

EHPE Series

Model Code No.

EHPE - 10 C * HAE - ZE255 A 2

Series Name

Nominal Size (Bore Size)

- 10 : 10mm
- 16 : 16mm
- 20 : 20mm
- 25 : 25mm

Action Type

- A : Normally Open, Single Acting
- B : Normally Close, Single Acting (only for Custom-made)
- C : Double Acting

Number of Switch

- 1 : 1 Switch
- 2 : 2 Switches

Switch Lead Wire

- A : 1m
- B : 3m

(Option)

●Sensor Switch

Blank : without Switch

Straight type

- ES13, ZE135 : Solid state type, 2 wire
- ES15, ESP15, ZE155 : Solid state type, 3 wire

L-shaped type

- ES23, ZE235 : Solid state type, 2 wire
- ES25, ESP25, ZE255 : Solid state type, 3 wire

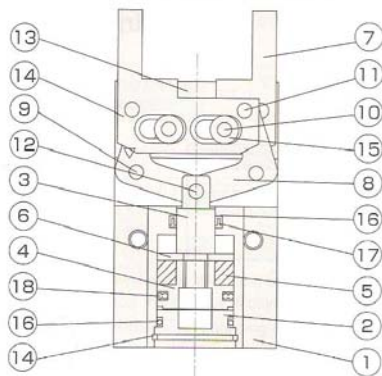
(Option)

●Mounting Adapter

- Blank : without Adapter
- HAE : HAE type
- HFE : HFE type
- HFEL : HFE-L type (only EHPE-16)

Internal Structure

(Example : Double Acting type)



Parts List

No.	Name	Material
1	Main Body	Aluminium Alloy
2	Head Cover	Aluminium Alloy
3	Piston Rod	Stainless Steel
4	Piston	Aluminium Alloy
5	Magnet	Plastic Magnet
6	Holding Cover	Aluminium Alloy
7	Lever	Carbon Tool Steel
8	Action Lever	Carbon Steel
9	Fulcrum Pin	Carbon Tool Steel
10	Fulcrum Pin	Carbon Tool Steel
11	Press-in Pin	Carbon Steel
12	Press-in Pin	Carbon Steel
13	Slide Plate	Carbon Steel
14	Snap Ring	Hard Steel
15	Ring	Carbon Steel
16	O-ring	NBR
17	Packing for Rod	NBR
18	Packing for Piston	NBR

Specifications

Action Type	Double Acting, Single Acting
Working Fluid	Air
Maximum Operating Pressure [MPa]	0.7
Proof Pressure [MPa]	1.05
Operating Ambient Temperature [°C]	0 to 60
Lubrication	Not required (need for Levers sliding portion only)
Max. Operating Cycle [cycles per min.]	180
Centering Accuracy [mm]	0.15 (+0.15 to -0.15)
Repeatability Accuracy [mm]	0.01 (+0.01 to -0.01)
Air port	M3×0.5 (EHPE-10) M5×0.8 (EHPE-16, EHPE-20, EHPE-25)
Available Switch type	ZE, ES type (Solid state type)

Action type	Model	Nominal Size [mm]	Minimum Operating Pressure [MPa]	Maximum Stroke [mm]	Effective Gripping Force [N]		External Dimensions (Thick×Width×Length) [mm]	Weight [g]
					Close	Open		
Double Acting	EHPE-10C	10	0.15	4	8	5	16×23×44	47
	EHPE-16C	16	0.1	8	24	18	22×34×55.5	120
	EHPE-20C	20	0.1	12	47	35	26×45×66.5	230
	EHPE-25C	25	0.1	14	78	60	32×52×76.5	388
Single Acting, Normally Open	EHPE-10A	10	0.35	4	3	2	16×23×44	48
	EHPE-16A	16	0.25	8	13	4	22×34×55.5	121
	EHPE-20A	20	0.25	12	23	7	26×45×66.5	232
	EHPE-25A	25	0.25	14	38	14	32×52×76.5	392

Note: Effective Gripping Force (N) is the value at gripping point of 30 mm in length under operating pressure of 0.5MPa.
Effective Gripping Force at Opening is shown by spring force for Single acting type of gripper.

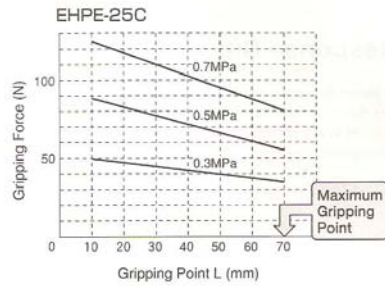
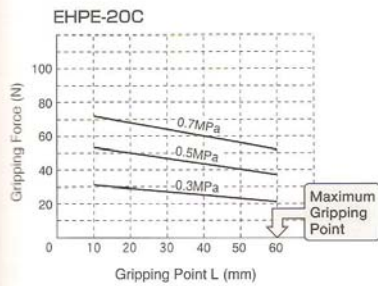
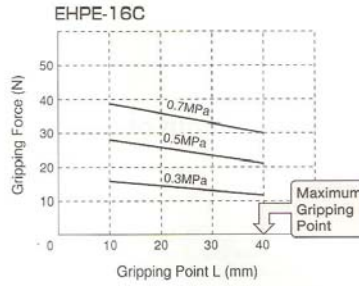
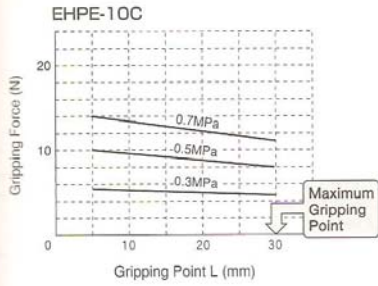
Mounting Adapter for Gripper

