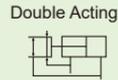




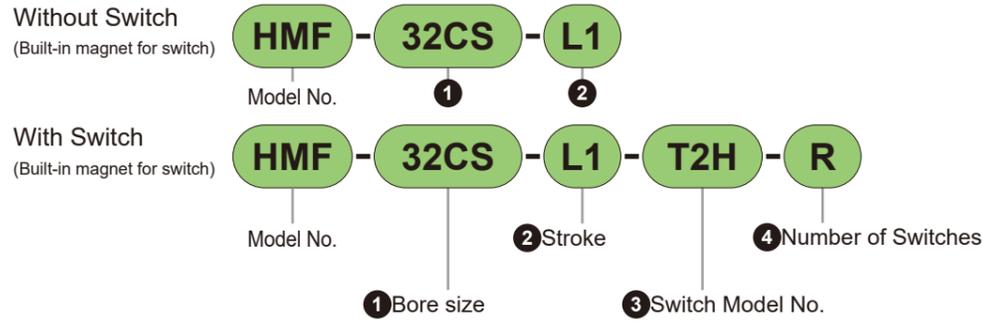
## Compact Wide Parallel Gripper (Standard/Long Stroke)

# HMF Series

- Operating stroke: Standard 20, 30, 40, 50, 70, 100 mm
- Long stroke 1 60, 80, 100, 120, 160 mm
- Long stroke 2 80, 100, 120, 160, 200 mm



### Model No. Notation Method



#### 1 Bore Size (mm)

Code	Content
12CS	ø12
16CS	ø16
20CS	ø20
25CS	ø25
32CS	ø32
40CS	ø40

#### 2 Stroke

Code	Content	Stroke (mm)					
		ø12	ø16	ø20	ø25	ø32	ø40
Blank	Standard	20	30	40	50	70	100
L1	Long stroke 1		60	80	100	120	160
L2	Long stroke 2		80	100	120	160	200

Note) For 12CS, long strokes "L1" and "L2" cannot be manufactured.

#### 3 Switch Model No.

For switch details, please refer to P. 573. Switches are included with the product and shipped.

Contact	Indicator LED Special Function	Wiring (Output)	Load Voltage (V)		Load Current (mA)		Lead wire *1	
			AC	DC	AC	DC	Straight	L-shape
Solid State	1-Color	2-wire	-	10 to 30	-	5 to 20 *2	T2H□	T2V□
	1-Color Flexible Lead Wire	2-wire	-	10 to 30	-	5 to 20 *2	T2HR3	T2VR3
	1-Color	3-wire (NPN)	-	30 or less	-	100 or less	T3H□	T3V□
		3-wire (PNP)	-				T3PH□	T3PV□

#### \*Lead wire length

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)

Example) Lead wire length  
 1 m T2H  
 3 m T2H③  
 5 m T2H⑤

\*1: For "□" in the switch model number, enter the code selected from the "Lead wire length" table.

\*2: The maximum load current value above, 20 mA, is at 25 °C. If the switch operating ambient temperature is higher than 25 °C, it will be lower than 20 mA. (At 60 °C, it will be 5 to 10 mA.)

\*3: Switches other than the model numbers listed above are also available. (Custom Product) For details, see P. 573.

#### 4 Number of Switches

Code	Content
R	With 1 pc. on Open Side
H	With 1 pc. on Close Side
D	With 2 pcs

Rechargeable Battery Compatible Specification (Catalog No. CC-1226AA)

- Design compatible with rechargeable battery manufacturing process

**HMF - ... - P4□**

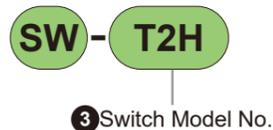
\*Please contact us for details.

Food Manufacturing Process Compatible Specification (Catalog No. CC-1271AA)

- Uses food grade grease that can be used in food manufacturing processes

**HMF - ... - FP1**

### Switch Single Unit Model No. Notation Method



### Specifications

Item	HMF-12CS	HMF-16CS			HMF-20CS			HMF-25CS			HMF-32CS			HMF-40CS		
		Blank	L1	L2	Blank	L1	L2	Blank	L1	L2	Blank	L1	L2	Blank	L1	L2
Bore size mm	ø12 x 2	ø16 x 2			ø20 x 2			ø25 x 2			ø32 x 2			ø40 x 2		
Operating Fluid	Compressed Air															
Max. Working Pressure MPa	0.7															
Min. Operating Pressure MPa	0.3															
Ambient Temperature °C	5 to 60															
Port Size	M5									Rc1/8						
Operating stroke mm	20	30	60	80	40	80	100	50	100	120	70	120	160	100	160	200
Rod diameter mm	ø6	ø8			ø10			ø12			ø16			ø20		
Internal volume (reciprocating) cm <sup>3</sup>	3.4	9.1	18.1	24.1	18.8	37.6	47.0	37.7	75.4	90.5	84.4	145	193	226	301	377
Repeatability mm	±0.1															
Weight kg	0.31	0.54	0.95	1.12	0.90	1.58	1.77	1.7	2.16	2.3	2.8	3.8	4.8	5.7	7.8	8.8
Lubrication	Not required (When lubricating, use turbine oil Class 1 ISO VG32)															

Hand (Gripper)

LSH-HP  
LSH  
FH100  
BSA2  
BHA  
BHG  
BHE  
LHA  
LHAG

HAP-1C  
HAP-2 to 4CS  
HKP  
HCP  
HGP  
LST-HP  
HLF2  
HLA/HLB  
HLAG/HLBG  
HLC  
HLD

HMC-HP  
**HMF**  
HMF-G

HMFB  
HFP  
FH500  
HBL  
HJL  
HMD  
HDL  
HJD

Cylinder Switch  
Ending

Hand (Gripper)

