

HMF Series Wide Opening Parallel Hand

Low Height Wide Opening Crab-Shaped Parallel Hand for Use in Multi-Purpose Application

Key Features

■ Small and light-weight

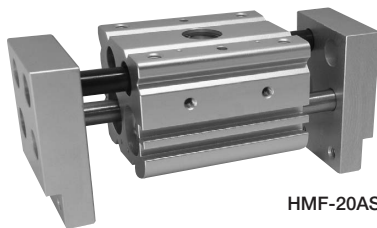
Low profile body design for use in confined spaces
Simple and compact body design

■ Powerful grip force

High grip force by using 2 pistons

■ Long stroke for handling multiple workpieces in different sizes

Long motion stroke for multi-purpose use



HMF-20AS

How To Order

Standard ----- HMF-12AS

Option ----- **HMF - 16AS - L1 - ET3S2 - MY** ----- HMF-16AS-L1 with base jaws mounted by 90-degree and 2 of ET3 non-contact reed switches

Model		Size	Stroke		Sensor, Quantity		Option			
Symbol	Name	Symbol	Symbol	Name	Symbol	Name	Symbol	Name		
HMF	Normal	12AS	No Symbol	Normal	ET3	Non-Contact 3-Lead	E25	Contact 2-Lead	MY	External Finger Direction Change
HMF-□□-L1	Long Stroke Type	16AS	L1	Long Stroke Type	ET3L	Non-Contact 3-Lead	E25L	Contact 2-Lead		
HMF-□□-L2	Long Stroke Type	20AS	L2	Long Stroke Type	ET2	Non-Contact 2-Lead	S1	1 Sensor		
HMF-□□-B1	Linear Guide Type	25AS	B1	Linear Guide Type	ET2L	Non-Contact 2-Lead	S2	2 Sensors		
HMF-□□-B2	Linear Guide Type	32AS	B2	Linear Guide Type	E24	Non-Contact 2-Lead				
		40AS			E24L	Contact 2-Lead				

* Except 12AS

For sensor detail ▶277P For option detail ▶36P

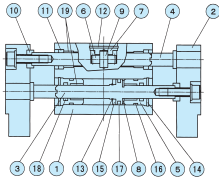
Specification

Model	HMF-12AS	HMF-16AS		HMF-20AS		HMF-25AS HMF-25AS-B			HMF-32AS HMF-32AS-B			HMF-40AS HMF-40AS-B				
	For Layout Drawing ▶99P	For Layout Drawing ▶100P		For Layout Drawing ▶101P		For Layout Drawing ▶102P			For Layout Drawing ▶103P			For Layout Drawing ▶104P				
		Standard	L1	L2	Standard	L1	L2	Standard	L1	L2	Standard	L1	L2	Standard	L1	L2
Working Pressure	Pneumatic: 0.3 to 0.7MPa															
Lubrication	Not Required or Turbine Oil Class 1 (ISOVG32)															
Ambient Temperature (°C)	5 to 60															
Total Jaw Stroke (mm)	20	30	60	80	40	80	100	50	100	120	70	120	160	100	160	200
Cylinder Diameter (mm)	dia.12×2	dia.16×2		dia.20×2		dia.25×2			dia.32×2			dia.40×2				
Rod Diameter (mm)	dia.6	dia.8		dia.10		dia.12			dia.16			dia.20				
Internal Volume [Reciprocation] (cm ³ /time)	3.39	9.05	18.1	24.1	18.8	37.6	47	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	0.9	1.58	1.77	1.7	L1/2.16 B1/4.06	L2/2.3 B2/4.13	2.8	L1/3.8 B1/5.97	L2/4.8 B2/7.2	5.7	L1/7.8 B1/10.1	L2/8.8 B2/11.8

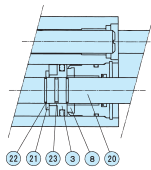
HMF-12AS/16AS/20AS/25AS/32AS/40AS

Internal Structure / Parts & Seals

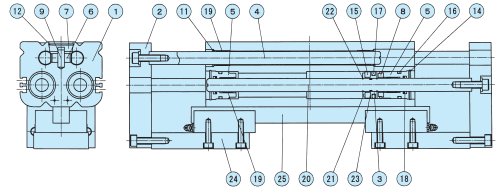
■HMF-12AS to 25AS (Standard Stroke)



