

MIL - STD - 1348
30 July 1969

MILITARY STANDARD

KNOBS, CONTROL

SELECTION OF



FSC 5355

MIL-STD-1548
30 July 1969

DEPARTMENT OF DEFENSE
Washington, D. C. 20360

Control knobs; Selection of

MIL-STD-

1. This Military Standard is mandatory for use by all Departments and Agencies of the Department of Defense.

2. Recommended corrections, additions, or deletions should be addressed to:

Commander, Naval Electronic Systems Command,
ATTN: Code 0517
Department of the Navy
Washington, D. C. 20360

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FOREWORD

This standard provides selected standard control knobs for use in the design of military equipment.

Additional sections of this standard will be developed as the standard control knobs of a given specification family are selected and coordinated with the three Military Departments.

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1. SCOPE

1.1 Scope. This standard establishes the requirements for the selection of control knobs used in the design and manufacture of military equipment. Complete detailed requirements for control knobs listed in this standard are covered under MIL-K-3926. The MS part number and the ancillary document number shall be referenced in procurement documents for the control knobs.

1.2 Purpose.

- (a) To provide equipment designers and manufacturers with lists of control knobs considered to be standard for military applications.
- (b) To control and minimize the variety of control knobs used in new design by military activities in order to facilitate effective logistic support of equipment in the field; to maximize economic support of, and to concentrate improvement on, production of the control knobs listed in this standard.
- (c) To provide the equipment designer or manufacturer with principal control knob characteristics taken from the Military Standard in effect at the time of issue of this standard.
- (d) To provide a combined listing indicating control knob type and Federal Stock Number (FSN).

2. REFERENCED DOCUMENTS

2.1 The issues of the following documents in effect on the date of invitation for bids form a part of this standard to the extent specified herein:

SPECIFICATIONS

MILITARY

MIL-K-3926 - Knobs, Control (For Use with Electronic, Communications, and Allied Equipment).

STANDARDS

MILITARY

MS91522 - Knob, Control, Crank, Metal.
 MS91524 - Knob, Control, Symmetrical Bar, Metal.
 MS91525 - Knob, Control, Bar, Metal.
 MS91528 - Knobs-Control, Plastic (Round, Concentric, Pointer, Spinner, Spinner Slip Clutch, Bar, Tactile, Knob Lock Pointer, and Knob Locks).

(Copies of specifications, standards, drawings, and publications required by suppliers in connection with specific procurement functions should be obtained from the procuring agency or as directed by the contracting officer.

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3. DEFINITIONS

3.1 Definitions. The terms used in this standard are defined in MIL-K-3926.

4. GENERAL REQUIREMENTS

4.1 Choice of control knobs. The variety of control knobs used in any particular equipment shall be the minimum necessary to obtain satisfactory performance. Where more than one type of control knob may be used in a given application, consideration should be given to cost and availability.

4.2 Item identification. A type designation for any control knob referenced herein may be constructed as indicated in the example given in the applicable Military standard. The part number assignments, where applicable, shall be as specified in the individual control knob specification.

4.3 Conflict of requirements. In the event of conflict between technical requirements of control knobs described in this standard and the applicable specification, the specification shall govern.

4.4 Criteria for inclusion in this standard. The criteria for the inclusion of control knob types in this standard are as follows:

- (a) The control knob shall be the best type available for general use in military equipment.
- (b) Approved military specifications shall be available (see 2.1).
- (c) The control knob shall have been in production and continued availability shall be reasonably certain.

5. DETAILED REQUIREMENTS

5.1 The detailed requirements for standard control knobs are contained in the applicable specification.

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CROSS REFERENCE

(MS number to Figure number)

MS number	Figure number	Page number	Title
91528 Sheet 1	1	4	Typical Round knob
91528 Sheet 2	2	5	Typical Round ring skirt knob
91528 Sheet 3	3	6	Typical Round dial skirt knob
91528 Sheet 4	4	7	Typical Round concentric knob
91528 Sheet 5	5	8	Typical Round concentric ring skirt knob
91528 Sheet 6	6	9	Typical Round concentric dial skirt knob
91528 Sheet 7	7	10	Typical Knob lock pointer knob
91528 Sheet 8	8	11	Typical Round bar knob
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91528 Sheet 10	10	13	Typical Round bar dial skirt knob
91528 Sheet 11	11	14	Typical Round bar concentric knob
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91528 Sheet 19	18	21	Typical Bar knobs (styles A, W, and XX)
91528 Sheet 20	19	22	Typical Bar dial skirt knob
91528 Sheet 21	20	23	Typical Bar anti-parallax knob
91528 Sheet 22	21	24	Typical Bar anti-parallax dial skirt knob
91528 Sheet 23	22	25	Typical Bar knobs (style R)
91528 Sheet 25	23	26	Typical Spinner knob
91528 Sheet 26	24	27	Typical Spinner slip clutch knob
91528 Sheet 27	25	28	Typical Spinner slip clutch tactile knob
91528 Sheet 28	26	29	Typical Spinner tactile knob
91528 Sheet 30	27	30	Typical Round tactile knob
91528 Sheet 31	28	31	Typical Round ring skirt tactile knob
91528 Sheet 32	29	32	Typical Round dial skirt tactile knob
91528 Sheet 33	30	33	Tactile forms
91528 Sheet 35	31	35	Typical Knob lock
91522 Sheet 1	32	36	Crank-knob assembly
91524 Sheet 1	33	37	Typical Knob control symmetrical bar metal
91525 Sheet 1	34	38	Typical Knob control bar metal

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TABLE I - Round knobs.

Series	Outside diameter $+0.030$ (.76) -0.010 (.25)	Overall thick- ness ± 0.030 (.76)	Shaft hole diameter <u>1/</u>	Shaft hole depth Min	Nut clearance		Style <u>1/</u>	Color <u>1/</u>
					Dia Min	Depth Min		
0	0.500 (12.70)	0.510 (12.95)	1--1/8" round	0.405 (10.29)	0.435 (11.05)	0.026 (.66)	Round	Black
1	0.700 (17.78)	0.610 (15.50)	2--1/4" round	0.405 (10.29)	0.485 (12.32)	0.026 (.66)	Round with white dot	Gray
2	0.900 (22.86)	0.790 (20.07)	3--1/8" D flat	0.520 (13.21)	0.640 (16.26)	0.114 (2.90)	Round with fluores- cent dot	Red
3	1.250 (31.75)	0.700 (17.78)	4--1/4" D flat	0.455 (11.56)	0.750 (19.05)	0.114 (2.90)	Round with phospho- rescent dot	
4	1.750 (44.45)	0.850 (21.59)		0.520 (13.21)	0.750 (19.05)	0.114 (2.90)		
5	2.250 (57.15)	0.875 (22.23)		0.520 (13.21)	0.750 (19.05)	0.114 (2.90)		

1/ Style, shaft hole diameter, and color optional.

NOTE: Dimensions are in inches. Millimeters are in parentheses. Metric equivalents (to the nearest .01 mm) are given for general information only and are based upon 1 inch = 25.4 mm.

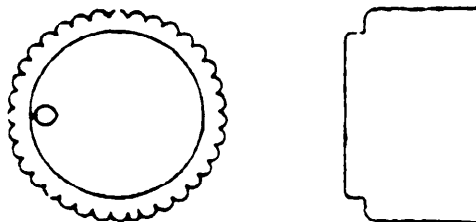


Figure 1 - Typical round knob.

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TABLE II - Round ring skirt knobs.

Series	Outside diameter $+0.030$ (.76) -0.010 (.25)	Overall thickness ± 0.030 (.76)	Shaft hole diameter $\frac{1}{2}$	Shaft hole depth Min	Nut clearance		Skirt dia max	Style $\frac{1}{2}$	Color $\frac{1}{2}$
					Dia Min	Depth Min			
0	0.500 (12.70)	0.655 (16.64)	1--1/8" round	0.560 (14.22)	0.300 (7.62)	0.177 (4.50)	0.460 (11.68)	Skirted round	Black
1	0.700 (17.78)	0.782 (19.86)	2--1/4" round	0.568 (14.43)	0.485 (12.32)	0.188 (4.78)	0.680 (17.27)	Skirted round with white dot	Gray
2	0.900 (22.86)	1.010 (25.65)	3--1/8" D flat	0.730 (18.54)	0.640 (16.26)	0.320 (8.13)	0.845 (21.46)	Skirted round with fluorescent dot	Red
3	1.250 (31.75)	0.850 (21.59)	4--1/4" D flat	0.605 (15.37)	0.750 (19.05)	0.250 (6.35)	1.185 (30.10)	Skirted round with phosphorescent dot	
4	1.750 (44.45)	1.070 (27.18)		0.740 (18.80)	0.750 (19.05)	0.320 (8.13)	1.690 (42.93)		
5	2.250 (57.15)	1.095 (27.81)		0.740 (18.80)	0.750 (19.05)	0.320 (8.13)	2.185 (55.50)		

 $\frac{1}{2}$ Style, shaft hole diameter and color optional.

NOTE: Dimensions are in inches. Millimeters are in parentheses. Metric equivalents (to the nearest .01 mm) are given for general information only and are based upon 1 inch = 25.4 mm.

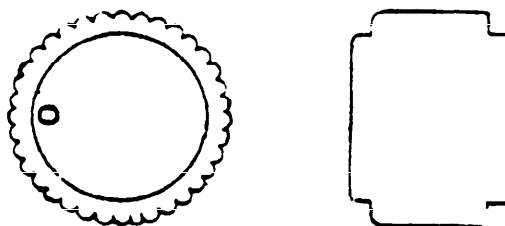


Figure 2 - Typical round ring skirt knob.

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TABLE III. - Round dial skirt knobs.

