AS81936/1

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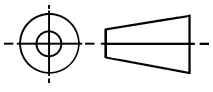
UNDER DEPARTMENT OF DEFENSE POLICIES AND PROCEDURES, ANY QUALIFICATION REQUIREMENTS AND ASSOCIATED QUALIFIED PRODUCTS LISTS ARE MANDATORY FOR DOD CONTRACTS. ANY REQUIREMENT RELATING TO QUALIFIED PRODUCTS LISTS (QPL'S) HAS NOT BEEN ADOPTED BY SAE AND IS NOT PART OF THIS TECHNICAL REPORT.

THIRD ANGLE PROJECTION



ISSUED 1998-05

PREPARED BY THE AIRFRAME CONTROL BEARINGS GROUP

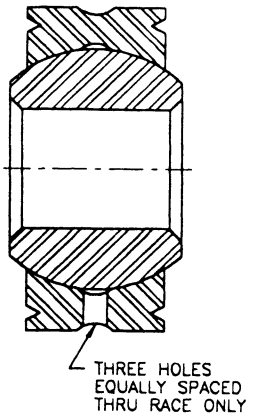
SAE The Engineering Society For Advancing Mobility Land Sea Air and Space®
INTERNATIONAL
400 Commonwealth Drive, Warrendale, PA 15096-0001

AEROSPACE STANDARD

BEARING, PLAIN, SELF-ALIGNING,
BE CU BALL, CRES RACE,
(WITH STACKING GROOVE) -65°F TO +350°F

AS81936/1
SHEET 1 OF 5

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: MIL-B-81936.



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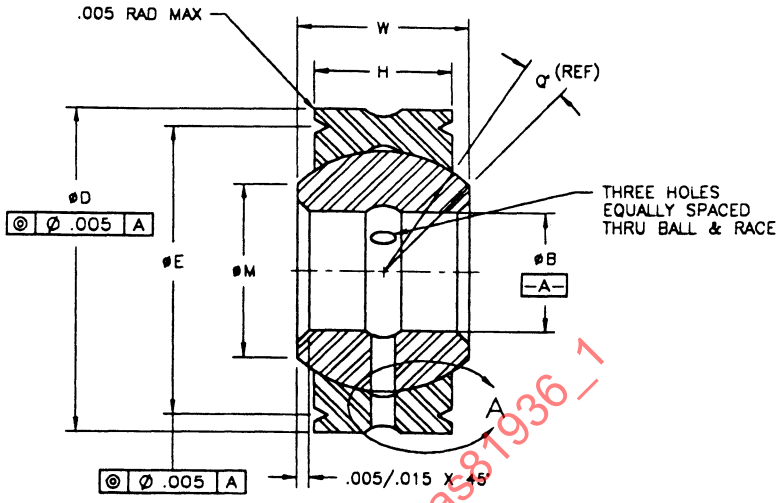

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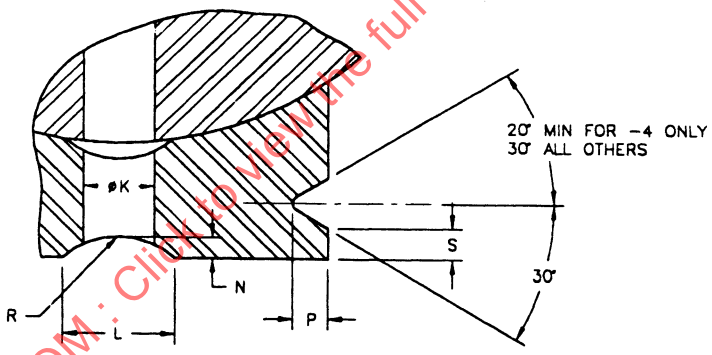

DETAIL A

TABLE I. DIMENSIONS

DASH NUMBER		øB	øD	øE	H		øK	L	øM	N	P	Q	R	S	W
LUBE GROOVES AND HOLES IN RACE ONLY	LUBE GROOVES AND HOLES IN BALL AND RACE	BORE +.0000 −.0005	OUTSIDE DIA +.0000 −.0005	+.000 −.010	RACE WIDTH +.000 −.005	BALL DIA MAX	LUBE HOLE DIA THRU RACE AND BALL	GROOVE WIDTH ID & OD OF RACE & OD OF BALL	MIN	GROOVE DEPTH ID & OD OF RACE & OD OF BALL	+.000 −.015	REF	GROOVE RADIUS ID & OD OF RACE & OD OF BALL	+.000 −.010	BALL WIDTH +.000 −.005
4R	4	.2500	.6562	.596	.250	.501	.032/.062	.042/.078	.357	.010/.015	.030	12	.030/.062	.020	.343
5R	5	.3125	.7500	.652	.281	.563	.042/.062	.042/.078	.413	.010/.015	.040	11	.030/.062	.030	.375
6R	6	.3750	.8125	.714	.312	.657	.042/.062	.042/.078	.509	.010/.015	.040	9	.030/.062	.030	.406
7R	7	.4375	.9062	.808	.343	.719	.052/.062	.065/.094	.563	.010/.015	.040	8	.060/.094	.030	.437
8R	8	.5000	1.0000	.878	.390	.814	.052/.062	.065/.094	.634	.010/.015	.060	8	.060/.094	.030	.500
9R	9	.5625	1.0937	.972	.437	.876	.052/.062	.065/.094	.664	.010/.015	.060	8	.060/.094	.030	.562
10R	10	.6250	1.1875	1.065	.500	.969	.062/.078	.073/.109	.732	.010/.015	.060	8	.070/.125	.030	.625
12R	12	.7500	1.4375	1.315	.593	1.188	.062/.078	.073/.109	.913	.010/.015	.060	8	.070/.125	.030	.750
13R	13	.8125	1.5625	1.440	.650	1.282	.062/.078	.073/.109	.984	.010/.015	.060	8	.070/.125	.030	.812
14R	14	.8750	1.6562	1.534	.703	1.376	.062/.078	.073/.109	1.054	.010/.015	.060	8	.070/.125	.030	.875
16R	16	1.0000	1.8750	1.753	.797	1.563	.078/.093	.082/.109	1.193	.010/.015	.060	8	.090/.125	.030	1.000
18R	18	1.1250	2.1250	2.003	.900	1.751	.078/.093	.082/.109	1.334	.010/.015	.060	8	.090/.125	.030	1.125
20R	20	1.2500	2.3125	2.190	1.000	1.938	.078/.093	.082/.109	1.473	.010/.015	.060	8	.090/.125	.030	1.250
22R	22	1.3750	2.5625	2.440	1.100	2.157	.078/.093	.082/.109	1.654	.010/.015	.060	8	.090/.125	.030	1.375
24R	24	1.5000	2.8125	2.690	1.200	2.345	.078/.093	.082/.109	1.794	.010/.015	.060	8	.090/.125	.030	1.500

