

Cylindrical Roller Bearings

AFBMA/ANSI Dimensional Tolerances Inner Ring

Basic Bore Diameter		Bore Diameter Tolerances*					Radial Runout	Width Limits	
		B Mean		Out of Roundness					
				Diameter Series					
		900	000	200 300					
Inch/mm		.0001 Inch/Micrometres							
Over	Incl.	Low	High	Max.	Max.	Max.	Max.	High	Low
0.7087 18.000	1.1811 30.000	-4 -10	+ 0 + 0	5 13	4 10	3 8	5 13	+ 0 + 0	-47 -120
1.1811 30.000	1.9685 50.000	-4.5 -12	+ 0 + 0	6 15	4.5 12	3.5 9	6 15	+ 0 + 0	-47 -120
1.9685 50.000	3.1496 80.000	-6 -15	+ 0 + 0	7.5 19	7.5 19	4.5 11	8 20	+ 0 + 0	-59 -150
3.1496 80.000	4.7244 120.000	-8 -20	+ 0 + 0	10 25	10 25	6 15	10 25	+ 0 + 0	-79 -200
4.7244 120.000	7.0866 180.000	-10 -25	+ 0 + 0	12 31	12 31	7.5 19	12 30	+ 0 + 0	-98 -250
7.0866 180.000	9.8425 250.000	-12 -30	+ 0 + 0	15 38	15 38	9 23	16 40	+ 0 + 0	-118 -300
9.8425 250.000	12.4015 315.000	-14 -35	+ 0 + 0	17 44	17 44	10 26	20 50	+ 0 + 0	-138 -350
12.4015 315.000	15.7480 400.000	-16 -40	0 0	20 50	20 50	12 30	24 60	0 0	-157 -400

* B Mean represents the Mean Bore Diameter Tolerance.
Out of Roundness represents the Maximum Bore Diameter Variation in a single radial plane.

Outer Ring

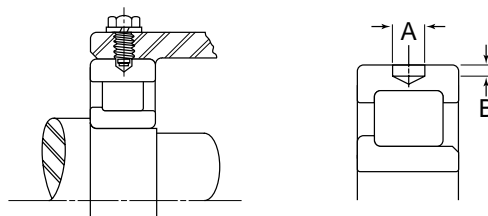
Basic Outside Diameter		Outside Diameter Tolerances**						Radial Runout	Width Limits
		D Mean		Out of Roundness					
				Open Bearing			Bearing with Internal Snap rings		
		900	000	200/300	200/300				
Inch/mm		.0001 Inch/Micrometres							
Over	Incl.	Low	High	Max.	Max.	Max.	Max.	Max.	High/Low
1.1811 30.000	1.9685 50.000	-4.5 -11	+ 0 + 0	5.5 14	4.5 11	3 8	6.5 16	8 20	Same as Inner Ring of the Same Bearing
1.9685 50.000	3.1496 80.000	-5 -13	+ 0 + 0	6.5 16	5 13	4 10	8 20	10 25	
3.1496 80.000	4.7244 120.000	-6 -15	+ 0 + 0	7.5 19	7.5 19	4.5 11	10 26	14 35	
4.7244 120.000	5.9055 150.000	-7 -18	+ 0 + 0	9 23	9 23	5.5 14	12 30	16 40	
5.9055 150.000	7.0866 180.000	-10 -25	+ 0 + 0	12 31	12 31	7.5 19	15 38	18 45	
7.0866 180.000	9.8425 250.000	-12 -30	+ 0 + 0	15 38	15 38	9 23	— —	20 50	
9.8425 250.000	12.4015 315.000	-14 -35	+ 0 + 0	17 44	17 44	10 26	— —	24 60	
12.4015 315.000	15.7480 400.000	-16 -40	+ 0 + 0	20 50	20 50	12 30	— —	28 70	
15.7480 400.000	19.6850 500.000	-18 -45	+ 0 + 0	22 56	22 56	13 34	— —	31 80	

** D Mean represents the Mean Outside Diameter Tolerance.
Out of Roundness represents the Maximum Outside Diameter Variation in a single radial plane.

Outer Ring Dowel Holes

Rotational or lateral movement of an outer ring can be prevented by dowing the ring in the housing. This method of mounting is used with either loosely fitted or heavily fitted rings as a precautionary measure. It is important that the blind dowel hole in the ring be located outside the load zone of the bearing.

The dowel holes are located centrally in the width of the outer ring and are identified by a letter "H" in the suffix of the bearing part number. Example: MR1310EHL. The dowel hole dimensions for each bearing size are charted below.



Basic Bearing Number									A	B	
'M' Series				'W' Series					Hole Diameter	Hole Depth	
1900	1000	1200 5200	1300 7300 5300	61900	61000	61200	67200	61300 67300		Inch/mm	
									Nominal	Maximum	Maximum
911 THRU 916	7 THRU 10	205 THRU 206	304 THRU 305	911 THRU 920	7 THRU 11	205 THRU 207			0.281 7.14	0.06 1.52	0.04 1.02
917 THRU 924	11 THRU 17	207 THRU 210		921 THRU 924	12 THRU 17	208 THRU 210			0.281 7.14	0.08 2.03	0.06 1.52
				18 THRU 21	211	207 THRU 211		0.312 7.92	0.08 2.03	0.06 1.52	
926 THRU 928	18 THRU 21	211 THRU 215	306 THRU 309	925 THRU 928		212 THRU 216			0.312 7.92	0.1 2.79	0.09 2.29
			930 THRU 934	22 THRU 24				0.375 9.52	0.11 2.79	0.09 2.29	
930 THRU 938	22 THRU 28	216 THRU 217	310 THRU 313	936 THRU 948	26 THRU 28			0.375 9.52	0.14 3.56	0.12 3.05	
						212 THRU 216	312 THRU 313	0.438 11.13	0.11 2.79	0.09 2.29	
					217 THRU 218	217 THRU 218		0.438 11.13	0.14 3.56	0.12 3.05	
940 THRU 964	30 THRU 64	218 THRU 228	314 THRU 321	952 THRU 964	30 THRU 64	219 THRU 232	219 THRU 232	314 THRU 320	0.438 11.13	0.108 4.57	0.16 4.06
	230 THRU 264	322 THRU 340						0.5 12.7	0.21 5.33	0.18 4.57	
				234 THRU 264	234 THRU 264			0.5 12.7	0.21 5.33	0.19 4.83	

Cylindrical Roller Bearings

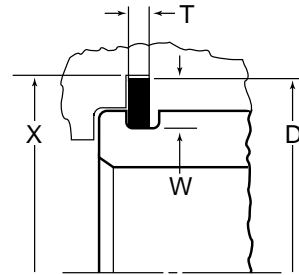
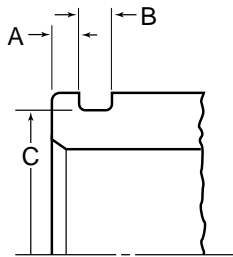
Outer Ring Groove & Snap Ring Dimensions

Outer rings can be retained axially in the housing bore by use of snap rings.

The groove and snap ring are identified by the letters G & R in the suffix of the bearing part number.

The groove without the snap ring is sometimes used as a puller groove to facilitate servicing.

