

REV.
A

AS81820/4

FEDERAL SUPPLY CLASS
3120

THE REQUIREMENTS FOR ACQUIRING THE PRODUCT(S) DESCRIBED HEREIN SHALL CONSIST OF THIS AEROSPACE STANDARD SHEET AND THE ISSUE OF THE FOLLOWING STANDARD LISTED IN THE DODISS SPECIFIED IN THE SOLICITATION: SAE AS81820.

NOTICE

THIS DOCUMENT INCLUDES CADMIUM AS A PLATING MATERIAL. THE USE OF CADMIUM HAS BEEN RESTRICTED AND/OR BANNED FOR USE IN MANY COUNTRIES DUE TO ENVIRONMENTAL AND HEALTH CONCERNS. THE USER SHOULD CONSULT WITH LOCAL OFFICIALS ON APPLICABLE HEALTH AND ENVIRONMENTAL REGULATIONS REGARDING ITS USE.

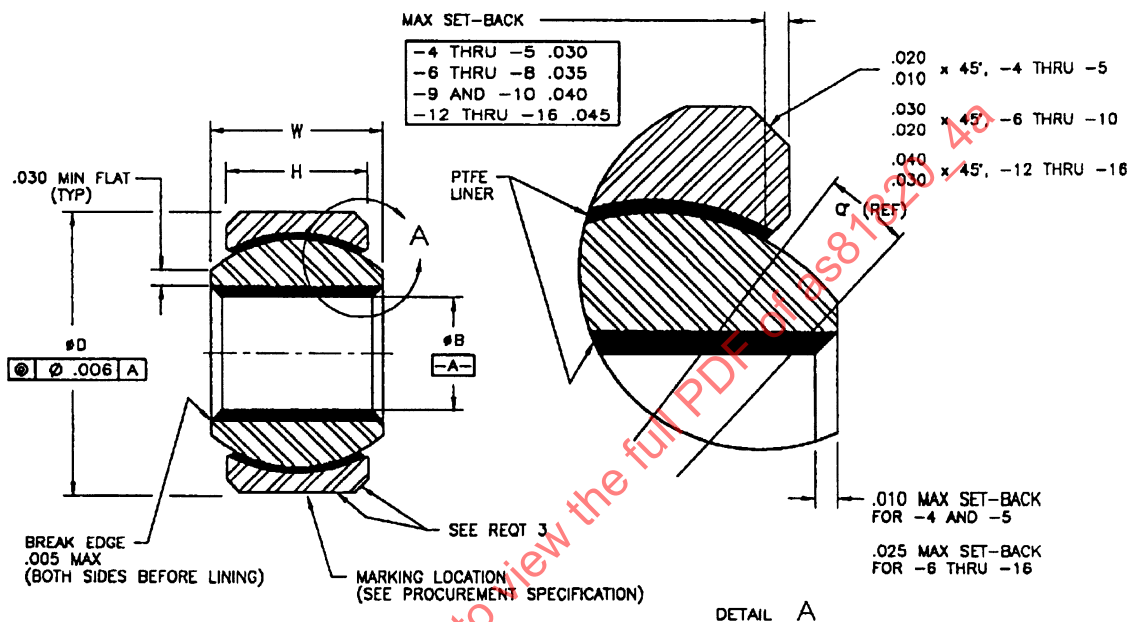
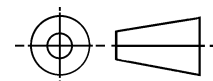


TABLE 1- DIMENSIONS AND STRENGTHS

PART NO.	ØB +.0000 -.0010	ØD +.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	10200	1100	4900			.040
M81820/4 -7	.4385	.9062	.343	8	.437	12950	1400	6700			.050
M81820/4 -8	.5010	1.0000	.390	8	.500	17250	2100	8250			.070
M81820/4 -9	.5635	1.0937	.437	8	.562	22150	3680	10600			.090
M81820/4 -10	.6260	1.1875	.500	8	.625	27700	4720	13250			.120
M81820/4 -12	.7510	1.4375	.593	8	.750	40600	6750	19400	1.0-25.0	0-2.0	.210
M81820/4 -14	.8760	1.5625	.703	8	.875	55950	9350	26750			.270
M81820/4 -16	1.0010	1.7500	.797	9	1.000	73800	12160	35250			.390

