BALL LOCK PINS

STRENGTH DATA (INCH)

NOM. DIA	ALLOWABLE 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)

NOM. DIA	ALLOWABLE 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
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

**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

MS CONVERSIONS

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

MS179 — 90 (Type) — C (Shank Material) — 5 (Shank Dia.) — 25 (Grip Length)

84	BLPB
85	BLPT
86	BLPL
87	BLPR
88	BPDT
89	BPDL
90	BPDR

C	S (Stainless)
—	Blank (Steel)

Dia. in 16ths

10ths | Inches

Example: CL — 5 — BPDR — 2.50 — S

NAS CONVERSIONS

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

NAS13 — 63 (Type and Shank Dia. (in 16ths)) — D (Handle Material, Handle Type, Shank Material) — C7C — 15 (Grip Length) — F (No. of Balls (2 Standard))

BLP	BPD	DIA
33	53	3
34	54	4
35	55	5
36	56	6
37	57	7
38	58	8
39	59	9
40	60	10
41	61	12
42	62	14
43	63	16

BLP Only*	
A2S	T
A2C	T-S
A5S	L
A5C	L-S
A6S	R
A6C	R-S
A3S	B
A3C	B-S

BPD Only*	
C2C	T-S
S2S	T
C5C	L-S
S5S	L
C7C	R-S
S7S	R

10ths | Inches

D	D
Blank	Blank

D	Blank (2 Ball)
F	4 Ball

Example: CL — 16 — BPD — R — — 1.50 — S — D — 4BALL

*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.

Knowledge is POWER – Motion Force Control is our Business
HYQUIP Limited New Brunswick Street Horwich Bolton Lancashire BL6 7JB UK

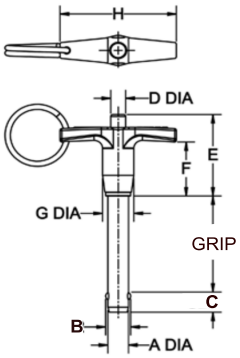
BALL LOCK PINS

T Handle

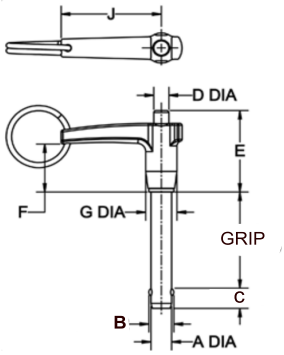
L Handle

Button Handle

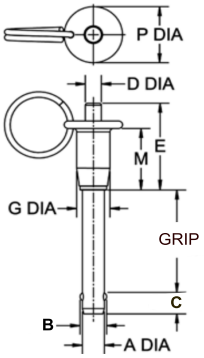
Ring Handle



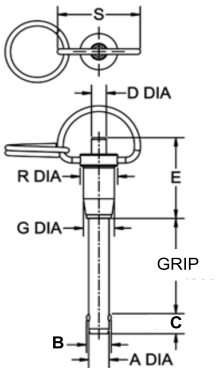
BLPT



BLPL



BLPB



BLPR

INCH

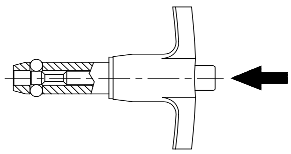
PART NO.	A DIA NOMINAL	A DIA ACTUAL	B ±.012	C ±.010	D DIA	E	F	G DIA	H	J	K DIA	L	M	N DIA	P DIA	R DIA	S
CL- 3-BLPx-x.xx	3/16 (#10)	.1885/.1870	.219	.245	.22	1.26	.78	.47	1.75	1.50	.22	1.26	.89	.47	.82	.57	1.13
CL- 4-BLPx-x.xx	1/4	.2485/.2470	.290	.275													
CL- 5-BLPx-x.xx	5/16	.3110/.3095	.375	.315													
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													
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													
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													
CL-14-BLPx-x.xx	7/8	.8735/.8720	1.044	.745	.71	2.07	1.25	1.30	3.50	2.90	.71	2.07	1.49	1.30	2.16	1.41	1.90
CL-16-BLPx-x.xx	1	.9985/.9970	1.217	.875													

METRIC

BASIC PART NO.	A DIA (mm)	A DIA ACTUAL (mm)	B ±.304 (mm)	C ±.254 (mm)	D DIA (mm)	E (mm)	F (mm)	G DIA (mm)	H (mm)
CLM-5-BLPx-xx	5	4.96 / 4.92	5.38	6.22	5.5	32	20	12	44.5
CLM-6-BLPx-xx	6	5.96 / 5.92	7.06	6.99	5.5	32	20	12	44.5
CLM-8-BLPx-xx	8	7.96 / 7.92	9.42	8.00	5.5	32	20	12	44.5
CLM-10-BLPx-xx	10	9.96 / 9.92	11.91	8.89	7	37.5	24	15	51
CLM-12-BLPx-xx	12	11.96 / 11.92	14.40	11.30	7	37.5	24	15	51
CLM-16-BLPx-xx	16	15.96 / 15.92	19.00	14.35	12.5	46	27	23.5	76
CLM-20-BLPx-xx	20	19.96 / 19.92	24.08	20.19	12.5	46	27	23.5	76

