

FEDERAL SUPPLY CLASS  
3110

**REV.  
A**

**AS27645™/1**

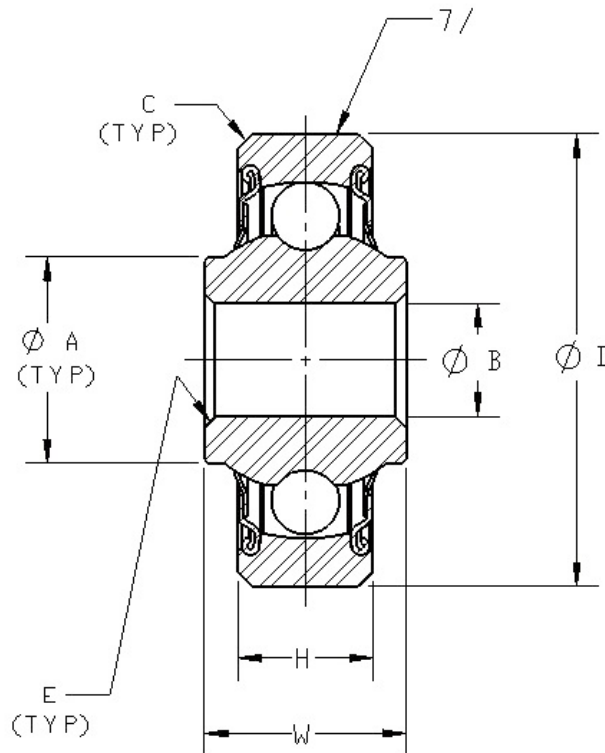
**RATIONALE**

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

**NOTICE**

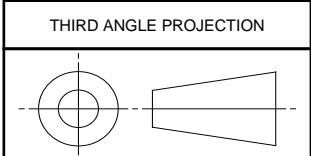
THE COMPLETE REQUIREMENTS FOR PROCURING THE PRODUCT DESCRIBED HEREIN SHALL CONSIST OF THIS DOCUMENT AND THE LATEST ISSUE OF AS7949.

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**FIGURE 1 - CREN AIRFRAME BEARING**

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ISSUED 2011-03 REVISED 2016-08

CUSTODIAN: ACBG		PROCUREMENT SPECIFICATION: AS7949	
	<b>AEROSPACE STANDARD</b>		<b>AS27645™/1</b> SHEET 1 OF 4
	BEARING, BALL, AIRFRAME, ANTI-FRICTION, SELF-ALIGNING, LIGHT AND HEAVY DUTY, CORROSION RESISTANT NITROGEN STEEL (CREN)		

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

AS DASH NO.	øB BORE +.0000 -.0005	øD OUTSIDE DIAMETER +.0000 -.0005	W WIDTH INNER RING +.000 -.005	H WIDTH OUTER RING +.000 -.005	(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 10000 COMPLETE 90° CYCLES		MAXIMUM AXIAL INTERNAL CLEARANCE	WEIGHT POUNDS (APPROX)		
						CORNER CHAMFER X 45°						INNER RING BORE +.015 -.000	OUTER RING OD +.015 -.000			CASE I	CASE II
						INNER RING BORE +.015 -.000	OUTER RING OD +.015 -.000	INNER RING BORE +.015 -.000	OUTER RING OD +.015 -.000								
-3A	.1900	.6250	.245	.203	.253	.005	.016	.016	.016	550	100	550	480	.023	.01		
-4A	.2500	.7500	.281	.219	.321	.005	.016	.016	.016	900	200	900	770	.025	.01		
-5A	.3125	.8125	.297	.234	.381	.015	.016	.016	.016	1000	200	950	815	.028	.02		
-6A	.3750	.8750	.313	.250	.453	.016	.016	.016	.016	1120	200	1120	990	.030	.02		
-3	.1900	.7774	.297	.270	.290	.005	.022	.022	.022	900	200	900	770	.023	.03		
-4	.2500	.9014	.484	.335	.390	.005	.032	.032	.032	1410	300	1230	1230	.025	.04		
-5	.3125	1.2500	.558	.375	.561	.015	.032	.032	.032	2190	300	2190	1890	.028	.10		
-6	.3750	1.4375	.620	.469	.607	.015	.032	.032	.032	2980	400	2980	2580	.030	.15		
-8	.5000	1.6875	.620	.500	.791	.015	.044	.044	.044	3670	500	3670	3290	.032	.23		
-10	.6250	1.9375	.813	.625	.916	.015	.044	.044	.044	5320	600	4980	4360	.034	.37		

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/ THESE BEARINGS ARE INTERNAL SELF-ALIGNING FOR 10 DEGREES IN EITHER DIRECTION EXCEPT AS-4A, -5A, AND -6A WHICH ARE SELF ALIGNING FOR 8 DEGREES IN EITHER DIRECTION.

8/ 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.

**TABLE 1 – (CONTINUED)**

AS DASH NO.	8/ MAXIMUM STARTING TORQUE (IN-OZ)	MINIMUM TORQUE TO DISLODGE SEALS (IN-LB)
-3A	1.0	4.0
-4A	1.0	6.0
-5A	2.0	10.0
-6A	3.0	8.0
-3	1.0	6.0
-4	1.0	5.0
-5	2.0	16.0
-6	3.0	18.0
-8	4.0	20.0
-10	6.0	25.0

**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.

	<b>AEROSPACE STANDARD</b>	<b>AS27645™/1</b> SHEET 2 OF 4	<b>REV.</b> <b>A</b>
	BEARING, BALL, AIRFRAME, ANTI-FRICTION, SELF-ALIGNING, LIGHT AND HEAVY DUTY, CORROSION RESISTANT NITROGEN STEEL (CREN)		