

0	TABLE	۱.	DIMENSIONS	AND	STRENGTHS
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DASH	₽∃ +.0000	¢D++ +.0000	ii++	øМ	Q (REF)	₩ +.000	STATIC LOA		OSCIL- LATING LOAD	NO-LC ROTATIO BREAKAWAY IN-L	NAL TORQUE	WT LB MAX
	0005	0005	±.005	MIN		002	RADIAL LB	AXIAL LB	LB	STANDARD	"К ^{® †} ТУРЕ	(OFF)
-3	.1900	6050	.327	.300	15		2500	1770	4900	0.25-5.0	0-0.5	.031
-4	.2500	.6250	.527	.300	13	.437	5500	1110				
-5	.3125	.6875	.317	.360	14		9400	1640	6050			.035
-6	.3750	.8125	.406	.466	8	.500	13700	2630	8310			. 08 0
-7	.4375	.9375	.442	.537	10	.562	20700	3650	11750			.080
-8	.5000	1.0000	.505	.607	9	.625	21400	4970	14950	0.25-8.0	0-1.0	.100
-9	.5625	1.1250	.536	.721	10	.687	26600	5370	18100			.135
-10	.6250	1.1875	.567	.747	12	.750	29000	6130	20250		1	.160
-12	.7500	1.3750	.630	.845	13	.875	37000	7730	26200			.240
-14	.8750	1.6250	.755	.995	6	.875	85200	10800	33600	0.25-12.0	0-2.0	.350
-16	1.0000	2.1250	1.005	1.269	12	1.375	104000	19300	56250	0.25-12.0	0-2.0	.970

SEE REQUIREMENT 5 "NO-LOAD TORQUE" AND NOTE 8.

++ SEE NOTE 7.

(J) DENOTES CHANGES

PREPARING ACTIVITY: NAVY - AS CUSTODIANS: ARMY-AV NAVY-AS	MILITARY SPECIFICATION SHEET	SPECIFCATION SHEET M		RE 5 D	V J EC §	94
AIR FORCE-99 DLA-	TITLE BEARING, PLAIN, SELF-LUBRICATING, SELF-AUGNING, LOW SPEED, WIDE,	SUPERSEDING MS14102		RE 31 J	VH ANS	94
REVIEW: ARMY-AR, AT, ME, DLA-IS, USAF-84 PROJECT NUMBER: 3120-0742-06	SELF-ALIGNING, LOW SPEED, WIDE, CHAMFERED OUTER RING, -65 F TO 325 F	AMSC - N/A	FSC	312	D	
DISTRIBUTION STATEMENT & APPROVED FOR PL	IBLIC RELEASE; DISTRIBUTION IS UNLIMITED.		PAGE	1	OF	3

THE REQUIREMENTS FOR ACCURRING THE PRODUCT(S) DESCRIBED HEREIN SHALL SHEET AND THE ISSUE OF THE FOLLOWING SPECIFICATION LISTED IN THAT ISSUE THE SOLICITATION: MIL-B-81820

OF THIS SPECIFICA DODISS SPECIFIED

THIS SPECTION IS APPROVED FOR USE BY ALL DEPARTMENTS AND AGENCIES CONFIRE DEPARTMENT OF DEFENSE.

DD 1 MAY 05

672

PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

(J) TABLE II. OVERSIZE BEARING DIMENSIONS 1/ 2/

RESTRICTED USAGE FOR REPAIR WORK ONLY

.010 AND .020 OVERSIZE OUTSIDE DIAMETER FOR REPLACEMENT OF BEARINGS SHOWN ON SHEET 1

DASH NO.	NOMINAL SIZE	1st OVERSIZE (.010) ≢D
-3	.1875	.6350
-4	.2500	.6350
-5	.3125	.6975
-6	.3750	.8225
-7	.4375	.9475
-8	.5000	1.0100
-9	.5825	1.1350
-10	.6250	1.1975
-12	.7500	1.3850
-14	.8750	1.6350
-16	1.0000	2.1350