■HMF-32AS/40AS (Standard Stroke) HMF-16AS to 40AS-L1L2 (Long Stroke)



■HMF-25AS to 40AS-B1B2



■Parts List

No.	Name	Material	No.	Name	Material	No.	Name	Material
1	Body	Aluminum	10	Washer *	Carbon Steel	19	Bush	
2	Master(Base) Jaw	Aluminum	11	Needle Bearing Seal		20	Piston Rod	Stainless Steel
3	Piston	Stainless Steel	12	Snap Ring	Stainless Steel	21	Magnet Holder	Stainless Steel
4	Guide Rod	Stainless Steel	13	Snap Ring	Stainless Steel	22	Piston Mount Spring	Stainless Steel
5	Cylinder Cover	Aluminum	14	Snap Ring	Stainless Steel	23	O-Ring	
6	Pinion Gear	Carbon Steel	15	Magnet		24	Operation Plate	Aluminum
7	Pinion Cover	Stainless Steel	16	Cylinder Gasket		25	Bearing	
8	Cushion		17	Piston Gasket				
9	Pinion Gear Shaft	Stainless Steel	18	Rod Gasket				

*Equipped to 12 AS and 16AS only

■Seals List

No.	HMF-12AS	HMF-16AS-L1,L2	HMF-20AS-L1,L2	HMF-25AS-L1,L2 HMF-25AS-B1,B2	HMF-32AS-L1,L2 HMF-32AS-B1,B2	HMF-40AS-L1,L2 HMF-40AS-B1,B2
16	S-10	S-14	S-18	P-21	S-29	S-36
17	PSD-12	PSD-16	PSD-20	PSD-25	PSD-32	PSD-40
18	MYA-6	MYA-8	MYA-10	MYA-12	MYA-16	MYA-20
23	—	S-5	S-7	S-9	S-12	S-16

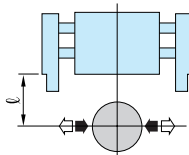
Hand
(2-Jaw)

Performance Data

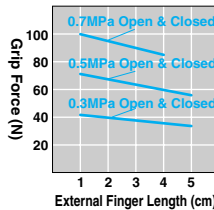
■Grip Force

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

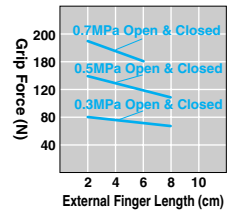
Open (\leftarrow) ———
Closed (\rightarrow) ———