LSH-HP  
LSH  
FH100  
BSA2  
BHA  
BHG  
BHE  
LHA  
LHAG

HAP-1C  
HAP-2 to 4CS  
HKP  
HCP  
HGP  
LST-HP  
HLF2  
HLA/HLB  
HLAG/HLBG  
HLC  
HLD

HMC-HP  
**HMF**  
HMF-G

HMFB  
HFP  
FH500  
HBL  
HJL  
HMD  
HDL  
HJD

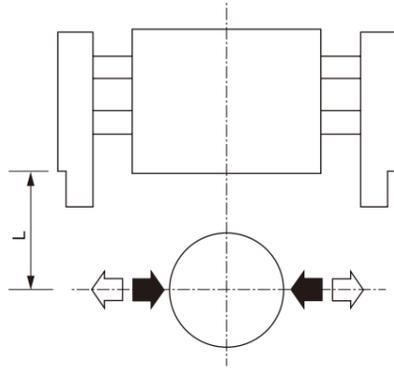
Cylinder Switch  
Ending

## Gripping Force Performance Data

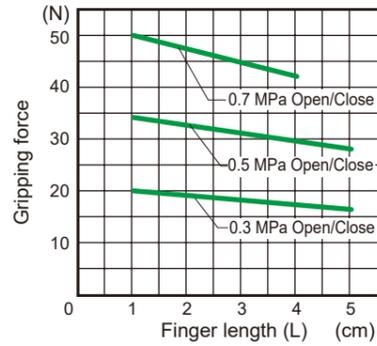
- Gripping force represents the thrust (for one finger) in the direction of the arrow shown in the figure.
- Indicates the gripping force at finger length L of the gripper when the supply pressure is 0.3, 0.5, and 0.7 MPa.

● Opening direction (◀) Closing direction (▶) Both  
 (Solid line)

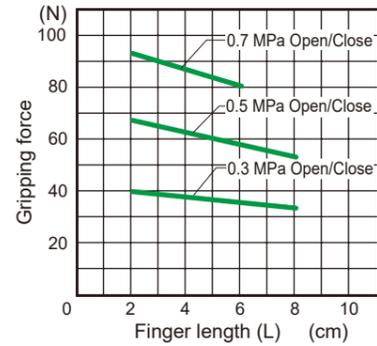
**Note: When selecting, check the design and selection precautions on P. 336.**