DASH NO.	NOMINAL SIZE	2nd OVERSIZE (.020) ≢D
-3	.1875	.6450
-4	.2500	.6450
-5	.3125	.7075
-6	.3750	.8325
-7	.4375	.9575
-8	.5000	1.0200
-9	.562 5	1.1450
-10	.6250	1.2075
-12	.7500	1.3950
-14	.8750	1.6450
-18	1.0000	2.1450

1/ BEFORE INITIATING A REPAR 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 NASO331 FOR INSTALLATION PROCEDURE AND STAKING FORCES.

REQUIREMENTS:

- MATERIAL: BALL, 440C AMS-5630 OR PH13-8M0 AMS-5629 H1000 (SEE NOTE 60). OUTER RING, AMS-5643 (17-4PH). LINER, PTFE SHALL BE INCLUDED IN THE LINER. 1.
- 2. SURFACE TEXTURE: BALL DIA. Ro 8 MAX; BORE, BALL, FACE, AND OUTER RING DIA Ro 32 MAX; ALL OTHERS Ro 125 MAX.
- 3. HARDNESS: BALL, 440C 55-62 Rc OR PH13-BMo Rc 43 MIN; OUTER RING, Rc 28 MIN/Rc 37 MAX BEFORE SWAGING.
- (J) 4. SURFACE FINISH:

PLATING, WHEN SPECIFIED, SHALL BE ZINC-NICKEL PLATING PER AMS-2417, TYPE 2, OR CADMIUM PLATING PER QQ-P-416, TYPE 11, CLASS 2, WITH A THICKNESS RANCE OF 0.0003 TO 0.0006 INCHES. PLATE ON THE OUTSIDE DIAMETER SURFACE AND ON THE CHAMFER. PLATING RUNOUT SHALL OCCUR IN THE SIDE FACE AREA BETWEEN THE CHAMFER AND THE BALL. OUTER RING:

BALL: PH13-BMO, PASSIVATE PER QQ-P-35; 440C, PASSIVATE PER QQ-P-35, OPTIONAL.

NO-LOAD TORQUE: WHEN THE LETTER " K " IS PRESENT IN THE PART NUMBER, LOWER VALUES OF NO-LOAD TORQUE ARE SPECIFIED PER TABLE I. IF THE MEASURED TORQUE OF A " K " TYPE BEARING IS LESS THAN 0.1 INCH-POUND, THE INTERNAL RADIAL PLAY SHALL BE MEASURED AND SHALL NOT EXCEED THE FOLLOWING: 5.

DASH NO.	MAXIMUM RADIAL PLAY	MAXIMUN AXIAL PLAY
-3K THRU -12K	0.0007 INCH	0.0021 INCH
-14K THRU -16K	0.0010 INCH	0.0030 INCH

THE INTERNAL AXIAL PLAY SHALL BE MEASURED FOR ALL * K * TYPE BEARINGS.

PREPARING ACTIVITY: NAVY - AS CUSTODIANS: ARMY-AV NAVY-AS	MILITARY SPECIFICATION SHEET	MS14102	R REV 5 DEC	-
AIR FORCE-99 DLA-	TITLE BEARING, PLAIN, SELF-LUBRICATING, SELF-ALIGNING, LOW SPEED, NARROW,	SUPERSEDING MS14102	REV 31 JAN	-
REVIEW: ARMY-AR, AT, ME, DLA-IS, USAF-84 PROJECT NUMBER: 3120-0742-06	GROOVED OUTER RING, -65 TO 325 F	AMSC - N/A F	5C 3120	
PROJECT NUMBER: 3120-0742-06 DISTRIBUTION STATEMENT A, APPROVED FOR PU	BLIC RELEASE; DISTRIBUTION IS UNLIMITED.	PAGE		•

