SERIES 71
.5-.75" Diameter, 1/4 Amp

FEATURES
• Performance and Value Leader
• Molded-In Position Terminals
• Choice of Shaft/Bushing Diameters
• 30° and 36° Angles of Throw

DIMENSIONS: Standard and Military  In inches (and millimeters)

<table>
<thead>
<tr>
<th>No. of Decks</th>
<th>Dimension A</th>
<th>Dimension B</th>
<th>Approx. Weight Grams</th>
<th>No. of Decks</th>
<th>Dimension A</th>
<th>Dimension B</th>
<th>Approx. Weight Grams</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.761 (.19,33)</td>
<td>.031 (.079)</td>
<td>14</td>
<td>7</td>
<td>2.349 (59.66)</td>
<td>.312 (.792)</td>
<td>26</td>
</tr>
<tr>
<td>2</td>
<td>.979 (24.87)</td>
<td>.031 (.079)</td>
<td>16</td>
<td>8</td>
<td>2.567 (65.20)</td>
<td>.312 (.792)</td>
<td>26</td>
</tr>
<tr>
<td>3</td>
<td>1.197 (30.40)</td>
<td>.031 (.079)</td>
<td>18</td>
<td>9</td>
<td>2.785 (70.74)</td>
<td>.312 (.792)</td>
<td>30</td>
</tr>
<tr>
<td>4</td>
<td>1.415 (35.94)</td>
<td>.031 (.079)</td>
<td>20</td>
<td>10</td>
<td>3.003 (76.28)</td>
<td>.312 (.792)</td>
<td>32</td>
</tr>
<tr>
<td>5</td>
<td>1.633 (41.48)</td>
<td>.031 (.079)</td>
<td>22</td>
<td>11</td>
<td>3.221 (81.81)</td>
<td>.312 (.792)</td>
<td>34</td>
</tr>
<tr>
<td>6</td>
<td>2.131 (54.13)</td>
<td>.312 (.792)</td>
<td>24</td>
<td>12</td>
<td>3.439 (87.35)</td>
<td>.312 (.792)</td>
<td>36</td>
</tr>
</tbody>
</table>

0.125" Diameter Shaft–Styles A and MA (and sealed versions)

0.250" Diameter Shaft–Styles B and MB (and sealed versions)

See pages F-39 through F-44 for specifications, accessories and ordering information.
**DIMENSIONS: Metric** All dimensions are in millimeters

### 4mm Diameter Shaft–Style E and ES

<table>
<thead>
<tr>
<th>No. of Decks</th>
<th>Dim. A</th>
<th>Dim. B</th>
<th>Approx. Weight Grams</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>19.33</td>
<td>0.79</td>
<td>12</td>
</tr>
<tr>
<td>2</td>
<td>24.87</td>
<td>0.79</td>
<td>14</td>
</tr>
<tr>
<td>3</td>
<td>30.40</td>
<td>0.79</td>
<td>16</td>
</tr>
<tr>
<td>4</td>
<td>35.94</td>
<td>0.79</td>
<td>18</td>
</tr>
<tr>
<td>5</td>
<td>41.48</td>
<td>0.79</td>
<td>20</td>
</tr>
<tr>
<td>6</td>
<td>47.02</td>
<td>7.92</td>
<td>22</td>
</tr>
<tr>
<td>7</td>
<td>52.56</td>
<td>7.92</td>
<td>24</td>
</tr>
<tr>
<td>8</td>
<td>58.10</td>
<td>7.92</td>
<td>26</td>
</tr>
<tr>
<td>9</td>
<td>63.64</td>
<td>7.92</td>
<td>28</td>
</tr>
<tr>
<td>10</td>
<td>69.18</td>
<td>7.92</td>
<td>30</td>
</tr>
<tr>
<td>11</td>
<td>74.72</td>
<td>7.92</td>
<td>32</td>
</tr>
<tr>
<td>12</td>
<td>80.26</td>
<td>7.92</td>
<td>34</td>
</tr>
</tbody>
</table>

Angle C is 15° in 12 position switches and 36° in 10 position switches.

Grayhill part number and date code marked on detent cover label. Customer part number marked on request.

