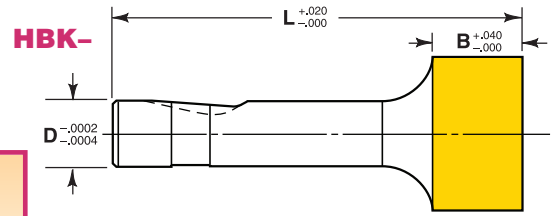
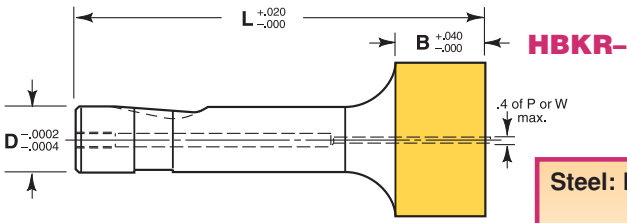


# PORTER Heavy Duty Knob Style Punches



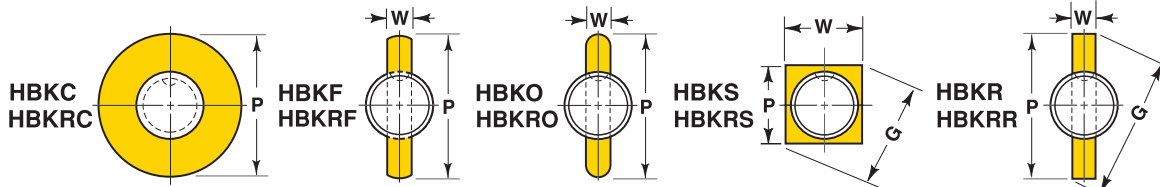
**Steel: M2 Rc 60-63**  
**TOLERANCES**  
 Round P  $\begin{matrix} +.0005 \\ -.0000 \end{matrix}$   $\text{\textcircled{C}}$  .0005 P to D  
 Shape P, W  $\pm .0005$   $\text{\textcircled{C}}$  .001 P, W to D

**Ordering Example:**

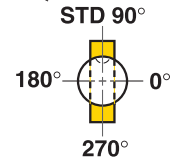
Qty Steel Type D L W P  
 2 M2 HBKRO 100 x 3.00 x .650 x 1.125

**Ordering Example:**

Qty Steel Type D L P  
 4 M2 HBKC 62 x 3.00 x .750



Shank		Point Length B	Lengths L in .25" Increments							Point			Replacement Retrakto Kit*
D	Code No.									Round Range P	Shape Min W Max P/G		
.375	37	.625	2.50	2.75	3.00	3.25	3.50	3.75	4.00	.376 - 1.000	.125	1.000	K4I
.500	50	.750	2.50	2.75	3.00	3.25	3.50	3.75	4.00	.501 - 1.250	.188	1.250	K6I
.625	62	.875	2.50	2.75	3.00	3.25	3.50	3.75	4.00	.626 - 1.500	.250	1.500	K6I
.750	75	.937	2.50	2.75	3.00	3.25	3.50	3.75	4.00	.751 - 1.500	.312	1.500	K9I
.875	87	.937	2.50	2.75	3.00	3.25	3.50	3.75	4.00	.876 - 1.750	.375	1.750	K9I
1.000	100	.937	2.50	2.75	3.00	3.25	3.50	3.75	4.00	1.001 - 1.750	.437	1.750	K9I
1.250	125	1.250	2.50	2.75	3.00	3.25	3.50	3.75	4.00	1.251 - 2.000	.500	2.000	K12I

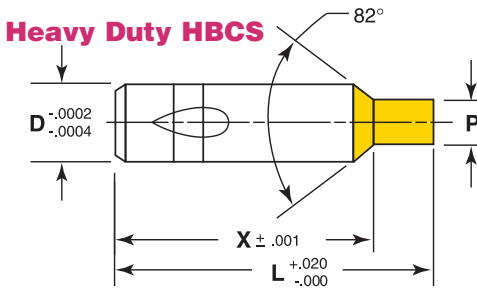


Standard ball seat location is at 90° using reflected view for punches. Alternate locations of 0°, 180° and 270° are available at no extra charge. Custom ball seat locations can be specified as number of degrees counterclockwise from 0°.

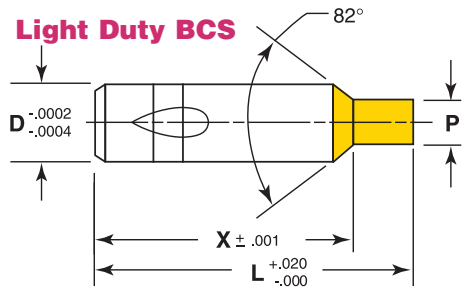
\*Retrakto kits available see page 36 for details.

For additional standard forms and configurations see pages 32 and 33.

# PORTER Bal-Lok Countersink Punches



**Steel: M2 Rc 60-63**  
 P  $\begin{matrix} +.0005 \\ -.0000 \end{matrix}$   $\text{\textcircled{C}}$  .001 P to D



**Ordering Example:**

Qty Steel Cat No. x L x P x =  
 12 M2 HBKS50 x 3.00 x .250 x =2.750

**Ordering Example:**

Qty Steel Cat No. x L x P x =  
 12 M2 BCS50 x 3.00 x .250 x =2.750

Catalog Number	ØD	L in .25" Increments	P $\begin{matrix} +.0005 \\ -.0000 \end{matrix}$ Range	X
HBKS-37	.375	2.00 - 3.50	.090 - .187	Specify in .001 Increments.
HBKS-50	.500	2.00 - 3.50	.140 - .250	
HBKS-62	.625	2.25 - 3.50	.203 - .281	
HBKS-75	.750	2.25 - 3.50	.265 - .406	
HBKS-87	.875	2.25 - 3.50	.328 - .469	
HBKS-100	1.000	2.75 - 3.75	.374 - .500	
HBKS-125	1.250	3.00 - 3.75	.484 - .625	

Catalog Number	ØD	L in .25" Increments	P $\begin{matrix} +.0005 \\ -.0000 \end{matrix}$ Range	X
BCS-25	.250	2.00 - 3.25	.050 - .125	Specify in .001 Increments.
BCS-37	.375	2.00 - 3.50	.090 - .187	
BCS-50	.500	2.00 - 3.50	.140 - .250	
BCS-62	.625	2.00 - 3.50	.200 - .281	
BCS-75	.750	2.00 - 3.50	.265 - .406	

"C" = Co/Sink to theoretical sharp corner

"T" = Material Thickness

"A" = Screw Head Diameter

FORMULA TO CALCULATE "C" .9T + A = C\*

\*This will result in an approximate flush screw mount.

For Countersink Engineering data see page 9.

Standard Alterations are changes that are beyond the ranges listed in the catalog that can be altered for a minimal charge. See page 37.