

Parallel Mechanical Gripper

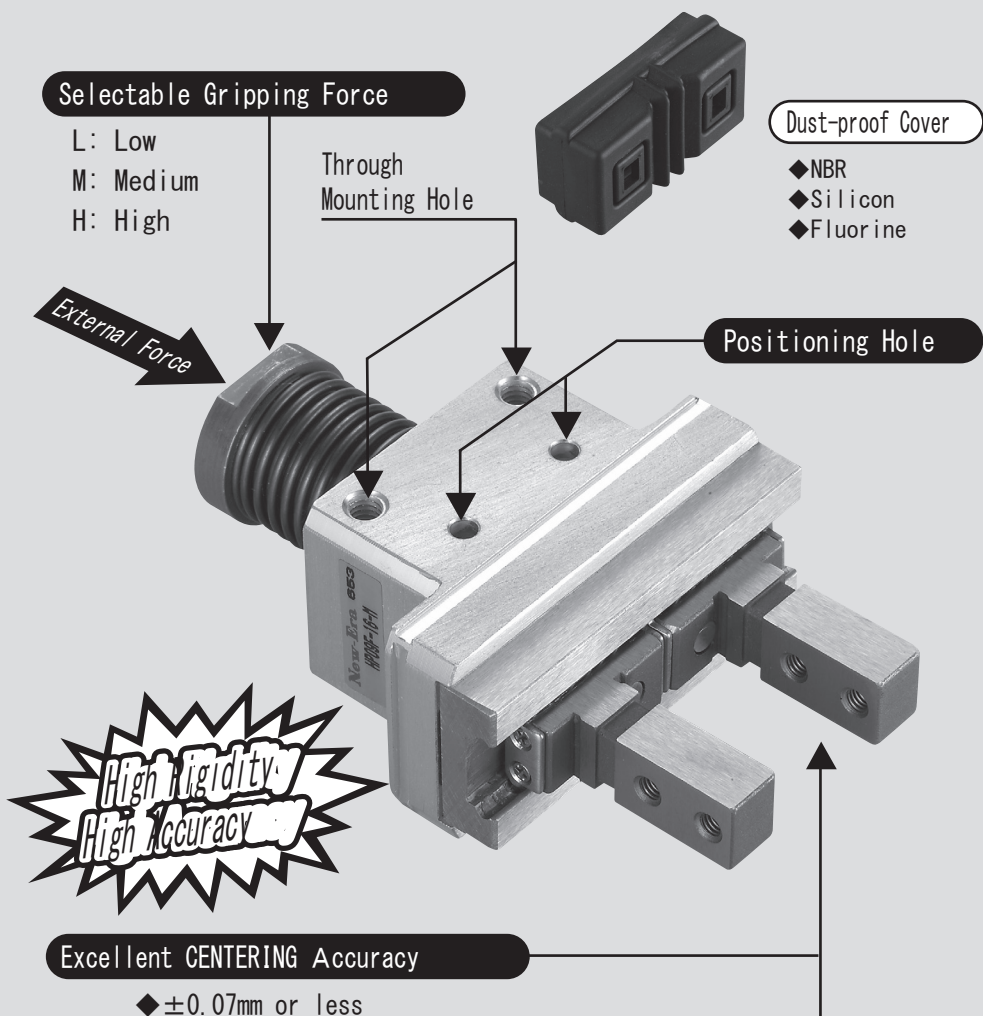
HP09FR

Finger (Long Attachment) Type
Series (Old Type HP12)

HP09FR Series

Parallel Mechanical Gripper ~ Finger (Long Attachment) Type

2



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.

