Angular Gripper
EHVE Series

◆Long Life

Long life realized thanks to the use of chrome molybdenum steel for the levers and hardening of the main parts.

◆Adjustable Switch Position

2 switches are mountable so you can check opening and closing of the levers. The switch is compact so it does not protrude from the main body side.

◆Mounting Available from 3 Directions

You can select the mounting direction freely because 3 faces have a mounting screw.

◆Mounting Adapter is optional

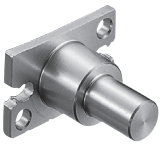
Mounting variation has been further expanded by providing a gripper mounting adapter for each size.

Model Code No.

EHVE – 10 C ※ HAE – ZE135 A 2

- Series Name
- Bore Size
  - 8: 8mm
  - 10:10mm
  - 16:16mm
  - 20:20mm
  - 25:25mm
- Action Type
  - A : Single Acting Normally Open
  - C : Double Acting
- Switch Lead Wire Length
  - A:1m
  - B:3m
- Number of Switches
  - 1:1 Switch
  - 2:2 Switches

●Gripper Adaptor Type
No Code: No Gripper Adaptor

HAE	HFE (excluding φ8) HFE-L : Large Diameter Type (φ16 only)
	

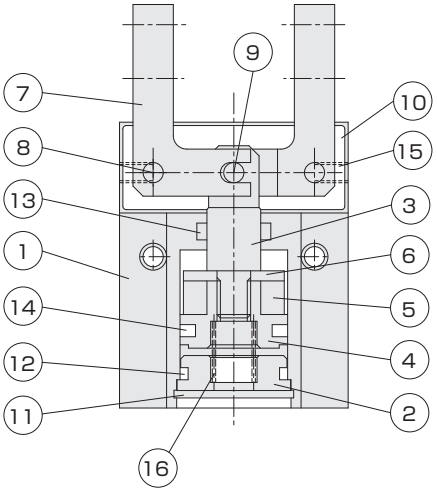
●Detailed specifications→P.326

●Switch Type No Code: No Switch

ZE135	ES13	ZE235	ES23
2 Wire System Solid State Switch, Straight Type		2 Wire System Solid State Switch, L-shaped	
ZE155	ES(P)15	ZE255	ES(P)25
3 Wire System Solid State Switch, Straight Type		3 Wire System Solid State Switch, L-shaped	


●Switch details→P.521～528

Internal Structure Diagram



Parts List

NO	Name	Material
1	Main Body	Aluminum Alloy
2	Head Cover	Aluminum Alloy
3	Piston Rod	Stainless Steel
4	Piston	Aluminum Alloy
5	Magnet	Resin
6	Pressure Cover	Aluminum Alloy
7	Lever	Carbon Tool Steel
8	Fulcrum Pin	Carbon Tool Steel
9	Press Fit Pin	Carbon Steel
10	Slide Plate	Carbon Steel
11	Hole Locating Snap Ring	Hard Steel
12	O Ring	NBR
13	Rod Packing	NBR
14	Piston Packing	NBR
15	Set Screw	Carbon Steel
16	Spring	Piano Wire (Single Acting only)

Specifications

Fluid		Air
Maximum Operating Pressure	[MPa]	0.7
Proof Pressure	[MPa]	1.05
Operating Temperature	[℃]	0~60 (No Freezing)
Lubrication		Not Required (Required for sliding parts of the machine)
Pipe Bore		M3×0.5 (EHVE-8, EHVE-10) M5×0.8 (EHVE-16, EHVE-20, EHVE-25)
Maximum Operating Cycle	[Cycle/min]	180
Applicable Switch		ZE, ES Type (Solid State Switch)

