



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

FH100 Series

● Operating stroke length: 8, 11, 14, 18, 20 mm

Double acting



Single acting (normally open)



Specifications

Item	FH100									
	FH110-D	FH112-D	FH116-D	FH120-D	FH125-D	FH110-0	FH112-0	FH116-0	FH120-0	FH125-0
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	M3×0.5		M5×0.8			M3×0.5		M5×0.8		
Operating stroke length mm	8	11	15	18	20	8	11	15	18	20
Weight g	51	71	124	176	284	51	71	124	177	286
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									

* 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. If the operating ambient temperature around the switch is higher than 25°C, the current is lower than 20 mA. (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
- HMFB
- HFP
- FH500
- HBL
- HJL
- HMD
- HDL
- HJD
- BHE

How to order

Without switch (built-in magnet for switch)



With switch (built-in magnet for switch)



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.

Code	Description				
A Bore size					
10	ø10				
12	ø12				
16	ø16				
20	ø20				
25	ø25				
B Option					
D	Standard (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	Proximity Contact	Voltage	Display	Lead wire
			AC	DC	
T2H*	T2V*	●			1-color display
T3H*	T3V*				3-wire
* Lead wire length					
Blank	1 m (standard)				
3	3 m (option)				
5	5 m (option)				
E Switch quantity					
R	1 on right (port) side open position				
D	2				
F End mount					
Blank	Without end mount				
B	With end mount				

[Example of model No.]

FH112-ZY1-T2V-D-B

Model: Feather hand (mini-parallel hand)

- A** Bore size : ø12
- B** Option : Double acting integrated speed controller
- C** Attachment : With attachment (Material S50C)
- D** Switch model No. : Proximity T2V switch, lead wire 1 m
- E** Switch quantity : 2
- F** End mount : With end mount

How to order end mount



Code	Description
A Bore size	
10	ø10
12	ø12
16	ø16
20	ø20
25	ø25

How to order switch



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

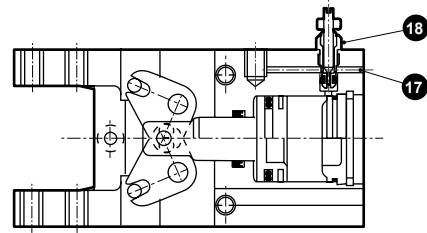
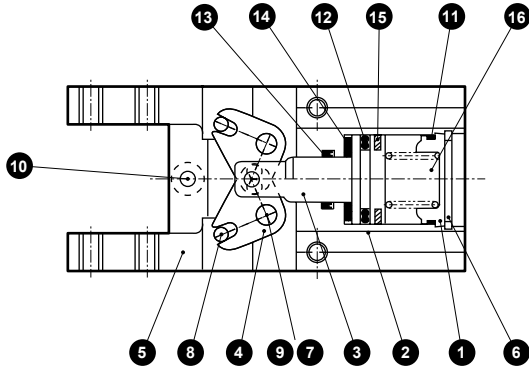
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LCG
LCW
LCX
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
UB
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCS2
RCC2
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
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LSH
FH100
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HLC
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HDL
HJD
BHE

FH100 Series

Internal structure and parts list

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

● With speed controller



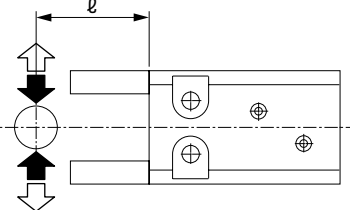
Cannot be disassembled

Standard (double acting) does not contain a 16 spring.

