

APPENDICES

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Appendix Table 1 Conversion Table from SI (International Units) System

Comparison of SI, CGS, and Engineering Units

Unit System	Units				Units					
	Length	Mass	Time	Temp.	Acceleration	Force	Stress	Pressure	Energy	Power
SI	m	kg	s	K, °C	m/s ²	N	Pa	Pa	J	W
CGS System	cm	g	s	°C	Gal	dyn	dyn/cm ²	dyn/cm ²	erg	erg/s
Engineering Unit System	m	kgf · s ² /m	s	°C	m/s ²	kgf	kgf/m ²	kgf/m ²	kgf · m	kgf · m/s

Prefixes Used In SI System

Multiples	Prefix	Symbols	Multiples	Prefix	Symbols
10 ¹⁸	Exa	E	10 ⁻¹	Deci	d
10 ¹⁵	Peta	P	10 ⁻²	Centi	c
10 ¹²	Tera	T	10 ⁻³	Milli	m
10 ⁹	Giga	G	10 ⁻⁶	Micro	μ
10 ⁶	Mega	M	10 ⁻⁹	Nano	n
10 ³	Kilo	k	10 ⁻¹²	Pico	p
10 ²	Hecto	h	10 ⁻¹⁵	Femto	f
10	Deca	da	10 ⁻¹⁸	Ato	a

Conversion Factors from SI Units

Parameter	SI Units		Units other than SI		Conversion Factors from SI Units
	Names of Units	Symbols	Name of Units	Symbols	
Angle	Radian	rad	Degree	°	180/π
			Minute	'	10 800/π
			Second	"	648 000/π
Length	Meter	m	Micron	μ	10 ⁶
			Angstrom	Å	10 ¹⁰
Area	Square meter	m ²	Are	a	10 ⁻²
			Hectare	ha	10 ⁻⁴
Volume	Cubic meter	m ³	Liter	l, L	10 ³
			Deciliter	dl, dL	10 ⁴
Time	Second	s	Minute	min	1/60
			Hour	h	1/3 600
			Day	d	1/86 400
Frequency	Hertz	Hz	Cycle	s ⁻¹	1
Speed of Rotation	Revolution per second	s ⁻¹	Revolution per minute	rpm	60
Speed	Meter per second	m/s	Kilometer per hour	km/h	3 600/1 000
			Knot	kn	3 600/1 852
Acceleration	Meter per second per second	m/s ²	Gal	Gal	10 ²
			g	G	1/9.806 65
Mass	Kilogram	kg	Ton	t	10 ⁻³
Force	Newton	N	Kilogram-force	kgf	1/9.806 65
			Ton-force	tf	1/ (9.806 65×10 ³)
			Dyne	dyn	10 ⁵
Torque or Moment	Newton · meter	N · m	Kilogram-force meter	kgf · m	1/9.806 65
Stress	Pascal	Pa (N/m ²)	Kilogram-force per square centimeter	kgf/cm ²	1/ (9.806 65×10 ⁴)
			Kilogram-force per square millimeter	kgf/mm ²	1/ (9.806 65×10 ⁶)

Conversion Factors from SI Units (Continued)

Parameter	SI Units		Units other than SI		Conversion Factors from SI Units
	Names of Units	Symbols	Names of Units	Units	
Pressure	Pascal (Newton per square meter)	Pa (N/m ²)	Kilogram-force per square meter	kgf/m ²	1/9.806 65
			Water Column	mH ₂ O	1/ (9.806 65×10 ³)
			Mercury Column	mmHg	760/ (1.013 25×10 ⁵)
			Torr	Torr	760/ (1.013 25×10 ⁵)
			Bar	bar	10 ⁻⁵
			Atmosphere	atm	1/ (1.013 25×10 ⁵)
Energy	Joule (Newton · meter)	J (N · m)	Erg	erg	10 ⁷
			Calorie (International)	cal _{IT}	1/4.186 8
			Kilogram-force meter	kgf · m	1/9.806 65
			Kilowatt hour	kW · h	1/ (3.6×10 ⁶)
			French horse power hour	PS · h	≈ 3.776 72×10 ⁻⁷
Work	Watt (Joule per second)	W (J/s)	Kilogram-force meter per second	kgf · m/s	1/9.806 65
			Kilocalorie per hour	kcal/h	1/1.163
			French horse power	PS	≈ 1/735.498 8
Viscosity, Viscosity Index	Pascal second	Pa · s	Poise	P	10
Kinematic Viscosity, Kinematic Viscosity Index	Square meter per second	m ² /s	Stokes	St	10 ⁴
			Centistokes	cSt	10 ⁶
Temperature	Kelvin, Degree celsius	K, °C	Degree	°C	(See note ⁽¹⁾)
Electric Current, Magnetomotive Force	Ampere	A	Ampere	A	1
			Voltage, Electromotive Force	Volt	(Watts per ampere)
Magnetic Field Strength	Ampere per meter	A/m	Oersted	Oe	4π/10 ³
Magnetic Flux Density	Tesla	T	Gauss	Gs	10 ⁴
			Gamma	γ	10 ⁹
Electrical Resistance	Ohm	Ω	(Volts per ampere)	(V/A)	1

Note ⁽¹⁾ The conversion from TK into θ °C is θ = T - 273.15 but for a temperature difference, it is ΔT = Δθ. However, ΔT and Δθ represent temperature differences measured using the Kelvin and Celsius scales respectively.

Remarks The names and symbols in () are equivalent to those directly above them or on their left.

Example of conversion 1N=1/9.806 65kgf

Appendix Table 2 N-kgf Force Conversion Table

[Method of using this table] For example, to convert 10N into kgf, read the figure in the right kgf column adjacent to the 10 in the center column in the 1st block. This means that 10N is 1.0197kgf. To convert 10kgf into N, read the figure in the left N column of the same row, which indicates that the answer is 98.066N.

1 N=0.1019716 kgf
1 kgf=9.80665 N

N		kgf	N		kgf	N		kgf
9.8066	1	0.1020	333.43	34	3.4670	657.05	67	6.8321
19.613	2	0.2039	343.23	35	3.5690	666.85	68	6.9341
29.420	3	0.3059	353.04	36	3.6710	676.66	69	7.0360
39.227	4	0.4079	362.85	37	3.7729	686.47	70	7.1380
49.033	5	0.5099	372.65	38	3.8749	696.27	71	7.2400
58.840	6	0.6118	382.46	39	3.9769	706.08	72	7.3420
68.647	7	0.7138	392.27	40	4.0789	715.89	73	7.4439
78.453	8	0.8158	402.07	41	4.1808	725.69	74	7.5459
88.260	9	0.9177	411.88	42	4.2828	735.50	75	7.6479
98.066	10	1.0197	421.69	43	4.3848	745.31	76	7.7498
107.87	11	1.1217	431.49	44	4.4868	755.11	77	7.8518
117.68	12	1.2237	441.30	45	4.5887	764.92	78	7.9538
127.49	13	1.3256	451.11	46	4.6907	774.73	79	8.0558
137.29	14	1.4276	460.91	47	4.7927	784.53	80	8.1577
147.10	15	1.5296	470.72	48	4.8946	794.34	81	8.2597
156.91	16	1.6315	480.53	49	4.9966	804.15	82	8.3617
166.71	17	1.7335	490.33	50	5.0986	813.95	83	8.4636
176.52	18	1.8355	500.14	51	5.2006	823.76	84	8.5656
186.33	19	1.9375	509.95	52	5.3025	833.57	85	8.6676
196.13	20	2.0394	519.75	53	5.4045	843.37	86	8.7696
205.94	21	2.1414	529.56	54	5.5065	853.18	87	8.8715
215.75	22	2.2434	539.37	55	5.6084	862.99	88	8.9735
225.55	23	2.3453	549.17	56	5.7104	872.79	89	9.0755
235.36	24	2.4473	558.98	57	5.8124	882.60	90	9.1774
245.17	25	2.5493	568.79	58	5.9144	892.41	91	9.2794
254.97	26	2.6513	578.59	59	6.0163	902.21	92	9.3814
264.78	27	2.7532	588.40	60	6.1183	912.02	93	9.4834
274.59	28	2.8552	598.21	61	6.2203	921.83	94	9.5853
284.39	29	2.9572	608.01	62	6.3222	931.63	95	9.6873
294.20	30	3.0591	617.82	63	6.4242	941.44	96	9.7893
304.01	31	3.1611	627.63	64	6.5262	951.25	97	9.8912
313.81	32	3.2631	637.43	65	6.6282	961.05	98	9.9932
323.62	33	3.3651	647.24	66	6.7301	970.86	99	10.095

Appendix Table 3 kg-lb Mass Conversion Table

[Method of using this table] For example, to convert 10kg into lb, read the figure in the right lb column adjacent to the 10 in the center column in the 1st block. This means that 10kg is 22.046lb. To convert 10lb into kg, read the figure in the left kg column of the same row, which indicates that the answer is 4.536kg.

1 kg=2.2046226 lb
1 lb=0.45359237 kg

kg		lb	kg		lb	kg		lb
0.454	1	2.205	15.422	34	74.957	30.391	67	147.71
0.907	2	4.409	15.876	35	77.162	30.844	68	149.91
1.361	3	6.614	16.329	36	79.366	31.298	69	152.12
1.814	4	8.818	16.783	37	81.571	31.751	70	154.32
2.268	5	11.023	17.237	38	83.776	32.205	71	156.53
2.722	6	13.228	17.690	39	85.980	32.659	72	158.73
3.175	7	15.432	18.144	40	88.185	33.112	73	160.94
3.629	8	17.637	18.597	41	90.390	33.566	74	163.14
4.082	9	19.842	19.051	42	92.594	34.019	75	165.35
4.536	10	22.046	19.504	43	94.799	34.473	76	167.55
4.990	11	24.251	19.958	44	97.003	34.927	77	169.76
5.443	12	26.455	20.412	45	99.208	35.380	78	171.96
5.897	13	28.660	20.865	46	101.41	35.834	79	174.17
6.350	14	30.865	21.319	47	103.62	36.287	80	176.37
6.804	15	33.069	21.772	48	105.82	36.741	81	178.57
7.257	16	35.274	22.226	49	108.03	37.195	82	180.78
7.711	17	37.479	22.680	50	110.23	37.648	83	182.98
8.165	18	39.683	23.133	51	112.44	38.102	84	185.19
8.618	19	41.888	23.587	52	114.64	38.555	85	187.39
9.072	20	44.092	24.040	53	116.84	39.009	86	189.60
9.525	21	46.297	24.494	54	119.05	39.463	87	191.80
9.979	22	48.502	24.948	55	121.25	39.916	88	194.01
10.433	23	50.706	25.401	56	123.46	40.370	89	196.21
10.886	24	52.911	25.855	57	125.66	40.823	90	198.42
11.340	25	55.116	26.308	58	127.87	41.277	91	200.62
11.793	26	57.320	26.762	59	130.07	41.730	92	202.83
12.247	27	59.525	27.216	60	132.28	42.184	93	205.03
12.701	28	61.729	27.669	61	134.48	42.638	94	207.23
13.154	29	63.934	28.123	62	136.69	43.091	95	209.44
13.608	30	66.139	28.576	63	138.89	43.545	96	211.64
14.061	31	68.343	29.030	64	141.10	43.998	97	213.85
14.515	32	70.548	29.484	65	143.30	44.452	98	216.05
14.969	33	72.753	29.937	66	145.51	44.906	99	218.26

