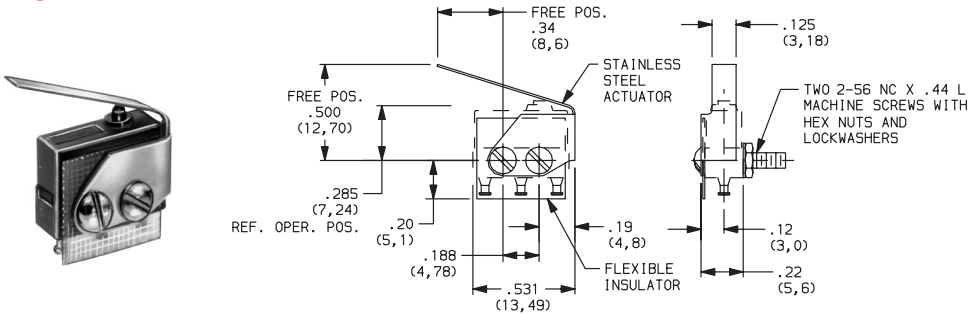


AUXILIARY ACTUATORS

Easy to assemble auxiliary actuators for the MM Series provides the end-user with the capability to operate the switch with force not directly in line with the operating button. Actuators are available in either the plain-leaf or roller-leaf style. Each actuator kit consists of the stainless steel spring-leaf with an integral side mounting plate, flexible insulator, two (2) #2-56 x 7/16" roundhead screws, with lockwashers and hex nuts. Actuator and hardware are supplied unassembled. Specially formed auxiliary actuators are available, consult Customer Service Center.

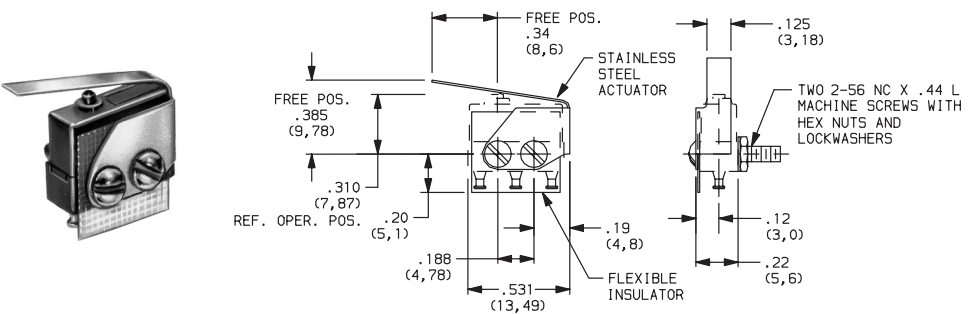
ALS-1 LEAF



SWITCH CHARACTERISTICS

|                           |                                  |                       |
|---------------------------|----------------------------------|-----------------------|
| OPERATING FORCE (MAX)     | $\frac{\text{oz}}{\text{grams}}$ | $\frac{6}{170}$       |
| RELEASE FORCE (MIN)       | $\frac{\text{oz}}{\text{grams}}$ | $\frac{2}{56}$        |
| DIFFERENTIAL TRAVEL (MAX) | $\frac{\text{in}}{\text{(mm)}}$  | $\frac{.025}{(0,64)}$ |
| PRETRAVEL (MAX)           | $\frac{\text{in}}{\text{(mm)}}$  | $\frac{.110}{(2,79)}$ |
| OVERTRAVEL (MIN)          | $\frac{\text{in}}{\text{(mm)}}$  | $\frac{.015}{(0,38)}$ |

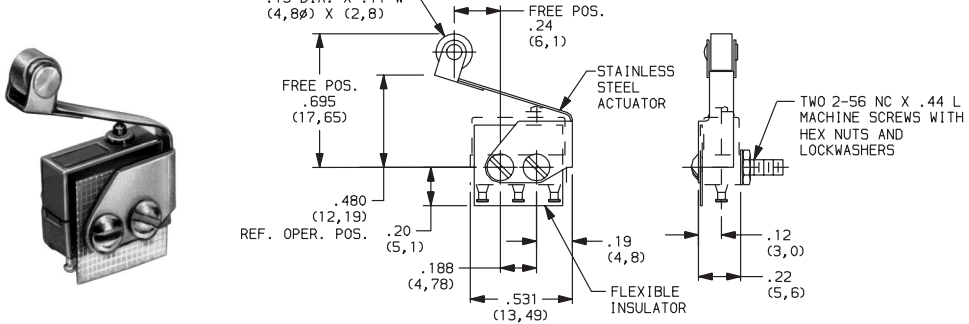
ALS-2 LEAF (Low Motion)



SWITCH CHARACTERISTICS

|                           |                                  |                       |
|---------------------------|----------------------------------|-----------------------|
| OPERATING FORCE (MAX)     | $\frac{\text{oz}}{\text{grams}}$ | $\frac{7}{198}$       |
| RELEASE FORCE (MIN)       | $\frac{\text{oz}}{\text{grams}}$ | $\frac{2}{56}$        |
| DIFFERENTIAL TRAVEL (MAX) | $\frac{\text{in}}{\text{(mm)}}$  | $\frac{.025}{(0,64)}$ |
| PRETRAVEL (MAX)           | $\frac{\text{in}}{\text{(mm)}}$  | $\frac{.225}{(5,72)}$ |
| OVERTRAVEL (MIN)          | $\frac{\text{in}}{\text{(mm)}}$  | $\frac{.015}{(0,38)}$ |

AWS-1 LEAF ROLLER



SWITCH CHARACTERISTICS

|                           |                                  |                       |
|---------------------------|----------------------------------|-----------------------|
| OPERATING FORCE (MAX)     | $\frac{\text{oz}}{\text{grams}}$ | $\frac{6}{170}$       |
| RELEASE FORCE (MIN)       | $\frac{\text{oz}}{\text{grams}}$ | $\frac{2}{56}$        |
| DIFFERENTIAL TRAVEL (MAX) | $\frac{\text{in}}{\text{(mm)}}$  | $\frac{.025}{(0,64)}$ |
| PRETRAVEL (MAX)           | $\frac{\text{in}}{\text{(mm)}}$  | $\frac{.110}{(2,79)}$ |
| OVERTRAVEL (MIN)          | $\frac{\text{in}}{\text{(mm)}}$  | $\frac{.015}{(0,38)}$ |

AWS-2 LEAF ROLLER (Low Motion)



SWITCH CHARACTERISTICS

|                           |                                  |                       |
|---------------------------|----------------------------------|-----------------------|
| OPERATING FORCE (MAX)     | $\frac{\text{oz}}{\text{grams}}$ | $\frac{7}{198}$       |
| RELEASE FORCE (MIN)       | $\frac{\text{oz}}{\text{grams}}$ | $\frac{2}{56}$        |
| DIFFERENTIAL TRAVEL (MAX) | $\frac{\text{in}}{\text{(mm)}}$  | $\frac{.025}{(0,64)}$ |
| PRETRAVEL (MAX)           | $\frac{\text{in}}{\text{(mm)}}$  | $\frac{.225}{(5,72)}$ |
| OVERTRAVEL (MIN)          | $\frac{\text{in}}{\text{(mm)}}$  | $\frac{.015}{(0,38)}$ |

## AUXILIARY ACTUATORS

Basic precision HB Series switches, with any terminal style, can be used with these attachable actuators. As supplied, the actuator is not assembled to the switch; the switch must be ordered separately. The actuator can be assembled to the switch before mounting, or the actuator can be mounted on the panel or chassis and the switch installed after wiring. Assembly screws, nuts and lockwashers are furnished.

