

Are your workpieces being damaged?

The shockless type grips the workpiece gently even at high speeds.



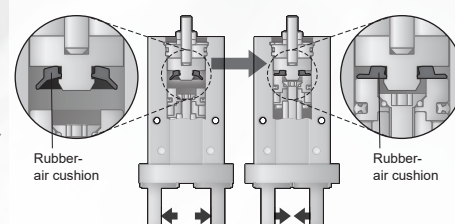
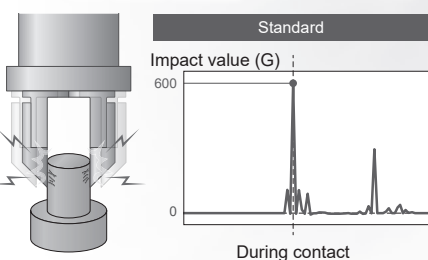
Suppresses impact to approximately 1/30

Shock absorbing mechanism integrated

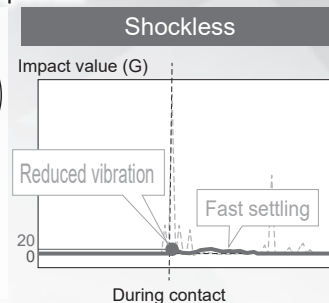
Unique shock absorbing mechanism (option)

Workpiece is damaged due to impact from the slide hand.

Grips the workpiece gently even at high speeds.



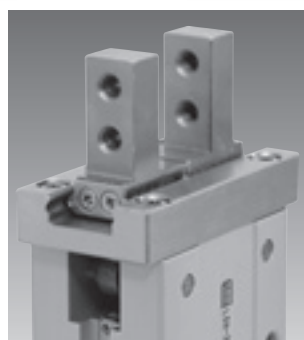
* Can be adjusted according to stroke length.



High rigidity/high precision

Linear guide used

High rigidity and high precision are achieved with a structure integrating the guide rail and finger.

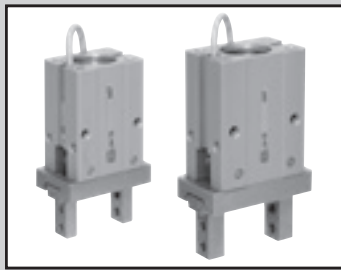


Increased flexibility in design

Can be mounted from three directions

Axial (upward) mounting	Horizontal mounting	Vertical mounting
With reference spigot	Body thickness tolerance ± 0.05 mm	Excellent centering precision

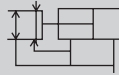
LCM
LCR
LCG
LCW
LCX
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
UB
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCS2
RCC2
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HRL
LN
Hand
Chuk
MechHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending
LSH-HP
LSH
FH100
BSA2
BHA/BHG
LHA
LHAG
HAP
HKP
HCP
HGP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



Linear Slide Hand Double acting

LSH Series

● Operating stroke: 4, 6, 10, 14 mm

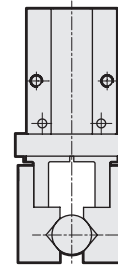


RoHS

Specifications

Descriptions		LSH			
Bore size	mm	ø10	ø16	ø20	ø25
Actuation		Double acting			
Working fluid		Compressed air			
Max. working pressure	MPa	0.7			
Min. working pressure	Standard	0.2	0.1		
	MPa	Shockless	0.3	0.2	
Port size		M3	M5		
Ambient temperature		°C			
Operating stroke		-10 to 60 (no freezing)			
mm		4	6	10	14
Repeatability		mm			
mm		±0.01			
Weight	Standard	0.055	0.125	0.250	0.460
	kg	Shockless	0.063	0.143	0.278
Lubrication		Not required (use turbine oil class 1 ISO VG32 if lubrication is necessary)			

