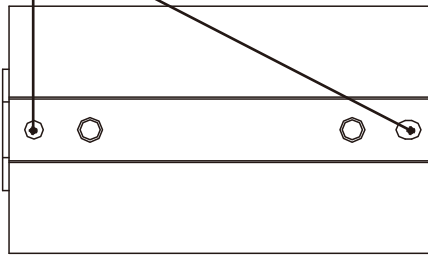
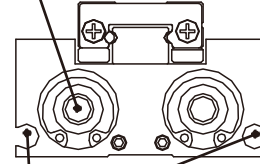
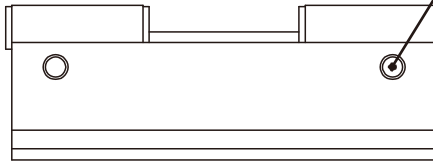
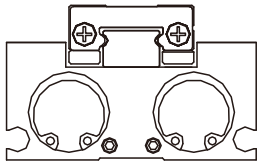




Improved mounting repeatability  
With positioning pin holes

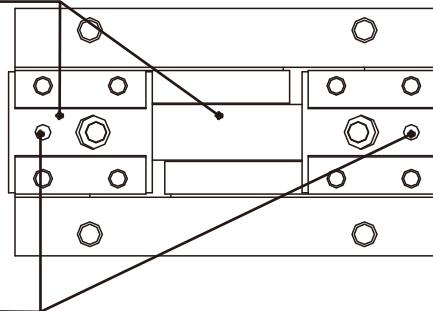


Piping is available from 2 directions.



Auto switches can be mounted on both sides.

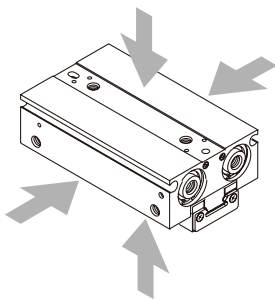
High precision and high rigidity  
with martensitic stainless steel.



Easy positioning for mounting  
attachments

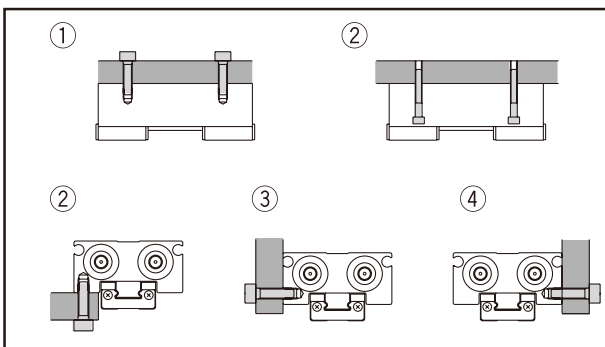
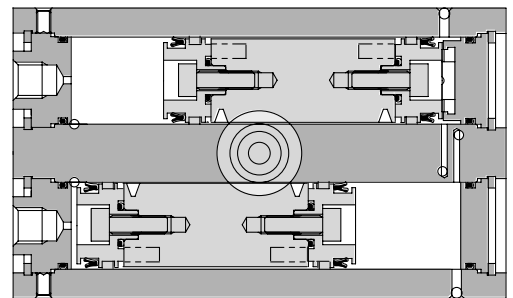
With positioning pin holes

High degree of mounting flexibility. As no brackets  
are required, mounting height can be minimized.



Mounting is  
possible from 4  
directions.

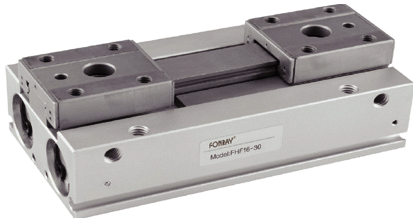
Double piston construction achieves compact design  
with strong gripping force.



