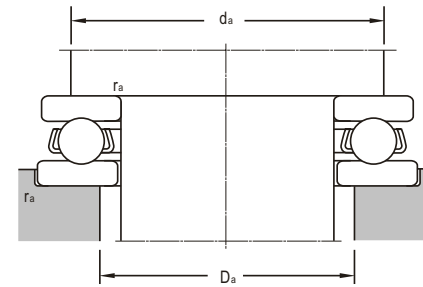
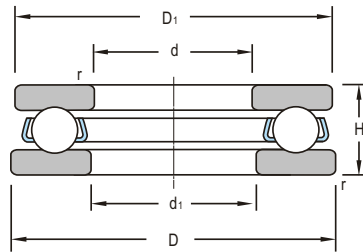


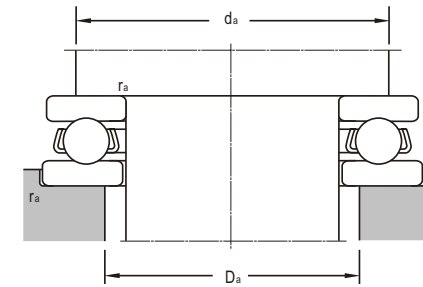
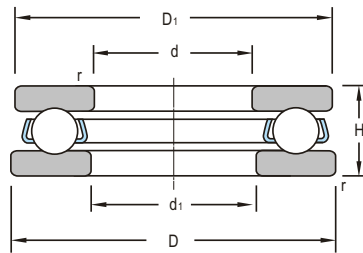
single direction thrust ball bearings with flat back face



d 10~45mm

Boundary Dimensions						Basic Load Ratings		Limiting Speeds	
d	d <sub>min</sub>	D	D <sub>1max</sub>	H	r <sub>min</sub>	Dynamic C	Static C <sub>0</sub>	Grease	Oil
mm						kN		r/min	
10	11	24	24	9	0.3	10	13.3	7000	9500
	12	26	26	11	0.6	12.7	16.2	6000	8000
12	13	26	26	9	0.3	10.3	14.5	7000	9500
	14	28	28	11	0.6	13.2	18.1	6000	8000
15	16	28	28	9	0.3	10.5	13.3	6300	8500
	17	32	32	12	0.6	14.2	15.8	5300	7000
	15.2	32	32	12	0.6	14.2	15.8	5300	7000
17	18	30	30	9	0.3	10.8	13.4	6300	8500
	19	35	35	12	0.6	17.2	26.1	5300	7000
20	21	35	35	10	0.3	13.4	18.6	5600	7500
	22	40	40	14	0.6	22.3	35.6	4500	6000
25	26	42	42	11	0.6	17.4	27.6	4800	6300
	25.2	47	47	15	0.6	27.8	47.5	4000	5300
	27	52	52	18	1	35.7	52.3	3400	4500
	27	60	60	24	1	55.5	85.5	2600	3600
30	32	47	47	11	0.6	18.1	31.8	4500	6000
	32	52	52	16	0.6	28.1	45.1	3600	4800
	32	60	60	21	1	42.8	62.2	2800	3800
	32	70	70	28	1	72.7	119	2200	3200
35	37	52	52	12	0.6	21.2	38.2	4300	5600
	35.2	62	62	18	1	39.2	63.7	3200	4300
	37	68	68	24	1	55.4	83.6	2400	3400
	37	80	80	32	1.1	87	148	1800	2600
40	42	60	60	13	0.6	26.9	47.5	3800	5000
	42	68	68	19	1	47	93.1	2800	3800
	42	78	78	26	1	69.2	106	2000	3000
	42	90	90	36	1.1	112	194	1700	2400
45	47	65	65	14	0.6	27	54.2	3400	4500
	47	65	65	14	0.6	31.6	108	3400	4500
	47	73	73	20	1	47.8	81	2600	3600
	47	85	85	28	1	75.8	133	1900	2800
	47	100	100	39	1.1	141	228	1600	2200

