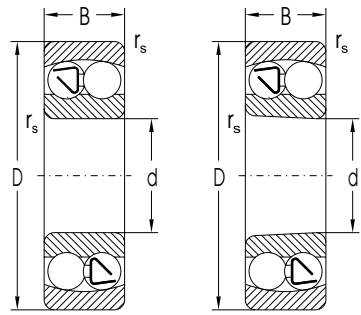
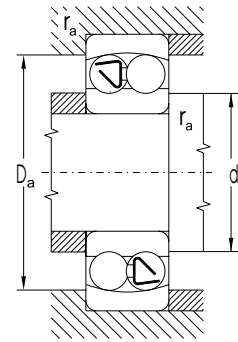


Double Row Self-Aligning Ball Bearings

d = 6 to 60 mm



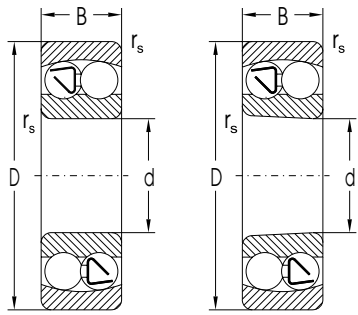
K



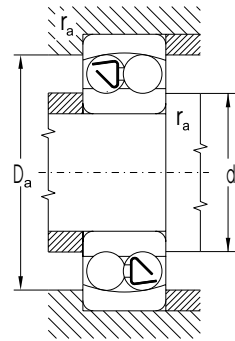
| Dimensions | | | | Basic Load Rating | | Limiting Speed for Lubrication with | | Bearing Designation | | Abutment and Fillet Dimensions | | | | Weight | | Corresponding Adapter Sleeve | Factors | | | |
|------------|-----|------|----------------|-------------------|-----------------|-------------------------------------|-------|-----------------------|-------------------|--------------------------------|--------------------|--------------------|--------------------|--------|--------|------------------------------|---------|----------------|----------------|----------------|
| d | D | B | r _s | C _r | C _{0r} | Grease | Oil | with Cylindrical Bore | with Tapered Bore | d | d _a min | D _a max | r _a max | ~ | K | | e | Y ₁ | Y ₂ | Y ₀ |
| mm | | | | kN | | min ⁻¹ | | | | mm | | | | kg | | | | | | |
| 6 | 19 | 6.0 | 0.30 | 2.150 | 0.240 | 27000 | 32000 | 126 | | 6 | 8.2 | 17 | 0.3 | 0.0090 | | | 0.34 | 1.90 | 2.90 | 2.00 |
| 10 | 30 | 14.0 | 0.60 | 7.280 | 1.580 | 25000 | 30000 | 2200 | | 10 | 14 | 26 | 0.6 | 0.0470 | | | 0.65 | 1.00 | 1.50 | 1.00 |
| 12 | 32 | 10.0 | 0.60 | 5.590 | 1.260 | 24000 | 28000 | 1201 | | 12 | 16 | 18 | 0.6 | 0.0400 | | | 0.34 | 1.90 | 2.90 | 2.00 |
| | 35 | 11.0 | 0.60 | 7.410 | 1.740 | 21000 | 25000 | 1202 | | 15 | 19 | 31 | 0.6 | 0.0490 | | | 0.33 | 1.90 | 2.90 | 2.00 |
| 15 | 35 | 14.0 | 0.60 | 7.610 | 1.810 | 21000 | 25000 | 2202 | | | 19 | 31 | 0.6 | 0.0600 | | | 0.49 | 1.30 | 2.00 | 1.30 |
| | 40 | 12.0 | 0.60 | 7.930 | 2.030 | 17000 | 20000 | 1203 | 1203K | 17 | 21 | 36 | 0.6 | 0.0730 | 0.0710 | H203 | 0.31 | 2.10 | 3.20 | 2.20 |
