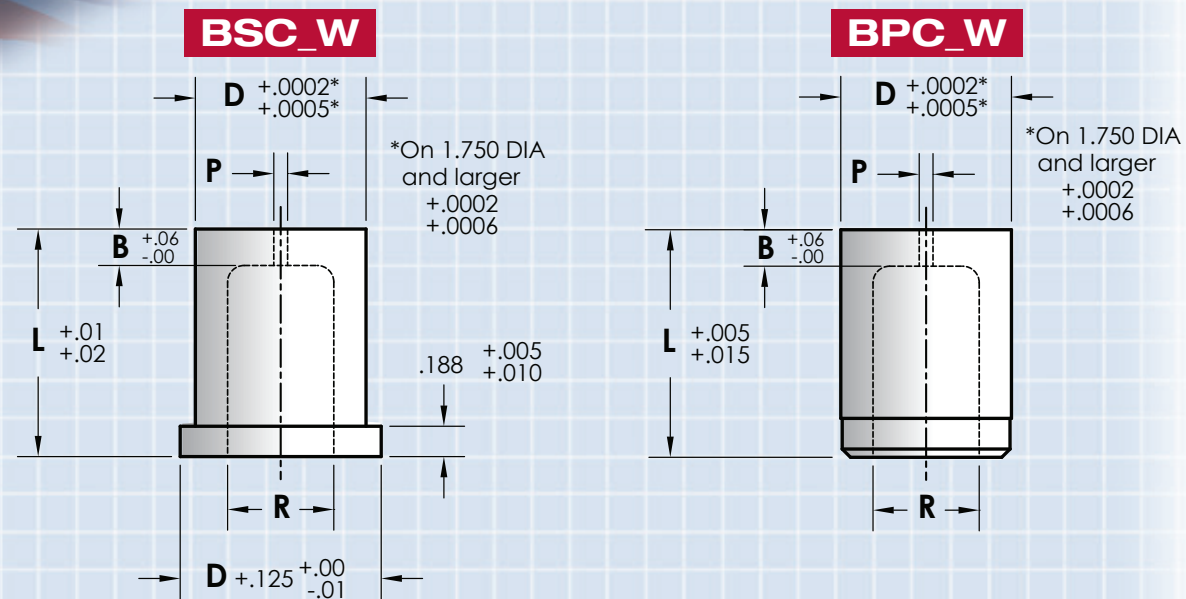


BD_H

HEXAGON

Use BD_B for blank punch
Use BD_Z for classified shape

See pages 34-37 for standard alterations and classified shapes.