Series	Outside diameter +0.030 (.76) -0.010 (.25)	Overall thickness +0.030 (.76)	Shaft hole diameter <u>1</u> /	Shaft hole depth Min	Nut clearance		Skirt dia max	Style <u>1</u> /	Color <u>1</u> /
					Dia Min	Depth Min			
0	0.500 (12.70)	0.655 (16.64)	1--1/8" round	0.560 (14.22)	0.300 (7.62)	0.177 (4.50)	0.900 (22.86)	Round dial skirt with white arrow	Black
1	0.700 (17.78)	0.782 (19.86)	2--1/4" round	0.568 (14.43)	0.485 (12.32)	0.188 (4.78)	1.150 (29.21)	Round dial skirt, no arrow	Gray
2	0.900 (22.86)	1.010 (25.65)	3--1/8" D flat	0.730 (18.54)	0.640 (16.26)	0.320 (8.13)	1.525 (38.74)	Round dial skirt with slot	Red
3	1.250 (31.75)	0.850 (21.59)	4--1/4" D flat	0.605 (15.37)	0.750 (19.05)	0.250 (6.35)	1.837 (46.66)	Round dial skirt with back-lighted white arrow	
4	1.750 (44.45)	1.070 (27.18)		0.740 (18.80)	0.750 (19.05)	0.320 (8.13)	2.468 (62.69)	Round dial skirt with fluorescent arrow	
5	2.250 (57.15)	1.095 (27.81)		0.740 (18.80)	0.750 (19.05)	0.320 (8.13)	3.020 (76.71)	Round dial skirt with phosphorescent dot	

1 Style, shaft hole diameter, and color optional.

NOTE Dimensions are in inches. Millimeters are in parentheses. Metric equivalents (to the nearest .01 mm) are given for general information only and are based upon 1 inch = 25.4 mm.

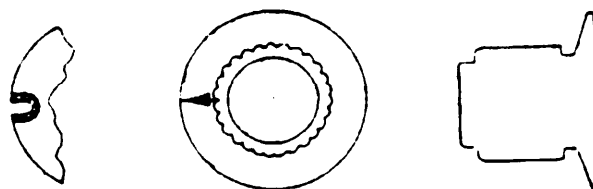


Figure 3 - Typical round dial skirt knobs.

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TABLE IV - Round concentric knobs.

Series	Outside diameter +0.030 (.76) -0.010 (.25)	Overall Thickness +0.015 (.38)	Shaft hole diameter <u>1/</u>	Nut clearance		Style	Color <u>1/</u>	Knob form
				Dia Min	Depth Min			
1	0.700 (17.78)	0.510 (12.95)	2--1/4" round	0.485 (12.32)	0.026 (.66)	Round	Black	Concentric
2	0.900 (22.86)	0.655 (16.64)	4--1/4" D flat	0.640 (16.26)	0.114 (2.90)		Gray	
3	1.250 (31.75)	0.530 (13.48)		0.750 (19.05)	0.114 (2.90)		Red	

1/ Shaft hole diameter and color optional.

NOTE: Dimensions are in inches. Millimeters are in parentheses. Metric equivalents (to the nearest .01 mm) are given for general information only and are based upon 1 inch = 25.4 mm.

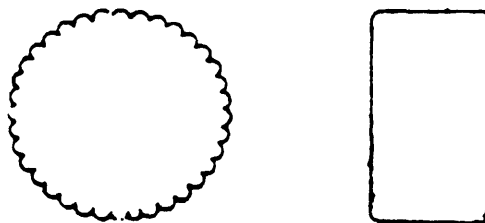


Figure 4 - Typical round concentric knob.

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TABLE V - Round concentric ring skirt knobs.

Series	Outside diameter +0.030 (.76) -0.010 (.25)	Overall Thick- ness +0.025 (.64)	Shaft hole diameter <u>1/</u>	Nut clearance		Skirt Dia max	Style	Color <u>1/</u>	Knob form
				Dia Min	Depth Min				
1	0.700 (17.78)	0.690 (17.53)	2--1/4" round	0.485 (12.32)	0.188 (4.78)	0.680 (17.27)	Skirted round	Black	Concentric
2	0.900 (22.86)	0.885 (22.48)	4--1/4" D flat	0.640 (16.26)	0.320 (8.13)	0.845 (21.46)		Gray	
3	1.250 (31.75)	0.700 (17.78)		0.750 (19.05)	0.250 (6.35)	1.185 (30.10)		Red	

1/ Shaft hole diameter and color optional.

NOTE: Dimensions are in inches. Millimeters are in parentheses. Metric equivalents (to the nearest .01 mm) are given for general information only and are based upon 1 inch = 25.4 mm.

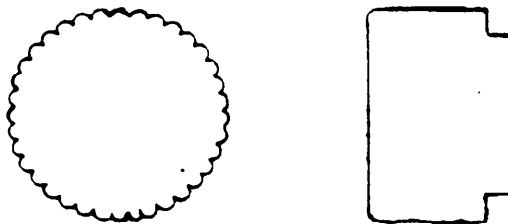


Figure 5 - Typical round concentric ring skirt knob.

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TABLE VI - Round concentric dial skirt knobs.

Series	Outside diameter +0.030 (.76) -0.010 (.25)	Overall thick- ness +0.025 (.64)	Shaft hole diameter ^{1/}	Nut clearance		Skirt dia max	Style ^{1/}	Color ^{1/}	Knob form
				Dia Min	Depth Min				
1	0.700 (17.78)	0.690 (17.53)	2--1/4" round	0.485 (12.32)	0.188 (4.78)	1.150 (29.21)	Round dial skirt with white arrow	Black	Concentric
2	0.900 (22.86)	0.885 (22.48)	4--1/4" D flat	0.640 (16.26)	0.320 (8.13)	1.525 (38.74)	Round dial skirt with fluorescent arrow	Gray	
3	1.250 (31.75)	0.700 (17.78)		0.750 (19.05)	0.250 (6.35)	1.837 (46.66)	Round dial skirt with phosphorescent arrow	Red	

^{1/} Style, shaft hole diameter, and color optional.

NOTE: Dimensions are in inches. Millimeters are in parentheses. Metric equivalents (to the nearest .01 mm) are given for general information only and are based upon 1 inch = 25.4 mm.



Figure 6 - Typical round concentric dial skirt knob.

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TABLE VII - Knob lock pointer knobs.

Series	Outside diameter +0.030 (.76) -0.010 (.25)	Overall thickness +0.030 (.76)	Shaft hole diameter <u>1/</u>	Shaft hole depth Min	Nut clearance		Skirt Dia max	Pointer length (from shaft center)	Style <u>1/</u>	Color <u>1/</u>
					Dia Min	Depth Min				
1	0.700 (17.78)	0.782 (19.86)	1--1/8" round	0.568 (14.43)	0.560 (14.22)	0.188 (4.78)	0.680 (17.27)	0.812 (20.62)	Round knob lock pointer with white line	Black
2	0.900 (22.86)	0.958 (24.33)	2--1/4" round	0.680 (17.27)	0.640 (16.26)	0.188 (4.78)	0.845 (21.46)	0.968 (24.59)	Round knob lock pointer with fluorescent line	Gray
3	1.250 (31.75)	0.862 (21.89)	3--1/8" D flat	0.605 (15.37)	0.750 (19.05)	0.188 (4.78)	1.185 (30.10)	1.125 (28.58)	Round knob lock pointer with phosphorescent line	Red

1/ Style, shaft hole diameter, and color optional.

NOTE: Dimensions are in inches. Millimeters are in parentheses. Metric equivalents (to the nearest .01 mm) are given for general information only and are based upon 1 inch = 25.4 mm.

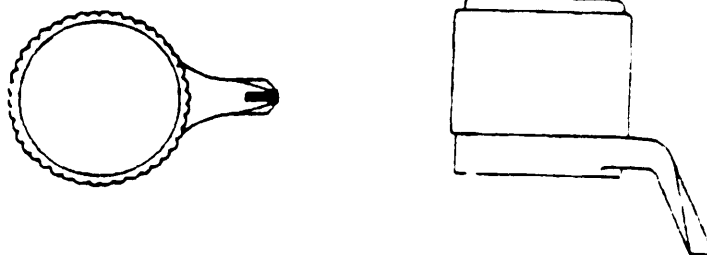


Figure 7 - Typical knob lock pointer knob.

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TABLE VIII - Round bar knobs.

Series	Outside diameter $+0.030$ (.76) -0.010 (.25)	Overall thickness $+0.030$ (.76)	Shaft hole diameter <u>1/</u>	Shaft hole depth Min	Nut clearance		Dimension M $+0.025$ (.64)	Style <u>1/</u>	Color <u>1/</u>
					Dia Min	Depth Min			
1	0.700 (17.78)	0.810 (15.49)	1--1/8" round	0.045 (1.14)	0.485 (12.32)	0.028 (.68)	1.150 (29.21)	Round bar with white line	Black
			2--1/4" round					Round bar with fluorescent line	Gray
			3--1/8" D flat					Round bar with phosphorescent line	Red
			4--1/4" D flat						

1/ Style, shaft hole diameter, and color optional.

NOTE: Dimensions are in inches. Millimeters are in parentheses. Metric equivalents (to the nearest .01 mm) are given for general information only and are based upon 1 inch = 25.4 mm.

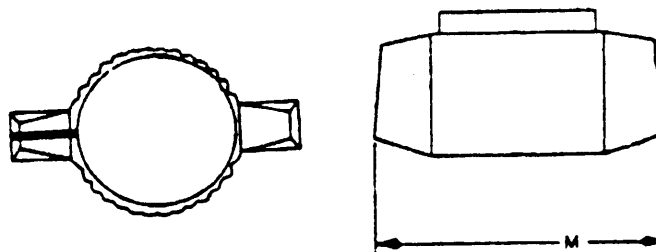


Figure 8 - Typical round bar knob.

