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REV.
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AS27644™/1

FEDERAL SUPPLY CLASS
3110

RATIONALE

THIS DOCUMENT REVISION ADDS THE FULLY SUBSTANTIATED AMS5655 MATERIAL FOR THE RINGS AND THE HEAT TREAT REQUIREMENT. AMS3666 IS BEING REMOVED AS A SEAL MATERIAL AS NO SUPPLIER UTILIZES IT ON THIS SERIES. THE LUBRICATION IS BEING REVISED FROM A TRADE NAME TO AN INDUSTRY AVAILABLE SPECIFICATION MIL-PRF-23827 TYPE 1. ZINC NICKEL PER AMS2417 WILL BE INDICATED BY "E" SUFFIX. PASSIVATION IN ACCORDANCE WITH AMS2700, METHOD 1 (NITRIC ACID) OPTION ADDED. CRES BALLS WILL BE INDICATED BY "T" SUFFIX.

NOTICE

THE REQUIREMENTS FOR PROCURING THE PRODUCT DESCRIBED HEREIN SHALL CONSIST OF THIS DOCUMENT AND THE LATEST ISSUE OF AS7949.

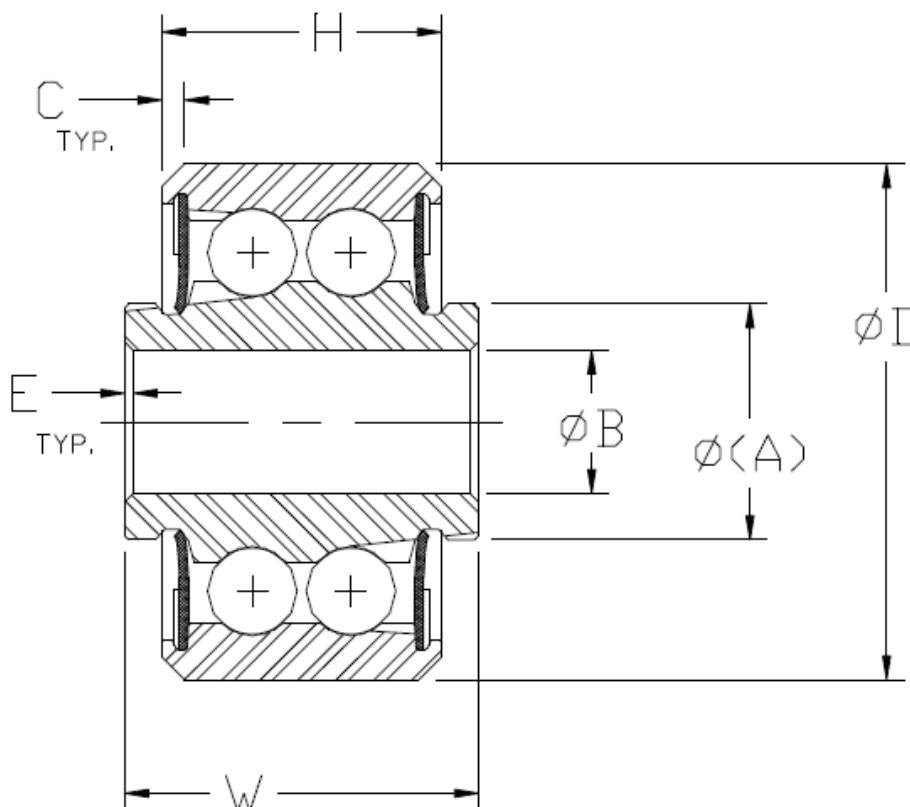
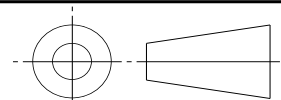


FIGURE 1 - CREN AIRFRAME BEARING

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THIRD ANGLE PROJECTION



CUSTODIAN: ACBG

PROCUREMENT SPECIFICATION: AS7949



AEROSPACE STANDARD

BEARING, BALL, AIRFRAME,
ANTI-FRICTION, DOUBLE ROW, HEAVY DUTY,
CORROSION RESISTANT NITROGEN STEEL (CREN)

