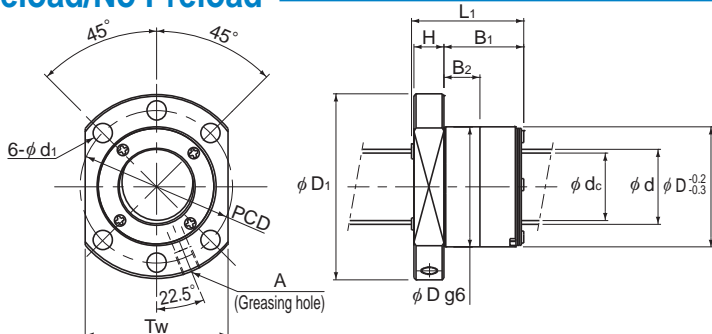


# SDA-V/SDA-VZ With Preload/No Preload

|          |                       |        |
|----------|-----------------------|--------|
| DN value | SDA-V (With Retainer) | 160000 |
|          | SDA-VZ (Full-Ball)    | 130000 |



SDA2806V/3110V/3112V/3116V/3120V/3132V/3205V/3210V

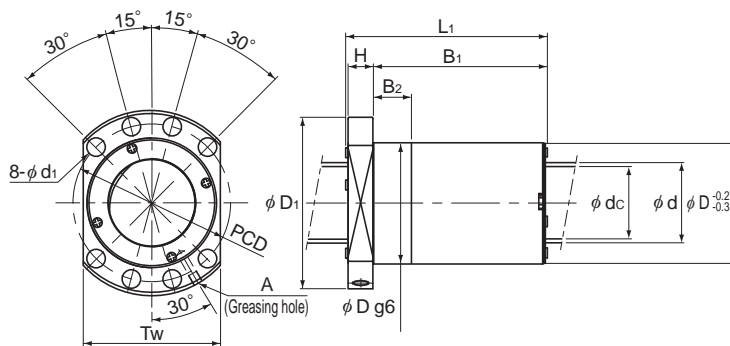
| Model No.   | Screw shaft outer diameter<br>d | Lead<br>Ph | Ball center-to-center diameter<br>dp | Screw shaft Thread minor diameter<br>dc | No. of loaded circuits<br>Rows X turns | Basic load rating     |           |                    |           | Rigidity              |                    |
|-------------|---------------------------------|------------|--------------------------------------|---|--|-----------------------|-----------|--------------------|-----------|-----------------------|--------------------|
|             |                                 |            |                                      |   |  | SDA-V (With Retainer) |           | SDA-VZ (Full-Ball) |           | SDA-V (With Retainer) | SDA-VZ (Full-Ball) |
|             |                                 |            |                                      |   |  | Ca<br>kN              | Coa<br>kN | Ca<br>kN           | Coa<br>kN | K<br>N/μm             | K<br>N/μm          |
| SDA 2806V-5 | 28                              | 6          | 29                                   | 24.9                                    | 1×5                                    | 29.6                  | 54.5      | 28.2               | 57.7      | 462                   | 487                |
| SDA 3110V-5 | 31                              | 10         | 32                                   | 25.4                                    | 1×5                                    | 57.1                  | 94.7      | 54.4               | 99.7      | 529                   | 554                |
| SDA 3112V-5 | 31                              | 12         | 32                                   | 25.4                                    | 1×5                                    | 57                    | 94.7      | 54.3               | 99.9      | 529                   | 555                |
| SDA 3116V-5 | 31                              | 16         | 32                                   | 25.4                                    | 1×5                                    | 56.8                  | 96        | 54.1               | 100.5     | 534                   | 556                |
| SDA 3120V-5 | 31                              | 20         | 32                                   | 25.4                                    | 1×5                                    | 56.6                  | 90.3      | 53.9               | 95.1      | 533                   | 558                |
| SDA 3132V-2 | 31                              | 32         | 32                                   | 25.4                                    | 1×2                                    | 23.2                  | 33.8      | 22.1               | 35.4      | 206                   | 214                |
| SDA 3205V-4 | 32                              | 5          | 32.75                                | 29.1                                    | 1×4                                    | 18.8                  | 38.5      | 17.9               | 41.7      | 388                   | 416                |
| SDA 3210V-5 | 32                              | 10         | 33                                   | 28.9                                    | 1×5                                    | 31.3                  | 62.9      | 29.8               | 66.3      | 517                   | 541                |
| SDA 3610V-5 | 36                              | 10         | 37                                   | 30.4                                    | 1×5                                    | 61.7                  | 110.6     | 58.8               | 116.4     | 598                   | 626                |
| SDA 3612V-5 | 36                              | 12         | 37                                   | 30.4                                    | 1×5                                    | 61.7                  | 110.6     | 58.7               | 116.6     | 598                   | 627                |
| SDA 3616V-5 | 36                              | 16         | 37                                   | 30.4                                    | 1×5                                    | 61.5                  | 111.9     | 58.6               | 117.1     | 603                   | 628                |
| SDA 3620V-5 | 36                              | 20         | 37                                   | 30.4                                    | 1×5                                    | 61.3                  | 105.2     | 58.4               | 110.6     | 602                   | 629                |
| SDA 3636V-2 | 36                              | 36         | 37                                   | 30.4                                    | 1×2                                    | 25.1                  | 39.3      | 23.9               | 41.3      | 232                   | 242                |
| SDA 3810V-5 | 38                              | 10         | 39                                   | 32.4                                    | 1×5                                    | 63.4                  | 117.7     | 60.4               | 123.1     | 629                   | 654                |
| SDA 3812V-5 | 38                              | 12         | 39                                   | 32.4                                    | 1×5                                    | 63.4                  | 117.7     | 60.3               | 123.3     | 628                   | 655                |
| SDA 3816V-5 | 38                              | 16         | 39                                   | 32.4                                    | 1×5                                    | 63.2                  | 117.7     | 60.2               | 123.7     | 627                   | 656                |
| SDA 3820V-5 | 38                              | 20         | 39                                   | 32.4                                    | 1×5                                    | 63                    | 111.9     | 60                 | 116.9     | 632                   | 657                |
| SDA 3825V-4 | 38                              | 25         | 39                                   | 32.4                                    | 1×4                                    | 51.1                  | 87.8      | 48.6               | 92.7      | 500                   | 525                |
| SDA 3830V-3 | 38                              | 30         | 39                                   | 32.4                                    | 1×3                                    | 38.7                  | 64.9      | 36.9               | 68.2      | 373                   | 390                |
| SDA 3840V-2 | 38                              | 40         | 39                                   | 32.4                                    | 1×2                                    | 25.7                  | 42        | 24.4               | 43.9      | 244                   | 253                |

