

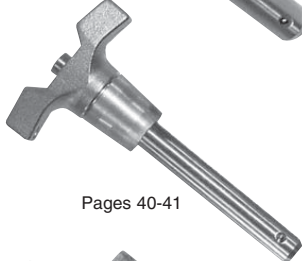
TECHNICAL INFORMATION BALL LOCK PINS



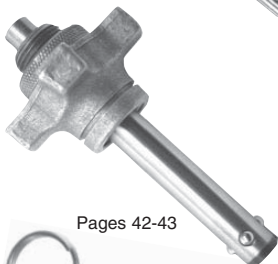
Pages 36-37



Pages 38-39



Pages 40-41



Pages 42-43



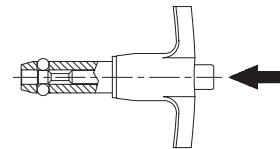
Pages 44-45



Page 46

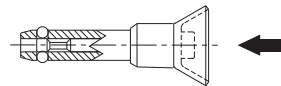
BALL LOCK PINS

Precision alignment pin with a ground shank. This popular single-acting type is 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. Widest range of types and sizes, in steel or stainless steel. Choice of four handle styles: T, L, Button, and Ring. Standard shank diameters from 3/16 to 1" (5 to 20mm in metric). Any grip length up to 6" (150mm in metric) is available as standard, at no extra charge. Available from stock in many standard grip lengths, or quickly made to order in custom lengths and diameters.



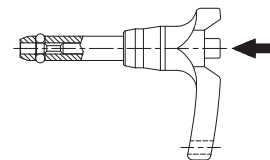
MARINE BALL LOCK PINS

Similar to our standard single-acting Ball Lock Pins in stainless steel, except this type has its handle and button made of 300-series stainless steel. Choice of two handle styles: Recessed Button and Ring. Shank diameters from 3/16 to 1/2", each available in a choice of several standard grip lengths. Available from stock only (not made to order).



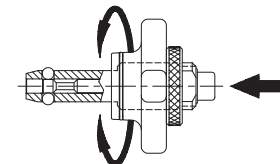
HEAVY-DUTY BALL LOCK PINS

Similar to our standard single-acting Ball Lock Pins, except with a heavier handle for rough service. Available only in stainless steel. Handles are made of solid stainless steel for maximum impact strength and are specially shaped to prevent accidentally pressing the release button. Choice of four handle styles: T, L, Button, and Ring. Shank diameters from 3/16 to 1/2" (5 to 12mm in metric), each in a choice of several standard grip lengths. Available from stock only (not made to order).



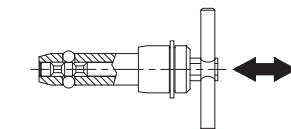
ADJUSTABLE BALL LOCK PINS

These Ball Lock Pins have an adjustable grip length. They can be used for clamping, or simply to provide a variable grip length. The threaded handle turns to provide a 1/2" clamping range or adjustment range. Available in steel or stainless steel. Choice of three handle styles: Knob, T, and L. Standard shank diameters from 1/4 to 1" (6 to 20mm in metric), each in a choice of many standard grip lengths. Other grip lengths are available as specials (extra charge and longer delivery time).



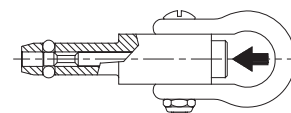
DOUBLE-ACTING BALL LOCK PINS

Similar to a single-acting pin, except the center spindle has two grooves instead of one, to release the ball by either pushing or pulling. Pushing on the handle releases the balls and inserts the pin in one motion. Pulling on the handle releases the balls and removes the pin in one motion. Available in steel or stainless steel. Choice of three handle styles: T, L, and Ring. Standard shank diameters from 3/16 to 1" (5 to 20mm in metric). Any grip length up to 6" (150mm in metric) is available as a standard, at no extra charge. Available from stock in some standard grip lengths, or quickly made to order in custom lengths and diameters.



LIFTING PINS

A single-acting ball lock pin with a solid, one-piece body and four balls for high tension loads. Positive locking until released by pushing the button. Sturdy forged shackle for heavy lifting. Shank diameters from 1/4 to 1", each in a choice of several standard grip lengths. Available from stock only (not made to order).



MATERIAL SPECIFICATIONS

(Any options listed below are manufacturing options, not options selectable by the customer.)

COMPONENT	ALLOY STEEL PINS	STAINLESS STEEL PINS
Shank	4130 steel, heat treated, 160,000 psi min. tensile strength, zinc or cadmium plated**	17-4 PH, heat treated, 180,000 psi min. tensile strength, or equivalent (300 Series on Detent Pins)**
Spindle	4130 steel or 416 stainless	17-4 PH or 416 stainless steel
Handle-BLPT,BLPL,ABP	Aluminum alloy, black or plain finish	Aluminum alloy, black or plain finish
Handle-BLPR,BLPB,BPD	Carbon steel, zinc or cadmium plated, or aluminum alloy, black finish	303 stainless, or aluminum alloy, black finish
Collar	Carbon steel, zinc or cadmium plated	303 stainless
Button	Carbon steel, zinc or cadmium plated, or aluminum alloy, anodized	302 or 303 stainless, or aluminum alloy, anodized
Balls	440 C stainless	440 C stainless
Spring	17-7PH, 302 stainless, or music wire	17-7PH or 302 stainless
Handle Ring	Carbon steel, zinc or cadmium plated, or 302 stainless	302 stainless
S-Hook	Carbon steel, zinc or cadmium plated, or 302 stainless	302 stainless
S-Hook Band	Carbon steel, zinc or cadmium plated, or 15-7MO or 302 stainless	15-7MO or 302 stainless

STRENGTH DATA (USA)

