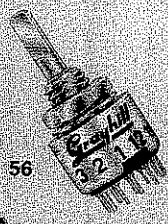
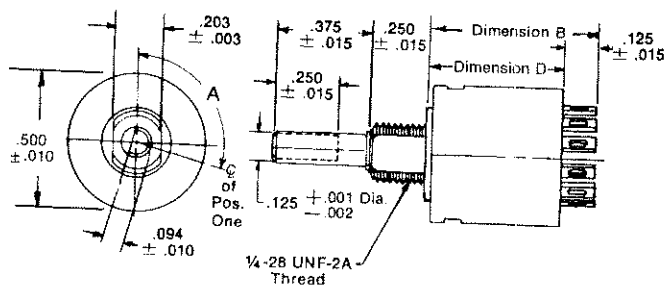


## Our Most Economical Single Deck Rotary Switch

**SERIES 55, 56**



## Standard



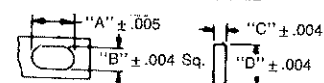
Stop pin holes are not shown in drawing. They are located between adjacent switch positions. Switch can also be made with bushing flats at 90° to those shown here. Available by special order.

|                |      |      |
|----------------|------|------|
| Angle Of Throw | 30°  | 36°  |
| Angle 'A'      | 105° | 108° |

| Series        | 55          | 56          |
|---------------|-------------|-------------|
| Dimension 'B' | .635 ± .020 | .480 ± .020 |
| Dimension 'D' | .510        | .355        |

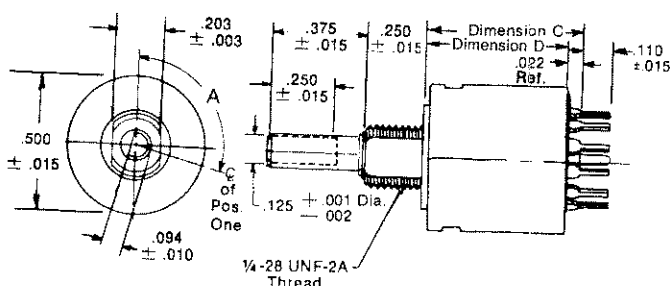
### Rear Views Shown With Circuit Diagrams

SOLDER LUG TERMINAL DETAIL



| Angle | 30°   |        |        |       | 36°    |        |  |  |
|-------|-------|--------|--------|-------|--------|--------|--|--|
|       | Term. | Common |        | Term. | Common |        |  |  |
|       |       | 1 Pole | 2 or 4 |       | 1 Pole | 2 Pole |  |  |
| "A"   | .063  | WIRE   | .068   | 0.68  | WIRE   | .068   |  |  |
| "B"   | .020  | WRAP   |        |       | WRAP   |        |  |  |
|       |       | STYLE  | .036   | .036  | STYLE  | .036   |  |  |
| "C"   | .016  | .062   | .020   | .020  | .062   | .020   |  |  |
|       |       | DIA.   |        |       | DIA.   |        |  |  |
| "D"   | .046  | ± .001 | .062   | .062  | ± .001 | .062   |  |  |

## PC Mountable



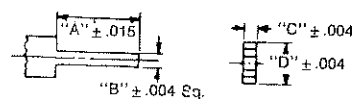
Stop pin holes are not shown in drawing. They are located between adjacent switch positions. Switch can also be made with bushing flats at 90° to those shown here. Available by special order.

|                |      |      |
|----------------|------|------|
| Angle Of Throw | 30°  | 36°  |
| Angle 'A'      | 105° | 108° |

| Series        | 55          | 56          |
|---------------|-------------|-------------|
| Dimension 'C' | .532 ± .020 | .377 ± .020 |
| Dimension 'D' | .510        | .355        |

### Rear Views Shown With Circuit Diagrams

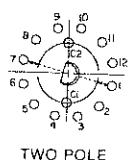
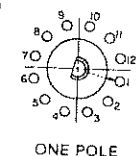
## PC TERMINAL DETAIL



| Angle |       | 30°    |        | 36°    |        |        |
|-------|-------|--------|--------|--------|--------|--------|
|       |       | Common |        | Common |        |        |
| Dim.  | Term. | 1 Pole | 2 or 4 | Term.  | 1 Pole | 2 Pole |
| "A"   | .110  | RND.   | .110   | .110   | RND.   | .110   |
| "B"   | .016  | PIN    | .020   | .020   | PIN    | .020   |
| "C"   | .016  | .025   | .020   | .020   | .025   | .020   |
|       |       | DIA.   |        |        | DIA.   |        |
| "D"   | .046  | ± .002 | .062   | .062   | ± .002 | .062   |