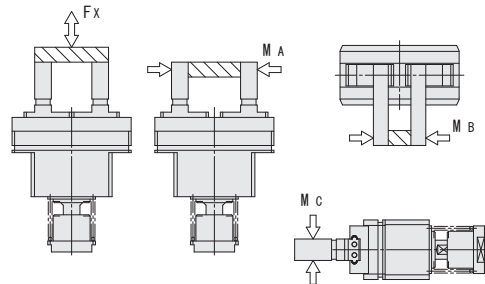
■ Specifications

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]	Note)3 Opening/ Closing Stroke [mm]	Gripping Force (At Closing) [N]	Note)1 Extrusion Force [N]	Allowable Extrusion Force [N]	Outside Dimensions (T x W x L) [mm]	Note)2 Lever Ratio	Product Mass [g]	
									Without dust-proof cover	With dust-proof cover
Single Acting Normally Close	HP09FR-8-L	8	4 (3.2~6.1)	1.6	7	30	13×20×55.1	1: 2	31	JN:32.5, JS:32.5, JF:33
	HP09FR-8-M			2.5	10					
	HP09FR-8-H			4.3	17					
	HP09FR-10-L	10	6.5 (5.2~8.1)	3.4	14	50	20×36×71.5	1: 2	78	JN:82.5, JS:82, JF:84.5
	HP09FR-10-M			4.5	20					
	HP09FR-10-H			7.2	31					
	HP09FR-16-L	16	10 (10.3~13.6)	4.4	20	130	25×50×79.7	1: 2.2	156	JN:162.5, JS:162, JF:165
	HP09FR-16-M			6.4	28					
	HP09FR-16-H			11.0	43					
	HP09FR-20-L	20	14 (13.3~16.1)	6.5	26	210	32×62×105.3	1: 2.2	312	JN:324.5, JS:322, JF:330.5
	HP09FR-20-M			8.3	37					
	HP09FR-20-H			12.0	56					

Note 1): Extrusion 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 "Extruded Distance (how much the lever rod is extruded)" and the "Lever Opening Distance (Lever Opening Distance at that time) (both sides) expressed in "Extruded 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

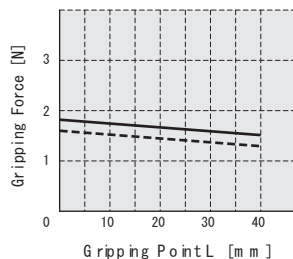


Load and Moment	Fx [N]	MA [N·m]	MB [N·m]	MC [N·m]
Model				
HP09FR-8	12	0.04	0.04	0.08
HP09FR-10	50	0.4	0.4	0.8
HP09FR-16	120	1	1	2
HP09FR-20	200	1.5	1.5	3

