

# Distinctive Characteristics

Various cap styles and colors to meet differing application needs.

Bright, full-face illumination to distinctively indicate status.

Rear panel threaded mounting or snap-in mounter for front panel mounting.

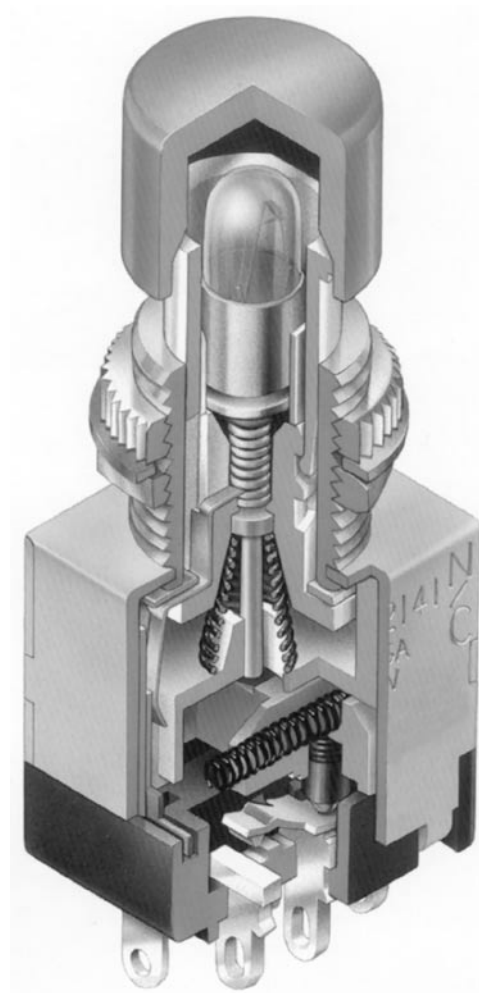
5-amp power rating standard. Dry circuit capability available.

Detent switching mechanism provides positive indication of actuation.

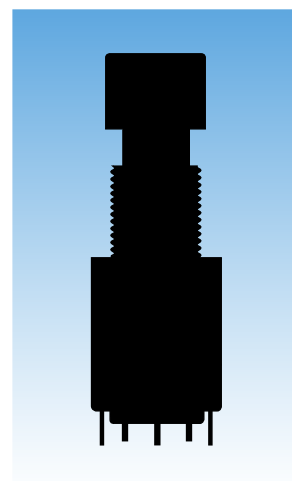
Heavy gauge steel case protects switch components and increases durability.

1,500V dielectric strength between contacts and case is accomplished by clinching the frame away from the terminals.

Solder lug and PC terminals staked into base.



Actual Size



## General Specifications

### Electrical Capacity (Resistive Load)

**Power Level (silver):** 5A @ 125V AC & 3A @ 250V AC or 3A @ 30V DC  
**Logic or Power Level (gold over silver):** 0.4VA maximum @ 28V AC/DC maximum or 5A @ 125V AC  
 (Applicable Range 0.1mA ~ 0.1A @ 20mV ~ 28V)  
 Note: See Supplement section to find explanation of dual rating & operating range.

### Other Ratings

**Contact Resistance:** 10 milliohms maximum for silver; 20 milliohms maximum for gold  
**Insulation Resistance:** 200 megohms minimum @ 500V DC  
**Dielectric Strength:** 1,000V AC minimum between contacts for 1 minute minimum;  
 1,500V AC minimum between contacts & case for 1 minute minimum  
**Mechanical Life:** 30,000 operations minimum  
**Electrical Life:** 10,000 operations minimum  
**Nominal Operating Force:** 12.75N for momentary; 11.77N for alternate action  
**Travel:** Pretravel: .039" (1.0mm); Overtravel: .157" (4.0mm); Total Travel: .196" (5.0mm)

### Materials & Finishes

**Plunger:** Polyacetal resin  
**Bushing:** Brass with nickel plating  
**Housing:** Steel with chromate over zinc  
**Movable Contact:** Silver  
**Stationary Contacts:** Silver with silver plating or silver with gold plating  
**Base:** Phenolic resin  
**Common Terminals:** Copper with silver plating  
**End Terminals:** Copper with silver plating or copper with gold plating  
**Lamp Terminals:** Brass with nickel plating

