



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 **ⓓ** 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
<b>A Bore size</b>	
<b>10</b>	$\phi 10$
<b>12</b>	$\phi 12$
<b>16</b>	$\phi 16$
<b>20</b>	$\phi 20$

### How to order switch

**SW** - **T2H**

Switch model No.  
(Item **ⓓ** above)

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

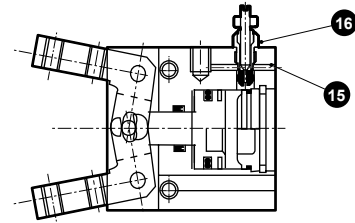
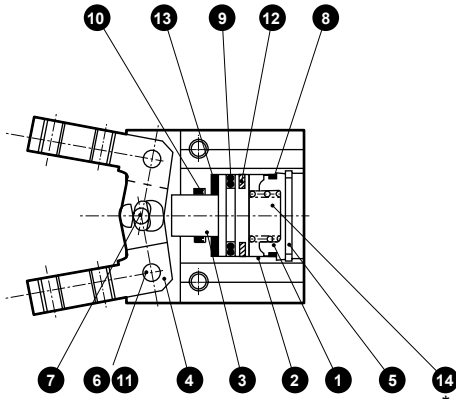
LCM
LCR
LCG
LCW
LCX
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
UB
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCS2
RCC2
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HRL
LN
<b>Hand</b>
Chuk
MechHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending
LSH-HP
LSH
FH100
BSA2
BHA/BHG
LHA
LHAG
HAP
HKP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

# FH500 Series

## Internal structure and parts list

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

● With speed controller



Cannot be disassembled

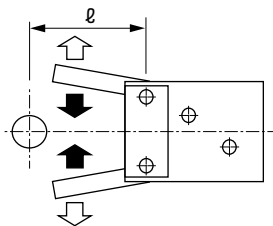
\* Standard (double acting) does not contain 14 spring

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

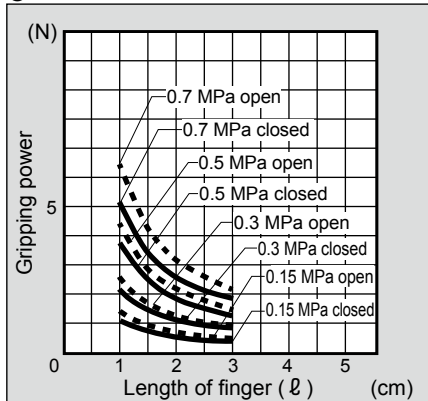
- Gripping power represents the thrust (per one finger) in the arrow direction shown in the figure.
- The gripping power in the opening/closing directions with finger length L of hand with a supply pressure of 0.15 to 0.7 MPa is shown.

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

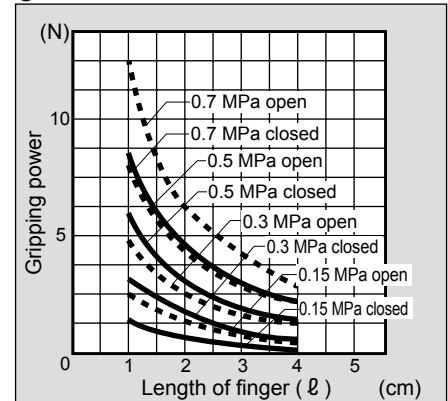


(Note) Single acting closed side gripping power is decreased by 25 to 30% compared to the double acting. When making a selection, read the precautions for design and selection on page 1764.