Bearing Designations		Minimum Load Constant A	Mounting Dimensions			Mass
Present	Original		d <sub>a</sub>	D <sub>a</sub>	r <sub>max</sub>	
			mm			kg
*51100	8100	0.002	19	15	0.3	0.02
*51200	8200	0.003	20	16	0.6	0.03
*51101	8101	0.002	21	17	0.3	0.022
*51201	8201	0.003	22	18	0.6	0.035
*51102	8102	0.003	23	20	0.3	0.024
51202	8202	0.005	23	20	0.3	0.044
51202/YB2	8202K	0.005	25	22	0.6	0.0451
51103	8103	0.003	25	22	0.3	0.0242
*51203	8203	0.006	28	24	0.6	0.053
51104	8104	0.005	29	26	0.3	0.0372
*51204	8204	0.009	32	28	0.6	0.08
51105	8105	0.007	35	32	0.6	0.06
51205	8205	0.018	38	34	0.6	0.112
51305	8305	0.026	41	36	1	0.18
*51405	8405	0.053	46	39	1	0.34
*51106	8106	0.009	40	37	0.6	0.07
51206	8206	0.02	43	39	0.6	0.137
51306	8306	0.046	48	42	1	0.252
*51406	8406	0.084	54	46	1	0.53
51107	8107	0.014	45	42	0.6	0.0836
51207	8207	0.04	56	46	1	0.22
*51307	8307	0.072	55	48	1	0.39
*51407	8407	0.17	62	53	1	0.82
*51108	8108	0.027	52	48	0.6	0.12
51208	8208	0.055	57	51	1	0.27
51308	8308	0.103	63	55	1	0.426
*51408	8408	0.275	70	60	1	1.18
*51109	8109	0.027	57	53	0.6	0.15
*51109M	8109	0.027	57	53	0.6	0.16
*51209	8209	72	62	56	1	0.32
51309	8309	0.148	69	61	1	0.665
*51409	8409	0.442	78	67	1	1.64

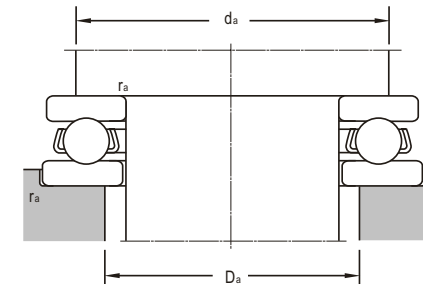
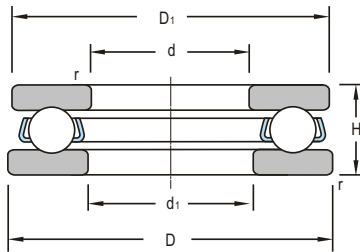


