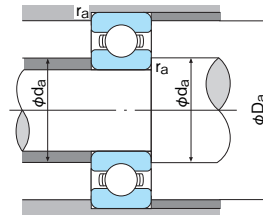
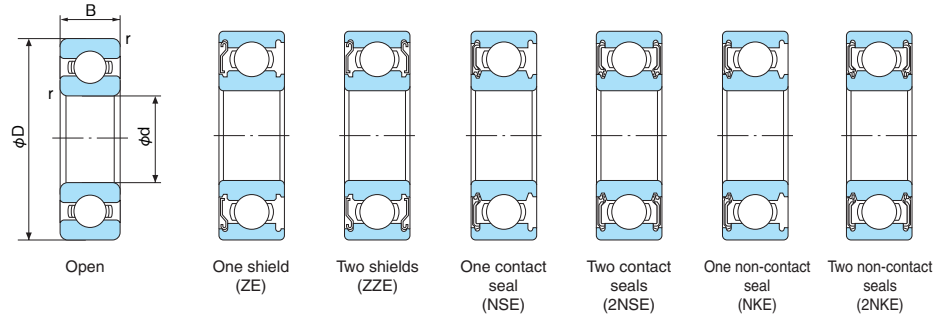


Deep-groove Ball Bearings

Bore Diameter: 10~25mm



■ Dynamic equivalent radial load
 $P_r = X F_r + Y F_a$

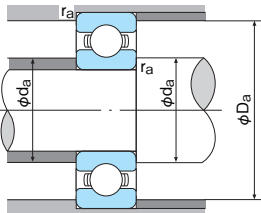
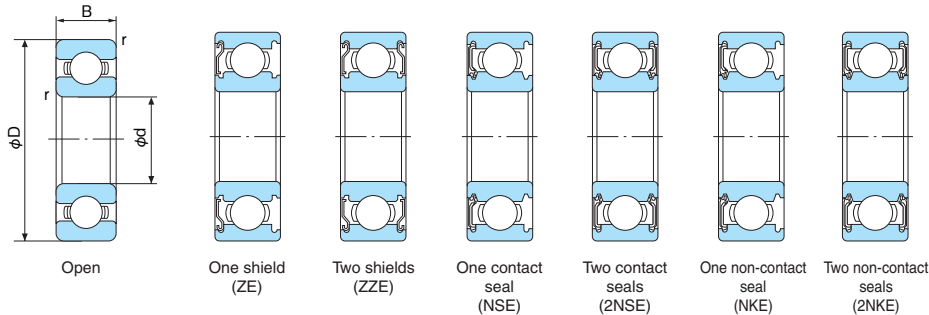
■ Static equivalent radial load
 Larger value of following to be used:
 $P_0 = 0.6 F_r + 0.5 F_a$
 $P_0 = F_r$

$\frac{F_0 F_a}{C_0}$	e	$\frac{F_a}{F_r} \leq e$	$\frac{F_a}{F_r} > e$
0.172	0.19	X	Y
0.345	0.22	1	0
0.689	0.26		
1.03	0.28		
1.38	0.30	1	0
2.07	0.34		
3.45	0.38		
5.17	0.42	1	0
6.89	0.44		

