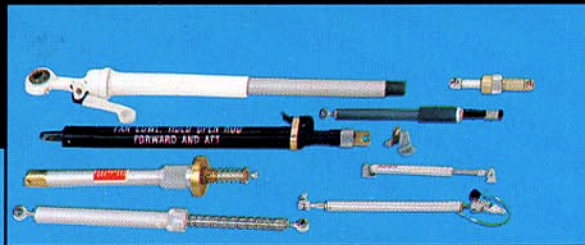




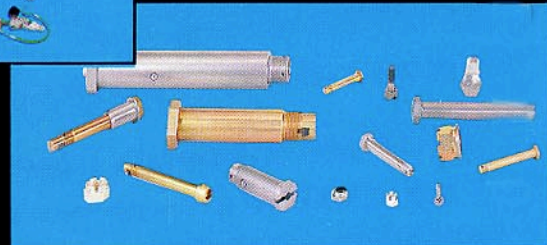
# AVIBANK'S LINE OF PRODUCTS

**ADJUSTABLE  
DIAMETER  
FASTENERS**



**STRUTS/HOLD-OPEN RODS**

**SELF RETAINING BOLTS  
AND ACCESSORIES**



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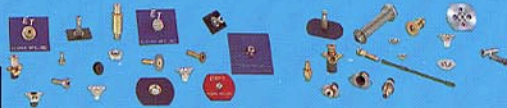
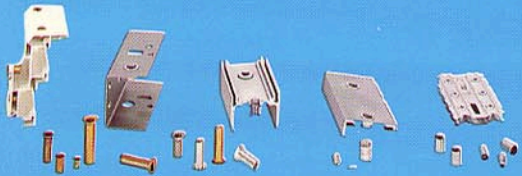
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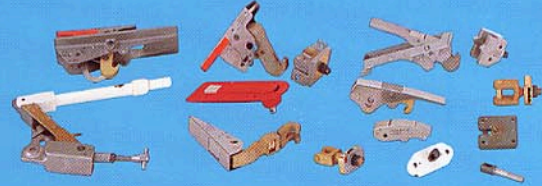
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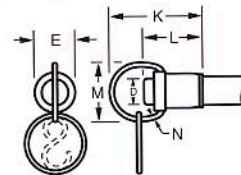
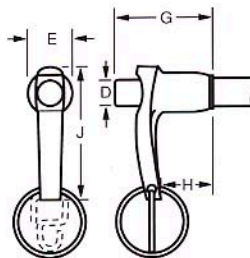
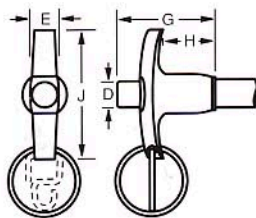
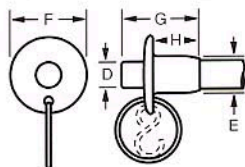
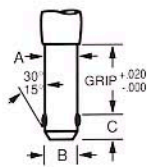
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"B" HANDLE

"TA" HANDLE

"LA" HANDLE

"R" HANDLE

# BALL-LOK® SINGLE ACTING PINS - POSITIVE LOCKING

## DIMENSIONS

NOM. DIA.	A		B		C		D		E		F		G		H	
	MAX.	MIN.	±.005	+0.000 -0.030	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.
3/16	.1885	.1870	.220	.260	.310	.250	.500	.310	.800	.720	1.280	.750	.820	.470		
1/4	.2485	.2470	.289	.290	.310	.250	.500	.310	.800	.720	1.280	.750	.820	.470		
5/16	.3110	.3095	.375	.330	.310	.250	.500	.310	1.135	.810	1.300	.890	.820	.600		
3/8	.3735	.3720	.440	.365	.390	.300	.625	.450	1.135	.875	1.440	.960	.890	.600		
7/16	.4360	.4345	.509	.380	.390	.300	.625	.550	1.400	.940	1.480	1.120	.890	.760		
1/2	.4985	.4970	.594	.460	.565	.435	.800	.600	1.400	1.300	1.580	1.140	.970	.830		
9/16	.5610	.5595	.666	.510	.565	.435	.800	.680	1.650	1.340	1.600	1.350	1.030	.870		
5/8	.6235	.6220	.750	.580	.580	.450	.975	.750	1.700	1.530	1.730	1.390	1.030	.900		
3/4	.7485	.7470	.887	.670	.700	.570	1.000	.865	1.900	1.790	1.730	1.630	1.210	.900		
7/8	.8735	.8720	1.046	.760	.840	.700	1.320	.980	2.250	2.120	2.200	1.900	1.470	1.120		
1	.9985	.9970	1.219	.890	.950	.750	1.320	1.175	2.250	2.120	2.200	1.900	1.570	1.200		

DIMENSIONS CONTINUED											CALC. DOUBLE SHEAR STRENGTH MN. LBS.		MIN. TENSION LOAD CAPABILITIES LBS.	
NOM. DIA.	J		K		L		M		N		STEEL	CRES	2 BALLS	4 BALLS
	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	±.03					
3/16	1.820	1.720	1.520	1.360	.870	.750	1.30	1.06	.10	4600	5150	200	260	
1/4	1.820	1.720	1.520	1.360	.870	.750	1.30	1.06	.10	8200	9200	230	300	
5/16	1.820	1.720	1.610	1.390	1.000	.880	1.30	1.06	.10	12800	14400	510	660	
3/8	2.070	1.940	1.610	1.390	1.160	1.040	1.37	1.06	.10	18400	20600	575	745	
7/16	2.070	1.940	1.820	1.700	1.220	1.100	1.52	1.09	.12	25000	28000	710	920	
1/2	2.350	2.230	1.820	1.700	1.240	1.120	1.61	1.16	.12	32800	36800	1160	1500	
9/16	2.350	2.230	2.000	1.880	1.460	1.340	1.64	1.16	.12	41200	46000	1420	1845	
5/8	3.100	2.380	2.000	1.880	1.460	1.340	1.70	1.24	.12	51200	57500	2070	2690	
3/4	3.100	2.460	2.640	2.520	1.730	1.610	2.00	1.64	.15	73600	82500	2950	3835	
7/8	3.520	2.750	2.790	2.670	1.980	1.860	2.18	1.64	.15	100000	112500	3980	5070	
1	3.520	2.750	3.010	2.890	2.210	2.090	2.28	1.64	.15	131000	147000	5480	7120	

## SPECIFICATIONS

PART NAME	ALLOY STEEL	CORROSION RESISTANT
BODY & SPINDLE	STEEL 4130 (MIL-T-6736 OR MIL-S-6758)	CRES 17-4PH (AMS 5643) OR PH15-7MO (AMS 5657)
BALLS	CRES 440C (QQ-S-763)	CRES 440C (QQ-S-763)
BUTTONS	MILD STEEL (ASTM-A-108) OR ALUMINUM 2024/2017 (QQ-A-225/6 OR /5)	CRES 303 (ASTM-A-581/582 OR ALUMINUM 2024/2017 (QQ-225/6 OR /5)
"B" BUTTON HEAD	MILD STEEL (ASTM-A-108) OR ALUMINUM 2024/2017 (QQ-A-225/6 OR /5)	CRES 303 (ASTM-A-581/582 OR ALUMINUM 2024/2017 (QQ-225/6 OR /5)
"TA"/"LA" HEAD	ALUMINUM CASTING 380 (QQ-A-591)	ALUMINUM CASTING 380 (QQ-A-591)
"R" HANDLE RING	CRES 302 (ASTM-A-313)	CRES 302 (ASTM-A-313)
"R" HANDLE HEAD	MILD STEEL (ASTM-A-108)	CRES 303 (ASTM-A-581/582)
COLLAR (ON ALUM. HANDLES ONLY)	MILD STEEL (ASTM-A-108 OR 366)	CRES 300 SERIES (ASTM-A-581/582 OR QQ-S-766)
SPRING/ATTACHING RING	MUSIC WIRE (ASTM-A-228)	CRES 17-7PH (AMS 5678) OR 302 (ASTM-A-313)

## OPTIONAL LANYARD

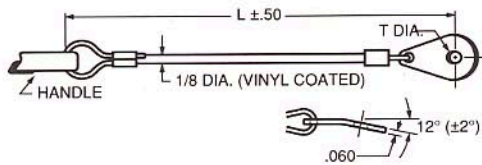


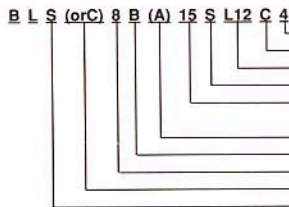
TABLE I

DASH NO.	TAB HOLE SIZE
-4	.129
-6	.194
-7	.255
-8	.281
-10	.318
-12	.377

## NOTES:

**CABLE:** SIZE 1/16 DIAMETER. 7 X 7 CORROSION RESISTANT STEEL PER MIL-W-83420. VINYL COATED, COLOR GREEN PER MIL-I-631. RATED FULL STRENGTH: 480 POUNDS. SWAGING SLEEVE: NICOPRESS® 28-IC OR EQUIV.  
**TAB:** "A"—ALUMINUM ALLOY 6061 PER QQ-A-250/11. "C"—CORROSION RESISTANT STEEL PER MIL-S-5059. **FINISH:** ALL CRES PARTS PASSIVATED PER QQ-P-35. ALL ALUMINUM ALLOY PARTS ANODIZED PER MIL-A-8625

## SAMPLE CALLOUT



TAB HOLE: 4 = .129 DIA. (SEE TABLE I)  
 TAB MATERIAL: "A" = ALUMINUM, "C" = CRES  
 OPTIONAL LANYARD, SEE NOTE 7. (L12 = 12" LONG.) (4" MIN)  
 SINGLE ACTING  
 GRIP LENGTH, FIFTEEN TENTHS = 1.5 INCHES FIRST DIGIT "0" IF LESS THAN ONE INCH. DROP DECIMAL IF ONLY 2 DIGITS USED.  
 ADD "A" FOR ALUMINUM, "C" FOR CRES OR "S" FOR STEEL HANDLE  
 HANDLE STYLE (SEE NOTE 4)  
 DIAMETER IN SIXTEENTHS: 8 = 1/2"  
 CORROSION RESISTANT STEEL

## HEAT TREATMENT:

**ALLOY STEEL:**  
 SHANK & SPINDLE, Rc 36-40 (MIL-H-6875)  
**CORROSION RESISTANT STEEL:**  
 SHANK AND SPINDLE Rc 40 MIN. (MIL-H-6875)  
**BALL HARDNESS:**  
 Rc 58-62

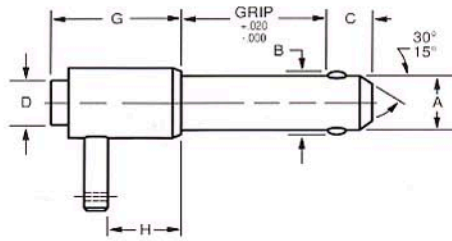
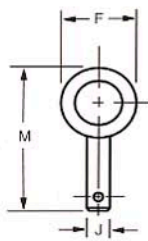
## PROTECTIVE TREATMENT:

**CARBON AND ALLOY STEEL:**  
 CADMIUM PLATE (QQ-P-416, TYPE I OR TYPE II, CLASS 2)  
**CORROSION RESISTANT STEEL:**  
 PASSIVATE (QQ-P-35)  
**ALUMINUM ALLOY:**  
 ANODIZE (MIL-A-8625) HANDLE (DYE DARK GRAY OR BLACK), BUTTON (DYE BLUE)

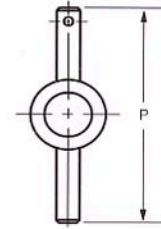
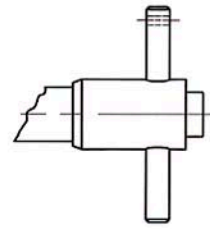
## NOTES:

- ALL PINS MEET OR EXCEED THE REQUIREMENTS OF PROCUREMENT SPECIFICATIONS MIL-P-23460 (WEP), AND ARE LISTED (OPL) ON MS17984 THRU 17987 AND NAS 1333 THRU 1346.
- ALL PINS FURNISHED WITH ATTACHING RINGS; SIZE AND SHAPE AT AVIBANK'S OPTION.
- "A" CALLOUT AFTER HANDLE CONFIGURATION IN PARTS ABOVE SIGNIFIES ALUMINUM HANDLE.
- BUTTON "B" AND RING "R" HANDLES AVAILABLE IN ALUMINUM "A", CRES "C" OR STEEL "S" MATERIAL. AVIBANK'S OPTION IF NOT CALLED OUT.
- IF A FOUR-BALL PIN IS REQUIRED FOR GREATER TENSION STRENGTH, ADD THE SUFFIX "F" AT THE END OF STANDARD CALLOUT. EXAMPLE: BLS8BA15SF
- IF GREATER "C" DIMENSION IS NECESSARY, ADD LENGTH AFTER "C" LETTER, EXAMPLE: BLS8BA15SC10 (C10 BEING 1.0 INCHES).
- OPTIONAL LANYARD IS ATTACHED DIRECTLY TO THE HANDLES.
- ALL PINS ARE IDENTIFIED PER MIL-STD-130 AND APPLICABLE SPECIFICATIONS.
- IF GRIP CANNOT BE CALLED OUT IN WHOLE NUMBER TENTHS, USE A DECIMAL POINT AND CALL OUT ACTUAL GRIP; EXAMPLE: 1.25 = 1.250 OR 2.375 = 2.375 GRIP.
- BALLS MAY BE ROTATED TO POSITIONS OTHER THAN SHOWN.

ALL PARTS WILL BE SUPPLIED TO THE LATEST DRAWING REVISIONS



"GL" HANDLE



"GT" HANDLE

# BALL-LOK® GROUND HANDLING PINS - POSITIVE LOCKING

## DIMENSIONS

DASH NO.	NOM. DIA.	A +.0000 -.0015	B ±.005	C MAX.	D MIN.	F ±.030	G MAX.	H MIN.	J ±.015	M MAX.	P MAX.	CALCULATED DOUBLE SHEAR LBS.	
												STEEL	CRES
3	3/16	.1885	.220	.380	.160	.500	1.550	.740	.187	2.155	2.000	4.600	5.150
4	1/4	.2485	.287	.380	.250	.500	1.550	.740	.187	2.155	2.000	8.200	9.200
5	5/16	.3110	.372	.400	.250	.500	1.550	.740	.187	2.155	2.000	12.800	14.400
6	3/8	.3735	.438	.490	.300	.625	1.550	.740	.250	2.155	2.000	18.400	20.600
7	7/16	.4360	.507	.490	.370	.625	1.550	.810	.250	2.245	2.250	25.000	28.000
8	1/2	.4985	.593	.530	.430	.750	1.820	.810	.250	2.425	2.500	32.800	36.800
9	9/16	.5610	.666	.600	.430	.750	1.820	.810	.250	2.425	2.500	41.200	46.000
10	5/8	.6235	.748	.650	.480	.875	1.820	.880	.312	3.075	3.000	51.200	57.500
12	3/4	.7485	.887	.780	.570	1.000	1.820	.930	.312	3.075	3.000	73.600	82.500
14	7/8	.8735	1.043	.890	.700	1.125	2.140	1.120	.375	3.650	3.500	100.000	112.500
16	1	.9985	1.217	1.000	.750	1.250	2.140	1.130	.375	3.650	3.500	131.000	147.000
18	1 1/8	1.122	1.375	1.250	1.00	1.390	3.90	1.62	.50	6.37	6.37	166.100	187.000
20	1 1/4	1.247	1.500	1.250	1.00	1.515	3.90	1.62	.50	6.50	6.50	205.000	230.500
22	1 3/8	1.372	1.625	1.250	1.00	1.640	3.90	1.62	.50	6.62	6.62	248.000	279.000
24	1 1/2	1.497	1.750	1.250	1.00	1.765	3.90	1.62	.50	6.75	6.75	295.000	332.000
26	1 5/8	1.622	1.931	1.562	1.00	1.890	3.90	1.62	.50	6.87	6.87	346.100	389.500
28	1 3/4	1.747	2.062	1.562	1.00	2.015	3.90	1.62	.50	7.00	7.00	401.200	452.100
30	1 7/8	1.872	2.187	1.562	1.00	2.140	3.90	1.62	.50	7.12	7.12	461.000	519.000
32	2	1.997	2.312	1.562	1.00	2.265	3.90	1.62	.50	7.25	7.25	524.000	590.000
34	2 1/8	2.122	2.500	1.875	1.50	2.390	4.25	1.75	.50	7.37	7.37	591.500	666.100
36	2 1/4	2.247	2.625	1.875	1.50	2.515	4.25	1.75	.50	7.50	7.50	663.100	747.000
38	2 3/8	2.372	2.750	1.875	1.50	2.640	4.25	1.75	.50	7.62	7.62	739.100	832.100
40	2 1/2	2.497	2.875	1.875	1.50	2.765	4.25	1.75	.50	7.75	7.75	819.000	922.100
42	2 5/8	2.622	3.000	1.875	1.50	2.890	4.25	1.75	.50	7.87	7.87	903.000	1,016.000
44	2 3/4	2.747	3.125	1.875	1.50	3.015	4.25	1.75	.50	8.00	8.00	991.000	1,116.000
46	2 7/8	2.872	3.250	1.875	1.50	3.140	4.25	1.75	.50	8.12	8.12	1,083.000	1,219.000
48	3	2.997	3.375	1.875	1.50	3.265	4.25	1.75	.50	8.25	8.25	1,179.000	1,328.100

## HEAT TREATMENT:

**ALLOY STEEL:**  
SHANK & SPINDLE, Rc 36-40 (MIL-H-6875)

**CORROSION RESISTANT STEEL:**  
SHANK AND SPINDLE Rc 40 MIN. (MIL-H-6875), SPRING 17-7 PH CH900 (MIL-H-6875)

**BALL HARDNESS:**  
Rc 58-62

## PROTECTIVE TREATMENT:

**CARBON AND ALLOY STEEL:**  
CADMIUM PLATE (QQ-P-416, TYPE I OR TYPE II, CLASS 2)

**CORROSION RESISTANT STEEL:**  
PASSIVATE (QQ-P-35)

**ALUMINUM ALLOY:**  
ANODIZE (MIL-A-8625)  
BUTTON (DYE BLUE)

## NOTES:

- ALL PINS MEET OR EXCEED THE REQUIREMENTS OF PROCUREMENT SPECIFICATION MIL-P-23460 (WEP) AND ARE AVAILABLE UNDER NAS1333 THROUGH NAS1346. WHEN ORDERED UNDER A NAS NUMBER, A RING OR HOOK MUST BE ATTACHED TO THE HANDLE.
- ALL PINS ARE IDENTIFIED PER MIL-STD130 AND APPLICABLE SPECIFICATIONS.
- IF A FOUR-BALL PIN IS REQUIRED FOR GREATER TENSION STRENGTH, ADD THE SUFFIX "F" AT THE END OF A STANDARD CALLOUT. EXAMPLE: BLSBGL15F
- IF A GREATER "C" DIMENSION IS REQUIRED, ADD THE LETTER "C" AND THE LENGTH AFTER THE STANDARD GRIP. EXAMPLE: BLSBGL15C10 (C10 BEING 1.0 INCHES).
- OPTIONAL LANYARD IS ATTACHED DIRECTLY TO THE HANDLE.
- IF GRIP CANNOT BE CALLED OUT IN WHOLE NUMBER TENTHS, USE A DECIMAL POINT AND CALL OUT ACTUAL GRIP. EXAMPLE: 1.25 = 1.250 OR 2.375 = 2.375 GRIP.
- BALLS MAY BE ROTATED TO POSITIONS OTHER THAN SHOWN.

## SPECIFICATIONS

PART NAME	ALLOY STEEL		CORROSION RESISTANT	
BODY	ALLOY STEEL 4130	MIL-S-6758/MIL-S-6736	CRES 17-4PH OR 15-7MO	AMS 5643/AMS 5657
SPINDLE	ALLOY STEEL 4130	MIL-S-6758	CRES 17-4PH	AMS 5643
BUTTON	CARBON STEEL ALUM. ALLOY 2017/2024	ASTM-A-108 QQ-A-225/5 OR QQ-A-225/6	CRES 303 ALUM. ALLOY 2017/2024	ASTM-A-581/582 QQ-A-225/5 OR QQ-A-225/6
SPRING	MUSIC WIRE	ASTM-A-228	CRES 17-7PH/302	AMS 5678/ASTM-A-313
HEAD	CARBON STEEL	ASTM-A-108	CRES 304, 316 OR 321	QQ-S-763 OR EQUIVALENT
HANDLE	CARBON STEEL	ASTM-A-108	CRES 304, 316 OR 321	QQ-S-763 OR EQUIVALENT
BALLS	CRES 440C	QQ-S-763	CRES 440C	QQ-S-763

## OPTIONAL LANYARD

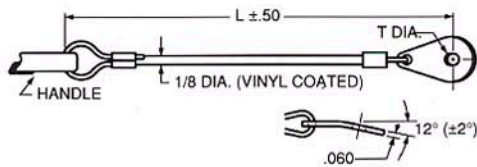


TABLE I

DASH NO.	+ .004 T-.001 DIA.
-4	.129
-6	.194
-7	.255
-8	.281
-10	.318
-12	.377

## NOTES:

**CABLE:** SIZE 1/16 DIAMETER. 7 X 7 CORROSION RESISTANT STEEL PER MIL-W-83420. VINYL COATED, COLOR GREEN PER MIL-I-631. RATED FULL STRENGTH: 480 POUNDS. SWAGING SLEEVE: NICOPRESS® 28-IC OR EQUIV.

