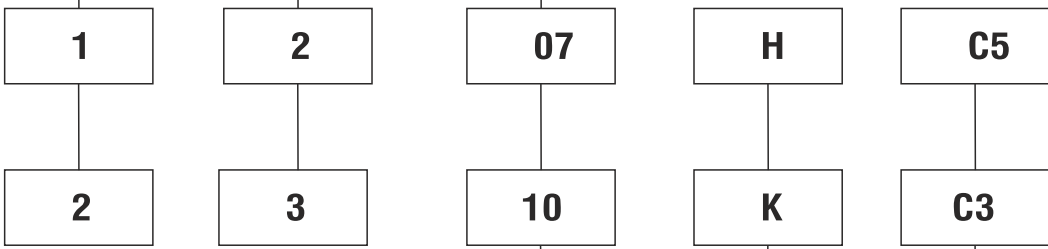


| Type code | +size code |
|-----------|------------|
|           | 12XX       |
|           | 13XX       |
|           | 22XX       |
|           | 23XX       |



**I.D.**

|        |   |       |
|--------|---|-------|
| 5 X -- | = | mm    |
| 5 X 07 | = | 35 mm |
| 5 X 10 | = | 50 mm |

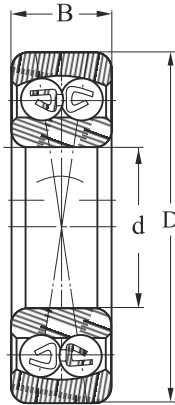
**Clearance:**

- C2: Less than nominal clearance
- C0: Nominal clearance, omitted in designation
- C3: Larger clearance, than C0
- C4: Larger clearance, than C3
- C5: Larger clearance, than C4

**I.D.**

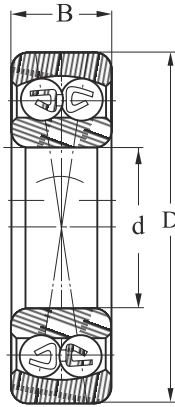
- C: Symmetrical, stamped steel retainer
- CA: Symmetrical, one-piece brass retainer
- H: Symmetrical, nylon retainer
- K: Bore is tapered 1: 12
- E4: a lubricating groove and three lubricating holes on the outer race