Example: MU1310GCLR (Groove with snap ring)
MU1310GCL (Groove only)



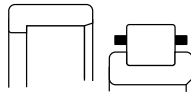
Series Number			A (Groove Location)		B	C		D	T	W	X
			1000-1900	1200-1300 5200-7300-5300	Groove Width	Groove Diameter		Snap Ring Diameter	Snap Ring Thickness	Snap Ring Height	Counter Bore
1000 1900	1200 5200	1300 7300 5300	Inch/mm								
			Nominal	Nominal	Nominal	Maximum	Tolerance	Nominal	Nominal	Nominal	Minimum
	1204			0.094 2.39	0.056 1.42	1.756 44.60	-0.010 -0.25	2.062 52.37	0.042 1.07	0.156 3.96	2.094 53.19
	1205	1304		0.094 2.39	0.056 1.42	1.958 49.73	-0.010 -0.25	2.266 57.56	0.042 1.07	0.156 3.96	2.297 59.34
1006			0.078 1.98		0.056 1.42	2.071 52.60	-0.010 -0.25	2.375 60.32	0.042 1.07	0.156 3.96	2.406 61.11
1007	1206	1305	0.078 1.98	0.125 3.18	0.078 1.98	2.347 59.61	-0.020 -0.51	2.656 67.46	0.065 1.65	0.156 3.96	2.688 68.28
1008			0.094 2.39		0.078 1.98	2.552 64.82	-0.020 -0.51	2.922 74.22	0.065 1.65	0.188 4.78	2.984 75.79
	1207	1306		0.125 3.18	0.078 1.98	2.709 68.81	-0.020 -0.51	3.078 78.18	0.065 1.65	0.188 4.78	3.141 79.78
1009			0.094 2.39		0.078 1.98	2.828 71.83	-0.020 -0.51	3.203 81.36	0.065 1.65	0.188 4.78	3.266 82.96
1010	1208	1307	0.094 2.39	0.125 3.18	0.078 1.98	3.024 76.81	-0.020 -0.51	3.406 86.51	0.065 1.65	0.188 4.78	3.469 88.11
1911			0.078 1.98		0.056 1.42	3.066 77.88	-0.020 -0.41	3.312 84.12	0.042 1.07	0.125 3.18	3.375 85.72
	1209			0.125 3.18	0.078 1.98	3.221 81.81	-0.020 -0.51	3.594 91.29	0.065 1.65	0.188 4.78	3.656 92.86
1912			0.078 1.98		0.056 1.42	3.263 82.88	-0.020 -0.41	3.516 89.31	0.042 1.07	0.125 3.18	3.578 90.88
1011	1210	1308	0.109 2.77	0.125 3.18	0.109 2.77	3.417 86.79	-0.020 -0.51	3.797 96.44	0.095 2.41	0.188 4.78	3.859 98.02
1913			0.078 1.98		0.056 1.42	3.459 87.86	-0.020 -0.41	3.703 94.06	0.042 1.07	0.125 3.18	3.766 95.66
1012			0.109 2.77		0.109 2.77	3.615 91.82	-0.020 -0.51	3.984 101.19	0.095 2.41	0.188 4.78	4.047 102.79
1013	1211	1309	0.109 2.77	0.125 3.18	0.109 2.77	3.811 96.80	-0.020 -0.41	4.188 106.38	0.095 2.41	0.188 4.78	4.250 107.95
1914			0.094 2.39		0.056 1.42	3.853 97.87	-0.020 -0.51	4.109 104.37	0.042 1.07	0.125 3.18	4.172 105.97

Outer Ring Groove & Snap Ring Dimensions

Series Number			A (Groove Location)		B	C		D	T	W	X
			1000-1900	1200-1300 5200-7300-5300	Groove Width	Groove Diameter		Snap Ring Diameter	Snap Ring Thickness	Snap Ring Height	Counter Bore
1000 1900	1200 5200	1300 7300 5300	Inch/mm								
			Nominal	Nominal	Nominal	Maximum	Tolerance	Nominal	Nominal	Nominal	Minimum
1915			0.094 2.39		0.056 1.42	4.040 102.62	-0.020 -0.51	4.359 110.72	0.042 1.07	0.156 3.96	4.422 112.32
1014	1212	1310	0.109 2.77	0.125 3.18	0.109 2.77	4.205 106.81	-0.020 -0.51	4.578 116.28	0.095 2.41	0.188 4.78	4.641 117.88
1916			0.094 2.39		0.056 1.42	4.237 107.62	-0.020 -0.51	4.457 115.49	0.042 1.07	0.156 3.96	4.609 117.07
1015			0.109 2.77		0.109 2.77	4.402 118.81	-0.020 -0.51	4.781 121.44	0.095 2.41	0.188 4.78	4.844 123.04
	1213	1311		0.156 3.96	0.125 3.18	4.536 115.21	-0.020 -0.51	5.094 129.39	0.109 2.77	0.281 7.14	5.156 130.96
1917			0.125 3.18		0.056 1.42	4.630 117.60	-0.020 -0.51	4.938 125.43	0.042 1.07	0.156 3.96	5.000 127.00
1016	1214		0.109 2.77	0.156 3.96	0.125 3.18	4.733 120.22	-0.020 -0.51	5.297 134.54	0.109 2.77	0.281 7.14	5.359 136.12
1918			0.125 3.18		0.056 1.42	4.827 122.61	-0.020 -0.51	5.141 130.58	0.042 1.07	0.156 3.96	5.203 132.16
1017	1215	1312	0.109 2.77	0.156 3.96	0.125 3.18	4.930 125.22	-0.020 -0.51	5.500 139.70	0.109 2.77	0.281 7.14	5.562 141.27
1919			0.125 3.18		0.056 1.42	5.024 127.61	-0.020 -0.51	5.328 135.33	0.042 1.07	0.156 3.96	5.391 136.93
1018	1216	1313	0.141 3.58	0.188 4.78	0.125 3.18	5.324 135.23	-0.020 -0.51	5.891 149.63	0.109 2.77	0.281 7.14	5.953 151.21
1920			0.125 3.18		0.078 1.98	5.418 137.62	-0.020 -0.51	5.734 145.64	0.065 1.65	0.156 3.96	5.797 147.24
1019			0.141 3.58		0.125 3.18	5.521 140.23	-0.020 -0.51	6.078 154.38	0.109 2.77	0.281 7.14	6.141 155.98
1921			0.125 3.18		0.078 1.98	5.615 142.62	-0.020 -0.51	5.922 150.42	0.065 1.65	0.156 3.96	5.984 151.99
1020	1217	1314	0.141 3.58	0.188 4.78	0.125 3.18	5.718 145.24	-0.020 -0.51	6.281 159.54	0.109 2.77	0.281 7.14	6.344 161.14
1922			0.125 3.18		0.078 1.98	5.812 147.62	-0.020 -0.51	6.125 155.58	0.065 1.65	0.156 3.96	6.188 157.18
1021	1218	1315	0.141 3.58	0.188 4.78	0.125 3.18	6.111 155.22	-0.020 -0.51	6.672 169.47	0.109 2.77	0.281 7.14	6.734 171.04
1924			0.141 3.58		0.078 1.98	6.371 161.82	-0.020 -0.51	6.750 171.45	0.065 1.65	0.188 4.78	6.812 173.02
1022	1219	1316	0.141 3.58	0.219 5.56	0.141 3.58	6.443 163.65	-0.020 -0.51	7.188 182.58	0.120 3.05	0.375 9.52	7.250 184.15

Cylindrical Roller Bearings

General Fitting Practice



Separable Bearings

Shaft	Inner Ring Fit	Page	Outer Ring Fit	Page
Rotating	Press	92-93	Tap	98-99
Stationary	Tap	94-95	Press	100-101

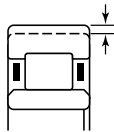


MU---TV, MU---UV, MU---TM, MU---UM

Non-Separable Bearings

Shaft	Inner Ring Fit	Page	Outer Ring Fit	Page
Rotating	Press	92-93	Push	96-97

* "A" Style Fitting Practice



Identified by suffix letter
"A" in part number

Over Size O.D.

Shaft	Inner Ring Fit	Page	Outer Ring Fit	Page
Rotating or Stationary	Press	92-93	Heavy Press*	102-103

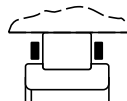
Inner or Outer Ring Omitted



M---EL, M---TV

Inner Ring Omitted

Shaft	Inner Ring Fit	Page	Outer Ring Fit	Page
Rotating	Shaft Dia.	104	Tap/Heavy Press*	98-99/102-103
Stationary	Shaft Dia.	105	Press	92-93



MU---L, MU---V

Outer Ring Omitted

Shaft	Inner Ring Fit	Page	Outer Ring Fit	Page
Rotating	Press	92-93	Housing Bore	107
Stationary	Tap	94-95	Housing Bore	106

* Over size outer ring for heavy press fit in standard (tap fit) size housing bore.

NOTE: The NTN Engineering Department should be consulted for any modification of the above fitting practice.

Fitting Practice

The fitting practice given in the following tables conforms to industry and AFBMA/ANSI standards, where applicable. The tables provide maximum and minimum sizes for bearing bore and O.D., shaft and housing bore, and the resultant effects of each type of fit.

Dimensions are given in both inch and metric units with deviations in .0001 inch and micrometers.

