

Parallel Mechanical Gripper

HP09R

Standard Type

Series

Selectable Gripping Force

L: Low

M: Medium

H: High

Through
Mounting Hole

Positioning Hole

External Force

High Rigidity
High Accuracy

Excellent
CENTERING Accuracy

◆ $\pm 0.07\text{mm}$ or less

Use of LINEAR GUIDE

- ◆ Withstand load, withstand moment (high rigidity)
- ◆ High accuracy (repeat accuracy: $\pm 0.01\text{ mm}$ or less)
- ◆ Gripping at a long point and overhang gripping are available.

HP09R Series

Parallel Mechanical Gripper (Standard Type)

HP09R Series

Model Code No.

HP09R - 8 - L

Series Name

Nominal diameter

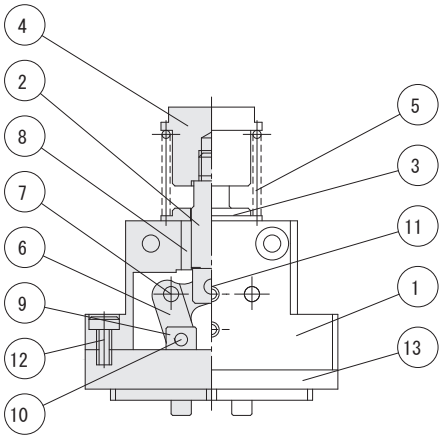
8
10
16
20

Gripping Force

L: Low
M: Medium
H: High

※Please feel free to consult us about
the grip forces (spring forces) other
than the ones specified on the left.

Internal Structure Diagram



Parts List

NO	Name	Material
1	Main Body	Aluminum Alloy
2	Piston Rod	Stainless Steel
3	Pressure Cover	Aluminum Alloy
4	Pressure Cover	Carbon Tool Steel
5	Spring	Spring Steel
6	Action Lever	Carbon Tool Steel
7	Fulcrum Pin	Carbon Tool Steel
8	Metal	Oil-impregnated Sintered Bearing
9	Knuckle	Stainless Steel
10	Roller	Carbon Steel
11	Roller	Carbon Steel
12	Hexagon Socket Head Bolt	Carbon Tool Steel
13	Bearing	Stainless Steel

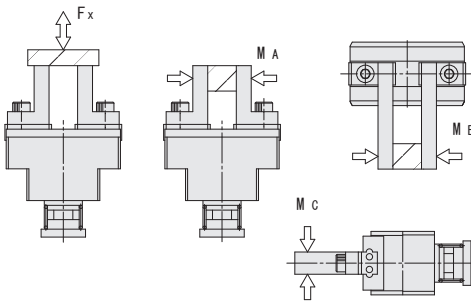
■ Specifications

Elastic Body to be Used	Compression spring
Action Type	Single Acting Normally Close (External force drive at opening)
Operating Temperature [°C]	0~120
Lubrication	Required (Sliding parts of the machine)
Maximum Operating Cycle [Cycle/min]	180
Centering Accuracy [mm]	±0.07
Repeat Accuracy [mm]	±0.01
Applicable Switch	Not mountable

Action Type	Model	Nominal diameter [mm]	Opening/Closing Stroke [mm] ^{Note)3}	Gripping Force (At Closing) [N]	^{Note)1} Extrinsic Force [N]	Allowable Extrinsic Force [N]	Product Mass [g]	Outside Dimensions (T x W x L) [mm]	^{Note)2} Lever Ratio
Single Acting Normally Close	HP09R-8-L	8	4 (3.2~6.1)	1.6	7	30	31	13×20×41.1	1:2
	HP09R-8-M			2.5	10				
	HP09R-8-H			4.3	17				
	HP09R-10-L	10	6.5 (5.2~8.1)	3.4	14	50	78	20×36×53	1:2
	HP09R-10-M			4.5	20				
	HP09R-10-H			7.2	31				
	HP09R-16-L	16	10 (10.3~13.6)	4.4	20	130	156	25×50×58.7	1:2.2
	HP09R-16-M			6.4	28				
	HP09R-16-H			11.0	43				
	HP09R-20-L	20	14 (13.3~16.1)	6.5	26	210	312	32×62×75.3	1:2.2
	HP09R-20-M			8.3	37				
	HP09R-20-H			12.0	56				

Note 1): Extrinsic force is an external force required to open the levers completely by overwhelming the spring force in the closing direction.
Note 2): The lever ratio is the "Extrinsic Distance (how much the lever rod is extruded)" and the "Lever Opening Distance (Lever Opening Distance at that time) (both sides) expressed in "Extrinsic Distance: Lever Opening Distance".
Note 3): The opening/closing stroke is a reference value. Values in the parentheses are measured values.