# SELF ALIGNING BALL BEARINGS



| Principal dimensions<br>mm (in) |                     |                     |                       | Weight<br>kg (lb)     | Bearing Number        | Basic Load Rating<br>kN (lbf) |                      | Limiting Speed<br>(rpm) |                    |                     |                     |                    |       |       |
|---------------------------------|---------------------|---------------------|-----------------------|-----------------------|-----------------------|-------------------------------|----------------------|-------------------------|--------------------|---------------------|---------------------|--------------------|-------|-------|
| d                               | D                   | B                   | r <sub>smin</sub>     |                       |                       | Dynamic<br>C <sub>r</sub>     | Static Cor           | Grease                  | Oil                |                     |                     |                    |       |       |
| <b>10</b><br>0.3937             | <b>30</b><br>1.1811 | <b>9</b><br>0.3543  | <b>0.6</b><br>0.023   | <b>0.033</b><br>0.072 | <b>1200</b>           | <b>4.95</b><br>1110           | <b>1.14</b><br>260   | 20000                   | 23000              |                     |                     |                    |       |       |
|                                 | <b>30</b><br>1.1811 | <b>14</b><br>0.5511 | <b>0.6</b><br>0.023   | <b>0.042</b><br>0.092 | <b>2200</b>           | <b>6.57</b><br>1480           | <b>1.53</b><br>340   |                         |                    | 18000               | 22000               |                    |       |       |
|                                 | <b>35</b><br>1.3779 | <b>11</b><br>0.4330 | <b>0.6</b><br>0.023   | <b>0.057</b><br>0.125 | <b>1300</b>           | <b>6.53</b><br>1470           | <b>1.56</b><br>350   |                         |                    |                     |                     | 17000              | 20000 |       |
|                                 | <b>35</b><br>1.3779 | <b>17</b><br>0.6692 | <b>0.6</b><br>0.023   | <b>0.077</b><br>0.169 | <b>2300</b>           | <b>9.09</b><br>2050           | <b>2.06</b><br>460   |                         |                    |                     |                     |                    |       | 16000 |
|                                 | <b>12</b><br>0.4724 | <b>32</b><br>1.2598 | <b>10</b><br>0.3937   | <b>0.6</b><br>0.023   | <b>0.039</b><br>0.085 | <b>1201</b>                   | <b>5.04</b><br>1130  |                         |                    |                     |                     | <b>1.22</b><br>270 | 17000 |       |
| <b>32</b><br>1.2598             | <b>14</b><br>0.5511 | <b>0.6</b><br>0.023 | <b>0.048</b><br>0.105 | <b>2201</b>           | <b>6.84</b><br>1540   | <b>1.66</b><br>370            | 16000                | 19000                   |                    |                     |                     |                    |       |       |
| <b>37</b><br>1.4566             | <b>12</b><br>0.4724 | <b>1.0</b><br>0.039 | <b>0.066</b><br>0.145 | <b>1301</b>           | <b>8.51</b><br>1910   | <b>2.07</b><br>470            |                      |                         | 15000              | 17000               |                     |                    |       |       |
| <b>37</b><br>1.4566             | <b>17</b><br>0.6692 | <b>1.0</b><br>0.039 | <b>0.082</b><br>0.180 | <b>2301</b>           | <b>10.62</b><br>2390  | <b>2.60</b><br>590            |                      |                         |                    |                     | 14000               | 16000              |       |       |
| <b>15</b><br>0.5905             | <b>35</b><br>1.3779 | <b>11</b><br>0.4330 | <b>0.6</b><br>0.023   | <b>0.048</b><br>0.105 | <b>1202</b>           | <b>6.71</b><br>1510           |                      |                         | <b>1.68</b><br>380 | 15000               |                     |                    |       | 18000 |
|                                 | <b>35</b><br>1.3779 | <b>14</b><br>0.5511 | <b>0.6</b><br>0.023   | <b>0.055</b><br>0.121 | <b>2202</b>           | <b>6.93</b><br>1560           | <b>1.78</b><br>400   | 14000                   | 17000              |                     |                     |                    |       |       |
|                                 | <b>42</b><br>1.6535 | <b>13</b><br>0.5118 | <b>1.0</b><br>0.039   | <b>0.093</b><br>0.205 | <b>1302</b>           | <b>8.60</b><br>1940           | <b>2.20</b><br>500   |                         |                    |                     | 12000               | 15000              |       |       |