**BB-1** SEALED PLUNGER (For use with P0 actuator option.)

**BB-2** SEALED PLUNGER (For use with PS sealed actuator option.)

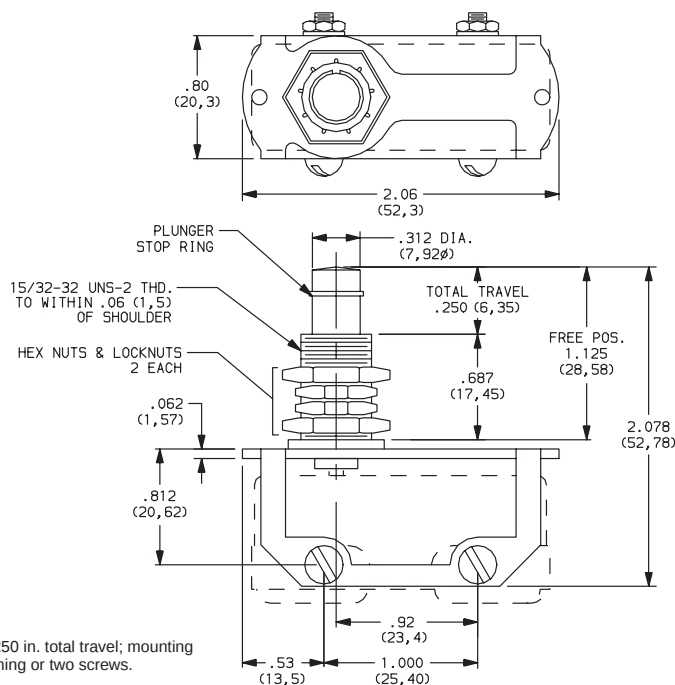


Actuator assembly sealed to mounting surface by flexible boot and o-ring seal.



**BJ-1** OVERTRAVEL PLUNGER (For use with P0 actuator option.)

**BJ-2** OVERTRAVEL PLUNGER (For use with PS sealed actuator option.)



Provides up to .250 in. total travel; mounting by threaded bushing or two screws.



## CAPS

### EP & TP SERIES, .100" DIA. PLUNGERS



#### PART NO.

**508101000** WHITE  
**508102000** BLACK  
**508103000** RED

### TP SERIES, .100" DIA. PLUNGERS (Recommended for S9 plunger)



#### PART NO.

**538701000** WHITE  
**538702000** BLACK  
**538703000** RED

### EP & TP SERIES, .100" DIA. PLUNGERS



#### PART NO.

**465801000** WHITE  
**465802000** BLACK  
**465803000** RED

### 8600 & KM33 SERIES, .106" DIA. PLUNGERS



#### PART NO.

**785101000** WHITE  
**785102000** BLACK  
**785103000** RED

### 8020, 8060, E010, E020, KM11, L & TP SERIES, .122" DIA. PLUNGERS



#### PART NO.

**708901000** WHITE  
**708902000** BLACK  
**708903000** RED

### 8020, 8060, E010, E020, KM11 & L SERIES, .122" DIA. PLUNGERS



#### PART NO.

**752701000** WHITE  
**752702000** BLACK  
**752703000** RED

### 8020, 8060, E010, E020, KM11, L & TP SERIES, .122" DIA. PLUNGERS



#### PART NO.

**801801000** WHITE  
**801802000** BLACK  
**801803000** RED

### .157" DIA. PLUNGERS



#### PART NO.

**267A01000** WHITE  
**267A02000** BLACK  
**267A03000** RED

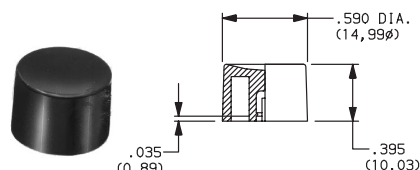
**FOR SERIES**  
 85X2T, 8534T  
 Models only

#### PART NO.

**893101000** WHITE  
**893102000** BLACK  
**893103000** RED

**FOR SERIES**  
 85X1T, 8532T1,  
 8533T, 8534T1 Models only

### 8020, 8050, E010, E020 & L SERIES, .122" DIA. SNAP-FITTING PLUNGERS



#### PART NO.

**894001000** WHITE  
**894002000** BLACK  
**894003000** RED

### EP11 & EP12 MODELS, .100 DIA. SNAP-FITTING PLUNGERS



#### PART NO.

**585A01000** WHITE  
**585A02000** BLACK  
**585A03000** RED

### EP11 & EP12 MODELS, .100 DIA. SNAP-FITTING PLUNGERS



#### PART NO.

**785A01000** WHITE  
**785A02000** BLACK  
**785A03000** RED

### 8020, 8050, E010, E020 & L SERIES, .122" DIA. SNAP-FITTING PLUNGERS



#### PART NO.

**894101000** WHITE  
**894102000** BLACK  
**894103000** RED

#### MATERIAL

Nylon. Finish: Gloss.

Special colors, custom markings available, consult Customer Service Center.

## CAPS

### KA SERIES, K1 CRUCIFORM ACTUATORS



#### PART NO.

699101000 WHITE  
699102000 BLACK  
699103000 RED

#### MATERIAL

Nylon; Finish: Matte

### MP SERIES



#### PART NO.

489401000 WHITE  
489402000 BLACK  
489403000 RED

#### MATERIAL

Polycarbonate-ABS blend; Finish: Matte

### MP SERIES WITH TWO LED



#### PART NO.

489501000 WHITE  
489502000 BLACK  
489503000 RED

#### MATERIAL

Polycarbonate-ABS blend; Finish: Matte

### MP SERIES WITHOUT LED



#### PART NO.

489601000 WHITE  
489602000 BLACK  
489603000 RED

#### MATERIAL

Polycarbonate-ABS blend; Finish: Matte

### MP SERIES WITH LED



#### PART NO.

489701000 WHITE  
489702000 BLACK  
489703000 RED

#### MATERIAL

Polycarbonate-ABS blend; Finish: Matte

### MP SERIES WITH TWO LED



#### PART NO.

489801000 WHITE  
489802000 BLACK  
489803000 RED

#### MATERIAL

Polycarbonate-ABS blend; Finish: Matte

### MP SERIES, ANTI-STATIC WITH TRANSPARENT LENS



#### PART NO.

552701000 WHITE  
552702000 BLACK  
552703000 RED

#### MATERIAL

Polycarbonate-ABS blend; Finish: Matte

### MP SERIES



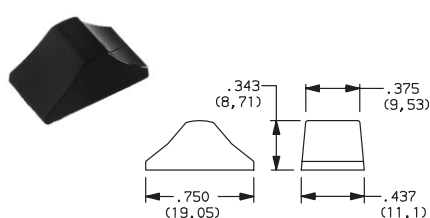
#### PART NO.