### Environmental Data

**Operating Temperature Range:** -10°C through +50°C (+14°F through +122°F) for spot illuminated  
 -20°C through +50°C (-4°F through +122°F) for other illuminated  
 -10°C through +50°C (+14°F through +122°F) for nonilluminated  
**Humidity:** 90 ~ 95% humidity for 96 hours @ 40°C (104°F)  
**Vibration:** 10 ~ 55Hz with peak-to-peak amplitude of 1.5mm traversing the frequency range  
 & returning in 1 minute; 3 right angled directions for 2 hours  
**Shock:** 50G (490m/s<sup>2</sup>) acceleration (tested in 6 right angled directions, with 5 shocks in each direction)

### Installation

**Cap Installation Force:** 19.62N (4.41 lbf) maximum downward force on cap  
**Soldering Time & Temperature:** 4 seconds maximum @ 410°C maximum

### Standards & Certifications

**UL & C-UL Recognition:** All models recognized at 5A @ 125V AC;  
 UL File No. WOYR2.E44145 & C-UL File No. WOYR8.E44145;  
 add "/U" to end of part number to order UL mark on switch & add "/C-UL" to end of part  
 number to order C-UL mark on switch (equivalent to CSA certification).



### TYPICAL SWITCH ORDERING EXAMPLE

**DLB**

**2141**

**W**

**01**

**L**

**3**

**G**

#### POLES & CIRCUITS

|             |      |    |      |
|-------------|------|----|------|
| <b>2141</b> | DPDT | ON | (ON) |
| <b>2145</b> | DPDT | ON | ON   |

( ) = Momentary

#### TERMINALS

|           |             |
|-----------|-------------|
| <b>01</b> | Solder Lug  |
| <b>03</b> | Straight PC |

#### SNAP-IN MOUNTER

|                |                               |
|----------------|-------------------------------|
| <b>No Code</b> | No Mounter                    |
| <b>S</b>       | Black Mounter for Square Caps |
| <b>R</b>       | Black Mounter for Round Caps  |

#### CONTACT MATERIALS & RATINGS

|          |                                                                                  |
|----------|----------------------------------------------------------------------------------|
| <b>W</b> | Silver Contacts 5A @ 125V AC                                                     |
| <b>A</b> | Gold over Silver Contacts<br>5A @ 125V AC & 0.4VA maximum<br>@ 28V AC/DC maximum |

#### LAMPS

##### Incandescent & Neon

|           |               |
|-----------|---------------|
| <b>E</b>  | 6-volt        |
| <b>G</b>  | 14-volt       |
| <b>L</b>  | 28-volt       |
| <b>*N</b> | 110-volt Neon |
| <b>0</b>  | No Lamp       |

\* Neon recommended for cap codes 2 & 3 in white only.

#### CAP TYPES

##### Solid Caps

|          |                                                     |
|----------|-----------------------------------------------------|
| <b>1</b> | .748" (19.0mm) Square                               |
| <b>2</b> | .346" (8.8mm) Diameter<br>Not for use with Mounter  |
| <b>3</b> | .512" (13.0mm) Diameter<br>Not for use with Mounter |

##### Design Cap

|          |                                              |
|----------|----------------------------------------------|
| <b>4</b> | .748" (19.0mm) Diameter<br>with Colored Lens |
|----------|----------------------------------------------|

#### CAP OR LED COLORS

##### Solid & Design Cap Colors

|          |        |
|----------|--------|
| <b>B</b> | White  |
| <b>C</b> | Red    |
| <b>D</b> | Amber  |
| <b>E</b> | Yellow |
| <b>F</b> | Green  |
| <b>G</b> | Blue   |

Note: Colors D & E are not available with Design Cap

#### LED used with Spot Illuminated

|          |                |
|----------|----------------|
| <b>D</b> | Single Element |
|----------|----------------|

