FEDERAL SUPPLY CLASS
3120

RATIONALE

THE REASON FOR UPDATING THIS DOCUMENT IS TO INCORPORATE AN "A" PART NUMBER DESIGNATION FOR A NEW LINER SYSTEM THAT HAS THE SAME WEAR LIMIT BUT 4 TIMES THE LIFE OF THE STANDARD LINER SYSTEM.

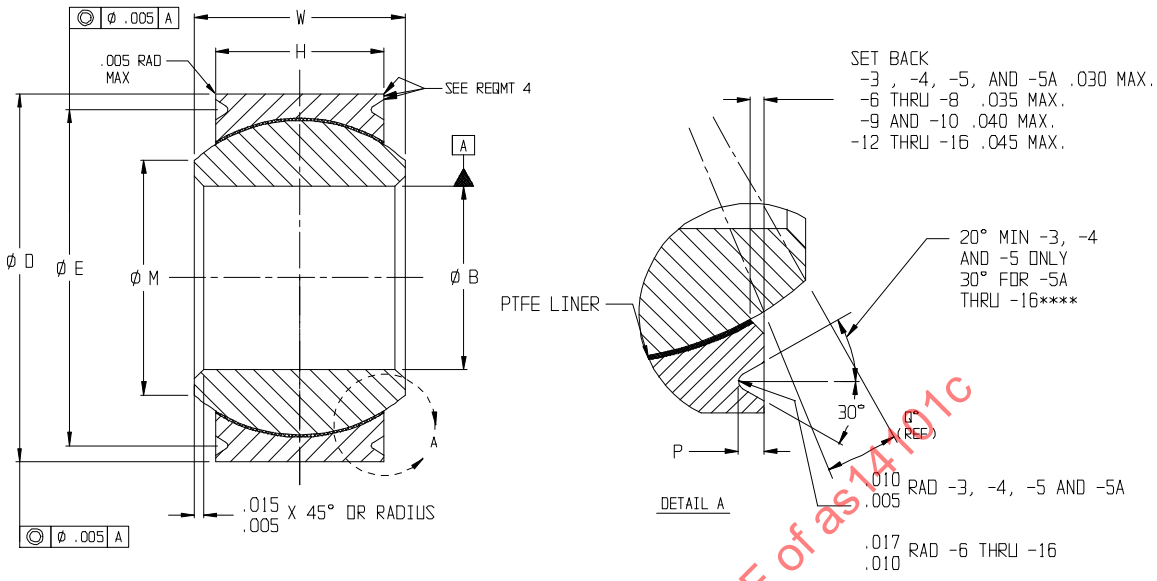


FIGURE 1

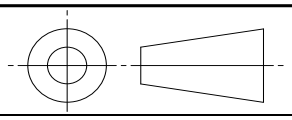
TABLE 1 - DIMENSIONS AND STRENGTHS

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 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)
MS14101- 3	.1900	.5625	.218	.293	.025	10	.281	.500	3975	150	1500	0.25- 5.0	0-0.5	.020
MS14101- 4	.2500	.6562	.250	.364	.025	10	.343	.594	6040	430	3320	0.25- 5.0	0-0.5	.020
MS14101- 5	.3125	.7500	.281	.419	.035	10	.375	.650	8750	700	5460	0.25- 8.0	0-1.0	.030
MS14101-5A	.3125	.7500	.281	.419	.035	10	.375	.660	8750	700	5460	0.25- 8.0	0-1.0	.030
MS14101- 6	.3750	.8125	.312	.475	.035	9	.406	.712	10 540	1100	6600	0.25- 8.0	0-1.0	.040
MS14101- 7	.4375	.9062	.343	.530	.035	8	.437	.806	13 200	1400	8050	0.25- 8.0	0-1.0	.050
MS14101- 8	.5000	1.0000	.390	.600	.055	8	.500	.876	17 900	2100	10 400	0.25- 8.0	0-1.0	.070
MS14101- 9	.5625	1.0937	.437	.670	.055	8	.562	.970	23 200	3680	13 000	0.25- 8.0	0-1.0	.090
MS14101-10	.6250	1.1875	.500	.739	.055	8	.625	1.063	30 500	4720	16 450	0.25- 8.0	0-1.0	.120
MS14101-12	.7500	1.4375	.593	.920	.055	8	.750	1.313	46 400	6750	23 600	0.25- 8.0	0-1.0	.210
MS14101-14	.8750	1.5625	.703	.980	.055	8	.875	1.438	62 200	9350	30 250	0.25-12.0	0-2.0	.270
MS14101-16	1.0000	1.7500	.797	1.118	.055	9	1.000	1.626	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 P/N WILL HAVE AN "A" DESIGNATION AFTER THE MS P/N (E.G., MS14101A-3).
****V-GROOVE INNER ANGLE FOR MS14101-5A WAS REVISED FROM 20 DEGREES MIN TO 30 DEGREES MIN TO IMPROVE SWAGE TOOL ACCESS ON REV C. MS14101-5A PARTS MANUFACTURED PRIOR TO REV C MAY BE USED UNTIL EXISTING STOCK IS DEPLETED.

MS14101-5 INACTIVE FOR NEW DESIGN

THIRD ANGLE PROJECTION



ISSUED 1998-07 REVISED 2008-03

