



Feather hand (mini-fulcrum hand) Double acting/single acting

FH500 Series

● Open/close angle: 20° at open, -5° at closed

Double acting

Single acting (normally open)



Specifications

Item	FH500							
	FH510-D	FH512-D	FH516-D	FH520-D	FH510-O	FH512-O	FH516-O	FH520-O
Actuation	Double acting				Single acting			
Working fluid	Compressed air							
Max. working pressure MPa	0.7 (≈100 psi, 7 bar)							
Min. working pressure MPa	0.15 (≈22 psi, 1.5 bar)				0.25 (≈36 psi, 2.5 bar)			
Proof pressure MPa	1.05 (≈150 psi, 10.5 bar)							
Ambient temperature °C	5 (41°F) to 60 (140°F)							
Port size	M3		M5		M3		M5	
Open and close angle °	20° at open -5° at closed							
Weight g	43	53	92	135	43	53	92	136
Repeatability mm	±0.03							
Max. operating frequency times/second	3							
Cushion	Open side rubber cushion							
Option	Proximity switch (2-wire/3-wire) * Closed side speed controller/end mount							

* Integrated speed controller is available only for double acting.

Switch specifications

Item	Proximity 2-wire	Proximity 3-wire
	T2H/V	T3H/V
Applications	Dedicated for programmable controller	For programmable controller, relay
Output method	-	NPN output
Power supply voltage	-	10 to 28 VDC
Load voltage/current	10 to 30 VDC, 5 to 20 mA (*1)	30 VDC or less, 100 mA or less
Indicator lamp	LED (Lit when ON)	
Leakage current	1 mA or less	10 µA or less
Weight	1 m:18 g 3 m:49 g 5 m:80 g	

*1 : The above max. load current is 20 mA at 25°C. The current is lower than 20 mA if the operating ambient temperature around the switch is higher than 25°C. (5 to 10 mA at 60°C)

*2 : Refer to Ending Page 1 for detailed switch specifications and dimensions.

LCM
LCR
LCG
LCW
LCX
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
UB
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCS2
RCC2
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HRL
LN
Hand
Chuk
MecHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending
LSH-HP
LSH
FH100
BSA2
BHA/BHG
LHA
LHAG
HAP
HKP
HCP
HGP
HLF2
HLA/HLB
HLAG/HLBG
HLC
HLD
HMF
HMF-G
HMF-B
HFP
FH500
HBL
HJL
HMD
HDL
HJD
BHE

How to order

Without switch (built-in magnet for switch)

FH5 **10** - **D** **Y1** ————— **B**

With switch (built-in magnet for switch)

FH5 **10** - **D** **Y1** - **T2V** - **R** - **B**

A Bore size

B Option

C Attachment
*1

D Switch model No.
*2
* indicates the lead wire length.

E Switch quantity

F End mount
*3

⚠ Precautions for model No. selection

- *1 : Refer to pages 1762 and 1763 for the dimensions and compatible model of the attachment. When ordered as an option, two are attached at shipment.
- *2 : Switches other than **D** Switch model No. are also available. (Made to order)
Refer to Ending Page 1 for details.
- *3 : When with end mount (model No. B), select switch with radial lead wire (model No. T*V).
The end mount is attached at delivery.

[Example of model No.]

FH512-DY1-T2V-R-B

Model: Feather hand (mini-fulcrum hand)

- A** Bore size : $\phi 12$
- B** Option : Double acting
- C** Attachment : With attachment (Material S50C)
- D** Switch model No. : Proximity T2V switch, lead wire 1 m
- E** Switch quantity : 1 on right (port) side open position
- F** End mount : With end mount

How to order end mount

FH - **B** - **10**

Code	Description
A Bore size	
10	$\phi 10$
12	$\phi 12$
16	$\phi 16$
20	$\phi 20$

How to order switch

SW - **T2H**

Switch model No.
(Item **D** above)

