



### Ball Lock Pins Technical Information

Ball lock pins are precision alignment pins with a ground shank. These pins are positive locking until released by pushing the button, which moves the center spindle forward to allow the locking balls to retract into a radial groove. The range also includes a choice of materials: steel and stainless steel. Available in four handle styles: L, T, Button, and Ring. Standard shank diameters range from 3/16 to 1" (5 to 20mm in metric). Any grip length up to 6" (150mm) is available as standard. Other ball lock pins such as heavy-duty, adjustable, and double acting are available from Harcourt as specials, please contact us to inquire about specials and customs.

**T Handle**



Provides a firm, even grip for smooth comfortable operation.

**L Handle**



Provides a firm grip for applications where space limits the use of a T-Handle.

**Button Handle**



Ideal for applications that require a compact, small diameter handle.

**Ring Handle**



Designed for applications where heavy duty is more important than comfort.



**SPECIFICATIONS**

PIN DIA	DOUBLE SHEAR MIN*		PULL-OUT STRENGTH MIN	RECOMMENDED HOLE DIAMETER	
	STEEL	S.S.		MAX	MIN
3/16	2,100	2,300	200	0.1940	0.1900
1/4	4,000	4,500	230	0.2540	0.2500
5/16	6,000	7,100	510	0.3165	0.3125
3/8	9,200	10,200	575	0.3790	0.3750
7/16	12,300	13,600	710	0.4425	0.4375
1/2	16,000	18,000	1,160	0.5050	0.5000
9/16	20,500	23,000	1,420	0.5675	0.5625
5/8	25,200	28,700	2,070	0.6300	0.6250
3/4	36,700	41,000	2,950	0.7570	0.7500
7/8	50,000	56,200	3,900	0.8820	0.8750
1	65,500	73,500	5,400	1.0100	1.0000

**METRIC SPECIFICATIONS (NEWTONS)**

5mm	11,500	13,000	890	5.1mm	5mm
6mm	17,500	19,500	890	6.1mm	6mm
8mm	30,000	35,500	2250	8.1mm	8mm
10mm	48,000	55,500	2280	10.1mm	10mm
12mm	70,000	80,000	3150	12.1mm	12mm
16mm	128,000	144,500	9200	16.1mm	16mm
20mm	200,000	226,000	13100	20.16mm	20mm

\*2:1 Safety factor

**MATERIALS**

PART DESCRIPTION	STEEL	STAINLESS STEEL
Shank	4130 Steel, Heat treated Zinc or cadmium plated	17-4 PH, Heat treated
Balls	440 C stainless steel	440 C stainless steel
Button	Aluminum alloy, anodized	302 or 303 stainless, or aluminum alloy, anodized
T and L Handles	Aluminum alloy, black or plain finish	Aluminum alloy, black or plain finish
Button and Ring handles	Carbon steel, or aluminum alloy, anodized	303 stainless, or aluminum alloy
Spring	17-7PH, 302 stainless, or music wire	17-7PH or 302 stainless
Collar	Carbon steel, zinc or cadmium plated	303 stainless steel
Handle ring	Carbon steel, or 302 stainless steel	302 stainless steel