**TAB: "A"**—ALUMINUM ALLOY 6061 PER QQ-A-250/11. **"C"**—CORROSION RESISTANT STEEL PER MIL-S-5059. **FINISH:** ALL CRES PARTS PASSIVATED PER QQ-P-35. ALL ALUMINUM ALLOY PARTS ANODIZED PER MIL-A-8625

## SAMPLE CALLOUT

B L S (or C) 8 GL (or GT) 15 L12 C 4

- TAB HOLE: 4 = .129 DIA. (SEE TABLE I)
- TAB MATERIAL: "A" = ALUMINUM, "C" = CRES
- OPTIONAL LANYARD, SEE NOTE 5. (L12 = 12" LONG.) (4" MIN)
- GRIP LENGTH, FIFTEEN TENTHS = 1.5 INCHES, FIRST DIGIT "O" IF LESS THAN ONE INCH. DROP DECIMAL IF ONLY 2 DIGITS USED.
- HANDLE STYLE
- DIAMETER IN SIXTEENTHS: 8 = 1/2"
- CORROSION RESISTANT STEEL
- STEEL

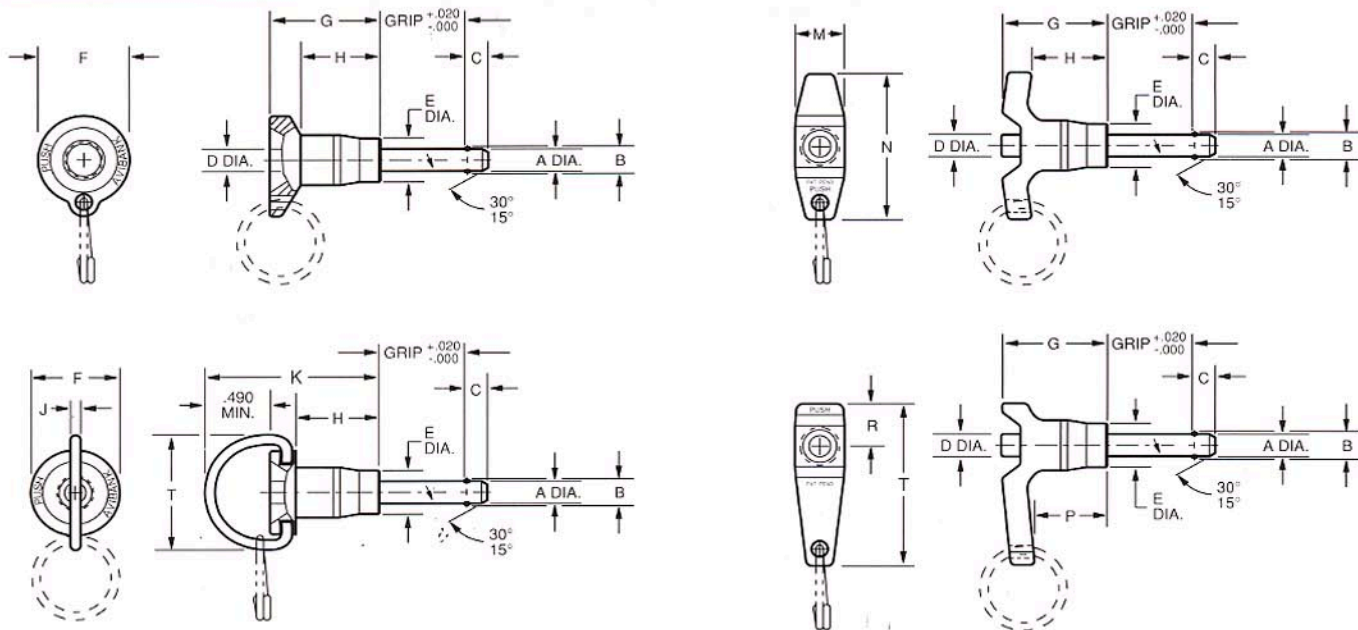
ALL PARTS WILL BE SUPPLIED TO THE LATEST DRAWING REVISIONS

**NEW**

- ◆ ERGONOMIC HANDLE DESIGN PREVENTS INADVERTENT BUTTON RELEASE
- ◆ STAINLESS STEEL CONSTRUCTION ELIMINATES TOXIC CADMIUM PLATING
- ◆ EXCEEDS ALL MS AND NAS TENSILE STRENGTH REQUIREMENTS
- ◆ ENGINEERED REINFORCED COMPOSITE RESIN HANDLE
- ◆ DECORATOR HANDLE COLORS ARE AVAILABLE BY SPECIAL ORDER
- ◆ ALL STAINLESS STEEL HANDLES OPTIONAL
- ◆ AVAILABLE IN METRIC SIZES (SEE PAGE 7)

**BIGGEST IMPROVEMENT IN QUICK RELEASE PINS IN 50 YEARS**

**BALL-LOK® ENVIRONMENTAL PIN - SINGLE ACTING, POSITIVE LOCKING, "E" STYLE**



PATENT NO. 5,394,594

**DIMENSIONS**

DASH NO.	NOM. DIA.	A +.0000 -.0015	B ±.005	C +.000 -.030	D		E		F		G	H	J	K	L	N		P	R	T		CALCULATED DOUBLE SHEAR (LBS)	
					MAX.	MIN.	MAX.	MIN.	MAX.	MIN.						MAX.	MIN.			MAX.	MIN.		MAX.
3	3/16	.1885	.220	.260	.310	.250	.500	.380	1.070	.990	1.270	.700	.080	2.125	1.060	.625	1.815	1.750	.700	.540	1.590	1.540	5,150
4	1/4	.2485	.289	.290	.310	.250	.500	.380	1.070	.990	1.270	.700	.080	2.125	1.060	.625	1.815	1.750	.700	.540	1.590	1.540	9,200
5	5/16	.3110	.375	.330	.310	.250	.500	.380	1.070	.990	1.270	.700	.080	2.125	1.060	.625	1.815	1.750	.700	.540	1.590	1.540	14,400
6	3/8	.3735	.440	.365	.565	.300	.800	.510	1.390	1.120	1.600	.850	.080	2.340	1.060	.800	2.345	1.935	.850	.700	1.975	1.925	20,600
7	7/16	.4360	.509	.380	.565	.300	.800	.510	1.390	1.120	1.600	.850	.080	2.340	1.060	.800	2.345	1.935	.850	.700	1.975	1.925	28,000
8	1/2	.4985	.594	.460	.565	.300	.800	.510	1.390	1.120	1.600	.850	.080	2.340	1.060	.800	2.345	1.935	.850	.700	1.975	1.925	36,800

**SPECIFICATIONS**

PART NAME	MATERIALS	
HANDLE RING (R STYLE)	CRES 302	ASTM-A-313
BALL	CRES 440C	QQ-S-763
ATTACHING RING (OPTIONAL)	CRES 17-7PH/302	AMS5678/ASTM-A-313
HEAD	CRES 303	ASTM-A-581/582
HANDLE	REINFORCED COMPOSITE RESIN (BLUE) OR CRES 300 SERIES	TBD ASTM-A-582 QQ-S-763 OR EQUIV.
SPRING (NOT SHOWN)	CRES 17-7PH/302	AMS5678/ASTM-A-313
SPINDLE (NOT SHOWN)	CRES 17-4PH	AMS5643
BUTTON	CRES 303	ASTM-A-581/582
BODY	CRES 17-4PH/15-5PH	AMS5643/AMS5657

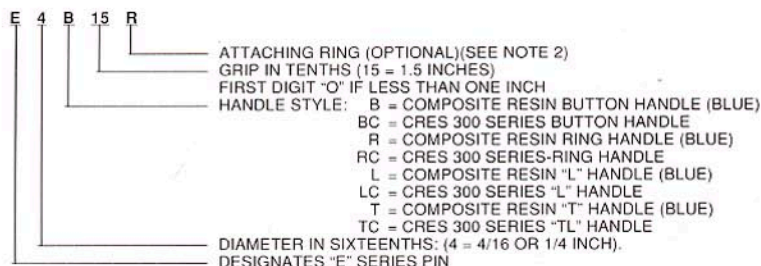
**HEAT TREATMENT:**

**CORROSION RESISTANT STEEL:**  
SHANK AND SPINDLE Rc 40 MIN.  
(MIL-H-6875) SPRING 17-7 PH  
CH900 (MIL-H-6875)  
**BALL HARDNESS:** Rc 58-62

**PROTECTIVE TREATMENT:**

**CORROSION RESISTANT STEEL:**  
PASSIVATE (QQ-P-35)

**SAMPLE CALLOUT**



**NOTES:**

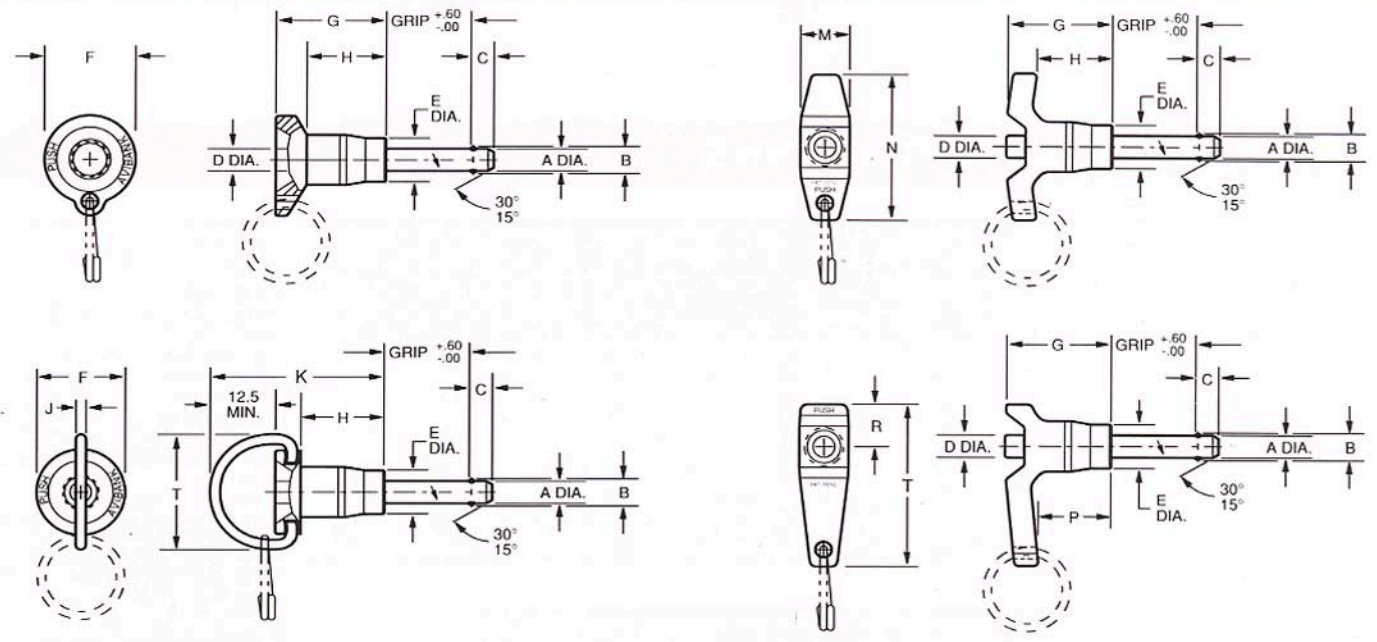
1. GRIP MEASURED TO EDGE OF BALL HOLE PRIOR TO STAKING.
2. SIZE AND SHAPE OF RING AVIBANK'S OPTION. IF ATTACHING RING OPTION IS CHOSEN (SUFFIX "R"), THE RING SHALL BE SUPPLIED UNASSEMBLED.
3. NO MARKING
4. BALLS MAY BE ROTATED TO POSITIONS OTHER THAN THAT SHOWN.

ALL PARTS WILL BE SUPPLIED TO THE LATEST DRAWING REVISIONS

**NEW**

- ◆ ERGONOMIC HANDLE DESIGN PREVENTS INADVERTENT BUTTON RELEASE
- ◆ STAINLESS STEEL CONSTRUCTION ELIMINATES TOXIC CADMIUM PLATING
- ◆ EXCEEDS ALL EUROPEAN A.E.C.M.A. AND DIN SHEAR AND TENSILE STRENGTH REQUIREMENTS
- ◆ ENGINEERED REINFORCED COMPOSITE RESIN HANDLE
- ◆ DECORATOR HANDLE COLORS ARE AVAILABLE BY SPECIAL ORDER
- ◆ ALL STAINLESS STEEL HANDLES OPTIONAL
- ◆ AVAILABLE IN INCH SIZES (SEE PAGE 6)

**BALL-LOK® METRIC ENVIRONMENTAL PIN - SINGLE ACTING, POSITIVE LOCKING, "EM" STYLE**



PATENT NO. 5,394,594

**DIMENSIONS**

DASH NO.	NOM. DIA.	A +0.00 -0.04	B ±.25	C ±1	D		E		F		G	H	J	K	L	M	N		P	R	T		CALCULATED DOUBLE SHEAR (N)
					MAX.	MIN.	MAX.	MIN.	MAX.	MIN.							MAX.	MIN.			MAX.	MIN.	
5	5 MM	4.96	5.33	7	8.0	6.0	13.0	9.5	27.5	25.0	32.5	17.5	2.0	54.0	26.5	16.0	46.5	44.5	17.5	14.0	40.5	39.0	24,400
6	6 MM	5.96	6.98	7	8.0	6.0	13.0	9.5	27.5	25.0	32.5	17.5	2.0	54.0	26.5	16.0	46.5	44.5	17.5	14.0	40.5	39.0	35,640
8	8 MM	7.96	9.43	8	8.0	6.0	13.0	9.5	27.5	25.0	32.5	17.5	2.0	54.0	26.5	16.0	46.5	44.5	17.5	14.0	40.5	39.0	63,804
10	10 MM	9.96	11.86	9	14.5	7.5	20.5	12.5	35.5	28.5	41.0	21.5	2.0	59.5	26.5	20.5	59.5	49.0	21.5	18.0	50.5	48.5	100,101
12	12 MM	11.96	14.45	10	14.5	7.5	20.5	12.5	35.5	28.5	41.0	21.5	2.0	59.5	26.5	20.5	59.5	49.0	21.5	18.0	50.5	48.5	144,060

**SPECIFICATIONS**

PART NAME	MATERIALS
HANDLE RING	CRES 302
BALL	CRES 440C
ATTACHING RING (OPTIONAL)	CRES 17-7PH/302
HEAD	CRES 303
HANDLE	REINFORCED COMPOSITE RESIN (BLUE) OR CRES 300 SERIES (OPTIONAL)
SPRING (NOT SHOWN)	CRES 17-7PH/302
SPINDLE (NOT SHOWN)	CRES 17-4PH
BUTTON	CRES 303
BODY	CRES 17-4PH/15-7MO

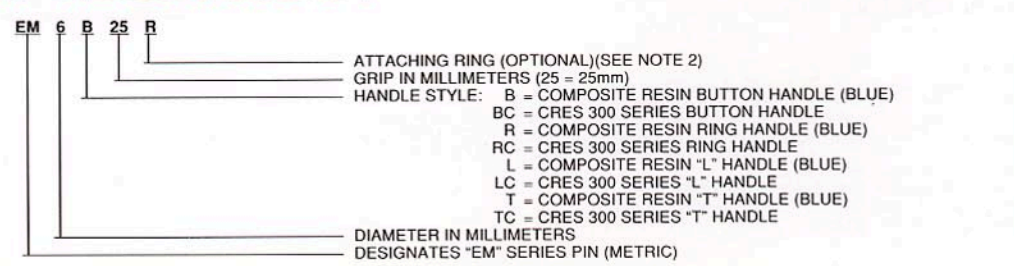
**HEAT TREATMENT:**

CORROSION RESISTANT STEEL: SHANK AND SPINDLE Rc 40 min. (MIL-H-6875) SPRING 17-7 PH CH900 (MIL-H-6875)  
**BALL HARDNESS: Rc 58-62**

**PROTECTIVE TREATMENT:**

CORROSION RESISTANT STEEL: PASSIVATE (QQ-P-35)

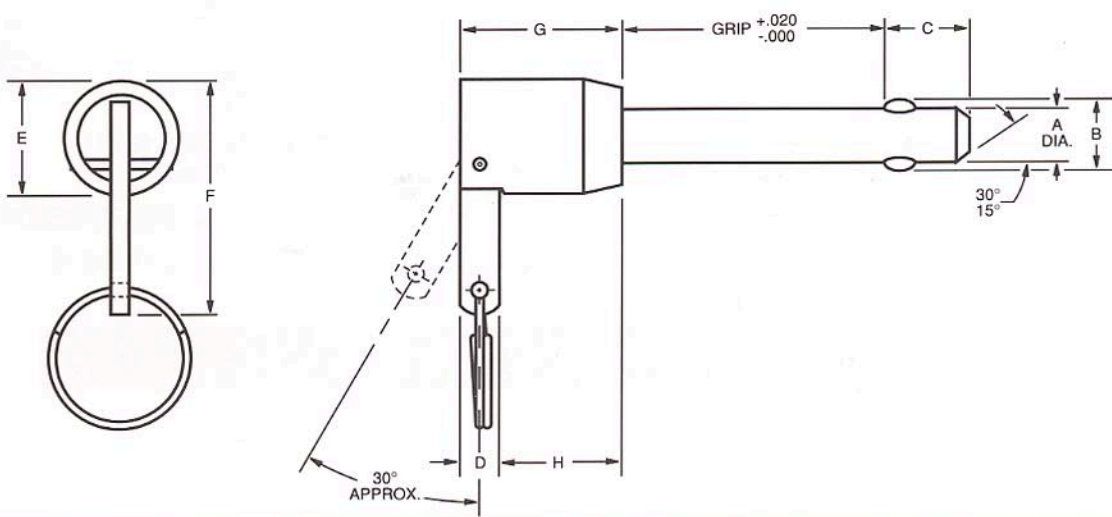
**SAMPLE CALLOUT**



**NOTES:**

- GRIP MEASURED TO EDGE OF BALL HOLE PRIOR TO STAKING.
- SIZE AND SHAPE OF RING AVIBANK'S OPTION. IF ATTACHING RING OPTION IS CHOSEN (SUFFIX "R"), THE RING SHALL BE SUPPLIED UNASSEMBLED.
- NO MARKING.
- BALLS MAY BE ROTATED TO POSITIONS OTHER THAN THAT SHOWN.

ALL PARTS WILL BE SUPPLIED TO THE LATEST DRAWING REVISIONS



# BALL-LOK® CAM LEVER PINS - POSITIVE LOCKING

## DIMENSIONS

DASH NO.	NOM. DIA.	A DIA.		B ±.005	C +.000 / -.030	D ±.015	E ±.03	F ±.05	G MAX.	H MIN.	CALC. DOUBLE SHEAR STRENGTH-LBS.	
		MAX.	MIN.								STEEL	CRES
3	3/16	.1885	.1870	.220	.260	.188	.44	.93	1.125	.44	4,600	5,150
4	1/4	.2485	.2470	.287	.290	.188	.44	.93	1.125	.44	8,200	9,200
5	5/16	.3110	.3095	.372	.330	.188	.50	1.11	1.125	.44	12,800	14,400
6	3/8	.3735	.3720	.438	.365	.188	.56	1.15	1.500	.45	18,400	20,600
7	7/16	.4360	.4345	.507	.380	.250	.63	1.36	1.500	.49	25,000	28,000
8	1/2	.4985	.4970	.593	.460	.250	.69	1.39	1.500	.59	32,800	36,800
9	9/16	.5610	.5595	.666	.510	.250	.75	1.45	1.500	.66	41,200	46,000
10	5/8	.6235	.6220	.748	.580	.375	.81	1.72	1.750	.69	51,200	57,500
12	3/4	.7485	.7470	.887	.670	.375	.94	1.91	2.000	.85	73,600	82,500
14	7/8	.8735	.8720	1.045	.760	.500	1.06	2.12	2.500	.90	100,000	112,500
16	1	.9985	.9970	1.217	.890	.500	1.25	2.21	2.500	.97	131,000	147,000

## HEAT TREATMENT:

**ALLOY STEEL:**  
SHANK & SPINDLE, Rc 36-40 (MIL-H-6875)

**CORROSION RESISTANT STEEL:**  
SHANK AND SPINDLE, Rc 40 MIN. (MIL-H-6875)

**BALL HARDNESS:**  
Rc 58-62

## PROTECTIVE TREATMENT:

**CARBON AND ALLOY STEEL:**  
CADMIUM PLATE (QQ-P-416, TYPE I OR TYPE II, CLASS 2)

**CORROSION RESISTANT STEEL:**  
PASSIVATE (QQ-P-35)

**ALUMINUM ALLOY:**  
ANODIZE (MIL-A-8625)

## SPECIFICATIONS

PART NAME	ALLOY STEEL	CORROSION RESISTANT		
BODY	ALLOY STEEL 4130	MIL-T-6736, MIL-S-6758 OR EQUIV.	CRES 17-4PH OR 15-7MO	AMS 5643/AMS5657
SPINDLE	ALLOY STEEL 4130	MIL-S-6758	CRES 17-4PH	AMS 5643
BUTTON	MILD STEEL OR ALUM. ALLOY	ASTM-A-108 QQ-A-225/6	CRES 303 OR ALUM. ALLOY	ASTM-A-581/582 QQ-A-225/6
LEVER	MILD STEEL	ASTM-A-108	CRES 303	ASTM-A-581/582
SPRING	MUSIC WIRE	ASTM-A-228	CRES 17-7PH OR 302	AMS5678/ASTM-A-313
HEAD	MILD STEEL	ASTM-A-108	CRES 303	ASTM-A-581/582
ATTACHING LINK	MILD STEEL	ASTM-A-108	CRES 17-7PH OR 302	AMS5678/ASTM-A-313
BALLS	CRES 440C	QQ-S-763	CRES 440C	QQ-S-763
PIN	CRES		CRES	

## NOTES:

1. ALL PINS MEET THE REQUIREMENTS OF NAS1332 EXCEPT OTHERWISE NOTED.
2. ALL PINS FURNISHED WITH ATTACHING RINGS; SIZE AND SHAPE AVIBANK'S OPTION.
3. IF FOUR BALL PIN IS REQUIRED FOR GREATER TENSION STRENGTH, ADD THE LETTER "F" TO STANDARD CALLOUT. EXAMPLE: BLS8CL15F.
4. IF A GREATER "C" DIMENSION IS REQUIRED, ADD THE LETTER "C" AND THE LENGTH AFTER THE STANDARD GROUP. EXAMPLE: BLS8CL15C10 (C10 BEING 1.0 INCHES)
5. OPTIONAL LANYARD IS ATTACHED DIRECTLY TO THE HANDLE.
6. IF GRIP CANNOT BE CALLED OUT IN WHOLE NUMBER TENTHS, USE A DECIMAL POINT AND CALL OUT ACTUAL GRIP. EXAMPLE: 1.25 = 1.250 OR 2.375 = 2.375 GRIP.

## OPTIONAL LANYARD

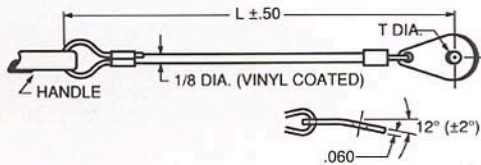


TABLE I

DASH NO.	+ .004 T-.001 DIA.
-4	.129
-6	.194
-7	.255
-8	.281
-10	.318
-12	.377

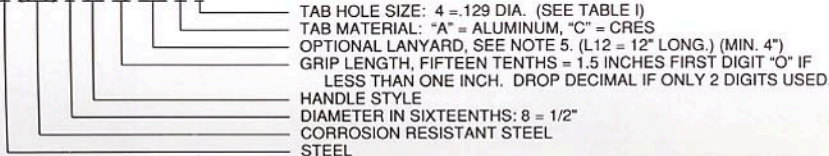
## NOTES:

**CABLE:** SIZE 1/16 DIAMETER. 7 X 7 CORROSION RESISTANT STEEL PER MIL-W-83420. VINYL COATED, COLOR GREEN PER MIL-I-631. RATED FULL STRENGTH: 480 POUNDS. SWAGING SLEEVE: NICOPRESS® 28-IC OR EQ.