#### Spot Illuminated Caps

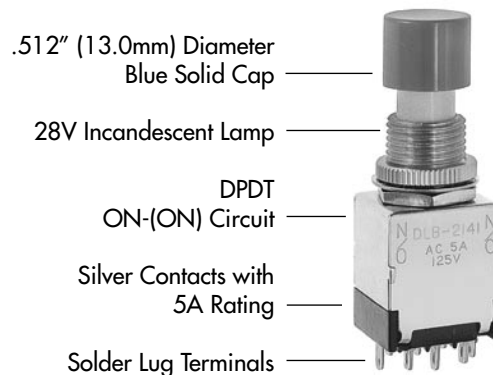
|          |                         |
|----------|-------------------------|
| <b>6</b> | .748" (19.0mm) Square   |
| <b>7</b> | .748" (19.0mm) Diameter |

#### LED Colors for Spot Illuminated

|          |       |
|----------|-------|
| <b>C</b> | Red   |
| <b>F</b> | Green |

DESCRIPTION  
FOR  
TYPICAL ORDERING EXAMPLE

**DLB2141W01-L3G**

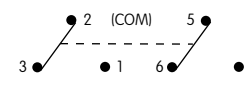


#### IMPORTANT:



Switches are supplied without UL & C-UL markings unless specified. Specific models & ratings noted on General Specifications page.

### POLES & CIRCUITS

| Pole | Model              | Plunger Position<br>( ) = Momentary                                                         |                                                                                           | Connected Terminals                                                                         |                                                                                           | Throw & Power/Lamp Schematics                                                                                                                                                                                                                                                                                           |
|------|--------------------|---------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|      |                    | Normal<br> | Down<br> | Normal<br> | Down<br> |                                                                                                                                                                                                                                                                                                                         |
| DP   | DLB2141<br>DLB2145 | ON<br>ON                                                                                    | (ON)<br>ON                                                                                | 2-3 5-6<br>2-1 5-4                                                                          |                                                                                           | Notes: Terminal numbers are not actually on the switch. Lamp circuit is isolated and requires an external power source.<br><br>DPDT  L (+)  L (-) |

### CONTACT MATERIALS & RATINGS



Silver

Power Level

3A @ 125V AC & 250V AC



Gold over Silver

Power Level  
or Logic Level

5A @ 125V AC  
or 0.4VA maximum @ 28V AC/DC maximum

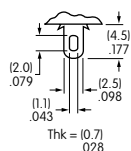
Note: This dual rated option is suitable when two or more identical switches are used in logic and in power circuits within the same application. See Supplement for complete explanation of dual rating and operating range.

### TERMINALS



Solder Lug

Wiring for Solder Lug Terminals

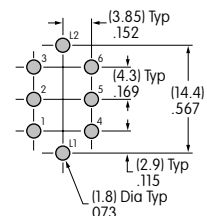
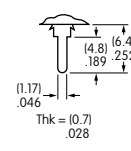


Switch terminal hole of .035" x .079" (0.9mm x 2.0mm) accommodates one solid 20-gauge wire or two solid or stranded 22-gauge wires.

Lamp terminal hole of .035" (0.9mm) diameter accommodates one solid 20-gauge wire.



Straight PC



### INCANDESCENT & NEON LAMP CODES & SPECIFICATIONS

Electrical specifications are determined at a basic temperature of 25°C.  
Lamp circuit is independent of switch operation.  
Incandescent & Neon lamps can be used with solid & design caps.

|                                                                                                                                                                                                                                                    |                                                              |               |              |              |                |                                                                                 |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------|---------------|--------------|--------------|----------------|---------------------------------------------------------------------------------|
| <div>AT604 &amp; AT604N</div> <div></div> <div>T-1¼ Midget Groove Base</div> | AT604 Incandescent 6-, 14-, or 28-volt; AT604N Neon 110-volt | <div>E</div>  | <div>G</div> | <div>L</div> | <div>* N</div> | <div>* Recommended Resistors: 33K ohms for 110V AC; 100K ohms for 220V AC</div> |
|                                                                                                                                                                                                                                                    | Voltage V                                                    | 6V AC         | 14V AC       | 28V AC       | 110V AC        |                                                                                 |
|                                                                                                                                                                                                                                                    | Current I                                                    | 200mA         | 80mA         | 40mA         | 1.5mA          |                                                                                 |
|                                                                                                                                                                                                                                                    | Endurance Average Hours                                      | 1,000         | 750          | 1,000        | 10,000         |                                                                                 |
|                                                                                                                                                                                                                                                    | Ambient Temperature Range                                    | -20°C ~ +50°C |              |              |                |                                                                                 |



No Lamp

Code 0 indicates that no lamp is used with the solid or design caps.