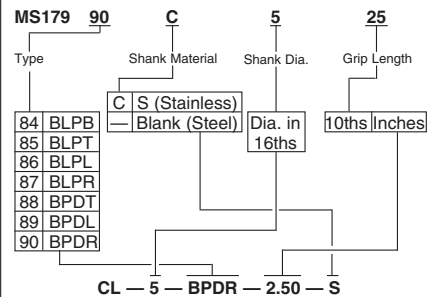
NOM. DIA	RECOMMENDED HOLE DIA		BLP, BPD, ABP APPROXIMATE PULL OUT STRENGTH (LBS)	BLP, BPD, ABP, LFP CALCULATED DOUBLE SHEAR STRENGTH (LBS)***		DEP CALCULATED DOUBLE SHEAR STRENGTH (LBS)***		BLP, BPD APPROX. WEIGHT (OUNCES)		DEP INSERTION/REMOVAL FORCE (LBS)	
	MAX	MIN		STEEL	STAINLESS	STEEL	STAINLESS	HANDLE	PER IN.	MAX	MIN
3/16 (#10)	.194	.190	200	2,100	2,300	2,200	2,000	1.25	.15	7	2
1/4	.254	.250	230	4,000	4,500	4,200	2,200	1.75	.25	7	2
5/16	.317	.313	510	6,000	7,100	6,700	3,500	2.00	.40	14	6
3/8	.379	.375	575	9,200	10,200	9,700	5,000	2.40	.50	14	6
7/16	.443	.438	710	12,300	13,600	13,200	7,000	2.90	.62	17	8
1/2	.505	.500	1160	16,000	18,000	17,500	9,200	3.40	.80	22	10
9/16	.568	.563	1420	20,500	23,000	22,000	11,500	3.65	1.20	22	10
5/8	.630	.625	2070	25,500	28,700	27,500	13,500	4.00	1.35	30	15
3/4	.757	.750	2970	36,700	41,000	39,500	20,500	4.25	2.30	30	15
7/8	.882	.875	3900	50,000	56,200	50,000	28,500	8.31	2.73	35	20
1	1.010	1.000	5400	65,500	73,500	70,700	37,200	9.00	3.47	40	20

STRENGTH DATA (METRIC)

5mm	.201	.197	230	2,600	3,000	2,500	1,400	1.25	.15	7	2
6mm	.240	.236	230	4,000	4,400	4,000	2,100	1.75	.25	7	2
8mm	.319	.315	510	7,000	8,000	7,200	3,700	2.00	.40	14	6
10mm	.398	.394	710	11,000	12,500	11,400	5,800	2.40	.50	14	6
12mm	.477	.472	1160	16,000	18,000	16,500	8,500	3.40	.80	22	10
16mm	.635	.630	2070	29,000	32,500	29,500	15,400	4.00	1.35	30	15
20mm	.794	.787	2970	45,200	50,900	46,100	21,600	4.25	2.30	30	15

MS CONVERSIONS

(MS-certified pins available as specials at higher cost)

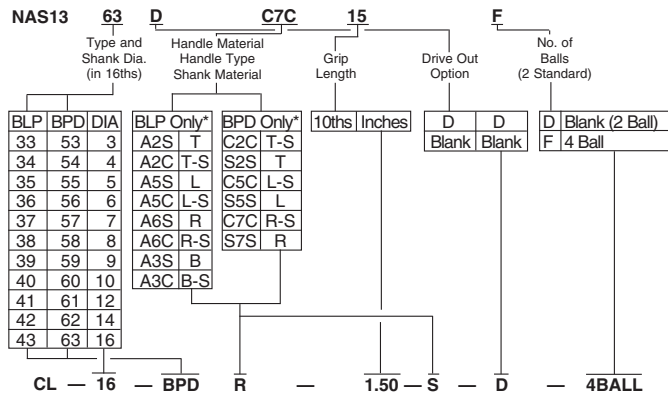


**Pins with grip lengths over 8" (special) are not heat treated, in order to maintain straightness. Double shear strength will be reduced approximately 20-50%. Steel pins over 8" long will have a black oxide finish instead of plating. Pins in larger diameters than listed here are available as specials (may be made from alternate steels).

***2:1 Safety factor

NAS CONVERSIONS

(NAS-certified pins available as specials at higher cost)



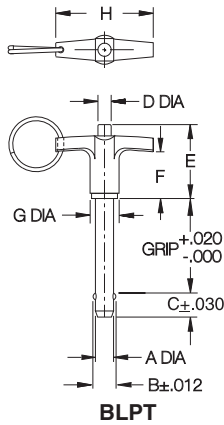
*These are the only standard combinations of Handle Material, Handle Style, Spindle Material, and BLP-BPD type directly convertible from NAS to Carr Lane. Other combinations are available as specials.

BALL LOCK PINS

SEE PAGE 35 FOR MATERIAL SPECIFICATIONS



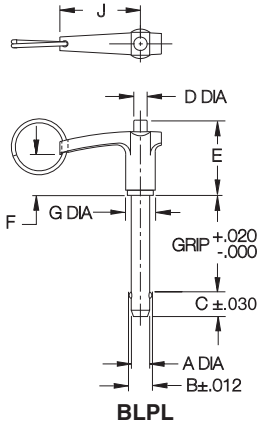
T Handle



BLPT



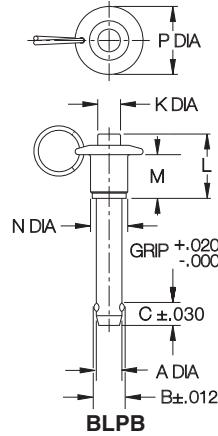
L Handle



BLPL



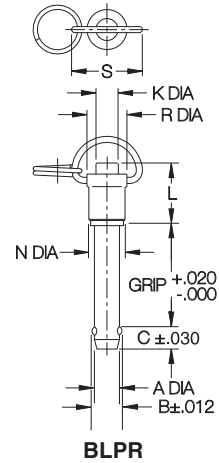
Button Handle



BLPB



Ring Handle



BLPR

USA

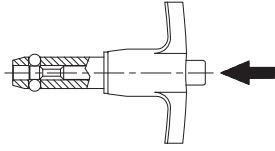
PART NO.	A DIA		B	C	D DIA	E	F	G DIA	H	J	K DIA	L	M	N DIA	P DIA	R DIA	S
	NOMINAL	ACTUAL															
CL- 3-BLPx-x.xx	3/16 (#10)	.1885/.1870	.219	.245	.22	1.26	.78	.47	1.75	1.50	.22	1.26	.89	.47	.82	.57	1.13
CL- 4-BLPx-x.xx	1/4	.2485/.2470	.290	.275	.22	1.26	.78	.47	1.75	1.50	.22	1.26	.89	.47	.82	.57	1.13
CL- 5-BLPx-x.xx	5/16	.3110/.3095	.375	.315	.27	1.47	.94	.59	2.00	1.62	.27	1.47	1.02	.59	1.00	.69	1.13
CL- 6-BLPx-x.xx	3/8	.3735/.3720	.438	.350	.27	1.47	.94	.59	2.00	1.62	.27	1.47	1.02	.59	1.00	.69	1.13
CL- 7-BLPx-x.xx	7/16	.4360/.4345	.508	.365	.39	1.61	1.06	.75	2.25	1.88	.39	1.61	1.08	.75	1.31	.82	1.33
CL- 8-BLPx-x.xx	1/2	.4985/.4970	.592	.445	.39	1.61	1.06	.75	2.25	1.88	.39	1.61	1.08	.75	1.31	.82	1.33
CL- 9-BLPx-x.xx	9/16	.5610/.5595	.666	.495	.50	1.81	1.06	.93	3.00	2.50	.50	1.81	1.25	.93	1.56	1.01	1.33
CL-10-BLPx-x.xx	5/8	.6235/.6220	.750	.565	.50	1.81	1.06	.93	3.00	2.50	.50	1.81	1.25	.93	1.56	1.01	1.33
CL-12-BLPx-x.xx	3/4	.7485/.7470	.886	.655	.71	2.07	1.25	1.31	3.50	2.90	.71	2.07	1.49	1.31	2.16	1.41	1.90
CL-14-BLPx-x.xx	7/8	.8735/.8720	1.044	.745	.71	2.07	1.25	1.31	3.50	2.90	.71	2.07	1.49	1.31	2.16	1.41	1.90
CL-16-BLPx-x.xx	1	.9985/.9970	1.217	.875													