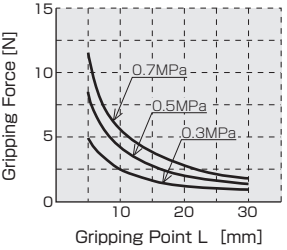
Action Type	Model	Bore Size [mm]	Minimum Operating Pressure [MPa]	Lever Screw	Gripping Force [N] Note) 1		Outside Dimensions (T x W x L) [mm] Note)2	Product Mass [g]
					Close	Open		
Double Acting	EHVE-8C	8	0.22	M2.5×0.45 (x 4)	1.6	2.6	13×20×29	23
	EHVE-10C	10	0.1	M3×0.5 (x 4)	2.5	3.8	16×23×36	40
	EHVE-16C	16	0.1	M3×0.5 (x 4)	12.8	17	22×34×42.5	96
	EHVE-20C	20	0.1	M4×0.7 (x 4)	24	32	26×45×50	180
	EHVE-25C	25	0.1	M5×0.8 (x 4)	48	62	32×52×58	313
Single Acting Normally Open	EHVE-8A	8	0.36	M2.5×0.45 (x 4)	1.0	0.6	13×20×29	23
	EHVE-10A	10	0.3	M3×0.5 (x 4)	1.4	1.0	16×23×36	40
	EHVE-16A	16	0.2	M3×0.5 (x 4)	10	2.8	22×34×42.5	96
	EHVE-20A	20	0.2	M4×0.7 (x 4)	18	6	26×45×50	182
	EHVE-25A	25	0.2	M5×0.8 (x 4)	38	10	32×52×58	317

Note 1): L indicates the distance (cm) from the fulcrum pin to the grip point. (The levers are retained in the horizontal condition.)
This is an effective value when the pressure is 0.5 MPa and L = 30mm. However, when the L = 25mm only for EHVE-8.
Note 2): The outside dimensions indicate the main body dimensions. (Excluding the levers)

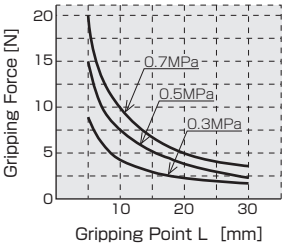
Effective Gripping Force (Closing Force)

Double Acting Type

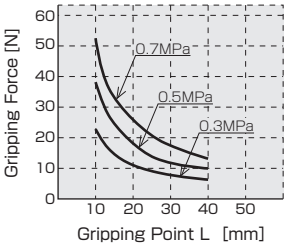
EHVE-8C



EHVE-10C



EHVE-16C



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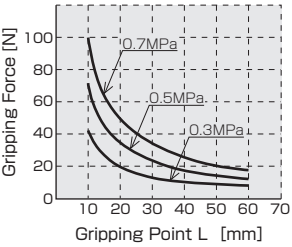
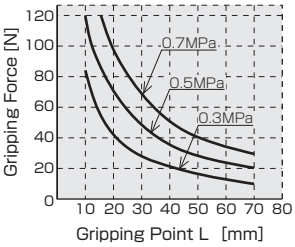
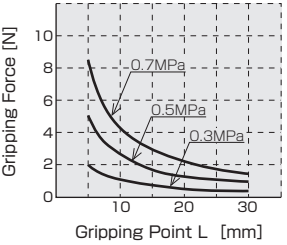


EHVE-25C



Single Acting Type

EHVE-8A



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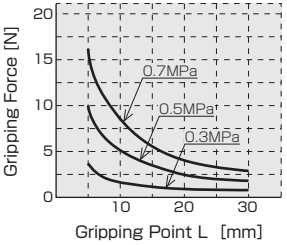

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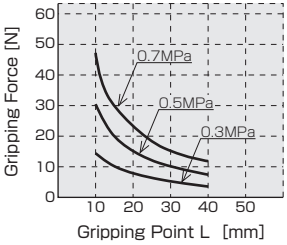
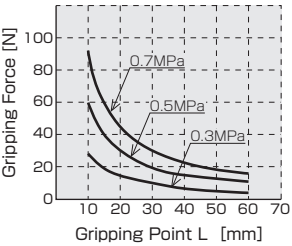
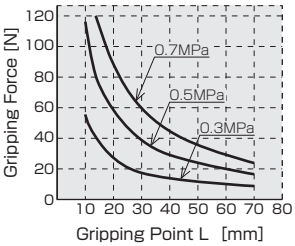
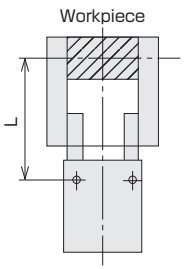


EHVE-20A

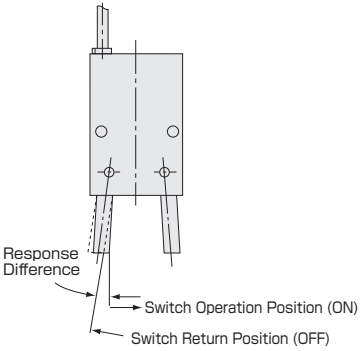


EHVE-25A





Lever Operation and Switch Characteristics



1. Opening/Closing Stroke Difference (Opening/Closing Angle Difference)

   The distance from the position where the one side lever moves and the switch turns on from the position where the lever moves in the reverse direction and the switch turns off is called "response difference".

