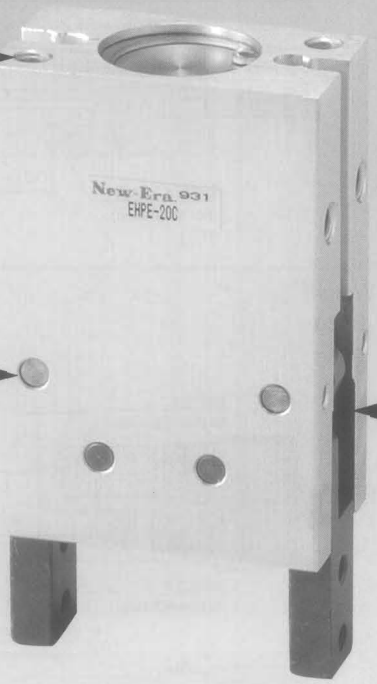
EHPE Series
Compact Gripper

Improved Mechanism

◆High Rigidity
(Repeat accuracy : below±0.01mm)

Powerfull Gripping Force

◆Strong Closing Force by Extending Cylinder



Ring Bearing Guide

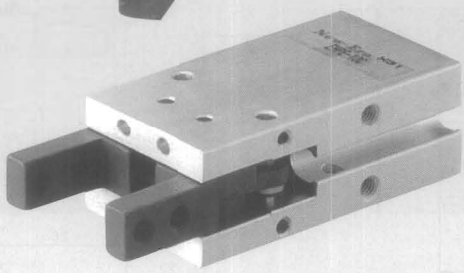
◆Long Life

3-Way Installation available

◆Mounting Holes with Threads

Mounting Adapters available (Option)

◆Female type
◆Male type



Straight and/or L-shaped ZE or ES type Sensor Switches

(Sensor switch is an option)
◆detecting Levers OPEN
◆detecting Levers CLOSED

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)

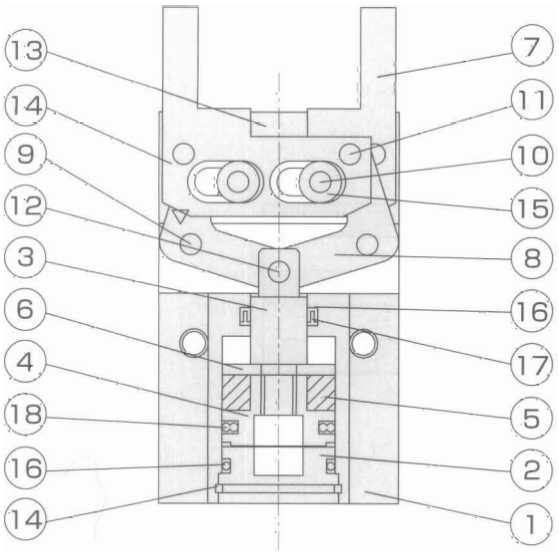
●Sensor Switch	
Blank : without Switch	
Straight type	
ES13, ZE135	: Solid state type, 2 wire
ES15, ESP15, ZE155	: Solid state type, 3 wire
L-shaped type	
ES23, ZE235	: Solid state type, 2 wire
ES25, ESP25, ZE255	: Solid state type, 3 wire

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

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

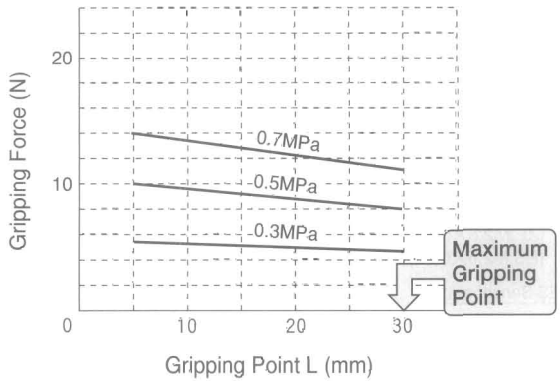
Gripper	Applicable Mounting Adapter		
EHPE-10	HAE-10	HAE-10	—
EHPE-16	HAE-16	HAE-16	HFE-16L
EHPE-20	HAE-20	HAE-20	—
EHPE-25	HAE-25	HAE-25	—