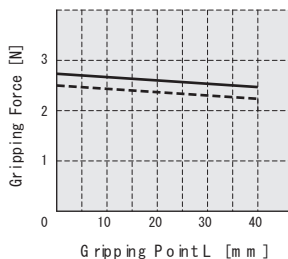
Effective Gripping Force

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

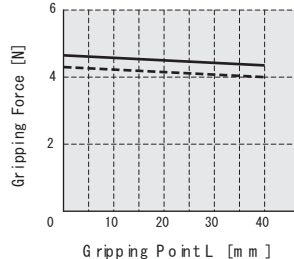
HP09FR-8-L



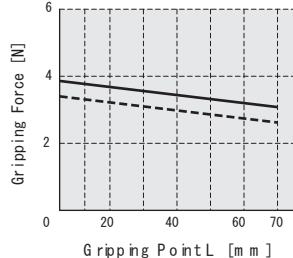
HP09FR-8-M



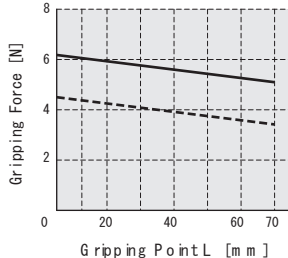
HP09FR-8-H



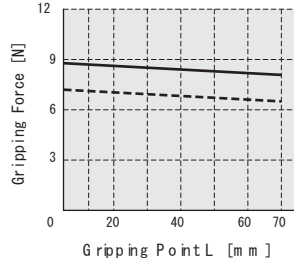
HP09FR-10-L



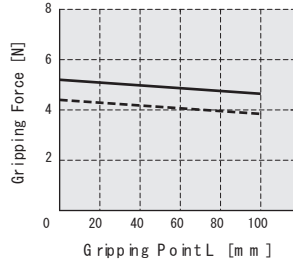
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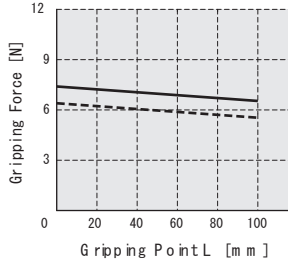
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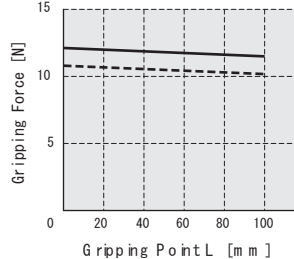
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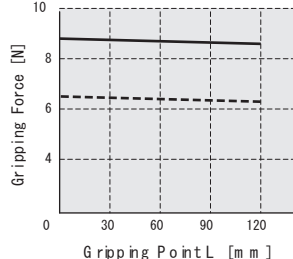
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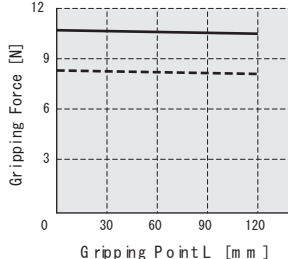
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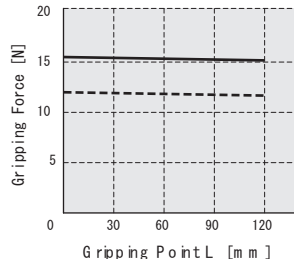
HP09FR-20-L



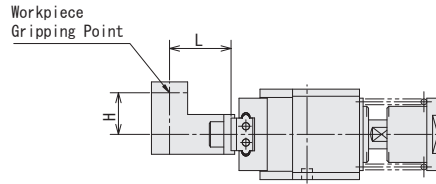
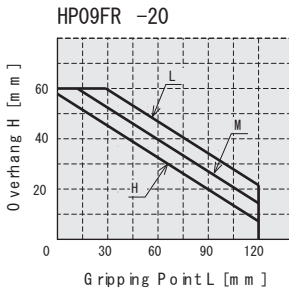
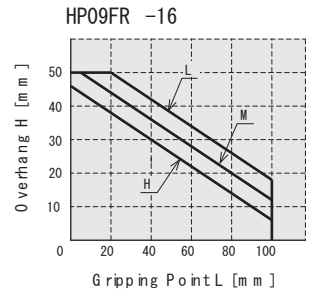
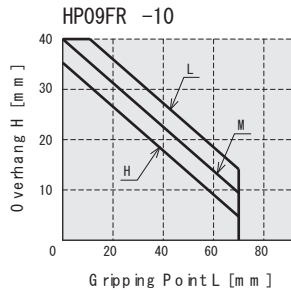
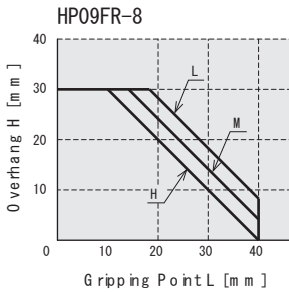
HP09FR-20-M



HP09FR-20-H



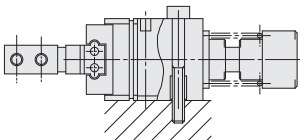
■ Gripping Point Limit Range



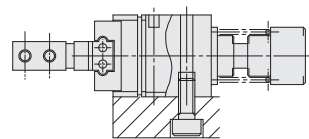
■ Main Body Mounting Example

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.)