Gripper	Applicable Mounting Adapter		
	HAE-10	HAE-16	HAE-20
EHPE-10	HAE-10	HAE-10	—
EHPE-16	HAE-16	HAE-16	HFE-16L
EHPE-20	HAE-20	HAE-20	—
EHPE-25	HAE-25	HAE-25	—

Please refer to the page 179 for "Dimensions of Mounting Adapter for Gripper".

Effective Gripping Force

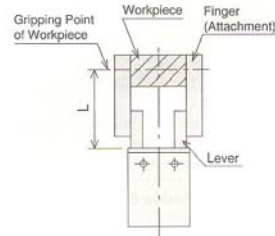
〈Double Acting Type〉



Calculation of Effective Gripping Force (When Opening) :

$$\text{Effective Gripping Force (when opening)} = \text{Effective Gripping Force (when closing)} \times C_f$$

EHPE series	-10C	-16C	-20C	-25C
Cf	0.64	0.75	0.75	0.77



NOTE:

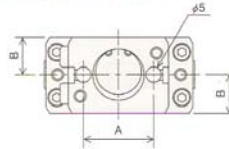
1. When gripping a workpiece, the mass of workpiece should be within the range between 5 to 10% of the above Effective Gripping Force.
2. When moving a workpiece with gripping it, the mass of workpiece should be within the range between 2 to 4% of the above Effective Gripping Force.
3. The necessary gripping force depends on the material (surface) of workpiece, shape of fingers and moving speed and direction (horizontally or vertically) of gripper. Therefore, please take your operational condition into consideration.

EHPE Series

■ Dimensions of Groove for Sensor Switch

Unit : mm

EHPE series	-10	-16	-20	-25
A	17	26	31	36
B	8	11	13	16

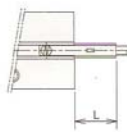


■ Protruding Length of Switch

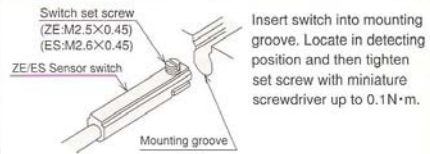
Refer to protruding length (L) of switch body at the levers closed fully.

Unit : mm

EHPE series	-10	-16	-20	-25
Max. Protruding Length (L)	0	0	0	0

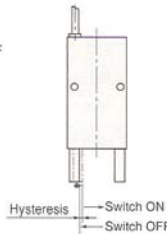


■ Switch Installation



■ Response Differential (Hysteresis)

This shows the stroke from the location where the lever moves and turns the switch ON to where the switch turns OFF in the opposite direction.



Unit : mm

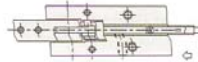
EHPE series	-10	-16	-20	-25
Max. Response Differential	0.3	0.4	0.4	0.4
Operating Position Accuracy	0.2	0.2	0.2	0.2

■ Finding & Adjustment Ideal Detecting Position

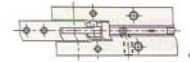
Lever-Inside Gripping (Workpiece-External Gripping)



① Check the levers are completely closed and inside gripping works.



② Fit the switch into the groove in the direction of arrow. Continue inserting the switch further, then LED turns ON.

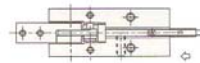


③ Insert the switch in the direction of arrow by 0.6mm from position ② furthermore and fix it there with set screw.

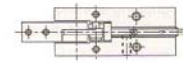
Lever-Outside Gripping (Workpiece-Internal Gripping)



① Check the levers are completely open and outside gripping works.



② Fit the switch into the groove in the direction of arrow. Continue inserting the switch further until LED turns ON. By moving it more, LED is OFF.

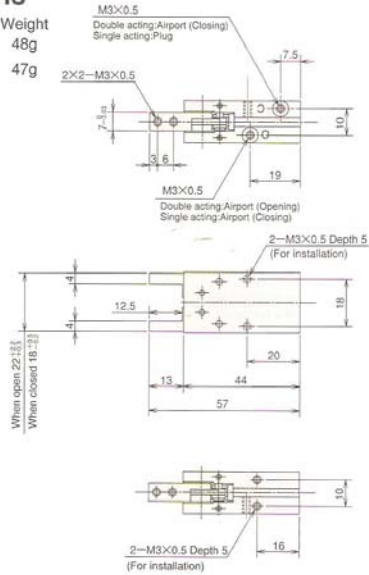


③ Move back the switch in the reverse direction of arrow by 0.6mm from position ② furthermore and fix it there with set screw.