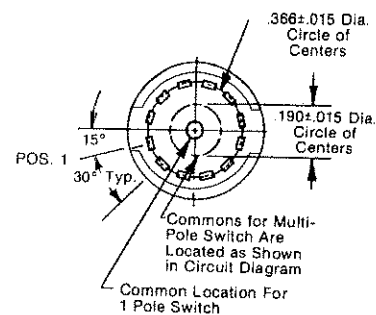
## Circuit Diagrams

Circuit as viewed from shaft end.



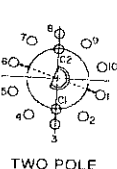
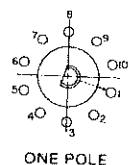
### 30° ANGLE OF THROW

## Rear View

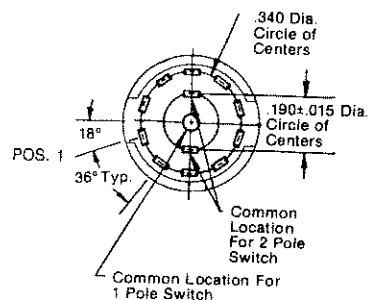


## 36° ANGLE OF THROW

Circuit as viewed from shaft end.



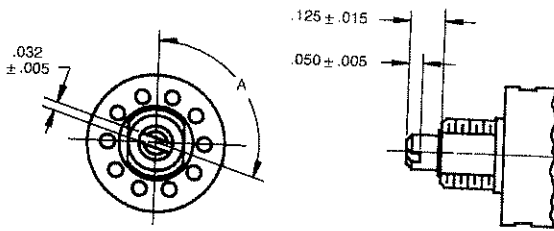
## Rear View



# 1/2" Diameter, 200 mA Rotary Switches

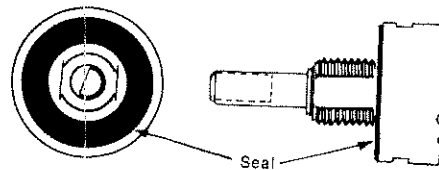
## Screwdriver Actuation

All styles and angles of throw are available with a screwdriver slotted shaft. Angle A and other dimensions are shown in the appropriate switch drawing.



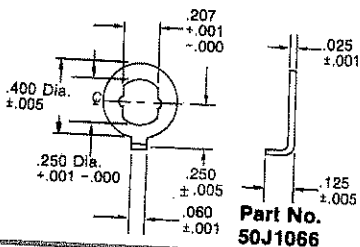
## Shaft and Panel Seal

Panel is sealed by an "O" ring at the base of bushing. Shaft is sealed by an "O" ring inside the bushing. After the switch is mounted, seals do not alter the dimensions of the unsealed style.



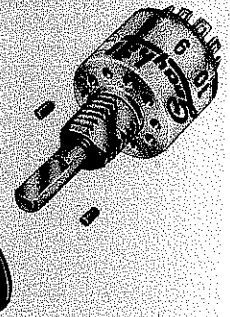
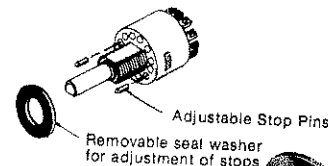
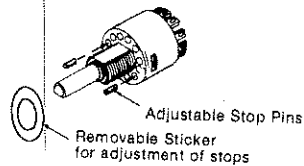
## Non-Turn Washer

This washer is sold only when accompanied by an order for a like number of switches. Washer is 302 stainless steel.



## Adjustable Stop Switches

Two stop pins and an adhesive backed sticker or seal washer are provided. Sticker is temporarily removed to locate stop pins as desired to limit the shaft rotation. All dimensions are identical to the fixed stop switch counterpart.



## Standard Options

Intermixing of Shorting and Non-Shorting Contacts; and RFI Grounding. Not available thru distributors. See Options, pages E-9 and E-10. See also Keylocks and features charted on E-7.

