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MS9013(ASG)

INACTIVE FOR DESIGN AFTER 13 JUNE 1966
NO SUPERSEDING MS STANDARD
For definition and application of drawing status notes, see MIL Handbook No. 337

FED. SUP CLASS 5340

PART NO.	FREE DIAMETER A MAX.	FREE DIAMETER A MIN.	B MAX.	C MAX.	D ±.010	E +.010 -.002	F MAX.	F MIN.	G REF.	H MAX.	J MAX.	K MAX.	K MIN.	L REF.	L MAX.	L MIN.	M ±.016	N ±.005	V MAX.	THICKNESS T MAX.	THICKNESS T MIN.	APPROX. WEIGHT LBS/1000
MS9013-01	.227	.221	.283	.010	.080	.041	.038	.032	.022	.035	.016	.055	.053	.0765	.1025	.0965	.020	.150	.005	.066	.035	.21
MS9013-02	.352	.345	.397	.010	.081	.041	.038	.032	.0205	.036	.016	.0555	.0535	.082	.1025	.102	.020	.150	.005	.066	.035	.23
MS9013-03	.358	.351	.318	.010	.080	.041	.041	.035	.0225	.035	.016	.0585	.0565	.0885	.1025	.1045	.020	.150	.005	.066	.035	.24
MS9013-04	.283	.276	.345	.011	.087	.041	.043	.037	.023	.039	.016	.0635	.0615	.092	.1125	.112	.031	.250	.005	.066	.035	.27
MS9013-05	.311	.304	.371	.011	.087	.047	.043	.037	.022	.039	.016	.0585	.0565	.087	.1125	.107	.020	.250	.005	.066	.035	.31
MS9013-06	.322	.315	.392	.012	.088	.041	.049	.043	.026	.040	.016	.0585	.0565	.092	.1125	.112	.031	.250	.005	.066	.035	.36
MS9013-07	.340	.333	.416	.012	.088	.047	.053	.047	.0275	.040	.016	.0635	.0615	.092	.1125	.112	.031	.250	.005	.066	.035	.39
MS9013-08	.356	.349	.419	.012	.087	.047	.045	.039	.022	.040	.016	.0585	.0565	.0875	.1125	.1075	.020	.250	.005	.066	.035	.35
MS9013-09	.368	.361	.449	.012	.087	.047	.057	.051	.030	.039	.016	.0685	.0665	.092	.1125	.112	.032	.250	.005	.066	.035	.43
MS9013-10	.397	.390	.481	.013	.088	.047	.058	.052	.030	.040	.016	.0635	.0615	.092	.1125	.112	.032	.250	.005	.066	.035	.50
MS9013-11	.430	.423	.522	.013	.088	.047	.063	.057	.032	.040	.016	.0635	.0615	.092	.1125	.112	.032	.250	.005	.066	.035	.54
MS9013-12	.463	.456	.563	.013	.108	.047	.069	.063	.036	.049	.021	.0735	.0715	.1125	.1375	.1325	.038	.250	.008	.066	.033	.61
MS9013-13	.414	.408	.600	.013E	.108	.047	.057	.051	.032	.049	.025	.0735	.0715	.1125	.1375	.1325	.038	.250	.008	.066	.033	.68
MS9013-14	.526	.511	.634	.014	.108	.047	.074	.068	.037	.0695	.025	.0735	.0715	.1125	.1375	.1325	.038	.250	.008	.066	.033	.70
MS9013-15	.555	.540	.669	.0145	.109	.047	.080	.072	.0391	.050	.025	.0735	.0715	.1125	.1375	.1325	.039	.312	.008	.066	.033	1.10
MS9013-16	.588	.569	.704	.0145	.110	.047	.084	.076	.0435	.050	.025	.0735	.0535	.1125	.1375	.1325	.038	.312	.008	.066	.033	1.20
MS9013-17	.626	.611	.746	.0155	.110	.047	.086	.078	.039	.051	.025	.0735	.0535	.1125	.1375	.1325	.039	.312	.008	.066	.033	1.40
MS9013-18	.640	.625	.766	.016	.136	.052	.089	.079	.043	.053	.029	.0865	.0665	.1395	.1595	.1545	.053	.312	.010	.066	.040	1.80
MS9013-19	.698	.683	.836	.0175	.136	.062	.097	.087	.046	.056	.029	.0865	.0665	.1395	.1595	.1545	.053	.312	.010	.066	.040	2.00
MS9013-20	.727	.712	.869	.018	.136	.052	.099	.089	.048	.063	.029	.0865	.0665	.1395	.1595	.1545	.053	.312	.010	.066	.040	2.20
MS9013-21	.756	.741	.900	.018	.136	.052	.101	.091	.048	.063	.029	.0865	.0665	.1395	.1595	.1545	.053	.375	.010	.066	.040	2.50
MS9013-22	.815	.800	.971	.021	.137	.062	.109	.095	.052	.064	.029	.0865	.0665	.1395	.1595	.1545	.053	.375	.010	.066	.040	2.80
MS9013-23	.872	.857	1.038	.021	.166	.078	.115	.105	.0577	.077	.029	.1295	.0825	.1395	.1595	.1545	.077	.375	.010	.066	.040	3.40
MS9013-24	.915	.900	1.073	.022	.180	.093	.110	.100	.055	.083	.029	.107	.087	.1395	.1595	.1545	.083	.437	.010	.066	.040	4.00
MS9013-25	.930	.915	1.104	.0225	.167	.093	.121	.111	.060	.078	.029	.105	.085	.1395	.1595	.1545	.078	.500	.010	.066	.040	4.30
MS9013-26	.951	.936	1.078	.023	.168	.093	.127	.117	.061	.079	.029	.1025	.0825	.1715	.1965	.1915	.079	.500	.010	.066	.044	4.70
MS9013-27	.992	.967	1.176	.0235	.181	.078	.128	.116	.063	.084	.040	.115	.095	.172	.212	.193	.084	.500	.012	.066	.052	5.00
MS9013-28	1.051	1.026	1.243	.025	.182	.093	.134	.122	.0688	.085	.040	.116	.086	.173	.213	.193	.085	.500	.012	.066	.052	5.50
MS9013-29	1.104	1.083	1.296	.026	.182	.093	.138	.126	.066	.085	.040	.115	.085	.173	.213	.193	.085	.500	.012	.066	.052	5.60

