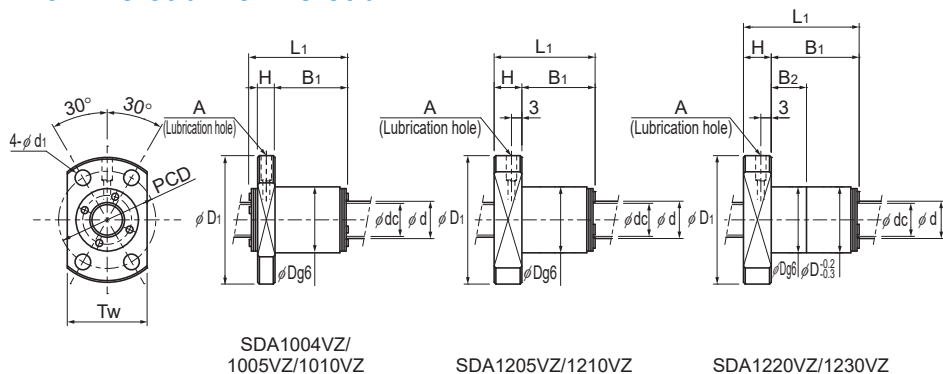


SDA-V/SDA-VZ With Preload/No Preload

| | | |
|----------|--------------------|--------|
| DN value | SDA-V (Caged Ball) | 160000 |
| | SDA-VZ (Full-Ball) | 100000 |



| Model No. | Screw shaft outer diameter | Lead | Ball center-to-center diameter | Screw shaft thread minor diameter | No. of loaded circuits | Basic load rating | | | | Rigidity | |
|----------------|----------------------------|------|--------------------------------|-----------------------------------|------------------------|--------------------|-----------------|--------------------|-----------------|--------------------|--------------------|
| | | | | | | SDA-V (Caged Ball) | | SDA-VZ (Full-Ball) | | SDA-V (Caged Ball) | SDA-VZ (Full-Ball) |
| | | | | | | Ca | C _{0a} | Ca | C _{0a} | K | K |
| | d | Ph | dp | dc | Rows X turns | kN | kN | kN | kN | N/μm | N/μm |
| * SDA 1004VZ-4 | 10 | 4 | 10.4 | 8.77 | 1×4 | — | — | 3.54 | 5.42 | — | 143 |
| * SDA 1005VZ-4 | 10 | 5 | 10.4 | 8.77 | 1×4 | — | — | 3.53 | 5.44 | — | 143 |
| * SDA 1010VZ-3 | 10 | 10 | 10.4 | 8.77 | 1×3 | — | — | 2.63 | 3.86 | — | 108 |
| * SDA 1205VZ-3 | 12 | 5 | 12.5 | 10.1 | 1×3 | — | — | 4.99 | 7.02 | — | 128 |
| * SDA 1210VZ-2 | 12 | 10 | 12.5 | 10.1 | 1×2 | — | — | 3.31 | 4.25 | — | 83 |
| * SDA 1220VZ-2 | 12 | 20 | 12.5 | 10.1 | 1×2 | — | — | 3.13 | 4.63 | — | 87 |
| * SDA 1230VZ-2 | 12 | 30 | 12.5 | 10.1 | 1×2 | — | — | 2.92 | 4.14 | — | 91 |
| SDA 1405V-4 | 14 | 5 | 14.5 | 12.1 | 1×4 | 7.4 | 10.1 | 7.1 | 11.3 | 178 | 196 |
| SDA 1505V-3 | 15 | 5 | 15.5 | 13.1 | 1×3 | 5.9 | 7.9 | 5.6 | 8.8 | 140 | 153 |
| SDA 1510V-3 | 15 | 10 | 15.5 | 13.1 | 1×3 | 5.8 | 7.6 | 5.5 | 8.4 | 141 | 154 |
| SDA 1520V-4 | 15 | 20 | 15.5 | 13.1 | 2×2 | 6.8 | 10.1 | 6.5 | 11.2 | 181 | 198 |
| SDA 1530V-4 | 15 | 30 | 15.5 | 13.1 | 2×2 | 6.5 | 8.8 | 6.2 | 9.7 | 188 | 205 |
| SDA 1605V-3 | 16 | 5 | 16.5 | 14.1 | 1×3 | 6 | 8.4 | 5.8 | 9.4 | 147 | 162 |
| SDA 1610V-3 | 16 | 10 | 16.5 | 14.1 | 1×3 | 6 | 8.1 | 5.7 | 9 | 148 | 163 |
| SDA 1616V-3 | 16 | 16 | 16.5 | 14.1 | 1×3 | 5.9 | 8.4 | 5.6 | 9.2 | 151 | 165 |

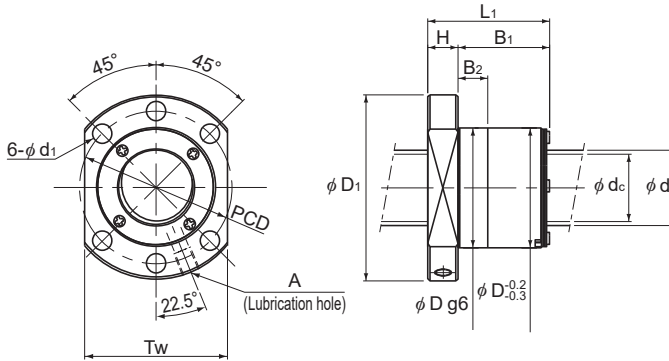
Note) Models marked with an asterisk (*) in the dimension table are only compatible with Model SDA-VZ (full-ball type).

