

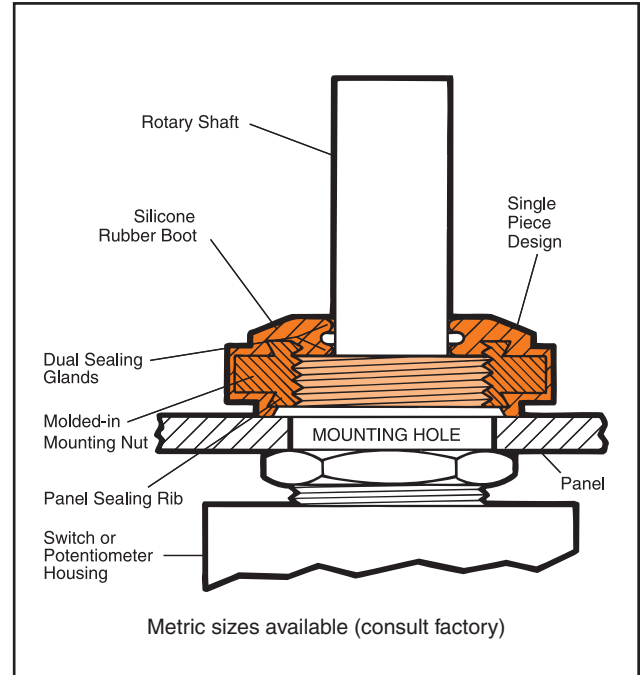
Rotary Shaft Seals for Switches & Potentiometers

POTSEAL and PSEEL rotary shaft seals are molded from a high tear-strength silicone rubber bonded to a built-in mounting nut. Each seal surrounds the rotary shaft and forms a watertight and dust-tight seal against the shaft and front panel surface.

SPECIFICATIONS

Material	POTSEALS: Silicone rubber conforms to A-A-59588, Gr. 60 unless otherwise specified. PSEELS: Silicone rubber polymer type ASTM D1418
Mounting Nut	POTSEALS: Brass, nickel-plated PSEELS: Brass, black-oxide
Temperature Range	POTSEALS: -94°F to +400°F (-70°C to +204°C) PSEELS: -80°F to +400°F (-62°C to +204°C)
Enclosure Protection ..	NEMA/UL/ULC Types 1, 2, 3, 3S, 3R, 4, 4X, 6P, 12, 13; IEC IP66/IP68
Pressure Range	Exceeds 15 psi internal and 1500 psi external
Operational Life	50,000 actuations (minimum)
Shelf Life	Excess of 25 years
Resistant to	Salt spray, sunlight, ozone, weather, fungus, and most acids and lubricating oils
Military Specs*	Most POTSEALS meet MIL-B-5423
Agency Recognition ...	UL & ULC Recognized to UL Std. 50
Installation	Please see installation instructions on page 19

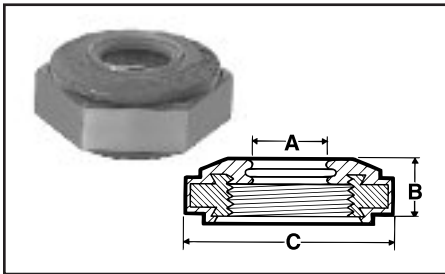
*Policy is to manufacture our POTSEAL sealing boots as defined by the requirements of MIL-Spec B-5423 which we regard as the standard for the switch, circuit breaker and potentiometer industry. These requirements were formulated based on our original patent.



HOW TO ORDER

Specify boot part number and, if necessary, the appropriate bushing adaptor part number (please see page 19).

