

MIL-R-83412/1(USAF)

17 July 1979

## MILITARY SPECIFICATION SHEET

RUBBER, ETHYLENE-PROPYLENE, HYDRAZINE RESISTANT,  
O-RINGS SIZES AND TOLERANCES

This specification sheet is approved by the Air Force Materials Laboratory, MXA, Department of the Air Force, and is available for use by all Departments and Agencies of the Department of Defense.

The complete requirements for procuring the o-rings described herein shall consist of this document and the latest issue of specification MIL-R-83412(USAF).

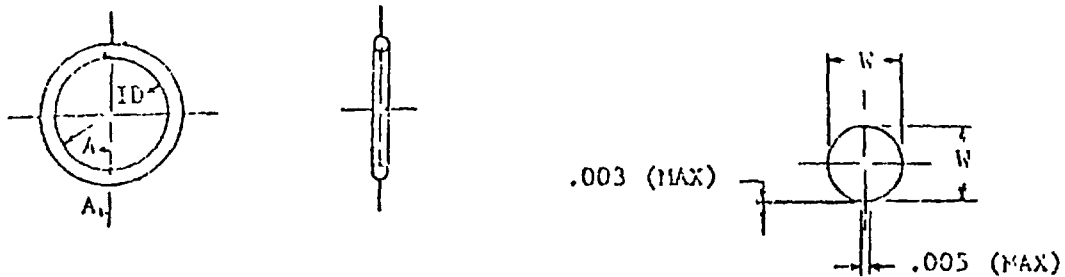


FIGURE 1. O-ring, front, side, and cross-section.

Purpose. The purpose of this specification sheet is to set up a standardized part numbering system for o-rings procured to MIL-R-83412(USAF), Type I.

Intended use. These o-rings are recommended for use in packing glands such as specified in MIL-G-5514 (See Note).

Part numbers. When this document is used for procurement of o-rings, part numbers shall consist of the following:

1. The letter M and the specification sheet number.

2. A dash followed by the appropriate dash number for Table I or Table II.

Example 1  
M83412/1-214

Example 2  
M83412/1-340

NOTE: The following sizes are not included in MIL-G-5514:  
029 to 050, 102 to 109, 150 to 178, 201 to 209, 248 to 284,  
309 to 324, 350 to 395, 461 to 475, and 901 to 932.

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TABLE I. O-ring sizes

DASH NO.	ACTUAL SIZE				DASH NO.	ACTUAL SIZE			
	W		ID			W		ID	
001	.040	±.003	.029	±.004	041	.070	±.003	2.989	±.024
002	.050		.042	↓	042	↓	↓	3.239	↓
003	.060		.056		043			3.489	↓
004	.070	±.003	.070	±.005	044			3.739	±.027
005	↓	↓	.101	↓	045			3.989	
006			.114		046			4.239	±.030
007			.145		047			4.489	↓
008			.176		048			4.739	↓
009			.208		049			4.989	±.037
010			.239		050	↓	↓	5.239	↓
011			.301						
012			.364		102	.103	±.003	.049	±.005
013			.426	↓	103	↓	↓	.081	↓
014			.489		104			.112	
015			.551	±.007	105			.143	
016			.614	±.009	106			.174	
017			.676	↓	107			.206	
018			.739	↓	108			.237	
019			.801	↓	109			.299	
020			.864	↓	110			.362	
021			.926	↓	111			.424	↓
022			.989	±.010	112			.487	↓
023			1.051	↓	113			.549	±.007
024			1.114	↓	114			.612	±.009
025			1.176	±.011	115			.674	↓
026			1.239	↓	116			.737	↓
027			1.301	↓	117			.799	±.010
028			1.364	±.013	118			.862	↓
029			1.489	↓	119			.924	↓
030			1.614	↓	120			.987	↓
031			1.739	↓	121			1.049	↓
032			1.864	↓	122			1.112	↓
033			1.989	±.018	123			1.174	±.012
034			2.114	↓	124			1.237	↓
035			2.239	↓	125			1.299	↓
036			2.364	↓	126			1.362	↓
037			2.489	↓	127			1.424	↓
038	↓	↓	2.614	±.020	128	↓	↓	1.487	↓
039			2.739	↓	129			1.549	±.015
040			2.864	↓	130			1.612	↓

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TABLE I. O-ring sizes. - Continued