## LED CODE & SPECIFICATIONS

Electrical specifications are determined at a basic temperature of 25°C. LED circuit is independent of switch operation.

LEDs are colored in OFF state. For dimension drawings of lamps see Accessories and Hardware section.

If the source voltage is greater than rated voltage, a ballast resistor is required.

The ballast resistor calculation and more lamp detail are shown in the Supplement section.

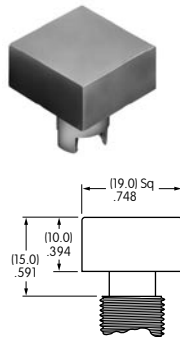
### LED for Spot Illuminated Cap

|                                                                                                                                                                                                                 |                                   |               |                            |                              |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|---------------|----------------------------|------------------------------|
| <div><div>D</div><div>Single Element LED</div></div> <div>LED is factory assembled in spot illuminated caps.</div> <div></div> | Color Codes                       |               | <div><div>C</div>Red</div> | <div><div>F</div>Green</div> |
|                                                                                                                                                                                                                 | Forward Peak Current              | $I_{FM}$      | 35mA                       | 30mA                         |
|                                                                                                                                                                                                                 | Continuous Forward Current        | $I_F$         | 25mA                       | 20mA                         |
|                                                                                                                                                                                                                 | Forward Voltage                   | $V_F$         | 1.65V                      | 2.0V                         |
|                                                                                                                                                                                                                 | Reverse Peak Voltage              | $V_{RM}$      | 3V                         | 3V                           |
|                                                                                                                                                                                                                 | Current Reduction Rate Above 25°C | $\Delta I_F$  | 0.57mA/°C                  | 0.43mA/°C                    |
|                                                                                                                                                                                                                 | Ambient Temperature Range         | -10°C ~ +50°C |                            |                              |

## CAP TYPES & COLORS

### 1 Solid Cap AT419 .748" (19.0mm) Square

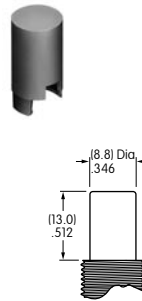
For use with Incandescent or Neon



Colors Available:  
B C D E F G

### 2 Solid Cap AT417 .346" (8.8mm) Diameter

For use with Incandescent or Neon

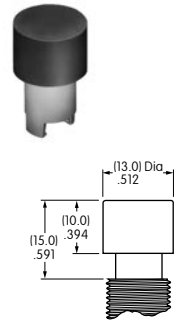


Colors Available:  
B C D E F G

Not for use with snap-in mounter

### 3 Solid Cap AT418 .512" (13.0mm) Diameter

For use with Incandescent or Neon

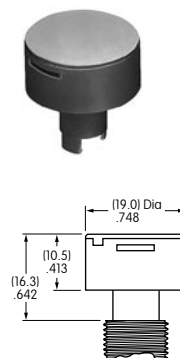


Colors Available:  
B C D E F G

Not for use with snap-in mounter

### 4 Design Cap AT446 .748" (19.0mm) Diameter

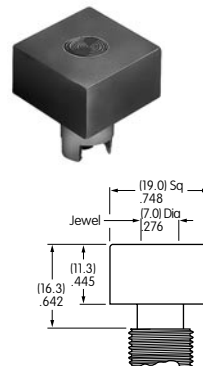
Black Holder with Colored Lens



Lens Colors Available:  
B C F G

### 6 Spot Illuminated AT463 .748" (19.0mm) Square

Black Cap with Clear Lens

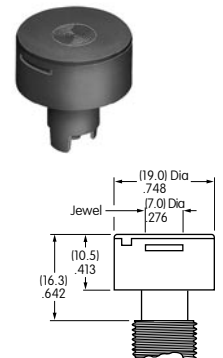


LED Colors:  
C F

LED & Cap assembled at factory; not available separately

### 7 Spot Illuminated AT464 .748" (19.0mm) Diameter

Black Cap with Clear Lens



LED Colors:  
C F

LED & Cap assembled at factory; not available separately

Material for all Caps: Polycarbonate Finish: Glossy

Color Codes: 

