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REV.
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AS27641™/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). CRES BALLS WILL BE INDICATED BY "T" SUFFIX.

NOTICE

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

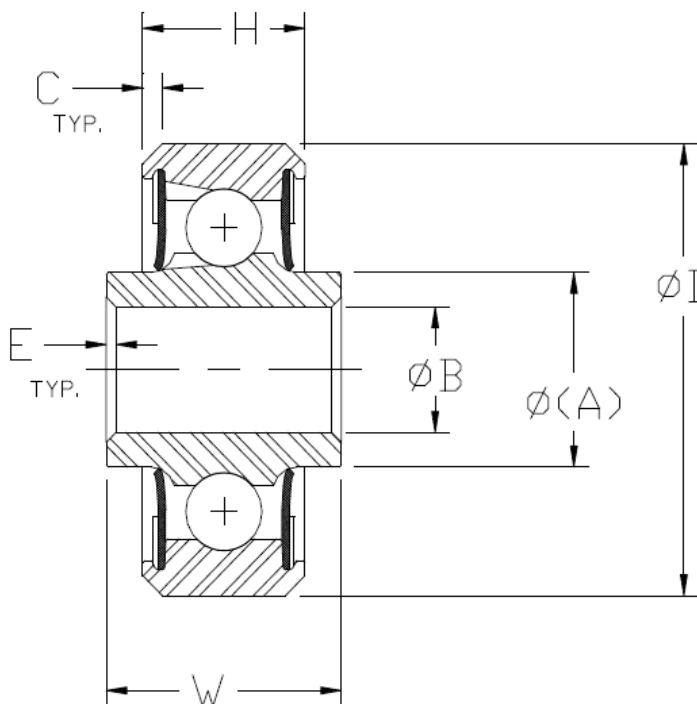
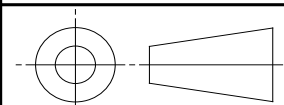


FIGURE 1 – CREN AIRFRAME BEARING

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<http://www.sae.org/technical/standards/AS27641/1A>

THIRD ANGLE PROJECTION



CUSTODIAN: ACBG

PROCUREMENT SPECIFICATION: AS7949



AEROSPACE STANDARD

BEARING, BALL, AIRFRAME,
ANTI-FRICTION, INTERMEDIATE DUTY, CORROSION
RESISTANT NITROGEN STEEL (CREN)

AS27641™/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/		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)	7/ MAXIMUM STARTING TORQUE (IN-OZ)
						CORNER CHAMFER X 45°									
						INNER RING BORE +.015 -.000	OUTER RING OD +.015 -.000								
						CASE I	CASE II								
-3	.1900	.6250	.297	.234	.297	.005	.016	1560	700	1500	1250	.01	1.0		
-4	.2500	.7500	.281	.219	.380	.005	.016	1880	900	1690	1450	.02	1.5		
-5	.3125	.8125	.297	.234	.415	.015	.016	2190	1000	1820	1600	.02	1.5		
-6	.3750	.8750	.313	.250	.495	.015	.016	2500	1100	1920	1710	.03	2.0		
-8	.5000	1.1250	.0375	.313	.616	.015	.016	3910	1700	2870	2550	.05	2.5		
-10	.6250	1.3750	.406	.344	.768	.015	.032	6700	3000	4980	4360	.08	3.0		
-12	.7500	1.6250	.437	.375	.919	.015	.032	8790	3900	5980	5320	.13	3.0		
-16	1.0000	2.0000	.500	.438	1.241	.015	.032	11900	5200	7070	6400	.22	4.0		
-20	1.2500	2.2500	.500	.438	1.478	.015	.032	13800	6100	7400	6810	.26	5.0		

1/ ALL DIMENSIONS TO BE MET AFTER SURFACE TREATMENT.

2/ OUT-OF-ROUND TOLERANCES: BORE: +.0002, -.0007; OUTER DIA: +.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. FOR OPERATION UP TO 350 °F, THE RATINGS SHALL BE REDUCED BY 20%.

7/ 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.

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 350 °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 AS27641/1 DASH NUMBER. MIL-PRF-23827 TYPE I SHALL NOT BE USED FOR OPERATION WHERE TEMPERATURES EXCEED 250 °F.

5. SURFACE ROUGHNESS

RACEWAYS AND BALLS SHALL HAVE A MAXIMUM SURFACE ROUGHNESS OF 8 MIN RA PER ASME B46.1

	AEROSPACE STANDARD		AS27641™/1 SHEET 2 OF 3	REV. A
	BEARING, BALL, AIRFRAME, ANTI-FRICTION, INTERMEDIATE DUTY, CORROSION RESISTANT NITROGEN STEEL (CREN)			