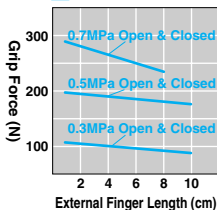
■HMF-12AS



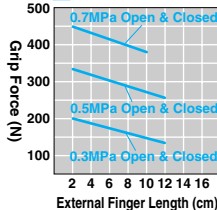
■HMF-16AS



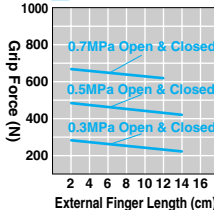
■HMF-20AS



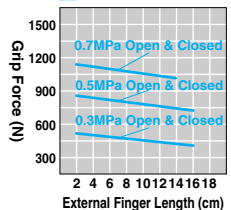
■HMF-25AS



■HMF-32AS



■HMF-40AS



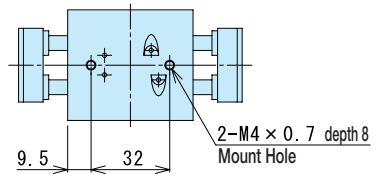
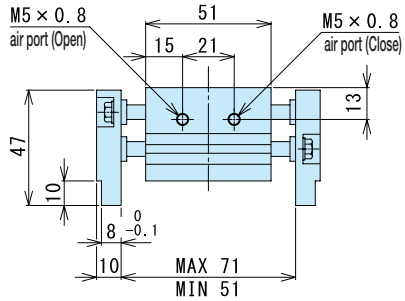
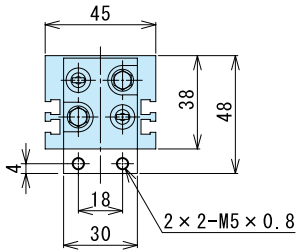
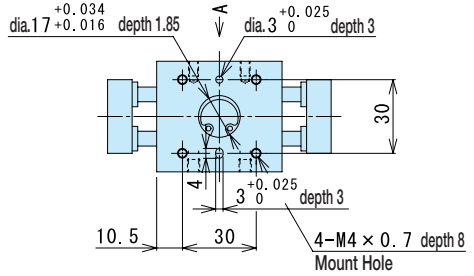
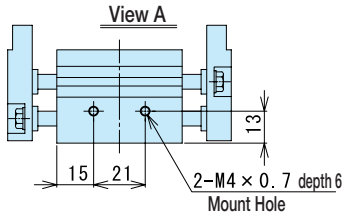
HMF Series Wide Opening Parallel Hand

Layout Drawing

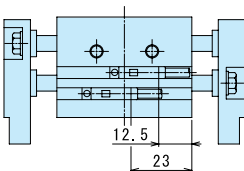
■ HMF-12AS (Optimal Grip Force 40N to 80N)

HMF-12AS Standard

Hand
(2-law)



HMF-12AS-E S

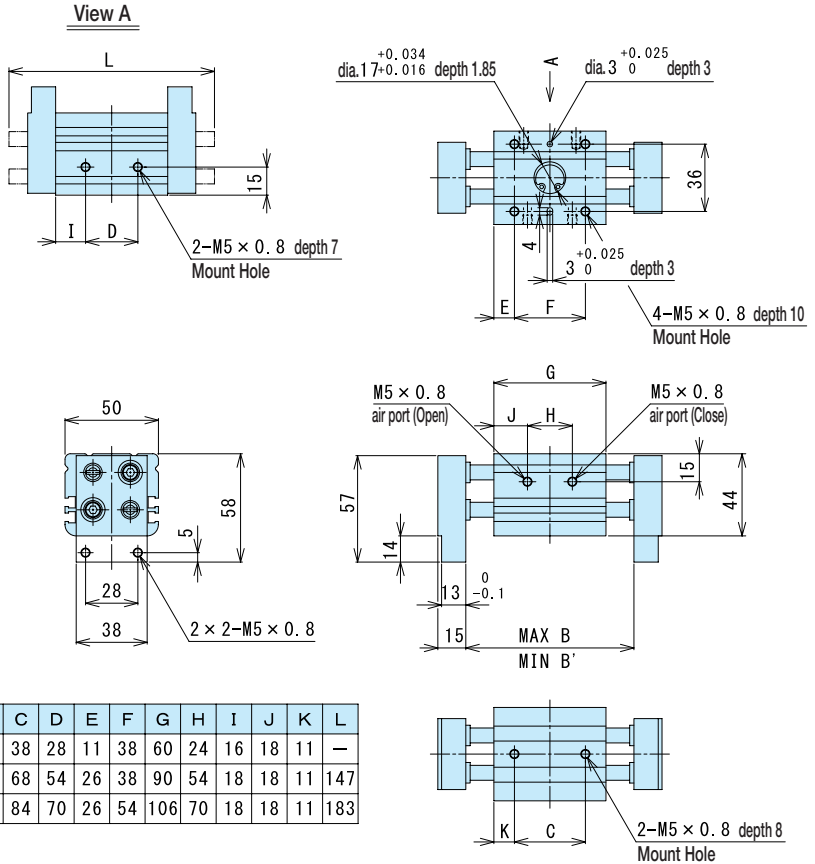


HMF-12AS/16AS/20AS/25AS/32AS/40AS

For CAD data, please go to **▶518P**

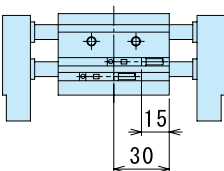
■HMF-16AS (Optimal Grip Force 80N to 160N)