Model	Bore size(mm)	Gripping force(N)
FHF2-8D □	8	19
FHZ2-10D □	10	11
FHF2-12D □	12	48
FHZ2-20D □	20	42
FHF2-16D □	16	90
FHZ2-25D □	25	65
FHF2-20D □	20	141
FHZ2-32D □	32	158

## Low Profile Air Gripper FHF2 Series(ø8~ø20)

Height is approximately 1/3 the size of an equivalent FHZ2 series.  
The low profile design saves space and reduces bending moments.  
3 standard stroke lengths are available for each bore size.

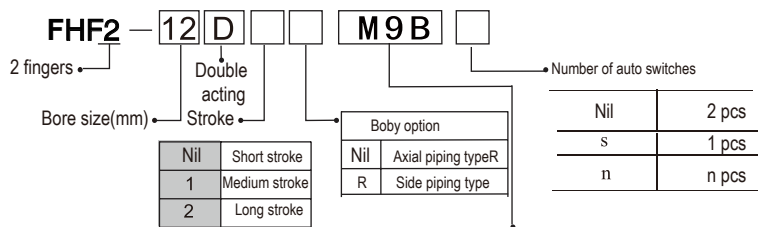


## Specifications

Bore size(mm)	8	12	16	20
Action				
Fluid				
Operating pressure range <sup>9</sup> (MPa)	0.15~0.7	0.1~0.7		
Ambient and fluid temperature	-10~60°C (with no condensation)			
Repeatability(mm)	±0.05*			
Max. operating frequency(c.p.m)	Short stroke:120 c.p.m. Long stroke: 60 c.p.m.			
Auto switch	contactless	M9B		
	2-wire	M9N		
	3-wire NPN			

Note) This is value when no offset load is applied to the finger. When an offset load is applied to the finger, the max. value is ±0.15mm due to the influence of backlash of the rack and pinion.

## How to Order



How to order

- 1) Need bore size 8mm. Model No. FHF2-8D
- 2) Need bore size 16mm and auto switches. Model No. SW-M9BL One cylinder with 2 auto switches.

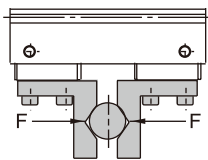
Auto switch	
Nil	Without auto switch
M9B	2-wire
M9N	3-wire

Lead wire length symbols:  
1m..... Nil(Example)M9B  
3m..... L(Example)M9BL

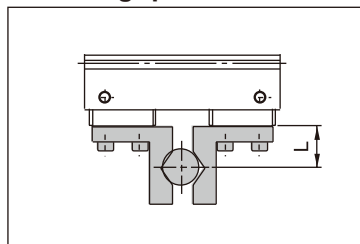
Action	model	Bore size (mm)	Gripping force* Effective gripping force per finger (N)	Opening/closing stroke(both sides) (mm)	weight (g)	Unobstructed capacity (cm <sup>3</sup> )	
						Finger open side	Finger close side
Double acting	FHF2-8D	8	19	8	65	0.7	0.6
	FHF2-8D1			16	85	1.1	1.0
	FHF2-8D2			32	120	2.0	1.9
	FHF2-12D	12	48	12	155	1.9	1.6
	FHF2-12D1			24	190	3.3	3.0
	FHF2-12D2			48	275	6.1	5.8
	FHF2-16D	16	90	16	350	4.9	4.1
	FHF2-16D1			32	445	8.2	7.4
	FHF2-16D2			64	650	14.9	14.0
	FHF2-20D	20	141	20	645	8.7	7.3
	FHF2-20D1			40	850	15.1	13.7
	FHF2-20D2			80	1,225	28.0	26.6

Note) At the pressure of 0.5MPa, when gripping point L is 20mm.