| 20 | 47 | 14.0 | 1.00 | 9.950 | 2.660 | 14000 | 17000 | 1204 | 1204K | 20 | 25 | 42 | 1.0 | 0.1200 | 0.1180 | H204 | 0.27 | 2.30 | 3.60 | 2.40 |
| | 52 | 15.0 | 1.00 | 12.100 | 3.350 | 12600 | 15000 | 1205 | 1205K | 25 | 30 | 47 | 1.0 | 0.1410 | 0.1380 | H205 | 0.27 | 2.30 | 3.60 | 2.40 |
| 25 | 52 | 18.0 | 1.00 | 12.400 | 3.480 | 12600 | 15000 | 2205 | 2205K | | 30 | 47 | 1.0 | 0.1630 | 0.1580 | H305 | 0.43 | 1.50 | 2.30 | 1.50 |
| | 62 | 24.0 | 1.10 | 24.200 | 6.560 | 10000 | 12000 | 2305TNGN | 2305KTNGN | | 31 | 55 | 1.0 | 0.3350 | 0.3270 | H2305 | 0.47 | 1.30 | 2.10 | 1.40 |
| 30 | 62 | 16.0 | 1.00 | 15.600 | 4.730 | 11000 | 13000 | 1206 | 1206K | 30 | 35 | 57 | 1.0 | 0.2200 | 0.2160 | H206 | 0.250 | 2.600 | 4.000 | 2.700 |
| | 62 | 20.0 | 1.00 | 15.300 | 4.550 | 11000 | 13000 | 2206 | 2206K | | 35 | 57 | 1.0 | 0.2600 | 0.2540 | H306 | 0.400 | 1.600 | 2.500 | 1.700 |
| | 72 | 19.0 | 1.10 | 21.200 | 6.310 | 9400 | 11000 | 1306 | 1306K | | 36 | 65 | 1.0 | 0.3870 | 0.3810 | H306 | 0.260 | 2.500 | 3.800 | 2.600 |
| | 72 | 27.0 | 1.10 | 31.200 | 8.740 | 8400 | 10000 | 2306 | 2306K | | 36 | 65 | 1.0 | 0.5000 | 0.4890 | H2306 | 0.440 | 1.400 | 2.200 | 1.500 |
| 35 | 72 | 17.0 | 1.10 | 15.900 | 5.110 | 9400 | 11000 | 1207 | 1207K | 35 | 42 | 65 | 1.0 | 0.3230 | 0.3170 | H207 | 0.230 | 2.700 | 4.200 | 2.900 |
| | 72 | 23.0 | 1.10 | 21.600 | 6.680 | 9400 | 11000 | 2207 | 2207K | | 42 | 65 | 1.0 | 0.4030 | 0.3960 | H307 | 0.370 | 1.700 | 2.600 | 1.800 |
| 40 | 80 | 18.0 | 1.10 | 19.000 | 6.560 | 7900 | 9400 | 1208 | 1208K | 40 | 47 | 73 | 1.0 | 0.4170 | 0.4110 | H208 | 0.220 | 2.900 | 4.400 | 3.000 |
| | 90 | 23.0 | 1.50 | 29.600 | 9.810 | 7100 | 8400 | 1308 | 1308K | | 47 | 81 | 1.5 | 0.7150 | 0.7040 | H308 | 0.240 | 2.600 | 4.100 | 2.700 |
| | 90 | 33.0 | 1.50 | 44.900 | 13.300 | 6700 | 7900 | 2308 | 2308K | | 47 | 81 | 1.5 | 0.9250 | 0.9030 | H2308 | 0.430 | 1.500 | 2.300 | 1.500 |