HMF-16AS Standard · L1 · L2



	B	B'	C	D	E	F	G	H	I	J	K	L
Standard	90	60	38	28	11	38	60	24	16	18	11	—
L 1	150	90	68	54	26	38	90	54	18	18	11	147
L 2	186	106	84	70	26	54	106	70	18	18	11	183

HMF-16AS-E □ S □



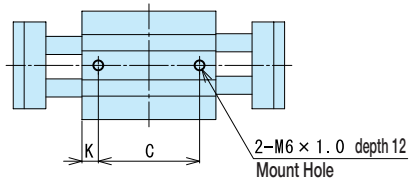
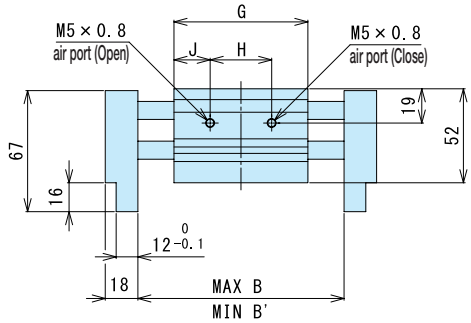
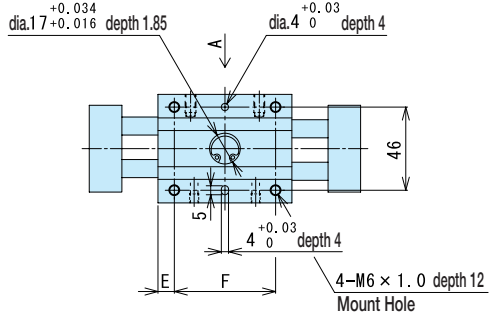
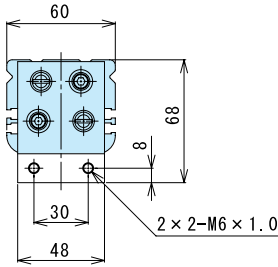
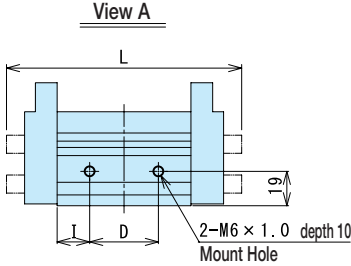
Hand
(2-Jaw)

HMF Series Wide Opening Parallel Hand

Layout Drawing

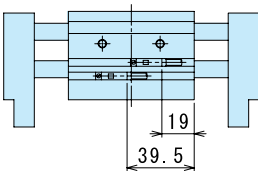
■HMF-20AS (Optimal Grip Force 100N to 250N)

HMF-20AS Standard · L1 · L2



	B	B'	C	D	E	F	G	H	I	J	K	L
Standard	114	74	56	38	9	56	74	34	18	20	9	—
L 1	197	117	96	54	6.5	104	117	54	31.5	31.5	10.5	196
L 2	233	133	112	70	6.5	120	133	70	31.5	31.5	10.5	232

HMF-20AS-E S

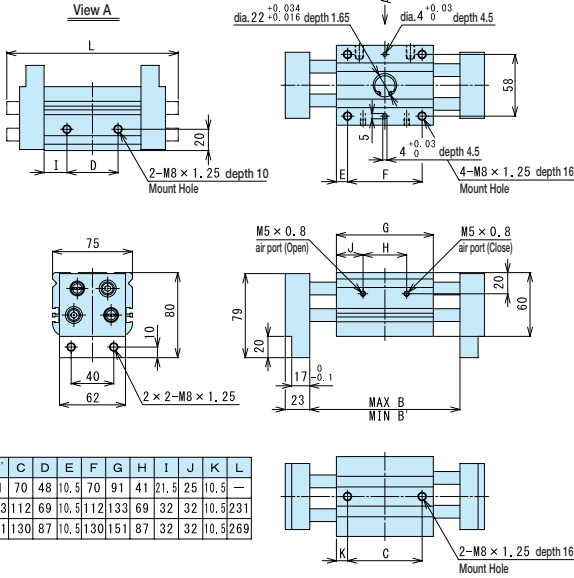


HMF-12AS/16AS/20AS/25AS/32AS/40AS

For CAD data, please go to **▶518P**

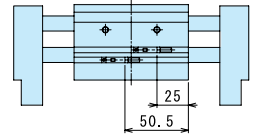
■HMF-25AS (Optimal Grip Force 150N to 350N)