■ Allowable Load and Allowable Moment



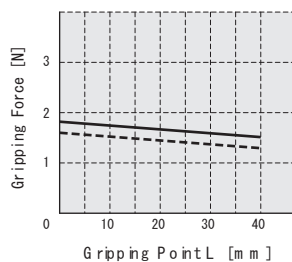
Load and Moment	Fx [N]	MA [N·m]	MB [N·m]	MC [N·m]
Model				
HP09R-8	12	0.04	0.04	0.08
HP09R-10	50	0.4	0.4	0.8
HP09R-16	120	1	1	2
HP09R-20	200	1.5	1.5	3

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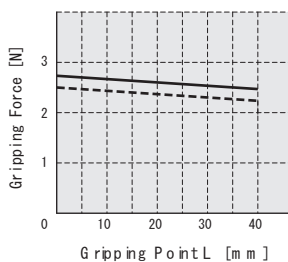
■ Effective Gripping Force

— When the levers are full open
 - - - When the levers are full closed

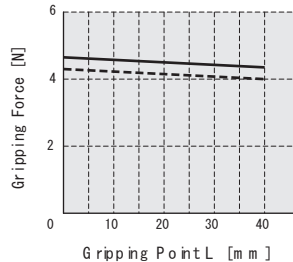
HP09R-8-L



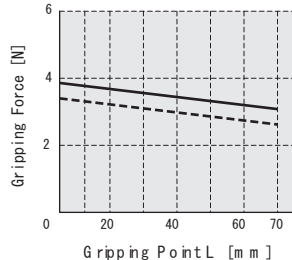
HP09R-8-M



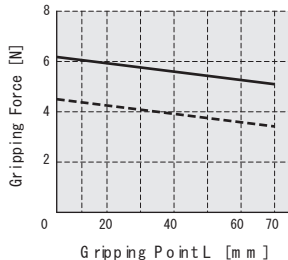
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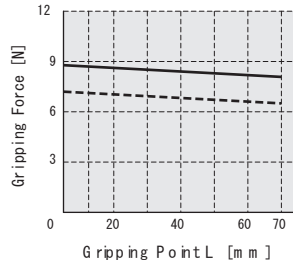
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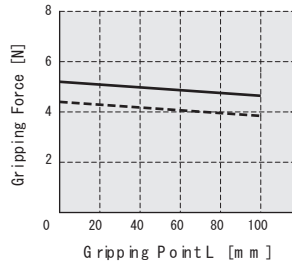
HP09R-10-M