489301000 WHITE  
489302000 BLACK  
489303000 RED

#### MATERIAL

Polycarbonate-ABS blend; Finish: Matte

### S SERIES, 03 ACTUATOR



#### PART NO.

121000101 WHITE  
121000102 BLACK  
121000103 RED

#### MATERIAL

6/6 Nylon; Finish: Gloss

### S SERIES, C1-C9 ACTUATORS



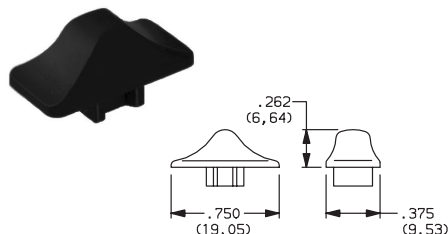
#### PART NO.

121160100 WHITE  
121160200 BLACK  
121160300 RED

#### MATERIAL

6/6 NYLON; Finish: Matte

### L SERIES



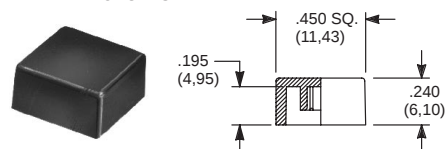
#### PART NO.

120100602 BLACK

#### MATERIAL

6/6 Nylon; Finish: Matte

### .122" DIA. PLUNGERS



#### GLOSS

#### PART NO.

484601000 WHITE  
484602000 BLACK  
484603000 RED

#### FOR SERIES

8020, 8060, E010, E020, KM11, L, TP.

#### MATTE

#### PART NO.

798201000 WHITE  
798202263 BLACK  
798203000 RED

#### FOR SERIES

8020, 8060, E010, E020, KM11, L, TP.

Special colors, custom markings available, consult Customer Service Center.

## CAPS

### 7000, 9000 & E SERIES TOGGLE CAPS



#### PART NO.

896801000 WHITE  
896802000 BLACK  
896803000 RED

Material: Polyethylene

### 7000 SERIES TOGGLE CAPS



#### PART NO.

763701000 WHITE  
763702000 BLACK  
763703000 RED

Material: Vinyl

### 7000, 9000, E & ET SERIES TOGGLE CAPS



#### PART NO.

706201000 WHITE  
706202000 BLACK  
706203000 RED

Material: Vinyl

### 8500 SERIES, .157" DIA. PLUNGERS



#### PART NO.

448901000 WHITE  
448902000 BLACK  
448903000 RED

### 8020 & 8060 SERIES, .122" DIA. PLUNGERS



MATTE

GLOSS

#### PART NO.

459701000 WHITE  
459702000 BLACK  
459703000 RED

#### PART NO.

476801000 WHITE  
476802000 BLACK  
476803000 RED

### PN SERIES, .110" SQ. PLUNGERS



#### PART NO.

979A01000 WHITE  
979A02000 BLACK  
979A03000 RED

MATERIAL  
ABS

### PN SERIES, .130" SQ. PLUNGERS



#### PART NO.

980A01000 WHITE  
980A02000 BLACK  
980A03000 RED

MATERIAL  
ABS

### PN SERIES, .110" SQ. PLUNGERS

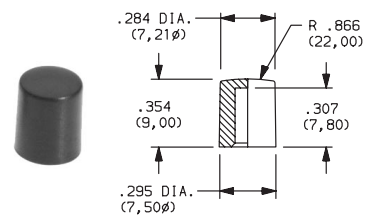


#### PART NO.

981A01000 WHITE  
981A02000 BLACK  
981A03000 RED

MATERIAL  
ABS

### PN SERIES, .130" SQ. PLUNGERS



#### PART NO.

982A01000 WHITE  
982A02000 BLACK  
982A03000 RED

MATERIAL  
ABS

### PN SERIES, .130" SQ. PLUNGERS



#### PART NO.

983A01000 WHITE  
983A02000 BLACK  
983A03000 RED

MATERIAL  
ABS

#### MATERIAL

Nylon. Finish: Matte or gloss.

Special colors, custom markings available, consult Customer Service Center.

## CODED SWITCHES – BLANK (INACTIVE) SECTIONS

3U SERIES BLANK SECTION, .302" THK.  
(Replaces active section.)



PART NO.

**123B002000** BLACK  
**123B009000** GRAY

3P SERIES BLANK SECTION, .300" THK.



PART NO.

**663702000** BLACK  
**663709000** GRAY

S2 SERIES BLANK SECTION, .315" THK.



2127



2290

PART NO.

**212702000** PLAIN-BLACK  
**229002000** W/RIB-BLACK

3 SERIES FRONT MOUNT, TYPE 0 & 3,  
.315" THK.



PART NO.

**413602000** W/RIB-BLACK  
**413609000** W/RIB-GRAY  
**400502000** W/RIB & W/OUT SPRINGS-BLACK  
**400509000** W/RIB & W/OUT SPRINGS GRAY

3 SERIES FRONT MOUNT, TYPE 0 & 3,  
.315" THK.



PART NO.

**413502000** PLAIN-BLACK  
**413509000** PLAIN-GRAY  
**400702000** PLAIN W/OUT SPRINGS-BLACK  
**400709000** PLAIN W/OUT SPRINGS GRAY

3 SERIES REAR MOUNT, TYPE 1,  
.350" THK.



4006



4008

PART NO.

**400602000** W/RIB-BLACK  
**400609000** W/RIB-GRAY  
**400802000** PLAIN-BLACK  
**400809000** PLAIN-GRAY

3 SERIES REAR MOUNT, TYPE 2,  
.350" THK.



4734



4733

PART NO.

**473402000** W/RIB-BLACK  
**473409000** W/RIB-GRAY  
**473302000** PLAIN-BLACK  
**473309000** PLAIN-GRAY



ITT Industries

Cannon



## CODED SWITCHES – END PLATES

S2 SERIES REAR MOUNT, MOUNTING STYLE S2S  
WITH .157" (4MM) FLANGE



PART NO.

**211702000** BLACK  
**211709000** GRAY

Two required for  
complete assembly.

S2 SERIES REAR MOUNT, MOUNTING STYLE S2R  
WITH .315" (8MM) FLANGE



PART NO.

**211802000** BLACK  
**211809000** GRAY

Two required for  
complete assembly.

S2 SERIES REAR MOUNT, MOUNTING STYLE S2T  
WITH NO FLANGE



PART NO.

**212002000** BLACK  
**212009000** GRAY

Two required for  
complete assembly.

S2 SERIES FRONT MOUNT, MOUNTING STYLE S2F



PART NO.

**211902000** BLACK  
**211909000** GRAY

Two required for  
complete assembly.

3U SERIES



LEFT-with hole      RIGHT-with pin

PART NO.

**113B02000** LEFT-BLACK  
**113B09000** LEFT-GRAY

**114B02000** RIGHT-BLACK  
**114B09000** RIGHT-GRAY

One left and one right  
piece required for  
complete assembly.

3 SERIES FRONT MOUNT, TYPE 3



PART NO.

**655702000** BLACK  
**655709000** GRAY

Two required for  
complete assembly.

3 SERIES FRONT MOUNT, TYPE 0



PART NO.

**413402000** BLACK  
**413409000** GRAY

Two required for  
complete assembly.

3 SERIES REAR MOUNT, TYPE 1



PART NO.

**400402000** BLACK  
**400409000** GRAY

Two required for  
complete assembly.

3 SERIES REAR MOUNT, TYPE 2



PART NO.

**473202000** BLACK  
**473209000** GRAY

Two required for  
complete assembly.

3P SERIES



LEFT-with hole      RIGHT-with pin

PART NO.