d 50~90mm

Boundary Dimensions						Basic Load Ratings		Limiting Speeds	
d	d <sub>1min</sub>	D	D <sub>1max</sub>	H	r <sub>min</sub>	Dynamic C	Static C <sub>0</sub>	Grease	Oil
mm						kN		r/min	
50	52	70	70	14	0.6	27.1	59.9	3400	4500
	52	78	78	22	1	48.5	101	2400	3400
	52	95	95	31	1.1	96.6	164	1800	2600
	52	110	110	43	1.5	160	295	1500	2000
55	57	78	78	16	0.6	34.4	74.1	3000	4000
	57	90	90	25	1	67.6	127	2000	3000
	57	105	105	35	1.1	114.5	198	1600	2200
	57	120	120	48	1.5	183	342	1300	1800
60	62	85	85	17	1	40.3	87	2600	3600
	62	95	95	26	1	73.6	141	1900	2800
	62	110	110	35	1.1	118	208	1600	2200
	62	130	130	51	1.5	201	380	1200	1700
65	67	90	90	18	1	41.7	103	2400	3400
	67	100	100	27	1	74.9	151	1800	2600
	67	115	115	36	1.1	116	228	1600	2200
	68	140	140	56	2	217	428	1000	1500
70	72	95	95	18	1	42	119	2400	3400
	72	105	105	27	1	73.6	161	1800	2600
	72	125	125	40	1.1	148	285	1400	1900
	73	150	150	60	2	257	475	950	1400
75	77	100	100	19	1	44	130	2200	3200
	77	110	110	27	1	74.9	173	1700	2400
	77	135	135	44	1.5	163	342	1200	1700
	78	160	160	65	2	269	532	900	1300
80	82	105	105	19	1	48.8	133	2000	3000
	82	115	115	28	1	83.8	193	1700	2400
	82	140	140	44	1.5	178	342	1200	1700
	83	170	170	68	2.1	292	589	850	1200
85	87	110	110	19	1	49.2	143	2000	3000
	88	125	125	31	1	103	238	1600	2200
	88	150	150	49	1.5	209	404	1100	1600
	88	180	177	72	2.1	318	646	850	1200
90	92	120	120	22	1	65.1	181	1800	2600

Bearing Designations		Minimum Load Constant A	Mounting Dimensions			Mass
Present	Original		d <sub>a</sub>	D <sub>a</sub>	r <sub>max</sub>	
			mm			kg
51110	8110	0.032	62	58	0.6	0.16
*51210	8210	0.097	67	61	1	0.375
*51310	8310	0.266	77	68	1	1
*51410	8410	0.589	86	74	1.5	1.99
51111	8111	0.068	69	64	0.6	0.232
*51211	8211	0.168	76	69	1	0.61
*51311	8311	0.393	85	75	1	1.34
*51411	8411	0.834	94	81	1.5	2.6
*51112	8112	0.07	75	70	1	0.29
*51212	8212	0.207	81	74	1	0.69
*51312	8312	0.462	90	80	1	1.43
*51412	8412	1.326	102	88	1.5	3.3
*51113	8113	0.099	80	75	1	0.34
*51213	8213	0.226	86	79	1	0.77
*51313	8313	0.638	95	85	1	1.57
*51413	8413	1.48	110	95	2	4.2
*51114	8114	0.119	85	80	1	0.36
*51214	8214	0.226	91	84	1	0.81
*51314	8314	0.756	103	92	1	1.932
*51414	8414	2.07	118	102	2	5.18
*51115	8115	0.128	90	85	1	0.42
*51215	8215	0.295	96	89	1	0.86
*51315	8315	1.04	111	99	1.5	2.7
*51415	8415	3.05	125	110	2	6.97
*51116	8116	0.138	95	90	1	0.43
*51216	8216	0.324	101	94	1	0.95
*51316	8316	1.19	116	104	1.5	2.58
*51416	8416	3.726	133	117	2	7.11
*51117	8117	0.148	100	95	1	0.46
*51217	8217	0.56	109	101	1	1.3
*51317	8317	1.766	123	111	1.5	3.7
*51417	8417	4.42	141	124	2	9.5
51118	8118	0.256	108	102	1	0.636

single direction thrust ball bearings with flat back face

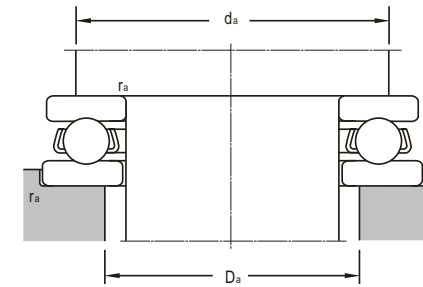
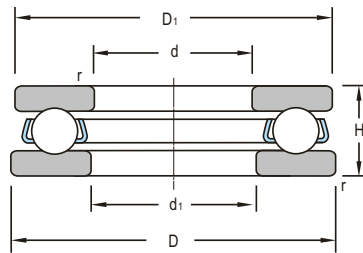


