

Ball Lock Pilot - Conical Code: **BAPK**

"N" becomes = 1.2 x "P" minimum when "P" is below (see table).

Standard Tolerances

Round / P ⁺⁰¹ ₋₀₀		,01	From P to d2
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When P = d2, shank / body tolerances apply.

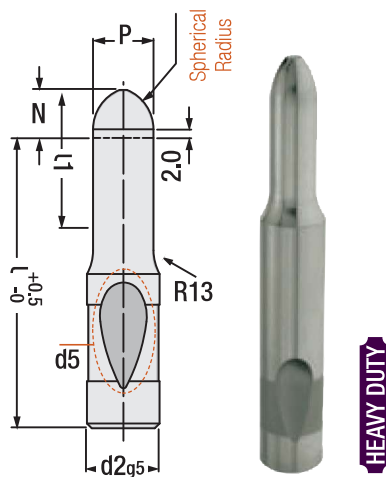
Material: 1.3343 (M2) **Hardness:** 60 - 62 HRC

d2	d5	P	L1	N	L
10	10	5.9 ~ 9.9	19	8	80
					100
					125
13	12	9.9 ~ 12.9	19	10	80
					100
					125
16	12	12.9 ~ 15.9	25	15	80
					100
					125
20	mm	15.9 ~ 19.9	25	20	71
					80
					100
25	mm	19.9 ~ 24.9	25	25	71
					80
					100
32	mm	24.9 ~ 31.9	25	30	71
					80
					100
40	mm	31.9 ~ 39.9	30	40	71
					80
					100

Note: P / L selection as per request.
- Special dimensions on request.



Order: **BAPK**. d2 x P x L



Ball Lock Pilot - Spherical Code: **BAPX**

- It is length of "L" pilot except end.
- 2 mm length is guided to punch before punch contacting sheet metal.

	P	N
	≤ 10 mm	8 mm
10.1 mm	- 15 mm	12 mm
	> 15 mm	15 mm

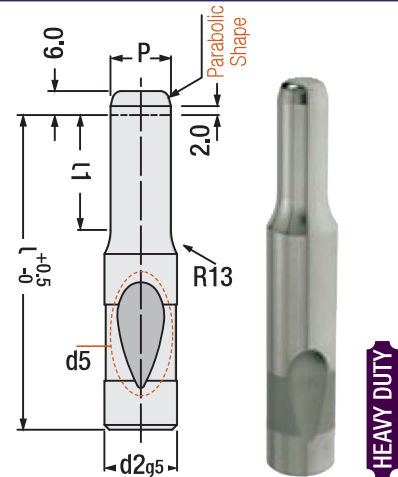
Material: 1.3343 (M2) **Hardness:** 60 - 62 HRC

d2	d5	P	L1	N	L
10	10	2.5 ~ 10	19	10	71
					80
					100
13	12	5 ~ 13	19	10	71
					80
					100
16	mm	8 ~ 16	19	10	71
					80
					100
20	mm	12 ~ 20	19	10	71
					80
					100
25	mm	16 ~ 25	19	10	71
					80
					100
32	mm	24 ~ 32	19	10	71
					80
					100
40	mm	30 ~ 40	25	10	71
					80
					100

Note: P / L selection as per request.
- Special dimensions on request.



Order: **BAPX**. d2 x P x L



Ball Lock Pilot - Parabolic Code: **BAPP**

"N" becomes = 1.2 x "P" minimum when "P" is below (see table).

Standard Tolerances

Round / P ⁺⁰¹ ₋₀₀		,01	From P to d2
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When P = d2, shank / body tolerances apply.

Material: 1.3343 (M2) **Hardness:** 60 - 62 HRC

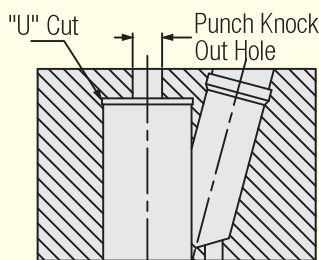
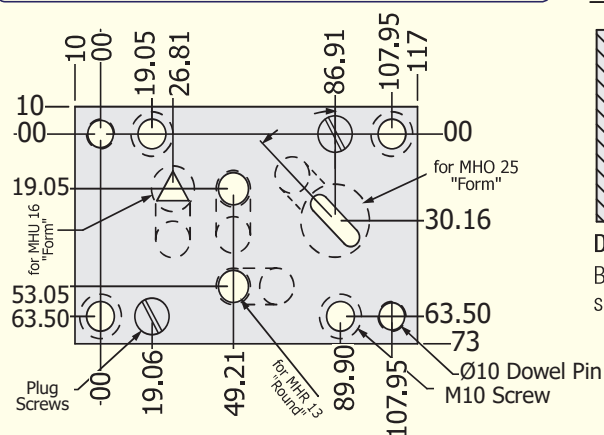
d2	d5	P	L1	L
10	10	2.5 ~ 10	19	71
				80
				100
13	12	5 ~ 13	19	71
				80
				100
16	mm	8 ~ 16	19	71
				80
				100
20	mm	12 ~ 20	19	71
				80
				100
25	mm	16 ~ 25	19	71
				80
				100
32	mm	24 ~ 32	19	71
				80
				100
40	mm	30 ~ 40	25	71
				80
				100

Note: P / L selection as per request.
- Special dimensions on request.



Order: **BAPP**. d2 x P x L

Multi Hole, Special Ball Lock Retainers



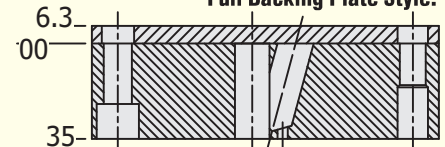
Detail View of Punch Hole

Ball - socket class "R" will be supplied unless otherwise specified.

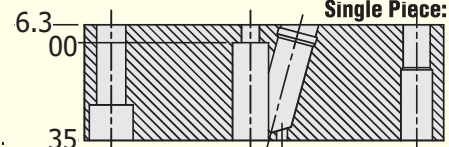
Ball-holes:	Radial Tolerance
R	+ 5°
F	+ .0°5'

Technical Information !

Full Backing Plate Style:



Single Piece:



Tolerances for All Types

Outside Edges	± .5
Dowel Hole Locations	± .01
Screw Hole Locations	± .1
Component Hole Locations	± .01

In technical drawings, the hardened backing plates of multi hole ball lock retainers are shown as two different examples as traditional and single piece retainer. Here, the retainer has been measured from the left upper corner and the zero point is considered as a punch or dowel pin hole and it is positioned correctly in die. This aids in CNC programming and ensures proper settling of the punch retainer and its matching die section or matrix retainer.

Dies



Page

201