SERIES 09, 42, 44, 50, 51
Isolated Position

FEATURES
- Protected Switch Positions For Safety, Calibration, or Stand-by
- Choice of Push- or Pull-To-Turn
- 1/2” Diameter, 200 mA and 1” Diameter, 1 Amp Switch
- 10,000 Cycles of Operation

DESCRIPTION
An isolated position is one which cannot be reached by the normal rotation. An additional action is required by the operator. It could be either Push-To-Turn, or Pull-To-Turn. After the switch is rotated to the isolated position, releasing the shaft locks the switch in that position. Push or pull again to rotate the switch again.

Use isolated positions to protect a switch position from indiscriminate rotation. Such safety positions might include “calibrate”, “off” and/or “stand-by”.

DIMENSIONS

<table>
<thead>
<tr>
<th>Series 09</th>
<th>Series 50 &amp; 51</th>
<th>Series 42 &amp; 44</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Deck</td>
<td>1.228 (31,19)</td>
<td>1.371 (34,82)</td>
</tr>
<tr>
<td>2 Decks</td>
<td>1.496 (38,0)</td>
<td>1.717 (43,61)</td>
</tr>
<tr>
<td>3 Decks</td>
<td>1.764 (44,81)</td>
<td>2.063 (52,40)</td>
</tr>
<tr>
<td>4 Decks</td>
<td>2.032 (51,81)</td>
<td>2.409 (61,19)</td>
</tr>
</tbody>
</table>

EXTERNAL DIFFERENCES
The isolated position mechanism increases the depth of the Series 50 and 51 by 0.217” (5,51 mm). All other dimensions remain unchanged. In Series 9, 42 and 44, it has the appearance of an additional deck section without terminals, located directly behind the detent system.

SPECIFICATIONS

Electrical Ratings
The switching elements, and therefore ratings, are the same in an isolated position switch as in a conventional rotary switch. Mechanical life is also the same.

Additional Characteristics
Shaf Movement or Vertical Travel:
- Series 09: .062 ± .020 (1,57 ± 0,51)
- Series 42 & 44: .070 ± .020 (1,78 ± 0,51)

Push or Pull Force Required:
- Series 09: 1.75 ± .5 lbs
- Series 42 & 44: 2 ± .5 lbs

Stops: Single pole per deck switches with the maximum number of positions are supplied with stops only on request: 12 positions in 30° throw, 10 in 36°, and 8 in 45°.

Materials and Finishes
Materials and finishes for the isolation mechanism are listed here.

Series 50 and 51
- Housing: Zinc casting, tin/zinc-plated
- Shaft: 303 stainless steel
- Stop Pin and Stop Post: 303 stainless steel
- Spring: Tinned music wire

Series 09
- Housing: Phenolic for style A; Diallyl, for M
- Shaft: 303 stainless steel, electro-polished
- Stop Pin and Stop Post: 303 stainless steel
- Spring: Tinned music wire

Series 42 and 44
- Housing: Diallyl per MIL-M-14
- Shaft: 303 stainless steel
- Lock Plate: 302 stainless steel
- Lock Arm: 316 stainless steel
- Lock Post: Brass, tin/zinc-plated
- Compression Spring: Tinned music wire

Grayhill part number and date code marked on label. Customer number marked on request.
### CHOICES AND LIMITATIONS

<table>
<thead>
<tr>
<th>Standard Style</th>
<th>Military Style**</th>
<th>Style Description</th>
<th>Angle Of Throw</th>
<th>No. Of Decks</th>
<th>Poles Per Deck</th>
<th>Positions Per Pole</th>
<th>Shorting Or Non-Shorting</th>
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<tbody>
<tr>
<td>09A</td>
<td>09M</td>
<td>Solder Lug</td>
<td>30°</td>
<td>01 to 04</td>
<td>1</td>
<td>02 to 12</td>
<td>N or S</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>01 to 04</td>
<td>2</td>
<td>02 to 06</td>
<td>N or S</td>
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<td></td>
<td></td>
<td></td>
<td>01 to 04</td>
<td>3</td>
<td>02 to 04</td>
<td>N or S</td>
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<td></td>
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<td>01 to 04</td>
<td>4</td>
<td>02 or 03</td>
<td>N or S</td>
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<td>01 to 04</td>
<td>5</td>
<td>02</td>
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<td>01 to 03</td>
<td>6</td>
<td>02</td>
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<tr>
<td>42A</td>
<td>42M</td>
<td>Solder Lug</td>
<td>36°</td>
<td>01 to 04</td>
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<td>02 to 10</td>
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<tr>
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<td>42H</td>
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<td></td>
<td>01 to 04</td>
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<tr>
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<td>44M</td>
<td>Solder Lug</td>
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<tr>
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<td>44H</td>
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<td></td>
<td>01 to 03</td>
<td>12</td>
<td>02</td>
<td>N or S</td>
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</tbody>
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*(Pull-to-Turn only) **For specifics on military qualified products, see Standard Switch Pages.

### CONVENTIONAL NUMBERS

Start by creating a conventional switch number in the manner which follows:

- **Series & Style**: 09A03-01-1-12N
- **Angle Of Throw**: 30°
- **Number Of Decks**: 02
- **Type Of Contacts**: Shorting = S, Non-Shorting = N
- **Positions Per Pole**: 12
- **Poles Per Deck**: 4

Note: No stop arrangement suffix is needed. See Describing Stops.

### DESCRIBING POSITIONS

The Grayhill system for isolating positions lets you choose the positions to be isolated. Grayhill inserts isolation posts next to the positions to be isolated. Consider a continuous rotation switch of the Series 09A with a 30° angle of throw. The terminals are listed here from 1 through 12 with a space between each to indicate where isolation posts might be inserted.

1 2 3 4 5 6 7 8 9 10 11 12

Let’s isolate position 1 and position 2 from all other positions and from each other. We indicate isolation posts as shown here:

- **To isolate just position 1, describe like this:** 12P1P2P3 4 5 6 7 8 9 10 11 12
- **To isolate positions 1 and 2 from all other positions, but not from each other, do this:** 12P1 2P3 4 5 6 7 8 9 10 11 12

### ORDERING INFORMATION

Indicate this as a SPECIAL switch to ensure that no error is made when the order is entered. Sample part number:

- **SPECIAL** 09A30-04-1-12N
- **PULL** 12P1P2P3 4 5 6 7 8 9 10 11 12

This sample part number orders a Series 9 standard style, four deck, one pole per deck, twelve positions per pole rotary switch with non-shorting contacts and isolation posts between positions 12 and 1, between 1 and 2, and between 2 and 3.

This lengthy order number is required to prevent any possible confusion in ordering the switch. When we receive your order, we will assign a special “short form” part number to facilitate future identification of this special switch. This number is sequentially assigned as the need arises, and is non-descriptive. A typical “short form” special part number might be 09Y12345. Contact Grayhill for price.

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