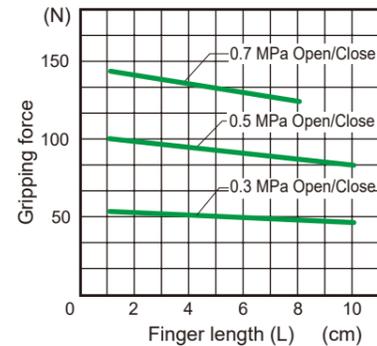
● HMF-12CS



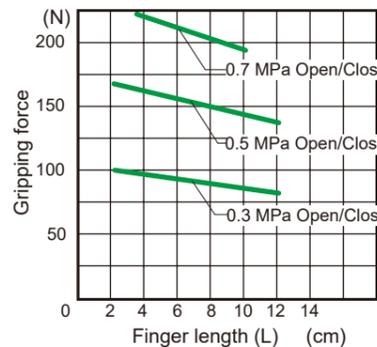
● HMF-16CS



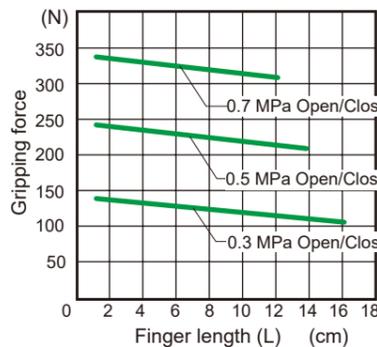
● HMF-20CS



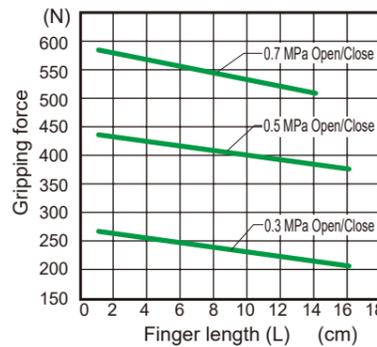
● HMF-25CS



● HMF-32CS



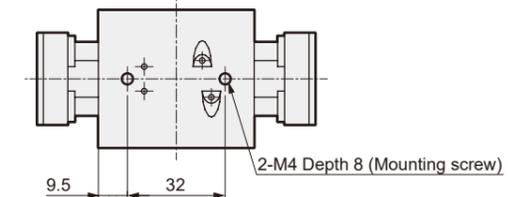
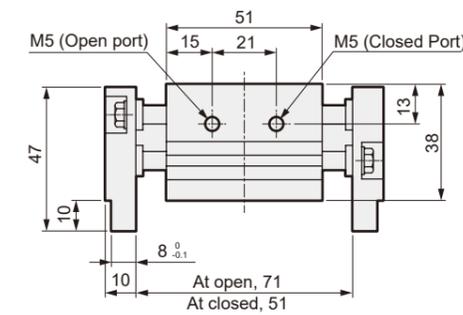
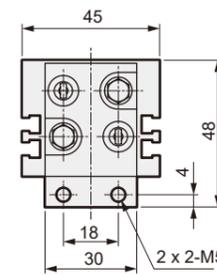
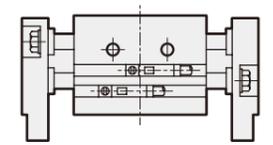
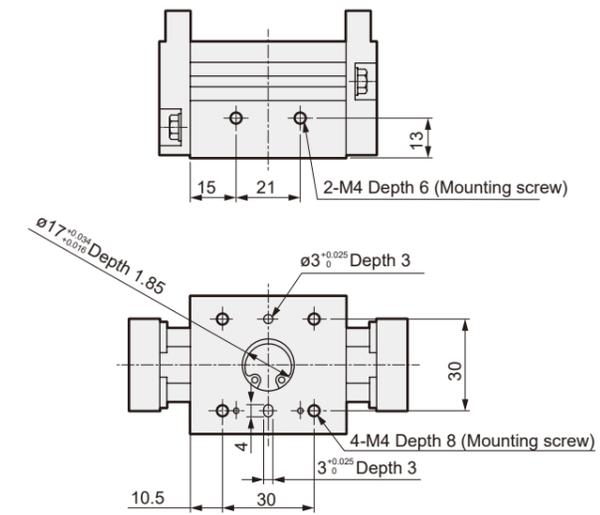
● HMF-40CS



## Outline Dimension Drawing

● HMF-12CS Standard

● With Switch



Hand (Gripper)

LSH-HP  
 LSH  
 FH100  
 BSA2  
 BHA  
 BHG  
 BHE  
 LHA  
 LHAG  
 HAP-1C  
 HAP-2 to 4CS  
 HKP  
 HCP  
 HGP  
 LST-HP  
 HLF2  
 HLA/HLB  
 HLAG/HLBG  
 HLC  
 HLD  
 HMC-HP  
**HMF**  
 HMF-G  
 HMF-B  
 HFP  
 FH500  
 HBL  
 HJL  
 HMD  
 HDL  
 HJD  
 Cylinder Switch  
 Ending

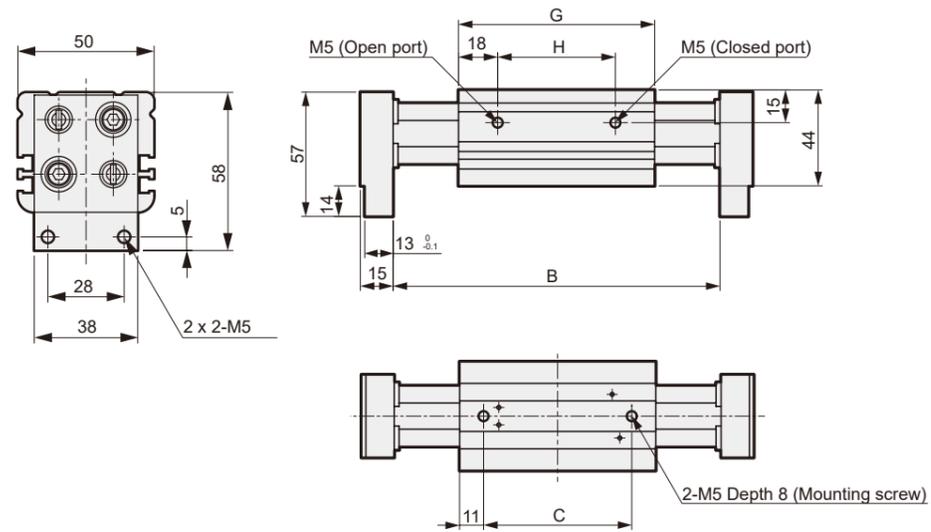
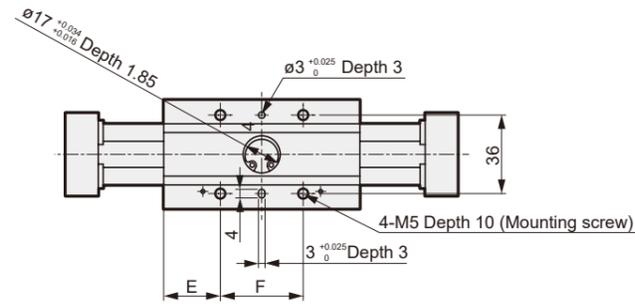
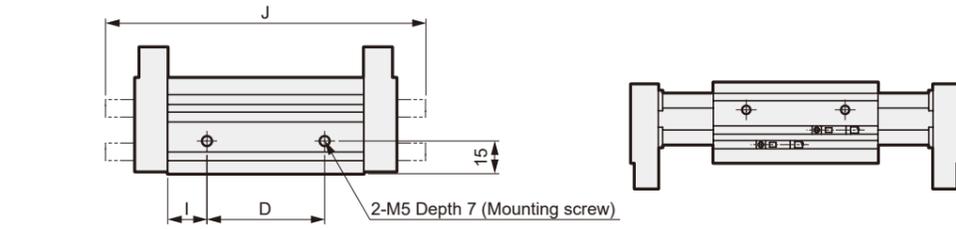
Hand (Gripper)

LSH-HP  
 LSH  
 FH100  
 BSA2  
 BHA  
 BHG  
 BHE  
 LHA  
 LHAG  
 HAP-1C  
 HAP-2 to 4CS  
 HKP  
 HCP  
 HGP  
 LST-HP  
 HLF2  
 HLA/HLB  
 HLAG/HLBG  
 HLC  
 HLD  
 HMC-HP  
**HMF**  
 HMF-G  
 HMF-B  
 HFP  
 FH500  
 HBL  
 HJL  
 HMD  
 HDL  
 HJD  
 Cylinder Switch  
 Ending

