

## Spherical Roller Bearings

Spherical roller bearings are self-aligning and designed for heavy combination loads with wide dimension range. Special dimension design is suitable for vibratory applications such as vibration screen or exciters. Sealed spherical roller bearing is the new design of UBC spherical roller bearings.

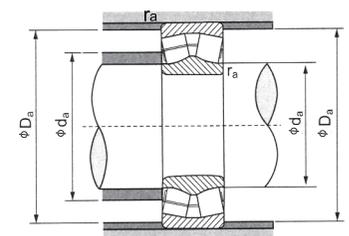
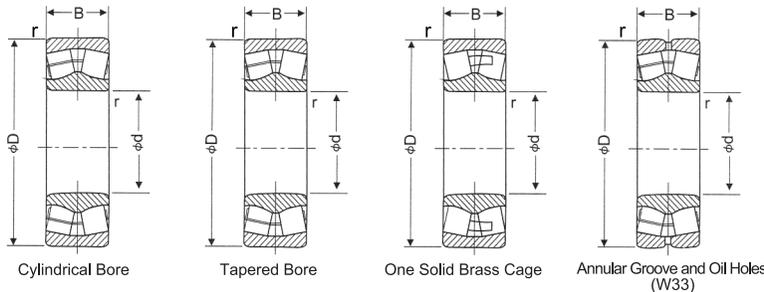
Spherical roller bearings have two rows of rollers with a common spherical raceway in the outer ring and two inner ring raceways inclined at an angle to the bearing axis. They are self-aligning and consequently resistant to misalignment between shaft and housing and to the shaft deflection or bending.

The possible aligning angle is  $0\sim 2.5^\circ$  for spherical roller bearings. The aligning performance of sealed type spherical roller bearings will be slightly lower.

Main applications of spherical roller bearings are: paper machinery, speed reducer, gearbox, crusher, shaker's screen, printing machine, wood machinery, etc.



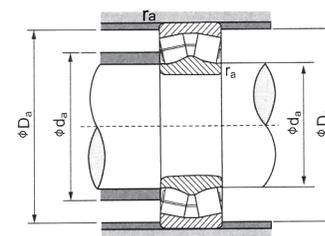
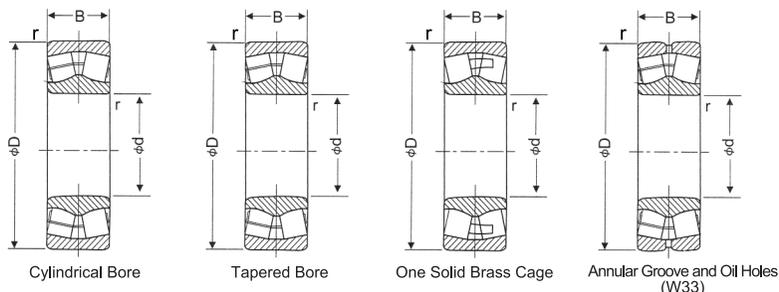
d: 20 ~ 75 mm



| Principal Dimensions (mm) |     |    |         | Bearing Designations |              | Basic Load Ratings (N) |            | Limiting Speed (rpm) |      | Abutment and Fillet Dimensions (mm) |          |          | Weight (kg) |
|---------------------------|-----|----|---------|----------------------|--------------|------------------------|------------|----------------------|------|-------------------------------------|----------|----------|-------------|
| d                         | D   | B  | r (min) | Cylindrical Bore     | Tapered Bore | Dynamic Cr             | Static Cor | Grease               | Oil  | ds (min)                            | Ds (max) | ra (max) |             |
| 20                        | 52  | 15 | 1.1     | 21304CA/W33          | 21304CAK/W33 | 34000                  | 33500      | 7300                 | 9000 | 27.0                                | 45.0     | 1.0      | 0.18        |
|                           | 52  | 18 | 1       | 22205CA/W33          | 22205CAK/W33 | 45500                  | 48000      | 7000                 | 9000 | 30.5                                | 46.5     | 1.0      |             |
| 25                        | 62  | 17 | 1.1     | 21305CA/W33          | 21305CAK/W33 | 46000                  | 47500      | 6200                 | 7800 | 32.0                                | 53.0     | 1.0      | 0.29        |
|                           | 62  | 20 | 1       | 22206CA/W33          | 22206CAK/W33 | 61000                  | 65000      | 6000                 | 7500 | 35.5                                | 56.5     | 1.0      |             |
| 30                        | 72  | 19 | 1.1     | 21306CA/W33          | 21306CAK/W33 | 59500                  | 62500      | 5300                 | 6600 | 38.0                                | 65.0     | 1.0      | 0.43        |
|                           | 72  | 23 | 1.1     | 22207CA/W33          | 22207CAK/W33 | 80500                  | 88500      | 5000                 | 6300 | 42.0                                | 65.0     | 1.0      |             |
| 35                        | 80  | 21 | 1.5     | 21307CA/W33          | 21307CAK/W33 | 69500                  | 76000      | 4700                 | 5900 | 44.0                                | 71.0     | 1.5      | 0.57        |
|                           | 80  | 31 | 1.5     | 22307CA/W33          | 22307CAK/W33 | 104000                 | 107000     | 6000                 | 7700 | 43.5                                | 71.5     | 1.5      |             |
|                           | 80  | 23 | 1.1     | 22208CA/W33          | 22208CAK/W33 | 90500                  | 102000     | 4500                 | 5600 | 47.0                                | 73.0     | 1.0      |             |
| 40                        | 90  | 23 | 1.5     | 21308CA/W33          | 21308CAK/W33 | 85500                  | 95500      | 4000                 | 5200 | 50.0                                | 81.0     | 1.5      | 0.78        |
|                           | 90  | 33 | 1.5     | 22308CA/W33          | 22308CAK/W33 | 135000                 | 151000     | 4000                 | 5300 | 48.5                                | 81.5     | 1.5      |             |
|                           | 85  | 23 | 1.1     | 22209CA/W33          | 22209CAK/W33 | 95500                  | 110000     | 4300                 | 5300 | 52.0                                | 78.0     | 1.0      |             |
| 45                        | 100 | 25 | 1.5     | 21309CA/W33          | 21309CAK/W33 | 108000                 | 124000     | 3700                 | 4600 | 55.0                                | 92.0     | 1.5      | 1.05        |
|                           | 100 | 36 | 1.5     | 22309CA/W33          | 22309CAK/W33 | 165000                 | 182000     | 3500                 | 4800 | 53.5                                | 91.5     | 1.5      |             |
|                           | 90  | 23 | 1.1     | 22210CA/W33          | 22210CAK/W33 | 102000                 | 122000     | 3800                 | 4800 | 57.0                                | 83.0     | 1.0      |             |
| 50                        | 110 | 27 | 2       | 21310CA/W33          | 21310CAK/W33 | 128000                 | 151000     | 3300                 | 4200 | 61.0                                | 101.0    | 2.0      | 1.36        |
|                           | 110 | 40 | 2       | 22310CA/W33          | 22310CAK/W33 | 203000                 | 235000     | 3200                 | 4300 | 60.0                                | 100.0    | 2.0      |             |
|                           | 100 | 25 | 1.5     | 22211CA/W33          | 22211CAK/W33 | 123000                 | 144000     | 3400                 | 4300 | 63.5                                | 91.5     | 1.5      |             |
| 55                        | 120 | 29 | 2       | 21311CA/W33          | 21311CAK/W33 | 144000                 | 165000     | 3000                 | 4100 | 65.0                                | 110.0    | 2.0      | 1.70        |
|                           | 120 | 43 | 2       | 22311CA/W33          | 22311CAK/W33 | 235000                 | 263000     | 3000                 | 3800 | 65.0                                | 110.0    | 2.0      |             |
|                           | 110 | 28 | 1.5     | 22212CA/W33          | 22212CAK/W33 | 151000                 | 179000     | 3200                 | 4000 | 68.5                                | 101.5    | 1.5      |             |
| 60                        | 130 | 31 | 2.1     | 21312CA/W33          | 21312CAK/W33 | 168000                 | 193000     | 2800                 | 3700 | 72.0                                | 118.0    | 2.0      | 2.10        |
|                           | 130 | 46 | 2.1     | 22312CA/W33          | 22312CAK/W33 | 281000                 | 330000     | 2800                 | 3600 | 72.0                                | 118.0    | 2.0      |             |
|                           | 120 | 31 | 1.5     | 22213CA/W33          | 22213CAK/W33 | 177000                 | 209000     | 2800                 | 3600 | 73.5                                | 111.5    | 1.5      |             |
| 65                        | 140 | 33 | 2.1     | 21313CA/W33          | 21313CAK/W33 | 194000                 | 232000     | 2600                 | 3400 | 77.0                                | 128.0    | 2.0      | 2.60        |
|                           | 140 | 48 | 2.1     | 22313CA/W33          | 22313CAK/W33 | 300000                 | 355000     | 2400                 | 3200 | 77.0                                | 128.0    | 2.0      |             |
|                           | 125 | 31 | 1.5     | 22214CA/W33          | 22214CAK/W33 | 185000                 | 220000     | 2600                 | 3400 | 78.5                                | 116.5    | 1.5      |             |
| 70                        | 150 | 35 | 2.1     | 21314CA/W33          | 21314CAK/W33 | 215000                 | 260000     | 2400                 | 3200 | 82.0                                | 138.0    | 2.0      | 3.10        |
|                           | 150 | 51 | 2.1     | 22314CA/W33          | 22314CAK/W33 | 345000                 | 415000     | 2200                 | 3000 | 82.0                                | 138.0    | 2.0      |             |
|                           | 130 | 31 | 1.5     | 22215CA/W33          | 22215CAK/W33 | 191000                 | 234000     | 2400                 | 3200 | 83.5                                | 121.5    | 1.5      |             |
| 75                        | 160 | 37 | 2.1     | 21315CA/W33          | 21315CAK/W33 | 245000                 | 298000     | 2200                 | 3000 | 87.0                                | 148.0    | 2.0      | 3.80        |
|                           | 160 | 55 | 2.1     | 22315CA/W33          | 22315CAK/W33 | 395000                 | 475000     | 2000                 | 2800 | 87.0                                | 148.0    | 2.0      |             |

