

AS81820/3

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ISSUED 1998-04

PREPARED BY COMMITTEE ACBG

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AEROSPACE STANDARD

BEARING, PLAIN, SELF-ALIGNING, SELF-LUBRICATING,
LINED BORE, LOW SPEED, WIDE, GROOVED
OUTER RING, -65° TO 325° F

AS81820/3
SHEET 1 OF 4

THE REQUIREMENTS FOR ACQUIRING THE PRODUCT(S) DESCRIBED HEREIN SHALL CONSIST OF THIS SPECIFICATION SHEET AND THE ISSUE OF THE FOLLOWING SPECIFICATION LISTED IN THAT ISSUE OF THE DODISS SPECIFIED IN THE SOLICITATION: MIL-B-81820.

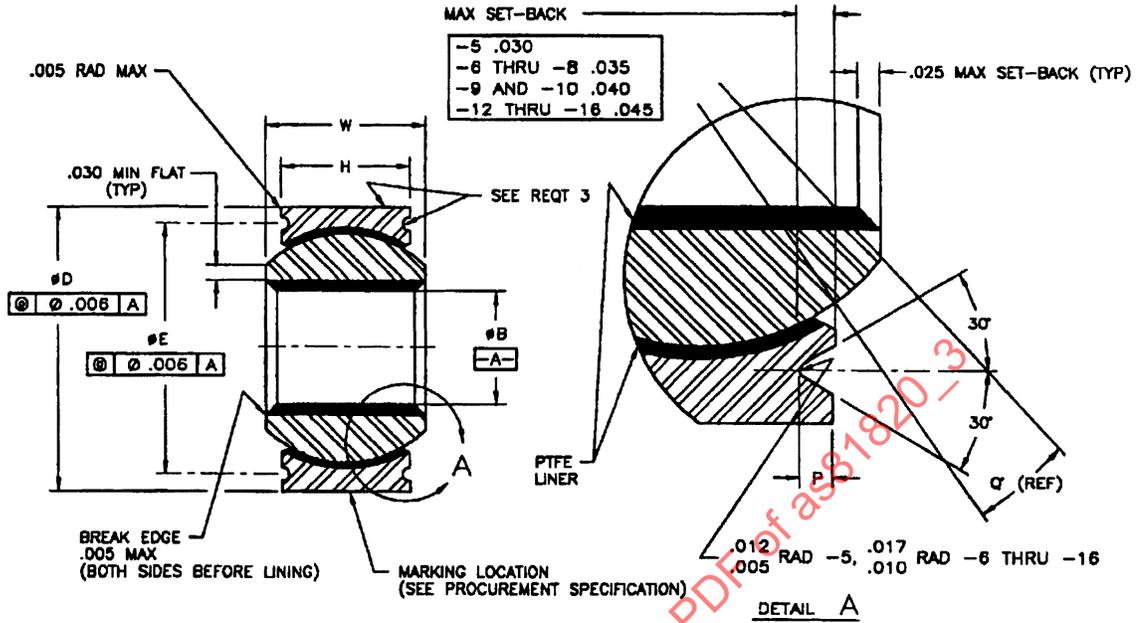


TABLE I. DIMENSIONS AND STRENGTHS

DASH NO.	øB +.0000 -.0010	øD +.0000 -.0005	H ±.005	P +.000 -.010	Q (REF)	W +.000 +.002	øE +.000 -.008	STATIC LIMIT LOAD		OSCILLATING LOAD LB	NO-LOAD ROTATIONAL BREAKAWAY TORQUE IN-LB		WT LB MAX (REF)
								RADIAL LB	AXIAL LB		STANDARD	"K" TYPE	
-5	.3135	.6875	.317	.025	14	.437	.825	9300	1640	4450			.035
-6	.3760	.8125	.406	.035	8	.500	.712	13000	2630	6200	1.0-15.0	0-1.0	.060
-7	.4385	.9375	.442		10	.562	.837	17300	3650	8250			.080
-7A	.4385	.9062	.442		10	.562	.806	17300	3650	8250			.080
-8	.5010	1.0000	.505		9	.625	.900	21400	4970	10600			.100
-9	.5635	1.1250	.536		10	.687	1.025	26600	5370	13200			.135
-10	.6260	1.1875	.567		12	.750	1.087	29000	6130	16150			.160
-12	.7510	1.3750	.630	.055	13	.875	1.251	37000	7730	24800	1.0-25.0	0-2.0	.240
-14	.8760	1.6250	.755		6	.875	1.501	56000	10800	26750			.350
-16	1.0010	2.1250	1.005		12	1.375	2.001	103000	19300	49300			.970

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

TABLE II. OVERSIZE BEARING DIMENSIONS 1/ 2/

RESTRICTED USAGE FOR REPAIR WORK ONLY

.010 AND .020 OVERSIZE OUTSIDE DIAMETER FOR
REPLACEMENT OF BEARINGS SHOWN ON SHEET 2

DASH NO.	NOMINAL SIZE	1st OVERSIZE (.010) ØD
-5	.3125	.6975
-6	.3750	.8225
-7	.4375	.9475
-7A	.4375	.9182
-8	.5000	1.0100
-9	.5625	1.1350
-10	.6250	1.1975
-12	.7500	1.3850
-14	.8750	1.6350
-16	1.0000	2.1350

DASH NO.	NOMINAL SIZE	2nd OVERSIZE (.020) ØD
-5	.3125	.7075
-6	.3750	.8325
-7	.4375	.9575
-7A	.4375	.9262
-8	.5000	1.0200
-9	.5625	1.1450
-10	.6250	1.2075
-12	.7500	1.3950
-14	.8750	1.6450
-16	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.

REQUIREMENTS:

- MATERIAL: BALL: PH13-8 Mo STEEL ALLOY PER AMS-5629, CONDITION H1000.
OUTER RING: 17-4 PH STEEL ALLOY PER AMS-5643.
LINER: POLYTETRAFLUOROETHYLENE (PTFE) SHALL BE INCLUDED IN THE LINER.
- SURFACE TEXTURE: BALL DIA. Ra 8; BALL FACES, Ra 16; OUTER RACE DIA Ra 32; ALL OTHER METALLIC SURFACES Ra 125. 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 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 EITHER OCCUR IN THE GROOVE OR IN THE AREA BETWEEN THE GROOVE 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 MIL-S-5002.
- HARDNESS: BALL: Rc 43 MIN; OUTER RING: 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 I. 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 III. THESE REQUIREMENTS APPLY TO THE TORQUE AND INTERNAL PLAY BETWEEN THE SPHERICAL BALL AND THE OUTER RING. THIS STANDARD DOES NOT DEFINE REQUIREMENTS FOR TORQUE OR INTERNAL PLAY BETWEEN THE BEARING BORE AND SHAFT.