

REV.  
A

AS21442

FEDERAL SUPPLY CLASS  
3110

## RATIONALE

AS21442 REV A IS A FIVE YEAR REVIEW AND UPDATE OF THIS SPECIFICATION. FIGURE AND TABLES REFORMATTED, CAD PLATE WARNING ADDED, MATERIALS AND HEAT TREATMENTS CLARIFIED.

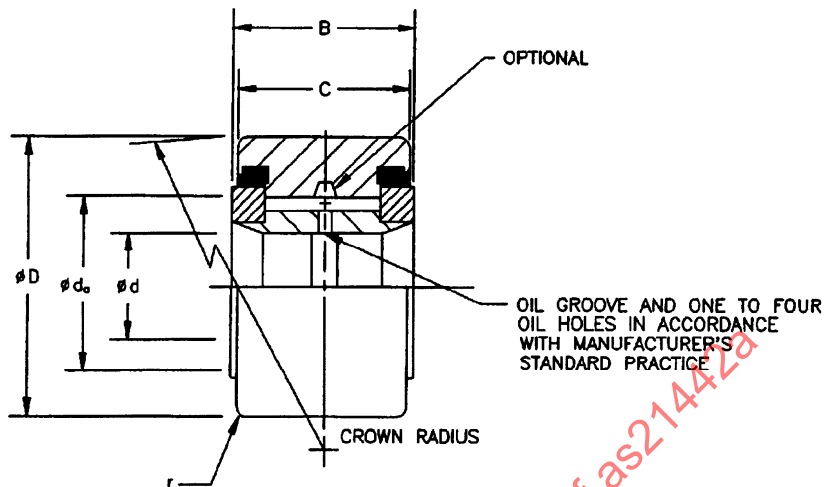


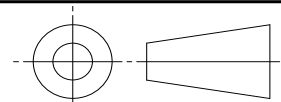
FIGURE 1

TABLE 1 - DIMENSIONS

DASH NO.	Ød BORE	ØD OUTSIDE DIAMETER	C OUTER RING WIDTH	B OVERALL WIDTH	Øda CLAMPING DIAMETER MINIMUM	CROWN RADIUS REF	r MAX. FILLET CORNER WILL CLEAR	CAPACITY AS A TRACK ROLLER	TRACK CAPACITY HRc 40 lb <sub>t</sub>	LIMIT LOAD RATING lb <sub>t</sub>	MASS (APPROX) lbs.
-121	.2500	.7500	.500	.5625	.500	10	.016	2000	1030	2600	.06
-141		.8750							1160		.08
-161	.3125	1.0000	.625	.6875	.641	12	.032	2900	1480	3900	.15
-181		1.1250							1670		.17
-201	.3750	1.2500	.750	.8125	.766	14	.047	4500	2330	5500	.24
-221		1.3750							2570		.30
-241	.4375	1.5000	.875	.9375	.891	20	.063	5800	3380	7300	.41
-261		1.6250							3660		.50
-281	.5000	1.7500	1.000	1.0625	1.047	24	.094	8100	4500	10300	.64
-301		1.8750							4820		.80
-321	.6250	2.0000	1.250	1.3125	1.203	30	.125	11100	6550	13800	1.05
-361		2.2500							7370		1.32
-401	.7500	2.5000	1.500	1.5625	1.313	30	.125	16200	9250	21600	1.80
-441		2.7500							10200		2.25
-481	1.0000	3.0000	1.750	1.8125	1.750	30	.125	24600	13400	32800	3.10
-521		3.2500							14500		3.62
-561	1.1250	3.5000	2.000	2.0625	1.922			31200	18300	41700	4.95
-641	1.2500	4.0000	2.250	2.3125	2.281			41000	24100	54700	7.05

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THIRD ANGLE PROJECTION



CUSTODIAN: AIRFRAME CONTROL BEARINGS GROUP

PROCUREMENT SPECIFICATION: AS39901



## AEROSPACE STANDARD

(R) BEARING, ROLLER, NEEDLE, TRACK ROLLER,  
SEALED, TYPE X,  
ANTIFRICTION, INCH

AS21442  
SHEET 1 OF 3

REV.  
A

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ISSUED 1999-09 REVISED 2013-11