d 90~170mm

Boundary Dimensions						Basic Load Ratings		Limiting Speeds	
d	d <sub>1min</sub>	D	D <sub>1max</sub>	H	r <sub>min</sub>	Dynamic C	Static C <sub>0</sub>	Grease	Oil
mm						kN		r/min	
90	93	135	135	35	1.1	125	285	1500	2000
	93	155	155	50	1.5	221	408	1000	1500
	93	190	187	77	2.1	327	713	800	1100
100	102	135	135	25	1	85.1	257	1700	2400
	103	150	150	38	1.1	149	347	1300	1800
	103	170	170	55	1.5	263	513	950	1400
	103	210	205	85	3	399	917	700	950
110	112	145	145	25	1	87.2	276	1600	2200
	113	160	160	38	1.1	139	393	1200	1700
	113	190	187	63	2	280	684	850	1200
	113	230	225	95	3	415	1150	630	850
	113	230	225	95	3	491	1397	630	850
120	122	155	155	25	1	87.1	295	1600	2200
	123	170	170	39	1.1	136	399	1200	1700
	123	210	205	70	2.1	330	869	800	1100
130	132	170	170	30	1	109	371	1400	1900
	132	155	153	17	1	41.5	158	1500	2000
	133	190	187	45	1.5	186	535	950	1400
	134	225	220	75	2.1	358	1007	750	1000
	134	270	265	110	4	490	1520	560	750
140	142	180	178	31	1	111	380	1300	1800
	143	200	197	46	1.5	191	542	950	1400
	144	240	235	80	2.1	396	1159	700	950
	144	280	275	112	4	553	1750	500	700
150	152	190	188	31	1	112	380	1200	1700
	153	215	212	5	1.5	244	698	900	1300
	154	250	245	80	2.1	407	1226	670	900
160	162	200	198	31	1	112	404	1200	1700
	163	225	222	51	1.5	240	741	850	1200
	164	270	265	87	3	463	1425	630	850
170	172	215	213	34	1.1	137	475	1100	1600
	173	240	237	55	1.5	280	884	800	1100
	174	280	275	87	3	445	1520	600	800

Bearing Designations		Minimum Load Constant A	Mounting Dimensions			Mass
Present	Original		d <sub>a</sub>	D <sub>a</sub>	r <sub>max</sub>	
			mm			kg
*51218	8218	0.746	117	108	1	1.77
51318M	8318	0.202	129	116	1.5	4.21
*51418	8418	6.09	149	131	2	11.2
*51120	8120	0.403	121	114	1	1
51220M	8220	1.226	130	120	1	2.51
51320M	8320	3.236	142	128	1.5	5.46
*51420	8420	9.606	165	145	2.5	14.9
51122	8122	0.48	131	124	1	1.08
*51222	8222	1.58	140	130	1	2.6
*51322	8322	4.216	158	142	2	7.9
*51422	8422	12.7	181	159	2.5	20
51422/HE		12.7	181	159	2.5	20.6
*51124	8124	0.48	141	134	1	1.16
*51224	8224	1.58	150	140	1	2.9
51324	8324	6.176	173	157	2	9.75
*51126	8126	0.922	154	146	1	1.87
LY-5014			144	141	1	0.603
51226	8226	2.85	166	154	1.5	4.2
*51326	8326	7.36	186	169	2	13.3
*51426	8426	26.3	213	187	3	32
*51128	8128	0.99	164	156	1	2.1
*51228	8228	3.15	176	164	1.5	4.5
*51328	8328	10.4	199	181	2	15.9
*51428	8428	26.3	222	198	3	32.2
*51130	8130	1.09	174	166	1	2.2
*51230	8230	4.13	189	176	1.5	5.8
*51330	8330	12	209	191	2	16.7
*51132	8132	1.276	184	176	1	2.3
*51232	8232	4.52	199	186	1.5	6.7
*51332	8332	16.3	225	205	2.5	21.5
*51134	8134	1.58	197	188	1	3.3
*51234	8234	5.196	212	198	1.5	8.3
*51334	8334	16.3	235	215	2.5	22.5