The looseness or tightness of a ring mounted on a shaft or in a housing bore depends on the conditions under which the bearing will operate and how it will be installed. The three most generally used fits are: PRESS, TAP AND PUSH.

PRESS fit is used to fit a ring tightly to a rotating member (shaft or housing) to prevent creep or slippage that could result in damage to the shaft or housing bore.

TAP fit usually accompanies PRESS fit, for fitting the opposite ring to the stationary member, if the bearing rings are separable.

PUSH fit is used instead of TAP, for a stationary outer ring, if the bearing is non-separable.

HEAVY PRESS fit ("A" style) is an NTN-Bower innovation for cylindrical roller bearings. It is used to prevent the outer ring from turning in the housing bore, where the bearing is operating under very heavy loads. The outer ring O.D. is made oversize to provide a heavy press fit in a standard (tap fit) size housing bore. The accompanying inner ring uses a PRESS fit on the shaft.

The catalog fitting practice does not apply to bearings mounted on hollow shafts or in housings of materials softer than steel, such as aluminum or magnesium. Since these conditions usually require heavier press fits, the NTN Engineering Department should be consulted for recommendation.

The chart on the opposite page summarizes the recommended fitting practice for various installations and bearing types, including bearings with inner or outer rings omitted.


Cylindrical Roller Bearings

Inner Ring PRESS Fit for Rotating Shaft

Basic Bearing Number	Bearing Dimensions		Shaft Diameter		Resultant Fit		AFBMA Fit Class
	Inch/mm				.0001 Inch/Micrometers		
	Maximum	Minimum	Maximum	Minimum	Tight	Tight	
04	0.7874 20.000	0.7870 19.990	0.7881 20.017	0.7877 20.008	3T 8T	11T 27T	m5
05	0.9843 25.000	0.9839 24.990	0.9850 25.017	0.9846 25.008	3T 8T	11T 27T	
06	1.1811 30.000	1.1807 29.990	1.1818 30.017	1.1814 30.008	3T 8T	11T 27T	
07	1.3780 35.000	1.3776 34.988	1.3788 35.020	1.3784 35.009	4T 9T	12.5T 32T	
08	1.5748 40.000	1.5744 39.988	1.5756 40.020	1.5752 40.009	4T 9T	12.5T 32T	
09	1.7717 45.000	1.7713 44.988	1.7727 45.025	1.7721 45.009	4T 9T	14.5T 37T	m6
10	1.9685 50.000	1.9681 49.988	1.9695 50.025	1.9689 50.009	4T 9T	14.5T 37T	
11	2.1654 55.000	2.1648 54.985	2.1666 55.030	2.1658 55.011	4T 11T	18T 45T	
12	2.3622 60.000	2.3616 59.985	2.3634 60.030	2.3626 60.011	4T 11T	18T 45T	
13	2.5591 65.000	2.5585 64.985	2.5603 65.030	2.5595 65.011	4T 11T	18T 45T	
14	2.7559 70.000	2.7553 69.985	2.7574 70.039	2.7567 70.020	8T 20T	21T 54T	n6
15	2.9528 75.000	2.9522 74.985	2.9543 75.039	2.9536 75.020	8T 20T	21T 54T	
16	3.1496 80.000	3.1490 79.985	3.1511 80.039	3.1504 80.020	8T 20T	21T 54T	
17	3.3465 85.000	3.3457 84.980	3.3483 85.045	3.3474 85.023	9T 23T	26T 65T	
18	3.5433 90.000	3.5425 89.980	3.5451 90.045	3.5442 90.023	9T 23T	26T 65T	
19	3.7402 95.000	3.7394 94.980	3.7420 95.045	3.7411 95.023	9T 23T	26T 65T	
20	3.9370 100.000	3.9362 99.980	3.9388 100.045	3.9379 100.023	9T 23T	26T 65T	

Cylindrical Roller Bearings

Inner Ring TAP Fit for Stationary Shaft

Basic Bearing Number	Bearing Dimensions		Shaft Diameter		Resultant Fit		AFBMA Fit Class
	Inch/mm				.0001 Inch/Micrometers		
	Maximum	Minimum	Maximum	Minimum	Tight	Tight	
04	0.7874	0.7870	0.7874	0.7869	5L	4T	 h6
	20.000	19.990	20.000	19.987	13L	10T	
05	0.9843	0.9839	0.9843	0.9838	5L	4T	
	25.000	24.990	25.000	24.987	13L	10T	
06	1.1811	1.1807	1.1877	1.1806	5L	4T	
	30.000	29.990	30.000	29.987	13L	10T	
07	1.3780	1.3776	1.3780	1.3774	6L	4.5T	
	35.000	34.988	35.000	34.984	16L	12T	
08	1.5748	1.5744	1.5748	1.5742	6L	4.5t	
	40.000	39.988	40.000	39.984	16L	12t	
09	1.7717	1.7713	1.7717	1.7711	6L	4.5T	
	45.000	44.988	45.000	44.984	16L	12T	
10	1.9685	1.9681	1.9685	1.9679	6L	4.5T	
	50.000	49.988	50.000	49.984	16L	12T	
11	2.1654	2.1648	2.1654	2.1647	7L	6T	
	55.000	54.985	55.000	54.981	19L	15T	
12	2.3622	2.3616	2.3622	2.3615	7L	6T	
	60.000	59.985	60.000	59.981	19L	15T	
13	2.5591	2.5585	2.5591	2.5584	7L	6T	
	65.000	64.985	65.000	64.981	19L	15T	
14	2.7559	2.7553	2.7559	2.7552	7L	6T	
	70.000	69.985	70.000	69.981	19L	15T	
15	2.9528	2.9522	2.9528	2.9521	7L	6T	
	75.000	74.985	75.000	74.981	19L	15T	
16	3.1496	3.1490	3.1496	3.1489	7L	6T	
	80.000	79.985	80.000	79.981	19L	15T	
17	3.3465	3.3457	3.3465	3.3456	9L	8T	
	85.000	84.980	85.000	84.978	22L	20T	
18	3.5433	3.5425	3.5433	3.5424	9L	8T	
	90.000	89.980	90.000	89.978	22L	20T	
19	3.7402	3.7394	3.7402	3.7393	9L	8T	
	95.000	94.980	95.000	94.978	22L	20T	
20	3.9370	3.9362	3.9370	3.9361	9L	8T	
	100.000	99.980	100.000	99.978	22L	20T	

Inner Ring TAP Fit for Stationary Shaft (Cont.)

Basic Bearing Number	Bearing Dimensions		Shaft Diameter		Resultant Fit		AFBMA Fit Class
	Inch/mm				.0001 Inch/Micrometers		
	Maximum	Minimum	Maximum	Minimum	Tight	Tight	
21	4.1339 105.000	4.1331 104.980	4.1339 105.000	4.1330 104.978	9L 22L	8T 20T	 h6
22	4.3307 110.000	4.3299 109.980	4.3307 110.000	4.3298 109.978	9L 22L	8T 20T	
24	4.7244 120.000	4.7236 119.980	4.7244 120.000	4.7235 119.978	9L 22L	8T 20T	
26	5.1181 130.000	5.1171 129.975	5.1181 130.000	5.1171 129.975	10L 25L	10T 25T	
28	5.5118 140.000	5.5108 139.975	5.5118 140.000	5.5108 139.975	10L 25L	10T 25T	
30	5.9055 150.000	5.9045 149.975	5.9055 150.000	5.9045 149.975	10L 25L	10T 25T	
32	6.2992 160.000	6.2982 159.975	6.2992 160.000	6.2982 159.975	10L 25L	10T 25T	
34	6.6929 170.000	6.6919 169.975	6.6929 170.000	6.6919 169.975	10L 25L	10T 25T	
36	7.0866 180.000	7.0856 179.975	7.0866 180.000	7.0856 179.975	10L 25L	10T 25T	
38	7.4803 190.000	7.4791 189.970	7.4803 190.000	7.4792 189.971	11L 29L	12T 30T	
40	7.8740 200.000	7.8728 199.970	7.8740 200.000	7.8729 199.971	11L 29L	12T 30T	
44	8.6614 220.000	8.6602 219.970	8.6614 220.000	8.6603 219.971	11L 29L	12T 30T	
48	9.4488 240.000	9.4476 239.970	9.4488 240.000	9.4477 239.971	11L 29L	12T 30T	
52	10.2362 260.000	10.2348 259.965	10.2362 260.000	10.2349 259.968	13L 32L	14T 35T	
56	11.0236 280.000	11.0222 279.965	11.0236 280.000	11.0223 279.968	13L 32L	14T 35T	
60	11.8110 300.000	11.8096 299.965	11.8110 300.000	11.8097 299.968	13L 32L	14T 35T	
64	12.5984 320.000	12.5968 319.960	12.5984 320.000	12.5970 319.964	14L 36L	16T 40T	