CUSTODIAN: SAE AIRFRAME CONTROL BEARINGS GROUP

PROCUREMENT SPECIFICATION: AS81820

SAE Aerospace
An SAE International Group

AEROSPACE STANDARD

(R) BEARING, PLAIN, SELF-LUBRICATING, SELF-ALIGNING, LOW SPEED, NARROW, GROOVED RACE, -65 TO +325 °F

SAE AS14101C
SHEET 1 OF 4

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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	1ST OVERSIZE (.010) ϕD
MS14101- 3T	.1875	.5725
MS14101- 4T	.2500	.6662
MS14101- 5AT	.3125	.7600
MS14101- 6T	.3750	.8225
MS14101- 7T	.4375	.9162
MS14101- 8T	.5000	1.0100
MS14101- 9T	.5625	1.1037
MS14101-10T	.6250	1.1975
MS14101-12T	.7500	1.4475
MS14101-14T	.8750	1.5725
MS14101-16T	1.0000	1.7600

PART NO. 3/	NOMINAL SIZE	2ND OVERSIZE (.020) ϕD
MS14101- 3U	.1875	.5825
MS14101- 4U	.2500	.6762
MS14101- 5AU	.3125	.7700
MS14101- 6U	.3750	.8325
MS14101- 7U	.4375	.9262
MS14101- 8U	.5000	1.0200
MS14101- 9U	.5625	1.1137
MS14101-10U	.6250	1.2075
MS14101-12U	.7500	1.4575
MS14101-14U	.8750	1.5825
MS14101-16U	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., MS14101A-3).

REQUIREMENTS:

1. MATERIAL: BALL, 440C (AMS5630, AMS5880, OR AMS5618) OR PH13-8Mo AMS5629 H1000 (SEE NOTE 8a).
   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 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.

   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	0.0028 INCH
-14K THRU -16K	0.0010 INCH	0.0040 INCH

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

NOTES:

NOTICE

THIS DOCUMENT REFERENCES A PART WHICH CONTAINS CADMIUM AS A PLATING MATERIAL. CONSULT LOCAL OFFICIALS IF YOU HAVE QUESTIONS CONCERNING CADMIUM'S USE.

1. DIMENSIONS ARE IN INCHES. UNLESS OTHERWISE SPECIFIED, TOLERANCES ARE; DECIMALS ±.010 AND ANGLES ±0.5°.

2. BREAK SHARP EDGES AND CORNERS AND REMOVE ALL BURRS AND SLIVERS.

3. THE -3 SIZE BEARING IS EXEMPT FROM THE "RADIAL STATIC LIMIT LOAD" TEST BECAUSE THE LOAD CAPACITY OF THE BEARING IS PIN CRITICAL.