HMF-25AS Standard · L1 · L2



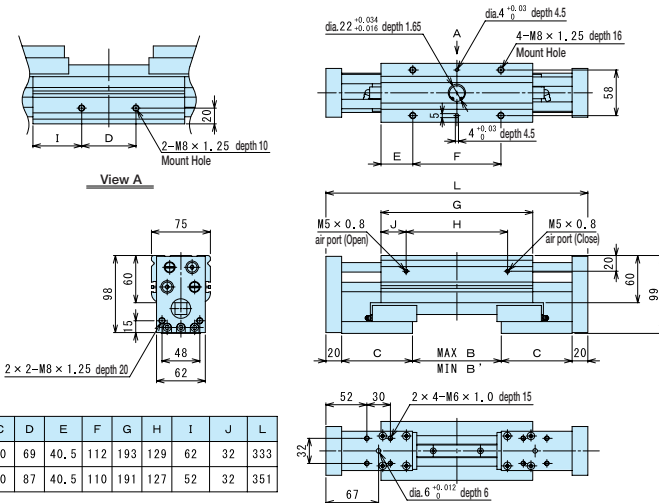
	B	B'	C	D	E	F	G	H	I	J	K	L
Standard	141	91	70	48	10.5	70	91	41	21.5	25	10.5	-
L 1	233	133	112	69	10.5	112	133	69	32	32	10.5	231
L 2	271	151	130	87	10.5	130	151	87	32	32	10.5	269

HMF-25AS-E □ □ □



Hand
(2-Jaw)

HMF-25AS-B1 · B2



	B	B'	C	D	E	F	G	H	I	J	L
B 1	113	13	90	69	40.5	112	193	129	62	32	333
B 2	131	11	90	87	40.5	110	191	127	52	32	351

HMF Series Wide Opening Parallel Hand

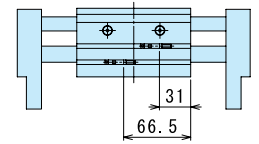
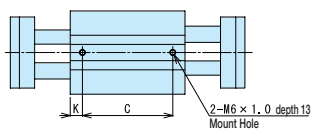
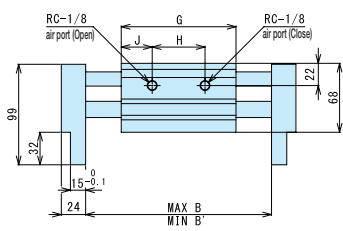
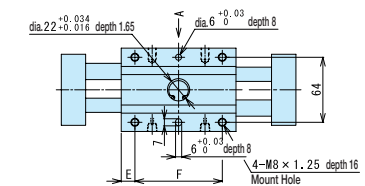
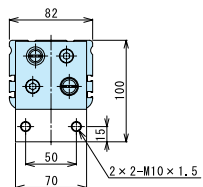
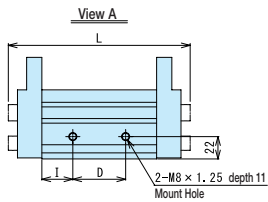
Layout Drawing

■HMF-32AS (Optimal Grip Force 250N to 500N)

HMF-32AS Standard · L1 · L2

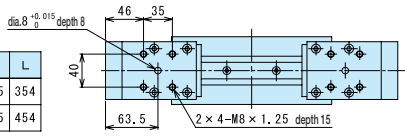
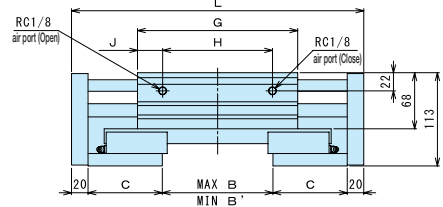
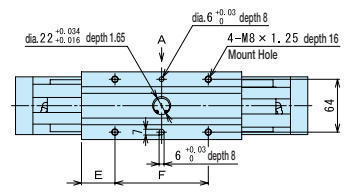
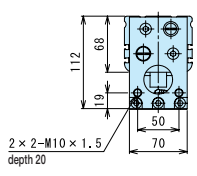
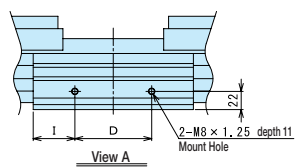
HMF-32AS-E