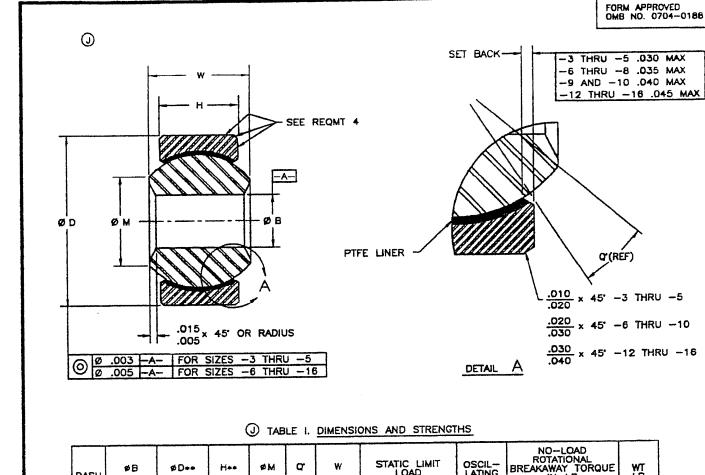
			FORM APPROVED ONB NO. 0704-018
NOTES			
NOTES:			
2. BREAK SHARP EDGES AND CORNERS A	OTHERWISE SPECIFIED, TOLERANCES ARE; DECIMAL	$5 \pm .010$ and angles \pm	0.5'.
	nd remove all borrs and slivers. In the "radial static limit load" test because	THE LOAD CAPACITY OF	THE
4. WHEN TESTED TO THE FLUID CONTAMIN	ATION AND SUB-ZERO TEMPERATURE REQUIREMEN REASED TO 75% OF THE SPECIFIED LOAD.	ITS OF THE PROCUREMEN	T SPECIFICATION.
	URES (ABOVE 200' F) ARE BOTH PRESENT IN AN	APPLICATION, THEN RED	ICTIONS
6. DASH NUMBER DESIGNATES NOMINAL BO			
7. DIMENSION " #D " TO BE MET AFTER !	PLATING. DIMENSION " H " TO BE NET BEFORE	PLATING WHEN APPLICABL	E.
() 8. EXAMPLE OF PART NO.			_
Ba. BALL MATERIAL SHALL BE 440C AMS-56 MS-5629 H1000. 9. IN THE EVENT OF A CONFLICT BETWEEN OF THIS STANDARD SHALL TAKE PRECED 10. REFERENCED GOVERNMENT (OR NON-GC	NOMINAL BORE DIA, PH13-BMO BALL MATERIAL, ZI SIZE O.D., (DIMENSION #D). ENCE OF THE LETTERS "T " AND " U " INDICATE S .010 OVERSIZE #D (FOR REPAIR ONLY, SEE TAB .020 OVERSIZE #D (FOR REPAIR ONLY, SEE TAB ENCE OF THE LETTER "K " INDICATES STANDARD ER "K " INDICATES LOW BREAKAWAY TORQUE (S ENCE OF THE LETTER "P " INDICATES NO PLATIM ER "P " INDICATES ZINCNICKEL OR CADNIUM F ENCE OF THE LETTER "C " INDICATES 440C BAL ER "C " INDICATES PH13-BMO BALL MATERIAL - BORE DIAMETER (DASH NO. FROM TABLE I). NUMBER. B30 UNLESS "C " CALLOUT IS PRESENT IN PAR THE TEXT OF THIS STANDARD AND THE REFEREN INCOMENT) DOCUMENTS OF THE ISSUE LISTED IN "STANDARDS DODISS SPECIFIED IN THE SOLICITAT	STANDARD OUTER DIAMETER LE II). BREAKAWAY TORQUE (SE EE TABLE I). IG. PLATING (SEE REQUIREMEN L MATERIAL F NUMBER. C MINDIC RCES CITED HEREIN, THE	(#D), (SEE TABLE I). E TABLE I). RT 4). RTES PH13-8No TEXT PARTMENT OF
EPARING ACTIVITY: NAVY - AS		SPECIFCATION SHEET	
STODIANS: ARMY-AV NAVY-AS	ILITARY SPECIFICATION SHEET	MS1410	2 REV J 5 DEC 94
AIR FORCE-99 DLA- NEW: ARMY-AR, AT, ME, DLA-IS, USAF-84	BEARING, PLAIN, SELF-LUBRICATING, SELF-ALIGNING, LOW SPEED, NARROW, GROOVED OUTER RING, -65' TO 325' F	SUPERSEDING MS14102	REV H 31 JAN 94
ROJECT NUMBER: 3120-0742-06	GROUVED OUTER RING, -65 TU 325 F	AMSC - N/A	FSC 3120