### CIRCUIT DIAGRAMS: Standard, Military and Metric

Switch is Viewed From Shaft End and Shown in Position No. 1.

*Note: All common terminals are located above base terminals as shown.*

**30° Angle of Throw**

- **ONE POLE**
- **TWO POLE**
- **THREE POLE**
- **FOUR POLE**
- **FIVE OR SIX POLE**

**36° Angle of Throw**

- **ONE POLE**
- **TWO POLE**

See pages F-39 through F-44 and F-63 for specifications, accessories and ordering information.
Multi-Deck Rotary Switches

SERIES 71
.5-.75" Diameter, 1/4 Amp, PC Mount

FEATURES
• Terminals From One Side
• Minimum Board Footprint
• Choice of Shaft/Bushing Diameters
• 30° and 36° Angles of Throw

DIMENSIONS: Standard and Military In inches (and millimeters)

0.125" Diameter Shaft: Styles AF and MAF (and sealed versions)

Military Qualified style MAF includes a spacer deck between decks 2 and 3. See dimension chart.

0.250" Diameter Shaft: Styles BF and MBF (and sealed versions)

Military Qualified style MBF includes a spacer deck between decks 2 and 3. See dimension chart.

DIMENSIONS

SHAFT SHOWN IN POSITION ONE

C OF BUSHING FLATS

C OF BUSHING KEYWAY

TERMINAL NO. 1

0.020 ± 0.003

0.005 ± 0.003

0.094 ± 0.010

0.203 ± 0.005

0.005 ± 0.003

0.005 ± 0.003

1/4-32 UNEF-2A THREAD

DIM. A ± 0.046 (1.17)

DIM. B REF.
STUD PROJECTION
(SEE CHARACTER-
ISTICS)

30° Angle of Throw

36° Angle of Throw

Grayhill part number and date code marked on detent cover label. Customer part number marked on request. Military part number marked when required.

Note: Common location for a single pole per deck switch. For common location on two pole switches see circuit diagrams.

Grayhill, Inc. • 561 Hillgrove Avenue • LaGrange, Illinois 60525-5997 • USA • Phone: 708-354-1040 • Fax: 708-354-2820 • www.grayhill.com
**DIMENSIONS: Metric**  All dimensions are in millimeters

### 4mm Diameter Shaft: Style EF and ESF

**30° Angle of Throw**

- Ø 12.7 ± 0.38
- 14.27 ± 0.38
- 3.96 ± 0.25 TYP.
- 9.35 ± REF.

**36° Angle of Throw**

- Ø 12.7 ± 0.38
- 18.42 ± 0.04
- 3.96 ± 0.25 TYP.
- 9.35 ± REF.

### Table: Dimensions

<table>
<thead>
<tr>
<th>No. of Decks</th>
<th>Dim. A</th>
<th>Dim. B</th>
<th>Approx. Weight Grams</th>
<th>No. of Decks</th>
<th>Dim. A</th>
<th>Dim. B</th>
<th>Approx. Weight Grams</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>19.33</td>
<td>0.79</td>
<td>12</td>
<td>7</td>
<td>59.66</td>
<td>7.92</td>
<td>24</td>
</tr>
<tr>
<td>2</td>
<td>24.87</td>
<td>0.79</td>
<td>14</td>
<td>8</td>
<td>65.20</td>
<td>7.92</td>
<td>26</td>
</tr>
<tr>
<td>3</td>
<td>30.40</td>
<td>0.79</td>
<td>16</td>
<td>9</td>
<td>70.74</td>
<td>7.92</td>
<td>28</td>
</tr>
<tr>
<td>4</td>
<td>35.94</td>
<td>0.79</td>
<td>18</td>
<td>10</td>
<td>76.28</td>
<td>7.92</td>
<td>30</td>
</tr>
<tr>
<td>5</td>
<td>41.48</td>
<td>0.79</td>
<td>20</td>
<td>11</td>
<td>81.81</td>
<td>7.92</td>
<td>32</td>
</tr>
<tr>
<td>6</td>
<td>54.13</td>
<td>7.92</td>
<td>22</td>
<td>12</td>
<td>87.35</td>
<td>7.92</td>
<td>34</td>
</tr>
</tbody>
</table>

**Note:** Common location for a single pole per deck switch. For common location on two pole switches see circuit diagrams.