METRIC

CLM-5-BLPx-xx	5mm	.1954/.1939	.212	.245													
CLM-6-BLPx-xx	6mm	.2347/.2332	.278	.275	.22	1.26	.78	.47	1.75	1.50	.22	1.26	.89	.47	.82	.57	1.13
CLM-8-BLPx-xx	8mm	.3135/.3120	.371	.315													
CLM-10-BLPx-xx	10mm	.3922/.3907	.469	.350	.27	1.47	.94	.59	2.00	1.62	.27	1.47	1.02	.59	1.00	.69	1.13
CLM-12-BLPx-xx	12mm	.4709/.4694	.567	.445							.39	1.61	1.08	.75	1.31	.82	1.33
CLM-16-BLPx-xx	16mm	.6284/.6269	.748	.565	.50	1.81	1.06	.93	3.00	2.50	.50	1.81	1.25	.93	1.56	1.01	1.33
CLM-20-BLPx-xx	20mm	.7859/.7844	.948	.795							.71	2.07	1.49	1.31	2.16	1.41	1.74

BALL LOCK PINS

SEE PAGE 35 FOR MATERIAL SPECIFICATIONS



Precision alignment pin with a ground shank. This popular single-acting type is 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. Widest range of types and sizes, in steel or stainless steel. Choice of four handle styles: T, L, Button, and Ring. Standard shank diameters from 3/16 to 1" (5 to 20mm in metric). Any grip length up to 6" (150mm in metric) is available as standard, at no extra charge. Available from stock in many standard grip lengths, or quickly made to order in custom lengths and diameters.

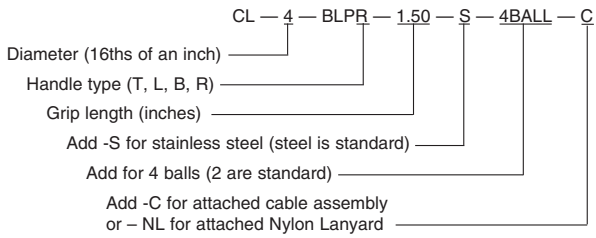


Options

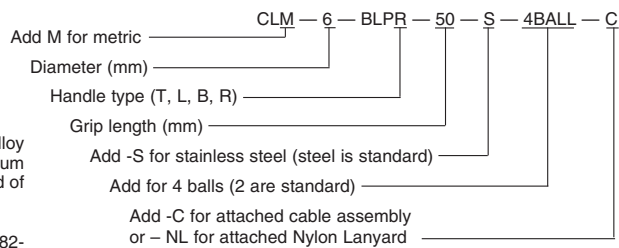
Ball Lock Pins are optionally available in stainless steel instead of alloy steel for greater corrosion resistance. (Note: Both types have aluminum handles, and buttons.) Pins are also available with four balls instead of two, as specials, for more-distributed ball-contact force.

The optional attached Cable Assembly (-C) is 12" long (part no. CL-82-KA-12.0 if ordered separately), while the optional attached Nylon Lanyard (-NL) is 10" long (part no. CL-1-NL-10 if ordered separately). Both have an eyelet at the free end for a #10 or M5 attachment screw.

Ordering Example (USA):



Ordering Example (Metric):



STOCK GRIP LENGTHS (USA)

PART NO.	NOMINAL SHANK DIA	GRIP LENGTH (INCHES)															
		.50	.75	1.00	1.25	1.50	1.75	2.00	2.25	2.50	3.00	3.50	4.00	4.50	5.00	5.50	6.00
CL-3-BLPx-x.xx	3/16 (#10)	•••••	•	X X X X	X ••••	X X X X		X ••••		••••	•••••	•	•				
CL-4-BLPx-x.xx	1/4	X X X •	X • X •	X X X X	X ••••	X X X X	••••	X X X X	••••	X X X •	•••••	X ••••	••••	••		•	
CL-5-BLPx-x.xx	5/16	••••	•	X X X •	••••	X X X •	••••	X X X •	•	X X ••	•••••	•••••	••	•		•	
CL-6-BLPx-x.xx	3/8	••••	X ••	X X X X	••••	X X X •	••••	X X X •	••••	X X X •	X X X •	X ••••	X ••••	••••	•	••	
CL-7-BLPx-x.xx	7/16			••••	••••	••••	••••	••••	••••	••••	••••	••••	••••	••••	••••	••	
CL-8-BLPx-x.xx	1/2	•	••	X ••••	X X •	X X X •	X X ••	X X X •	•	X X X •	X X ••	X ••••	X ••••	•••••	••••	X ••••	
CL-9-BLPx-x.xx	9/16							••••		••••	••••	••••	•				
CL-10-BLPx-x.xx	5/8					••••		••••		••••	••••	••••	••	••		•	
CL-12-BLPx-x.xx	3/4					••		X ••••		X X ••	X X ••	X •	X ••	••	X ••••	X •	
CL-14-BLPx-x.xx	7/8							••		••	••	••		••	••	••	
CL-16-BLPx-x.xx	1							••		••	••	••	•	••	••	••	

STOCK GRIP LENGTHS (METRIC)

PART NO.	NOMINAL SHANK DIA	GRIP LENGTH (mm)														
		10	15	20	25	30	40	50	60	70	80	90	100			
CLM-5-BLPx-xx	5mm															
CLM-6-BLPx-xx	6mm	••	••	••	••	••	••	••	••							••
CLM-8-BLPx-xx	8mm			•	•	•	•	••	••							
CLM-10-BLPx-xx	10mm				••	••	••	••	••							••
CLM-12-BLPx-xx	12mm					••	••	••	••				•			••
CLM-16-BLPx-xx	16mm									••						
CLM-20-BLPx-xx	20mm															

