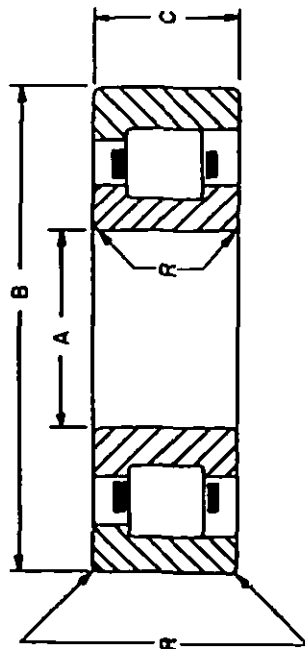


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THE CORNER RADIUS OR CHAMFER ON BOTH SIDES OF THE BEARING MUST CLEAR THE SHAFT AND HOUSING FILLET RADIUS LISTED IN THE TABLE BELOW

P.A. No. 00		TITLE		FED. SUP CLASS													
Other Cust ORD USAF		BEARINGS, ROLLER, CYLINDRICAL, SINGLE ROW OF ROLLERS, TWO ROLLER RETAINING RIBS ON INNER RING, ONE ROLLER RETAINING RIB ON OUTER RING, ONE DIRECTION LOCATING.		3110													
PROCUREMENT SPECIFICATION FF-B-185		SUPERSEDES:															
MS PART NO	FILM	A		B		C		SHAFT & HOUSING FILLET RADIUS		RECOMMENDED DIAMETER		INTERNAL ROLLER CLEARANCE		BASIC DYNAMIC LOAD RATING	BASIC STATIC LOAD RATING	RECOMMENDED LIMITING SPEED	EST WEIGHT
		MM	INCH	OUTSIDE DIA	MM	INCH	WIDTH	MM	INCH	MAX	MIN	MAX	MIN				
MS19077 - 1		17	.6693	40	1.5748	12	.4724	.025	.04	1.44	.84	4	16	2500	1400	8750	.19
MS19077 - 2		17	.6693	47	1.8504	14	.5512	.040	.00	1.67	.90	4	16	2900	1600	7800	.32
MS19077 - 3		20	.7874	52	2.0472	15	.5908	.040	.00	1.82	.90	4	16	3500	1900	6950	.37
MS19077 - 4		25	.9843	62	2.4409	17	.6693	.040	.00	2.20	1.25	4	18	5100	3000	6500	.35
MS19077 - 5		25	.9843	62	2.4409	17	.6693	.040	.00	2.20	1.25	4	18	5100	3000	6500	.64
MS19077 - 6		30	1.1811	62	2.4409	18	.6899	.040	.00	2.24	1.42	4	18	3950	2200	5500	.57
MS19077 - 7		30	1.1811	72	2.8346	19	.7480	.040	.00	2.55	1.50	4	18	6750	3950	5000	.98
MS19077 - 8		35	1.3780	72	2.8346	17	.6693	.040	.00	2.81	1.68	6	20	5900	3450	4700	.78
MS19077 - 9		35	1.3780	80	3.1496	21	.8268	.080	.00	2.83	1.73	6	20	6850	5350	4350	1.29
MS19077 - 10		40	1.5748	80	3.1496	18	.7087	.040	.00	2.88	1.87	6	20	7650	4650	4200	.99
MS19077 - 11		40	1.5748	90	3.5433	23	.9055	.060	.00	3.19	1.94	6	20	10300	6350	3850	1.74
MS19077 - 12		45	1.7717	95	3.7465	18	.7480	.040	.00	3.08	2.08	8	22	8050	5000	3850	1.15
MS19077 - 13		45	1.7717	100	3.9370	25	.9843	.060	.00	3.54	2.20	8	22	14200	9050	3450	2.32
MS19077 - 14		50	1.9685	110	4.3307	27	1.0630	.080	.00	3.90	2.42	8	22	17000	11100	3150	3.04
MS19077 - 15		55	2.1654	100	3.9370	21	.8268	.060	.00	3.60	2.52	8	26	10300	6700	3250	1.71
MS19077 - 16		55	2.1654	120	4.7244	29	1.1417	.080	.00	4.25	2.65	8	26	20700	13600	2850	3.88
MS19077 - 17		60	2.3622	110	4.3307	22	.8661	.060	.00	3.96	2.73	8	26	12800	8450	2950	2.29
MS19077 - 18		60	2.3622	130	5.1181	31	1.2205	.080	.00	4.61	2.88	8	26	23200	15500	2600	4.82
MS19077 - 19		65	2.5591	120	4.7244	23	.9055	.060	.00	4.32	3.00	8	26	14900	10200	2700	2.83
MS19077 - 20		65	2.5591	140	5.5118	33	1.2992	.080	.00	4.96	3.11	8	26	25600	17100	2400	6.99
MS19077 - 21		70	2.7559	125	4.9213	24	.9449	.060	.00	4.50	3.19	10	30	14800	10200	2550	3.02
MS19077 - 22		70	2.7559	150	5.9055	35	1.3780	.080	.00	5.31	3.32	10	30	30100	20800	2250	7.47
MS19077 - 23		75	2.9528	130	5.1181	25	.9843	.060	.00	4.68	3.37	10	30	17000	12100	2400	3.32
MS19077 - 24		75	2.9528	150	5.9055	37	1.4567	.080	.00	5.67	3.57	10	30	33300	25800	2100	8.55
MS19077 - 25		80	3.1496	140	5.5118	26	1.0236	.080	.00	5.05	3.60	10	30	19600	13700	2250	3.82
MS19077 - 26		80	3.1496	170	6.6929	39	1.5354	.080	.00	6.02	3.79	10	30	36500	25600	1950	10.47
MS19077 - 27		85	3.3465	160	6.3055	28	1.1024	.080	.00	5.40	3.85	12	32	22400	15900	2100	5.00
MS19077 - 28		85	3.3465	180	7.0866	41	1.6142	.100	.00	6.38	4.04	12	32	42900	30500	1850	12.28
MS19077 - 29		90	3.5433	160	6.2992	30	1.1811	.080	.00	5.76	4.05	12	32	28000	20200	1950	5.88
MS19077 - 30		90	3.5433	180	7.4803	43	1.6929	.100	.00	6.73	4.25	12	32	48500	33300	1750	14.21
MS19077 - 31		95	3.7402	170	6.6929	32	1.2598	.080	.00	6.12	4.29	12	32	31400	22800	1850	7.18
MS19077 - 32		95	3.7402	200	7.8740	45	1.7717	.100	.00	7.09	4.54	12	32	63200	39100	1650	18.94
MS19077 - 33		100	3.9370	180	7.0866	34	1.3388	.080	.00	6.48	4.56	12	32	34800	25600	1750	8.62