Grayhill part number and date code marked on detent cover label. Customer part number marked on request.

### Rear Views

30° and 36° Angle of Throw may be interposed on either shaft diameter.

### Circuit is Viewed From Shaft End and Shown in Position No. 1

**30° Angle of Throw**

- ONE POLE
- 10° 9 8 7 6 5 4 3 2 1
- OF BUSHING KEYWAY OR FLATS

**36° Angle of Throw**

- ONE POLE
- 10° 9 8 7 6 5 4 3 2 1
- OF BUSHING KEYWAY OR FLATS

See pages F-39 through F-44 for specifications, accessories and ordering information.
SERIES 71: PC Board Pattern  In inches (and millimeters)

All Styles Except 71BT

30° Angle of Throw

36° Angle of Throw

Spacer decks can be supplied to facilitate PC board layouts of three or more decks. A spacer deck does not have any terminals and provides no switching function. Dimensionally, it requires the same space as one normal switch deck. Spacer deck can be placed at any location in the switch, per your instructions. Switches which include spacer decks are procured under a special part number.

SERIES 71: PC MOUNT ACCESSORY

1/8” and 1/4” Diameter Shaft Styles

In inches (and millimeters)

DIMENSIONS APPLY TO BOTH WASHERS.

Metric Mount Styles

In millimeters

For printed circuit styles. Mounting bushing provides additional support for the front end of the switch. Order separately by appropriate part number. Rotary switch discount applies.

See pages F-39 through F-44 for specifications, accessories and ordering information.
SERIES 71
.5-.75" Diameter, 1/4 Amp, Process Sealed

FEATURES
- No Hand Soldering Required
- Sealed to Resist Intrusion by Flux, Solder and Cleaning Solutions
- .75" Diameter
- 250 mA for 20,000 Cycles
- 36°, 1 or 2 Poles, Up to 5 Decks
- 10 Positions, Continuous Rotation, or 2-9 Positions With Fixed Stops

DIMENSIONS: Standard and Military  In inches (and millimeters)

<table>
<thead>
<tr>
<th>No. of Decks</th>
<th>Dimension A</th>
<th>Dimension B</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.795 ± .015</td>
<td>0.031 ± .015</td>
</tr>
<tr>
<td>2</td>
<td>1.040 ± .020</td>
<td>0.053 ± .015</td>
</tr>
<tr>
<td>3</td>
<td>1.285 ± .025</td>
<td>0.076 ± .020</td>
</tr>
<tr>
<td>4</td>
<td>1.530 ± .030</td>
<td>0.098 ± .025</td>
</tr>
<tr>
<td>5</td>
<td>1.775 ± .035</td>
<td>0.120 ± .030</td>
</tr>
</tbody>
</table>

Shaft flat is opposite point of contact for pole number one. Shaft is shown here in position 1.

Grayhill part number and date code marked on detent cover label. Customer part number marked on request.

CIRCUIT DIAGRAMS

36° Angle of Throw

STYLE 71BT: PC Board Pattern

Including Integral Front Plate Standoffs

See pages F-39 through F-44 for specifications, accessories and ordering information.
SERIES 71
0.5 to 0.75" Diameter, 1/4 Amp, Concentric Shaft

FEATURES
- Two Switches in the Panel Space of a Single Shaft Rotary

DIMENSIONS In inches (and millimeters)

Solder Lug Terminals: Style C

<table>
<thead>
<tr>
<th>No. of Decks</th>
<th>Sec. A</th>
<th>Dim. A (in)</th>
<th>Dim. B (in)</th>
<th>Approx. Weight</th>
<th>Grams</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>1.415 (35.94)</td>
<td>0.032 (0.81)</td>
<td>24</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>1.633 (41.49)</td>
<td>0.032 (0.81)</td>
<td>26</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>1</td>
<td>1.633 (41.49)</td>
<td>0.312 (7.92)</td>
<td>28</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>1.633 (41.49)</td>
<td>0.250 (6.35)</td>
<td>28</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>2</td>
<td>2.349 (59.66)</td>
<td>0.312 (7.92)</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>3</td>
<td>2.349 (59.66)</td>
<td>0.312 (7.92)</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>2.567 (65.20)</td>
<td>0.312 (7.92)</td>
<td>32</td>
<td></td>
</tr>
</tbody>
</table>

Note: All common terminals are located above base terminals as shown.