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E REQUIREMENTS FOR ACQUIRING THE PRODUCT(S) DESCRIBED HEREIN SHALL CONSULTING THIS SPECIFICATION MEET AND THE ISSUE OF THE FOLLOWING SPECIFICATION LISTED IN THAT ISSUE OF THE FOLDORS SPECIFIED IN THE SOLICITATION: MIL-B-81820

ON IS APPROVED FOR USE BY ALL DEPARTMENTS AND THE DEPARTMENT OF DEFENSE.

THIS SPED



DASH	¢₿ +.0000	¢D** +.0000	H++	øM	(REF) +.000		LOAD		LOAD LATING		OSCIL- LATING LOAD	NO-LC ROTATIO BREAKAWAY IN-L	TORQUE	WT LB MAX
	0005	0005	±.005	MIN		002	RADIAL LB	AXIAL LB	LB	STANDARD	K TYPE			
-3	.1900	6050	.327	.300	15		2500	1770	4900	0.25-5.0	0-0.5	.031		
-4	.2500	.6250	.527	.500	13	.437	5500							
-5	.3125	.6875	.317	.360	14		9400	1640	6050			.035		
-6	.3750	.8125	.406	.466	8	.500	13700	2630	8310			.060		
-7	.4375	.9375	.442	.537	10	.562	20700	3650	11750			.080		
-8	.5000	1.0000	.505	.607	9	.625	21400	4970	14950	0.25-8.0	0-1.0	.100		
-9	.5625	1.1250	.536	.721	10	.687	26600	5370	18100			.135		
-10	.6250	1.1875	.567	.747	12	.750	29000	6130	20250			.160		
-12	.7500	1.3750	.630	.845	13	.875	37000	7730	26200		<u> </u>	.240		
-14	.8750	1.6250	.755	.995	6	.875	65200	10800	33600	0.25-12.0	0-2.0	.350		
-16	1.0000	2.1250	1.005	1.269	12	1.375	104000	19300	56250	0.20-12.0	2.0	.970		

* SEE REQUIREMENT 5 "NO-LOAD TORQUE" AND NOTE 8.

++ SEE NOTE 7.

J DENOTES CHANGES

PREPARING ACTIVITY: NAVY - AS CUSTODIANS: ARMY-AV NAVY-AS	MILITARY SPECIFICATION SHEET	SPECIFCATION SHEET N MS1410		REV 5 DE	'J C 94
AIR FORCE-99 DLA-	TITLE BEARING, PLAIN, SELF-LUBRICATING, SELF-AUGNING LOW SPEED, WIDE,	SUPERSEDING MS14102		REV 31 JA	H N 94
REVIEW: ARMY-AR, AT, ME, DLA-IS, USAF-84 PROJECT NUMBER: 3120-0742-08	SELF-ALGNING, LOW SPEED, WIDE, CHAMFERED OUTER RING, -65° F TO 325° F	AMSC - N/A	FSC	3120	
DISTRIBUTION STATEMENT & APPROVED FOR PL	IBLIC RELEASE; DISTRIBUTION IS UNLIMITED.		PAGE	1	0F 3

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THIS SPEC

(J) TABLE II. OVERSIZE BEARING DIMENSIONS 1/ 2/

RESTRICTED USAGE FOR REPAIR WORK ONLY

.010 AND .020 OVERSIZE OUTSIDE DIAMETER FOR REPLACEMENT OF BEARINGS SHOWN ON SHEET 1

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-5	.3125	.6975
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-9	.562 5	1.1450
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-14	.8750	1.6450
-18	1.0000	2.1450

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2/ REFER TO NASO331 FOR INSTALLATION PROCEDURE AND STAKING FORCES.