No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Cylinder guard	Acetal resin		10	Hexagon socket head cap screw	Alloy steel	
2	Body	Aluminum alloy	Lubrication alumite treatment	11	Cylinder gasket	Nitrile rubber	
3	Piston	Stainless steel		12	Piston packing	Nitrile rubber	
4	Arm	Stainless steel	Heat treatment	13	Rod packing	Nitrile rubber	
5	Finger	Stainless steel		14	Cushion	Urethane rubber	
6	Snap ring	Stainless steel		15	Magnet		Nickeling
7	Fulcrum axis	Alloy steel	Heat treatment	16	Spring	Stainless steel	
8	Operation shaft	Alloy steel	Heat treatment	17	Steel ball	Stainless steel	
9	Hexagon socket set screw	Alloy steel		18	Flow control valve assembly		

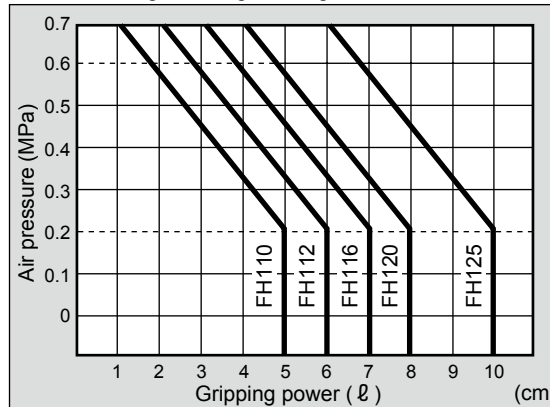
Gripping power performance data

- 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)



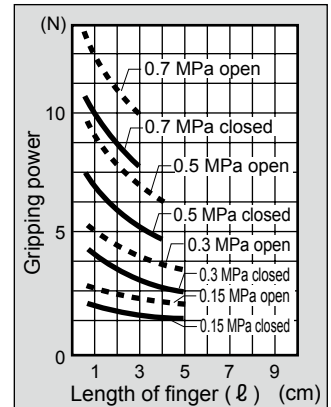
(Note) Single acting closed side gripping power is decreased by 25 to 30% compared to the double acting.

Restriction range for length of finger ℓ

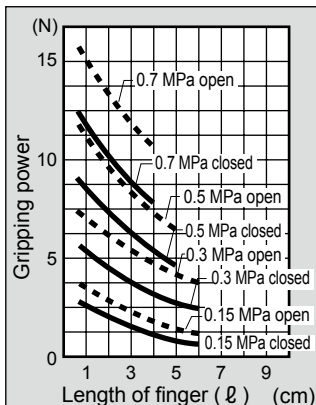


When making a selection, read the precautions for design and selection on page 1764.