30° Angle of Throw

Switch is Viewed From Shaft End and Shown in Position No. 1.

Add-A-Pot Switches
Contact Grayhill for Series 71 Concentric Add-A-Pot or Add-A-Switch type switches.

CIRCUIT DIAGRAMS: Solder Lug Terminals

36° Angle of Throw

See pages F-39 through F-44 for specifications, accessories and ordering information.
DIMENSIONS  In inches (and millimeters)

PC Mount: Style CF

For additional dimensions and references for shafts, flat orientation and bushing keyway, see drawings for styles 71AF and 71BF.

CIRCUIT DIAGRAMS: PC Mount Terminals

Switch is Viewed From Shaft End and Shown in Position No. 1.

Note: All common terminals are located above base terminals as shown.

For layout of printed circuit board, see diagrams illustrated on page F-36.

See pages F-39 through F-44 for specifications, accessories and ordering information.
Multi-Deck Rotary Switches

### SPECIFICATIONS: Materials and Finishes

#### Materials and Finishes

<table>
<thead>
<tr>
<th>Standard Style</th>
<th>Cover</th>
<th>Base and Deck Separator</th>
<th>Rotor Mounting Plate</th>
<th>Bushing</th>
<th>Through Bolts and Nuts, Shaft and Rear Support Plate, Stop Pins and Stop Arm (All Others)</th>
<th>Shaft, Stop Plates, Stop Arm (71BT)</th>
<th>Detent Rotor</th>
<th>Mounting Hardware</th>
<th>Military Qualified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard Style</td>
<td>Dialyl per (MIL-M-14) ASTM-D-5948 for all others</td>
<td>Dialyl per (MIL-M-14) ASTM-D-5948</td>
<td>Thermoplastic</td>
<td>Zinc casting, cadmium-plated per ZZ-P-416, Class 2, Type II</td>
<td>Stainless steel</td>
<td>Reinforced thermoplastic</td>
<td>Reinforced thermoplastic for 71BT; phenolic per (MIL-M-14) ASTM-D-5948</td>
<td>One mounting nut and one internal tooth lockwasher are supplied with each switch. For switches with C in the description, the nut is .062&quot; (1,57) thick by .312&quot; (7,92) across flats.</td>
<td>One mounting nut and one internal tooth lockwasher are supplied with each switch.</td>
</tr>
<tr>
<td></td>
<td>Brass, gold plate .00005&quot; minimum over silver plate .00005&quot; over nickel .00002&quot;</td>
<td>Brass, gold plate .00005&quot; minimum over silver plate .00005&quot; over nickel .00002&quot;</td>
<td>Brass, gold plate .00005&quot; minimum over silver plate .00005&quot; over nickel .00002&quot;</td>
<td>Brass, gold plate .00005&quot; minimum over silver plate .00005&quot; over nickel .00002&quot;</td>
<td>Steel, nickel-plated</td>
<td>Steel, nickel-plated</td>
<td>Steel, nickel-plated</td>
<td>Steel, nickel-plated</td>
<td>Steel, nickel-plated</td>
</tr>
<tr>
<td></td>
<td>Silicone</td>
<td>Stainless steel</td>
<td>Thermoplastic</td>
<td>Zinc, cadmium-plated per QQ-P-416, Class 2, Type II</td>
<td>Stainless steel</td>
<td>Reinforced thermoplastic</td>
<td>Stainless steel</td>
<td>Steel, nickel-plated</td>
<td>Steel, nickel-plated</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Military Qualification MIL-S-3786/39**

The military style of the Series 71 rotary switch is qualified to MIL-S-3786/39. Complete electrical rating information is listed on the following page. The Series 71 rotary switch qualification includes the 30° and the 36° angles of throw, in .125" (3,18) and .250" (6,35) diameter shafts, with solder lug terminals and printed circuit terminals, in sealed and unsealed style switches. Standard variations such as shaft and/or bushing length, etc. that do not affect the switch performance can also be marked as qualified product. Contact Grayhill for complete details.

