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REV.
E

AS24461™

FEDERAL SUPPLY CLASS
3110

RATIONALE

IN TABLE 3 OIL HOLE DATA, BORE-DASH NO. WAS CHANGED WITH NO MENTION OF CHANGING IT IN THE RATIONALE. "INNER RING" SHOULD BE "INCL." THE SIZE RANGES ALSO NEED TO BE FIXED/REVERTED TO WHAT THEY ONCE WERE.

NOTICE

THE COMPLETE REQUIREMENTS FOR PROCURING THE PRODUCT DESCRIBED HEREIN SHALL CONSIST OF THIS DOCUMENT AND THE LATEST ISSUE OF AS39901.

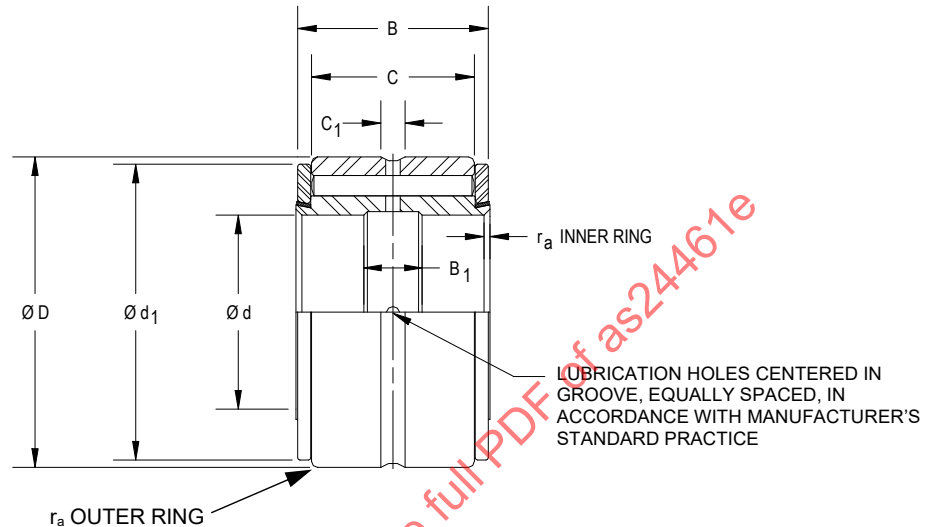
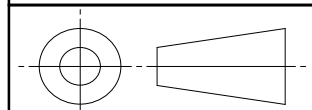


FIGURE 1 - PART CONFIGURATION

For more information on this standard, visit
<https://www.sae.org/standards/content/AS24461E/>

THIRD ANGLE PROJECTION



CUSTODIAN: ACBG

PROCUREMENT SPECIFICATION: AS39901



AEROSPACE STANDARD

BEARING, ROLLER, NEEDLE,
SINGLE ROW, HEAVY DUTY,
TYPE I, ANTIFRICTION, INCH

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ISSUED 1998-04 REVISED 2024-03

TABLE 1

AS DASH NO.	Ød BORE	ØD OUTER RING OUTSIDE DIA ⁽²⁾	B OVERALL WIDTH	C OUTER RING WIDTH	Ød ₁ WASHER OUTSIDE DIA	B ₁ LUBRICATION GROOVE WIDTH	C ₁ LUBRICATION GROOVE WIDTH	r _a FILLET MAX ⁽¹⁾	TOTAL RADIAL INTERNAL CLEARANCE MAX	CLAMPING DIA MIN ⁽²⁾	LIMIT LOAD RATING LBF	MASS (APPROX) LB		
-3	.1900	.6875	.312	.218	.625	NONE	.062	.022	.0017	.438	1800	.028		
-4	.2500	.7500	.375	.281	.687		.093			.516	2870	.040		
-5	.3125	.8125	.437	.344	.750								.578	4080
-6	.3750	.8750	.562	.469	.812	.188	.125	.0018	.641	6330	.075			
-7	.4375	.9375	.625	.531	.875							.703	8000	.097
-8	.5000	1.1250	.750	.656	1.031									
-9	.5625	1.1875	.875	.781	1.094		.0019	.891	15000	.207				
-10	.6250	1.2500	1.000	.906	1.156						.953	18900	.252	
-12	.7500	1.3750	1.125	1.000	1.281									1.078
-14	.8750	1.6250	1.250	1.125	1.500	.375	.156	.032	.0022	1.250	30500	.423		
-16	1.0000	1.7500			1.625					1.375	33900	.510		
-20	1.2500	2.0000		1.049	1.906				.0026	1.625	37900	.600		
-24	1.5000	2.2500			2.156					1.875	44200	.710		
-28	1.7500	2.5000			2.406				.0027	2.125	50500	.780		
-32	2.0000	2.7500			2.656				.0028	2.375	56800	.880		
-36	2.2500	3.0000			2.906				.0032	2.625	63100	.980		
-40	2.5000	3.2500			3.156				.0037	2.875	69400	1.060		
-44	2.7500	3.5000			3.406				.0039	3.125	75700	1.150		
-48	3.0000	3.7500			3.656					3.375	82000	1.240		
-52	3.2500	4.0000			3.906					3.641	88300	1.340		
-56	3.5000	4.3750			4.219				.044	.0041	3.969	96700	1.730	
-60	3.7500	4.6250			4.469						4.218	103000	1.840	
-64	4.0000	4.8750			4.719					.0045	4.469	109000	1.990	
-80	5.0000	5.8750			5.888						5.438	135000	2.750	

