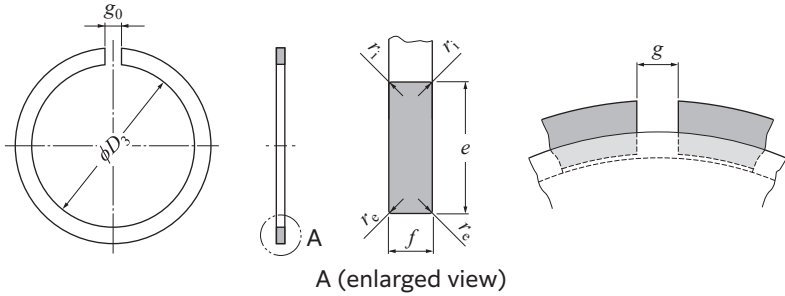


# ● Snap Rings and Grooves for Rolling Bearings



## Snap rings

For dimension series 18 and 19 bearings



A (enlarged view)

Unit: mm

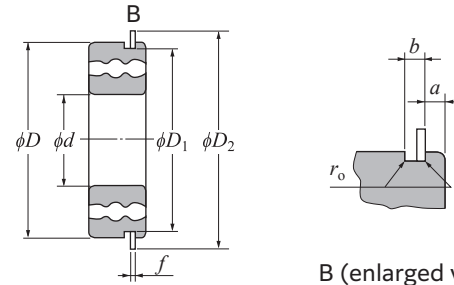
| Number | Bearing                 |                        | Snap rings         |       |      |      |      |      | Snap ring fitted inside groove <sup>1)</sup> |                | (Reference) |               |               |               | Bearing bore diameter series |     |                     |                              |
|--------|-------------------------|------------------------|--------------------|-------|------|------|------|------|--|----------------|-------------|---------------|---------------|---------------|------------------------------|-----|---------------------|------------------------------|
|        | outside diameter<br>$D$ | bore diameter<br>$D_3$ | Tolerance of $D_3$ |       | $e$  |      | $f$  |      | Max. $D_2$                                   | $g$<br>Approx. | $g_0$       | $r_1$<br>Min. | $r_e$<br>Min. | $V_f$<br>Max. | 18<br>$d$                    | 19  |                     |                              |
|        |                         |                        | Upper              | Lower | Max. | Min. | Max. | Min. |  |                |             |               |               |               |                              |     |                     |                              |
|        |                         |                        |                    |       |      |      |      |      |  |                |             |               |               |               |                              |     | Thickness variation | Bearing bore diameter series |
| NR1022 | 22                      | 20.5                   | 0                  | -0.3  | 2.00 | 1.85 | 0.7  | 0.6  | 24.8   | 2              | 1           | 0.2           | 0.1           | 0.06          | -                            | 10  |                     |                              |
| NR1024 | 24                      | 22.5                   | 0                  | -0.3  | 2.00 | 1.85 | 0.7  | 0.6  | 26.8   | 2              | 1           | 0.2           | 0.1           | 0.06          | -                            | 12  |                     |                              |
| NR1028 | 28                      | 26.4                   | 0                  | -0.3  | 2.05 | 1.90 | 0.85 | 0.75 | 30.8   | 3              | 2           | 0.25          | 0.15          | 0.06          | -                            | 15  |                     |                              |
| NR1030 | 30                      | 28.3                   | 0                  | -0.3  | 2.05 | 1.90 | 0.85 | 0.75 | 32.8   | 3              | 2           | 0.25          | 0.15          | 0.06          | -                            | 17  |                     |                              |
| NR1032 | 32                      | 30.3                   | 0                  | -0.3  | 2.05 | 1.90 | 0.85 | 0.75 | 34.8   | 3              | 2           | 0.25          | 0.15          | 0.06          | 20                           | -   |                     |                              |
| NR1034 | 34                      | 32.3                   | 0                  | -0.3  | 2.05 | 1.90 | 0.85 | 0.75 | 36.8   | 3              | 2           | 0.25          | 0.15          | 0.06          | 22                           | -   |                     |                              |
| NR1037 | 37                      | 35.3                   | 0                  | -0.3  | 2.05 | 1.90 | 0.85 | 0.75 | 39.8   | 3              | 2           | 0.25          | 0.15          | 0.06          | 25                           | 20  |                     |                              |
| NR1039 | 39                      | 37.3                   | 0                  | -0.3  | 2.05 | 1.90 | 0.85 | 0.75 | 41.8   | 3              | 2           | 0.25          | 0.15          | 0.06          | -                            | 22  |                     |                              |
| NR1040 | 40                      | 38.3                   | 0                  | -0.3  | 2.05 | 1.90 | 0.85 | 0.75 | 42.8   | 3              | 2           | 0.25          | 0.15          | 0.06          | 28                           | -   |                     |                              |