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

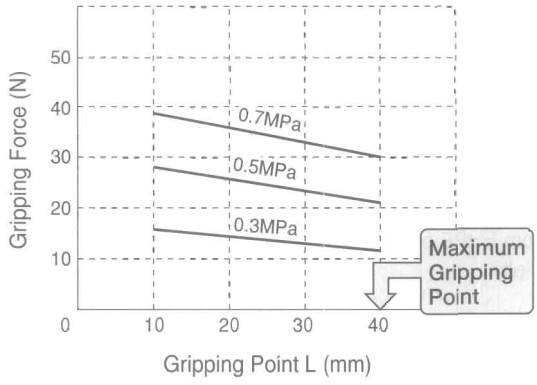
■Effective Gripping Force

〈Double Acting Type〉

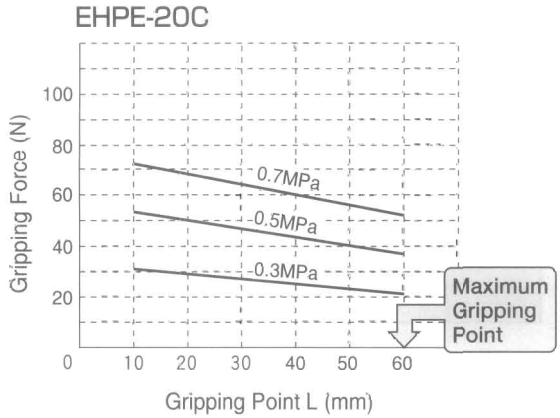
EHPE-10C



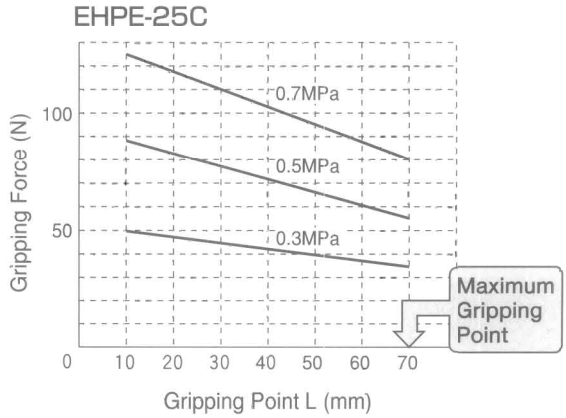
EHPE-16C



EHPE-20C

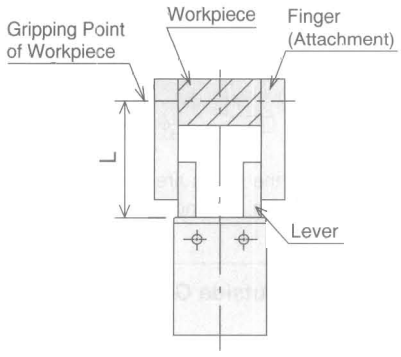


EHPE-25C



■Calculation of Effective Gripping Force (When Opening) :

Effective Gripping Force (when opening) = **Effective Gripping Force (when closing)** × ***Cf***



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

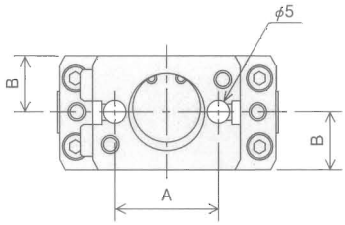
NOTE:

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 workiece 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.

Dimensions of Groove for Sensor Switch

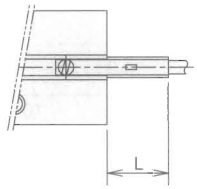
Unit : mm

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



Protruding Length of Switch

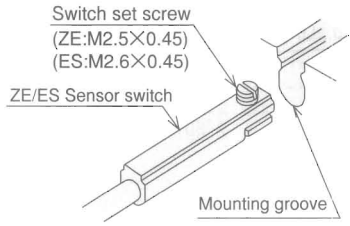
Refer to protruding length (L) of switch body from EHPE body at the levers closed fully.