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TABLE IX - Round bar ring skirt knobs.

Series	Outside diameter $+0.030$ (.76) -0.010 (.25)	Overall thickness $+0.030$ (.76)	Shaft hole diameter $\frac{1}{2}$	Shaft hole depth Min	Nut clearance		Skirt dia max	Dimension M $+0.025$ (.64)	Style $\frac{1}{2}$	Color $\frac{1}{2}$
					Dia Min	Depth Min				
1	0.700 (17.78)	0.782 (19.86)	1--1/8" round	0.568 (14.43)	0.485 (12.32)	0.188 (4.78)	0.680 (17.27)	1.150 (29.21)	Round bar ring skirted with white line	Black
			2--1/4" round						Round bar ring skirted with fluorescent line	Gray
			3--1/8" D flat						Round bar ring skirted with phosphorescent line	Red
			4--1/4" D flat							

$\frac{1}{2}$ Style, shaft hole diameter, and color optional.

NOTE: Dimensions are in inches. Millimeters are in parentheses. Metric equivalents (to the nearest .01 mm) are given for general information only and are based upon 1 inch = 25.4 mm.

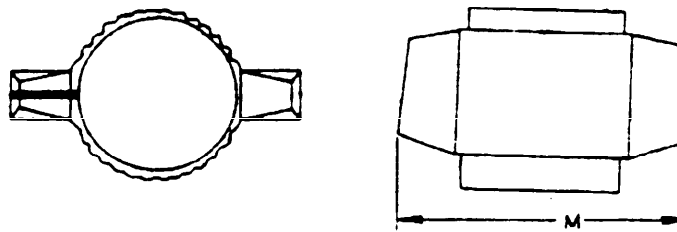


Figure 9 - Typical round bar ring skirt knob.

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TABLE X - Round bar dial skirt knobs.

Series	Outside diameter +0.030 (.76) -0.010 (.25)	Overall thickness +0.030 (.76) -0.010 (.25)	Shaft hole diameter <u>1/</u>	Shaft hole depth Min	Nut clearance		Skirt dia max	Dimension M +0.025 (.64)	Style <u>1/</u>	Color <u>1/</u>
					Dia Min	Depth Min				
1	0.700 (17.78)	0.782 (19.86)	1--1/8" round	0.368 (14.43)	0.485 (12.32)	0.188 (4.78)	1.150 (29.21)	1.150 (29.21)	Round bar dial skirted with white line	Black
			2--1/4" round						Round bar dial skirted with fluorescent line	Gray
			3--1/8" D flat						Round bar dial skirted with phosphorescent line	Red
			4--1/4" D flat							

1/ Style, shaft hole diameter, and color optional.

NOTE: Dimensions are in inches. Millimeters are in parentheses. Metric equivalents (to the nearest .01 mm) are given for general information only and are based upon 1 inch = 25.4 mm.

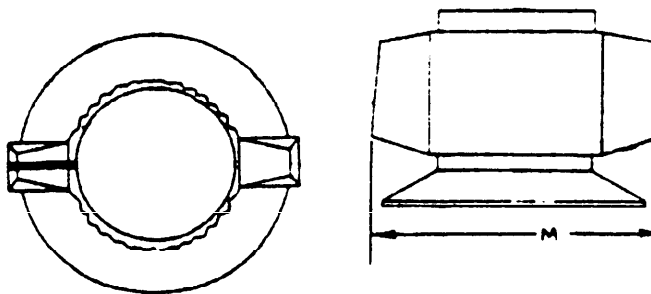


Figure 10 - Typical round bar dial skirt knob.

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TABLE XI - Round bar concentric knobs.

Series	Outside diameter +0.030 (.76) -0.010 (.25)	Overall thick- ness +0.015 (.38)	Shaft hole diameter <u>1/</u>	Nut clearance		Dimen- sion M +0.025 (.64)	Style <u>1/</u>	Color <u>1/</u>	Knob form
				Dia Min	Depth Min				
1	0.700 (17.78)	0.510 (12.95)	2--1/4" round	0.485 (12.32)	0.026 (.66)	1.150 (29.21)	Round bar with white line	Black	Concentric
			4--1/4" D flat				Round bar with fluo- rescent line	Gray	
							Round bar with phos- phorescent line	Red	

1/ Style, shaft hole diameter, and color optional.

NOTE: Dimensions are in inches. Millimeters are in parentheses. Metric equivalents (to the nearest .01 mm) are given for general information only and are based upon 1 inch = 25.4 mm.

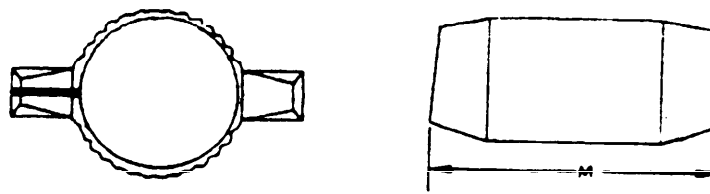


Figure 11 - Typical round bar concentric knob.

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TABLE XII - Round bar concentric ring skirt knobs.

Series	Outside diameter +0.030 (.76) -0.010 (.25)	Overall thickness +0.025 (.64)	Shaft hole diameter ^{1/}	Nut clearance		Skirt dia max	Dimension M +0.025 (.64)	Style ^{1/}	Color ^{1/}	Knob form
				Dia Min	Depth Min					
1	0.700 (17.78)	0.690 (17.53)	2--1/4" round 4--1/4" D flat	0.485 (12.32)	0.188 (4.78)	0.680 (17.27)	1.150 (29.21)	Round bar ring skirt- ed with white line	Black	Concentric
								Round bar ring skirted with fluo- rescent line	Gray	
								Round bar ring skirted with phos- phorescent line	Red	

^{1/} Style, shaft hole diameter, and color optional.

NOTE: Dimensions are in inches. Millimeters are in parentheses. Metric equivalents (to the nearest .01 mm) are given for general information only and are based upon 1 inch = 25.4 mm.

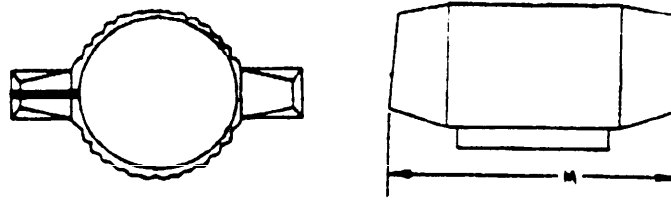


Figure 12 - Typical round bar concentric ring skirt knob.

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TABLE XIII - Round bar concentric dial skirt knobs.

Series	Outside diameter $+0.030$ (.76) -0.010 (.25)	Overall thick- ness $+0.025$ (.64)	Shaft hole diameter $\frac{1}{2}$	Nut clearance		Skirt dia max	M ± 0.025 (.64)	Style $\frac{1}{2}$	Color $\frac{1}{2}$	Knob form
				Dia Min	Depth Min					
1	0.700 (17.78)	0.690 (17.53)	2--1.4" round 4--1/4" D flat	0.485 (12.32)	0.188 (4.78)	1.150 (29.21)	1.150 (29.21)	Round bar dial skirted with white line	Black	Concentric
								Round bar dial skirted with fluorescent line	Gray	
								Round bar dial skirted with phosphorescent line	Red	

$\frac{1}{2}$ Style, shaft hole diameter, and color optional.

NOTE: Dimensions are in inches. Millimeters are in parentheses. Metric equivalents (to the nearest .01 mm) are given for general information only and are based upon 1 inch = 25.4 mm.

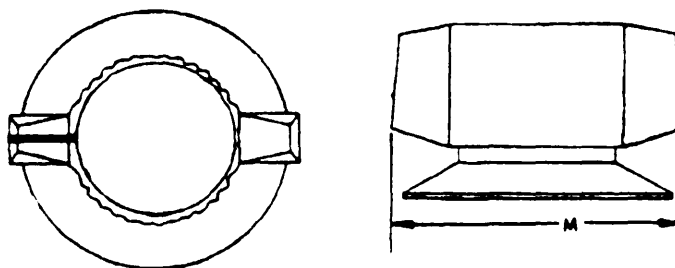


Figure 13 - Typical round bar concentric dial skirt knob.

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TABLE XIV - Pointer knobs.

Series	Outside diameter +0.030 (.76) -0.010 (.25)	Overall thickness +0.030 (.76)	Shaft hole diameter <u>1/</u>	Shaft hole depth Min	Nut clearance		Pointer length (from shaft center) +0.025 (.64) -0.005 (.13)	Style <u>1/</u>	Color <u>1/</u>
					Dia Min	Depth Min			
0	0.500 (12.70)	0.510 (12.95)	1--1/8" round	0.405 (10.29)	0.420 (10.67)	0.028 (.66)	0.490 (12.45)	Plain pointer	Black
1	0.700 (17.78)	0.610 (15.49)	2--1/4" round	0.405 (10.29)	0.485 (12.32)	0.028 (.66)	0.680 (17.27)	Plain pointer with white line	Gray
2	0.900 (22.86)	0.790 (20.07)	3--1/8" D flat 4--1/4" D flat	0.520 (13.21)	0.640 (16.26)	0.114 (2.90)	0.885 (22.48)	Plain pointer with fluorescent line Plain pointer with phosphorescent line	Red

1/ Style, shaft hole diameter, and color optional.

NOTE: Dimensions are in inches. Millimeters are in parentheses. Metric equivalents (to the nearest .01 mm) are given for general information only and are based upon 1 inch = 25.4 mm.

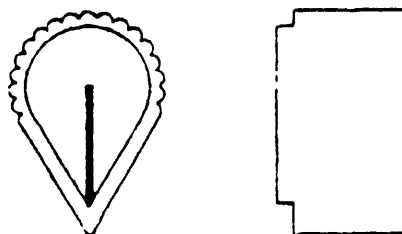


Figure 14 - Typical pointer knob.