| NR1042 | 42                      | 40.3                   | 0                  | -0.4  | 2.05 | 1.90 | 0.85 | 0.75 | 44.8   | 3              | 2           | 0.25          | 0.15          | 0.06          | 30                           | 25  |                     |                              |
| NR1044 | 44                      | 42.3                   | 0                  | -0.4  | 2.05 | 1.90 | 0.85 | 0.75 | 46.8   | 4              | 2.5         | 0.25          | 0.15          | 0.06          | 32                           | -   |                     |                              |
| NR1045 | 45                      | 43.3                   | 0                  | -0.4  | 2.05 | 1.90 | 0.85 | 0.75 | 47.8   | 4              | 2.5         | 0.25          | 0.15          | 0.06          | -                            | 28  |                     |                              |
| NR1047 | 47                      | 45.3                   | 0                  | -0.4  | 2.05 | 1.90 | 0.85 | 0.75 | 49.8   | 4              | 2.5         | 0.25          | 0.15          | 0.06          | 35                           | 30  |                     |                              |
| NR1052 | 52                      | 50.3                   | 0                  | -0.4  | 2.05 | 1.90 | 0.85 | 0.75 | 54.8   | 4              | 2.5         | 0.25          | 0.15          | 0.06          | 40                           | 32  |                     |                              |
| NR1055 | 55                      | 53.3                   | 0                  | -0.4  | 2.05 | 1.90 | 0.85 | 0.75 | 57.8   | 4              | 2.5         | 0.25          | 0.15          | 0.06          | -                            | 35  |                     |                              |
| NR1058 | 58                      | 56.3                   | 0                  | -0.6  | 2.05 | 1.90 | 0.85 | 0.75 | 60.8   | 4              | 2.5         | 0.25          | 0.15          | 0.06          | 45                           | -   |                     |                              |
| NR1062 | 62                      | 60.2                   | 0                  | -0.6  | 2.05 | 1.90 | 0.85 | 0.75 | 64.8   | 4              | 2.5         | 0.25          | 0.15          | 0.06          | -                            | 40  |                     |                              |
| NR1065 | 65                      | 63.2                   | 0                  | -0.6  | 2.05 | 1.90 | 0.85 | 0.75 | 67.8   | 4              | 2.5         | 0.25          | 0.15          | 0.06          | 50                           | -   |                     |                              |
| NR1068 | 68                      | 66.2                   | 0                  | -0.6  | 2.05 | 1.90 | 0.85 | 0.75 | 70.8   | 5              | 3           | 0.25          | 0.15          | 0.06          | -                            | 45  |                     |                              |
| NR1072 | 72                      | 70.2                   | 0                  | -0.6  | 2.05 | 1.90 | 0.85 | 0.75 | 74.8   | 5              | 3           | 0.25          | 0.15          | 0.06          | 55                           | 50  |                     |                              |
| NR1078 | 78                      | 75.7                   | 0                  | -0.6  | 3.25 | 3.10 | 1.12 | 1.02 | 82.7   | 5              | 3           | 0.4           | 0.3           | 0.06          | 60                           | -   |                     |                              |
| NR1080 | 80                      | 77.4                   | 0                  | -0.6  | 3.25 | 3.10 | 1.12 | 1.02 | 84.4   | 5              | 3           | 0.4           | 0.3           | 0.06          | -                            | 55  |                     |                              |
| NR1085 | 85                      | 82.4                   | 0                  | -0.6  | 3.25 | 3.10 | 1.12 | 1.02 | 89.4   | 5              | 3           | 0.4           | 0.3           | 0.06          | 65                           | 60  |                     |                              |
| NR1090 | 90                      | 87.4                   | 0                  | -0.6  | 3.25 | 3.10 | 1.12 | 1.02 | 94.4   | 5              | 3           | 0.4           | 0.3           | 0.06          | 70                           | 65  |                     |                              |
| NR1095 | 95                      | 92.4                   | 0                  | -0.6  | 3.25 | 3.10 | 1.12 | 1.02 | 99.4   | 5              | 3           | 0.4           | 0.3           | 0.06          | 75                           | -   |                     |                              |