Cylindrical Roller Bearings

Inner Ring PUSH Fit for Non-Separable Bearings

Use with Press Fit Inner Ring

Basic Bearing Number				Bearing Outside Diameter		Housing Bore		Resultant Fit		AFBMA Fit Class
1900	1000	1200 5200	1300 7300 5300	Inch/mm				.0001 Inch/Micrometers		
				Maximum	Minimum	Maximum	Minimum	Loose	Tight	
		204		1.8504 47.000	1.8495 46.989	1.8514 47.025	1.8504 47.000	14.5L 36L		
		205	304	2.0472 52.000	2.0467 51.987	2.0484 52.030	2.0472 52.000	17L 43L		
	006			2.1654 55.000	2.1649 54.987	2.1666 55.030	2.1654 55.000	17L 43L		
	007	206	305	2.4409 62.000	2.4404 61.978	2.4421 62.030	2.4409 62.000	17L 43L		
	008			2.6772 68.000	2.6767 67.987	2.6784 68.030	2.6772 68.000	17L 43L		
		207	306	2.8346 72.000	2.8341 71.987	2.8358 72.030	2.8346 72.000	17L 43L		
	009			2.9528 75.000	2.9523 74.987	2.9540 75.030	2.9528 75.000	17L 43L		
911	010	208	307	3.1496 80.000	3.1491 79.987	3.1508 80.030	3.1496 80.000	17L 43L		
912		209		3.3465 85.000	3.3459 84.985	3.3479 85.035	3.3465 85.000	20L 50L		
913	011	210	308	3.5433 90.000	3.5427 89.985	3.5447 90.035	3.5433 90.000	20L 50L		
	012			3.7402 95.000	3.7396 94.985	3.7416 95.035	3.7402 95.000	20L 50L		
914	013	211	309	3.9370 100.000	3.9364 99.985	3.9384 100.035	3.9370 100.000	20L 50L		
915				4.1339 105.000	4.1333 104.985	4.1353 105.035	4.1339 105.000	20L 50L		
916	014	212	310	4.3307 110.000	4.3301 109.985	4.3321 110.035	4.3307 110.000	20L 50L		
	015			4.5276 115.000	4.5270 114.985	4.5290 115.035	4.5276 115.000	20L 50L		
917		213	311	4.7244 120.000	4.7238 119.985	4.7258 120.035	4.7244 120.000	20L 50L		
918	016	214		4.9213 125.000	4.9206 124.982	4.9299 125.040	4.9213 125.000	23L 58L		
919	017	215	312	5.1181 130.000	5.1174 129.982	5.1197 130.040	5.1181 130.000	23L 58L		
920	018	216	313	5.5118 140.000	5.5111 139.982	5.5134 140.040	5.5118 140.000	23L 58L		
921	019			5.7087 145.000	5.7080 144.982	5.7103 145.040	5.7087 145.000	23L 58L		
922	020	217	314	5.9055 150.000	5.9048 149.982	5.9071 150.040	5.9055 150.000	23L 58L		
	021	218	315	6.2992 160.000	6.2982 159.975	6.3008 160.040	6.2992 160.000	26L 65L		
924				6.4961 165.000	6.4951 164.975	6.4977 165.040	6.4961 165.000	26L 65L		
	022	219	316	6.6929 170.000	6.6919 169.975	6.6945 170.040	6.6929 170.000	26L 65L		

Inner Ring PUSH Fit for Non-Separable Bearings (Cont.)

Use with Press Fit Inner Ring


Basic Bearing Number				Bearing Outside Diameter		Housing Bore		Resultant Fit		AFBMA Fit Class
1900	1000	1200 5200	1300 7300 5300	Inch/mm				.0001 Inch/Micrometers		
				Maximum	Minimum	Maximum	Minimum	Loose	Tight	
926	024	220	317	7.0866	7.0856	7.0882	7.0866	26L	↑	↑
				180.000	179.975	180.040	180.000	65L		
928	026	221	318	7.4803	7.4791	7.4821	7.4803	30L	↑	↑
				190.000	189.970	190.046	190.000	76L		
930	028	222	319	7.8740	7.8728	7.8758	7.8740	30L	↑	↑
				200.000	199.970	200.046	200.000	76L		
932	030	224	320	8.2677	8.2665	8.2695	8.2677	30L	↑	↑
				210.000	209.970	210.046	210.000	76L		
934	032	226	321	8.4646	8.4634	8.4664	8.4646	30L	↑	↑
				215.000	214.970	215.046	215.000	76L		
936	034	228	322	8.6614	8.6602	8.6632	8.6614	30L	↑	↑
				220.000	219.970	220.046	220.000	76L		
938	036	230	324	8.8583	8.8571	8.8601	8.8583	30L	↑	↑
				225.000	224.970	225.046	225.000	76L		
940	038	232	326	9.0551	9.0539	9.0569	9.0551	30L	↑	↑
				230.000	229.970	230.046	230.000	76L		
944	040	234	328	9.4488	9.4476	9.4506	9.4488	30L	↑	↑
				240.000	239.970	240.046	240.000	76L		
948	044	236	330	9.8425	9.8413	9.8443	9.8425	30L	↑	↑
				250.000	249.970	250.046	250.000	76L		
952	048	238	332	10.2362	10.2348	10.2382	10.2362	34L	↑	↑
				260.000	259.965	260.052	260.000	87L		
956	052	240	334	10.6299	10.6285	10.6319	10.6299	34L	↑	↑
				270.000	269.965	270.052	270.000	87L		
960	056	244	336	11.0236	11.0222	11.0256	11.0236	34L	↑	↑
				280.000	279.965	280.052	280.000	87L		
964	248	252	338	11.4173	11.4159	11.4193	11.4173	34L	↑	↑
				290.000	289.965	290.052	290.000	87L		
966	252	256	340	11.8110	11.8096	11.8130	11.8110	34L	↑	↑
				300.000	299.965	300.052	300.000	87L		
968	256	260	342	12.2047	12.2033	12.2067	12.2047	34L	↑	↑
				310.000	309.965	310.052	310.000	87L		
970	260	264	344	12.5984	12.5967	12.6006	12.5984	38L	↑	↑
				320.000	319.960	320.057	320.000	97L		
972	264	268	346	13.3858	13.3842	13.3880	13.3858	38L	↑	↑
				340.000	339.960	340.057	340.000	97L		
974	268	272	348	14.1732	14.1716	14.1754	14.1732	38L	↑	↑
				360.000	359.960	360.057	360.000	97L		
976	272	276	350	14.9606	14.9590	14.9628	14.9606	38L	↑	↑
				380.000	379.960	380.057	380.000	97L		
978	276	280	352	15.7480	15.7464	15.7502	15.7480	38L	↑	↑
				400.000	399.960	400.057	400.000	97L		
980	280	284	354	16.5354	16.5336	16.5379	16.5354	43L	↑	↑
				420.000	419.955	420.063	420.000	108L		
982	284	288	356	17.3228	17.3210	17.3253	17.3228	43L	↑	↑
				440.000	439.955	440.063	440.000	108L		
984	288	292	358	18.8976	18.8958	18.9001	18.8976	43L	↑	↑
				480.000	479.955	480.063	480.000	108L		
986	292	296	360	19.6850	19.6832	19.6875	19.6850	43L	↑	↑
				500.000	499.955	500.063	500.000	108L		