## Electrical Ratings

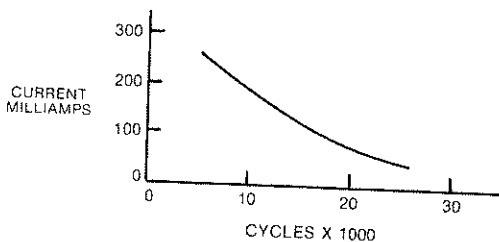


Chart shown for non-shorting contacts (break before make)  
Voltage: 115 Vac or 30 Vdc, resistive load.

One cycle is 360° rotation and a return through all switch positions to the starting position. The data for the curve was measured at sea level, 25°C, and 68% humidity with the following life limiting criteria.

The life limiting criteria for the curve are as follows:

**Contact Resistance:** Standard style: 100 milliohms maximum (15 milliohms initially)

**Insulation Resistance and Voltage Breakdown:** 10,000 megohms minimum (50,000 megohms initially) and 600 Vac minimum, respectively, between mutually insulated parts.

**Life Expectancy:** If the life limiting criteria of the application are less critical than above or if elevated temperatures or reduced pressures are involved, Grayhill Incorporated can predict the life of the switch for the application.

**Contact Carry Rating:** Switch will carry 6 amperes with a maximum contact temperature rise of 20°C.

Switch meets the following requirements of MIL-S-3786:

High and medium shock

Vibration (10 to 2,000 Hz)

Thermal Shock (-65° to 125°C)

Salt Spray

Explosion

Stop Strength (7.5 in-lbs. minimum (.85 N-m))

Terminal Strength

Sealed styles withstand water pressure of 15 PSI minimum (103 KPa) without leakage.

## Additional Characteristics

**Contact Type and Forces:** Shorting or non-shorting wiping contacts with over 25 grams of contact force.

**Shaft Flat Orientation:** Flat opposite contacting position of pole number one (see circuit diagram).

**Terminals:** Switches are provided with the full circle of terminals, regardless of the number of active positions.

**Stop Strength:** 7.5 pound-inches minimum.

**Rotational Torque:** 3.5 to 7.5 ounce-inches (21-53 mN-m) depending on the number of poles.

**Bushing Mounting:** Required for switches with stops and recommended for switches without stops.

## Materials and Finishes

**Housing:** Zinc die cast, zinc plated with chromate treatment.

**Mounting Nut:** Brass. Zinc plated with chromate treatment.

**Lockwasher:** Spring steel, zinc plated with chromate treatment.

**Panel Seal:** Silicone Rubber.

**Shaft & Stop Arm:** Zinc die cast, zinc plated with chromate treatment.

**Retaining Ring:** 302 stainless steel, passivated.

**Shaft Seal:** Silicone rubber.

**Stop Pins:** 303 stainless steel, passivated.

**Detent Rotor:** Molded Thermoplastic.

**Detent Spring:** Tinned music wire.

**Detent Balls:** Steel, nickel plated.

**Contact Spring:** Stainless steel, passivated.

**Rotor Contact:** Brass, silver over nickel plated.

**Common Ring:** Brass, gold over silver over nickel plated.

**Terminals:** Brass, gold over silver over nickel plated.

**Switch Base:** Molded thermoset plastic.

**Mounting Hardware:** One mounting nut .089" thick by .375" across flats and one internal tooth lockwasher are supplied with the switch.

