

REV.
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AS81820/4

FEDERAL SUPPLY CLASS
3120

RATIONALE

THE REASON FOR UPDATING THIS SPECIFICATION IS TO ADD A 440C BALL MATERIAL OPTION AND REMOVE CHROME PLATING AS AN OPTION.

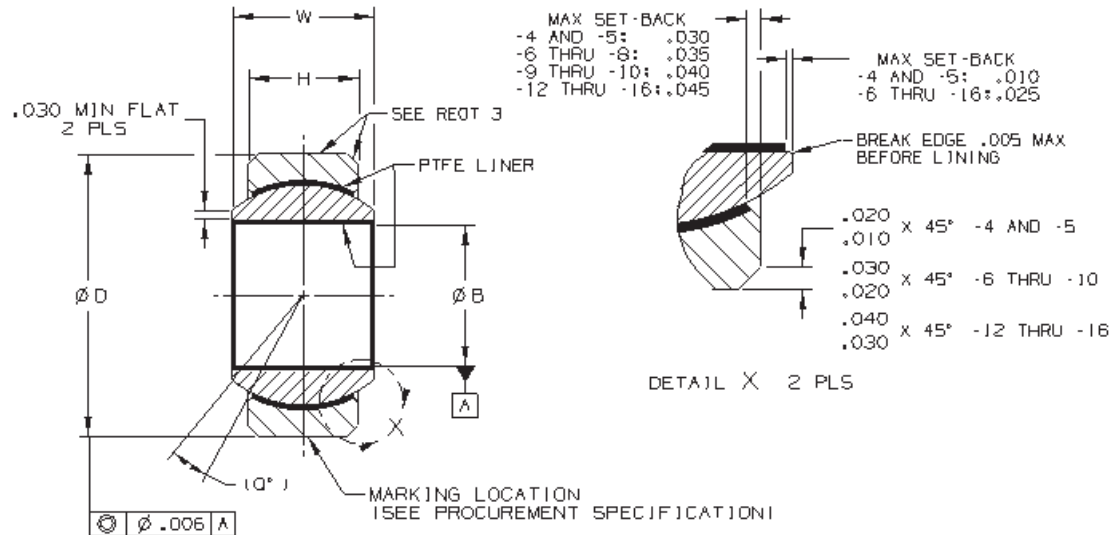


FIGURE 1 - PART CONFIGURATION

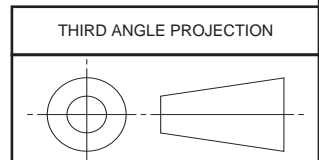
TABLE 1 - DIMENSIONS AND STRENGTHS

PART NO.**	φB +.0000 -.0010	φD +.0000 -.0005	H ±.005	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	
M81820/4- 4	.2510	.6562	.250	10	.343	5550	430	2650	1.0- 5.0	0-0.5	.020
M81820/4- 5	.3135	.7500	.281	10	.375	7700	700	3700	1.0-15.0	0-1.0	.030
M81820/4- 6	.3760	.8125	.312	9	.406	10 200	1100	4900	1.0-15.0	0-1.0	.040
M81820/4- 7	.4385	.9062	.343	8	.437	12 950	1400	6700	1.0-15.0	0-1.0	.050
M81820/4- 8	.5010	1.0000	.390	8	.500	17 250	2100	8250	1.0-15.0	0-1.0	.070
M81820/4- 9	.5635	1.0937	.437	8	.562	22 150	3680	10 600	1.0-15.0	0-1.0	.090
M81820/4-10	.6260	1.1875	.500	8	.625	27 700	4720	13 250	1.0-15.0	0-1.0	.120
M81820/4-12	.7510	1.4375	.593	8	.750	40 600	6750	19 400	1.0-15.0	0-1.0	.210
M81820/4-14	.8760	1.5625	.703	8	.875	55 950	9350	26 750	1.0-25.0	0-2.0	.270
M81820/4-16	1.0010	1.7500	.797	9	1.000	73 800	12 160	35 250	1.0-25.0	0-2.0	.390

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

** FOR TYPE A BEARINGS, THE CORRESPONDING PART NUMBER WILL HAVE AN "A" DESIGNATION AFTER THE PART NUMBER (E.G., M81820/4A-5).