single direction thrust ball bearings with flat back face

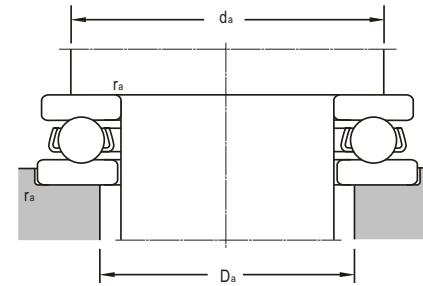
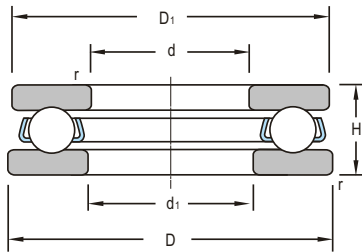


d 170~400mm

Boundary Dimensions						Basic Load Ratings		Limiting Speeds	
<i>d</i>	<i>d</i> <sub>min</sub>	<i>D</i>	<i>D</i> <sub>max</sub>	<i>H</i>	<i>r</i> <sub>min</sub>	Dynamic <i>C</i>	Static <i>C</i> <sub>0</sub>	Grease	Oil
mm						kN		r/min	
170	172	215	213	34	1.1	137	475	1100	1600
	173	240	237	55	1.5	280	884	800	1100
	174	280	275	87	3	445	1520	600	800
180	183	225	222	34	1.1	135	504	1000	1500
	183	250	247	56	1.5	294	950	800	1100
	184	300	295	95	3	494	1738	560	750
190	195	320	315	105	4	544	1480	520	700
200	205	340	335	110	4	624	2400	500	700
220	223	270	267	37	1.1	179	740	950	1400
238	242	340	340	70	3.5	365	1140	580	750
260	263	320	317	45	1.5	218	994	800	1100
	264	360	355	79	2.1	450	1900	560	750
280	284	380	375	80	2.1	493	1950	560	750
300	304	380	376	62	2	322	1634	630	850
	304	420	415	95	3	575	2613	480	630
320	324	400	396	63	2	352	1756	600	800
	325	440	435	95	3	543	2565	450	600
340	344	420	416	64	2	358	1768	600	800
	345	460	455	96	3	575	2755	450	600
	345	540	535	160	5	1020	5100	200	250
360	364	440	436	36	2	371	1805	560	750
	364	440	436	65	2	371	1890	560	750
	365	500	495	110	4	704	3610	400	530
365	365.4	475	400	95	3				
370	368	529	529	131	6				
400	400.4	440	440	24	1	140	700	1300	1600
	404	480	476	65	2	403	2014	530	700

Bearing Designations		Minimum Load Constant <i>A</i>	Mounting Dimensions			Mass
Present	Original		<i>d</i> <sub>a</sub>	<i>D</i> <sub>a</sub>	<i>r</i> <sub>max</sub>	
			mm			kg
*51134	8134	1.58	197	188	1	3.3
*51234	8234	5.196	212	198	1.5	8.3
*51334	8334	16.3	235	215	2.5	22.5
*51136	8136	2.356	207	198	1	3.5
51236	8236	6.276	222	208	1.5	8.08
*51336	8336	21.7	251	229	2.5	28.7
51338M		27.8	308	202	3	36
LY-Z093		35	282	258	3	41.8
51144			250	240	1	4.6
8949M		35	335	252	3	19.6
51152	8152	0.856	296	284	1.5	7.96
*51252	8252	1.9	319	301	2	24.8
51256			339	321	2	27
51160	8160	22.46	348	332	2	17.3
51260	8260	46.2	371	349	2.5	42.5
51164	8164	23.91	368	352	2	18.76
51264	8264	55.2	391	369	2.5	43
51168	8168	27.16	388	372	2	19.8
51268	8268	59.9	411	389	2.5	45
51368	8368	211.8	457	425	4	142
51172X2	7708172	1.805	408	392	2	11.3
51172	8172	28.86	408	392	2	21.1
51272	8272	101	443	417	3	69.2
	708773Y		1433	407	2.5	40.1
	8974H		1467	433	5	105
50980/YB2	9008980	119.5	426	414	1	4.47
51180	8180	36	448	432	2	23