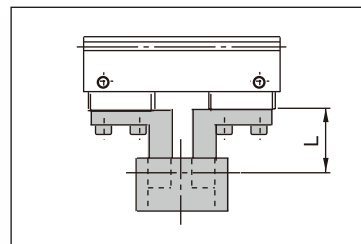
## Effective gripping force



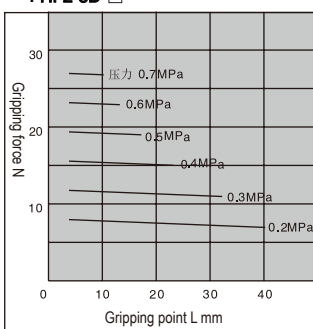
## External grip



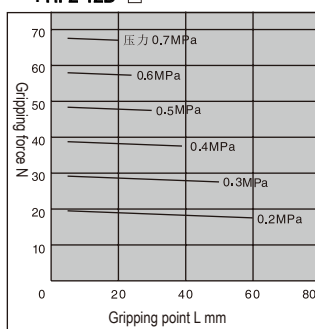
## Internal grip



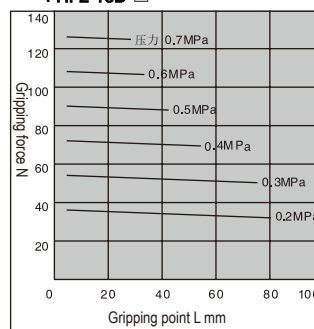
FHF2-8D □



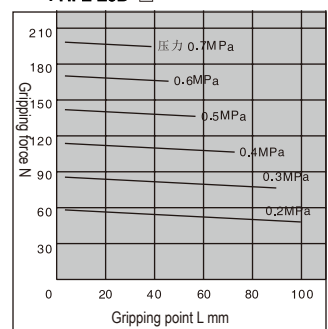
FHF2-12D □



FHF2-16D □



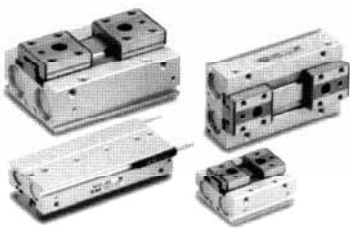
FHF2-20D □



## Specifications/ Model

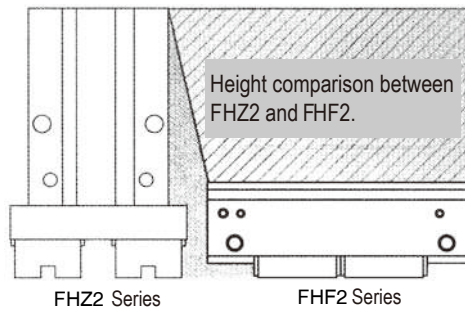
Specifications	Bore size (mm)	Action	Fluid	Operating pressure range MPa	Ambient and fluid temperature °C	Repeatability mm	Max. operating frequency c.p.m	Gripping force N	Opening/Closing stroke mm	Auto switch model
FHF2-8D	8	Double acting	Air	0.15 ~ 0.7	-10 ~ 60 (with no condensation)	±0.05	120	19	8	SW-M9B SW-M9N
FHF2-8D1							120		16	
FHF2-8D2							60		32	
FHF2-12D	12			120			48	12		
FHF2-12D1				120				24		
FHF2-12D2				60				48		
FHF2-16D	16			120			90	16		
FHF2-16D1				120				32		
FHF2-16D2				60				64		
FHF2-20D	20			120			141	20		
FHF2-20D1				120				40		
FHF2-20D2				60				80		

Note)At the pressure of 0.5MPa when gripping point L is 10mm.

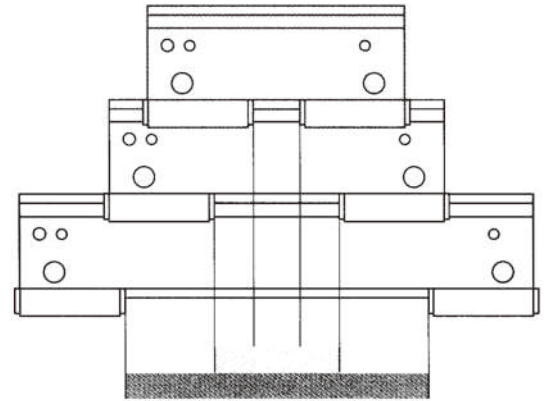


- Space-saving design.
- Strong gripping force.
- Centralized wiring and piping.
- Three standard stroke lengths: short/medium/long.