## Outline Dimension Drawing

●HMF-16CS Standard/L1/L2

●With Switch

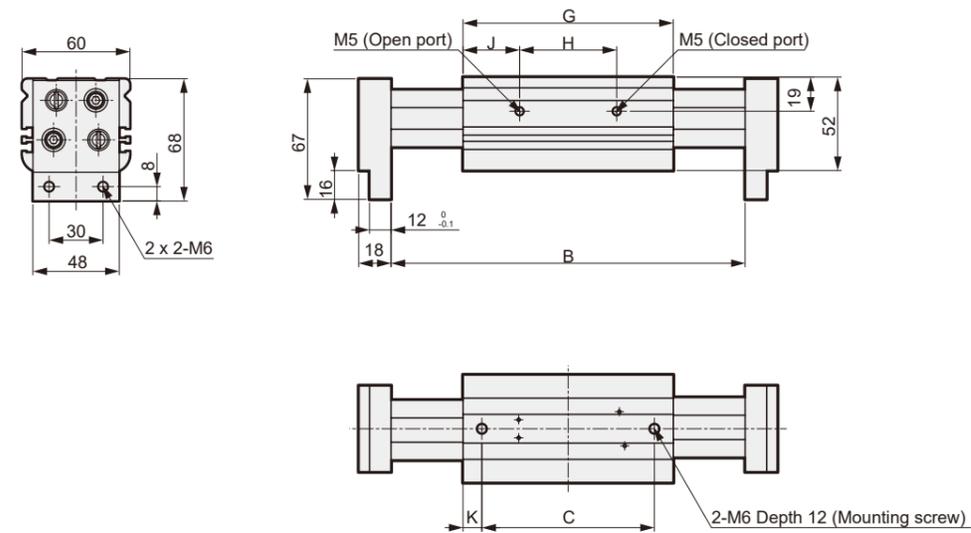
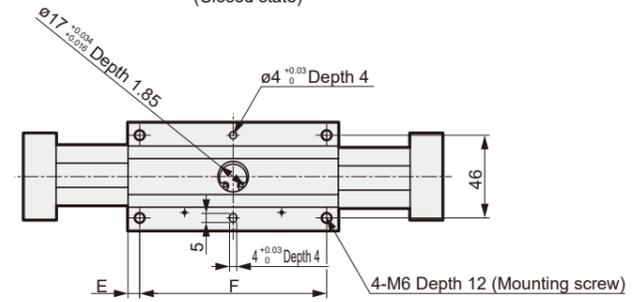
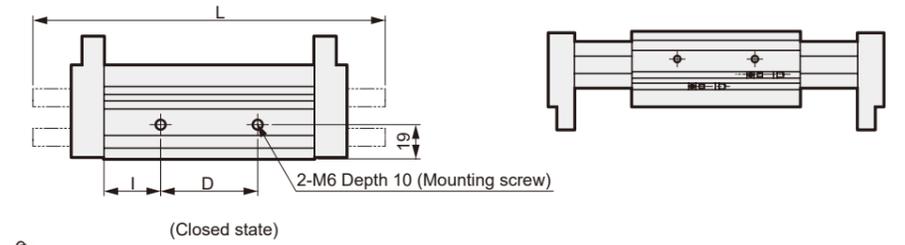


Code	B		C	D	E	F	G	H	I	J
	When Open	When Closed								
Standard (Blank)	90	60	38	28	11	38	60	24	16	-
L1	150	90	68	54	26	38	90	54	18	147
L2	186	106	84	70	26	54	106	70	18	183

## Outline Dimension Drawing

●HMF-20CS Standard/L1/L2

●With Switch



Code	B		C	D	E	F	G	H	I	J	K	L
	When Open	When Closed										
Standard (Blank)	114	74	56	38	9	56	74	34	18	20	9	-
L1	197	117	96	54	6.5	104	117	54	31.5	31.5	10.5	196
L2	233	133	112	70	6.5	120	133	70	31.5	31.5	10.5	232

Hand (Gripper)

LSH-HP

LSH

FH100

BSA2

BHA

BHG

BHE

LHA

LHAG

HAP-1C

HAP-2 to 4CS

HKP

HCP

HGP

LST-HP

HLF2

HLA/HLB

HLAG/HLBG

HLC

HLD

HMC-HP

HMF

HMF-G

HMF-B

HFP

FH500

HBL

HJL

HMD

HDL

HJD

Cylinder Switch

Ending

Hand (Gripper)