FIGURE 21 Rotary Shaft Seals – IP66/68 Rated

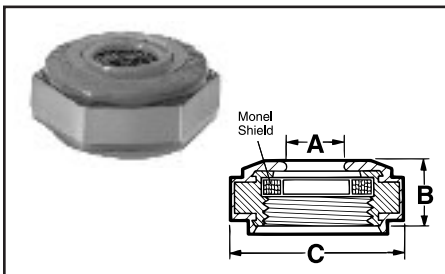


Thread Size	A Shaft Size		B Height		C Flat		Military Part Number	Boot Part Number	Color*	POTSEAL	PSEEL
	inch	mm	inch	mm	inch	mm					
1/4-28NF2B	.125	3.18	.219	5.56	.375	9.53	—	359042 x 1/8	Gray	•	
1/4-32NEF-2B	.125	3.18	.219	5.56	.375	9.53	Available	359040 x 1/8	Gray	•	
3/8-32NEF-2B	.125	3.18	.219	5.56	.500	12.70	Available	359030 x 1/8	Gray	•	
3/8-32NEF-2B	.188	4.78	.219	5.56	.500	12.70	—	359030 x 3/16	Gray	•	
3/8-32NEF-2B	.250	6.35	.219	5.56	.500	12.70	Available	359030 x 1/4	Gray	•	
3/8-32NEF-2B	.250	6.35	.359	9.12	.500	12.70	—	359033 x 1/4	Gray	•	
15/32-32NS-2B	.250	6.35	.219	5.56	.625	15.88	Available	359060 x 1/4	Gray	•	
1/2-32NS-2B	.250	6.35	.219	5.56	.625	15.88	Available	359063 x 1/4	Gray	•	
5/8-24NEF-2B	.375	9.53	.219	5.56	.750	19.05	Available	359065 x 3/8	Gray	•	
5/8-24NEF-2B	.500	12.70	.219	5.56	.750	19.05	—	359065 x 1/2	Gray	•	
3/8-32NEF-2B	.250	6.35	.219	5.56	.500	12.70	—	351332/40	Black		•

*Other colors available. Please consult factory.

Figure 21

FIGURE 22 RFI/EMI Shielded Rotary Shaft Seals – IP66/68 RatedM

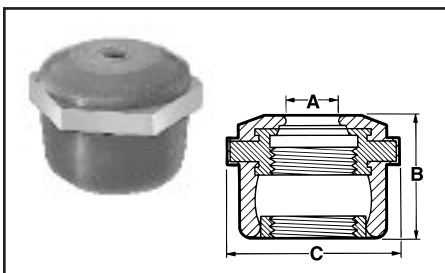


Thread Size	A Shaft Size		B Height		C Flat		Military Part Number	Boot Part Number	Color*	POTSEAL	PSEEL
	inch	mm	inch	mm	inch	mm					
1/4-32NF2B	.125	3.18	.219	5.56	.375	9.53	Available	359040 x 1/8 RFI	Gray	•	
3/8-32NEF-2B	.125	3.18	.219	5.56	.500	12.70	Available	359030 x 1/8 RFI	Gray	•	
3/8-32NEF-2B	.250	6.35	.219	5.56	.500	12.70	Available	359030 x 1/4 RFI	Gray	•	
3/8-32NEF-2B	.250	6.35	.359	9.12	.500	12.70	Available	359033 x 1/4 RFI	Gray	•	
15/32-32NS-2B	.250	6.35	.219	5.56	.625	15.88	Available	359060 x 1/4 RFI	Gray	•	
1/2-24NEF-2B	.375	9.53	.219	5.56	.750	19.05	Available	359065 x 3/8 RFI	Gray	•	
1/2-32NS-2B	.250	6.35	.219	5.56	.625	15.88	Available	359063 x 1/4 RFI	Gray	•	
1/4-28NF-2B	.125	3.18	.219	5.56	.375	9.53	—	359042 x 1/8 RFI	Gray	•	
3/8-32NEF-2B	.125	3.18	.531	13.49	.625	15.88	—	PM359030 x 1/8 RFI	Gray	•	
3/8-32NEF-2B	.250	6.35	.531	13.49	.625	15.88	—	PM359030 x 1/4 RFI	Gray	•	

*Other colors available. Please consult factory. †Inactive for new designs. All Standard RFI/EMI boots feature knitted Monel wire shields.