2. Switch repeat operating position accuracy

   Variation of the switch ON/OFF position when the one side lever is moved in a certain direction.

Model	Opening/Closing Angle Difference[°]	Operation Position Accuracy[°]
EHVE-8	3.0	1.0
EHVE-10	3.0	1.0
EHVE-16	2.0	0.6
EHVE-20	2.0	0.5
EHVE-25	1.5	0.5

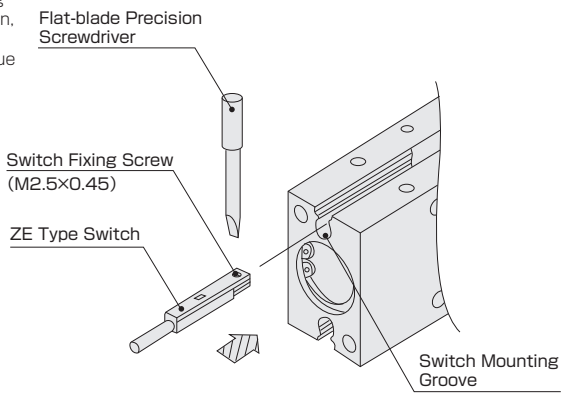
Switch Protrusion Distance

The maximum switch protrusion from the switch body end face (when the levers are full closed) is shown in the table on the right.
Use it as a guide for mounting.

Cylinder Bore[mm]	ϕ8	ϕ10	ϕ16	ϕ20	ϕ25
Maximum Protrusion[mm]	2	0	0	0	0

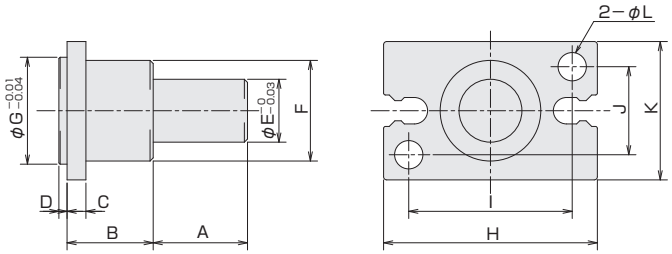
Switch Mounting

Insert the switch into the switch mounting groove. After setting the mounting position, tighten the switch fixing screw with a precision screwdriver. The tightening torque shall be 0.1 N·m or less.



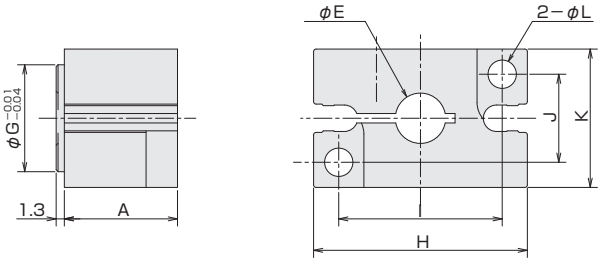
Outline Dimensional Drawing of Gripper Adaptor