LSH-HP

LSH

FH100

BSA2

BHA

BHG

BHE

LHA

LHAG

HAP-1C

HAP-2 to 4CS

HKP

HCP

HGP

LST-HP

HLF2

HLA/HLB

HLAG/HLBG

HLC

HLD

HMC-HP

HMF

HMF-G

HMF-B

HFP

FH500

HBL

HJL

HMD

HDL

HJD

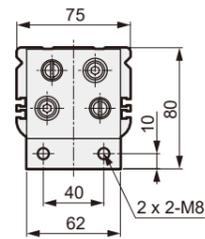
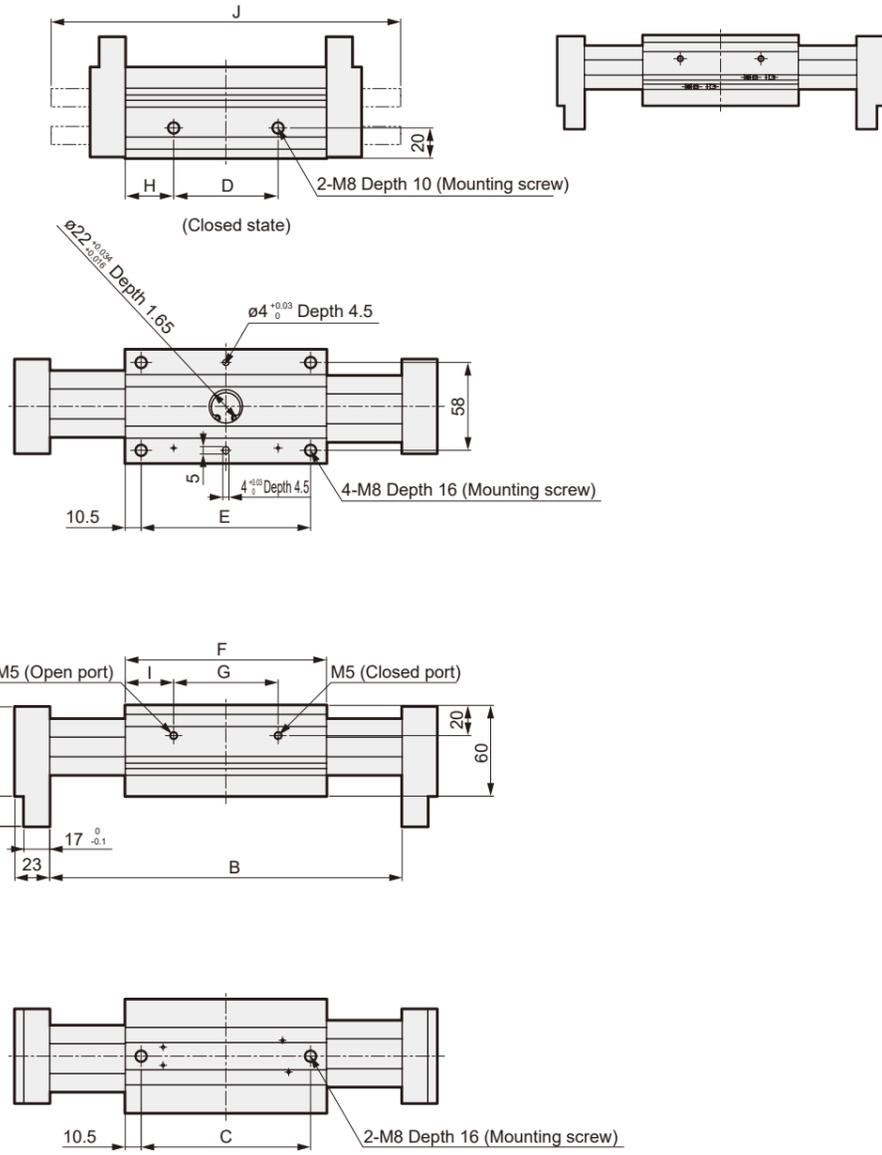
Cylinder Switch

Ending

Outline Dimension Drawing

●HMF-25CS Standard/L1/L2

●With Switch

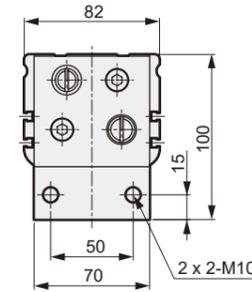
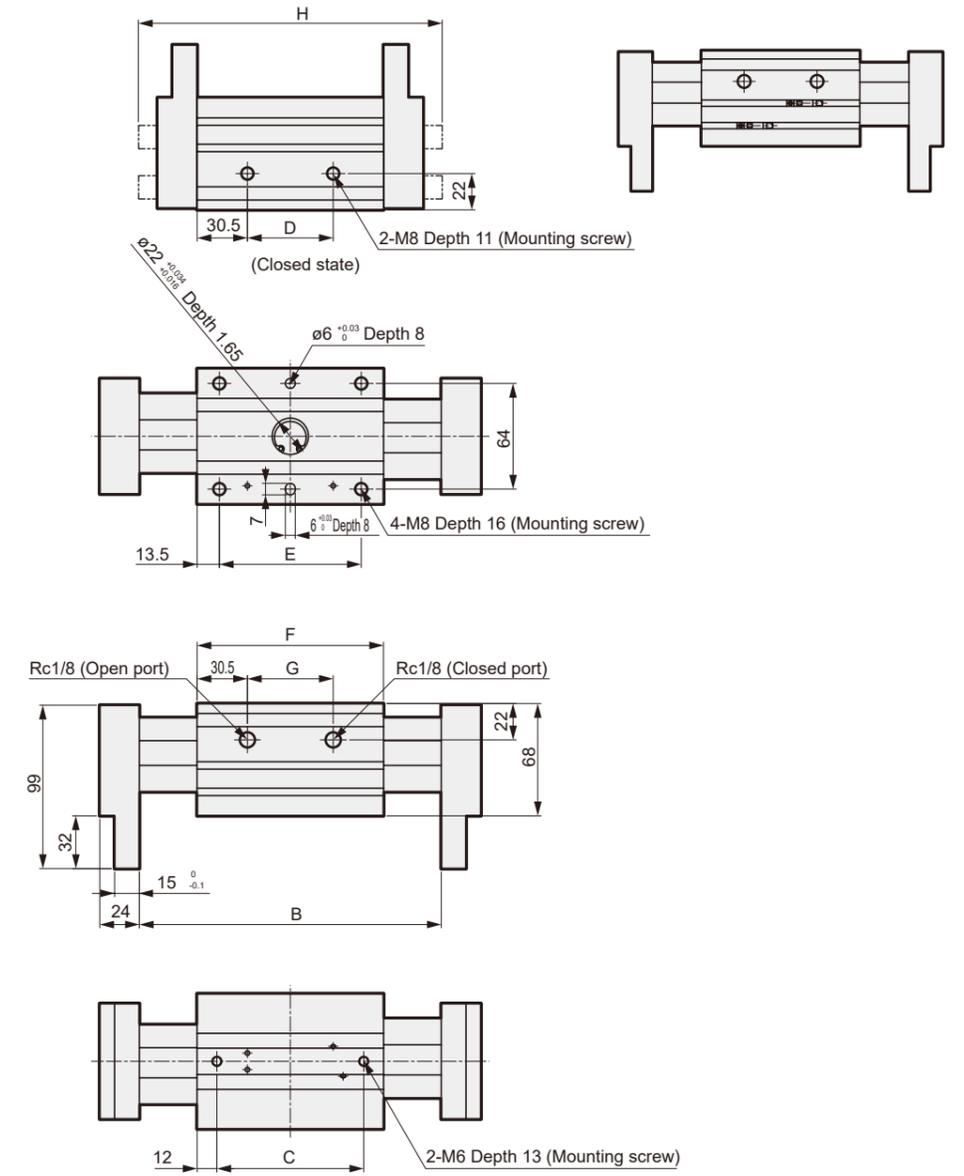