Hand (2-law)



	B	B'	C	D	E	F	G	H	I	J	K	L
Standard	183	113	89	52	13.5	86	113	52	30.5	30.5	12	179
L 1	274	154	130	93	13.5	127	154	93	30.5	30.5	12	270
L 2	354	194	170	133	13.5	167	194	133	30.5	30.5	12	350

HMF-32AS-B1 · B2



	B	B'	C	D	E	F	G	H	I	J	L
B 1	134	14	90	93	40.5	113	194	133	50.5	30.5	354
B 2	174	14	120	133	43.5	167	254	193	60.5	30.5	454

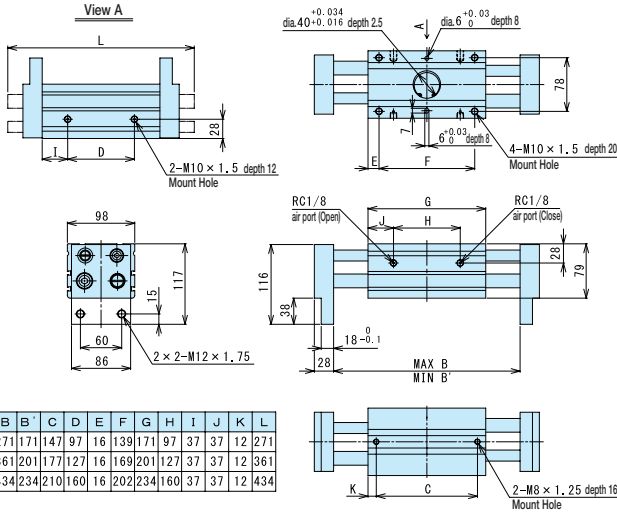
HMF-12AS/16AS/20AS/25AS/32AS/40AS

For CAD data, please go to **▶518P**

■HMF-40AS (Optimal Grip Force 450N to 850N)

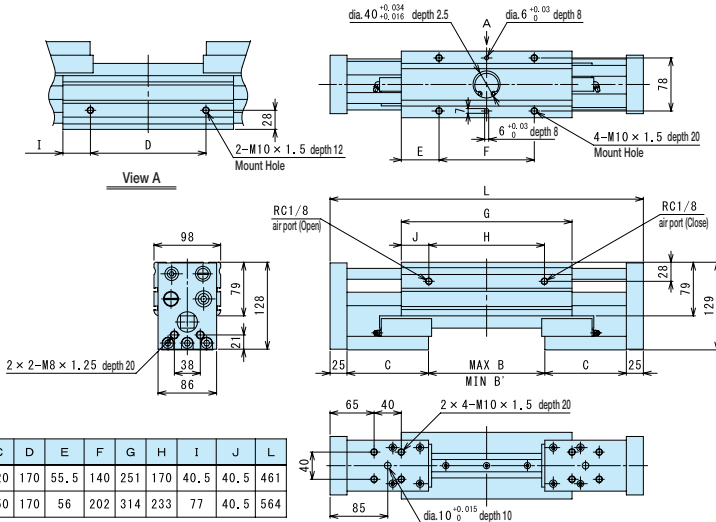
HMF-40AS Standard · L1 · L2

HMF-40AS-E□S□



	B	B'	C	D	E	F	G	H	I	J	K	L	T
Standard	271	171	147	97	16	139	171	97	37	37	12	271	
L 1	361	201	177	127	16	169	201	127	37	37	12	361	
L 2	434	234	210	160	16	202	234	160	37	37	12	434	

HMF-40AS-B1 · B2



	B	B'	C	D	E	F	G	H	I	J	L
B 1	171	11	120	170	55.5	140	251	170	40.5	40.5	461
B 2	214	14	150	170	56	202	314	233	77	40.5	564

Hand
(2-Jaw)