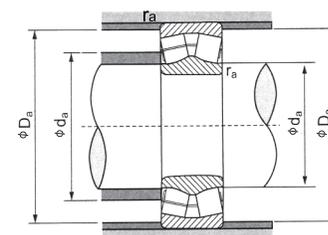
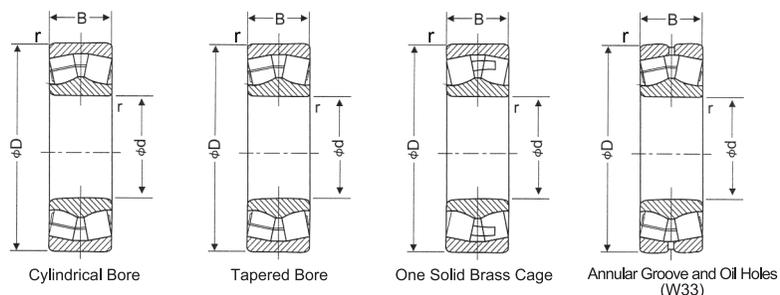


d: 80 ~ 110 mm



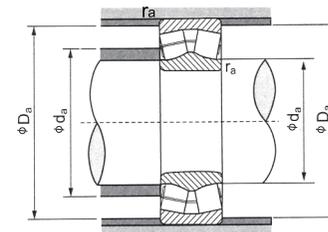
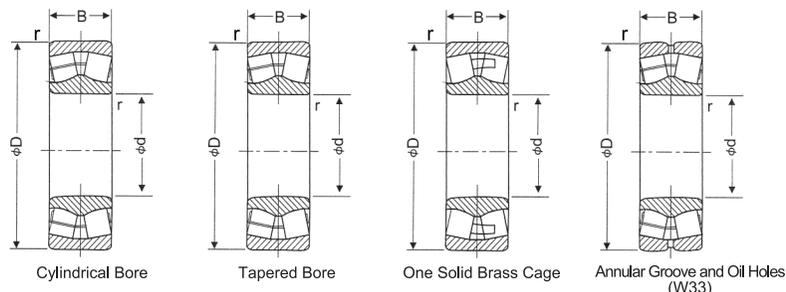
| Principal Dimensions (mm) |     |      |         | Bearing Designations |              | Basic Load Ratings (N) |            | Limiting Speed (rpm) |      | Abutment and Fillet Dimensions (mm) |                      |                      | Weight (kg) |
|---------------------------|-----|------|---------|----------------------|--------------|------------------------|------------|----------------------|------|-------------------------------------|----------------------|----------------------|-------------|
| d                         | D   | B    | r (min) | Cylindrical Bore     | Tapered Bore | Dynamic Cr             | Static Cor | Grease               | Oil  | d <sub>a</sub> (min)                | D <sub>a</sub> (max) | r <sub>a</sub> (max) |             |
| 80                        | 140 | 33   | 2       | 22216CA/W33          | 22216CAK/W33 | 215000                 | 269000     | 2200                 | 3000 | 90.0                                | 130.0                | 2.0                  | 2.19        |
|                           | 140 | 44.4 | 2       | 23216CA/W33          | 23216CAK/W33 | 241000                 | 335000     | 2200                 | 2900 | 90.0                                | 130.0                | 2.0                  | 2.95        |
|                           | 170 | 39   | 2.1     | 21316CA/W33          | 21316CAK/W33 | 275000                 | 339000     | 2100                 | 2800 | 92.0                                | 158.0                | 2.0                  | 4.50        |
|                           | 170 | 58   | 2.1     | 22316CA/W33          | 22316CAK/W33 | 430000                 | 520000     | 1900                 | 2600 | 92.0                                | 158.0                | 2.0                  | 6.42        |
| 85                        | 150 | 36   | 2       | 22217CA/W33          | 22217CAK/W33 | 255000                 | 320000     | 2000                 | 2800 | 95.0                                | 140.0                | 2.0                  | 2.75        |
|                           | 150 | 49.2 | 2       | 23217CA/W33          | 23217CAK/W33 | 285000                 | 405000     | 2100                 | 2700 | 95.0                                | 140.0                | 2.0                  | 3.78        |
|                           | 180 | 41   | 3       | 21317CA/W33          | 21317CAK/W33 | 300000                 | 372000     | 2000                 | 2600 | 99.0                                | 166.0                | 2.5                  | 5.30        |
|                           | 180 | 60   | 3       | 22317CA/W33          | 22317CAK/W33 | 480000                 | 585000     | 1800                 | 2400 | 99.0                                | 166.0                | 2.5                  | 7.46        |
| 90                        | 160 | 40   | 2       | 22218CA/W33          | 22218CAK/W33 | 294000                 | 375000     | 1900                 | 2600 | 100.0                               | 150.0                | 2.0                  | 3.50        |
|                           | 160 | 52.4 | 2       | 23218CA/W33          | 23218CAK/W33 | 337000                 | 482000     | 2100                 | 2800 | 100.0                               | 150.0                | 2.0                  | 4.57        |
|                           | 190 | 43   | 3       | 21318CA/W33          | 21318CAK/W33 | 330000                 | 410000     | 1900                 | 2500 | 104.0                               | 176.0                | 2.5                  | 6.10        |
|                           | 190 | 64   | 3       | 22318CA/W33          | 22318CAK/W33 | 535000                 | 660000     | 1800                 | 2400 | 104.0                               | 176.0                | 2.5                  | 8.82        |
| 95                        | 170 | 43   | 2.1     | 22219CA/W33          | 22219CAK/W33 | 335000                 | 420000     | 1900                 | 2600 | 107.0                               | 158.0                | 2.0                  | 4.24        |
|                           | 170 | 55.6 | 2.1     | 23219CA/W33          | 23219CAK/W33 | 360000                 | 510000     | 1900                 | 2400 | 107.0                               | 158.0                | 2.0                  | 5.46        |
|                           | 200 | 45   | 3       | 21319CA/W33          | 21319CAK/W33 | 362000                 | 461000     | 1800                 | 2300 | 109.0                               | 186.0                | 2.5                  | 7.10        |
|                           | 200 | 67   | 3       | 22319CA/W33          | 22319CAK/W33 | 585000                 | 725000     | 1700                 | 2200 | 109.0                               | 186.0                | 2.5                  | 10.20       |
| 100                       | 140 | 30   | 1.1     | 23920CA/W33          | 23920CAK/W33 | 142000                 | 233000     | 2300                 | 3000 | 107.0                               | 133.0                | 1.0                  | 1.46        |
|                           | 150 | 37   | 1.5     | 23020CA/W33          | 23020CAK/W33 | 206000                 | 325000     | 1800                 | 2500 | 117.0                               | 141.0                | 1.5                  | 2.33        |
|                           | 165 | 52   | 2       | 23120CA/W33          | 23120CAK/W33 | 325000                 | 500000     | 1700                 | 2200 | 110.0                               | 155.0                | 2.0                  | 4.49        |
|                           | 180 | 46   | 2.1     | 22220CA/W33          | 22220CAK/W33 | 375000                 | 480000     | 1800                 | 2400 | 112.0                               | 168.0                | 2.0                  | 5.10        |
|                           | 180 | 60.3 | 2.1     | 23220CA/W33          | 23220CAK/W33 | 427000                 | 629000     | 1900                 | 2500 | 112.0                               | 168.0                | 2.0                  | 6.76        |
|                           | 215 | 47   | 3       | 21320CA/W33          | 21320CAK/W33 | 416000                 | 524000     | 1600                 | 2200 | 114.0                               | 201.0                | 2.5                  | 8.70        |
| 110                       | 170 | 45   | 2       | 23022CA/W33          | 23022CAK/W33 | 298000                 | 475000     | 1800                 | 2400 | 120.0                               | 160.0                | 2.0                  | 3.84        |
|                           | 180 | 56   | 2       | 23122CA/W33          | 23122CAK/W33 | 390000                 | 610000     | 1800                 | 2400 | 120.0                               | 170.0                | 2.0                  | 5.70        |
|                           | 180 | 69   | 2       | 24122CA/W33          | 24122CAK/W33 | 455000                 | 743000     | 1800                 | 2400 | 120.0                               | 170.0                | 2.0                  | 6.89        |
|                           | 200 | 53   | 2.1     | 22222CA/W33          | 22222CAK/W33 | 490000                 | 640000     | 1700                 | 2200 | 122.0                               | 188.0                | 2.0                  | 7.36        |
|                           | 200 | 69.8 | 2.1     | 23222CA/W33          | 23222CAK/W33 | 538000                 | 793000     | 1700                 | 2200 | 122.0                               | 188.0                | 2.0                  | 9.6         |
|                           | 240 | 50   | 3       | 21322CA/W33          | 21322CAK/W33 | 485000                 | 635000     | 1400                 | 1900 | 124.0                               | 226.0                | 2.5                  | 11.6        |
|                           | 240 | 80   | 3       | 22322CA/W33          | 22322CAK/W33 | 825000                 | 1040000    | 1500                 | 1900 | 124.0                               | 226.0                | 2.5                  | 18.1        |