**623502000** LEFT-BLACK  
**623509000** LEFT-GRAY

**623602000** RIGHT-BLACK  
**623609000** RIGHT-GRAY

One left and one right  
piece required for  
complete assembly.



## CODED SWITCHES – SPACERS

3P SERIES, .100" THK.  
(Makes section pitch .400")



PART NO.

663602000 BLACK  
663609000 GRAY

3 SERIES FRONT MOUNT-FITS TYPE 0 & 3,  
.185" THK. (Makes section pitch .500")



PART NO.

410602000 BLACK  
410609000 GRAY

3 SERIES FRONT MOUNT, FITS TYPE 0 & 3,  
.078" THK. (Makes section pitch 10mm)



PART NO.

410802000 BLACK  
410809000 GRAY

3 SERIES REAR MOUNT, FITS TYPE 1,  
.150" THK. (Makes section pitch .500")



PART NO.

410702000 BLACK  
410709000 GRAY

3 SERIES REAR MOUNT, FITS TYPE 2,  
.150" THK. (Makes section pitch .500")



PART NO.

473602000 BLACK  
473609000 GRAY

HARDWARE FOR FIELD ASSEMBLY-3 SERIES ONLY.

SCREWS FOR FIELD ASSEMBLY OF THUMBWHEEL SWITCHES  
(2 screws needed per assembly + 403500000 nuts)

| SCREW PART NUMBER<br>(0-80 UNF THD. SIZE) | NUMBER OF SECTIONS IN ASSEMBLY |                     |                     |                     |                     |
|-------------------------------------------|--------------------------------|---------------------|---------------------|---------------------|---------------------|
|                                           | FRONT MOUNTING                 |                     |                     | REAR MOUNTING       |                     |
|                                           | MTG. STYLE - 00, 30            | MTG. STYLE - 03, 33 | MTG. STYLE - 04, 34 | MTG. STYLE - 10, 20 | MTG. STYLE - 14, 24 |
| 412700000                                 | 1 - 2                          | 1                   | 1                   | 1 - 2               | 1                   |
| 412701000                                 | 3 - 4                          | 2 - 3               | 2                   | 3                   | 2                   |
| 412702000                                 | 5 - 7                          | 4 - 5               | 3 - 4               | 4 - 6               | 3 - 4               |
| 412703000                                 | 8 - 10                         | 6 - 8               | 5 - 6               | 7 - 9               | 5 - 6               |
| 412704000                                 | 11 - 13                        | 9 - 10              | 7 - 8               | 10 - 12             | 7 - 8               |
| 412705000                                 | 14 - 16                        | 11 - 13             | 9 - 10              | 13 - 15             | 9 - 10              |

See 3 series mounting styles, pages J-11 thru J-14.

NUT



PART NO.

403500000

Two nuts required per assembly and screws.

NUT DRIVER (For 403500000 nut)



PART NO.

406100652

Not required for assembly.  
Not supplied with sample pieces.

## FIXING SPANNERS

RAFI 15.2mm, Lumotast 75 & 8.1mm



PART NO.

5.58002.0190000

DESCRIPTION

Tool used to secure switch to panel.  
Tightens threaded fixing ring.

PART NO.

5.58002.0270000

DESCRIPTION

Tool used to secure switch to panel.  
Tightens threaded fixing ring.

RAFIX 16



PART NO.

5.58002.0340000

DESCRIPTION

Tool used to secure switch to panel.  
Tightens hexagon nut.

## FRAMES

7000 & E SERIES  
J11, J21 ACTUATORS



Material: Spring Steel.

PART NO.

764500223 BRIGHT CHROME  
764500252 SATIN CHROME  
764500746 BLACK ENAMEL  
764500747 WHITE ENAMEL  
764601106 RETAINING SPRING

7000 & E SERIES  
J16, J26 ACTUATORS



Material: Nylon.  
Finish: Matte.

PART NO.

459101000 WHITE  
459102000 BLACK  
459103000 RED

7000, 8020, 8060 & 8500 SERIES  
J51, J61, J81, J83, J85, J86, J91 ACTUATORS



Material: Nylon.  
Finish: Matte.

PART NO.

615601000 WHITE  
615602263 BLACK  
615603000 RED

J19 ACTUATOR



Material: Spring Steel.

PART NO.

781000223 BRIGHT CHROME  
781000252 SATIN CHROME  
781000746 BLACK ENAMEL  
781000747 WHITE ENAMEL

7000 & 9000 SERIES  
J37, J47, J57 ACTUATORS



Material: Spring Steel.

PART NO.

445400223 BRIGHT CHROME  
445400252 SATIN CHROME  
445400746 BLACK ENAMEL  
445400747 WHITE ENAMEL

7000, 8020, 8060 & 8500 SERIES  
J52, J62, J82, J84, J92 ACTUATORS



Material: Nylon.  
Finish: Matte.

PART NO.

613301000 WHITE  
613302263 BLACK  
613303000 RED

J50, J60, J80, J83, J90 ACTUATORS



Material: Nylon.  
Finish: Matte or Gloss.

MATTE

GLOSS

PART NO.

PART NO.

486701000 486801000 WHITE  
486702000 486802000 BLACK  
486703000 486803000 RED

7000 SERIES  
J76 ACTUATORS



Material: Nylon.  
Finish: Matte.

PART NO.

724A01000 WHITE  
724A02000 BLACK  
724A03000 RED

Special colors, custom markings available, consult Customer Service Center.

## FRAMES—SEPARATE SNAP-IN

Frames snap into panel opening and are independent from switch mounting. Accurate positioning of the PC mounted switch relative to the panel opening is necessary to provide proper clearance between actuator and frame. Available in two basic styles and four panel thicknesses .047-.125 in. Material: Nylon. Finish: Matte.

## TYPICAL APPLICATION

7000 & E SERIES  
J1, J2 ACTUATORS

.047" (1,19) PANEL THK.

## PART NO.

452901000  
452902263  
452903000

.062" (1,57) PANEL THK.

## PART NO.

452701000  
452702263  
452703000

.090" (2,29) PANEL THK.

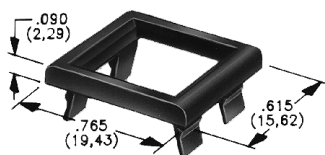
## PART NO.

452801000  
452802263  
452803000

.125" (3,18) PANEL THK.

## PART NO.

452601000 WHITE  
452602263 BLACK  
452603000 RED

7000, 8020, 8060, 8500, E, E010, E020 & TP SERIES  
J50, J60, J80, J90 ACTUATORS

.047" (1,19) PANEL THK.

## PART NO.

432501000  
432502263  
432503000

.062" (1,57) PANEL THK.

## PART NO.

432601000  
432602263  
432603000

.090" (2,29) PANEL THK.

## PART NO.

432701000  
432702263  
432703000

.125" (3,18) PANEL THK.

## PART NO.

432801000 WHITE  
432802263 BLACK  
432803000 RED

4529, 4527, 4528, 4526



## PANEL MOUNTING

4325, 4326



4327, 4328

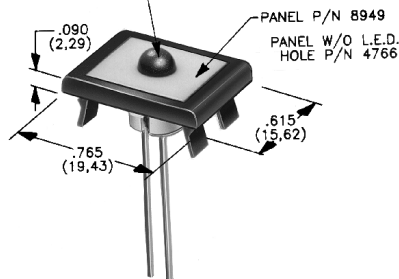


## PANEL INSERTS

(WILL FIT SEPARATE SNAP-IN  
FRAMES FOR J50, J60, J90 ACTUATORS).

