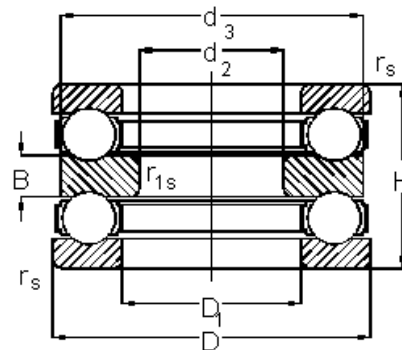


## Double Direction Thrust Ball Bearings

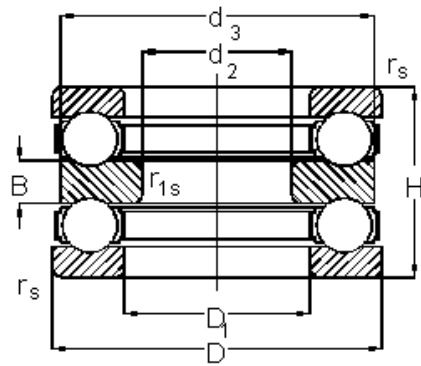
Sizes 10 mm – 45 mm



Dimensions								Basic Load Rating		Limiting Speed for Lubricating by		Bearing Designation
d <sub>2</sub>	D	d <sub>3</sub>	D <sub>1</sub>	H	B	r <sub>s</sub> min	r <sub>1s</sub> min	Dynamic C <sub>a</sub>	Static C <sub>0a</sub>	Grease	Oil	
mm								kN <i>lbf</i>		min <sup>-1</sup>		
10	32	32	17	22	5	0.6	0.3	15.8 <b>3,550</b>	16.5 <b>3,690</b>	6,000	7,900	<b>52202A</b>
15	40	40	22	26	6	0.6	0.3	22.4 <b>5,010</b>	26.1 <b>5,840</b>	5,000	6,700	<b>52204A</b>
	60	60	27	45	11	1	0.6	55.2 <b>12,300</b>	55.2 <b>12,300</b>	3,200	4,200	<b>52405A</b>
20	47	47	27	28	7	0.6	0.3	27.6 <b>6,190</b>	36.2 <b>8,100</b>	4,500	6,000	<b>52205A</b>
	52	52	27	34	8	1	0.3	35.5 <b>7,940</b>	42.2 <b>9,440</b>	3,800	5,000	<b>52305A</b>
	70	70	32	52	12	1	0.6	72.2 <b>16,200</b>	81 <b>18,100</b>	2,700	3,500	<b>52406A</b>
25	52	52	32	29	7	0.6	0.3	29.3 <b>6,560</b>	43.8 <b>9,810</b>	4,000	5,300	<b>52206A</b>
	60	60	32	38	9	1	0.3	43.0 <b>9,620</b>	55.2 <b>12,300</b>	3,300	4,500	<b>52306A</b>
	80	80	37	59	14	1.1	0.6	87.4 <b>19,600</b>	100 <b>22,400</b>	2,200	3,000	<b>52407A</b>
30	62	62	37	34	8	1	0.3	39.1 <b>8,740</b>	58.4 <b>13,100</b>	3,500	4,700	<b>52207A</b>
	68	68	37	44	10	1	0.3	55.2 <b>12,300</b>	73.6 <b>16,500</b>	2,800	3,800	<b>52307A</b>
	68	68	42	36	9	1	0.6	43.8 <b>9,810</b>	70.8 <b>15,800</b>	3,200	4,200	<b>52208A</b>
	78	78	42	49	12	1	0.6	69.4 <b>15,600</b>	94.4 <b>21,100</b>	2,700	3,500	<b>52308A</b>
	90	90	42	65	15	1.1	0.6	112 <b>25,100</b>	133 <b>29,900</b>	2,000	2,700	<b>52408ATNGN</b>
35	73	73	47	37	9	1	0.6	46.4 <b>10,400</b>	81 <b>18,100</b>	3,000	4,000	<b>52209A</b>
	85	85	47	52	12	1	0.6	79.4 <b>17,800</b>	117 <b>26,100</b>	2,400	3,200	<b>52309A</b>
	100	100	47	72	17	1.1	0.6	131 <b>29,300</b>	158 <b>35,500</b>	1,900	2,500	<b>52409A</b>
40	78	78	52	39	9	1	0.6	47.3 <b>10,600</b>	87.4 <b>19,600</b>	2,800	3,800	<b>52210A</b>
	95	95	52	58	14	1.1	0.6	73.5 <b>16,500</b>	144 <b>32,200</b>	2,100	2,800	<b>52310A</b>
	110	100	52	78	18	1.5	0.6	158 <b>35,500</b>	200 <b>44,700</b>	1,700	2,200	<b>52410A</b>