| 45 | 85 | 19.0 | 1.10 | 21.600 | 7.360 | 7500 | 8900 | 1209 | 1209K | 45 | 52 | 78 | 1.0 | 0.4650 | 0.4590 | H209 | 0.210 | 3.000 | 4.600 | 3.100 |
| | 85 | 23.0 | 1.10 | 23.400 | 8.100 | 7500 | 8900 | 2209 | 2209K | | 52 | 78 | 1.0 | 0.5450 | 0.5330 | H309 | 0.310 | 2.100 | 3.200 | 2.200 |
| | 100 | 25.0 | 1.50 | 37.700 | 12.800 | 6300 | 7500 | 1309 | 1309K | | 52 | 91 | 1.5 | 0.9570 | 0.9420 | H309 | 0.250 | 2.500 | 3.900 | 2.700 |
| | 100 | 36.0 | 1.50 | 54.000 | 16.500 | 6000 | 7100 | 2309 | 2309K | | 52 | 91 | 1.5 | 1.2300 | 1.2000 | H2309 | 0.420 | 1.500 | 2.300 | 1.600 |
| 50 | 90 | 20.0 | 1.10 | 22.900 | 8.100 | 7100 | 8400 | 1210 | 1210K | 50 | 57 | 83 | 1.0 | 0.5250 | 0.5150 | H210 | 0.200 | 3.100 | 4.900 | 3.300 |
| | 90 | 23.0 | 1.10 | 23.400 | 8.410 | 7100 | 8400 | 2210 | 2210K | | 57 | 83 | 1.0 | 0.5900 | 0.5770 | H310 | 0.290 | 2.200 | 3.400 | 2.300 |
| | 110 | 27.0 | 2.00 | 43.600 | 14.100 | 5600 | 6700 | 1310 | 1310K | | 60 | 100 | 2.0 | 1.2100 | 1.1900 | H310 | 0.240 | 2.700 | 4.100 | 2.800 |
| 55 | 100 | 21.0 | 1.50 | 26.500 | 10.000 | 6300 | 7500 | 1211 | 1211K | 55 | 62 | 91 | 1.5 | 0.7050 | 0.6930 | H211 | 0.200 | 3.200 | 5.000 | 3.400 |
| | 100 | 25.0 | 1.50 | 26.500 | 10.000 | 6300 | 7500 | 2211 | 2211K | | 62 | 91 | 1.5 | 0.8100 | 0.7920 | H311 | 0.280 | 2.300 | 3.500 | 2.400 |
| 60 | 110 | 22.0 | 1.50 | 30.200 | 11.700 | 5600 | 6700 | 1212 | 1212K | 60 | 67 | 101 | 1.5 | 0.9000 | 0.8850 | H212 | 0.190 | 3.400 | 5.300 | 3.600 |
| | 110 | 28.0 | 1.50 | 33.800 | 12.600 | 5600 | 6700 | 2212 | 2212K | | 67 | 101 | 1.5 | 1.0900 | 1.0700 | H312 | 0.280 | 2.300 | 3.500 | 2.400 |
| | 130 | 31.0 | 2.00 | 57.200 | 20.700 | 4700 | 5600 | 1312 | 1312K | | 72 | 118 | 2.0 | 1.9600 | 1.9300 | H312 | 0.230 | 2.800 | 4.300 | 2.900 |

