

180° Opening/Closing Angular Gripper

HV02E Series



◆ **Opening/Closing Angle 180°**

Since the levers open at 180 degrees in a direct line, workpieces do not interfere with the levers so they can move laterally.

◆ **High Gripping Force**

Stronger gripping force than that of the link mechanism.

(When the levers are in parallel)

HV02E Series

Model Code No.

HV02E - 12 ※ HAE - ZE135 A 2

Series Name

Bore Size

12:12mm
16:16mm
20:20mm
25:25mm

Number of Switches

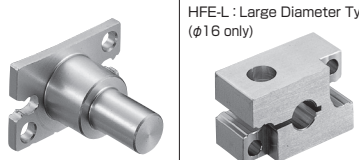
1:1 Switch
2:2 Switches

Switch Lead Wire Length

A:1m
B:3m

●Gripper Adaptor Type
No Code: No Gripper Adaptor

HAE




HFE (φ16, φ20 only)
HFE-L : Large Diameter Type (φ16 only)

●Detailed specifications→P.315

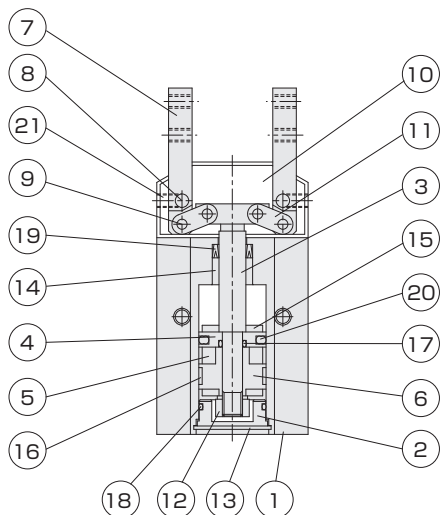
●Switch Type No Code: No Switch

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	Carbon Steel
4	Piston	Aluminum Alloy
5	Magnet	Resin
6	Magnet Mount Base	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	Link	Carbon Steel
12	U Nut	Carbon Steel
13	Hole Locating Snap Ring	Hard Steel
14	Oil-containing Metal	Oil-impregnated Sintered Bearing
15	Bumper	Urethane
16	Wearing	Resin
17	O Ring	NBR
18	O Ring	NBR
19	Rod Packing	NBR
20	Piston Packing	NBR
21	Set Screw	Chrome Molybdenum Steel

12: Washer + Nut for φ12 to 20 15, 16: None for φ12 and 25

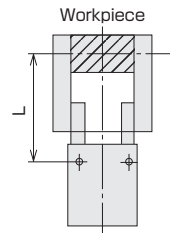
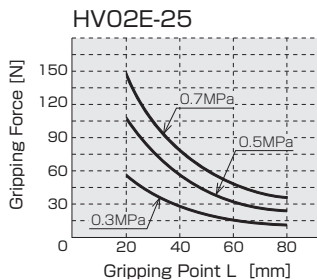
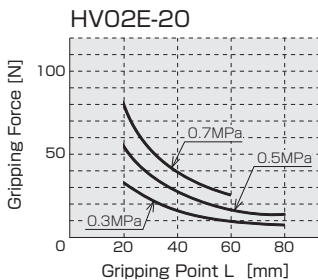
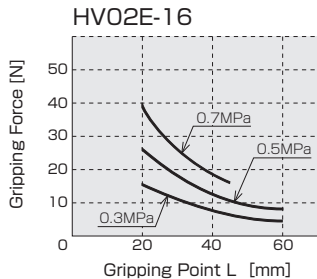
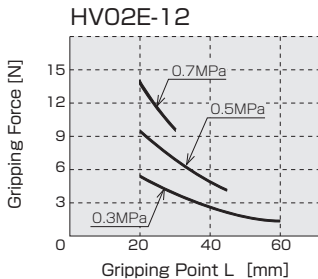
Specifications