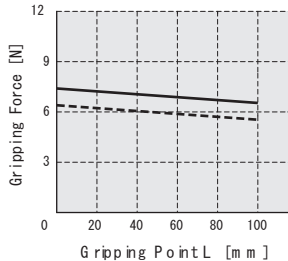
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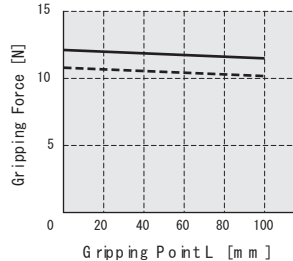
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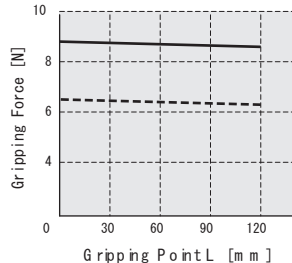
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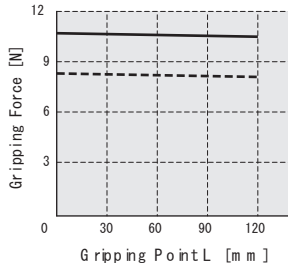
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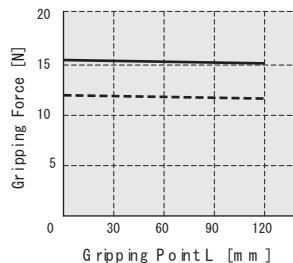
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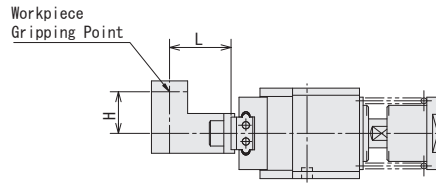
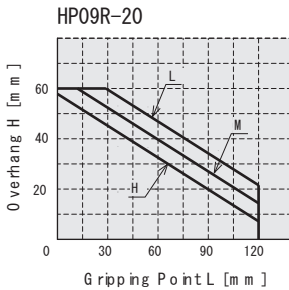
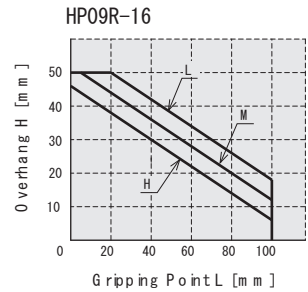
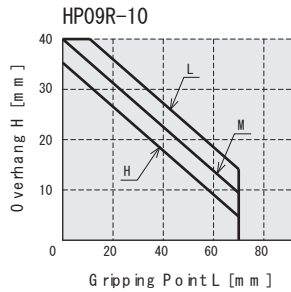
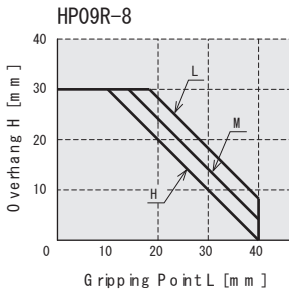
HP09R-20-M



HP09R-20-H



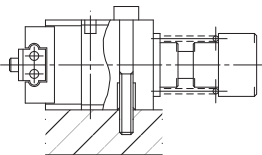
■ Gripping Point Limit Range



■ Main Body Mounting Example

- 1 When the through-hole of the main body is used

(For $\phi 16$ and $\phi 20$, the bolt head does not protrude from the main body.)



