

**REV.  
A****AS14103**

## NOTICE

THIS DOCUMENT HAS BEEN TAKEN DIRECTLY FROM U.S. MILITARY SPECIFICATION MS14103J AND CONTAINS ONLY MINOR EDITORIAL AND FORMAT CHANGES REQUIRED TO BRING IT INTO CONFORMANCE WITH THE PUBLISHING REQUIREMENTS OF SAE TECHNICAL STANDARDS. THE INITIAL RELEASE OF THIS DOCUMENT IS INTENDED TO REPLACE MS14103J. ANY PART NUMBERS ESTABLISHED BY THE ORIGINAL SPECIFICATION REMAIN UNCHANGED.

THE ORIGINAL MILITARY SPECIFICATION WAS ADOPTED AS AN SAE STANDARD UNDER THE PROVISIONS OF THE SAE TECHNICAL STANDARDS BOARD (TSB) RULES AND REGULATIONS (TSB 001) PERTAINING TO ACCELERATED ADOPTION OF GOVERNMENT SPECIFICATIONS AND STANDARDS. TSB RULES PROVIDE FOR (A) THE PUBLICATION OF PORTIONS OF UNREVISED GOVERNMENT SPECIFICATIONS AND STANDARDS WITHOUT CONSENSUS VOTING AT THE SAE COMMITTEE LEVEL, AND (B) THE USE OF THE EXISTING GOVERNMENT SPECIFICATION OR STANDARD FORMAT.

UNDER DEPARTMENT OF DEFENSE POLICIES AND PROCEDURES, ANY QUALIFICATION REQUIREMENTS AND ASSOCIATED QUALIFIED PRODUCTS LISTS ARE MANDATORY FOR DOD CONTRACTS. ANY REQUIREMENT RELATING TO QUALIFIED PRODUCTS LISTS (QPL'S) HAS NOT BEEN ADOPTED BY SAE AND IS NOT PART OF THIS SAE TECHNICAL DOCUMENT.

SAENORM.COM : Click to view the full PDF of as14103a

SAE Technical Standards Board Rules provide that: "This report is published by SAE to advance the state of technical and engineering sciences. The use of this report is entirely voluntary, and its applicability and suitability for any particular use, including any patent infringement arising therefrom, is the sole responsibility of the user."

SAE reviews each technical report at least every five years at which time it may be reaffirmed, revised, or cancelled. SAE invites your written comments and suggestions.

ISSUED 1997-08 REVISED 1999-03

PREPARED BY AIRFRAME CONTROL BEARINGS GROUP

**SAE** The Engineering Society  
For Advancing Mobility  
Land Sea Air and Space®  
**INTERNATIONAL**  
400 Commonwealth Drive, Warrendale, PA 15096-0001

**AEROSPACE STANDARD**

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

**AS14103**  
SHEET 1 OF 4**REV.  
A**

REV. A

AS14103

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.