d: 120 ~ 150 mm



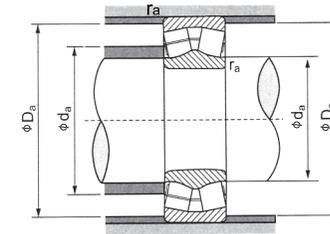
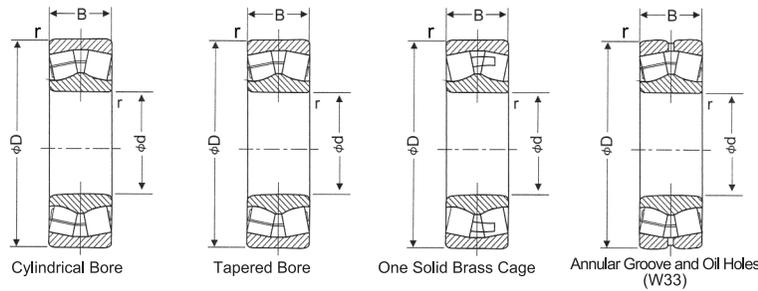
| d   | Principal Dimensions (mm) |     |         | Bearing Designations |              | Basic Load Ratings (N) |            |  | Limiting Speed (rpm) |      | Abutment and Fillet Dimensions (mm) |                      |                      | Weight (kg) |
|-----|---------------------------|-----|---------|----------------------|--------------|------------------------|------------|--|----------------------|------|-------------------------------------|----------------------|----------------------|-------------|
|     | D                         | B   | r (min) | Cylindrical Bore     | Tapered Bore | Dynamic Cr             | Static Cor |  | Grease               | Oil  | d <sub>a</sub> (min)                | D <sub>a</sub> (max) | r <sub>a</sub> (max) |             |
| 120 | 180                       | 46  | 2       | 23024CA/W33          | 23024CAK/W33 | 310000                 | 515000     |  | 1700                 | 2200 | 130.0                               | 170.0                | 2.0                  | 4.20        |
|     | 180                       | 60  | 2       | 24024CA/W33          | 24024CAK/W33 | 388000                 | 683000     |  | 1700                 | 2300 | 130.0                               | 170.0                | 2.0                  | 5.36        |
|     | 200                       | 62  | 2       | 23124CA/W33          | 23124CAK/W33 | 485000                 | 720000     |  | 1600                 | 2200 | 130.0                               | 190.0                | 2.0                  | 7.90        |
|     | 200                       | 80  | 2       | 24124CA/W33          | 24124CAK/W33 | 586000                 | 970000     |  | 1600                 | 2200 | 130.0                               | 190.0                | 2.0                  | 10.0        |
|     | 215                       | 58  | 2.1     | 22224CA/W33          | 22224CAK/W33 | 565000                 | 765000     |  | 1600                 | 2000 | 132.0                               | 203.0                | 2.0                  | 9.28        |
|     | 215                       | 76  | 2.1     | 23224CA/W33          | 23224CAK/W33 | 620000                 | 956000     |  | 1500                 | 2100 | 132.0                               | 203.0                | 2.0                  | 12.0        |
|     | 260                       | 55  | 3       | 21324CA/W33          | 21324CAK/W33 | 570000                 | 765000     |  | 1300                 | 1600 | 134.0                               | 246.0                | 2.5                  | 15.3        |
|     | 260                       | 86  | 3       | 22324CA/W33          | 22324CAK/W33 | 897000                 | 1130000    |  | 1300                 | 1800 | 134.0                               | 246.0                | 2.5                  | 22.6        |
| 130 | 180                       | 37  | 1.5     | 23926CA/W33          | 23926CAK/W33 | 204000                 | 355000     |  | 1800                 | 2300 | 138.5                               | 171.5                | 1.5                  | 2.87        |
|     | 200                       | 52  | 2       | 23026CA/W33          | 23026CAK/W33 | 400000                 | 660000     |  | 1600                 | 2000 | 140.0                               | 190.0                | 2.0                  | 6.14        |
|     | 200                       | 69  | 2       | 24026CA/W33          | 24026CAK/W33 | 510000                 | 900000     |  | 1600                 | 2100 | 140.0                               | 190.0                | 2.0                  | 7.93        |
|     | 210                       | 64  | 2       | 23126CA/W33          | 23126CAK/W33 | 497000                 | 799000     |  | 1500                 | 2000 | 140.0                               | 200.0                | 2.0                  | 860         |
|     | 210                       | 80  | 2       | 24126CA/W33          | 24126CAK/W33 | 604000                 | 1030000    |  | 1500                 | 2000 | 140.0                               | 200.0                | 2.0                  | 10.7        |
|     | 230                       | 64  | 3       | 22226CA/W33          | 22226CAK/W33 | 655000                 | 915000     |  | 1400                 | 1800 | 144.0                               | 216.0                | 2.5                  | 11.6        |
|     | 230                       | 80  | 3       | 23226CA/W33          | 23226CAK/W33 | 705000                 | 1090000    |  | 1400                 | 1900 | 144.0                               | 216.0                | 2.5                  | 14.2        |
|     | 280                       | 93  | 4       | 22326CA/W33          | 22326CAK/W33 | 1050000                | 1340000    |  | 1200                 | 1700 | 148.0                               | 262.0                | 3.0                  | 28.4        |
| 140 | 190                       | 37  | 1.5     | 23928CA/W33          | 23928CAK/W33 | 248000                 | 466000     |  | 1700                 | 2200 | 148.5                               | 181.5                | 1.5                  | 3.13        |
|     | 210                       | 53  | 2       | 23028CA/W33          | 23028CAK/W33 | 420000                 | 710000     |  | 1500                 | 1900 | 150.0                               | 200.0                | 2.0                  | 6.61        |
|     | 210                       | 69  | 2       | 24028CA/W33          | 24028CAK/W33 | 510000                 | 920000     |  | 1500                 | 2000 | 150.0                               | 200.0                | 2.0                  | 8.40        |
|     | 225                       | 68  | 2.1     | 23128CA/W33          | 23128CAK/W33 | 568000                 | 940000     |  | 1400                 | 1900 | 152.0                               | 213.0                | 2.0                  | 10.5        |
|     | 225                       | 85  | 2.1     | 24128CA/W33          | 24128CAK/W33 | 685000                 | 1180000    |  | 1400                 | 1900 | 152.0                               | 213.0                | 2.0                  | 13.0        |
|     | 250                       | 68  | 3       | 22228CA/W33          | 22228CAK/W33 | 755000                 | 1030000    |  | 1300                 | 1700 | 154.0                               | 236.0                | 2.5                  | 13.9        |
|     | 250                       | 88  | 3       | 23228CA/W33          | 23228CAK/W33 | 814000                 | 1290000    |  | 1300                 | 1700 | 154.0                               | 236.0                | 2.5                  | 18.8        |
|     | 300                       | 102 | 4       | 22328CA/W33          | 22328CAK/W33 | 1110000                | 1520000    |  | 1100                 | 1500 | 158.0                               | 282.0                | 3.0                  | 35.9        |
| 150 | 210                       | 45  | 2       | 23930CA/W33          | 23930CAK/W33 | 334000                 | 622000     |  | 1600                 | 2000 | 200.0                               | 160.0                | 2.0                  | 5.01        |
|     | 225                       | 56  | 2.1     | 23030CA/W33          | 23030CAK/W33 | 460000                 | 790000     |  | 1300                 | 1700 | 162.0                               | 213.0                | 2.0                  | 8.01        |
|     | 225                       | 75  | 2.1     | 24030CA/W33          | 24030CAK/W33 | 580000                 | 1060000    |  | 1400                 | 1800 | 162.0                               | 213.0                | 2.0                  | 10.50       |
|     | 250                       | 80  | 2.1     | 23130CA/W33          | 23130CAK/W33 | 722000                 | 1230000    |  | 1300                 | 1700 | 162.0                               | 238.0                | 2.0                  | 16.2        |
|     | 250                       | 100 | 2.1     | 24130CA/W33          | 24130CAK/W33 | 888000                 | 1520000    |  | 1300                 | 1700 | 162.0                               | 238.0                | 2.0                  | 19.6        |
|     | 270                       | 73  | 3       | 22230CA/W33          | 22230CAK/W33 | 864000                 | 1200000    |  | 1200                 | 1600 | 164.0                               | 256.0                | 2.5                  | 18.9        |
|     | 270                       | 96  | 3       | 23230CA/W33          | 23230CAK/W33 | 961000                 | 1540000    |  | 1200                 | 1600 | 164.0                               | 256.0                | 2.5                  | 24.2        |
|     | 320                       | 108 | 4       | 22330CA/W33          | 22330CAK/W33 | 1270000                | 1740000    |  | 1000                 | 1400 | 168.0                               | 302.0                | 3.0                  | 43.3        |