Appendix Table 4 °C-°F Temperature Conversion Table

[Method of using this table] For example, to convert 38°C into °F, read the figure in the right °F column adjacent to the 38 in the center column in the 2nd block. This means that 38°C is 100.4°F. To convert 38°F into °C, read the figure in the left °C column of the same row, which indicates that the answer is 3.3°C.

$$C = \frac{5}{9}(F - 32)$$

$$F = 32 + \frac{9}{5}C$$

°C			°F			°C			°F		
-73.3	-100	-148.0	0.0	32	89.6	21.7	71	159.8	43.3	110	230
-62.2	-80	-112.0	0.6	33	91.4	22.2	72	161.6	46.1	115	239
-51.1	-60	-76.0	1.1	34	93.2	22.8	73	163.4	48.9	120	248
-40.0	-40	-40.0	1.7	35	95.0	23.3	74	165.2	51.7	125	257
-34.4	-30	-22.0	2.2	36	96.8	23.9	75	167.0	54.4	130	266
-28.9	-20	-4.0	2.8	37	98.6	24.4	76	168.8	57.2	135	275
-23.3	-10	14.0	3.3	38	100.4	25.0	77	170.6	60.0	140	284
-17.8	0	32.0	3.9	39	102.2	25.6	78	172.4	65.6	150	302
-17.2	1	33.8	4.4	40	104.0	26.1	79	174.2	71.1	160	320
-16.7	2	35.6	5.0	41	105.8	26.7	80	176.0	76.7	170	338
-16.1	3	37.4	5.6	42	107.6	27.2	81	177.8	82.2	180	356
-15.6	4	39.2	6.1	43	109.4	27.8	82	179.6	87.8	190	374
-15.0	5	41.0	6.7	44	111.2	28.3	83	181.4	93.3	200	392
-14.4	6	42.8	7.2	45	113.0	28.9	84	183.2	98.9	210	410
-13.9	7	44.6	7.8	46	114.8	29.4	85	185.0	104.4	220	428
-13.3	8	46.4	8.3	47	116.6	30.0	86	186.8	110.0	230	446
-12.8	9	48.2	8.9	48	118.4	30.6	87	188.6	115.6	240	464
-12.2	10	50.0	9.4	49	120.2	31.1	88	190.4	121.1	250	482
-11.7	11	51.8	10.0	50	122.0	31.7	89	192.2	148.9	300	572
-11.1	12	53.6	10.6	51	123.8	32.2	90	194.0	176.7	350	662
-10.6	13	55.4	11.1	52	125.6	32.8	91	195.8	204	400	752
-10.0	14	57.2	11.7	53	127.4	33.3	92	197.6	232	450	842
-9.4	15	59.0	12.2	54	129.2	33.9	93	199.4	260	500	932
-8.9	16	60.8	12.8	55	131.0	34.4	94	201.2	288	550	1022
-8.3	17	62.6	13.3	56	132.8	35.0	95	203.0	316	600	1112
-7.8	18	64.4	13.9	57	134.6	35.6	96	204.8	343	650	1202
-7.2	19	66.2	14.4	58	136.4	36.1	97	206.6	371	700	1292
-6.7	20	68.0	15.0	59	138.2	36.7	98	208.4	399	750	1382
-6.1	21	69.8	15.6	60	140.0	37.2	99	210.2	427	800	1472
-5.6	22	71.6	16.1	61	141.8	37.8	100	212.0	454	850	1562
-5.0	23	73.4	16.7	62	143.6	38.3	101	213.8	482	900	1652
-4.4	24	75.2	17.2	63	145.4	38.9	102	215.6	510	950	1742
-3.9	25	77.0	17.8	64	147.2	39.4	103	217.4	538	1000	1832
-3.3	26	78.8	18.3	65	149.0	40.0	104	219.2	593	1100	2012
-2.8	27	80.6	18.9	66	150.8	40.6	105	221.0	649	1200	2192
-2.2	28	82.4	19.4	67	152.6	41.1	106	222.8	704	1300	2372
-1.7	29	84.2	20.0	68	154.4	41.7	107	224.6	760	1400	2552
-1.1	30	86.0	20.6	69	156.2	42.2	108	226.4	816	1500	2732
-0.6	31	87.8	21.1	70	158.0	42.8	109	228.2	871	1600	2912

Appendix Table 5 Viscosity Conversion Table

Kinematic Viscosity mm ² /s	Saybolt Universal SUS (sec)		No.1 Type Redwood R (sec)		Engler E (degree)	Kinematic Viscosity mm ² /s	Saybolt Universal SUS (sec)		No.1 Type Redwood R (sec)		Engler E (degree)
	100°F	210°F	50°C	100°C			100°F	210°F	50°C	100°C	
2	32.6	32.8	30.8	31.2	1.14	35	163	164	144	147	4.70
3	36.0	36.3	33.3	33.7	1.22	36	168	170	148	151	4.83
4	39.1	39.4	35.9	36.5	1.31	37	172	173	153	155	4.96
5	42.3	42.6	38.5	39.1	1.40	38	177	178	156	159	5.08
6	45.5	45.8	41.1	41.7	1.48	39	181	183	160	164	5.21
7	48.7	49.0	43.7	44.3	1.56	40	186	187	164	168	5.34
8	52.0	52.4	46.3	47.0	1.65	41	190	192	168	172	5.47
9	55.4	55.8	49.1	50.0	1.75	42	195	196	172	176	5.59
10	58.8	59.2	52.1	52.9	1.84	43	199	201	176	180	5.72
11	62.3	62.7	55.1	56.0	1.93	44	204	205	180	185	5.85
12	65.9	66.4	58.2	59.1	2.02	45	208	210	184	189	5.98
13	69.6	70.1	61.4	62.3	2.12	46	213	215	188	193	6.11
14	73.4	73.9	64.7	65.6	2.22	47	218	219	193	197	6.24
15	77.2	77.7	68.0	69.1	2.32	48	222	224	197	202	6.37
16	81.1	81.7	71.5	72.6	2.43	49	227	228	201	206	6.50
17	85.1	85.7	75.0	76.1	2.54	50	231	233	205	210	6.63
18	89.2	89.8	78.6	79.7	2.64	55	254	256	225	231	7.24
19	93.3	94.0	82.1	83.6	2.76	60	277	279	245	252	7.90
20	97.5	98.2	85.8	87.4	2.87	65	300	302	266	273	8.55
21	102	102	89.5	91.3	2.98	70	323	326	286	294	9.21
22	106	107	93.3	95.1	3.10	75	346	349	306	315	9.89
23	110	111	97.1	98.9	3.22	80	371	373	326	336	10.5
24	115	115	101	103	3.34	85	394	397	347	357	11.2
25	119	120	105	107	3.46	90	417	420	367	378	11.8
26	123	124	109	111	3.58	95	440	443	387	399	12.5
27	128	129	112	115	3.70	100	464	467	408	420	13.2
28	132	133	116	119	3.82	120	556	560	490	504	15.8
29	137	138	120	123	3.95	140	649	653	571	588	18.4
30	141	142	124	127	4.07	160	742	747	653	672	21.1
31	145	146	128	131	4.20	180	834	840	734	757	23.7
32	150	150	132	135	4.32	200	927	933	816	841	26.3
33	154	155	136	139	4.45	250	1 159	1 167	1 020	1 051	32.9
34	159	160	140	143	4.57	300	1 391	1 400	1 224	1 241	39.5

Remark 1mm²/s=1cSt

Appendix Table 7 Hardness Conversion Table (Reference)

Rockwell C Scale Hardness (1 471N) (150kgf)	Vickers Hardness	Brinell Hardness		Rockwell Hardness		Shore Hardness
		Standard Ball	Tungsten Carbide Ball	A Scale Load ^{588.4N} (60kgf) Brale Indenter	B Scale Load ^{980.7N} (100kgf) 1.588 mm Ball (1/16in)	
68	940	—	—	85.6	—	97
67	900	—	—	85.0	—	95
66	865	—	—	84.5	—	92
65	832	—	739	83.9	—	91
64	800	—	722	83.4	—	88
63	772	—	705	82.8	—	87
62	746	—	688	82.3	—	85
61	720	—	670	81.8	—	83
60	697	—	654	81.2	—	81
59	674	—	634	80.7	—	80
58	653	—	615	80.1	—	78
57	633	—	595	79.6	—	76
56	613	—	577	79.0	—	75
55	595	—	560	78.5	—	74
54	577	—	543	78.0	—	72
53	560	—	525	77.4	—	71
52	544	500	512	76.8	—	69
51	528	487	496	76.3	—	68
50	513	475	481	75.9	—	67
49	498	464	469	75.2	—	66
48	484	451	455	74.7	—	64
47	471	442	443	74.1	—	63
46	458	432	432	73.6	—	62
45	446	421	421	73.1	—	60
44	434	409	409	72.5	—	58
43	423	400	400	72.0	—	57
42	412	390	390	71.5	—	56
41	402	381	381	70.9	—	55
40	392	371	371	70.4	—	54
39	382	362	362	69.9	—	52
38	372	353	353	69.4	—	51
37	363	344	344	68.9	—	50
36	354	336	336	68.4	(109.0)	49
35	345	327	327	67.9	(108.5)	48
34	336	319	319	67.4	(108.0)	47
33	327	311	311	66.8	(107.5)	46
32	318	301	301	66.3	(107.0)	44
31	310	294	294	65.8	(106.0)	43
30	302	286	286	65.3	(105.5)	42
29	294	279	279	64.7	(104.5)	41
28	286	271	271	64.3	(104.0)	41
27	279	264	264	63.8	(103.0)	40
26	272	258	258	63.3	(102.5)	38
25	266	253	253	62.8	(101.5)	38
24	260	247	247	62.4	(101.0)	37
23	254	243	243	62.0	100.0	36
22	248	237	237	61.5	99.0	35
21	243	231	231	61.0	98.5	35
20	238	226	226	60.5	97.8	34
(18)	230	219	219	—	96.7	33
(16)	222	212	212	—	95.5	32
(14)	213	203	203	—	93.9	31
(12)	204	194	194	—	92.3	29
(10)	196	187	187	—	90.7	28
(8)	188	179	179	—	89.5	27
(6)	180	171	171	—	87.1	26
(4)	173	165	165	—	85.5	25
(2)	166	158	158	—	83.5	24
(0)	160	152	152	—	81.7	24