LINE TO LINE

H7


Cylindrical Roller Bearings

Outer Ring TAP Fit for Rotating Shaft


Basic Bearing Number				Bearing Outside Diameter		Housing Bore		Resultant Fit		AFBMA Fit Class
1900	1000	1200 5200	1300 7300 5300	Inch/mm				.0001 Inch/Micrometers		
				Maximum	Minimum	Maximum	Minimum	Loose	Tight	
		204		1.8504 47.000	1.8500 46.989	1.8510 47.014	1.8500 46.989	10.5L 25L	4T 11T	 J7
		205	304	2.0472 52.000	2.0467 51.987	2.0479 52.018	2.0467 51.988	12L 31L	5T 12T	
	006			2.1654 55.000	2.1649 54.987	2.1661 55.018	2.1649 54.988	12L 31L	5T 12T	
	007	206	305	2.4490 62.000	2.4404 61.987	2.4416 62.018	2.4404 61.988	12L 31L	5T 12T	
	008			2.6772 68.000	2.6767 67.987	2.6779 68.018	2.6767 67.988	12L 31L	5T 12T	
		207	306	2.8346 72.000	2.8341 71.987	2.8353 72.018	2.8341 71.988	12L 31L	5T 12T	
	009			2.9528 75.000	2.9523 74.987	2.9535 75.018	2.9523 74.988	12L 31L	5T 12T	
911	010	208	307	3.1496 80.000	3.1491 79.987	3.1503 80.018	3.1491 79.988	12L 31L	5T 12T	
912		209		3.3465 85.000	3.3459 84.985	3.3474 85.022	3.3460 84.987	15L 37L	5T 13T	
913	011	210	308	3.5433 90.000	3.5427 89.985	3.5442 90.022	3.5428 89.987	15L 37L	5T 13T	
	012			3.7402 95.000	3.7396 94.985	3.7411 95.022	3.7397 94.987	15L 37L	5T 13T	
914	013	211	309	3.9370 100.000	3.9364 99.985	3.9379 100.022	3.9365 99.987	15L 37L	5T 13T	
915				4.1339 105.000	4.1333 104.985	4.1348 105.022	4.1334 104.987	15L 37L	5T 13T	
916	014	212	310	4.3307 110.000	4.3301 109.985	4.3316 110.022	4.3302 109.987	15L 37L	5T 13T	
	015			4.5276 115.000	4.5270 114.985	4.5285 115.022	4.5271 114.987	15L 37L	5T 13T	
917		213	311	4.7244 120.000	4.7238 119.985	4.7253 120.022	4.7239 119.987	15L 37L	5T 13T	
918	016	214		4.9213 125.000	4.9206 124.982	4.9223 125.026	4.9207 124.986	17L 44L	6T 14T	
919	017	215	312	5.1181 130.000	5.1174 129.982	5.1191 130.026	5.1175 129.986	17L 44L	6T 14T	
920	018	216	313	5.5118 140.000	5.5111 139.982	5.5128 140.026	5.5112 139.986	17L 44L	6T 14T	
921	019			5.7087 145.000	5.7080 144.982	5.7097 145.026	5.7081 144.986	17L 44L	6T 14T	
922	020	217	314	5.9055 150.000	5.9048 149.982	5.9065 150.026	5.9049 149.986	17L 44L	6T 14T	
	021	218	315	6.2992 160.000	6.2982 159.975	6.3002 160.026	6.2986 159.986	20L 51L	6T 14T	
924				6.4961 165.000	6.4951 164.975	6.4971 165.026	6.4955 164.986	20L 51L	6T 14T	
	022	219	316	6.6929 170.000	6.6919 169.975	6.6939 170.026	6.6923 169.986	20L 51L	6T 14T	

Cylindrical Roller Bearings

Outer Ring PRESS Fit for Stationary Shaft

Basic Bearing Number				Bearing Outside Diameter		Housing Bore		Resultant Fit		AFBMA Fit Class
1900	1000	1200 5200	1300 7300 5300	Inch/mm				.0001 Inch/Micrometers		
				Maximum	Minimum	Maximum	Minimum	Loose	Tight	
		204		1.8504 47.000	1.8500 46.989	1.8501 46.992	1.8491 46.967	1.5L 3L	13T 33T	 N7
		205	304	2.0472 52.000	2.0467 51.987	2.0468 51.991	2.0457 51.961	1L 4L	15T 39T	
	006			2.1654 55.000	2.1649 54.987	2.1650 54.991	2.1639 54.961	1L 4L	15T 39T	
	007	206	305	2.4409 62.000	2.4404 61.987	2.4405 61.991	2.4394 61.961	1L 4L	15T 39T	
	008			2.6772 68.000	2.6767 67.987	2.6768 67.991	2.6757 67.961	1L 4L	15T 39T	
		207	306	2.8346 72.000	2.8341 71.987	2.8342 71.991	2.8331 71.961	1L 4L	15T 39T	
	009			2.9528 75.000	2.9523 74.987	2.9524 74.991	2.9513 74.961	1L 4L	15T 39T	
911	010	208	307	3.1496 80.000	3.1491 79.987	3.1492 79.991	3.1481 79.961	1L 4L	15T 39T	
912		209		3.3465 85.000	3.3459 84.985	3.3461 84.990	3.3447 84.955	2L 5L	18T 45T	
913	011	210	308	3.5433 90.000	3.5427 89.985	3.5429 89.990	3.5415 89.955	2L 5L	18T 45T	
	012			3.7402 95.000	3.7396 94.985	3.7398 94.990	3.7384 94.955	2L 5L	18T 45T	
914	013	211	309	3.9370 100.000	3.9364 99.985	3.9366 99.990	3.9352 99.955	2L 5L	18T 45T	
915				4.1339 105.000	4.1333 104.985	4.1335 104.990	4.1321 104.955	2L 5L	18T 45T	
916	014	212	310	4.3307 110.000	4.3301 109.985	4.3303 109.990	4.3289 109.955	2L 5L	18T 45T	
	015			4.5276 115.000	4.5270 114.985	4.5272 114.990	4.5258 114.955	2L 5L	18T 45T	
917		213	311	4.7244 120.000	4.7238 119.985	4.7240 119.990	4.7226 119.955	2L 5L	18T 45T	
918	016	214		4.9213 125.000	4.9206 124.982	4.9208 124.988	4.9193 124.948	2L 6L	20T 52T	
919	017	215	312	5.1181 130.000	5.1174 129.982	5.1176 129.988	5.1161 124.948	2L 6L	20T 52T	
920	018	216	313	5.5118 140.000	5.5111 139.982	5.5113 139.988	5.5098 139.948	2L 6L	20T 52T	
921	019			5.7087 145.000	5.7080 144.982	5.7082 144.988	5.7067 144.948	2L 6L	20T 52T	
922	020	217	314	5.9055 150.000	5.9048 149.982	5.9050 149.982	5.9035 149.948	2L 6L	20T 52T	
	021	218	315	6.2992 160.000	6.2982 159.975	6.2987 159.988	6.2972 159.948	5L 13L	20T 52T	
924				6.4961 165.000	6.4951 164.975	6.4956 164.988	6.4941 164.948	5L 13L	20T 52T	
	022	219	316	6.6929 170.000	6.6919 169.975	6.6924 169.988	6.6909 169.948	5L 13L	20T 52T	