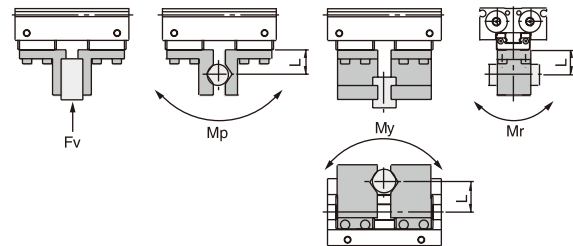
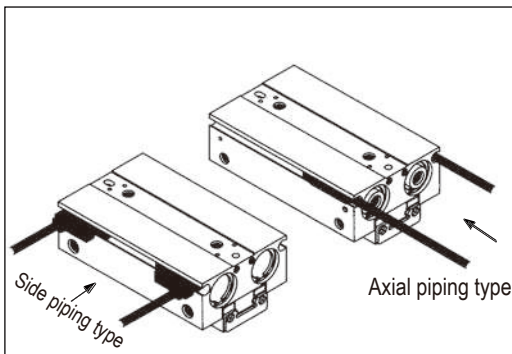
■ Much shorter than FHZ2 series.



■ standard stroke lengths for each bore size. Stroke can be selected to suit the workpiece.

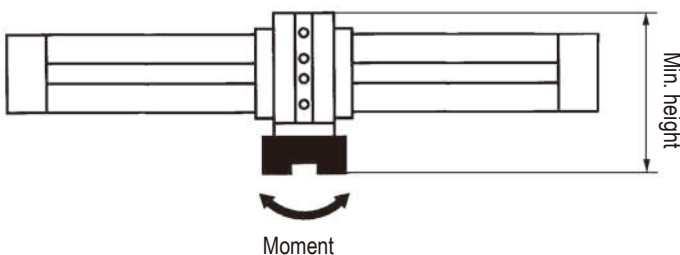


■ Centralized wiring and piping are possible.



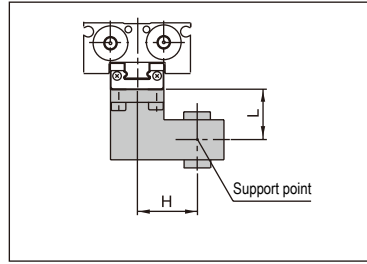
Model	Allowable vertical load $F_v$ (N)	Max. allowable moment		
		Pitch moment $M_p$ (N·m)	Yaw moment $M_y$ (N·m)	Roll moment $M_r$ (N·m)
FHF2-8D □	58	0.26	0.26	0.53
FHF2-12D □	98	0.68	0.68	1.4
FHF2-16D □	176	1.4	1.4	2.8
FHF2-20D □	294	2	2	4