SERIES  
55 & 56

### Choices And Limitations

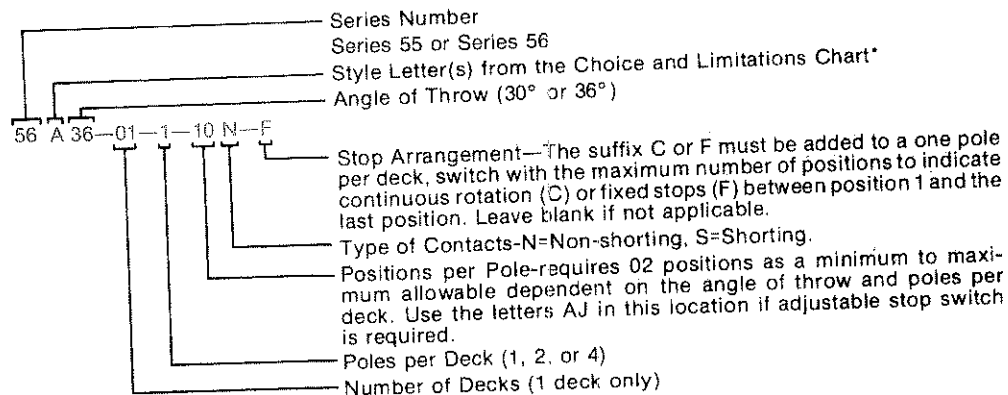
| Style, Description & Applicable Drawing Figures                                                                                                                        | Angle Of Throw | Stops      | Terminals       | Number of Poles |              | Number Of Positions/Pole |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|------------|-----------------|-----------------|--------------|--------------------------|
|                                                                                                                                                                        |                |            |                 | Shorting        | Non-Shorting |                          |
| <b>A</b> = Standard<br><b>S</b> = Standard, Shaft/Panel Seal<br><b>B</b> = Screwdriver Slotted<br><b>BS</b> = Slotted, Shaft/Panel Seal                                | 1, 2           | Fixed      | Solder Lug      | 1               | 1            | 2 thru 12                |
|                                                                                                                                                                        | 1, 2           |            |                 | 2               | 2            | 2 thru 6                 |
|                                                                                                                                                                        | 3, 2           |            |                 | 4               | 4            | 2 or 3                   |
|                                                                                                                                                                        | 3, 2           |            |                 | 1               | 1            | 2 thru 10                |
| <b>P</b> = PC Mount<br><b>SP</b> = PC Mount, Shaft/Panel Seal<br><b>BP</b> = Screwdriver Slotted, PC Mount<br><b>BSP</b> = Slotted, Sealed, PC Mount                   | 1, 4           | Fixed      | Printed Circuit | 1               | 1            | 2 thru 12                |
|                                                                                                                                                                        | 1, 4           |            |                 | 2               | 2            | 2 thru 6                 |
|                                                                                                                                                                        | 3, 4           |            |                 | 4               | 4            | 2 or 3                   |
|                                                                                                                                                                        | 3, 4           |            |                 | 1               | 1            | 2 thru 10                |
| <b>D</b> = Adjustable Stops<br><b>SD</b> = Adj. Stops, Shaft/Panel Seal<br><b>BD</b> = Adj. Stops, Screwdriver Slotted<br><b>BSD</b> = Slotted, Sealed, Adjustable     | 1, 2           | Adjustable | Solder lug      | 1               | 1            | Adjustable (2 thru 12)   |
|                                                                                                                                                                        | 1, 2           |            |                 | 2               | 2            | Adjustable (2 thru 6)    |
|                                                                                                                                                                        | 3, 2           |            |                 | 4               | 4            | 2 or 3                   |
|                                                                                                                                                                        | 3, 2           |            |                 | 1               | 1            | Adjustable (2 thru 10)   |
| <b>DP</b> = Adj. Stops, PC Mount<br><b>SDP</b> = Adjustable, PC Mount, Sealed<br><b>BDP</b> = Slotted, Adjustable, PC Mount<br><b>BDSP</b> = Slotted, Sealed, Adj., PC | 1, 4           | Adjustable | Printed Circuit | 1               | 1            | Adjustable (2 thru 10)   |
|                                                                                                                                                                        | 1, 4           |            |                 | 2               | 2            | Adjustable (2 thru 5)    |
|                                                                                                                                                                        | 3, 4           |            |                 | 4               | 4            | Adjustable (2 thru 12)   |
|                                                                                                                                                                        | 3, 4           |            |                 | 1               | 1            | Adjustable (2 thru 6)    |
|                                                                                                                                                                        | 3, 4           |            |                 | 2               | 2            | Adjustable (2 thru 5)    |
|                                                                                                                                                                        |                |            |                 |                 |              |                          |
|                                                                                                                                                                        |                |            |                 |                 |              |                          |
|                                                                                                                                                                        |                |            |                 |                 |              |                          |

Switches with bushing flats at 90°, are available by special order.

For additional features in this series, see Features Chart on page E-7.

### Ordering Information

Part number is descriptive and formed in the following manner:



\*For styles which include "D", see also "Positions per Pole".

For prices and discounts, contact a local Sales Office, an authorized local Distributor, or Grayhill.

Available From Your Local GRAYHILL Distributor.