BALL LOCK PINS

SHANK (STEEL): 4130 STEEL, HEAT TREATED RC 36-40, ZINC PLATED YELLOW CHROMATE;
SHANK (STAINLESS STEEL): 17-4PH STAINLESS STEEL, HEAT TREATED RC 40 MIN, PASSIVATED;
SPINDLE: 17-4PH STAINLESS STEEL, PASSIVATED; HANDLE: ALUMINUM ALLOY, BLACK FINISH;
BUTTON: ALUMINUM ALLOY, ANODIZED; COLLAR: 300-SERIES STAINLESS STEEL, PASSIVATED;
SPRING & RING: 302 STAINLESS STEEL; BALLS: 440C STAINLESS STEEL

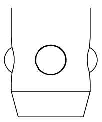


Precision alignment pin with a ground shank. This popular single-acting type is positive locking until released by pushing the button, which moves the center spindle forward to allow the locking balls to retract into a radial groove. Widest range of types and sizes, in steel or stainless steel. Choice 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.

Ordering Example (INCH):

CL — 4 — BLPR — 1.50 — S — 4BALL — C

- Diameter (16ths of an inch)
- Handle type (T, L, B, R)
- Grip length (inches)
- Add -S for stainless steel (steel is standard)
- Add for 4 balls (2 are standard)
- Add -C for attached Cable Assembly or – NL for attached Nylon Lanyard



Ordering Example (Metric):

CLM — 6 — BLPR — 50 — S — 4BALL — C

- Add M for metric
- Diameter (mm)
- Handle type (T, L, B, R)
- Grip length (mm)
- Add -S for stainless steel (steel is standard)
- Add for 4 balls (2 are standard)
- Add -C for attached Cable Assembly or – NL for attached Nylon Lanyard

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.

STOCK GRIP LENGTHS (INCH)

GRIP LENGTH (INCHES) +.020/-.000

PART NO. CL-X-BLPx-x.xx	NOMINAL SHANK DIA	0.50				0.75				1.00				1.25				1.50				1.75				2.00			
		T	L	B	R	T	L	B	R	T	L	B	R	T	L	B	R	T	L	B	R	T	L	B	R	T	L	B	R
CL-3-BLP ...	3/16(#10)	•	•	•	•	•		•		X	X	X	X	X	•	•	•	X	X	X	•	•	•			X	•	X	X
CL-4-BLP ...	1/4	X	X	X	•	X	•	X	•	X	X	X	X	X	•	•	•	X	X	X	X	X	•	•	•	X	X	X	X
CL-5-BLP ...	5/16	•		•		•		•	•	X	X	X	•	•	•	•	•	X	X	X		•	•		•	X	X	X	•
CL-6-BLP ...	3/8	•	•	•		X	•	•		X	X	X	X	•	•	•	•	X	X	X	X	•	•	•		X	X	X	•
CL-7-BLP ...	7/16									•	•	•						•	•	•						•	•	•	
CL-8-BLP ...	1/2	•				•	•			•	•	•	•	X	X	•		X	X	X	•	X	X	•	•	X	X	X	•
CL-9-BLP ...	9/16																									•	•	•	
CL-10-BLP ...	5/8																	•	•	•						•	•	X	
CL-12-BLP ...	3/4																	•	•							X	•	•	•
CL-14-BLP ...	7/8																									•			
CL-16-BLP ...	1																									•	•		

PART NO. CL-X-BLPx-x.xx	NOMINAL SHANK DIA	2.25				2.50				3.00				3.50				4.00				4.50				5.00				5.50				6.00			
		T	L	B	R	T	L	B	R	T	L	B	R	T	L	B	R	T	L	B	R	T	L	B	R	T	L	B	R	T	L	B	R	T	L	B	R
CL-3-BLP ...	3/16(#10)					•	•	•		•	•	•	•	•				•																			
CL-4-BLP ...	1/4	X	•	•	•	X	X	X	•	X	•	X	•	•	•	•	•	X	•	•		•	•			•	•										
CL-5-BLP ...	5/16	•				X	X	•	•	•	•	•	•	•	•	•		•	•	•		•				•								•			
CL-6-BLP ...	3/8	•	•	•	•	X	X	X	•	X	X	X	•	X	X	X	•	X	•	•	•	•	•	•		•	•	•		•				•	•		
CL-7-BLP ...	7/16					•	•			•	•							•																			
CL-8-BLP ...	1/2	•	•			X	X	X	•	X	X	•	•	X	•	•	•	X	•	•	•	•	X	•	•	•	•	•	•	•	•	•		X	•	•	•
CL-9-BLP ...	9/16					•	•			•	•							•																			
CL-10-BLP ...	5/8					•	•	•		•	•	•		X	•	•		•	•			•	•			•				•	•			•			
CL-12-BLP ...	3/4	•				X	X	•	•	X	X	•	•	X	•			X	•	•		•	•			X	•	•		•	•			X	•		
CL-14-BLP ...	7/8					•				•																											
CL-16-BLP ...	1					•				•	•	•		•	•			•	•			•				•	•							•	•		

STOCK GRIP LENGTHS (METRIC)

GRIP LENGTH (mm) +.508/-.000

PART NO.	NOMINAL SHANK DIA	10				15				20				25				30				40				50				80				100			
		T	L	B	R	T	L	B	R	T	L	B	R	T	L	B	R	T	L	B	R	T	L	B	R	T	L	B	R	T	L	B	R	T	L	B	R
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																																				

X = STOCKED IN ALLOY AND STAINLESS STEEL