

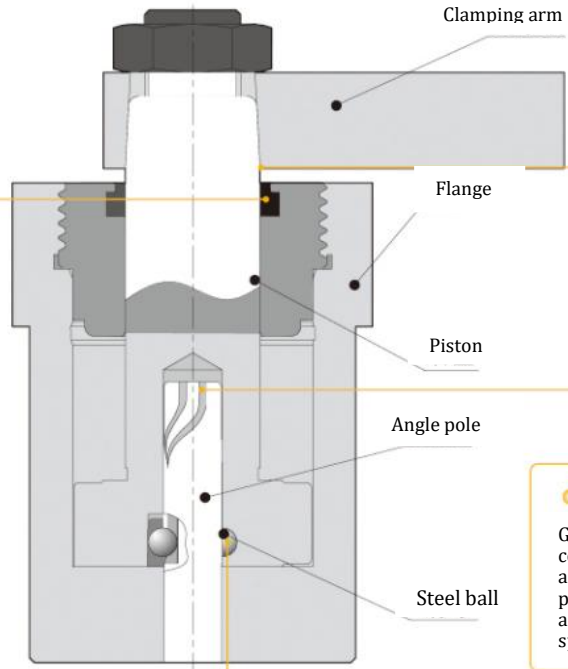
YZG-SG/ oil pressure upper flange piping swing clamp cylinder

|                         |
|-------------------------|
| Pressure Range          |
| 15-70kg/cm <sup>2</sup> |



**High quality seals**  
 High quality seals are used to effectively prevent coolant and chips from entering the cylinder block.

**High precision taper fit**  
 The taper fit is adopted between the clamping arm and the piston, which not only facilitates disassembly, but also ensures the positioning accuracy, and you can freely adjust the angle of the clamping arm to meet your requirements.



**Gothic cam groove**  
 Gothic cam groove with large contact surface with steel ball is adopted to effectively reduce the pressure on the contact surface and rotate continuously at high speed with high frequency.

**Point steel ball support**  
 Three-point steel ball support mechanism is adopted to realize stable high-speed rotation.

The figure shows the sectional view of the YZG-SG clamping state

Model Representation

YZG-SG ① ② ③ ★ ④ (Example: YZG-SG25SR\*90)

|        |   |                                  |  |  |
|--------|---|----------------------------------|--|--|
| YZG-SG | ① Dimensions (refer to specification sheet) | ② Clamping arm                   | ③ Rotation direction (during clamping) | ④ Rotation angle   |
|        | 25<br>32<br>40<br>50<br>63                  | S: single side<br>D: double side | L: turn left<br>R: turn right          | 0: Rotation angle 0°<br>45: Rotation angle 45°<br>60: Rotation angle 60°<br>90: Rotation angle 90° |

(The above is the standard model and the extended stroke type is expressed as: "YZG-SG①②③④C")

Piping Method

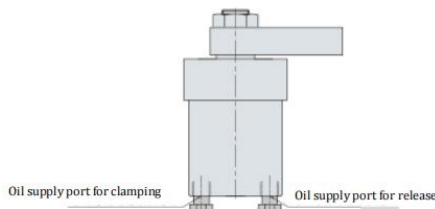
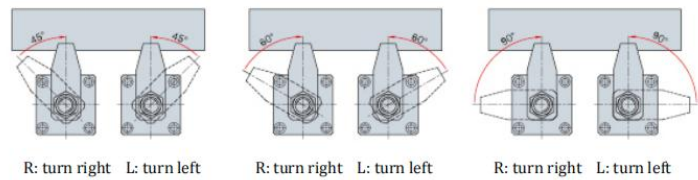


Plate type (no plate type interface)  
The figure shows the clamping state of YZG-SG

Rotation Angle (When Clamped)