**TAB:** "A"—ALUMINUM ALLOY 6061 PER QQ-A-250/11. "C"—CORROSION RESISTANT STEEL PER MIL-S-5059. **FINISH:** ALL CRES PARTS PASSIVATED PER QQ-P-35. ALL ALUMINUM ALLOY PARTS ANODIZED PER MIL-A-8625

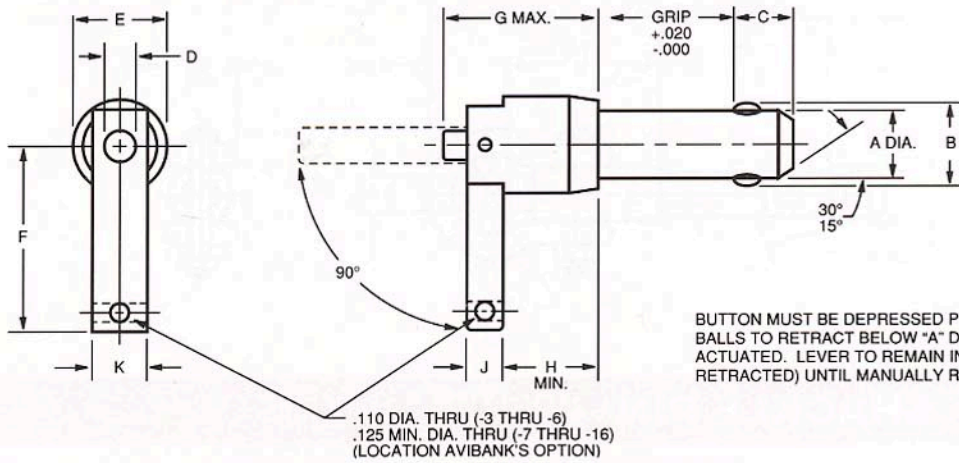
## SAMPLE CALLOUT

B L S (orC) 8 CL 15 L12 C 4



ALL PARTS WILL BE SUPPLIED TO THE LATEST DRAWING REVISIONS





# BALL-LOK® DOUBLE-LOK CAM LEVER PINS - POSITIVE LOCKING

## DIMENSIONS

DASH NO.	NOM. DIA.	A		B ±.005	C +.000 -.030	D ±.010	E ±.030	F ±.030	G		H MAX.	J MAX.	K ±.015	CALC. DOUBLE SHEAR STR. MIN. LBS.	
		MAX.	MIN.						MAX.	MIN.				STEEL	CRES
3	3/16	.1885	.1870	.220	.260	.187	.437	.850	1.550	.740	.250	.312	4,600	5,150	
4	1/4	.2485	.2470	.289	.290	.187	.437	.850	1.550	.740	.250	.312	8,200	9,200	
5	5/16	.3110	.3095	.375	.330	.187	.500	1.000	1.550	.740	.250	.375	12,800	14,400	
6	3/8	.3735	.3720	.440	.365	.218	.562	1.000	1.550	.810	.250	.375	18,400	20,600	
7	7/16	.4360	.4345	.509	.380	.218	.625	1.125	1.550	.810	.281	.406	25,000	28,000	
8	1/2	.4985	.4970	.594	.460	.218	.687	1.350	1.820	.810	.281	.406	32,800	36,800	
9	9/16	.5610	.5595	.666	.510	.218	.750	1.350	1.820	.810	.281	.406	41,200	46,000	
10	5/8	.6235	.6220	.750	.580	.250	.812	1.750	1.820	.880	.281	.562	51,200	57,500	
12	3/4	.7485	.7470	.887	.670	.250	.937	2.000	2.330	.930	.375	.562	73,600	82,500	
14	7/8	.8735	.8720	1.046	.780	.375	1.062	2.000	2.500	1.120	.375	.562	100,000	112,500	
16	1	.9985	.9970	1.219	.890	.375	1.250	2.000	2.750	1.130	.375	.562	131,000	147,200	

## HEAT TREATMENT:

**ALLOY STEEL:**  
SHANK & SPINDLE, Rc 36-40 (MIL-H-6875)  
**CORROSION RESISTANT STEEL:**  
SHANK AND SPINDLE Rc 40 min. (MIL-H-6875)  
**BALL HARDNESS:**  
Rc 58-62

## PROTECTIVE TREATMENT:

**CARBON AND ALLOY STEEL:**  
CADMIUM PLATE (QQ-P-416, TYPE I OR TYPE II, CLASS 2)  
**CORROSION RESISTANT STEEL:**  
PASSIVATE (QQ-P-35)  
**ALUMINUM ALLOY:**  
ANODIZE (MIL-A-8625)  
BUTTON (DYE BLUE)

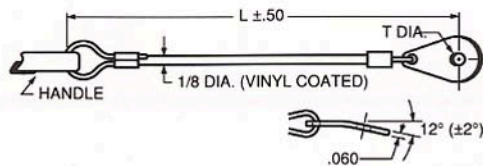
## SPECIFICATIONS

PART NAME	ALLOY STEEL		CORROSION RESISTANT	
BODY	4130 ALLOY STEEL	MIL-T-6736/MIL-S-6758	CRES 17-4PH OR 15-7MO	AMS 5643/AMS 5657
SPINDLE	4130 ALLOY STEEL	MIL-S-6758	CRES 17-4PH	AMS 5643
BUTTON	ALUM. ALLOY 2024 OR 2017	QQ-A-225/6/ QQ-A-225/5	ALUM. ALLOY 2024 OR 2017	QQ-A-225/6/ QQ-A-225/5
SPRING	MUSIC WIRE	ASTM-A-228	CRES 17-7PH OR 302	AMS 5678/ASTM-A-313
HEAD	MILD STEEL	ASTM-A-108	CRES 303	ASTM-A-581/582
LEVER	MILD STEEL	ASTM-A-108	CRES 303	ASTM-A-581/582
BALL	CRES 440C	QQ-S-763	CRES 440C	QQ-S-763

## NOTES:

- IF A FOUR BALL PIN IS REQUIRED FOR GREATER TENSION STRENGTH, ADD THE SUFFIX "F" AT THE END OF A STANDARD CALLOUT. EXAMPLE: BLS8DCL15F
- IF A GREATER "C" DIMENSION IS NECESSARY, ADD LENGTH AFTER "C" LETTER. EXAMPLE: BLS8DCL15C10 (C10 BEING 1.0 INCHES).
- ALL PINS ARE IDENTIFIED PER MIL-STD-130 AND APPLICABLE SPECIFICATIONS.
- OPTIONAL LANYARD IS ATTACHED DIRECTLY TO THE HANDLE.
- IF GRIP CANNOT BE CALLED OUT IN WHOLE NUMBER TENTHS, USE A DECIMAL POINT AND CALL OUT ACTUAL GRIP; EXAMPLE: 1.25 = 1.250 OR 2.375 = 2.375 GRIP.
- BALLS MAY BE ROTATED TO POSITIONS OTHER THAN SHOWN.

## OPTIONAL LANYARD

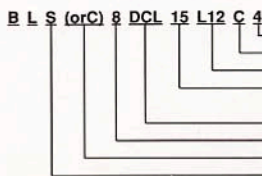


## TABLE I NOTES:

DASH NO.	+.004 T-.001 DIA.
-4	.129
-6	.194
-7	.255
-8	.281
-10	.318
-12	.377

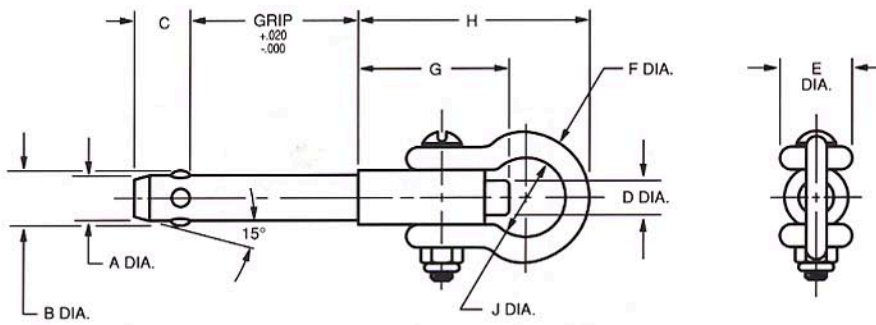
**CABLE:** SIZE 1/16 DIAMETER, 7 X 7 CORROSION RESISTANT STEEL PER MIL-W-83420. VINYL COATED, COLOR GREEN PER MIL-I-631. RATED FULL STRENGTH: 480 POUNDS. SWAGING SLEEVE: NICOPRESS® 28-IC OR EQ.  
**TAB:** "A"—ALUMINUM ALLOY 6061 PER QQ-A-250/11. "C"—CORROSION RESISTANT STEEL PER MIL-S-5059. **FINISH:** ALL CRES PARTS PASSIVATED PER QQ-P-35. ALL ALUMINUM ALLOY PARTS ANODIZED PER MIL-A-8625

## SAMPLE CALLOUT



TAB HOLE: 4 = .129 DIA. (SEE TABLE I)  
TAB MATERIAL: "A" = ALUMINUM, "C" = CRES  
OPTIONAL LANYARD, SEE NOTE 4. (L12 = 12" LONG.) (4" MIN.)  
GRIP LENGTH, FIFTEEN TENTHS = 1.5 INCHES FIRST DIGIT "O" IF LESS THAN ONE INCH. DROP DECIMAL IF ONLY 2 DIGITS USED.  
HANDLE STYLE  
DIAMETER IN SIXTEENTHS: 8 = 1/2"  
CORROSION RESISTANT STEEL  
STEEL

ALL PARTS WILL BE SUPPLIED TO THE LATEST DRAWING REVISIONS



# BALL-LOK® SHACKLE PIN - POSITIVE LOCKING

## DIMENSIONS

DASH NO.	NOM. DIA.	A		B ±.015	C +.000 -.030	D ±.015	E ±.020	F NOM.	G MAX.	H MAX.	J MIN.	CALC. DBL. SHEAR LBS. MIN. STEEL
		MAX.	MIN.									
4	1/4	.2485	.2470	.287	.333	.382	.562	3/16	1.500	2.450	.562	8,200
5	5/16	.3110	.3095	.372	.395	.382	.562	3/16	1.500	2.450	.562	12,800
6	3/8	.3735	.3720	.438	.425	.453	.750	1/4	1.600	2.850	.687	18,400
7	7/16	.4360	.4345	.507	.457	.453	.750	1/4	1.650	2.850	.687	25,000
8	1/2	.4985	.4970	.593	.519	.574	.812	5/16	1.800	3.150	.812	32,800
9	9/16	.5610	.5595	.666	.583	.574	.812	5/16	1.800	3.150	.812	41,200
10	5/8	.6235	.6220	.748	.645	.625	1.000	3/8	2.100	3.650	.968	51,200
12	3/4	.7485	.7470	.887	.707	.625	1.125	7/16	2.200	4.050	1.125	73,600
14	7/8	.8735	.8720	1.043	.833	.824	1.375	1/2	2.600	4.550	1.249	100,000
16	1	.9985	.9970	1.217	.957	.824	1.375	1/2	2.750	4.550	1.249	131,000

## HEAT TREATMENT:

**ALLOY STEEL:**  
SHANK & SPINDLE, Rc 36-40  
(MIL-H-6875)  
**BALL HARDNESS:**  
Rc 58-62

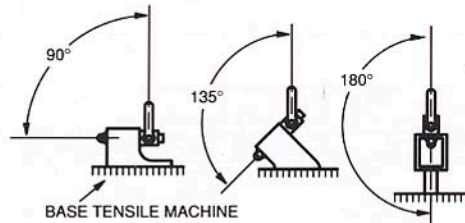
## PROTECTIVE TREATMENT:

**ALLOY STEEL:**  
CADMIUM PLATE (QQ-P-416,  
TYPE I OR TYPE II, CLASS 2  
**CORROSION RESISTANT STEEL:**  
PASSIVATE (QQ-P-35)

## LOADS

DASH NO.	ULTIMATE LOAD* LBS.			TABLE II MAX. GAP*:	
	90°	135°	180°	90°	135°
4	583	847	1,054	.037	.031
5	1,040	1,570	2,390	.037	.031
6	1,744	2,622	2,590	.042	.036
7	2,375	2,870	2,880	.042	.036
8	3,857	4,475	4,906	.042	.036
9	4,250	5,580	5,030	.042	.036
10	6,610	9,530	9,610	.047	.041
12	9,930	11,350	11,061	.047	.041
14	12,650	15,140	14,470	.052	.046
16	12,655	13,948	14,481	.052	.046

## LOAD SCHEMATIC



\* ULTIMATE STRENGTH VALUES OBTAINED FROM THE AVERAGE FAILING LOAD OF TEST SPECIMENS DIVIDED BY 1.15. HOLE TOLERANCES IN FIXTURES PER NAS 618 COLUMN C, SHEET 4. LOAD VALUES MAY BE REDUCED IF OVERSIZE INSTALLATION HOLES ARE USED. HARDENED TOOL STEEL SHOULDER BUSHING USED FOR 180 DEGREE TESTS.

\*\* MAXIMUM ALLOWABLE GAP BETWEEN SHACKLE PIN SHOULDER AND FACE OF FIXTURE.

## NOTES:

- OPTIONAL LANYARD IS ATTACHED DIRECTLY TO SHACKLE.
- IF GRIP CANNOT BE CALLED OUT IN WHOLE NUMBER TENTHS, USE A DECIMAL POINT AND CALL OUT ACTUAL GRIP; EXAMPLE: 1.25 = 1.250 OR 2.375 = 2.375 GRIP.
- IF A GREATER "C" DIMENSION IS REQUIRED ADD THE LETTER "C" AND THE LENGTH AFTER THE STANDARD GRIP. EXAMPLE: BL8SP15C10 (C10 BEING 1.0 INCHES).
- FOUR BALLS IS STANDARD.

ALL PARTS WILL BE SUPPLIED TO THE LATEST DRAWING REVISIONS

## SPECIFICATIONS

PART NAME		
BODY	4130 ALLOY STEEL	MIL-S-6758 OR EQUIV.
SPINDLE	4130 ALLOY STEEL	MIL-S-6758
BUTTON	MILD STEEL	ASTM-A-108
SPRING	MUSIC WIRE	ASTM-A-228
HEAD (OPTIONAL)	4130 ALLOY STEEL	MIL-S-6758 OR EQUIV.
BALLS (4)	CRES 440C	QQ-S-763
SHACKLE	MODIFIED AN116	---
BOLT	AN23	---
NUT	AN364	---

## OPTIONAL LANYARD

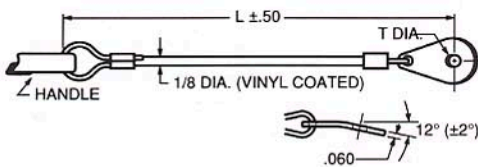


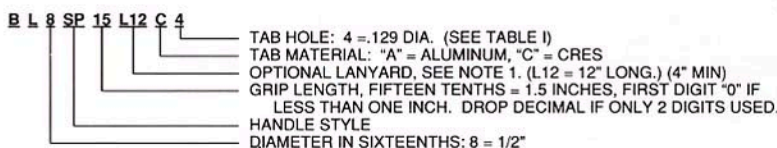
TABLE I

DASH NO.	TAB HOLE SIZE	
	+004	T-.001 DIA.
-4	.129	
-6	.194	
-7	.255	
-8	.281	
-10	.318	
-12	.377	

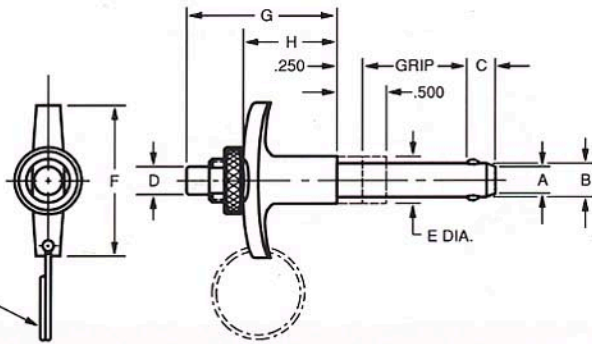
## NOTES:

**CABLE:** SIZE 1/16 DIAMETER. 7 X 7 CORROSION RESISTANT STEEL PER MIL-W-83420. VINYL COATED, COLOR GREEN PER MIL-I-631. RATED FULL STRENGTH: 480 POUNDS. SWAGING SLEEVE: NICOPRESS® 28-IC OR EQUIVALENT.  
**TAB:** "A"—ALUMINUM ALLOY 6061 PER QQ-A-250/11.  
"C"—CORROSION RESISTANT STEEL PER MIL-S-5059.  
**FINISH:** ALL CRES PARTS PASSIVATED PER QQ-P-35. ALL ALUMINUM ALLOY PARTS ANODIZED PER MIL-A-8625

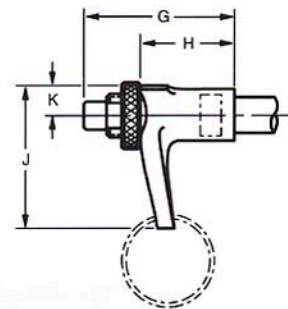
## SAMPLE CALLOUT



SIZE,  
SHAPE &  
LOCATION,  
AVIBANK'S  
OPTION



"T" HANDLE



"L" HANDLE

# BALL-LOK® ADJUSTABLE GRIP LENGTH PIN - POSITIVE LOCKING (51588)

## DIMENSIONS

DASH NO.	A		B		C		D		E		F		G		H		J		K	CALC. DOUBLE SHEAR LBS.	
	MAX.	MIN.	±.005	-.030	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.		STEEL	CRES
3	.1885	.1870	.220	.260	.185	.165	.500	.380	1.815	1.750	1.630	.870	1.800	1.720	.340	4,600	5,150				
4	.2485	.2470	.289	.290	.185	.165	.500	.380	1.815	1.750	1.630	.870	1.800	1.720	.340	8,200	9,200				
5	.3110	.3095	.375	.330	.185	.165	.625	.510	2.065	1.935	1.730	.870	2.030	1.945	.390	12,800	14,400				
6	.3735	.3720	.440	.365	.285	.265	.800	.630	2.345	2.220	1.730	.870	2.360	2.230	.500	18,400	20,600				
7	.4360	.4345	.509	.380	.345	.325	.800	.630	2.345	2.220	1.730	.990	2.360	2.230	.500	25,000	28,000				
8	.4985	.4970	.594	.460	.345	.325	.800	.630	2.345	2.220	1.830	.990	2.360	2.230	.500	32,800	36,800				
9	.5610	.5595	.666	.510	.375	.355	.975	.810	3.100	2.250	1.830	.990	3.070	2.385	.600	41,200	46,000				
10	.6235	.6220	.750	.580	.375	.355	.975	.810	3.100	2.250	2.480	1.240	3.070	2.385	.600	51,200	57,500				
12	.7485	.7470	.887	.670	.500	.480	1.320	1.120	3.520	2.750	2.480	1.240	3.700	2.750	.800	73,600	82,500				
.14	.8735	.8720	1.046	.760	.656	.636	1.320	1.120	3.520	2.750	2.720	1.610	3.700	2.750	.800	100,000	112,500				
16	.9985	.9970	1.219	.890	.656	.636	1.320	1.120	3.520	2.750	2.720	1.610	3.700	2.750	.800	131,000	147,000				

## HEAT TREATMENT:

**ALLOY STEEL:**  
SHANK & SPINDLE, Rc 36-40 (MIL-H-6875)  
**CORROSION RESISTANT STEEL:**  
SHANK AND SPINDLE, Rc 40 min. (MIL-H-6875)  
**BALL HARDNESS:**  
Rc 58-62

## PROTECTIVE TREATMENT:

**CARBON AND ALLOY STEEL:**  
CADMIUM PLATE (QQ-P-416, TYPE I OR TYPE II, CLASS 2)  
**CORROSION RESISTANT STEEL:**  
PASSIVATE (QQ-P-35)  
**ALUMINUM ALLOY:**  
ANODIZE (MIL-A-8625) HANDLE (DYE DARK GRAY OR BLACK)

## SPECIFICATIONS

PART NAME	ALLOY STEEL	MIL-SPEC	CORROSION RESISTANT	AMS SPEC
BODY	ALLOY STEEL 4130	MIL-T-6736/MIL-S-6758	CRES 17-4PH/15-7MO	AMS 5643/AMS 5657
SPINDLE	ALLOY STEEL 4130	MIL-S-6758	CRES 17-4PH	AMS 5643
BUTTON	CARBON STEEL	ASTM-A-108 OR EQUIV.	CRES 303	ASTM-A-581/582
SPRING	MUSIC WIRE	ASTM-A-228	CRES 17-7PH/302	AMS 5678/ASTM-A-313
HANDLE	ALUMINUM ALLOY 380	QQ-A-591	ALUMINUM ALLOY 380	QQ-A-591
BALL	CRES 440C	QQ-S-763	CRES 440C	QQ-S-763
NUT	CARBON STEEL	ASTM-A-108 OR EQUIV.	CRES 303	ASTM-A-581/582
ATTACHING HOOK	CARBON STEEL WIRE OR CRES 302	ASTM-A-228/ASTM-A-313	CRES 302	ASTM-A-313

## NOTES:

- PINS ARE IDENTIFIED PER MIL-STD-130 AND APPLICABLE SPECIFICATIONS.
- BALLS MAY BE ROTATED TO POSITIONS OTHER THAN SHOWN.
- OPTIONAL LANYARD IS ATTACHED DIRECTLY TO THE HANDLE.

ALL PARTS WILL BE SUPPLIED TO THE LATEST DRAWING REVISIONS

## OPTIONAL LANYARD

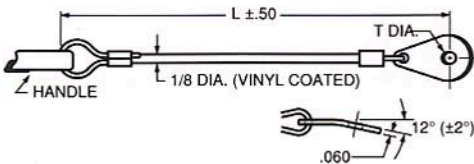


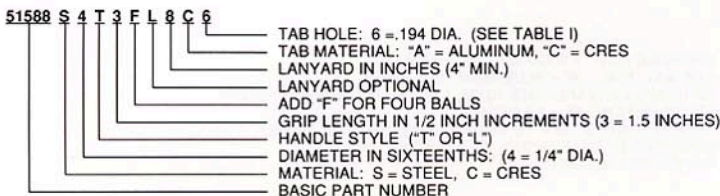
TABLE I

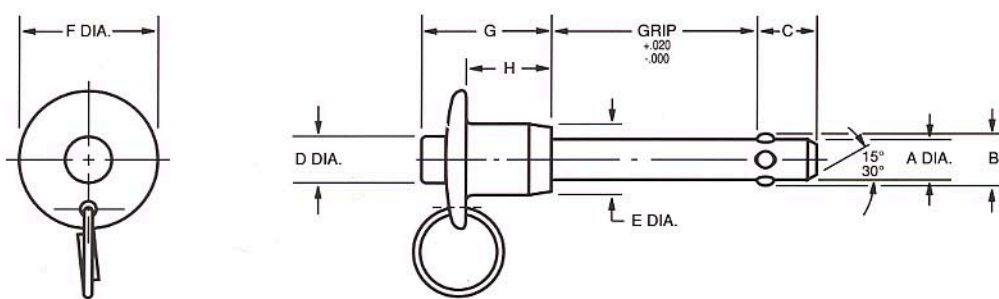
DASH NO.	TAB HOLE SIZE
-4	.129
-6	.194
-7	.255
-8	.281
-10	.318
-12	.377

## NOTES:

**CABLE:** SIZE 1/16 DIAMETER. 7 X 7 CORROSION RESISTANT STEEL PER MIL-W-83420. VINYL COATED, COLOR GREEN PER MIL-I-631. RATED FULL STRENGTH: 480 POUNDS. SWAGING SLEEVE: NICOPRESS® 28-IC OR EQUIVALENT.  
**TAB:** "A"—ALUMINUM ALLOY 6061 PER QQ-A-250/11. "C"—CORROSION RESISTANT STEEL PER MIL-S-5059. **FINISH:** ALL CRES PARTS PASSIVATED PER QQ-P-35. ALL ALUMINUM ALLOY PARTS ANODIZED PER MIL-A-8625.

## SAMPLE CALLOUT





# BALL-LOK® HI-TENSION PIN - SINGLE ACTING, POSITIVE LOCKING (52325)

## DIMENSIONS

DASH NO.	NOM. DIA.	A		B ±.005	C +.000 -.030	D		E		F		G	H	CALC. DBL. SHEAR (LBS.)	MIN. TENSION (LBS.)
		MAX.	MIN.			MAX.	MIN.	MAX.	MIN.	MAX.	MIN.				
4	1/4	.2485	.2470	.289	.290	.310	.250	.440	.310	.800	.720	.890	.480	9,200	1,500
5	5/16	.3110	.3095	.375	.330	.310	.250	.490	.410	1.135	.810	.930	.480	14,400	1,700
6	3/8	.3735	.3720	.440	.365	.390	.300	.570	.450	1.135	.810	1.040	.620	20,600	3,100
7	7/16	.4360	.4345	.509	.380	.390	.300	.625	.550	1.400	.940	1.160	.620	28,000	4,000
8	1/2	.4985	.4970	.594	.460	.565	.365	.725	.600	1.400	1.300	1.190	.720	36,800	5,500

## HEAT TREATMENT:

**CORROSION RESISTANT STEEL:**  
180/210 KPSI  
**BALL HARDNESS:**  
Rc 58-62

## PROTECTIVE TREATMENT:

**CORROSION RESISTANT STEEL:**  
PASSIVATE PER QQ-P-35  
**ALUMINUM ALLOY:**  
ANODIZE PER MIL-A-8625

## NOTES:

- ALL PINS FURNISHED WITH ATTACHING RINGS. SIZE AND SHAPE AVIBANK'S OPTION.
- IF A GREATER "C" DIMENSION IS REQUIRED, ADD LENGTH IN TENTHS OF AN INCH AFTER LETTER "C". EXAMPLE: 52325-4-15C15 (C15 BEING 1.5 INCHES).
- IF GRIP CANNOT BE CALLED OUT IN WHOLE NUMBER TENTHS, USE A DECIMAL POINT AND CALL OUT ACTUAL GRIP. EXAMPLE: 1.25 = 1.250 GRIP.
- OPTIONAL LANYARD IS ATTACHED DIRECTLY TO THE HANDLE.
- ALL PARTS TO BE IDENTIFIED PER MIL-STD-130 AND ALL APPLICABLE SPECIFICATIONS.