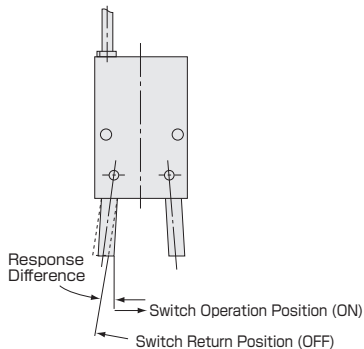
Fluid	Air	
Maximum Operating Pressure [MPa]	0.7	
Operating Pressure [MPa]	0.2~0.7	
Proof Pressure [MPa]	1.05	
Operating Temperature [°C]	0~60 (No Freezing)	
Lubrication	Not Required (Required for sliding parts of the machine)	
Pipe Bore	M3×0.5 (HV02E-12) M5×0.8 (Excepting HV02E-12)	
Maximum Operating Cycle [Cycle/min]	100	
Opening/Closing Angle (One Side)	Open [°]	90±2.5
	Close [°]	-3±1.5
Applicable Switch	ZE, ES Type (Solid State Switch)	

Action Type	Model	Bore Size [mm]	Lever Screw	Gripping Force [N] ^{Note)1}		Outside Dimensions (T x W x L) [mm] ^{Note)2}	Product Mass [g]
				Close	Open		
Double Acting	HV02E-12	12	M3×0.5 (x 4)	20/L	24/L	16×27×47	55
	HV02E-16	16	M3×0.5 (x 4)	55/L	64/L	22×34×69	146
	HV02E-20	20	M4×0.7 (x 4)	95/L	113/L	26×45×81	277
	HV02E-25	25	M5×0.8 (x 4)	220/L	260/L	32×52×88	427

Note 1): L indicates the distance (cm) from the fulcrum pin to the grip point. (The levers are retained in the horizontal condition.)
 Note 2): The outside dimensions indicate the main body dimensions. (Excluding the levers)

Effective Gripping Force (Closing Force)



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".

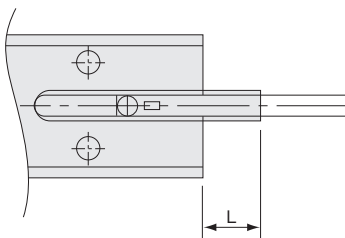
2. Switch repeat operating position accuracy

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

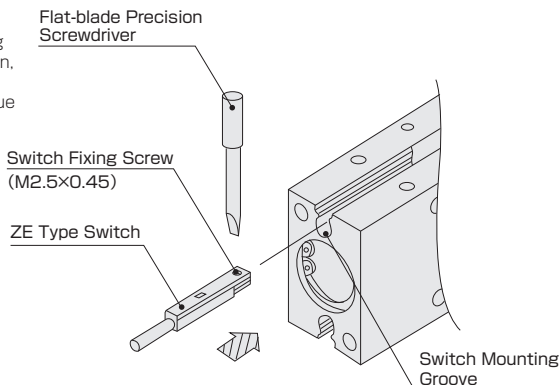
Model	Opening/Closing Angle Difference[°]	Operation Position Accuracy[°]
HV02E-12	3	0.5
HV02E-16	1.5	0.5
HV02E-20	2.5	0.5
HV02E-25	1.5	0.5

Switch Protrusion Distance

No switch protrusion distance is set for the HV02E series.

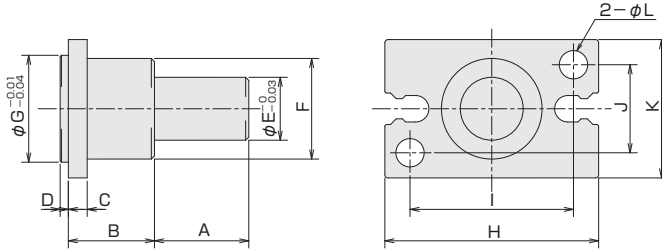
**Switch Mounting**

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.



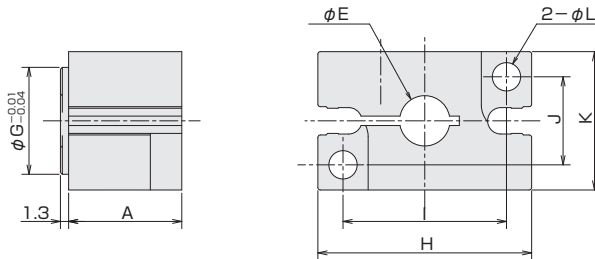
■ Outline Dimensional Drawing of Gripper Adaptor