Dimensionally the military style is the same as the standard style with the exception of the PC version of 3 or 4 decks; a spacer deck between decks 2 and 3 adds another deck length to the switch without increasing the number of operative decks.

Another difference in the standard and military styles is the mounting hardware. Ordered as options with a standard style switch these items are included with the military style switch: non-turn washer with solder lug style and a non-turn washer plus a mounting bushing washer with the PC terminal style.

Complete specification drawings are available from Grayhill, Inc. for the standard military qualified products. Military qualified Series 71 rotary switches may be ordered by the “M” number listed in Military Specification Sheet/39 or by Grayhill part number. All qualified switches will be marked to the specification.

**Military Shaft and Panel Seal**

A shaft and panel seal is available to provide watertight mounting of the Series 71 standard military style rotary switches. Sealing is accomplished by an O-ring shaft seal and a panel seal washer. Panel seal dimension differences are shown in the dimensional drawings. When the panel seal is compressed, dimensions are approximately the same as an unsealed switch. If the non-turn washer supplied with the switch is used, it should not be allowed to extend entirely through the panel when mounting a sealed switch. However, the bushing may be used as a non-turn device instead. Switches are provided with a double flat bushing in styles which include the letter A and with a bushing which has a keyway in the styles which include the letter B.
### SPECIFICATIONS: Electrical Ratings, Others

#### Electrical Ratings

**General**
- **Charts**: Charts shown are for non-shorting (break before make) contacts. Measurements were made at 25°C and 68% relative humidity.
- The load life curves show the number of rotational cycles which can be expected for the voltage, current and type of load. Thus, for a standard style switch with a 300 milliampere 115 Vac resistive load, the expected load is 15,000 cycles. Reducing the load to 200 milliamps increases the life to 25,000 cycles. Life limiting or failure criteria are listed in the rating sections which follow.
- **Cycles**: A cycle is a 360° rotation and a return through all switch positions to the starting position.
- **Voltage**: As listed in charts.

#### Electrical Ratings

**Standard Style**
- Curves are based on the following failure criteria:
  - **Contact Resistance**: 50 milliohms maximum (20 milliohms initially).
  - **Insulation Resistance**: 1,000 megohms minimum between terminals and shaft (50,000 megohms initially).
  - **Voltage Breakdown**: 500 Vac minimum between mutually insulated parts.
- **Current Rating**: These switches will carry 4 amperes with a maximum contact temperature rise of 20°C. If the life limiting characteristics are less critical than those shown above, if elevated temperatures or reduced pressures are involved, Grayhill can predict the switch life for the application.
- **Meet the Following Requirements of MIL-S-3786**: Moisture Resistance: Medium and High Shock; Vibration (10 to 2,000 cps); Thermal Shock (-65°C to 85°C); Salt Spray, Explosion; and Stop Strength (10 in-lb).

#### Electrical Ratings

**Military Style**
- Curves are based on the following failure criteria:
  - **Qualified to the following MIL-S-3786**: Moisture Resistance: Medium and High Shock; Vibration (10 to 2,000 cps); Thermal Shock (-65°C to 85°C); Salt Spray, Explosion; and Stop Strength (10 in-lb).
- **Dielectric Strength**: 1,000 megohms minimum between terminals and shaft.
- **Dielectric Strength**: 1,000 megohms minimum between terminals and shaft.
- **Contact Resistance**: 50 milliohms maximum after life.
- **Insulation Resistance**: 1,000 megohms minimum between terminals and shaft.
- **Dielectric Strength**: 500 Vac (atmospheric pressure) and 350 Vac (reduced pressure) between mutually insulated parts.

