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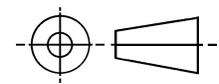
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THIRD ANGLE PROJECTION



ISSUED 2001-07

CUSTODIAN: SAE E-25

PROCUREMENT SPECIFICATION: MIL-I-45910



AEROSPACE STANDARD

RING, LOCK, SERRATED

AS51990
SHEET 1 OF 4



DETAIL S ENLARGED
 No specific angularity exists between internal and external serrations. The serrated sectors will be diametrically opposite.

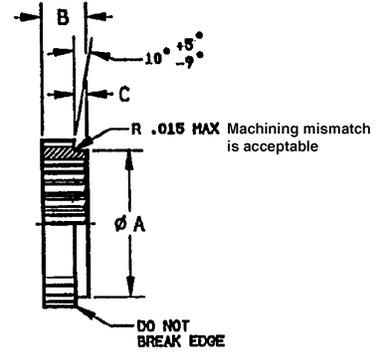
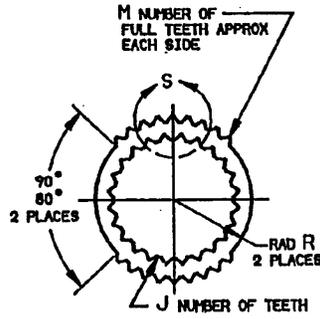


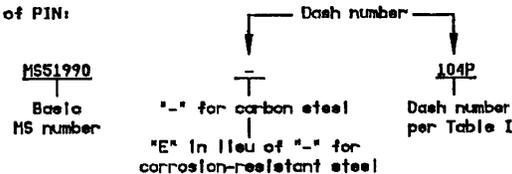
TABLE I. DIMENSIONS

DASH NUMBERS	Ø A	B	C	Ø E		Ø F		Ø H	J	K°		M	N°	R RAD REF
				+ .004 - .003		+ .005 - .004	+ .003 - .006			+1° -2°				
102P	.223	.084	.027	.161	.189	.274	.246	14	102°	8	100°	.120		
103P	.255	.099	.040	.189	.223	.308	.279	16	90°	8	100°	.135		
104P	.298	.099	.040	.213	.252	.354	.324	13	102°	6	90°	.159		
105P	.343	.112	.040	.266	.315	.399	.363	17	86°	6	90°	.180		
106P	.400	.138	.040	.323	.364	.468	.430	20	102°	7	90°	.214		
107P	.480	.145	.040	.390	.425	.545	.511	24	102°	9	90°	.252		
108P	.560	.145	.040	.468	.505	.624	.589	26	102°	10	90°	.293		
109P	.702	.161	.049	.574	.613	.767	.731	26	111°	11	100°	.362		
110P	.837	.176	.056	.695	.740	.910	.871	30	111°	12	100°	.431		
111P	.958	.176	.056	.795	.845	1.040	.994	30	111°	10	111°	.492		
112P	1.078	.176	.056	.908	.950	1.170	1.113	38	102°	11	102°	.551		
113P	1.232	.193	.070	1.035	1.093	1.326	1.274	36	111°	10	111°	.629		
114P	1.371	.193	.070	1.189	1.247	1.456	1.402	48	90°	10	102°	.692		
115P	1.509	.193	.070	1.282	1.339	1.611	1.551	42	111°	8	111°	.770		

REQUIREMENTS:

- MATERIAL:** Steel, alloy, Grade 4130 (UNS G41300) conforming to AMS 6370 or Grade 4140 (UNS G41400) conforming to AMS 6382 or Grade 8740 (UNS G87400) per AMS 6322.
 Steel, corrosion-resistant, type A286 (UNS S66286) per AMS 5731, AMS 5732, AMS 5734, or AMS 5737, heat treated and aged as applicable.
- PROTECTIVE COATING OR TREATMENT:** Steel, carbon, shall be cadmium plated conforming to QQ-P-416, Type II, Class 3.
 Steel, corrosion-resistant, shall be cleaned, descaled and passivated in accordance with QQ-P-35.
- SURFACE ROUGHNESS:** Machined surfaces to be 125 microinches Ra in accordance with ANSI/ASME B46.1, except serrations.
- HARDNESS:** Rings of alloy steel shall have a hardness of RC 36-45 in accordance with procurement specification.
 Corrosion-resistant steel rings shall have a hardness of 269 HB minimum in accordance with procurement specification.
- FILLETS:** Fillets shall be R .015 maximum.
- EDGES:** Unless otherwise specified, edges broken .003-.015 except serrations.
- TOLERANCES:** Linear dimensions ±.005, angular dimensions ±2°.
- PART IDENTIFYING NUMBER (PIN):** The PIN shall consist of the basic MS number followed by a dash number.
 Add "E" in lieu of "-" for corrosion-resistant steel.

Example of PIN:



MS51990-104P Ring, Lock, Carbon Steel, .354 External Serration Major Diameter.

MS51990E104P Ring, Lock, Corrosion-Resistant Steel, .354 External Serration Major Diameter.

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TABLE II. INTERCHANGEABILITY
(SEE NOTE 4)

DASH NUMBERS	
INACTIVE	NEW
-102	-102P
-103	-103P
-104	-104P
-105	-105P
-106	-106P
-107	-107P
-108	-108P
-109	-109P
-110	-110P
-111	-111P
-112	-112P
-113	-113P
-114	-114P
-115	-115P
C102	E102P
C103	E103P
C104	E104P
C105	E105P
C106	E106P
C107	E107P
C108	E108P
C109	E109P
C110	E110P
C111	E111P
C112	E112P
C113	E113P
C114	E114P
C115	E115P

NOTES:

1. Dimensions are in inches.
2. In the event of a conflict between the text of this standard and the references cited herein, the text of this standard shall take precedence.
3. Referenced Government (or non-Government) documents of the issue listed in that issue of the Department of Defense Index of Specifications and Standards (DODISS) specified in the solicitation form a part of this standard to the extent specified herein.
4. The dash numbers "-100" and "C100" series lockrings in the original issue of this standard were inactivated 10 Feb 69. The inactivated lockrings should be used on existing callouts until stock is depleted. Use the new "-100P" and "E100P" series lockrings for replacement of "-100" and "C100" series lockrings in accordance with table II. Use "-100P" and "E100P" series lockrings for all new designs.
5. Parts manufactured prior to the issue of Amendment 3 are acceptable until exhausted.