ALL PARTS WILL BE SUPPLIED TO THE LATEST DRAWING REVISIONS

## SPECIFICATIONS

PART NAME		
BODY	CRES 17-4PH/15-7 MO.	AMS 5643/AMS 5657
SPINDLE	CRES 440C	QQ-S-763
BUTTON	CRES 303, ALUM. ALLOY 2024 OR 417	QQ-S-764, QQ-A-225/6 OR QQ-A-225/5
SPRING	CRES 17-7PH 302	AMS 5678/ASTM-A-313
HANDLE	CRES 303	ASTM-A-581/582
BALLS (4)	CRES 440C	QQ-S-763
ATTACHING RING	CRES 302	ASTM-A-313

## OPTIONAL LANYARD

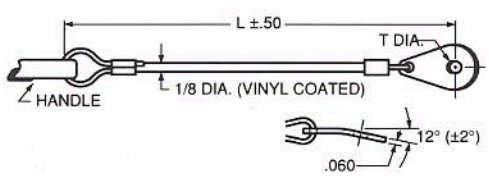


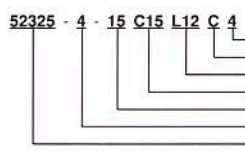
TABLE I

TAB HOLE SIZE	
DASH NO.	T-.001 DIA.
-4	.129
-6	.194
-8	.281
-10	.318
-12	.377

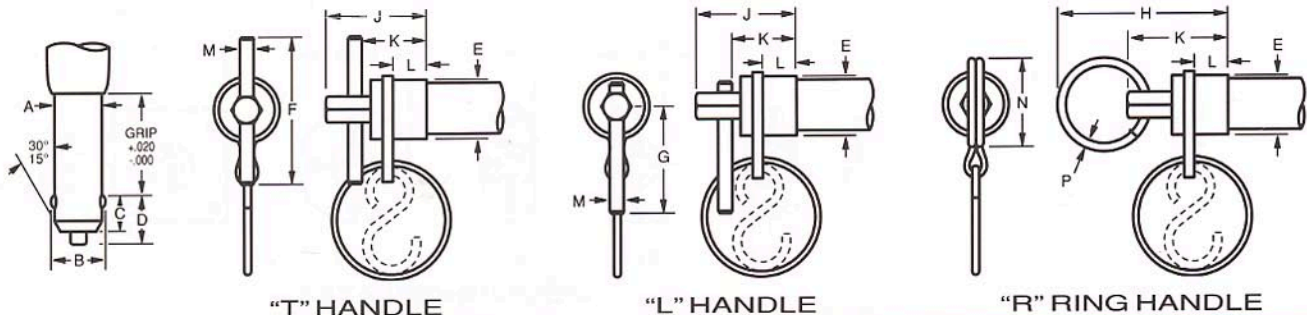
## NOTES:

**CABLE:** SIZE 1/16 DIAMETER. 7 X 7 CORROSION RESISTANT STEEL PER MIL-W-83420. VINYL COATED, COLOR GREEN PER MIL-I-631. RATED FULL STRENGTH: 480 POUNDS. SWAGING SLEEVE: NICOPRESS® 28-IC OR EQUIVALENT.  
**TAB:** "A"—ALUMINUM ALLOY 6061 PER QQ-A-250/11. "C"—CORROSION RESISTANT STEEL PER MIL-S-5059. **FINISH:** ALL CRES PARTS PASSIVATED PER QQ-P-35. ALL ALUMINUM ALLOY PARTS ANODIZED PER MIL-A-8625

## SAMPLE CALLOUT



TAB HOLE SIZE: 4 = .129 DIA. (SEE TABLE I)  
TAB MATERIAL: "A" = ALUMINUM, "C" = CRES  
OPTIONAL LANYARD. SEE NOTE 4. (L12 = 12" LONG) (4" MIN.)  
"C" DIMENSION: 15 = 1.5 INCHES  
GRIP IN TENTHS: 15 = 1.5 INCHES, FIRST DIGIT "0" IF LESS THAN ONE INCH DIAMETER IN SIXTEENTHS: 4 = 1/4 INCH  
BASIC PART NUMBER



"T" HANDLE

"L" HANDLE

"R" RING HANDLE

# BALL-LOK® DOUBLE ACTING PINS - POSITIVE LOCKING

## DIMENSIONS

NOM. DIA.	A		B ±.005	C +.000 -.000	D +.000 -.060	E		F		G		H		J	
	MAX.	MIN.				MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.
3/16	.1885	.1870	.220	.410	.500	.450	.360	1.750	1.375	1.300	1.140	1.945	1.875	1.030	.940
1/4	.2485	.2470	.289	.410	.500	.450	.360	1.750	1.375	1.300	1.140	1.945	1.875	1.030	.940
5/16	.3110	.3095	.375	.440	.550	.505	.390	1.750	1.375	1.300	1.140	1.945	1.875	1.030	.940
3/8	.3735	.3720	.440	.510	.640	.630	.510	2.000	1.875	1.500	1.300	2.025	1.905	1.090	1.000
7/16	.4360	.4345	.509	.510	.640	.630	.510	2.000	1.875	1.500	1.300	2.025	1.905	1.090	1.000
1/2	.4985	.4970	.594	.590	.780	.755	.640	2.250	2.125	1.655	1.500	2.060	1.960	1.270	1.180
9/16	.5610	.5595	.666	.660	.820	.755	.640	2.250	2.125	1.655	1.500	2.060	1.960	1.270	1.180
5/8	.6235	.6220	.750	.750	.930	.870	.805	2.500	2.375	1.810	1.625	2.550	2.400	1.465	1.375
3/4	.7485	.7470	.887	.790	1.000	.960	.890	2.500	2.375	1.810	1.625	2.550	2.400	1.465	1.375
7/8	.8735	.8720	1.046	.950	1.180	1.150	1.070	2.875	2.750	2.250	2.050	2.770	2.570	1.640	1.550
1	.9985	.9970	1.219	1.100	1.350	1.280	1.200	2.875	2.750	2.250	2.050	2.950	2.750	1.830	1.740

NOM. DIA.	K		L		M +.030 -.000	N		P ±.03	CALCULATE DOUBLE SHEAR STR. MIN.		MINIMUM TENSION LOAD CAPABILITIES LBS.	
	MAX.	MIN.	MAX.	MIN.		MAX.	MIN.		STEEL	CRES	2 BALLS	4 BALLS
3/16	.900	.780	.480	.415	.105	1.125	1.000	.11	4,600	5,140	200	260
1/4	.900	.780	.480	.415	.105	1.125	1.000	.11	8,200	9,200	230	300
5/16	.900	.780	.480	.415	.105	1.125	1.000	.11	12,800	14,400	510	660
3/8	.970	.830	.540	.445	.134	1.125	1.000	.11	18,400	20,600	575	745
7/16	.970	.830	.540	.445	.134	1.125	1.000	.11	25,000	28,000	710	920
1/2	1.120	.880	.540	.445	.200	1.125	1.000	.11	32,800	36,800	1160	1500
9/16	1.120	.880	.540	.445	.200	1.125	1.000	.11	41,200	46,000	1420	1845
5/8	1.300	1.000	.575	.510	.231	1.500	1.312	.15	51,200	57,500	2070	2690
3/4	1.300	1.000	.595	.530	.231	1.500	1.312	.15	73,600	82,500	2950	3835
7/8	1.470	1.180	.730	.665	.231	1.500	1.312	.15	100,000	112,500	3900	5070
1	1.680	1.320	.865	.800	.231	1.500	1.312	.15	131,000	147,000	5480	7120

## HEAT TREATMENT:

ALLOY STEEL: SHANK AND SPINDLE (MIL-H-6875) Rc 36-40  
 CORROSION RESISTANT STEEL: SHANK AND SPINDLE Rc 40 MIN. (MIL-H-6875) SPRING 17-7 PH CH900 (MIL-H-6875)  
 BALL HARDNESS: Rc 58-62

## PROTECTIVE TREATMENT:

CARBON AND ALLOY STEEL: CADMIUM PLATE (QQ-P-416, TYPE I OR TYPE II, CLASS 2)  
 CORROSION RESISTANT STEEL: PASSIVATE (QQ-P-35)  
 ALUMINUM ALLOY: ANODIZE (MIL-A-8625)

## NOTES:

1. ALL PINS MEET OR EXCEED THE REQUIREMENTS OF PROCUREMENT SPECIFICATIONS MIL-P-23460 (WEP), AND ARE LISTED (QPL) ON MS17988 THRU MS17990 AND NAS 1353 THRU 1366.
2. ALL PINS FURNISHED WITH ATTACHING RINGS; SIZE AND SHAPE AVIBANK'S OPTION.
3. DOUBLE ACTING PINS ARE AVAILABLE WITH DRIVE-OUT FEATURE. THIS FEATURE IS EMPLOYED WHERE REMOVAL OF PIN IS NECESSARY WHILE IN A SHEAR LOADED CONDITION. TO ORDER DRIVE-OUT, SEE SAMPLE CALLOUT.
4. IF A FOUR BALL PIN IS REQUIRED FOR GREATER TENSION STRENGTH, ADD THE LETTER "F" TO THE END OF THE STANDARD CALLOUT. EXAMPLE: BLS8R15NF
5. IF GREATER "C" DIMENSION IS NECESSARY, ADD LENGTH AFTER "C" LETTER, EXAMPLE: BLS8R15NC10 (C10 BEING 1.0 INCHES).
6. OPTIONAL LANYARD IS ATTACHED DIRECTLY TO LINK BAND.
7. ALL PINS ARE IDENTIFIED PER MIL-STD-130 AND APPLICABLE SPECIFICATION.
8. IF GRIP CANNOT BE CALLED OUT IN WHOLE NUMBER TENTHS, USE A DECIMAL POINT; AND CALL OUT ACTUAL GRIP. EXAMPLE: 1.25 = 1.250 OR 2.375 = 2.375 GRIP.
9. ALL PINS IDENTIFIED PER MIL-STD-130 AND APPLICABLE SPECIFICATIONS.
10. BALLS MAY BE ROTATED TO POSITIONS OTHER THAN SHOWN.

## SPECIFICATIONS

PART NAME	ALLOY STEEL	CORROSION RESISTANT
BODY & SPINDLE	STEEL 4130 (MIL-T-6736 OR MIL-S-6758)	CRES 17-4PH (AMS 5643)/15-7MO (AMS 5657)
BALL	CRES 440C (QQ-S-763)	CRES 440C (QQ-S-763)
BUTTON	MILD STEEL (ASTM -A-108) OR ALUMINUM 2024/2017 (QQ-A-225/6 OR /5)	CRES 303 (ASTM-A-581/582) OR ALUMINUM 2024/2017 (QQ-A-225/6 OR /5)
HEAD	MILD STEEL (ASTM -A-108)	CRES 303 (ASTM-A-581/582) OR CRES 302 (QQ-S-763)
"T" OR "L" HANDLE	MILD STEEL (ASTM -A-108)	CRES 303 (ASTM-A-581/582)
"R" HANDLE RING	CRES 302 (ASTM-A-313) OR 17-7PH (AMS5678)	CRES 302 (ASTM-A-313) OR 17-7PH (AMS 5678)
ATTACHING LINK BAND	MILD STEEL (ASTM-A-366/568) OR CRES 302 (QQ-S-766 OR MIL-S-5059)	CRES 302 (QQ-S-766 OR MIL-S-5059)
SPRING/ATTACHING RING	MUSIC WIRE (ASTM-A-228 OR CRES 302 (ASTM-A-313))	CRES 302 (ASTM-A-313) OR 17-7PH (AMS 5678)

## OPTIONAL LANYARD

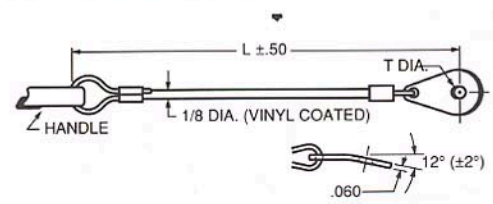


TABLE I

TAB HOLE SIZE	DASH NO.	+0.004 T-.001 DIA.
-4	.129	
-6	.194	
-7	.255	
-8	.281	
-10	.318	
-12	.377	

## NOTES:

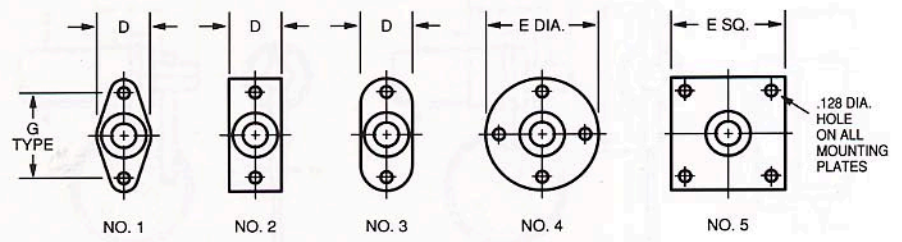
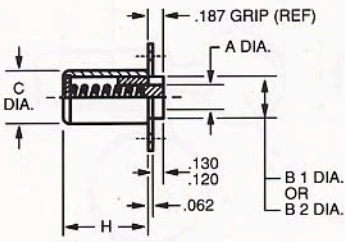
CABLE: SIZE 1/16 DIAMETER. 7 X 7 CORROSION RESISTANT STEEL PER MIL-W-83420. VINYL COATED, COLOR GREEN PER MIL-I-631. RATED FULL STRENGTH: 480 POUNDS. SWAGING SLEEVE: NICOPRESS® 28-IC OR EQUIVALENT. TAB: "A"—ALUMINUM ALLOY 6061 PER QQ-A-250/11. "C"—CORROSION RESISTANT STEEL PER MIL-S-5059. FINISH: ALL CRES PARTS PASSIVATED PER QQ-P-35. ALL ALUMINUM ALLOY PARTS ANODIZED PER MIL-A-8625.

## SAMPLE CALLOUT

B L S (OR C) 8 R 15 N (OR D) L12 C 4

- TAB HOLE, 4 = .129 (SEE TABLE I)
- TAB MATERIAL: "A" = ALUMINUM, "C" = CRES
- OPTIONAL LANYARD, SEE NOTE 6. (L12 = 12" LONG.) (4" MIN.)
- DRIVE OUT (SEE NOTE 3)
- NON-DRIVE OUT
- GRIP LENGTH, FIFTEEN TENTHS = 1.5 INCHES, FIRST DIGIT "0" IF LESS THAN ONE INCH. DROP DECIMAL IF ONLY 2 DIGITS USED.
- HANDLE STYLE (R, T OR L)
- DIAMETER IN SIXTEENTHS: 8 = 1/2"
- CORROSION RESISTANT STEEL
- STEEL

ALL PARTS WILL BE SUPPLIED TO THE LATEST DRAWING REVISIONS



**MOUNTING PLATES**

**RECEPTACLES - FOR USE WITH POSITIVE LOCK, SINGLE ACTING, BALL-LOK® PINS**

**DIMENSIONS**

PIN NO.	"A" +.003 -.000	"B 1" +.001 -.004	"B 2"	"C"	"D"	"E"	"G"	"H"	APPROX. WEIGHT
3	.190	.375	.500	.63	.63	1.28	1.000	1.06	.080 LBS.
4	.250	.375	.500	.63	.63	1.28	1.000	1.06	.085 LBS.
5	.312	—	.500	.63	.63	1.28	1.000	1.06	.090 LBS.
6	.375	—	.500	.63	.63	1.28	1.000	1.06	.095 LBS.
7	.437	.625	—	.75	.75	1.41	1.125	1.25	.100 LBS.
8	.500	.625	—	.75	.75	1.41	1.125	1.25	.110 LBS.

WEIGHTS ARE CALCULATED USING STEEL RECEPTACLES WITH NO. 4 MOUNTING PLATES.

**SHIMS:**

STANDARD RECEPTACLE MANUFACTURED FOR .125 SKIN THICKNESS. WHEN ORDERING, CALL OUT SKIN THICKNESS. SHIM WILL BE FURNISHED TO COMPENSATE FOR THE DIFFERENCE (ON CRES AND STEEL ONLY). TOLERANCE OF SHIM THICKNESS ±.005. ALUMINUM RECEPTACLES MANUFACTURED TO SPECIFIED SKIN THICKNESS. MOUNTING PLATE THICKNESS VARIES ACCORDING TO SKIN THICKNESS DESIRED. EXAMPLE: .093 SKIN THICKNESS, .032 MOUNTING PLATE THICKNESS (ALUMINUM RECEPTACLES ONLY).

**ALUMINUM RECEPTACLES**

PART NAME	MATERIAL	SPECIFICATION
BODY	7075-T73/T6511	QQ-A-225/9/QQ-A-200/11
PLUNGER	2017-T4/2024-T4	QQ-A-225/5/QQ-A-225/6
MOUNTING PLATE (OPTIONAL)	7075-T73/T6511	QQ-A-225/9/QQ-A-200/11
SPRING	MUSIC WIRE	ASTM-A-228
RETAINING DISK	ALUM. ALLOY 2024-T4 OR 6061-T6	QQ-A-225/6/QQ-A-225/8

**MATERIALS:**

- CONSTRUCTION:**  
**CRES & STEEL:** MOUNTING PLATE BRAZED TO BODY PER MIL-B-7883.  
**ALUMINUM:** ONE PIECE MOUNTING PLATE AND BODY WITH HARDENED STEEL SHOULDER ON INSIDE FOR TENSION LOADS.
- HEAT TREAT:**  
**CRES BODY:** 180/210,000 PSI  
**STEEL BODY:** 160/180,000 PSI
- FINISH:**  
**CRES:** PASSIVATE PER QQ-P-35  
**STEEL:** CADMIUM PLATE PER QQ-P-416, TYPE I OR II, CLASS 2.  
**ALUMINUM:** ANODIZE PER MIL-A-8625 (CLEAR OR GRAY)  
 RECEPTACLES ARE DESIGNED TO WITHSTAND THE TENSION LOADS OF THE BALL-LOK® PINS USED WITH THEM.

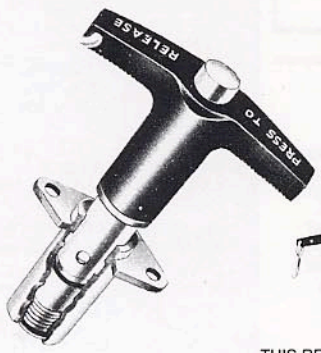
**CRES RECEPTACLES**

PART NAME	MATERIAL	SPECIFICATION
BODY	CRES 17-4 PH	AMS 5643
PLUNGER	CRES 300 SERIES	ASTM-A-581/582
MOUNTING PLATE	CRES 300 SERIES	QQ-S-766/MIL-S-5059
SPRING	CRES 302 OR 17-7 PH	ASTM -A-313/AMS 5678
RETAINING DISK	CRES 300 SERIES	QQ-S-766/MIL-S-5059

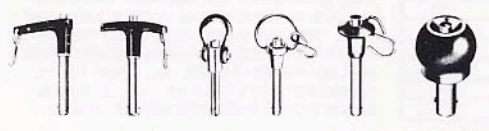
**STEEL RECEPTACLES**

PART NAME	MATERIAL	SPECIFICATION
BODY	ALLOY STEEL 4130	MIL-S-6758/MIL-T-6763
PLUNGER	MILD STEEL	ASTM-A-108 OR EQUIV.
MOUNTING PLATE	ALLOY STEEL 4130, MILD STEEL	MIL-S-18729 OR EQUIV., ASTM-A-366 OR EQUIV.
SPRING	MUSIC WIRE	ASTM-A-228
RETAINING DISK	MILD STEEL	ASTM-A-366 OR EQUIV.

**FLUSH-MOUNTED RECEPTACLE**

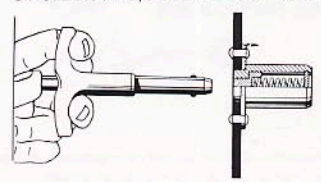


THE COMBINATION OF THE BALL-LOK® SERIES SINGLE-ACTING QUICK RELEASE PIN AND RECEPTACLE PROVIDES A FASTENING UNIT THAT OFFERS SPEED OF ATTACHMENT—QUICK CONNECT AND DISCONNECT—EASE OF ASSEMBLY AND DISASSEMBLY—LIFTING, HOLDING AND SUPPORTING EQUIPMENT, MATERIALS AND ACCESSORIES. THE RECEPTACLE IS PERMANENTLY FLUSH-MOUNTED ON THE SKIN SURFACE. (OR ON ANY SURFACE WHERE FLANGE CAN BE ATTACHED.) THE SELF-LOCKING QUICK RELEASE BALL-LOK® PIN CANNOT BE ACCIDENTALLY RELEASED... PRESSING BUTTON AND PULLING REMOVES PIN INSTANTLY FROM RECEPTACLE.



THIS RECEPTACLE IS MADE SPECIFICALLY FOR USE WITH BALL-LOK® SINGLE ACTING PINS. "SPECIAL" BALL-LOK® PINS CAN BE DESIGNED FOR SPECIFIC APPLICATIONS AND TO MANY REQUIREMENTS.

**SINGLE ACTING, POSITIVE LOCKING PINS**



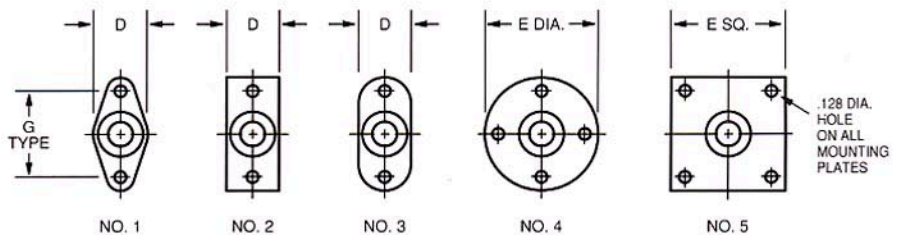
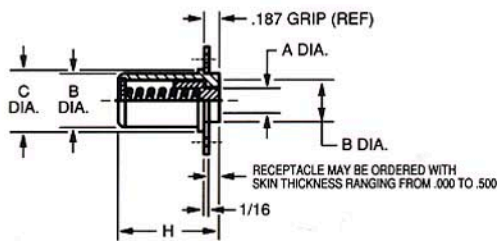
SPECIAL DIAMETER RECEPTACLE AND MOUNTING PLATES CAN BE MANUFACTURED FOR SPECIAL APPLICATIONS. PLEASE CONSULT OUR SALES ENGINEERS FOR FURTHER INFORMATION AND PRICES.

ALL PARTS WILL BE SUPPLIED TO THE LATEST DRAWING REVISIONS

**SAMPLE CALLOUT**

A 4 S 4 B 1 - .072

- SKIN THICKNESS IN THOUSANDTHS (MAX .125)
- STUD DIAMETER (B1 OR B2)
- MOUNTING PLATE TYPE (NO. 1, 2, 3, 4, OR 5)
- MATERIAL: "S" = STEEL, "C" = CRES, "A" = ALUMINUM
- PIN DIA. IN SIXTEENTHS (4 = 1/4)
- DENOTES RECEPTACLE



**MOUNTING PLATES**

**LIGHTWEIGHT RECEPTACLES - FOR USE WITH SINGLE ACTING, BALL-LOK® PINS**

**DIMENSIONS**

PIN NO.	A +.003 -.000	B +.001 -.004	C*	D	E	G	H	APPROX. WEIGHT
3	.190	.375	.437	5/8	1.281	1.000	1.25	.040 LBS.
4	.250	.375	.437	5/8	1.281	1.000	1.25	.043 LBS.
5	.312	.500	.562	5/8	1.281	1.000	1.25	.045 LBS.
6	.375	.625	.687	3/4	1.406	1.125	1.31	.048 LBS.

WEIGHTS ARE CALCULATED USING STEEL RECEPTACLES WITH NO. 4 MOUNTING PLATES.

\* "C" DIMENSION OPTIONAL WHEN ALUMINUM COMPONENTS ARE USED.

**MATERIALS:**

- CONSTRUCTION:**
    - CRES & STEEL:** MOUNTING PLATE BRAZED TO BODY PER MIL-B-7883.
    - ALUMINUM:** ONE PIECE MOUNTING PLATE AND BODY WITH HARDENED STEEL SHOULDER ON INSIDE FOR TENSION LOADS.
  - HEAT TREAT:**
    - CRES BODY:** 180/210,000 PSI
    - STEEL BODY:** 160/180,000 PSI
  - FINISH:**
    - CRES:** PASSIVATE PER QQ-P-35
    - STEEL:** CADMIUM PLATE PER QQ-P-416, TYPE I OR II CLASS 2.
    - ALUMINUM:** ANODIZE PER MIL-A-8625 (CLEAR OR GRAY)
- RECEPTACLES ARE DESIGNED TO WITHSTAND THE TENSION LOADS OF THE BALL-LOK® PINS USED WITH THEM.