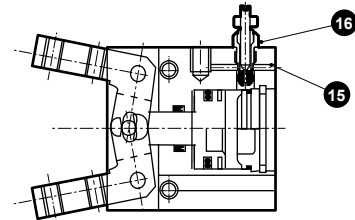
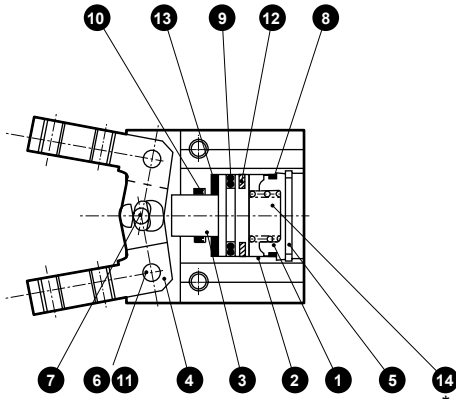
Code	Description				
A Bore size					
10	$\phi 10$				
12	$\phi 12$				
16	$\phi 16$				
20	$\phi 20$				
B Option					
D	Double acting				
O	Single acting (normally open)				
Z	Double acting integrated speed controller				
C Attachment					
Blank	Without attachment				
Y1	With attachment (Material S50C)				
Y2	With attachment (Material MC nylon)				
D Switch model No.					
Axial lead wire	Radial lead wire	Contact	Voltage	Display	Lead wire
T2H*	T2V*	Proximity	AC	1-color display	2-wire
T3H*	T3V*		DC		
* Lead wire length					
Blank	1 m (standard)				
3	3 m (option)				
5	5 m (option)				
E Switch quantity					
R	1 on open side				
H	1 on closed side				
D	2				
F End mount					
Blank	Without end mount				
B	With end mount				

LCM
LCR
LCG
LCW
LCX
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
UB
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCS2
RCC2
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HRL
LN
Hand
Chuk
MechHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending
LSH-HP
LSH
FH100
BSA2
BHA/BHG
LHA
LHAG
HAP
HKP
HCP
HGP
HLF2
HLA/HLB
HLAG/HLBG
HLC
HLD
HMF
HMF-G
HMFB
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FH500
HBL
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HMD
HDL
HJD
BHE

Internal structure and parts list

● Standard (double acting)/O (normally open)

● With speed controller



Cannot be disassembled

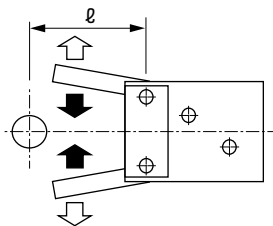
* Standard (double acting) does not contain 14 spring

No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Cylinder guard	Acetal resin		9	Piston packing	Nitrile rubber	
2	Body	Aluminum alloy	Lubrication alumite treatment	10	Rod packing	Nitrile rubber	
3	Piston	Stainless steel		11	Hexagon socket set screw	Stainless steel	
4	Finger	Alloy steel	Heat treatment	12	Magnet		Nickeling
5	Snap ring	Stainless steel		13	Cushion	Urethane rubber	
6	Fulcrum axis	Alloy steel	Heat treatment	14	Spring	Stainless steel	
7	Operation shaft	Alloy steel	Heat treatment	15	Steel ball	Stainless steel	
8	Cylinder gasket	Nitrile rubber		16	Flow control valve assembly		

Gripping power performance data

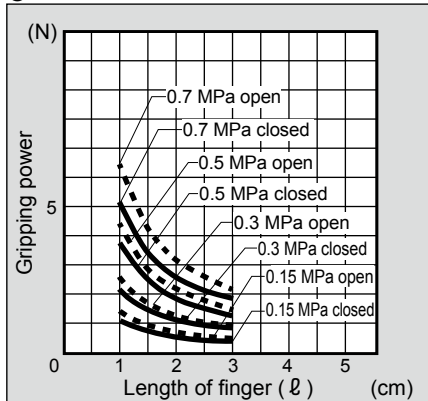
- Gripping power represents the thrust (per one finger) in the arrow direction shown in the figure.
- The gripping power in the opening/closing directions with finger length L of hand with a supply pressure of 0.15 to 0.7 MPa is shown.

- Open direction (↔) ----- (shown with broken line)
- Closed direction (↔) ————— (shown with continuous line)

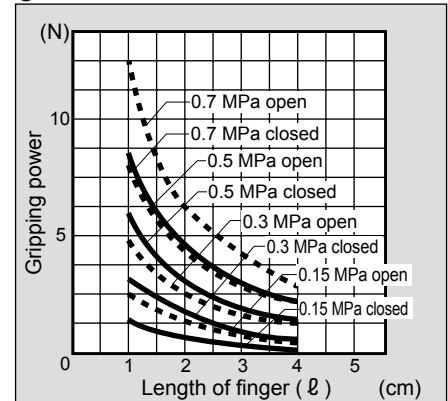


(Note) Single acting closed side gripping power is decreased by 25 to 30% compared to the double acting. When making a selection, read the precautions for design and selection on page 1764.