Appendix Table 8 Physical and Mechanical Properties of Materials

Materials	Specific Gravity	Coefficient of Linear Expansion (0° to 100°C) (K ⁻¹)	Hardness (Brinell)	Young's modulus (MPa) (kgf/mm ²)	Tensile Strength (MPa) (kgf/mm ²)	Yield Point (MPa) (kgf/mm ²)	Elongation (%)
Bearing Steel (hardened)	7.83	12.5×10 ⁻⁶	650 to 740	208 000 (21 200)	1 570 to 1 960 (160 to 200)	—	—
Martensitic Stainless Steel SUS 440C	7.68	10.1×10 ⁻⁶	580	200 000 (20 400)	1 960 (200)	1 860 (190)	—
Mild Steel (C=0.12 to 0.20%)	7.86	11.6×10 ⁻⁶	100 to 130	206 000 (21 000)	373 to 471 (38 to 48)	216 to 294 (22 to 30)	24 to 36
Hard Steel (C=0.3 to 0.5%)	7.84	11.3×10 ⁻⁶	160 to 200	206 000 (21 000)	539 to 686 (55 to 70)	333 to 451 (34 to 46)	14 to 26
Austenitic Stainless Steel SUS 304	8.03	16.3×10 ⁻⁶	150	193 000 (19 700)	588 (60)	245 (25)	60
Cast Iron Gray Iron FC200	7.3	10.4×10 ⁻⁶	223	98 100 (10 000)	More than 200 (20)	—	—
Cast Iron Spheroidal graphite Iron FCD400	7.0	11.7×10 ⁻⁶	Less than 201	169 000 (17 200)	More than 400 (41)	—	More than 12
Aluminum	2.69	23.7×10 ⁻⁶	15 to 26	70 600 (7 200)	78 (8)	34 (3.5)	35
Zinc	7.14	31×10 ⁻⁶	30 to 60	92 200 (9 400)	147 (15)	—	30 to 40
Copper	8.93	16.2×10 ⁻⁶	50	123 000 (12 500)	196 (20)	69 (7)	15 to 20
Brass (Annealed)	8.5	19.1×10 ⁻⁶	45	103 000 (10 500)	294 to 343 (30 to 35)	—	65 to 75
Brass (Machined)			85 to 130		363 to 539 (37 to 55)		15 to 50

Remark The hardness of hardened bearing steel and martensitic stainless steel is usually expressed using the Rockwell C Scale, but for comparison, it is converted into Brinell hardness.

Appendix Table 9 Tolerances

Diameter Classification (mm)		Single Plane Mean B.D. Deviation (Normal) Δd_{mp}	d6	e6	f6	g5	g6	h5	h6	h7	h8	h9	h10	js5	js6
over	incl.														
3	6	0 - 8	- 30 - 38	- 20 - 28	- 10 - 18	- 4 - 4 - 9 - 12	- 0 - 0 - 5 - 8	0 - 0 - 12 - 18	0 - 0 - 30 - 48	± 2.5	± 4				
6	10	0 - 8	- 40 - 49	- 25 - 34	- 13 - 22	- 5 - 5 - 11 - 14	0 - 0 - 6 - 9	0 - 0 - 15 - 22	0 - 0 - 36 - 58	± 3	± 4.5				
10	18	0 - 8	- 50 - 61	- 32 - 43	- 16 - 27	- 6 - 6 - 14 - 17	0 - 0 - 8 - 11	0 - 0 - 18 - 27	0 - 0 - 43 - 70	± 4	± 5.5				
18	30	0 - 10	- 65 - 78	- 40 - 53	- 20 - 33	- 7 - 7 - 16 - 20	0 - 0 - 9 - 13	0 - 0 - 21 - 33	0 - 0 - 52 - 84	± 4.5	± 6.5				
30	50	0 - 12	- 80 - 96	- 50 - 66	- 25 - 41	- 9 - 9 - 20 - 25	0 - 0 - 11 - 16	0 - 0 - 25 - 39	0 - 0 - 62 - 100	± 5.5	± 8				
50	80	0 - 15	- 100 - 119	- 60 - 79	- 30 - 49	- 10 - 10 - 23 - 29	0 - 0 - 13 - 19	0 - 0 - 30 - 46	0 - 0 - 74 - 120	± 6.5	± 9.5				
80	120	0 - 20	- 120 - 142	- 72 - 94	- 36 - 58	- 12 - 12 - 27 - 34	0 - 0 - 15 - 22	0 - 0 - 35 - 54	0 - 0 - 87 - 140	± 7.5	± 11				
120	180	0 - 25	- 145 - 170	- 85 - 110	- 43 - 68	- 14 - 14 - 32 - 39	0 - 0 - 18 - 25	0 - 0 - 40 - 63	0 - 0 - 100 - 160	± 9	± 12.5				
180	250	0 - 30	- 170 - 199	- 100 - 129	- 50 - 79	- 15 - 15 - 35 - 44	0 - 0 - 20 - 29	0 - 0 - 46 - 72	0 - 0 - 115 - 185	± 10	± 14.5				
250	315	0 - 35	- 190 - 222	- 110 - 142	- 56 - 88	- 17 - 17 - 40 - 49	0 - 0 - 23 - 32	0 - 0 - 52 - 81	0 - 0 - 130 - 210	± 11.5	± 16				
315	400	0 - 40	- 210 - 246	- 125 - 161	- 62 - 98	- 18 - 18 - 43 - 54	0 - 0 - 25 - 36	0 - 0 - 57 - 89	0 - 0 - 140 - 230	± 12.5	± 18				
400	500	0 - 45	- 230 - 270	- 135 - 175	- 68 - 108	- 20 - 20 - 47 - 60	0 - 0 - 27 - 40	0 - 0 - 63 - 97	0 - 0 - 155 - 250	± 13.5	± 20				
500	630	0 - 50	- 260 - 304	- 145 - 189	- 76 - 120	- 22 - 66	0 - 44	0 - 70	0 - 110	0 - 175	0 - 280	—	± 22		
630	800	0 - 75	- 290 - 340	- 160 - 210	- 80 - 130	- 24 - 74	0 - 50	0 - 80	0 - 125	0 - 200	0 - 320	—	± 25		
800	1 000	0 - 100	- 320 - 376	- 170 - 226	- 86 - 142	- 26 - 82	0 - 56	0 - 90	0 - 140	0 - 230	0 - 360	—	± 28		
1 000	1 250	0 - 125	- 350 - 416	- 195 - 261	- 98 - 164	- 28 - 94	0 - 66	0 - 105	0 - 165	0 - 260	0 - 420	—	± 33		
1 250	1 600	0 - 160	- 390 - 468	- 220 - 298	- 110 - 188	- 30 - 108	0 - 78	0 - 125	0 - 195	0 - 310	0 - 500	—	± 39		
1 600	2 000	0 - 200	- 430 - 522	- 240 - 332	- 120 - 212	- 32 - 124	0 - 92	0 - 150	0 - 230	0 - 370	0 - 600	—	± 46		

for Shaft Diameters

Units : μm

j5	j6	j7	k5	k6	k7	m5	m6	n6	p6	r6	r7	Diameter Classification (mm)	
												over	incl.
+ 3 - 2	+ 6 - 2	+ 8 - 4	+ 6 + 1	+ 9 + 1	+ 13 + 1	+ 9 + 4	+ 12 + 4	+ 16 + 8	+ 20 + 12	+ 23 + 15	+ 27 + 15	3	6
+ 4 - 2	+ 7 - 2	+ 10 - 5	+ 7 + 1	+ 10 + 1	+ 16 + 1	+ 12 + 6	+ 15 + 6	+ 19 + 10	+ 24 + 15	+ 28 + 19	+ 34 + 19	6	10
+ 5 - 3	+ 8 - 3	+ 12 - 6	+ 9 + 1	+ 12 + 1	+ 19 + 1	+ 15 + 7	+ 18 + 7	+ 23 + 12	+ 29 + 18	+ 34 + 23	+ 41 + 23	10	18
+ 5 - 4	+ 9 - 4	+ 13 - 8	+ 11 + 2	+ 15 + 2	+ 23 + 2	+ 17 + 8	+ 21 + 8	+ 28 + 15	+ 35 + 28	+ 41 + 28	+ 49 + 28	18	30
+ 6 - 5	+ 11 - 5	+ 15 - 10	+ 13 + 2	+ 18 + 2	+ 27 + 2	+ 20 + 9	+ 25 + 9	+ 33 + 17	+ 42 + 26	+ 50 + 34	+ 59 + 34	30	50
+ 6 - 7	+ 12 - 7	+ 18 - 12	+ 15 + 2	+ 21 + 2	+ 32 + 2	+ 24 + 11	+ 30 + 11	+ 39 + 20	+ 51 + 32	+ 60 + 41	+ 71 + 41	50	65
+ 6 - 9	+ 13 - 9	+ 20 - 15	+ 18 + 3	+ 25 + 3	+ 38 + 3	+ 28 + 13	+ 35 + 13	+ 45 + 23	+ 59 + 37	+ 73 + 51	+ 86 + 51	80	100
+ 7 - 11	+ 14 - 11	+ 22 - 18	+ 21 + 3	+ 28 + 3	+ 43 + 3	+ 33 + 15	+ 40 + 15	+ 52 + 27	+ 68 + 43	+ 88 + 63	+ 103 + 63	120	140
+ 7 - 13	+ 16 - 13	+ 25 - 21	+ 24 + 4	+ 33 + 4	+ 50 + 4	+ 37 + 17	+ 46 + 17	+ 60 + 31	+ 79 + 50	+ 90 + 65	+ 105 + 65	140	160
+ 7 - 16	± 16	± 26	+ 27 + 4	+ 36 + 4	+ 56 + 4	+ 43 + 20	+ 52 + 20	+ 66 + 34	+ 88 + 56	+ 93 + 68	+ 108 + 68	160	180
+ 7 - 18	± 18	+ 29 - 28	+ 29 + 4	+ 40 + 4	+ 61 + 4	+ 46 + 21	+ 57 + 21	+ 73 + 37	+ 98 + 62	+ 106 + 77	+ 123 + 77	180	200
+ 7 - 20	± 20	+ 31 - 32	+ 32 + 5	+ 45 + 5	+ 68 + 5	+ 50 + 23	+ 63 + 23	+ 80 + 40	+ 108 + 68	+ 109 + 80	+ 126 + 80	200	225
—	—	—	—	+ 44 0	+ 70 0	—	+ 70 + 26	+ 88 + 44	+ 122 + 78	+ 113 + 84	+ 130 + 84	225	250
—	—	—	—	+ 56 0	+ 90 0	—	+ 90 + 34	+ 112 + 56	+ 156 + 100	+ 126 + 94	+ 146 + 94	250	280
—	—	—	—	+ 50 0	+ 80 0	—	+ 80 + 30	+ 100 + 50	+ 138 + 88	+ 130 + 98	+ 150 + 98	280	315
—	—	—	—	+ 66 0	+ 105 0	—	+ 106 + 40	+ 132 + 66	+ 186 + 120	+ 144 + 114	+ 165 + 114	315	355
—	—	—	—	+ 78 0	+ 125 0	—	+ 126 + 48	+ 156 + 78	+ 218 + 140	+ 166 + 126	+ 189 + 126	400	450
—	—	—	—	+ 92 0	+ 150 0	—	+ 150 + 58	+ 184 + 92	+ 262 + 170	+ 172 + 132	+ 195 + 132	450	500
—	—	—	—	—	—	—	—	—	—	+ 194 + 150	+ 220 + 150	500	560
—	—	—	—	—	—	—	—	—	—	+ 199 + 155	+ 225 + 155	560	630
—	—	—	—	—	—	—	—	—	—	+ 225 + 175	+ 255 + 175	630	710
—	—	—	—	—	—	—	—	—	—	+ 235 + 185	+ 265 + 185	710	800
—	—	—	—	—	—	—	—	—	—	+ 266 + 210	+ 300 + 210	800	900
—	—	—	—	—	—	—	—	—	—	+ 276 + 220	+ 310 + 220	900	1 000
—	—	—	—	—	—	—	—	—	—	+ 316 + 250	+ 355 + 250	1 000	1 120
—	—	—	—	—	—	—	—	—	—	+ 326 + 260	+ 365 + 260	1 120	1 250
—	—	—	—	—	—	—	—	—	—	+ 378 + 300	+ 425 + 300	1 250	1 400
—	—	—	—	—	—	—	—	—	—	+ 408 + 330	+ 455 + 330	1 400	1 600
—	—	—	—	—	—	—	—	—	—	+ 462 + 370	+ 520 + 370	1 600	1 800
—	—	—	—	—	—	—	—	—	—	+ 492 + 400	+ 550 + 400	1 800	2 000