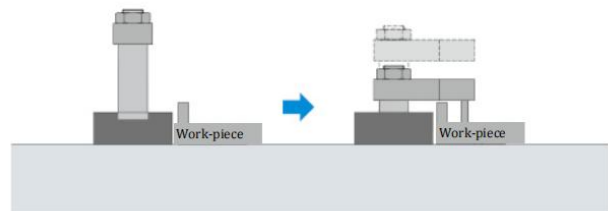


Product Type

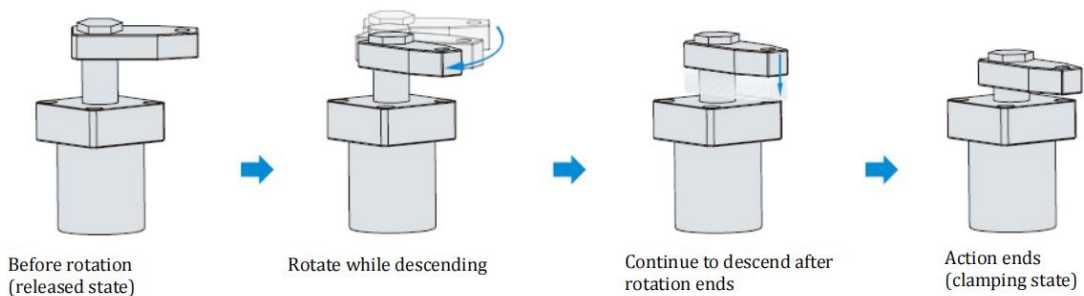
Standard type



Extended stroke type



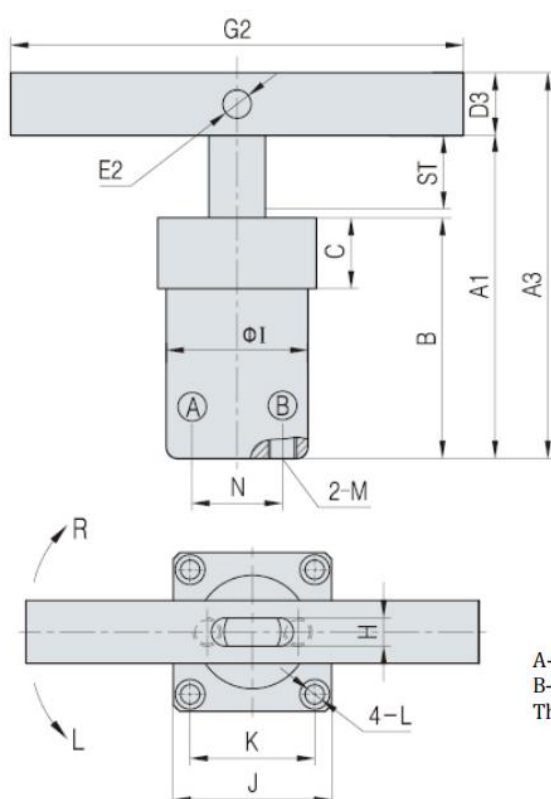
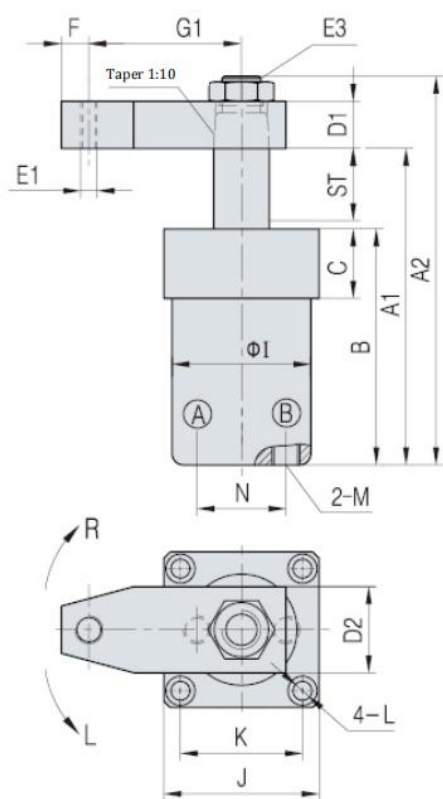
Action Description