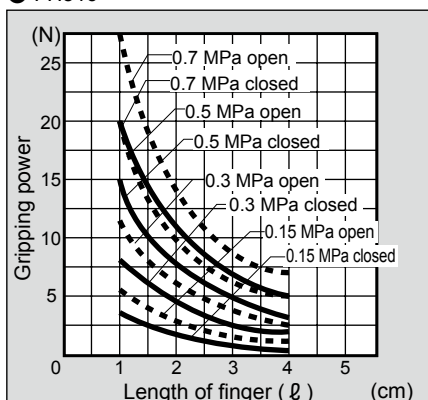
● FH510



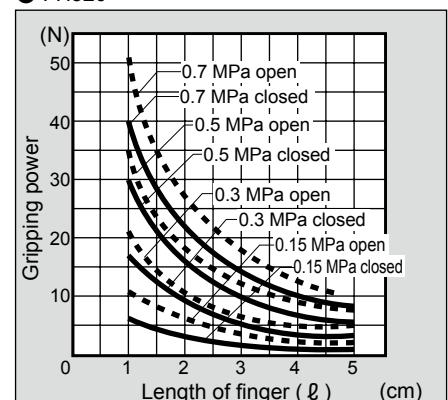
● FH512



● 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

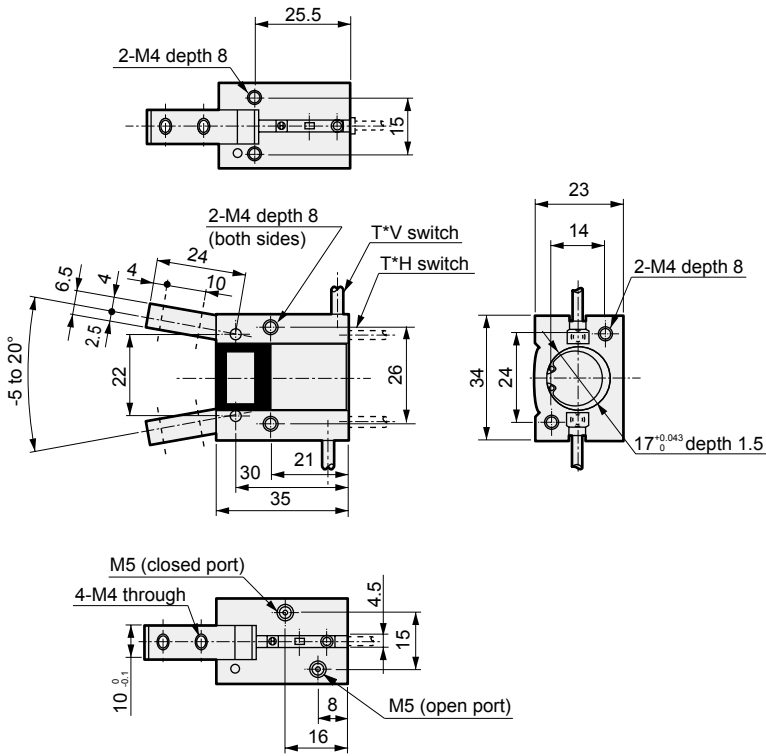


# FH500 Series

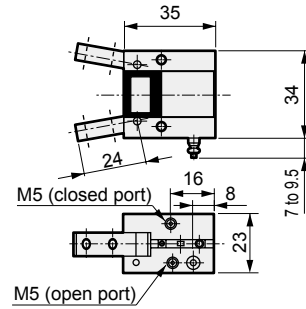
## Dimensions



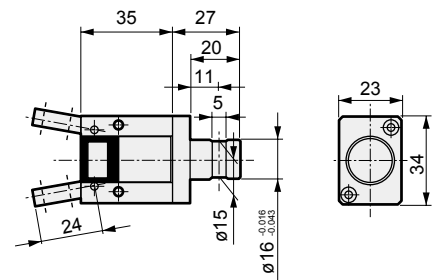
### ● FH516-D/FH516-O



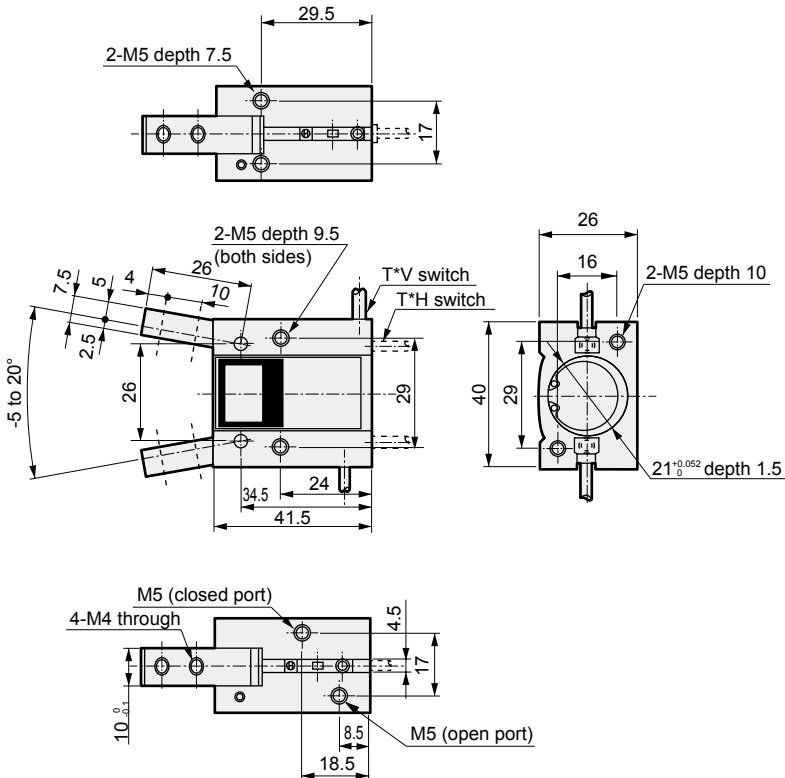
### ● With speed controller (FH516-Z)



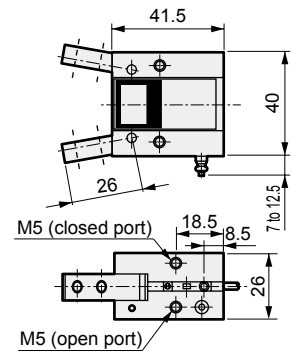
### ● With end mount



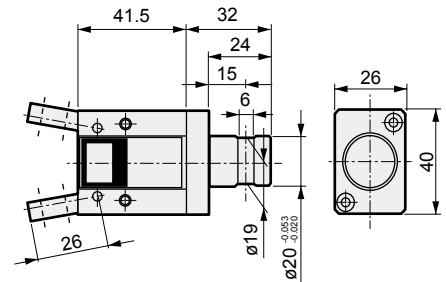
### ● FH520-D/FH520-O



### ● With speed controller (FH520-Z)



### ● With end mount



- LCM
- LCR
- LCG
- LCW
- LX
- 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