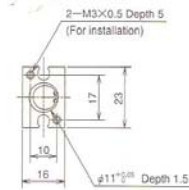
Dimensions

Unit : mm

Weight
EHPE-10A 48g
EHPE-10C 47g

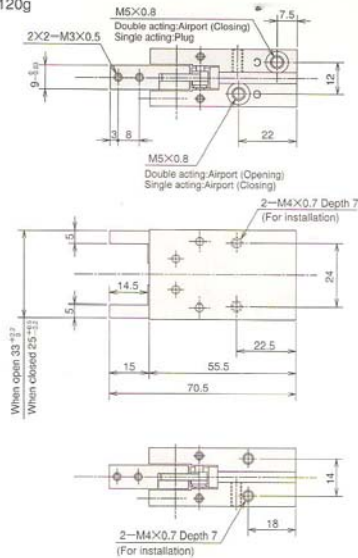


Double Acting Type
Letters "C" and "O" are stamped near Air ports. Refer to each drawing which show Double acting type.
Single Acting Type
Only "C" is stamped at the same place of "O" for Double acting type, and the other port is plugged at factory.

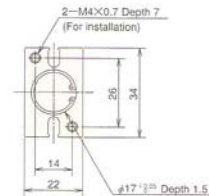


Weight
EHPE-16A 121g
EHPE-16C 120g

Unit : mm



Double Acting Type
Letters "C" and "O" are stamped near Air ports. Refer to each drawing which show Double acting type.
Single Acting Type
Only "C" is stamped at the same place of "O" for Double acting type, and the other port is plugged at factory.

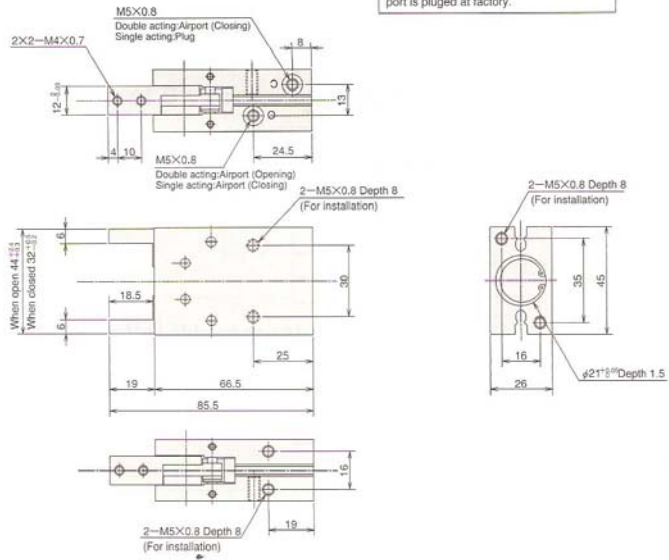


Dimensions

Weight
EHPE-20A 232g
EHPE-20C 230g

Double Acting Type
Letters "C" and "O" are stamped near Air ports. Refer to each drawing which show Double acting type.
Single Acting Type
Only "C" is stamped at the same place of "O" for Double acting type, and the other port is plugged at factory.

Unit : mm

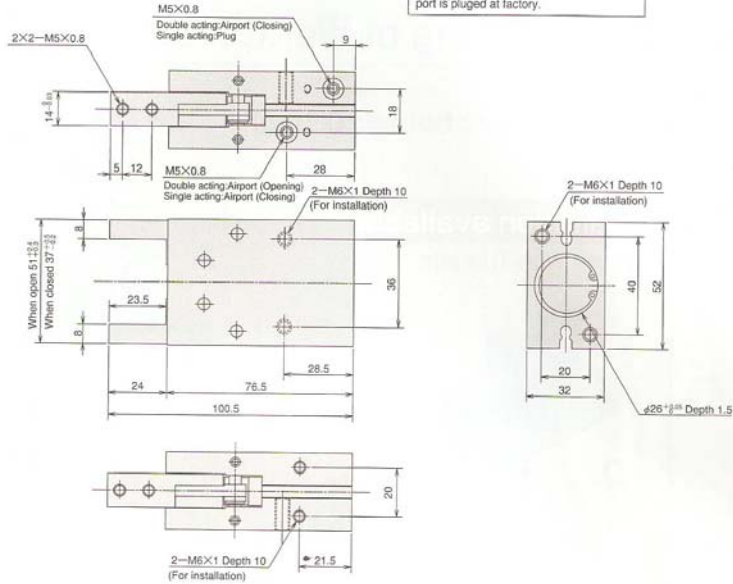


Dimensions

Weight
EHPE-25A 392g
EHPE-25C 388g

Unit : mm

Double Acting Type
Letters "C" and "O" are stamped near Air ports. Refer to each drawing which show Double acting type.
Single Acting Type
Only "C" is stamped at the same place of "O" for Double acting type, and the other port is plugged at factory.



EHPE

4ad1

4ad1

6ad1

6ad1

6ad1