Appendix Table 10

Diameter Classification (mm)		Single Plane Mean O.D. Deviation (Normal) Δ_{Dmp}	E6	F6	F7	G6	G7	H6	H7	H8	J6	J7	JS6	JS7
over	incl.													
10	18	0 - 8	+ 43 + 32	+ 27 + 16	+ 34 + 16	+ 17 + 6	+ 24 + 6	+ 11 0	+ 18 0	+ 27 0	+ 6 - 5	+ 10 - 8	± 5.5	± 9
18	30	0 - 9	+ 53 + 40	+ 33 + 20	+ 41 + 20	+ 20 + 7	+ 28 + 7	+ 13 0	+ 21 0	+ 33 0	+ 8 - 5	+ 12 - 9	± 6.5	± 10.5
30	50	0 - 11	+ 66 + 50	+ 41 + 25	+ 50 + 25	+ 25 + 9	+ 34 + 9	+ 16 0	+ 25 0	+ 39 0	+ 10 - 6	+ 14 - 11	± 8	± 12.5
50	80	0 - 13	+ 79 + 60	+ 49 + 30	+ 60 + 30	+ 29 + 10	+ 40 + 10	+ 19 0	+ 30 0	+ 46 0	+ 13 - 6	+ 18 - 12	± 9.5	± 15
80	120	0 - 15	+ 94 + 72	+ 58 + 36	+ 71 + 36	+ 34 + 12	+ 47 + 12	+ 22 0	+ 35 0	+ 54 0	+ 16 - 6	+ 22 - 13	± 11	± 17.5
120	150	0 - 18	+ 110 + 85	+ 68 + 43	+ 83 + 43	+ 39 + 14	+ 54 + 14	+ 25 0	+ 40 0	+ 63 0	+ 18 - 7	+ 26 - 14	± 12.5	± 20
150	180	0 - 25	+ 129 + 100	+ 79 + 50	+ 96 + 50	+ 44 + 15	+ 61 + 15	+ 29 0	+ 46 0	+ 72 0	+ 22 - 7	+ 30 - 16	± 14.5	± 23
180	250	0 - 30	+ 142 + 110	+ 88 + 56	+ 108 + 56	+ 49 + 17	+ 69 + 17	+ 32 0	+ 52 0	+ 81 0	+ 25 - 7	+ 36 - 16	± 16	± 26
250	315	0 - 35	+ 161 + 125	+ 98 + 62	+ 119 + 62	+ 54 + 18	+ 75 + 18	+ 36 0	+ 57 0	+ 89 0	+ 29 - 7	+ 39 - 18	± 18	± 28.5
315	400	0 - 40	+ 175 + 135	+ 108 + 68	+ 131 + 68	+ 60 + 20	+ 83 + 20	+ 40 0	+ 63 0	+ 97 0	+ 33 - 7	+ 43 - 20	± 20	± 31.5
400	500	0 - 45	+ 189 + 145	+ 120 + 76	+ 146 + 76	+ 66 + 22	+ 92 + 22	+ 44 0	+ 70 0	+ 110 0	—	—	± 22	± 35
500	630	0 - 50	+ 210 + 160	+ 130 + 80	+ 160 + 80	+ 74 + 24	+ 104 + 24	+ 50 0	+ 80 0	+ 125 0	—	—	± 25	± 40
630	800	0 - 75	+ 226 + 170	+ 142 + 86	+ 176 + 86	+ 82 + 26	+ 116 + 26	+ 56 0	+ 90 0	+ 140 0	—	—	± 28	± 45
800	1 000	0 - 100	+ 261 + 195	+ 164 + 98	+ 203 + 98	+ 94 + 28	+ 133 + 28	+ 66 0	+ 105 0	+ 165 0	—	—	± 33	± 52.5
1 000	1 250	0 - 125	+ 298 + 220	+ 188 + 110	+ 235 + 110	+ 108 + 30	+ 155 + 30	+ 78 0	+ 125 0	+ 195 0	—	—	± 39	± 62.5
1 250	1 600	0 - 160	+ 332 + 240	+ 212 + 120	+ 270 + 120	+ 124 + 32	+ 182 + 32	+ 92 0	+ 150 0	+ 230 0	—	—	± 46	± 75
1 600	2 000	0 - 200	+ 370 + 260	+ 240 + 130	+ 305 + 130	+ 144 + 34	+ 209 + 34	+ 110 0	+ 175 0	+ 280 0	—	—	± 55	± 87.5
2 000	2 500	0 - 250												

Tolerances for Housing Bore Diameters

Units : μm

K5	K6	K7	M5	M6	M7	N5	N6	N7	P6	P7	Diameter Classification (mm)	
											over	incl.
+ 2 - 6	+ 2 - 9	+ 6 - 12	- 4 - 12	- 4 - 15	0 - 18	- 9 - 17	- 9 - 20	- 5 - 23	- 15 - 26	- 11 - 29	10	18
+ 1 - 8	+ 2 - 11	+ 6 - 15	- 5 - 14	- 4 - 17	0 - 21	- 12 - 21	- 11 - 24	- 7 - 28	- 18 - 31	- 14 - 35	18	30
+ 2 - 9	+ 3 - 13	+ 7 - 18	- 5 - 16	- 4 - 20	0 - 25	- 13 - 24	- 12 - 28	- 8 - 33	- 21 - 37	- 17 - 42	30	50
+ 3 - 10	+ 4 - 15	+ 9 - 21	- 6 - 19	- 5 - 24	0 - 30	- 15 - 28	- 14 - 33	- 9 - 39	- 26 - 45	- 21 - 51	50	80
+ 2 - 13	+ 4 - 18	+ 10 - 25	- 8 - 23	- 6 - 28	0 - 35	- 18 - 33	- 16 - 38	- 10 - 45	- 30 - 52	- 24 - 59	80	120
+ 3 - 15	+ 4 - 21	+ 12 - 28	- 9 - 27	- 8 - 33	0 - 40	- 21 - 39	- 20 - 45	- 12 - 52	- 36 - 61	- 28 - 68	120	180
+ 2 - 18	+ 5 - 24	+ 13 - 33	- 11 - 31	- 8 - 37	0 - 46	- 25 - 45	- 22 - 51	- 14 - 60	- 41 - 70	- 33 - 79	180	250
+ 3 - 20	+ 5 - 27	+ 16 - 36	- 13 - 36	- 9 - 41	0 - 52	- 27 - 50	- 25 - 57	- 14 - 66	- 47 - 79	- 36 - 88	250	315
+ 3 - 22	+ 7 - 29	+ 17 - 40	- 14 - 39	- 10 - 46	0 - 57	- 30 - 55	- 26 - 62	- 16 - 73	- 51 - 87	- 41 - 98	315	400
+ 2 - 25	+ 8 - 32	+ 18 - 45	- 16 - 43	- 10 - 50	0 - 63	- 33 - 60	- 27 - 67	- 17 - 80	- 55 - 95	- 45 - 108	400	500
—	0 - 44	0 - 70	—	- 26 - 70	- 26 - 96	—	- 44 - 88	- 44 - 114	- 78 - 122	- 78 - 148	500	630
—	0 - 50	0 - 80	—	- 30 - 80	- 30 - 110	—	- 50 - 100	- 50 - 130	- 88 - 138	- 88 - 168	630	800
—	0 - 56	0 - 90	—	- 34 - 90	- 34 - 124	—	- 56 - 112	- 56 - 146	- 100 - 156	- 100 - 190	800	1 000
—	0 - 66	0 - 105	—	- 40 - 106	- 40 - 145	—	- 66 - 132	- 66 - 171	- 120 - 186	- 120 - 225	1 000	1 250
—	0 - 78	0 - 125	—	- 48 - 126	- 48 - 173	—	- 78 - 156	- 78 - 203	- 140 - 218	- 140 - 265	1 250	1 600
—	0 - 92	0 - 150	—	- 58 - 150	- 58 - 208	—	- 92 - 184	- 92 - 242	- 170 - 262	- 170 - 320	1 600	2 000
—	0 - 110	0 - 175	—	- 68 - 178	- 68 - 243	—	- 110 - 220	- 110 - 285	- 195 - 305	- 195 - 370	2 000	2 500