■ Reduce moment and vibration

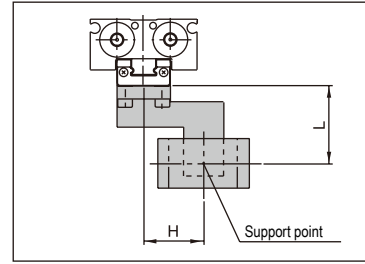


### Effective gripping force

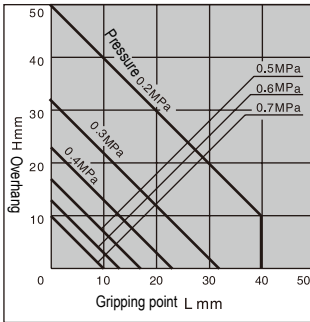
#### External gripping



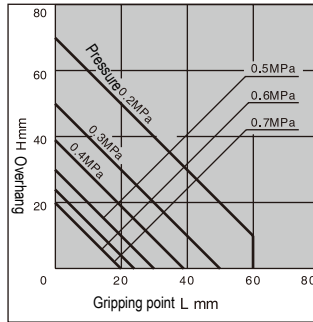
#### Internal gripping



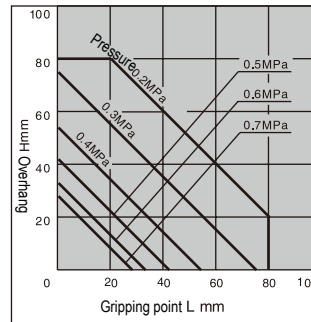
FHF2-8D □



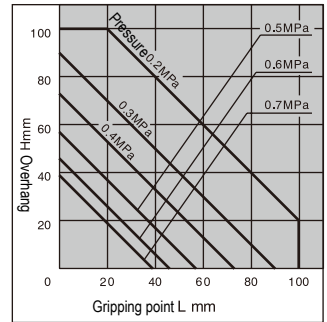
FHF2-12D □



FHF2-16D □

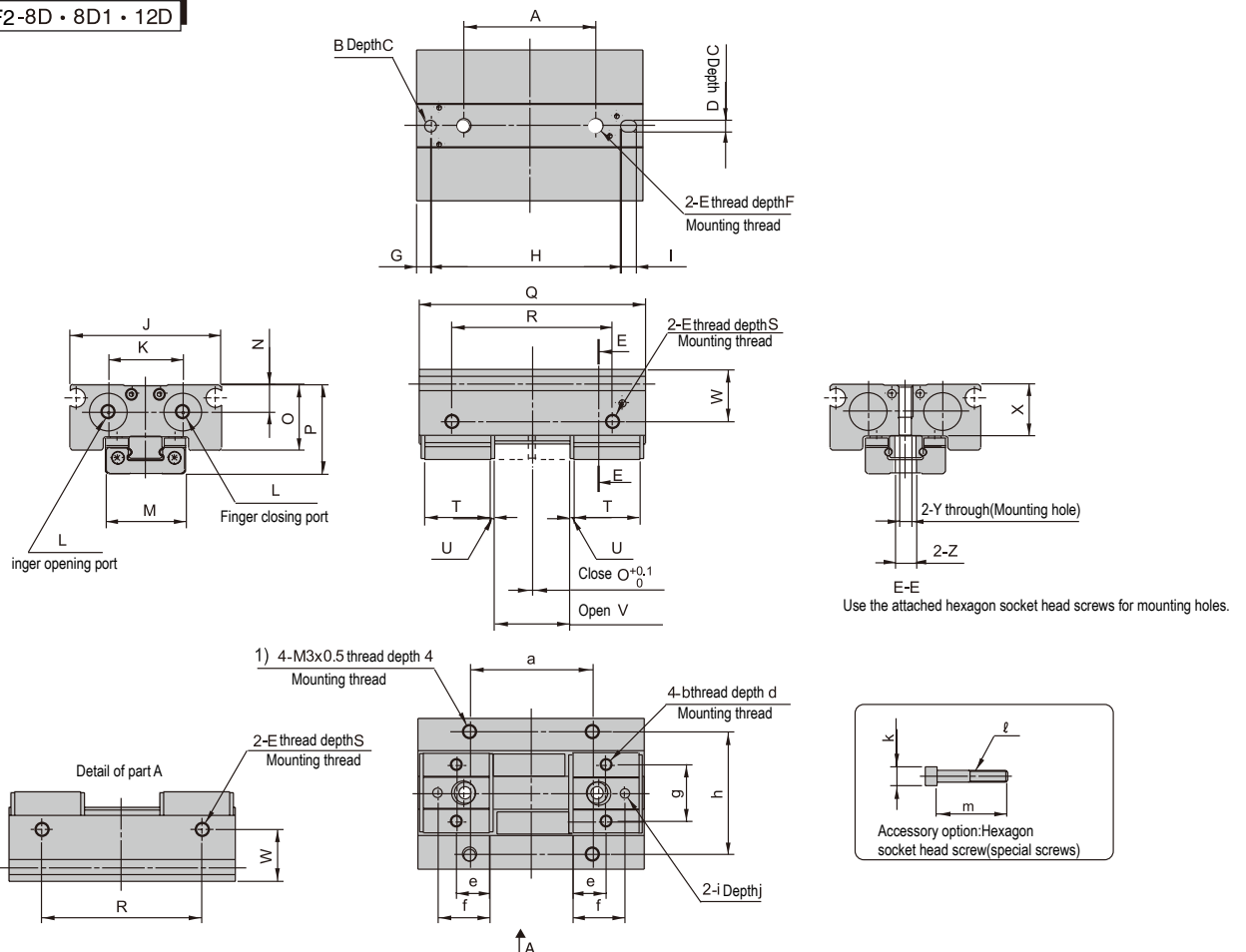


FHF2-20D □



### Outline drawing(mm)

FHF2-8D · 8D1 · 12D

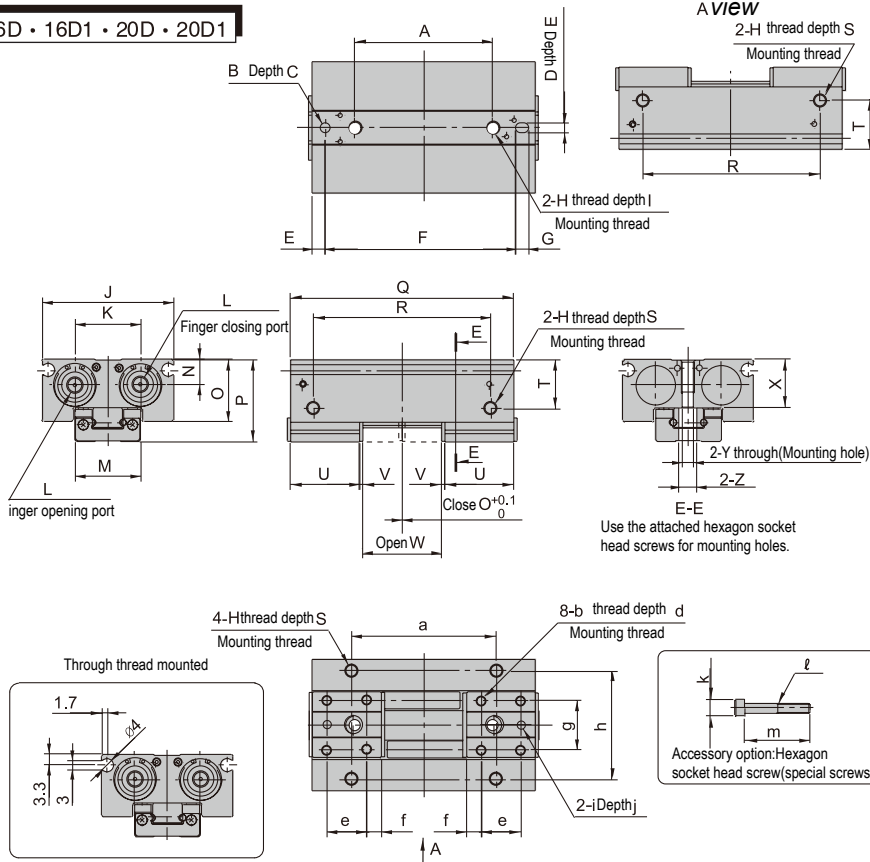


Model	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	a	b	d	e	f	g	h	i	j	k	ℓ	m
FHF2-8D	16	∅2.5H9 <sup>+0.025</sup> <sub>0</sub>	2.5	∅2.5H9 <sup>+0.025</sup> <sub>0</sub>	M3 x 0.5	7	3	28.3	3.4	32	15.8	M3 x 0.5	17 <sup>-0.1</sup> <sub>0</sub>	5.9	14	19	36	22	4	12	0.8	8 <sup>-1</sup>	11	11	∅2.6	∅4.5	14	M2.5 x 0.45	3	6	10	12	26	∅2H9 <sup>+0.025</sup> <sub>0</sub>	2	∅4	M2.5 x 0.45	15