DASH	ACTUAL SIZE				DASH	ACTUAL SIZE			
NO.	W		ID		NO.	W		ID	
131	.103	±.003	1.674	±.015	171	.103	±.003	7.987	±.
132	↓	↓	1.737	↓	172	↓	↓	8.237	±.
133	↓	↓	1.799	↓	173	↓	↓	8.487	±.
134	↓	↓	1.862	↓	174	↓	↓	8.737	±.
135	↓	↓	1.925	±.017	175	↓	↓	8.987	±.
136	↓	↓	1.987	↓	176	↓	↓	9.237	±.
137	↓	↓	2.050	↓	177	↓	↓	9.487	±.
138	↓	↓	2.112	↓	178	↓	↓	9.737	±.
139	↓	↓	2.175	↓	201	.139	±.004	.171	±.
140	↓	↓	2.237	↓	202	↓	↓	.234	±.
141	↓	↓	2.300	±.020	203	↓	↓	.296	±.
142	↓	↓	2.362	↓	204	↓	↓	.359	±.
143	↓	↓	2.425	↓	205	↓	↓	.421	±.
144	↓	↓	2.487	↓	206	↓	↓	.484	±.
145	↓	↓	2.550	↓	207	↓	↓	.546	±.
146	↓	↓	2.612	↓	208	↓	↓	.609	±.
147	↓	↓	2.675	±.022	209	↓	↓	.671	±.
148	↓	↓	2.737	↓	210	↓	↓	.734	±.
149	↓	↓	2.800	↓	211	↓	↓	.796	±.
150	↓	↓	2.862	↓	212	↓	↓	.859	±.
151	↓	↓	2.987	±.024	213	↓	↓	.921	±.
152	↓	↓	3.237	↓	214	↓	↓	.984	±.
153	↓	↓	3.487	↓	215	↓	↓	1.046	±.
154	↓	↓	3.737	±.028	216	↓	↓	1.109	±.
155	↓	↓	3.987	↓	217	↓	↓	1.171	±.
156	↓	↓	4.237	±.030	218	↓	↓	1.234	±.
157	↓	↓	4.487	↓	219	↓	↓	1.296	±.
158	↓	↓	4.737	↓	220	↓	↓	1.359	±.
159	↓	↓	4.987	±.035	221	↓	↓	1.421	±.
160	↓	↓	5.237	↓	222	↓	↓	1.484	±.
161	↓	↓	5.487	↓	223	↓	↓	1.609	±.
162	↓	↓	5.737	↓	224	↓	↓	1.734	±.
163	↓	↓	5.987	↓	225	.139	±.004	1.859	±.
164	↓	↓	6.237	±.040	226	↓	↓	1.984	±.
165	↓	↓	6.487	↓	227	↓	↓	2.109	±.
166	↓	↓	6.737	↓	228	↓	↓	2.234	±.
167	↓	↓	6.987	↓	229	↓	↓	2.359	±.
168	↓	↓	7.237	±.045	230	↓	↓	2.484	±.
169	↓	↓	7.487	↓	231	↓	↓	2.609	±.
170	↓	↓	7.737	↓					

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TABLE I. O-ring sizes. - Continued

DASH NO.	ACTUAL SIZE				DASH NO.	ACTUAL SIZE			
	W		ID			W		ID	
232	.139	$\pm .004$	2.734	$\pm .024$	273	.139	$\pm .004$	9.734	$\pm .055$
233			2.859		274			9.984	
234			2.984		275			10.484	
235			3.109		278			10.984	$\pm .065$
236			3.234		277			11.484	
237			3.359		278			11.984	
238			3.484		279			12.984	
239			3.609	$\pm .028$	280			13.984	
240			3.734		281			14.984	
241			3.859		282			15.955	$\pm .075$
242			3.984		283			16.955	$\pm .080$
243			4.109		284			17.955	$\pm .085$
244			4.234	$\pm .030$					
245			4.359		309	.210	$\pm .005$	.412	$\pm .005$
246			4.484		310			.475	
247			4.609		311			.537	$\pm .007$
248			4.734		312			.600	$\pm .009$
249			4.859	$\pm .035$	313			.662	
250			4.984		314			.725	$\pm .010$
251			5.109		315			.787	
252			5.234		316			.850	
253			5.359		317			.912	
254			5.484		318			.975	$\pm .010$
255			5.609		319			1.037	
256			5.734		320			1.100	$\pm .012$
257			5.859		321			1.162	
258			5.984		322			1.225	
259			6.234	$\pm .040$	323			1.287	
260			6.484		324			1.350	
261			6.734		325			1.475	$\pm .015$
262			6.984		326			1.600	
263			7.234	$\pm .045$	327			1.725	
264			7.484		328			1.850	
265			7.734		329			1.975	$\pm .018$
266			7.984		330			2.100	
267			8.234	$\pm .050$	331			2.225	
268			8.484		332			2.350	
269			8.734		333			2.475	$\pm .020$
270			8.984		334			2.600	
271			9.234	$\pm .055$	335			2.725	
272			9.484		336			2.850	

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TABLE I. C-ring sizes. - Continued