HAE Type



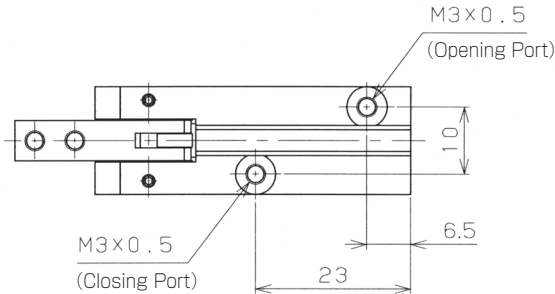
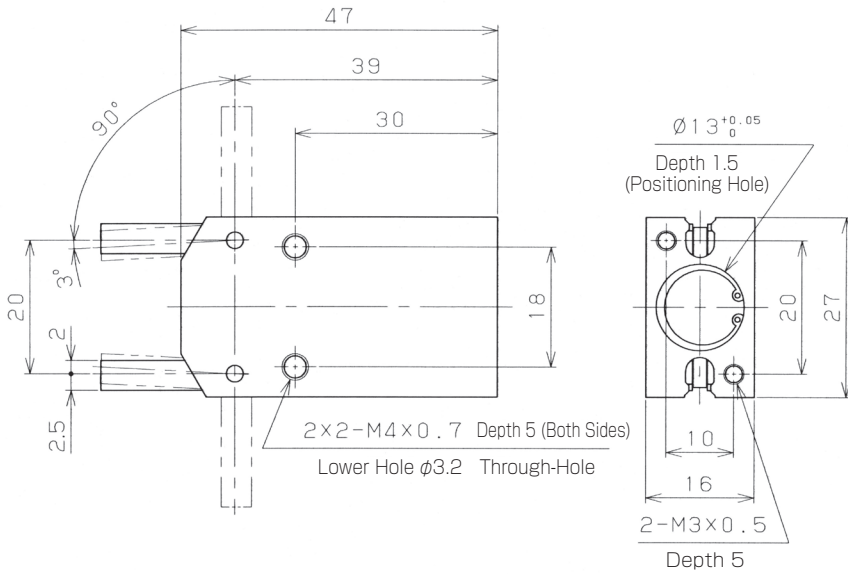
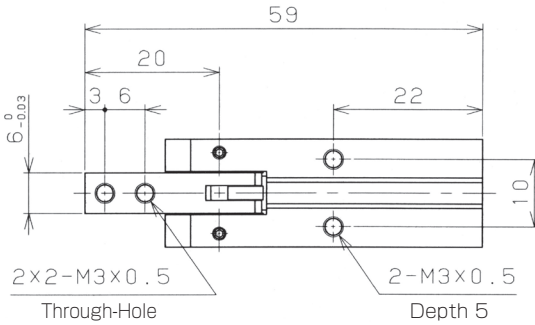
Type \ Code	A	B	C	D	E	F	G	H	I	J	K	L	Ancillary Bolt (x2)	Product Mass [g] (Including Bolts)
HAE-12	15	15	3	1.3	10	12	13	27	20	10	16	3.4	M3×0.5×8 ^L	13
HAE-16	15	15	3	1.3	10	16	17	34	26	14	22	4.5	M4×0.7×10 ^L	20
HAE-20	15	15	3	1.3	10	18	21	45	35	16	26	5.5	M5×0.8×10 ^L	28
HAE-25	20	17	5	1.3	14	26	26	52	40	20	32	6.6	M6×1×15 ^L	63