Unit : mm

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

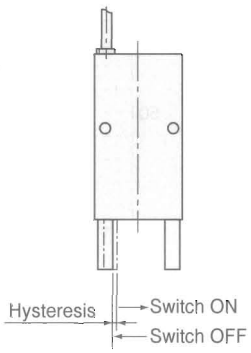
Switch Installation



Insert switch into mounting groove. Locate in detecting position and then tighten set screw with miniature screwdriver up to 0.1N·m.

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.

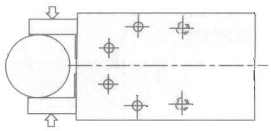


Unit : mm

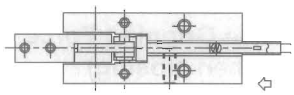
EHPE series	-10	-16	-20	-25
Max. Response Differential	0.3	0.4	0.4	0.4
Operating Position Accuracy	0.2	0.2	0.2	0.2

Finding & Adjustment Ideal Detecting Position

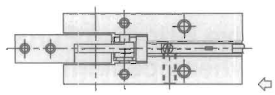
Levers-Inside Gripping (Workpiece-External Gripping)



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

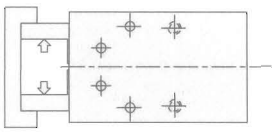


②Fit the switch into the groove in the direction of arrow. Continue inserting the switch further, then LED turns ON.

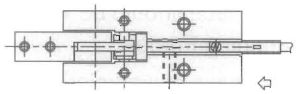


③Insert the switch in the direction of arrow by 0.6mm from position ② furthermore and fix it there with set screw.

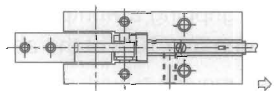
Levers-Outside Gripping (Workpiece-Internal Gripping)



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



②Fit 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.

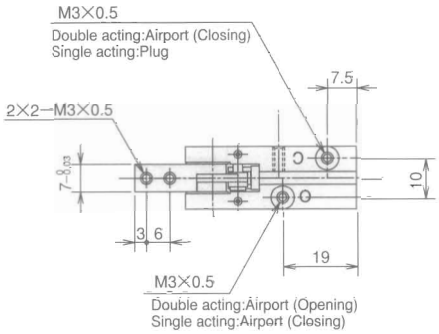


③Move back the switch in the reverse direction of arrow by 0.6mm from position ② furthermore and fix it there with set screw.

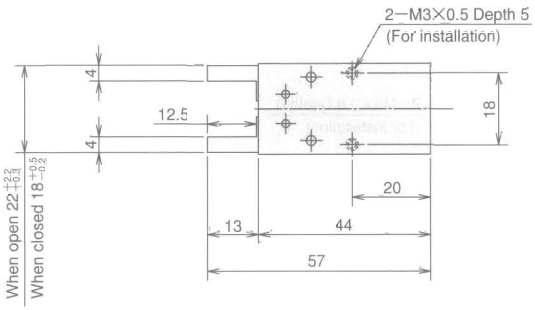
Dimensions

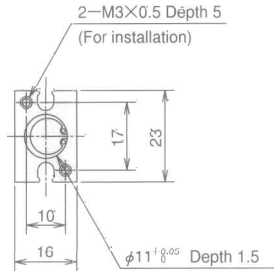
Unit : mm

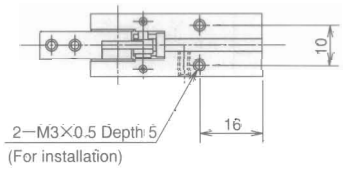
	Weight
EHPE-10A	48g
EHPE-10C	47g



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 pluged at factory.

