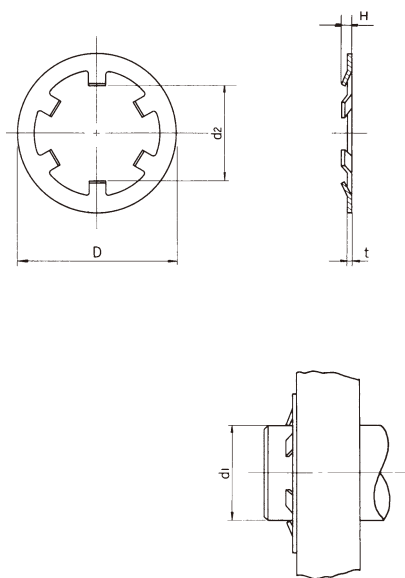


# CA Retaining Rings for Shafts



Unit: mm



| Dimensions Codes | Nominal Diameter | CA Retaining Ring for Shafts Dimensions |            |                 |           |     |      |                 | Thrust Loading $N$ | Applicable Shafts $d_1$ |            |
|------------------|------------------|-----------------------------------------|------------|-----------------|-----------|-----|------|-----------------|--------------------|-------------------------|------------|
|                  |                  | $d_2$                                   |            | D               |           | H   | t    | Number of Teeth |                    | Basic Dimension         | Tolerance  |
|                  |                  | Basic Dimension                         | Tolerance  | Basic Dimension | Tolerance |     |      |                 |                    |                         |            |
| 48015            | 1.5              | 1.4                                     | $\pm 0.05$ | 5.2             | $\pm 0.2$ | 0.6 | 0.25 | 3               | 78                 | 1.5                     | $\pm 0.03$ |
| 48020            | 2                | 1.9                                     |            | 6               |           | 0.6 | 0.25 | 3               | 118                | 2                       |            |
| 48024            | 2.4              | 2.2                                     | $+0.1_0$   | 6.4             |           | 0.7 | 0.25 | 3               | 118                | 2.4                     |            |
| 48030            | 3                | 2.8                                     |            | 8               |           | 0.7 | 0.25 | 4               | 147                | 3                       |            |
| 48040            | 4                | 3.8                                     |            | 9               |           | 0.7 | 0.25 | 4               | 177                | 4                       |            |
| 48050            | 5                | 4.8                                     |            | 10              |           | 0.7 | 0.25 | 5               | 245                | 5                       |            |
| 48060            | 6                | 5.8                                     |            | 11              |           | 0.8 | 0.25 | 5               | 245                | 6                       |            |
| 48080            | 8                | 7.8                                     |            | 13              |           | 0.8 | 0.25 | 5               | 294                | 8                       |            |
| 48100            | 10               | 9.8                                     |            | 15.4            |           | 0.8 | 0.25 | 6               | 294                | 10                      |            |
| 48120            | 12               | 11.8                                    | $\pm 0.3$  | 17.8            | 1.0       | 0.4 | 6    | 343             | 12                 | $\pm 0.05$              |            |
| 48160            | 16               | 15.8                                    |            | 22.8            | 1.0       | 0.4 | 6    | 392             | 16                 |                         |            |
| 48180            | 18               | 17.8                                    |            | 25              | 1.0       | 0.4 | 8    | 392             | 18                 |                         |            |
| 48200            | 20               | 19.8                                    |            | 28              | 1.0       | 0.4 | 8    | 392             | 20                 |                         |            |

Remarks: 1. Thrust loading is measured with SUS304-CSP.  
2. Thrust loading measured using steel shaft with hardness HV300 or less.

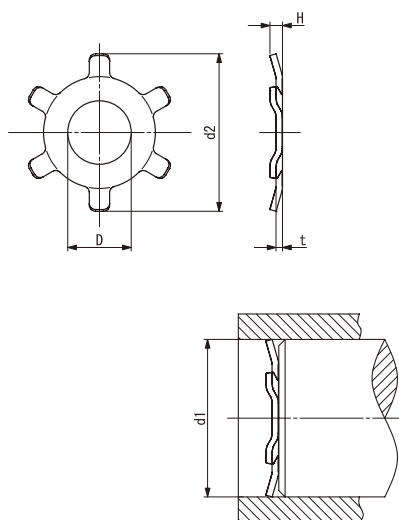
Notes: Customer-specified dimensions and materials are available upon request.

|              |                                       |               |                   |                           |                                                                                                                                          |  |  |  |  |  |  |  |  |  |
|--------------|---------------------------------------|---------------|-------------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|--|--|--|--|
| Product code | 148                                   | Material code | 02...SUS304-CSP   |                           | Part Number Structure (Standardized Product Code)                                                                                        |  |  |  |  |  |  |  |  |  |
|              |                                       |               | 70...Spring Steel |                           |                                                                                                                                          |  |  |  |  |  |  |  |  |  |
| Surface code | 01...Burnished (SUS304-CSP)           |               | Hardness          | HRC37 - 46 (SUS304-CSP)   | <div><div>Product</div><div>Surface</div><div><div>①④⑧</div><div>○ ○ ○ ○ ○ ○ ○ ○ ○ ○</div><div>MaterialDimensions code</div></div></div> |  |  |  |  |  |  |  |  |  |
|              | 05...Phosphate Coating (Spring Steel) |               |                   | HRC45 - 53 (Spring Steel) |                                                                                                                                          |  |  |  |  |  |  |  |  |  |

# CI Retaining Rings for Holes



Unit: mm



| Dimensions Codes | Nominal Diameter | CI Retaining Rings for Holes Dimensions |           |                 |                 |      |   | Applicable Hole Size d <sub>1</sub> |   |
|------------------|------------------|-----------------------------------------|-----------|-----------------|-----------------|------|---|-------------------------------------|---|
|                  |                  | d <sub>2</sub>                          |           | D               |                 | H    | t | Number of Teeth                     |   |
|                  |                  | Basic Dimension                         | Tolerance | Basic Dimension | Basic Dimension |      |   |                                     |   |
| 49050            | 5                | 5.2                                     | +0.1      | 2.0             | 0.7             | 0.25 |   | 6                                   | 5 |
| 49060            | 6                | 6.2                                     |           | 2.5             | 0.7             |      |   | 6                                   | 6 |
| 49080            | 8                | 8.2                                     |           | 3.5             | 0.55            |      |   | 6                                   | 8 |

|              |                |               |                 |                |                                                   |          |   |   |   |         |                 |   |   |   |   |   |   |
|--------------|----------------|---------------|-----------------|----------------|---------------------------------------------------|----------|---|---|---|---------|-----------------|---|---|---|---|---|---|
| Product code | 149            | Material code | 02...SUS304-CSP |                | Part Number Structure (Standardized Product Code) |          |   |   |   |         |                 |   |   |   |   |   |   |
|              |                |               |                 |                | Product                                           |          |   |   |   | Surface |                 |   |   |   |   |   |   |
| Surface code | 01...Burnished |               | Hardness        | HRC<br>37 - 46 |                                                   | ①        | ④ | ⑨ | ⑦ | ②       | ①               | — | ○ | ○ | ○ | ○ | ○ |
|              |                |               |                 |                |                                                   | Material |   |   |   |         | Dimensions code |   |   |   |   |   |   |