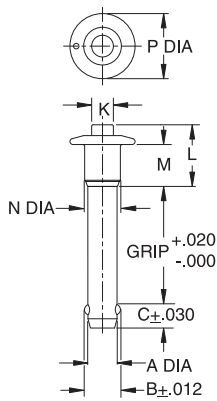
• = STOCKED IN ALLOY STEEL ONLY
X = STOCKED IN ALLOY AND STAINLESS STEEL

MARINE BALL LOCK PINS

**NOW ALSO
AVAILABLE IN
LARGER DIAMETERS!**



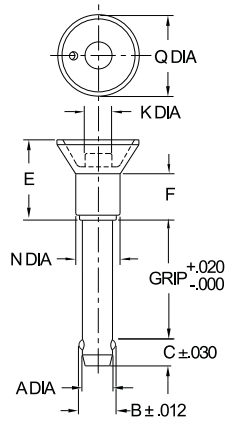
Button Handle (B)



MBPB



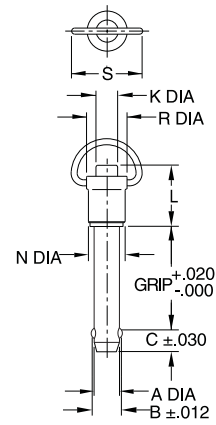
Recessed Button Handle (M)



MBPM



Ring Handle (R)



MBPR

USA

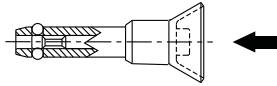
PART NO.	A DIA		B	C	E	F	K DIA	L	M	N DIA	P DIA	Q DIA	R	S
	NOMINAL	ACTUAL												
CL-3-MBPx-x.xx-S	3/16 (#10)	.1885/.1870	.219	.245	.94	.62	.25	.81	.56	.47	.79	1.00	.52	1.13
CL-4-MBPx-x.xx-S	1/4	.2485/.2470	.290	.275							.88		.58	
CL-5-MBPx-x.xx-S	5/16	.3110/.3095	.375	.315	1.00	.68		.92	.65	.59	1.00	1.00	.64	1.13
CL-6-MBPx-x.xx-S	3/8	.3735/.3720	.438	.350	1.06	.78	.31	.98	.65	.59	1.00	1.00	.64	1.13
CL-8-MBPx-x.xx-S	1/2	.4985/.4970	.592	.445	1.19	.93	.44	1.20	.80	.75	1.31	1.12	.80	1.33
CL-10-MBPx-x.xx-S	5/8	.6235/.6220	.750	.565			.44							1.33
CL-12-MBPx-x.xx-S	3/4	.7485/.7470	.886	.655	1.50	1.00	.50	1.56	1.00	.93	1.56	1.50	1.01	1.74

METRIC

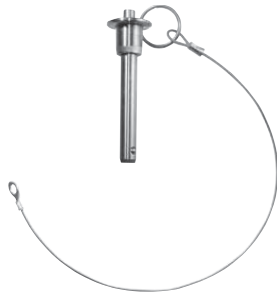
CLM-5-MBPx-xx-S	5mm	.1954/.1939	.212	.245	.94	.62	.22	.81	.56	.47	.82	1.00	.52	1.13
CLM-6-MBPx-xx-S	6mm	.2347/.2332	.278	.275									.58	
CLM-8-MBPx-xx-S	8mm	.3135/.3120	.371	.315	1.00	.68		.92	.65	.59	1.00	1.00	.64	1.13
CLM-10-MBPx-xx-S	10mm	.3922/.3907	.469	.350	1.06	.78	.27	.98	.65	.59	1.00	1.00	.64	1.13
CLM-12-MBPx-xx-S	12mm	.4709/.4694	.567	.445	1.19	.93	.39	1.20	.80	.75	1.31	1.33	.80	1.33
CLM-16-MBPx-xx-S	16mm	.6283/.6268	.748	.565	1.50	1.00	.50	1.56	1.00	.93	1.56	1.50	1.01	1.33

MARINE BALL LOCK PINS

SHANK & SPINDLE: 17-4PH STAINLESS STEEL
HANDLE AND BUTTON: 300-SERIES STAINLESS STEEL
SPRING: 17-7 OR 300-SERIES STAINLESS STEEL
BALLS: 440C OR 300-SERIES STAINLESS STEEL



Similar to our standard single-acting Ball Lock Pins in stainless steel, except this type has its handle and button made of 300-series stainless steel. Choice of three handle styles: Buttons, Recessed Button and Ring. Shank diameters from 3/16 to 3/4" (5 to 16mm in metric), each available in a choice of several standard grip lengths. Available from stock only in the standard grip lengths listed below (other grip length available as specials).



Optional Cable

The optional attached Cable Assembly (-C) is 12" long (part no. CL-82-KA-12.0 if ordered separately), while the optional attached Nylon Lanyard (-NL) is 10" long (part no. CL-1-NL-10 if ordered separately). Both have an eyelet at the free end for a #10 or M5 attachment screw.

Ordering Example (USA):

CL - 4 - MBPR - 1.50 - S - C
 Diameter (16ths) ————
 Handle type (B, M, or R) ————
 Grip length (inches) ————
 Add -C for attached cable assembly
 or - NL for attached Nylon Lanyard

Ordering Example (Metric):

CLM - 6 - MBPR - 50 - S - C
 Diameter (mm) ————
 Diameter (mm) ————
 Handle type (B, M, or R) ————
 Grip length (mm) ————
 Add -C for attached cable assembly
 or - NL for attached Nylon Lanyard

STANDARD STOCK GRIP LENGTHS (USA)

