

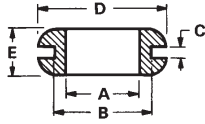


Designers' Choice

GROMMETS, BUMPERS & BUSHINGS

RUBBER GROMMETS

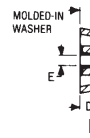
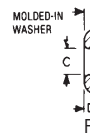
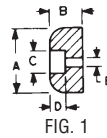
Ideal for electrical insulation and mechanical damping. Made from BUNA S.



CAT. NO.	I.D. A	For Hole B	For Panel C	D	E
730	.125	.187	.062	.312	.187
733	.125	.250	.062	.343	.187
734	.125	.437	.062	.625	.187
735	.125	.375	.093	.500	.312
736	.187	.312	.062	.437	.218
731	.187	.312	.062	.437	.218
737	.187	.281	.093	.437	.218
738	.250	.437	.062	.625	.187
739	.250	.375	.062	.562	.250
740	.250	.375	.093	.500	.250
741	.312	.562	.062	.812	.312
742	.312	.437	.062	.625	.281
743	.312	.437	.093	.625	.312
744	.375	.625	.062	.875	.312
745	.375	.500	.062	.625	.250
732	.437	.562	.062	.750	.250
746	.437	.687	.062	.937	.312
747	.500	.812	.062	1.062	.312
748	.500	1.250	.062	1.500	.250
749	.500	.750	.093	.968	.281
750	.562	.812	.062	1.062	.312
752	.625	.875	.062	1.125	.312
753	.625	1.250	.062	1.500	.250
755	.750	1.062	.062	1.375	.375
756	.750	1.437	.062	1.812	.375
757	.875	1.250	.062	1.625	.437

RECESSED BUMPERS

Provides excellent traction and shock absorbing qualities. available with or without Mold-in Washers.



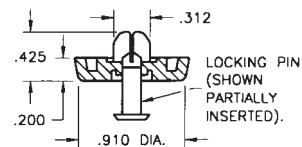
MATERIAL: Rubber, BUNA S (figs. 1 & 2), Vinyl (fig. 3)

CAT. NO.	FIG.	A	B	C	D	E	Screw Size
720	1	.500	.250	.250	.187	.125	#4
721	1	.625	.312	.250	.187	.125	#4
722	1	.718	.437	.250	.218	.125	#4
723	2	.937	.375	.375	.187	.187	#8
*724	3	.687	.250	.343	.125	.155	#6
*725	3	.875	.312	.406	.125	.187	#8
*726	3	1.062	.437	.468	.234	.200	#10
727	3	.562	.375	.218	.187	.115	#4
728	3	.750	.437	.265	.250	.148	#6
729	3	.937	.625	.359	.297	.174	#8

*Grey - all others black

SELF-LOCKING BUMPER FOOT

- A unique easy-to-install self-locking bumper foot
- Two piece assembly, furnished pre-assembled
- Vibration absorbing and skid resistant
- Mounts without screws or tools



MATERIAL:
Foot: Santoprene, Black
Pin: Polypropylene, Black

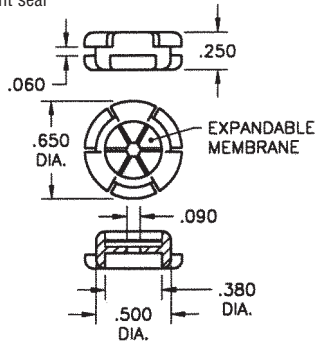
CAT. NO. 717

Recommended Mounting Hole: .305 dia.

"UNIVERSAL" RUBBER GROMMET

Designed to adjust to different wire, cable or tubing diameters from .125 to .312

- Self-adjusting membrane forms a dust resistant seal
- Installs in .500 diameter hole in .062 thick panels or boards
- Molded outer ring retains grommet in place

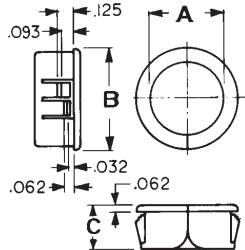


MATERIAL: Black Thermoplastic Rubber

CAT. NO. 777

NYLON SPLIT BUSHINGS

Designed to be assembled into holes that already contain wire or cable. Versatile bushing can be used on all chassis from .032 to .125 thick.