THIS STANDARD WAS DEVELOPED COOPERATIVELY WITH THE ENGINE AND PROPELLER UTILITY PARTS COMMITTEE OF THE SAE

APPROVED 1 Jul 54 REVISED (A) 23 Nov 55 (B) 13 Jun 60

CUSTODIAN
Navy - Nep
USAF

PROCUREMENT SPECIFICATION
NONE

MILITARY STANDARD

RING-RETAINING, EXTERNAL, STEEL

MS9013(ASG)

SHEET 1 OF 2

NOTICES. When Government drawings, specifications, or other data are used for any purpose other than in connection with a definitely related Government procurement operation, the United States Government thereby incurs no responsibility, nor any obligation whatsoever; and the fact that the Government may have formulated, furnished, or in any way supplied the said drawings, specifications, or other data is not to be regarded by implication or otherwise as in any manner licensing the holder or any other person or corporation, or conveying any rights or permission to manufacture, use, or sell any patented invention that may in any way be related thereto.

MS FORM 1 NOV 58 239

DI 88170

NOTICE: When Government drawings, specifications, or other data are used for any purpose other than in connection with a definitely related Government procurement operation, the United States Government thereby incurs no responsibility, nor any obligation whatsoever; and the fact that the Government may have formulated, furnished, or in any way supplied the said drawings, specifications, or other data is not to be regarded by implication or otherwise as in any manner licensing the holder or any other person or corporation, or conveying any rights or permission to manufacture, use, or sell any patented invention that may in any way be related thereto.

