

REV.
E

SAE AS14103

FEDERAL SUPPLY CLASS
3120

RATIONALE

THE REASON FOR UPDATING THIS SPECIFICATION IS TO ADD THE ZINC NICKEL PLATING ONLY OPTION " E ". THE PLATING OPTION " P " WILL REMAIN AS ZINC NICKEL OR CADMIUM PLATING.

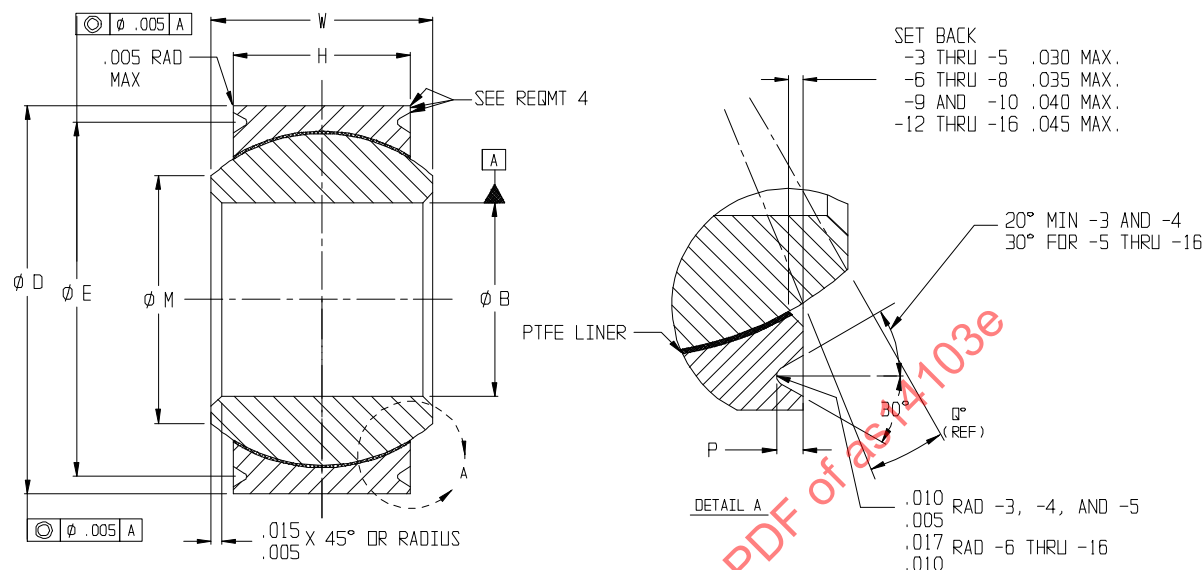


FIGURE 1 - PART CONFIGURATION

TABLE 1 - DIMENSIONS AND STRENGTHS

PART NO.***	φB +.0000 -.0005	φD** +.0000 -.0005	H** ±.005	φM MIN	P +.000 -.010	Q° (REF)	W +.000 -.002	φE +.000 -.008	STATIC LIMIT LOAD		OSCILLATING LOAD LB	NO-LOAD ROTATIONAL BREAKAWAY TORQUE IN-LB		WT LB MAX (REF)
									RADIAL LB	AXIAL LB		STANDARD	"K" TYPE	
MS14103- 3	.1900	.6250	.327	.300	.025	15	.437	.563	2500	1770	4900	0.25- 5.0	0-0.5	.031
MS14103- 4	.2500	.6250	.327	.300	.025	15	.437	.563	5500	1770	4900	0.25- 5.0	0-0.5	.031
MS14103- 5	.3125	.6875	.317	.360	.025	14	.437	.625	9400	1640	6050	0.25- 8.0	0-1.0	.035
MS14103- 6	.3750	.8125	.406	.466	.035	8	.500	.712	13 700	2630	8310	0.25- 8.0	0-1.0	.060
MS14103- 7	.4375	.9375	.442	.537	.035	10	.562	.837	20 700	3650	11 750	0.25- 8.0	0-1.0	.080
MS14103- 7A	.4375	.9062	.442	.537	.035	10	.562	.806	19 700	3650	11 750	0.25- 8.0	0-1.0	.080
MS14103- 8	.5000	1.0000	.505	.607	.035	9	.625	.900	21 400	4970	14 950	0.25- 8.0	0-1.0	.100
MS14103- 9	.5625	1.1250	.536	.721	.035	10	.687	1.025	26 600	5370	18 100	0.25- 8.0	0-1.0	.135
MS14103-10	.6250	1.1875	.567	.747	.035	12	.750	1.087	29 000	6130	20 250	0.25- 8.0	0-1.0	.160
MS14103-12	.7500	1.3750	.630	.845	.055	13	.875	1.251	37 000	7730	26 200	0.25- 8.0	0-1.0	.240
MS14103-14	.8750	1.6250	.755	.995	.055	6	.875	1.501	65 200	10 800	33 600	0.25-12.0	0-2.0	.350
MS14103-16	1.0000	2.1250	1.005	1.269	.055	12	1.375	2.001	104 000	19 300	56 250	0.25-12.0	0-2.0	.970

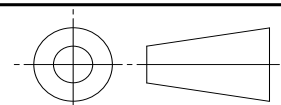
* SEE REQUIREMENT 5 "NO-LOAD TORQUE" AND NOTE 8.

** SEE NOTE 7.

*** FOR TYPE A BEARINGS, THE CORRESPONDING PART NUMBER WILL HAVE AN "A" DESIGNATION AFTER THE MS PART NUMBER (E.G., MS14103A-3).