Boundary dimensions (mm)				Bearing No.								Basic dynamic load rating Cr (N)	Basic static load rating Cor (N)	Factor fo	Limiting speed (min ⁻¹)			Abutment and fillet dimensions (mm)			Mass (kg)	Bearing No.
d	D	B	r (mm)	Open type	Shield type		Contact seal type		Non-contact seal type					Grease lubrication		Oil lubrication	da (mm)	Da (max)	ra (max)			
														Open type, ZE, ZZE, NKE, 2NKE	NSE, 2NSE	Open type, ZE						
10	19	5	0.3	6800	6800ZE	6800ZZE	6800NSE	6800-2NSE	6800NKE	6800-2NKE		2120	985	14.2	37000	24000	44000	12	17	0.3	0.005	6800
	22	6	0.3	6900	6900ZE	6900ZZE	6900NSE	6900-2NSE	6900NKE	6900-2NKE		2490	1130	14.0	33000	22000	38000	12	20	0.3	0.009	6900
	26	8	0.3	6000	6000ZE	6000ZZE	6000NSE	6000-2NSE	6000NKE	6000-2NKE		4550	1970	12.4	30000	22000	36000	12	24	0.3	0.019	6000
	30	9	0.6	6200	6200ZE	6200ZZE	6200NSE	6200-2NSE	6200NKE	6200-2NKE		5100	2390	13.2	25000	18000	30000	15	25	0.6	0.032	6200
	35	11	0.6	6300	6300ZE	6300ZZE	6300NSE	6300-2NSE	6300NKE	6300-2NKE		8100	3450	11.3	23000	17000	27000	15	30	0.6	0.053	6300
12	21	5	0.3	6801	6801ZE	6801ZZE	6801NSE	6801-2NSE	6801NKE	6801-2NKE		1920	1040	15.3	32000	20000	39000	14	19	0.3	0.006	6801
	24	6	0.3	6901	6901ZE	6901ZZE	6901NSE	6901-2NSE	6901NKE	6901-2NKE		2700	1320	14.5	30000	20000	36000	14	22	0.3	0.011	6901
	28	8	0.3	6001	6001ZE	6001ZZE	6001NSE	6001-2NSE	6001NKE	6001-2NKE		5100	2390	13.2	28000	18000	32000	14	26	0.3	0.023	6001
	32	10	0.6	6201	6201ZE	6201ZZE	6201NSE	6201-2NSE	6201NKE	6201-2NKE		6800	3050	12.3	22000	17000	28000	17	27	0.6	0.037	6201
	37	12	1	6301	6301ZE	6301ZZE	6301NSE	6301-2NSE	6301NKE	6301-2NKE		9750	4250	11.2	20000	16000	24000	18	31	1.0	0.060	6301
15	24	5	0.3	6802	6802ZE	6802ZZE	6802NSE	6802-2NSE	6802NKE	6802-2NKE		2080	1260	15.8	28000	17000	34000	17	22	0.3	0.007	6802
	28	7	0.3	6902	6902ZE	6902ZZE	6902NSE	6902-2NSE	6902NKE	6902-2NKE		4300	2250	14.3	26000	17000	31000	17	26	0.3	0.016	6902
	32	8	0.3	16002	—	—	—	—	—	—		5600	2840	13.9	24000	—	28000	20	27	0.3	0.025	16002
	32	9	0.3	6002	6002ZE	6002ZZE	6002NSE	6002-2NSE	6002NKE	6002-2NKE		5600	2840	13.9	24000	15000	28000	17	30	0.3	0.032	6002
	35	11	0.6	6202	6202ZE	6202ZZE	6202NSE	6202-2NSE	6202NKE	6202-2NKE		7650	3700	13.1	20000	15000	24000	20	30	0.6	0.045	6202
	42	13	1	6302	6302ZE	6302ZZE	6302NSE	6302-2NSE	6302NKE	6302-2NKE		11400	5400	12.3	17000	13000	21000	21	36	1.0	0.082	6302