FSC 5340

MS9013(ASG)

PART NO.		FREE DIAMETER A MAX.	FREE DIAMETER A MIN.	FREE DIAMETER B MAX.	C MAX.	D ±.010	E +.010 −.002	F MAX.	F MIN.	G MAX.	G MIN.	H	J MAX.	K MAX.	K MIN.	L MAX.	L MIN.	M ±.015	J ±.015	V MAX.	SECTION X MIN.	SECTION Y MIN.	APPROX. WEIGHT LBS/1000
MS9013-30		1.166	1.141	1.376	.0275	.183	.093	.146	.134	.0825	.0705	.086	.040	.136	.086	.213	.183	.500	.064	.012	.052	.048	6.20
MS9013-31		1.224	1.199	1.372	.031	.183	.093	.107	.095	.088	.046	.086	.040	.116	.086	.213	.183	.500	.064	.012	.052	.048	4.80
MS9013-32		1.282	1.257	1.510	.0325	.186	.093	.158	.146	.088	.076	.087	.040	.116	.086	.213	.183	.500	.064	.012	.052	.048	7.90
MS9013-33		1.343	1.318	1.532	.034	.188	.093	.132	.120	.078	.062	.087	.040	.116	.086	.213	.183	.500	.064	.012	.052	.048	6.90
MS9013-34		1.397	1.372	1.649	.035	.214	.120	.174	.164	.097	.085	.083	.040	.132	.102	.244	.214	.500	.075	.012	.052	.048	9.00
MS9013-35		1.459	1.426	1.666	.0365	.235	.125	.144	.132	.081	.069	.111	.051	.140	.110	.266	.236	.500	.084	.012	.065	.059	9.70
MS9013-36		1.516	1.483	1.786	.0375	.235	.125	.186	.174	.103	.091	.111	.051	.145	.115	.272	.241	.500	.084	.012	.065	.059	13.80
MS9013-37		1.573	1.540	1.849	.038	.235	.125	.190	.178	.105	.093	.111	.051	.145	.115	.272	.241	.500	.084	.012	.065	.059	14.80
MS9013-38		1.631	1.598	1.913	.040	.237	.125	.194	.182	.1067	.0947	.112	.051	.146	.115	.272	.241	.500	.084	.012	.065	.059	15.30
MS9013-39		1.690	1.617	1.869	.041	.237	.125	.152	.140	.084	.072	.112	.051	.141	.111	.266	.236	.500	.084	.012	.065	.059	11.80
MS9013-40		1.688	1.655	1.877	.0415	.238	.125	.132	.120	.1074	.062	.113	.051	.140	.110	.266	.236	.625	.047	.012	.065	.059	10.70
MS9013-41		1.748	1.715	2.082	.0425	.239	.125	.202	.190	.110	.098	.114	.051	.140	.110	.265	.235	.625	.047	.012	.065	.059	17.30
MS9013-42		1.832	1.799	2.132	.045	.245	.125	.206	.194	.112	.100	.120	.051	.140	.110	.265	.235	.750	.125	.012	.065	.059	18.00
MS9013-43		1.863	1.830	2.169	.045	.239	.125	.210	.198	.114	.102	.114	.051	.141	.111	.266	.236	.500	.084	.012	.065	.059	19.00
MS9013-44		1.921	1.901	2.133	.0465	.266	.125	.148	.134	.084	.070	.126	.062	.160	.120	.301	.261	.625	.047	.015	.081	.075	17.00
MS9013-45		1.961	1.921	2.181	.049	.266	.125	.154	.140	.085	.071	.126	.062	.160	.120	.301	.261	.625	.047	.015	.081	.075	17.50
MS9013-46		2.008	1.968	2.326	.0495	.266	.125	.219	.205	.1202	.1062	.1255	.062	.168	.128	.309	.269	.625	.094	.015	.081	.075	26.50
MS9013-47		2.096	2.056	2.366	.0525	.267	.125	.187	.173	.102	.088	.127	.062	.160	.120	.300	.260	.500	.094	.015	.081	.075	20.00
MS9013-48		2.154	2.114	2.397	.054	.267	.125	.189	.155	.103	.089	.127	.062	.160	.120	.301	.261	.625	.047	.015	.081	.075	21.00
MS9013-49		2.212	2.172	2.518	.055	.267	.125	.231	.217	.126	.112	.127	.062	.160	.120	.301	.261	.625	.047	.015	.081	.075	29.00
MS9013-50		2.270	2.230	2.522	.056	.268	.125	.175	.161	.096	.082	.128	.062	.160	.120	.301	.261	.625	.047	.015	.081	.075	22.00
MS9013-51		2.328	2.288	2.634	.0575	.268	.125	.211	.197	.114	.100	.128	.062	.168	.128	.309	.269	.500	.094	.015	.081	.075	29.70
MS9013-52		2.397	2.347	2.706	.058	.268	.125	.213	.199	.114	.100	.128	.069	.161	.121	.302	.262	.500	.094	.015	.081	.075	31.80
MS9013-53		2.448	2.398	2.718	.060	.268	.125	.187	.173	.102	.088	.128	.069	.160	.120	.301	.261	.625	.047	.015	.081	.075	25.00
MS9013-54		2.505	2.455	2.779	.061	.268	.125	.190	.176	.103	.089	.128	.069	.160	.120	.301	.261	.625	.047	.015	.081	.075	26.00
MS9013-55		2.563	2.513	2.847	.0625	.310	.125	.196	.182	.111	.097	.160	.077	.1765	.1365	.331	.291	.625	.156	.015	.096	.090	35.00
MS9013-56		2.679	2.629	2.978	.066	.298	.125	.207	.193	.117	.103	.142	.077	.1765	.1365	.331	.291	.625	.062	.015	.096	.090	34.00
MS9013-57		2.737	2.687	3.043	.068	.298	.125	.211	.197	.115	.101	.142	.077	.1765	.1365	.331	.291	.625	.062	.015	.096	.090	39.00
MS9013-58		2.795	2.745	3.110	.070	.298	.125	.217	.203	.117	.103	.142	.077	.1765	.1365	.331	.291	.625	.156	.015	.096	.090	41.00