Gripping force



Bore size (mm)	Open side	Closed side
ø10	17	11
ø16	45	34
ø20	66	42
ø25	104	65

* Values at 0.5 MPa supply pressure, L = 20 mm

Unit: N

Switch specifications

Item	Proximity 2-wire	Proximity 3-wire	Proximity 2-wire	Proximity 3-wire	
	F2S	F3S	F2H/F2V	F3H/F3V	F3PH/F3PV
Applications	Programmable Controller dedicated	Programmable For controller, relay	Programmable Controller dedicated	Programmable For controller, relay	
Output method	-	NPN output	-	NPN output	PNP output
Power supply voltage	-	10 to 28 VDC	-	10 to 28 VDC	4.5 to 28 VDC
Load voltage/ current	10 to 30 VDC 5 to 20mA	30 VDC, 50 mA or less	10 to 30 VDC 5 to 20mA	30 VDC, 50 mA or less	
Indicator lamp	LED (Lit when ON)		Yellow LED (Lit when ON)		
Leakage current	1 mA or less	10 μA or less	1 mA or less	10 μA or less	
Shock resistance	980m/s ²				
Weight	g 1m:10 3m:29				

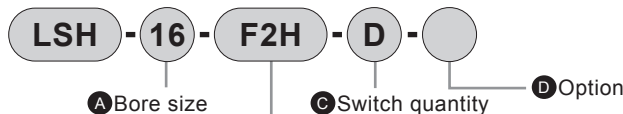
*1 : The switch uses a bend-resistant lead wire.

How to order

Without switch



With switch



A Bore size

B Switch model No.

C Switch quantity

D Option

⚠ Precautions for model No. selection

*1: Shock absorbing option is enabled only for the closed side.

[Example of model No.]

LSH-16-F2H-D

Model: Linear Slide Hand

A Bore size : ø16

B Switch model No. : Proximity switch F2H
Lead wire 1 m

C Switch quantity : 2

How to order switch



Switch model No.
(Item B above)

LSH-20, 25 Long nut for switch



Code	Description
A Bore size (mm)	
10	ø10
16	ø16
20	ø20
25	ø25

B Switch model No.					
Straight Lead wire	L-shaped Lead wire	Contact	Voltage		Indicator
			AC	DC	
-	F2S*	Proximity		●	1-color LED
-	F3S*			●	
F2H*	F2V*			●	
F3H*	F3V*			●	
F3PH*	F3PV*			●	

* Lead wire length

Blank	1 m (standard)
3	3 m (option)

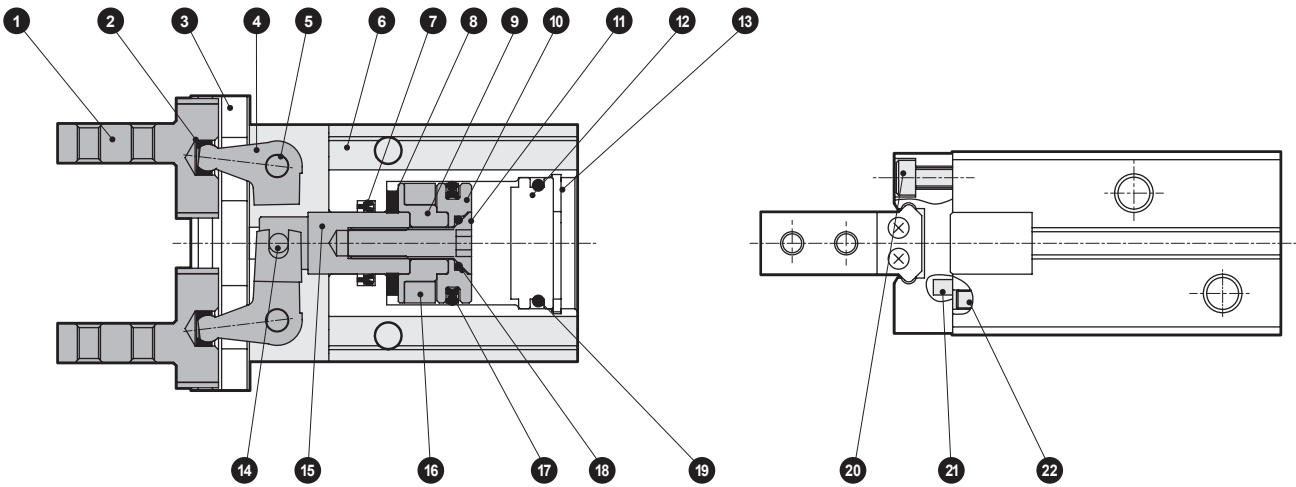
C Switch quantity	
R	1 on open side
H	1 on closed side
D	2