17	26	5	0.3	6803	6803ZE	6803ZZE	6803NSE	6803-2NSE	6803NKE	6803-2NKE		2630	1570	16.1	26000	15000	30000	19	24	0.3	0.008	6803
	30	7	0.3	6903	6903ZE	6903ZZE	6903NSE	6903-2NSE	6903NKE	6903-2NKE		4600	2550	14.7	24000	15000	29000	19	28	0.3	0.018	6903
	35	8	0.3	16003	—	—	—	—	—	—		6000	3250	14.3	22000	—	26000	22	30	0.3	0.032	16003
	35	10	0.3	6003	6003ZE	6003ZZE	6003NSE	6003-2NSE	6003NKE	6003-2NKE		6000	3250	14.3	22000	14000	26000	19	33	0.3	0.039	6003
	40	12	0.6	6203	6203ZE	6203ZZE	6203NSE	6203-2NSE	6203NKE	6203-2NKE		9550	4800	13.1	18000	12000	21000	22	35	0.6	0.065	6203
	47	14	1	6303	6303ZE	6303ZZE	6303NSE	6303-2NSE	6303NKE	6303-2NKE		13600	6550	12.3	16000	11000	19000	23	41	1.0	0.115	6303
20	32	7	0.3	6804	6804ZE	6804ZZE	6804NSE	6804-2NSE	6804NKE	6804-2NKE		4000	2640	15.5	22000	13000	26000	22	30	0.3	0.019	6804
	37	9	0.3	6904	6904ZE	6904ZZE	6904NSE	6904-2NSE	6904NKE	6904-2NKE		6350	3700	14.8	19000	12000	23000	22	35	0.3	0.036	6904
	42	8	0.3	16004	—	—	—	—	—	—		7900	4500	14.5	18000	—	21000	25	37	0.3	0.050	16004
	42	12	0.6	6004	6004ZE	6004ZZE	6004NSE	6004-2NSE	6004NKE	6004-2NKE		9400	5000	13.9	18000	11000	21000	24	38	0.6	0.070	6004
	47	14	1	6204	6204ZE	6204ZZE	6204NSE	6204-2NSE	6204NKE	6204-2NKE		12800	6600	13.1	16000	11000	18000	26	41	1.0	0.106	6204
	52	15	1.1	6304	6304ZE	6304ZZE	6304NSE	6304-2NSE	6304NKE	6304-2NKE		15900	7900	12.4	14000	10000	17000	27	45	1.1	0.144	6304
22	50	14	1	62/22	62/22ZE	62/22ZZE	62/22NSE	62/22-2NSE	62/22NKE	62/22-2NKE		13900	6950	13.1	14000	9700	17000	28	44	1.0	0.120	62/22
	56	16	1.1	63/22	63/22ZE	63/22ZZE	63/22NSE	63/22-2NSE	63/22NKE	63/22-2NKE		18400	9250	12.4	13000	9500	16000	29	49	1.0	0.176	63/22
25	37	7	0.3	6805	6805ZE	6805ZZE	6805NSE	6805-2NSE	6805NKE	6805-2NKE		4300	2940	16.0	18000	10000	22000	27	35	0.3	0.022	6805
	42	9	0.3	6905	6905ZE	6905ZZE	6905NSE	6905-2NSE	6905NKE	6905-2NKE		7000	4500	15.3	16000	10000	20000	27	40	0.3	0.042	6905
	47	8	0.3	16005	—	—	—	—	—	—		6950	4600	15.6	15000	—	18000	30	42	0.3	0.060	16005
	47	12	0.6	6005	6005ZE	6005ZZE	6005NSE	6005-2NSE	6005NKE	6005-2NKE		10100	5850	14.5	15000	9500	18000	29	43	0.6	0.079	6005
	52	15	1	6205	6205ZE	6205ZZE	6205NSE	6205-2NSE	6205NKE	6205-2NKE		14000	7900	13.9	13000	9000	16000	31	46	1.0	0.128	6205
	62	17	1.1	6305	6305ZE	6305ZZE	6305NSE	6305-2NSE	6305NKE	6305-2NKE		23600	12100	12.2	12000	8100	14000	32	55	1.0	0.232	6305