d: 160 ~ 190 mm



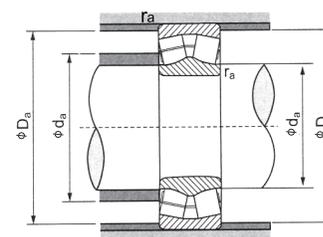
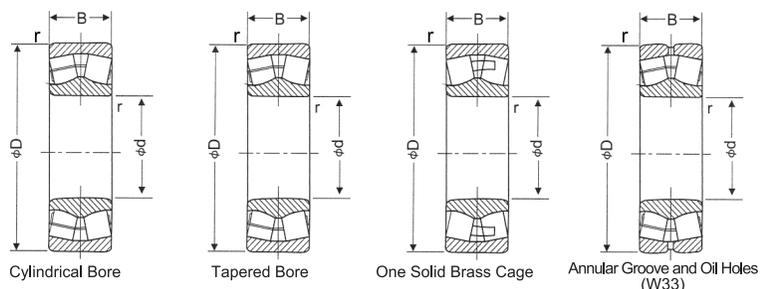
| d   | Principal Dimensions (mm) |     |             | Bearing Designations |              | Basic Load Ratings (N) |            |     | Limiting Speed (rpm) |       | Abutment and Fillet Dimensions (mm) |                      |                      | Weight (kg) |
|-----|---------------------------|-----|-------------|----------------------|--------------|------------------------|------------|-----|----------------------|-------|-------------------------------------|----------------------|----------------------|-------------|
|     | D                         | B   | r (min)     | Cylindrical Bore     | Tapered Bore | Dynamic Cr             | Static Cor |     | Grease               | Oil   | d <sub>a</sub> (min)                | D <sub>a</sub> (max) | r <sub>a</sub> (max) |             |
| 160 | 220                       | 45  | 2           | 23932CA/W33          | 23932CAK/W33 | 341000                 | 649000     |     | 1500                 | 1900  | 170.0                               | 210.0                | 2.0                  | 5.29        |
|     | 240                       | 60  | 2.1         | 23032CA/W33          | 23032CAK/W33 | 530000                 | 915000     |     | 1200                 | 1300  | 172.0                               | 228.0                | 2.0                  | 9.74        |
|     | 240                       | 80  | 2.1         | 24032CA/W33          | 24032CAK/W33 | 685000                 | 128000     |     | 1300                 | 1700  | 172.0                               | 228.0                | 2.0                  | 12.7        |
|     | 270                       | 86  | 2.1         | 23132CA/W33          | 23132CAK/W33 | 852000                 | 1430000    |     | 1200                 | 1600  | 172.0                               | 258.0                | 2.0                  | 20.5        |
|     | 270                       | 109 | 2.1         | 24132CA/W33          | 24132CAK/W33 | 1040000                | 1810000    |     | 1200                 | 1600  | 172.0                               | 258.0                | 2.0                  | 25.5        |
|     | 290                       | 80  | 3           | 22232CA/W33          | 22232CAK/W33 | 885000                 | 1330000    |     | 1000                 | 1400  | 174.0                               | 276.0                | 2.5                  | 23.7        |
|     | 290                       | 104 | 3           | 23232CA/W33          | 23232CAK/W33 | 1080000                | 1710000    |     | 900                  | 1200  | 174.0                               | 276.0                | 2.5                  | 30.4        |
| 340 | 114                       | 4   | 22332CA/W33 | 22332CAK/W33         | 1400000      | 1950000                |            | 650 | 1300                 | 178.0 | 322.0                               | 3.0                  | 51.4                 |             |
| 170 | 230                       | 45  | 2           | 23934CA/W33          | 23934CAK/W33 | 353000                 | 691000     |     | 1400                 | 1800  | 180.0                               | 220.0                | 2.0                  | 5.58        |
|     | 260                       | 67  | 2.1         | 23034CA/W33          | 23034CAK/W33 | 630000                 | 1080000    |     | 1100                 | 1500  | 182.0                               | 248.0                | 2.0                  | 13.1        |
|     | 260                       | 90  | 2.1         | 24034CA/W33          | 24034CAK/W33 | 810000                 | 1480000    |     | 1200                 | 1600  | 182.0                               | 248.0                | 2.0                  | 17.3        |
|     | 280                       | 88  | 2.1         | 23134CA/W33          | 23134CAK/W33 | 910000                 | 1530000    |     | 1100                 | 1500  | 182.0                               | 268.0                | 2.0                  | 21.6        |
|     | 280                       | 109 | 2.1         | 24134CA/W33          | 24134CAK/W33 | 979000                 | 1650000    |     | 1100                 | 1500  | 182.0                               | 268.0                | 2.0                  | 26.1        |
|     | 310                       | 86  | 4           | 22234CA/W33          | 22234CAK/W33 | 100000                 | 1510000    |     | 950                  | 1300  | 188.0                               | 292.0                | 3.0                  | 30.0        |
|     | 310                       | 110 | 4           | 23234CA/W33          | 23234CAK/W33 | 1240000                | 1970000    |     | 900                  | 1200  | 188.0                               | 292.0                | 3.0                  | 37.0        |
| 360 | 120                       | 4   | 22334CA/W33 | 22334CAK/W33         | 1550000      | 2200000                |            | 900 | 1200                 | 188.0 | 342.0                               | 3.0                  | 60.6                 |             |
| 180 | 250                       | 52  | 2           | 23936CA/W33          | 23936CAK/W33 | 480000                 | 939000     |     | 1300                 | 1700  | 190.0                               | 240.0                | 2.0                  | 8.10        |
|     | 280                       | 74  | 2.1         | 23036CA/W33          | 23036CAK/W33 | 773000                 | 1330000    |     | 1000                 | 1500  | 192.0                               | 268.0                | 2.0                  | 17.4        |
|     | 280                       | 100 | 2.1         | 24036CA/W33          | 24036CAK/W33 | 960000                 | 1760000    |     | 1100                 | 1400  | 192.0                               | 268.0                | 2.0                  | 22.7        |
|     | 300                       | 96  | 3           | 23136CA/W33          | 23136CAK/W33 | 1070000                | 1710000    |     | 900                  | 1200  | 194.0                               | 286.0                | 2.5                  | 27.9        |
|     | 300                       | 118 | 3           | 24136CA/W33          | 24136CAK/W33 | 1180000                | 2040000    |     | 900                  | 1200  | 194.0                               | 286.0                | 2.5                  | 33.7        |
|     | 320                       | 86  | 4           | 22236CA/W33          | 22236CAK/W33 | 1050000                | 1610000    |     | 950                  | 1300  | 198.0                               | 302.0                | 3.0                  | 30.9        |
|     | 320                       | 112 | 4           | 23236CA/W33          | 23236CAK/W33 | 1290000                | 2100000    |     | 850                  | 1100  | 198.0                               | 302.0                | 3.0                  | 39.4        |
| 380 | 126                       | 4   | 22336CA/W33 | 22336CAK/W33         | 1710000      | 2400000                |            | 850 | 1100                 | 198.0 | 362.0                               | 3.0                  | 70.5                 |             |
| 190 | 260                       | 52  | 2           | 23938CA/W33          | 23938CAK/W33 | 487000                 | 969000     |     | 1200                 | 1600  | 200.0                               | 250.0                | 2.0                  | 8.46        |
|     | 290                       | 75  | 2.1         | 23038CA/W33          | 23038CAK/W33 | 760000                 | 1330000    |     | 950                  | 1300  | 202.0                               | 278.0                | 2.0                  | 18.4        |
|     | 290                       | 100 | 2.1         | 24038CA/W33          | 24038CAK/W33 | 1020000                | 1920000    |     | 900                  | 1200  | 202.0                               | 278.0                | 2.0                  | 24.6        |
|     | 320                       | 104 | 3           | 23138CA/W33          | 23138CAK/W33 | 1240000                | 2120000    |     | 850                  | 1100  | 204.0                               | 306.0                | 2.5                  | 35.0        |
|     | 320                       | 128 | 3           | 24138CA/W33          | 24138CAK/W33 | 1370000                | 2380000    |     | 850                  | 1100  | 204.0                               | 306.0                | 2.5                  | 42.0        |
|     | 340                       | 92  | 4           | 22238CA/W33          | 22238CAK/W33 | 1140000                | 1740000    |     | 900                  | 1200  | 208.0                               | 322.0                | 3.0                  | 37.2        |
|     | 340                       | 120 | 4           | 23238CA/W33          | 23238CAK/W33 | 1490000                | 2450000    |     | 800                  | 1000  | 208.0                               | 322.0                | 3.0                  | 48.0        |
| 400 | 132                       | 5   | 22338CA/W33 | 22338CAK/W33         | 1870000      | 2670000                |            | 850 | 1100                 | 212.0 | 378.0                               | 4.0                  | 81.8                 |             |