Above frames (part nos. 432XXXXXX) are also available with insert which accepts LED for indicator light assembly. Order insert separately from frame. Blank insert panel (without hole for LED) also available. LED not included, see page L-17 for LED information and recommendations.

L.E.D. (.200 DIA. (5,08)) SNAPS  
SECURELY INTO INSERT (P/N 8949).  
HEIGHT DEPENDS ON L.E.D. USED.



PANEL INSERT  
WITH HOLE FOR LED

## PART NO.

894901000  
894902000  
894903000

BLANK PANEL INSERT  
WITHOUT HOLE FOR LED

## PART NO.

476601000 WHITE  
476602000 BLACK  
476603000 RED

Special colors, custom markings available, consult Customer Service Center.

## INSERT

### D SERIES



#### PART NO.

057190200

#### MATERIAL

Zinc nylon 6/6  
Finish: Matte

## KEYS



#### 4 TUMBLER

#### PART NO. (ONE KEY)

115140126

#### MATERIAL

Brass; Finish: Nickel plate

#### FOR SERIES

A, H, P, W, Y, YL  
Key Code: A126



#### 5 TUMBLER

#### PART NO. (ONE KEY)

11622100101 WHITE  
11622100102 BLACK  
11622100103 RED  
11622100100 BEIGE

#### MATERIAL

Brass; Finish: Nickel plate;  
6/6 Nylon insert molded head

#### FOR SERIES

A, BY, GY, H, Y, YL  
Key Code: D001

A, H, W, Y & YL SERIES  
KEY CODE: AAAA



#### PART NO. (ONE KEY)

1110801

#### MATERIAL

Zinc alloy;  
Finish: Chrome plate

PF, PL & PM SERIES  
KEY CODE: 041



#### PART NO. (ONE KEY)

16916004101 WHITE  
16916004102 BLACK  
16916004103 RED  
16916004100 BEIGE

#### MATERIAL

Brass; Finish: Nickel plate;  
6/6 Nylon insert molded head

YF & YM SERIES  
KEY CODE: 0029



#### PART NO. (ONE KEY)

119091029

#### MATERIAL

Brass; Finish: Nickel plate

BY, GY SERIES  
KEY CODE: 3434



#### PART NO. (ONE KEY)

11630CKBYST

#### MATERIAL

Zinc alloy;  
Finish: Chrome plate

A, BY, H, P, W, Y & YL SERIES  
Key Code: A126



#### PART NO. (ONE KEY)

16564112601 WHITE  
16564112602 BLACK  
16564112603 RED  
16564112600 BEIGE

#### MATERIAL

Brass; Finish: Nickel plate;  
6/6 Nylon insert molded head

RAFI LUMOTAST 75



#### PART NO. (ONE KEY)

5.58004.7210000

RAFIX 16



#### PART NO. (ONE KEY)

5.58007.0010000

## LAMP EXTRACTORS



## PART NO.

1.90900.0010000

## FOR SERIES

RAFI 8.1 mm Illuminated Pushbutton

## DESCRIPTION

Tool used to remove lamps or LEDs from switches.

## PART NO.

1.90900.0020000

## FOR SERIES

RAFI Lumotast® 75

## DESCRIPTION

Tool used to remove lamps or LEDs from switches.

## PART NO.

1.90900.0030000

## FOR SERIES

RAFIX 16

## DESCRIPTION

Tool used to remove lamps or LEDs from switches.

## LEDS &amp; FILAMENT LAMPS

## MP SERIES

02, R2 &amp; S2 CAP STYLES



## PART NO.

498703615

RED

498705615

YELLOW

498706615

GREEN

## MP SERIES

01, A1, A2 &amp; S1 CAP STYLES



## PART NO.

498703614

RED

498705614

YELLOW

498706614

GREEN

| LED PART NUMBER                                       | DESCRIPTION | COLOR                  | BASE      | VOLTAGE $U_B$            | FORWARD CURRENT $I_F$ | FOR SERIES                   | LAMP EXTRACTOR PART NUMBER |
|-------------------------------------------------------|-------------|------------------------|-----------|--------------------------|-----------------------|------------------------------|----------------------------|
| 1.90691.0260000<br>1.90691.0270000<br>1.90691.0280000 | 1 Chip LED  | Red<br>Green<br>Yellow | Bi-pin T1 | DC*                      | 10 mA                 | 8.1mm Illuminated Pushbutton | 1.90900.0010000            |
| 1.90692.0010000<br>1.90692.0020000<br>1.90692.0030000 | 1 Chip LED  | Red<br>Green<br>Yellow | T4.5      | DC*                      | 10 mA                 | Lumotast® 75                 | 1.90900.0010000            |
| 1.90692.0450000<br>1.90692.0460000<br>1.90692.0470000 | 6 chip LED  | Red<br>Green<br>Yellow | W 2x4.6 d | 24 +10%<br>AC/DC<br>max. | 12 mA                 | RAFIX 16                     | 1.90900.0030000            |

\*Must install a suitable external series resistor.

| FILAMENT LAMP | PART NUMBER                                                              | DESCRIPTION                       | BASE      | RATED VOLTAGE               | RATED CURRENT (A or mA)              | RATED POWER (W)           | AVERAGE OPERATING LIFE (Hrs.)      | FOR SERIES                | LAMP EXTRACTOR PART NUMBER |
|---------------|--------------------------------------------------------------------------|-----------------------------------|-----------|-----------------------------|--------------------------------------|---------------------------|------------------------------------|---------------------------|----------------------------|
|               | 1.90100.0210000<br>1.90100.0220000<br>1.90100.0230000                    | Miniature Telephone Filament Lamp | T 4.5     | 6 V<br>12 V<br>24 V         | 0.05 A<br>0.04 A<br>0.02 A           | 0.3<br>0.48<br>0.48       | 10,000<br>10,000<br>8,000          | Lumotast® 75              | 1.90900.0020000            |
|               | 1.90120.0130000<br>1.90120.0120000<br>1.90120.0110000<br>1.90120.0090000 | Filament Lamp                     | W 2x4.6 d | 6 V<br>12 V<br>24 V<br>60 V | 0.20 A<br>0.08 A<br>0.04 A<br>0.02 A | 1.2<br>1.2<br>1.2<br>1.2  | 20,000<br>15,000<br>7,000<br>3,300 | RAFIX 16                  | 1.90900.0030000            |
|               | 1.90180.4710000<br>1.90180.4720000<br>1.90180.4730000                    | Indicator Lamp T1                 | Bi-pin    | 6 V<br>12/14 V<br>24/28 V   | 0.05 A<br>0.03 A<br>0.016 A          | 0.3<br>0.4-.56<br>0.4-.56 | 50,000<br>20,000<br>5,000          | 8.1 mm Illum. Pushbuttons | 1.90900.0010000            |



## LOCKING RINGS

T & TP SERIES  
FITS 10-48 BUSHING



PART NO.