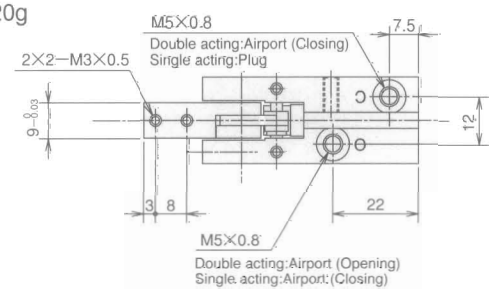




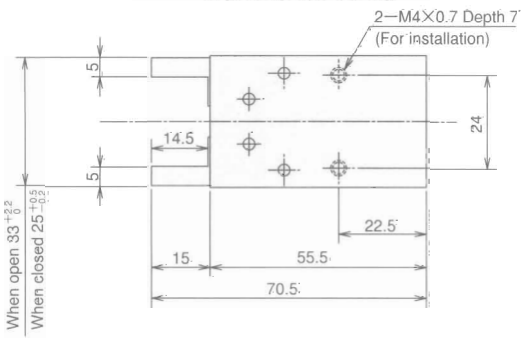


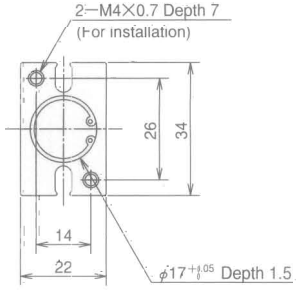
	Weight
EHPE-16A	121g
EHPE-16C	120g

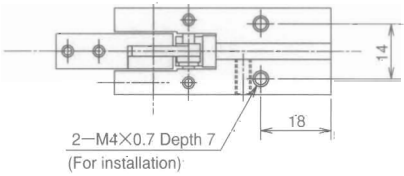
Unit : mm



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 pluged at factory.





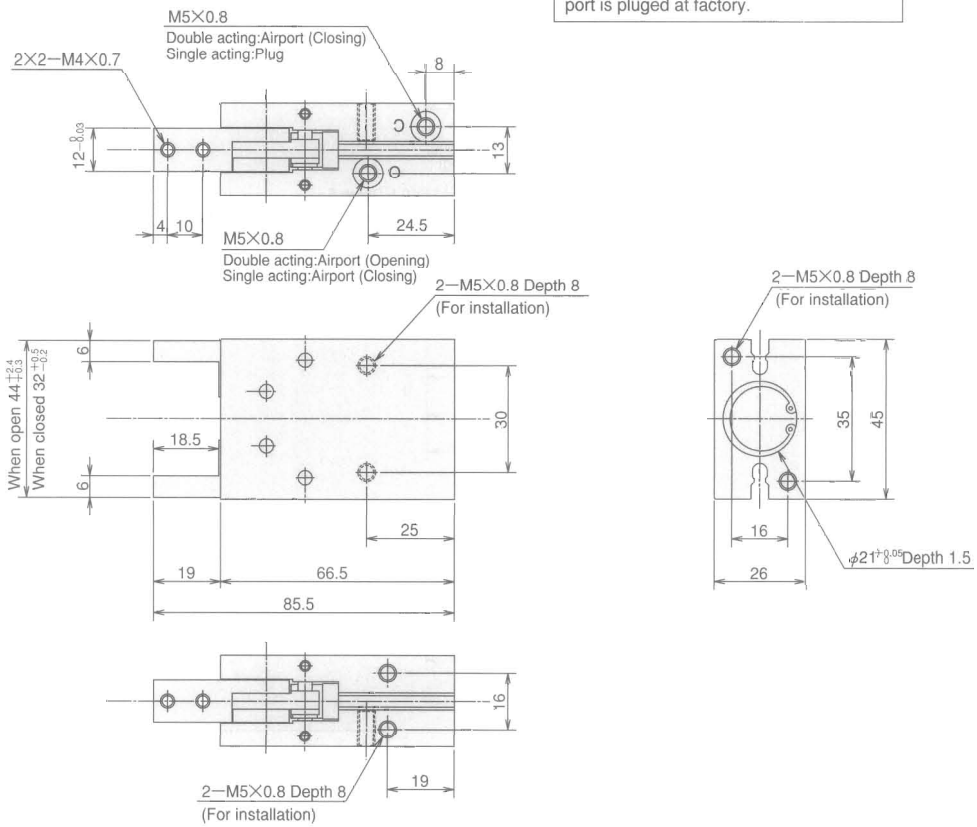


Dimensions

Unit : mm

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 pluged at factory.



Dimensions

Unit : mm

Weight

EHPE-25A 392g

EHPE-25C 388g

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 pluged at factory.