

REV.  
D

AS24461™

FEDERAL SUPPLY CLASS  
3110

RATIONALE

AS24461 REVISION D IS A FIVE-YEAR REVIEW. TABLES HAVE BEEN REFORMATTED FOR CLARITY. FORMATTED SUFFIX CODE "G" AND "E" FOR CLARITY. CLARIFIED PLATING REQUIREMENTS. ADDED SURFACE TEXTURE REQUIREMENTS. CLARIFIED PART NUMBER EXAMPLE.

NOTICE

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

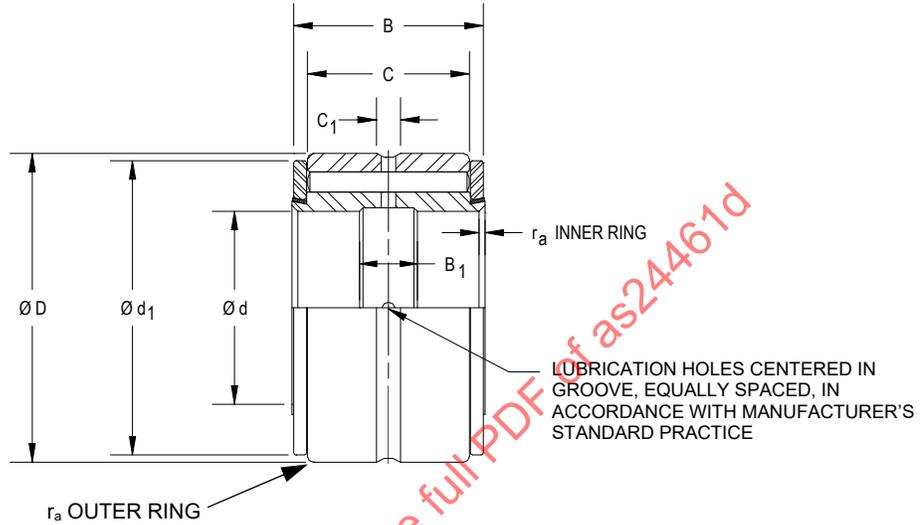
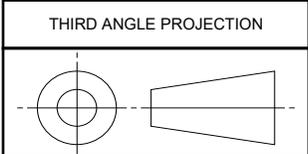


FIGURE 1 - PART CONFIGURATION

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For more information on this standard, visit <https://www.sae.org/standards/content/AS24461D>



ISSUED 1998-04 REVISED 2021-07

CUSTODIAN: ACBG		PROCUREMENT SPECIFICATION: AS39901	
	<b>AEROSPACE STANDARD</b>		<b>AS24461™</b> SHEET 1 OF 4
	BEARING, ROLLER, NEEDLE, SINGLE ROW, HEAVY DUTY, TYPE I, ANTIFRICTION, INCH		

**TABLE 1**

AS DASH NO.	Ød BORE	ØD OUTER RING OUTSIDE DIA (2)	B OVERALL WIDTH	C OUTER RING WIDTH	Ød <sub>1</sub> WASHER OUTSIDE DIA	B <sub>1</sub> LUBRICATION GROOVE WIDTH	C <sub>1</sub> LUBRICATION GROOVE WIDTH	r <sub>a</sub> 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	.057	
-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				.844	11600	.165	
-9	.5625	1.1875	.875	.781	1.094	.250	.156	.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	23900	.336	
-14	.8750	1.6250	1.250	1.125	1.500	.375	.032	.0026	1.250	30500	.423	
-16	1.0000	1.7500			1.625				1.375	33900	.510	
-20	1.2500	2.0000			1.906				1.625	37900	.600	
-24	1.5000	2.2500		2.156	1.875				44200	.710		
-28	1.7500	2.5000		2.406	2.125				50500	.780		
-32	2.0000	2.7500		2.656	2.375				56800	.880		
-36	2.2500	3.0000		2.906	2.625				63100	.980		
-40	2.5000	3.2500		3.156	2.875				69400	1.060		
-44	2.7500	3.5000		3.406	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	3.969				96700	1.730		
-60	3.7500	4.6250	4.469	4.218	103000	1.840						
-64	4.0000	4.8750	4.719	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 SHOULD BE AT LEAST AS LARGE AS THE MINIMUM CLAMPING DIAMETER.

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	<b>AEROSPACE STANDARD</b>	<b>AS24461™</b> SHEET 2 OF 4	<b>REV.</b> <b>D</b>
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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 WIDTH $B_1$	
OVER	INCL	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW
.1250	3.0000	+0.0000	-0.0007	+0.000	-0.005	+0.010	-0.010	+0.000	-0.062
3.0000	4.0000	+0.0000	-0.0008	+0.000	-0.005	+0.010	-0.010	+0.000	-0.062
4.0000	5.0000	+0.0000	-0.0010	+0.000	-0.005	+0.010	-0.010	+0.000	-0.062

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	+0.0000	-0.0005	+0.000	-0.005	+0.031	-0.031
1.7500	3.0000	+0.0000	-0.0006	+0.000	-0.005	+0.031	-0.031
3.0000	4.6250	+0.0000	-0.0008	+0.000	-0.005	+0.031	-0.031
4.6250	5.8750	+0.0000	-0.0010	+0.000	-0.005	+0.031	-0.031

**TABLE 3 - LUBRICATION HOLE DATA**

BORE DASH NO		NUMBER OF HOLES	
OVER	INNER RING	INNER RING	OUTER RING
2	NONE	NONE	2
5	2	2	4
10	4	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 TO 66 HRC  
 ENDWASHERS: HARDENED AND TEMPER TO 51 TO 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 °F TO 350 °F

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