**465000201** NICKEL PLATED WITH FLAT

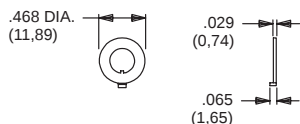
7000, 8020, 8060, 8500, 9000, M, T & TP SERIES  
FITS 1/4-40 BUSHING



PART NO.

**700701201** NICKEL PLATED WITH KEYWAY  
**700701264** BLACK WITH KEYWAY

T & TP SERIES  
FITS 10-48 BUSHING



PART NO.

**465101201** NICKEL PLATED WITH KEYWAY

7000, 8020, 8060, 8500, 9000, M, T & TP SERIES  
FITS 1/4-40 BUSHING



PART NO.

**753700201** NICKEL PLATED WITH KEYWAY  
**753700264** BLACK WITH KEYWAY

7000, 8500 & 9000 SERIES  
FITS 15/32 BUSHING



PART NO.

**707200201** NICKEL PLATED WITH KEYWAY  
**707200264** BLACK WITH KEYWAY

7000, 8020, 8060, 8500, 9000, M, T & TP SERIES  
FITS 1/4-40 BUSHING



PART NO.

**757200201** NICKEL PLATED WITH FLAT  
**757200264** BLACK WITH FLAT

7000, 8020 & 8060 SERIES  
FITS M6P2 METRIC BUSHING



PART NO.

**791800201** NICKEL PLATED WITH KEYWAY  
**791800264** BLACK WITH KEYWAY

7000, 8020, 8060, 8500, 9000, M, T & TP SERIES  
FITS 1/4-40 BUSHING



PART NO.

**757300201** NICKEL PLATED WITH FLAT  
**757300264** BLACK WITH FLAT

### MATERIAL

Brass, nickel plated standard. Other finishes available, consult Customer Service Center.



## LOCKWASHERS

## FITS 10-48 BUSHING



## PART NO.

465200202 NICKEL PLATED

## FITS 15/32 BUSHING



## PART NO.

700302202 NICKEL PLATED  
700302264 BLACK

## FITS 1/4-40 BUSHING



## PART NO.

700303202 NICKEL PLATED  
700303264 BLACKA, BY, GY, H, W, Y & YL SERIES  
FITS 3/4 DIA. BUSHING

## PART NO.

175050200 NICKEL PLATED

## MATERIAL

Steel; Finish: Zinc plate

A SERIES  
FITS 3/8 DIA. THREAD

## PART NO.

472800202

## MATERIAL

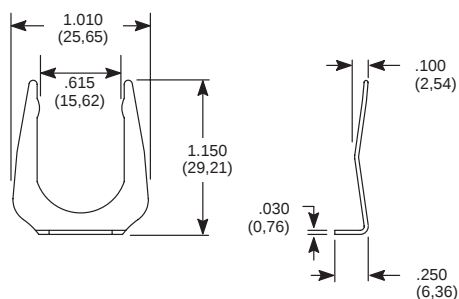
Steel; Finish: Zinc plate

## MATERIAL

Steel, nickel plated standard. Other finishes available, consult Customer Service Center.

## MOUNTING CLIP

## A, BY, GY, H, P, W, Y &amp; YL SERIES



## PART NO.

175050300

## MATERIAL

Steel; Finish: Nickel or bright zinc plate



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## NUTS (DRESS)

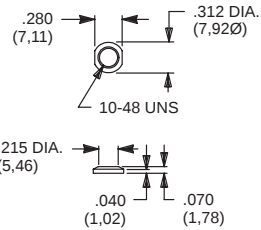
### Y, H & A SERIES



#### PART NO.

**531300201** NICKEL PLATE  
**531300535** POLISHED NICKEL PLATE  
**175052745** GLOSS BLACK PLATE

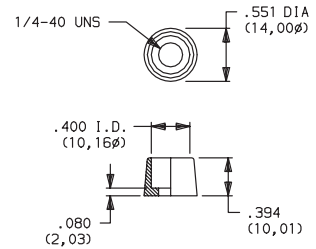
### T & TP SERIES



#### PART NO.

**465701201** NICKEL PLATED  
**465701264** BLACK

### 8020, 8060, 8500 & TP SERIES



#### PART NO.

**580700201** NICKEL PLATED

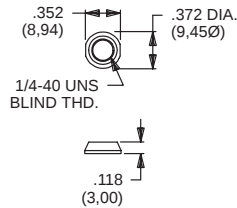
### 8020, 8060, E010 & TP SERIES



#### PART NO.

**702501201** NICKEL PLATED  
**702501264** BLACK

### 7000, 8020, 8060, 8500, 9000, E, E010, T & TP SERIES



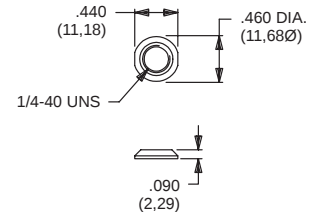
#### PART NO.

**709901201** NICKEL PLATED  
**709901215** SATIN CHROME  
**709901264** BLACK

#### FOR SERIES

7000, 8020, 8060, 8500, 9000, E, E010, T, TP

### 7000, 8020, 8060, 8500, 9000, E, E010, T & TP SERIES



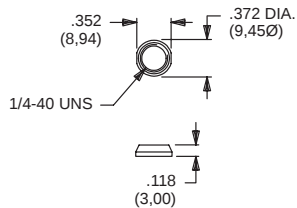
#### PART NO.

**776001201** NICKEL PLATED  
**776002231** BLACK

#### FOR SERIES

7000, 8020, 8060, 8500, 9000, E, E010, T, TP

### 7000, 8020, 8060, 8500, 9000, E, E010, T & TP SERIES



#### PART NO.

**780701201** NICKEL PLATED  
**780701215** SATIN CHROME  
**780701264** BLACK

### 8500 SERIES



#### PART NO.

**498800201** NICKEL PLATED

### 7000 SERIES, T2P ACTUATOR



#### PART NO.

**605300201** NICKEL PLATED

#### MATERIAL

Brass, nickel plated standard. Other finishes available, consult Customer Service center.

## NUTS (DRESS)

7000, 8500 & 9000 SERIES



PART NO.

**895101201** NICKEL PLATED  
**895101264** BLACK

7000, 8020 & 8060 SERIES



PART NO.

**709903201** NICKEL PLATED  
**709903264** BLACK

### MATERIAL

Brass, nickel plated standard. Other finishes available, consult Customer Service center.

## NUTS (KNURLED)

7000, 8020, 8060, 8500, 9000, T & TP SERIES



PART NO.

**778000201** NICKEL PLATED  
**778000264** BLACK

7000, 8020, 8060, 8500, 9000, E, E010, T & TP SERIES



PART NO.

**778600201** NICKEL PLATED  
**778600224** BLACK

7000, 8020, 8060, 8500, 9000, T & TP SERIES  
FITS GULMITE #12 SOCKET & WRENCH 8942-02-201



PART NO.

**796901201** NICKEL PLATED  
**796901264** BLACK

7000, 8500 & 9000 SERIES



PART NO.

**471300201** NICKEL PLATED  
**471300264** BLACK

7000, 8020 & 8060 SERIES



PART NO.

**483200201** NICKEL PLATED

### MATERIAL

Brass, nickel plated standard. Other finishes available, consult Customer Service center.