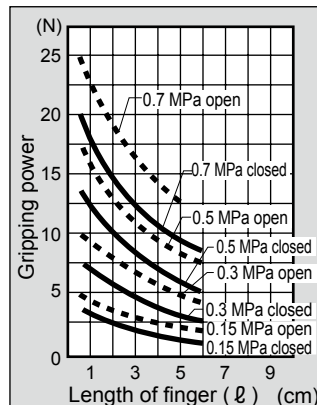
● FH110



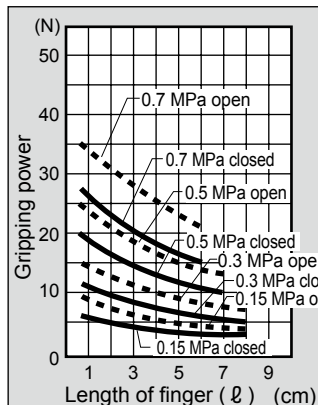
● FH112



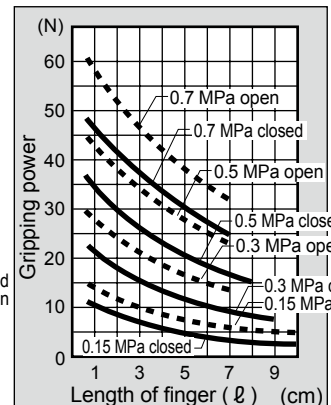
● FH116



● FH120



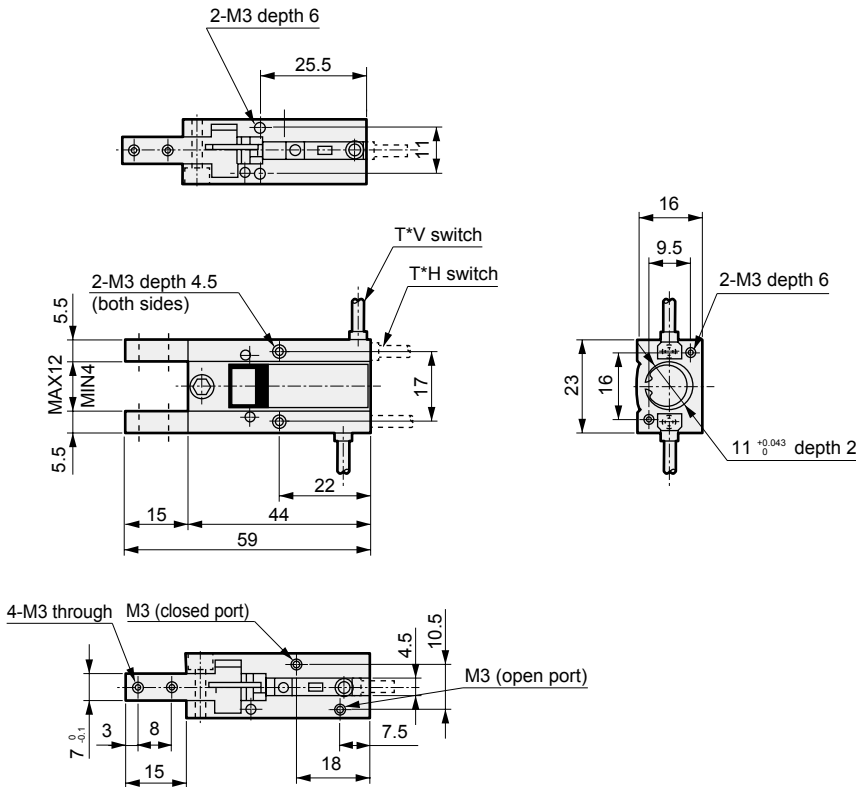
● FH125



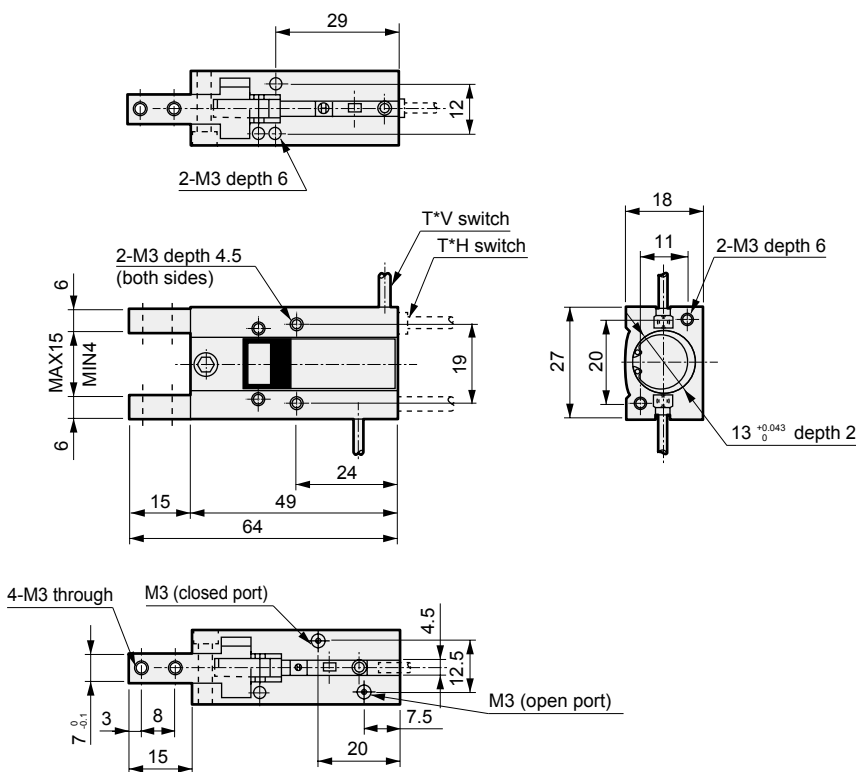
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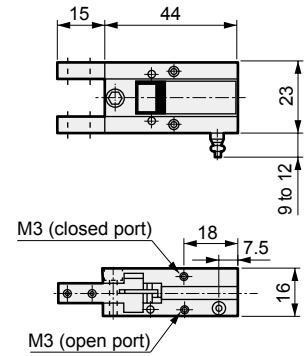
● FH110-D/FH110-O