- 2 When the mounting screw on the back side of the through-hole is used

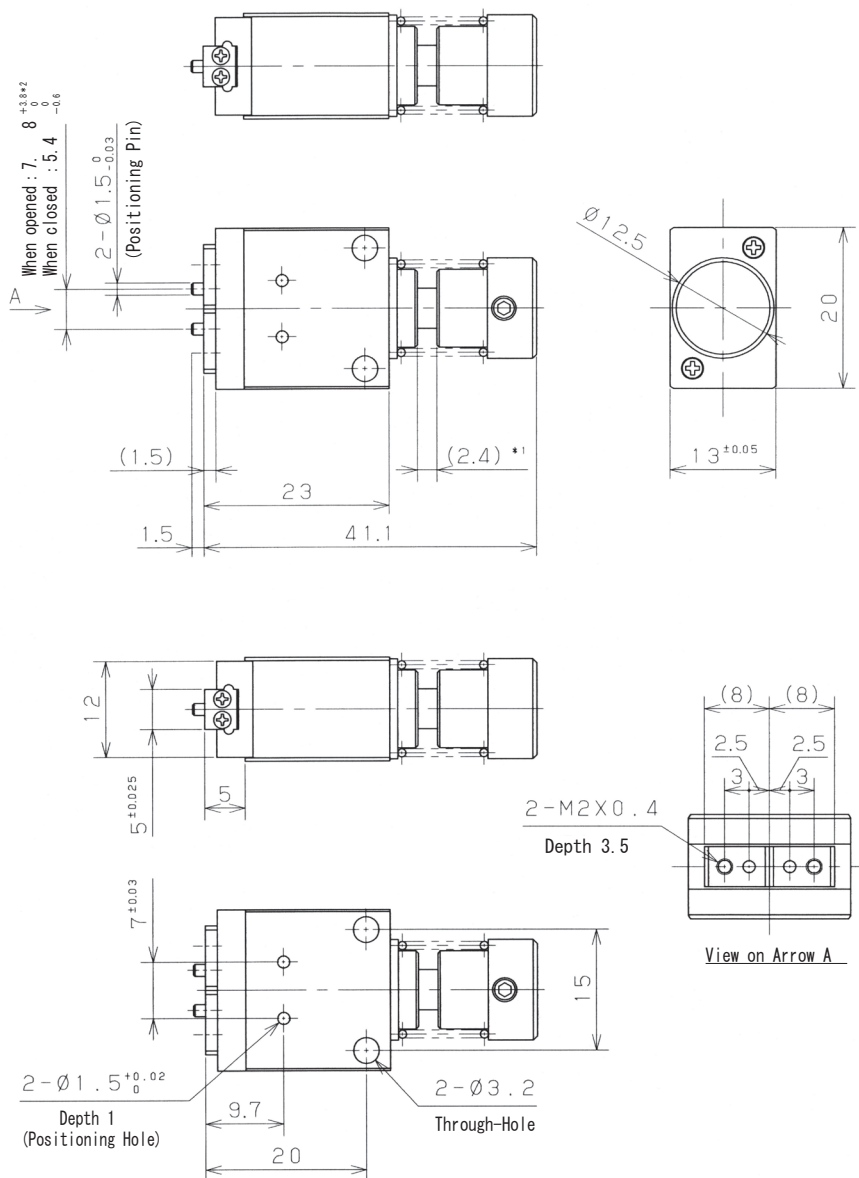


- 3 When the mounting screw on the bottom face of the main body side is used

(Excluding $\phi 8$)

■ Dimensions

HP09R-8-□



Note) · The allowable extrusion force shall be within the specified range in use.

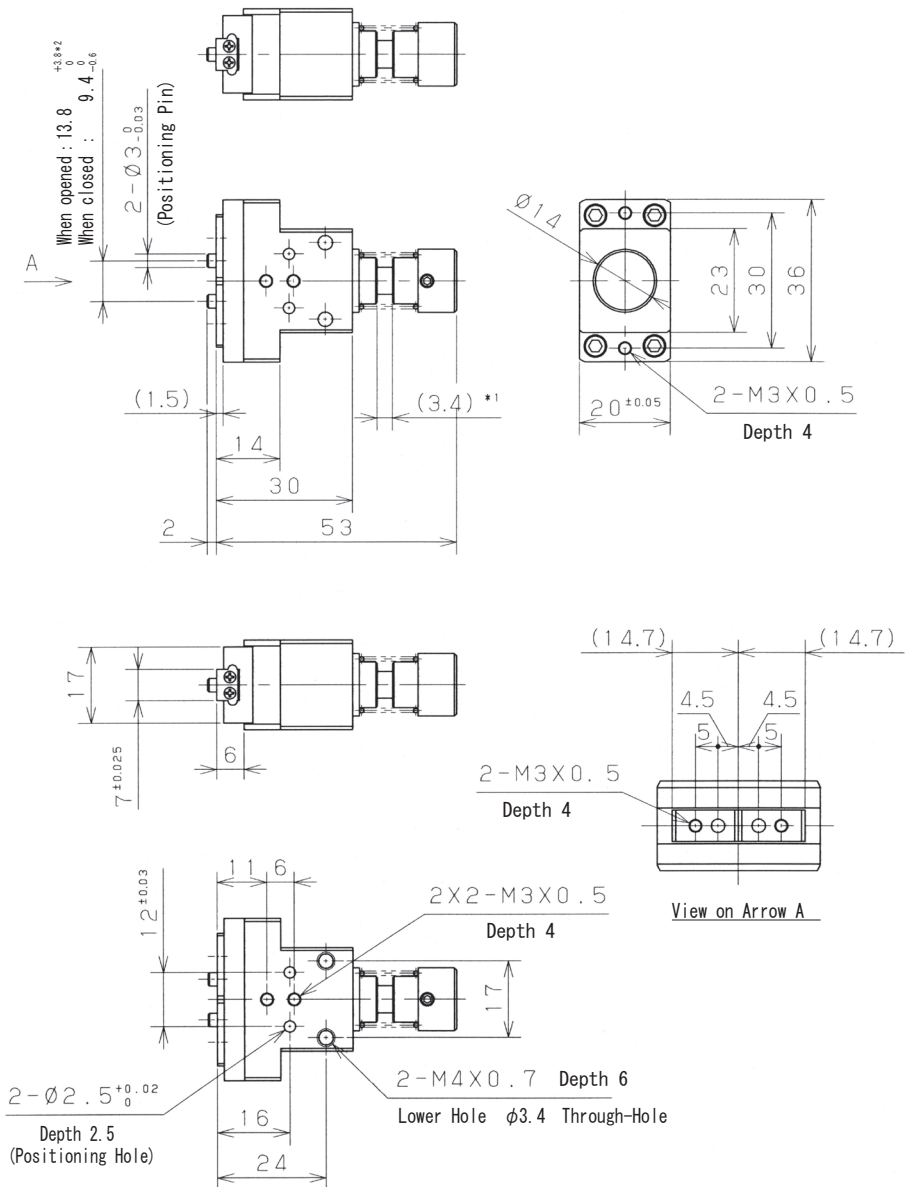
· Do not hit the cam and the dog against the pressure cover in use.