**ALUMINUM RECEPTACLES**

PART NAME	MATERIAL	SPECIFICATION
BODY	7075-T73/T6511	QQ-A-225/9/ QQ-A-200/11
PLUNGER	2017-T4/2024-T4	QQ-A-225/5/ QQ-A-225/6
MOUNTING PLATE (OPTIONAL)	7075-T73/T6511	QQ-A-225/9/ QQ-A-200/11
SPRING	MUSIC WIRE	ASTM-A-228
RETAINING DISK	2024-T4 ALUMINUM ALLOY	QQ-A-225/6

**CRES RECEPTACLES**

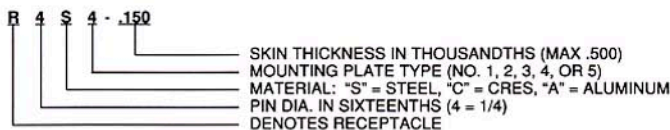
PART NAME	MATERIAL	SPECIFICATION
BODY	CRES 17-4 PH	AMS 5643
PLUNGER	CRES 300 SERIES	QQ-S-763 OR EQUIVALENT
MOUNTING PLATE	CRES 300 SERIES	QQ-S-766/ QQ-S-763
SPRING	CRES 302 Q&R 17-7 PH	ASTM-A-313/AMS 5673
RETAINING DISK	CRES 300 SERIES	QQ-S-766/ QQ-S-763

**STEEL RECEPTACLES**

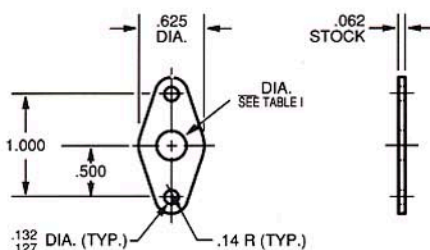
PART NAME	MATERIAL	SPECIFICATION
BODY	ALLOY STEEL 4130	MIL-S-6758/ MIL-T-6736
PLUNGER	MILD STEEL	ASTM-A-108 OR EQUIVALENT
MOUNTING PLATE	ALLOY STEEL 4130, MILD STEEL	MIL-S-18725 OR EQUIVALENT, QQ-S-698 OR EQUIV.
SPRING	MUSIC WIRE	ASTM-A-228
RETAINING DISK	MILD STEEL	ASTM-A-366 OR EQUIVALENT

ALL PARTS WILL BE SUPPLIED TO THE LATEST DRAWING REVISIONS

**SAMPLE CALLOUT**



**MOUNTING PLATES - CAN BE USED IN PLACE OF A RECEPTACLE**



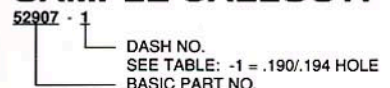
**TABLE I**

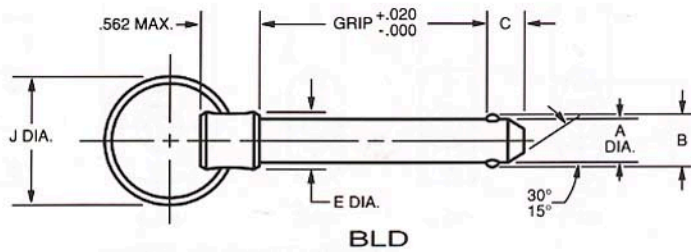
HOLE SIZE		
DASH NO.	DIAMETER MIN.	DIAMETER MAX.
-1	.190	.194
-2	.250	.254
-3	.312	.316
-4	.375	.379
-5	.438	.442
-6	.500	.504

**MATERIAL:** 300 SERIES CRES QQ-S-766 OR EQUIV.

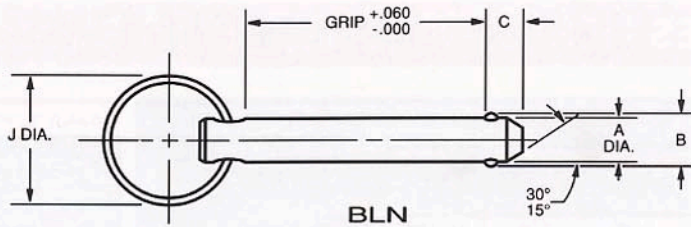
**FINISH:** PASSIVATE PER QQ-P-35

**SAMPLE CALLOUT:**

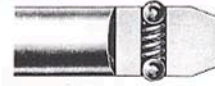




BLD



BLN



TWO BALLS FOR COMPLETE SAFETY  
3/16" PIN HAS 1 BALL ONLY  
SOLID STEEL SHANK FOR ADDED STRENGTH

## BALL-LOK® DETENT PINS - SPRING LOADED

### DIMENSIONS

DASH NO.	NOM. DIA.	A +.0000 -.0030	B MIN.	C MAX.	E ±.015	J MAX	CALCULATED DOUBLE SHEAR STRENGTH (POUNDS)			PUSH-PULL FORCE LBS.	
							STEEL 4130	MILD STEEL	CRES	MAX.	MIN.
3	3/16	.1885	.200	.329	.312	1.187	4,700	2,100	3,900	7	2
4	1/4	.2480	.280	.344	.375	1.187	8,500	3,800	4,500	7	2
5	5/16	.3105	.360	.359	.438	1.187	13,400	6,100	7,100	14	6
6	3/8	.3730	.430	.390	.500	1.187	19,600	8,900	10,300	14	6
7	7/16	.4355	.495	.469	.563	1.187	26,700	12,200	14,100	17	8
8	1/2	.4980	.570	.516	.625	1.187	34,900	15,900	18,400	22	10
9	9/16	.5605	.645	.593	.688	1.687	44,400	20,300	23,400	22	10
10	5/8	.6230	.720	.672	.750	1.687	54,900	25,200	28,900	30	15
12	3/4	.7480	.860	.750	.875	1.687	79,300	36,500	41,800	30	15
14	7/8	.8730	1.030	.859	1.000	2.187	108,000	49,800	57,000	35	20
16	1	.9980	1.160	.984	1.125	2.187	141,500	65,200	74,600	40	20

### HEAT TREATMENT:

**4130 STEEL:**  
SHANK: 160/180,000, PSI PER MIL-H-6875, Rc 36-40  
**CORROSION RESISTANT STEEL:**  
17-7 PH (CH900)  
**CARBON STEEL: NONE**

### PROTECTIVE TREATMENT:

**4130 STEEL:**  
SHANK, SPRING & RING:  
CADMIUM PLATED PER QQ-P-416, TYPE I OR TYPE II, CLASS 2.  
**CORROSION RESISTANT STEEL:**  
PASSIVATE PER QQ-P-35.  
**CARBON STEEL:**  
SHANK, SPRING & RING:  
CADMIUM PLATED PER QQ-P-416, TYPE I OR TYPE II, CLASS 2.

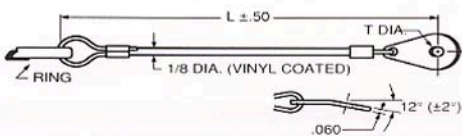
### SPECIFICATIONS

PART NAME	ALLOY STEEL	CORROSION RESISTANT		
BODY	ALLOY STEEL 4130 "S"	MIL-S-6758 OR EQUIV.		
BODY	MILD STEEL "M"	ASTM-A-108	CRES 303	ASTM-A-581/582
SPRING & RING	MUSIC WIRE	ASTM-A-228	CRES 17-7PH/302	AMS 5678/ASTM-A-313
HEAD (OPTIONAL)	MILD STEEL	ASTM-A-108	CRES 303	ASTM-A-581/582
BALLS	CRES 440C	QQ-S-763, Rc 58-62	CRES 440C	QQ-S-763, Rc 58-62

### NOTES:

- IF A GREATER "C" DIMENSION IS REQUIRED, ADD THE LETTER "C" AND THE LENGTH AFTER THE STANDARD GRIP. EXAMPLE: BLDS8-15C10 (C10 BEING 1.0 INCHES)
- PARTS TO BE IDENTIFIED, AVK AND APPROPRIATE PART NUMBER IF AREA PERMITS.
- BALLS MAY BE ROTATED TO POSITIONS OTHER THAN SHOWN.
- IF GRIP CANNOT BE CALLED OUT IN WHOLE NUMBER TENTHS, USE A DECIMAL POINT AND CALL OUT ACTUAL GRIP. EXAMPLE: 1.25 = 1.250 OR 2.375 = 2.375 GRIP.
- OPTIONAL LANYARD ASSEMBLY IS ATTACHED DIRECTLY TO RING HANDLE.

### OPTIONAL LANYARD



### NOTES:

**CABLE:** SIZE 1/16 DIAMETER, 7 X 7 CORROSION RESISTANT STEEL PER MIL-W-83420. VINYL COATED, COLOR GREEN PER MIL-I-631. RATED FULL STRENGTH: 480 POUNDS. SWAGING SLEEVE: NICOPRESS® 28-IC OR EQUIVALENT.  
**TAB:** "A"—ALUMINUM ALLOY 6061 PER QQ-A-250/11. "C"—CORROSION RESISTANT STEEL PER MIL-S-5059.  
**FINISH:** ALL CRES PARTS PASSIVATED PER QQ-P-35. ALL ALUMINUM ALLOY PARTS ANODIZED PER MIL-A-8625.

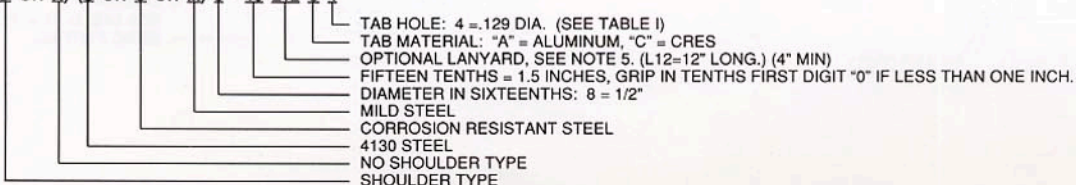
TABLE I

TAB HOLE SIZE	
DASH NO.	+ .004 T-.001 DIA.
-4	.129
-6	.194
-7	.255
-8	.281
-10	.318
-12	.377

ALL PARTS WILL BE SUPPLIED TO THE LATEST DRAWING REVISIONS

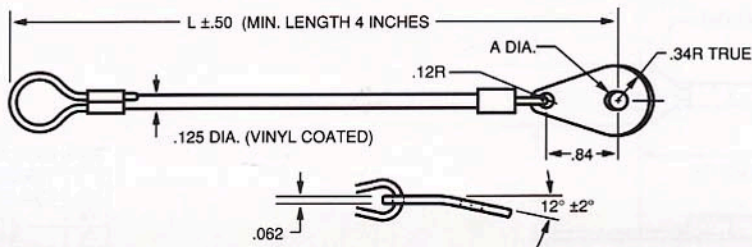
### SAMPLE CALLOUT

B L (D OR N) (S OR C OR M) 8 - 15 L12 C 4





# LANYARD ASSEMBLY (LT1504)



## SAMPLE CALLOUT:

LT1504 C 6 - 16  
 LENGTH IN INCHES (4 INCH MIN.)  
 DASH NO. (SEE TABLE I)  
 TAB MATERIAL  
 \*C\* = CRES, \*A\* = ALUM. ALLOY  
 BASIC PART NO.

## SPECIFICATIONS

PART NAME	MATERIAL	SPECIFICATION	FINISH
SWAGING SLEEVE, NICO PRESS 28-IC	COPPER	COMMERCIAL	ZINC PLATE
TAB	ALUM. ALLOY 6061	QQ-A-250/11	ALUM. ANODIZE PER MIL-A-8625
CABLE 1/16 DIA., 7 X 7	CRES	MIL-S-5059	CRES PASSIVATE PER QQ-P-35
	CRES	MIL-W-83420 TY. I, COMP. B	VINYL COATED (GREEN) PER MIL-I-631

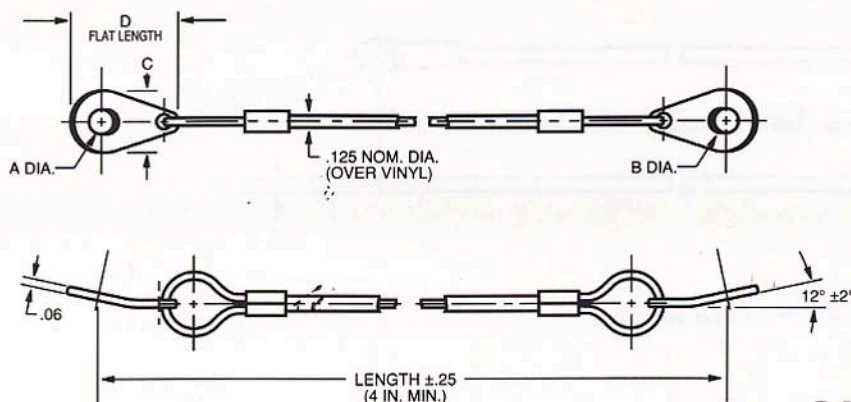
RATED FULL STRENGTH OF CABLE 480 LBS.

TABLE I

TAB HOLE SIZE	
DASH NO.	A +.004 DIA. A -.001
-4	.129
-6	.194
-7	.255
-8	.281
-10	.318
-12	.377

# LANYARDS

# LANYARD ASSEMBLY (53128)



## SPECIFICATIONS

PART NAME	MATERIAL	SPECIFICATION	FINISH
TAB	CRES	MIL-S-5059	PASSIVATE PER QQ-P-35
SLEEVE, NICO PRESS® 28-IC	COPPER	COMMERCIAL	ZINC PLATE
CABLE 1/16 DIA., 7 X 7	CRES	MIL-W-83420	VINYL COAT (GREEN) PER MIL-I-631

RATED FULL STRENGTH OF CABLE 480 LBS.

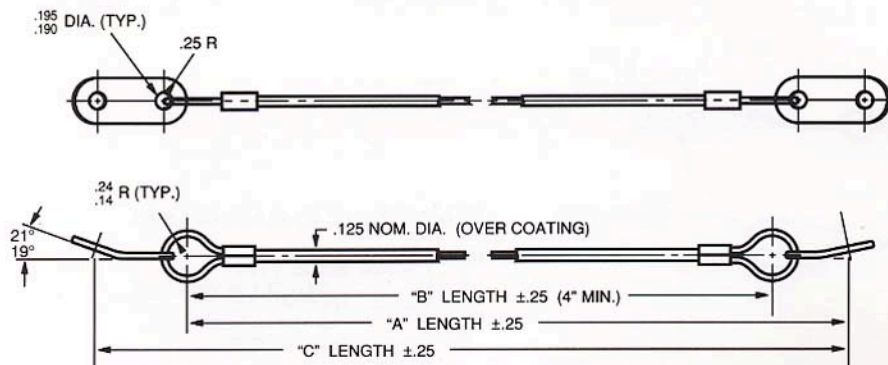
TABLE II

TAB DIMENSIONS			
HOLE SIZE	C	D	DASH NO. A & B
.133			
.128	.68	1.31	.125
.198			
.193	.68	1.31	.190
.259			
.254	.68	1.31	.250
.285			
.280	.68	1.31	.277
.323			
.316	.68	1.31	.312
.384			
.379	.68	1.31	.375
.445			
.440	.68	1.31	.437
.510			
.505	.68	1.31	.500
.571			
.566	1.25	2.31	.562
.635			
.630	1.25	2.31	.625
.697			
.692	1.25	2.31	.688
.760			
.755	1.25	2.31	.750
.821			
.816	1.25	2.31	.812
.885			
.880	1.25	2.31	.875
.947			
.942	1.25	2.31	.938
1.010			
1.005	1.25	2.31	1.000

## SAMPLE CALLOUT:

53128 - 8 - 250 - 375  
 "B" DIA. NOM. (384/.379)  
 "A" DIA. NOM. (259/.254)  
 LENGTH IN 1" INCREMENTS  
 BASIC PART NO.  
 \*SEE TABLE II

# LANYARD ASSEMBLY (50996)



## SPECIFICATIONS

PART NAME	MATERIAL	SPECIFICATION	FINISH
TAB	ALUM. ALLOY 2024-T4	QQ-A-250/4	ANODIZE PER MIL-A-8625, TYPE II
SLEEVE	COPPER	COMMERCIAL	ZINC PLATE
CABLE, 1/16 DIA., 7 X 7	CRES	MIL-W-83420, TY. I, COMP. B	VINYL COAT PER MIL-I-631, GREEN

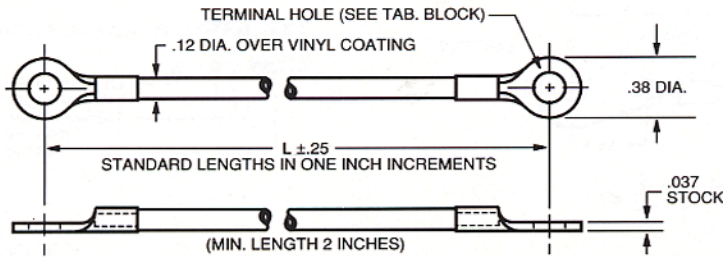
RATED FULL STRENGTH OF CABLE 480 LBS.

## SAMPLE CALLOUT:

50996 - 6 W B  
 BARE CABLE NO VINYL COATING  
 "W" DENOTES WITHOUT TABS.  
 (USE "B" LENGTH)  
 NO LETTER DENOTES (1) TAB  
 (USE "A" LENGTH)  
 "T" DENOTES TWO TABS  
 (USE "C" LENGTH)  
 LENGTH IN 2 INCH INCREMENTS  
 (6 = 12.00 LG, 4.00 MIN.)  
 BASIC PART NO.

\* DUE TO SIZE LIMITATIONS THE -2 LENGTH WILL BE SUPPLIED WITHOUT VINYL COATING.

# CABLE ASSEMBLY



**TABLE I**

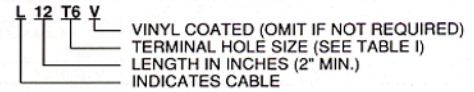
NO.	TERMINAL HOLE DIA.
T4	.129
T6	.194
T8	.252

## SPECIFICATIONS

PART NAME	MATERIAL	SPECIFICATION	FINISH
CABLE 1/16", 7 X 7	CRES	MIL-W-83420 TY. I, COMP. B	VINYL COATED (GREEN) PER MIL-I-631
TERMINAL	300 SERIES CRES	MIL-S-5059/QQ-S-766	PASSIVATE PER QQ-P-35

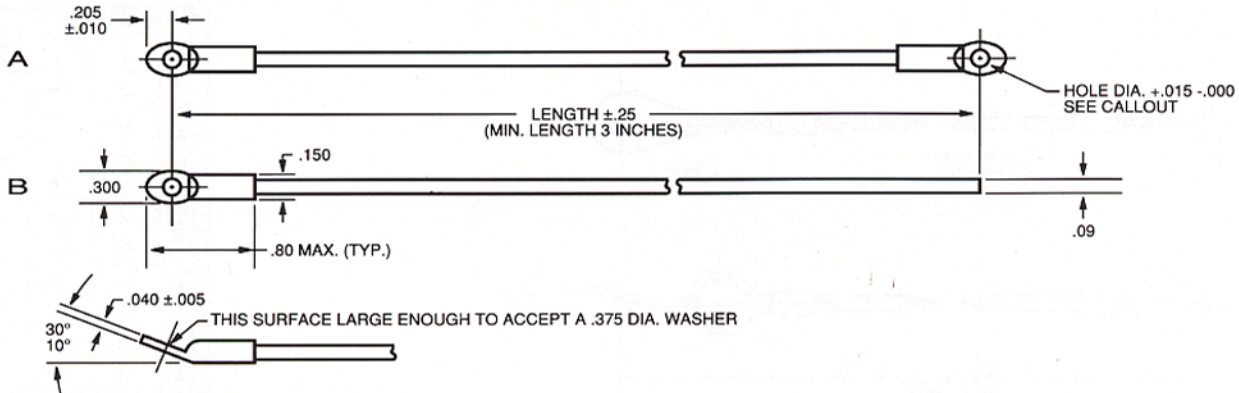
TENSION LOAD = 30 LB. MIN.

## SAMPLE CALLOUT:



# CABLES AND CHAINS

## CABLE ASSEMBLY (52305)

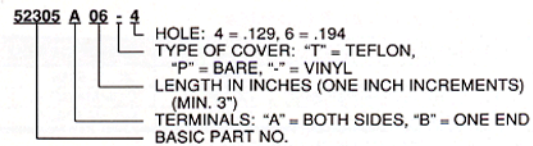


## SPECIFICATIONS

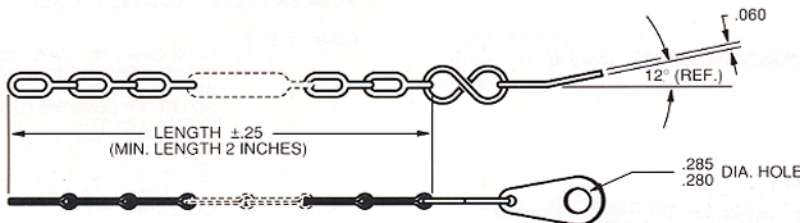
PART NAME	MATERIAL	SPECIFICATION	FINISH
CABLE 1/16", 7 X 7	CRES	MIL-W-83420, TYPE I, COMP B ASTM-D-2116-66	VINYL COVERED (GREEN) TEFLON COVERED
TERMINAL	CRES	QQ-S-764 OR ASTM -A-581/582	PASSIVATE PER QQ-P-35

CABLE ASSEMBLY IS CAPABLE OF WITHSTANDING A 200 LB. MIN. TENSILE LOAD WITHOUT FAILURE. TEST LEVEL PER MIL-STD-105E, SPECIAL INSPECTION LEVEL S-3 AQL 1.0.

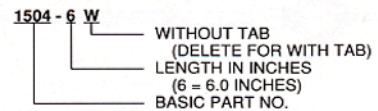
## SAMPLE CALLOUT:



## CHAIN ASSEMBLY (1504)



## SAMPLE CALLOUT:

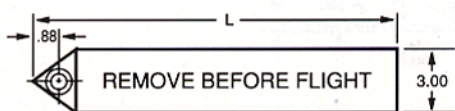


## SPECIFICATIONS

PART NAME	MATERIAL	SPECIFICATION	FINISH
CHAIN - FLAT LINK - SIZE #1	STEEL	RR-C-271	CAD. PLATE PER QQ-P-416, TYPE I OR II, CLASS 2
"S" HOOK	MILD STEEL	ASTM-A-228 OR EQUIV.	CAD. PLATE PER QQ-P-416, TYPE I OR II, CLASS 2
TAB	6061-T4 ALUM. ALLOY	QQ-A-250/11 OR EQUIV.	ANODIZE PER MIL-A-8625

TENSION LOAD 30 LBS. MIN.

# 67D34391 - STREAMER - CLOTH COATED NYLON



## SAMPLE CALLOUT:

67D34391 - 3  
 DASH NO. (-3 = 36.00" LONG)  
 BASIC PART NO.

## TABLE I

DASH NO.*	LENGTH IN. L
-1	24.00
-3	36.00
-5	48.00
-7	60.00
-15	12.00

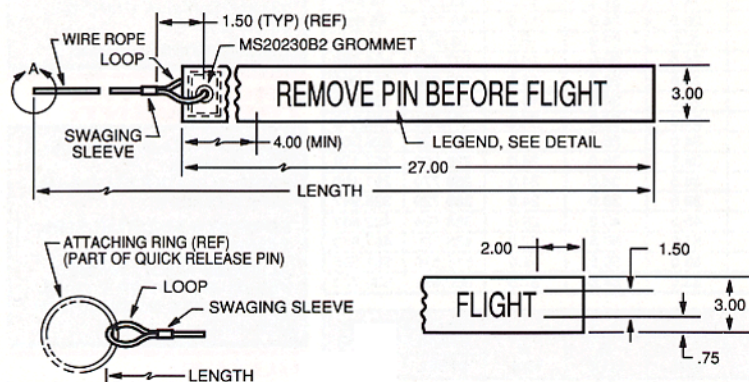
\*SEE NOTE 1.

## NOTES:

- OTHER CONFIGURATIONS AND MARKINGS ARE AVAILABLE. SEE LATEST SPECIFICATION.
- MATERIAL: CLOTH, NYLON, WATERPROOF PER MIL-C-20696, TYPE I, CLASS 2, COLOR NUMBER 11136 (INSIGNIA RED) PER FED-STD-595.
- HEIGHT OF LETTERS: SINGLE LINE, 1.00" HIGH, DOUBLE LINE, .75" HIGH.

# STREAMERS AND RINGS

## NAS 1091 - STREAMER VINYL COATED NYLON



## SAMPLE CALLOUT:

NAS1091 - 39  
 LENGTH IN INCHES (SEE TABLE II)  
 BASIC PART NO.