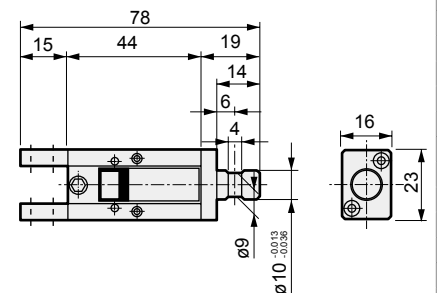
● FH112-D/FH112-O



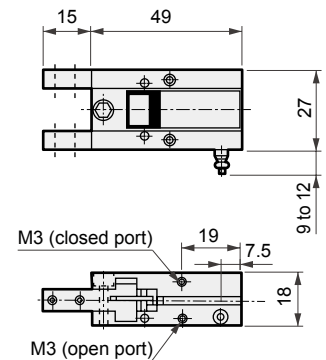
● With speed controller (FH110-Z)



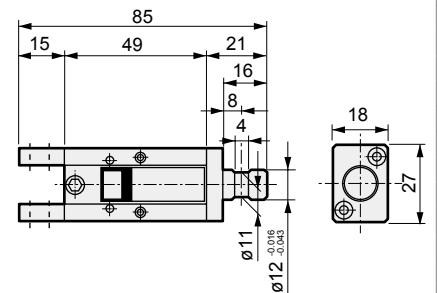
● With end mount



● With speed controller (FH112-Z)



● With end mount



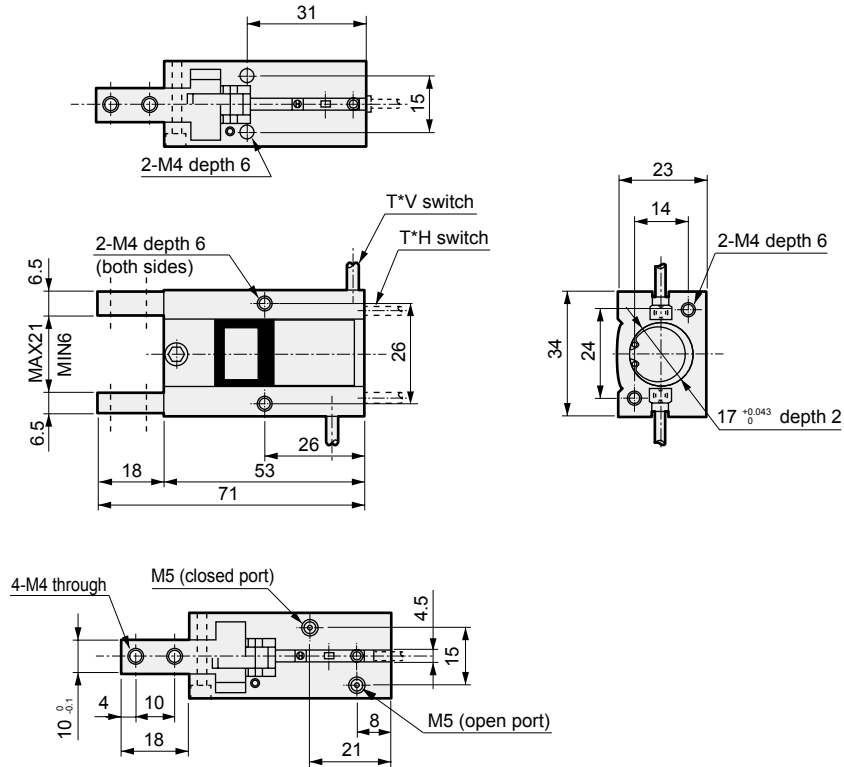
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STG
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UCA2
ULK*
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USSD
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USC
UB
JSB3
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CAC-N
UCAC-N
RCS2
RCC2
PCC
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MCP
GLC
MFC
BBS
RRC
GRC
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FH100 Series

