



PANOVA™

Simply Solve

Switch Seal Boots



2020 Catalog

Panova Seal Boots for Toggle, Push Button, and Rotary Switches

Panova seal boots are elastomeric boots that seal, thus protecting a switch and internal components against hazardous foreign elements. Panova's one-piece switch seal is constructed of a flexible rubber boot element bonded during molding to a threaded metal insert that fully encapsulates the switch and bushing to the panel. This assembly replaces the panel mounting nut and seals the mounting hole, making it watertight. It protects against moisture, oil, dirt, dust, most solvents, and many acids.

- **Protects switches and internal components against water, oil, dust, solvents, and acids.**
- **Vibration resistant.**
- **Eliminates the need for gaskets or packings.**
- **Does not interfere with switch movement.**
- **One-piece construction fully encapsulates switch and bushing to panel.**

Silicone Material Specifications

Elastomer: Conforms to A-A-59588, Class 3A

Mounting Nut:

Black parts - Brass per ASTM B16 C36000; Black Oxide per MIL-F-495E

All other colors: Brass Per ASTM B16 C36000; Dull Nickel Plated Per AMS 2424

Operating Temperature: -103°F (-75°C) to 400°F (204°C)

Resistant to: Water, moisture, oil, dirt, dust, most solvents, and many acids

Shelf Life: Unlimited if stored under proper conditions

Neoprene Material Specifications

Elastomer: Neoprene per ASTM D2000 M2BC507

Mounting Nut:

Black Parts - Brass Per ASTM B16 C36000; Black Oxide Per MIL-F-495E

Operating Temperature: -4°F (-20°C) to 248°F (120°C)

Resistant to: Water, moisture, oil, dirt, dust, most solvents, and many acids

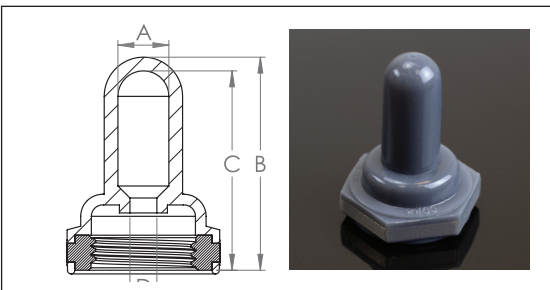
Shelf Life: 15 years if stored under proper conditions

Alternative elastomer options are available by request. Please contact us for details.
Additional durometer and color options available by request. Please contact us for details.