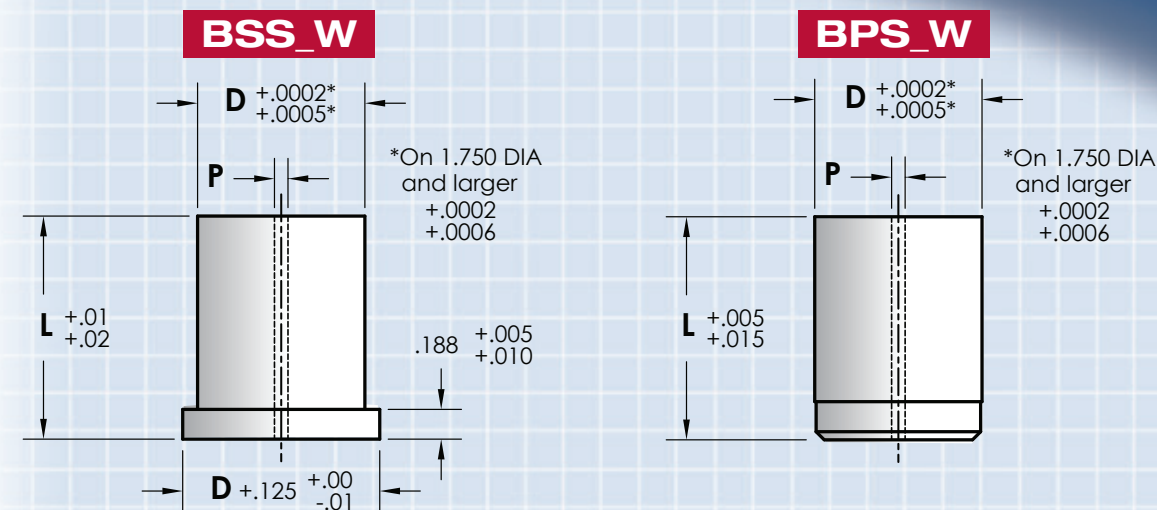


STEEL: M2 R/C 60-63

BODY DIA. "D"	CATALOG NUMBER	DIE. LAND "B"	MAX DIA. "R"	DRILL SIZE "P"	LENGTH RANGE .125" INCREMENT
.3125	B_C31W	.156	.18	.046	.75 - 1.50
.3750	B_C37W	.156	.24	.046	.75 - 1.50
.4375	B_C43W	.156	.28	.046	.75 - 1.50
.5000	B_C50W	.156	.31	.046	.75 - 1.50
.6250	B_C62W	.188	.38	.078	.75 - 1.50
.7500	B_C75W	.188	.47	.093	.75 - 1.50
.8750	B_C87W	.188	.57	.109	.75 - 1.50
1.0000	B_C100W	.250	.69	.125	.75 - 1.50
1.2500	B_C125W	.312	.84	.156	.75 - 1.50
1.5000	B_C150W	.312	1.09	.218	.75 - 1.50

ORDERING EXAMPLE

QTY CAT# L STEEL
20 BPC50W 112 M2



STEEL: M2 R/C 60-63