Figure 22

FIGURE 23 Locking Rotary Shaft Seals – IP66/68 RatedM



Thread Size	A Shaft Size		B Height		C Flat		Lock Nut O.D.		Military Part Number	Boot Part Number	Color*	POTSEAL	PSEEL
	inch	mm	inch	mm	inch	mm	inch	mm					
1/4-32NS-2B	.125	3.18	.500	12.70	.500	12.70	.344	8.74	—	PM359040 x 1/8	Gray	•	
3/8-32NS-2B	.125	3.18	.531	13.49	.625	15.88	.469	11.91	—	PM359030 x 1/8	Gray	•	
3/8-32NS-2B	.250	6.35	.531	13.49	.625	15.88	.469	11.91	—	PM359030 x 1/4	Gray	•	

*Other colors available. Please consult factory.

Figure 23

DIMENSIONS FOR REFERENCE ONLY.



Bushing Seals for Sealed Switch Panel Mounting Hole

Protect Against & Prevent Seepage/Leakage Through Switch Panel Cutout

These reusable self-sealing washers are designed for use with popular sealed switches and circuit breakers. While such sealed switches are designed to tolerate hostile environments (such as salt spray, wash-downs, lubricating fluids, weather, dust and other contaminants) that may compromise reliable switch operation, *they typically do not seal the panel cutout in which they are mounted*. Hence, these same contaminants may “leak past” the bushing through the panel cutout causing equipment/system failures.

Designed to prevent such leakage, each is fabricated from a stainless steel washer with a bonded high-tear strength silicone rubber sealing ring. The soft resilient ring conforms to the panel surface to seal out harmful contaminants.

- Seals the panel cutout in which the circuit breaker is mounted, protecting behind-panel components from dirt/moisture. No O-ring required.
- Reusable in the event the switch or circuit breaker fails and replacement is needed.
- Easy to install without the need for special tools, sealing compounds, sealing tapes, et al.
- Does not compromise switch or circuit breaker performance.
- Meets stringent Military, UL and Canadian National Standards regarding environmental requirements for electrical enclosures.
- UL Recognized for Type 4X & Type 6 enclosure protection.
- Meets IEC IP66/68 enclosure protection

SPECIFICATIONS

MaterialStainless steel with bonded silicone rubber conforms to A-A-59588 GR. 50 (both sides P/N 511-60064; one side only P/N 511-60225)

Temperature Range.....-94°F to +400°F (-70°C to +204°C)

MountingEither Front or Behind Panel

Shelf LifeIn excess of 25 years

Resistant toSalt spray, sunlight, ozone, weather, fungus, and most acids and lubricating oils

Agency Recognition...UL-Recognized to UL Std. 50, Types 1, 2, 3(R)(S), 4(X), 6, 12 & 13. UL Recognition also includes compliance with Canadian National Standards.

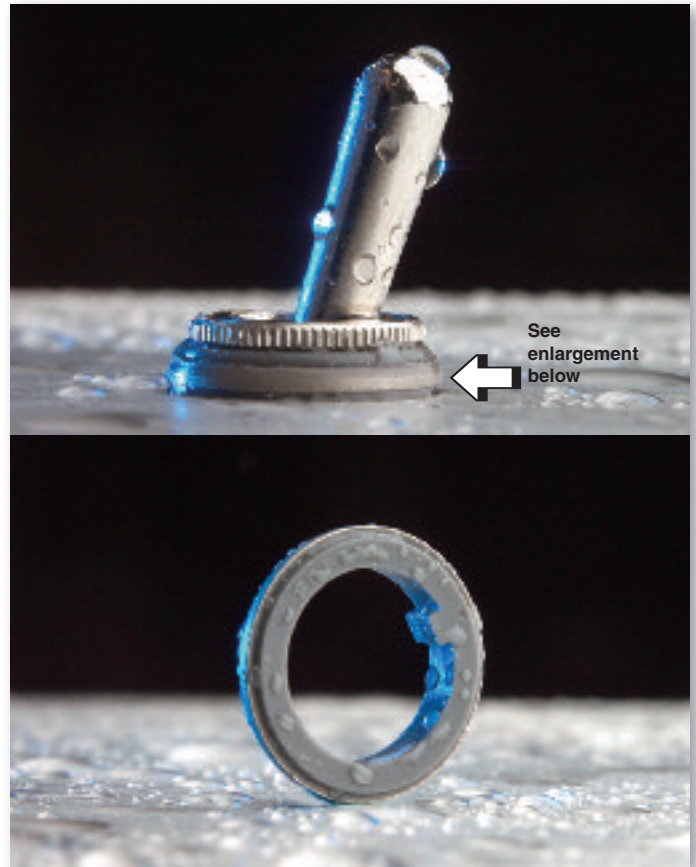
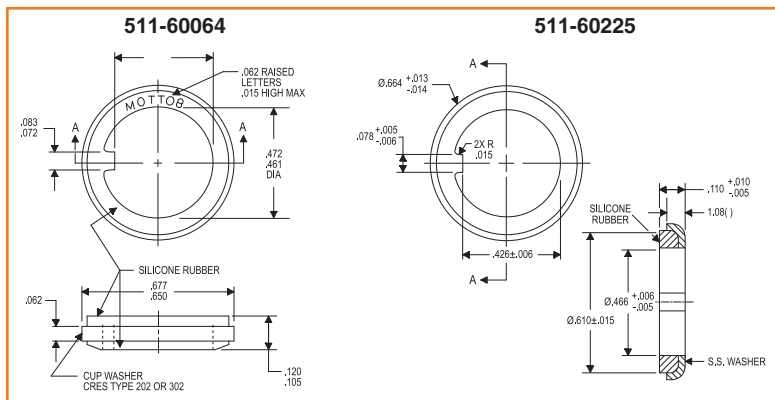
HOW TO ORDER