* 1) This dimension allows extrusion. See "Lever Ratio" for the lever opening distance for the extrusion distance.

* 2) This is a dimension at the maximum extrusion.

Dimensions

HP09R-10-□



Note) ・The allowable extrusion force shall be within the specified range in use.

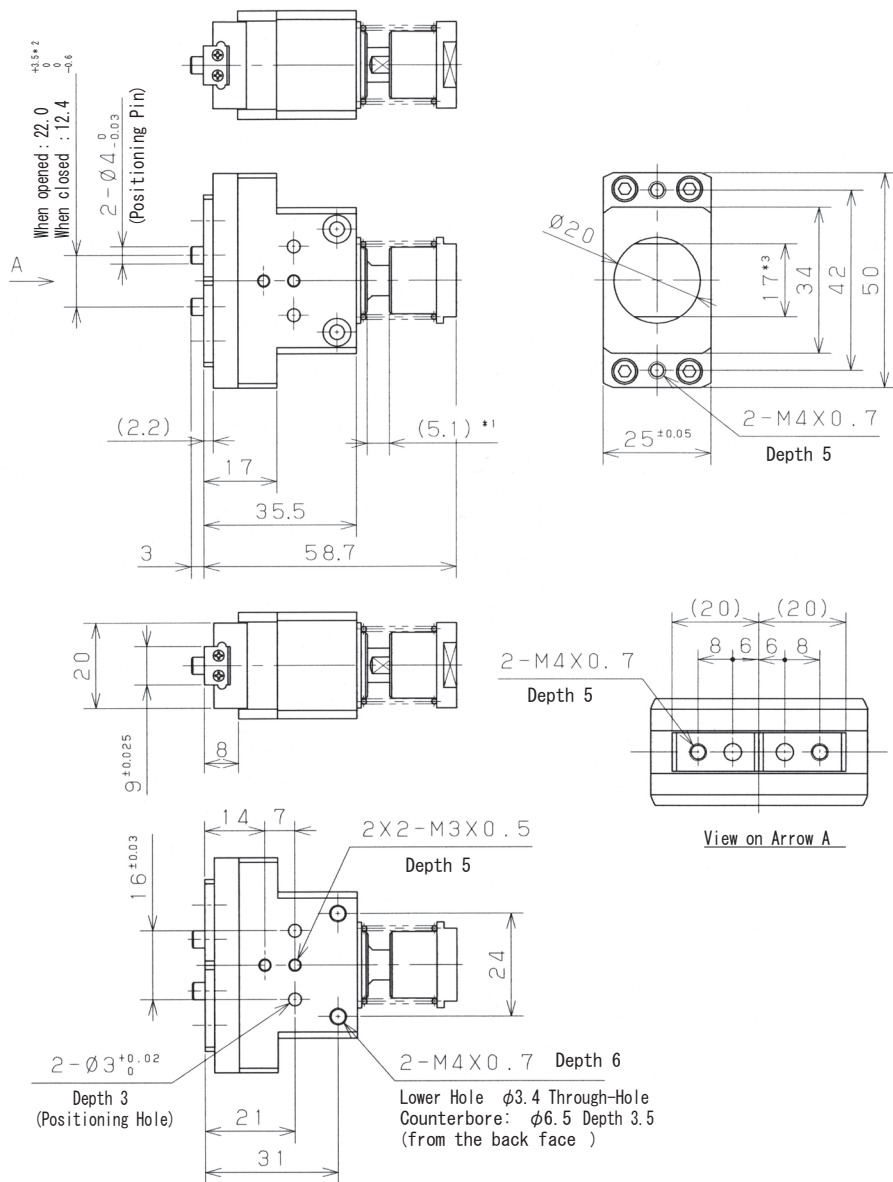
・Do not hit the cam and the dog against the pressure cover in use.