REQUIREMENTS:

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- 2. SURFACE TEXTURE: BALL DIA. Ro 8 MAX; BORE, BALL, FACE, AND OUTER RING DIA Ro 32 MAX; ALL OTHERS Ro 125 MAX.
- 3. HARDNESS: BALL, 440C 55-62 Rc OR PH13-BMo Rc 43 MIN; OUTER RING, Rc 28 MIN/Rc 37 MAX BEFORE SWAGING.
- (J) 4. SURFACE FINISH:

PLATING, WHEN SPECIFIED, SHALL BE ZINC-NICKEL PLATING PER AMS-2417, TYPE 2, OR CADMIUM PLATING PER QQ-P-416, TYPE 11, CLASS 2, WITH A THICKNESS RANCE OF 0.0003 TO 0.0006 INCHES. PLATE ON THE OUTSIDE DIAMETER SURFACE AND ON THE CHAMFER. PLATING RUNOUT SHALL OCCUR IN THE SIDE FACE AREA BETWEEN THE CHAMFER AND THE BALL. OUTER RING:

BALL: PH13-BMO, PASSIVATE PER QQ-P-35; 440C, PASSIVATE PER QQ-P-35, OPTIONAL.

NO-LOAD TORQUE: WHEN THE LETTER " K " IS PRESENT IN THE PART NUMBER, LOWER VALUES OF NO-LOAD TORQUE ARE SPECIFIED PER TABLE I. IF THE MEASURED TORQUE OF A " K " TYPE BEARING IS LESS THAN 0.1 INCH-POUND, THE INTERNAL RADIAL PLAY SHALL BE MEASURED AND SHALL NOT EXCEED THE FOLLOWING: 5.

DASH NO.	MAXIMUM RADIAL PLAY	MAXIMUN AXIAL PLAY
-3K THRU -12K	0.0007 INCH	0.0021 INCH
-14K THRU -16K	0.0010 INCH	0.0030 INCH

THE INTERNAL AXIAL PLAY SHALL BE MEASURED FOR ALL * K * TYPE BEARINGS.

PREPARING ACTIVITY: NAVY - AS CUSTODIANS: ARMY-AV NAVY-AS	MILITARY SPECIFICATION SHEET	MS14102	REV J 5 DEC 94
AIR FORCE-99 DLA-	TITLE BEARING, PLAIN, SELF-LUBRICATING, SELF-ALIGNING, LOW SPEED, NARROW,	SUPERSEDING MS14102	REV H 31 JA
REVIEW: ARMY-AR, AT, ME, DLA-IS, USAF-84 PROJECT NUMBER: 3120-0742-06	GROOVED OUTER RING, -65 TO 325 F	AMSC - N/A FS	3120
PROJECT NUMBER: 3120-0742-06 DISTRIBUTION STATEMENT A. APPROVED FOR PU	BLIC RELEASE; DISTRIBUTION IS UNLIMITED.	PAGE	2 OF