FHF2-8D1	28	∅2.5H9 <sup>+0.025</sup> <sub>0</sub>	2.5	∅2.5H9 <sup>+0.025</sup> <sub>0</sub>	M3 x 0.5	7	3	40.3	3.4	32	15.8	M3 x 0.5	17 <sup>-0.1</sup> <sub>0</sub>	5.9	14	19	48	34	4	14	0.8	16 <sup>-1</sup>	11	11	∅2.6	∅4.5	26	M2.5 x 0.45	3	7	11	12	26	∅2H9 <sup>+0.025</sup> <sub>0</sub>	2	∅4	M2.5 x 0.45	15
FHF2-12D	26	∅3H9 <sup>+0.030</sup> <sub>0</sub>	3	∅3H9 <sup>+0.025</sup> <sub>0</sub>	M4 x 0.7	10	4	42	4	40	20	M5 x 0.8	20 <sup>-0.1</sup> <sub>0</sub>	7.7	19	25	52	38	5	18	1	12 <sup>-1</sup>	15	14.8	∅3.4	∅5.5	28	M3 x 0.5	4	9	14	15	33	∅2.5H9 <sup>+0.025</sup> <sub>0</sub>	2.5	∅5	M3 x 0.5	20

Note) FHF2-12D uses mounting thread M4x0.7 and the depth is 5mm.

Effective gripping force

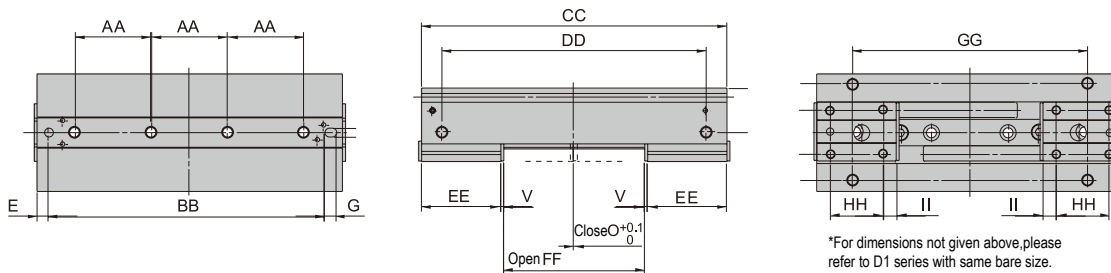
FHF2-12D1 · 16D · 16D1 · 20D · 20D1



Model	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V