Overall Dimension

Single-sided clamping arm SG

Double-sided clamping arm SGD



A-clamping hole  
B-release hole  
The figure shows the released state

| Model             | YZG-SG25        | YZG-SG32            | YZG-SG40            | YZG-SG50            | YZG-SG63            |
|-------------------|-----------------|---------------------|---------------------|---------------------|---------------------|
| ST:Swing/clamping | 22(9/13)        | 26(11/15) 41(11/30) | 26(11/15) 41(11/30) | 30(13/17) 47(13/34) | 30(13/17) 47(13/34) |
| A1                | 101             | 115 145             | 120 150             | 134 168             | 139 173             |
| A2                | (125)           | (140) (170)         | (149) (179)         | (167) (201)         | (178) (212)         |
| A3                | 120             | 137.2 167.2         | 142.2 172.2         | 159.4 193.4         | 170.8 204.8         |
| B                 | 76              | 85 100              | 90 105              | 100 117             | 105 122             |
| C                 | 22              | 25                  | 25                  | 30                  | 30                  |
| D1                | 15              | 17                  | 18                  | 20                  | 23                  |
| D2                | 27              | 31                  | 31                  | 37                  | 48                  |
| D3                | □19             | □22.2               | □22.2               | □25.4               | □31.8               |
| E1                | M10*1.5         | M10*1.5             | M10*1.5             | M12*1.75            | M16*2               |
| E2                | ϕ8              | ϕ8                  | ϕ10                 | ϕ12                 | ϕ15                 |
| E3                | M14*1.5         | M16*1.5             | M18*1.5             | M20*1.5             | M27*1.5             |
| F                 | 10              | 10                  | 10                  | 12                  | 15                  |
| G1                | 50              | 55                  | 60                  | 65                  | 75                  |
| G2                | 140             | 160                 | 160                 | 180                 | 200                 |
| H                 | 9               | 10                  | 10                  | 12                  | 15                  |
| ϕI                | ϕ45             | ϕ50                 | ϕ58                 | ϕ68                 | ϕ80                 |
| J                 | 53              | 57                  | 69                  | 75                  | 90                  |
| K                 | 40              | 44                  | 52                  | 58                  | 70                  |
| L                 | ϕ6.8-ϕ10.5*6.5D | ϕ6.8-ϕ10.5*7D       | ϕ9-ϕ14*9D           | ϕ9-ϕ14*9D           | ϕ11-ϕ18*11D         |
| M                 | RP1/4           | RP1/4               | RP1/4               | RP1/4               | RP1/4               |
| N                 | 28              | 33                  | 40                  | 50                  | 63                  |

Note: □ indicates square

Performance Table

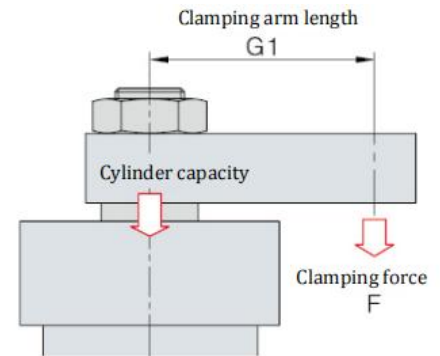
The clamping force varies depending on the length of the clamping arm (G1) and the oil pressure. Please comprehensively consider the clamping arm length (G1), operating oil pressure, installation size and other factors to select the appropriate swing clamp cylinder model.

Note: the longer the clamping arm of the swing clamp cylinder, the greater the force acting on the cam mechanism. Do not use a clamping arm longer than the maximum length (Max.G1)

Interpretation of clamping force

When YZG-SG32 is used, the supplied oil pressure is 5.0MPa and the clamping arm length is 65mm, the clamping force is about 1.7kN.