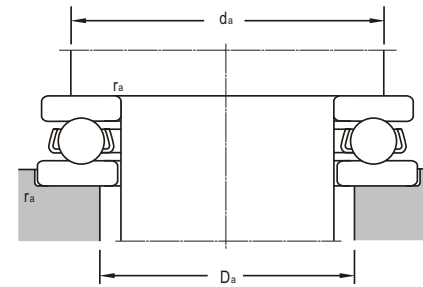
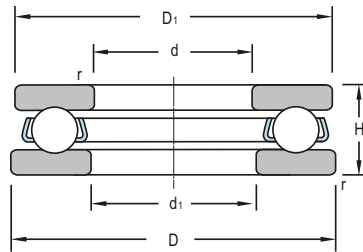
single direction thrust ball bearings with flat back face



d 400~670mm

Boundary Dimensions						Basic Load Ratings		Limiting Speeds	
<i>d</i>	<i>d</i> <sub>min</sub>	<i>D</i>	<i>D</i> <sub>max</sub>	<i>H</i>	<i>r</i> <sub>min</sub>	Dynamic <i>C</i>	Static <i>C</i> <sub>0</sub>	Grease	Oil
mm						kN		r/min	
400	405	540	535	112	4	730	3800	250	380
	405	540	535	85	4	668	3250	330	470
420	424	500	495	65	2	410	2090	530	700
	422	550	550	80	4	463	2574	500	650
440	444	540	535	80	2.1	552	2730	450	600
	444	540	535	60	2.1	360	2112	360	500
	445	600	595	130	5	904	4150	320	470
455	457	650	650	120	5	776	4851	350	500
460	464	560	555	80	2.1	527	2850	450	600
	465	620	615	130	5	688	4504	200	300
480	481	600	600	80	2.1	585	3165	448	640
	484	580	575	80	2.1	530	3100	430	560
	485	730	725	195	6	1065	6886	230	330
500	502	540	540	30	1	101	835	1100	1500
	504	600	595	80	2.1	595	3250	430	560
	505	670	665	135	5	864	5443	250	300
	505	750	745	150	6	950	6320	180	220
530	534	640	635	85	3	618	3311	400	530
560	560.6	610	610	30	1.1	128	960	560	800
600	604	710	705	67	3	630	4275	380	500
	604	710	705	85	3	689	4445	360	470
630	634	750	745	95	3	744	4680	350	480
	635	850	845	175	6	1400	10000	100	160
	635	810	805	100	6	894	5058	302	432
635	635	787.4	787.4	88.9	3	730	4690	341	488
670	670	800	800	95	4	852	4900	318	454
	672	730	730	45	1.5	284	2160	380	530
	674	800	795	105	4	683	5778	160	240