| NR1100 | 100                     | 97.4                   | 0                  | -0.6  | 3.25 | 3.10 | 1.12 | 1.02 | 104.4  | 5              | 3           | 0.4           | 0.3           | 0.06          | 80                           | 70  |                     |                              |
| NR1105 | 105                     | 101.9                  | 0                  | -0.8  | 4.04 | 3.89 | 1.12 | 1.02 | 110.7  | 5              | 3           | 0.4           | 0.3           | 0.06          | -                            | 75  |                     |                              |
| NR1110 | 110                     | 106.9                  | 0                  | -0.8  | 4.04 | 3.89 | 1.12 | 1.02 | 115.7  | 5              | 3           | 0.4           | 0.3           | 0.06          | 85                           | 80  |                     |                              |
| NR1115 | 115                     | 111.9                  | 0                  | -0.8  | 4.04 | 3.89 | 1.12 | 1.02 | 120.7  | 5              | 3           | 0.4           | 0.3           | 0.06          | 90                           | -   |                     |                              |
| NR1120 | 120                     | 116.9                  | 0                  | -0.8  | 4.04 | 3.89 | 1.12 | 1.02 | 125.7  | 7              | 4           | 0.4           | 0.3           | 0.06          | 95                           | 85  |                     |                              |
| NR1125 | 125                     | 121.8                  | 0                  | -0.8  | 4.04 | 3.89 | 1.12 | 1.02 | 130.7  | 7              | 4           | 0.4           | 0.3           | 0.06          | 100                          | 90  |                     |                              |
| NR1130 | 130                     | 126.8                  | 0                  | -0.8  | 4.04 | 3.89 | 1.12 | 1.02 | 135.7  | 7              | 4           | 0.4           | 0.3           | 0.06          | 105                          | 95  |                     |                              |
| NR1140 | 140                     | 136.8                  | 0                  | -1.0  | 4.04 | 3.89 | 1.7  | 1.6  | 145.7  | 7              | 4           | 0.6           | 0.5           | 0.06          | 110                          | 100 |                     |                              |
| NR1145 | 145                     | 141.8                  | 0                  | -1.0  | 4.04 | 3.89 | 1.7  | 1.6  | 150.7  | 7              | 4           | 0.6           | 0.5           | 0.06          | -                            | 105 |                     |                              |
| NR1150 | 150                     | 146.8                  | 0                  | -1.2  | 4.04 | 3.89 | 1.7  | 1.6  | 155.7  | 7              | 4           | 0.6           | 0.5           | 0.06          | 120                          | 110 |                     |                              |
| NR1165 | 165                     | 161                    | 0                  | -1.2  | 4.85 | 4.70 | 1.7  | 1.6  | 171.5  | 7              | 4           | 0.6           | 0.5           | 0.06          | 130                          | 120 |                     |                              |
| NR1175 | 175                     | 171                    | 0                  | -1.2  | 4.85 | 4.70 | 1.7  | 1.6  | 181.5  | 10             | 6           | 0.6           | 0.5           | 0.06          | 140                          | -   |                     |                              |
| NR1180 | 180                     | 176                    | 0                  | -1.2  | 4.85 | 4.70 | 1.7  | 1.6  | 186.5  | 10             | 6           | 0.6           | 0.5           | 0.06          | -                            | 130 |                     |                              |
| NR1190 | 190                     | 186                    | 0                  | -1.4  | 4.85 | 4.70 | 1.7  | 1.6  | 196.5  | 10             | 6           | 0.6           | 0.5           | 0.06          | 150                          | 140 |                     |                              |
| NR1200 | 200                     | 196                    | 0                  | -1.4  | 4.85 | 4.70 | 1.7  | 1.6  | 206.5  | 10             | 6           | 0.6           | 0.5           | 0.06          | 160                          | -   |                     |                              |