Specify selected boot part number shown in chart below.

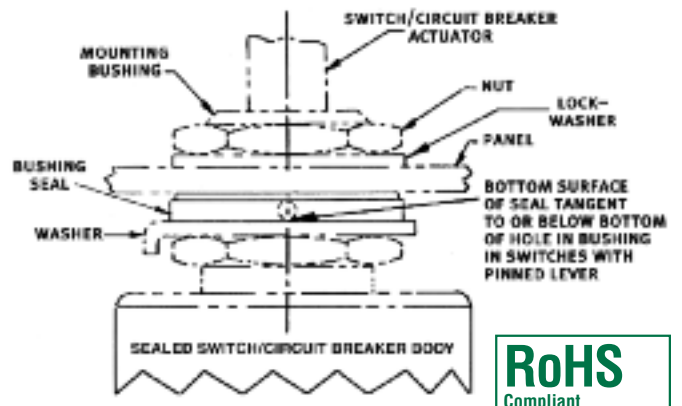
Part Number	Compatible Switch Bushing	Washer Diameter	Washer Thickness	Color	Conforms to*
511-60064 511-60225	15/32-32	0.677" 0.660"	0.120" 0.105"	Gray	Meets MIL-B-5423/16-01, MS25196, UL & ULC Recognized

*Policy is to manufacture our POTSEAL sealing boots as defined by the requirements of MIL-Spec B-5423 B-5423 which we regard as the standard for the switch, circuit breaker and potentiometer industry. These requirements were formulated based on our original patent.

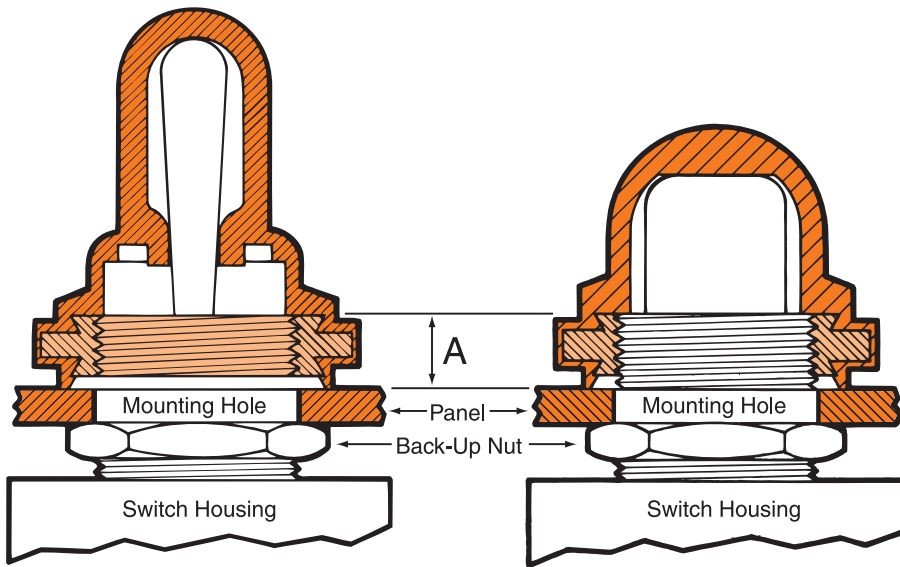
Note: Where the possibility of ice build-up or other contaminants can accumulate in the toggle breaker external actuating mechanism, we recommend using a full silicone sealing boot which will protect the actuator mechanism and keep it operating smoothly, and its perimeter seal will protect the mounting hole from potential seepage.