Bearing Designations		Minimum Load Constant <i>A</i>	Mounting Dimensions			Mass
Present	Original		<i>d</i> <sub>a</sub>	<i>D</i> <sub>a</sub>	<i>r</i> <sub>max</sub>	
			mm			kg
51280	8280	119.5	484	458	3	74.5
59280	9008280	3.25	484	458	3	53.4
51184	8184	39.1	468	452	2	24.2
51784	8784	2.574	468	452	2	53.6
51188	8188	2.7	499	481	2	39
59188/YB2	9008188	38	499	481	2	28.2
51288	8288	126.3	537	505	4	109
51791	8791	4.851	560	544	4	131
51192	8192	70.7	518	502	2	41.7
51292	8292	176.6	557	525	4	114
51196X1	8196K	3.165	548	532	2	53.1
51196	8196	78.5	538	522	2	42.5
51396	8396	6.886	620	590	5	308
510/500	10089/500	0.835	527	513	1	6.66
511/500	81/500	82.66	559	541	2	45.7
512/500	82/500	248.4	601	569	4	137
593/500	90083/500	6.32	641	609	5	228
511/530	81/530	123.6	595	575	2.5	55.8
590/560	90089/560	6.6	592	578	1	9.55
591/600	90081/600	4.275	665	645	2.5	50.1
511/600			665	645	2.5	63.5
511/630			1700	680	2.5	81.7
512/630	82/630	558.7	759	721	5	243
517/630	87/630	5.058	1700	680	5	126
517/635/YB2	87/635K	4.69	721	701	2.5	95.2
511/670X2	81/670K	4.85	748	722	3	93.5
510/670	10089/670	33	707	693	1.5	20.5
511/670	81/670	164.7	748	722	3	92.21



d 708 ~ 3000mm

Boundary Dimensions						Basic Load Ratings		Limiting Speeds	
<i>d</i>	<i>d</i> <sub>min</sub>	<i>D</i>	<i>D</i> <sub>1max</sub>	<i>H</i>	<i>r</i> <sub>min</sub>	Dynamic <i>C</i>	Static <i>C</i> <sub>0</sub>	Grease	Oil
mm						kN		r/min	
708	708	950	950	92.8	8	775	970	150	220
710	715 715	950 950	945 945	109 145	6 6	787 1025	980 1296	150 150	220 220
750	755 755	900 900	895 895	90 90	4 4	810 741	6210 4900	160 303	240 433
780	782	930	930	100	3.5	800	6069	140	200
800	805 805	1060 920	1055 915	205 100	7.5 4	1810 825	12570 6120	130 140	180 200
850	855	1000	995	120	4	885	6770	220	314
880	880	1020	1020	86	5	840	6620	284	406
980	985	1120	1115	120	5	940	7880	200	284
1035	1035	1300	1300	96.8	6	823	1170	160	260
1060	1065	1250	1245	115	5	940	1240	140	200
1095	1095	1205	1205	55	3	377	2708	353	504
1180	1181	1280	1280	80	2.1	738	7680	150	220
1720	1721.2	1880	1880	80	2.5	988	12243	180	258
2860	2860	3140	3140	210	9.5	2434	42494	28	40
3000	3000	3250	3250	140	3	1612	29858	53	76

Bearing Designations		Minimum Load Constant <i>A</i>	Mounting Dimensions			Mass
Present	Original		<i>d</i> <sub>a</sub>	<i>D</i> <sub>a</sub>	<i>r</i> <sub>max</sub>	
			mm			kg
	9089/708		846	812	6	190
572/710	70082/710	4.4	846	814	5	199.4
592/710	90082/710	4.4	846	814	5	284
591/750V	97081/750	6.21	838	812	3	100
591/750	90081/750	4.9	838	812	3	111
517/780	87/780	6.069	868	842	3	129
512/800			947	913	6	516
517/800			873	847	3	113
511/850	81/850	6.77	938	912	3	173
LY-5004		6.62	963	937	4	114
517/980	87/980	7.88	1063	1037	4	185
	9089/1035		1180	1154	5	311
591/1060	97081/1060	1.24	1168	1142	4	249
517/1095/HG2	7089/1095G2	2.709	1158	1142	2.5	68.5
510/1080	10089/1180	420	1238	1222	2	108
517/1720V	7089/1720	12.24	1808	1792	2	200
517/2860V	8089/2860	42.494	3020	2980	9	1821
517/3000V	87/3000	29.959	3132	3118	3.5	1116