Appendix Table 11 Values of

Basic Size (mm)		Standard										
		IT1	IT2	IT3	IT4	IT5	IT6	IT7	IT8	IT9	IT10	IT11
over	incl.	Tolerances (μm)										
—	3	0.8	1.2	2	3	4	6	10	14	25	40	60
3	6	1	1.5	2.5	4	5	8	12	18	30	48	75
6	10	1	1.5	2.5	4	6	9	15	22	36	58	90
10	18	1.2	2	3	5	8	11	18	27	43	70	110
18	30	1.5	2.5	4	6	9	13	21	33	52	84	130
30	50	1.5	2.5	4	7	11	16	25	39	62	100	160
50	80	2	3	5	8	13	19	30	46	74	120	190
80	120	2.5	4	6	10	15	22	35	54	87	140	220
120	180	3.5	5	8	12	18	25	40	63	100	160	250
180	250	4.5	7	10	14	20	29	46	72	115	185	290
250	315	6	8	12	16	23	32	52	81	130	210	320
315	400	7	9	13	18	25	36	57	89	140	230	360
400	500	8	10	15	20	27	40	63	97	155	250	400
500	630	9	11	16	22	32	44	70	110	175	280	440
630	800	10	13	18	25	36	50	80	125	200	320	500
800	1 000	11	15	21	28	40	56	90	140	230	360	560
1 000	1 250	13	18	24	33	47	66	105	165	260	420	660
1 250	1 600	15	21	29	39	55	78	125	195	310	500	780
1 600	2 000	18	25	35	46	65	92	150	230	370	600	920
2 000	2 500	22	30	41	55	78	110	175	280	440	700	1 100
2 500	3 150	26	36	50	68	96	135	210	330	540	860	1 350

- Remarks**
- Standard tolerance grades IT14 to IT18 shall not be used for basic sizes less than or equal to 1 mm.
 - Values for standard tolerance grades IT1 to IT5 for basic sizes over 500 mm are included for experimental use.

Standard Tolerance Grades IT

Grades							Basic Size (mm)	
IT12	IT13	IT14	IT15	IT16	IT17	IT18		
Tolerances (mm)							over	incl.
0.10	0.14	0.25	0.40	0.60	1.00	1.40	—	3
0.12	0.18	0.30	0.48	0.75	1.20	1.80	3	6
0.15	0.22	0.36	0.58	0.90	1.50	2.20	6	10
0.18	0.27	0.43	0.70	1.10	1.80	2.70	10	18
0.21	0.33	0.52	0.84	1.30	2.10	3.30	18	30
0.25	0.39	0.62	1.00	1.60	2.50	3.90	30	50
0.30	0.46	0.74	1.20	1.90	3.00	4.60	50	80
0.35	0.54	0.87	1.40	2.20	3.50	5.40	80	120
0.40	0.63	1.00	1.60	2.50	4.00	6.30	120	180
0.46	0.72	1.15	1.85	2.90	4.60	7.20	180	250
0.52	0.81	1.30	2.10	3.20	5.20	8.10	250	315
0.57	0.89	1.40	2.30	3.60	5.70	8.90	315	400
0.63	0.97	1.55	2.50	4.00	6.30	9.70	400	500
0.70	1.10	1.75	2.80	4.40	7.00	11.00	500	630
0.80	1.25	2.00	3.20	5.00	8.00	12.50	630	800
0.90	1.40	2.30	3.60	5.60	9.00	14.00	800	1 000
1.05	1.65	2.60	4.20	6.60	10.50	16.50	1 000	1 250
1.25	1.95	3.10	5.00	7.80	12.50	19.50	1 250	1 600
1.50	2.30	3.70	6.00	9.20	15.00	23.00	1 600	2 000
1.75	2.80	4.40	7.00	11.00	17.50	28.00	2 000	2 500
2.10	3.30	5.40	8.60	13.50	21.00	33.00	2 500	3 150

Appendix Table14 Index of Inch Design Tapered Roller Bearings

Bearing No. CONE, CUP	Nominal Dimension (mm) d: CONE (Bore Dia.) D: CUP (Outside Dia.)	Pages	Bearing No. CONE, CUP	Nominal Dimension (mm) d: CONE (Bore Dia.) D: CUP (Outside Dia.)	Pages	Bearing No. CONE, CUP	Nominal Dimension (mm) d: CONE (Bore Dia.) D: CUP (Outside Dia.)	Pages	Bearing No. CONE, CUP	Nominal Dimension (mm) d: CONE (Bore Dia.) D: CUP (Outside Dia.)	Pages
332	<i>D</i> 80.000	C214, C218, C220	497	<i>d</i> 85.725	C236	657	<i>d</i> 73.025	C232	1328	<i>D</i> 52.388	C210
336	<i>d</i> 41.275	C220	498	<i>d</i> 84.138	C236	658	<i>d</i> 74.612	C232	1329	<i>D</i> 53.975	C210
342	<i>d</i> 41.275	C220	522	<i>D</i> 101.600	C222, C224	659	<i>d</i> 76.200	C232	1380	<i>d</i> 22.225	C210
342 S	<i>d</i> 42.875	C220	528	<i>d</i> 47.625	C222	661	<i>d</i> 79.375	C234	1620	<i>D</i> 66.675	C216
344	<i>d</i> 40.000	C218	529	<i>d</i> 50.800	C224	663	<i>d</i> 82.550	C234	1680	<i>d</i> 33.338	C216
344 A	<i>d</i> 40.000	C218	529 X	<i>d</i> 50.800	C224	664	<i>d</i> 84.138	C236	1729	<i>D</i> 56.896	C210, C212
346	<i>d</i> 31.750	C214	532 X	<i>D</i> 107.950	C226	665	<i>d</i> 85.725	C236	1755	<i>d</i> 22.225	C210
354 A	<i>D</i> 85.000	C222	539	<i>d</i> 53.975	C226	665 A	<i>d</i> 85.725	C236	1779	<i>d</i> 23.812	C212
359 S	<i>d</i> 46.038	C222	552 A	<i>D</i> 123.825	C226, C228, C230	672	<i>D</i> 168.275	C236, C238, C240	1922	<i>D</i> 57.150	C212
362 A	<i>D</i> 88.900	C222, C224	553 X	<i>D</i> 122.238	C228, C230	677	<i>d</i> 85.725	C236	1988	<i>d</i> 28.575	C212
366	<i>d</i> 50.000	C224	555 S	<i>d</i> 57.150	C226	681	<i>d</i> 92.075	C238	1997 X	<i>d</i> 26.988	C212
368	<i>d</i> 50.800	C224	557 S	<i>d</i> 53.975	C226	683	<i>d</i> 95.250	C238	A2047	<i>d</i> 12.000	C210
368 A	<i>d</i> 50.800	C224	558	<i>d</i> 60.325	C228	685	<i>d</i> 98.425	C238	A2126	<i>D</i> 31.991	C210
369 A	<i>d</i> 47.625	C222	559	<i>d</i> 63.500	C228	687	<i>d</i> 101.600	C240	2523	<i>D</i> 69.850	C214, C216
372	<i>D</i> 100.000	C224	560	<i>d</i> 66.675	C230	742	<i>D</i> 150.089	C230, C234, C236	2558	<i>d</i> 30.162	C214
374	<i>D</i> 93.264	C222	560 S	<i>D</i> 68.262	C230	743	<i>D</i> 150.000	C234	2559	<i>d</i> 30.162	C214
376	<i>d</i> 45.000	C222	563	<i>D</i> 127.000	C228, C230, C232	745 A	<i>d</i> 69.850	C230	2580	<i>d</i> 31.750	C214
377	<i>d</i> 52.388	C224	563 X	<i>D</i> 127.000	C230	749	<i>d</i> 85.026	C236	2582	<i>d</i> 31.750	C214
382	<i>D</i> 98.425	C226	565	<i>d</i> 63.500	C228	749 A	<i>d</i> 82.550	C234	2585	<i>d</i> 33.338	C216
382 A	<i>D</i> 96.838	C226	566	<i>d</i> 69.850	C230	749 S	<i>d</i> 85.026	C236	2631	<i>D</i> 66.421	C214
382 S	<i>D</i> 96.838	C226	567	<i>d</i> 73.025	C232	750	<i>d</i> 79.375	C234	2690	<i>d</i> 29.367	C214
385	<i>d</i> 55.000	C226	567 A	<i>d</i> 71.438	C232	752	<i>D</i> 161.925	C234, C236	2720	<i>D</i> 76.200	C218
387	<i>d</i> 57.150	C226	567 S	<i>d</i> 71.438	C232	753	<i>D</i> 168.275	C234, C236	2729	<i>D</i> 76.200	C218
387 A	<i>d</i> 57.150	C226	568	<i>d</i> 73.817	C232	757	<i>d</i> 82.550	C234	2735 X	<i>D</i> 73.025	C218
388 A	<i>d</i> 57.531	C226	569	<i>d</i> 64.963	C228	758	<i>d</i> 85.725	C236	2788	<i>d</i> 38.100	C218
390 A	<i>d</i> 63.500	C228	570	<i>d</i> 68.262	C230	759	<i>d</i> 88.900	C236	2789	<i>d</i> 39.688	C218
394 A	<i>D</i> 110.000	C228, C230	572	<i>D</i> 139.992	C232, C234	760	<i>d</i> 90.488	C236	2820	<i>D</i> 73.025	C216
395	<i>d</i> 63.500	C228	572 X	<i>D</i> 139.700	C234	766	<i>d</i> 88.900	C236	2877	<i>d</i> 34.925	C216
395 A	<i>d</i> 66.675	C230	575	<i>d</i> 76.200	C232	772	<i>D</i> 180.975	C238, C240	2924	<i>D</i> 85.000	C222
395 S	<i>d</i> 66.675	C230	580	<i>d</i> 82.550	C234	776	<i>d</i> 95.250	C238	2984	<i>d</i> 46.038	C222
397	<i>d</i> 60.000	C228	581	<i>d</i> 80.962	C234	779	<i>d</i> 98.425	C238	3120	<i>D</i> 72.626	C214, C216
399 A	<i>d</i> 68.262	C230	582	<i>d</i> 82.550	C234	780	<i>d</i> 101.600	C240	3188	<i>d</i> 31.750	C214
414	<i>D</i> 88.501	C218	590 A	<i>d</i> 76.200	C232	782	<i>d</i> 104.775	C240	3197	<i>d</i> 33.338	C216
418	<i>d</i> 38.100	C218	592	<i>D</i> 152.400	C238	787	<i>d</i> 104.775	C240	3320	<i>D</i> 80.167	C218
432	<i>D</i> 95.250	C220	592 A	<i>D</i> 152.400	C232, C236, C238	792	<i>D</i> 206.375	C242	3386	<i>d</i> 39.688	C218
432 A	<i>D</i> 95.250	C222	593	<i>d</i> 88.900	C236	795	<i>d</i> 120.650	C242	3420	<i>D</i> 79.375	C216, C218
436	<i>d</i> 46.038	C222	594	<i>d</i> 95.250	C238	797	<i>d</i> 130.000	C242	3478	<i>d</i> 34.925	C216
438	<i>d</i> 44.450	C220	596	<i>d</i> 85.725	C236	799	<i>d</i> 128.588	C242	3479	<i>d</i> 36.512	C218
453 A	<i>D</i> 107.950	C222	597	<i>d</i> 93.662	C238	799 A	<i>d</i> 130.175	C242	3490	<i>d</i> 38.100	C218
453 X	<i>D</i> 104.775	C226	598	<i>d</i> 92.075	C238	832	<i>D</i> 168.275	C234, C236	3525	<i>D</i> 87.312	C220
460	<i>d</i> 44.450	C222	598 A	<i>d</i> 92.075	C238	837	<i>d</i> 76.200	C234	3576	<i>d</i> 41.275	C220
462	<i>d</i> 57.150	C226	614 X	<i>D</i> 115.000	C226	842	<i>d</i> 82.550	C234	3578	<i>d</i> 44.450	C220
469	<i>d</i> 57.150	C226	622 X	<i>d</i> 55.000	C226	843	<i>d</i> 76.200	C234	3720	<i>D</i> 93.264	C220
472	<i>D</i> 120.000	C230, C232	632	<i>D</i> 136.525	C228, C232	850	<i>d</i> 88.900	C236	3730	<i>D</i> 93.264	C224
472 A	<i>D</i> 120.000	C230	633	<i>D</i> 130.175	C228, C230, C232	854	<i>D</i> 190.500	C236, C238, C240	3775	<i>d</i> 50.800	C224
478	<i>d</i> 65.000	C230	637	<i>d</i> 60.325	C228	855	<i>d</i> 88.900	C236	3780	<i>d</i> 50.800	C224
480	<i>d</i> 68.262	C230	639	<i>d</i> 63.500	C228	857	<i>d</i> 92.075	C238	3782	<i>d</i> 44.450	C220
484	<i>d</i> 70.000	C232	643	<i>d</i> 69.850	C230	861	<i>d</i> 101.600	C240	3820	<i>D</i> 85.725	C220
492 A	<i>D</i> 133.350	C234, C236	644	<i>d</i> 71.438	C232	864	<i>d</i> 95.250	C238	3877	<i>d</i> 41.275	C220
493	<i>D</i> 136.525	C232, C234, C236	645	<i>d</i> 71.438	C232	866	<i>d</i> 98.425	C238	3920	<i>D</i> 112.712	C228, C230
495	<i>d</i> 82.550	C234	652	<i>D</i> 152.400	C232, C234	932	<i>D</i> 212.725	C240	3926	<i>D</i> 112.712	C226, C228
495 A	<i>d</i> 76.200	C232	653	<i>D</i> 146.050	C230, C232, C234, C236	938	<i>d</i> 114.300	C240	3981	<i>d</i> 58.738	C226
495 AX	<i>d</i> 76.200	C232	653 X	<i>D</i> 150.000	C232	1220	<i>D</i> 57.150	C210	3982	<i>d</i> 63.500	C228
496	<i>d</i> 80.962	C234	655	<i>d</i> 69.850	C230	1280	<i>d</i> 22.225	C210	3984	<i>d</i> 66.675	C230