Outer Ring PRESS Fit for Stationary Shaft

Basic Bearing Number				Bearing Outside Diameter		Housing Bore		Resultant Fit		AFBMA Fit Class
1900	1000	1200 5200	1300 7300 5300	Inch/mm				.0001 Inch/Micrometers		
				Maximum	Minimum	Maximum	Minimum	Loose	Tight	
926	024	220	317	7.0866	7.0856	7.0861	7.0846	5L	20T	 N7
				180.000	179.975	179.988	179.948	13L	52T	
928	026	222	319	7.4803	7.4791	7.4797	7.4779	6L	24T	
				190.000	189.970	189.986	189.940	16L	60T	
930	028	224	320	7.8740	7.8728	7.8734	7.8716	6L	24T	
				200.000	199.970	199.986	199.940	16L	60T	
932	030	226	321	8.2677	8.2665	8.2671	8.2653	6L	24T	
				210.000	209.970	209.986	209.940	16L	60T	
934	032	230	322	8.4646	8.4634	8.4640	8.4622	6L	24T	
				215.000	214.970	214.986	214.940	16L	60T	
938	034	232	324	8.6614	8.6602	8.6608	8.6590	6L	24T	
				220.000	219.970	219.986	219.940	16L	60T	
940	036	234	326	8.8583	8.8571	8.8577	8.8559	6L	24T	
				225.000	224.970	224.986	224.940	16L	60T	
944	040	236	328	9.0551	9.0539	9.0545	9.0527	6L	24T	
				230.000	229.970	229.986	229.940	16L	60T	
948	044	238	330	9.4488	9.4476	9.4482	9.4464	6L	24T	
				250.000	249.970	249.986	249.940	16L	60T	
952	048	240	332	10.2362	10.2348	10.2356	10.2336	8L	26T	
				260.000	259.965	259.986	259.934	21L	66T	
956	052	244	334	10.6299	10.6285	10.6293	10.6273	8L	26T	
				270.000	269.965	269.986	269.934	21L	66T	
960	056	248	336	11.0236	11.0222	11.0230	11.0210	8L	26T	
				280.000	279.965	279.986	279.934	21L	66T	
964	252	256	338	11.4173	11.4159	11.4167	11.4147	8L	26T	
				290.000	289.965	289.986	289.934	21L	66T	
			340	11.8110	11.8096	11.8104	11.8084	8L	26T	
				300.000	299.965	299.986	299.934	21L	66T	
			342	12.2047	12.2033	12.2041	12.2021	8L	26T	
				310.000	309.965	309.986	309.934	21L	66T	
			344	12.5984	12.5968	12.5978	12.5955	10L	29T	
				320.000	319.960	319.984	319.927	24L	73T	
			346	13.3858	13.3842	13.3852	13.3829	10L	29T	
				340.000	339.960	339.984	339.927	24L	73T	
			348	14.1732	14.1716	14.1726	14.1703	10L	29T	
				360.000	359.960	359.984	359.927	24L	73T	
			350	14.9606	14.9590	14.9600	14.9577	10L	29T	
				380.000	379.960	379.984	379.927	24L	73T	
			352	15.7480	15.7464	15.7474	15.7451	10L	29T	
				400.000	399.960	399.984	399.927	24L	73T	
			354	16.5354	16.5336	16.5347	16.5323	11L	31T	
				420.000	419.955	419.983	419.920	28L	80T	
			356	17.3228	17.3210	17.3221	17.3197	11L	31T	
				440.000	439.955	439.983	439.920	28L	80T	
			358	18.9876	18.8958	18.8969	18.8945	11L	31T	
				480.000	479.955	479.983	479.920	28L	80T	
			360	19.6850	19.6832	19.6843	19.6819	11L	31T	
				500.000	499.955	499.983	499.920	28L	80T	

Cylindrical Roller Bearings


Outer Ring HEAVY PRESS Fit

“A” Style Bearing with Oversize O.D. For Heavy Press Fit — Use with Press Fit Inner Ring

Basic Bearing Number				Bearing Outside Diameter		Housing Bore		Resultant Fit		AFBMA Fit Class
1900	1000	1200 5200	1300 7300 5300	Inch/mm				.0001 Inch/Micrometers		
				Maximum	Minimum	Maximum	Minimum	Tight	Tight	
		204		1.8514 47.026	1.8510 47.015	1.8510 47.014	1.8500 46.989	.5L 1T	14T 37T	NONE
		205	304	2.0482 52.024	2.0477 52.011	2.0479 52.018	2.0467 51.988	2L 7L	15T 36T	
	006			2.1665 55.029	2.1660 55.016	2.1661 55.018	2.1649 54.988	1L 2L	16T 41T	
	007	206	305	2.4421 62.029	2.4416 62.016	2.4416 62.018	2.4404 61.988	0L 2L	17T 41T	
	008			2.6785 68.034	2.6780 68.021	2.6779 68.018	2.6767 67.988	1T 3T	18T 46T	
		207	306	2.8359 72.032	2.8354 72.019	2.8353 72.018	2.8341 71.988	1T 1T	18T 44T	
	009			2.9542 75.037	2.9537 75.024	2.9535 75.018	2.9523 74.988	2T 6T	19T 49T	
911	010	208	307	3.1510 80.035	3.1505 80.022	3.1503 80.018	3.1491 79.988	2T 4T	19T 47T	
912		209		3.3480 85.039	3.3474 85.024	3.3474 85.022	3.3460 84.987	0T 2T	20T 52T	
913	011	210	308	3.5449 90.040	3.5443 90.025	3.5442 90.022	3.5428 89.987	1T 3T	21T 53T	
	012			3.7419 95.044	3.7413 95.029	3.7411 95.022	3.7397 94.987	2T 7T	22T 57T	
914	013	211	309	3.9388 100.046	3.9382 100.031	3.9379 100.022	3.9365 99.987	3T 9T	23T 59T	
915				4.1358 105.049	4.1352 105.034	4.1348 105.022	4.1334 104.987	4T 12T	24T 62T	
916	014	212	310	4.3329 110.056	4.3323 110.041	4.3316 110.022	4.3302 109.987	7T 19T	27T 69T	
	015			4.5298 115.057	4.5292 115.042	4.5285 115.022	4.5271 114.987	7T 20T	27T 70T	
917		213	311	4.7266 120.056	4.7260 120.041	4.7253 120.022	4.7239 119.987	7T 19T	27T 69T	
918	016	214		4.9236 125.059	4.9229 125.041	4.9223 125.026	4.9207 124.986	6T 15T	29T 73T	
919	017	215	312	5.1204 130.058	5.1197 130.040	5.1191 130.026	5.1175 129.986	6T 14T	29T 72T	
920	018	216	313	5.5141 140.058	5.5134 140.040	5.5128 140.026	5.5112 139.986	6T 14T	29T 72T	
921	019			5.7113 145.067	5.7106 145.049	5.7097 145.026	5.7081 144.986	9T 23T	32T 81T	
922	020	217	314	5.9081 150.066	5.9074 150.048	5.9065 150.026	5.9049 149.986	9T 22T	32T 80T	
	021	218	315	6.3020 160.071	6.3010 160.046	6.3002 160.026	6.2986 159.986	8T 20T	34T 85T	
924				6.4989 165.072	6.4979 165.047	6.4971 165.026	6.4955 164.986	8T 21T	34T 86T	
	022	219	316	6.6957 170.071	6.6947 170.046	6.6939 170.026	6.6923 169.986	8T 20T	34T 85T	

Outer Ring HEAVY PRESS Fit (Cont.)

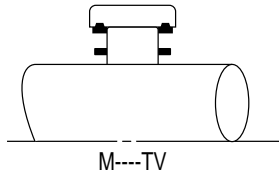
“A” Style Bearing with Oversize O.D. For Heavy Press Fit — Use with Press Fit Inner Ring