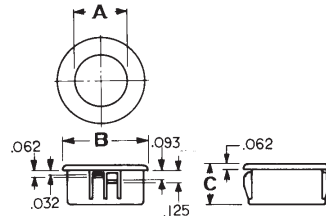


CAT. NO.	HOLE SIZE REQUIRED	A INSIDE DIA.	B HEAD DIA.
8490	.375	.265	.421
8491	.500	.312	.562
8492	.562	.390	.640
8493	.625	.453	.687
8494	.750	.546	.796
8495	.875	.671	.921
8496	1.000	.796	1.062

MATERIAL: Nylon 6/6, Black

NYLON INSULATED BUSHINGS

Snaps into panel hole to provide protection for wire, cable and tubing from sharp uneven edges.



MATERIAL: Nylon 6/6, Black

CAT. NO.	HOLE SIZE REQUIRED	MAXIMUM CHASSIS THICKNESS	A INSIDE DIA.	B HEAD DIA.	C OVERALL HEIGHT
8470	.250	.062	.125	.312	.312
8471	.312	.062	.187	.375	.312
8472	.375	.125	.250	.468	.406
8473	.437	.125	.312	.531	.406
8474	.500	.125	.375	.578	.406
8475	.562	.125	.437	.656	.406
8476	.625	.125	.500	.718	.406
8477	.750	.125	.562	.843	.406
8478	.875	.125	.625	.953	.453
8479	1.000	.125	.750	1.125	.453
8480	1.187	.125	.937	1.312	.453
8481	1.250	.125	.937	1.359	.453
8482	1.375	.125	1.000	1.468	.453
8483	1.500	.125	1.062	1.609	.453
8484	1.750	.125	1.375	1.875	.453
8485	2.000	.125	1.625	2.125	.453
8486	2.500	.250	1.968	2.656	.718