d: 200 ~ 260 mm



| d   | Principal Dimensions (mm) |     |         | Bearing Designations |              | Basic Load Ratings (N) |            | Limiting Speed (rpm) |      | Abutment and Fillet Dimensions (mm) |          |          | Weight (kg) |
|-----|---------------------------|-----|---------|----------------------|--------------|------------------------|------------|----------------------|------|-------------------------------------|----------|----------|-------------|
|     | D                         | B   | r (min) | Cylindrical Bore     | Tapered Bore | Dynamic Cr             | Static Cor | Grease               | Oil  | da (min)                            | Da (max) | ra (max) |             |
| 200 | 280                       | 60  | 2.1     | 23940CA/W33          | 23940CAK/W33 | 603000                 | 1190000    | 1200                 | 1500 | 212.0                               | 268.0    | 2.0      | 11.9        |
|     | 310                       | 82  | 2.1     | 23040CA/W33          | 23040CAK/W33 | 900000                 | 1560000    | 950                  | 1300 | 212.0                               | 298.0    | 2.0      | 23.4        |
|     | 310                       | 109 | 2.1     | 24040CA/W33          | 24040CAK/W33 | 1180000                | 2230000    | 850                  | 1100 | 212.0                               | 298.0    | 2.0      | 31.2        |
|     | 340                       | 112 | 3       | 23140CA/W33          | 23140CAK/W33 | 1400000                | 2390000    | 800                  | 1000 | 214.0                               | 326.0    | 2.5      | 42.7        |
|     | 340                       | 140 | 3       | 24140CA/W33          | 24140CAK/W33 | 1600000                | 2820000    | 800                  | 1000 | 214.0                               | 326.0    | 2.5      | 52.9        |
|     | 360                       | 98  | 4       | 22240CA/W33          | 22240CAK/W33 | 1300000                | 1990000    | 850                  | 1100 | 218.0                               | 342.0    | 3.0      | 44.8        |
|     | 360                       | 128 | 4       | 23240CA/W33          | 23240CAK/W33 | 1620000                | 2750000    | 800                  | 1000 | 218.0                               | 342.0    | 3.0      | 57.7        |
|     | 420                       | 138 | 5       | 22340CA/W33          | 22340CAK/W33 | 2080000                | 3000000    | 800                  | 1000 | 222.0                               | 398.0    | 4.0      | 93.7        |
| 220 | 300                       | 60  | 2.1     | 23944CA/W33          | 23944CAK/W33 | 605000                 | 1190000    | 900                  | 1200 | 232.0                               | 288.0    | 2.0      | 12.6        |
|     | 340                       | 90  | 3       | 23044CA/W33          | 23044CAK/W33 | 1060000                | 1880000    | 800                  | 1100 | 234.0                               | 326.0    | 2.5      | 30.7        |
|     | 340                       | 118 | 3       | 24044CA/W33          | 24044CAK/W33 | 1400000                | 2670000    | 800                  | 1000 | 234.0                               | 326.0    | 2.5      | 40.3        |
|     | 370                       | 120 | 4       | 23144CA/W33          | 23144CAK/W33 | 1620000                | 2870000    | 700                  | 900  | 238.0                               | 352.0    | 3.0      | 54.3        |
|     | 370                       | 150 | 4       | 24144CA/W33          | 24144CAK/W33 | 1820000                | 3250000    | 750                  | 950  | 238.0                               | 352.0    | 3.0      | 66.3        |
|     | 400                       | 108 | 4       | 22244CA/W33          | 22244CAK/W33 | 1540000                | 2380000    | 800                  | 1000 | 238.0                               | 382.0    | 3.0      | 61.9        |
|     | 400                       | 144 | 4       | 23244CA/W33          | 23244CAK/W33 | 2100000                | 3500000    | 670                  | 850  | 238.0                               | 382.0    | 3.0      | 81.4        |
|     | 460                       | 145 | 5       | 22344CA/W33          | 22344CAK/W33 | 2430000                | 3600000    | 700                  | 900  | 242.0                               | 438.0    | 4.0      | 119         |
| 240 | 320                       | 60  | 2.1     | 23948CA/W33          | 23948CAK/W33 | 6250000                | 1260000    | 850                  | 1100 | 252.0                               | 308.0    | 2.0      | 13.7        |
|     | 360                       | 92  | 3       | 23048CA/W33          | 23048CAK/W33 | 1100000                | 2000000    | 800                  | 1000 | 254.0                               | 346.0    | 2.5      | 33.5        |
|     | 360                       | 118 | 3       | 24048CA/W33          | 24048CAK/W33 | 1430000                | 2800000    | 700                  | 900  | 254.0                               | 346.0    | 2.5      | 43.3        |
|     | 400                       | 128 | 4       | 23148CA/W33          | 23148CAK/W33 | 1880000                | 3350000    | 670                  | 850  | 258.0                               | 382.0    | 3.0      | 66.6        |
|     | 400                       | 160 | 4       | 24148CA/W33          | 24148CAK/W33 | 2050000                | 3700000    | 670                  | 850  | 258.0                               | 382.0    | 3.0      | 81.6        |
|     | 440                       | 120 | 4       | 22248CA/W33          | 22248CAK/W33 | 1890000                | 2930000    | 700                  | 900  | 258.0                               | 422.0    | 3.0      | 82.8        |
|     | 440                       | 160 | 4       | 23248CA/W33          | 23248CAK/W33 | 2440000                | 4100000    | 630                  | 800  | 258.0                               | 422.0    | 3.0      | 109         |
|     | 500                       | 155 | 5       | 22348CA/W33          | 22348CAK/W33 | 2770000                | 4100000    | 670                  | 850  | 262.0                               | 487.0    | 4.0      | 151         |
| 260 | 360                       | 75  | 2.1     | 23952CA/W33          | 23952CAK/W33 | 8950000                | 1780000    | 800                  | 1000 | 272.0                               | 348.0    | 2.0      | 24.9        |
|     | 400                       | 104 | 4       | 23052CA/W33          | 23052CAK/W33 | 1400000                | 2530000    | 750                  | 950  | 278.0                               | 382.0    | 3.0      | 52.7        |
|     | 400                       | 140 | 4       | 24052CA/W33          | 24052CAK/W33 | 1890000                | 3700000    | 630                  | 800  | 278.0                               | 382.0    | 3.0      | 69.6        |
|     | 440                       | 144 | 4       | 23152CA/W33          | 23152CAK/W33 | 2250000                | 4000000    | 600                  | 750  | 278.0                               | 422.0    | 3.0      | 98.4        |
|     | 440                       | 180 | 4       | 24152CA/W33          | 24152CAK/W33 | 2550000                | 4650000    | 600                  | 750  | 278.0                               | 422.0    | 3.0      | 120         |
|     | 480                       | 130 | 5       | 22252CA/W33          | 22252CAK/W33 | 2230000                | 3500000    | 670                  | 850  | 282.0                               | 458.0    | 4.0      | 113         |
|     | 480                       | 174 | 5       | 23252CA/W33          | 23252CAK/W33 | 2860000                | 4800000    | 560                  | 700  | 282.0                               | 458.0    | 4.0      | 152         |
|     | 540                       | 165 | 6       | 22352CA/W33          | 22352CAK/W33 | 3150000                | 4750000    | 600                  | 750  | 288.0                               | 512.0    | 5.0      | 228         |

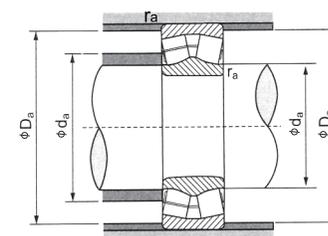
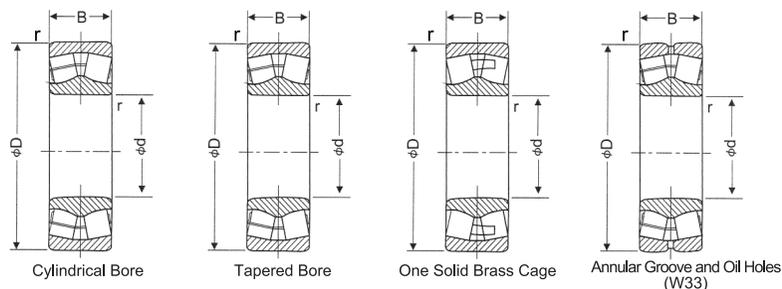
d: 280 ~ 340 mm