B

 White 

C

 Red 

D

 Amber 

E

 Yellow 

F

 Green 

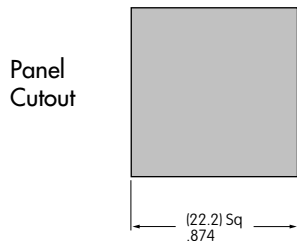
G

 Blue

## OPTIONAL SNAP-IN MOUNTERS

**S** **AT517 Mounter**  
**for Square Caps AT419 & AT463**

Glass fiber reinforced polyamide  
Black only available (code A)

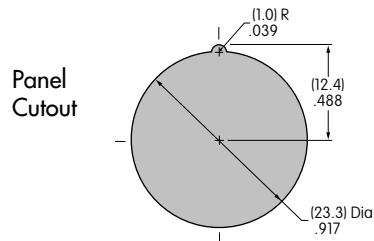


Recommended  
Panel Thickness:  
.039" ~ .157"  
(1.0mm ~ 4.0mm)

The standard mounting hardware provided with the switch is used to assemble the square mounter.

**R** AT528 Mounter  
for Round Caps AT446 & AT464

Glass fiber reinforced polyamide  
Black only available (code A)

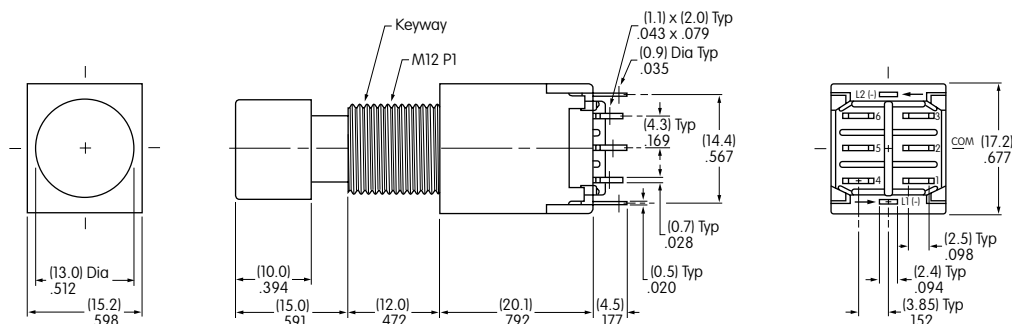


Recommended  
Panel Thickness:  
.039" ~ .157"  
(1.0mm ~ 4.0mm)

Locking Ring AT506 and Hex Nut AT527 are provided with the round mounter. It is assembled to the switch with this hardware plus the lockwasher and hex nut provided as standard hardware. Not for use with Solid Caps AT417 and AT418.