DASH NO.	ACTUAL SIZE				DASH NO.	ACTUAL SIZE			
	W		ID			W		ID	
337	.210	+.005	2.975	+.024	378	.210	+.005	10.475	+.060
338	↓	↓	3.100	↓	379	↓	↓	10.975	↓
339	↓	↓	3.225	↓	380	↓	↓	11.475	+.065
340	↓	↓	3.350	↓	381	↓	↓	11.975	↓
341	↓	↓	3.475	↓	382	↓	↓	12.975	↓
342	↓	↓	3.600	+.028	383	↓	↓	13.975	+.070
343	↓	↓	3.725	↓	384	↓	↓	14.975	↓
344	↓	↓	3.850	↓	385	↓	↓	15.955	+.075
345	↓	↓	3.975	↓	386	↓	↓	16.955	+.080
346	↓	↓	4.100	↓	387	↓	↓	17.955	+.085
347	↓	↓	4.225	+.030	388	↓	↓	18.955	+.090
348	↓	↓	4.350	↓	389	↓	↓	19.955	+.095
349	↓	↓	4.475	↓	390	↓	↓	20.955	↓
350	↓	↓	4.600	↓	391	↓	↓	21.955	+.100
351	↓	↓	4.725	↓	392	↓	↓	22.940	+.105
352	↓	↓	4.850	↓	393	↓	↓	23.940	+.110
353	↓	↓	4.975	+.037	394	↓	↓	24.940	+.115
354	↓	↓	5.100	↓	395	↓	↓	25.940	+.120
355	↓	↓	5.225	↓					↓
356	↓	↓	5.350	↓	425	.275	+.006	4.475	+.033
357	↓	↓	5.475	↓	426	↓	↓	4.600	↓
358	↓	↓	5.600	↓	427	↓	↓	4.725	↓
359	↓	↓	5.725	↓	428	↓	↓	4.850	↓
360	↓	↓	5.850	↓	429	↓	↓	4.975	+.037
361	↓	↓	5.975	↓	430	↓	↓	5.100	↓
362	↓	↓	6.225	+.040	431	↓	↓	5.225	↓
363	↓	↓	6.475	↓	432	↓	↓	5.350	↓
364	↓	↓	6.725	↓	433	↓	↓	5.475	↓
365	↓	↓	6.975	↓	434	↓	↓	5.600	↓
366	↓	↓	7.225	+.045	435	↓	↓	5.725	↓
367	↓	↓	7.475	↓	436	↓	↓	5.850	↓
368	↓	↓	7.725	↓	437	↓	↓	5.975	↓
369	↓	↓	7.975	↓	438	↓	↓	6.225	+.040
370	↓	↓	8.225	+.050	439	↓	↓	6.475	↓
371	↓	↓	8.475	↓	440	↓	↓	6.725	↓
372	↓	↓	8.725	↓	441	↓	↓	6.975	↓
373	↓	↓	8.975	↓	442	↓	↓	7.225	+.045
374	↓	↓	9.225	+.055	443	↓	↓	7.475	↓
375	↓	↓	9.475	↓	444	↓	↓	7.725	↓
376	↓	↓	9.725	↓	445	↓	↓	7.975	↓
377	↓	↓	9.975	↓	446	↓	↓	8.475	+.055

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TABLE I. O-ring sizes. - Continued

DASH NO.	ACTUAL SIZE			
	W		ID	
447	.275	+.006	8.975	+.055
448	↓	↓	9.475	↓
449			9.975	↓
450			10.475	+.060
451			10.975	↓
452			11.475	↓
453			11.975	↓
454			12.475	↓
455			12.975	↓
456			13.475	+.070
457			13.975	↓
458			14.475	↓
459			14.975	↓
460			15.475	↓
461			15.955	+.075
462			16.455	↓
463			16.955	+.080
464			17.455	+.085
465			17.955	↓
466			18.455	↓
467			18.955	+.090
468			19.455	↓
469			19.955	+.095
470			20.955	↓
471			21.955	+.100
472			22.940	+.105
473			23.940	+.110
474			24.940	+.115
475			25.940	+.120

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TABLE II. Straight thread tube fitting boss gaskets.

DASH NO.	TUBE OUTSIDE DIAMETER	W CROSS-SECTION		I D.	
901	.094	.056	$\pm .003$	.185	$\pm .005$
902	.125	.064	↓	.239	↓
903	.188	↓	↓	.351	↓
904	.250	.072	↓	.351	↓
905	.312	↓	↓	.414	↓
906	.375	.078	↓	.468	↓
907	.438	.082	↓	.530	$\pm .007$
908	.500	.087	↓	.604	$\pm .009$
909	.562	.097	↓	.700	↓
910	.625	↓	↓	.755	↓
911	.688	.116	$\pm .004$	.863	↓
912	.750	↓	↓	.924	↓
913	.812	↓	↓	.986	$\pm .010$
914	.875	↓	↓	1.047	↓
916	1.000	↓	↓	1.171	↓
918	1.125	↓	↓	1.355	$\pm .012$
920	1.250	.118	↓	1.475	$\pm .014$
924	1.500	↓	↓	1.720	↓
928	1.750	↓	↓	2.090	$\pm .018$
932	2.000	↓	↓	2.337	↓

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(Project No 5330-P045)

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MIL-R-83412/1(USAF)  
NOTICE 2  
10 December 1992

## MILITARY SPECIFICATION

### RUBBER, ETHYLENE-PROPYLENE, HYDRAZINE RESISTANT, O-RINGS SIZES AND TOLERANCES

MIL-R-83412/1(USAF), dated 17 July 1979, has been reviewed and determined to be valid for use in acquisition.

Custodians:  
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