|                                 | <b>42</b><br>1.6535 | <b>17</b><br>0.6692 | <b>1.0</b><br>0.039   | <b>0.108</b><br>0.238 | <b>2302</b>           | <b>10.80</b><br>2430          | <b>2.78</b><br>630   | 12000                   | 14000              |                     |                     |                    |       |       |
| <b>17</b><br>0.6692             | <b>40</b><br>1.5748 | <b>12</b><br>0.4724 | <b>0.6</b><br>0.023   | <b>0.072</b><br>0.158 | <b>1203</b>           | <b>7.11</b><br>1600           | <b>1.93</b><br>430   |                         |                    | 13000               | 16000               |                    |       |       |
|                                 | <b>40</b><br>1.5748 | <b>16</b><br>0.6299 | <b>0.6</b><br>0.023   | <b>0.085</b><br>0.187 | <b>2203</b>           | <b>8.82</b><br>1980           | <b>2.31</b><br>520   | 12000                   | 15000              |                     |                     |                    |       |       |
|                                 | <b>47</b><br>1.8503 | <b>14</b><br>0.5511 | <b>1.0</b><br>0.039   | <b>0.130</b><br>0.286 | <b>1303</b>           | <b>11.25</b><br>2530          | <b>3.07</b><br>690   |                         |                    |                     |                     | 11000              | 13000 |       |
|                                 | <b>47</b><br>1.8503 | <b>19</b><br>0.7480 | <b>1.0</b><br>0.039   | <b>0.150</b><br>0.330 | <b>2303</b>           | <b>12.96</b><br>2920          | <b>3.41</b><br>770   |                         |                    |                     |                     |                    |       | 10000 |
|                                 | <b>20</b><br>0.7874 | <b>47</b><br>1.8503 | <b>14</b><br>0.5511   | <b>1.0</b><br>0.039   | <b>0.120</b><br>0.264 | <b>1204</b>                   | <b>8.91</b><br>2000  |                         |                    |                     |                     | <b>2.51</b><br>560 | 12000 |       |
| <b>47</b><br>1.8503             |                     | <b>18</b><br>0.7086 | <b>1.0</b><br>0.039   | <b>0.133</b><br>0.293 | <b>2204</b>           | <b>11.34</b><br>2550          | <b>3.17</b><br>710   | 11000                   | 13000              |                     |                     |                    |       |       |
| <b>52</b><br>2.0472             |                     | <b>15</b><br>0.5905 | <b>1.1</b><br>0.043   | <b>0.165</b><br>0.363 | <b>1304</b>           | <b>11.16</b><br>2510          | <b>3.22</b><br>720   |                         |                    | 10000               | 12000               |                    |       |       |
| <b>52</b><br>2.0472             |                     | <b>21</b><br>0.8267 | <b>1.1</b><br>0.043   | <b>0.193</b><br>0.425 | <b>2304</b>           | <b>16.29</b><br>3670          | <b>4.51</b><br>1010  |                         |                    |                     |                     | 10000              |       | 11000 |
| <b>25</b><br>0.9842             |                     | <b>52</b><br>2.0472 | <b>15</b><br>0.5905   | <b>1.0</b><br>0.039   | <b>0.140</b><br>0.308 | <b>1205</b>                   | <b>10.89</b><br>2450 |                         |                    | <b>3.17</b><br>710  | 10000               |                    |       |       |
|                                 | <b>52</b><br>2.0472 | <b>18</b><br>0.7086 | <b>1.0</b><br>0.039   | <b>0.150</b><br>0.330 | <b>2205</b>           | <b>11.07</b><br>2490          | <b>3.31</b><br>740   | 10000                   | 11000              |                     |                     |                    |       |       |
|                                 | <b>62</b><br>2.4409 | <b>17</b><br>0.6692 | <b>1.1</b><br>0.043   | <b>0.255</b><br>0.562 | <b>1205</b>           | <b>16.20</b><br>3650          | <b>4.80</b><br>1080  |                         |                    | 8600                |                     | 10000              |       |       |
|                                 | <b>62</b><br>2.4409 | <b>24</b><br>0.9448 | <b>1.1</b><br>0.043   | <b>0.319</b><br>0.703 | <b>2305</b>           | <b>21.96</b><br>4940          | <b>6.34</b><br>1430  |                         |                    |                     |                     |                    | 8100  | 10000 |