Basic Bearing Number				Bearing Outside Diameter		Housing Bore		Resultant Fit		AFBMA Fit Class
1900	1000	1200 5200	1300 7300 5300	Inch/mm				.0001 Inch/Micrometers		
				Maximum	Minimum	Maximum	Minimum	Tight	Tight	
926	024	220	317	7.0894	7.0884	7.0876	7.0860	8T	34T	 NONE
				180.071	180.046	180.026	179.986	20T	85T	
928	026	221	318	7.4833	7.4821	7.4815	7.4797	6T	36T	
				190.076	190.046	190.030	189.984	16T	92T	
930	028	222	319	7.8771	7.8759	7.8752	7.8734	7T	37T	
				200.078	200.048	200.030	199.984	18T	94T	
932	030	224	320	8.2709	8.2697	8.2689	8.2671	8T	38T	
				210.081	210.051	210.030	209.984	21T	97T	
934	032	226	321	8.4680	8.4668	8.4658	8.4640	10T	40T	
				215.087	215.057	215.030	214.984	27T	103T	
936	034	228	322	8.6649	8.6637	8.6626	8.6608	11T	41T	
				220.088	220.058	220.030	219.984	28T	104T	
938	036	230	324	8.8618	8.8606	8.8595	8.8577	11T	41T	
				225.090	225.060	225.030	224.984	30T	106T	
940	038	232	326	9.0587	9.0575	9.0563	9.0545	12T	42T	
				230.091	230.061	230.030	229.984	31T	107T	
944	040	234	328	9.4526	9.4514	9.4500	9.4482	14T	44T	
				240.096	240.066	240.030	239.984	36T	112T	
948	044	236	330	9.8463	9.8451	9.8437	9.8419	14T	44T	
				250.096	250.066	250.030	249.984	36T	112T	
952	048	240	334	10.2402	10.2388	10.2376	10.2356	12T	46T	
				260.101	260.066	260.036	259.984	30T	117T	
956	052	244	338	10.6339	10.6325	10.6313	10.6293	12T	46T	
				270.101	270.066	270.036	269.984	30T	117T	
960	056	248	340	11.0276	11.0262	11.0250	11.0230	12T	46T	
				280.101	280.066	280.036	279.984	30T	117T	
964	252	256	340	11.4216	11.4202	11.4187	11.4167	15T	49T	
				290.109	290.074	290.036	289.984	38T	125T	
964	256	256	340	11.8154	11.8140	11.8124	11.8104	16T	50T	
				300.111	300.076	300.036	299.984	40T	127T	
964	256	256	340	12.2091	12.2077	12.2061	12.2041	16T	50T	
				310.111	310.076	310.036	309.984	40T	127T	
964	256	256	340	12.6032	12.6016	12.5999	12.5977	17T	55T	
				320.121	320.081	320.039	319.982	42T	139T	
964	256	256	340	13.3906	13.3890	13.3873	13.3851	17T	55T	
				340.121	340.081	340.039	339.982	42T	139T	
964	256	256	340	14.1781	14.1765	14.1747	14.1725	18T	56T	
				360.124	360.084	360.039	359.982	45T	142T	
964	256	256	340	14.9655	14.9639	14.9621	14.9599	18T	56T	
				380.124	380.084	380.039	379.982	45T	142T	
964	256	256	340	15.7529	15.7513	15.7495	15.7473	18T	56T	
				400.124	400.084	400.039	399.982	45T	142T	
964	256	256	340	16.5406	16.5388	16.5371	16.5346	17T	60T	
				420.131	420.086	420.043	419.980	43T	151T	
964	256	256	340	17.3280	17.3262	17.3245	17.3220	17T	60T	
				440.131	440.086	440.043	439.980	43T	151T	
964	256	256	340	18.9029	18.9011	18.8993	18.8968	18T	61T	
				480.134	480.089	480.043	479.980	46T	154T	
964	256	256	340	19.6903	19.6885	19.6867	19.6842	18T	61T	
				500.134	500.089	500.043	499.980	46T	154T	

Cylindrical Roller Bearings

Shaft Diameter — Inner Ring Omitted

With Outer Ring TAP and HEAVY PRESS Fits for Rotating Shaft

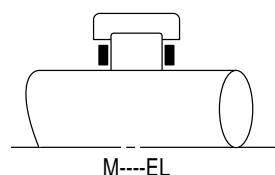
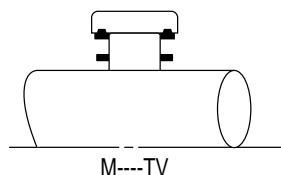


Basic Bearing Number	Shaft Diameter								Basic Bearing Number
	1900		1000		1200 5200		1300 7300 5300		
	Inch/mm								
	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum	
04					1.1092	1.1087	1.1013	1.1008	04
					28.174	28.161	27.973	27.960	
05					1.2672	1.2667	1.3383	1.3378	05
					32.187	32.174	33.993	33.980	
06			1.4523	1.4518	1.4994	1.4989	1.6024	1.6019	06
			36.888	36.875	38.085	38.072	40.701	40.688	
07			1.6611	1.6606	1.7322	1.7317	1.8452	1.8447	07
			42.192	42.179	43.998	43.985	46.868	46.855	
08			1.8777	1.8772	1.9667	1.9662	2.0600	2.0595	08
			47.694	47.681	49.954	49.941	52.324	52.311	
09			2.0831	2.0825	2.1870	2.1864	2.3382	2.3376	09
			52.911	52.896	55.550	55.535	59.390	59.375	
10			2.2802	2.2796	2.3816	2.3810	2.5660	2.5654	10
			57.917	57.902	60.493	60.478	65.176	65.161	
11	2.4316	2.4310	2.5408	2.5402	2.6354	2.6348	2.8136	2.8130	11
	61.763	61.748	64.536	64.521	66.939	66.924	71.465	71.450	
12	2.6316	2.6310	2.7377	2.7371	2.8511	2.8505	3.0545	3.0538	12
	66.843	66.828	69.538	69.523	72.418	72.403	77.584	77.566	
13	2.8267	2.8261	2.9348	2.9341	3.1677	3.1670	3.2957	3.2950	13
	71.798	71.783	74.544	74.526	80.460	80.442	83.711	83.693	
14	3.0719	3.0712	3.1588	3.1581	3.3392	3.3385	3.5132	3.5125	14
	78.026	78.008	80.234	80.216	84.816	84.798	89.235	89.217	
15	3.2669	3.2662	3.3569	3.3562	3.5063	3.5056	3.7780	3.7772	15
	82.979	82.961	85.265	85.247	89.060	89.042	95.961	95.941	
16	3.4619	3.4612	3.5969	3.5962	3.7532	3.7525	4.0031	4.0023	16
	87.932	87.914	91.361	91.343	95.331	95.313	101.679	101.659	
17	3.7274	3.7267	3.7944	3.7936	4.0182	4.0174	4.2746	4.2738	17
	94.676	94.658	96.378	96.358	102.062	102.042	108.575	108.555	
18	3.9225	3.9217	4.0324	4.0316	4.2235	4.2227	4.4915	4.4907	18
	99.632	99.612	102.423	102.403	107.277	107.257	114.084	114.064	
19	4.1174	4.1166	4.2284	4.2276	4.4714	4.4706	4.8113	4.8105	19
	104.582	104.562	107.401	107.381	113.574	113.554	122.207	122.187	
20	4.3330	4.3322	4.4254	4.4246	4.7663	4.7655	5.1267	5.1258	20
	110.058	110.038	112.405	112.385	121.064	121.044	130.218	130.195	

NOTE: Shaft surface functioning as a bearing raceway must have a hardness of Rockwell C-58-64 and a maximum finish of 18 AA Deviation from this hardness or surface finish will require a reduction in the catalog load rating of the bearing. Consult NTN Engineering Department for a recommendation.

Shaft Diameter — Inner Ring Omitted

With Outer Ring PRESS Fit for Stationary Shaft



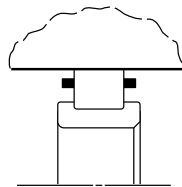
Basic Bearing Number	Shaft Diameter								Basic Bearing Number
	1900		1000		1200 5200		1300 7300 5300		
	Inch/mm								
	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum	
04					1.1085 28.156	1.1080 28.143	1.1005 27.953	1.1000 27.940	04
05					1.2665 32.169	1.2660 32.156	1.3376 33.975	1.3371 33.962	05
06			1.4515 36.868	1.4510 36.855	1.4896 38.064	1.4981 38.051	1.6016 40.681	1.6011 40.688	06
07			1.6603 42.172	1.6598 42.159	1.7314 43.978	1.7309 43.965	1.8444 46.848	1.8439 46.835	07
08			1.8770 47.676	1.8765 47.663	1.9660 49.936	1.9655 49.923	2.0590 52.299	2.0585 52.286	08
09			2.0823 52.890	2.0817 52.875	2.1861 55.527	2.1855 55.512	2.3373 59.367	2.3367 59.352	09
10			2.2794 57.897	2.2788 57.882	2.3807 60.470	2.3801 60.455	2.5651 65.154	2.5645 65.139	10
11	2.4308 61.742	2.4302 61.727	2.5398 64.511	2.5392 64.496	2.6344 66.914	2.6338 66.899	2.8127 71.443	2.8121 71.428	11
12	2.6307 66.820	2.6301 66.805	2.7368 69.515	2.7362 69.500	2.8502 72.395	2.8496 72.380	3.0534 77.556	3.0527 77.538	12
13	2.8258 71.775	2.8252 71.760	2.9339 74.521	2.9332 74.503	3.1668 80.437	3.1661 80.419	3.2946 83.683	3.2939 83.665	13
14	3.0710 78.003	3.0703 77.985	3.1579 80.211	3.1572 80.193	3.3381 84.788	3.3374 84.770	3.5120 89.205	3.5113 89.187	14
15	3.2660 82.956	3.2653 82.938	3.3560 85.242	3.3553 85.224	3.5052 89.032	3.5045 89.014	3.7769 95.933	3.7761 95.913	15
16	3.4610 87.909	3.4603 87.891	3.5958 91.333	3.5951 91.315	3.7520 95.301	3.7513 95.283	4.0020 101.651	4.0012 101.631	16
17	3.7265 94.653	3.7258 94.635	3.7933 96.350	3.7925 96.330	4.0171 102.034	4.0163 102.014	4.2735 108.547	4.2727 108.527	17
18	3.9214 99.604	3.9206 99.584	4.0313 102.395	4.0305 102.375	4.2224 107.249	4.2216 107.229	4.4902 114.051	4.4894 114.031	18
19	4.1163 104.554	4.1155 104.534	4.2273 107.373	4.2265 107.353	4.4703 113.546	4.4695 113.526	4.8099 122.171	4.8091 122.151	19
20	4.3319 110.030	4.3311 110.010	4.4243 112.377	4.4235 112.357	4.7652 121.036	4.7644 121.016	5.1254 130.162	5.1245 130.162	20

NOTE: Shaft surface functioning as a bearing raceway must have a hardness of Rockwell C-58-64 and a maximum finish of 18 AA Deviation from this hardness or surface finish will require a reduction in the catalog load rating of the bearing. Consult NTN Engineering Department for a recommendation.