HFE Type

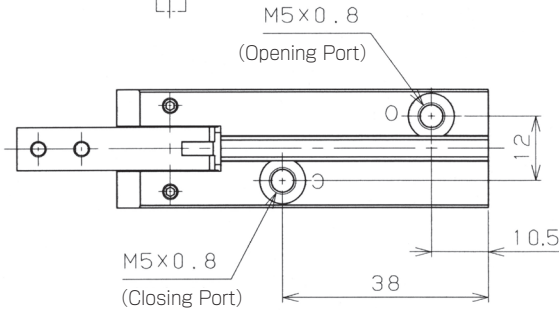
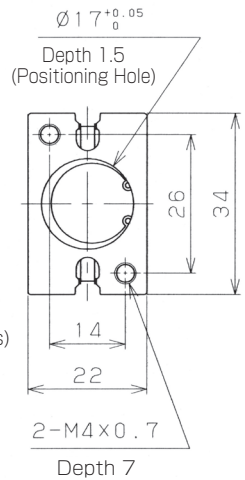
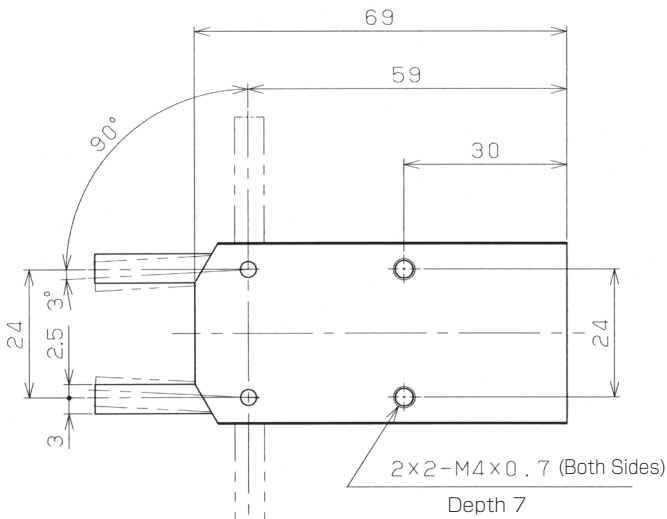
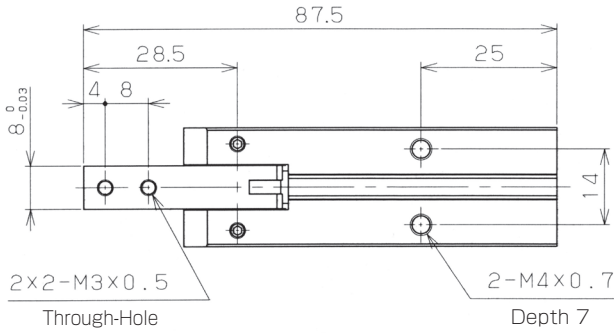


Type \ Code	A	E	G	H	I	J	K	L	Ancillary Bolt (x3)		Product Mass [g] (Including Bolts)
									Gripper Mounting (x2)	Adapter Fixing (x1)	
HFE-16	18	8	17	34	26	14	22	4.5	M4×0.7×20 ^L	M4×0.7×16 ^L	35
HFE-16L	18	10	17	34	26	14	22	4.5	M4×0.7×20 ^L	M4×0.7×16 ^L	33
HFE-20	19	13	21	45	35	16	26	5.5	M5×0.8×20 ^L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