| d   | Principal Dimensions (mm) |     |         | Bearing Designations |              | Basic Load Ratings (N) |            |  |  | Limiting Speed (rpm) |     | Abutment and Fillet Dimensions (mm) |                      |                      | Weight (kg) |
|-----|---------------------------|-----|---------|----------------------|--------------|------------------------|------------|--|--|----------------------|-----|-------------------------------------|----------------------|----------------------|-------------|
|     | D                         | B   | r (min) | Cylindrical Bore     | Tapered Bore | Dynamic Cr             | Static Cor |  |  | Grease               | Oil | d <sub>a</sub> (min)                | D <sub>a</sub> (max) | r <sub>a</sub> (max) |             |
| 280 | 380                       | 75  | 2.1     | 23956CA/W33          | 23956CAK/W33 | 905000                 | 1840000    |  |  | 750                  | 950 | 292.0                               | 368.0                | 2.0                  | 39.7        |
|     | 420                       | 106 | 4       | 23056CA/W33          | 23056CAK/W33 | 1460000                | 2720000    |  |  | 700                  | 900 | 298.0                               | 402.0                | 3.0                  | 72.8        |
|     | 420                       | 140 | 4       | 24056CA/W33          | 24056CAK/W33 | 1930000                | 3900000    |  |  | 600                  | 750 | 298.0                               | 402.0                | 3.0                  | 98.7        |
|     | 460                       | 146 | 5       | 23156CA/W33          | 23156CAK/W33 | 2310000                | 4200000    |  |  | 560                  | 700 | 302.0                               | 438.0                | 4.0                  | 129         |
|     | 460                       | 180 | 5       | 24156CA/W33          | 24156CAK/W33 | 2580000                | 4800000    |  |  | 560                  | 700 | 302.0                               | 438.0                | 4.0                  | 160         |
|     | 500                       | 130 | 5       | 22256CA/W33          | 22256CAK/W33 | 2320000                | 3700000    |  |  | 630                  | 800 | 302.0                               | 478.0                | 4.0                  | 144         |
|     | 500                       | 176 | 5       | 23256CA/W33          | 23256CAK/W33 | 3000000                | 5200000    |  |  | 530                  | 670 | 302.0                               | 478.0                | 4.0                  | 196         |
|     | 580                       | 175 | 6       | 22356CA/W33          | 22356CAK/W33 | 3550000                | 5450000    |  |  | 560                  | 700 | 308.0                               | 552.0                | 5.0                  | 279         |
| 300 | 420                       | 90  | 3       | 23960CA/W33          | 23960CAK/W33 | 1250000                | 2520000    |  |  | 670                  | 850 | 314.0                               | 406.0                | 2.5                  | 23.7        |
|     | 460                       | 118 | 4       | 23060CA/W33          | 23060CAK/W33 | 1800000                | 3300000    |  |  | 630                  | 800 | 318.0                               | 442.0                | 3.0                  | 48.9        |
|     | 460                       | 160 | 4       | 24060CA/W33          | 24060CAK/W33 | 2420000                | 4850000    |  |  | 560                  | 700 | 318.0                               | 442.0                | 3.0                  | 65.7        |
|     | 500                       | 160 | 5       | 23160CA/W33          | 23160CAK/W33 | 2650000                | 4750000    |  |  | 530                  | 670 | 322.0                               | 478.0                | 4.0                  | 92          |
|     | 500                       | 200 | 5       | 24160CA/W33          | 24160CAK/W33 | 3200000                | 6100000    |  |  | 530                  | 670 | 322.0                               | 478.0                | 4.0                  | 113         |
|     | 540                       | 140 | 5       | 22260CA/W33          | 22260CAK/W33 | 2670000                | 4300000    |  |  | 600                  | 750 | 322.0                               | 518.0                | 4.0                  | 107         |
|     | 540                       | 192 | 5       | 23260CA/W33          | 23260CAK/W33 | 3550000                | 6250000    |  |  | 480                  | 600 | 322.0                               | 518.0                | 4.0                  | 142         |
|     | 620                       | 185 | 7.5     | 22360CA/W33          | 22360CAK/W33 | 3950000                | 6050000    |  |  | 520                  | 650 | 336.0                               | 584.0                | 6.0                  | 187         |
| 320 | 440                       | 90  | 3       | 23964CA/W33          | 23964CAK/W33 | 1270000                | 2610000    |  |  | 630                  | 800 | 334.0                               | 426.0                | 2.5                  | 41.8        |
|     | 480                       | 121 | 4       | 23064CA/W33          | 23064CAK/W33 | 1860000                | 3500000    |  |  | 600                  | 750 | 338.0                               | 462.0                | 3.0                  | 78.6        |
|     | 480                       | 160 | 4       | 24064CA/W33          | 24064CAK/W33 | 2470000                | 5100000    |  |  | 530                  | 670 | 338.0                               | 462.0                | 3.0                  | 104         |
|     | 540                       | 176 | 5       | 23164CA/W33          | 23164CAK/W33 | 3150000                | 5700000    |  |  | 480                  | 600 | 342.0                               | 518.0                | 4.0                  | 168         |
|     | 540                       | 218 | 5       | 24164CA/W33          | 24164CAK/W33 | 3650000                | 6900000    |  |  | 480                  | 600 | 342.0                               | 518.0                | 4.0                  | 206         |
|     | 580                       | 150 | 5       | 22264CA/W33          | 22264CAK/W33 | 3050000                | 4900000    |  |  | 550                  | 680 | 342.0                               | 558.0                | 4.0                  | 179         |
|     | 580                       | 208 | 5       | 23264CA/W33          | 23264CAK/W33 | 4050000                | 7200000    |  |  | 450                  | 560 | 342.0                               | 558.0                | 4.0                  | 244         |
| 340 | 460                       | 90  | 3       | 23968CA/W33          | 23968CAK/W33 | 1320000                | 2790000    |  |  | 600                  | 750 | 354.0                               | 446.0                | 2.5                  | 44.1        |
|     | 520                       | 133 | 5       | 23068CA/W33          | 23068CAK/W33 | 2270000                | 4300000    |  |  | 560                  | 700 | 362.0                               | 498.0                | 4.0                  | 104         |
|     | 520                       | 180 | 5       | 24068CA/W33          | 24068CAK/W33 | 2960000                | 6050000    |  |  | 480                  | 600 | 362.0                               | 498.0                | 4.0                  | 141         |
|     | 580                       | 190 | 5       | 23168CA/W33          | 23168CAK/W33 | 3700000                | 6750000    |  |  | 450                  | 560 | 362.0                               | 558.0                | 4.0                  | 212         |
|     | 580                       | 243 | 5       | 24168CA/W33          | 24168CAK/W33 | 4350000                | 8300000    |  |  | 450                  | 560 | 362.0                               | 558.0                | 4.0                  | 267         |
|     | 620                       | 165 | 6       | 22268CA/W33          | 22268CAK/W33 | 4050000                | 6850000    |  |  | 500                  | 620 | 368.0                               | 592.0                | 5.0                  | 224         |
|     | 620                       | 224 | 6       | 23268CA/W33          | 23268CAK/W33 | 4550000                | 8000000    |  |  | 400                  | 530 | 368.0                               | 592.0                | 5.0                  | 299         |



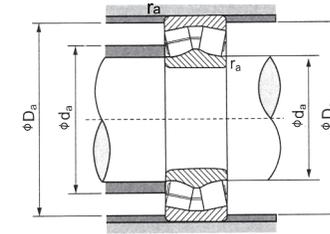
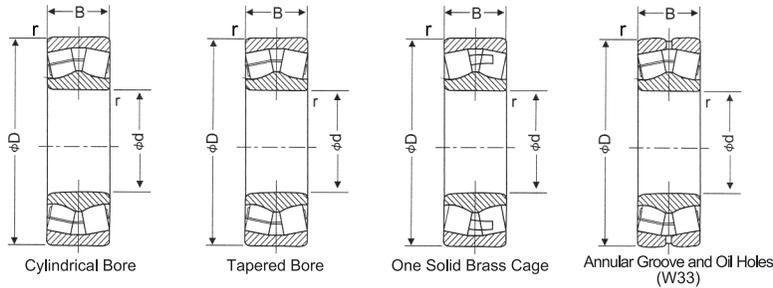
d: 360 ~ 440 mm