Deep-groove Ball Bearings

Bore Diameter: 28~50mm



Dynamic equivalent radial load
 $P_r = X F_r + Y F_a$

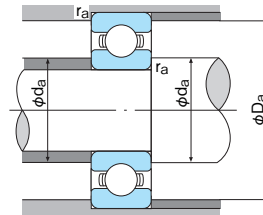
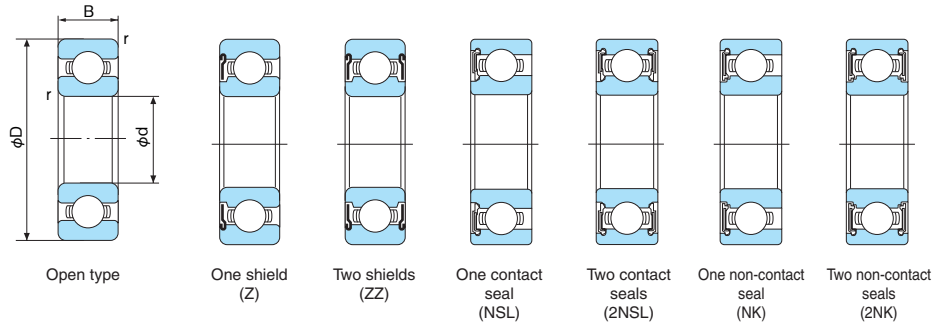
Static equivalent radial load
Larger value of following to be used:
 $P_s = 0.6 F_r + 0.5 F_a$
 $P_s = F_r$

$\frac{F_a}{F_r}$ Cor	e	$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
		X	Y	X	Y
0.172	0.19				2.30
0.345	0.22	1	0	0.56	1.99
0.689	0.26				1.71
1.03	0.28				1.55
1.38	0.30	1	0	0.56	1.45
2.07	0.34				1.31
3.45	0.38				1.15
5.17	0.42	1	0	0.56	1.04
6.89	0.44				1.00