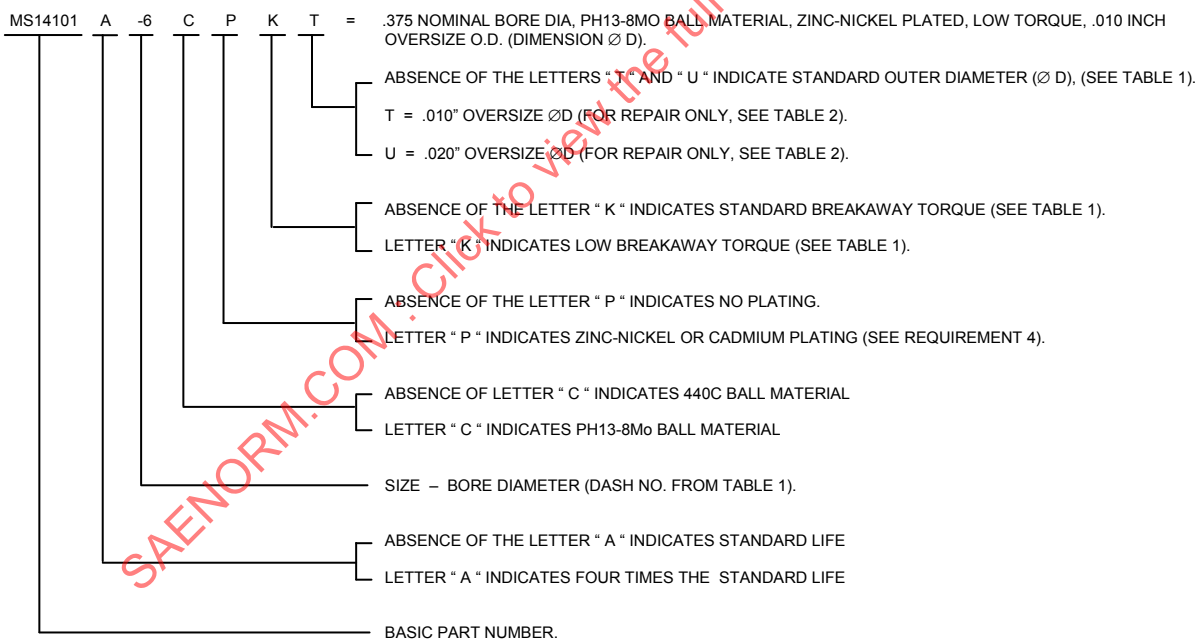
4. WHEN TESTED TO THE FLUID CONTAMINATION AND SUB-ZERO TEMPERATURE REQUIREMENTS OF THE PROCUREMENT SPECIFICATION, THE OSCILLATING LOAD SHALL BE DECREASED TO 75% OF THE SPECIFIED LOAD.

5. WHEN FLUIDS AND ELEVATED TEMPERATURES (ABOVE 200 °F) ARE BOTH PRESENT IN AN APPLICATION, THEN REDUCTIONS IN OPERATING LOADS OR BEARING LIFE MAY BE REQUIRED.

6. DASH NUMBER DESIGNATES NOMINAL BORE DIA IN SIXTEENTHS OF AN INCH.

7. DIMENSION “øD” TO BE MET AFTER PLATING. DIMENSION "H" TO BE MET BEFORE PLATING WHEN APPLICABLE.

8. EXAMPLE OF PART NO.



8a. BALL MATERIAL SHALL BE 440C (AMS5630, AMS5880, OR AMS5618) UNLESS "C" CALLOUT IS PRESENT IN PART NUMBER. "C" INDICATES PH13-8Mo (AMS5629) H1000.

9. 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.