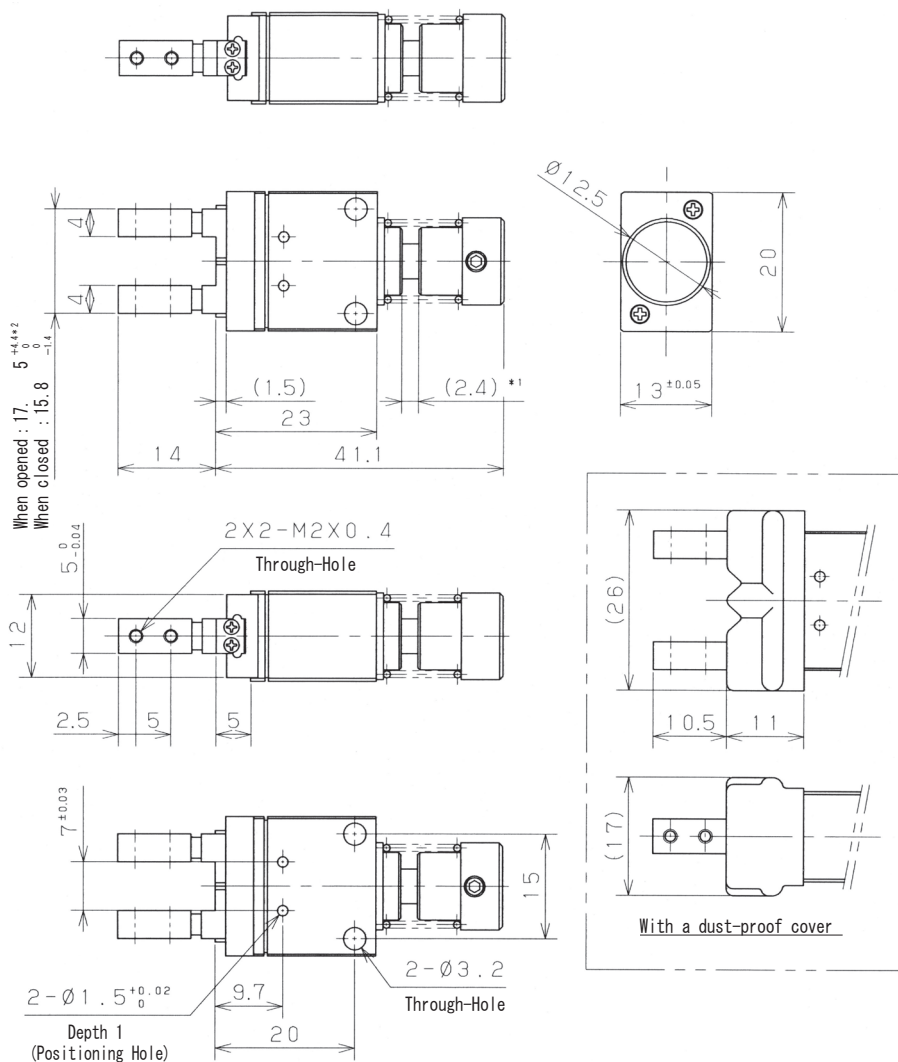


2 When the mounting screw on the back side of the through-hole is used



■ Dimensions

HP09FR-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.