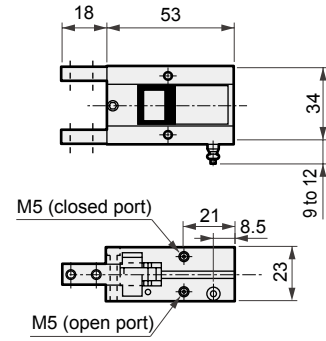
Dimensions



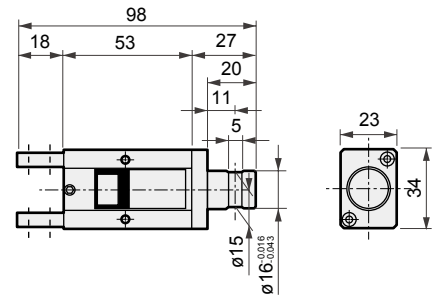
● FH116-D/FH116-O



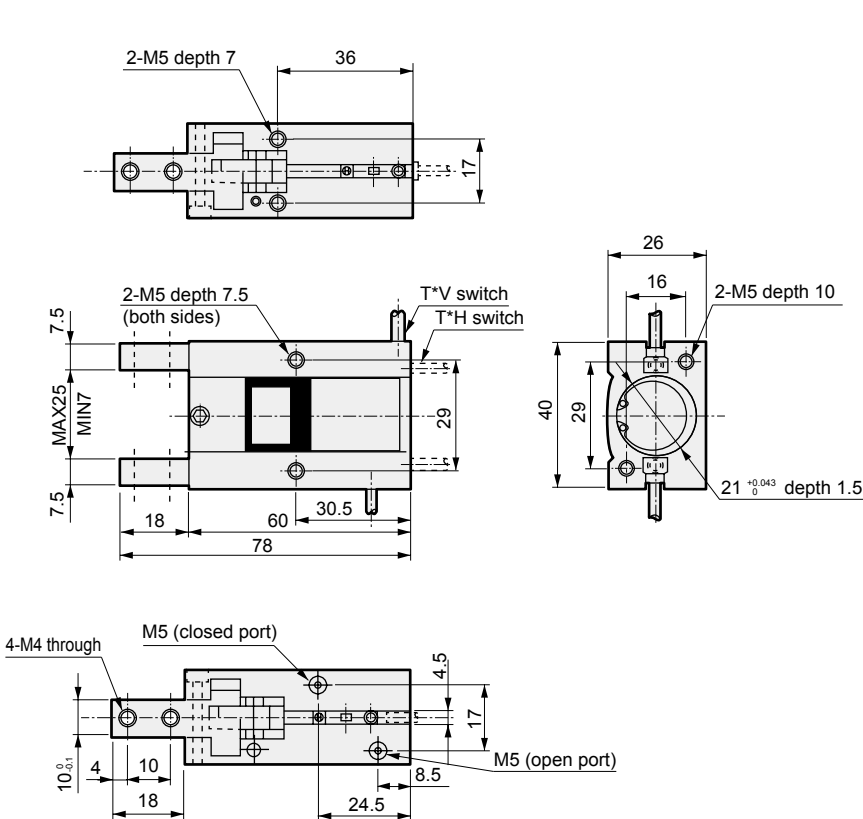
● With speed controller (FH116-Z)



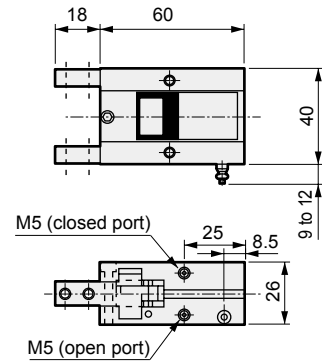
● With end mount



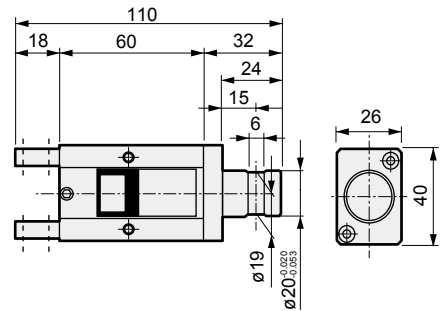
● FH120-D/FH120-O



● With speed controller (FH120-Z)