1) The snap ring must be fitted inside the groove in the radius direction free from looseness.

# ● Snap Rings and Grooves for Rolling Bearings



## Groove



B (enlarged view)

Unit: mm

| Bearing outside diameter<br>$D$ | Groove diameter |       | Dimension series |      |      |      | Groove width |      | Fillet radius of groove bottom |      |  |
|---------------------------------|-----------------|-------|------------------|------|------|------|--------------|------|--------------------------------|------|--|
|                                 | Max. $D_1$      | Min.  | 18               |      | 19   |      | Max. $b$     | Min. | Max. $r_o$                     | Min. |  |
|                                 |                 |       | Groove position  |      |      |      |              |      |                                |      |  |
|                                 |                 |       |                  |      |      |      |              |      |                                |      |  |
| 22                              | 20.8            | 20.5  | -                | -    | 1.05 | 0.90 | 1.05         | 0.8  | 0.2                            |      |  |
| 24                              | 22.8            | 22.5  | -                | -    | 1.05 | 0.90 | 1.05         | 0.8  | 0.2                            |      |  |
| 28                              | 26.7            | 26.4  | -                | -    | 1.30 | 1.15 | 1.20         | 0.95 | 0.25                           |      |  |
| 30                              | 28.7            | 28.4  | -                | -    | 1.30 | 1.15 | 1.20         | 0.95 | 0.25                           |      |  |
| 32                              | 30.7            | 30.4  | 1.30             | 1.15 | -    | -    | 1.20         | 0.95 | 0.25                           |      |  |
| 34                              | 32.7            | 32.4  | 1.30             | 1.15 | -    | -    | 1.20         | 0.95 | 0.25                           |      |  |
| 37                              | 35.7            | 35.4  | 1.30             | 1.15 | 1.70 | 1.55 | 1.20         | 0.95 | 0.25                           |      |  |
| 39                              | 37.7            | 37.4  | -                | -    | 1.70 | 1.55 | 1.20         | 0.95 | 0.25                           |      |  |
| 40                              | 38.7            | 38.4  | 1.30             | 1.15 | -    | -    | 1.20         | 0.95 | 0.25                           |      |  |
| 42                              | 40.7            | 40.4  | 1.30             | 1.15 | 1.70 | 1.55 | 1.20         | 0.95 | 0.25                           |      |  |
| 44                              | 42.7            | 42.4  | 1.30             | 1.15 | -    | -    | 1.20         | 0.95 | 0.25                           |      |  |
| 45                              | 43.7            | 43.4  | -                | -    | 1.70 | 1.55 | 1.20         | 0.95 | 0.25                           |      |  |
| 47                              | 45.7            | 45.4  | 1.30             | 1.15 | 1.70 | 1.55 | 1.20         | 0.95 | 0.25                           |      |  |
| 52                              | 50.7            | 50.4  | 1.30             | 1.15 | 1.70 | 1.55 | 1.20         | 0.95 | 0.25                           |      |  |
| 55                              | 53.7            | 53.4  | -                | -    | 1.70 | 1.55 | 1.20         | 0.95 | 0.25                           |      |  |
| 58                              | 56.7            | 56.4  | 1.30             | 1.15 | -    | -    | 1.20         | 0.95 | 0.25                           |      |  |
| 62                              | 60.7            | 60.3  | -                | -    | 1.70 | 1.55 | 1.20         | 0.95 | 0.25                           |      |  |
| 65                              | 63.7            | 63.3  | 1.30             | 1.15 | -    | -    | 1.20         | 0.95 | 0.25                           |      |  |
| 68                              | 66.7            | 66.3  | -                | -    | 1.70 | 1.55 | 1.20         | 0.95 | 0.25                           |      |  |
| 72                              | 70.7            | 70.3  | 1.70             | 1.55 | 1.70 | 1.55 | 1.20         | 0.95 | 0.25                           |      |  |
| 78                              | 76.2            | 75.8  | 1.70             | 1.55 | -    | -    | 1.6          | 1.3  | 0.4                            |      |  |
| 80                              | 77.9            | 77.5  | -                | -    | 2.1  | 1.9  | 1.6          | 1.3  | 0.4                            |      |  |
| 85                              | 82.9            | 82.5  | 1.70             | 1.55 | 2.1  | 1.9  | 1.6          | 1.3  | 0.4                            |      |  |
| 90                              | 87.9            | 87.5  | 1.70             | 1.55 | 2.1  | 1.9  | 1.6          | 1.3  | 0.4                            |      |  |
| 95                              | 92.9            | 92.5  | 1.70             | 1.55 | -    | -    | 1.6          | 1.3  | 0.4                            |      |  |
| 100                             | 97.9            | 97.5  | 1.70             | 1.55 | 2.5  | 2.3  | 1.6          | 1.3  | 0.4                            |      |  |
| 105                             | 102.6           | 102.1 | -                | -    | 2.5  | 2.3  | 1.6          | 1.3  | 0.4                            |      |  |
| 110                             | 107.6           | 107.1 | 2.1              | 1.9  | 2.5  | 2.3  | 1.6          | 1.3  | 0.4                            |      |  |
| 115                             | 112.6           | 112.1 | 2.1              | 1.9  | -    | -    | 1.6          | 1.3  | 0.4                            |      |  |
| 120                             | 117.6           | 117.1 | 2.1              | 1.9  | 3.3  | 3.1  | 1.6          | 1.3  | 0.4                            |      |  |
| 125                             | 122.6           | 122.1 | 2.1              | 1.9  | 3.3  | 3.1  | 1.6          | 1.3  | 0.4                            |      |  |
| 130                             | 127.6           | 127.1 | 2.1              | 1.9  | 3.3  | 3.1  | 1.6          | 1.3  | 0.4                            |      |  |
| 140                             | 137.6           | 137.1 | 2.5              | 2.3  | 3.3  | 3.1  | 2.2          | 1.9  | 0.6                            |      |  |
| 145                             | 142.6           | 142.1 | -                | -    | 3.3  | 3.1  | 2.2          | 1.9  | 0.6                            |      |  |
| 150                             | 147.6           | 147.1 | 2.5              | 2.3  | 3.3  | 3.1  | 2.2          | 1.9  | 0.6                            |      |  |
| 165                             | 161.8           | 161.3 | 3.3              | 3.1  | 3.7  | 3.5  | 2.2          | 1.9  | 0.6                            |      |  |
| 175                             | 171.8           | 171.3 | 3.3              | 3.1  | -    | -    | 2.2          | 1.9  | 0.6                            |      |  |
| 180                             | 176.8           | 176.3 | -                | -    | 3.7  | 3.5  | 2.2          | 1.9  | 0.6                            |      |  |
| 190                             | 186.8           | 186.3 | 3.3              | 3.1  | 3.7  | 3.5  | 2.2          | 1.9  | 0.6                            |      |  |
| 200                             | 196.8           | 196.3 | 3.3              | 3.1  | -    | -    | 2.2          | 1.9  | 0.6                            |      |  |