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TABLE IV - Pointer ring skirt knobs.

Series	Outside diameter +0.030 (.76) -0.010 (.25)	Overall thickness +0.030 (.76) -0.010 (.25)	Shaft hole diameter 1/ Min	Shaft hole depth Min	Nut clearance		Skirt dia max	Pointer length (from shaft center) +0.025 (.64) -0.005 (.13)	Style 1/ 	Color 1
					Dia Min	Depth Min				
0	0.500 (12.70)	0.655 (16.64)	1--1/8" round	0.560 (14.22)	0.300 (7.62)	0.177 (4.50)	0.690 (17.53)	0.490 (12.45)	Skirted pointer	Black
1	0.700 (17.78)	0.782 (19.86)	2--1/4" round	0.568 (14.43)	0.485 (12.32)	0.188 (4.78)	1.000 (25.40)	0.680 (17.27)	Skirted pointer with white line	Gray
2	0.900 (22.86)	1.010 (25.65)	3--1/8" D flat	0.730 (18.54)	0.640 (16.26)	0.320 (8.13)	1.345 (34.16)	0.885 (22.48)	Skirted pointer with fluorescent line	Red
			4--1/4" D flat					Skirted pointer with phosphorescent line		

1/ Style, shaft hole diameter, and color optional.

NOTE: Dimensions are in inches. Millimeters are in parentheses. Metric equivalents (to the nearest .01 mm) are given for general information only and are based upon 1 inch = 25.4 mm.

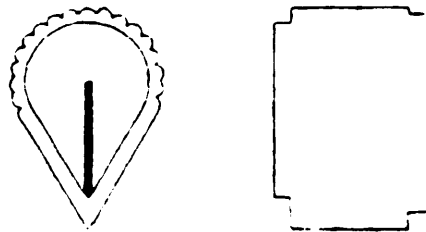


Figure 15 - Typical pointer ring skirt knob.

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TABLE XVI - Pointer tactile knobs.

Series	Outside diameter +0.030 (.76) -0.010 (.25)	Overall thick- ness +0.050 (1.27)	Shaft hole diameter <u>1/</u>	Shaft hole depth Min	Nut clearance		Pointer length (from shaft center) +0.025 (.64) -0.005 (.13)	Style	Color <u>1/</u>	Tactile form
					Dia Min	Depth Min				
1	0.700 (17.78)	0.900 (22.86)	1--1/8" round	0.405 (10.29)	0.485 (12.32)	0.026 (.66)	0.680 (17.27)	Plain pointer (P)	Black	Form 7
2	0.900 (22.86)	1.155 (29.34)	2--1/4" round	0.520 (13.21)	0.640 (16.26)	0.114 (2.90)	0.885 (22.48)		Gray	
			3--1/8" D flat						Red	
			4--1/4" D flat							

1/ Shaft hole diameter and color optional.

NOTE: Dimensions are in inches. Millimeters are in parentheses. Metric equivalents (to the nearest .01 mm) are given for general information only and are based upon 1 inch = 25.4 mm.

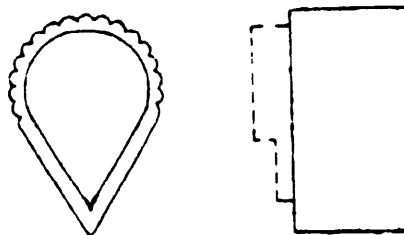


Figure 16 - Typical pointer tactile knob.

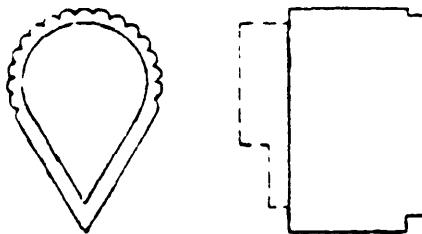
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TABLE XVII - Pointer ring skirt tactile knobs.

Series	Outside diameter +0.030 (.76) -0.010 (.25)	Overall thickness +0.050 (1.27)	Shaft hole diameter ^{1/}	Shaft hole depth Min	Nut clearance		Skirt dia max	Pointer length (from shaft center) +0.015 (.38) -0.005 (.13)	Style	Color ^{1/}	Tactile form
					Dia Min	Depth Min					
1	0.700 (17.78)	1.075 (27.31)	1--1/8" round	0.568 (14.43)	0.485 (12.32)	0.188 (4.78)	1.000 (25.40)	0.680 (17.27)	Skirted pointer (K)	Black	Form 7
2	0.900 (22.86)	1.375 (34.93)	2--1/4" round	0.730 (18.54)	0.440 (11.18)	0.320 (8.13)	1.345 (34.16)	0.885 (22.48)		Gray	
			3--1/8" 0 flat							Red	
			4--1/4" 0 flat								

^{1/} Shaft hole diameter and color optional.

NOTE: Dimensions are in inches. Millimeters are in parentheses. Metric equivalents (to the nearest .01 mm) are given for general information only and are based upon 1 inch = 25.4 mm.



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TABLE XVIII - Bar knobs (Styles A, W, and XX).

Series	Outside diameter +0.030 (.76) -0.010 (.25)	Overall thickness +0.015 (.38) -0.010 (.25)	Shaft hole diameter $\frac{1}{2}$	Shaft clearance Min	Nut clearance		Pointer length (from shaft center) max	Dimension M Max	Style $\frac{1}{2}$	Color $\frac{1}{2}$
					Dia Min	Depth Min				
1	0.700 (17.78)	0.645 (16.38)	2--1/4" round	0.445 (11.30)	0.515 (13.08)	0.110 (2.79)	0.575 (14.61)	1.515 (38.48)	Bar with white line	Black
			4--1/4" flat						Bar with fluorescent line	Gray
									Bar with phosphorescent line	Red

 $\frac{1}{2}$ Style, shaft hole diameter, and color optional.

NOTE: Dimensions are in inches. Millimeters are in parentheses. Metric equivalents (to the nearest .01 mm) are given for general information only and are based upon 1 inch = 25.4 mm.

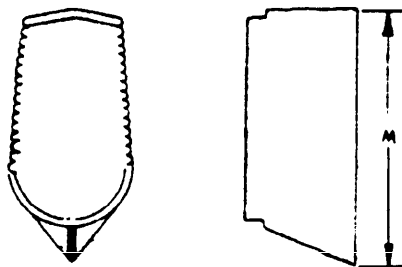


Figure 18 - Typical bar knobs (Styles A, W, and XX).

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TABLE XIX - Bar dial skirt knobs.

Series	Outside diameter max	Overall thickness ± 0.025 (.64)	Shaft hole diameter $\frac{1}{2}$	Shaft clearance Min	Nut clearance		Pointer length (from shaft center) max	Dimension M Max	Style $\frac{1}{2}$	Color $\frac{1}{2}$
					Dia Min	Depth Min				
1	1.520 (38.61)	0.815 (20.70)	2--1/4" round 4--1/4" D flat	0.590 (14.99)	0.515 (13.08)	0.268 (6.76)	0.780 (19.81)	1.720 (43.69)	Dial skirted bar with white line and white arrow	Black
									Dial skirted bar with white line and slot	Gray
									Dial skirted bar with white line and translucent arrow	Red
									Dial skirted bar with fluorescent line and fluorescent arrow	
									Dial skirted bar with fluorescent line and slot	
									Dial skirted bar with fluorescent line and translucent arrow	
									Dial skirted bar with phosphorescent line and phosphorescent arrow	
									Dial skirted bar with phosphorescent line and slot	
									Dial skirted bar with phosphorescent line and translucent arrow	

$\frac{1}{2}$ Style, shaft hole diameter, and color optional.

NOTE: Dimensions are in inches. Millimeters are in parentheses. Metric equivalents (to the nearest .01 mm) are given for general information only and are based upon 1 inch = 25.4 mm.

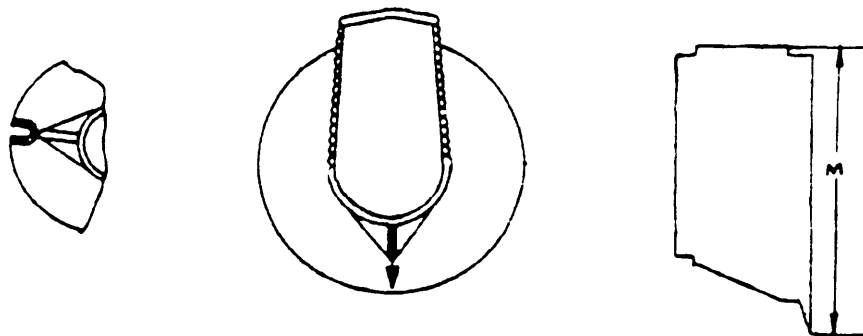


Figure 19 - Typical bar dial skirt knobs.

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TABLE XX - Bar anti-parallax knobs.

Series	Outside diameter +0.030 (.76) -0.010 (.25)	Overall thick- ness +0.015 (.38)	Shaft hole diameter <u>1/</u>	Shaft hole depth Min	Nut clearance		Pointer length (from shaft center) max	Dimen- sion M Max	Style <u>1/</u>	Color <u>1/</u>
					Dia Min	Depth Min				
2	0.700 (17.78)	0.645 (16.38)	2--1/4" round	0.445 (11.30)	0.595 (15.11)	0.110 (2.79)	0.900 (22.86)	1.855 (47.12)	Bar with white line	Black
			4--1/4" D flat						Bar with fluores- cent line	Gray
									Bar with phospho- rescent line	Red

1/ Style, shaft hole diameter, and color optional.

NOTE: Dimensions are in inches. Millimeters are in parentheses. Metric equivalents (to the nearest .01 mm) are given for general information only and are based upon 1 inch = 25.4 mm.