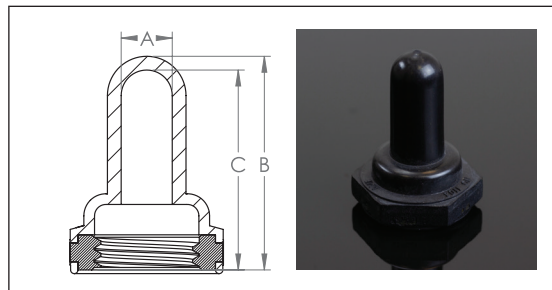
Toggle Switch Seal Boots

Panova Part #	Military Part #	Thread Size	Material / Durometer	Dimensions									
				Inner Boot Diameter (A)		Outer Boot Height (B)		Inner Boot Height (C)		Inner Throat Diameter (D)		Hex (E)	
				in	mm	in	mm	in	mm	in	mm	in	mm
Standard Products													
1100-BK	M5423/01-01*	15/32-32	Black Silicone 50 Durometer	0.208	5.28	0.870	22.10	0.814	20.68	0.110	2.79	0.625	15.88
1100-GY	M5423/01-01	15/32-32	Gray Silicone 50 Durometer	0.208	5.28	0.870	22.10	0.814	20.68	0.110	2.79	0.625	15.88
1101-13DGY	M5423/02-01*	15/32-32	Dk Gray Silicone 30 Durometer	0.425	10.80	0.400	10.16	0.234	5.94	0.090	2.29	0.625	15.88
1101-BK	M5423/02-01*	15/32-32	Black Silicone 50 Durometer	0.425	10.80	0.400	10.16	0.234	5.94	0.090	2.29	0.625	15.88
1101-GY	M5423/02-01	15/32-32	Gray Silicone 50 Durometer	0.425	10.80	0.400	10.16	0.234	5.94	0.090	2.29	0.625	15.88
1102-GY	NA	15/32-32	Gray Silicone 50 Durometer	0.208	5.28	0.870	22.10	0.814	20.68	NA	NA	0.625	15.88
1103-55BK	NA	15/32-32	Black Neoprene 50 Durometer	0.218	5.54	0.905	22.99	0.874	22.20	NA	NA	0.625	15.88
1103-BK	NA	15/32-32	Black Silicone 50 Durometer	0.218	5.54	0.905	22.99	0.874	22.20	NA	NA	0.625	15.88
1103-GY	NA	15/32-32	Gray Silicone 50 Durometer	0.218	5.54	0.905	22.99	0.874	22.20	NA	NA	0.625	15.88
1106-BK	M5423/11-01*	1/4-40	Black Silicone 50 Durometer	0.215	5.46	0.245	6.22	0.150	3.81	0.043	1.09	0.375	9.53
1106-GY	M5423/11-01*	1/4-40	Gray Silicone 50 Durometer	0.215	5.46	0.245	6.22	0.150	3.81	0.043	1.09	0.375	9.53
1126-13GY	NA	15/32-32	Gray Silicone 30 Durometer	0.425	10.80	0.400	10.16	0.234	5.94	0.160	4.06	0.625	15.88
1155-BK	NA	1/4-40	Black Silicone/50 Durometer	0.200	5.08	0.615	15.62	0.575	14.61	NA	NA	0.482	12.24
Special Order													
1102-BK	NA	15/32-32	Black Silicone 50 Durometer	0.208	5.28	0.870	22.10	0.814	20.68	NA	NA	0.625	15.88
1105-BK	M5423/05-01*	1/4-40	Black Silicone 50 Durometer	0.094	2.39	0.517	13.13	0.490	12.45	NA	NA	0.375	9.53
1105-GY	M5423/05-01*	1/4-40	Gray Silicone 50 Durometer	0.094	2.39	0.517	13.13	0.490	12.45	NA	NA	0.375	9.53
1113-BK	NA	1/2-32	Black Silicone 50 Durometer	0.208	5.28	0.870	22.10	0.814	20.68	NA	NA	0.625	15.88
1114-55BK	NA	5/8-32	Black Neoprene 50 Durometer	0.580	14.73	0.985	25.02	0.945	24.00	0.185	4.70	0.755	19.18
1116-BK	NA	1/2-32	Black Silicone 50 Durometer	0.211	5.36	0.879	22.33	0.848	21.54	NA	NA	0.625	15.88
1117-GY	NA	10-48	Gray Silicone 50 Durometer	0.120	3.05	0.500	12.70	0.469	11.91	NA	NA	0.320	8.13
1117-RD	NA	10-48	Red Silicone 50 Durometer	0.120	3.05	0.500	12.70	0.469	11.91	NA	NA	0.320	8.13
1125-02	NA	10-48	Black Silicone 30 Durometer	0.150	3.81	0.218	5.54	0.168	4.27	0.037	0.94	0.315	8.00

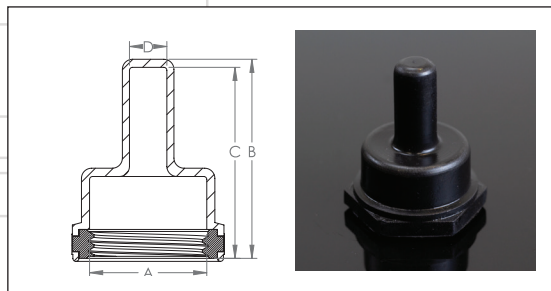
*Denotes exception to the military spec. For more information please contact Panova for the client drawing.