Model number coding

SDA1510V Z -3 TT G0 +600L C5

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

(*1) See **A15-334**. (*2) See **A15-19**. (*3) See **A15-12**.



SDA14V to 16V

Unit: mm

| Nut dimensions | | | | | | | | | | | Screw shaft inertial moment/mm ² | Nut mass | Shaft mass | Permissible rotational speed | |
|----------------|-----------------|----------------|----|----------------|----------------|-----|----------------|----------------|------------------|-------------------------|---|----------|-------------------|------------------------------|------|
| Outer diameter | Flange diameter | Overall length | H | B ₁ | B ₂ | PCD | d ₁ | T _w | Lubrication hole | kg·m ² /mm | | | | kg | kg/m |
| D | D ₁ | L ₁ | H | B ₁ | B ₂ | PCD | d ₁ | T _w | A | kg·m ² /mm | kg | kg/m | min ⁻¹ | min ⁻¹ | |
| 19 | 36 | 24 | 6 | 16 | — | 28 | 4.5 | 23 | φ 3 | 7.71 × 10 ⁻⁹ | 0.047 | 0.577 | — | 5000 | |
| 19 | 36 | 28 | 6 | 20 | — | 28 | 4.5 | 23 | φ 3 | 7.71 × 10 ⁻⁹ | 0.052 | 0.585 | — | 5000 | |
| 19 | 36 | 37 | 6 | 29 | — | 28 | 4.5 | 23 | φ 3 | 7.71 × 10 ⁻⁹ | 0.066 | 0.6 | — | 5000 | |
| 24 | 40 | 25 | 8 | 17 | — | 32 | 4.5 | 26 | φ 3 | 1.60 × 10 ⁻⁸ | 0.073 | 0.796 | — | 5000 | |
| 24 | 40 | 29 | 8 | 21 | — | 32 | 4.5 | 26 | φ 3 | 1.60 × 10 ⁻⁸ | 0.082 | 0.841 | — | 5000 | |
| 24 | 40 | 47 | 8 | 39 | 20 | 32 | 4.5 | 26 | φ 3 | 1.60 × 10 ⁻⁸ | 0.126 | 0.863 | — | 5000 | |
| 24 | 40 | 65 | 8 | 57 | 20 | 32 | 4.5 | 26 | φ 3 | 1.60 × 10 ⁻⁸ | 0.172 | 0.869 | — | 5000 | |
| 26 | 48 | 30 | 10 | 20 | 10 | 38 | 5.5 | 40 | M6 | 2.96 × 10 ⁻⁸ | 0.14 | 1.1 | 5000 | 5000 | |
| 28 | 48 | 25 | 10 | 15 | 12.5 | 38 | 5.5 | 40 | M6 | 3.90 × 10 ⁻⁸ | 0.13 | 1.27 | 5000 | 5000 | |
| 28 | 48 | 38 | 10 | 28 | 25.5 | 38 | 5.5 | 40 | M6 | 3.90 × 10 ⁻⁸ | 0.17 | 1.33 | 5000 | 5000 | |
| 28 | 48 | 46 | 10 | 36 | 20 | 38 | 5.5 | 40 | M6 | 3.90 × 10 ⁻⁸ | 0.19 | 1.33 | 5000 | 5000 | |
| 28 | 48 | 65 | 10 | 55 | 20 | 38 | 5.5 | 40 | M6 | 3.90 × 10 ⁻⁸ | 0.25 | 1.34 | 5000 | 5000 | |
| 28 | 48 | 25 | 10 | 15 | 12.5 | 38 | 5.5 | 40 | M6 | 5.05 × 10 ⁻⁸ | 0.13 | 1.46 | 5000 | 5000 | |
| 28 | 48 | 39 | 10 | 29 | 26.5 | 38 | 5.5 | 40 | M6 | 5.05 × 10 ⁻⁸ | 0.16 | 1.52 | 5000 | 5000 | |
| 28 | 48 | 56 | 10 | 46 | 20 | 38 | 5.5 | 40 | M6 | 5.05 × 10 ⁻⁸ | 0.21 | 1.54 | 5000 | 5000 | |

Axial Clearance

Unit: mm

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

Note) See **A15-19** for the axial direction clearance for models SDA1205VZ to SDA1230VZ.

The overall length of the nut will increase when equipping the QZ lubricating device. See **A15-344** 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_n) is obtained from the following equation.

$$K_n = K \left(\frac{Fa}{0.3Ca} \right)^{\frac{1}{3}}$$

K: Rigidity value in the dimensional table