F: clamping force (KN) P: operating oil pressure (MPa) G1: clamping arm length (mm)



| YZG-SG25           |                        |                             |     |     |
|--------------------|------------------------|-----------------------------|-----|-----|
| Oil pressure (MPa) | Cylinder capacity (kN) | Clamping force (kN)         |     |     |
|                    |                        | Clamping arm length G1 (mm) |     |     |
|                    |                        | 50                          | 60  | 70  |
| 7.0                | 1.7                    | 1.3                         | 1.2 | 1.1 |
| 6.5                | 1.5                    | 1.1                         | 1.1 | 1.0 |
| 6.0                | 1.4                    | 1.1                         | 1.0 | 0.9 |
| 5.5                | 1.3                    | 1.0                         | 0.9 | 0.9 |
| 5.0                | 1.2                    | 0.9                         | 0.9 | 0.8 |
| 4.5                | 1.1                    | 0.8                         | 0.8 | 0.7 |
| 4.0                | 0.9                    | 0.7                         | 0.6 | 0.6 |
| 3.5                | 0.8                    | 0.6                         | 0.6 | 0.5 |
| 3.0                | 0.7                    | 0.5                         | 0.5 | 0.5 |
| 2.5                | 0.6                    | 0.5                         | 0.4 | 0.4 |
| 2.0                | 0.5                    | 0.4                         | 0.4 | 0.3 |
| 1.5                | 0.4                    | 0.3                         | 0.3 | 0.3 |

| YZG-SG32           |                        |                             |     |     |     |
|--------------------|------------------------|-----------------------------|-----|-----|-----|
| Oil pressure (MPa) | Cylinder capacity (kN) | Clamping force (kN)         |     |     |     |
|                    |                        | Clamping arm length G1 (mm) |     |     |     |
|                    |                        | 55                          | 65  | 75  | 85  |
| 7.0                | 3.4                    | 2.6                         | 2.5 | 2.5 | 2.4 |
| 6.5                | 3.2                    | 2.3                         | 2.3 | 2.3 | 2.2 |
| 6.0                | 2.9                    | 2.2                         | 2.1 | 2.0 | 1.9 |
| 5.5                | 2.7                    | 2.0                         | 1.9 | 1.9 | 1.8 |
| 5.0                | 2.4                    | 1.8                         | 1.7 | 1.6 | 1.6 |
| 4.5                | 2.2                    | 1.6                         | 1.5 | 1.5 | 1.4 |
| 4.0                | 2.0                    | 1.5                         | 1.4 | 1.4 | 1.3 |
| 3.5                | 1.7                    | 1.2                         | 1.2 | 1.2 | 1.1 |
| 3.0                | 1.5                    | 1.0                         | 1.0 | 1.0 | 0.9 |
| 2.5                | 1.2                    | 0.8                         | 0.8 | 0.8 | 0.7 |
| 2.0                | 1.0                    | 0.6                         | 0.6 | 0.6 | 0.5 |
| 1.5                | 0.7                    | 0.4                         | 0.4 | 0.4 | 0.4 |

| YZG-SG40           |                        |                             |     |     |     |
|--------------------|------------------------|-----------------------------|-----|-----|-----|
| Oil pressure (MPa) | Cylinder capacity (kN) | Clamping force (kN)         |     |     |     |
|                    |                        | Clamping arm length G1 (mm) |     |     |     |
|                    |                        | 60                          | 70  | 80  | 90  |
| 7.0                | 6.0                    | 4.4                         | 4.3 | 4.1 | 4.0 |
| 6.5                | 5.6                    | 4.1                         | 4.1 | 4.0 | 3.7 |
| 6.0                | 5.2                    | 3.8                         | 3.7 | 3.6 | 3.4 |
| 5.5                | 4.7                    | 3.5                         | 3.4 | 3.3 | 3.1 |
| 5.0                | 4.3                    | 3.1                         | 3.1 | 3.0 | 2.8 |
| 4.5                | 3.9                    | 2.8                         | 2.7 | 2.7 | 2.5 |
| 4.0                | 3.5                    | 2.5                         | 2.4 | 2.4 | 2.2 |
| 3.5                | 3.0                    | 2.2                         | 2.1 | 2.0 | 1.9 |
| 3.0                | 2.6                    | 1.8                         | 1.7 | 1.7 | 1.6 |
| 2.5                | 2.2                    | 1.5                         | 1.4 | 1.4 | 1.3 |
| 2.0                | 1.7                    | 1.2                         | 1.1 | 1.0 | 1.0 |
| 1.5                | 1.3                    | 0.8                         | 0.8 | 0.7 | 0.7 |