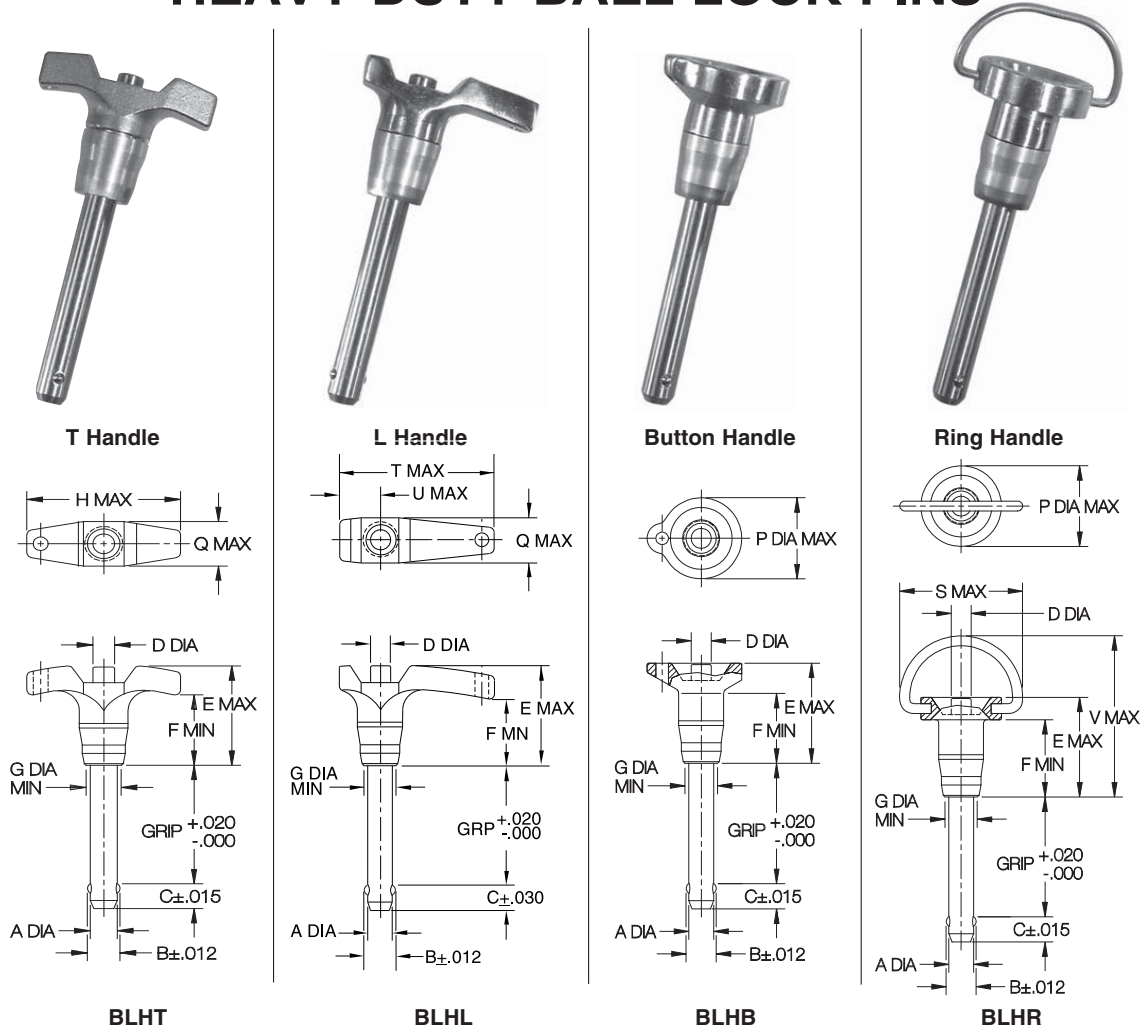
PART NO.	NOMINAL SHANK DIA	GRIP LENGTH (INCHES)												
		0.50 BMR	0.75 BMR	1.00 BMR	1.25 BMR	1.50 BMR	1.75 BMR	2.00 BMR	2.25 BMR	2.50 BMR	3.00 BMR	3.50 BMR	4.00 BMR	4.50 BMR
CL-3-MBPx-x.xx-S	3/16 (#10)	XXX	XXX	XXX	XXX	XXX								
CL-4-MBPx-x.xx-S	1/4	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX				
CL-5-MBPx-x.xx-S	5/16		XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	
CL-6-MBPx-x.xx-S	3/8		XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	
CL-8-MBPx-x.xx-S	1/2			XXX		XXX		XXX		XXX		XXX	XXX	XXX
CL-10-MBPx-x.xx-S	5/8					XXX		XXX		XXX	XXX			
CL-12-MBPx-x.xx-S	3/4							XXX		XXX	XXX			

STANDARD STOCK GRIP LENGTHS (METRIC)

PART NO.	NOMINAL SHANK DIA	GRIP LENGTH (mm)											
		10 BMR	15 BMR	20 BMR	25 BMR	30 BMR	40 BMR	50 BMR	60 BMR	70 BMR	80 BMR	100 BMR	
CLM-5-MBPx-xx-S	5mm	XXX	XXX	XXX	XXX	XXX	XXX	XXX					
CLM-6-MBPx-xx-S	6mm	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX				
CLM-8-MBPx-xx-S	8mm			XXX	XXX	XXX	XXX	XXX	XXX		XXX	XXX	
CLM-10-MBPx-xx-S	10mm			XXX	XXX	XXX	XXX	XXX	XXX		XXX	XXX	
CLM-12-MBPx-xx-S	12mm				XXX	XXX	XXX	XXX	XXX		XXX	XXX	
CLM-16-MBPx-xx-S	16mm							XXX					

X = STOCKED IN STAINLESS STEEL

HEAVY-DUTY BALL LOCK PINS



USA

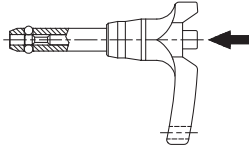
PART NO.	A DIA		B	C	D DIA	E	F	G DIA	H	P DIA	Q	S	T	U	V
	NOMINAL	ACTUAL													
CL-3-BLHx-x.xx-S	3/16 (#10)	.1885/.1870	.220	.245	.25	1.27	.70	.38	1.82	1.07	.63	1.56	1.95	.54	2.13
CL-4-BLHx-x.xx-S	1/4	.2485/.2470	.289	.275	.25	1.27	.70	.38	1.82	1.07	.63	1.56	1.95	.54	2.13
CL-5-BLHx-x.xx-S	5/16	.3110/.3095	.375	.315	.25	1.27	.70	.38	1.82	1.07	.63	1.56	1.95	.54	2.13
CL-6-BLHx-x.xx-S	3/8	.3735/.3720	.440	.350	.25	1.27	.70	.38	1.82	1.07	.63	1.56	1.95	.54	2.13
CL-7-BLHx-x.xx-S	7/16	.4360/.4345	.509	.365	.30	1.60	.85	.51	2.35	1.39	.80	2.00	2.51	.70	2.34
CL-8-BLHx-x.xx-S	1/2	.4985/.4970	.594	.445	.30	1.60	.85	.51	2.35	1.39	.80	2.00	2.51	.70	2.34