The Series 71 also meets the requirements of MIL-S-3786/39 for moisture resistance, stop strength, rotational torque, vibration (10 through 2,000 cps), medium and high shock, salt spray, explosion, thermal shock (-65°C to 85°C) and terminal pull. When tested at sea level, 25°C and 68% relative humidity with failure criteria of 50 milliohms maximum contact resistance and 500 Vac breakdown voltage, these switches will make and break 250 milliamperes at 28 Vdc inductive (250 millihenries) 500 milliamperes at 28 Vdc resistive: 500 milliamperes at 115 volts Vac, 60 hertz resistive, for 10,000 cycles of operation.

#### Additional Characteristics

**Standard and Military Styles**
- **Rotational Torque**: 4-32 ounce-inches, (28-230 N-mm) depending on the number of poles per deck and the number of decks.
- **Contacts**: Shorting or non-shorting wiping contacts with over 100 grams of contact force.
- **Shaft Flat Orientation**: Opposite first position pole no. 1 (See Circuit Diagrams).
- **Terminals**: Switches are provided with full circle of terminals regardless of the number of active positions.
- **Extended Studs**: Switches of 6 or more decks (or concentric switches of 4 or more) have longer studs and extra stud nuts for recommended double end mounting. Stud hole size is 1/16" diameter for #0-80 NF-2A thread.
- **Stop Strength**: 10 pound-inches.
- **Mounting Bushing Strength**: 10 pound-inches.

#### STANDARD OPTIONS
- Intermixing of shorting/non-shorting, RFI grounding and shielding, see pages F-9 and F-10.
**ADJUSTABLE STOPS**

Set and Reset Stops to Limit Rotation  
Form, Fit, Function Equivalent to Fixed Stop Styles

The adjustable stop Series 71 rotary switches allow you to change the number of positions per pole. Simply remove and relocate stop pins in the holes in the front of the switch. The pins are held in place by a self adhesive sticker which fits over the front plate.

This feature is available in the Series 71 single shaft standard switches with either \( \frac{1}{8} \)" or \( \frac{1}{4} \)" diameter shafts with either PC or solder lug terminals. It is not available in military qualified or concentric shaft styles.

All dimensions, ratings and characteristics are the same as the fixed stop equivalent. The chart shown here describes the adjustable stop style substitutions for the fixed stop styles. Although Series 71 is not an exact dimensional equivalent of the fixed stop styles of Series 8 and 9, it most nearly represents a functional substitution.

<table>
<thead>
<tr>
<th>Fixed Stop Style</th>
<th>Adjustable Stop Substitution</th>
</tr>
</thead>
<tbody>
<tr>
<td>08A</td>
<td>71AD</td>
</tr>
<tr>
<td>09A</td>
<td>71AD</td>
</tr>
<tr>
<td>71A</td>
<td>71AD</td>
</tr>
<tr>
<td>71AF</td>
<td>71ADF</td>
</tr>
<tr>
<td>71B</td>
<td>71BD</td>
</tr>
<tr>
<td>71BF</td>
<td>71BDF</td>
</tr>
<tr>
<td>71E</td>
<td>71ED</td>
</tr>
<tr>
<td>71EF</td>
<td>71EDF</td>
</tr>
</tbody>
</table>

For more adjustable stop information, see page F-6. For ordering information, see page F-44.

**SHAFT AND PANEL SEAL**

The shaft is sealed by an O-ring inside the bushing. The panel is sealed by an O-ring at the base of the bushing.

The seals do not alter the dimensions as shown in the drawings when the switch is mounted.

The panel seal is silicone rubber. The shaft seal is an O-ring per MIL-P-5516B.
ACCESSORIES: Non-Turn Washers  In inches (and millimeters)

1/8” and 1/4” Diameter Shaft Switches
The bushing of the Series 71 switch is designed so the switch will not turn if the panel has been cut to fit the exact bushing shape. The bushing for the 1/8” diameter shaft switch has a double flat; the 1/4” diameter shaft switch has a keyway in the bushing. An alternate means of keeping the switches from turning is to mount them with optional, non-turn washers.

Part number 50J1066 is made of Stainless Steel. It is supplied with military switches with Style A in the description. When ordered for standard product, a like number of switches must be ordered.