| YZG-SG50           |                        |                             |     |     |     |
|--------------------|------------------------|-----------------------------|-----|-----|-----|
| Oil pressure (MPa) | Cylinder capacity (kN) | Clamping force (kN)         |     |     |     |
|                    |                        | Clamping arm length G1 (mm) |     |     |     |
|                    |                        | 65                          | 75  | 85  | 95  |
| 7.0                | 9.4                    | 7.1                         | 6.8 |     |     |
| 6.5                | 8.8                    | 6.8                         | 6.3 | 5.4 |     |
| 6.0                | 8.1                    | 6.0                         | 5.6 | 5.3 |     |
| 5.5                | 7.4                    | 5.5                         | 5.3 | 5.1 | 4.3 |
| 5.0                | 6.7                    | 5.0                         | 4.8 | 4.7 | 4.2 |
| 4.5                | 6.1                    | 4.4                         | 4.3 | 4.3 | 4.0 |
| 4.0                | 5.4                    | 3.9                         | 3.9 | 3.7 | 3.6 |
| 3.5                | 4.7                    | 3.3                         | 3.4 | 3.3 | 3.0 |
| 3.0                | 4.0                    | 2.8                         | 2.8 | 2.7 | 2.7 |
| 2.5                | 3.4                    | 2.3                         | 2.3 | 2.2 | 2.1 |
| 2.0                | 2.7                    | 1.7                         | 1.8 | 1.8 | 1.6 |
| 1.5                | 2.0                    | 1.1                         | 1.3 | 1.3 | 1.1 |

| YZG-SG63           |                        |                             |     |     |     |
|--------------------|------------------------|-----------------------------|-----|-----|-----|
| Oil pressure (MPa) | Cylinder capacity (kN) | Clamping force (kN)         |     |     |     |
|                    |                        | Clamping arm length G1 (mm) |     |     |     |
|                    |                        | 75                          | 90  | 100 | 110 |
| 7.0                | 15.1                   | 9.6                         | 9.1 | 6.3 |     |
| 6.5                | 14.0                   | 9.3                         | 8.9 | 6.2 | 5.8 |
| 6.0                | 12.9                   | 8.8                         | 8.3 | 6.0 | 5.4 |
| 5.5                | 11.8                   | 8.1                         | 7.5 | 5.9 | 4.9 |
| 5.0                | 10.8                   | 7.4                         | 7.0 | 5.8 | 4.7 |
| 4.5                | 9.7                    | 6.6                         | 6.2 | 5.6 | 4.4 |
| 4.0                | 8.6                    | 5.9                         | 5.5 | 5.3 | 4.3 |
| 3.5                | 7.5                    | 5.1                         | 4.7 | 4.6 | 4.2 |
| 3.0                | 6.5                    | 4.4                         | 4.1 | 3.8 | 3.6 |
| 2.5                | 5.4                    | 3.5                         | 3.4 | 3.1 | 2.9 |
| 2.0                | 4.3                    | 2.6                         | 2.5 | 2.3 | 2.4 |
| 1.5                | 3.2                    | 1.9                         | 1.7 | 1.5 | 1.5 |

\*Precautions:

1. This figure shows the actual measured values. The clamping force at the clamping point of the clamping arm of the standard cylinder is about 65% of the theoretical value.
2. The clamping arm with a large moment of inertia may not be able to rotate due to the supplied oil pressure, flow rate, and installation state of the clamping arm.
3. This figure shows the relationship between clamping force and supplied oil pressure.
4. The clamping force indicates the clamping energy when the clamping arm is clamped at the horizontal position.
5. The clamping force varies with the length of the clamping arm. Use it with the supplied oil pressure suitable for the length of the clamping arm.
6. If you need a clamping arm other than our standard, please contact us.