Bearing No. CONE, CUP	Nominal Dimension (mm) <i>d</i> :CONE (Bore Dia.) <i>D</i> :CUP (Outside Dia.)	Pages
3994	<i>d</i> 66.675	C230
A4050	<i>d</i> 12.700	C210
A4059	<i>d</i> 15.000	C210
A4138	<i>D</i> 34.988	C210
4335	<i>D</i> 90.488	C220
4388	<i>d</i> 41.275	C220
4535	<i>D</i> 104.775	C226
4595	<i>d</i> 53.975	C226
A5069	<i>d</i> 17.455	C210
A5144	<i>D</i> 36.525	C210
5335	<i>D</i> 103.188	C222
5356	<i>d</i> 44.450	C222
5535	<i>D</i> 122.238	C226,C228
5566	<i>d</i> 55.562	C226
5582	<i>d</i> 60.325	C228
5584	<i>d</i> 63.500	C228
5735	<i>D</i> 135.733	C232,C234
5760	<i>d</i> 76.200	C232
5795	<i>d</i> 77.788	C234
A6062	<i>d</i> 15.875	C210
A6067	<i>d</i> 16.993	C210
A6075	<i>d</i> 19.050	C210
A6157	<i>D</i> 39.992	C210
6220	<i>D</i> 127.000	C224,C226
6279	<i>d</i> 50.800	C224
6280	<i>d</i> 53.975	C226
6320	<i>D</i> 135.755	C228,C230
6376	<i>d</i> 60.325	C228
6379	<i>d</i> 65.088	C230
6420	<i>D</i> 149.225	C226,C230,C232
6454	<i>d</i> 69.850	C230
6455	<i>d</i> 57.150	C226
6460	<i>d</i> 73.025	C232
6461	<i>d</i> 76.200	C232
6535	<i>D</i> 161.925	C232,C234,C236
6536	<i>D</i> 161.925	C232
6559	<i>d</i> 82.550	C234
6575	<i>d</i> 76.200	C232
6576	<i>d</i> 76.200	C232
6580	<i>d</i> 88.900	C236
9121	<i>D</i> 152.400	C228,C230
9180	<i>d</i> 61.912	C228
9185	<i>d</i> 68.262	C230
9220	<i>D</i> 161.925	C232
9285	<i>d</i> 76.200	C232
9320	<i>D</i> 177.800	C234
9321	<i>D</i> 171.450	C234,C236
9378	<i>d</i> 76.200	C234
9380	<i>d</i> 76.200	C234
9385	<i>d</i> 84.138	C236
02420	<i>D</i> 68.262	C212,C214
02473	<i>d</i> 25.400	C212
02474	<i>d</i> 28.575	C212
02475	<i>d</i> 31.750	C214

Bearing No. CONE, CUP	Nominal Dimension (mm) <i>d</i> :CONE (Bore Dia.) <i>D</i> :CUP (Outside Dia.)	Pages
02820	<i>D</i> 73.025	C212,C216
02872	<i>d</i> 28.575	C212
02878	<i>d</i> 34.925	C216
03062	<i>d</i> 15.875	C210
03162	<i>D</i> 41.275	C210
05062	<i>d</i> 15.875	C210
05068	<i>d</i> 17.462	C210
05075	<i>d</i> 19.050	C210
05079	<i>d</i> 19.990	C210
05175	<i>D</i> 44.450	C210
05185	<i>D</i> 47.000	C210
07079	<i>d</i> 20.000	C210
07087	<i>d</i> 22.225	C210
07097	<i>d</i> 25.000	C212
07098	<i>d</i> 24.981	C212
07100	<i>d</i> 25.400	C212
07100SA	<i>d</i> 25.400	C212
07196	<i>D</i> 50.005	C210,C212
07204	<i>D</i> 51.994	C210,C212
07205	<i>D</i> 52.001	C212
08118	<i>d</i> 30.162	C214
08125	<i>d</i> 31.750	C214
08231	<i>D</i> 58.738	C214
09062	<i>d</i> 15.875	C210
09067	<i>d</i> 19.050	C210
09074	<i>d</i> 19.050	C210
09078	<i>d</i> 19.050	C210
09081	<i>d</i> 20.625	C210
09194	<i>D</i> 49.225	C210
09195	<i>D</i> 49.225	C210
09196	<i>D</i> 49.225	C210
11162	<i>d</i> 41.275	C220
11300	<i>D</i> 76.200	C220
11520	<i>D</i> 42.862	C210
11590	<i>d</i> 15.875	C210
LM11710	<i>D</i> 39.878	C210
LM11749	<i>d</i> 17.462	C210
LM11910	<i>D</i> 45.237	C210
LM11949	<i>d</i> 19.050	C210
12168	<i>d</i> 42.862	C220
12303	<i>D</i> 76.992	C220
12520	<i>D</i> 49.225	C210
12580	<i>d</i> 20.638	C210
M12610	<i>D</i> 50.005	C210
M12648	<i>d</i> 22.225	C210
M12649	<i>d</i> 21.430	C210
LM12710	<i>D</i> 45.237	C210
LM12711	<i>D</i> 45.975	C210
LM12749	<i>d</i> 22.000	C210
13175	<i>d</i> 44.450	C220
13181	<i>d</i> 46.038	C222
13318	<i>D</i> 80.962	C220,C222
13620	<i>D</i> 69.012	C218
13621	<i>D</i> 69.012	C218

Bearing No. CONE, CUP	Nominal Dimension (mm) <i>d</i> :CONE (Bore Dia.) <i>D</i> :CUP (Outside Dia.)	Pages
13685	<i>d</i> 38.100	C218
13687	<i>d</i> 38.100	C218
13830	<i>D</i> 63.500	C218
13889	<i>d</i> 38.100	C218
14123 A	<i>d</i> 31.750	C214
14125 A	<i>d</i> 31.750	C214
14130	<i>d</i> 33.338	C216
14131	<i>d</i> 33.338	C216
14137 A	<i>d</i> 34.925	C216
14138 A	<i>d</i> 34.925	C216
14139	<i>d</i> 34.976	C216
14274	<i>D</i> 69.012	C214,C216
14276	<i>D</i> 69.012	C214,C216
14283	<i>D</i> 72.085	C216
15100	<i>d</i> 25.400	C212
15101	<i>d</i> 25.400	C212
15106	<i>d</i> 26.988	C212
15112	<i>d</i> 28.575	C212
15113	<i>d</i> 28.575	C212
15116	<i>d</i> 30.112	C214
15117	<i>d</i> 30.000	C214
15118	<i>d</i> 30.213	C214
15119	<i>d</i> 30.213	C214
15120	<i>d</i> 30.213	C214
15123	<i>d</i> 31.750	C214
15125	<i>d</i> 31.750	C214
15126	<i>d</i> 31.750	C214
15245	<i>D</i> 62.000	C212,C214
15250	<i>D</i> 63.500	C214
15250 X	<i>D</i> 63.500	C212
15520	<i>D</i> 57.150	C212
15523	<i>D</i> 60.325	C212
15578	<i>d</i> 25.400	C212
15580	<i>d</i> 26.988	C212
16150	<i>d</i> 38.100	C218
16284	<i>D</i> 72.238	C218
16929	<i>D</i> 74.988	C220
16986	<i>d</i> 43.000	C220
17098	<i>d</i> 24.981	C212
17118	<i>d</i> 30.000	C214
17244	<i>D</i> 62.000	C212,C214
17520	<i>D</i> 42.862	C210
17580	<i>d</i> 15.875	C210
17831	<i>D</i> 79.985	C222
17887	<i>d</i> 45.230	C222
18200	<i>d</i> 50.800	C224
18337	<i>D</i> 85.725	C224
18520	<i>D</i> 73.025	C218
18590	<i>d</i> 41.275	C218
18620	<i>D</i> 79.375	C222
18690	<i>d</i> 46.038	C222
18720	<i>D</i> 85.000	C224
18790	<i>d</i> 50.800	C224
19138	<i>d</i> 34.976	C216