Bearing designations printed in bold face type are currently in our manufacturing schedule. Those shown in normal face type are made to order.

**ZVLZKL**

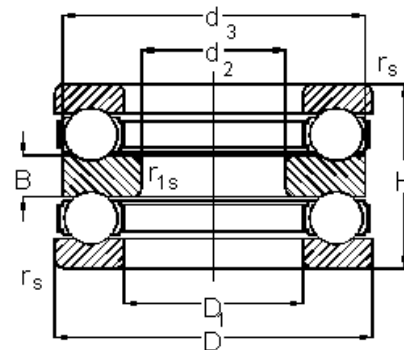


d <sub>2</sub>	Abutment and Fillet Dimensions				Weight	Minimum Axial Load Factor
	d <sub>a</sub> min	D <sub>a</sub> max	r <sub>a</sub> max	r <sub>b</sub> max		
mm					kg lbs	
10	15	22	0.6	0.3	0.08 0.176	0.004
15	20	28	0.6	0.3	0.150 0.330	0.008
	25	39	1	0.6	0.630 1.387	0.035
20	25	34	0.6	0.3	0.230 0.506	0.015
	25	36	1	0.3	0.330 0.727	0.020
	30	46	1	0.6	1.0 2.20	0.085
25	30	39	0.6	0.3	0.270 0.595	0.018
	30	42	1	0.3	0.490 1.079	0.030
	35	53	1	0.6	1.44 3.17	0.12
30	35	46	1	0.3	0.420 0.925	0.032
	35	48	1	0.3	0.710 1.563	0.050
	40	51	1	0.6	0.540 1.189	0.047
	40	55	1	0.6	1.06 2.33	0.095
	40	60	1	0.6	2.03 4.47	0.19
35	45	56	1	0.6	0.620 1.365	0.060
	45	61	1	0.6	1.29 2.84	0.13
	45	67	1	0.6	2.71 5.97	0.35
40	50	61	1	0.6	0.710 1.563	0.082
	50	68	1	0.6	1.86 4.10	0.19
	50	74	1.5	0.6	3.56 7.84	0.45