HAE Type



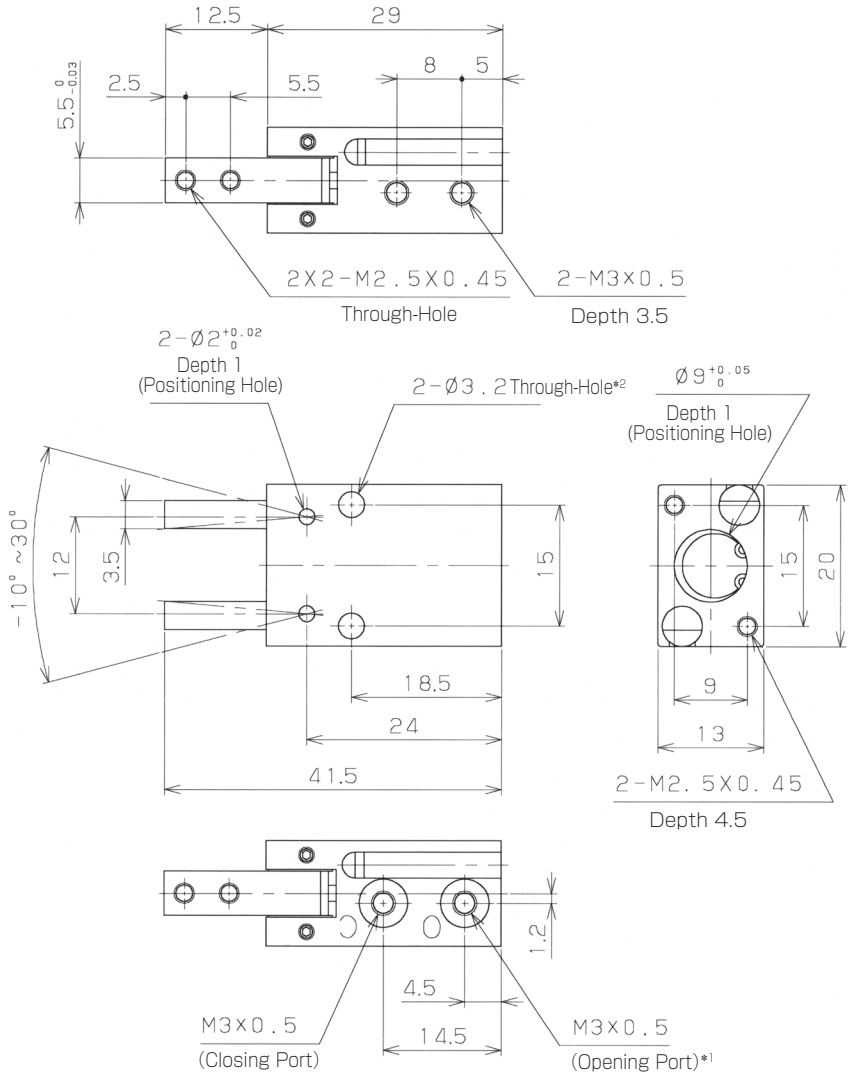
Code / Type	A	B	C	D	E	F	G	H	I	J	K	L	Ancillary Bolt (x2)	Product Mass [g] (Including Bolts)
HAE-8	10	10	3	0.8	8	10	9	20	15	9	13	2.8	M2.5×0.45×6L	6
HAE-10	15	15	3	1.3	10	11	11	23	17	10	16	3.4	M3×0.5×8L	11
HAE-16	15	15	3	1.3	10	16	17	34	26	14	22	4.5	M4×0.7×10L	20
HAE-20	15	15	3	1.3	10	18	21	45	35	16	26	5.5	M5×0.8×10L	28
HAE-25	20	17	5	1.3	14	26	26	52	40	20	32	6.6	M6×1×15L	63

HFE Type



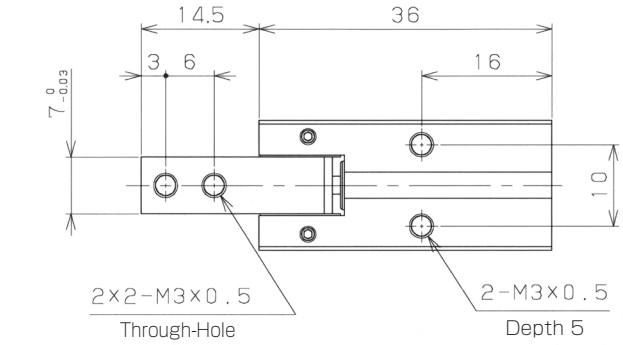
Code / Type	A	E	G	H	I	J	K	L	Ancillary Bolt (x3)		Product Mass [g] (Including Bolts)
									Gripper Mounting (x2)	Adapter Fixing (x1)	
HFE-10	15	6	11	23	17	10	16	3.4	M3×0.5×16L	M3×0.5×12L	14
HFE-16	18	8	17	34	26	14	22	4.5	M4×0.7×20L	M4×0.7×16L	35
HFE-16L	18	10	17	34	26	14	22	4.5	M4×0.7×20L	M4×0.7×16L	33
HFE-20	19	13	21	45	35	16	26	5.5	M5×0.8×20L	M5×0.8×20L	55
HFE-25	22	13	26	52	40	20	32	6.6	M6×1×25L	M6×1×25L	96