|                                 | <b>30</b><br>1.1811 | <b>62</b><br>2.4409 | <b>16</b><br>0.6399   | <b>1.0</b><br>0.039   | <b>0.220</b><br>0.485 | <b>1206</b>                   | <b>14.04</b><br>3160 |                         |                    | <b>4.46</b><br>1000 |                     | 8700               |       |       |
|                                 |                     | <b>62</b><br>2.4409 | <b>20</b><br>0.7874   | <b>1.0</b><br>0.039   | <b>0.249</b><br>0.549 | <b>2206</b>                   | <b>13.68</b><br>3080 |                         |                    | <b>4.32</b><br>970  |                     |                    | 8200  | 10000 |
| <b>72</b><br>2.8346             |                     | <b>19</b><br>0.7480 | <b>1.1</b><br>0.043   | <b>0.385</b><br>0.848 | <b>1306</b>           | <b>19.17</b><br>4310          | <b>6.05</b><br>1360  | 7300                    | 8600               |                     |                     |                    |       |       |
| <b>72</b><br>2.8346             |                     | <b>27</b><br>1.0629 | <b>1.1</b><br>0.043   | <b>0.480</b><br>1.058 | <b>2306</b>           | <b>28.35</b><br>6380          | <b>8.40</b><br>1890  |                         |                    | 6800                | 8100                |                    |       |       |
| <b>35</b><br>1.3779             |                     | <b>72</b><br>2.8346 | <b>17</b><br>0.6692   | <b>1.1</b><br>0.043   | <b>0.320</b><br>0.705 | <b>1207</b>                   | <b>14.22</b><br>3200 | <b>4.90</b><br>1100     | 7600               |                     |                     |                    |       |       |
|                                 | <b>72</b><br>2.8346 | <b>23</b><br>0.9055 | <b>1.1</b><br>0.043   | <b>0.378</b><br>0.833 | <b>2207</b>           | <b>19.35</b><br>4350          | <b>6.34</b><br>1430  | 7100                    |                    | 8400                |                     |                    |       |       |
|                                 | <b>80</b><br>3.1496 | <b>21</b><br>0.8267 | <b>1.5</b><br>0.059   | <b>0.510</b><br>1.124 | <b>1307</b>           | <b>22.59</b><br>5080          | <b>7.54</b><br>1700  |                         |                    |                     | 6500                | 7600               |       |       |
|                                 | <b>80</b><br>3.1496 | <b>31</b><br>1.2204 | <b>1.5</b><br>0.059   | <b>0.642</b><br>1.416 | <b>2307</b>           | <b>35.55</b><br>8000          | <b>10.85</b><br>2440 |                         |                    |                     |                     |                    | 6000  | 7000  |
|                                 | <b>40</b><br>1.5748 | <b>80</b><br>3.1496 | <b>18</b><br>0.7086   | <b>1.1</b><br>0.043   | <b>0.415</b><br>0.915 | <b>1208</b>                   | <b>17.37</b><br>3910 |                         |                    |                     | <b>6.29</b><br>1420 | 6700               |       |       |
| <b>80</b><br>3.1496             |                     | <b>23</b><br>0.9055 | <b>1.1</b><br>0.043   | <b>0.477</b><br>1.051 | <b>2208</b>           | <b>20.07</b><br>4500          | <b>7.06</b><br>1590  | 6400                    | 7500               |                     |                     |                    |       |       |
| <b>90</b><br>3.5433             |                     | <b>23</b><br>0.9055 | <b>1.5</b><br>0.059   | <b>0.715</b><br>1.576 | <b>1308</b>           | <b>26.64</b><br>5990          | <b>9.31</b><br>2090  |                         |                    | 5700                | 6700                |                    |       |       |
| <b>90</b><br>3.5433             |                     | <b>33</b><br>1.2992 | <b>1.5</b><br>0.059   | <b>0.889</b><br>1.960 | <b>2308</b>           | <b>40.50</b><br>9110          | <b>12.96</b><br>2920 |                         |                    |                     |                     |                    | 5300  | 6300  |
| <b>45</b><br>1.7716             |                     | <b>85</b><br>3.3464 | <b>19</b><br>0.7480   | <b>1.1</b><br>0.043   | <b>0.465</b><br>1.025 | <b>1209</b>                   | <b>19.71</b><br>4430 |                         |                    | <b>7.06</b><br>1590 | 6100                |                    |       |       |
|                                 | <b>85</b><br>3.3464 | <b>23</b><br>0.9055 | <b>1.1</b><br>0.043   | <b>0.522</b><br>1.151 | <b>2209</b>           | <b>20.88</b><br>4700          | <b>7.82</b><br>1760  | 5700                    | 6700               |                     |                     |                    |       |       |

