

REV.
B

AS27642

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: SAE AS7949.

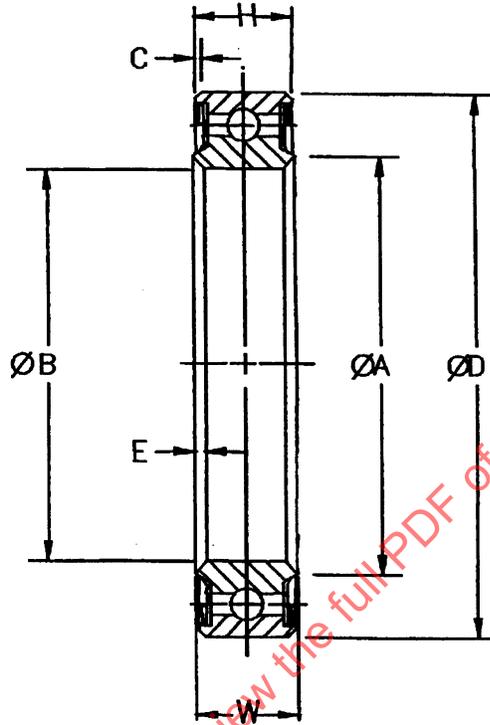


FIGURE 1

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PREPARED BY AIRFRAME CONTROL BEARINGS GROUP (ACBG)



AEROSPACE STANDARD

(R) BEARING, BALL, AIRFRAME,
EXTRA LIGHT DUTY

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SHEET 1 OF 4

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TABLE 1 - BEARING DIMENSIONS AND MAXIMUM TORQUE

MS DASH NO.	BEARING PART NO. REF. ONLY	BORE DIAM	BORE TOLERANCE		D 2/ OUTSIDE DIAMETER	W 2/ WIDTH INNER RING	E 4/ WIDTH OUTER RING	A SHOULDER DIAMETER INNER RING (APPROX)	E AND C 4/ INNER & OUTER RING CORNER CHAMFER x 45°	RADIAL INTERNAL CLEARANCE		WEIGHT POUNDS (APPROX)	MAXIMUM STARTING TORQUE (IN-OZ) $\frac{1}{2}$
			WITHOUT SUFFIX S	WITH SUFFIX S						WITHOUT SUFFIX S	WITH SUFFIX S		
-16	KP16B	1.0000	+0.0000	-0.0005	1.7500			1.141				.14	5.0
-21	KP21B	1.3125			2.0625			1.454		.0003		.16	7.0
-23	KP23B	1.4375			2.1875	.437	.375	1.575	.024	TO		.17	9.0
-25	KP25B	1.5625			2.3125			1.593		.0010		.19	9.0
-29	KP29B	1.8125	+0.0000	-0.0005	2.5625			1.931				.21	14.0
-33	KP33B	2.0625			2.8125			2.231				.23	14.0
-37	KP37B	2.3125			3.0625			2.468				.26	20.0
-47	KP47B	2.9375			3.8750			3.093				.49	30.0
-49	KP49B	3.0625			4.0000			3.222				.53	32.0
-52	KP52B	3.2500			4.1875			3.479				.55	
-56	KP56B	3.5000			4.4375	.531	.469	3.775				.59	
-60	KP60B	3.7500			4.6875			4.014				.61	
-64	KP64B	4.0000			4.9375			4.253	.039			.64	
-68	KP68B	4.2500			5.3125			4.517				.73	
-72	KP72B	4.5000	+0.0000	-0.0010	5.5625			4.774		.0003		.76	
-76	KP76B	4.7500			5.8125			5.046		TO		1.00	
-80	KP80B	5.0000			6.0625	.593	.531	5.246		.0015		1.04	
-84	KP84B	5.2500			6.3125			5.506				1.09	
-88	KP88B	5.5000			6.5625			5.770				1.14	
-92	KP92B	5.7500			6.8125			6.033				1.18	
-96	KP96B	6.0000			7.0625			6.303				1.23	