* 1) This dimension allows extrusion. See "Lever Ratio" for the lever opening distance for the extrusion distance.

* 2) This is a dimension at the maximum extrusion.

■ Dimensions

HP09R-16-□



Note) · The allowable extrusion force shall be within the specified range in use.

· Do not hit the cam and the dog against the pressure cover in use.

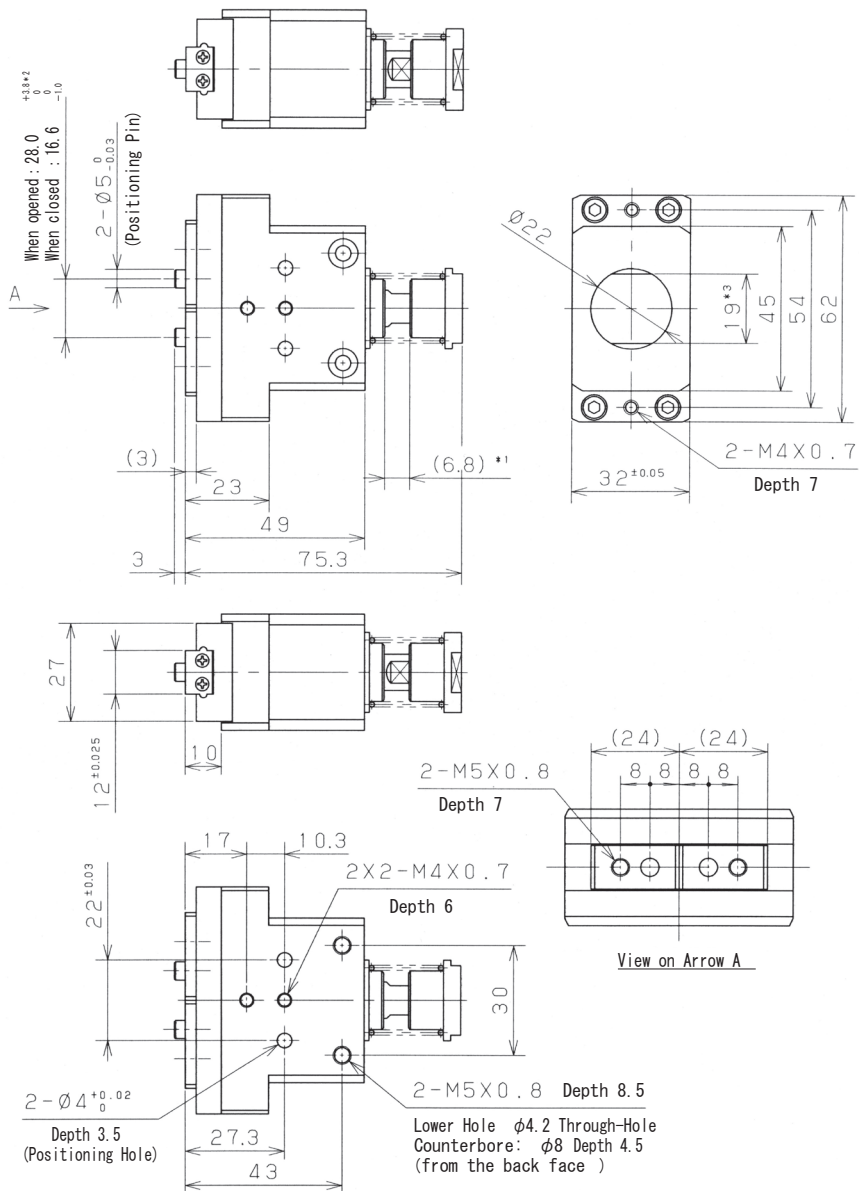
* 1) This dimension allows extrusion. See "Lever Ratio" for the lever opening distance for the extrusion distance.

* 2) This is a dimension at the maximum extrusion.

* 3) This is used for rod tightening, so it is different from the actual position.

■ Dimensions

HP09R-20-□



Note) • The allowable extrusion force shall be within the specified range in use.

• Do not hit the cam and the dog against the pressure cover in use.

* 1) This dimension allows extrusion. See "Lever Ratio" for the lever opening distance for the extrusion distance.

* 2) This is a dimension at the maximum extrusion.

* 3) This is used for rod tightening, so it is different from the actual position.