## NUTS (MOUNTING)

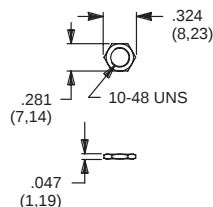
## 8600 SERIES



## PART NO.

**775200201** NICKEL PLATED  
**775200264** BLACK

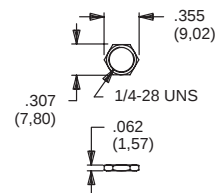
## T &amp; TP SERIES



## PART NO.

**464900201** NICKEL PLATED  
**464900264** BLACK

## M SERIES



## PART NO.

**477100201** NICKEL PLATED

## E &amp; E010 SERIES



## PART NO.

**540400201** NICKEL PLATED  
**540400264** BLACK

## 7000, 8020, 8060, 8500, 9000, T &amp; TP SERIES



## PART NO.

**700201201** NICKEL PLATED  
**700201264** BLACK

## 7000, 8500 &amp; 9000 SERIES



## PART NO.

**707100201** NICKEL PLATED  
**707100215** SATIN CHROME  
**707100264** BLACK

## 7000, 8020 &amp; 8060 SERIES



## PART NO.

**791600201** NICKEL PLATED  
**791600264** BLACK

## A, BY, GY, H, P, W, Y &amp; YL SERIES

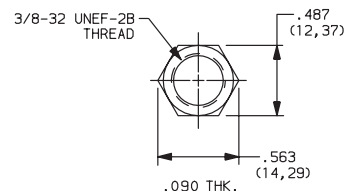


## PART NO.

**175050700**

**MATERIAL**  
 Steel; Finish: Zinc plate

## A SERIES



## PART NO.

**472706201**

**MATERIAL**  
 Zinc; Finish: Nickel plate

## A SERIES



## PART NO.

**495100201**

## H &amp; R SERIES



## PART NO.

**175000100**

**MATERIAL**  
 Brass; Finish: Zinc electro & clear bright chromate

## F SERIES



## PART NO.

**175020201**

## MATERIAL

Brass, nickel plated standard. Other finishes available, consult Customer Service Center.



## NUTS (MOUNTING)

YM SERIES



PART NO.

179090123

## MATERIAL

Brass, nickel plated standard. Other finishes available, consult Customer Service Center.

## RECESSED BRACKET

D &amp; DM SERIES



PART NO.

057090100

MATERIAL

6/6 Nylon

## ROCKER AND LEVER HANDLE SWITCH-PANEL MOUNTING HARDWARE

Panel mounting hardware for rocker and lever handle switches is available separately. Mounting hardware consists of two screws, two nuts, two standoffs and two lockwashers per switch, and is available for panel thicknesses of 1/16, 3/32 and 1/8 inch. See part numbers below.



7000 Series: J1, J2, J54, J64, J94 actuators.  
T Series: J1, J6 actuators.

| PART NO.  | PANEL THK.      | STANDOFF LENGTH |
|-----------|-----------------|-----------------|
| 761101000 | 1/16 IN. (1,59) | .295 (7,49)     |
| 761102000 | 3/32 IN (2,38)  | .264 (6,71)     |
| 761103000 | 1/8 IN. (3,18)  | .233 (5,92)     |

9000 Series: J1, J2, J3, J50, J60, J90 actuators.  
7000 Series: J3 actuators.

| PART NO.  | PANEL THK.      | STANDOFF LENGTH |
|-----------|-----------------|-----------------|
| 770601000 | 1/16 IN. (1,59) | .295 (7,49)     |
| 770602000 | 3/32 IN (2,38)  | .264 (6,71)     |
| 770603000 | 1/8 IN. (3,18)  | .233 (5,92)     |

7000 &amp; 9000 Series: J4, J5 actuators.

| PART NO.  | PANEL THK.      | STANDOFF LENGTH |
|-----------|-----------------|-----------------|
| 775001000 | 1/16 IN. (1,59) | .375 (9,53)     |
| 775002000 | 3/32 IN (2,38)  | .344 (8,74)     |
| 775003000 | 1/8 IN. (3,18)  | .312 (7,92)     |

7000 &amp; 9000 Series: J10 actuators.

| PART NO.  | PANEL THK.      | STANDOFF LENGTH |
|-----------|-----------------|-----------------|
| 770701000 | 1/16 IN. (1,59) | .295 (7,49)     |
| 770702000 | 3/32 IN (2,38)  | .264 (6,71)     |
| 770703000 | 1/8 IN. (3,18)  | .233 (5,92)     |

## MATERIAL

Screws, nuts, lockwashers: Stainless steel. Standoffs: Nylon, standard Aluminum available, consult Customer Service Center.



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## ROCKER AND LEVER HANDLE ACTUATORS

### ET SERIES J1 ACTUATOR



#### PART NO.

**261A01000** WHITE  
**261A02263** BLACK  
**261A03000** RED

### T SERIES J1 ACTUATOR



#### PART NO.

**468001000** WHITE  
**468002263** BLACK  
**468003000** RED

### 7000, 9000 & E SERIES J1, J11, J15, J16 ACTUATORS



#### PART NO.

**760201000** WHITE  
**760202263** BLACK  
**760203000** RED

### 7000, 9000 & E SERIES J2, J21, J25, J26 ACTUATORS



#### PART NO.

**760501000** WHITE  
**760502263** BLACK  
**760503000** RED

### 7000, 9000 & E SERIES J3, J37 ACTUATORS



#### PART NO.

**766601000** WHITE  
**766602263** BLACK  
**766603000** RED

### 7000, 9000 & E SERIES J4, J47 ACTUATORS



#### PART NO.

**773301000** WHITE  
**773302263** BLACK  
**773303000** RED

### 7000, 9000 & E SERIES J5, J57 ACTUATORS



#### PART NO.

**791201000** WHITE  
**791202263** BLACK  
**791203000** RED

### 7000, 9000 & E SERIES J50, J51, J52, J53, J54 ACTUATORS



#### PART NO.

**628301000** WHITE  
**628302263** BLACK  
**628303000** RED

### ET SERIES, J6 ACTUATOR



#### PART NO.

**260A01000** WHITE  
**260A02263** BLACK  
**260A03000** RED

For Hi Temp, Consult Factory)

### T SERIES J6 ACTUATOR



#### PART NO.

**468101000** WHITE  
**468102263** BLACK  
**468103000** RED

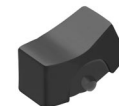
### 7000, 9000 & E SERIES J60, J61, J62, J63, J64 ACTUATORS



#### PART NO.

**598101000** WHITE  
**613802263** BLACK  
**598103000** RED

### 7000 SERIES J76 ACTUATOR



#### PART NO.

**725A01000** WHITE  
**725A02263** BLACK  
**725A03000** RED

#### MATERIAL

Nylon. Finish: Matte. Special colors, custom markings available, consult Customer Service Center.

## ROCKER AND LEVER HANDLE ACTUATORS

7000, 9000 & E SERIES  
J8 ACTUATOR

PART NO.

488701000 WHITE  
488702263 BLACK  
488703000 RED

7000, 9000 & E SERIES  
J90, J91, J92, J93, J94 ACTUATORS

PART NO.

598001000 WHITE  
598002263 BLACK  
598003000 RED

7000 & 9000 SERIES  
J10, J19 ACTUATORS

PART NO.

769501000 WHITE  
769502263 BLACK  
769503000 RED

7000 & 9000 SERIES  
L41 ACTUATOR

PART NO.