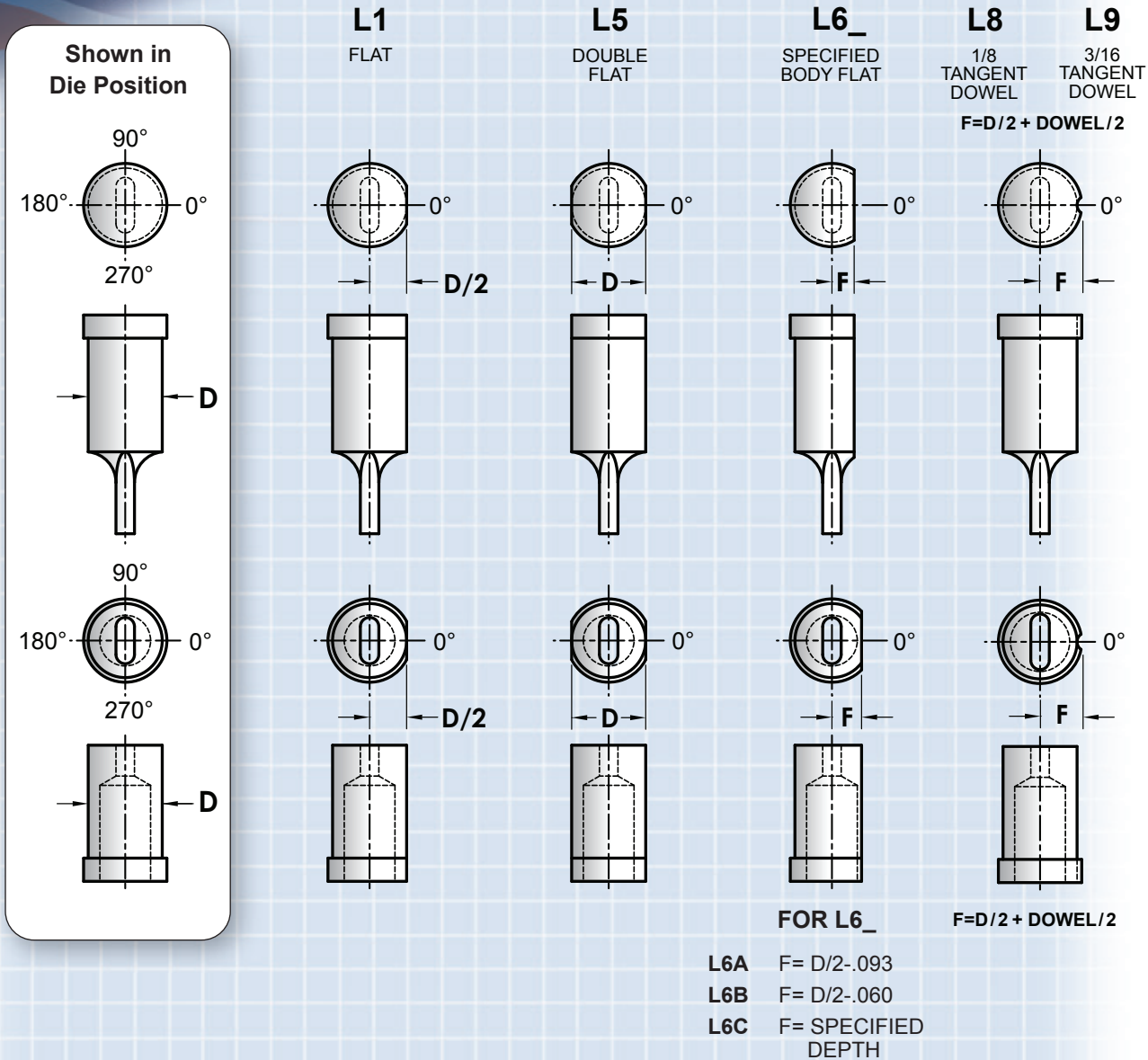
BODY DIA. "D"	CATALOG NUMBER	DRILL SIZE "P"	LENGTH RANGE .125" INCREMENT
.2500	B_S25W	.046	.75 - 1.50
.3125	B_S31W	.046	.75 - 1.50
.3750	B_S37W	.046	.75 - 1.50
.4375	B_S43W	.062	.75 - 1.50
.5000	B_S50W	.062	.75 - 1.50
.6250	B_S62W	.062	.75 - 1.50
.7500	B_S75W	.093	.75 - 1.50
.8750	B_S87W	.093	.75 - 1.50
1.0000	B_S100W	.093	.75 - 1.50
1.2500	B_S125W	.093	.75 - 1.50
1.5000	B_S150W	.093	.75 - 1.50
*1.7500	BPS175W	.093	1.00 - 1.50
*2.0000	BPS200W	.093	1.00 - 1.50
*2.2500	BPS225W	.093	1.00 - 1.50
*2.5000	BPS250W	.093	1.00 - 1.50
*2.7500	BPS275W	.093	1.00 - 1.50
*3.0000	BPS300W	.093	1.00 - 1.50