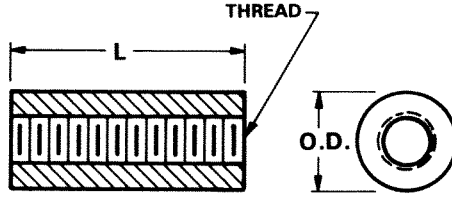


Designers' Choice

THREADED STANDOFFS



HEX



ROUND



MATERIAL

Brass: per ASTM-B16
Aluminum: QQ-A-225/3, Alloy 2011-T3

PLATING

Zinc: ASTM B633
Iridite Finish: MIL-C-5541

THREAD	O.D.	LENGTH	ALUMINUM IRIDITE FINISH		BRASS ZINC PLATE	
			HEX CAT. NO.	ROUND CAT. NO.	HEX CAT. NO.	ROUND CAT. NO.
2-56	.156 (5/32)	3/16 (.187)	1797A	1801A	1798A	1802A
		1/4 (.250)	1797B	1801B	1798B	1802B
		5/16 (.312)	1797C	1801C	1798C	1802C
		3/8 (.375)	1797D	1801D	1798D	1802D
4-40	.187 (3/16)	1/4 (.250)	1891	2025	1450	1547
		3/8 (.375)	1892	2026	1803	1864
		1/2 (.500)	1893	2027	1656	1657
		5/8 (.625)	1894	2028	1804	1865
		3/4 (.750)	1895	2029	1656A	1657A
		7/8 (.875)	1896	2030	1805	1866
		1 (1.000)	1897	2031	1656B	1657B
4-40	.250 (1/4)	1/4 (.250)	2201	3478	1450A	1547A
		3/8 (.375)	2202	3479	1450B	1547B
		1/2 (.500)	2203	3480	1450C	1547C
		5/8 (.625)	1808	1839	1829	1867
		3/4 (.750)	2204	3481	1450D	1547D
		7/8 (.875)	1809	1846	1830	1876
		1 (1.000)	2205	3482	1450E	1547E
		1-1/2 (1.500)	2206	3483	1831	1877
		2 (2.000)	2207	3484	1832	1878
		2 (2.000)	2207	3484	1451A	1548A
6-32	.250 (1/4)	1/4 (.250)	2208	3485	1451A	1548A
		3/8 (.375)	2209	3486	1451B	1548B
		1/2 (.500)	2210	3487	1451C	1548C
		5/8 (.625)	1813	1847	1451D	1548D
		3/4 (.750)	2211	3488	1451E	1548E
		7/8 (.875)	1816	1848	1833	1879
		1 (1.000)	2212	3489	1635	1548F
		1-1/4 (1.250)	1818	1853	1636	1881
		1-1/2 (1.500)	2213	3490	1637	1882
		1-3/4 (1.750)	1819	1855	1638	1883
		2 (2.000)	2214	3491	1639	1884
		2-1/4 (2.250)	1820	1856	1642	1885
		2-12 (2.500)	1825	1857	1643	1886
8-32	.250 (1/4)	1/4 (.250)	2215	3492	1474A	1692A
		3/8 (.375)	2216	3493	1474B	1692B
		1/2 (.500)	2217	3494	1474C	1692C
		5/8 (.625)	1827	1858	1834	1887
		3/4 (.750)	2218	3495	1474D	1692D
		7/8 (.875)	1828	1859	1836	1888
		1 (1.000)	2219	3496	1474E	1692E
		1-1/2 (1.500)	2220	3497	1837	1889
		2 (2.000)	2221	3498	1838	1899
8-32	.375 (3/8)	3/8 (.375)	1926A	2315A	1452A	1549A
		1/2 (.500)	1926B	2315B	1452B	1549B
		5/8 (.625)	1926C	2315C	1452C	1549C
		3/4 (.750)	1926D	2315D	1452D	1549D
		1 (1.000)	1926E	2315E	1452E	1549E

NOTE: Spacers over 1.000 long are tapped .375 deep each end.

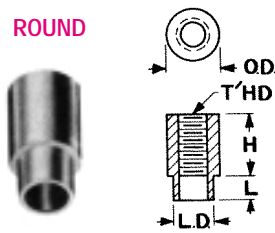
SWAGE/FORCE FIT STANDOFFS

Designers' Choice

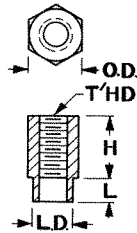


SWAGE THREADED STANDOFFS

ROUND



HEX



SPECIFICATIONS:

Brass: per ASTM-B16

Nickel Plate: QQ-N-290

ROUND CAT. NO.	H Height Above Panel	L Shank Length	For Panel Thickness	LD Shank Diameter	HEX CAT. NO.
2-56 THREAD × .156 O.D. (5/32")					
1589-2	.125	.109	1/16	.125	1731-2
1590-2	.187	.109	1/16	.125	1734-2
1591-2	.250	.109	1/16	.125	1740-2
1596-2	.375	.109	1/16	.125	1743-2
4-40 THREAD × .187 O.D. (3/16")					
2260-2	.125	.109	1/16	.139	2270-2
2261-2	.187	.109	1/16	.139	2271-2
2262-2	.250	.109	1/16	.139	2272-2
2263-2	.375	.109	1/16	.139	2273-2
2264-2	.500	.109	1/16	.139	2274-2
4-40 THREAD × .250 O.D. (1/4")					
1560 A	.125	.109	1/16	.187	1653-2
1560 F	.125	.140	3/32	.187	1653-3
1790-2	.187	.109	1/16	.187	1746-2
1790-3	.187	.140	3/32	.187	1746-3
1650-2	.250	.109	1/16	.187	1627-2
1650-3	.250	.140	3/32	.187	1627-3
1651-2	.375	.109	1/16	.187	1628-2
1651-3	.375	.140	3/32	.187	1628-3
1623-2	.500	.109	1/16	.187	1629-2
1623-3	.500	.140	3/32	.187	1629-3
1624-2	.625	.109	1/16	.187	1654-2
1624-3	.625	.140	3/32	.187	1654-3
1625-2	.750	.109	1/16	.187	1655-2
1625-3	.750	.140	3/32	.187	1655-3
1792-2	.875	.109	1/16	.187	1749-2
1792-3	.875	.140	3/32	.187	1749-3
1652-2	1.000	.109	1/16	.187	1630-2
1652-3	1.000	.140	3/32	.187	1630-3
6-32 THREAD × .250 O.D. (1/4")					
1560 B	.125	.109	1/16	.187	1620-2
1560 C	.125	.140	3/32	.187	1620-3
1612-2	.187	.109	1/16	.187	1752-2
1612-3	.187	.140	3/32	.187	1752-3
1546	.250	.109	1/16	.187	1621-2
1546 B	.250	.140	3/32	.187	1621-3
1546 D	.250	.171	1/8	.187	1621-4
1561 B	.375	.109	1/16	.187	1622-2
1561 C	.375	.140	3/32	.187	1622-3
1561 D	.375	.171	1/8	.187	1622-4
1604-2	.500	.109	1/16	.187	1758-2
1604-3	.500	.140	3/32	.187	1758-3
1604-4	.500	.171	1/8	.187	1758-4
1605-2	.625	.109	1/16	.187	1759-2
1605-3	.625	.140	3/32	.187	1759-3
1608-2	.750	.109	1/16	.187	1761-2
1608-3	.750	.140	3/32	.187	1761-3
1796-2	.875	.109	1/16	.187	1775-2
1796-3	.875	.140	3/32	.187	1775-3
1609-2	1.000	.109	1/16	.187	1784-2
1609-3	1.000	.140	3/32	.187	1784-3