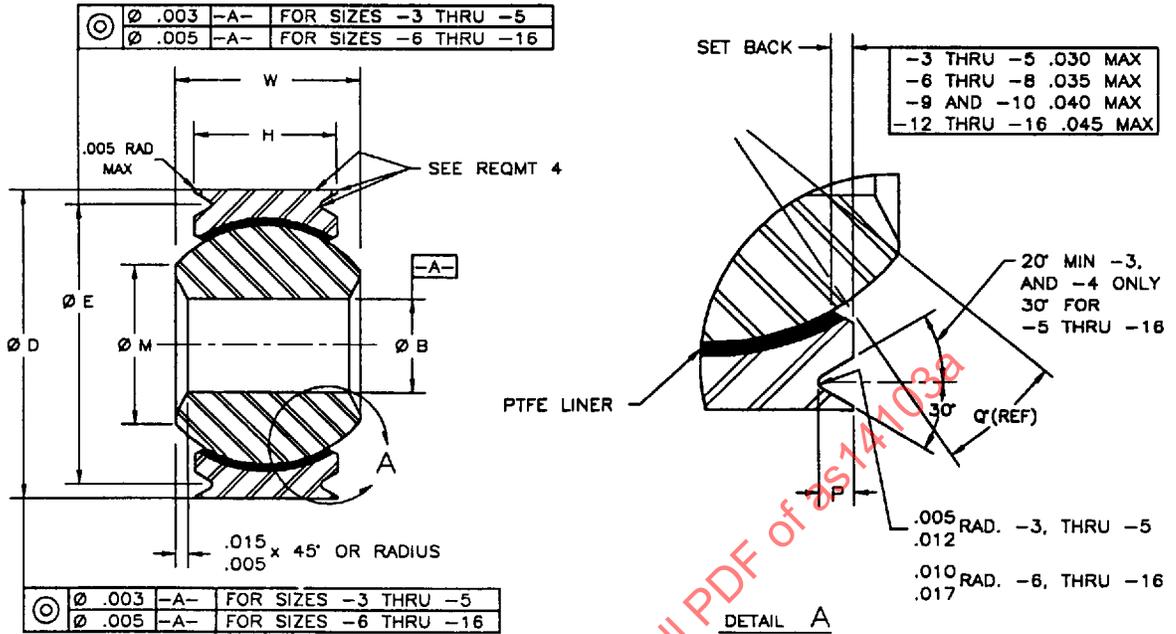


TABLE I. DIMENSIONS AND STRENGTHS

DASH NO.	∅B +.0000 -.0005	∅D** +.0000 -.0005	H** ±.005	∅M MIN	P +.000 -.010	Q' (REF)	W +.000 -.002	∅E +.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										
-3	.1900	.6250	.327	.300	.025	15	.437	.563	2500	1770	4900	0.25-5.0	0-0.5	.031									
-4	.2500								5500														
-5	.3125	.6875	.317	.360	.035	14	.500	.712	9400	1640	6050	0.25-8.0	0-1.0	.035									
-6	.3750	.8125	.406	.466					8						.562	.837	20700	3650	11750	.060			
-7	.4375	.9375	.442	.537					10						.562	.806	19700	3650	11750	.080			
-7A	.4375	.9062	.442	.537					10						.562	.806	19700	3650	11750	.100			
-8	.5000	1.0000	.505	.607					9						.625	.900	21400	4970	14950	.135			
-9	.5625	1.1250	.536	.721					10						.687	1.025	26600	5370	18100	.160			
-10	.6250	1.1875	.567	.747					12						.750	1.087	29000	6130	20250	.240			
-12	.7500	1.3750	.630	.845					13						.875	1.251	37000	7730	26200	.350			
-14	.8750	1.6250	.755	.995					.055						6	.875	1.501	65200	10800	33600	0.25-12.0	0-2.0	.970
-16	1.0000	2.1250	1.005	1.269																			

\* SEE REQUIREMENT 5 "NO-LOAD TORQUE" AND NOTE 8.

\*\* SEE NOTE 7.

REV.  
A

AS14103

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 1

DASH NO.	NOMINAL SIZE	1st OVERSIZE (.010) #D
-3	.1875	.6350
-4	.2500	.6350
-5	.3125	.6975
-6	.3750	.8225
-7	.4375	.9475
-7A	.4375	.9162
-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) #D
-3	.1875	.6450
-4	.2500	.6450
-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, 440C AMS-5630 OR PH13-8Mo AMS-5629 H1000 (see NOTE 8a)  
OUTER RING, AMS-5643 (17-4PH)  
LINER, PTFE SHALL BE INCLUDED IN THE LINER
- SURFACE TEXTURE: BALL DIA. Ra 8 MAX; BORE, BALL, FACE, AND OUTER RING DIA Ra 32 MAX; ALL OTHERS Ra 125 MAX.
- HARDNESS: BALL, 440C 55-62 Rc OR PH13-8Mo Rc 43 MIN; OUTER RING Rc 28 MIN/Rc 37 MAX BEFORE SWAGING.
- SURFACE FINISH:  
OUTER RING: 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 OCCUR EITHER IN THE GROOVE OR IN THE AREA BETWEEN THE GROOVE AND THE BALL.  
BALL: PH13-8Mo. PASSIVATE PER QQ-P-35; 440C, PASSIVATE PER QQ-P-35, OPTIONAL.
- 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.