D Option	
Blank	Standard
C	Shockless (closed side only)

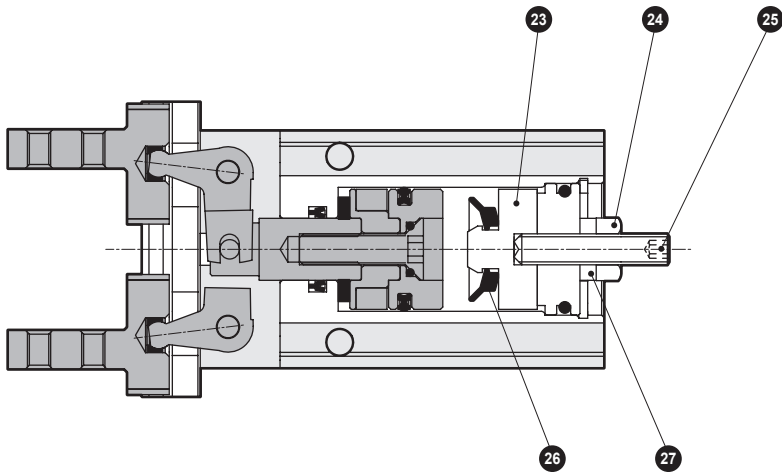
LCM
LCR
LCG
LCW
LCX
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
UB
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCS2
RCC2
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HRL
LN
Hand
Chuk
MechHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending
LSH-HP
LSH
FH100
BSA2
BHA/BHG
LHA
LHAG
HAP
HKP
HCP
HGP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

Internal structure diagram and parts list

●LSH (Standard)



●LSH-*-C (Shockless (Closed side only))