* MADE TO ORDER

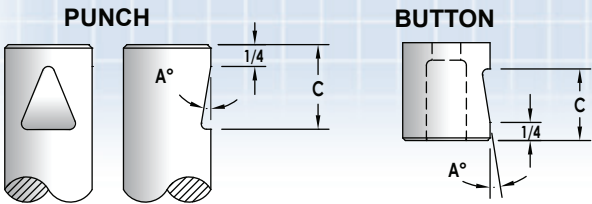
ORDERING EXAMPLE

QTY CAT# L STEEL
20 BPS25W 112 M2

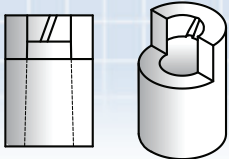
NOTE: STANDARD FLAT LOCATION @ 0°



Whistle Spot

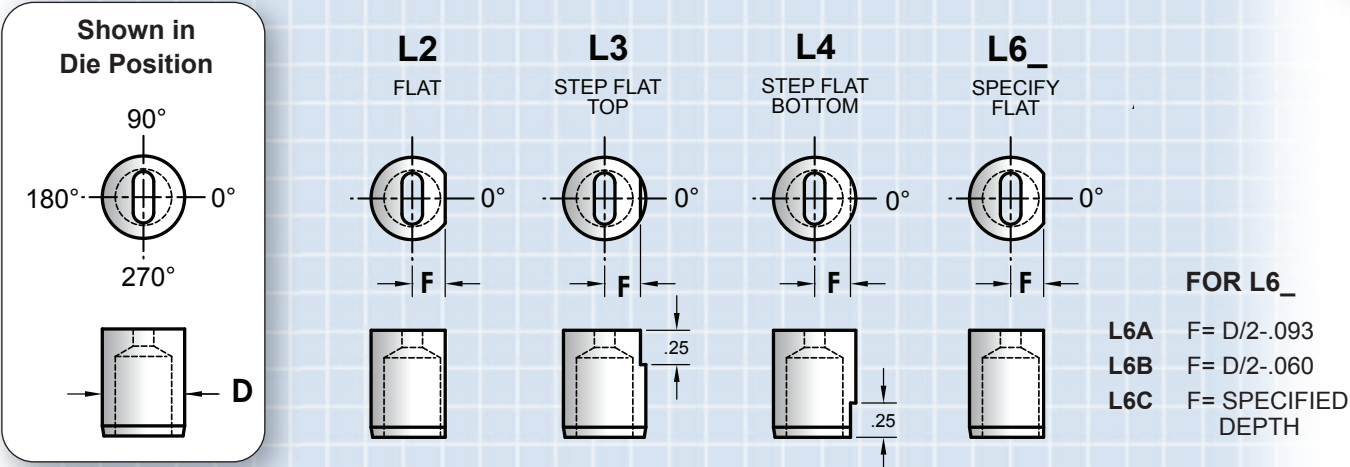


Slug Control



USE AS POSSIBLE SOLUTION TO SLUG PULL

NOTE: STANDARD FLAT LOCATION @ 0°



L20 | OVERALL LENGTH REDUCED

"B" LENGTH MAINTAINED WHILE REDUCING OVERALL LENGTH

NOTE: Shoulder and Ball-Lock Buttons "B" length can only be maintained with taper relief

L21 | OVERALL LENGTH REDUCED

NOTE: "B" length is not maintained

L22 | OVERALL LENGTH REDUCED

L ±.001 PROVIDING A PRECISION OVERALL LENGTH
Maximum of .020 removal.

NOTE: "B" length is maintained.

HEAD ALTERATIONS

L23

PRECISION HEAD REDUCES OVERALL LENGTH

L24

REDUCES HEAD THICKNESS AND OVERALL LENGTH

L25

REDUCES HEAD THICKNESS WHILE MAINTAINING OVERALL LENGTH

L26

REDUCES HEAD DIAMETER

L27

STRENGTHENED HEAD

L28

SPECIFIED CHAMFER

L29

SPECIFIED CHAMFER

L30

STRAIGHT BORE

PUNCH SHEARS

BACK TAPERS

Note: Ball seat orientation shown out of position for clarity.

Note: Shear orientation shown in die position.

Shear angles and dimensions "A" and "F" must be specified.

EJECTOR PUNCH

EJECTOR NO.	PIN DIA. "D"	PIN HEAD DIA. "H"	PIN HEAD THICKNESS "T"	SPRING DIA. "S"	SET SCREW SIZE	BALL LOCK PUNCH SHANK	SHOULDER PUNCH SHANK
EJ2	.019	.048	1/32	.078	3-48		3/16
EJ3	.027	.078	3/64	.100	5-40	1/4	1/4
EJ4	.041	.094	1/64	.132	8-32	3/8	5/16
EJ6	.058	.125	1/16	.163	10-32	1/2 - 5/8	3/8 - 1/2
EJ9	.089	.156	3/32	.215	1/4-28	3/4 - 1-1/4	5/8 - 1