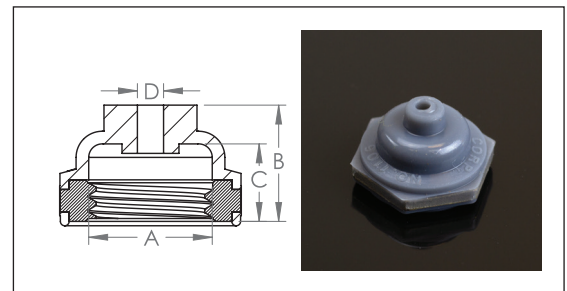
1101



1102, 1103, 1105, 1113, 1116, 1117, 1118, 1155



1114

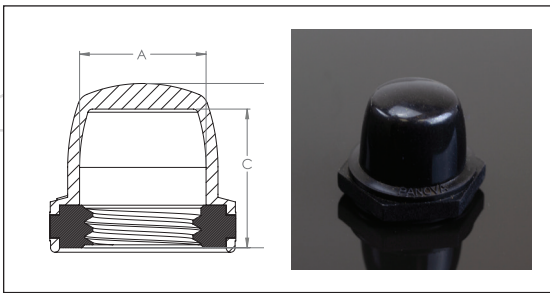


1101, 1106, 1125-02, 1126-13GY

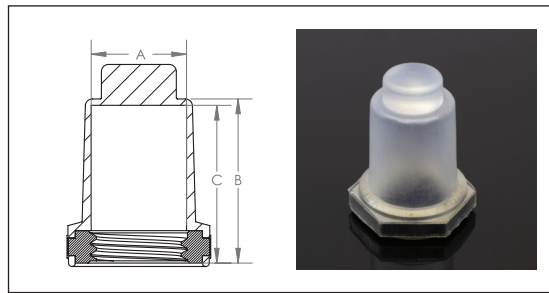
Push Button Switch Seal Boots

Panova Part #	Military Part #	Thread Size	Durometer	Dimensions							
				Inner Diameter (A)		Outer Boot Height (B)		Inner Boot Height (C)		Hex (D)	
				in	mm	in	mm	in	mm	in	mm
Standard Products											
2100-BK	M5423/07-01*	15/32-32	Black Silicone 60 Durometer	0.425	10.80	0.552	14.02	0.466	11.84	0.625	15.88
2100-GY	M5423/07-01	15/32-32	Gray Silicone 60 Durometer	0.425	10.80	0.552	14.02	0.466	11.84	0.625	15.88
2102-CL	M5423/07-12	15/32-32	Clear Silicone 60 Durometer	0.420	10.67	0.725	18.42	0.620	15.75	0.625	15.88
2102-GY	M5423/07-02	15/32-32	Gray Silicone 60 Durometer	0.420	10.67	0.725	18.42	0.620	15.75	0.625	15.88
2104-BK	M5423/10-02*	1/4-40	Black Silicone 50 Durometer	0.165	4.19	0.318	8.08	0.280	7.11	0.375	9.53
2104-GY	M5423/10-02	1/4-40	Gray Silicone 50 Durometer	0.165	4.19	0.318	8.08	0.280	7.11	0.375	9.53
2108-CL	NA	3/8-32	Clear Silicone 60 Durometer	0.330	8.38	0.650	16.51	0.570	14.48	0.500	12.70
2109-15GY	M5423/07-04*	5/8-24	Gray Silicone 50 Durometer	0.518	13.16	0.605	15.37	0.515	13.08	0.750	19.05
2109-15YL	M5423/07-04*	5/8-24	Yellow Silicone 50 Durometer	0.518	13.16	0.605	15.37	0.515	13.08	0.750	19.05
2109-BK	M5423/07-04*	5/8-24	Black Silicone 60 Durometer	0.518	13.16	0.605	15.37	0.515	13.08	0.750	19.05
2110-CL	NA	3/8-27	Clear Silicone 60 Durometer	0.320	8.13	0.720	18.29	0.623	15.82	0.625	15.88
2115-CL	NA	7/16-28	Clear Silicone 60 Durometer	0.400	10.16	0.705	17.91	0.600	15.24	0.625	15.88
2127-GY	NA	M12x.75	Gray Silicone 60 Durometer	0.425	10.80	0.552	14.02	0.466	11.84	0.625	15.88
Special Order											
2100-CL	M5423/07-11	15/32-32	Clear Silicone 60 Durometer	0.425	10.80	0.552	14.02	0.466	11.84	0.625	15.88
2100-RD	M5423/07-01*	15/32-32	Red Silicone 60 Durometer	0.425	10.80	0.552	14.02	0.466	11.84	0.625	15.88
2102-BK	M5423/07-02*	15/32-32	Black Silicone 60 Durometer	0.420	10.67	0.725	18.42	0.620	15.75	0.625	15.88
2102-RD	M5423/07-02*	15/32-32	Red Silicone 60 Durometer	0.420	10.67	0.725	18.42	0.620	15.75	0.625	15.88
2106-CL	NA	15/32-32	Clear Silicone 70 Durometer	0.420	10.67	0.723	18.36	0.695	17.65	0.630	16.00
2107-BK	NA	3/8-27	Black Silicone 60 Durometer	0.330	8.38	0.650	16.51	0.570	14.48	0.500	12.70
2107-GY	NA	3/8-27	Gray Silicone 60 Durometer	0.330	8.38	0.650	16.51	0.570	14.48	0.500	12.70
2108-BK	NA	3/8-32	Black Silicone 60 Durometer	0.330	8.38	0.650	16.51	0.570	14.48	0.500	12.70
2111-RD	NA	1/2-32	Red Silicone 60 Durometer	0.425	10.80	0.552	14.02	0.466	11.84	0.625	15.88
2116-CL	NA	7/16-32	Clear Silicone 60 Durometer	0.390	9.91	0.738	18.75	0.658	16.71	0.630	16.00
2117-CL	NA	7/16-32	Clear Silicone 60 Durometer	0.402	10.21	0.558	14.17	0.490	12.45	0.562	14.27
2119-BK	NA	3/8-32	Black Silicone 50 Durometer	0.382	9.70	0.297	7.54	NA	NA	0.628	15.95