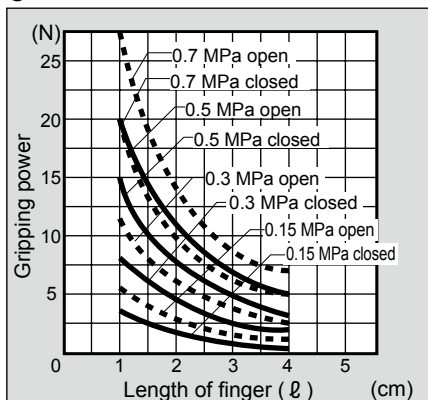
● FH510



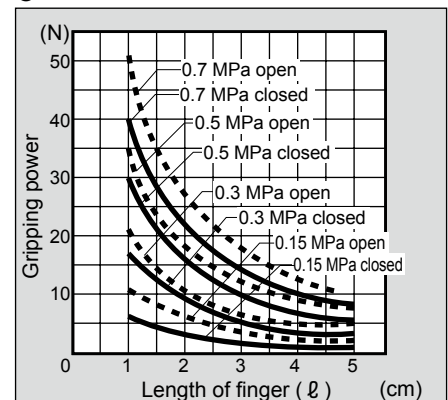
● FH512



● FH516



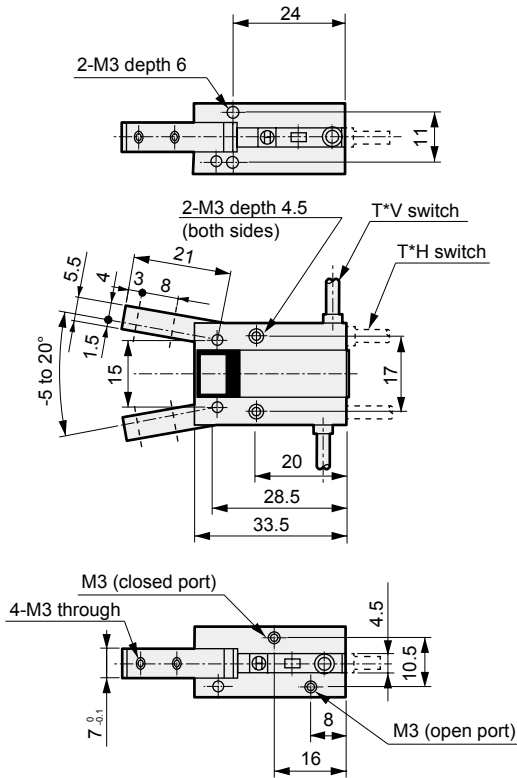
● FH520



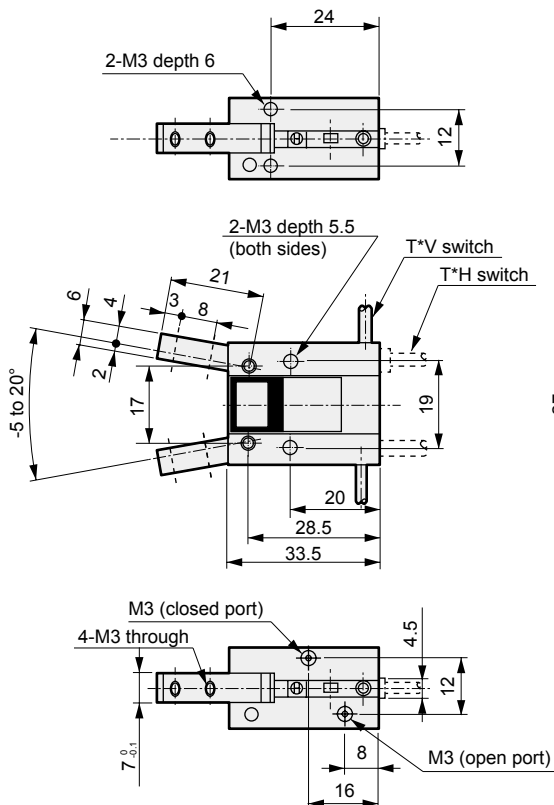
- LCM
- LCR
- LCG
- LCW
- LCX
- STM
- STG
- STS/STL
- STR2
- UCA2
- ULK*
- JSK/M2
- JSG
- JSC3/JSC4
- USSD
- UFCD
- USC
- UB
- JSB3
- LMB
- LML
- HCM
- HCA
- LBC
- CAC4
- UCAC2
- CAC-N
- UCAC-N
- RCS2
- RCC2
- PCC
- SHC
- MCP
- GLC
- MFC
- BBS
- RRC
- GRC
- RV3*
- NHS
- HRL
- LN
- Hand
- Chuk
- MecHnd/Chuk
- ShkAbs
- FJ
- FK
- SpdContr
- Ending
- LSH-HP
- LSH
- FH100
- BSA2
- BHA/BHG
- LHA
- LHAG
- HAP
- HKP
- HCP
- HGP
- HLF2
- HLA/HLB
- HLAG/HLBG
- HLC
- HLD
- HMF
- HMF-G
- HMFB
- HFP
- FH500**
- HBL
- HJL
- HMD
- HDL
- HJD
- BHE