APPROVED 30 Apr 1959 REVISED

MILITARY STANDARD  
MS 19077

SHEET 1 OF 3

FED. SUP CLASS  
3110

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P.A. No		MS PART NO	F IN	A		B		C		R	RECOMMENDED		INTERNAL		BASIC DYNAMIC LOAD RATING	BASIC STATIC LOAD RATING	RECOMMENDED LIMITING SPEED	EST WEIGHT
Order	Cust			INSIDE DIA		OUTSIDE DIA		WIDTH			SHAFT & HOUSING FILLET RADIUS	SHAFT	DIAMETER	RADIAL CLEARANCE .0001 INCH				
ORD	USA#			MM	INCH	MM	INCH	MM	INCH	MM				INCH	MAX	MIN	MAX	MIN
PROCUREMENT SPECIFICATION FF-B-185		M619077 - 34	100	3.9370	215	8.4648	47	1.8504	.100	4.83	7.62	12	32	61500	45900	1550	19.50	
		M619077 - 35	105	4.1339	190	7.4603	36	1.4173	.080	4.77	6.84	14	35	36000	30000	1500	10.32	
		M619077 - 36	105	4.1339	225	8.8583	49	1.9291	.100	5.05	7.97	14	35	69700	52400	1450	22.95	
		M619077 - 37	110	4.3307	200	7.8740	38	1.4961	.080	5.01	7.20	14	35	45000	34000	1850	11.81	
		M619077 - 38	110	4.3307	240	9.4488	50	1.9685	.100	5.37	8.50	14	35	79100	60300	1350	27.35	
		M619077 - 39	120	4.7244	215	8.4648	40	1.5748	.080	5.47	7.74	14	35	49500	37500	1450	14.70	
TITLE		M619077 - 40	120	4.7244	250	10.2362	53	2.1554	.100	5.82	9.21	14	35	93400	71100	1150	35.00	
		M619077 - 41	130	5.1181	280	11.0236	58	2.2835	.120	6.32	9.92	18	41	110000	90100	950	43.05	
		M619077 - 42	150	5.9055	320	12.5984	65	2.5591	.120	7.11	11.34	18	45	133000	106000	950	60.00	
SUPERSEDES																		

P.A. Nono  
Other Cast  
ORD  
USAFPROCUREMENT SPECIFICATION  
FE-B-185

TITLE

BEARINGS, ROLLER, CYLINDRICAL, SINGLE ROW OF ROLLERS,  
TWO ROLLER RETAINING RIBS ON INNER RING, ONE ROLLER  
RETAINING RIB ON OUTER RING, ONE DIRECTION LOCATING.