Rolling Bearing Accessories

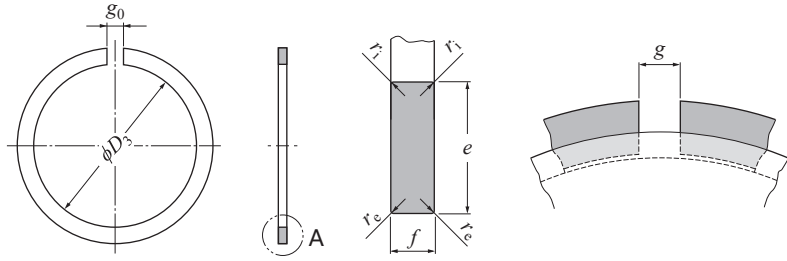
Rolling Bearing Accessories

# ● Snap Rings and Grooves for Rolling Bearings



## Snap rings

For diameter series 0, 2, 3 and 4 bearings



A (enlarged view)

Unit: mm

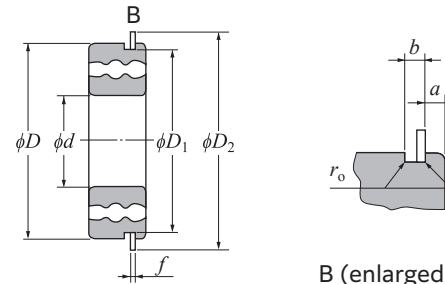
| Number | Bearing outside diameter |                | Snap rings                      |                             |       |                            | Snap ring fitted inside groove <sup>1)</sup> |                           |       |                                    | (Reference)                            |     |                |                |                |     |    |    |   |
|--------|--------------------------|----------------|---------------------------------|-----------------------------|-------|----------------------------|--|---------------------------|-------|------------------------------------|--|-----|----------------|----------------|----------------|-----|----|----|---|
|        | D                        | D <sub>3</sub> | Bore diameter of D <sub>3</sub> | Tolerance of D <sub>3</sub> |       | Snap ring outside diameter |  | Snap ring inside diameter |       | Thickness variation V <sub>f</sub> | Bearing bore diameter dimension series |     |                |                |                |     |    |    |   |
|        |                          |                |                                 | Upper                       | Lower | Max.                       | Min.   | Max.                      | Min.  |                                    | D <sub>2</sub>                         | g   | g <sub>0</sub> | r <sub>i</sub> | r <sub>e</sub> | 0   | 2  | 3  | 4 |
|        |                          |                |                                 |                             |       |                            |  |                           |       |                                    |  |     |                |                |                |     |    |    |   |
| NR30   | 30                       | 27.9           | 0                               | -0.4                        | 3.25  | 3.10                       | 1.12   | 1.02                      | 34.7  | 3                                  | 2                                      | 0.4 | 0.3            | 0.06           | -              | 10  | 9  | 8  |   |
| NR32   | 32                       | 29.9           | 0                               | -0.4                        | 3.25  | 3.10                       | 1.12   | 1.02                      | 36.7  | 3                                  | 2                                      | 0.4 | 0.3            | 0.06           | 15             | 12  | -  | 9  |   |
| NR35   | 35                       | 32.9           | 0                               | -0.4                        | 3.25  | 3.10                       | 1.12   | 1.02                      | 39.7  | 3                                  | 2                                      | 0.4 | 0.3            | 0.06           | 17             | 15  | 10 | -  |   |
| NR37   | 37                       | 34.5           | 0                               | -0.4                        | 3.25  | 3.10                       | 1.12   | 1.02                      | 41.3  | 3                                  | 2                                      | 0.4 | 0.3            | 0.06           | -              | -   | 12 | 10 |   |
| NR40   | 40                       | 37.8           | 0                               | -0.4                        | 3.25  | 3.10                       | 1.12   | 1.02                      | 44.6  | 3                                  | 2                                      | 0.4 | 0.3            | 0.06           | -              | -   | 17 | -  |   |
| NR42   | 42                       | 39.5           | 0                               | -0.5                        | 3.25  | 3.10                       | 1.12   | 1.02                      | 46.3  | 3                                  | 2                                      | 0.4 | 0.3            | 0.06           | 20             | -   | 15 | 12 |   |
| NR44   | 44                       | 41.5           | 0                               | -0.5                        | 3.25  | 3.10                       | 1.12   | 1.02                      | 48.3  | 3                                  | 2                                      | 0.4 | 0.3            | 0.06           | 22             | -   | -  | -  |   |
| NR47   | 47                       | 44.3           | 0                               | -0.5                        | 4.04  | 3.89                       | 1.12   | 1.02                      | 52.7  | 4                                  | 2.5                                    | 0.4 | 0.3            | 0.06           | 25             | 20  | 17 | -  |   |