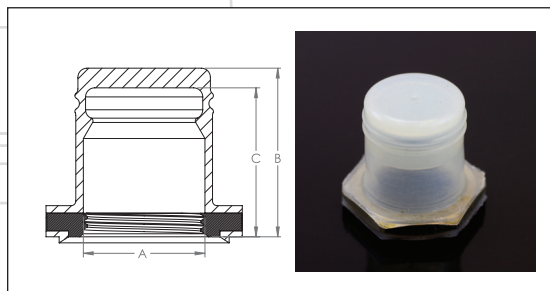
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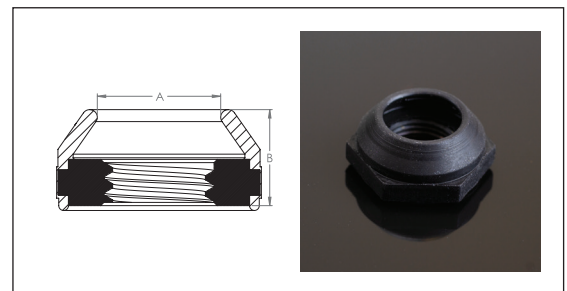
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2106



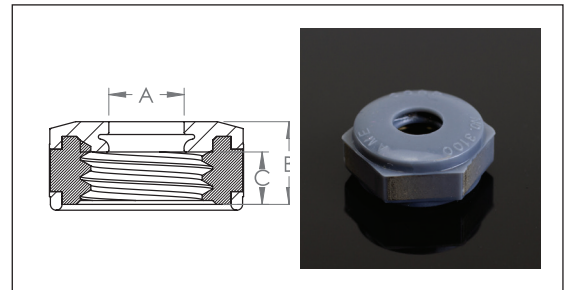
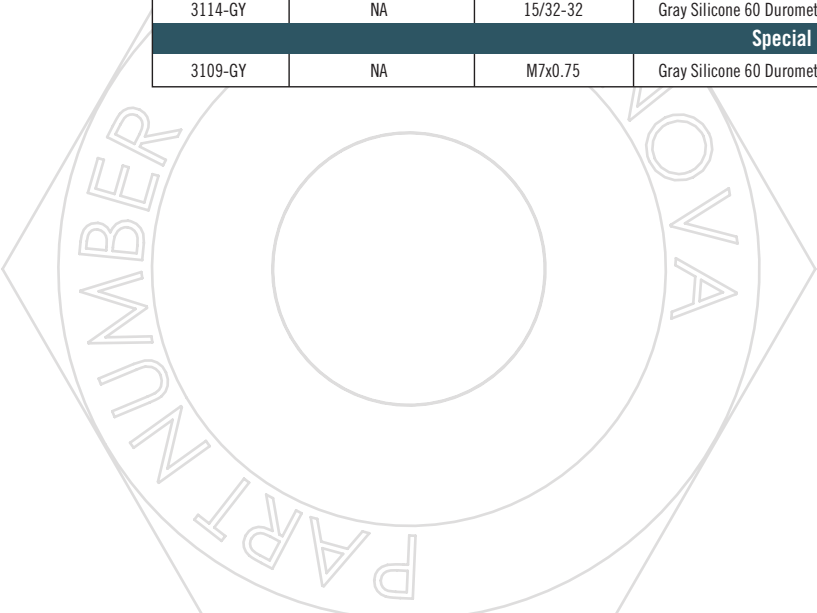
2117



