

FEDERAL SUPPLY CLASS  
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**REV.  
A**

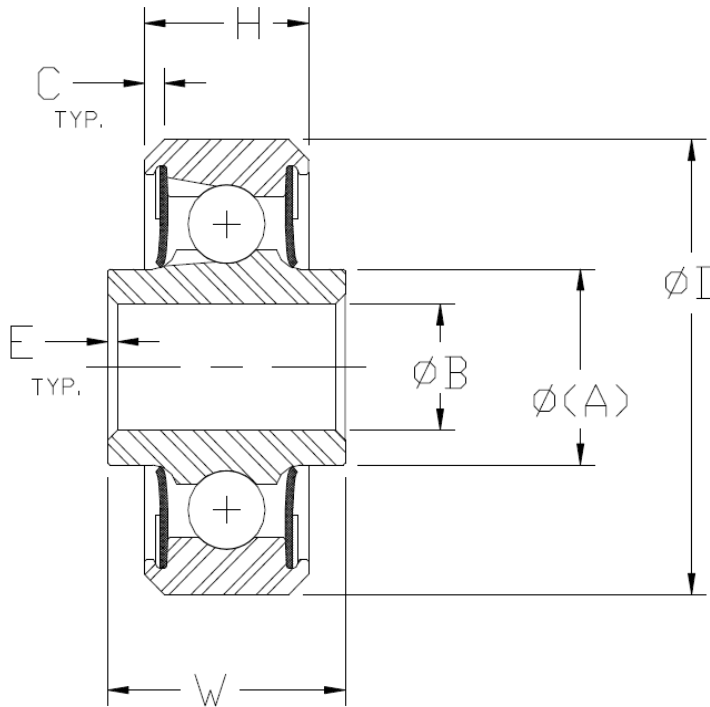
**AS27640™/1**

**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. ADDS PASSIVATION IN ACCORDANCE WITH AMS2700, METHOD 1 (NITRIC ACID). CRES BALLS WILL BE INDICATED BY "T" SUFFIX.

**NOTICE**

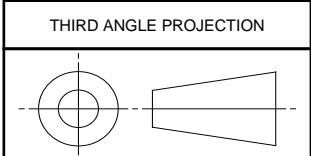
THE COMPLETE REQUIREMENTS FOR PROCURING THE PRODUCT DESCRIBED HEREIN SHALL CONSIST OF THIS DOCUMENT AND THE LATEST ISSUE OF AS7949.



**FIGURE 1 - CREN AIRFRAME BEARING**

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ISSUED 2011-03 REVISED 2016-01

CUSTODIAN: ACBG		PROCUREMENT SPECIFICATION: AS7949	
	<b>AEROSPACE STANDARD</b>		<b>AS27640™/1</b> SHEET 1 OF 4
	BEARING, BALL, AIRFRAME, ANTI-FRICTION, HEAVY DUTY, CORROSION RESISTANT NITROGEN STEEL (CREN)		

**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)	CORNER CHAMFER X 45°		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)	Z/ MAXIMUM STARTING TORQUE (IN-OZ)
						E 4/	C 3/			CASE I	CASE II		
						INNER RING BORE +.015 -.000	OUTER RING OD +.015 -.000						
-3A	.1900	.6250	.245	.203	.280	.005	.010	1,560	700	1,520	1,260	.01	2.0
-3	.1900	.7774	.297	.270	.331	.005	.022	1,880	900	1,700	1,450	.03	2.0
-4	.2500	.9014	.484	.335	.390	.005	.032	2,680	1,200	2,410	2,030	.04	2.0
-5	.3125	1.2500	.558	.375	.469	.015	.032	5,620	2,500	4,900	3,970	.09	2.0
-6	.3750	1.4375	.620	.469	.591	.015	.032	7,910	3,500	6,540	5,410	.15	3.0
-8	.5000	1.6875	.620	.500	.768	.015	.044	11,800	5,200	9,320	7,700	.21	4.0
-10	.6250	1.9375	.620	.500	.850	.015	.044	14,100	6,200	11,000	9,060	.28	4.0

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

RING WALL THICKNESS AT RACEWAY 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.

	<b>AEROSPACE STANDARD</b>	<b>AS27640™/1</b> SHEET 2 OF 4	<b>REV.</b> <b>A</b>
	BEARING, BALL, AIRFRAME, ANTI-FRICTION, HEAVY DUTY, CORROSION RESISTANT NITROGEN STEEL (CREN)		