## Model number coding

**SDA3810V Z -5 TT G0 +830L C5**

|   |                 |  |                      |
|---|-----------------|--|----------------------|
| Model No.                                       | Number of turns | Overall screw shaft length (in mm)   | Accuracy symbol (*3) |
| Full-Ball type code (No code for retainer type) |                 |  |                      |
| Contamination protection accessory symbol (*1)  |                 | Axial direction clearance code (*2)<br>(Preloaded products: GO Clearance,<br>Non-preloaded products: GT Clearance) |                      |

(\*1) See **A15-308**. (\*2) See **A15-19**. (\*3) See **A15-12**.



SDA3610V/3612V/3616V/3620V/3636V/3810V/  
3812V/3816V/3820V/3825V/3830V/3840V

Unit: mm

| Nut dimensions |                 |                |    |                |                |     |                |                |               |                         | Screw shaft inertial moment/mm <sup>2</sup> | Nut mass | Shaft mass        | Permissible Rotational Speed |      |
|----------------|-----------------|----------------|----|----------------|----------------|-----|----------------|----------------|---------------|-------------------------|---|----------|-------------------|------------------------------|------|
| Outer diameter | Flange diameter | Overall length | H  | B <sub>1</sub> | B <sub>2</sub> | PCD | d <sub>1</sub> | T <sub>w</sub> | Greasing hole | kg•m <sup>2</sup> /mm   |   |          |                   | kg                           | kg/m |
| D              | D <sub>1</sub>  | L <sub>1</sub> | H  | B <sub>1</sub> | B <sub>2</sub> | PCD | d <sub>1</sub> | T <sub>w</sub> | A             | kg•m <sup>2</sup> /mm   | kg  | kg/m     | min <sup>-1</sup> | min <sup>-1</sup>            |      |
| 46             | 80              | 42             | 12 | 30             | 10             | 65  | 9              | 62             | M6            | 4.74 × 10 <sup>-7</sup> | 0.49  | 4.37     | 5000              | 4480                         |      |
| 56             | 86              | 65             | 14 | 50             | 20             | 71  | 9              | 65             | M6            | 7.07 × 10 <sup>-7</sup> | 0.96  | 5.02     | 5000              | 4060                         |      |
| 56             | 86              | 74             | 14 | 59             | 20             | 71  | 9              | 65             | M6            | 7.07 × 10 <sup>-7</sup> | 1.08  | 5.17     | 5000              | 4060                         |      |
| 56             | 86              | 93             | 14 | 78             | 20             | 71  | 9              | 65             | M6            | 7.07 × 10 <sup>-7</sup> | 1.31  | 5.36     | 5000              | 4060                         |      |
| 56             | 86              | 112            | 14 | 97             | 20             | 71  | 9              | 65             | M6            | 7.07 × 10 <sup>-7</sup> | 1.54  | 5.47     | 5000              | 4060                         |      |
| 56             | 86              | 73             | 14 | 58             | 20             | 71  | 9              | 65             | M6            | 7.07 × 10 <sup>-7</sup> | 1.04  | 5.63     | 5000              | 4060                         |      |
| 50             | 80              | 32             | 12 | 20             | 16.5           | 65  | 9              | 62             | M6            | 8.08 × 10 <sup>-3</sup> | 0.41  | 5.89     | 4880              | 3960                         |      |
| 50             | 80              | 61             | 12 | 49             | 10             | 65  | 9              | 62             | M6            | 8.08 × 10 <sup>-7</sup> | 0.64  | 6.00     | 4840              | 3960                         |      |