STAKING TOOLS FOR SWAGE STANDOFFS

Precision made tools-heat treated and plater. Will give your job the professional appearance. Set of tools consists of: Top Staking Tool and Anvil.



CAT.NO.TL-19	For Bushing 5/32 OD with 2-56 Thd.
CAT.NO.TL-20	For Bushing 1/4 OD with 4-40 Thd.
CAT.NO.TL-21	For Bushing 1/4 OD with 6-32 Thd.

A broaching-type fastener/standoff for installation in panels and circuit boards .060 inch and thicker made of plastic and other non-ductile materials. Available threaded or with clearance holes. Easy to install, pressed into punched or drilled holes.

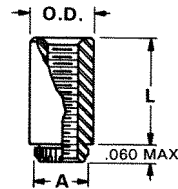
MATERIALS: Stainless Steel
per ASTM-A581/A582

Mounting Holes:

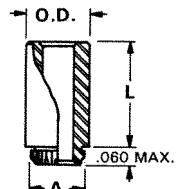
- .147 hole for 2-56.
- .166 hole for 4-40.
- .213 hole for 6-32.

Tolerance on Mounting Holes:

+ .003/- .000.



Threaded



Clear Hole

THREADED

CAT. NO.	THREAD	"L" LENGTH	O.D.	"A"
4860	2-56	.065	.219	.165
4861	4-40	.065	.219	.184
4862	4-40	.125	.219	.184
4863	4-40	.250	.219	.184
4864	4-40	.375	.219	.184
*4865	4-40	.500	.219	.184
4866	6-32	.065	.281	.231
4867	6-32	.125	.281	.231
4868	6-32	.250	.281	.231
4869	6-32	.375	.281	.231
*4870	6-32	.500	.281	.231

*Thread depth .375

CLEAR HOLE

CAT. NO.	I.D.	LENGTH	O.D.	"A"
4850	#4 (.116)	.065	.219	.184
4851	#4 (.116)	.125	.219	.184
4852	#4 (.116)	.250	.219	.184
4853	#4 (.116)	.375	.219	.184
4854	#4 (.116)	.500	.219	.184
4855	#6 (.143)	.065	.281	.231
4856	#6 (.143)	.125	.281	.231
4857	#6 (.143)	.250	.281	.231
4858	#6 (.143)	.375	.281	.231
4859	#6 (.143)	.500	.281	.231

CUSTOM SPACERS & STANDOFFS

Keystone is fully integrated to meet your total design & production needs.

Manufacturing custom designs & modifications of standard items is our specialty.

