

CONSTRUCTION

This is a non-separable unit, comprising an inner ring, needle rollers, retaining washers and outer ring made extra-thick to better withstand rolling loads. The end washers are fastened to the inner ring. Type NBF has a single row of rollers, and type NBL has two rows of rollers.

Lubrication grooves and holes are provided for relubrication in the inner ring only, since the outer ring must serve as a roller.

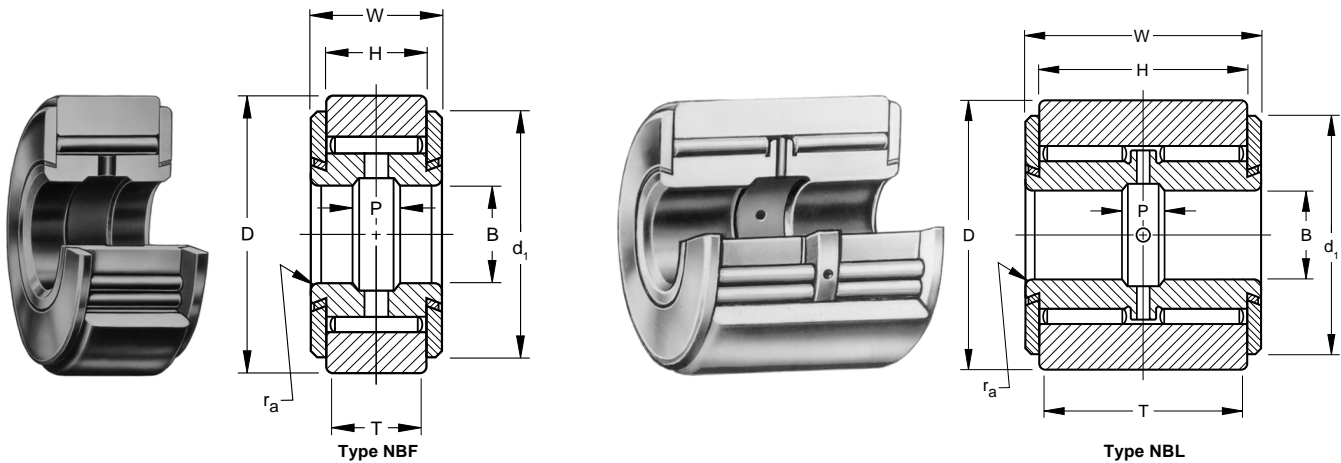
For protection from corrosion under the heavy rolling loads, the O.D. of the bearing is chrome plated. Other exposed surfaces, as mounted, are cadmium plated, or zinc-nickel plated.

DIMENSIONS

Dimensions listed below are for the finished bearing after plating.

Bearings are made to ISO and U.S. Military Specifications, and are constructed to have maximum capacity under rolling loads.

The shaft diameter dimensions necessary to mount these bearings properly are listed on the facing page.



SPECIFICATIONS AND ORDERING INFORMATION

BEARING DIMENSIONS

Bearing Designation	MS24465 MS24466 Dash No.	B* Bore		D* O.D.		W Widths Δ		H		r _a § Shaft Fillet (max.)	d ₁ End Washer Diameter (ref.)		P Inner Ring Groove Width (ref.)		
		+0.00 -0.007	+0.00 -0.018	+0.001 -0.001	+0.025 -0.025	+0.00 -0.05	+0.00 -0.13	+0.00 -0.05	+0.00 -0.13		in.	mm	in.	mm	
3NBF512YJ	MS24465-3	0.1900	4.826	0.7500	19.05	0.312	7.92	0.218	5.54	0.022	0.56	0.688	17.48	0.094	2.39
4NBF614YJ	MS24465-4	0.2500	6.350	0.8750	22.23	0.375	9.53	0.281	7.14	0.022	0.56	0.750	19.05	0.125	3.18
6NBF817YJ	MS24465-6	0.3750	9.525	1.0625	26.99	0.500	12.70	0.375	9.53	0.022	0.56	0.938	23.83	0.188	4.78
8NBF1021YJ	MS24465-8	0.5000	12.700	1.3125	33.34	0.625	15.88	0.500	12.70	0.032	0.81	1.188	30.18	0.188	4.78
10NBF1224YJ	MS24465-10	0.6250	15.875	1.5000	38.10	0.750	19.05	0.625	15.88	0.032	0.81	1.375	34.93	0.250	6.35
12NBF1628YJ	MS24465-12	0.7500	19.050	1.7500	44.45	1.000	25.40	0.875	22.23	0.032	0.81	1.625	41.28	0.250	6.35
14NBF1832YJ	MS24465-14	0.8750	22.225	2.0000	50.80	1.125	28.58	1.000	25.40	0.032	0.81	1.875	47.63	0.250	6.35
20NBF2040YJ	MS24465-20	1.2500	31.750	2.5000	63.50	1.250	31.75	1.049	26.64	0.032	0.81	1.906	48.41	0.375	9.53
6NBL1618YJ	MS24466-6	0.3750	9.525	1.1250	28.58	1.000	25.40	0.875	22.23	0.022	0.56	1.000	25.40	0.188	4.78
8NBL2022YJ	MS24466-8	0.5000	12.700	1.3750	34.93	1.250	31.75	1.125	28.58	0.032	0.81	1.250	31.75	0.250	6.35
10NBL2426YJ	MS24466-10	0.6250	15.875	1.6250	41.28	1.500	38.10	1.375	34.93	0.032	0.81	1.500	38.10	0.375	9.53
12NBL2830YJ	MS24466-12	0.7500	19.050	1.8750	47.63	1.750	44.45	1.625	41.28	0.032	0.81	1.750	44.45	0.375	9.53
14NBL3234YJ	MS24466-14	0.8750	22.225	2.1250	53.98	2.000	50.80	1.875	47.63	0.032	0.81	2.000	50.80	0.375	9.53
16NBL3638YJ	MS24466-16	1.0000	25.400	2.3750	60.33	2.250	57.15	2.049	52.04	0.032	0.81	2.125	53.98	0.375	9.53
20NBL4044YJ	MS24466-20	1.2500	31.750	2.7500	69.85	2.500	63.50	2.299	58.39	0.032	0.81	2.500	63.50	0.375	9.53

*Bore and O.D. tolerance limits correspond to the single mean diameter (the arithmetical mean of the largest and smallest diameters in a single radial plane).