J

## Double Direction Thrust Ball Bearings

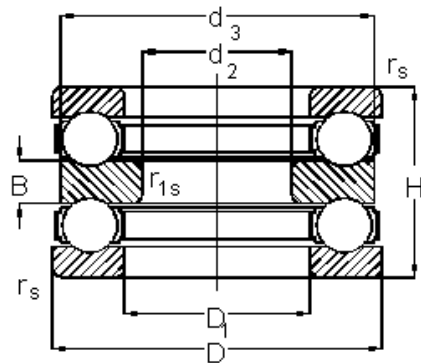
Sizes 50 mm – 85 mm



Dimensions								Basic Load Rating		Limiting Speed for Lubricating by		Bearing Designation
d <sub>2</sub>	D	d <sub>3</sub>	D <sub>1</sub>	H	B	r <sub>s</sub> min	r <sub>1s</sub> min	Dynamic C <sub>a</sub>	Static C <sub>0a</sub>	Grease	Oil	
mm								kN lbf		min <sup>-1</sup>		
45	90	90	57	45	10	1	0.6	69.4 <i>15,500</i>	123 <i>27,600</i>	2,500	3,300	<b>52211A</b>
	105	105	57	64	15	1.1	0.6	91.5 <i>20,700</i>	174 <i>39,100</i>	1,900	2,500	52311A
	120	120	57	87	20	1.5	0.6	156 <i>34,800</i>	251 <i>56,200</i>	1,600	2,100	52411A
50	95	95	62	46	10	1	0.6	56 <i>12,600</i>	141 <i>31,600</i>	2,400	3,200	52212A
	110	110	62	64	15	1.1	0.6	95 <i>21,500</i>	192 <i>43,000</i>	1,900	2,500	52312A
	130	130	62	93	21	1.5	0.6	170 <i>38,300</i>	287 <i>64,300</i>	1,400	1,900	52412A
	140	140	68	101	23	2	1	176 <i>39,800</i>	329 <i>73,600</i>	1,200	1,600	52413A
55	100	100	67	47	10	1	0.6	75 <i>16,800</i>	150 <i>33,500</i>	2,400	3,200	52213A
	115	115	67	65	15	1.1	0.6	128 <i>28,700</i>	211 <i>47,300</i>	1,800	2,400	52313A
	105	105	72	47	10	1	1	76.4 <i>17,100</i>	162 <i>36,200</i>	2,200	3,000	52214A
	125	125	72	72	16	1.1	1	147 <i>32,900</i>	251 <i>56,200</i>	1,700	2,200	52314A
	150	150	73	107	24	2	1	251 <i>56,200</i>	369 <i>82,500</i>	1,200	1,600	52414A
60	110	110	77	47	10	1	1	77.9 <i>17,400</i>	171 <i>38,300</i>	2,200	3,000	52215A
	135	135	77	79	18	1.5	1	185 <i>41,400</i>	310 <i>69,400</i>	1,600	2,100	52315A
	160	160	78	115	26	2	1	299 <i>66,800</i>	438 <i>98,100</i>	940	1,300	52415
65	115	115	82	48	10	1	1	79.4 <i>17,800</i>	181 <i>40,600</i>	2,000	2,700	52216A
	140	140	82	79	18	1.5	1	181 <i>40,600</i>	316 <i>70,800</i>	1,500	2,000	52316A
	170	170	83	120	27	2.1	1	316 <i>70,800</i>	482 <i>108,000</i>	890	1,200	52416
	180	179.5	88	128	29	2.1	1.1	335 <i>75,000</i>	531 <i>119,000</i>	890	1,200	52417
70	125	125	88	55	12	1	1	96.2 <i>21,500</i>	215 <i>48,200</i>	1,900	2,500	52217A
	150	150	88	87	19	1.5	1	224 <i>50,100</i>	376 <i>84,100</i>	1,300	1,800	52317A
	190	189.5	93	135	30	2.1	1.1	383 <i>85,800</i>	619 <i>139,000</i>	790	1,060	52418

Bearing designations printed in bold face type are currently in our manufacturing schedule. Those shown in normal face type are made to order.

**ZVLZKL**

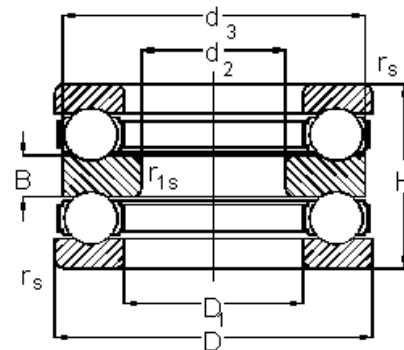


$d_2$	Abutment and Fillet Dimensions				Weight	Minimum Axial Load Factor
	$d_a$ min	$D_a$ max	$r_a$ max	$r_b$ max		
mm					kg lbs	M
45	55	69	1	0.6	1.12 2.74	0.11
	55	75	1	0.6	2.51 5.53	0.27
	55	81	1.5	0.6	4.70 10.35	0.65
50	60	74	1	0.6	1.25 2.75	0.13
	60	80	1	0.6	2.68 5.90	0.35
	60	88	1.5	0.6	6.33 13.94	0.90
	65	95	2	1	8.03 17.68	1.3
55	65	79	1	0.6	1.36 2.99	0.17
	65	85	1	0.6	2.90 6.39	0.45
	70	84	1	0.6	1.48 3.26	0.21
	70	92	1	1	3.90 8.59	0.54
	70	102	2	1	9.71 21.38	1.60
60	75	89	1	1	1.57 3.46	0.27
	75	99	1.5	1	4.83 9.94	0.76
	75	110	2	1	11.80 26.0	2.10
65	80	95	1	1	1.69 3.72	0.35
	80	104	1.5	1	5.06 11.14	0.85
	80	117	2	1	14.0 30.8	2.70
	85	124	2	1	17.5 38.5	3.30
70	85	101	1	1	2.34 5.15	0.43
	85	111	1.5	1	6.43 14.16	1.20
	90	131	2	1	19.60 43.10	4.10