METRIC

CLM-5-BLHx-xx-S	5mm	.1954/.1939	.210	.245	.25	1.27	.70	.38	1.82	1.07	.63	1.56	1.95	.54	2.13
CLM-6-BLHx-xx-S	6mm	.2347/.2332	.275	.275	.25	1.27	.70	.38	1.82	1.07	.63	1.56	1.95	.54	2.13
CLM-8-BLHx-xx-S	8mm	.3135/.3120	.371	.315	.25	1.27	.70	.38	1.82	1.07	.63	1.56	1.95	.54	2.13
CLM-10-BLHx-xx-S	10mm	.3922/.3907	.467	.350	.30	1.60	.85	.51	2.35	1.39	.80	2.00	2.51	.70	2.34
CLM-12-BLHx-xx-S	12mm	.4709/.4694	.569	.445	.30	1.60	.85	.51	2.35	1.39	.80	2.00	2.51	.70	2.34

HEAVY-DUTY BALL LOCK PINS

SHANK & SPINDLE: 17-4PH OR 15-7MO STAINLESS STEEL
HANDLE: 17-4PH STAINLESS STEEL
HEAD & BUTTON: 303 STAINLESS STEEL
R-HANDLE RING: 302 STAINLESS STEEL
SPRING & ATTACHING RING: 17-7PH OR 302 STAINLESS STEEL
BALLS: 440C STAINLESS STEEL



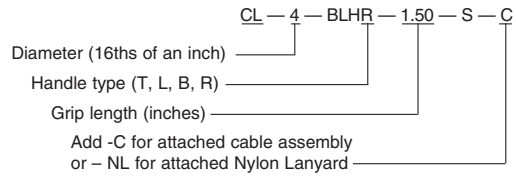
Similar to our standard single-acting Ball Lock Pins, except with a heavier handle for rough service. Available only in stainless steel. Handles are made of solid stainless for maximum impact strength, and are specially shaped to prevent accidentally pressing the release button. Choice of four handle styles: T, L, Button, and Ring. Shank diameters from 3/16 to 1/2" (5 to 12mm in metric), each in a choice of several standard grip lengths. Available from stock only (not made to order).



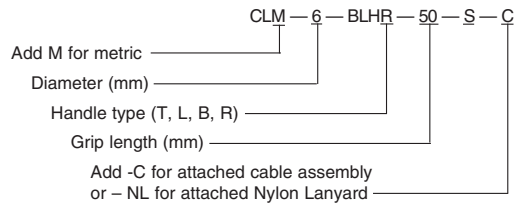
Optional Cable

The optional attached Cable Assembly (-C) is 12" long, while the optional attached Nylon Lanyard (-NL) is 10" long. Both have an eyelet at the free end for a #10 or M5 attachment screw.

Ordering Example (USA):



Ordering Example (Metric):



STANDARD STOCK GRIP LENGTHS (USA)

PART NO.	NOMINAL SHANK DIA	GRIP LENGTH (INCHES)														
		.50	.75	1.00	1.25	1.50	1.75	2.00	2.25	2.50	3.00	3.50	4.00	4.50	5.00	6.00
CL-3-BLHx-xx-S	3/16 (#10)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
CL-4-BLHx-xx-S	1/4	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
CL-5-BLHx-xx-S	5/16	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
CL-6-BLHx-xx-S	3/8	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
CL-7-BLHx-xx-S	7/16			x	x	x	x	x	x	x	x	x	x	x	x	x
CL-8-BLHx-xx-S	1/2			x	x	x	x	x	x	x	x	x	x	x	x	x

STOCK GRIP LENGTHS (METRIC)

PART NO.	NOMINAL SHANK DIA	GRIP LENGTH (mm)														
		10	15	20	25	30	40	50	60	70	80	100				
CLM-5-BLHx-xx-S	5mm	x	x	x	x	x	x	x	x	x	x	x				
CLM-6-BLHx-xx-S	6mm	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
CLM-8-BLHx-xx-S	8mm			x	x	x	x	x	x	x	x	x	x	x	x	x
CLM-10-BLHx-xx-S	10mm			x	x	x	x	x	x	x	x	x	x	x	x	x
CLM-12-BLHx-xx-S	12mm				x	x	x	x	x	x	x	x	x	x	x	x

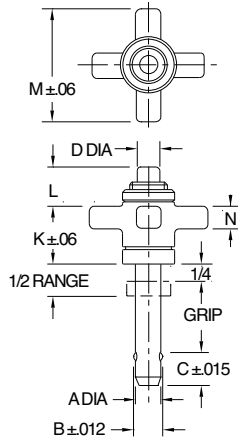
X = Stocked in stainless steel.

ADJUSTABLE BALL LOCK PINS

SEE PAGE 35 FOR MATERIAL SPECIFICATIONS



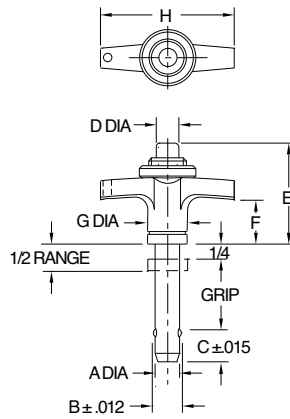
Knob Handle



ABPK



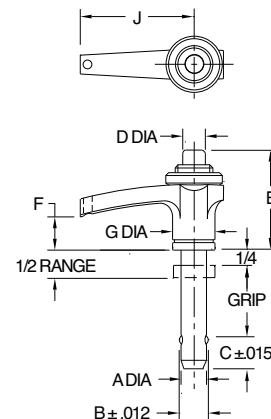
T Handle



ABPT



L Handle



ABPL

USA

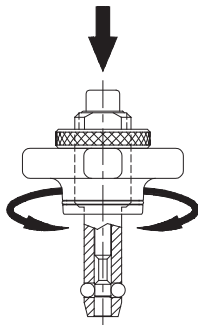
PART NO.	A DIA		B	C	D DIA	E	F	G DIA	H	J	K	L	M	N
	NOMINAL	ACTUAL												
CL-4-ABPx-x.xx	1/4	.2485/.2470	.290	.275	.22	1.51	1.06	.75	2.25	1.87	.88	.58	1.75	.38
CL-5-ABPx-x.xx	5/16	.3110/.3095	.375	.315	.27	1.48	1.06	.93	3.00	2.50	.88	.63	2.12	.44
CL-6-ABPx-x.xx	3/8	.3735/.3720	.438	.350	.27	1.48	1.06	.93	3.00	2.50	1.00	.55	2.12	.44
CL-7-ABPx-x.xx	7/16	.4360/.4345	.508	.365	.39	1.55	1.06	.93	3.00	2.50	1.00	.55	2.12	.44
CL-8-ABPx-x.xx	1/2	.4985/.4970	.592	.445	.50	2.07	1.25	1.31	3.50	2.87	1.25	1.13	2.75	.50
CL-9-ABPx-x.xx	9/16	.5610/.5595	.666	.495	.71	2.34	1.62	1.50	4.30	4.00	1.62	1.00	4.00	.75
CL-10-ABPx-x.xx	5/8	.6235/.6220	.750	.565										
CL-12-ABPx-x.xx	3/4	.7485/.7470	.886	.655										
CL-14-ABPx-x.xx	7/8	.8735/.8720	1.044	.745										
CL-16-ABPx-x.xx	1	.9985/.9970	1.217	.875										