FHF2-12D1	42	∅3H9 <sup>+0.030</sup> <sub>0</sub>	3	∅3H9 <sup>+0.025</sup> <sub>0</sub>	4	58	4	M4 x 0.7	10	40	20	M5x0.8	20 <sup>0</sup> <sub>-0.1</sub>	7.7	19	25	68	54	5	15	21	1
FHF2-16D	38	∅4H9 <sup>+0.030</sup> <sub>0</sub>	3	∅4H9 <sup>+0.030</sup> <sub>0</sub>	6	57.5	5	M5 x 0.8	12	50	26	M5x0.8	27 <sup>0</sup> <sub>-0.1</sub>	10.6	24	33	72	52	5.5	20	25	1.2
FHF2-16D1	60	∅4H9 <sup>+0.030</sup> <sub>0</sub>	3	∅4H9 <sup>+0.030</sup> <sub>0</sub>	3	79.5	5	M5 x 0.8	12	50	26	M5x0.8	27 <sup>0</sup> <sub>-0.1</sub>	10.6	24	33	94	74	5.5	20	29	1.2
FHF2-20D	38	∅5H9 <sup>+0.030</sup> <sub>0</sub>	4	∅5H9 <sup>+0.030</sup> <sub>0</sub>	4	71	6	M6 x 1	15	62	33	M5x0.8	32 <sup>0</sup> <sub>-0.1</sub>	13	30	41	86	56	6	25	31	1.2
FHF2-20D1	66	∅5H9 <sup>+0.030</sup> <sub>0</sub>	4	∅5H9 <sup>+0.030</sup> <sub>0</sub>	6	99	6	M6 x 1	15	62	33	M5x0.8	32 <sup>0</sup> <sub>-0.1</sub>	13	30	41	114	84	6	25	36	1.2