J

## Double Direction Thrust Ball Bearings

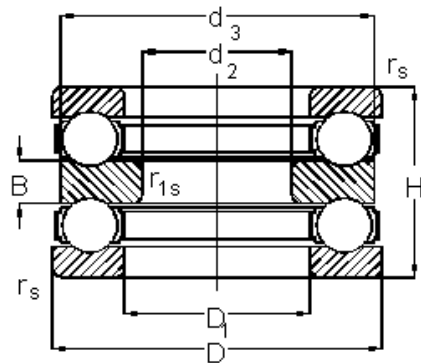
Sizes 95 mm – 140 mm



Dimensions								Basic Load Rating		Limiting Speed for Lubricating by		Bearing Designation
$d_2$	D	$d_3$	$D_1$	H	B	$r_s$ min	$r_{1s}$ min	Dynamic $C_a$	Static $C_{oa}$	Grease	Oil	
mm								kN <i>lbf</i>		min <sup>-1</sup>		
75	135	135	93	62	14	1.1	1	133 <i>29,900</i>	282 <i>63,100</i>	1,700	2,200	<b>52218A</b>
	155	155	93	88	19	1.5	1	233 <i>52,100</i>	406 <i>90,900</i>	1,100	1,500	52318
80	210	209.5	103	150	33	3	1.1	447 <i>100,000</i>	779 <i>174,000</i>	750	1,000	52420
85	150	150	103	67	15	1.1	1	162 <i>36,200</i>	348 <i>77,900</i>	1,600	2,100	<b>52220A</b>
	170	170	103	97	21	1.5	1	251 <i>56,200</i>	464 <i>104,000</i>	1,060	1,400	52320
95	160	160	113	67	15	1.1	1	171 <i>38,300</i>	391 <i>87,400</i>	1,300	1,800	52222
	190	189.5	113	110	24	2	1	304 <i>68,100</i>	584 <i>131,000</i>	890	1,200	52322
100	170	170	123	68	15	1.1	1.1	174 <i>39,100</i>	422 <i>94,400</i>	1,200	1,600	52224
	210	209.5	123	123	27	2.1	1.1	348 <i>77,900</i>	708 <i>158,000</i>	790	1,060	52324
110	190	189.5	133	80	18	1.5	1.1	237 <i>53,100</i>	562 <i>126,000</i>	1,000	1,500	52226
120	200	199.5	143	81	18	1.5	1.1	242 <i>54,100</i>	596 <i>133,000</i>	1,060	1,400	52228
130	215	214.5	153	89	20	1.5	1.1	271 <i>60,700</i>	681 <i>153,000</i>	1,000	1,300	52230
140	225	224.5	163	90	20	1.5	1.1	276 <i>61,900</i>	722 <i>162,000</i>	890	1,200	52232

Bearing designations printed in bold face type are currently in our manufacturing schedule. Those shown in normal face type are made to order.

**ZVLZKL**



Abutment and Fillet Dimensions					Weight ~	Minimum Axial Load Factor M
$d_2$	$d_a$ min	$D_a$ max	$r_a$ max	$r_b$ max		
mm					kg lbs	
75	90	108	1	1	3.22 7.09	0.53
	90	116	1.5	1	6.60 14.53	1.50
80	100	145	2.5	1	26.60 58.60	6.20
85	100	120	1	1	4.29 9.45	0.77
	100	128	1.5	1	8.90 19.60	2.00
95	110	130	1	1	4.68 10.31	1.10
	110	422	1.5	1	13.80 30.40	2.80
100	120	140	1	1	5.24 11.54	1.40
	120	157	2	1	17.20 37.90	4.10
110	130	154	1.5	1	7.74 17.04	1.70
120	140	164	1.5	1	8.95 19.71	2.0
130	150	176	1.5	1	10.60 23.32	2.8
140	160	186	1.5	1	12.20 26.90	3.2

J