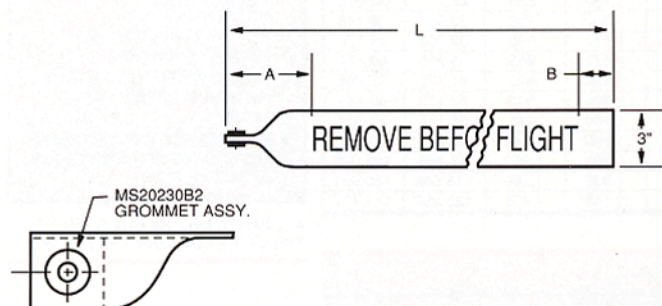
## TABLE II

LOOP END	LENGTH OR IN. ±.25
NAS 1091-33	33"
NAS 1091-39	39"
NAS 1091-45	45"
NAS 1091-51	51"
NAS 1091-57	57"
NAS 1091-63	63"

## NOTES:

- MATERIAL: CLOTH, NYLON, VINYL COATED PER MIL-C-20696, TYPE I, CLASS 2.
- COLOR; STREAMER: RED COLOR NO. 11136 PER FED-STD-595. LETTERS: WHITE COLOR NO. 37875 PER FED-STD-595.

## NAS 1756 - STREAMER VINYL COATED NYLON



## SAMPLE CALLOUT:

NAS1756 - 36  
 LENGTH IN INCHES, SEE TABLE III  
 "\*" = WITH LEGEND, "N" = NO LEGEND  
 BASIC PART NO.

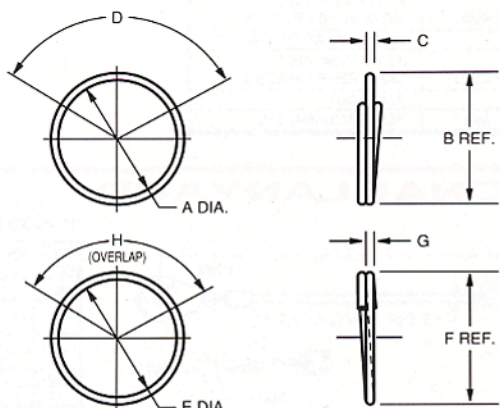
## TABLE III

LOOP END	A MIN.	B APPROX.	LENGTH OR IN. ±.25
NAS 1756-12	2	1	12"
NAS 1756-24	4	2	24"
NAS 1756-36	12	6	36"
NAS 1756-48	24	6	48"
NAS 1756-60	36	6	60"

## NOTES:

- MATERIAL: VINYL COATED NYLON PER MIL-C-20696, TYPE I, CLASS 2.
- COLOR; STREAMER: RED COLOR NO. 11136 PER FED-STD-595. LETTERS: WHITE COLOR NO. 37875 PER FED-STD-595.
- BASIC PART NUMBER INCLUDES LEGEND "REMOVE BEFORE FLIGHT." ADD "N" IN PLACE OF DASH FOR NO LEGEND.

# RINGS



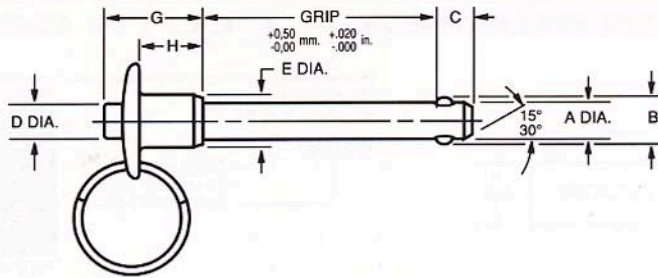
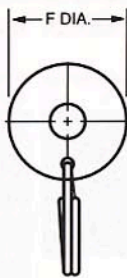
## TABLE IV

PART NO.	MATERIAL	SPEC.	A	B	C DIA.	D
19 - 4CD	CRES 302	ASTM-A-313	1.050-.950	1.144	.077-.067	120°
19 - 8CD	CRES 302	ASTM-A-313	1.423-1.325	1.561	.058-.088	120°
19 - 9CD	CRES 302	ASTM-A-313	1.550-1.450	1.660	.095-.075	120°
R - 625	MUSIC WIRE	ASTM-A-228	.592-.532	.625	.068-.058	60°
19 - 4SD	MUSIC WIRE	ASTM-A-228	1.050-.950	1.144	.077-.067	120°
19 - 8SD	MUSIC WIRE	ASTM-A-228	1.425-1.325	1.561	.058-.066	120°
19 - 9SD	MUSIC WIRE	ASTM-A-228	1.550-1.450	1.660	.085-.075	120°

PART NO.	MATERIAL	SPEC.	E	F	G DIA.	H
7CR	302 CRES	ASTM-A-313	.655-.595	.740	.062-.052	90°
19 - 100C	17-7PH CRES	AMS 5678	.810-.790	.859	.086-.084	285°-255°
719 - 4CR	302 CRES	ASTM-A-313	.922-.862	1.062	.088-.082	150°-120°
719 - 10CR	302 CRES	ASTM-A-313	1.135-1.075	1.375	.138-.132	150°-120°
7SR	MUSIC WIRE	ASTM-A-228	.655-.595	.740	.062-.052	90°
19 - 100S	MUSIC WIRE	ASTM-A-228	.810-.790	.859	.086-.084	285°-255°

## NOTE:

- FINISH: STEEL: CADMIUM PLATE PER QQ-P-416, TYPE II, CLASS 2. CRES: PASSIVATE PER QQ-P-35.



# BALL-LOK® METRIC PINS – “B” HANDLE, SINGLE ACTING, POSITIVE LOCKING (56772)

## DIMENSIONS

DIMENSIONS IN MILLIMETERS													CALCULATED DBL. SHEAR (NEWTONS)	
DASH NO.	A +0.04, -0.00	B ±0.25	C ±1.0	D MAX. MIN.		E MAX. MIN.		F MAX. MIN.		G MAX.	H MIN.	STEEL	CRES	
5	4.92	5.54	6	8.0	6.0	12.0	8.0	20.0	18.0	21.0	12.0	21,600	24,400	
6	5.92	6.99	7	8.0	6.0	12.0	8.0	20.0	18.0	21.0	12.0	31,686	35,640	
7	6.92	7.90	7	8.0	6.0	12.0	8.0	20.0	18.0	21.0	12.0	43,200	48,690	
8	7.92	9.42	8	8.0	6.0	13.0	10.0	29.0	20.0	24.0	12.0	56,712	63,804	
10	9.92	11.86	9	10.0	7.0	15.0	11.0	29.0	20.0	27.0	16.0	88,977	100,101	
11	10.92	12.80	9	10.0	7.0	16.0	14.0	36.0	24.0	30.0	16.0	107,750	121,220	
12	11.92	14.45	10	10.0	7.0	16.0	14.0	36.0	24.0	30.0	16.0	128,050	144,060	
13	12.92	15.04	11	15.0	10.5	18.5	15.0	36.0	24.0	30.5	18.0	150,800	169,690	
14	13.92	16.94	12	15.0	10.5	19.5	17.0	42.0	34.0	36.0	24.0	174,706	196,543	
15	14.92	18.54	13	15.0	10.5	19.5	17.0	42.0	34.0	36.0	24.0	201,125	226,300	
16	15.92	19.00	14	15.0	11.5	22.0	19.0	43.0	38.5	38.0	24.0	228,602	257,179	
17	16.92	20.07	14	15.0	11.5	22.0	19.0	43.0	38.5	38.0	24.0	258,770	291,100	
18	17.92	20.91	16	15.0	11.5	22.0	19.0	43.0	38.5	38.0	24.0	289,729	325,947	
20	19.92	24.08	17	18.0	14.0	25.4	21.5	48.5	45.5	43.0	29.0	358,104	402,867	
22	21.92	26.49	19	21.5	17.0	29.0	24.5	57.5	53.0	50.5	32.0	433,700	487,910	
24	23.92	27.74	21	21.5	17.0	29.0	24.5	57.5	53.0	50.5	32.0	516,536	581,095	
25	24.92	33.32	29	23.0	17.5	33.0	29.0	57.5	53.0	54.5	37.5	660,661	630,783	

DIMENSIONS IN INCHES													CALCULATED DBL. SHEAR (POUNDS)	
DASH NO.	A +0.016, -0.000	B ±0.009	C ±0.39	D MAX. MIN.		E MAX. MIN.		F MAX. MIN.		G MAX.	H MIN.	STEEL	CRES	
5	.1930	.218	.232	.315	.236	.472	.315	.787	.708	.830	.472	4,856	5,485	
6	.2331	.275	.275	.315	.236	.472	.315	.787	.708	.830	.472	7,121	8,009	
7	.2725	.311	.275	.315	.236	.472	.315	.787	.708	.830	.472	9,712	10,946	
8	.3118	.371	.315	.315	.236	.512	.393	1.141	.787	.945	.472	12,745	14,339	
10	.3905	.467	.354	.394	.276	.590	.433	1.141	.787	1.063	.630	19,996	22,496	
11	.4300	.504	.354	.394	.276	.630	.551	1.417	.945	1.180	.630	24,223	27,251	
12	.4693	.569	.394	.394	.276	.630	.551	1.417	.945	1.180	.630	28,777	32,375	
13	.5087	.592	.433	.590	.413	.728	.590	1.417	.945	1.200	.708	33,901	38,148	
14	.5481	.667	.472	.590	.413	.768	.669	1.653	1.338	1.417	.945	39,262	44,170	
15	.5874	.730	.512	.590	.413	.768	.669	1.653	1.338	1.417	.945	45,215	50,874	
16	.6268	.748	.551	.590	.453	.866	.748	1.693	1.516	1.496	.945	51,375	57,796	
17	.6662	.790	.551	.590	.453	.866	.748	1.693	1.516	1.496	.945	58,173	65,441	
18	.7056	.823	.630	.590	.453	.866	.748	1.693	1.516	1.496	.945	65,111	73,231	
20	.7843	.948	.669	.708	.551	1.000	.846	1.909	1.791	1.693	1.141	80,478	90,537	
22	.8630	1.043	.748	.846	.669	1.141	.964	2.263	2.087	1.988	1.260	97,466	109,649	
24	.9418	1.092	.827	.846	.669	1.141	.964	2.263	2.087	1.988	1.260	116,082	130,591	
25	.9811	1.218	.866	.905	.689	1.300	1.141	2.263	2.087	2.145	1.476	125,999	141,757	

## SPECIFICATIONS

PART NAME	ALLOY STEEL	CORROSION RESISTANT
BALLS	CRES 440C	CRES 440C
ATTACHING RING	MUSIC WIRE, CRES 302	CRES 17-7PH
COLLAR	CARBON STEEL CRES 300 SERIES	CRES 300 SERIES
HANDLE	CARBON STEEL ALUM. ALLOY 2024/2017	CRES 303 ALUM. ALLOY 2024/2017
SPRING	MUSIC WIRE	CRES 17-7PH/302
BUTTON	CARBON STEEL ALUM. ALLOY 2024/2017	CRES 303 ALUM. ALLOY 2024/2017
SPINDLE	ALLOY STEEL 4130	CRES 17-4PH
BODY	ALLOY STEEL 4130	CRES 17-4PH/15-7MO

## HEAT TREATMENT:

ALLOY STEEL SHANK & SPINDLE: 1100/1240 MPa OR 160/180 KSI. (MIL-H-6825)  
CORROSION RESISTANT STEEL SHANK & SPINDLE: 1240/1455 MPa OR 180/210 KSI. (MIL-H-6875)  
BALL HARDNESS: Rc 58-62

## PROTECTIVE TREATMENT:

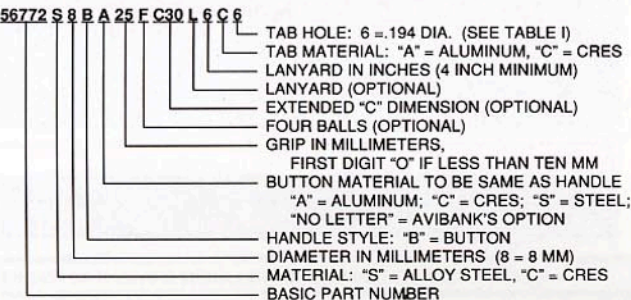
CARBON STEEL, ALLOY STEEL & MUSIC WIRE: CADMIUM PLATE PER QQ-P-416, TYPE II, CLASS 2.  
CORROSION RESISTANT STEEL: PASSIVATE PER QQ-P-35.  
ALUMINUM ALLOY: ANODIZE PER MIL-A-8625, TYPE II, CLASS 2, HANDLE DYE BLACK, BUTTON DYE GOLD.

## NOTES:

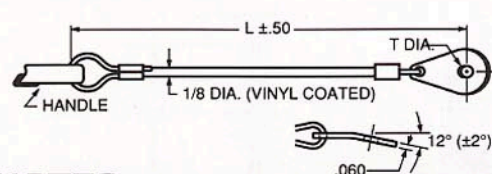
- OPTIONAL LANYARD IS ATTACHED DIRECTLY TO THE HANDLE.
- ALL PARTS THAT ARE SUPPLIED WITH A RING, SIZE AND SHAPE IS AVIBANK'S OPTION.
- COLLAR IS USED WITH ALUMINUM HANDLE.
- BALLS MAY BE ROTATED TO POSITIONS OTHER THAN SHOWN.
- ALL PINS ARE IDENTIFIED PER MIL-STD-130 AND APPLICABLE SPECIFICATIONS.

ALL PARTS WILL BE SUPPLIED TO THE LATEST DRAWING REVISIONS

## SAMPLE CALLOUT



## OPTIONAL LANYARD

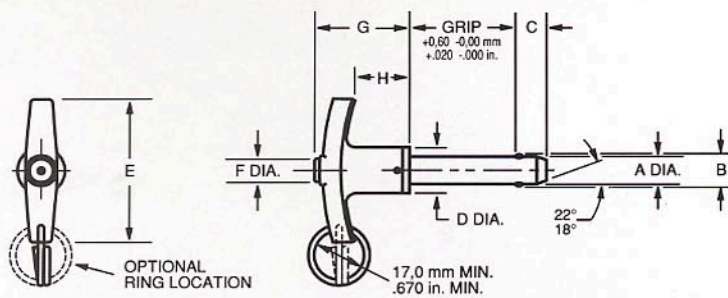


## NOTES:

CABLE: SIZE 1/16 DIAMETER. 7 X 7 CORROSION RESISTANT STEEL PER MIL-W-83420. VINYL COATED, COLOR GREEN PER MIL-I-631. RATED FULL STRENGTH: 480 POUNDS. SWAGING SLEEVE: NICOPRESS® 28-IC OR EQ. TAB: "A"—ALUMINUM ALLOY 6061 PER QQ-A-250/11. "C"—CORROSION RESISTANT STEEL PER MIL-S-5059. FINISH: ALL CRES PARTS PASSIVATED PER QQ-P-35. ALL ALUMINUM ALLOY PARTS ANODIZED PER MIL-A-8625.

TABLE I

DASH NO.	T +0.102 -0.025 DIA.	+0.102 -0.025 DIA.
-4	.129	3,277
-6	.194	4,928
-7	.255	6,477
-8	.281	7,137
-10	.318	8,077
-12	.377	9,576



# BALL-LOK® METRIC PINS – “TA” HANDLE, SINGLE ACTING, POSITIVE LOCKING (51399)

## DIMENSIONS

DIMENSIONS IN MILLIMETERS										CALCULATED DBL. SHEAR (NEWTONS)	
DASH NO.	MAX.	A MIN.	B ±0.25	C ±1.0	D MAX.	E ±1.0	F ±1.0	G MAX.	H MIN.	STEEL	CRES
5	4.96	4.92	5.54	6	13	46	7	32	18	21,600	24,400
6	5.96	5.92	6.99	7	13	46	7	32	18	31,686	35,640
7	6.96	6.92	7.90	7	13	46	7	32	18	43,200	48,690
7.3	7.26	7.22	8.69	7	13	46	7	32	18	47,000	52,900
8	7.96	7.92	9.42	8	13	46	7	32	18	56,712	63,804
10	9.96	9.92	11.86	9	16	51	8	37	21	88,977	100,101
11	10.96	10.92	12.80	9	16	51	10	37	21	107,750	121,220
12	11.96	11.92	14.45	10	16	51	10	37	21	128,050	144,060
13	12.96	12.92	15.04	11	21	57	12	37	22	150,800	169,690
14	13.96	13.92	16.94	12	21	57	12	37	22	174,706	196,543
15	14.96	14.92	18.54	13	21	57	12	42	22	201,125	226,300
16	15.96	15.92	19.00	14	25	76	13	42	24	228,602	257,179
17	16.96	16.92	20.07	14	25	76	13	43	24	258,770	291,100
18	17.96	17.92	20.91	16	25	76	15	43	26	289,729	325,947
20	19.96	19.92	24.08	17	25	76	15	43	26	358,104	402,867
22	21.96	21.92	26.49	19	34	89	18	55	33	433,700	487,910
24	23.96	23.92	27.74	21	34	89	20	55	33	516,536	581,095
25	24.96	24.92	30.94	23	34	89	20	55	33	660,661	630,783
28	27.96	27.92	33.32	29	34	89	20	55	33	704,900	793,000

## HEAT TREATMENT:

ALLOY STEEL SHANK & SPINDLE:  
1100/1240 MPa OR 160/180 KSI.  
(MIL-H-6825)  
CORROSION RESISTANT STEEL SHANK & SPINDLE:  
1240/1445 MPa OR 180/210 KSI.  
(MIL-H-6875)  
BALL HARDNESS: Rc 58-62

## PROTECTIVE TREATMENT:

CARBON STEEL, ALLOY STEEL & MUSIC WIRE:  
CADMIUM PLATE PER QQ-P-416, TYPE II, CLASS 2.  
CORROSION RESISTANT STEEL:  
PASSIVATE PER QQ-P-35.  
ALUMINUM ALLOY: ANODIZE PER MIL-A-8625, TYPE II, CLASS 2, HANDLE DYE BLACK, BUTTON DYE GOLD.

DIMENSIONS IN INCHES										CALCULATED DBL. SHEAR (POUNDS)	
DASH NO.	MAX.	A MIN.	B ±.009	C ±.039	D MAX.	E ±.039	F ±.039	G MAX.	H MIN.	STEEL	CRES
5	.1950	.1930	.216	.232	.511	1.811	.275	1.259	.708	4,856	5,485
6	.2346	.2331	.275	.275	.511	1.811	.275	1.259	.708	7,121	8,009
7	.2740	.2725	.311	.275	.511	1.811	.275	1.259	.708	9,712	10,946
7.3	.2858	.2842	.342	.275	.511	1.811	.275	1.259	.708	10,566	11,892
8	.3133	.3118	.371	.315	.511	1.811	.275	1.259	.708	12,745	14,339
10	.3920	.3905	.467	.354	.629	2.008	.315	1.377	.827	19,996	22,496
11	.4315	.4300	.504	.354	.629	2.008	.394	1.417	.827	24,223	27,251
12	.4708	.4693	.569	.394	.629	2.008	.394	1.417	.827	28,777	32,375
13	.5102	.5087	.592	.433	.826	2.244	.472	1.456	.866	33,901	38,148
14	.5496	.5481	.667	.472	.826	2.244	.472	1.456	.866	39,262	44,170
15	.5889	.5874	.730	.512	.826	2.244	.472	1.653	.866	45,215	50,874
16	.6283	.6268	.748	.551	.984	2.992	.511	1.653	.945	51,375	57,796
17	.6677	.6662	.790	.551	.984	2.992	.511	1.692	.945	58,173	65,441
18	.7070	.7056	.823	.630	.984	2.992	.590	1.692	1.024	65,111	73,231
20	.7858	.7843	.948	.669	.984	2.992	.590	1.692	1.024	80,478	90,537
22	.8645	.8630	1.043	.748	1.338	3.504	.710	2.165	1.300	97,466	109,649
24	.9433	.9418	1.092	.82	1.338	3.504	.787	2.165	1.300	116,082	130,591
25	.9826	.9811	1.218	.866	1.338	3.504	.787	2.165	1.300	125,999	141,757
28	1.1009	1.0994	1.312	1.141	1.338	3.504	.787	2.165	1.300	158,468	178,273

## NOTES:

- OPTIONAL LANYARD IS ATTACHED DIRECTLY TO THE HANDLE.
- ALL PINS THAT ARE FURNISHED WITH RING, SIZE AND SHAPE IS AVIBANK'S OPTION.
- ALL PINS ARE IDENTIFIED PER MIL-STD-130 AND APPLICABLE SPECIFICATIONS.
- BALLS MAY BE ROTATED TO POSITIONS OTHER THAN SHOWN.
- GRIP LENGTH IS MEASURED TO EDGE OF BALL HOLE BEFORE STAKING.

ALL PARTS WILL BE SUPPLIED TO THE LATEST DRAWING REVISIONS

## SPECIFICATIONS

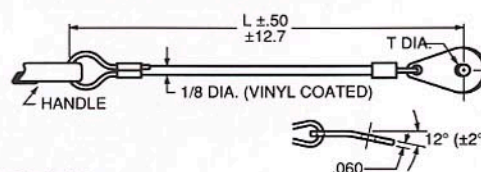
PART NAME	ALLOY STEEL	CORROSION RESISTANT		
SPINDLE	STEEL 4130	MIL-S-6758	CRES 17-4PH	AMS 5643
SPRING	MUSIC WIRE	ASTM-A-228	CRES 17-7PH	AMS 5678
BUTTON	ALUM. ALLOY 2017/2024	QQ-A-225/5/QQ-A-225/6	ALUM. ALLOY 2017/2024	QQ-A-225/5/QQ-A-225/6
BALL	CRES 440C	QQ-S-763	CRES 440C	QQ-S-763
BODY	STEEL 4130	MIL-S-6758/MIL-T-6737	CRES 17-4PH OR 15-7MO	AMS 5643/AMS 5657
SHOULDER RING	CARBON STEEL	ASTM-A-108	CRES 303	ASTM-A-582
HANDLE	ALUM. ALLOY 380	QQ-A-591	ALUM. ALLOY 380	QQ-A-591

## SAMPLE CALLOUT

51399 S 6 T 25 MS P F C10 L 6 C 6

TAB HOLE: 6 = .194 DIA. (SEE TABLE I)  
TAB MATERIAL: "A" = ALUMINUM, "C" = CRES  
LANYARD IN INCHES (4 INCH MINIMUM)  
LANYARD (OPTIONAL)  
EXTENDED "C" DIMENSION (OPTIONAL)  
"F" = FOUR BALLS (OPTIONAL),  
NO LETTER = TWO BALLS STANDARD  
HANDLE PINNED (OPTIONAL) (2 PLACES)  
DENOTES METRIC STANDARD  
GRIP IN MILLIMETERS FIRST DIGIT "0" IF LESS THAN TEN MM  
HANDLE STYLE: "T"  
DIAMETER IN MILLIMETERS (6 = 6 MM)  
MATERIAL: "S" = ALLOY STEEL, "C" = CRES  
BASIC PART NO.

## OPTIONAL LANYARD



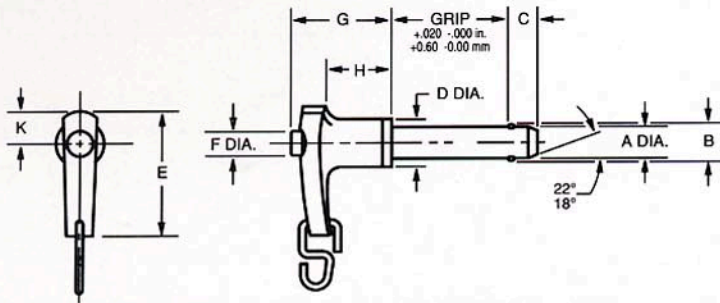
## NOTES:

CABLE: SIZE 1/16 DIAMETER. 7 X 7 CORROSION RESISTANT STEEL PER MIL-W-83420. VINYL COATED, COLOR GREEN PER MIL-I-631. RATED FULL STRENGTH: 480 POUNDS. SWAGING SLEEVE: NICOPRESS® 28-IC OR EQ. TAB: "A"—ALUMINUM ALLOY 6061 PER QQ-A-250/11. "C"—CORROSION RESISTANT STEEL PER MIL-S-5059. FINISH: ALL CRES PARTS PASSIVATED PER QQ-P-35. ALL ALUMINUM ALLOY PARTS ANODIZED PER MIL-A-8625.

