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.

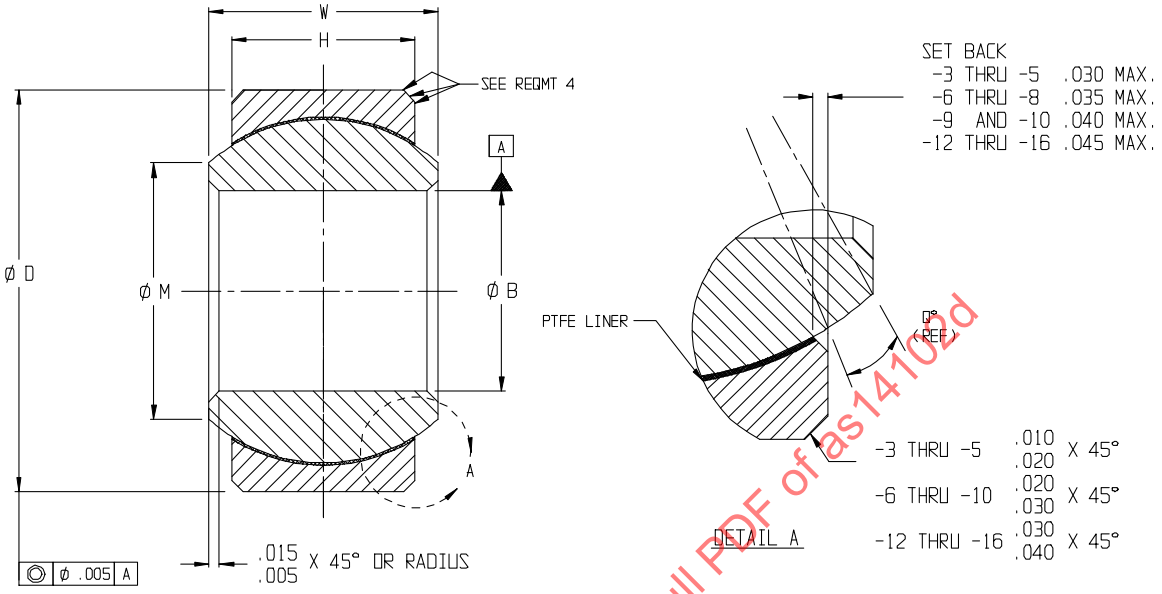


FIGURE 1 – PART CONFIGURATION

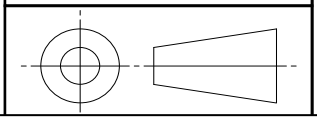
TABLE 1 - DIMENSIONS AND STRENGTHS

PART NO.***	ϕB +.0000 −.0005	ϕD** +.0000 −.0005	H** ±.005	ϕM MIN	Q° (REF)	W +.000 −.002	STATIC LIMIT LOAD RADIAL LB	STATIC LIMIT LOAD AXIAL LB	OSCILLATING LOAD LB	NO-LOAD ROTATIONAL BREAKAWAY TORQUE IN-LB STANDARD	NO-LOAD ROTATIONAL BREAKAWAY TORQUE IN-LB * "K" TYPE	WT LB MAX (REF)
MS14102- 3	.1900	.6250	.327	.300	15	.437	2500	1770	4900	0.25- 5.0	0-0.5	.031
MS14102- 4	.2500	.6250	.327	.300	15	.437	5500	1770	4900	0.25- 5.0	0-0.5	.031
MS14102- 5	.3125	.6875	.311	.360	14	.437	9400	1640	6050	0.25- 8.0	0-1.0	.035
MS14102- 6	.3750	.8125	.406	.466	8	.500	13 700	2630	8310	0.25- 8.0	0-1.0	.060
MS14102- 7	.4375	.9375	.442	.537	10	.562	20 700	3650	11 750	0.25- 8.0	0-1.0	.080
MS14102- 8	.5000	1.0000	.505	.607	9	.625	21 400	4970	14 950	0.25- 8.0	0-1.0	.100
MS14102- 9	.5625	1.1250	.536	.721	10	.687	26 600	5370	18 100	0.25- 8.0	0-1.0	.135
MS14102-10	.6250	1.1875	.567	.747	12	.750	29 000	6130	20 250	0.25- 8.0	0-1.0	.160
MS14102-12	.750	1.3750	.630	.845	13	.875	37 000	7730	26 200	0.25- 8.0	0-1.0	.240
MS14102-14	.8750	1.6250	.755	.995	6	.875	65 200	10 800	33 600	0.25-12.0	0-2.0	.350
MS14102-16	1.0000	2.1250	1.005	1.269	12	1.375	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., MS14102A-3)

SAE values your input. To provide feedback on this Technical Report, please visit
http://www.sae.org/technical/standards/AS14102D

THIRD ANGLE PROJECTION



ISSUED 1997-08 REVISED 2010-06

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, CHAMFERED RACE, -65 TO +325 °F

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	1ST OVERSIZE (.010) ϕD
MS14102- 3T	.1875	.6350
MS14102- 4T	.2500	.6350
MS14102- 5T	.3125	.6975
MS14102- 6T	.3750	.8225
MS14102- 7T	.4375	.9475
MS14102- 8T	.5000	1.0100
MS14102- 9T	.5625	1.1350
MS14102-10T	.6250	1.1975
MS14102-12T	.7500	1.3850
MS14102-14T	.8750	1.6350
MS14102-16T	1.0000	2.1350

PART NO. 3/	NOMINAL SIZE	2ND OVERSIZE (.020) ϕD
MS14102- 3U	.1875	.6450
MS14102- 4U	.2500	.6450
MS14102- 5U	.3125	.7075
MS14102- 6U	.3750	.8325
MS14102- 7U	.4375	.9575
MS14102- 8U	.5000	1.0200
MS14102- 9U	.5625	1.1450
MS14102-10U	.6250	1.2075
MS14102-12U	.7500	1.3950
MS14102-14U	.8750	1.6450
MS14102-16U	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., MS14102A-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.

2. 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.

3. HARDNESS: BALL, 440C HRC 55-62 OR PH13-8Mo HRC 43 MIN; RACE HRC 28 MIN/HRC 37 MAX BEFORE SWAGING.

4. 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 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.

5. 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.