# SELF ALIGNING BALL BEARINGS



| Principal dimensions<br>mm (in) |               |              |                   | Weight<br>kg (lb) | Bearing Number | Basic Load Rating<br>kN (lbf) |                 | Limiting Speed<br>(rpm) |      |                |      |
|---------------------------------|---------------|--------------|-------------------|-------------------|----------------|-------------------------------|-----------------|-------------------------|------|----------------|------|
| d                               | D             | B            | r <sub>smin</sub> |                   |                | Dynamic<br>C <sub>r</sub>     | Static Cor      | Grease                  | Oil  |                |      |
| 45<br>1.7716                    | 100<br>3.9370 | 25<br>0.9842 | 1.5<br>0.059      | 0.955<br>2.106    | 1309           | 34.20<br>7.70                 | 12.19<br>2.740  | 5100                    | 6000 |                |      |
|                                 | 100<br>3.9370 | 36<br>1.4173 | 1.5<br>0.059      | 1.200<br>2.646    |                | 2309                          | 48.60<br>10.940 |                         |      | 16.03<br>3.610 | 4800 |
| 50<br>1.9685                    | 90<br>3.5433  | 20<br>0.7874 | 1.1<br>0.043      | 0.525<br>1.158    | 1210           | 20.43<br>4.600                | 7.78<br>1.750   | 5500                    | 6500 |                |      |
|                                 | 90<br>3.5433  | 23<br>0.9055 | 1.1<br>0.043      | 0.564<br>1.244    | 2210           | 20.88<br>4.700                | 8.11<br>1.820   |                         |      | 5200           | 6100 |
|                                 | 110<br>4.3307 | 27<br>1.0629 | 2.0<br>0.079      | 1.250<br>2.756    | 1310           | 39.15<br>8.810                | 13.54<br>3.050  |                         |      | 4700           | 5500 |
|                                 | 110<br>4.3307 | 40<br>1.5748 | 2.0<br>0.079      | 1.580<br>3.484    | 2310           | 58.05<br>13.060               | 19.39<br>4.360  |                         |      | 4400           | 5100 |
|                                 | 100<br>3.9370 | 21<br>0.8267 | 1.5<br>0.059      | 0.705<br>1.555    | 1211           | 24.12<br>5.430                | 9.60<br>2.160   |                         |      | 5000           | 5900 |
| 55<br>2.1653                    | 100<br>3.9370 | 25<br>0.9842 | 1.5<br>0.059      | 0.746<br>1.645    | 2211           | 23.85<br>5.370                | 9.50<br>2.140   | 4800                    | 5500 |                |      |
|                                 | 120<br>4.7244 | 29<br>1.1417 | 2.0<br>0.079      | 1.600<br>3.528    | 1311           | 46.35<br>10.430               | 17.18<br>3.870  |                         |      | 4300           | 4900 |
|                                 | 120<br>4.7244 | 43<br>1.6929 | 2.0<br>0.079      | 2.030<br>4.476    | 2311           | 67.95<br>15.290               | 23.04<br>5.180  |                         |      | 4000           | 4700 |
|                                 | 110<br>4.3307 | 22<br>0.8661 | 1.5<br>0.059      | 0.900<br>1.985    | 1212           | 27.00<br>6.080                | 11.04<br>2.480  |                         |      | 4700           | 5500 |
|                                 | 110<br>4.3307 | 28<br>1.1023 | 1.5<br>0.059      | 1.030<br>2.271    | 2212           | 30.60<br>6.890                | 12.10<br>2.720  |                         |      | 4400           | 5100 |
| 60<br>2.3622                    | 130<br>5.1181 | 31<br>1.2204 | 2.1<br>0.083      | 2.030<br>4.476    | 1312           | 51.30<br>11.540               | 19.97<br>4.490  | 3900                    | 4600 |                |      |
|                                 | 130<br>5.1181 | 46<br>1.8110 | 2.1<br>0.083      | 2.570<br>5.667    | 2312           | 78.30<br>17.620               | 27.072<br>6.090 |                         |      | 3600           | 4300 |
|                                 | 120<br>4.7244 | 23<br>0.9055 | 1.5<br>0.059      | 1.150<br>2.536    | 1213           | 27.90<br>6.280                | 12.00<br>2.700  |                         |      | 4300           | 5000 |
|                                 | 120<br>4.7244 | 31<br>1.2204 | 1.5<br>0.059      | 1.400<br>3.087    | 2213           | 39.15<br>8.810                | 15.74<br>3.540  |                         |      | 4000           | 4800 |
|                                 | 140<br>5.5118 | 33<br>1.2992 | 2.1<br>0.083      | 2.540<br>5.601    | 1313           | 55.80<br>12.560               | 21.99<br>4.950  |                         |      | 3600           | 4300 |