Part number 12C1087-1 is Brass, Cadmium-plated and may be ordered for standard product.

Part number SHH694-5 is Stainless Steel washer supplied with all military style switches with Style B in the description.

4mm Diameter Shaft Switches
Non-Turn Washer
For styles E, ED, EF and EDF.
Mounting bushing washer provides non-turn feature.
302 Stainless Steel.
Part No. 71 J1103. Contact Grayhill for price.

Control Knobs Available.
See page E-39.
## Multi-Deck Rotary Switches

### CHOICES AND LIMITATIONS: Series 71

<table>
<thead>
<tr>
<th>Basic Style</th>
<th>Style Choices</th>
<th>Adj. Stop</th>
<th>Angle of Throw</th>
<th>No. Of Decks</th>
<th>Poles Per Deck</th>
<th>Positions Per Pole¹</th>
<th>Shorting Or Non-Shorting</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>AS</td>
<td>AD</td>
<td>30°</td>
<td>01 thru 12</td>
<td>1</td>
<td>02 thru 12²</td>
<td>N or S</td>
</tr>
<tr>
<td>B</td>
<td>BS</td>
<td>BD</td>
<td></td>
<td>01 thru 08</td>
<td>2</td>
<td>02 thru 06</td>
<td>N or S</td>
</tr>
<tr>
<td>E</td>
<td>ES</td>
<td>ED</td>
<td></td>
<td>01 thru 05</td>
<td>3</td>
<td>02 thru 04</td>
<td>N or S</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>01 thru 04</td>
<td>4</td>
<td>02 thru 03</td>
<td>N or S</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>01 or 02</td>
<td>5</td>
<td>02</td>
<td>N or S</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>36°</td>
<td>01 thru 12</td>
<td>1</td>
<td>02 thru 10³</td>
<td>N or S</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>01 thru 08</td>
<td>2</td>
<td>02 thru 05</td>
<td>N or S</td>
</tr>
<tr>
<td>AF</td>
<td>ASF</td>
<td>ADF</td>
<td>30°</td>
<td>01 thru 12</td>
<td>1</td>
<td>02 thru 12²</td>
<td>N or S</td>
</tr>
<tr>
<td>BF</td>
<td>BSF</td>
<td>BDF</td>
<td></td>
<td>01 thru 08</td>
<td>2</td>
<td>02 thru 06</td>
<td>N or S</td>
</tr>
<tr>
<td>EF</td>
<td>ESF</td>
<td>EDF</td>
<td></td>
<td>01 thru 12</td>
<td>1</td>
<td>02 thru 10³</td>
<td>N or S</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>01 thru 08</td>
<td>2</td>
<td>02 thru 05</td>
<td>N or S</td>
</tr>
<tr>
<td>BT</td>
<td>——</td>
<td>——</td>
<td>36°</td>
<td>01 thru 05</td>
<td>1</td>
<td>02 thru 10³</td>
<td>N or S</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>01 thru 05</td>
<td>2</td>
<td>02 thru 05</td>
<td>N or S</td>
</tr>
<tr>
<td>MA</td>
<td>MAS</td>
<td>——</td>
<td>30°</td>
<td>01 thru 05³</td>
<td>1</td>
<td>02 thru 12³</td>
<td>N or S</td>
</tr>
<tr>
<td>MB</td>
<td>MBS</td>
<td>——</td>
<td></td>
<td>01 thru 05³</td>
<td>2</td>
<td>02 thru 06</td>
<td>N or S</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>01 thru 05³</td>
<td>3</td>
<td>02 thru 04</td>
<td>N or S</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>01 thru 04³</td>
<td>4</td>
<td>02 or 03</td>
<td>N or S</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>01 thru 02³</td>
<td>6</td>
<td>02</td>
<td>N or S</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>36°</td>
<td>01 thru 05³</td>
<td>1</td>
<td>02 thru 10³</td>
<td>N or S</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>01 thru 05³</td>
<td>2</td>
<td>02 thru 05</td>
<td>N or S</td>
</tr>
<tr>
<td>MAF</td>
<td>MASF</td>
<td>——</td>
<td>30°</td>
<td>01 thru 04³</td>
<td>1</td>
<td>02 thru 12³</td>
<td>N or S</td>
</tr>
<tr>
<td>MBF</td>
<td>MBSF</td>
<td>——</td>
<td></td>
<td>01 thru 04³</td>
<td>2</td>
<td>02 thru 06</td>
<td>N or S</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>01 thru 04³</td>
<td>2</td>
<td>02 thru 05</td>
<td>N or S</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>36°</td>
<td>01 thru 03</td>
<td>1</td>
<td>02 thru 10³</td>
<td>N or S</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>01 thru 03</td>
<td>2</td>
<td>02 thru 05</td>
<td>N or S</td>
</tr>
<tr>
<td>CF</td>
<td>——</td>
<td>——</td>
<td>30°</td>
<td>01 thru 03</td>
<td>1</td>
<td>02 thru 12³</td>
<td>N or S</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>01 thru 03</td>
<td>2</td>
<td>02 thru 06</td>
<td>N or S</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>36°</td>
<td>01 thru 03</td>
<td>1</td>
<td>02 thru 10³</td>
<td>N or S</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>01 thru 03</td>
<td>2</td>
<td>02 thru 05</td>
<td>N or S</td>
</tr>
</tbody>
</table>