Adjustment of Rotation Speed

1. Please use the flow control valve to adjust the rotation speed so that the relationship between the inertia torque of the clamping arm and the time required to rotate 90° is located below the line “—” of the curve. The time required to rotate 90° does not include the time of clamping stroke (vertical action).

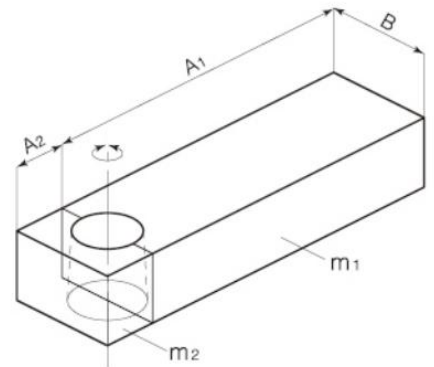
2. If a 90° rotation time shorter than the line “—” is selected, the fault will be caused by the overload of the cylinder and piston.

Calculation example of inertia torque:

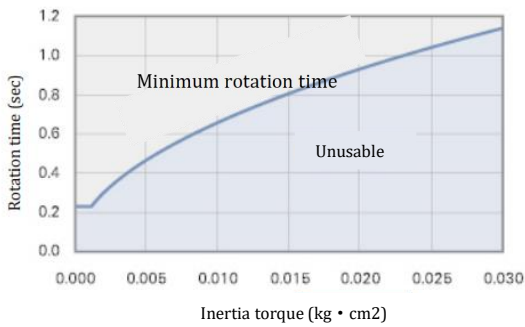
$$I = \frac{1}{12}m_1(4A_1^2+B^2) + \frac{1}{12}m_2(4A_2^2+B^2)$$

I: Inertia torque (kg • m<sup>2</sup>)

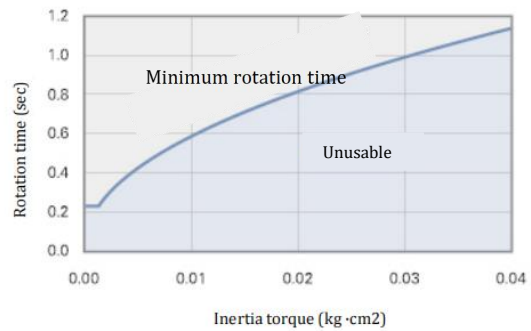
m: Mass (kg)



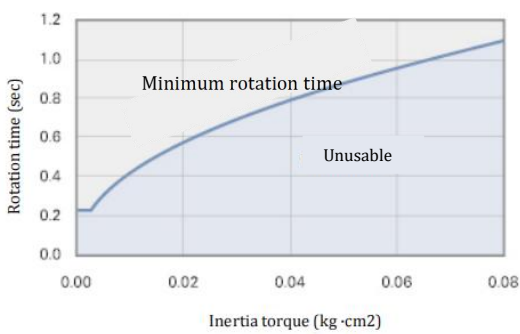
YZG-SG25



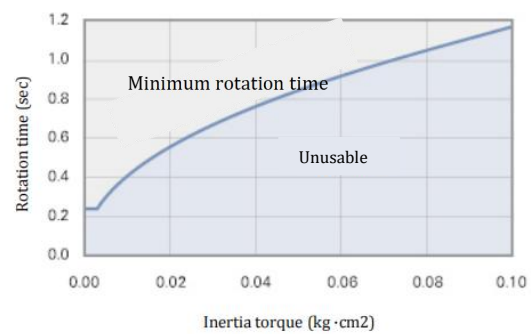
YZG-SG32



YZG-SG40



YZG-SG50



YZG-SG63