SUPERSEDES:

MILITARY STANDARD

MS 19077

SHEET 2 OF 3

APPROVED 30 Apr 1959 REVISED

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P.A. NO. 0 Other Cust ORD USAF		TITLE BEARINGS, ROLLER, CYLINDRICAL, SINGLE ROW OF ROLLERS, TWO ROLLER RETAINING RIBS ON INNER RING, ONE ROLLER RETAINING RIB ON OUTER RING, ONE DIRECTION LOCATING.		MILITARY STANDARD <b>MS 19077</b>	
PROCUREMENT SPECIFICATION FF-B-185		SUPERSEDES:		SHEET 3 OF 3	

TOLERANCES: STANDARD GRADE (TOLERANCES IN .0001 INCH).

BORE			INNER RING			OUTER RING			WIDTH		
INCH			A			B			C		
OVER	INCL	MIN	MAX	RADIAL RUNOUT	OVER	INCL	MAX	MIN	MAX	MIN	MAX
0	10	-3	+0	3	0	18	+0	-4	6	0	50
10	18	-3	+0	4	18	30	+0	-4	6		
18	30	-4	+0	5	30	50	+0	-5	8		
30	50	-5	+0	6	50	80	+0	-6	10		
50	80	-6	+0	8	80	120	+0	-6	14		
80	120	-8	+0	10	120	150	+0	-8	16		
120	180	-10	+0	12	150	180	+0	-10	18		
180	250	-12	+0	16	180	250	+0	-12	20		
					250	315	+0	-14	24		
					315	400	+0	-16	28		

THE TOLERANCES FOR WIDTH APPLIES TO INDIVIDUAL RINGS.

MATERIAL: RINGS AND ROLLERS: ALLOY STEEL, FED. STD. 56 STEEL NO'S. 4320, 4620, 8620 OR E52100. CAGES: BRASS, BRONZE OR STEEL (MACHINED).

HARDNESS: RINGS AND ROLLERS: 58 RC. TO 66 RC.

DIMENSIONS: UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.

LUBRICATION: THE IDENTIFYING NUMBER DOES NOT INCLUDE LUBRICATION.

BASIC DYNAMIC LOAD RATING: BASIC DYNAMIC LOAD RATING IS THAT CONSTANT STATIONARY RADIAL LOAD WHICH A GROUP OF APPARENTLY IDENTICAL BEARINGS WITH STATIONARY OUTER RING CAN ENDURE FOR A RATING LIFE OF ONE MILLION REVOLUTIONS OF THE INNER RING.

RATING LIFE (HOURS): RATING LIFE IS THE NUMBER OF HOURS AT SOME CONSTANT SPEED OF THE INNER RING THAT 90 PER CENT OF A GROUP OF APPARENTLY IDENTICAL BEARINGS WILL COMPLETE OR EXCEED BEFORE THE FIRST EVIDENCE OF FATIGUE DEVELOPS.

THE MAGNITUDE OF THE APPROXIMATE RATING LIFE IN HOURS,  $H$ , IS FOUND FROM THE FORMULA:

$$H = \frac{16667}{R} \left( \frac{C}{P} \right)^3$$

WHERE  
 $C$  = BASIC DYNAMIC LOAD RATING  
 $P$  = EQUIVALENT LOAD (COMBINED RADIAL AND SHAFT LOCATION LOAD)  
 $R$  = REVOLUTIONS PER MINUTE

AVERAGE LIFE IS APPROXIMATELY FIVE TIMES THE RATING LIFE.

BASIC STATIC LOAD RATING: BASIC STATIC LOAD RATING IS THE MAXIMUM STATIC RADIAL LOAD WHICH WILL PRODUCE A PERMANENT DEFORMATION IN THE RACE AND ROLLERS, COMBINED AT ANY ONE CONTACT POINT, OF NOT MORE THAN .0001 OF THE ROLLER DIAMETER.

OPERATING TEMPERATURE: RECOMMENDED OPERATING TEMPERATURE NOT TO EXCEED 250 DEGREES FAHRENHEIT.

LIMITING RPM: LIMITING RPM IS THE RECOMMENDED SAFE DESIGN SPEED FOR NORMAL OPERATING CONDITIONS WITH GREASE LUBRICATION (INNER RING ROTATING).

NOTES:  
 (A) THIS STANDARD TAKES PRECEDENCE OVER DOCUMENTS REFERRED HEREIN.  
 (B) REFERENCED DOCUMENTS SHALL BE OF THE ISSUE IN EFFECT ON DATE OF INVITATION FOR BID.

FED. SUP CLASS  
3110

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