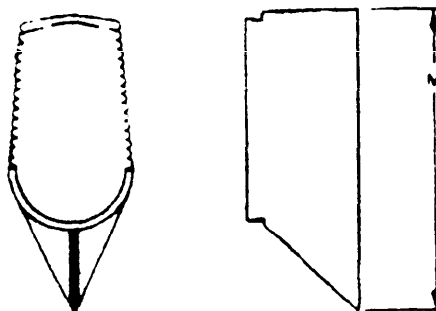


Figure 20 - Typical bar anti-parallax knob.

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TABLE XXI - Bar anti-parallax dial skirt knobs.

Series	Outside diameter max	Overall thickness +0.025 (-.64)	Shaft hole diameter <u>1</u>	Shaft hole depth Min	Nut clearance		Pointer length (from shaft center) max	Dimension M Max	Style <u>1</u>	Color <u>1</u>
					Dia Min	Depth Min				
2	1.520 (38.61)	0.815 (20.70)	2--1/4" round	0.590 (14.99)	0.470 (11.94)	0.266 (6.76)	0.915 (23.24)	1.870 (47.50)	Dial skirted bar with white line	Black
			4--1/4" D flat						Dial skirted bar with fluorescent line	Gray
									Dial skirted bar with phosphorescent line	Red

1/ Style, shaft hole diameter, and color optional.

NOTE: Dimensions are in inches. Millimeters are in parentheses. Metric equivalents (to the nearest .01 mm) are given for general information only and are based upon 1 inch = 25.4 mm.

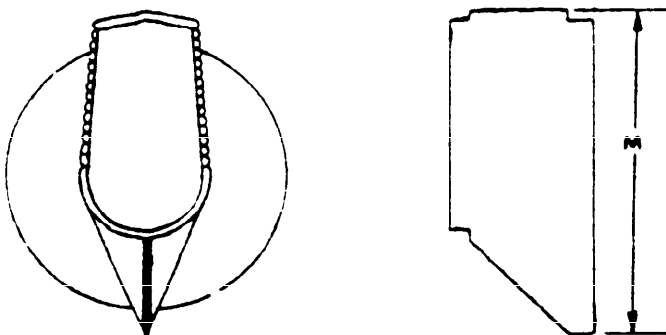


Figure 21 - Typical bar anti-parallax dial skirt knob.

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TABLE XXII - Bar knobs (Style R)

Series	Outside diameter Max.	Overall thick- ness Max	Shaft hole diameter <u>1/</u>	Shaft hole depth Min	Nut clearance		Pointer length (from shaft center) max	Dimen- sion M Max	Style	Color <u>1/</u>
					Dia Min	Depth Min				
3	0.788 (20.02)	0.869 (22.07)	2--1/4" round	0.739 (18.77)	0.562 (14.27)	0.177 (4.50)	1.290 (32.77)	2.552 (64.82)	Bar	Black
			4--1/4" D flat							Gray
										Red

1/ Shaft hole diameter and color optional.

NOTE: Dimensions are in inches. Millimeters are in parentheses. Metric equivalents (to the nearest .01 mm) are given for general information only and are based upon 1 inch = 25.4 mm.

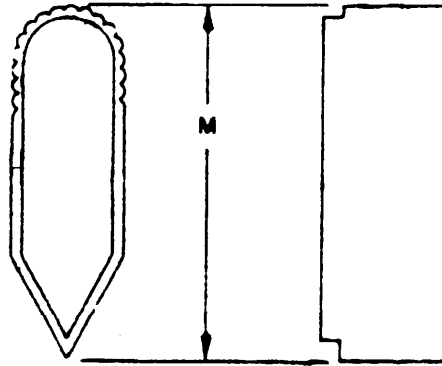


Figure 22 - Typical bar knob (Style R).

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TABLE XXIII - Spinner knobs.

Series	Outside diameter +0.030 (.76) -0.010 (.25)	M ±0.050 (1.27)	F ±0.030 (.76)	Shaft hole diameter ^{1/}	Shaft hole depth Min	Nut clearance		Skirt dia max	N ±0.025 (.64)	P ±0.015 (.38)	Style	Color ^{1/}
						Dia Min	Depth Min					
3	1.250 (31.75)	1.350 (34.29)	0.850 (21.59)	2--1/4" round	0.605 (15.37)	0.685 (17.40)	0.250 (6.35)	1.185 (30.10)	0.580 (14.73)	0.800 (20.32)	Spinner	Black
4	1.750 (44.45)	1.758 (44.65)	1.070 (27.18)	4--1/4" D flat	0.740 (18.80)	0.685 (17.40)	0.320 (8.13)	1.690 (42.93)	0.780 (19.81)	1.094 (27.79)		Gray
5	2.250 (57.15)	1.782 (45.26)	1.095 (27.81)		0.740 (18.80)	0.685 (17.40)	0.320 (8.13)	2.185 (55.50)	0.780 (19.81)	1.344 (34.14)		Red

^{1/} Shaft hole diameter and color optional.

NOTE: Dimensions are in inches. Millimeters are in parentheses. Metric equivalents (to the nearest .01 mm) are given for general information only and are based upon 1 inch = 25.4 mm.

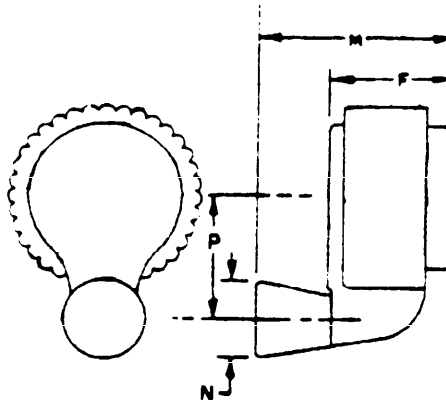


Figure 23 - Typical spinner knob.

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TABLE XXIV - Spinner slip clutch knobs.

Series	Outside diameter ± 0.030 (.75) -0.010 (.25)	M ± 0.050 (1.27)	F ± 0.030 (.76)	Shaft hole diameter 1/ diameter 1/	Shaft hole depth Min	Nut clearance		Skirt dia max	N ± 0.025 (.64)	P ± 0.015 (.38)	Style	Color 1/ torque 1/
						Dia Min	Depth Min					
3	1.250 (31.75)	1.350 (34.29)	0.850 (21.59)	2--1/4" round	0.600 (15.24)	0.685 (17.40)	0.105 (2.67)	1.185 (30.10)	0.580 (14.73)	0.800 (20.32)	Spinner slip clutch	Black
4	1.750 (44.45)	1.758 (44.65)	1.070 (27.18)	4--1/4" D flat	0.740 (18.80)	0.885 (17.40)	0.200 (5.08)	1.690 (42.93)	0.780 (19.81)	1.094 (27.79)		Gray
5	2.250 (57.15)	1.782 (45.26)	1.095 (27.81)		0.740 (18.80)	0.685 (17.40)	0.200 (5.08)	2.185 (55.50)	0.780 (19.81)	1.344 (34.14)		Red
												2.0 in-lbs ± 0.5 4.0 in-lbs ± 0.5 6.0 in-lbs ± 0.5

1/ Shaft hole diameter, color, and slipping torque optional.

NOTE: Dimensions are in inches. Millimeters are in parentheses. Metric equivalents (to the nearest .01 mm) are given for general information only and are based upon 1 inch = 25.4 mm.

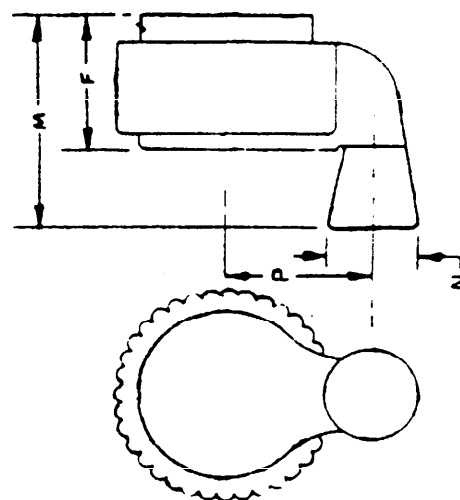


Figure 24 - Typical spinner slip clutch knob.

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TABLE XXV - Spinner slip clutch tactile knobs.

Series	Outside diameter ± 0.030 (.76) -0.010 (.25)	M ± 0.060 (1.27)	F ± 0.030 (.76)	Shaft hole diameter 1/ diameter 1/	Shaft hole depth Min	Nut clearance		Skirt dia max	N Ref	P ± 0.015 (.38)	Style	Color 1/	Slipping torque 1/	Tactile form 1/
						Die Min	Depth Min							
3	1.250 (31.75)	1.475 (37.47)	0.850 (21.59)	2--1/4" round	0.600 (15.24)	0.685 (17.40)	0.105 (2.67)	1.185 (30.10)	0.860 (21.84)	0.800 (20.32)	Spinner slip clutch (SC)	Black	2.0 in-lbs ± 0.5	Form 8
4	1.750 (44.45)	1.940 (49.28)	1.070 (27.18)	4--1/4 D flat	0.740 (18.80)	0.685 (17.40)	0.200 (5.08)	1.690 (42.93)	1.187 (30.15)	1.094 (27.79)		Gray	4.0 in-lbs ± 0.5	Form 9
5	2.250 (57.15)	1.970 (50.04)	1.095 (27.81)		0.740 (18.80)	0.685 (17.40)	0.200 (5.08)	2.185 (55.50)	1.187 (30.15)	1.344 (34.14)		Red	6.0 in-lbs ± 0.5	

1/ Shaft hole diameter, color, slipping torque, and tactile form optional.

NOTE: Dimensions are in inches. Millimeters are in parentheses. Metric equivalents (to the nearest .01 mm) are given for general information only and are based upon 1 inch = 25.4 mm.