Visit our website for dimensional drawings and to download CAD drawings.



Installation Instructions

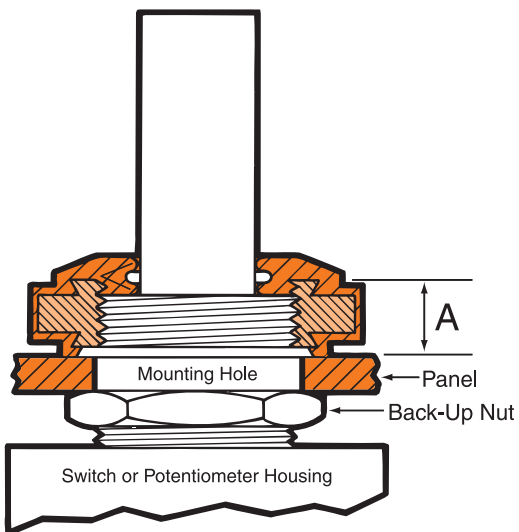


IMPORTANT — CAUTION

STEP 3: THREAD RULE DIMENSION A

3 to 4 threads (maximum) for all toggle pushbutton and rotary shaft seals (except 355000 series).

2 to 3 threads (maximum) for 355000 series.



For proper installation of these boots, follow these five sequential steps. It is **EXTREMELY IMPORTANT** that the number of threads on the switch/potentiometer bushing **EXPOSED ABOVE THE FRONT PANEL SURFACE** be within the recommendation (see chart above). Failure to respect these maximums may result in boot damage (such as tearing).

STEP 1. Remove front mounting nut from switch bushing.

STEP 2. Put threaded bushing through panel.

STEP 3. Adjust back-up nut to allow the specified number of threads to protrude past front of panel (see Dimension "A" above).

STEP 4. If needed, install appropriate bushing adaptor.

STEP 5. Install switch boot in place of front mounting nut.

RECOMMENDED INSTALLATION TOOLS:

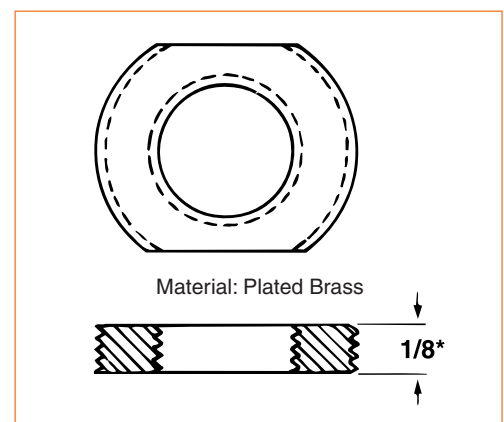
- Six point hex socket wrench.
- Spintite.
- Adjustable wrench (without serrated jaws).

For torque setting, consult factory.

Threaded Bushing Adaptors

Inside (Bushing) Thread Size (Class 2B)	Outside (Boot) Thread Size (Class 2A)	Part Number
3/8-32	15/32-32	352500/1/5*
15/32-32	11/16-32	352500/1/7
1/2-32	11/16-32	352500/1/10
15/32-32	13/16-32	352500/1/8
1/2-24	13/16-32	352500/1/9
5/8-24	13/16-32	352500/1/11
5/8-24	7/8-32	352500/1/12
3/4-32	7/8-32	352500/1/13*
3/4-20	7/8-32	352500/1/14*

*5/32 thick. Additional sizes, including metric, available. Consult factory.



*Unless otherwise noted.