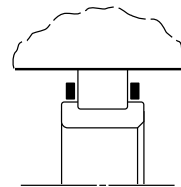
Cylindrical Roller Bearings

Housing Bore — Outer Ring Omitted

With Inner Ring TAP Fit for Stationary Shaft



MU---V



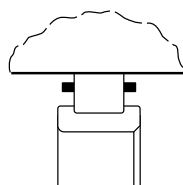
MU---L

Basic Bearing Number	Shaft Diameter								Basic Bearing Number
	1900		1000		1200 5200		1300 7300 5300		
	Inch/mm								
	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum	
04					1.6075 40.831	1.6070 40.818	1.7305 43.955	1.7300 43.942	04
05					1.7656 44.847	1.7651 44.834	2.1031 53.419	2.1026 53.406	05
06			1.9090 48.489	1.9085 48.476	2.1285 54.064	2.1280 54.051	2.3780 60.401	2.3775 60.388	06
07			2.1594 54.849	2.1589 54.836	2.4591 62.461	2.4586 62.448	2.6745 67.933	2.6740 67.920	07
08			2.3760 60.351	2.3755 60.338	2.7405 69.609	2.7400 69.596	3.0572 77.653	3.0567 77.640	08
09			2.6430 67.132	2.6424 67.117	2.9517 74.973	2.9511 74.958	3.3894 86.091	3.3888 86.076	09
10			2.8400 72.136	2.8394 72.121	3.1311 79.530	3.1305 79.515	3.7195 94.475	3.7189 94.460	10
11	2.8881 73.357	2.8875 73.342	3.1697 80.510	3.1691 80.495	3.4646 88.001	3.4640 87.986	4.0784 103.591	4.0778 103.567	11
12	3.0882 78.440	3.0876 78.425	3.3668 85.516	3.3662 85.501	3.8481 97.741	3.8475 97.726	4.4280 112.471	4.4273 112.453	12
13	3.2832 83.393	3.2826 83.378	3.5639 90.523	3.5632 90.505	4.1649 105.789	4.1642 105.771	4.7775 121.349	4.7768 121.331	13
14	3.6316 92.243	3.6309 92.225	3.9323 99.881	3.9316 99.863	4.3902 111.511	4.3895 111.493	5.0926 129.352	5.0919 129.334	14
15	3.8266 97.196	3.8259 97.178	4.1304 104.912	4.1297 104.894	4.5573 115.756	4.5566 115.738	5.4770 139.115	5.4762 139.095	15
16	4.0217 102.151	4.0210 102.133	4.4511 113.058	4.4504 113.040	4.9068 124.633	4.9061 124.615	5.8033 147.404	5.8025 147.384	16
17	4.3561 110.645	4.3554 110.627	4.6515 118.148	4.6507 118.128	5.2829 134.185	5.2821 134.165	6.1966 157.393	6.1958 157.373	17
18	4.5512 115.600	4.5504 115.580	5.0292 127.741	5.0284 127.721	5.5968 142.158	5.5960 142.138	6.5109 165.377	6.5101 165.357	18
19	4.7463 120.556	4.7455 120.536	5.2253 132.722	5.2245 132.702	5.9532 151.211	5.9524 151.191	6.8308 173.502	6.8300 173.482	19
20	5.1064 129.702	5.1056 129.682	5.4223 137.726	5.4215 137.706	6.3459 161.186	6.3451 161.166	7.2787 184.879	7.2778 184.856	20

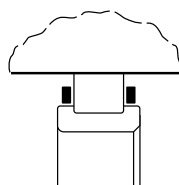
NOTE: Shaft surface functioning as a bearing raceway must have a hardness of Rockwell C-58-64 and a maximum finish of 18 AA Deviation from this hardness or surface finish will require a reduction in the catalog load rating of the bearing. Consult NTN Engineering Department for a recommendation.

Housing Bore — Outer Ring Omitted

With Inner Ring PRESS Fit for Rotating Shaft



MU---V



MU---L

Basic Bearing Number	Shaft Diameter								Basic Bearing Number
	1900		1000		1200 5200		1300 7300 5300		
	Inch/mm								
	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum	
04					1.6080 40.843	1.6075 40.830	1.7309 43.965	1.7304 43.952	04
05					1.7661 44.859	1.7656 44.846	2.1036 53.432	2.1031 53.419	05
06			1.9096 48.504	1.9091 48.491	2.1291 54.079	2.1286 54.066	2.3785 60.414	2.3780 60.401	06
07			2.1600 54.864	2.1595 54.851	2.4597 62.477	2.4592 62.464	2.6751 67.948	2.6746 67.935	07
08			2.3767 60.368	2.3762 60.355	2.7411 69.624	2.7406 69.611	3.0578 77.668	3.0573 77.655	08
09			2.6438 67.152	2.6432 67.137	2.9526 74.996	2.9520 74.981	3.3902 86.111	3.3896 86.096	09
10			2.8409 72.159	2.8403 72.144	3.1319 79.550	3.1313 79.535	3.7203 94.498	3.7197 94.480	10
11	2.8892 73.385	2.8886 73.370	3.1707 80.536	3.1701 80.521	3.4656 88.026	3.4650 88.011	4.0793 103.614	4.0787 103.599	11
12	3.0893 78.468	3.0887 78.453	3.3678 85.542	3.3672 85.527	3.8491 97.767	3.8485 97.752	4.4289 112.494	4.4282 112.476	12
13	3.2843 83.421	3.2837 83.406	3.5649 90.549	3.5642 90.531	4.1658 105.812	4.1651 105.794	4.7785 121.374	4.7778 121.356	13
14	3.6329 92.276	3.6322 92.258	3.9337 99.916	3.9330 99.898	4.3914 111.544	4.3908 111.526	5.0938 129.383	5.0931 129.365	14
15	3.8280 97.231	3.8273 97.213	4.1317 104.945	4.1310 104.927	4.5585 115.786	4.5578 115.768	5.4782 139.146	5.4774 139.126	15
16	4.0230 102.184	4.0223 102.166			4.9081 124.666	4.9074 124.648	5.8045 147.434	5.8037 147.414	16
17	4.3578 110.688	4.3571 110.670			5.2845 134.226	5.2837 134.206	6.1981 157.431	6.1973 157.411	17
18	4.5529 115.643	4.5521 115.623	5.0309 127.785	5.0301 127.765	5.5984 142.199	5.5976 142.179	6.5124 165.415	6.5116 165.395	18
19	4.7480 120.599	4.7472 120.579	5.2269 132.763	5.2261 132.743	5.9548 151.252	5.9540 151.232	6.8322 173.538	6.8314 173.518	19
20	5.1082 129.748	5.1074 129.728	5.4240 137.769	5.4232 137.749	6.3474 161.224	6.3466 161.204	7.2802 184.917	7.2793 184.894	20

NOTE: Shaft surface functioning as a bearing raceway must have a hardness of Rockwell C-58-64 and a maximum finish of 18 AA Deviation from this hardness or surface finish will require a reduction in the catalog load rating of the bearing. Consult NTN Engineering Department for a recommendation.