Bearing No. CONE, CUP	Nominal Dimension (mm) <i>d</i> :CONE (Bore Dia.) <i>D</i> :CUP (Outside Dia.)	Pages
19150	<i>d</i> 38.100	C218
19268	<i>D</i> 68.262	C216,C218
21075	<i>d</i> 19.050	C210
21212	<i>D</i> 53.975	C210
L21511	<i>D</i> 34.988	C210
L21549	<i>d</i> 15.875	C210
22168	<i>d</i> 42.862	C220
22325	<i>D</i> 82.550	C220
23100	<i>d</i> 25.400	C212
23256	<i>D</i> 65.088	C212
23621	<i>D</i> 73.025	C216
23691	<i>d</i> 35.000	C216
24720	<i>D</i> 76.200	C220
24721	<i>D</i> 76.200	C220
24780	<i>d</i> 41.275	C220
25520	<i>D</i> 82.931	C220,C222
25521	<i>D</i> 82.931	C220
25523	<i>D</i> 82.931	C220,C222
25577	<i>d</i> 42.875	C220
25578	<i>d</i> 42.862	C220
25580	<i>d</i> 44.450	C220
25584	<i>d</i> 44.983	C222
25590	<i>d</i> 45.618	C222
25820	<i>D</i> 73.025	C216
25821	<i>D</i> 73.025	C216,C218
25877	<i>d</i> 34.925	C216
25878	<i>d</i> 34.925	C216
25880	<i>d</i> 36.487	C218
26118	<i>d</i> 30.000	C214
26131	<i>d</i> 33.338	C216
26283	<i>D</i> 72.000	C214,C216
26820	<i>D</i> 80.167	C220
26822	<i>D</i> 79.375	C220
26823	<i>D</i> 76.200	C220
26882	<i>d</i> 41.275	C220
26884	<i>d</i> 42.875	C220
27620	<i>D</i> 125.412	C234
27687	<i>d</i> 82.550	C234
27689	<i>d</i> 83.345	C234
27690	<i>d</i> 83.345	C234
27820	<i>D</i> 80.035	C218
27880	<i>d</i> 38.100	C218
28138	<i>d</i> 34.976	C216
28315	<i>D</i> 80.000	C216
28521	<i>D</i> 92.075	C224
28580	<i>d</i> 50.800	C224
28584	<i>d</i> 52.388	C224
28622	<i>D</i> 97.630	C226
28680	<i>d</i> 55.562	C226
28920	<i>D</i> 101.600	C228
28921	<i>D</i> 100.000	C228
28985	<i>d</i> 60.325	C228
29520	<i>D</i> 107.950	C228
29586	<i>d</i> 63.500	C228

Bearing No. CONE, CUP	Nominal Dimension (mm) d :CONE (Bore Dia.) D :CUP (Outside Dia.)	Pages
29620 29630 29675	D 112.712 D 120.650 d 69.850	C230,C232 C230 C230
29685 LM29710 LM29711	d 73.025 D 65.088 D 65.088	C232 C218 C218
LM29748 LM29749 31520	d 38.100 d 38.100 D 76.200	C218 C218 C216
31594 33262 33275	d 34.925 d 66.675 d 69.850	C216 C230 C230
33281 33287 JHM33410	d 71.438 d 73.025 D 55.000	C232 C232 C212
JHM33449 33462 33821	d 24.000 D 117.475 D 95.250	C212 C230,C232 C224
33889 34300 34306	d 50.800 d 76.200 d 77.788	C224 C232 C234
34478 36620 36690	D 121.442 D 193.675 d 146.050	C232,C234 C242 C242
36920 36990 37425	D 227.012 d 177.800 d 107.950	C244 C244 C240
37625 M38510 M38511	D 158.750 D 66.675 D 65.987	C240 C216 C216
M38547 M38549 39236	d 35.000 d 34.925 d 60.000	C216 C216 C228
39250 39412 39520	d 63.500 D 104.775 D 112.712	C228 C228 C228,C230
39521 39585 39590	D 112.712 d 63.500 d 66.675	C230 C228 C230
41100 41125 41126	d 25.400 d 28.575 d 28.575	C212 C212 C212
41286 42350 42362	D 72.626 d 88.900 d 92.075	C212 C236 C238
42368 42375 42376	d 93.662 d 95.250 d 95.250	C238 C238 C238
42381 42584 42587	d 96.838 D 148.430 D 149.225	C238 C238 C236,C238
42620 42687 42688	D 127.000 d 76.200 d 76.200	C232,C234 C232 C232

Bearing No. CONE, CUP	Nominal Dimension (mm) d :CONE (Bore Dia.) D :CUP (Outside Dia.)	Pages
42690 43118 43131	d 77.788 d 30.162 d 33.338	C234 C214 C216
43300 43312 44143	D 76.200 D 79.375 d 36.512	C214 C216 C218
44150 44157 44162	d 38.100 d 40.000 d 41.275	C218 C218 C220
44348 L44610 L44640	D 88.501 D 50.292 d 23.812	C218,C220 C212 C212
L44643 L44649 45220	d 25.400 d 26.988 D 104.775	C212 C212 C226
45221 45289 L45410	D 104.775 d 57.150 D 50.292	C226 C226 C214
L45449 46143 46162	d 29.000 d 36.512 d 41.275	C214 C218 C220
46176 46368 46720	d 44.450 D 93.662 D 225.425	C220 C218,C220 C242
46780 47420 47487	d 158.750 D 120.000 d 69.850	C242 C230,C232 C230
47490 47620 47680	d 71.438 D 133.350 d 76.200	C232 C232,C234 C232
47685 47686 47687	d 82.550 d 82.550 d 82.550	C234 C234 C234
47820 47890 47896	D 146.050 d 92.075 d 95.250	C238 C238 C238
48120 48190 48220	D 161.925 d 107.950 D 182.562	C240 C240 C242
48282 48286 48290	d 120.650 d 123.825 d 127.000	C242 C242 C242
48320 48385 48393	D 190.500 d 133.350 d 136.525	C242 C242 C242
LM48510 LM48511 LM48548	D 65.088 D 65.088 d 34.925	C216 C216 C216
48620 48685 49175	D 200.025 d 142.875 d 44.450	C242 C242 C220
49176 49368 49520	d 44.450 D 93.662 D 101.600	C220 C220 C224

Bearing No. CONE, CUP	Nominal Dimension (mm) d :CONE (Bore Dia.) D :CUP (Outside Dia.)	Pages
49585 52387 52393	d 50.800 d 98.425 d 100.012	C224 C238 C238
52400 52618 52637	d 101.600 D 157.162 D 161.925	C240 C238,C240 C238,C240
53150 53162 53176	d 38.100 d 41.275 d 44.450	C218 C220 C222
53177 53178 53375	d 44.450 d 44.450 D 95.250	C222 C222 C218,C222
53387 55175 55187	D 98.425 d 44.450 d 47.625	C220,C222 C222 C222
55200 55200 C 55206	d 50.800 d 50.800 d 52.388	C224 C224 C224
55437 55443 56418	D 111.125 D 112.712 d 106.362	C222,C224 C222 C240
56425 56650 59200	d 107.950 D 165.100 d 50.800	C240 C240 C224
59429 64433 64450	D 108.966 d 109.992 d 114.300	C224 C240 C240
64700 65200 65212	D 177.800 d 50.800 d 53.975	C240 C224 C226
65237 65320 65385	d 60.325 D 114.300 d 44.450	C228 C222 C222
65500 66187 66462	D 127.000 d 47.625 D 117.475	C224,C226,C228 C222 C222
66520 66584 66585	D 122.238 d 53.975 d 60.000	C226,C228 C226 C228
66587 LM67010 LM67043	d 57.150 D 59.131 D 28.575	C226 C212,C214 C212
LM67048 67320 67322	d 31.750 D 203.200 D 196.850	C214 C242 C242
67388 67389 67390	d 127.000 d 130.175 d 133.350	C242 C242 C242
67720 67780 67787	D 247.650 D 165.100 d 174.625	C242,C244 C242 C244
67790 67820 67885	d 177.800 D 266.700 d 190.500	C244 C244 C244

Bearing No. CONE, CUP	Nominal Dimension (mm) d :CONE (Bore Dia.) D :CUP (Outside Dia.)	Pages
67920 67983 67985	D 282.575 d 203.200 d 206.375	C244 C244 C244
L68110 L68111 L68149	D 59.131 D 59.975 d 35.000	C216 C216 C216
68450 68462 68709	d 114.300 d 117.475 D 180.000	C240 C240 C240
68712 JL69310 JL69349	D 180.975 D 63.000 d 38.000	C240 C218 C218
71412 71425 71437	d 104.775 d 107.950 d 111.125	C240 C240 C240
71450 71453 71750	d 114.300 d 115.087 D 190.500	C240 C240 C240
72187 72200 72200 C	d 47.625 d 50.800 d 50.800	C222 C224 C224
72212 72212 C 72218	d 53.975 d 53.975 d 55.562	C226 C226 C226
72218 C 72225 C 72487	d 55.562 d 57.150 D 123.825	C226 C226 C222,C224,C226
LM72810 LM72849 74500	D 47.000 d 22.606 d 127.000	C212 C212 C242
74525 74537 74550	d 133.350 d 136.525 d 139.700	C242 C242 C242
74850 74856 77375	D 215.900 D 217.488 d 95.250	C242 C242 C238
77675 78225 78250	D 171.450 d 57.150 d 63.500	C238 C226 C228
LM78310 LM78310 A LM78349	D 62.000 D 62.000 d 35.000	C216 C216 C216
78537 78551 78571	D 136.525 D 140.030 D 144.983	C228 C226,C228 C226
HM81610 HM81649 M84210	D 47.000 d 16.000 D 59.530	C210 C210 C212
M84249 M84510 M84548	d 25.400 D 57.150 d 25.400	C212 C212 C212
M86610 M86643 M86647	D 64.292 d 25.400 d 28.575	C212,C214 C212 C212