⑤ INACTIVE FOR DESIGN AFTER 13 JUNE 1960.
NO SUPERSEDING MS STANDARD
For definition and application of drawing status notes, see AMA Bulletin No. 337.

MATERIAL: STEEL AMS 5120

HARDNESS: ROCKWELL (See 66-73 for Rings MS9013-1 to MS9013-26 Inclusive
(C 47-52 for Rings MS9013-27 to MS9013-58

FINISH: AMS 2400

BREAK SHARP EDGES .010 MAX.

DIMENSIONS IN INCHES. UNLESS OTHERWISE SPECIFIED: TOLERANCES; ANGULAR DIMENSIONS ± 2°

WITH ALLOWANCE FOR INITIAL SET, MINIMUM DIAMETRAL EXPANSION WITHOUT PERMANENT SET SHALL BE 18% OF FREE DIAMETER A FOR RINGS MS9013-1 to MS9013-10 INCLUSIVE, AND 13% OF FREE DIAMETER A FOR RINGS MS9013-11 to MS9013-58

MINIMUM DIAMETRAL EXPANSION WITHOUT FAILURE BY CRACKING SHALL BE 21% OF FREE DIAMETER A FOR RINGS MS9013-1 to MS9013-10 INCLUSIVE, AND 15% OF FREE DIAMETER A FOR RINGS MS9013-11 to MS9013-58.

DO NOT USE UNASSIGNED PART NUMBERS

HOLES MUST NOT BREAK THRU LEG CONTOUR

APPROVED 1 Jul 54 REVISED (A) 23 NOV 55 (B) FOR CHANGES SEE SHEET NO. 1 AND 2

CUSTODIAN: Navy - Ship
PROCUREMENT SPECIFICATION MORE
MILITARY STANDARD
RING-RETAINING, INTERNAL, 1000#
SHEET 2 OF 2
MS9013(ASG)

THIS STANDARD WAS INSTALLATED COOPERATIVELY WITH THE NAVAL AIR PROPULSION TEST PARTS COMMITTEE OF THE SAE

FSC "HIP CLASS"
5340

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