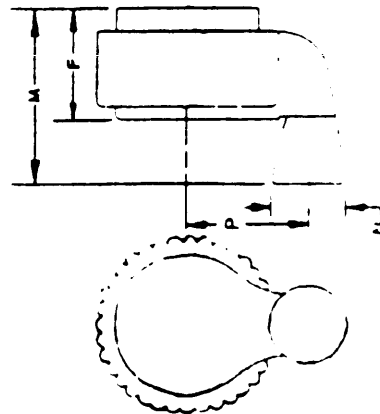


Figure 25 - Spiral spinner slip clutch tactile knob.

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TABLE XXVI - Spinner tactile knobs.

Series	Outside diameter ± 0.030 (.76) -0.010 (.25)	M ± 0.050 (1.27)	F ± 0.030 (.76)	Shaft hole diameter $\frac{1}{2}$	Shaft hole depth Min	Nut clearance		Skirt dia max	N Ref	P ± 0.015 (.38)	Style	Color $\frac{1}{2}$	Tactile form $\frac{1}{2}$
						Dia Min	Depth Min						
3	1.250 (31.75)	1.475 (37.47)	0.850 (21.59)	2--1/4" round	0.605 (15.37)	0.685 (17.40)	0.250 (6.35)	1.185 (30.10)	0.860 (21.84)	0.800 (20.32)	Spinner (S)	Black	Form 8
4	1.750 (44.45)	1.940 (49.28)	1.070 (27.18)	4--1/4 D flat	0.740 (18.80)	0.685 (17.40)	0.320 (8.13)	1.690 (42.93)	1.187 (30.15)	1.094 (27.79)		Gray	Form 9
5	2.250 (57.15)	1.970 (50.04)	1.095 (27.81)		0.740 (18.80)	0.685 (17.40)	0.320 (8.13)	2.185 (55.50)	1.187 (30.15)	1.344 (34.14)		Red	

 $\frac{1}{2}$ Shaft hole diameter, color, and tactile form optional.

NOTE: Dimensions are in inches. Millimeters are in parentheses. Metric equivalents (to the nearest .01 mm) are given for general information only and are based upon 1 inch = 25.4 mm.

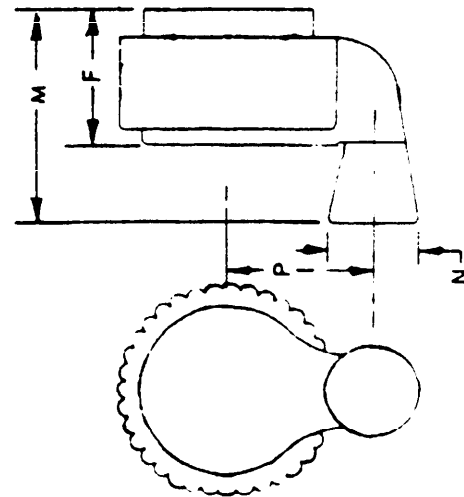


Figure 26 - Typical spinner tactile knob.

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TABLE XXVII - Round tactile knobs.

Series	Outside diameter +0.030 (.76) -0.010 (.25)	F =0.050 (1.27)	Shaft hole diameter <u>1</u> / 	Shaft hole depth Min	Nut clearance		Style	Color <u>1</u> / 	Tactile form <u>1</u> /
					Dia Min	Depth Min			
1	0.700 (17.78)	0.908 (23.01)	1--1/8" round	0.405 (10.29)	0.485 (12.32)	0.026 (.66)	Round (N)	Black	Form 1
2	0.900 (22.86)	1.156 (29.36)	2--1/4" round	0.520 (13.21)	0.640 (16.26)	0.114 (2.90)		Gray	Form 2
3	1.250 (31.75)	1.220 (30.99)	3--1/8" D flat	0.455 (11.56)	0.750 (19.05)	0.114 (2.90)		Red	Form 3
			4--1/4" D flat						Form 4
							Form 5		
									Form 6

$\frac{1}{2}$ Shaft hole diameter, color, and tactile form optional.

NOTE: Dimensions are in inches. Millimeters are in parentheses. Metric equivalents (to the nearest .01 mm) are given for general information only and are based upon 1 inch = 25.4 mm.

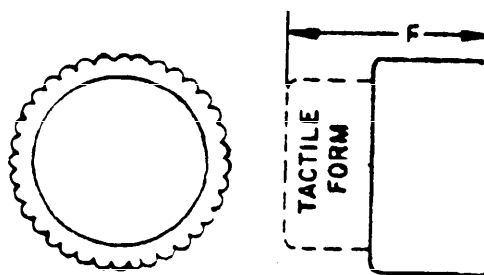


Figure 27 - Typical round tactile knob.

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TABLE XXVIII - Round ring skirt tactile knobs.

Series	Outside diameter +0.030 (.76) -0.010 (.25)	F ±0.050 (1.27)	Shaft hole diameter $\frac{1}{2}$	Shaft hole depth Min	Nut clearance		Skirt dia max	Style	Color $\frac{1}{2}$	Tactile form $\frac{1}{2}$
					Dia Min	Depth Min				
1	0.700 (17.78)	1.075 (27.31)	1--1/8" round	0.568 (14.43)	0.485 (12.32)	0.188 (4.78)	0.680 (17.27)	Skirted round, plain (D)	Black	Form 1
2	0.900 (22.86)	1.375 (34.93)	2--1/4" round	0.730 (18.54)	0.640 (16.26)	0.320 (8.13)	0.845 (21.46)		Gray	Form 2
3	1.250 (31.75)	1.375 (34.93)	3--1/8" D flat	0.605 (15.37)	0.750 (19.05)	0.250 (6.35)	1.185 (30.10)		Red	Form 3
			4--1/4" D flat							Form 4
										Form 5
										Form 6

 $\frac{1}{2}$ Shaft hole diameter, color, and tactile form optional.

NOTE: Dimensions are in inches. Millimeters are in parentheses. Metric equivalents (to the nearest .01 mm) are given for general information only and are based upon 1 inch = 25.4 mm.

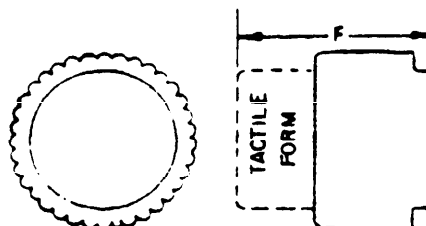


Figure 28 - Typical round ring skirt tactile knob.

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TABLE XXIX - Round dial skirt tactile knobs.

Series	Outside diameter +0.030 (.76) -0.010 (.25)	F ±0.050 (1.27)	Shaft hole diameter <u>1</u>	Shaft hole depth Min	Nut clearance		Skirt dia max	Style <u>1</u>	Color <u>1</u>	Tactile form <u>1</u>
					Dia Min	Depth Min				
1	0.700 (17.78)	1.075 (27.31)	1--1/8" round	0.568 (14.43)	0.485 (12.32)	0.188 (4.78)	1.150 (29.21)	Round dial skirt with white arrow (F)	Black	Form 1
2	0.900 (22.86)	1.375 (34.93)	2--1/4" round	0.730 (18.54)	0.640 (16.26)	0.320 (8.13)	1.525 (38.74)	Round dial skirt, no arrow (G)	Gray	Form 2
3	1.250 (31.75)	1.375 (34.93)	3--1/8" D flat	0.605 (15.37)	0.750 (19.05)	0.250 (6.35)	1.837 (46.66)	Round dial skirt with slot (H)	Red	Form 3
			4--1/4" D flat					Round dial skirt with back-lighted white arrow (O)		Form 4
								Round dial skirt with fluorescent arrow (Q)		Form 5
								Round dial skirt with phosphorescent arrow (OO)		Form 6

1 Style, shaft hole diameter, color, and tactile form optional.

NOTE: Dimensions are in inches. Millimeters are in parentheses. Metric equivalents (to the nearest .01 mm) are given for general information only and are based upon 1 inch = 25.4 mm.

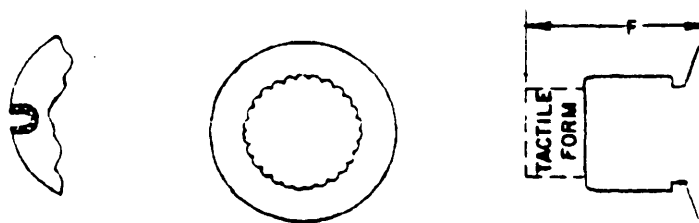


Figure 29 - Typical round dial skirt tactile knobs.