2119

Rotary & Potentiometer Switch Seal Boots

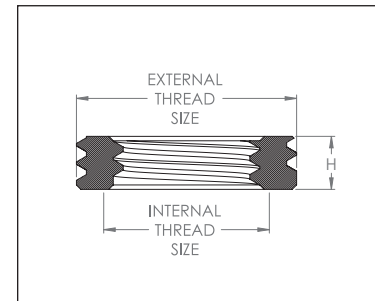
Panova Part #	Military Part #	Thread Size	Material / Durometer	Dimensions							
				Inner Diameter (A)		Height (B)		Inner Height (C)		Hex (D)	
				in	mm	in	mm	in	mm	in	mm
Standard Products											
3100-GY	M5423/09-02	3/8-32	Gray Silicone 60 Durometer	0.194	4.93	0.213	5.41	0.135	3.43	0.500	12.70
3102-GY	M5423/09-04	15-32/32	Gray Silicone 60 Durometer	0.202	5.13	0.218	5.54	0.136	3.45	0.630	16.00
3104-GY	M5423/09-05	5/8-24	Gray Silicone 60 Durometer	0.330	8.38	0.218	5.54	0.136	3.45	0.753	19.13
3110-GY	NA	M9x0.75	Gray Silicone 60 Durometer	0.182	4.62	0.213	5.41	0.135	3.43	0.500	12.70
3114-GY	NA	15/32-32	Gray Silicone 60 Durometer	0.282	7.16	0.213	5.41	0.135	3.43	0.625	15.88
Special Order											
3109-GY	NA	M7x0.75	Gray Silicone 60 Durometer	0.180	4.57	0.213	5.41	0.135	3.43	0.500	12.70



3102-GY, 3104-GY, 3110-GY, 3114-GY, 3109-GY

Seal Boot Adapters

Panova Part #	F in (mm)	H in (mm)	External Thread	Thread Size
Standard Products				
10009-5	.42 (10.67)	.12 (3.05)	15/32-32 UNS-2A	3/8-32 UNEF-2B
Special Order				
10009-4	.42 (10.67)	.12 (3.05)	15/32-32 UNS-2A	1/4-40 UNS-2B
10009-6	.42 (10.67)	.12 (3.05)	15/32-32 UNS-2A	3/8-27 UNS-2B
10009-7	.42 (10.67)	.12 (3.05)	15/32-32 UNS-2A	3/8-24 UNF-2B
10009-8	.55 (13.97)	.12 (3.05)	11/16-32 UNS-2A	15/32-32 UNS-2B

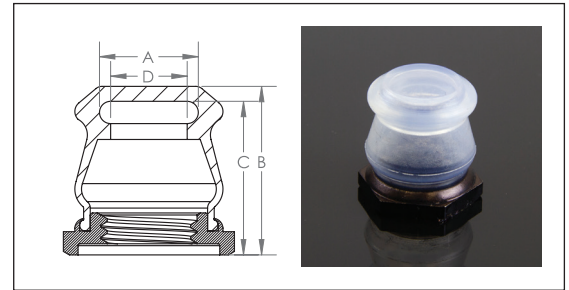
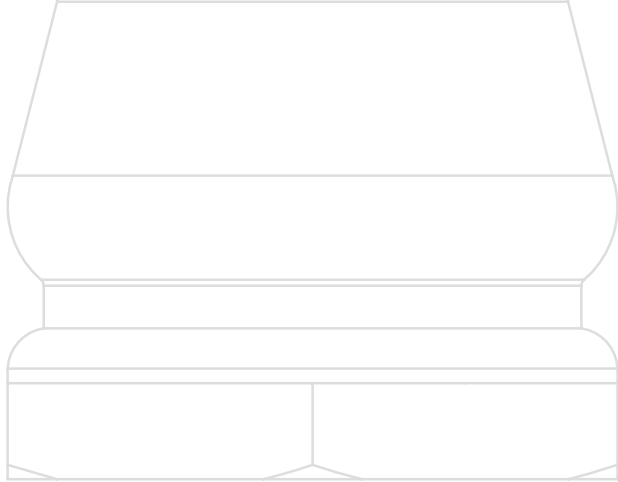


10009-5

Brass Per ASTM B16 C36000; Dull Nickel Plated Per AMS 2424

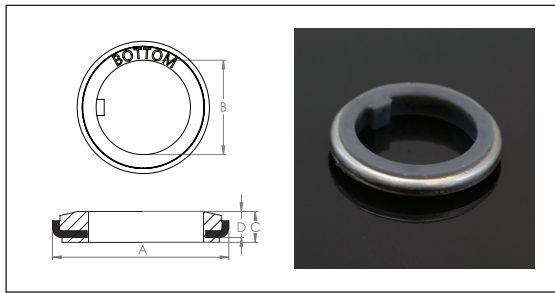
Specialized Switch Seal Boots

Panova Part #	NSN #	Thread Size	Durometer	Dimensions									
				Inner Diameter (A)		Height (B)		Inner Height (C)		Inner Throat Diameter (D)		Hex (E)	
				in	mm	in	mm	in	mm	in	mm	in	mm
Standard Products													
6452-3	5930-01-523-1780	7/16-32	Clear Silicone 30 Durometer	0.417	10.59	0.725	18.42	0.663	16.84	0.323	8.20	0.625	15.88
6452-4	5930-01-481-2289	15/32-32	Clear Silicone 30 Durometer	0.417	10.59	0.725	18.42	0.663	16.84	0.323	8.20	0.625	15.88