Double Row Self-Aligning Ball Bearings

d = 65 to 150 mm



K



| Dimensions | | | | | Basic Load Dynamic C_r | Rating Static C_{or} | Limiting Speed for Lubrication with | | Bearing Designation | | Abutment and Fillet Dimensions | | | Weight | | Corresponding Adapter Sleeve | Factors | | | | | |
|------------|-----|------|------------|--------------|--------------------------------|------------------------------|--|------|-----------------------|-------------------|--------------------------------|------------|------------|------------|---------|------------------------------------|---------|-------|-------|-------|-------|-------|
| d | D | B | $B_1^{1)}$ | $r_{s \min}$ | | | Grease | Oil | with Cylindrical Bore | with Tapered Bore | d | $d_a \min$ | $D_a \max$ | $r_a \max$ | ~ | | K | e | Y_1 | Y_2 | Y_0 | |
| mm | | | | | kN | | min ⁻¹ | | | | mm | | | kg | | | | | | | | |
| 65 | 120 | 23.0 | | 1.50 | 31.200 | 12.300 | 5300 | 6300 | 1213 | 1213K | 65 | 72 | 111 | 1.5 | 1.1500 | 1.1300 | H213 | 0.170 | 3.700 | 5.700 | 3.900 | |
| | 120 | 31.0 | | 1.50 | 43.600 | 16.500 | 5300 | 6300 | 2213 | 2213K | | 72 | 111 | 1.5 | 1.4600 | 1.4300 | | H313 | 0.280 | 2.200 | 3.500 | 2.300 |
| 70 | 125 | 31.0 | | 1.50 | 44.200 | 17.100 | 5000 | 6000 | 2214 | | 70 | 77 | 116 | 1.5 | 1.5200 | | H215 | 0.270 | 2.400 | 3.700 | 2.500 | |
| | 150 | 51.0 | | 2.10 | 111.000 | 37.600 | 3800 | 4500 | 2314 | | | 81 | 138 | 2.0 | 3.9000 | | | H313 | 0.380 | 1.700 | 2.600 | 1.800 |
| 75 | 130 | 25.0 | | 1.50 | 39.000 | 15.500 | 4700 | 5600 | 1215 | 1215K | 75 | 82 | 121 | 1.5 | 1.3600 | 1.3400 | H215 | 0.180 | 3.600 | 5.600 | 3.800 | |
| | 130 | 31.0 | | 1.50 | 44.200 | 17.800 | 4700 | 5600 | 2215 | 2215K | | 82 | 121 | 1.5 | 1.6200 | 1.5800 | | H315 | 0.250 | 2.500 | 3.900 | 2.600 |
| | 160 | 37.0 | | 2.10 | 79.300 | 29.900 | 3800 | 4500 | 1315 | 1315K | | 86 | 148 | 2.0 | 3.5600 | 3.5100 | H315 | 0.220 | 2.800 | 4.400 | 3.000 | |
| | 160 | 55.0 | | 2.10 | 124.000 | 43.000 | 3500 | 4200 | 2315 | 2315K | | 86 | 148 | 2.0 | 4.7200 | 4.6100 | H2315 | 0.380 | 1.700 | 2.600 | 1.700 | |
| 80 | 140 | 26.0 | | 2.00 | 39.700 | 16.800 | 4500 | 5300 | 1216 | 1216K | 80 | 90 | 130 | 2.0 | 1.6700 | 1.6400 | H216 | 0.160 | 3.900 | 6.100 | 4.100 | |
| | 140 | 33.0 | | 2.00 | 48.800 | 20.000 | 4500 | 5300 | 2216 | 2216K | | 90 | 130 | 2.0 | 2.0100 | 1.9700 | | H316 | 0.250 | 2.500 | 3.900 | 2.600 |
| 85 | 150 | 28.0 | | 2.00 | 48.800 | 20.300 | 4000 | 4700 | 1217 | 1217K | 85 | 95 | 140 | 2.0 | 2.0700 | 2.0400 | H217 | 0.170 | 3.700 | 5.700 | 3.900 | |
| | 180 | 41.0 | | 3.00 | 97.500 | 37.600 | 3300 | 4000 | 1317 | 1317K | | 98 | 166 | 2.5 | 4.9800 | 4.9100 | | H317 | 0.220 | 2.900 | 4.500 | 3.000 |
| 90 | 180 | 60.0 | | 3.00 | 140.000 | 51.100 | 3200 | 3800 | 2317 | 2317K | 90 | 98 | 166 | 2.5 | 6.7100 | 6.5500 | H2317 | 0.370 | 1.700 | 2.700 | 1.800 | |
| | 160 | 30.0 | | 2.00 | 57.200 | 23.300 | 3800 | 4500 | 1218 | 1218K | | 100 | 150 | 2.0 | 2.5200 | 2.4800 | | H218 | 0.170 | 3.800 | 5.800 | 3.900 |