| NR50   | 50                       | 47.3           | 0                               | -0.5                        | 4.04  | 3.89                       | 1.12   | 1.02                      | 55.7  | 4                                  | 2.5                                    | 0.4 | 0.3            | 0.06           | -              | 22  | -  | -  |   |
| NR52   | 52                       | 49.4           | 0                               | -0.5                        | 4.04  | 3.89                       | 1.12   | 1.02                      | 57.9  | 4                                  | 2.5                                    | 0.4 | 0.3            | 0.06           | 28             | 25  | 20 | 15 |   |
| NR55   | 55                       | 52.3           | 0                               | -0.5                        | 4.04  | 3.89                       | 1.12   | 1.02                      | 60.7  | 4                                  | 2.5                                    | 0.4 | 0.3            | 0.06           | 30             | -   | -  | -  |   |
| NR56   | 56                       | 53.2           | 0                               | -0.6                        | 4.04  | 3.89                       | 1.12   | 1.02                      | 61.7  | 4                                  | 2.5                                    | 0.4 | 0.3            | 0.06           | -              | -   | 22 | -  |   |
| NR58   | 58                       | 55.2           | 0                               | -0.6                        | 4.04  | 3.89                       | 1.12   | 1.02                      | 63.7  | 4                                  | 2.5                                    | 0.4 | 0.3            | 0.06           | 32             | 28  | -  | -  |   |
| NR62   | 62                       | 59.0           | 0                               | -0.6                        | 4.04  | 3.89                       | 1.7  | 1.6                       | 67.7  | 4                                  | 2.5                                    | 0.6 | 0.5            | 0.06           | 35             | 30  | 25 | 17 |   |
| NR65   | 65                       | 62.0           | 0                               | -0.6                        | 4.04  | 3.89                       | 1.7  | 1.6                       | 70.7  | 4                                  | 2.5                                    | 0.6 | 0.5            | 0.06           | -              | 32  | -  | -  |   |
| NR68   | 68                       | 64.2           | 0                               | -0.6                        | 4.85  | 4.70                       | 1.7  | 1.6                       | 74.6  | 5                                  | 3                                      | 0.6 | 0.5            | 0.06           | 40             | -   | 28 | -  |   |
| NR72   | 72                       | 68.2           | 0                               | -0.6                        | 4.85  | 4.70                       | 1.7  | 1.6                       | 78.6  | 5                                  | 3                                      | 0.6 | 0.5            | 0.06           | -              | 35  | 30 | 20 |   |
| NR75   | 75                       | 71.2           | 0                               | -0.6                        | 4.85  | 4.70                       | 1.7  | 1.6                       | 81.6  | 5                                  | 3                                      | 0.6 | 0.5            | 0.06           | 45             | -   | 32 | -  |   |
| NR80   | 80                       | 76.2           | 0                               | -0.6                        | 4.85  | 4.70                       | 1.7  | 1.6                       | 86.6  | 5                                  | 3                                      | 0.6 | 0.5            | 0.06           | 50             | 40  | 35 | 25 |   |
| NR85   | 85                       | 81.2           | 0                               | -0.6                        | 4.85  | 4.70                       | 1.7  | 1.6                       | 91.6  | 5                                  | 3                                      | 0.6 | 0.5            | 0.06           | -              | 45  | -  | -  |   |
| NR90   | 90                       | 86.2           | 0                               | -0.6                        | 4.85  | 4.70                       | 2.46   | 2.36                      | 96.5  | 5                                  | 3                                      | 0.6 | 0.5            | 0.06           | 55             | 50  | 40 | 30 |   |
| NR95   | 95                       | 91.2           | 0                               | -0.6                        | 4.85  | 4.70                       | 2.46   | 2.36                      | 101.6 | 5                                  | 3                                      | 0.6 | 0.5            | 0.06           | 60             | -   | -  | -  |   |