| Principal Dimensions (mm) |     |     |         | Bearing Designations |              | Basic Load Ratings (N) |            |  |  | Limiting Speed (rpm) |     | Abutment and Fillet Dimensions (mm) |             |             | Weight (kg) |
|---------------------------|-----|-----|---------|----------------------|--------------|------------------------|------------|--|--|----------------------|-----|-------------------------------------|-------------|-------------|-------------|
| d                         | D   | B   | r (min) | Cylindrical Bore     | Tapered Bore | Dynamic Cr             | Static Cor |  |  | Grease               | Oil | $d_a$ (min)                         | $D_a$ (max) | $r_a$ (max) |             |
| 360                       | 480 | 90  | 3       | 23972CA/W33          | 23972CAK/W33 | 1360000                | 2960000    |  |  | 600                  | 750 | 374.0                               | 466.0       | 2.5         | 46          |
|                           | 540 | 134 | 5       | 23072CA/W33          | 23072CAK/W33 | 2320000                | 4500000    |  |  | 430                  | 670 | 382.0                               | 518.0       | 4.0         | 110         |
|                           | 540 | 180 | 5       | 24072CA/W33          | 24072CAK/W33 | 3050000                | 6350000    |  |  | 450                  | 560 | 382.0                               | 518.0       | 4.0         | 148         |
|                           | 600 | 192 | 5       | 23172CA/W33          | 23172CAK/W33 | 3850000                | 7250000    |  |  | 430                  | 530 | 382.0                               | 578.0       | 4.0         | 225         |
|                           | 600 | 243 | 5       | 24172CA/W33          | 24172CAK/W33 | 4500000                | 8750000    |  |  | 430                  | 530 | 382.0                               | 578.0       | 4.0         | 279         |
|                           | 650 | 232 | 6       | 23272CA/W33          | 23272CAK/W33 | 5000000                | 9000000    |  |  | 380                  | 500 | 388.0                               | 622.0       | 5.0         | 342         |
| 380                       | 520 | 106 | 4       | 23976CA/W33          | 23976CAK/W33 | 1720000                | 3650000    |  |  | 530                  | 670 | 398.0                               | 502.0       | 3.0         | 68.2        |
|                           | 560 | 135 | 5       | 23076CA/W33          | 23076CAK/W33 | 2370000                | 4700000    |  |  | 500                  | 630 | 402.0                               | 538.0       | 4.0         | 116         |
|                           | 560 | 180 | 5       | 24076CA/W33          | 24076CAK/W33 | 3100000                | 6650000    |  |  | 450                  | 560 | 402.0                               | 538.0       | 4.0         | 154         |
|                           | 620 | 194 | 5       | 23176CA/W33          | 23176CAK/W33 | 3900000                | 7400000    |  |  | 400                  | 500 | 402.0                               | 598.0       | 4.0         | 236         |
|                           | 620 | 243 | 5       | 24176CA/W33          | 24176CAK/W33 | 4650000                | 9300000    |  |  | 400                  | 500 | 402.0                               | 598.0       | 4.0         | 290         |
|                           | 680 | 240 | 6       | 23276CA/W33          | 23276CAK/W33 | 5400000                | 9800000    |  |  | 360                  | 480 | 408.0                               | 652.0       | 5.0         | 383         |
| 400                       | 540 | 106 | 4       | 23980CA/W33          | 23980CAK/W33 | 1780000                | 3900000    |  |  | 500                  | 630 | 418.0                               | 522.0       | 3.0         | 71.4        |
|                           | 600 | 148 | 5       | 23080CA/W33          | 23080CAK/W33 | 2800000                | 5500000    |  |  | 480                  | 600 | 422.0                               | 578.0       | 4.0         | 151         |
|                           | 600 | 200 | 5       | 24080CA/W33          | 24080CAK/W33 | 3600000                | 7650000    |  |  | 400                  | 500 | 422.0                               | 578.0       | 4.0         | 204         |
|                           | 650 | 220 | 6       | 23180CA/W33          | 23180CAK/W33 | 4150000                | 7900000    |  |  | 380                  | 480 | 428.0                               | 622.0       | 5.0         | 266         |
|                           | 650 | 250 | 6       | 24180CA/W33          | 24180CAK/W33 | 4950000                | 9850000    |  |  | 380                  | 480 | 428.0                               | 622.0       | 5.0         | 330         |
|                           | 720 | 256 | 6       | 23280CA/W33          | 23280CAK/W33 | 6100000                | 11100000   |  |  | 340                  | 450 | 428.0                               | 692.0       | 5.0         | 461         |
| 420                       | 560 | 106 | 4       | 23984CA/W33          | 23984CAK/W33 | 1810000                | 4000000    |  |  | 480                  | 600 | 438.0                               | 542.0       | 3.0         | 74.4        |
|                           | 620 | 150 | 5       | 23084CA/W33          | 23084CAK/W33 | 2910000                | 5850000    |  |  | 450                  | 560 | 442.0                               | 598.0       | 4.0         | 158         |
|                           | 620 | 200 | 5       | 24084CA/W33          | 24084CAK/W33 | 3700000                | 8000000    |  |  | 380                  | 480 | 442.0                               | 598.0       | 4.0         | 212         |
|                           | 700 | 224 | 6       | 23184CA/W33          | 23184CAK/W33 | 4900000                | 9250000    |  |  | 360                  | 450 | 448.0                               | 672.0       | 5.0         | 354         |
|                           | 700 | 280 | 6       | 24184CA/W33          | 24184CAK/W33 | 6000000                | 12000000   |  |  | 360                  | 450 | 448.0                               | 672.0       | 5.0         | 437         |
|                           | 760 | 272 | 7.5     | 23284CA/W33          | 23284CAK/W33 | 6750000                | 12500000   |  |  | 330                  | 430 | 456.0                               | 724.0       | 6.0         | 548         |
| 440                       | 600 | 118 | 4       | 23988CA/W33          | 23988CAK/W33 | 2230000                | 4900000    |  |  | 450                  | 560 | 458.0                               | 582.0       | 3.0         | 101         |
|                           | 650 | 157 | 6       | 23088CA/W33          | 23088CAK/W33 | 3100000                | 6250000    |  |  | 430                  | 530 | 468.0                               | 622.0       | 5.0         | 183         |
|                           | 650 | 212 | 6       | 24088CA/W33          | 24088CAK/W33 | 4150000                | 9000000    |  |  | 360                  | 450 | 468.0                               | 622.0       | 5.0         | 247         |
|                           | 720 | 226 | 6       | 23188CA/W33          | 23188CAK/W33 | 5150000                | 10000000   |  |  | 340                  | 430 | 468.0                               | 692.0       | 5.0         | 371         |
|                           | 720 | 280 | 6       | 24188CA/W33          | 24188CAK/W33 | 6150000                | 12700000   |  |  | 340                  | 430 | 468.0                               | 692.0       | 5.0         | 460         |
|                           | 790 | 280 | 7.5     | 23288CA/W33          | 23288CAK/W33 | 7200000                | 13300000   |  |  | 320                  | 400 | 476.0                               | 754.0       | 6.0         | 605         |

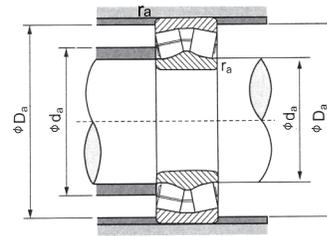
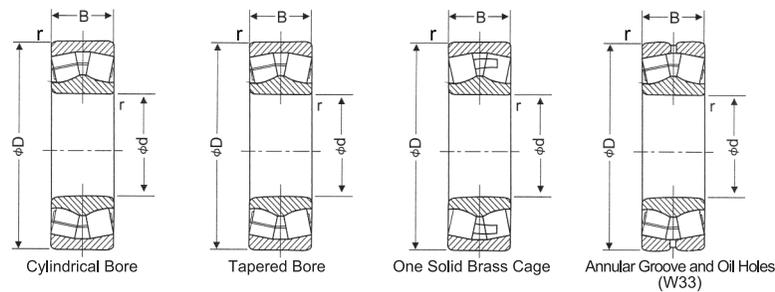


d: 460 ~ 600 mm



| d   | Principal Dimensions (mm) |     |         | Bearing Designations |                | Basic Load Ratings (N) |            |  |  | Limiting Speed (rpm) |     | Abutment and Fillet Dimensions (mm) |                      |                      | Weight (kg) |
|-----|---------------------------|-----|---------|----------------------|----------------|------------------------|------------|--|--|----------------------|-----|-------------------------------------|----------------------|----------------------|-------------|
|     | D                         | B   | r (min) | Cylindrical Bore     | Tapered Bore   | Dynamic Cr             | Static Cor |  |  | Grease               | Oil | d <sub>a</sub> (min)                | D <sub>a</sub> (max) | r <sub>a</sub> (max) |             |
| 460 | 620                       | 118 | 4       | 23992CA/W33          | 23992CAK/W33   | 2220000                | 4900000    |  |  | 430                  | 530 | 478.0                               | 602.0                | 3.0                  | 105         |
|     | 680                       | 163 | 6       | 23092CA/W33          | 23092CAK/W33   | 3400000                | 68500000   |  |  | 400                  | 500 | 488.0                               | 652.0                | 5.0                  | 208         |
|     | 680                       | 218 | 6       | 24092CA/W33          | 24092CAK/W33   | 4400000                | 9650000    |  |  | 340                  | 430 | 488.0                               | 652.0                | 5.0                  | 279         |
|     | 760                       | 240 | 7.5     | 23192CA/W33          | 23192CAK/W33   | 5750000                | 11200000   |  |  | 320                  | 400 | 496.0                               | 724.0                | 6.0                  | 446         |
|     | 760                       | 300 | 7.5     | 24192CA/W33          | 24192CAK/W33   | 6800000                | 13900000   |  |  | 320                  | 400 | 496.0                               | 724.0                | 6.0                  | 550         |
|     | 830                       | 296 | 7.5     | 23292CA/W33          | 23292CAK/W33   | 7650000                | 14500000   |  |  | 300                  | 380 | 496.0                               | 794.0                | 6.0                  | 709         |
| 480 | 650                       | 128 | 5       | 23996CA/W33          | 23996CAK/W33   | 2390000                | 5450000    |  |  | 430                  | 530 | 502.0                               | 628.0                | 4.0                  | 126         |
|     | 700                       | 165 | 6       | 23096CA/W33          | 23096CAK/W33   | 3500000                | 7250000    |  |  | 380                  | 480 | 508.0                               | 672.0                | 5.0                  | 217         |
|     | 700                       | 218 | 6       | 24096CA/W33          | 24096CAK/W33   | 4550000                | 10100000   |  |  | 340                  | 430 | 508.0                               | 672.0                | 5.0                  | 290         |
|     | 790                       | 248 | 7.5     | 23196CA/W33          | 23196CAK/W33   | 6100000                | 12000000   |  |  | 300                  | 380 | 516.0                               | 754.0                | 6.0                  | 495         |
|     | 790                       | 308 | 7.5     | 24196CA/W33          | 24196CAK/W33   | 7150000                | 14800000   |  |  | 300                  | 380 | 516.0                               | 754.0                | 6.0                  | 625         |
|     | 870                       | 310 | 7.5     | 23296CA/W33          | 23296CAK/W33   | 8150000                | 15400000   |  |  | 280                  | 360 | 516.0                               | 834.0                | 6.0                  | 820         |
| 500 | 670                       | 128 | 5       | 239/500CA/W33        | 239/500CAK/W33 | 2450000                | 5700000    |  |  | 400                  | 500 | 522.0                               | 648.0                | 4.0                  | 130         |
|     | 720                       | 167 | 6       | 230/500CA/W33        | 230/500CAK/W33 | 3650000                | 7650000    |  |  | 380                  | 480 | 528.0                               | 692.0                | 5.0                  | 228         |
|     | 720                       | 218 | 6       | 240/500CA/W33        | 240/500CAK/W33 | 4650000                | 10500000   |  |  | 320                  | 400 | 528.0                               | 692.0                | 5.0                  | 330         |
|     | 830                       | 264 | 7.5     | 231/500CA/W33        | 231/500CAK/W33 | 6700000                | 13000000   |  |  | 280                  | 360 | 536.0                               | 794.0                | 6.0                  | 584         |
|     | 830                       | 325 | 7.5     | 241/500CA/W33        | 241/500CAK/W33 | 7950000                | 16200000   |  |  | 280                  | 360 | 536.0                               | 794.0                | 6.0                  | 718         |
|     | 920                       | 336 | 7.5     | 232/500CA/W33        | 232/500CAK/W33 | 9500000                | 17800000   |  |  | 260                  | 340 | 536.0                               | 884.0                | 6.0                  | 1000        |
| 530 | 710                       | 136 | 5       | 239/530CA/W33        | 239/530CAK/W33 | 2940000                | 6800000    |  |  | 360                  | 450 | 552.0                               | 688.0                | 4.0                  | 156         |
|     | 780                       | 185 | 6       | 230/530CA/W33        | 230/530CAK/W33 | 4500000                | 9450000    |  |  | 370                  | 450 | 558.0                               | 752.0                | 5.0                  | 308         |
|     | 780                       | 250 | 6       | 240/530CA/W33        | 240/530CAK/W33 | 5600000                | 12500000   |  |  | 300                  | 370 | 558.0                               | 752.0                | 5.0                  | 417         |
|     | 870                       | 272 | 7.5     | 231/530CA/W33        | 231/530CAK/W33 | 7350000                | 14600000   |  |  | 260                  | 340 | 566.0                               | 834.0                | 6.0                  | 640         |
|     | 980                       | 355 | 9.5     | 232/530CA/W33        | 232/530CAK/W33 | 11000000               | 21000000   |  |  | 220                  | 300 | 574.0                               | 936.0                | 8.0                  | 1215        |
| 560 | 750                       | 140 | 5       | 239/560CA/W33        | 239/560CAK/W33 | 3050000                | 6950000    |  |  | 340                  | 430 | 582.0                               | 728.0                | 4.0                  | 177         |
|     | 820                       | 195 | 6       | 230/560CA/W33        | 230/560CAK/W33 | 5050000                | 10800000   |  |  | 340                  | 430 | 588.0                               | 792.0                | 5.0                  | 359         |
|     | 820                       | 258 | 6       | 240/560CA/W33        | 240/560CAK/W33 | 6000000                | 13500000   |  |  | 280                  | 350 | 588.0                               | 792.0                | 5.0                  | 468         |
|     | 920                       | 280 | 7.5     | 231/560CA/W33        | 231/560CAK/W33 | 7950000                | 15800000   |  |  | 240                  | 320 | 596.0                               | 884.0                | 6.0                  | 732         |
|     | 1030                      | 365 | 9.5     | 232/560CA/W33        | 232/560CAK/W33 | 11500000               | 22000000   |  |  | 190                  | 270 | 612.0                               | 992.0                | 8.0                  | 1390        |
| 600 | 800                       | 150 | 5       | 239/600CA/W33        | 239/600CAK/W33 | 3450000                | 8050000    |  |  | 320                  | 400 | 622.0                               | 778.0                | 4.0                  | 214         |
|     | 870                       | 200 | 6       | 230/600CA/W33        | 230/600CAK/W33 | 5500000                | 12000000   |  |  | 320                  | 400 | 628.0                               | 842.0                | 5.0                  | 408         |
|     | 870                       | 272 | 6       | 240/600CA/W33        | 240/600CAK/W33 | 6500000                | 14900000   |  |  | 260                  | 330 | 628.0                               | 842.0                | 5.0                  | 551         |
|     | 980                       | 300 | 7.5     | 231/600CA/W33        | 231/600CAK/W33 | 8700000                | 17500000   |  |  | 200                  | 280 | 636.0                               | 944.0                | 6.0                  | 887         |
|     | 1090                      | 388 | 9.5     | 232/600CA/W33        | 232/600CAK/W33 | 12900000               | 25100000   |  |  | 160                  | 240 | 654.0                               | 1048                 | 8.0                  | 1640        |