Quotations on special spacers & standoffs furnished promptly upon receipt of sample, sketch, print or CAD drawings.

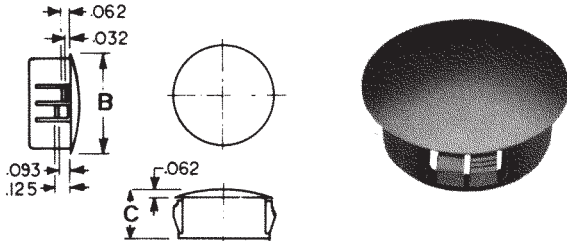
HOLE PLUGS/CABLE CLAMPS

Designers' Choice



NYLON HOLE PLUGS

Closes unused chassis holes quickly and economically. Plugs are abrasion and vibration resistant.



MATERIAL: Black, Nylon 6/6, Matte Finish

CAT. NO.	HOLE DIA.	PANEL THICKNESS	B	C
8600	.250	.062	.312	.312
8601	.312	.062	.375	.312
8602	.375	.125	.468	.406
8603	.500	.125	.578	.406
8604	.625	.125	.734	.406
8605	.750	.125	.921	.406
8606	.875	.125	1.015	.453
8607	1.000	.125	1.203	.453
8608	1.125	.125	1.218	.453
8609	1.250	.125	1.375	.453
8610	1.375	.125	1.500	.453
8611	1.500	.125	1.671	.453

STEEL HOLE PLUGS

Excellent spring retention. Plugs will cover chassis holes, wiring outlets, access holes or unused opening.

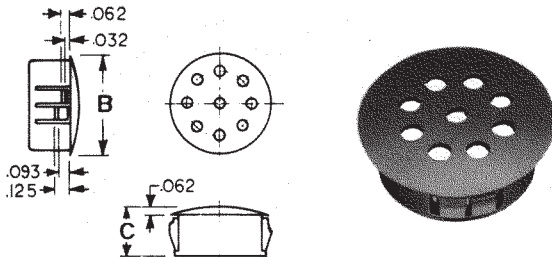


MATERIAL: Steel, Nickel Plate

CAT. NO.	Hole Dia.	Panel Thickness	A	B	C	Prongs
7600	.250	.032-.062	.406	.234	.062	6
7601	.312	.047-.078	.437	.250	.062	6
7602	.375	.047-.062	.500	.234	.062	6
7603	.500	.031-.062	.656	.281	.078	8
7604	.625	.062-.093	.812	.296	.078	8
7605	.750	.062-.093	.921	.296	.078	12
7606	.875	.062-.093	1.062	.296	.062	12
7607	1.000	.062-.156	1.140	.328	.093	12
7608	1.125	.031-.125	1.312	.343	.093	12
7609	1.250	.062-.093	1.437	.343	.093	12
7610	1.375	.031-.125	1.562	.406	.078	12
7611	1.500	.031-.062	1.640	.406	.093	12

NYLON VENT PLUGS

Used to cover chassis holes while allowing air flow for ventilation.



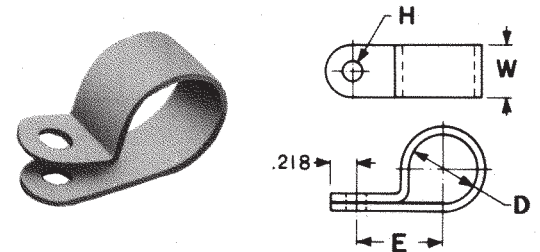
MATERIAL: Black, Nylon 6/6, Matte Finish

CAT. NO.	HOLE DIA.	PANEL THICKNESS	B	C
8612	.875	.125	1.015	.453
8613	1.000	.125	1.203	.453

NYLON CABLE CLAMPS

Ideal for securing, insulating and routing cable wiring, piping, tubing, components and fibre optics.