TABLE 2 - TOLERANCE LIMITS

$\phi$ d BASIC BORE		ALLOWABLE DEVIATION FROM d OF SINGLE MEAN DIA., $d_{mp}$		ALLOWABLE DEVIATION FROM OVERALL WIDTH, B	
OVER	INCL	HIGH	LOW	HIGH	LOW
.1875	.7500	+.0002	-.0004	+.005	-.010
.7500	1.2500	+.0001	-.0005	+.005	-.010

$\phi$ D BASIC OUTSIDE DIAMETER		ALLOWABLE DEVIATION FROM D OF SINGLE MEAN DIA, $D_{mp}$		ALLOWABLE DEVIATION FROM OUTER RING WIDTH, C	
OVER	INCL	HIGH	LOW	HIGH	LOW
.6250	4.0000	.0020	-.0005	+.005	-.005

## REQUIREMENTS:

## 1. MATERIAL:

OUTER RING, INNER RING AND NEEDLES: 52100 STEEL PER AMS6440, AMS6444, AMS6447, OR ASTM A295/A295M.

ENDWASHER: 52100 STEEL PER AMS6440, AMS6444, AMS6447, OR ASTM A295/A295M, AISI 1070-1095 PER ASTM A108, OR AISI 1010, 1018, 1117, OR 1231 STEEL.

SEALS: ACETAL RESIN PER ASTM D6778 POM 111 OR NYLON PER L-P-410, OR PTFE PER AMS3652, OR PTFE IMPREGNATED FIBERGLASS PER AMS3666.

## 2. HEAT TREAT:

OUTER RING: HARDEN AND TEMPER TO 58-62 HRC.

INNER RING: HARDEN AND TEMPER TO 60-64 HRC

ALTERNATE - INNER RING (RACEWAY): CARBURIZE WITH A SURFACE HARDNESS OF MINIMUM 60 HRC OR INDUCTION HARDEN TO 60 HRC MINIMUM. REMAINDER MAY BE SOFTENED FOR MANUFACTURING.

NEEDLES: HARDEN AND TEMPER TO 60-64 HRC.

ENDWASHER: HARDEN AND TEMPER TO 52-56 HRC, EXCEPT AISI 1010, 1018, 1117, OR 1213 HARDENED TO A DEPTH OF .005 MINIMUM WITH A SURFACE HARDNESS OF 51-59 HRC ON THE WEAR SURFACE. REMAINDER MAY BE SOFTENED FOR MANUFACTURING.

## 3. FINISH:

a. OUTER RING-OUTER RING CHROME PLATED PER AMS-QQ-C-320, CLASS 2 OR AMS2460, CLASS 2. O.D. AND O.D. CORNERS .0004 TO .0010 INCH THICKNESS. FACES MINIMUM .0003 INCH THICKNESS.

b. ALL EXTERNAL SURFACES BLACK OXIDE FINISH PER MIL-DTL-13924.

c. ENDPLATES-ALL EXPOSED SURFACES ZINC-NICKEL IN ACCORDANCE WITH AMS2417, TYPE 2, GRADE B OR CADMIUM PLATED IN ACCORDANCE WITH AMS-QQ-P-416, TYPE I, CLASS 2, .0003 TO .0006 INCH THICK.

IF ZINC-NICKEL PLATING IS REQUIRED ADD THE LETTER "E" AFTER THE MS21442 DASH NUMBER. NO CODE DESIGNATES CADMIUM PLATING IS REQUIRED.

4. LUBRICATION: MIL-PRF-81322 OR MIL-PRF-23827, TYPE I. ALL BEARINGS SHALL BE PREPACKED WITH GREASE CONFORMING TO MIL-PRF-81322 UNLESS OTHERWISE SPECIFIED. IF MIL-PRF-23827, TYPE I IS REQUIRED ADD THE LETTER "G" AFTER THE COMPLETE MS PART NUMBER.

5. MARKING: THE MARKING SHALL CONSIST OF THE MS PART NUMBER AND THE MANUFACTURER'S CAGE CODE MARKED IN ACCORDANCE WITH MIL-STD-130 AND LOT CONTROL NUMBER IF SPACE IS AVAILABLE.

	<b>AEROSPACE STANDARD</b>	<b>AS21442</b> SHEET 2 OF 3	<b>REV.</b> <b>A</b>
	(R) BEARING, ROLLER, NEEDLE, TRACK ROLLER, SEALED, TYPE X, ANTIFRICTION, INCH		