¹ For Adjustable Stop styles (with the letter D), use AJ instead of number of positions when ordering.
² Military Qualified PC mount switches of 3 or 4 operative decks have an additional spacer deck after deck 2. Use total decks to calculate length; but use only the number of operative decks when creating the part number.
³ For 1-pole switches with maximum positions, specify Fixed stop after last position or Continuous rotation when ordering. (Note: 1 p, 71BT, 10 positions, is available only as Continuous).
⁴ In addition to qualified types (Solder lug—5 decks; PC mount—4 decks), Grayhill can provide switches with additional decks in the materials of the ‘M’ style. Contact Grayhill.
⁵ Switches in 30° throw with 5 or 6 poles per deck are not available with adjustable stops.
ORDERING INFORMATION: Single Shaft Switches

- **Series**: 71A
- **Style**: 30° or 36°
- **Angle of Throw**: 30° or 36°
- **Number of Decks**: As limited by Choices and Limitations chart
- **Stop Arrangement**: Use suffix only when ordering 1 pole with maximum positions.
  - C = Continuous rotation; F = Stop between last and first positions
- **Type of Contacts**: N = Non-shorting; S = Shorting
- **Positions Per Pole**: 02 to 12 per Choices chart.
- **Poles Per Deck**: As limited by the Choices chart

*All rotary switches that are required to have military designated markings and testing adhering to MIL-3786 are to be ordered by specifying the military part number identified on the appropriate slash sheet.*

ORDERING INFORMATION: Concentric Shaft Switches

- **Entire Switch**
  - **Series and Style**: 71C or 71CF
  - **Angle of Throw**: 30° or 36°. Both switch sections will be the same.
- **Switch Section A (Front Switch)**
  - **Number of Decks**: 1 to 3, per Choices and Limitations chart
  - **Poles Per Deck**: As limited by the Choices and Limitations chart
  - **Positions Per Pole**: 02 to 12 per Choices and Limitations chart
  - **Type of Contacts**: N = Non-shorting; S = Shorting
  - **Stop Arrangement**: Use suffix only when ordering 1 pole with maximum positions.
    - C = Continuous rotation; F = Stop between last and first positions
- **Switch Section B (Rear Switch)**
  - **Stop Arrangement**: Use suffix only when ordering 1 pole with maximum positions.
    - C = Continuous rotation; F = Stop between last and first positions
  - **Type of Contacts**: N = Non-shorting; S = Shorting
  - **Positions Per Pole**: 02 to 12 per Choices and Limitations chart.
  - **Poles Per Deck**: As limited by the Choices and Limitations chart
  - **Number of Decks**: 1 to 3, per Choices and Limitations chart

ACCESSORIES

Control knobs available, see page E-39.

- Available from your local Grayhill Distributor.
- For prices and discounts, contact a Local Sales Office, an authorized local Distributor or Grayhill.