Code	B		C	D	E	F	G	H	I	J
	When Open	When Closed								
Standard (Blank)	141	91	70	48	70	91	41	21.5	25	-
L1	233	133	112	69	112	133	69	32	32	231
L2	271	151	130	87	130	151	87	32	32	269

Outline Dimension Drawing

●HMF-32CS Standard/L1/L2

●With Switch



Code	B		C	D	E	F	G	H
	When Open	When Closed						
Standard (Blank)	183	113	89	52	86	113	52	179
L1	274	154	130	93	127	154	93	270
L2	354	194	170	133	167	194	133	350

Hand (Gripper)

- LSH-HP
- LSH
- FH100
- BSA2
- BHA
- BHG
- BHE
- LHA
- LHAG
- HAP-1C
- HAP-2 to 4CS
- HKP
- HCP
- HGP
- LST-HP
- HLF2
- HLA/HLB
- HLAG/HLBG
- HLC
- HLD
- HMC-HP
- HMF**
- HMF-G
- HMF-B
- HFP
- FH500
- HBL
- HJL
- HMD
- HDL
- HJD
- Cylinder Switch
- Ending

Hand (Gripper)

- LSH-HP
- LSH
- FH100
- BSA2
- BHA
- BHG
- BHE
- LHA
- LHAG
- HAP-1C
- HAP-2 to 4CS
- HKP
- HCP
- HGP
- LST-HP
- HLF2
- HLA/HLB
- HLAG/HLBG
- HLC
- HLD
- HMC-HP
- HMF**
- HMF-G
- HMF-B
- HFP
- FH500
- HBL
- HJL
- HMD
- HDL
- HJD
- Cylinder Switch
- Ending

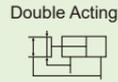




Compact Wide Parallel Gripper (Standard/Long Stroke) Cutting Oil Resistant Specification

# HMF-G Series

- Operating stroke: Standard 30, 40, 50 mm
- Long stroke 1 60, 80, 100 mm
- Long stroke 2 80, 100, 120 mm



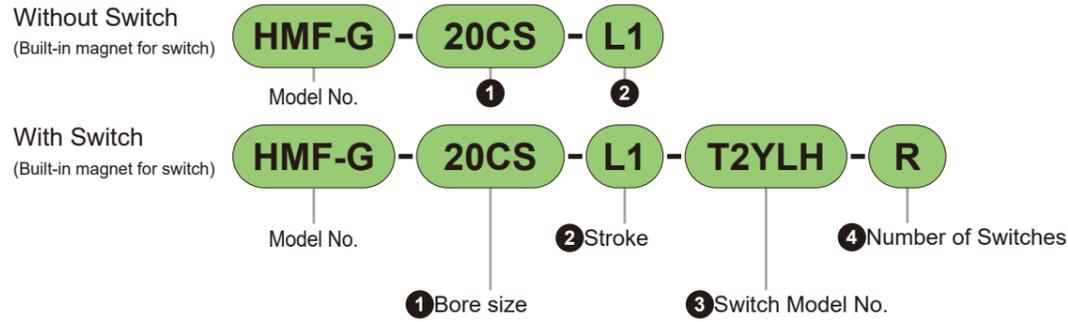
# HMF-G Series

Specifications/Gripping Force Performance Data

## Specifications

Item	HMF-G-16CS			HMF-G-20CS			HMF-G-25CS		
	Standard	L1	L2	Standard	L1	L2	Standard	L1	L2
Bore size mm	ø16 x 2			ø20 x 2			ø25 x 2		
Operating Fluid	Compressed Air								
Max. Working Pressure MPa	0.7								
Min. Operating Pressure MPa	0.3								
Ambient Temperature °C	5 to 60								
Port Size	M5								
Operating stroke mm	30	60	80	40	80	100	50	100	120
Rod diameter mm	ø8			ø10			ø12		
Internal volume (reciprocating) cm <sup>3</sup>	9.1	18.1	24.1	18.8	37.6	47.0	37.7	75.4	90.5
Repeatability mm	±0.1								
Weight kg	0.65	1.06	1.23	1.07	1.75	1.94	2	2.46	2.6
Lubrication	Not required (When lubricating, use turbine oil Class 1 ISO VG32)								

## Model No. Notation Method



### ① Bore Size (mm)

Code	Content
16CS	ø16
20CS	ø20
25CS	ø25

### ② Stroke

Code	Content	Stroke (mm)		
		ø16	ø20	ø25
Blank	Standard	30	40	50
L1	Long stroke 1	60	80	100
L2	Long stroke 2	80	100	120

### ③ Switch Model No.

For switch details, please refer to P. 573. Switches are included with the product and shipped.