● With end mount

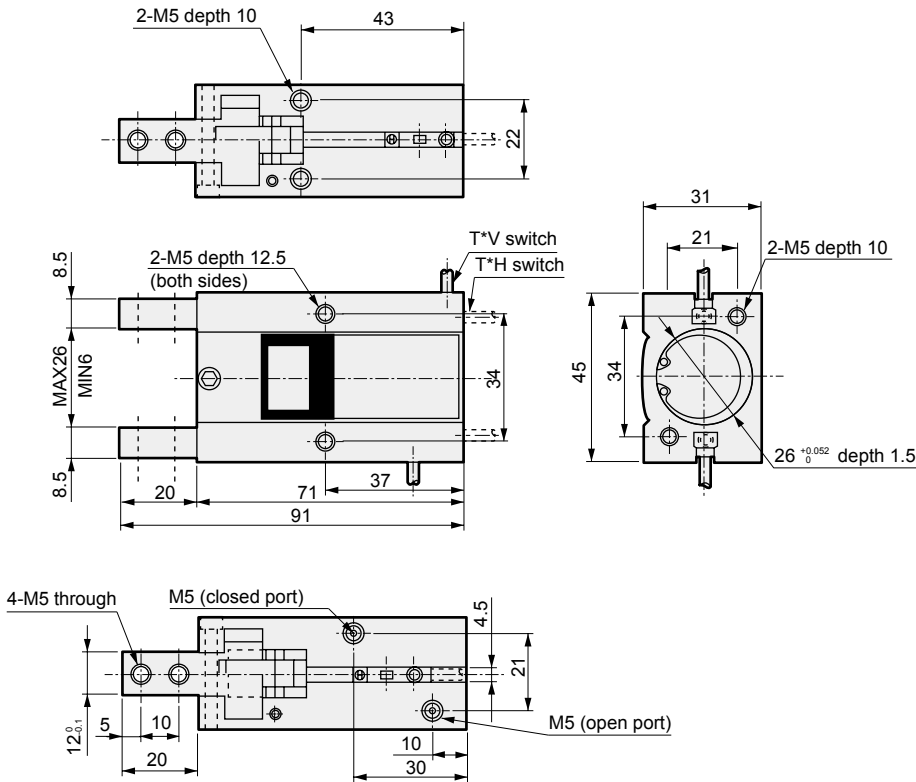


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- CAC-N
- UCAC-N
- RCS2
- RCC2
- PCC
- SHC
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- GLC
- MFC
- BBS
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- LN
- Hand**
- Chuk
- MecHnd/Chuk
- ShkAbs
- FJ
- FK
- SpdContr
- Ending
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- LSH
- FH100**
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- LHA
- LHAG
- HAP
- HKP
- HCP
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- HLF2
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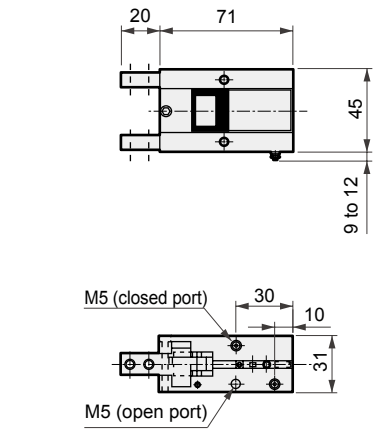
Dimensions



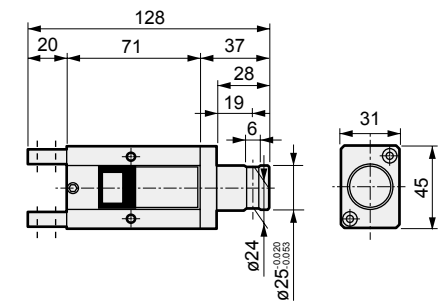
● FH125-D/FH125-O



● With speed controller (FH125-Z)



● With end mount



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