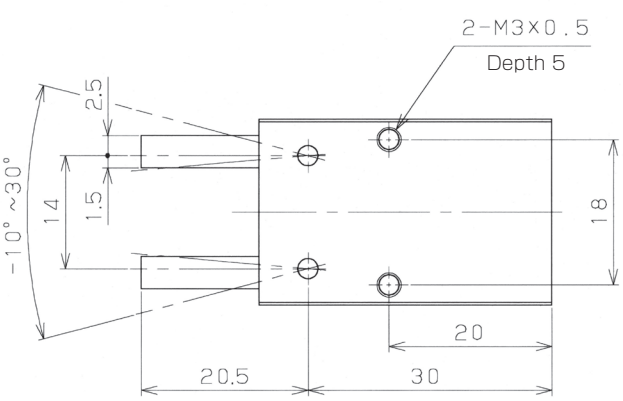
■Dimensions EHVE-8□

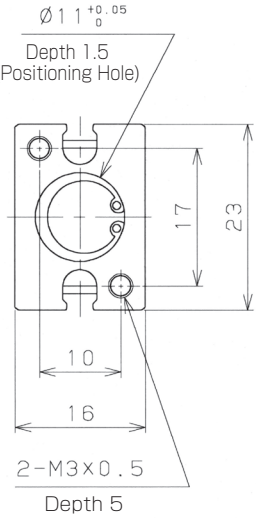


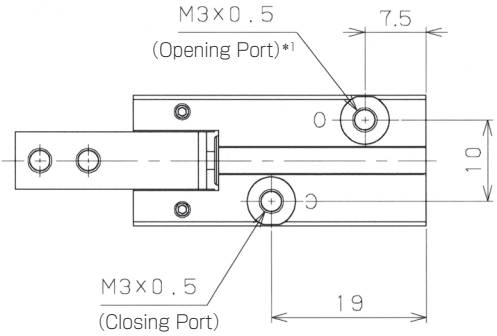
*1) For the single acting type, the opening port cannot be used because it is used for the exhaust plug.
*2) When the through-hole of the main body is used, you cannot mount a switch.

Dimensions EHVE-10□



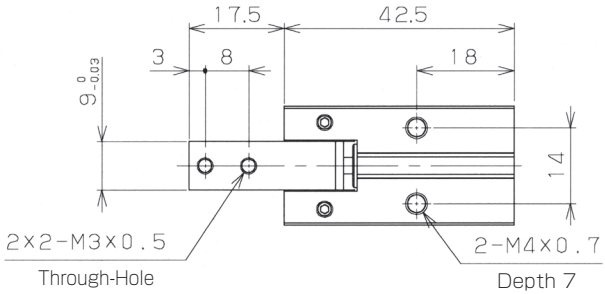


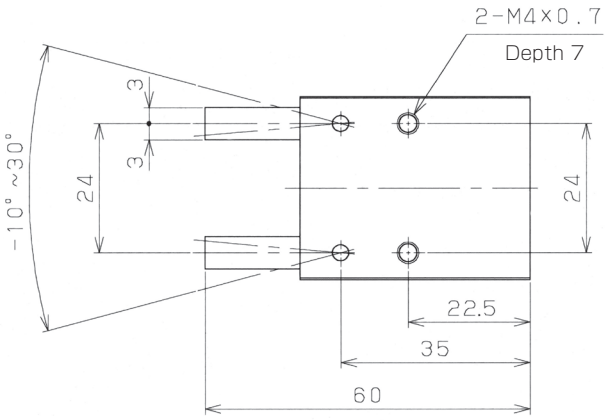


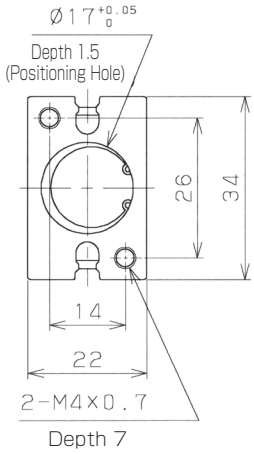


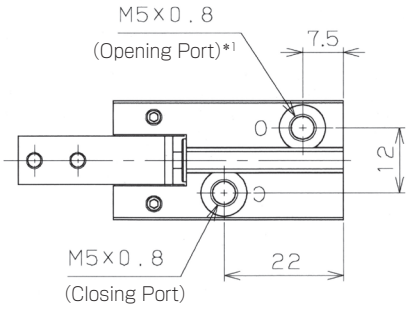
*1) For the single acting type, the opening port cannot be used because it is used for the exhaust plug.

