

# HLF Series Linear Guide Parallel Hand

## Thin Body and Light-Weight with Cost in Mind!

### Key Features

#### ■ Thin and light-weight

25% reduced gripper height and 30% reduced body weight (compared to similar older models)

#### ■ High grip force

Using 2 pistons to give more grip force

#### ■ Long stroke

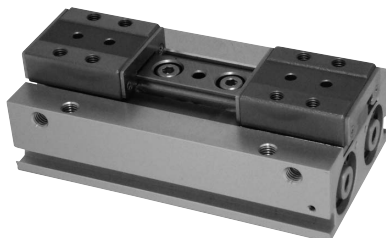
Ideal for numerous areas of application and workpieces

#### ■ 4 different mounting surfaces

The body has 4 different mounting surfaces with tap holes and 1 surface with through holes

#### ■ Switch slots available for sensing jaw position (open or closed)

Various types of sensors (non-contact reed switch, contact switch, or oil-resistant switches) available



HLF-16AS1

### How To Order

Standard ----- HLF-16AS1

Option ----- HLF- <sup>Size</sup>16AS1- <sup>Sensor, Quantity</sup>E24LS2 ----- HL-16AS1 with 2 of E24 sensors

Size	Sensor, Quantity					
Symbol	Name	Symbol	Name	Symbol	Name	
08AS1	ET3	Non-Contact 3-Lead	E25	Contact 2-Lead	S1	1 Sensor
12AS1	ET3L	Non-Contact 3-Lead	E25L	Contact 2-Lead	S2	2 Sensors
16AS1	ET2	Non-Contact 2-Lead	E40	Non-Contact 3-Lead		
20AS1	ET2L	Non-Contact 2-Lead	E40L	Non-Contact 3-Lead		
	E24	Contact 2-Lead	E41	Non-Contact 2-Lead		
	E24L	Contact 2-Lead	E41L	Non-Contact 2-Lead		

For sensor detail ▶ 277P

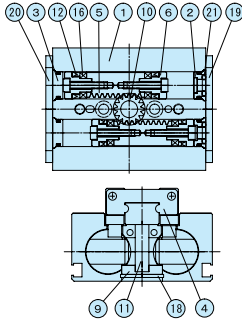
### Specification

Model	HLF-08AS1	HLF-12AS1	HLF-16AS1	HLF-20AS1
	For Layout Drawing ▶ 95P	For Layout Drawing ▶ 95P	For Layout Drawing ▶ 96P	For Layout Drawing ▶ 96P
Working Pressure	Pneumatic: 0.2 to 0.7MPa			
Lubrication	Not Required or Turbine Oil Class 1 (ISOVG32)			
Ambient Temperature (°C)	5 to 60			
Total Jaw Stroke (mm)	16	24	32	40
Cylinder Diameter (mm)	dia.8×2	dia.12×2	dia.16×2	dia.20×2
Internal Volume [Reciprocation] (cm <sup>3</sup> /time)	1.6	5.4	12.8	25.1
Repeatability (mm)	±0.03			
Weight (kg)	0.098	0.206	0.428	0.812

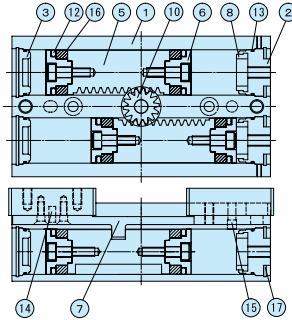
# HLF-08AS1/12AS1/16AS1/20AS1

## Internal Structure / Parts & Seals

### HLF-08AS1



### HLF-12AS1 to 20AS1



### Parts List

No.	Name	Material	No.	Name	Material	No.	Name	Material
1	Body	Aluminum	8	Cushion	Resin	15	Positioning Pin	Bearing Steel
2	Cylinder Cover Port	Aluminum	9	Center Plate	Aluminum	16	Magnet	
3	Cylinder Cover	Resin	10	Pinion	Stainless Steel	17	For C-Type Snap Ring Hole	Stainless Steel
4	LM Guide		11	Pinion Shaft	Bearing Steel	18	For C-Type Snap Ring Hole	Stainless Steel
5	Rack	Stainless Steel	12	Piston Seal		19	Side Plate 1	Stainless Steel
6	Piston	Resin	13	Cylinder Seal		20	Side Plate 2	Stainless Steel
7	Rack Joint	Stainless Steel	14	Locating Pin	Bearing Steel	21	Cover Seal	

### Seals List

No.	HLF-08AS1	HLF-12AS1	HLF-16AS1	HLF-20AS1
12	MYA-5	MYA-9	PSD-16	PSD-20
13	dia.8×dia.1	dia.10×dia.1	dia.14×dia.1	dia.18×dia.1
21	S-4			

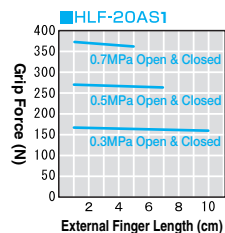
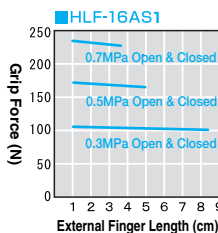
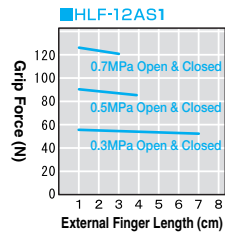
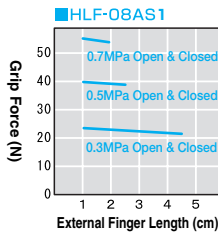
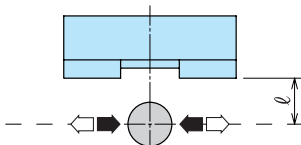
## Performance Data