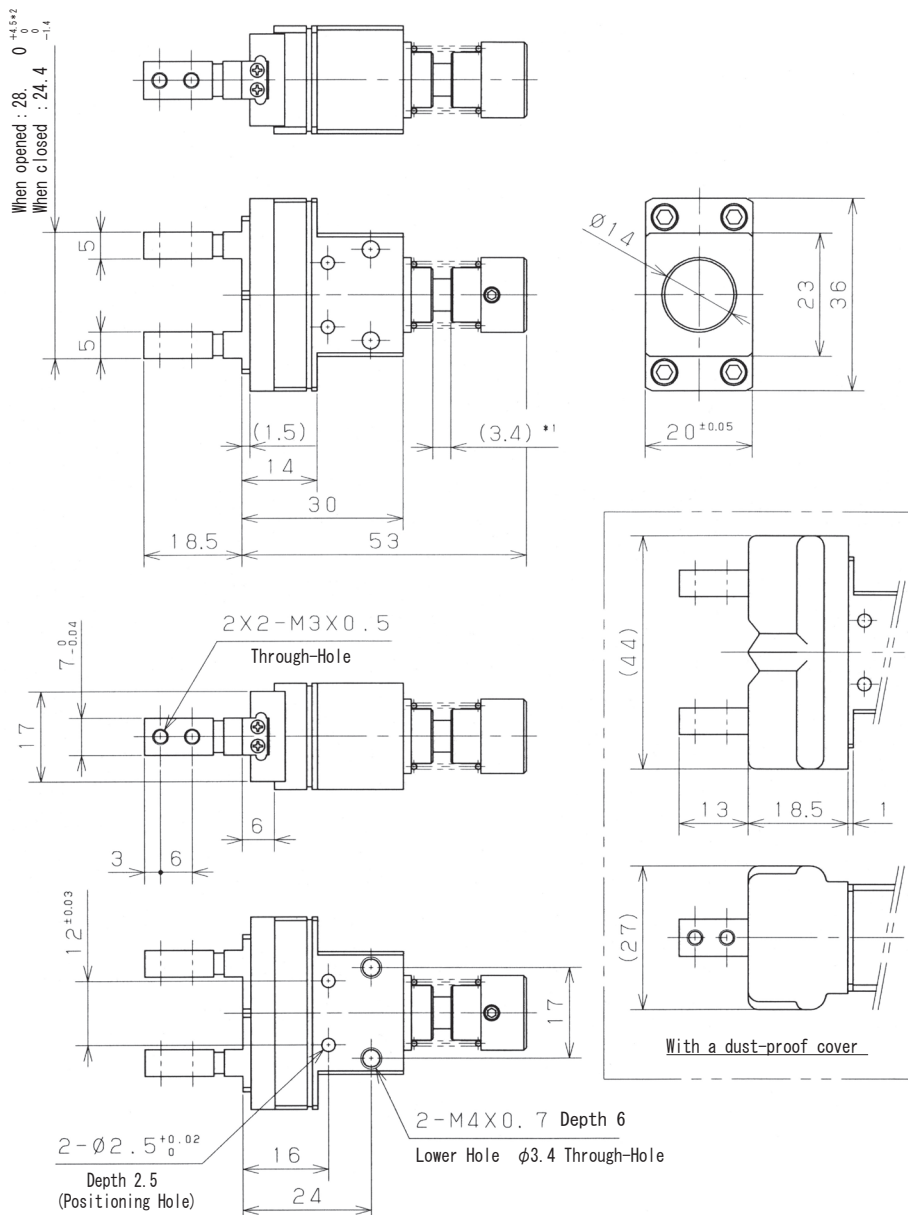
Dimensions

HP09FR-10-□

HP09FR Series

Parallel Mechanical Gripper ~ Finger (Long Attachment) Type

2



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.

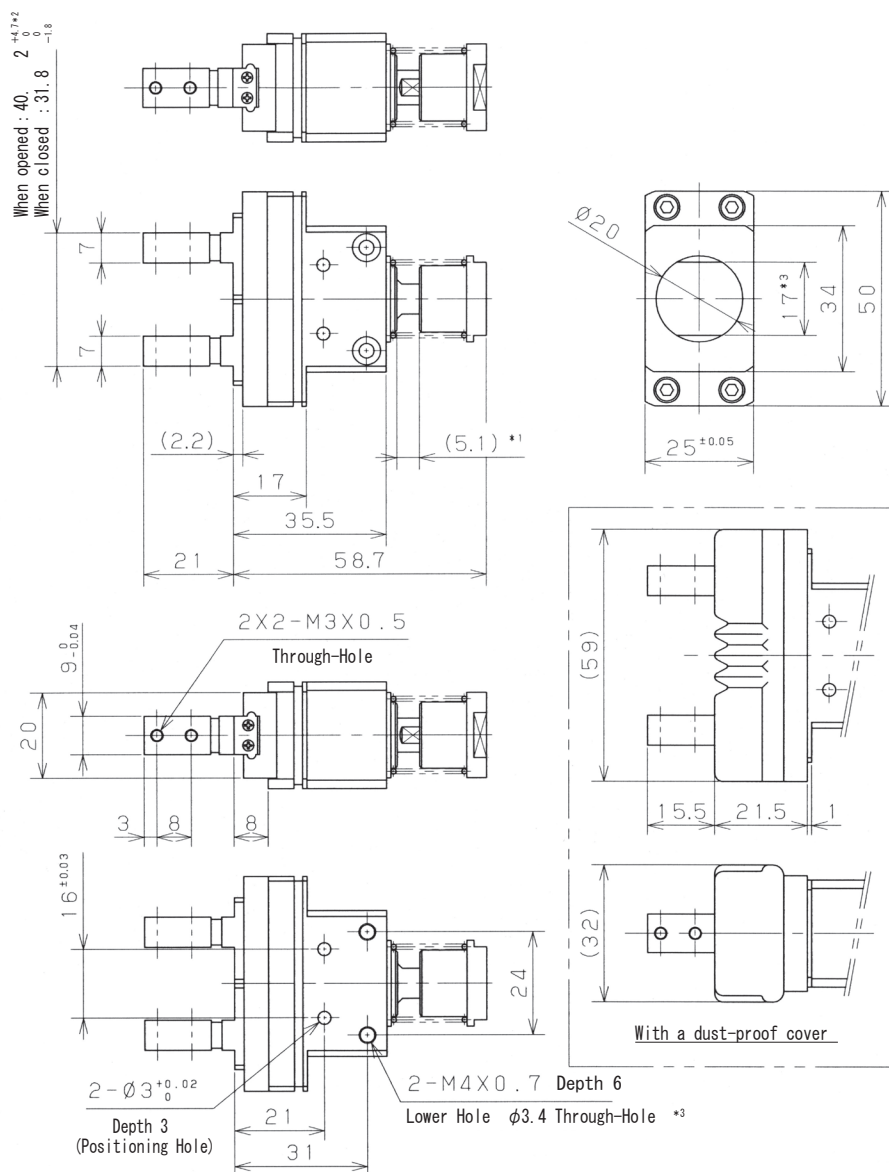
* 1) This dimension allows extrusion. See "Lever Ratio" for the lever opening distance for the extrusion distance.