MATERIAL: White, .050 Nylon 6/6

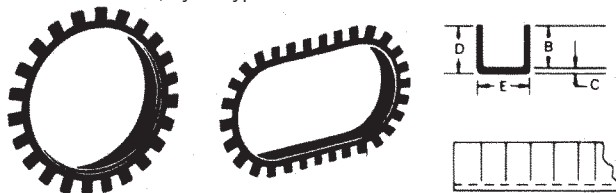


CAT. NO.	D	E	W	H
7620	.125	.325	.375	.140
7621	.125	.325	.375	.203
7622	.187	.380	.375	.140
7623	.187	.380	.375	.203
7624	.250	.410	.375	.140
7625	.250	.410	.375	.203
7626	.312	.445	.375	.140
7627	.312	.445	.375	.203
7628	.375	.475	.375	.140
7629	.375	.475	.375	.203
7630	.437	.525	.375	.140
7631	.437	.525	.375	.203
7632	.500	.550	.375	.140
7633	.500	.550	.375	.203
7634	.562	.625	.500	.203
7635	.625	.660	.500	.203
7636	.750	.785	.500	.203
7637	.875	.845	.500	.203
7638	1.000	.910	.500	.203
7639	1.125	.970	.500	.203
7640	1.250	1.060	.500	.203

FLEXIBLE GROMMETING

Ideal for maintenance, short-run production, R&D or prototyping. Supplied in 25ft. rolls. Make your own grommets to fit any size or shape required.

MATERIAL: Black, Nylon Type 6/6



CAT. NO.	MAX. PANEL	B	C	D	E
8615	.052	.150	.040	.190	.125
8616	.085	.155	.045	.200	.162
8617	.125	.155	.045	.220	.206

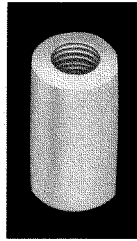
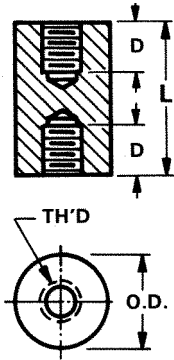


Designers' Choice

INSULATED SPACERS/STANDOFFS

CERAMIC STANDOFFS

- Ideal for very high temperature conditions
- Commercial and military types available
- Special sizes available upon request
- Exceptional strength in compression and tension
- Withstands very high voltage without flashover.
- Military types meet MIL-1-010, NL# clearly marked



COMMERCIAL

CAT. NO.	LENGTH	O.D.	T THREAD	D(2) DEPTH
7710	.250	.250	6-32	THRU
7711	.500	.250	6-32	.156
7712	.375	.375	6-32	.156
7713	.500	.375	6-32	.187
7714	.500	.500	6-32	.140
7715	.750	.500	6-32	.250
7716	1.000	.500	6-32	.375
7717	1.500	.500	6-32	.562
7718	2.500	.500	6-32	.500
7719	2.500	.750	1/4-20	.750
7720	4.000	.750	1/4-20	.750

MILITARY

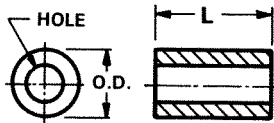
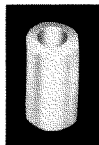
CAT. NO.	LENGTH	O.D.	T THREAD	D(2) DEPTH	NL #
7661	.500	.375	6-32	.156	NL523W01-004
7662	.625	.375	6-32	.250	NL523W01-005
7663	.625	.500	8-32	.187	NL523W02-005
7664	.750	.375	6-32	.250	NL523W01-006
7665	.750	.500	8-32	.250	NL523W02-006
7666	1.000	.375	10-32	.375	NL523W01-008
7667	1.000	.500	8-32	.375	NL523W02-008
7668	1.000	.750	10-32	.375	NL523W03-008
7669	1.250	.375	6-32	.375	NL523W01-010
7670	1.250	.500	8-32	.375	NL523W02-010
7671	1.250	1.000	1/4-20	.437	NL523W04-010
7672	1.500	.375	6-32	.375	NL523W01-012
7673	1.500	.500	8-32	.375	NL523W02-012
7674	1.500	.750	10-32	.375	NL523W03-012
7675	1.500	1.000	1/4-20	.500	NL523W04-012
7676	2.000	.375	6-32	.375	NL523W01-016
7677	2.000	.500	8-32	.375	NL523W02-016
7678	2.000	.750	10-32	.375	NL523W03-016