SAE values your input. To provide feedback on this Technical Report, please visit <http://www.sae.org/technical/standards/AS81820/4D>



CUSTODIAN: ACBG

PROCUREMENT SPECIFICATION: AS81820



AEROSPACE STANDARD
BEARING, PLAIN, SELF-ALIGNING, SELF-LUBRICATING, LINED BORE, LOW SPEED, NARROW, CHAMFERED RACE, -65 TO +325 °F

AS81820/4
SHEET 1 OF 4

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ISSUED 1998-04 REVISED 2014-07

**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) φD	PART NO. 3/	NOMINAL SIZE	2 ND OVERSIZE (.020) φD
M81820/4- 4T	.2500	.6662	M81820/4- 4U	.2500	.6762
M81820/4- 5T	.3125	.7600	M81820/4- 5U	.3125	.7700
M81820/4- 6T	.3750	.8225	M81820/4- 6U	.3750	.8325
M81820/4- 7T	.4375	.9162	M81820/4- 7U	.4375	.9262
M81820/4- 8T	.5000	1.0100	M81820/4- 8U	.5000	1.0200
M81820/4- 9T	.5625	1.1037	M81820/4- 9U	.5625	1.1137
M81820/4-10T	.6250	1.1975	M81820/4-10U	.6250	1.2075
M81820/4-12T	.7500	1.4475	M81820/4-12U	.7500	1.4575
M81820/4-14T	.8750	1.5725	M81820/4-14U	.8750	1.5825
M81820/4-16T	1.0000	1.7600	M81820/4-16U	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 PART NUMBER (E.G., M81820/4A-5).

REQUIREMENTS:

1. MATERIAL:

BALL: 440C (AMS5630, AMS5880, OR AMS5618) OR PH13-8 CRES PER AMS5629 (SEE NOTE 5 FOR P/N EXAMPLE AND DESIGNATION).

RACE: 17-4PH CRES PER AMS5643.

LINER: PTFE SHALL BE INCLUDED IN THE LINER.

2. SURFACE TEXTURE: BALL DIA Ra 8 MAX; BALL FACES AND RACE DIA Ra 32 MAX; ALL OTHER METALLIC SURFACES Ra 125 MAX. LINER SURFACES ARE EXEMPT FROM SURFACE TEXTURE MEASUREMENTS.


3. SURFACE FINISH:

RACE: PLATING, WHEN SPECIFIED, SHALL BE ZINC-NICKEL PLATING PER AMS2417, TYPE 2 GRADE A OR B (ONLY GRADE B SHALL BE PERMITTED ON BEARINGS MANUFACTURED AFTER JUNE 1, 2015) OR CADMIUM PLATING PER AMS-QQ-P-416, TYPE II, CLASS 2 WITH A THICKNESS RANGE OF .0003 TO .0006 INCHES. PLATING SHALL BE ON THE OUTSIDE DIAMETER SURFACE AND ON THE FLAT BETWEEN THE OUTSIDE DIAMETER AND THE GROOVE. THE PLATING RUNOUT SHALL OCCUR EITHER IN THE GROOVE OR IN THE SIDE FACE AREA BETWEEN THE GROOVE AND THE BALL. SEE NOTE 5 FOR P/N EXAMPLE AND DESIGNATION.

THE PTFE LINER IN THE OUTER RACE INSIDE DIAMETER AND IN THE BALL BORE SHALL BE PROTECTED FROM EXPOSURE TO PLATING SOLUTIONS DURING PROCESSING.

BALL: PASSIVATE BALL AS DETAIL PER AMS2700, METHOD 1 (NITRIC ACID) OR METHOD 2 (CITRIC ACID), OR ASTM A967. CITRIC 1, CITRIC 2, AND CITRIC 3 ARE ACCEPTABLE. BALL SURFACE FINISH SHALL BE AS ORIGINALLY QUALIFIED.

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

	AEROSPACE STANDARD	AS81820/4 SHEET 2 OF 4	REV. D
	BEARING, PLAIN, SELF-ALIGNING, SELF-LUBRICATING, LINED BORE, LOW SPEED, NARROW, CHAMFERED RACE, -65 TO +325 °F		