Dimensions

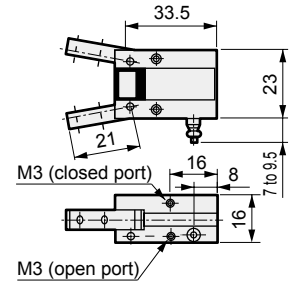
● FH510-D/FH510-O



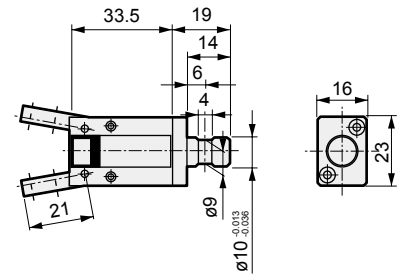
● FH512-D/FH512-O



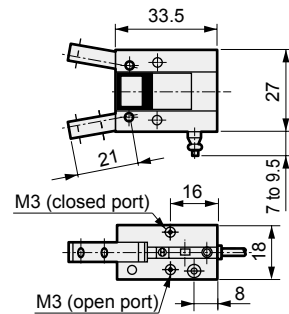
● With speed controller (FH510-Z)



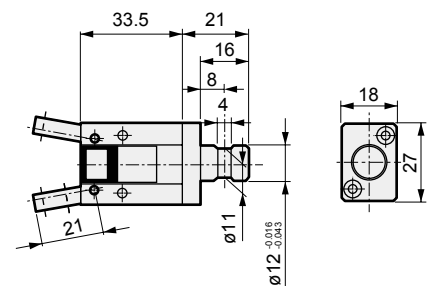
● With end mount



● With speed controller (FH512-Z)



● With end mount



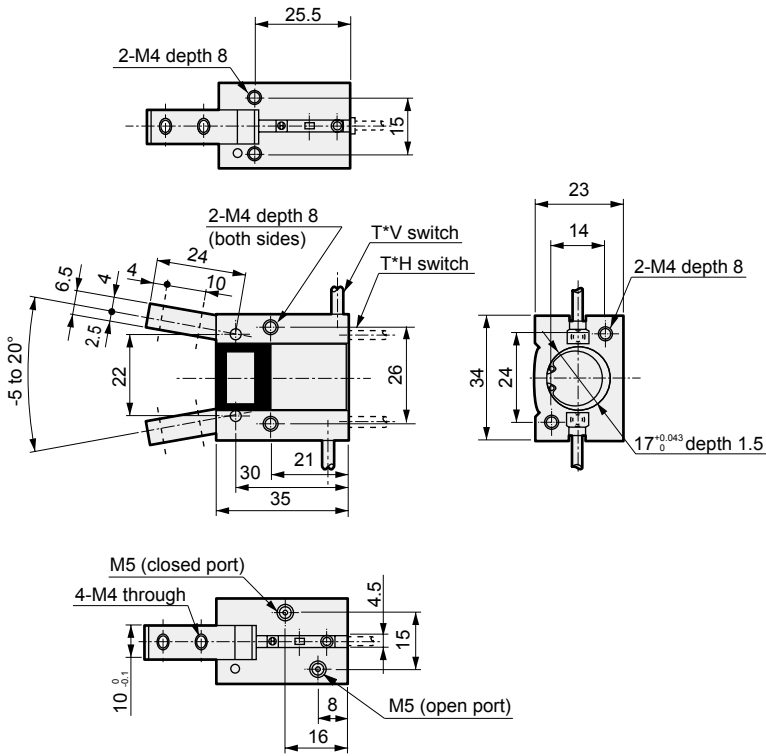
LCM
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JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
UB
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCS2
RCC2
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
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HKP
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HLF2
HLA/HLB
HLAG/HLBG
HLC
HLD
HMF
HMF-G
HMFB
HFP
FH500
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HJL
HMD
HDL
HJD
BHE