⁽¹⁾ THE CHAMFER ON BEARINGS MUST CLEAR THE MAXIMUM FILLET RADIUS GIVEN IN THE TABLE.

THIS SPECIFICATION DOES NOT CONTROL BEARING CHAMFER CONTOURS.

⁽²⁾ THE OUTSIDE DIAMETER OF THE INSTALLATION CLAMPING SURFACES SHALL BE AT LEAST AS LARGE AS THE MINIMUM CLAMPING DIAMETER.



AEROSPACE STANDARD

BEARING, ROLLER, NEEDLE,
SINGLE ROW, HEAVY DUTY,
TYPE I, ANTIFRICTION, INCH

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TABLE 2 - TOLERANCE LIMITS

BASIC BORE $\varnothing d$		ALLOWABLE DEVIATION FROM d OF SINGLE MEAN $\varnothing d_{mp}$		ALLOWABLE DEVIATION FROM OVERALL WIDTH B		ALLOWABLE DEVIATION FROM WASHER OUTSIDE DIA $\varnothing d_1$		ALLOWABLE DEVIATION FROM LUBRICATION GROOVE WIDTH B_1	
OVER	INCL	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW
.1250	3.0000	+.0000	-.0007	+.000	-.005	+.010	-.010	+.000	-.062
3.0000	4.0000	+.0000	-.0008	+.000	-.005	+.010	-.010	+.000	-.062
4.0000	5.000	+.0000	-.0010	+.000	-.005	+.010	-.010	+.000	-.062

BASIC OUTER RING OUTSIDE DIA $\varnothing D$		ALLOWABLE DEVIATION FROM d OF SINGLE MEAN DIAMETER		ALLOWABLE DEVIATION FROM OUTER RING WIDTH C		ALLOWABLE DEVIATION FROM LUBRICATION GROOVE WIDTH C_1	
OVER	INCL	HIGH	LOW	HIGH	LOW	HIGH	LOW
.5000	1.7500	+.0000	-.0005	+.000	-.005	+.031	-.031
1.7500	3.0000	+.0000	-.0006	+.000	-.005	+.031	-.031
3.0000	4.6250	+.0000	-.0008	+.000	-.005	+.031	-.031
4.6250	5.8750	+.0000	-.0010	+.000	-.005	+.031	-.031

TABLE 3 - LUBRICATION HOLE DATA

BORE DASH NO.		NUMBER OF HOLES	
OVER	INCL	INNER RING	OUTER RING
2	5	NONE	2
5	10	2	4
10	80	4	4

REQUIREMENTS:

1. MATERIAL:

RINGS AND ROLLERS: SAE 52100 PER ASTM A295, AMS6440, OR AMS6444.
 ENDWASHERS: AISI 1070 THRU 1090 STEEL OR SAE 52100 STEEL PER ASTM A295 OR AMS6440.
 RETAINING RINGS: BRASS (OPTIONAL).

2. HEAT TREATMENT:

RINGS AND ROLLERS: HARDENED AND TEMPER TO 58-66 HRC.
 ENDWASHERS: HARDENED AND TEMPER TO 51-60 HRC.

3. FINISHING:

NO SUFFIX CODE: ALL EXTERNAL SURFACES EXCEPT BORE SHALL BE CADMIUM PLATED PER AMS-QQ-P-416, TYPE I, CLASS 2, .0003 TO .0006 THICK.

SUFFIX CODE "E": ALL EXTERNAL SURFACES EXCEPT BORE SHALL BE ZINC-NICKEL PLATED PER AMS2417, TYPE 2, GRADE B, .0003 TO .0006 THICK.

4. LUBRICATION:

NO SUFFIX CODE: BEARINGS TO BE PREPACKED 80 TO 100% FULL CONFORMING TO MIL-PRF-81322. BEARING OPERATING TEMPERATURE RANGE -65 TO 350 °F.

SUFFIX CODE "G": BEARINGS TO BE PREPACKED 80 TO 100% FULL CONFORMING TO MIL-PRF-23827, TYPE 1. BEARING OPERATING TEMPERATURE RANGE -65 TO 250 °F.

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	BEARING, ROLLER, NEEDLE, SINGLE ROW, HEAVY DUTY, TYPE I, ANTIFRICTION, INCH		