Boundary dimensions (mm)				Bearing No.								Basic dynamic load rating Cr (N)	Basic static load rating Cor (N)	Factor fo	Limiting speed (min ⁻¹)			Abutment and fillet dimensions (mm)			Mass (kg)	Bearing No.
d	D	B	r (min)	Open type	Shield type		Contact seal type		Non-contact seal type		Grease lubrication				Oil lubrication	da (min)	Da (max)	ra (max)				
					Open type, ZE, ZZE,NKE,2NKE	NSE, 2NSE	Open type, ZE															
28	58	16	1	62/28	62/28ZE	62/28ZZE	62/28NSE	62/28-2NSE	62/28NKE	62/28-2NKE	17900	9750	13.1	12000	8200	14000	34	52	1.0	0.175	62/28	
	68	18	1.1	63/28	63/28ZE	63/28ZZE	63/28NSE	63/28-2NSE	63/28NKE	63/28-2NKE	26800	14000	12.4	11000	7500	13000	35	61	1.0	0.287	63/28	
30	42	7	0.3	6806	6806ZE	6806ZZE	6806NSE	6806-2NSE	6806NKE	6806-2NKE	5350	3800	16.4	15000	9000	18000	32	40	0.3	0.026	6806	
	47	9	0.3	6906	6906ZE	6906ZZE	6906NSE	6906-2NSE	6906NKE	6906-2NKE	7250	5000	15.8	14000	8500	17000	32	45	0.3	0.045	6906	
	55	9	0.3	16006	—	—	—	—	—	—	9950	6550	15.4	13000	—	15000	35	50	0.3	0.085	16006	
	55	13	1	6006	6006ZE	6006ZZE	6006NSE	6006-2NSE	6006NKE	6006-2NKE	13200	8300	14.8	13000	8000	15000	35	50	1.0	0.117	6006	
	62	16	1	6206	6206ZE	6206ZZE	6206NSE	6206-2NSE	6206NKE	6206-2NKE	19500	11300	13.9	11000	7500	13000	36	56	1.0	0.199	6206	
	72	19	1.1	6306	6306ZE	6306ZZE	6306NSE	6306-2NSE	6306NKE	6306-2NKE	26700	15000	13.2	10000	6700	12000	37	65	1.0	0.346	6306	
32	65	17	1	62/32	62/32ZE	62/32ZZE	62/32NSE	62/32-2NSE	62/32NKE	62/32-2NKE	22400	13100	13.6	11000	7100	12000	38	59	1.0	0.230	62/32	
	75	20	1.1	63/32	63/32ZE	63/32ZZE	63/32NSE	63/32-2NSE	63/32NKE	63/32-2NKE	30000	16200	12.7	9500	6500	11000	39	68	1.0	0.382	63/32	
35	47	7	0.3	6807	6807ZE	6807ZZE	6807NSE	6807-2NSE	6807NKE	6807-2NKE	4750	3800	16.4	14000	7600	16000	37	45	0.3	0.029	6807	
	55	10	0.6	6907	6907ZE	6907ZZE	6907NSE	6907-2NSE	6907NKE	6907-2NKE	10400	7150	15.6	12000	7500	15000	39	51	0.6	0.073	6907	
	62	9	0.3	16007	—	—	—	—	—	—	11700	8150	15.6	12000	—	14000	40	57	0.6	0.110	16007	
	62	14	1	6007	6007ZE	6007ZZE	6007NSE	6007-2NSE	6007NKE	6007-2NKE	16000	10300	14.8	12000	6800	14000	40	57	1.0	0.156	6007	
	72	17	1.1	6207	6207ZE	6207ZZE	6207NSE	6207-2NSE	6207NKE	6207-2NKE	25700	15300	13.8	9800	6300	11000	42	65	1.0	0.288	6207	