AS27644™/1
SHEET 1 OF 3

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TABLE 1 - DIMENSIONS, LOAD RATINGS, WEIGHT, AND TORQUE

AS DASH NO.	øB BORE +.0000 -.0005 2/	øD OUTSIDE DIAMETER +.0000 -.0005 1/ 2/	W WIDTH INNER RING +.000 -.005 1/	H WIDTH OUTER RING +.000 -.005 1/	(øA) SHOULDER DIAMETER INNER RING (REF)	E 4/	C 3/	MAXIMUM AXIAL INTERNAL CLEARANCE	RADIAL LIMIT LOAD RATING LB	THRUST LIMIT LOAD RATING LB	5/ 6/ RADIAL LOAD RATING (LB) FOR AVERAGE LIFE OF 10 000 COMPLETE 90° CYCLES		WEIGHT POUNDS (APPROX)	9/ MAXIMUM STARTING TORQUE (IN-OZ)
						CORNER CHAMFER X 45°					CASE I	CASE II		
						INNER RING BORE +.015 -.000	OUTER RING OD +.015 -.000							
-3	.1900	.7774	.495	.473	.302	.005	.018	.005	7/ 2950	1700	2950	2830	.04	1.0
-4	.2500	.9014	.620	.491	.410	.005	.032	.006	7/ 5370	1800	3550	3020	.06	1.0
-5	.3125	1.2500	.745	.687	.469	.015	.032	.006	8/ 11000	4000	7360	6250	.17	1.5
-6	.3750	1.4375	.870	.794	.551	.015	.032	.006	8/ 15760	5300	9690	8120	.26	2.0
-8	.5000	1.6875	.932	.856	.735	.015	.032	.007	23600	7800	14100	11600	.38	3.0
-10	.6250	1.9375	.995	.920	.890	.015	.044	.007	28400	9400	15300	13100	.53	4.5

1/ ALL DIMENSIONS TO BE MET AFTER SURFACE TREATMENT.

2/ OUT-OF-ROUND TOLERANCES: BORE: +.0002, -.0007; OUTER DIAMETER: +.0005, -.0010.

3/ A RADIUS GIVING APPROXIMATELY THE SAME GRIP FOR STAKING THE BEARING IN THE HOUSING WILL BE ACCEPTABLE.

4/ A RADIUS GIVING APPROXIMATELY THE SAME FILLET CLEARANCE WILL BE ACCEPTABLE.

5/ CASE I - LOAD FIXED WITH RESPECT TO OUTER RING.

CASE II - LOAD FIXED WITH RESPECT TO INNER RING.

6/ THESE RATINGS ARE FOR OPERATION UP TO 250 °F.

7/ BOLTS OF 160000 PSI TENSILE STRENGTH ARE REQUIRED TO DEVELOP THE RADIAL LIMITLOAD SHOWN.

8/ BOLTS OF 180000 PSI TENSILE STRENGTH ARE REQUIRED TO DEVELOP THE RADIAL LIMITLOAD SHOWN.

9/ SPECIFIED LIMITS ARE FOR BEARINGS LUBRICATED WITH MIL-PRF-81322 GREASE. FOR BEARINGS LUBRICATED WITH MIL-PRF-23827 TYPE I GREASE, THE TORQUE LIMIT SHALL BE THE SPECIFIED VALUE IN THE TABLE MULTIPLIED BY 1.2.

REQUIREMENTS

1. MATERIAL

RINGS: CORROSION RESISTANT NITROGEN STEEL (CREN) PER AMS5898, AMS5925, OR AISI 422 STEEL PER AMS5655.

BALLS: NO SUFFIX CODE: CORROSION RESISTANT NITROGEN STEEL (CREN) PER AMS5898 OR AMS5925.

SUFFIX CODE "T": CORROSION RESISTANT STEEL (CRES) PER AMS5880 OR AMS5618. CRES BALLS SHALL BE PASSIVATED IN ACCORDANCE WITH AMS2700, METHOD 1 (NITRIC ACID) OR METHOD 2 (CITRIC ACID), OR ASTM A967/A967M, CITRIC I, II, OR III. AMS2700, METHOD 1, TYPE 8 SHALL NOT BE USED.

SEALS: POLYTETRAFLUOROETHYLENE (PTFE) PER AMS3652.

SEAL RETAINERS: ANY CORROSION RESISTANT STEEL.

2. HARDNESS

RINGS: STEEL PER AMS5898 AND AMS5925: THROUGH HARDEN TO 58 HRC MINIMUM.

STEEL PER AMS5655: RING WALL THICKNESS .090 OR LESS: CASE HARDEN TO 58 HRC MINIMUM AT A CASE DEPTH OF 1/3 OF THE WALL THICKNESS.

RING WALL THICKNESS GREATER THAN .090: CASE HARDEN TO 58 HRC MINIMUM AT A CASE DEPTH OF .030.

BALLS: 58 HRC MINIMUM.

3. STABILITY

RINGS AND BALLS SHALL BE STABILIZED FOR OPERATION UP TO 250 °F.

4. LUBRICANT

MIL-PRF-81322 OR MIL-PRF-23827 TYPE I. ALL BEARINGS SHALL BE PACKED WITH AN 80% MINIMUM GREASE FILL CONFORMING TO MIL-PRF-81322, UNLESS OTHERWISE SPECIFIED. IF MIL-PRF-23827 TYPE I IS REQUIRED, ADD THE DESIGNATOR "G" AFTER THE AS27644/1 DASH NUMBER. MIL-PRF-23827 TYPE I SHALL NOT BE USED FOR OPERATION WHERE TEMPERATURES EXCEED 250 °F.

	AEROSPACE STANDARD	AS27644™/1 SHEET 2 OF 3	REV. A
	BEARING, BALL, AIRFRAME, ANTI-FRICTION, DOUBLE ROW, HEAVY DUTY, CORROSION RESISTANT NITROGEN STEEL (CREN)		



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