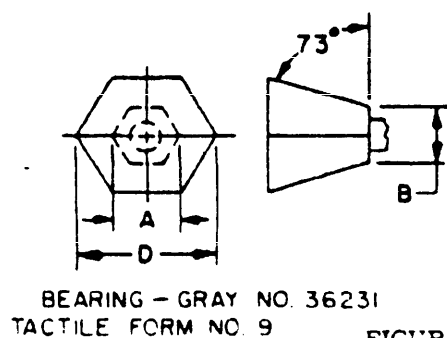
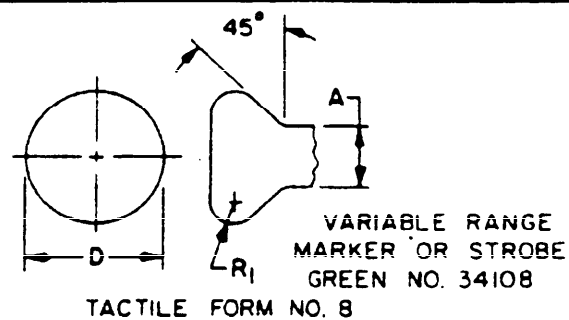
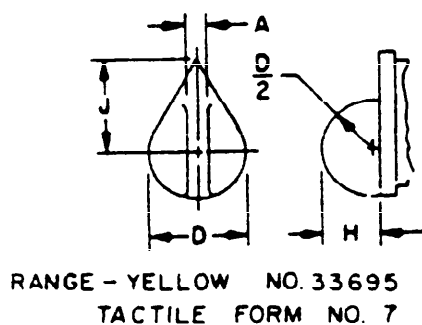
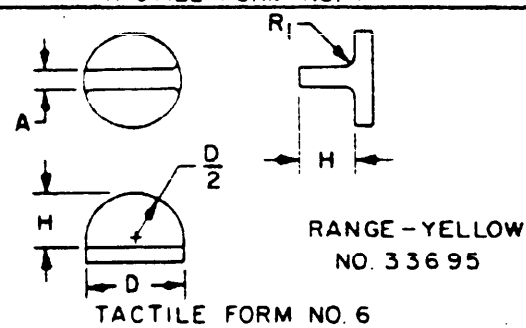
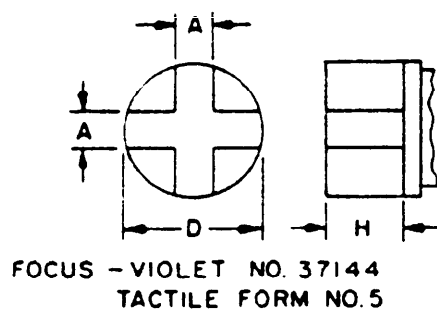
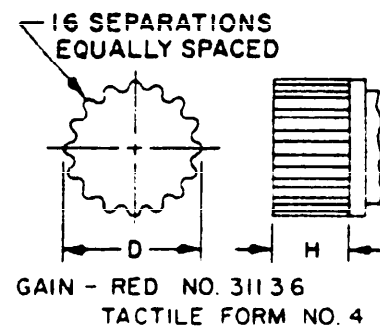
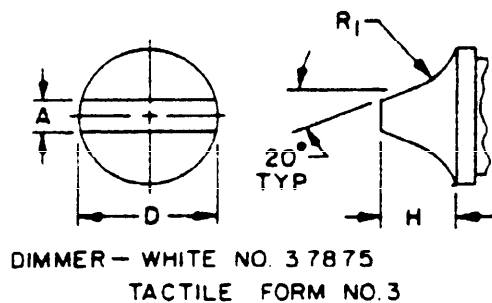
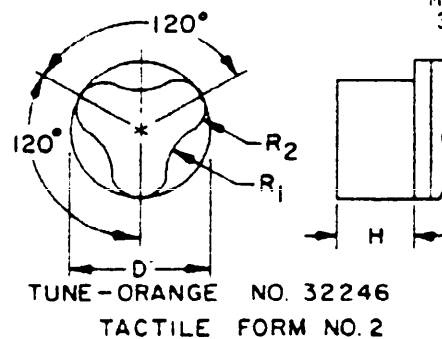
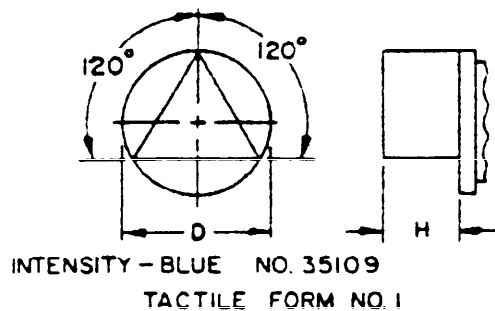
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FIGURE 30. Tactile forms.

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TABLE XXX - Tactile forms.

Tactile form No.	Used on knob style	Applicable to knob size	Dimensions						
			A ±0.010 (.25)	B ±0.010 (.25)	D ±0.020 (.51)	H ±0.025 (.64)	J ±0.025 (.64)	R ₁ ±0.025 (.64)	R ₂ ±0.025 (.64)
1	D F, N, and G, H, O Q, 00	1	---	---	0.630 (18.00)	0.345 (8.76)	---	---	---
		2	---	---	0.812 (20.62)	0.438 (11.13)	---	---	---
		3	---	---	1.156 (29.36)	0.625 (15.88)	---	---	---
2	D F, N, and G, H, O Q, 00	1	---	---	0.630 (18.00)	0.345 (8.76)	---	0.329 (8.36)	0.158 (4.01)
		2	---	---	0.812 (20.62)	0.438 (11.13)	---	0.422 (10.72)	0.203 (5.16)
		3	---	---	1.156 (29.36)	0.625 (15.88)	---	0.609 (15.47)	0.281 (7.14)
3	D F, N, and G, H, O Q, 00	1	0.136 (3.45)	---	0.630 (18.00)	0.345 (8.76)	---	0.390 (9.91)	---
		2	0.175 (4.45)	---	0.812 (20.62)	0.438 (11.13)	---	0.500 (12.70)	---
		3	0.250 (6.35)	---	1.156 (29.36)	0.625 (15.88)	---	0.719 (18.26)	---
4	D F, N, and G, H, O Q, 00	1	---	---	0.630 (18.00)	0.390 (9.91)	---	---	---
		2	---	---	0.812 (20.62)	0.500 (12.70)	---	---	---
		3	---	---	1.156 (29.36)	0.690 (17.53)	---	---	---
5	D F, N, and G, H, O Q, 00	1	0.166 (4.22)	---	0.630 (18.00)	0.345 (8.76)	---	---	---
		2	0.213 (5.41)	---	0.812 (20.62)	0.438 (11.13)	---	---	---
		3	0.302 (7.67)	---	1.156 (29.36)	0.625 (15.88)	---	---	---
6	D F, N, and G, H, O Q, 00	1	0.162 (4.11)	---	0.630 (18.00)	0.345 (8.76)	---	0.070 (1.78)	---
		2	0.188 (4.78)	---	0.812 (20.62)	0.438 (11.13)	---	0.125 (3.18)	---
		3	0.162 (4.11)	---	0.630 (16.00)	0.345 (8.76)	0.630 (16.00)	---	---
7	P and K	2	0.188 (4.78)	---	0.812 (20.62)	0.438 (11.13)	0.812 (20.62)	---	---
		3	0.400 (10.16)	---	0.860 (21.84)	---	---	0.125 (3.18)	---
		4	0.560 (14.22)	---	1.187 (30.15)	---	---	0.188 (4.78)	---
8	S and SC	5	0.560 (14.22)	---	1.187 (30.15)	---	---	0.188 (4.78)	---
		3	0.400 (10.16)	0.350 (8.89)	0.860 (21.84)	---	---	---	---
		4	0.560 (14.22)	0.484 (12.29)	1.187 (30.15)	---	---	---	---
9	S and SC	5	0.560 (14.22)	0.484 (12.29)	1.187 (30.15)	---	---	---	---

NOTE: Dimensions are in inches. Millimeters are in parentheses. Metric equivalents (to the nearest .01 mm) are given for general information only and are based upon 1 inch = 25.4 mm.

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TABLE XXXI - Knob locks.

Series	Outside diameter max.	Thread size		Style <u>1/</u>	Thread size <u>1/</u>	Color <u>1/</u>
		1/4" Shaft	1/8" Shaft			
1	1.030 (26.16)	3/8-32 UNEF-2B	1/4-32 UNEF-2B	Round knob lock with white marking	1--1/4-32	Black
2	1.340 (34.04)	3/8-32 UNEF-2B	---	Round knob lock splash proof with white marking <u>2/</u>	2--3/8-32	Gray
3	1.645 (41.78)	3/8-32 UNEF-2B	---	Round knob lock with fluorescent marking Round knob lock splash proof with fluorescent marking <u>2/</u> Round knob lock with phosphorescent marking Round knob lock splash proof with phosphorescent marking <u>2/</u>		Red

1/ Style, thread size, and color optional.2/ Used only with thread size No. 2 for 1/4" diameter shafts.

NOTE: Dimensions are in inches. Millimeters are in parentheses. Metric equivalents (to the nearest .01 mm) are given for general information only and are based upon 1 inch = 25.4 mm.

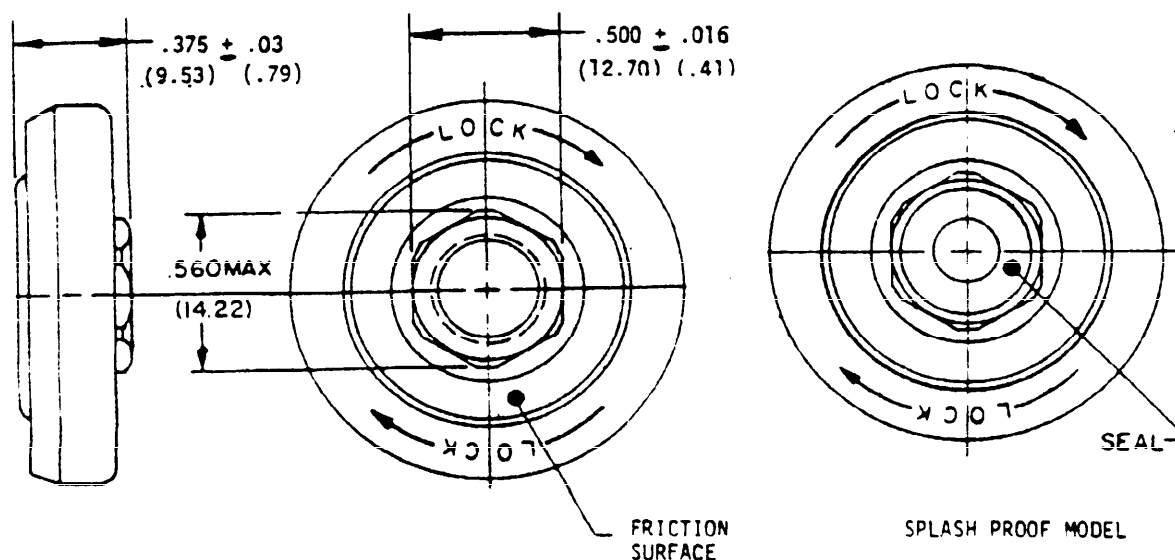
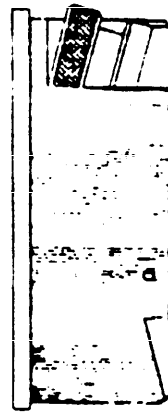
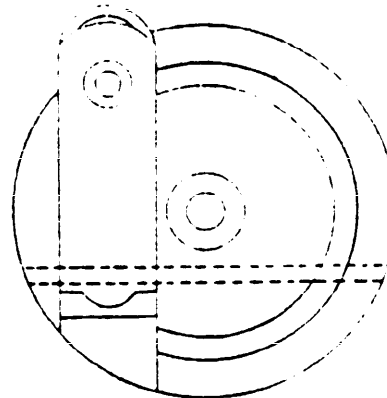


Figure 31 - Typical knob locks.