	80	21	1.5	6307	6307ZE	6307ZZE	6307NSE	6307-2NSE	6307NKE	6307-2NKE	33500	19200	13.2	8800	6000	10000	44	71	1.5	0.457	6307	
40	52	7	0.3	6808	6808ZE	6808ZZE	6808NSE	6808-2NSE	6808NKE	6808-2NKE	5950	4900	16.2	12000	6700	14000	42	50	0.3	0.033	6808	
	62	12	0.6	6908	6908ZE	6908ZZE	6908NSE	6908-2NSE	6908NKE	6908-2NKE	13700	9950	15.8	11000	6300	13000	44	58	0.6	0.108	6908	
	68	9	0.3	16008	—	—	—	—	—	—	11100	8550	16.1	10000	—	12000	45	63	0.3	0.125	16008	
	68	15	1	6008	6008ZE	6008ZZE	6008NSE	6008-2NSE	6008NKE	6008-2NKE	16800	11500	15.3	10000	6100	12000	45	63	1.0	0.194	6008	
	80	18	1.1	6208	6208ZE	6208ZZE	6208NSE	6208-2NSE	6208NKE	6208-2NKE	29100	17900	14.0	8700	5600	10000	47	73	1.0	0.366	6208	
	90	23	1.5	6308	6308ZE	6308ZZE	6308NSE	6308-2NSE	6308NKE	6308-2NKE	40500	24100	13.2	7800	5300	9200	49	81	1.5	0.633	6308	
45	58	7	0.3	6809	6809ZE	6809ZZE	6809NSE	6809-2NSE	6809NKE	6809-2NKE	5350	4900	16.1	11000	6000	13000	47	56	0.3	0.040	6809	
	68	12	0.6	6909	6909ZE	6909ZZE	6909NSE	6909-2NSE	6909NKE	6909-2NKE	14100	10900	16.1	10000	5600	12000	49	64	0.6	0.122	6909	
	75	10	0.6	16009	—	—	—	—	—	—	12900	10500	16.2	9200	—	11000	52	68	0.6	0.170	16009	
	75	16	1	6009	6009ZE	6009ZZE	6009NSE	6009-2NSE	6009NKE	6009-2NKE	20900	15200	15.3	9200	5400	11000	50	70	1.0	0.246	6009	
	85	19	1.1	6209	6209ZE	6209ZZE	6209NSE	6209-2NSE	6209NKE	6209-2NKE	32500	20500	14.1	7800	5300	9300	52	78	1.0	0.407	6209	
	100	25	1.5	6309	6309ZE	6309ZZE	6309NSE	6309-2NSE	6309NKE	6309-2NKE	53000	32000	13.1	7000	4800	8200	54	91	1.5	0.833	6309	
50	65	7	0.3	6810	6810ZE	6810ZZE	6810NSE	6810-2NSE	6810NKE	6810-2NKE	6400	5800	16.1	10000	5300	12000	52	63	0.3	0.052	6810	
	72	12	0.6	6910	6910ZE	6910ZZE	6910NSE	6910-2NSE	6910NKE	6910-2NKE	14500	11700	16.1	9500	5300	11000	54	68	0.6	0.125	6910	
	80	10	0.6	16010	—	—	—	—	—	—	16100	13100	16.1	8500	—	10000	57	73	0.6	0.180	16010	
	80	16	1	6010	6010ZE	6010ZZE	6010NSE	6010-2NSE	6010NKE	6010-2NKE	21800	16600	15.6	8500	5000	10000	55	75	1.0	0.264	6010	
	90	20	1.1	6210	6210ZE	6210ZZE	6210NSE	6210-2NSE	6210NKE	6210-2NKE	35000	23200	14.4	7100	4800	8600	57	83	1.0	0.463	6210	
	110	27	2	6310	6310ZE	6310ZZE	6310NSE	6310-2NSE	6310NKE	6310-2NKE	62000	38000	13.1	6400	4300	7500	60	100	2.0	1.07	6310	