Bearing No. CONE, CUP	Nominal Dimension (mm) d: CONE (Bore Dia.) D: CUP (Outside Dia.)	Pages
M86648A M86649 M88010	<i>d</i> 30.955 <i>d</i> 30.162 <i>D</i> 68.262	C214 C214 C214, C216
M88043 M88046 M88048	<i>d</i> 30.162 <i>d</i> 31.750 <i>d</i> 33.338	C214 C214 C216
HM88510 HM88542 HM88547	<i>D</i> 73.025 <i>d</i> 31.750 <i>d</i> 33.338	C214, C216 C214 C216
HM88610 HM88630 HM88638	<i>D</i> 72.233 <i>d</i> 25.400 <i>d</i> 32.000	C212, C214, C216, C218 C212 C214
HM88648 HM88649 HM89410	<i>d</i> 35.717 <i>d</i> 34.925 <i>D</i> 76.200	C218 C216 C216, C218
HM89411 HM89443 HM89444	<i>D</i> 76.200 <i>d</i> 33.338 <i>d</i> 33.338	C216 C216 C216
HM89446 HM89446A HM89449	<i>d</i> 34.925 <i>d</i> 34.925 <i>d</i> 36.512	C216 C216 C218
99100 99550 99575	<i>D</i> 254.000 <i>d</i> 139.700 <i>d</i> 146.050	C242 C242 C242
99587 99600 LM102910	<i>d</i> 149.225 <i>d</i> 152.400 <i>D</i> 73.431	C242 C242 C222
LM102949 JLM104910 LM104911	<i>d</i> 45.242 <i>D</i> 82.000 <i>D</i> 82.550	C222 C224 C224
LM104911A LM104912 LM104947A	<i>D</i> 82.550 <i>D</i> 82.931 <i>d</i> 50.000	C224 C224 C224
JLM104948 LM104949 M201011	<i>d</i> 50.000 <i>d</i> 50.800 <i>D</i> 73.025	C224 C224 C218
M201047 JM205110 JM205149	<i>d</i> 39.688 <i>D</i> 90.000 <i>d</i> 50.000	C218 C224 C224
JM207010 JM207049 JH211710	<i>D</i> 95.000 <i>d</i> 55.000 <i>D</i> 120.000	C226 C226 C230
JH211749 HM212010 HM212011	<i>d</i> 65.000 <i>D</i> 122.238 <i>D</i> 122.238	C230 C228, C230 C228, C230
HM212044 HM212046 HM212047	<i>d</i> 60.325 <i>d</i> 63.500 <i>d</i> 63.500	C228 C228 C228
HM212049 JH217210 JH217249	<i>d</i> 66.675 <i>D</i> 150.000 <i>d</i> 85.000	C230 C236 C236
HM218210 HM218248 HH221410	<i>D</i> 147.000 <i>d</i> 90.000 <i>D</i> 190.500	C236 C236 C236, C238, C240

Bearing No. CONE, CUP	Nominal Dimension (mm) d: CONE (Bore Dia.) D: CUP (Outside Dia.)	Pages
HH221432 HH221434 HH221440	<i>d</i> 87.312 <i>d</i> 88.900 <i>d</i> 95.250	C236 C236 C238
HH221442 HH221447 HH221449	<i>d</i> 98.425 <i>d</i> 99.982 <i>d</i> 101.600	C238 C238 C240
HH224310 HH224335 HH224340	<i>D</i> 212.725 <i>d</i> 101.600 <i>d</i> 107.950	C240 C240 C240
HH224346 M224710 M224748	<i>d</i> 114.300 <i>D</i> 174.625 <i>d</i> 120.000	C240 C242 C242
LL225710 LL225749 HM231110	<i>D</i> 165.895 <i>d</i> 127.000 <i>D</i> 236.538	C242 C242 C242
HM231140 M236810 M236849	<i>d</i> 146.050 <i>D</i> 260.350 <i>d</i> 177.800	C242 C244 C244
LM300811 LM300849 L305610	<i>D</i> 68.000 <i>D</i> 41.000 <i>D</i> 80.962	C218 C218 C224
L305649 JH307710 JH307749	<i>d</i> 50.800 <i>D</i> 110.000 <i>d</i> 55.000	C224 C226 C226
JHM318410 JHM318448 L327210	<i>D</i> 155.000 <i>d</i> 90.000 <i>D</i> 177.008	C236 C236 C242
L327249 LM328410 LM328448	<i>d</i> 133.350 <i>D</i> 187.325 <i>d</i> 139.700	C242 C242 C242
H414210 H414245 H414249	<i>D</i> 136.525 <i>d</i> 68.262 <i>d</i> 71.438	C230, C232 C230 C232
JH415610 JH415647 LM501310	<i>D</i> 145.000 <i>d</i> 75.000 <i>D</i> 73.431	C232 C232 C218
LM501314 LM501349 LM503310	<i>D</i> 73.431 <i>d</i> 41.275 <i>D</i> 75.000	C218 C218 C222
LM503349 HH506310 HH506348	<i>d</i> 46.000 <i>D</i> 114.300 <i>d</i> 49.212	C222 C224 C224
JLM506810 JLM506849 JLM508710	<i>D</i> 90.000 <i>d</i> 55.000 <i>D</i> 95.000	C226 C226 C228
JLM508748 JM511910 JM511946	<i>d</i> 60.000 <i>D</i> 110.000 <i>d</i> 65.000	C228 C230 C230
JM515610 JM515649 HM516410	<i>D</i> 130.000 <i>d</i> 80.000 <i>D</i> 133.350	C234 C234 C234
HM516448 JHM516810 JHM516849	<i>d</i> 82.550 <i>D</i> 140.000 <i>d</i> 85.000	C234 C236 C236

Bearing No. CONE, CUP	Nominal Dimension (mm) d: CONE (Bore Dia.) D: CUP (Outside Dia.)	Pages
HM518410 HM518445 LM522510	<i>D</i> 152.400 <i>d</i> 88.900 <i>D</i> 159.987	C236 C236 C240
LM522546 LM522548 LM522549	<i>d</i> 107.950 <i>d</i> 109.987 <i>d</i> 109.987	C240 C240 C240
JHM522610 JHM522649 JHM534110	<i>D</i> 180.000 <i>d</i> 110.000 <i>D</i> 230.000	C240 C240 C244
JHM534149 LM603011 LM603012	<i>d</i> 170.000 <i>D</i> 77.788 <i>D</i> 77.788	C244 C222 C222
LM603049 L610510 L610549	<i>d</i> 45.242 <i>D</i> 94.458 <i>d</i> 63.500	C222 C228 C228
JM612910 JM612949 LM613410	<i>D</i> 115.000 <i>d</i> 70.000 <i>D</i> 112.712	C232 C232 C230
LM613449 HM617010 HM617049	<i>d</i> 69.850 <i>D</i> 142.138 <i>d</i> 85.725	C230 C236 C236
L623110 L623149 JLM710910	<i>D</i> 152.400 <i>d</i> 114.300 <i>D</i> 105.000	C240 C240 C230
JLM710949 JLM714110 JLM714149	<i>d</i> 65.000 <i>D</i> 115.000 <i>d</i> 75.000	C230 C232 C232
JM714210 JM714249 H715311	<i>D</i> 120.000 <i>d</i> 75.000 <i>D</i> 136.525	C232 C232 C228, C230, C232
H715334 H715340 H715341	<i>d</i> 61.912 <i>d</i> 65.088 <i>d</i> 66.675	C228 C230 C230
H715343 H715345 JM716610	<i>d</i> 68.262 <i>d</i> 71.438 <i>D</i> 130.000	C230 C232 C236
JM716648 JM716649 JM718110	<i>d</i> 85.000 <i>d</i> 85.000 <i>D</i> 145.000	C236 C236 C236
JM718149 JM719113 JM719149	<i>d</i> 90.000 <i>D</i> 150.000 <i>d</i> 95.000	C236 C238 C238
JM720210 JHM720210 JM720249	<i>D</i> 155.000 <i>D</i> 160.000 <i>d</i> 100.000	C238 C238 C238
JHM720249 JL724314 JL724348	<i>d</i> 100.000 <i>D</i> 170.000 <i>d</i> 120.000	C238 C242 C242
JL725316 JL725346 JM734410	<i>d</i> 175.000 <i>d</i> 125.000 <i>D</i> 240.000	C242 C242 C244
JM734449 JM738210 JM738249	<i>d</i> 170.000 <i>D</i> 260.000 <i>d</i> 190.000	C244 C244 C244

Bearing No. CONE, CUP	Nominal Dimension (mm) d: CONE (Bore Dia.) D: CUP (Outside Dia.)	Pages
HM801310 HM801346 M802011	<i>D</i> 82.550 <i>d</i> 38.100 <i>D</i> 82.550	C218 C218 C220
M802048 HM803110 HM803145	<i>d</i> 41.275 <i>D</i> 88.900 <i>d</i> 41.275	C220 C220 C220
HM803146 HM803149 M804010	<i>d</i> 41.275 <i>d</i> 44.450 <i>D</i> 88.900	C220 C220 C222
M804049 HM804810 HM804840	<i>d</i> 47.625 <i>D</i> 95.250 <i>d</i> 41.275	C222 C220, C222, C224 C220
HM804843 HM804846 HM804848	<i>d</i> 44.450 <i>d</i> 47.625 <i>d</i> 48.412	C222 C222 C224
HM804849 HM807010 HM807011	<i>d</i> 48.412 <i>D</i> 104.775 <i>D</i> 104.775	C224 C222, C224 C224
JHM807012 HM807040 HM807044	<i>D</i> 105.000 <i>d</i> 44.450 <i>d</i> 49.212	C224 C222 C224
JHM807045 HM807046 JLM813010	<i>d</i> 50.000 <i>d</i> 50.800 <i>D</i> 110.000	C224 C224 C232
JLM813049 JLM820012 JLM820048	<i>d</i> 70.000 <i>D</i> 150.000 <i>d</i> 100.000	C232 C238 C238
JM822010 JM822049 JHM840410	<i>D</i> 165.000 <i>d</i> 110.000 <i>D</i> 300.000	C240 C240 C244
JHM840449 HM903210 HM903247	<i>d</i> 200.000 <i>D</i> 95.250 <i>d</i> 44.450	C244 C222 C222
HM903249 HM911210 HM911242	<i>d</i> 44.450 <i>D</i> 130.175 <i>d</i> 53.975	C222 C226 C226
H913810 H913842 H913849	<i>D</i> 146.050 <i>d</i> 61.912 <i>d</i> 69.850	C228, C230 C228 C230