34

AMERICAN PUNCH COMPANY

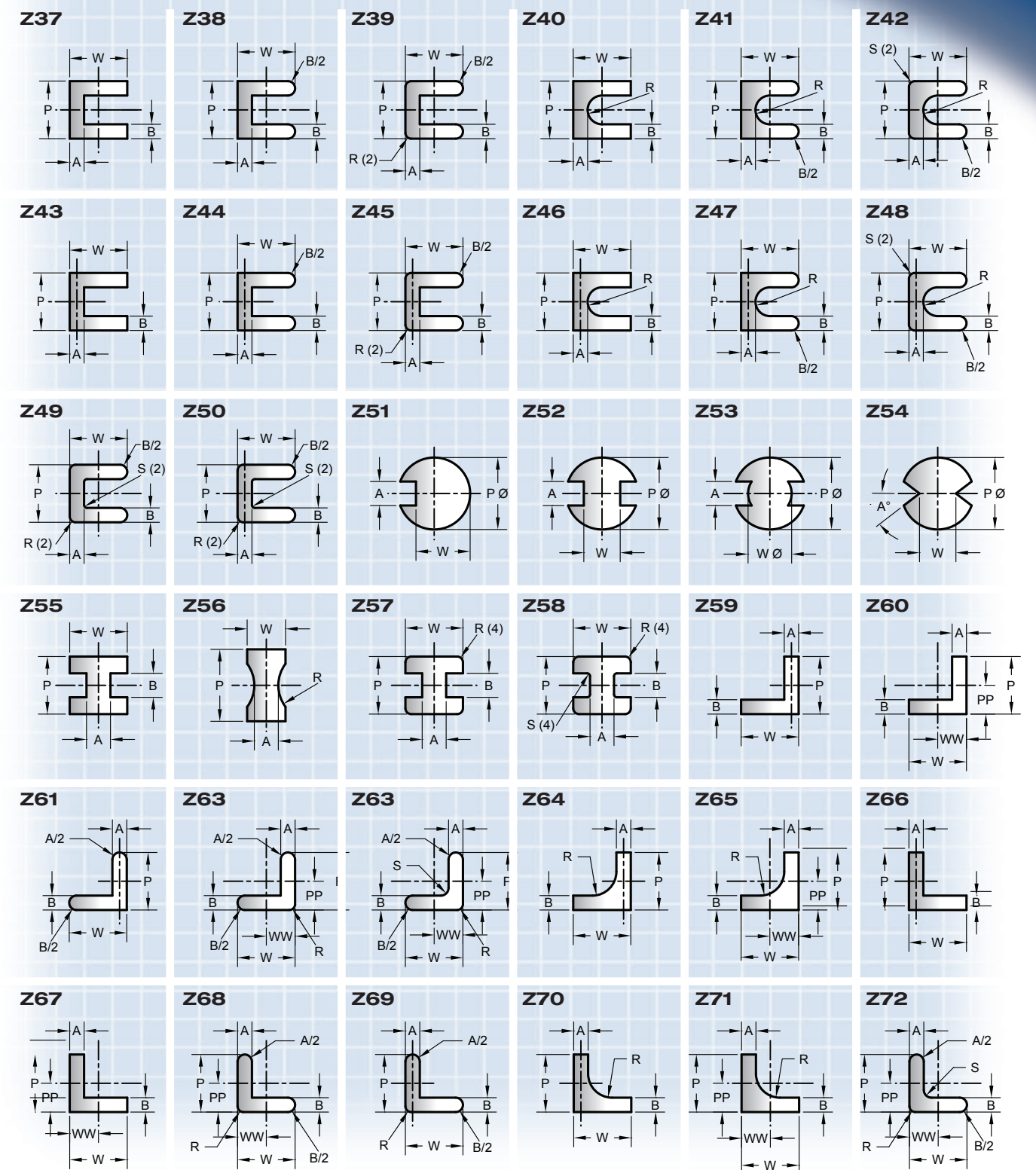