Contact	Indicator LED Special Function	Wiring (Output)	Load Voltage (V)		Load Current (mA)		Lead wire *1	
			AC	DC	AC	DC	Straight	L-shape
Solid State	2-Color	2-wire	-	10 to 30	-	5 to 20	T2YLH□	T2YLV□
		3-wire (NPN)	-	10 to 28	-	50 or less	T3YLH□	T3YLV□
	2-Color Improved Water Resistance	2-wire	-	24 ± 10%	-	5 to 20	T2WLH□	T2WLV□

\*Lead wire length, connector specification

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)
W	M8 Connector, 1PIN (+), 4PIN (-) Lead Wire 0.3 m

\*5: Only T2WLH and T2WLV can be selected.

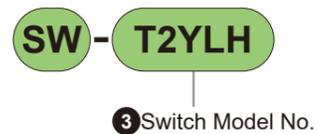
Example) Lead wire length  
1 m T2YLH  
3 m T2YLH③  
5 m T2YLH③

\*1: For "□" in the switch model number, enter the code selected from the "Lead wire length" table.  
\*2: Switches other than the model numbers listed above are also available. (Custom Product) For details, see P. 573.

### ④ Number of Switches

Code	Content
R	With 1 pc. on Open Side
H	With 1 pc. on Close Side
D	With 2 pcs

## Switch Single Unit Model No. Notation Method

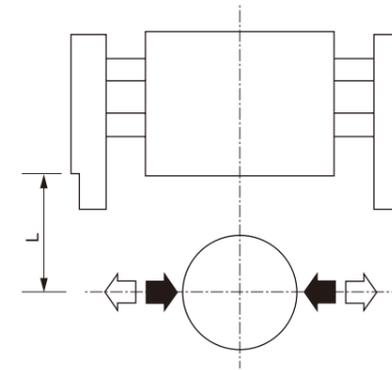


## Gripping Force Performance Data

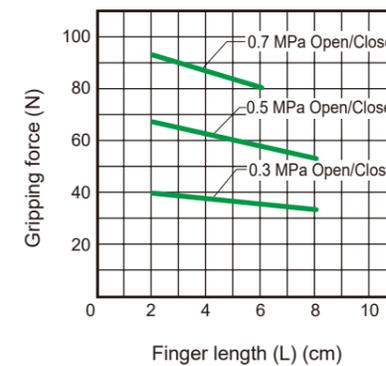
- Gripping force represents the thrust (for one finger) in the direction of the arrow shown in the figure.
- Indicates the gripping force at Finger length L of the gripper when the supply pressure is 0.3, 0.5, and 0.7 MPa.

● Opening direction (◀) Closing direction (▶) Both (Solid line)

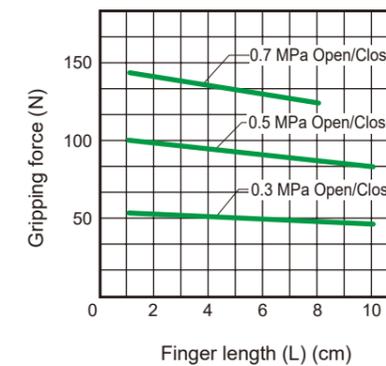
Note) When selecting, check the design and selection precautions on P. 336.



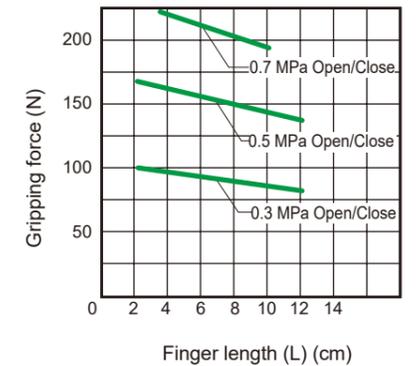
### ● HMF-G-16CS



### ● HMF-G-20CS



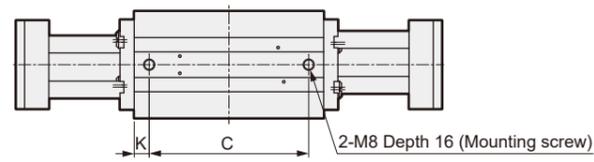
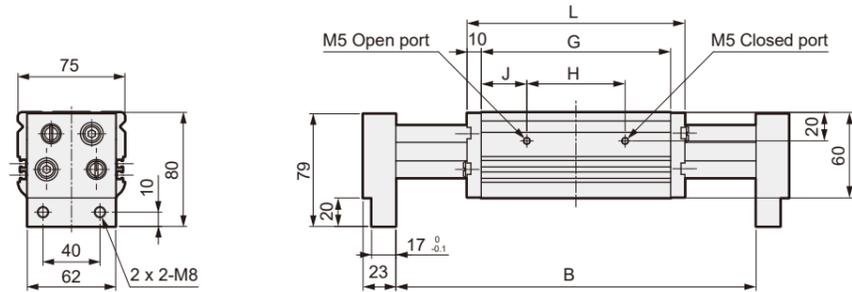
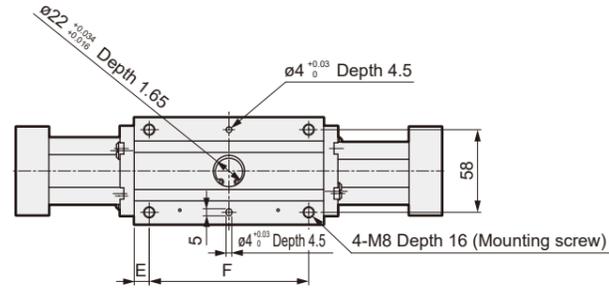
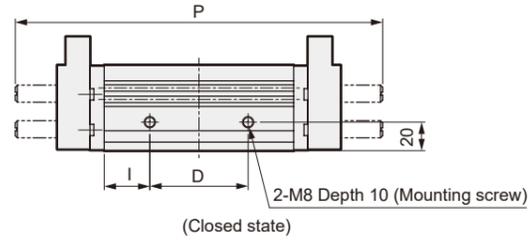
### ● HMF-G-25CS