SAE values your input. To provide feedback on this Technical Report, please visit <http://www.sae.org/technical/standards/AS14103E>

THIRD ANGLE PROJECTION



CUSTODIAN: AIRFRAME CONTROL BEARINGS GROUP

PROCUREMENT SPECIFICATION: AS81820

SAE Aerospace
An SAE International Group

AEROSPACE STANDARD

BEARING, PLAIN, SELF-LUBRICATING,
SELF-ALIGNING, LOW SPEED, WIDE,
GROOVED RACE, -65 TO +325 °F

SAE AS14103
SHEET 1 OF 3

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TABLE 2 - OVERSIZE BEARING DIMENSIONS 1/ 2/
RESTRICTED USAGE FOR REPAIR WORK ONLY
.010 INCH AND .020 INCH OVERSIZE OUTSIDE DIAMETER FOR
REPLACEMENT OF BEARINGS SHOWN ON SHEET 1

PART NO. 3/	NOMINAL SIZE	1 ST OVERSIZE (.010) ϕ D	PART NO. 3/	NOMINAL SIZE	2 ND OVERSIZE (.020) ϕ D
MS14103- 3T	.1875	.6350	MS14103- 3U	.1875	.6450
MS14103- 4T	.2500	.6350	MS14103- 4U	.2500	.6450
MS14103- 5T	.3125	.6975	MS14103- 5U	.3125	.7075
MS14103- 6T	.3750	.8225	MS14103- 6U	.3750	.8325
MS14103- 7T	.4375	.9475	MS14103- 7U	.4375	.9575
MS14103- 7AT	.4375	.9162	MS14103- 7AU	.4375	.9262
MS14103- 8T	.5000	1.0100	MS14103- 8U	.5000	1.0200
MS14103- 9T	.5625	1.1350	MS14103- 9U	.5625	1.1450
MS14103-10T	.6250	1.1975	MS14103-10U	.6250	1.2075
MS14103-12T	.7500	1.3850	MS14103-12U	.7500	1.3950
MS14103-14T	.8750	1.6350	MS14103-14U	.8750	1.6450
MS14103-16T	1.0000	2.1350	MS14103-16U	1.0000	2.1450

- 1/ BEFORE INITIATING A REPAIR PROCEDURE TO USE AN OVERSIZE BEARING, APPROVAL FOR MODIFYING AND REIDENTIFYING THE BEARING HOUSING MUST BE OBTAINED FROM THE COGNIZANT ENGINEERING AUTHORITY.
2/ REFER TO NAS0331 FOR INSTALLATION PROCEDURE AND STAKING FORCES.
3/ FOR TYPE A BEARINGS, THE CORRESPONDING PART NUMBER WILL HAVE AN "A" DESIGNATION AFTER THE MS PART NUMBER (E.G., MS14103A-3).

REQUIREMENTS:

- MATERIAL: BALL, 440C (AMS5630, AMS5880, OR AMS5618) OR PH13-8Mo AMS5629 H1000 (SEE NOTE 8 FOR P/N EXAMPLE AND DESIGNATION..
RACE, 17-4PH (AMS5643).
LINER, PTFE SHALL BE INCLUDED IN THE LINER.
- SURFACE TEXTURE: BALL DIA Ra 8 MAX; BALL FACES, BALL BORE AND RACE DIA Ra 32 MAX; ALL OTHER METALLIC SURFACES Ra 125 MAX. LINER SURFACES ARE EXEMPT FROM SURFACE TEXTURE MEASUREMENTS.
- HARDNESS: BALL, 440C HRC 55-62 OR PH13-8Mo HRC 43 MIN; RACE HRC 28 MIN/HRC 37 MAX BEFORE SWAGING.
- SURFACE FINISH:

RACE: PLATING, WHEN SPECIFIED, SHALL BE ZINC-NICKEL PLATING PER AMS2417, TYPE 2, OR CADMIUM PLATING PER AMS-QQ-P-416, TYPE II, CLASS 2, WITH A THICKNESS RANGE OF 0.0003 TO 0.0006 INCHES. PLATE ON THE OUTSIDE DIAMETER SURFACE AND ON THE FLAT BETWEEN THE OUTSIDE DIAMETER AND THE GROOVE. PLATING RUNOUT MAY OCCUR EITHER IN THE GROOVE OR IN THE AREA BETWEEN THE GROOVE AND THE BALL. SEE NOTE 8 FOR P/N EXAMPLE AND DESIGNATION.

BALL: PH13-8Mo, PASSIVATE PER AMS2700 OR ASTM A 967; 440C, PASSIVATE PER AMS2700 OR ASTM A 967, OPTIONAL. CHROME PLATING PER AMS2460 IS ALLOWED. BALL SHALL BE CHROME PLATED IF QUALIFIED WITH IT.

- NO-LOAD TORQUE: WHEN THE LETTER "K" IS PRESENT IN THE PART NUMBER, LOWER VALUES OF NO-LOAD TORQUE ARE SPECIFIED PER TABLE 1. IF THE MEASURED TORQUE OF A "K" TYPE BEARING IS LESS THAN 0.1 INCH-POUND, THE INTERNAL RADIAL PLAY SHALL BE MEASURED AND SHALL NOT EXCEED THE FOLLOWING:

DASH NO.	MAXIMUM RADIAL PLAY	MAXIMUM AXIAL PLAY
-3K THRU -12K	0.0007 INCH	0.0021 INCH
-14K THRU -16K	0.0010 INCH	0.0030 INCH

THE INTERNAL AXIAL PLAY SHALL BE MEASURED FOR ALL "K" TYPE BEARINGS.

 An SAE International Group	AEROSPACE STANDARD	SAE AS14103 SHEET 2 OF 3	REV. E
	BEARING, PLAIN, SELF-LUBRICATING, SELF-ALIGNING, LOW SPEED, WIDE, GROOVED RACE, -65 TO +325 °F		