### Grip Force

The graph shows grip force in opening and closing with effective external finger lengths  $\ell$  from gripper cover surface under different air pressure (MPa)

Open (⇐) ————

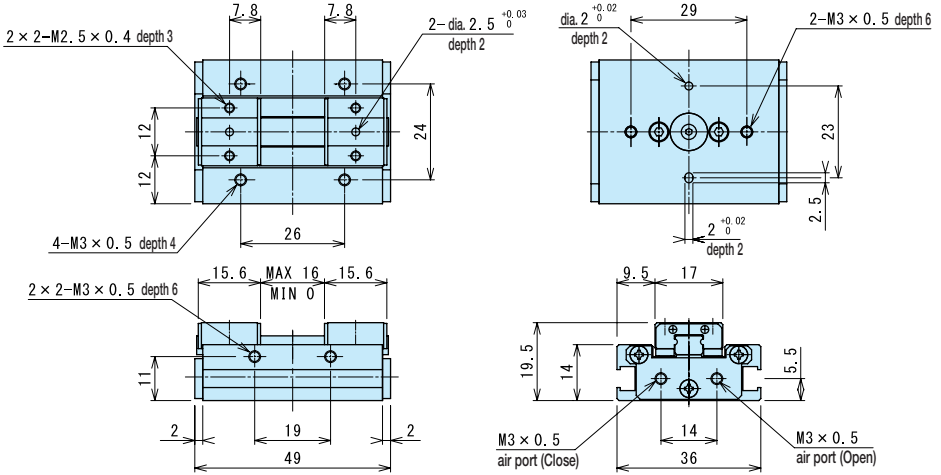
Closed (⇒) ————



## Layout Drawing

### HLF-08AS1 (Optimal Grip Force 20N to 35N)

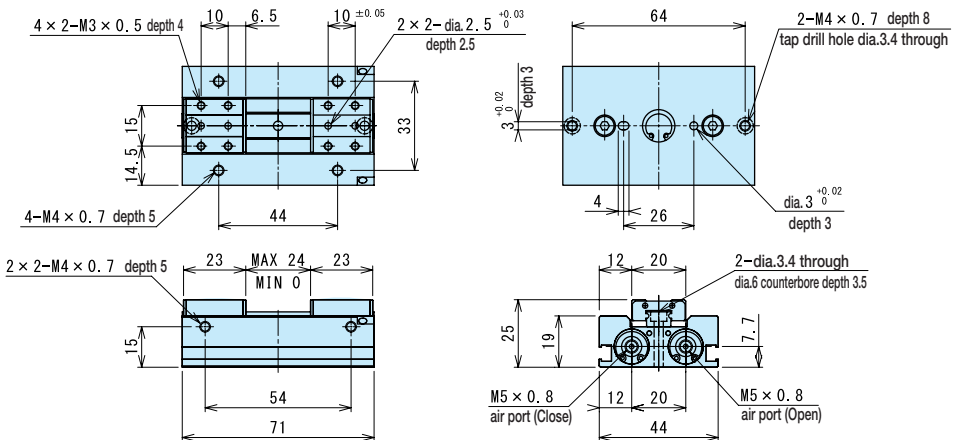
#### HLF-08AS1 Standard



Hand  
(2-law)

### HLF-12AS1 (Optimal Grip Force 60N to 80N)

#### HLF-12AS1 Standard

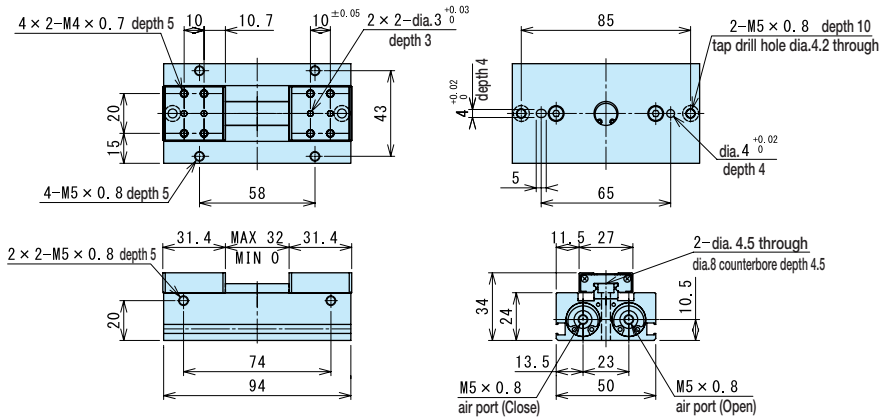


# HLF-08AS1/12AS1/16AS1/20AS1

For CAD data, please go to **▶518P**

## HLF-16AS1 (Optimal Grip Force 110N to 160N)

### HLF-16AS1 Standard



## HLF-20AS1 (Optimal Grip Force 160N to 250N)

### HLF-20AS1 Standard