481001000 WHITE  
481002263 BLACK  
481003000 RED

7000 & 9000 SERIES  
L42 ACTUATOR

PART NO.

481101000 WHITE  
481102263 BLACK  
481103000 RED

9000 SERIES  
L43 ACTUATOR

PART NO.

481201000 WHITE  
481202263 BLACK  
481203000 RED

## MATERIAL

Nylon. Finish: Matte. Special colors, custom markings available, consult Customer Service Center.

## SPLASH CAPS

L SERIES



PART NO.

120100200 Fits 'MS' mounting style,  
LXX1 & LXX2 models only.

MATERIAL  
6/6 Nylon

L SERIES



PART NO.

120100300 Fits 'MV' mounting style,  
LX1X models only.

MATERIAL  
6/6 Nylon

L SERIES



PART NO.

120100400 Fits 'MA' mounting style,  
LXX3 models only.

MATERIAL  
6/6 Nylon

V SERIES



PART NO.

128000100

MATERIAL  
6/6 Nylon

SD SERIES



PART NO.

678500000 NATURAL  
678501000 BLACK

MATERIAL  
6/6 Nylon



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STOP RINGS

A SERIES

PART NO.  
472900201

MATERIAL  
Brass; Finish: Nickel plated



M SERIES

PART NO.  
638100000 INNER-W/SHORT TAB  
638101000 OUTER-W/LONG TAB



One each required for setting stops.

SWITCH ENCLOSURES

These enclosures make it easy to install HB and HG Series switches with electrical conduit, electrical tubing or armored cable. The switch is inserted through the open top of the enclosure and is secured by two screws (furnished). The lower section of the enclosure is completely removable and gives free access to the switch terminals. Switches having either the flat base or step base can be used. Switches must be ordered separately.

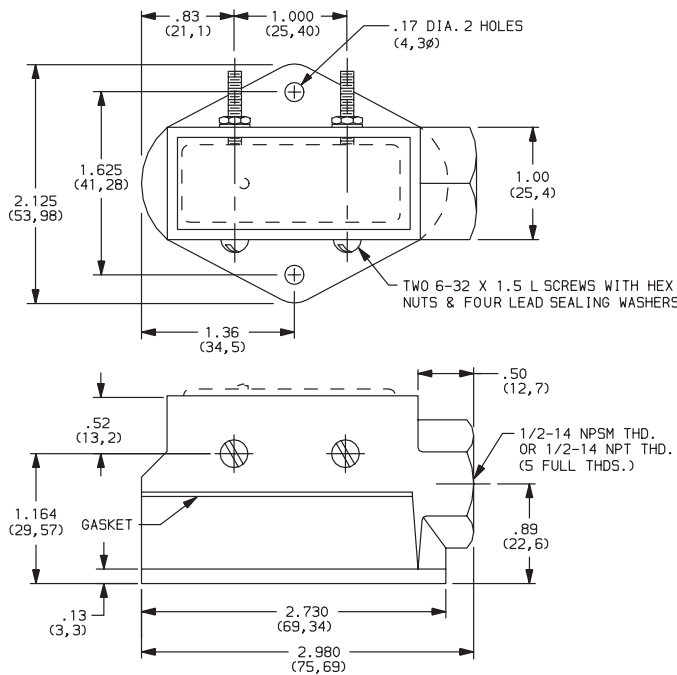
TC-2 THRU-BOLT MOUNTING, 1/2-14 NPSM CONDUIT THREAD (Straight Thread)

TC-4 THRU-BOLT MOUNTING, 1/2-14 NPT CONDUIT THREAD (Tapered Thread)



TC-3 FLANGE MOUNTING, 1/2-14 NPSM CONDUIT THREAD (Straight Thread)

TC-5 FLANGE MOUNTING, 1/2-14 NPT CONDUIT THREAD (Tapered Thread)



## TERMINAL COVERS

These terminal covers are available with HB and HG Series switches. They are made of molded phenolic, with knockouts that permit wires to be brought in at convenient points. They are held in place by the switch mounting screws.

### TC-1



## WRENCHES



PART NO.

**465300201**

FITS NUT PART NUMBERS  
4649XXXXX, 4657XXXXX



PART NO.

**778500201**

FITS NUT PART NUMBERS  
7002XXXXX, 7099XXXXX  
7807XXXXX, 7916XXXXX



PART NO.

**481500201**

FITS NUT PART NUMBERS  
7780XXXXX, 4832XXXXX



PART NO.

**894200201**

FITS NUT PART NUMBERS  
7969XXXXX



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| MISCELLANEOUS                                                                                                                                                                                                                                   |                                                                                                                                                                                                                             |                                                                                                                                                                                              |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <div>STOP PINS</div> <div></div> <div>PART NO.<br/>402900000 3 SERIES<br/>657800000 3P SERIES<br/>537100000 M SERIES<br/>587300000 SF/SR &amp; S2 SERIES</div> | <div>3 SERIES CONNECTOR</div> <div></div> <div>PART NO.<br/>605A00000 PC Fits 0, 1, 4, 5 terminations only.<br/>605A02000 SOLDER LUG</div> | <div>3P SERIES CONNECTOR</div> <div></div> <div>PART NO.<br/>630000000 Fits 0, 1 terminations only.</div> |
| <div>M SERIES WASHERS</div> <div></div> <div>PART NO.<br/>586800000 RUBBER PANEL SEAL<br/>537202000 ADHESIVE MYLAR RETAINS STOP PINS</div>                   | <div>Z3 TERMINATION FEMALE CONNECTOR</div> <div></div> <div>PART NO.<br/>530100000</div>                                                 | <div>KS SERIES LED SUPPORT</div> <div></div> <div>PART NO.<br/>540300000</div>                          |

Компания «Океан Электроники» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Поставка оригинальных импортных электронных компонентов напрямую с производств Америки, Европы и Азии, а так же с крупнейших складов мира;
- Широкая линейка поставок активных и пассивных импортных электронных компонентов (более 30 млн. наименований);
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Помощь Конструкторского Отдела и консультации квалифицированных инженеров;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Поставка электронных компонентов под контролем ВП;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- При необходимости вся продукция военного и аэрокосмического назначения проходит испытания и сертификацию в лаборатории (по согласованию с заказчиком);
- Поставка специализированных компонентов военного и аэрокосмического уровня качества (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Actel, Aeroflex, Peregrine, VPT, Syfer, Eurofarad, Texas Instruments, MS Kennedy, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Компания «Океан Электроники» является официальным дистрибьютором и эксклюзивным представителем в России одного из крупнейших производителей разъемов военного и аэрокосмического назначения «JONHON», а так же официальным дистрибьютором и эксклюзивным представителем в России производителя высокотехнологичных и надежных решений для передачи СВЧ сигналов «FORSTAR».



## JONHON

«JONHON» (основан в 1970 г.)

Разъемы специального, военного и аэрокосмического назначения:

(Применяются в военной, авиационной, аэрокосмической, морской, железнодорожной, горно- и нефтедобывающей отраслях промышленности)

«FORSTAR» (основан в 1998 г.)

ВЧ соединители, коаксиальные кабели,  
кабельные сборки и микроволновые компоненты:

(Применяются в телекоммуникациях гражданского и специального назначения, в средствах связи, РЛС, а так же военной, авиационной и аэрокосмической отраслях промышленности).



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