METRIC

CLM-6-ABPx-xx	6mm	.2346/.2331	.278	.275	.22	1.51	1.06	.75	2.25	1.87	.88	.65	1.75	.38
CLM-8-ABPx-xx	8mm	.3134/.3118	.371	.315								.75		
CLM-10-ABPx-xx	10mm	.3921/.3906	.469	.350								.72	2.12	.44
CLM-12-ABPx-xx	12mm	.4709/.4693	.567	.445	.27	1.48	1.06	.93	3.00	2.50	1.00	.73	2.12	.44
CLM-16-ABPx-xx	16mm	.6283/.6268	.748	.565								1.25	1.13	
CLM-20-ABPx-xx	20mm	.7858/.7843	.948	.795	.50	2.07	1.25	1.31	3.50	2.87	2.00	1.00	2.75	.50

ADJUSTABLE BALL LOCK PINS

SEE PAGE 35 FOR MATERIAL SPECIFICATIONS



Adjustable Ball Lock Pins can be used for clamping, or simply to provide a variable grip length.

These Ball Lock Pins have an adjustable grip length. They can be used for clamping, or simply to provide a variable grip length. The threaded handle turns to provide a +/- 1/4" clamping range or adjustment range. When used just for variable grip length (not for clamping), the handle can be secured with the supplied knurled locknut. These single-acting pins are manufactured with four balls as standard, instead of two, for more-distributed ball-pullout force in clamping applications. Available in steel or stainless steel.

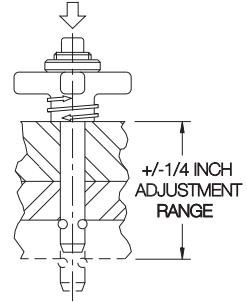
Choice of three handle styles: Knob, T, and L. Standard shank diameters from 1/4 to 1" (6 to 20mm in metric), each in a choice of many standard grip lengths. Available from stock only in the standard grip lengths listed below. Other grip lengths are available as specials (extra charge and longer delivery time).

Pins are optionally available in stainless steel instead of alloy steel, for greater corrosion resistance. Note: both steel and stainless pins have aluminum handles and buttons.

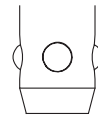
- CL-4-ABPK-1.50 (steel)
- CL-4-ABPK-1.50-S (stainless)

To order pins with a standard cable assembly attached (#2 cable size, 12" long, with a terminal at the free end for a #10 or M5 attachment screw), add "-C" to the part number:

- CL-4-ABPK-1.50-S-C



Grip length adjusts +/- 1/4" from nominal.



Four balls are standard on Adjustable Ball Lock Pins, to provide more distributed ball-pullout force in clamping applications.

STOCK GRIP LENGTHS (USA)

PART NO.	NOMINAL SHANK DIA	GRIP LENGTH (INCHES)															
		.50	.75	1.00	1.25	1.50	1.75	2.00	2.25	2.50	3.00	3.50	4.00	4.50	5.00	5.50	6.00
CL-4-ABPx-xxx	1/4	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
CL-5-ABPx-xxx	5/16	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
CL-6-ABPx-xxx	3/8	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
CL-7-ABPx-xxx	7/16																
CL-8-ABPx-xxx	1/2			x	x	x	x	x	x	x	x	x	x	x	x	x	
CL-9-ABPx-xxx	9/16																
CL-10-ABPx-xxx	5/8			x	x	x		x	x	x	x	x	x	x	x	x	
CL-12-ABPx-xxx	3/4			x	x	x		x	x	x	x	x	x	x	x	x	
CL-14-ABPx-xxx	7/8																
CL-16-ABPx-xxx	1								x	x	x	x	x	x	x	x	

STOCK GRIP LENGTHS (METRIC)

PART NO.	NOMINAL SHANK DIA	GRIP LENGTH (mm)											
		10	15	20	25	30	40	50	60	70	80	90	100
CLM-6-ABPx-xx	6mm			x	x	x		x	x	x	x	x	
CLM-8-ABPx-xx	8mm			x	x			x	x	x	x	x	
CLM-10-ABPx-xx	10mm							x	x	x	x	x	
CLM-12-ABPx-xx	12mm												
CLM-16-ABPx-xx	16mm												
CLM-20-ABPx-xx	20mm												

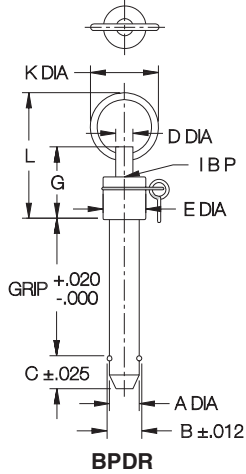
X = STOCKED IN ALLOY AND STAINLESS STEEL