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

THIRD ANGLE PROJECTION



PREPARED BY AIRFRAME CONTROL BEARINGS GROUP

SAE Aerospace
An SAE International Group

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

AS81820/4
SHEET 1 OF 3

**REV.
A**

REV.
A

AS81820/4

TABLE 2 - OVERSIZE BEARING DIMENSIONS 1/ 2/

RESTRICTED USAGE FOR REPAIR WORK ONLY

.010 AND .020 OVERSIZE OUTSIDE DIAMETER FOR
REPLACEMENT OF BEARINGS SHOWN ON SHEET 1

PART NO.	NOMINAL SIZE	1st OVERSIZE (.010) ØD
M81820/4-4T	.2500	.6662
M81820/4-5T	.3125	.7600
M81820/4-6T	.3750	.8225
M81820/4-7T	.4375	.9162
M81820/4-8T	.5000	1.0100
M81820/4-9T	.5625	1.1037
M81820/4-10T	.6250	1.1975
M81820/4-12T	.7500	1.4475
M81820/4-14T	.8750	1.5725
M81820/4-16T	1.0000	1.7600

PART NO.	NOMINAL SIZE	2nd OVERSIZE (.020) ØD
M81820/4-4U	.2500	.6762
M81820/4-5U	.3125	.7700
M81820/4-6U	.3750	.8325
M81820/4-7U	.4375	.9262
M81820/4-8U	.5000	1.0200
M81820/4-9U	.5625	1.1137
M81820/4-10U	.6250	1.2075
M81820/4-12U	.7500	1.4575
M81820/4-14U	.8750	1.5825
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.

REQUIREMENTS:

- MATERIAL: BALL: PH13-8 Mo STEEL ALLOY PER AMS 5629, CONDITION H1000.
RACE: 17-4 PH STEEL ALLOY PER AMS 5643.
LINER: POLYTETRAFLUOROETHYLENE (PTFE) SHALL BE INCLUDED IN THE LINER.
- SURFACE TEXTURE: BALL DIA. Ra 8 MAX; BALL FACES, Ra 16 MAX; RACE DIA Ra 32 MAX; ALL OTHER METALLIC SURFACES Ra 125 MAX. LINER SURFACES ARE EXEMPT FROM SURFACE TEXTURE MEASUREMENTS.
- SURFACE FINISH:
OUTER RACE: PLATING, WHEN SPECIFIED, SHALL BE ZINC-NICKEL PLATING PER AMS 2417, 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.
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 PER AMS-QQ-P-35 OR ASTM A 967.
- HARDNESS: BALL: Rc 43 MIN; RACE: Rc 28 MIN, Rc 37 MAX BEFORE SWAGING.
- 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 CLEARANCE SHALL BE MEASURED AND SHALL NOT EXCEED THE VALUES IN TABLE 3. THESE REQUIREMENTS APPLY TO THE TORQUE AND INTERNAL PLAY BETWEEN THE SPHERICAL BALL AND THE RACE. THIS STANDARD DOES NOT DEFINE REQUIREMENTS FOR TORQUE OR INTERNAL PLAY BETWEEN THE BEARING BORE AND SHAFT.

SAE Aerospace
An SAE International Group

AEROSPACE STANDARD

(R) BEARING, PLAIN, SELF-ALIGNING, SELF-LUBRICATING,
LINED BORE, LOW SPEED, NARROW, CHAMFERED
RACE, -65 TO 325 °F

AS81820/4
SHEET 2 OF 3

REV.
A