§ Equal to minimum inner bearing chamfers.

AIRFRAME CONTROL NEEDLE ROLLER BEARINGS

MOUNTING

Types NBF and NBL bearings are designed for heavy rolling loads. The type NBF bearing is usually clevis mounted or cantilever mounted on a high strength shaft or bolt. The type NBL bearing must be straddle-mounted on a high strength shaft or bolt.

The end washers are fastened to the inner ring in a manner only to maintain the integrity of the assembly, while handling and installing the bearing. Therefore, when mounted they should be firmly backed up by washers or other clamping surfaces that are flat and square with the shaft center line. To provide sufficient washer support, the outside diameter of the clamping surfaces should be at least as large as the minimum clamping diameter (d_a) listed below.

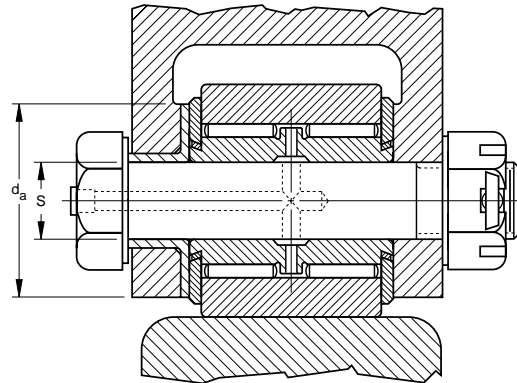
LOAD RATINGS

The limit load ratings (also called “allowable working load ratings”) of the bearings are listed below. The ultimate load ratings are not less than 1.5 times the limit load ratings. The ultimate load ratings correspond to 2/3 of the Aircraft Static Capacity ratings.

The track capacity ratings listed below are based on a track hardness equivalent to 40 HRC. For track capacity ratings for other hardness values see the “Engineering for Airframe Needle Roller Bearings” section of this catalog. It is important that the limit load rating of the bearings not be exceeded.

Load ratings are given in pounds-force: 1 lbf = 0.454 kgf = 4.448 N

Before final bearing selection is made, please consult the RBC Aerospace Engineering Department.



SPECIFICATIONS AND ORDERING INFORMATION

MOUNTING DIMENSIONS

T Track Contact Width (minimum)	Weight		S Shaft Diameters				d_a Clamping Diameter		Clamping Force		Bearing Capacity			
	(approx.)		Transition Fits (loose fits)		Transition Fits (tight range)		(minimum)		(max.)		as a Track Roller (CTR)		Limit Load Rating	
in. mm	lbs	kgs	in.	in.	in.	in.	in.	mm	lbf	N	lbf	N	lbf	N
0.125 3.18	0.029	0.01	0.1894	0.1889	0.1902	0.1897	0.438	11.13	480	2100	900	4000	1200	5300
0.218 5.54	0.049	0.02	0.2494	0.2489	0.2502	0.2497	0.516	13.11	870	3900	1430	6400	1910	8500
0.312 7.92	0.098	0.04	0.3744	0.3739	0.3752	0.3747	0.672	17.07	2100	9300	2700	12000	3600	16000
0.438 11.13	0.178	0.08	0.4994	0.4989	0.5002	0.4997	0.844	21.44	3840	17100	4300	19100	5780	25700
0.562 14.27	0.266	0.12	0.6244	0.6239	0.6252	0.6247	0.953	24.21	6150	27400	6400	28500	8530	37900
0.750 19.05	0.495	0.22	0.7494	0.7489	0.7502	0.7497	1.109	28.17	8950	39800	10700	47600	14200	63200
0.875 22.23	0.713	0.32	0.8744	0.8739	0.8752	0.8747	1.219	30.96	12200	54300	14400	64100	19300	85900
0.938 23.83	1.100	0.50	1.2494	1.2489	1.2503	1.2497	1.625	41.28	25800	114800	18900	84100	25300	112500
0.750 19.05	0.228	0.10	0.3744	0.3739	0.3752	0.3747	0.672	17.07	2100	9300	5370	23900	7130	31700
1.000 25.40	0.416	0.19	0.4994	0.4989	0.5002	0.4997	0.891	22.63	3840	17100	9370	41700	12500	55600
1.125 28.58	0.693	0.31	0.6244	0.6239	0.6252	0.6247	1.109	28.17	6150	27400	15000	66700	19900	88500
1.375 34.93	1.080	0.49	0.7494	0.7489	0.7502	0.7497	1.281	32.54	8950	39800	21400	95200	28500	126800
1.625 41.28	1.550	0.70	0.8744	0.8739	0.8752	0.8747	1.469	37.31	12200	54300	28900	128600	38500	171300
1.797 45.64	2.200	1.00	0.9994	0.9989	1.0002	0.9997	1.578	40.08	16300	72500	33600	149500	44900	199700
2.047 51.99	3.100	1.41	1.2494	1.2488	1.2503	1.2497	1.844	46.84	25800	114800	44600	198400	59500	264700

AIRFRAME CONTROL NEEDLE ROLLER BEARINGS