Dimensions HV02E-12



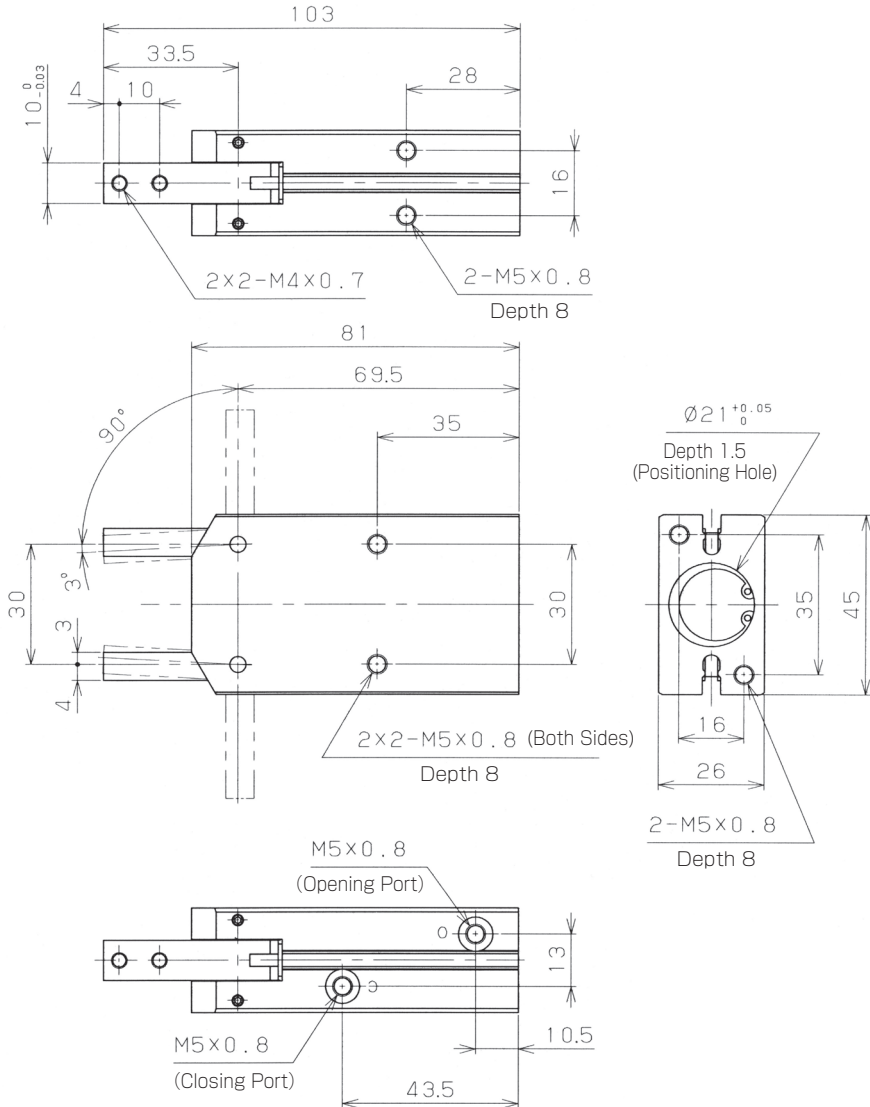
Dimensions HV02E-16



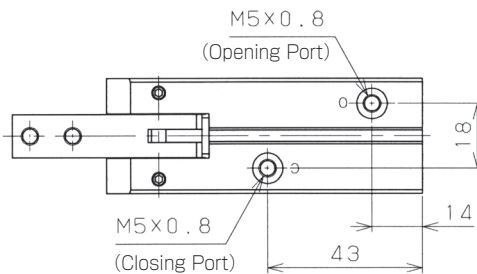
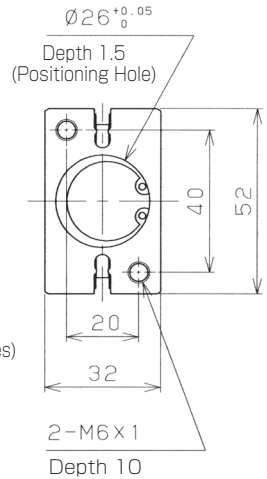
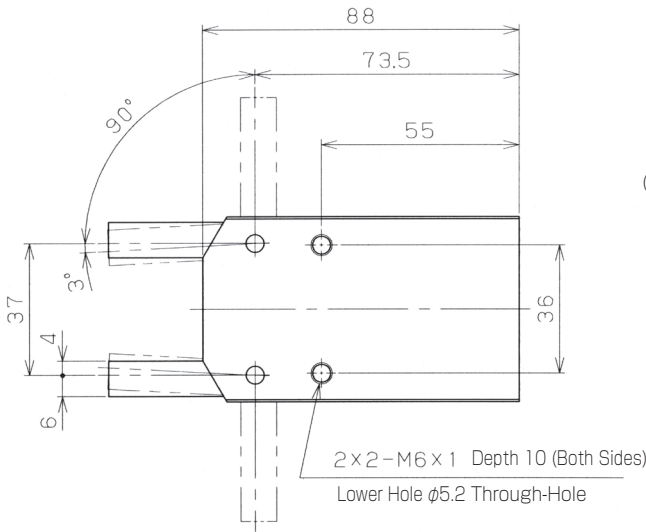
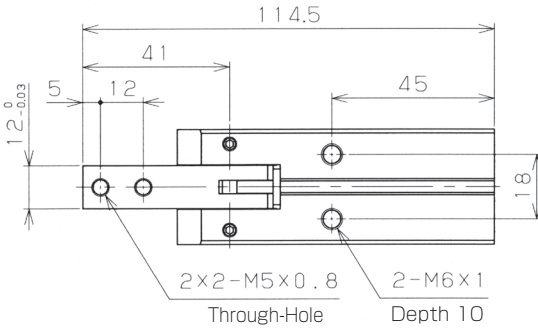
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HV02E Series

Dimensions HV02E-20



Dimensions HV02E-25



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