FH500 Series

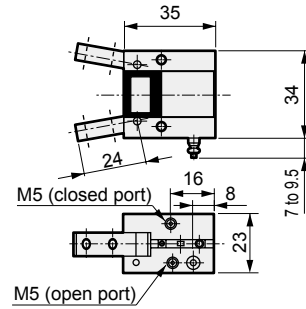
Dimensions



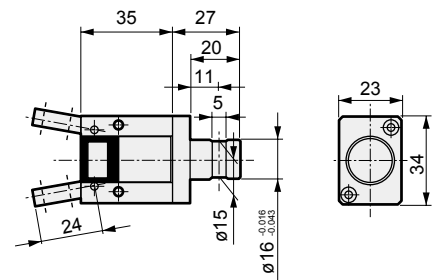
● FH516-D/FH516-O



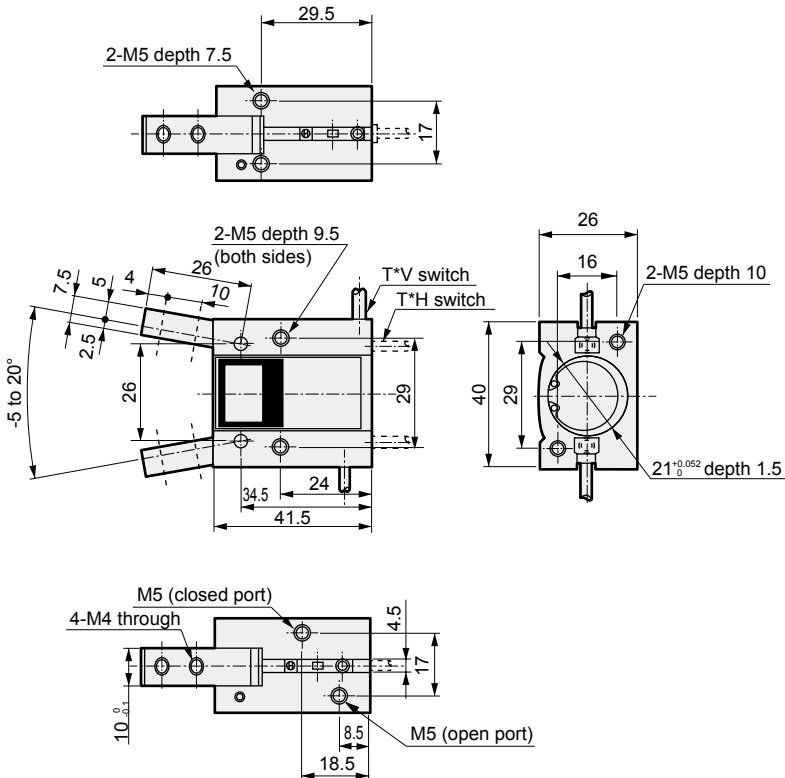
● With speed controller (FH516-Z)



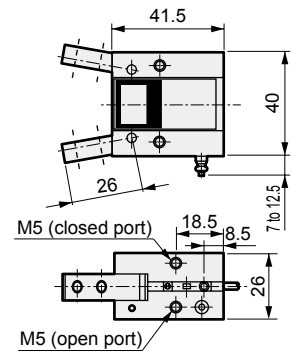
● With end mount



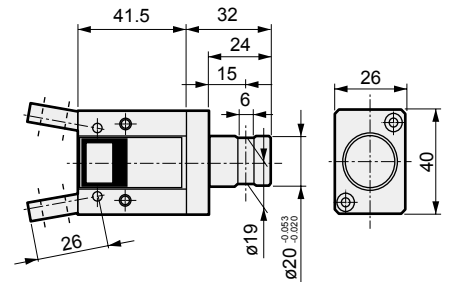
● FH520-D/FH520-O



● With speed controller (FH520-Z)



● With end mount



- LCM
- LCR
- LCG
- LCW
- LCX
- STM
- STG
- STS/STL
- STR2
- UCA2
- ULK*
- JSK/M2
- JSG
- JSC3/JSC4
- USSD
- UFCD
- USC
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