Deep-groove Ball Bearings

Bore Diameter: 85~110mm



■ Dynamic equivalent radial load
 $P_r = X F_r + Y F_a$

■ Static equivalent radial load
 Larger value of following to be used:
 $P_{0r} = 0.6 F_r + 0.5 F_a$
 $P_{0r} = F_r$

f _o F _a Cor	e	F _a / F _r ≤ e		F _a / F _r > e	
		X	Y	X	Y
0.172	0.19				2.30
0.345	0.22	1	0	0.56	1.99
0.689	0.26				1.71
1.03	0.28				1.55
1.38	0.30	1	0	0.56	1.45
2.07	0.34				1.31
3.45	0.38				1.15
5.17	0.42	1	0	0.56	1.04
6.89	0.44				1.00

Boundary dimensions (mm)				Bearing No.							Basic dynamic load rating Cr (N)	Basic static load rating Cor (N)	Factor fo	Limiting speed (min ⁻¹)			Abutment and fillet dimensions (mm)			Mass (kg)	Bearing No.
d	D	B	r (mm)	Open type	Shield type	Contact seal type		Non-contact seal type		Grease lubrication				Oil lubrication	da (mm)	Da (max)	ra (max)				
								Open type, Z, ZZ, NK, 2NK	NSL, 2NSL	Open type, Z											
85	110	13	1	6817	6817Z	6817ZZ	—	—	—	—	18700	19000	16.2	5700	—	6700	90	105	1.0	0.265	6817
	120	18	1.1	6917	6917Z	6917ZZ	—	—	—	—	32000	29600	16.4	5400	—	6300	91	113	1.0	0.517	6917
	130	14	0.6	16017	—	—	—	—	—	—	31500	29800	16.4	5000	—	6000	92	123	0.6	0.626	16017
	130	22	1.1	6017	6017Z	6017ZZ	—	—	—	—	49500	43000	15.7	5000	—	6000	91	124	1.1	0.895	6017
	150	28	2	6217	6217Z	6217ZZ	6217NSL	6217-2NSL	6217NK	6217-2NK	84000	62000	14.5	4300	2800	5000	95	140	2.0	1.79	6217
	180	41	3	6317	6317Z	6317ZZ	6317NSL	6317-2NSL	6317NK	6317-2NK	133000	96500	13.3	3800	2600	4500	99	166	2.5	4.23	6317
90	115	13	1	6818	6818Z	6818ZZ	—	—	—	—	19000	19700	16.1	5400	—	6300	95	110	1.0	0.280	6818
	125	18	1.1	6918	6918Z	6918ZZ	—	—	—	—	33000	31500	16.4	5100	—	6000	96	119	1.0	0.540	6918
	140	16	1	16018	—	—	—	—	—	—	41500	39500	16.3	4800	—	5600	99	131	1.0	0.848	16018
	140	24	1.5	6018	6018Z	6018ZZ	—	—	—	—	58000	49500	15.6	4800	—	5600	97	133	1.5	1.17	6018
	160	30	2	6218	6218Z	6218ZZ	6218NSL	6218-2NSL	6218NK	6218-2NK	96000	71500	14.5	4000	2600	4800	100	150	2.0	2.15	6218
	190	43	3	6318	6318Z	6318ZZ	6318NSL	6318-2NSL	6318NK	6318-2NK	143000	107000	13.3	3600	2400	4300	104	176	2.5	4.91	6318
95	120	13	1	6819	6819Z	6819ZZ	—	—	—	—	19300	20500	16.0	5000	—	6000	100	115	1.0	0.298	6819
	130	18	1.1	6919	6919Z	6919ZZ	—	—	—	—	33500	33500	16.5	4800	—	5700	101	124	1.0	0.567	6919
	145	16	1	16019	—	—	—	—	—	—	41000	39500	16.4	4600	—	5300	104	136	1.0	0.885	16019
	145	24	1.5	6019	6019Z	6019ZZ	—	—	—	—	60500	54000	15.8	4500	—	5300	102	138	1.5	1.22	6019
	170	32	2.1	6219	6219Z	6219ZZ	6219NSL	6219-2NSL	6219NK	6219-2NK	109000	81500	14.4	3800	2600	4500	107	158	2.0	2.62	6219
	200	45	3	6319	6319Z	6319ZZ	6319NSL	6319-2NSL	6319NK	6319-2NK	153000	118000	13.3	3300	2400	3900	109	186	2.5	5.67	6319
100	125	13	1	6820	6820Z	6820ZZ	—	—	—	—	19600	21200	16.0	4800	—	5600	105	120	1.0	0.311	6820
	140	20	1.1	6920	6920Z	6920ZZ	—	—	—	—	42500	36500	16.5	4500	—	5300	106	134	1.0	0.771	6920
	150	16	1	16020	—	—	—	—	—	—	37500	39500	16.4	4300	—	5300	109	141	1.0	0.910	16020
	150	24	1.5	6020	6020Z	6020ZZ	—	—	—	—	60000	54000	15.9	4300	—	5300	107	143	1.5	1.26	6020
	180	34	2.1	6220	6220Z	6220ZZ	6220NSL	6220-2NSL	6220NK	6220-2NK	122000	93000	14.4	3600	2400	4300	112	168	2.0	3.14	6220
	215	47	3	6320	6320Z	6320ZZ	6320NSL	6320-2NSL	6320NK	6320-2NK	173000	141000	13.2	3200	2200	3700	114	201	2.5	7.00	6320
105	130	13	1	6821	—	—	—	—	—	—	19900	21900	15.9	4800	—	5600	110	125	1.0	0.325	6821
	145	20	1.1	6921	—	—	—	—	—	—	42500	42000	16.4	4300	—	5300	111	139	1.0	0.793	6921
	160	18	1	16021	—	—	—	—	—	—	37500	50500	16.4	4000	—	4800	114	151	1.0	1.20	16021
	160	26	2	6021	6021Z	6021ZZ	—	—	—	—	72500	65500	15.8	4000	—	4800	113	152	2.0	1.60	6021
	190	36	2.1	6221	6221Z	6221ZZ	—	—	—	—	133000	104000	14.3	3400	—	4000	117	178	2.0	3.76	6221
	225	49	3	6321	6321Z	6321ZZ	—	—	—	—	184000	153000	13.2	3000	—	3600	119	211	2.5	8.05	6321
110	140	16	1	6822	—	—	—	—	—	—	27300	29400	16.9	4300	—	5300	115	135	1.0	0.510	6822
	150	20	1.1	6922	—	—	—	—	—	—	38000	38500	16.4	4300	—	5000	116	144	1.0	0.830	6922
	170	19	1	16022	—	—	—	—	—	—	44000	45000	16.5	3800	—	4500	119	161	1.0	1.46	16022
	170	28	2	6022	6022Z	6022ZZ	—	—	—	—	84500	73000	15.5	3800	—	4500	118	162	2.0	1.97	6022
	200	38	2.1	6222	6222Z	6222ZZ	—	—	—	—	144000	117000	14.3	3200	—	3800	122	188	2.0	4.36	6222
	240	50	3	6322	6322Z	6322ZZ	—	—	—	—	205000	179000	13.1	2900	—	3400	124	226	2.5	9.54	6322

1N=0.102kgf