d: 630 ~ 950 mm



| Principal Dimensions (mm) |      |     |         | Bearing Designations |                | Basic Load Ratings (N) |            | Limiting Speed (rpm) |     | Abutment and Fillet Dimensions (mm) |                      |                      | Weight (kg) |
|---------------------------|------|-----|---------|----------------------|----------------|------------------------|------------|----------------------|-----|-------------------------------------|----------------------|----------------------|-------------|
| d                         | D    | B   | r (min) | Cylindrical Bore     | Tapered Bore   | Dynamic Cr             | Static Cor | Grease               | Oil | d <sub>a</sub> (min)                | D <sub>a</sub> (max) | r <sub>a</sub> (max) |             |
| 630                       | 850  | 165 | 6       | 239/630CA/W33        | 239/630CAK/W33 | 4150000                | 9700000    | 280                  | 360 | 658.0                               | 822.0                | 5.0                  | 273         |
|                           | 920  | 212 | 7.5     | 230/630CA/W33        | 230/630CAK/W33 | 6000000                | 13100000   | 290                  | 380 | 666.0                               | 884.0                | 6.0                  | 487         |
|                           | 1030 | 315 | 7.5     | 231/630CA/W33        | 231/630CAK/W33 | 9700000                | 19800000   | 190                  | 260 | 666.0                               | 994.0                | 6.0                  | 1070        |
| 670                       | 900  | 170 | 6       | 239/670CA/W33        | 239/670CAK/W33 | 4450000                | 10500000   | 260                  | 340 | 698.0                               | 872.0                | 5.0                  | 316         |
|                           | 980  | 230 | 7.5     | 230/670CA/W33        | 230/670CAK/W33 | 6950000                | 15300000   | 270                  | 340 | 706.0                               | 944.0                | 6.0                  | 603         |
|                           | 980  | 308 | 7.5     | 240/670CA/W33        | 240/670CAK/W33 | 8650000                | 19800000   | 230                  | 290 | 706.0                               | 944.0                | 6.0                  | 801         |
|                           | 1090 | 336 | 7.5     | 231/670CA/W33        | 231/670CAK/W33 | 11000000               | 23000000   | 180                  | 240 | 706.0                               | 1054                 | 6.0                  | 1260        |
| 710                       | 950  | 180 | 6       | 239/710CA/W33        | 239/710CAK/W33 | 5000000                | 12100000   | 240                  | 320 | 738.0                               | 922.0                | 5.0                  | 369         |
|                           | 1030 | 236 | 7.5     | 230/710CA/W33        | 230/710CAK/W33 | 7450000                | 16600000   | 250                  | 320 | 746.0                               | 994.0                | 6.0                  | 676         |
|                           | 1150 | 345 | 9.5     | 231/710CA/W33        | 231/710CAK/W33 | 12100000               | 25300000   | 170                  | 220 | 754.0                               | 1106                 | 8.0                  | 1432        |
| 750                       | 1000 | 185 | 6       | 239/750CA/W33        | 239/750CAK/W33 | 5400000                | 13200000   | 220                  | 300 | 778.0                               | 972.0                | 5.0                  | 417         |
|                           | 1090 | 250 | 7.5     | 230/750CA/W33        | 230/750CAK/W33 | 8400000                | 18900000   | 230                  | 300 | 786.0                               | 1054                 | 6.0                  | 803         |
|                           | 1220 | 365 | 9.5     | 231/750CA/W33        | 231/750CAK/W33 | 13000000               | 27700000   | 150                  | 190 | 794.0                               | 1176                 | 8.0                  | 1710        |
| 800                       | 1060 | 195 | 6       | 239/800CA/W33        | 239/800CAK/W33 | 5850000                | 14500000   | 200                  | 280 | 825.0                               | 1032                 | 5.0                  | 470         |
|                           | 1150 | 258 | 7.5     | 230/800CA/W33        | 230/800CAK/W33 | 8800000                | 20900000   | 210                  | 270 | 836.0                               | 1114                 | 6.0                  | 910         |
|                           | 1150 | 345 | 7.5     | 240/800CA/W33        | 240/800CAK/W33 | 11100000               | 27200000   | 200                  | 250 | 836.0                               | 1114                 | 6.0                  | 1200        |
|                           | 1280 | 375 | 9.5     | 231/800CA/W33        | 231/800CAK/W33 | 14400000               | 31000000   | 160                  | 210 | 844.0                               | 1236                 | 8.0                  | 1910        |
| 850                       | 1120 | 200 | 6       | 239/850CA/W33        | 239/850CAK/W33 | 6200000                | 15600000   | 190                  | 260 | 878.0                               | 1092                 | 5.0                  | 546         |
|                           | 1220 | 272 | 7.5     | 230/850CA/W33        | 230/850CAK/W33 | 9750000                | 22500000   | 190                  | 240 | 886.0                               | 1184                 | 6.0                  | 1059        |
| 900                       | 1180 | 206 | 6       | 239/900CA/W33        | 239/900CAK/W33 | 6700000                | 17000000   | 180                  | 240 | 928.0                               | 1152                 | 5.0                  | 618         |
|                           | 1280 | 280 | 7.5     | 230/900CA/W33        | 230/900CAK/W33 | 10500000               | 25400000   | 180                  | 220 | 936.0                               | 1244                 | 5.0                  | 1200        |
| 950                       | 1250 | 224 | 7.5     | 239/950CA/W33        | 239/950CAK/W33 | 7750000                | 19900000   | 170                  | 220 | 986.0                               | 1214                 | 6.0                  | 763         |
|                           | 1360 | 300 | 7.5     | 230/950CA/W33        | 230/950CAK/W33 | 11600000               | 27200000   | 160                  | 200 | 986.0                               | 1324                 | 6.0                  | 1450        |