- 1/ Torque values for these size bearings shall be specified in purchase orders.
- 2/ All dimensions to be after plating.
- 3/ Out-of-round tolerances: Bore: -16 through -49, +0.0003, -0.0013 in, -52 through -96 +0.0005, -0.0015 Outer Diameter: +0.0010, -0.0021 in
- 4/ A radius giving approximately the same grip for staking the bearing in the housing will be acceptable.
- 5/ A radius giving approximately thru same fillet clearance will be acceptable.
- 6/ Specified limits are for bearings lubricated with MIL-PRF-81322 grease. For bearings lubricated with MIL-PRF-23827 grease, the torque limit shall be the specified value in the table multiplied by 1.2.

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TABLE 2 - BEARING ECCENTRICITIES AND LOADS

MS DASH NO.	ECCENTRICITIES				RADIAL LIMIT (LB)	THRUST LIMIT RATING (LB)	RADIAL LOAD	
	RADIAL		LATERAL				RATING (LB) FOR AVERAGE LIFE OF 10,000 COMPLETE 90° CYCLES	
	INNER	OUTER	INNER	OUTER			1/ CASE 1	2/ CASE 2
-16	.0010	.0016	.0010	.0016	8085	3600	4260	3960
-21					9840	4400	4590	4290
-23					10500	4700	4650	4360
-25					11300	5000	4680	4420
-29					12700	5600	4760	4530
-33					14400	6400	4820	4630
-37					15800	7000	4880	4690
-47					24700	10900	6600	6390
-49					27500	12100	8150	7840
-52					28700	12600	8210	7880
-56	.0012	.0016	.0010	.0016	31200	13700	8240	7970
-60					33100	14600	8290	8010
-64					35000	15400	8350	8100
-68					41900	18400	10280	9900
-72					44300	19500	10330	10000
-76					46700	20500	10350	10050
-80	.0014	.0018	.0012	.0018	48200	21200	10360	10090
-84					50600	22300	10420	10120
-88					53000	23300	10480	10200
-92					55400	24400	10550	10240
-96					.0014	.0020	.0016	.0020

1/ Case 1 = load fixed with respect to outer ring.

Case 2 = load fixed with respect to inner ring.

2/ These ratings are for operations up to 250 °F. For operations up to 350 °F. The ratings shall be reduced by 20%.

REQUIREMENTS:

- MATERIAL:** RINGS AND BALLS: 52100 STEEL PER AMS 6440 OR AMS 6444.
SEALS: POLYTETRAFLUOROETHYLENE PER AMS 3652 OR POLYTETRAFLUOROETHYLENE SHEET, GLASS FABRIC REINFORCED PER AMS 3666.
SEAL RETAINERS: ANY CORROSION RESISTANT STEEL.
- LUBRICANT:** MIL-PRF-81322 OR MIL-PRF-23827, ALL BEARINGS SHALL BE PACKED WITH AN 80% MINIMUM GREASE FILL CONFORMING TO MIL-PRF-81322 UNLESS OTHERWISE SPECIFIED. IF MIL-PRF-23827 IS REQUIRED, ADD THE LETTER "G" AFTER THE MS27642 DASH NUMBER. MIL-PRF-23827 SHALL NOT BE USED FOR OPERATION WHERE TEMPERATURES EXCEED 250 °F.
- HARDNESS:** HEAT TREAT RINGS AND BALLS TO ROCKWELL "C" 60 TO 66 AND STABILIZE FOR OPERATION AT 250 °F.
- SURFACE ROUGHNESS:** RACEWAYS AND BALL SHALL HAVE A MAXIMUM SURFACE ROUGHNESS OF 8 µin Ra PER ANSI/ASME B46.1.
- PLATING:** ALL EXTERNAL SURFACES EXCEPT BORE, SEALS AND SEAL RETAINERS SHALL BE ZINC NICKEL IN ACCORDANCE WITH AMS 2417, TYPE 2, OR CADMIUM PLATED IN ACCORDANCE WITH QQ-P-416, TYPE I, CLASS 2, WITH A THICKNESS OF .0003 TO .0006 in.