Model	W	X	Y	Z	a	b	d	e	f	g	h	i	j	k	l	m
FHF2-12D1	24 <sup>±1</sup>	14.8	∅3.4	∅5.5	44	M3 x 0.5	4	12	4.5	15	33	∅2.5H9 <sup>+0.025</sup> <sub>0</sub>	2.5	∅5	M3 x 0.5	20
FHF2-16D	16 <sup>±1</sup>	20	∅4.3	∅7.5	36	M4 x 0.7	4	15	5	20	43	∅3H9 <sup>+0.025</sup> <sub>0</sub>	3	—	—	—
FHF2-16D1	32 <sup>±1</sup>	20	∅4.3	∅7.5	58	M4 x 0.7	4	18	5.5	20	43	∅3H9 <sup>+0.025</sup> <sub>0</sub>	3	—	—	—
FHF2-20D	20 <sup>±1</sup>	25	∅5.2	∅10	40	M4 x 0.7	4	16	7.5	24	52	∅3H9 <sup>+0.025</sup> <sub>0</sub>	3	—	—	—
FHF2-20D1	40 <sup>±1</sup>	25	∅5.2	∅10	68	M4 x 0.7	4	20	8	24	52	∅3H9 <sup>+0.025</sup> <sub>0</sub>	3	—	—	—

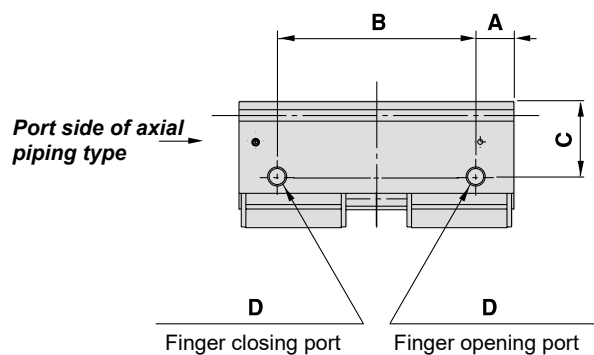
FHF2-8D2 · 12D2 · 16D2 · 20D2



Model	AA	BB	CC	DD	EE	FF	GG	HH	II
FHF2-8D2	17	64.3	72	58	18	32 <sup>±1</sup>	50	8	5
FHF2-12D2	26	94	104	90	27	48 <sup>±1</sup>	80	18	4.5
FHF2-16D2	36	127.5	142	122	37	64 <sup>±1</sup>	106	26	5.5
FHF2-20D2	42	159	174	144	46	80 <sup>±1</sup>	128	30	8

## Body Option: Side Piping type

FHF2 □D□R



\*For dimensions not given above,  
please refer to the table of dimensions above.

**Body Option Dimension**

(mm)

Model	A	B	C	D
FHF2-8DR	5.5	25	11	M3 x 0.5
FHF2-8D1R		37		
FHF2-8D2R		61		
FHF2-12DR	7	38	14.8	M5 x 0.8
FHF2-12D1R		54		
FHF2-12D2R		90		
FHF2-16DR	9	54	19	M5 x 0.8
FHF2-16D1R		76		
FHF2-16D2R		124		
FHF2-20DR	10	66	23	M5 x 0.8
FHF2-20D1R		94		
FHF2-20D2R		154		