YZG-XB/BT/ oil pressure lower flange plate or speed control swing clamp cylinder

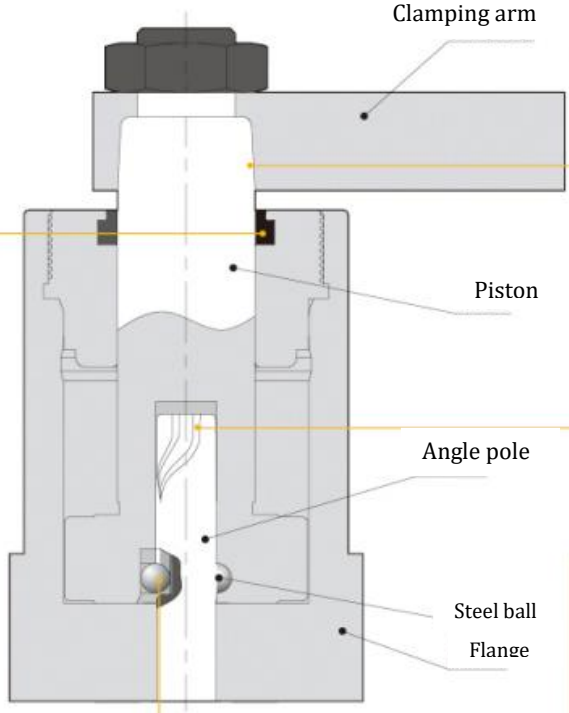
Pressure Range
15-70KN/cm^2

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.

High quality seals

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



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-XB/BT clamping state

Model Representation

YZG—XB/BT ①②③★④ (Example: YZG-BT25SR*90)

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

(The above is the standard model and the extended stroke type is expressed as: "YZG-XB/BT①②③④JC")

Oil Circuit Plate Method

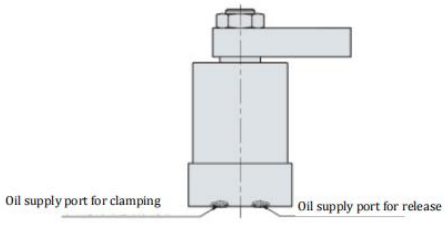
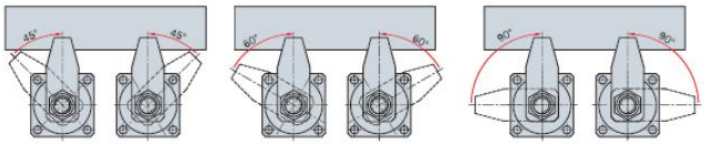


Plate type
The figure shows the clamping state of YZG-XB/BT

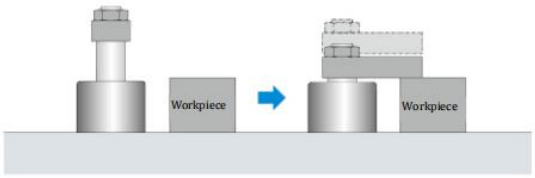
Rotation Angle (When Clamped)



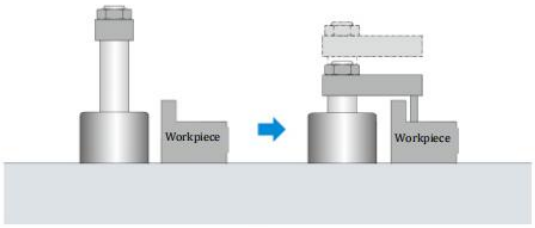
R: turn right L: turn left R: turn right L: turn left R: turn right L: turn left