| | 160 | 40.0 | | 2.00 | 70.200 | 28.700 | 3800 | 4500 | 2218 | 2218K | | 100 | 150 | 2.0 | 3.2000 | 3.1300 | | H318 | 0.270 | 2.400 | 3.600 | 2.500 |
| 95 | 190 | 64.0 | | 3.00 | 153.000 | 57.300 | 3000 | 3500 | 2318 | 2318K | 95 | 103 | 176 | 2.5 | 7.9600 | 7.7700 | H2318 | 0.380 | 1.700 | 2.600 | 1.800 | |
| | 170 | 32.0 | | 2.10 | 63.700 | 27.100 | 3500 | 4200 | 1219 | 1219K | | 107 | 158 | 2.0 | 3.1000 | 3.0500 | | H219 | 0.170 | 3.700 | 5.700 | 3.900 |
| | 170 | 43.0 | | 2.10 | 83.200 | 34.100 | 3500 | 4200 | 2219 | 2219K | | 107 | 158 | 2.0 | 3.9500 | 3.8500 | | H319 | 0.270 | 2.400 | 3.600 | 2.500 |
| | 200 | 45.0 | 48.0 | 3.00 | 133.000 | 51.100 | 3000 | 3500 | 1319 | 1319K | | 109 | 186 | 2.5 | 6.6900 | 6.5900 | | H319 | 0.230 | 2.800 | 4.300 | 2.900 |
| 100 | 200 | 67.0 | | 3.00 | 165.000 | 64.300 | 2800 | 3300 | 2319 | 2319K | 100 | 109 | 186 | 2.5 | 9.2100 | 8.9900 | H2319 | 0.380 | 1.700 | 2.600 | 1.800 | |
| | 180 | 34.0 | | 2.10 | 68.900 | 29.300 | 3300 | 4000 | 1220 | 1220K | | 112 | 168 | 2.0 | 3.7000 | 3.6400 | | H220 | 0.170 | 3.600 | 5.600 | 3.800 |
| | 180 | 46.0 | | 2.10 | 97.500 | 40.600 | 3300 | 4000 | 2220 | 2220K | | 112 | 168 | 2.0 | 4.7200 | 4.6100 | | H320 | 0.270 | 2.400 | 3.600 | 2.500 |
| | 215 | 47.0 | 52.0 | 3.00 | 143.000 | 58.400 | 2800 | 3300 | 1320 | 1320K | | 113 | 201 | 2.5 | 8.3000 | 8.1900 | | H320 | 0.240 | 2.700 | 4.100 | 2.800 |
| 110 | 215 | 73.0 | | 3.00 | 190.000 | 77.900 | 2700 | 3200 | 2320 | 2320K | 110 | 113 | 201 | 2.5 | 11.7000 | 11.4000 | H2320 | 0.380 | 1.700 | 2.600 | 1.700 | |
| | 200 | 38.0 | | 2.10 | 88.400 | 38.300 | 3000 | 3500 | 1222 | 1222K | | 122 | 188 | 2.0 | 5.1500 | 5.0700 | | H222 | 0.170 | 3.600 | 5.600 | 3.800 |
| | 200 | 53.0 | | 2.10 | 124.000 | 52.100 | 3000 | 3500 | 2222 | 2222K | | 122 | 188 | 2.0 | 6.8400 | 6.6800 | | H322 | 0.280 | 2.300 | 3.500 | 2.400 |
| | 240 | 50.0 | 55.0 | 3.00 | 163.000 | 70.800 | 2700 | 3200 | 1322 | 1322K | | 124 | 226 | 2.5 | 11.8000 | 11.7000 | | H322 | 0.220 | 2.800 | 4.400 | 3.000 |
| 120 | 240 | 80.0 | | 3.00 | 216.000 | 94.400 | 2500 | 3000 | 2322 | 2322K | 120 | 124 | 226 | 2.5 | 17.3000 | 16.9000 | H2322 | 0.370 | 1.700 | 2.700 | 1.800 | |
| | 215 | 42.0 | 45.0 | 2.10 | 119.000 | 52.100 | 2800 | 3300 | 1224 | 1224K | | 132 | 203 | 2.0 | 6.7500 | | | H219 | 0.190 | 3.300 | 5.100 | 3.400 |
| | 260 | 55.0 | 62.0 | 3.00 | 196.000 | 90.900 | 2500 | 3000 | 1324 | 1324K | | 134 | 246 | 2.5 | 15.5000 | | | | H319 | 0.240 | 2.700 | 4.100 |
| 130 | 230 | 46.0 | 48.0 | 3.00 | 126.000 | 59.600 | 2700 | 3200 | 1226 | | 130 | 144 | 2.5 | 8.3000 | | H219 | 0.190 | 3.300 | 5.000 | 3.400 | | |
| 140 | 250 | 50.0 | 54.0 | 3.00 | 159.000 | 72.200 | 2500 | 3000 | 1228 | | 140 | 154 | 2.5 | 10.9000 | | | H319 | 0.200 | 3.100 | 4.800 | 3.300 | |
| 150 | 270 | 54.0 | 56.0 | 3.00 | 171.000 | 85.800 | 2400 | 2800 | 1230 | | 150 | 164 | 2.5 | 13.8000 | | | 0.190 | 3.200 | 5.000 | 3.400 | | |

¹⁾ The dimension B_1 indicates the bearing width measured over balls if they protrude from the bearing side faces