| 61             | 91              | 65             | 14 | 50             | 20             | 76  | 9              | 68             | M8            | 1.29 × 10 <sup>-6</sup> | 1.06  | 6.93     | 4320              | 3510                         |      |
| 61             | 91              | 74             | 14 | 59             | 20             | 76  | 9              | 68             | M8            | 1.29 × 10 <sup>-6</sup> | 1.19  | 7.11     | 4320              | 3510                         |      |
| 61             | 91              | 93             | 14 | 78             | 20             | 76  | 9              | 68             | M8            | 1.29 × 10 <sup>-6</sup> | 1.45  | 7.34     | 4320              | 3510                         |      |
| 61             | 91              | 112            | 14 | 97             | 20             | 76  | 9              | 68             | M8            | 1.29 × 10 <sup>-6</sup> | 1.7   | 7.47     | 4320              | 3510                         |      |
| 61             | 91              | 81             | 14 | 66             | 20             | 76  | 9              | 68             | M8            | 1.29 × 10 <sup>-6</sup> | 1.24  | 7.69     | 4320              | 3510                         |      |
| 63             | 93              | 65             | 14 | 50             | 20             | 78  | 9              | 70             | M8            | 1.60 × 10 <sup>-6</sup> | 1.1   | 7.79     | 4100              | 3330                         |      |
| 63             | 93              | 74             | 14 | 59             | 20             | 78  | 9              | 70             | M8            | 1.60 × 10 <sup>-6</sup> | 1.23  | 7.97     | 4100              | 3330                         |      |
| 63             | 93              | 93             | 14 | 78             | 20             | 78  | 9              | 70             | M8            | 1.60 × 10 <sup>-6</sup> | 1.5   | 8.21     | 4100              | 3330                         |      |
| 63             | 93              | 112            | 14 | 97             | 20             | 78  | 9              | 70             | M8            | 1.60 × 10 <sup>-6</sup> | 1.77  | 8.35     | 4100              | 3330                         |      |
| 63             | 93              | 111            | 14 | 96             | 20             | 78  | 9              | 70             | M8            | 1.60 × 10 <sup>-6</sup> | 1.73  | 8.45     | 4100              | 3330                         |      |
| 63             | 93              | 100            | 14 | 85             | 20             | 78  | 9              | 70             | M8            | 1.60 × 10 <sup>-6</sup> | 1.56  | 8.53     | 4100              | 3330                         |      |
| 63             | 93              | 87             | 14 | 72             | 20             | 78  | 9              | 70             | M8            | 1.60 × 10 <sup>-6</sup> | 1.38  | 8.62     | 4100              | 3330                         |      |

Axial Clearance

Unit: mm

| Clearance symbol | G0        | GT         |
|------------------|-----------|------------|
| Axial Clearance  | 0 or less | 0 to 0.005 |

Note) The overall length of the nut will increase when equipping the QZ lubricating device. See **A15-318** for further details. It is not possible to chamfer both ends of the screw shaft. When designing your system this way, contact THK.

The rigidity values (K) in the table represent spring constants, each obtained from the load and the elastic deformation under an axial load equal to 30% of the basic axial dynamic load rating (Ca). These values do not include the rigidity of the components related to mounting the ball screw nut. Therefore, it is normally appropriate to regard roughly 80% of the rigidity value (K) in the table as the actual value. If the axial load (Fa) is not 0.3 Ca, the rigidity value (K<sub>n</sub>) is obtained from the following equation.

$$K_n = K \left( \frac{F_a}{0.3 C_a} \right)^3$$

K: Rigidity value in the dimensional table.