Product Type

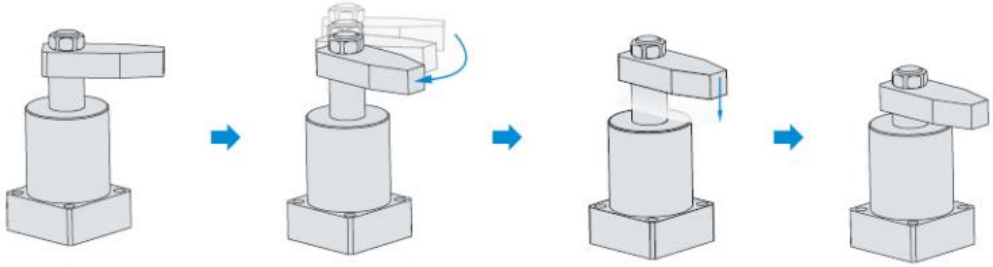
Standard type



Extended stroke type



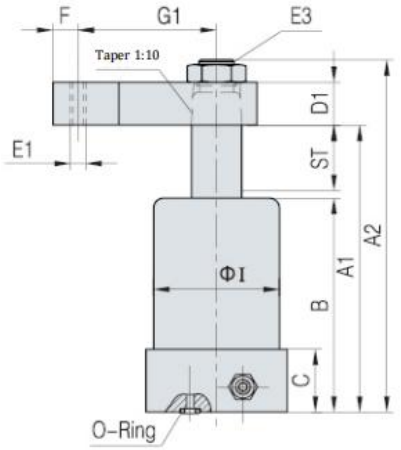
Action Description



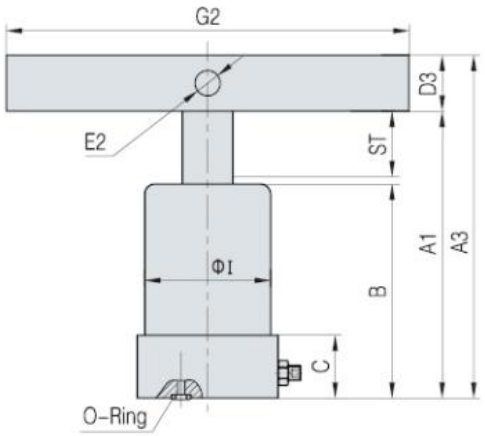
Before rotation (released state) → Rotate while descending → Continue to descend after rotation ends → Action ends (clamping state)

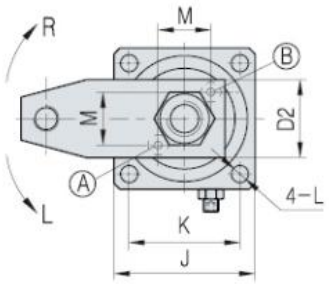
Overall Dimension

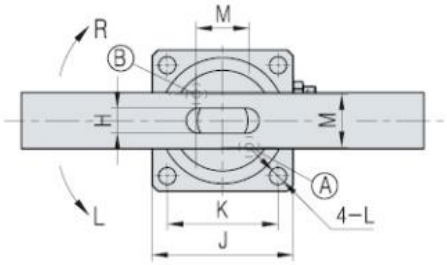
Single-sided clamping arm XB/BT

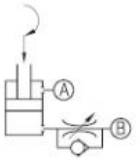


Double-sided clamping arm XBD/BTD









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

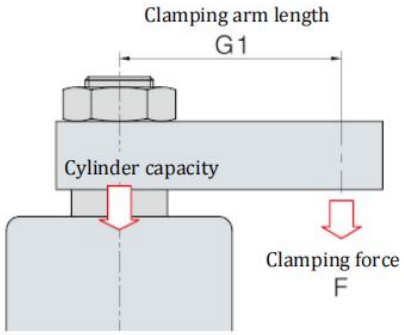
Model / Dimension	YZG-XB25 YZG-BT25	YZG-XB32 YZG-BT32		YZG-XB40 YZG-BT40		YZG-XB50 YZG-BT50		YZG-XB63 YZG-BT63	
ST:Swing/clamping	22(9/13)	26(11/15)	41(11/30)	26(11/15)	41(11/30)	30(13/17)	47(13/34)	30(13/17)	47(13/34)
A1	101	115	145	120	150	134	168	139	173
A2	(125)	(140)	(170)	(149)	(179)	(167)	(201)	(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*2.0	
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	Φ46	Φ50		Φ54		Φ66		Φ80	
J	55	57		63		72		88	
K	42	44		48		57		70	
L	Φ6.8	Φ6.8		Φ9		Φ9		Φ11	
M	19	21		23		28		32	
O-Ring	P7	P7		P7		P7		P7	

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-XB32 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-XB/BT25

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-XB/BT32

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-XB/BT40

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-XB/BT50

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-XB/BT63

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 air 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).