TABLE I

DASH NO.	TAB HOLE SIZE	
	T ±.004 DIA.	T ±.012 ±.025 DIA.
-4	.129	3.277
-6	.194	4.928
-7	.255	6.477
-8	.281	7.137
-10	.318	8.077
-12	.377	9.576

# BALL-LOK® METRIC PINS – “LA” HANDLE, SINGLE ACTING, POSITIVE LOCKING (51446)



## DIMENSIONS

DIMENSIONS IN MILLIMETERS											CALCULATED DOUBLE SHEAR (NEWTONS)	
DASH NO.	A		B	C	D	E	F	G	H	K	STEEL	CRES
	MAX.	MIN.	±0.25	±1	MAX.	MAX.	±1	MAX.	MIN.	MAX.		
6	5.96	5.92	6.98	7	12.7	45.8	7	32.2	19.3	8.7	31,686	35,640
8	7.96	7.92	9.43	8	12.7	45.8	7	32.2	19.3	8.7	56,712	63,304
10	9.96	9.92	11.86	9	15.8	51.6	8	37.3	21.5	10.0	88,977	100,101
12	11.96	11.92	14.45	10	20.3	51.6	10	40.6	21.5	10.0	128,050	144,060
14	13.96	13.92	16.94	12	20.3	60.0	12	40.6	21.5	12.7	174,706	196,543
16	15.96	15.92	19.00	14	24.7	78.0	12.5	43.1	24.9	15.3	228,602	257,179
18	17.96	17.92	20.91	16	25.4	78.0	12.5	43.6	34.8	15.3	289,729	325,947
20	19.96	19.92	24.08	17	25.4	94.0	15	43.6	30.4	20.4	358,104	402,867
22	21.96	21.92	26.49	19	33.5	94.0	18	55.1	30.4	20.4	433,700	487,910
24	23.96	23.92	27.74	21	33.5	94.0	20	55.1	30.4	20.4	516,536	581,095
25	24.96	24.92	30.94	22	33.5	94.0	20	55.1	30.4	20.4	560,661	630,783

DIMENSIONS IN INCHES											CALCULATED DOUBLE SHEAR (POUNDS)	
DASH NO.	A		B	C	D	E	F	G	H	K	STEEL	CRES
	MAX.	MIN.	±.009	±.039	MAX.	MAX.	±.039	MAX.	MIN.	MAX.		
6	.2346	.2331	.275	.275	.500	1.800	.275	1.270	.760	.34	7,121	8,009
8	.3133	.3118	.371	.315	.500	1.800	.275	1.270	.760	.34	12,745	14,339
10	.3920	.3905	.467	.354	.625	2.030	.315	1.470	.850	.39	19,996	22,496
12	.4708	.4693	.569	.394	.800	2.030	.394	1.600	.850	.39	28,777	32,375
14	.5496	.5481	.667	.472	.800	2.360	.472	1.600	.850	.50	39,262	44,170
16	.6283	.6278	.748	.551	.975	3.070	.482	1.700	.905	.60	51,375	57,796
18	.7070	.7056	.823	.630	1.000	3.070	.482	1.720	.980	.60	65,111	73,251
20	.7858	.7843	.948	.669	1.000	3.700	.590	1.720	1.200	.80	80,478	90,537
22	.8645	.8630	1.043	.748	1.320	3.700	.708	2.170	1.200	.80	97,466	109,649
24	.9433	.9418	1.092	.827	1.320	3.700	.787	2.170	1.200	.80	116,082	130,591
25	.9826	.9811	1.218	.866	1.320	3.700	.787	2.170	1.200	.80	125,999	141,757

## SPECIFICATIONS

PART NAME	ALLOY STEEL		CORROSION RESISTANT	
	CARBON STEEL OR CRES 302	ASTM-A-228 ASTM-A-313	CRES 302	ASTM-A-313
ATTACHING LINK	CARBON STEEL OR CRES 302	ASTM-A-228 ASTM-A-313	CRES 302	ASTM-A-313
SPINDLE	4130 ALLOY STEEL	MIL-S-6758	17-4 PH CRES	AMS 5643
SPRING	MUSIC WIRE	ASTM-A-228	17-7 PH CRES	AMS 5678
BUTTON	MILD STEEL 2017, 2024 ALUM. ALLOY	ASTM-A-08 QQ-A-225/5/6	CRES 303 2017, 2024 ALUM. ALLOY	ASTM-A-581/582 QQ-A-225/5/6
BALL	440C CRES	QQ-S-763	440C CRES	QQ-S-763
BODY	4130 ALLOY STEEL	MIL-S-6758 MIL-T-6736	17-4 PH OR 15-7 MO. CRES	AMS 5643 AMS 5657
SHOULDER RING	MILD STEEL	ASTM-A-108 OR EQUIV.	303 CRES	ASTM-A-581/582
HANDLE	ALUM. ALLOY 380	QQ-A-591	ALUM. ALLOY 380	QQ-A-591

## HEAT TREATMENT:

ALLOY STEEL SHANK & SPINDLE:  
1100/1240 MPa OR 160/180 KSI  
(MIL-H-6825)  
CORROSION RESISTANT STEEL  
SHANK & SPINDLE:  
1240/1445 MPa OR 180/210 KSI.  
(MIL-H-6875)  
BALL HARDNESS: Rc 58-62

## PROTECTIVE TREATMENT:

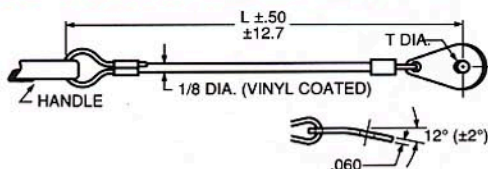
CARBON STEEL, ALLOY STEEL & MUSIC WIRE:  
CADMIUM PLATE PER QQ-P-416, TYPE II, CLASS 2.  
CORROSION RESISTANT STEEL:  
PASSIVATE PER QQ-P-35.  
ALUMINUM ALLOY: ANODIZE PER MIL-A-8625, TYPE II, CLASS 2. HANDLE DYE BLACK, BUTTON DYE GOLD.

## NOTES:

- OPTIONAL LANYARD IS ATTACHED DIRECTLY TO HANDLE.
- ALL PINS THAT ARE FURNISHED WITH A S-HOOK, SIZE AND SHAPE IS AVIBANK'S OPTION.
- ALL PINS ARE IDENTIFIED PER MIL-STD-130 AND APPLICABLE SPECIFICATIONS. ALL -6L'S AND -6L'S ARE IDENTIFIED WITH THE LATEST REVISION LETTER.
- BALLS MAY BE ROTATED TO POSITIONS OTHER THAN SHOWN.

ALL PARTS WILL BE SUPPLIED TO THE LATEST DRAWING REVISIONS

## OPTIONAL LANYARD

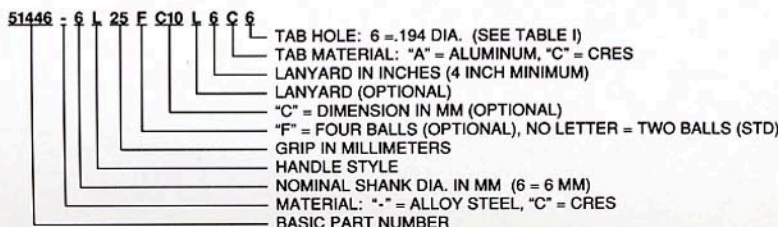


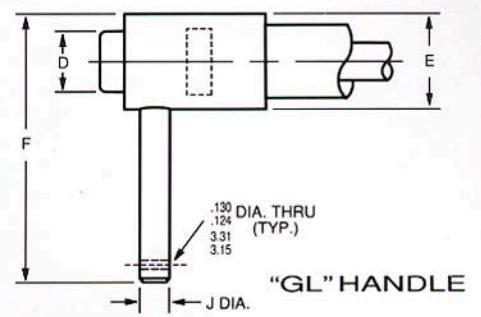
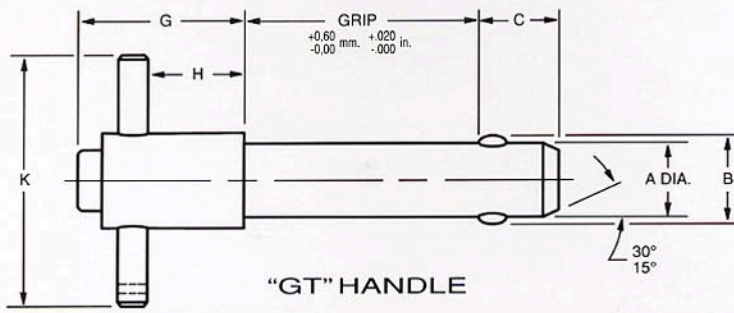
DASH NO.	TAB HOLE SIZE	
	T ±.004 DIA.	T ±0.102 ±0.025 DIA.
-4	.129	3.277
-6	.194	4.928
-7	.255	6.477
-8	.281	7.137
-10	.318	8.077
-12	.377	9.576

## NOTES:

CABLE: SIZE 1/16 DIAMETER, 7 X 7 CORROSION RESISTANT STEEL PER MIL-W-83420. VINYL COATED, COLOR GREEN PER MIL-I-631. RATED FULL STRENGTH: 480 POUNDS. SWAGING SLEEVE: NICOPRESS® 28-IC OR EQ.  
TAB: "A"—ALUMINUM ALLOY 6061 PER QQ-A-250/11.  
"C"—CORROSION RESISTANT STEEL PER MIL-S-5059.  
FINISH: ALL CRES PARTS PASSIVATED PER QQ-P-35. ALL ALUMINUM ALLOY PARTS ANODIZED PER MIL-A-8625.

## SAMPLE CALLOUT





# BALL-LOK® METRIC PINS – GROUND HANDLING, SINGLE ACTING (52917)

## DIMENSIONS

DIMENSIONS IN MILLIMETERS													CALCULATED DOUBLE SHEAR (NEWTONS)									
DASH NO.	A		B		C		D		E		F		G		H		J		K		STEEL	CRES
	MAX.	MIN.	±0.25	±1	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	±0.38	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.		
6	5.96	5.92	6.98	7	6.35	13.46	11.93	54.73	39.37	18.28	4.74	50.80	44.45	31.686	35.640							
8	7.96	7.92	9.43	8	6.35	13.46	11.93	54.73	39.37	18.28	4.74	50.80	44.45	56.712	63.804							
10	9.96	9.92	11.86	9	7.62	16.63	15.11	57.02	39.37	18.28	6.35	50.80	44.45	88.977	100.101							
12	11.96	11.92	14.45	10	9.40	16.63	15.11	57.02	39.37	18.79	6.35	57.15	50.80	128.050	144.060							
14	13.96	13.92	16.94	12	10.92	19.81	18.28	61.59	46.22	20.57	6.35	62.50	57.15	174.706	196.543							
16	15.96	15.92	19.00	14	12.19	22.98	21.46	78.10	46.22	22.35	7.92	76.20	57.15	228.602	257.179							
18	17.96	17.92	20.91	16	12.19	22.98	21.46	78.10	46.22	22.35	7.92	76.20	63.50	289.729	325.947							
20	19.96	19.92	24.08	17	14.47	26.16	24.63	78.10	46.22	23.62	7.92	76.20	63.50	358.104	402.867							
22	21.96	21.92	26.49	19	17.78	29.33	27.81	92.71	54.45	28.44	9.52	88.90	69.85	433.700	487.910							
24	23.96	23.92	27.74	21	17.78	29.33	27.81	92.71	54.45	28.70	9.52	88.90	69.85	516.536	581.095							
25	24.96	24.92	30.94	22	19.05	32.51	30.98	92.71	54.45	28.70	9.52	88.90	69.85	560.661	630.783							

DIMENSIONS IN INCHES													CALCULATED DOUBLE SHEAR (POUNDS)									
DASH NO.	A		B		C		D		E		F		G		H		J		K		STEEL	CRES
	MAX.	MIN.	±.009	±.039	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	±.015	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.		
6	.2346	.2331	.275	.275	.250	.530	.470	2.155	1.550	.720	.187	2.000	1.750	7.121	8.009							
8	.3133	.3118	.371	.315	.250	.530	.470	2.155	1.550	.720	.187	2.000	1.750	12.745	14.339							
10	.3920	.3905	.467	.354	.300	.655	.595	2.245	1.550	.720	.250	2.000	1.750	19.996	22.496							
12	.4708	.4693	.569	.394	.370	.655	.595	2.245	1.550	.740	.250	2.250	2.000	28.777	32.375							
14	.5496	.5481	.667	.472	.430	.780	.720	2.425	1.820	.810	.250	2.500	2.250	39.262	44.170							
16	.6283	.6262	.748	.551	.480	.905	.845	3.075	1.820	.880	.312	3.000	2.250	51.375	57.796							
18	.7070	.7056	.823	.630	.480	.905	.845	3.075	1.820	.880	.312	3.000	2.500	65.111	73.251							
20	.7858	.7843	.948	.669	.570	1.030	.970	3.075	1.820	.930	.312	3.000	2.500	80.478	90.537							
22	.8645	.8630	1.043	.748	.700	1.155	1.095	3.650	2.140	1.120	.375	3.500	2.750	97.466	109.649							
24	.9433	.9418	1.092	.827	.700	1.155	1.095	3.650	2.140	1.130	.375	3.500	2.750	116.082	130.591							
25	.9826	.9811	1.218	.866	.750	1.280	1.220	3.650	2.140	1.130	.375	3.500	2.750	125.999	141.757							

## HEAT TREATMENT:

ALLOY STEEL SHANK & SPINDLE:  
1100/1240 MPa OR 160/180 KSI.  
(MIL-H-6875)  
CORROSION RESISTANT STEEL SHANK & SPINDLE:  
1240/1445 MPa OR 180/210 KSI.  
(MIL-H-6875)  
BALL HARDNESS: Rc 58-62

## PROTECTIVE TREATMENT:

CARBON STEEL, ALLOY STEEL & MUSIC WIRE:  
CADMIUM PLATE PER QQ-P-416, TYPE II, CLASS 2.  
CORROSION RESISTANT STEEL:  
PASSIVATE PER QQ-P-35.

## NOTES:

- OPTIONAL LANYARD IS ATTACHED DIRECTLY TO THE HANDLE.
- HANDLE IS WELDED TO HEAD PER MIL-STD-2219.
- BALLS MAY BE ROTATED TO POSITIONS OTHER THAN SHOWN.
- HOLE IN HANDLE MAY BE ROTATED TO POSITION OTHER THAN SHOWN.
- ALL PINS ARE IDENTIFIED PER MIL-STD-130 AND APPLICABLE SPECIFICATIONS.

## SPECIFICATIONS

PART NAME	ALLOY STEEL	MIL-S-6758	CORROSION RESISTANT	AMS 5643/AMS 5657
BODY	ALLOY STEEL 4130	MIL-T-6736/MIL-S-6758	CRES 17-4 PH OR 15-7 MO	AMS 5643/AMS 5657
SPINDLE	ALLOY STEEL 4130	MIL-S-6758	CRES 17-4 PH	AMS 5643
BUTTON	CARBON STEEL	ASTM-A-108	CRES 303	ASTM-A-581/582
	ALUM. ALLOY 2017/2024	QQ-A-225/5, QQ-A-225/6	ALUM. ALLOY 2017/2024	QQ-A-225/5, QQ-A-225/6
SPRING	MUSIC WIRE	ASTM-A-228	CRES 17-7PH/302	AMS5678/ASTM-A-313
HEAD	CARBON STEEL	ASTM-A-108	CRES 304, 316 OR 321	QQ-S-763 OR EQUIV.
HANDLE	CARBON STEEL	ASTM-A-108	CRES 304, 316 OR 321	QQ-S-763 OR EQUIV.
BALL	CRES 440C	QQ-S-763	CRES 440C	QQ-S-763

ALL PARTS WILL BE SUPPLIED TO THE LATEST DRAWING REVISIONS

## OPTIONAL LANYARD

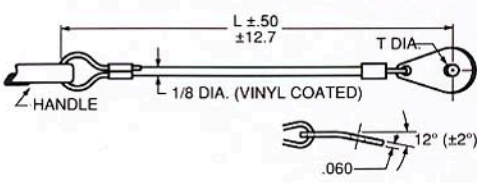


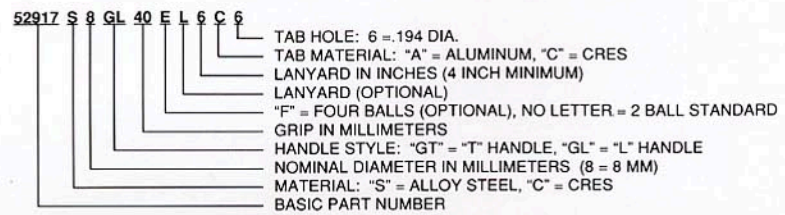
TABLE I

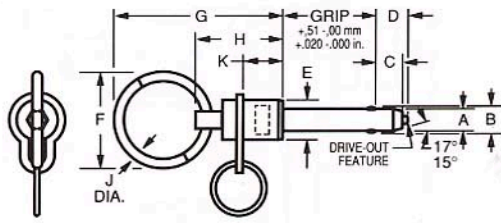
DASH NO.	T ±.004 DIA.	T ±.012 DIA.
-4	.129	3.277
-6	.194	4.928
-7	.255	6.477
-8	.281	7.137
-10	.318	8.077
-12	.377	9.576

## NOTES:

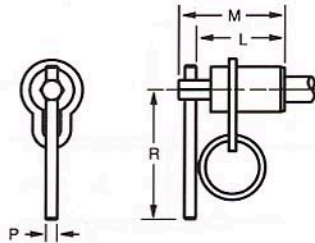
CABLE: SIZE 1/16 DIAMETER, 7 X 7 CORROSION RESISTANT STEEL PER MIL-W-83420, VINYL COATED, COLOR GREEN PER MIL-I-631. RATED FULL STRENGTH: 480 POUNDS. SWAGING SLEEVE: NICOPRESS® 28-IC OR EQUIV.  
TAB: "A"—ALUMINUM ALLOY 6061 PER QQ-A-250/11.  
"C"—CORROSION RESISTANT STEEL PER MIL-S-5059.  
FINISH: ALL CRES PARTS PASSIVATED PER QQ-P-35. ALL ALUMINUM ALLOY PARTS ANODIZED PER MIL-A-8625.

## SAMPLE CALLOUT

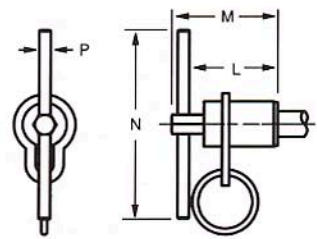




"R" HANDLE



"L" HANDLE



"T" HANDLE

# BALL-LOK® METRIC PINS – DOUBLE ACTING, POSITIVE LOCKING (51453)

## DIMENSIONS

DIMENSIONS IN MILLIMETERS																CALCULATED DBL. SHEAR (NEWTONS)			
DASH NO.	A MAX.	A MIN.	B ±.025	C +.00-1.27	D MAX.	E MAX.	E MIN.	F MAX.	G MAX.	H MIN.	J MIN.	K MAX.	L MIN.	M MAX.	N MAX.	P MIN.	R MAX.	STEEL	CRES
6	5.96	5.92	6.98	10.41	12.70	11.43	9.14	28.58	49.41	23.74	2.03	12.19	19.81	26.17	44.45	2.66	33.02	31,686	35,360
7	6.96	6.92	8.11	10.41	12.70	11.43	9.14	28.58	49.41	23.74	2.03	12.19	19.81	26.17	44.45	2.66	33.02	43,301	48,716
8	7.96	7.92	9.43	11.68	13.97	12.83	9.91	28.58	49.41	23.74	2.03	12.19	19.81	26.17	44.45	2.66	33.02	56,427	63,490
9	8.96	8.92	10.64	13.21	16.26	16.00	12.95	28.58	51.44	25.40	2.03	13.72	21.08	27.69	50.80	3.40	38.10	71,907	80,893
10	9.96	9.92	11.86	13.21	16.26	16.00	12.95	28.58	51.44	25.40	2.03	13.72	21.08	27.69	50.80	3.40	38.10	88,741	99,836
11	10.96	10.92	13.16	13.46	16.26	16.00	12.95	28.58	51.44	25.40	2.03	13.72	21.08	27.69	50.80	3.40	38.10	107,861	121,350
12	11.96	11.92	14.45	13.72	19.81	16.00	12.95	28.58	52.33	27.17	2.03	13.72	22.35	32.26	57.15	5.08	42.04	128,344	144,384
13	12.96	12.92	15.09	15.49	19.81	19.18	16.26	28.58	52.33	27.17	2.03	13.72	22.35	32.26	57.15	5.08	42.04	151,103	169,988
14	13.96	13.92	16.94	17.27	20.83	19.18	16.26	28.58	52.33	27.17	2.03	13.72	22.35	32.26	57.15	5.08	42.04	175,216	197,122
15	14.96	14.92	17.95	17.27	20.83	19.18	16.26	28.58	52.33	27.17	2.03	13.72	22.35	32.26	57.15	5.08	42.04	201,321	226,493
16	15.96	15.92	19.00	19.18	23.62	22.10	20.45	38.10	64.77	31.75	3.04	14.61	25.40	37.34	63.50	5.86	45.98	229,397	258,072
17	16.96	16.92	19.97	19.18	23.62	22.10	20.45	38.10	64.77	31.75	3.04	14.61	25.40	37.34	63.50	5.86	45.98	258,817	291,180
18	17.96	17.92	20.91	19.18	25.40	24.38	22.61	38.10	64.77	31.75	3.04	15.12	25.40	37.34	63.50	5.86	45.98	290,003	326,251
19	18.96	18.92	22.48	20.19	25.40	24.38	22.61	38.10	64.77	31.75	3.04	15.12	25.40	37.34	63.50	5.86	45.98	323,828	364,304
20	19.96	19.92	24.08	20.57	25.40	24.38	22.61	38.10	64.77	31.75	3.04	15.12	25.40	37.34	63.50	5.86	45.98	358,644	403,475
21	20.96	20.92	25.28	25.15	29.97	29.21	27.18	38.10	70.36	38.10	3.04	18.54	29.97	41.46	73.03	5.86	57.15	396,108	445,629
22	21.96	21.92	26.49	25.15	29.97	29.21	27.18	38.10	70.36	38.10	3.04	18.54	29.97	41.46	73.03	5.86	57.15	434,554	488,881
23	22.96	22.92	27.11	25.15	29.97	29.21	27.18	38.10	70.36	38.10	3.04	18.54	29.97	41.46	73.03	5.86	57.15	475,383	534,802
24	23.96	23.92	27.74	28.83	34.29	32.51	30.48	38.10	74.93	43.18	3.04	21.97	33.53	46.48	73.03	5.86	57.15	516,663	581,243
25	24.96	24.92	30.94	28.83	34.29	32.51	30.48	38.10	74.93	43.18	3.04	21.97	33.53	46.48	73.03	5.86	57.15	561,515	631,715

## HEAT TREATMENT:

ALLOY STEEL SHANK & SPINDLE:  
1100/1240 MPa OR 160/180 KSI.  
(MIL-H-6825)  
CORROSION RESISTANT STEEL  
SHANK & SPINDLE:  
1240/1445 MPa OR 180/210 KSI.  
(MIL-H-6875)  
BALL HARDNESS: Rc 58-62

## PROTECTIVE TREATMENT:

CARBON STEEL, ALLOY STEEL & MUSIC WIRE:  
CAD. PLATE PER QQ-P-416, TYPE II, CLASS 2.  
CORROSION RESISTANT STEEL:  
PASSIVATED PER QQ-P-35.

## NOTES:

- OPTIONAL LANYARD IS ATTACHED DIRECTLY TO ATTACHING LINK BAND.
- ALL PINS THAT ARE FURNISHED WITH ATTACHING RING, SIZE AND SHAPE AVIBANK'S OPTION.
- ALL PINS ARE IDENTIFIED PER MIL-STD-130 AND APPLICABLE SPECIFICATIONS.
- BALLS MAY BE ROTATED TO POSITIONS OTHER THAN SHOWN.