| 65<br>2.5590                    | 140<br>5.5118 | 48<br>1.8897 | 2.1<br>0.083      | 3.200<br>7.056    | 2313           | 86.40<br>19.440               | 31.20<br>7.020  | 3400                    | 4000 |                |      |
|                                 | 125<br>4.9212 | 24<br>0.9448 | 1.5<br>0.059      | 1.30<br>2.876     | 1214           | 31.05<br>6.990                | 13.25<br>2.980  | 4000                    | 4700 |                |      |
|                                 | 125<br>4.9212 | 31<br>1.2204 | 1.5<br>0.059      | 1.52<br>3.352     | 2214           | 39.60<br>8.910                | 16.42<br>3.690  | 3700                    | 4400 |                |      |
| 70<br>2.7559                    | 150<br>5.9055 | 35<br>1.3779 | 2.1<br>0.083      | 3.19<br>7.034     | 1314           | 67.05<br>15.090               | 26.59<br>5.980  | 3300                    | 4000 |                |      |
|                                 | 150<br>5.9055 | 51<br>2.0078 | 2.1<br>0.083      | 3.90<br>8.600     | 2314           | 98.10<br>22.070               | 36.00<br>8.100  |                         |      | 3100           | 3700 |
|                                 | 130<br>5.1181 | 25<br>0.9842 | 1.5<br>0.059      | 1.41<br>3.109     | 1215           | 35.10<br>7.900                | 15.07<br>3.390  |                         |      | 3700           | 4400 |
|                                 | 130<br>5.1181 | 31<br>1.2204 | 1.5<br>0.059      | 1.60<br>3.528     | 2215           | 40.05<br>9.010                | 17.09<br>3.850  |                         |      | 3500           | 4100 |
|                                 | 160<br>6.2992 | 37<br>1.4566 | 2.1<br>0.083      | 3.65<br>8.048     | 1315           | 71.55<br>16.100               | 28.80<br>6.480  |                         |      | 3100           | 3700 |
| 75<br>2.9527                    | 160<br>6.2992 | 55<br>2.1653 | 2.1<br>0.083      | 4.77<br>10.518    | 2315           | 110.7<br>24.910               | 41.28<br>9.290  | 2900                    | 3400 |                |      |
|                                 | 140<br>5.5118 | 26<br>1.0236 | 2.0<br>0.079      | 1.73<br>3.815     | 1216           | 36.00<br>8.100                | 16.32<br>3.670  | 3500                    | 4100 |                |      |
|                                 | 140<br>5.5118 | 33<br>1.2992 | 2.0<br>0.079      | 1.97<br>4.344     | 2216           | 43.65<br>9.820                | 19.10<br>4.300  | 3200                    | 3800 |                |      |
| 80<br>3.1496                    | 170<br>6.6929 | 39<br>1.5354 | 2.1<br>0.083      | 4.31<br>9.504     | 1316           | 79.65<br>17.920               | 31.68<br>7.130  | 2900                    | 3400 |                |      |
|                                 | 170<br>6.6929 | 58<br>2.2834 | 2.1<br>0.083      | 5.54<br>12.216    | 2316           | 115.20<br>25.920              | 43.20<br>9.720  |                         |      | 2800           | 3200 |
|                                 | 150<br>5.9055 | 28<br>1.1023 | 2.0<br>0.079      | 2.09<br>4.608     | 1217           | 44.10<br>9.920                | 19.97<br>4.490  |                         |      | 3300           | 3900 |
|                                 | 150<br>5.9055 | 36<br>1.4173 | 2.0<br>0.079      | 2.48<br>5.468     | 2217           | 52.20<br>11.750               | 22.66<br>5.100  |                         |      | 3000           | 3600 |
| 85<br>3.3464                    | 180<br>7.0866 | 41<br>1.6141 | 3.0<br>0.118      | 5.13<br>11.312    | 1317           | 87.75<br>19.740               | 36.48<br>8.210  | 2800                    | 3200 |                |      |
|                                 | 180<br>7.0866 | 60<br>2.3622 | 3.0<br>0.118      | 6.56<br>14.465    | 2317           | 126<br>28.350                 | 49.44<br>11.120 |                         |      | 2600           | 3000 |
|                                 | 160<br>6.2992 | 30<br>1.1811 | 2.0<br>0.079      | 2.55<br>5.623     | 1218           | 51.3<br>11.540                | 22.56<br>5.080  |                         |      | 3100           | 3600 |
| 90<br>3.5433                    | 160<br>6.2992 | 40<br>1.5748 | 2.0<br>0.079      | 3.13<br>6.902     | 2218           | 63<br>14.180                  | 27.552<br>6.200 | 2900                    | 3400 |                |      |
|                                 | 190<br>7.4803 | 43<br>1.6929 | 3.0<br>0.118      | 5.94<br>13.098    | 1218           | 104.4<br>23.490               | 47.72<br>9.610  |                         |      | 2600           | 3000 |
|                                 | 190<br>7.4803 | 64<br>2.5196 | 3.0<br>0.118      | 7.76<br>17.111    | 2318           | 136.8<br>30.780               | 55.2<br>12.420  |                         |      | 2500           | 2900 |