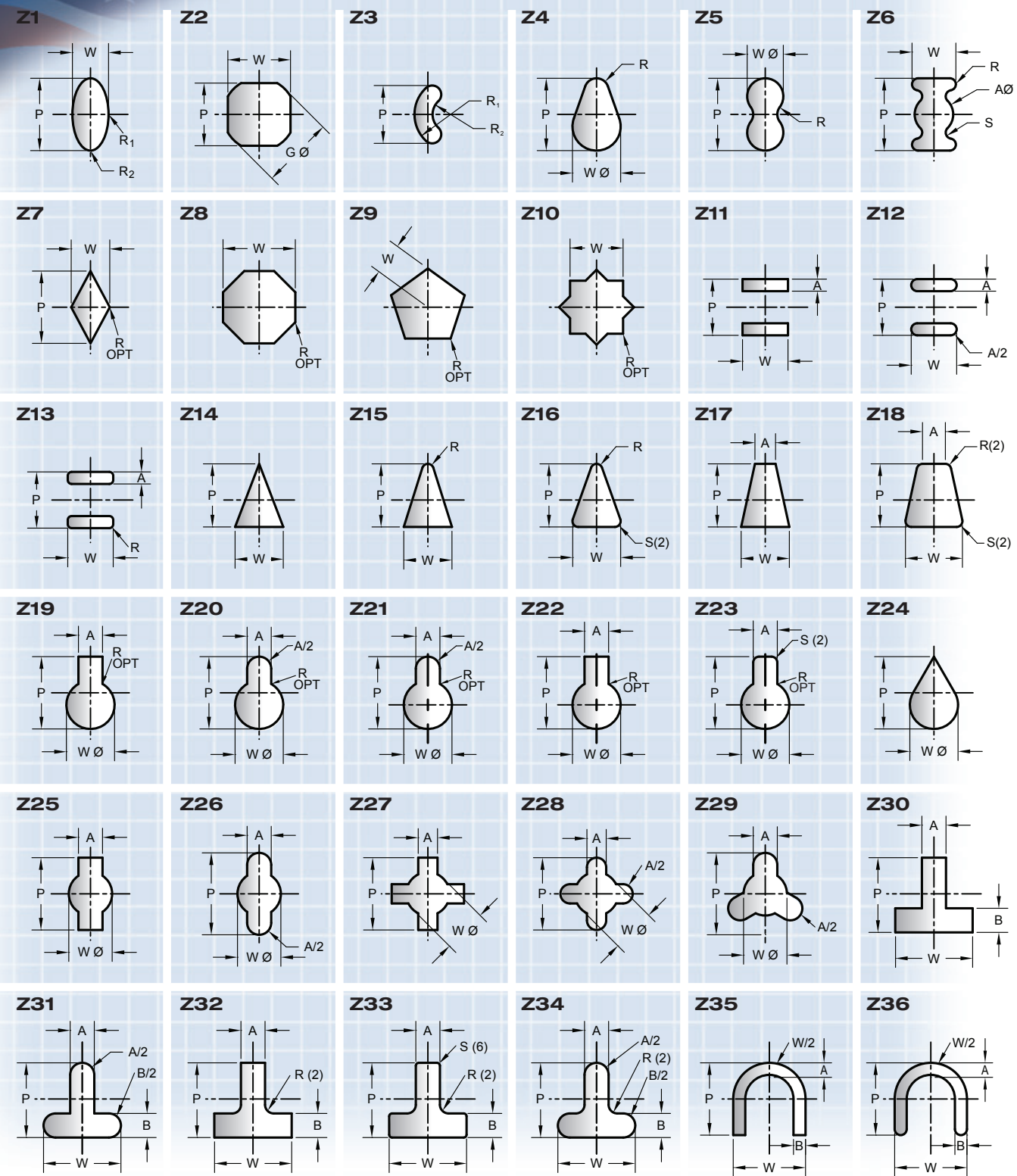
www.AmericanPunchCo.com
info@AmericanPunchCo.com