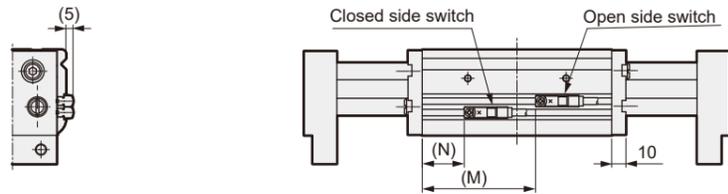


## Outline Dimension Drawing

●HMF-G-25CS Standard/L1/L2



●With Switch

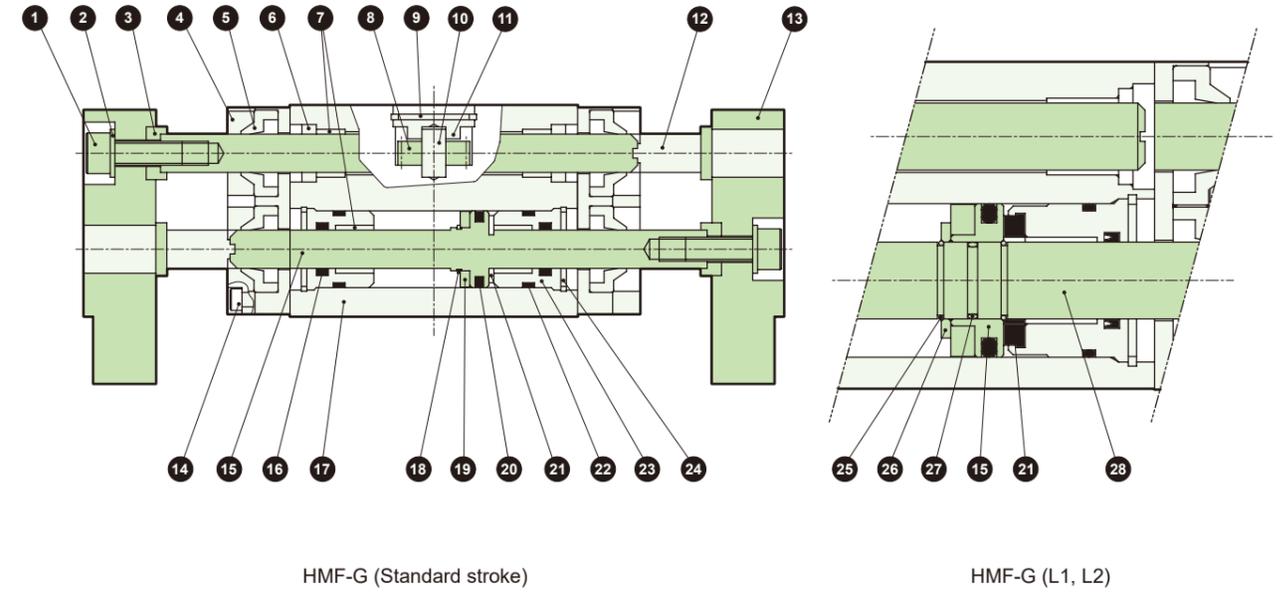


Code	B		C	D	E	F	G	H	I	J	K	L	M	N	P
	When Open	When Closed													
Standard (Blank)	161	111	70	48	10.5	70	91	41	21.5	25	10.5	111	46	21	166
L1	253	153	112	69	10.5	112	133	69	32	32	10.5	153	79.5	29.5	258
L2	291	171	130	87	10.5	130	151	87	32	32	10.5	171	97.5	37.5	296

## Internal Structure Diagram/Material

## Internal Structure Diagram/Material

●HMF-G-16CS to 25CS



Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Hexagon Socket Head Cap Screw	Alloy Steel		15	Piston	Stainless Steel	
2	Plain Washer	Steel		16	Rod Packing	Nitrile Rubber	
3	Washer	Steel	16CS only	17	Body	Aluminum Alloy	
4	Side cover	Aluminum Alloy		18	Retaining ring	Stainless Steel	
5	Scraper	Nitrile Rubber, Steel		19	Magnet		
6	Needle bearing seal	Resin, Steel		20	Piston Packing	Nitrile Rubber	
7	Bushing	Oil-Impregnated Bearing Alloy		21	Cushion	Urethane Rubber	
8	Pinion gear	Steel		22	Gasket	Nitrile Rubber	
9	Retaining ring	Stainless Steel		23	Cover	Aluminum Alloy	
10	Pinion gear shaft	Stainless Steel		24	Retaining ring	Stainless Steel	
11	Pinion cover	Stainless Steel		25	Piston fixing spring	Stainless Steel	
12	Guide rod	Stainless Steel		26	Magnet retainer	Stainless Steel	
13	Finger	Aluminum Alloy		27	O-ring	Nitrile Rubber	
14	Hexagon Socket Head Cap Screw	Alloy Steel		28	Piston Rod	Stainless Steel	

**Do not disassemble**