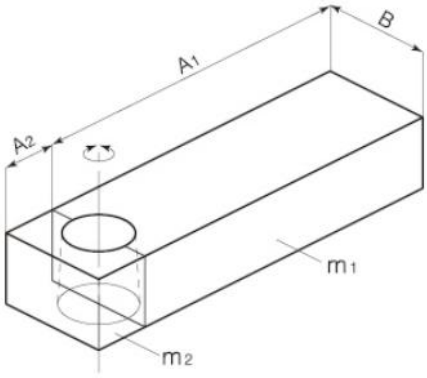
2 if a 90° rotation time shorter than the line "——" is selected, the fault will be caused by the overload of the cylinder and piston.

Calculation example of inertia torque:

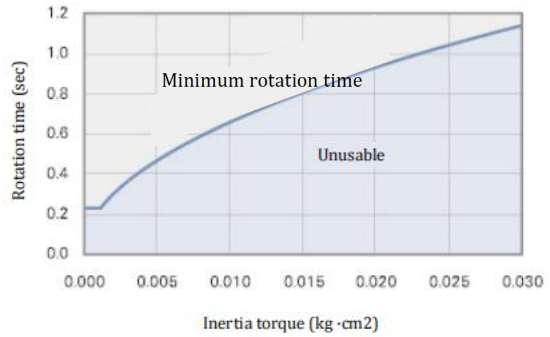
$$I = \frac{1}{12}m_1(4A_1^2+B^2)+\frac{1}{12}m_2(4A_2^2+B^2)$$

I: Inertia torque (kg • m^2)

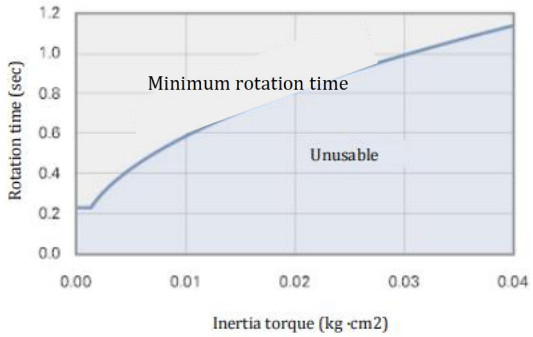
m: Mass (kg)



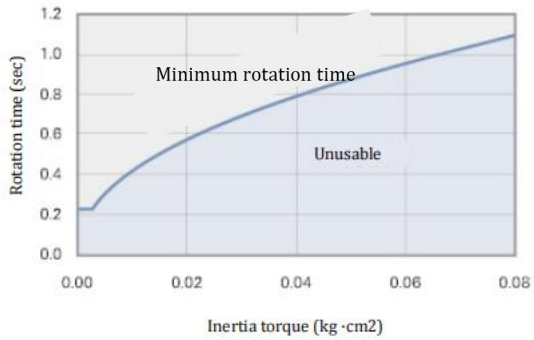
YZG–XB/BT25



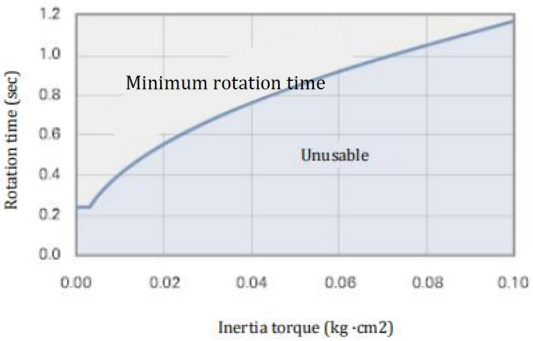
YZG-XB/BT32



YZG-XB/BT40



YZG–XB/BT50



YZG-XB/BT63