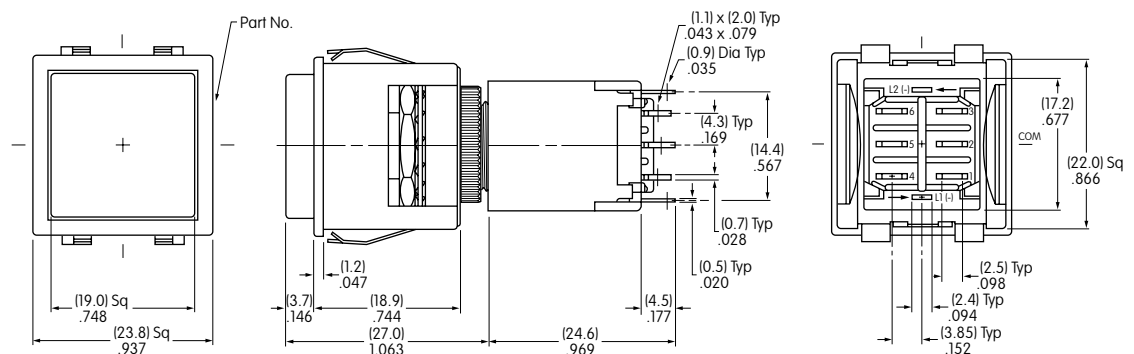
## TYPICAL SWITCH DIMENSIONS

## Solder Lug • Bushing Mount



DLB2145W01-G3G

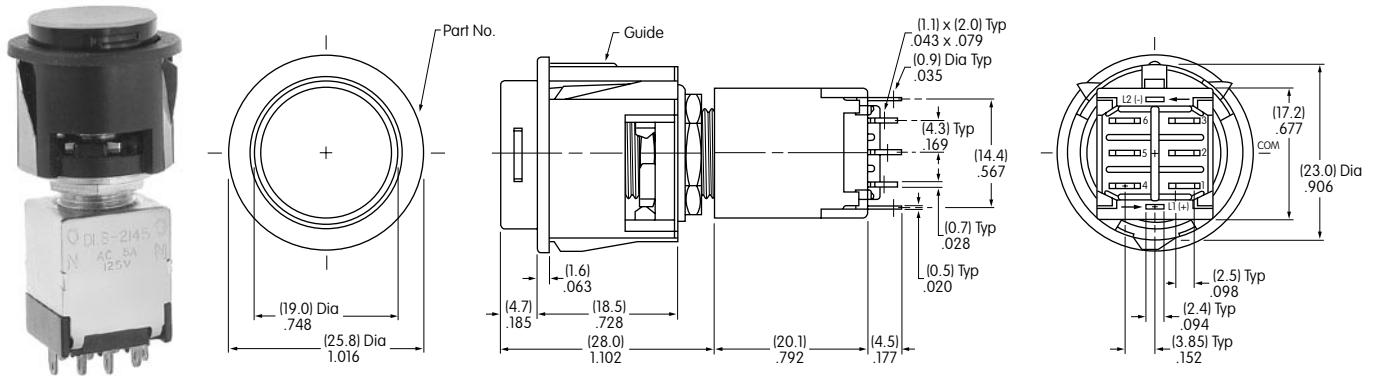
**Solder Lug • Square Snap-in Mounter**



DLB2145W01-G1C-S

### TYPICAL SWITCH DIMENSIONS

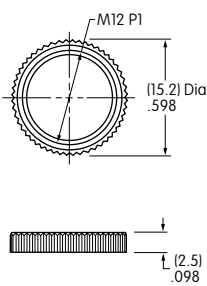
#### Solder Lug • Round Snap-in Mounter



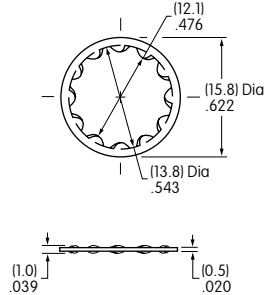
DLB2145W01-E4C-R

### STANDARD HARDWARE

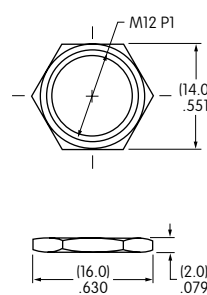
**AT504M**  
Knurled Face Nut  
Brass with Chrome Plating



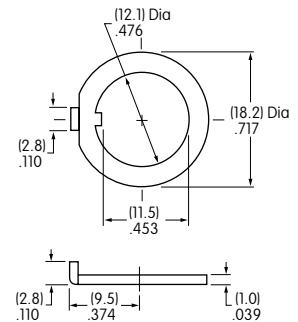
**AT508**  
Lockwasher  
Steel with Zinc Plating



**AT527M**  
Hex Nut  
Steel with Nickel Plating



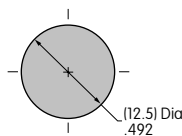
**AT506**  
Locking Ring  
Steel with Zinc Plating



### Maximum Effective Panel Thickness & Cutouts

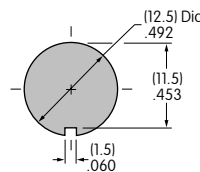
With Standard Hardware

.220" (5.6mm)



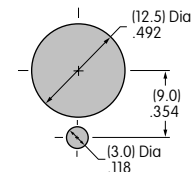
With Standard Hardware & Keyway

.220" (5.6mm)

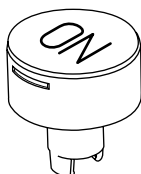


With Standard Hardware & Locking Ring

.181" (4.6mm)



### LEGENDS



Inscriptions can be placed on solid and design caps. Details regarding screen printing or engraving may be obtained from the factory.