

REV.
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SAE AS14104

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.

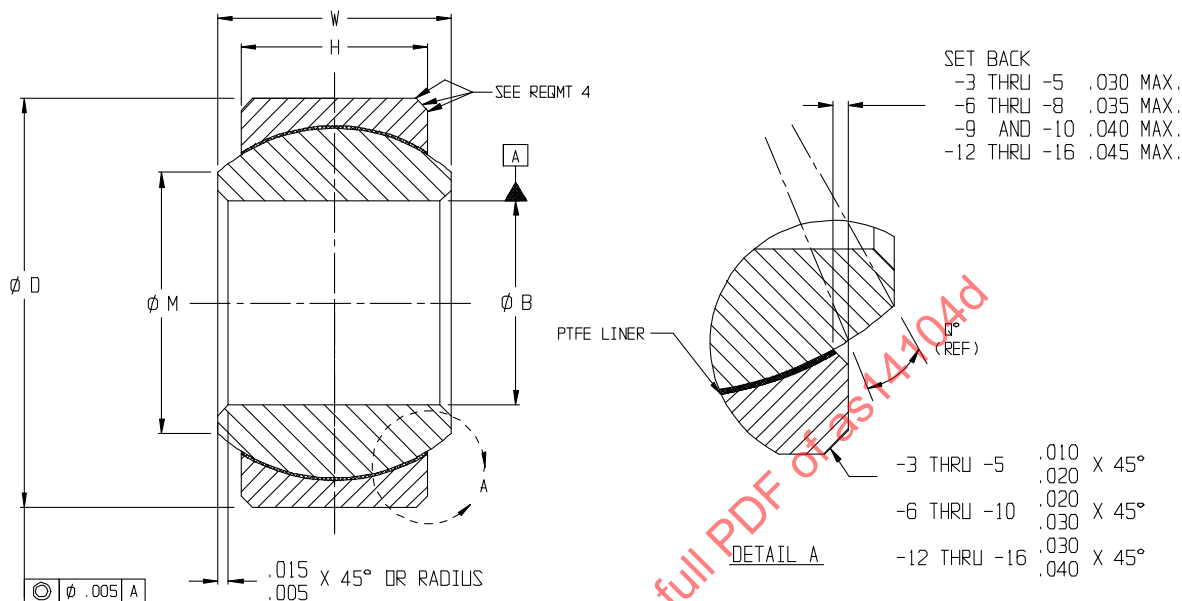


FIGURE 1 - PART CONFIGURATION

TABLE 1 - DIMENSIONS AND STRENGTHS

PART NO.***	ØB +.0000 -.0005	ØD** +.0000 -.0005	H** ±.005	ØM MIN	Q° (REF)	W +.000 -.002	STATIC LIMIT LOAD		OSCILLATING LOAD LB	NO-LOAD ROTATIONAL BREAKAWAY TORQUE IN-LB		WT LB MAX (REF)
							RADIAL LB	AXIAL LB		STANDARD	"K" TYPE	
MS14104- 3	.1900	.5625	.218	.293	10	.281	3975	150	1500	0.25- 5.0	0-0.5	.020
MS14104- 4	.2500	.6562	.250	.364	10	.343	6040	430	3320	0.25- 5.0	0-0.5	.020
MS14104- 5	.3125	.7500	.281	.419	10	.375	8750	700	5460	0.25- 8.0	0-1.0	.030
MS14104- 6	.3750	.8125	.312	.475	9	.406	10 540	1100	6600	0.25- 8.0	0-1.0	.040
MS14104- 7	.4375	.9062	.343	.530	8	.437	13 200	1400	8050	0.25- 8.0	0-1.0	.050
MS14104- 8	.5000	1.0000	.390	.600	8	.500	17 900	2100	10 400	0.25- 8.0	0-1.0	.070
MS14104- 9	.5625	1.0937	.437	.670	8	.562	23 200	3680	13 000	0.25- 8.0	0-1.0	.090
MS14104-10	.6250	1.1875	.500	.739	8	.625	30 500	4720	16 450	0.25- 8.0	0-1.0	.120
MS14104-12	.7500	1.4375	.593	.920	8	.750	46 400	6750	23 600	0.25- 8.0	0-1.0	.210
MS14104-14	.8750	1.5625	.703	.980	8	.875	62 200	9350	30 250	0.25-12.0	0-2.0	.270
MS14104-16	1.0000	1.7500	.797	1.118	9	1.000	82 200	12 160	38 000	0.25-12.0	0-2.0	.390

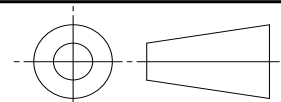
* SEE REQUIREMENT 5 "NO-LOAD TORQUE" AND NOTE 8.

** SEE NOTE 7

*** FOR TYPE A BEARINGS, THE CORRESPONDING PART NUMBER WILL HAVE AN "A" DESIGNATION AFTER THE MS PART NUMBER (E.G., MS14104A-3).

SAE values your input. To provide feedback on this Technical Report, please visit <http://www.sae.org/technical/standards/AS14104D>

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, NARROW,
CHAMFERED RACE, -65 TO +325 °F

SAE AS14104
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
MS14104- 3T	.1875	.5725	MS14104- 3U	.1875	.5825
MS14104- 4T	.2500	.6662	MS14104- 4U	.2500	.6762
MS14104- 5T	.3125	.7600	MS14104- 5U	.3125	.7700
MS14104- 6T	.3750	.8225	MS14104- 6U	.3750	.8325
MS14104- 7T	.4375	.9162	MS14104- 7U	.4375	.9262
MS14104- 8T	.5000	1.0100	MS14104- 8U	.5000	1.0200
MS14104- 9T	.5625	1.1037	MS14104- 9U	.5625	1.1137
MS14104-10T	.6250	1.1975	MS14104-10U	.6250	1.2075
MS14104-12T	.7500	1.4475	MS14104-12U	.7500	1.4575
MS14104-14T	.8750	1.5725	MS14104-14U	.8750	1.5825
MS14104-16T	1.0000	1.7600	MS14104-16U	1.0000	1.7700

- 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., MS14104A-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 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 CHAMFER. PLATING RUNOUT SHALL OCCUR IN THE SIDE FACE AREA BETWEEN THE CHAMFER 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	0.0028 INCH
-14K THRU -16K	0.0010 INCH	0.0040 INCH

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

 An SAE International Group	AEROSPACE STANDARD	SAE AS14104 SHEET 2 OF 3	REV. D
	BEARING, PLAIN, SELF-LUBRICATING, SELF-ALIGNING, LOW SPEED, NARROW, CHAMFERED RACE, -65 TO +325 °F		