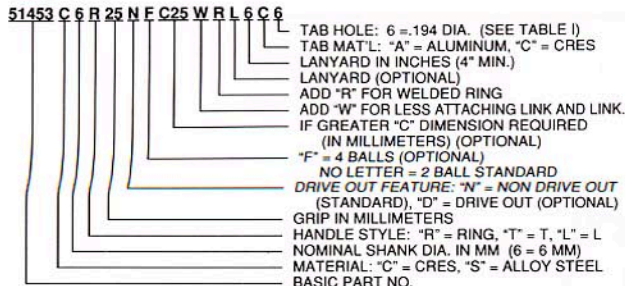
ALL PARTS WILL BE SUPPLIED TO THE LATEST DRAWING REVISIONS

DIMENSIONS IN INCHES																CALCULATED DOUBLE SHEAR (LBS.)			
DASH NO.	A MAX.	A MIN.	B ±.009	C +.000-.050	D MAX.	E MAX.	E MIN.	F MAX.	G MAX.	H MIN.	J MIN.	K MAX.	L MIN.	M MAX.	N MAX.	P MIN.	R MAX.	STEEL	CRES
6	.2346	.2331	.275	.410	.500	.450	.360	1.125	1.945	.935	.080	.480	.78	1.03	1.750	.105	1.300	7,118	8,008
7	.2739	.2724	.319	.410	.500	.450	.360	1.125	1.945	.935	.080	.480	.78	1.03	1.750	.105	1.300	9,732	10,950
8	.3133	.3118	.371	.460	.550	.505	.390	1.125	1.945	.935	.080	.480	.78	1.03	1.750	.105	1.300	12,682	14,268
9	.3527	.3512	.419	.520	.640	.630	.510	1.125	2.025	1.000	.080	.540	.83	1.09	2.000	.134	1.500	16,160	18,180
10	.3920	.3905	.467	.520	.640	.630	.510	1.125	2.025	1.000	.080	.540	.83	1.09	2.000	.134	1.500	19,944	22,437
11	.4315	.4300	.506	.530	.640	.630	.510	1.125	2.025	1.000	.080	.540	.83	1.09	2.000	.134	1.500	24,242	27,272
12	.4708	.4693	.569	.540	.780	.630	.510	1.125	2.060	1.070	.080	.540	.88	1.27	2.250	.200	1.655	28,842	32,448
13	.5102	.5087	.594	.610	.780	.755	.640	1.125	2.060	1.070	.080	.540	.88	1.27	2.250	.200	1.655	33,958	38,202
14	.5496	.5481	.667	.680	.820	.755	.640	1.125	2.060	1.070	.080	.540	.88	1.27	2.250	.200	1.655	39,377	44,300
15	.5889	.5874	.707	.680	.820	.755	.640	1.125	2.060	1.070	.080	.540	.88	1.27	2.250	.200	1.655	45,244	50,900
16	.6283	.6268	.748	.755	.930	.870	.805	1.500	2.550	1.250	.120	.575	1.00	1.47	2.500	.231	1.810	51,553	57,997
17	.6677	.6662	.786	.755	.930	.870	.805	1.500	2.550	1.250	.120	.575	1.00	1.47	2.500	.231	1.810	58,166	65,438
18	.7070	.7055	.823	.755	.930	.870	.805	1.500	2.550	1.250	.120	.575	1.00	1.47	2.500	.231	1.810	65,173	73,320
19	.7464	.7449	.885	.795	1.000	.960	.890	1.500	2.550	1.250	.120	.595	1.00	1.47	2.500	.231	1.810	72,776	81,872
20	.7858	.7843	.948	.810	1.000	.960	.890	1.500	2.550	1.250	.120	.595	1.00	1.47	2.500	.231	1.810	80,598	90,673
21	.8252	.8237	.995	.990	1.180	1.150	1.070	1.500	2.770	1.500	.120	.730	1.18	1.64	2.875	.231	2.250	89,020	100,148
22	.8646	.8630	1.043	.990	1.180	1.150	1.070	1.500	2.770	1.500	.120	.730	1.18	1.64	2.875	.231	2.250	97,659	109,867
23	.9039	.9024	1.067	.990	1.180	1.150	1.070	1.500	2.770	1.500	.120	.730	1.18	1.64	2.875	.231	2.250	106,334	120,188
24	.9433	.9418	1.092	1.135	1.350	1.280	1.200	1.500	2.950	1.700	.120	.865	1.32	1.83	2.875	.231	2.250	116,110	130,624
25	.9826	.9811	1.218	1.135	1.350	1.280	1.200	1.500	2.950	1.700	.120	.865	1.32	1.83	2.875	.231	2.250	126,191	141,966

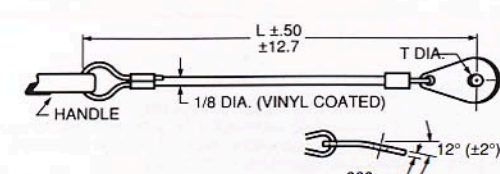
## SPECIFICATIONS

PART NAME	ALLOY STEEL	MIL-T-6736/MIL-S-6758	CRES 17-4PH	AMS5643
BODY	ALLOY STEEL 4130	MIL-T-6736/MIL-S-6758	CRES 17-4PH	AMS5643
SPINDLE	ALLOY STEEL 4130	MIL-S-6758	CRES 17-4PH	AMS5643
BUTTON	CARBON STL/ALLOY STL 4130	ASTM-A-108/MIL-S-6758	CRES 302/303	QQ-S-763/ASTM-A-581/582
SPRING	MUSIC WIRE	ASTM-A-228	CRES 17-7PH/302	AMS5678/ASTM-A-313
HEAD	CARBON STL/ALLOY STL 4130	ASTM-A-108/MIL-S-6758	CRES 302/303	QQ-S-763/ASTM-A-581/582
BALL	CRES 440C	QQ-S-763	CRES 440C	QQ-S-763
ATTACHING LINK BAND	CARBON STL/CRES 302	ASTM-A-366/MIL-S-5059	CRES 302/303	QQ-S-766/MIL-S-5059
ATTACHING LINK	CARBON STL WIRE/CRES 302	ASTM-A-228/ASTM-A-313	CRES 302/17-7PH	ASTM-A-313/AMS5678
HANDLE RING	CRES 302/17-7PH	ASTM-A-313/AMS5678	CRES 302/17-7PH	ASTM-A-313/AMS5678
HANDLE, "R" OR "L"	CARBON STL/CRES 302	ASTM-A-108/ASTM-A-313	CRES 302/303	QQ-S-763/ASTM-A-581/582

## SAMPLE CALLOUT



## OPTIONAL LANYARD



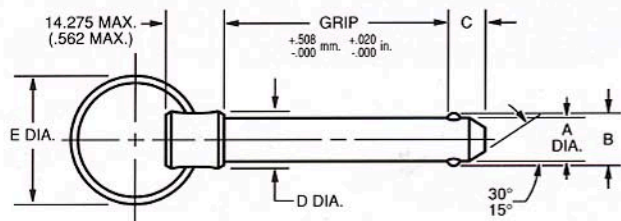
## NOTES:

CABLE: SIZE 1/16 DIAMETER, 7 X 7 CORROSION RESISTANT STEEL PER MIL-W-83420. VINYL COATED, COLOR GREEN PER MIL-I-631. RATED FULL STRENGTH: 480 POUNDS. SWAGING SLEEVE: NICOPRESS® 28-IC OR EQUIV. TAB: "A"—ALUMINUM ALLOY 6061 PER QQ-A-250/11. "C"—CORROSION RESISTANT STEEL PER MIL-S-5059. FINISH: ALL CRES PARTS PASSIVATED PER QQ-P-35. ALL ALUMINUM ALLOY PARTS ANODIZED PER MIL-A-8625.

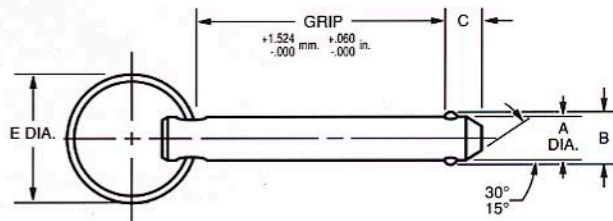
TABLE I

DASH NO.	TAB HOLE SIZE	
	T +.004 DIA.	T +.012 DIA.
-4	.129	3,277
-6	.194	4,928
-7	.255	6,477
-8	.281	7,137
-10	.318	8,077
-12	.377	9,576





53420D



53420N

# BALL-LOK® METRIC DETENT PINS – SPRING LOADED, SINGLE ACTING (53420)

## DIMENSIONS

DIMENSIONS IN MILLIMETERS							DOUBLE SHEAR STRENGTH daN			PUSH-PULL FORCE daN		RECOMMENDED HOLE SIZE	
NOM. DIA.	MAX.	A MIN.	B MIN.	C MAX.	D ±.381	E MAX.	MILD STEEL	CRES	4130	MAX.	MIN.	MIN.	MAX.
5	4.95	4.87	5.23	8.36	7.925	30.150	1139	1294	2464	3.1	.9	5.000	5.102
6	5.95	5.87	6.76	8.74	9.525	30.150	1657	1882	3581	3.1	.9	6.000	6.102
8	7.95	7.87	9.22	9.12	11.125	30.150	2980	3381	6441	6.2	2.7	8.000	8.102
10	9.95	9.87	11.40	9.91	12.700	30.150	4684	5316	10129	6.2	2.7	10.000	10.102
12	11.95	11.87	13.79	13.11	14.300	30.150	6775	7691	14648	9.8	4.5	12.000	12.127
14	13.95	13.87	16.10	15.06	17.475	42.850	9252	10502	20004	9.8	4.5	14.000	14.127
16	15.95	15.87	18.42	17.07	19.050	42.850	12113	13750	26187	13.4	6.7	16.000	16.127
18	17.95	17.87	20.80	19.05	22.225	42.850	15355	17433	33202	13.4	6.7	18.000	18.178
20	19.95	19.87	22.78	20.45	23.800	42.850	18985	21552	41048	13.4	6.7	20.000	20.178
22	21.95	21.87	25.93	21.82	25.400	55.550	23002	26107	49731	15.6	8.9	22.000	22.178
24	23.95	23.87	28.07	23.42	27.000	55.550	27397	31102	59241	15.6	8.9	24.000	24.178
25	24.95	24.87	29.06	24.99	28.575	55.550	29741	33762	64308	17.8	8.9	25.000	25.254

## HEAT TREATMENT:

**ALLOY STEEL:**  
1100/1240 MPa OR 160/180 KSI.  
(MIL-H-6875)  
**CORROSION RESISTANT STEEL:**  
1240/1445 MPa OR 180/210 KSI.  
(MIL-H-6875)  
**BALL HARDNESS:** Rc 58-62

## PROTECTIVE TREATMENT:

**CARBON STEEL, ALLOY STEEL & MUSIC WIRE:**  
CADMIUM PLATE PER QQ-P-416, TYPE II, CLASS 2.  
**CORROSION RESISTANT STEEL:**  
PASSIVATE PER QQ-P-35.

DIMENSIONS IN INCHES							DOUBLE SHEAR STRENGTH POUNDS			PUSH-PULL FORCE POUNDS		RECOMMENDED HOLE SIZE	
NOM. DIA.	MAX.	A MIN.	B MIN.	C MAX.	D ±.381	E MAX.	MILD STEEL	CRES	4130	MAX.	MIN.	MIN.	MAX.
5	.1949	.1917	.206	.329	.312	1.187	2560	2910	5540	7	2	.197	.201
6	.2343	.2311	.266	.344	.375	1.187	3725	4230	8050	7	2	.236	.240
8	.3130	.3098	.363	.359	.438	1.187	6700	7600	14480	14	6	.315	.319
10	.3917	.3886	.449	.390	.500	1.187	6700	11950	22770	14	6	.394	.398
12	.4705	.4673	.543	.516	.563	1.187	15230	17290	32930	22	10	.472	.477
14	.5492	.5461	.634	.593	.688	1.687	20800	23610	44970	22	10	.551	.556
16	.6280	.6248	.725	.672	.750	1.687	27230	30910	58870	30	15	.630	.635
18	.7067	.7035	.819	.750	.875	1.687	34520	39190	74640	30	15	.709	.716
20	.7854	.7823	.897	.805	.937	1.687	42680	48450	92280	30	15	.787	.794
22	.8642	.8610	1.021	.859	1.000	2.187	51710	58690	111800	35	20	.866	.873
24	.9429	.9398	1.105	.922	1.063	2.187	61590	69920	133180	35	20	.945	.952
25	.9823	.9791	1.144	.984	1.125	2.187	66860	75900	144570	40	20	.984	.994

## NOTES:

- PARTS TO BE IDENTIFIED BY AVK AND APPROPRIATE PART NUMBER IF AREA PERMITS.
- BALLS MAY BE ROTATED TO POSITIONS OTHER THAN SHOWN.
- OPTIONAL LANYARD IS ATTACHED DIRECTLY TO HANDLE.

ALL PARTS WILL BE SUPPLIED TO THE LATEST DRAWING REVISIONS

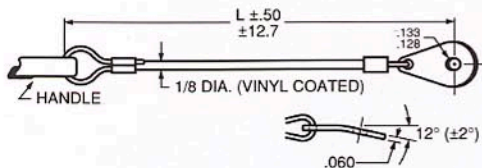
## SPECIFICATIONS

PART NAME	ALLOY STEEL	CORROSION RESISTANT
BALL	CRES 440C	CRES 440C
HEAD (OPTIONAL)	MILD STEEL	CRES 303
SPRING & RING	MUSIC WIRE	CRES 17-7PH OR 302
BODY "M"	MILD STEEL	CRES 303
BODY "S"	4130 STEEL	



TWO BALLS FOR COMPLETE SAFETY  
5MM PIN HAS 1 BALL ONLY  
SOLID STEEL SHANK FOR ADDED STRENGTH

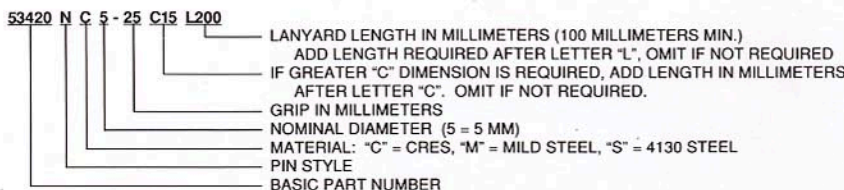
## OPTIONAL LANYARD



## NOTES:

**CABLE:** SIZE 1/16 DIAMETER. 7 X 7 CORROSION RESISTANT STEEL PER MIL-W-83420. VINYL COATED, COLOR GREEN PER MIL-I-631. RATED FULL STRENGTH: 480 POUNDS. SWAGING SLEEVE: NICOPRESS® 28-IC OR EQ.  
**TAB:** CORROSION RESISTANT STEEL PER MIL-S-5059.  
**FINISH:** ALL CRES PARTS PASSIVATED PER QQ-P-35. ALL ALUMINUM ALLOY PARTS ANODIZED PER MIL-A-8625.

## SAMPLE CALLOUT



AIRLINE SEAT BACK LOCKS  
 AMUSEMENT RIDE ASSEMBLY  
 ANCHOR CLEVIS FITTINGS  
 ANTI SHOPLIFTING MAGNETS  
 ASSEMBLY MACHINERY FOR  
 ELECTRONICS INDUSTRIES  
 BACKPACK ATTACHMENTS  
 BATTING MACHINE HEIGHT  
 ADJUSTMENT  
 BICYCLE HYDRAULIC BRAKE  
 BLIND GEAR BOX ASSEMBLY  
 BOAT TRAILER HITCHES  
 BOTTLING MACHINERY  
 CAMPER SHOCK  
 CAB SEATS  
 CAN MAKING MACHINERY  
 CANOPY HANDLES  
 CART-DOLLY IN PLANT USE  
 CHASSIS TO HOUSE RADIO  
 TELESCOPES  
 COAL MINING EQUIPMENT  
 COMPUTER DISK PACK  
 CONCRETE WALL ERECTION  
 CONVEYOR BELT ASSEMBLY LINE  
 COTTER PIN REPLACEMENT  
 DOORS ON TANKS & DRUMS FOR  
 FOOD AND PHARMACEUTICAL  
 INDUSTRIES  
 ENGINE ALIGNMENT

FIRE FIGHTING LADDERS  
 FLOOR WASHING/WAXING  
 EQUIPMENT  
 FOOD PROCESSING MACHINERY  
 FORK LIFT BRAKE SAFETY PIN  
 LAWN MOWERS  
 GUITAR PIN STRAP  
 HANG GLIDERS  
 HELICOPTER CROP SPRAYING  
 ATTACHMENTS  
 HINGE TO SECURE INDUSTRIAL  
 SEWING MACHINE TO PLATFORM  
 HOSPITAL BEDS  
 HOT AIR BALLOONS  
 IMAGE SCANNERS FOR  
 ADVERTISING INDUSTRIES  
 JACKS—MECHANICAL &  
 HYDRAULIC  
 KNITTING MACHINES  
 LAUNDRY MACHINERY  
 LAWN MOWER ATTACHMENTS  
 MARINE—QUICK RELEASE LINE  
 TENSIONER  
 MARINE—QUICK RELEASE TILLER  
 EXTENDER  
 MARINE FASTENER FOR FABRIC  
 MEDICAL EQUIPMENT  
 MINING MACHINES  
 MOBILE X-RAY MACHINES

MOTORIZED AND VACUUM  
 STREET SWEEPERS  
 MOUNTAIN CLIMBING EQUIP.  
 NC MILLING MACHINE TOOLS  
 OIL DRILLING EQUIPMENT  
 OIL SPILL CLEAN UP BOOMS  
 OUTRIGGERS HEAVY LIFT EQUIP  
 OXYGEN EQUIPMENT  
 PACKAGING MACHINERY  
 PAPER MAKING MACHINERY  
 PART FORMING EQUIPMENT/NUT  
 FORMERS/COLD HEADERS  
 PHOTO EQUIPMENT  
 PLASTIC INJECTION MOULDING  
 MACHINE TOOLS  
 PORTABLE ANTENNAS  
 SCAFFOLDING  
 PRINTING PRESS TO HOLD  
 DRUM PLATES  
 R.V. AWNINGS  
 RACING STEERING WHEELS  
 RACING TRANSMISSION  
 RACKS ON MOTORCYCLES  
 RAILROAD EQUIPMENT  
 REMOVABLE ARMS & LEGS—  
 PROSTHESIS  
 SAIL PLANES  
 SCAFFOLDING  
 SEAT HEIGHT ADJUSTMENT  
 SKYLIGHT HINGE PIN  
 SLING PRODUCTS WIRE ROPE,

HOISTS, CRANES, WINCHES  
 STAGE & LIGHTING  
 EQUIPMENT—PORTABLE  
 SUN ROOFS  
 SURFBOARD STRAP  
 TABLET OR PILL MFG MACHINERY  
 TELEPHONE BOOTH  
 TELESCOPING TUBE LOCK  
 TEST EQUIPMENT  
 TEXTILE MACHINES  
 TONNEAU COVERS  
 TOOL AND DIE MFG  
 TOOLING JAWS  
 TRACTOR ACCESSORY SUPPORT  
 TRAILER BED  
 TRANSPORTABLE RADAR SYSTEM  
 TRUCK HOISTS  
 TUBE ASSEMBLIES  
 ULTRALIGHTS  
 UTILITY TOOL EQ. AND TRUCKS  
 VALVES—MARINE & NUCLEAR  
 WALLS—REMOVABLE & PANELS  
 WAVE RUNNERS JET SKIS  
 WEAVING MACHINES  
 WEIGHT LIFTING MACHINES  
 WHEELCHAIR AXLES, HUBS,  
 RECEIVERS, ATTACHMENTS  
 WHEELS—MOTION PICTURE  
 CAMERA  
 WHEELS ON SMALL BOATS  
 WINDOW WASHING STAGES

CONTACT AVIBANK WITH YOUR SPECIAL DESIGN REQUIREMENTS.



## BALL-LOK® QUICK RELEASE PINS

DIAMETER DASH NO.	NOMINAL DIAMETER	ACTUAL FINISH DIAMETER		RECOMMENDED* HOLE DIAMETER		BALL DIA.	MINIMUM TENSION LOAD CAPABILITIES** 2 BALLS
		MAX.	MIN.	MAX.	MIN.		
3	3/16	.1885	.1870	.1940	.1900	.062 (1/16)	200 lbs.
4	1/4	.2485	.2470	.2540	.2500	.078 (5/64)	230 lbs.
5	5/16	.3110	.3095	.3165	.3125	.125 (1/8)	510 lbs.
6	3/8	.3735	.3720	.3790	.3750	.125 (1/8)	575 lbs.
7	7/16	.4360	.4345	.4425	.4375	.156 (5/32)	710 lbs.
8	1/2	.4985	.4970	.5050	.5000	.171 (11/64)	1160 lbs.
9	9/16	.5610	.5595	.5675	.5625	.218 (7/32)	1420 lbs.
10	5/8	.6235	.6220	.6300	.6250	.250 (1/4)	2070 lbs.
12	3/4	.7485	.7470	.7570	.7500	.281 (9/32)	2950 lbs.
14	7/8	.8735	.8720	.8820	.8750	.343 (11/32)	3900 lbs.
16	1"	.9985	.9970	1.0100	1.0000	.406 (13/32)	5480 lbs.

\*DATA TAKEN FROM PAGE 4, COLUMN C, OF NAS618

\*\*DATA TAKEN FROM MIL-P-23460 (TABLE II) - CAN BE INCREASED 30% USING 4 BALLS

## WEIGHT CHART

### SINGLE ACTING - QUICK RELEASE PINS

DIAMETER DASH NO.	WT. PER 1" GRIP LENGTH	WEIGHT OF COMPLETE PIN LESS GRIP LENGTH			
		BL-R	BL-LA	BL-TA	BL-B
4	.25 oz.	.425 oz.	1.75 oz.	1.625 oz.	.60 oz.
5	.40 oz.	.80 oz.	2.00 oz.	1.75 oz.	.85 oz.
6	.50 oz.	1.10 oz.	2.40 oz.	2.10 oz.	1.10 oz.
7	.62 oz.	1.40 oz.	2.90 oz.	2.50 oz.	1.50 oz.
8	.80 oz.	1.90 oz.	3.40 oz.	2.70 oz.	2.00 oz.
9	1.20 oz.	2.10 oz.	3.65 oz.	3.40 oz.	2.40 oz.
10	1.35 oz.	2.75 oz.	4.00 oz.	4.20 oz.	2.70 oz.
12	2.30 oz.	3.60 oz.	4.25 oz.	4.80 oz.	3.60 oz.
14	2.73 oz.	8.11 oz.	8.31 oz.	8.56 oz.	9.11 oz.
16	3.47 oz.	—	9.80 oz.	9.80 oz.	15.9 oz.

#### TO FIGURE WEIGHT OF PIN:

$$\begin{matrix} \text{Weight Complete} \\ \text{pin less grip} \\ \text{length} \end{matrix} + \begin{matrix} \text{Grip Weight} \\ \text{Grip X Wt. per} \\ \text{1" grip} \end{matrix} = \begin{matrix} \text{Complete} \\ \text{Weight} \end{matrix}$$

EXAMPLE: BLS4R09S     4.25 oz. + (.900 x .25oz.) = .225 = .650 oz.  
 EXAMPLE: BLS12TA50S     4.80 oz. + (5.000 x 2.30 oz.) = 11.50 = 16.30 oz.

## NOTES

### EXPLANATION OF BALL-LOK GRIP LENGTH

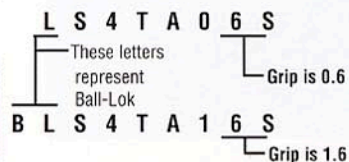
How to select the CORRECT LENGTH for your application

#### DEFINITION:

This is the effective area in which the Ball-Lok® Pin is to be installed. This area is measured from the shoulder to the tangent point where the Ball intersects the Body diameter.

#### HOW TO SPECIFY:

Unless otherwise specified, Grip Length can only be ordered in tenths. For example:



#### INTERPRETATION: (Important)

There should always be a zero (0) preceding the digit if the Grip Length is less than one (1) inch. Also, since the maximum Grip Length that can be ordered (standard) is 9.9 the decimal point should always follow the first digit, i.e., 06 equals 0.6, 16 equals 1.6.

We have assigned different part numbers for Grip Lengths over 9.9, which are available upon request.

If the application makes it mandatory that you order a Grip Length that consists of three (3) or more digits, i.e. BLS4TA2.25S, be sure you note the actual Grip Length required. (i.e., 2 1/4 inch.)

This extra precaution will ensure that the correct Grip Length is quoted and manufactured for you.

In order to eliminate any misinterpretation with regard to the Grip Length required, we suggest the following:

- A. If required Grip Length is not in EVEN tenths of an inch, show actual Grip Length as a decimal equivalent.

#### EXAMPLE:

- (1) Grip Length required-1 3/8 inches.  
Proper call-out should be BLS4TA1.375S. (Grip Length-1.375 inches or one inch and three hundred seventy-five thousandths.)
- (2) Grip Length required-5/16 inches.  
Proper call-out should be BLS4TA0.312S. (Grip Length-.312 inches or three hundred twelve thousandths.)