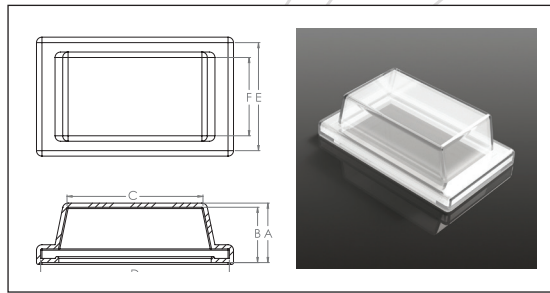


6452

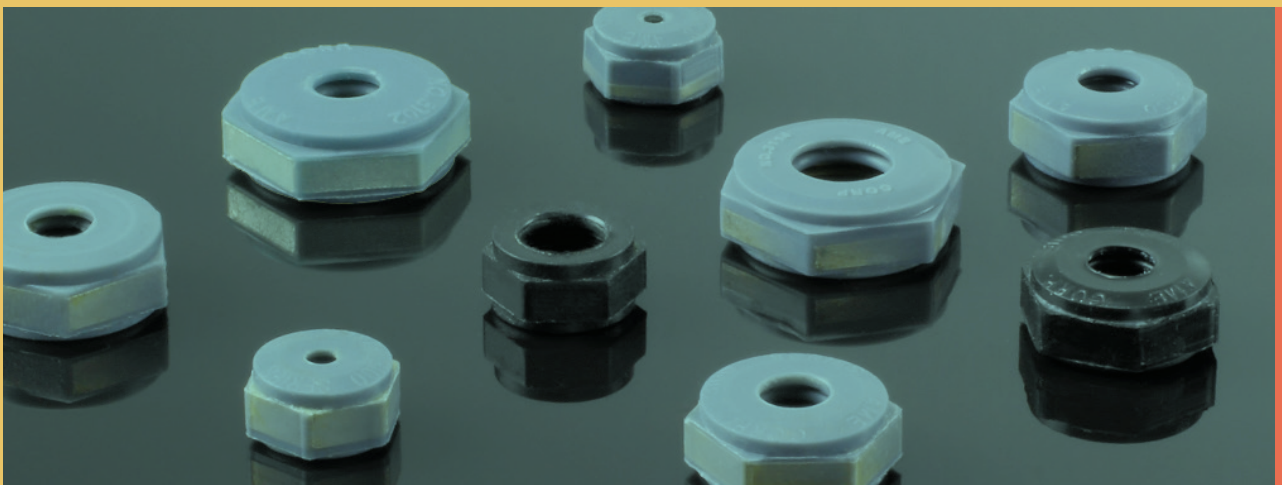
Panova Part #	Military Part #	Thread Size	Durometer	Dimensions							
				(A)		(B)		(C)		(D)	
				in	mm	in	mm	in	mm	in	mm
Standard Products											
6185-1	M5423/16-01	NA	Gray Silicone 50 Durometer	0.656	16.66	0.468	11.89	0.115	2.92	0.097	2.46
Special Order											
4002	NA	NA	Clear Silicone 60 Durometer	0.500	12.7	0.465	11.81	1.143	29.03	1.586	40.28



6185-1



4002



Founded as AME Corporation in 1977, Panova has been a leader in rubber molding, contract manufacturing, and sealing solutions. During our 40+ years in business, we have become the go-to company for hard-to-manufacture products.

In today's competitive manufacturing environment, procuring high-quality, cost-effective parts helps keep your business profitable. Often, however, the most cost-effective production options can sometimes force you to sacrifice quality and speed to reduce costs.

Panova understands these issues and works as a trusted partner to provide affordable and reliable solutions.

Our established supply chain, expertise in materials and manufacturability, and client-centric approach allows our clients to experience the benefits of outsourced production, while still getting the product quality and availability they need to run their business with ease.

In short: *We are the components supplier that makes it easy.*



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