		FORM AP OMB NO. 0
NOTES:		
1. DIMENSIONS ARE IN INCHES. UNLES	S OTHERWISE SPECIFIED, TOLERANCES ARE; DECIMA	ALS \pm .010 AND ANGLES \pm 0.5.
2. BREAK SHARP EDGES AND CORNERS	AND REMOVE ALL BURRS AND SLIVERS.	
3. THE -3 SIZE BEARING IS EXEMPT F	ROM THE "RADIAL STATIC LIMIT LOAD TEST BECAU	JSE THE LOAD CAPACITY OF THE
	AMINATION AND SUB-ZERO TEMPERATURE RETIREME ECREASED TO 75% OF THE SPECIFIED LOAD.	
5. WHEN FLUIDS AND ELEVATED TEMPERA IN OPERATING LOADS OR BEARING I	ATURES (ABOVE 200° F) ARE BOTH PRESENT IN A LIFE MAY BE REQUIRED.	N APPLICATION, THEN Reductions
6. RASH NUMBER DESIGNATES NOMINAL	BORE DIA IN SIXTEENTHS OF AN INCH.	
	ER PLATING. DIMENSION " H" TO BE MET BEFORE	E PLATING WHEN APPLICABLE.
8. EXAMPLE OF PART NO.		
<u>MS14102 -6</u> C P K T = .375 C	5 NOMIMAL SORE DIA PH13-8Mo BALL MATERIAL Z. VERSIZE 0.0., (dimension D).	INC-NICKEL PLATED, LOW TORQUE, .010 IN
	ABSENCE OF THE LETTERS 1 T " AND " U" INDICATE	
	T = .010 OVERSIZE D (FOR REPAIR ONLY. SEE TAB	,
	u = .020 OVERSIZE 1 D (FOR REPAIR ONLY. SEE TAI	BLE II).
	ABSENCE OF THE LETTER "K " INDICATES STANDAR	~ · ·
	LETTER" K INDICATES LOW BREAKAWAY TORQUE (,
	ABSENCE OF THE LETTER "P 1 INDICATES NO PLAT LETTER " P 1 INDICATES ZINC-NICKEL OR CADMIUM	
	ABSENCE OF THE LETTER " C " INDICATES 440C B	
	LETIER "C" INDICATES PH13-8Mo BALL MATERIA	
	SIZE - BORE DIAMETER (DASH NO. FROM TABLE 1).	
· · · · · · · · · · · · · · · · · · ·	MS NUMBER.	
8a. BALL MATERIAL SHALL BE 440C A	MS-5630 UNLESS "C CALLOUT IS PRESENT IN	PART NUMBER. "C l INDICATES PH13-8Mo
	EEN THE TEXT OF THIS STANDARD AND THE REFERI	
DEFENSE INDEX OF SPECIFICATIONS	GOVERNMENT DOCUMENTS OF THE ISSUE LISTED I AND STANDARDS DODISS SPECIFIED IN THE SOLICI	TATION FORM A PART OF THIS STANDARD
REPARING ACTIVITY: NAVY - AS	MILIMARY CREATERAIMION CURRENT	SPECIFICATION SHEET NUMBER
REPARING ACTIVITY: NAVY - AS PUSTODIANS: ARMY- AV NAVY- AS	MILITARY SPECIFICATION SHEET	<u>r</u> MS141025
USTODIANS: ARMY- AV NAVY- AS AIR FORCE- 99 DIA-	TITLE	M S 1 4 1 0 2 5 SUPERSEDING R
USTODIANS: ARMY- AV NAVY- AS AIR FORCE- 99 DIA- EVIEW: ARMY-AR, AT, ME, DLA-IS, USAF-84		MS14102 R SUPERSEDING R MS14102 31
USTODIANS: ARMY- AV NAVY- AS AIR FORCE- 99 DIA-	TITLE BEARING PLAIN, SELF-LUBRICATING, SELF-ALIGNING, LOW SPEED, NARROW, GROOVED OUTER RING, -65' TO 325' F	M S 1 4 1 0 2 5 SUPERSEDING R

E REQUIREMENTS FOR ACOURING THE PRODUCT(S) DESCRIBED HEREIN SHALL CONSIDERT THIS SPECIFICATION THE AND THE ISSUE OF THE PODISS SPECIFIED IN THE SOLICITATION: MIL-B-81820

ON IS APPROVED FOR USE BY ALL DEPARTMENTS AND The department of defense.

THIS SPEC