| NR100  | 100                      | 96.2           | 0                               | -0.8                        | 4.85  | 4.70                       | 2.46   | 2.36                      | 106.5 | 5                                  | 3                                      | 0.6 | 0.5            | 0.06           | 65             | 55  | 45 | 35 |   |
| NR110  | 110                      | 106.2          | 0                               | -0.8                        | 4.85  | 4.70                       | 2.46   | 2.36                      | 116.6 | 5                                  | 3                                      | 0.6 | 0.5            | 0.06           | 70             | 60  | 50 | 40 |   |
| NR115  | 115                      | 111.2          | 0                               | -0.8                        | 4.85  | 4.70                       | 2.46   | 2.36                      | 121.6 | 5                                  | 3                                      | 0.6 | 0.5            | 0.06           | 75             | -   | -  | -  |   |
| NR120  | 120                      | 114.6          | 0                               | -0.8                        | 7.21  | 7.06                       | 2.82   | 2.72                      | 129.7 | 7                                  | 4                                      | 0.6 | 0.5            | 0.06           | -              | 65  | 55 | 45 |   |
| NR125  | 125                      | 119.6          | 0                               | -0.8                        | 7.21  | 7.06                       | 2.82   | 2.72                      | 134.7 | 7                                  | 4                                      | 0.6 | 0.5            | 0.06           | 80             | 70  | -  | -  |   |
| NR130  | 130                      | 124.6          | 0                               | -0.8                        | 7.21  | 7.06                       | 2.82   | 2.72                      | 139.7 | 7                                  | 4                                      | 0.6 | 0.5            | 0.06           | 85             | 75  | 60 | 50 |   |
| NR140  | 140                      | 134.6          | 0                               | -1.2                        | 7.21  | 7.06                       | 2.82   | 2.72                      | 149.7 | 7                                  | 4                                      | 0.6 | 0.5            | 0.06           | 90             | 80  | 65 | 55 |   |
| NR145  | 145                      | 139.6          | 0                               | -1.2                        | 7.21  | 7.06                       | 2.82   | 2.72                      | 154.7 | 7                                  | 4                                      | 0.6 | 0.5            | 0.06           | 95             | -   | -  | -  |   |
| NR150  | 150                      | 144.5          | 0                               | -1.2                        | 7.21  | 7.06                       | 2.82   | 2.72                      | 159.7 | 7                                  | 4                                      | 0.6 | 0.5            | 0.06           | 100            | 85  | 70 | 60 |   |
| NR160  | 160                      | 154.5          | 0                               | -1.2                        | 7.21  | 7.06                       | 2.82   | 2.72                      | 169.7 | 7                                  | 4                                      | 0.6 | 0.5            | 0.06           | 105            | 90  | 75 | 65 |   |
| NR170  | 170                      | 162.9          | 0                               | -1.2                        | 9.60  | 9.45                       | 3.1  | 3.0                       | 182.9 | 10                                 | 6                                      | 0.6 | 0.5            | 0.06           | 110            | 95  | 80 | -  |   |
| NR180  | 180                      | 172.8          | 0                               | -1.2                        | 9.60  | 9.45                       | 3.1  | 3.0                       | 192.9 | 10                                 | 6                                      | 0.6 | 0.5            | 0.06           | 120            | 100 | 85 | 70 |   |
| NR190  | 190                      | 182.8          | 0                               | -1.4                        | 9.60  | 9.45                       | 3.1  | 3.0                       | 202.9 | 10                                 | 6                                      | 0.6 | 0.5            | 0.06           | -              | 105 | 90 | 75 |   |
| NR200  | 200                      | 192.8          | 0                               | -1.4                        | 9.60  | 9.45                       | 3.1  | 3.0                       | 212.9 | 10                                 | 6                                      | 0.6 | 0.5            | 0.06           | 130            | 110 | 95 | 80 |   |