DOUBLE-ACTING BALL LOCK PINS

SEE PAGE 35 FOR MATERIAL SPECIFICATIONS



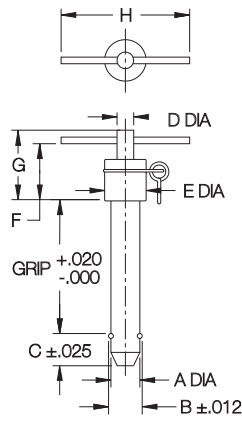
Ring Handle



BPDR



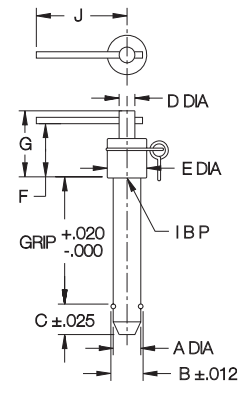
T Handle



BPDT



L Handle



BPDL

USA

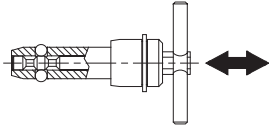
PART NO.	A DIA		B	C	D DIA	E DIA	F	G	H	J	K DIA	L	M	
	NOMINAL	ACTUAL												
CL-3-BPDx-x.xx	3/16 (#10)	.1885/.1870	.219	.385	.19	7/16					1	1.86	.12	
CL-4-BPDx-x.xx	1/4	.2485/.2470	.290				.86	1.02	1-1/2	1-1/4				.12
CL-5-BPDx-x.xx	5/16	.3110/.3095	.375	.415		1/2								.14
CL-6-BPDx-x.xx	3/8	.3735/.3720	.438	.485	.25	5/8	.86	1.06	1-15/16	1-7/16			.15	
CL-7-BPDx-x.xx	7/16	.4360/.4345	.508										.16	
CL-8-BPDx-x.xx	1/2	.4985/.4970	.592	.565									.18	
CL-9-BPDx-x.xx	9/16	.5610/.5595	.666	.635	.31	11/16	.97	1.24	2-3/16	1-19/32			.18	
CL-10-BPDx-x.xx	5/8	.6235/.6220	.750	.725	.43	13/16	1.14	1.44					2.45	
CL-12-BPDx-x.xx	3/4	.7485/.7470	.886	.765		15/16	1.13	1.43	2-7/16	1-3/4		1-5/16	2.44	
CL-14-BPDx-x.xx	7/8	.8735/.8720	1.044	.925	.56	1-1/8	1.29	1.59					2.62	
CL-16-BPDx-x.xx	1	.9985/.9970	1.217	1.075		1-1/4	1.47	1.77	2-25/32	2-3/16	2.79			

METRIC

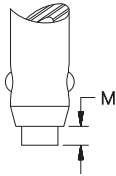
CLM-5-BPDx-xx	5mm	.1954/.1939	.212	.385	.19	7/16					1	1.86	.12	
CLM-6-BPDx-xx	6mm	.2347/.2332	.278				.86	1.02	1-1/2	1-1/4				.12
CLM-8-BPDx-xx	8mm	.3135/.3120	.371	.415	.25	1/2								.14
CLM-10-BPDx-xx	10mm	.3922/.3907	.469	.485		5/8	.86	1.06	1-15/16	1-7/16			.15	
CLM-12-BPDx-xx	12mm	.4709/.4694	.567	.565	.31	11/16	.97	1.24	2-3/16	1-19/32			.18	
CLM-16-BPDx-xx	16mm	.6284/.6269	.748	.725	.43	13/16	1.14	1.44	2-7/16	1-3/4		1-5/16	2.45	
CLM-20-BPDx-xx	20mm	.7859/.7844	.948	.925	.56	1-1/8	1.29	1.59	2-25/32	2-3/16			2.62	

DOUBLE-ACTING BALL LOCK PINS

SEE PAGE 35 FOR MATERIAL SPECIFICATIONS



Similar to a single-acting pin, except the center spindle has *two* grooves instead of one, to release the ball by either pushing or pulling. Pushing on the handle releases the balls and inserts the pin in one motion. Pulling on the handle releases the balls and removes the pin in one motion. Available in steel or stainless steel. Choice of three handle styles: T, L, and Ring. Standard shank diameters from 3/16 to 1" (5 to 20mm in metric). Any grip length up to 6" (150mm in metric) is available as a standard, at no extra charge. Available from stock in some standard grip lengths, or quickly made to order in custom lengths and diameters.



Drive-Out Option

Double-acting Ball Lock Pins are available with a "drive-out" option, where the center spindle extends slightly beyond the shank end (see M dimension). This allows removing a pin under slight shear load by tapping the shank end with a hammer (releasing the balls at the same time).

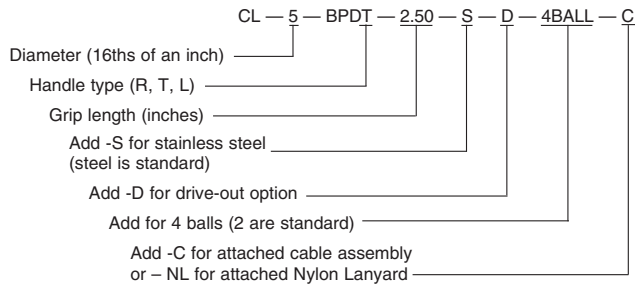


Other Options

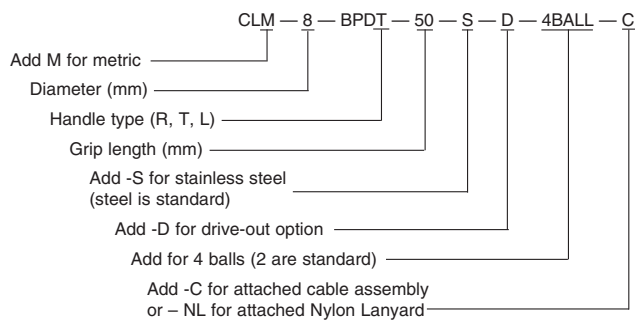
Ball Lock Pins are optionally available in stainless steel instead of alloy steel for greater corrosion resistance. Pins are also available with four balls instead of two, as specials, for additional pull-out strength and more distributed ball-contact force.

The optional attached Cable Assembly (-C) is 12" long (part no. CL-82-KA-12.0 if ordered separately), while the optional attached Nylon Lanyard (-NL) is 10" long (part no. CL-1-NL-10 if ordered separately). Both have an eyelet at the free end for a #10 or M5 attachment screw.

Ordering Example (USA):



Ordering Example (Metric):



STOCK GRIP LENGTHS (USA) ALLOY STEEL

PART NO.	NOMINAL SHANK DIA	GRIP LENGTH (INCHES)													
		1.00 R T L	1.25 R T L	1.50 R T L	1.75 R T L	2.00 R T L	2.50 R T L	3.00 R T L	3.50 R T L	4.00 R T L	5.00 R T L				
CL-3-BPDx-x.xx	3/16 (#10)	••		••											
CL-4-BPDx-x.xx	1/4	••	•	••		••	•								
CL-5-BPDx-x.xx	5/16														
CL-6-BPDx-x.xx	3/8	••		••		••	••	•							
CL-7-BPDx-x.xx	7/16														
CL-8-BPDx-x.xx	1/2	•		••••	•	••	••	••	••	•	•				
CL-9-BPDx-x.xx	9/16														
CL-10-BPDx-x.xx	5/8														
CL-12-BPDx-x.xx	3/4														
CL-14-BPDx-x.xx	7/8														
CL-16-BPDx-x.xx	1														