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

HP09FR

Series (Old Type HP12)

CAD data provided

Dimensions**HP09FR-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.

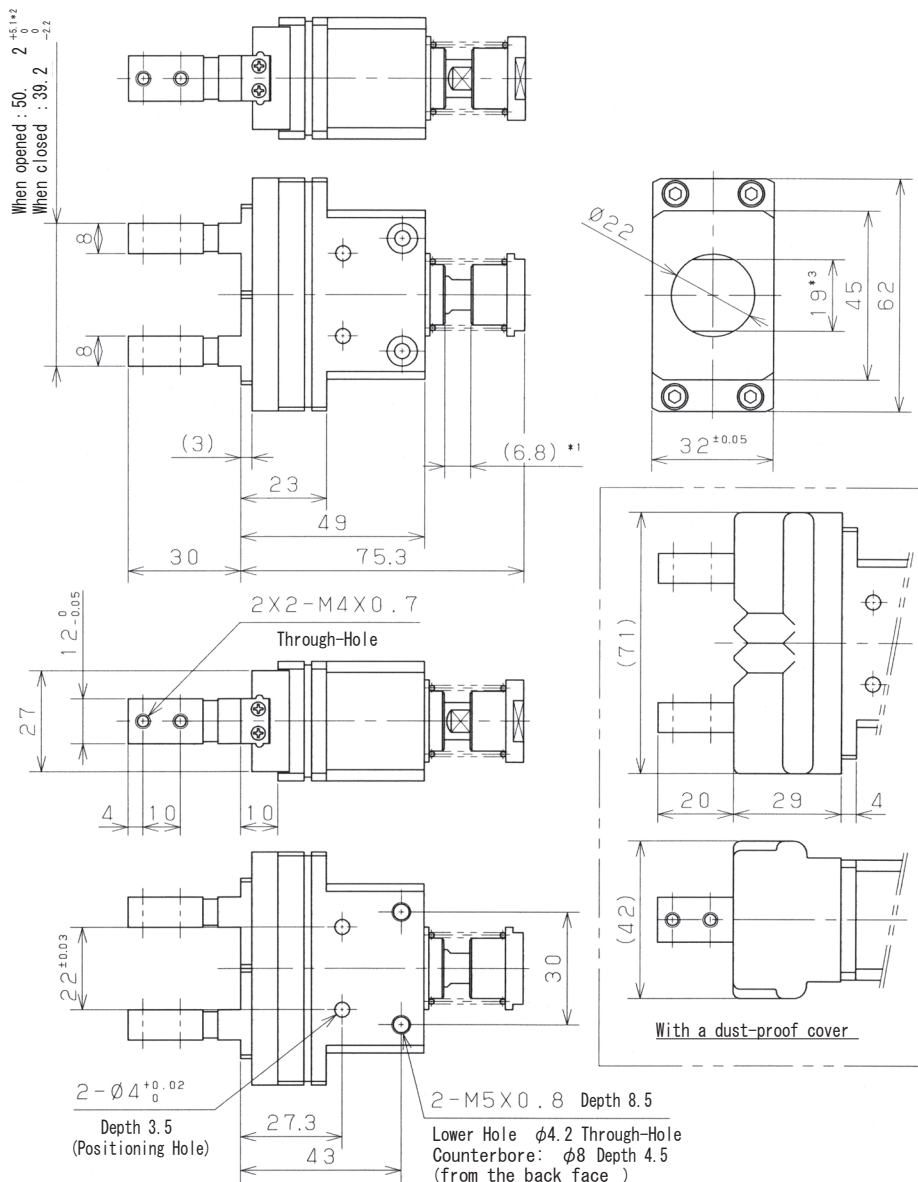
Dimensions

HP09FR-20-□

HP09FR Series

Parallel Mechanical Gripper ~ Finger (Long Attachment) Type

2



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.