1) The snap ring must be fitted inside the groove in the radius direction free from looseness.

# ● Snap Rings and Grooves for Rolling Bearings



## Groove



B (enlarged view)

Unit: mm

| Bearing outside diameter | Groove diameter |                | Dimension series |      |                 |      | Groove width |                | Fillet radius of groove bottom |
|--------------------------|-----------------|----------------|------------------|------|-----------------|------|--------------|----------------|--------------------------------|
|                          | D               | D <sub>1</sub> | 0                |      | 2, 3, 4         |      | b            | r <sub>o</sub> |                                |
|                          |                 |                | Max.             | Min. | Groove position |      |              |                |                                |
|                          |                 |                |                  |      | Max.            | Min. |              |                |                                |
| 30                       | 28.17           | 27.91          | -                | -    | 2.06            | 1.90 | 1.65         | 1.35           | 0.4                            |
| 32                       | 30.15           | 29.90          | 2.06             | 1.90 | 2.06            | 1.90 | 1.65         | 1.35           | 0.4                            |
| 35                       | 33.17           | 32.92          | 2.06             | 1.90 | 2.06            | 1.90 | 1.65         | 1.35           | 0.4                            |
| 37                       | 34.77           | 34.52          | -                | -    | 2.06            | 1.90 | 1.65         | 1.35           | 0.4                            |
| 40                       | 38.10           | 37.85          | -                | -    | 2.06            | 1.90 | 1.65         | 1.35           | 0.4                            |
| 42                       | 39.75           | 39.50          | 2.06             | 1.90 | 2.06            | 1.90 | 1.65         | 1.35           | 0.4                            |
| 44                       | 41.75           | 41.50          | 2.06             | 1.90 | -               | -    | 1.65         | 1.35           | 0.4                            |
| 47                       | 44.60           | 44.35          | 2.06             | 1.90 | 2.46            | 2.31 | 1.65         | 1.35           | 0.4                            |
| 50                       | 47.60           | 47.35          | -                | -    | 2.46            | 2.31 | 1.65         | 1.35           | 0.4                            |
| 52                       | 49.73           | 49.48          | 2.06             | 1.90 | 2.46            | 2.31 | 1.65         | 1.35           | 0.4                            |
| 55                       | 52.60           | 52.35          | 2.08             | 1.88 | -               | -    | 1.65         | 1.35           | 0.4                            |
| 56                       | 53.60           | 53.35          | -                | -    | 2.46            | 2.31 | 1.65         | 1.35           | 0.4                            |
| 58                       | 55.60           | 55.35          | 2.08             | 1.88 | 2.46            | 2.31 | 1.65         | 1.35           | 0.4                            |
| 62                       | 59.61           | 59.11          | 2.08             | 1.88 | 3.28            | 3.07 | 2.2          | 1.9            | 0.6                            |
| 65                       | 62.60           | 62.10          | -                | -    | 3.28            | 3.07 | 2.2          | 1.9            | 0.6                            |
| 68                       | 64.82           | 64.31          | 2.49             | 2.29 | 3.28            | 3.07 | 2.2          | 1.9            | 0.6                            |
| 72                       | 68.81           | 68.30          | -                | -    | 3.28            | 3.07 | 2.2          | 1.9            | 0.6                            |
| 75                       | 71.83           | 71.32          | 2.49             | 2.29 | 3.28            | 3.07 | 2.2          | 1.9            | 0.6                            |
| 80                       | 76.81           | 76.30          | 2.49             | 2.29 | 3.28            | 3.07 | 2.2          | 1.9            | 0.6                            |
| 85                       | 81.81           | 81.31          | -                | -    | 3.28            | 3.07 | 2.2          | 1.9            | 0.6                            |
| 90                       | 86.79           | 86.28          | 2.87             | 2.67 | 3.28            | 3.07 | 3.0          | 2.7            | 0.6                            |
| 95                       | 91.82           | 91.31          | 2.87             | 2.67 | -               | -    | 3.0          | 2.7            | 0.6                            |
| 100                      | 96.80           | 96.29          | 2.87             | 2.67 | 3.28            | 3.07 | 3.0          | 2.7            | 0.6                            |
| 110                      | 106.81          | 106.30         | 2.87             | 2.67 | 3.28            | 3.07 | 3.0          | 2.7            | 0.6                            |
| 115                      | 111.81          | 111.30         | 2.87             | 2.67 | -               | -    | 3.0          | 2.7            | 0.6                            |
| 120                      | 115.21          | 114.71         | -                | -    | 4.06            | 3.86 | 3.4          | 3.1            | 0.6                            |
| 125                      | 120.22          | 119.71         | 2.87             | 2.67 | 4.06            | 3.86 | 3.4          | 3.1            | 0.6                            |
| 130                      | 125.22          | 124.71         | 2.87             | 2.67 | 4.06            | 3.86 | 3.4          | 3.1            | 0.6                            |
| 140                      | 135.23          | 134.72         | 3.71             | 3.45 | 4.90            | 4.65 | 3.4          | 3.1            | 0.6                            |
| 145                      | 140.23          | 139.73         | 3.71             | 3.45 | -               | -    | 3.4          | 3.1            | 0.6                            |
| 150                      | 145.24          | 144.73         | 3.71             | 3.45 | 4.90            | 4.65 | 3.4          | 3.1            | 0.6                            |
| 160                      | 155.22          | 154.71         | 3.71             | 3.45 | 4.90            | 4.65 | 3.4          | 3.1            | 0.6                            |
| 170                      | 163.65          | 163.14         | 3.71             | 3.45 | 5.69            | 5.44 | 3.8          | 3.5            | 0.6                            |
| 180                      | 173.66          | 173.15         | 3.71             | 3.45 | 5.69            | 5.44 | 3.8          | 3.5            | 0.6                            |
| 190                      | 183.64          | 183.13         | -                | -    | 5.69            | 5.44 | 3.8          | 3.5            | 0.6                            |
| 200                      | 193.65          | 193.14         | 5.69             | 5.44 | 5.69            | 5.44 | 3.8          | 3.5            | 0.6                            |