■Dimensions EHVE-16□



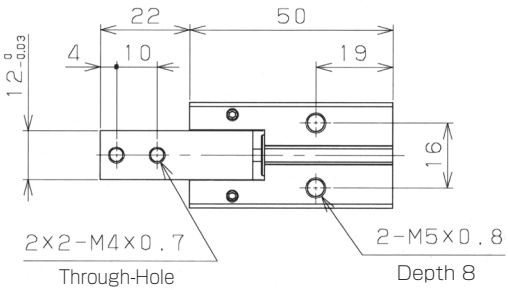


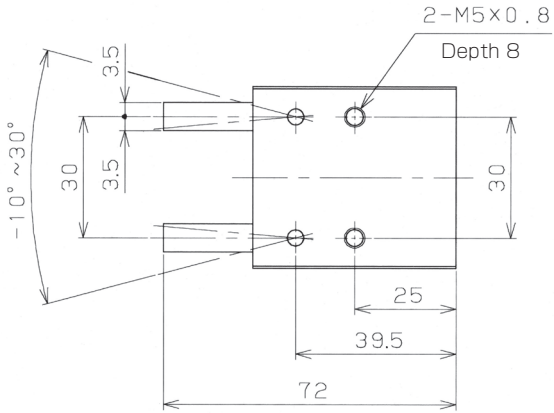


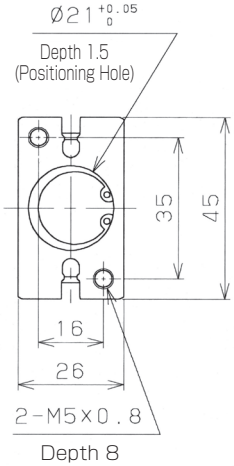


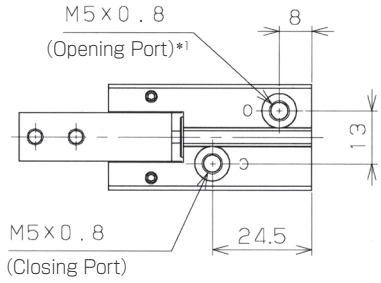
*1) For the single acting type, the opening port cannot be used because it is used for the exhaust plug.

Dimensions EHVE-20□



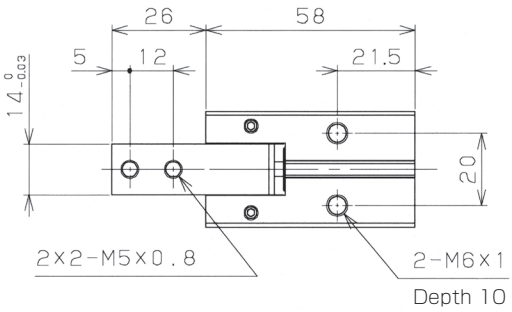


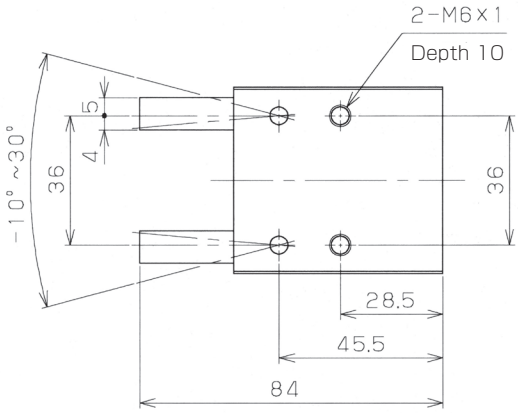


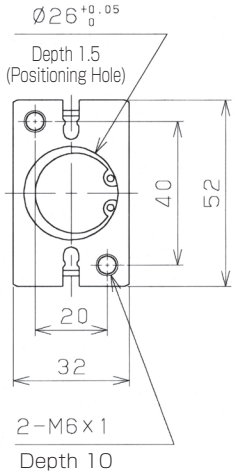


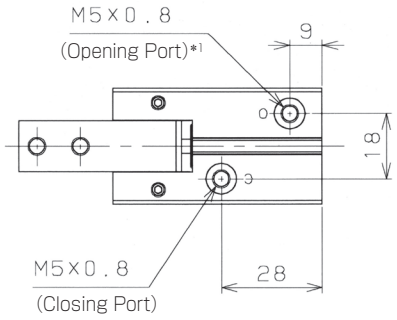
*1) For the single acting type, the opening port cannot be used because it is used for the exhaust plug.

■Dimensions EHVE-25□









*1) For the single acting type, the opening port cannot be used because it is used for the exhaust plug.