P: 800.243.1492

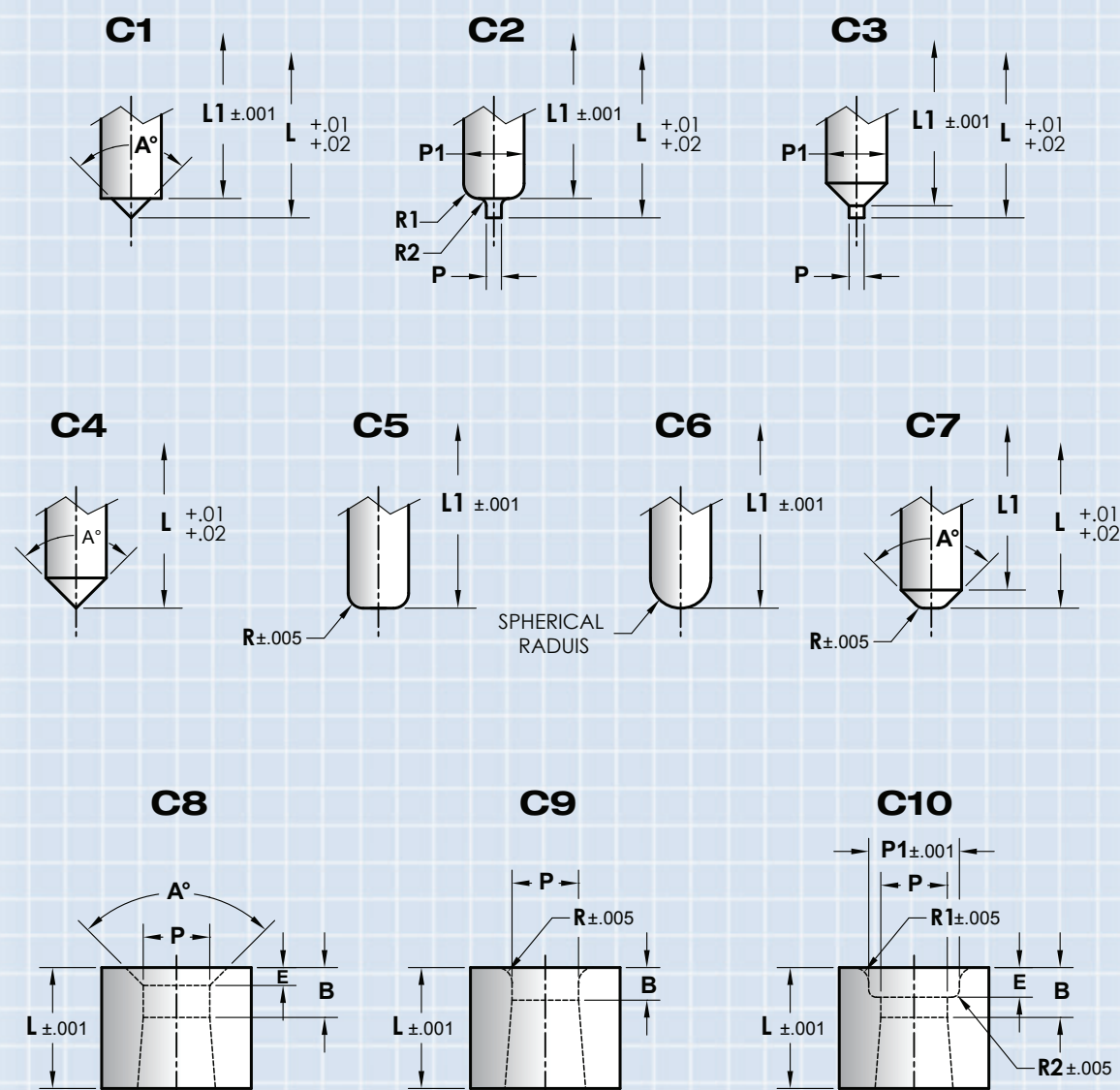
F: 800.261.6270

AMERICAN PUNCH COMPANY

35

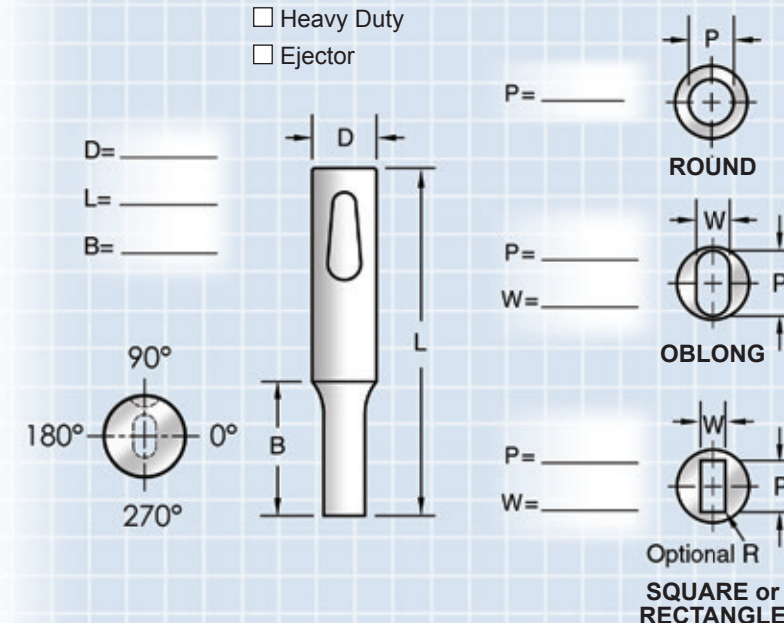


EXTRUSION TOOLS



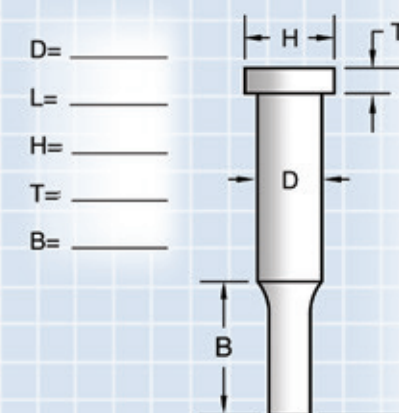
BALL LOCK

- ☐ Light Duty
☐ Heavy Duty
☐ Ejector



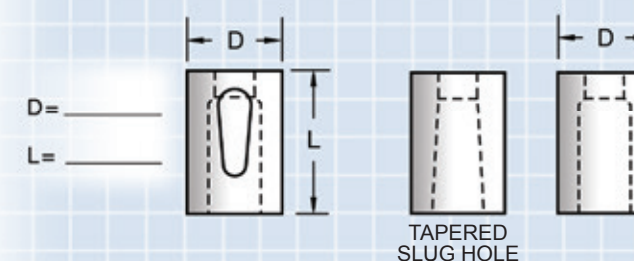
SHOULDER PUNCH

- ☐ Ejector
- ☐ Standard
- ☐ Diamond



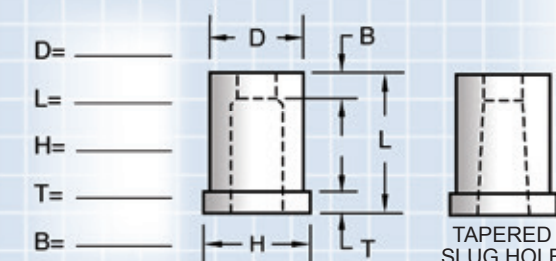
PRESS FIT BUTTON

- ☐
- Standard
-
- ☐
- Diamond



SHOULDER BUTTON

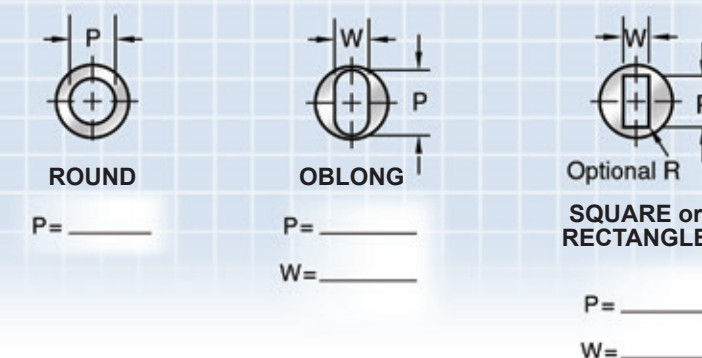
- ☐
- Standard
-
- ☐
- Diamond



OPTIONS

See page 32-33 for
locating flats and grooves.

See page 36-37 for
classified shapes.



American Punch Company offers an extensive line of precision tooling for stamping, roll forming and metalforming. We encourage you to contact us for more information on our extensive line of tooling, for technical support, or to place an order.



High quality tooling and the best customer service in the business.

www.AmericanPunchCo.com • info@AmericanPunchCo.com

1655 Century Corners Parkway • Euclid, OH 44132

fax 800.261.6270

800.243.1492