TABLE II. STRENGTHS

DASH NO.		RADIAL STATIC LIMIT LOAD LB	RADIAL STATIC LIMIT LOAD LB	PEAK RADIAL LOAD MODE I LB.	PEAK RADIAL LOAD MODE II LB.
4	4R	6330	1930	2570	5000
5	5R	8460	2450	3520	6300
6	6R	11400	3090	4570	8200
7	7R	14800	3740	5750	9900
8	8R	20400	4860	7500	12650
9	9R	26700	6100	9500	15300
10	10R	33100	8080	11750	19300
12	12R	50000	11440	16900	28200
13	13R	59000	13800	19800	33400
14	14R	70300	16160	23000	38700
16	16R	77700	20850	30000	49800
18	18R	121500	26740	38000	63000
20	20R	152000	33065	46900	77500
22	22R	186000	40120	56900	95000
24	24R	224000	47820	67500	112500

TABLE III. OVERSIZE BEARING DIMENSIONS 1/ 2/

RETRICTED USAGE FOR REPAIR WORK ONLY

.010 AND .020 OVERSIZE OUTSIDE DIAMETER FOR
REPLACEMENT OF BEARINGS SHOWN ON SHEET 2

DASH NO.		NOMINAL SIZE	1st OVERSIZE (.010) ØD
4R	4	.2500	.6662
5R	5	.3125	.7600
6R	6	.3750	.8225
7R	7	.4375	.9162
8R	8	.5000	1.0100
9R	9	.5625	1.1037
10R	10	.6250	1.1975
12R	12	.7500	1.4475
13R	13	.8125	1.5725
14R	14	.8750	1.6662
16R	16	1.000	1.8850
18R	18	1.1250	2.1350
20R	20	1.2500	2.2000
22R	22	1.3750	2.5725
24R	24	1.5000	2.8225

DASH NO.		NOMINAL SIZE	2nd OVERSIZE (.020) ØD
4R	4	.2500	.6762
5R	5	.3125	.7700
6R	6	.3750	.8325
7R	7	.4375	.9262
8R	8	.5000	1.0200
9R	9	.5625	1.1137
10R	10	.6250	1.2075
12R	12	.7500	1.4575
13R	13	.8125	1.5825
14R	14	.8750	1.6762
16R	16	1.000	1.8950
18R	18	1.1250	2.1450
20R	20	1.2500	2.2100
22R	22	1.3750	2.5825
24R	24	1.5000	2.8325

1/ BEFORE INITIATING A REPAIR PROCEDURE TO USE AN OVERSIZE BEARING, APPROVAL FOR MODIFYING AND REIDENTIFYING THE BEARING HOUSING MUST BE OBTAINED FROM THE COGNIZANT ENGINEERING AUTHORITY.

2/ REFER TO NAS0331 FOR INSTALLATION PROCEDURE AND STAKING FORCES.

REQUIREMENTS

1. MATERIAL:

   BALL: BERYLLIUM COPPER ROD OR BAR PER ASTM-B194 OR B196, TEMPER TH04.
   RACE: 17-4 PH PER AMS-5643 CONDITION H1150 PER MIL-H-6875.

2. SURFACE TEXTURE:

   SPHERICAL SURFACE OF BALL AND BORE: 16 RHR.
   BALL FACE AND OUTER FACE O.D.: 32 RHR.
   OUTER RACE I.D.: 64 RHR.
   ALL OTHER SURFACES: 125 RHR.

3. HARDNESS:

   BALL: RC 37 MINIMUM.
   RACE: RC 28 TO 36 BEFORE SWAGING.

4. INTERNAL PLAY BETWEEN RACE AND BALL:

   AXIAL PLAY: FREE TURNING TO .005 INCH.
   RADIAL PLAY: FREE TURNING TO .001 INCH.

5. LUBRICATION: PREPACKED WITH MIL-G-81322.