MATERIAL: Grade L5 Ceramic

PHENOLIC SPACERS/STANDOFFS

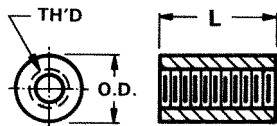
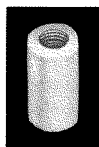
- RESISTS ABRASIONS & CHEMICALS • EXCELLENT DIELECTRIC STRENGTH
- LOW MOISTURE ABSORPTION • GOOD MECHANICAL STRENGTH

MATERIAL: PBE Grade Natural Color Phenolic



CLEAR HOLE SPACERS

"L" Length Inches	.250 O.D. (1/4)			.312 O.D.
	#4 Screw .120 Hole CAT. NO.	#6 Screw .140 Hole CAT. NO.	#8 Screw .171 Hole CAT. NO.	#10 Screw .200 Hole CAT. NO.
1/4 (.250)	360	367	1490	453
3/8 (.375)	361	368	1491	454
1/2 (.500)	362	369	1492	455
3/4 (.750)	363	370	1493	456
1 (1.000)	364	371	1494	457
1 1/2 (1.500)	365	372	374	458
2 (2.000)	366	373	375	459



THREADED STANDOFFS

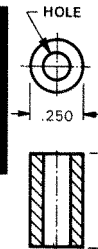
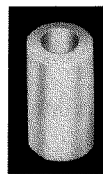
"L" Length Inches	.250 O.D. (1/4)			.312 O.D.	
	4-40 Th'd CAT. NO.	6-32 Th'd CAT. NO.	8-32 Th'd CAT. NO.	8-32 CAT. NO.	10-32 CAT. NO.
1/4 (.250)	376	383	390	460	467
3/8 (.375)	377	384	391	461	468
1/2 (.500)	378	385	392	462	469
3/4 (.750)	379	386	393	463	470
1 (1.000)	380	387	394	464	471
1 1/2 (1.500)	381	388	395	465	472
2 (2.000)	382	389	396	466	473

NOTE: 1 1/2" and 2" spacers are tapped 3/8" deep each end.

NYLON SPACERS/STANDOFFS

Economical for terminal or printed circuit board supports.

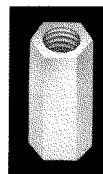
ROUND THRU-HOLE SPACERS



"L" Length Inches	#4 Screw .120 Hole CAT. NO.	#6 Screw .140 Hole CAT. NO.	#8 Screw .171 Hole CAT. NO.
1/8 (.125)	875	883	891
1/4 (.250)	876	884	892
3/8 (.375)	877	885	893
1/2 (.500)	878	886	894
5/8 (.625)	879	887	895
3/4 (.750)	880	888	896
7/8 (.875)	881	889	897
1 (1.000)	882	890	898

MATERIAL: Nylon 6/6

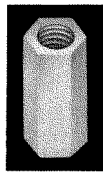
HEX THREADED STANDOFFS



"L" Length Inches	4-40 Thread CAT. NO.	6-32 Thread CAT. NO.	8-32 Thread CAT. NO.
1/4 (.250)	1902A	1903A	1904A
3/8 (.375)	1902B	1903B	1904B
1/2 (.500)	1902C	1903C	1904C
5/8 (.625)	1902F	1903F	1904F
3/4 (.750)	1902D	1903D	1904D
7/8 (.875)	1902G	1903G	1904G
1 (1.000)	1902E	1903E	1904E

MATERIAL: Nylon 6/6

FLAME RETARDANT HEX THREADED STANDOFFS



"L" Length Inches	4-40 Thread CAT. NO.	6-32 Thread CAT. NO.	8-32 Thread CAT. NO.
1/4 (.250)	8440A	8441A	8442A
3/8 (.375)	8440B	8441B	8442B
1/2 (.500)	8440C	8441C	8442C
5/8 (.625)	8440D	8441D	8442D
3/4 (.750)	8440E	8441E	8442E
7/8 (.875)	8440F	8441F	8442F
1 (1.000)	8440G	8441G	8442G

MATERIAL: Nylon 6/6