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SIDE VIEW



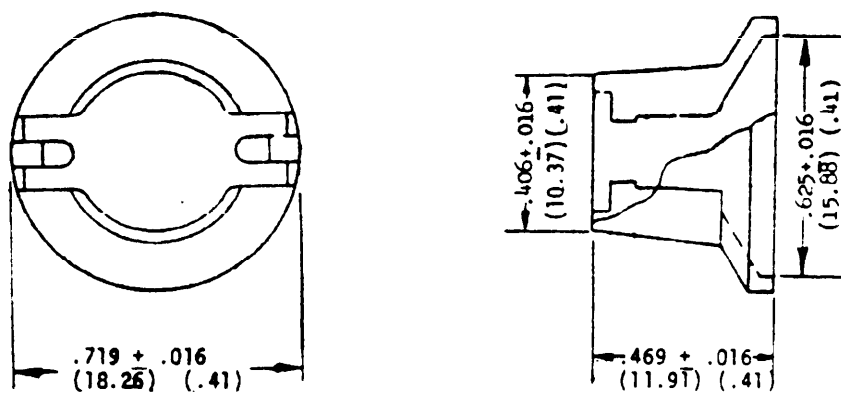
TOP VIEW

Figure 32 - Crank-knob assembly.

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TABLE XXXII - Knob control symmetrical, bar metal

Series	Knob body color	Finish-line
1	Olive	Phosphorescent
2	Olive	White
3	Black	Phosphorescent
4	Black	White
5	Gray	Phosphorescent
6	Gray	White



NOTE: Dimensions are in inches. Millimeters are in parentheses. Metric equivalents (to the nearest .01 mm) are given for general information only and are based upon 1 inch = 25.4 mm.

Figure 33 - Typical knob control symmetrical, bar metal.

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TABLE XXXIII - Knob control bar metal.

Series	A	B	Knob finish	Bar line	Series	A	B	Knob finish	Bar line
1	.594 (15.09)	1.188 (30.18)	Olive	Phosphorescent	13	.594 (15.09)	1.188 (30.18)	Olive	White
2	.844 (21.44)	1.438 (36.53)	Olive	Phosphorescent	14	.844 (21.44)	1.438 (36.53)	Olive	White
3	1.344 (34.14)	1.938 (49.23)	Olive	Phosphorescent	15	1.344 (34.14)	1.938 (49.23)	Olive	White
4	1.969 (50.01)	2.562 (65.07)	Olive	Phosphorescent	16	1.969 (50.01)	2.562 (65.07)	Olive	White
5	.594 (15.09)	1.188 (30.18)	Black	Phosphorescent	17	.594 (15.09)	1.188 (30.18)	Black	White
6	.844 (21.44)	1.438 (36.53)	Black	Phosphorescent	18	.844 (21.44)	1.438 (36.53)	Black	White
7	1.344 (34.14)	1.938 (49.23)	Black	Phosphorescent	19	1.344 (34.14)	1.938 (49.23)	Black	White
8	1.969 (50.01)	2.562 (65.07)	Black	Phosphorescent	20	1.969 (50.01)	2.562 (65.07)	Black	White
9	.594 (15.09)	1.188 (30.18)	Gray	Phosphorescent	21	.594 (15.09)	1.188 (30.18)	Gray	White
10	.844 (21.44)	1.438 (36.53)	Gray	Phosphorescent	22	.844 (21.44)	1.438 (36.53)	Gray	White
11	1.344 (34.14)	1.938 (49.23)	Gray	Phosphorescent	23	1.344 (34.14)	1.938 (49.23)	Gray	White
12	1.969 (50.01)	2.562 (65.07)	Gray	Phosphorescent	24	1.969 (50.01)	2.562 (65.07)	Gray	White

NOTE: Dimensions are in inches. Millimeters are in parentheses. Metric equivalents (to the nearest .01 mm) are given for general information only and are based upon 1 inch = 25.4 mm.

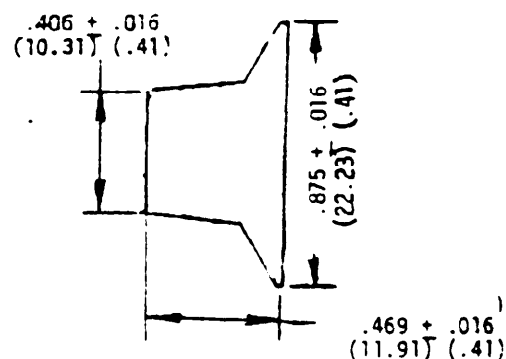
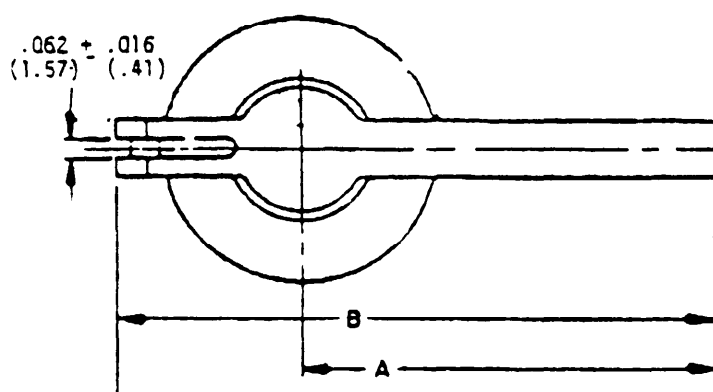


Figure 34 - Typical knob control bar metal.

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TABLE XXXIV - MS Part numbers.

MS91528-0C1B	MS91528-1N1B	MS91528-2E2G	MS91528-3D2B1
MS91528-0D1B	MS91528-1N1B2	MS91528-2F13	MS91528-3D2B2
MS91528-0D1G	MS91528-1N1B4	MS91528-2F2B	MS91528-3D2B3
MS91528-0F1B	MS91528-1N1B5	MS91528-2F2BC	MS91528-3D2B4
MS91528-0K1B	MS91528-1N2B	MS91528-2F2B2	MS91528-3D2B5
MS91528-0K2B	MS91528-1N2BC	MS91528-2F2B4	MS91528-3D2B9
MS91528-0N1B	MS91528-1N2B1	MS91528-2F2G	MS91528B-3D2G
MS91528-0N2G	MS91528-1N2B2	MS91528-2G2B	MS91528-3E2B
MS91528-001B	MS91528-1N2B3	MS91528-2K1B	MS91528-3F2B
MS91528-0P1B	MS91528-1N2B4	MS91528-2K1G	MS91528-3F2BC
MS91528-1A2B	MS91528-1N2B5	MS91528-2K2B	MS91528-3F2B3
MS91528-1D1B	MS91528-1N2G	MS91528-2K2B7	MS91528-3F2G
MS91528-1D1G	MS91528-101B	MS91528-2N1B	MS91528-3G2B
MS91528-1D2B	MS91528-101B1	MS91528-2N1B2	MS91528-3N2B
MS91528-1D2B1	MS91528-101B4	MS91528-2N1B3	MS91528-3N2B3
MS91528-1D2B2	MS91528-102B	MS91528-2N2B	MS91528-302B
MS91528-1D2B3	MS91528-102B1	MS91528-2N2BC	MS91528-3R2B
MS91528-1D2B4	MS91528-102B2	MS91528-2N2B1	MS91528-3S2B
MS91528-1D2B5	MS91528-102B5	MS91528-2N2B2	MS91528-3S2B8
MS91528-1D2G	MS91528-1P1B	MS91528-2N2B3	MS91528-3S2G
MS91528-1E2B	MS91528-1P2B	MS91528-2N2B4	MS91528-4D2B
MS91528-1F1B	MS91528-1P2B7	MS91528-2N2B5	MS91528-4F2B
MS91528-1F2B	MS91528-1P2G	MS91528-201B	MS91528-4N2B
MS91528-1F2B1	MS91528-2C2B	MS91528-202B	MS91528-402B
MS91528-1F2B4	MS91528-2D1B	MS91528-202B1	MS91528-4S2B
MS91528-1F2B3	MS91528-2D2B	MS91528-202B3	MS91528-4S2B9
MS91528-1F2G	MS91528-2D2BC	MS91528-202B4	MS91528-5D2B
MS91528-1G1B	MS91528-2D2B1	MS91528-202B5	MS91528-5F2B
MS91528-1G2B	MS91528-2D2B2	MS91528-2P1B	MS91528-5N2B
MS91528-1K1B	MS91528-2D2B3	MS91528-2P2B	MS91528-502B
MS91528-1K2B	MS91528-2D2B4	MS91528-2P2B1	MS91528-5S2B
MS91528-1K2B7	MS91528-2D2B5	MS91528-3C2B	MS91528-5S2B8
MS91528-1K1G	MS91528-2D1G	MS91528-3D2B	MS91528-5S2B9
MS91528-1K2G	MS91528-2D2G		

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