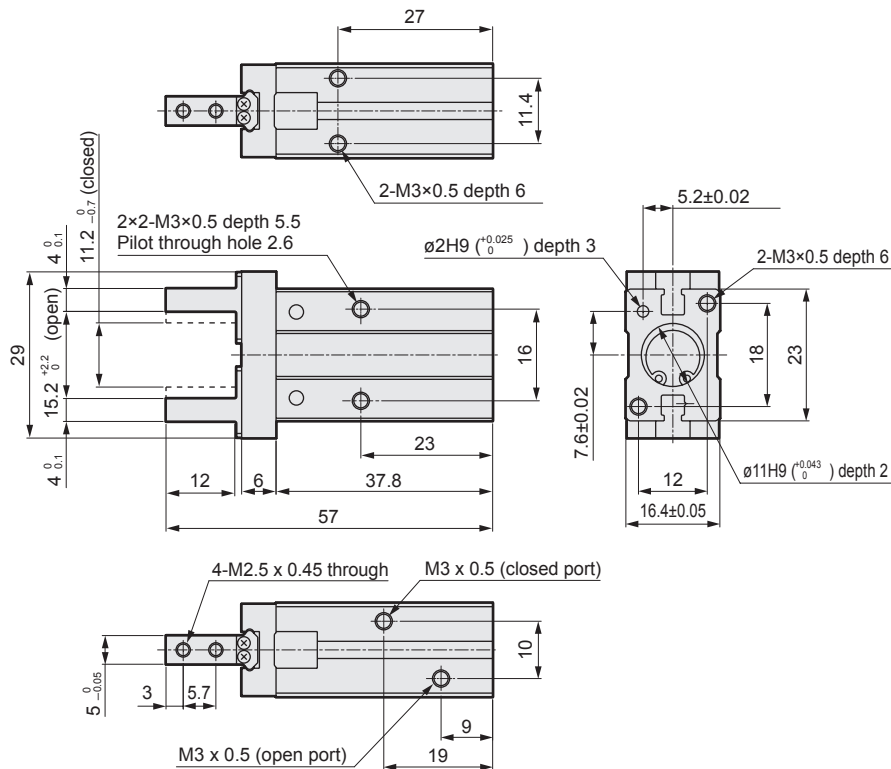
Cannot be disassembled

Parts list

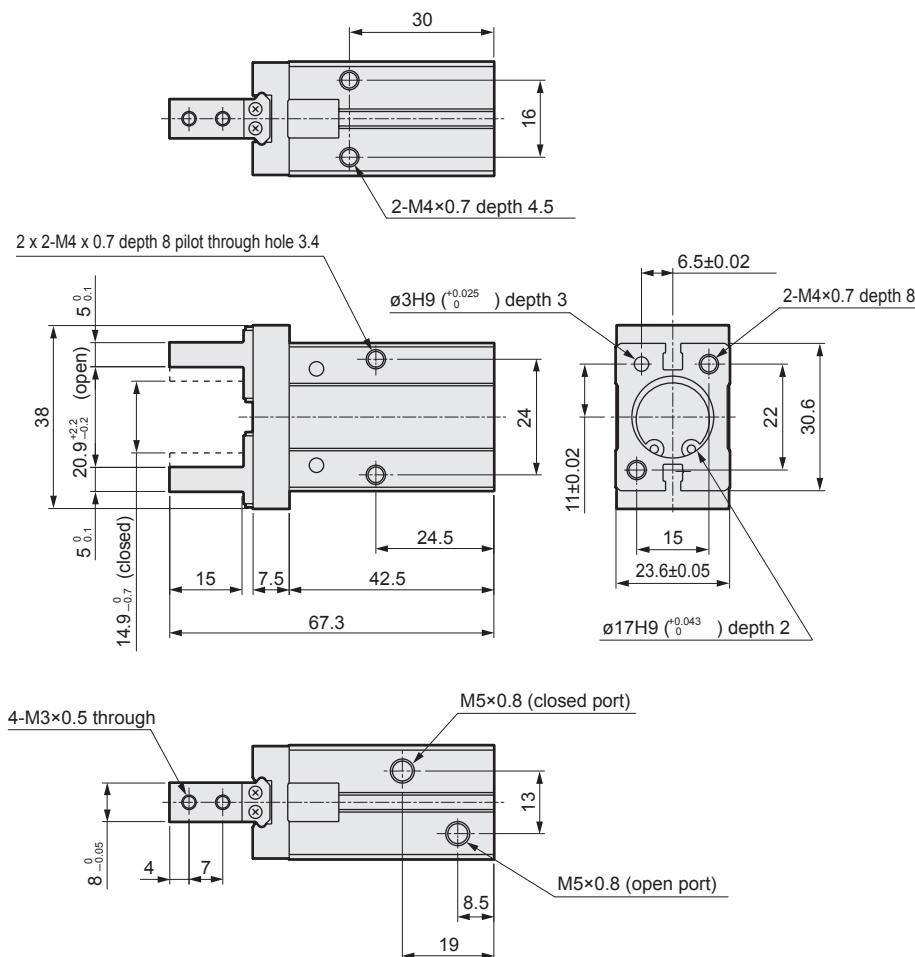
Part No.	Part name	Material	Remarks	Part No.	Part name	Material	Remarks
1	Finger	Stainless steel		15	Piston rod	Stainless steel	
2	Holder	Steel alloy		16	Magnet		
3	Linear guide	Stainless steel		17	Piston packing	Nitrile rubber	
4	Lever	Stainless steel		18	O-ring	Nitrile rubber	
5	Fulcrum axis	Steel alloy		19	O-ring	Nitrile rubber	
6	Body	Aluminum alloy		20	Hexagon socket head cap screw	Stainless steel	
7	Rod packing	Nitrile rubber		21	Pin	Steel alloy	
8	Cushion rubber	Urethane rubber		22	Hexagon socket set screw	Steel alloy	
9	Spacer	Aluminum alloy		23	Stopper	Aluminum alloy	Hard alumite
10	Piston	Aluminum alloy		24	Hexagon nut	Steel alloy	
11	Hexagon socket head cap screw	Stainless steel		25	Hexagon socket set screw	Steel alloy	
12	Head cover	Aluminum alloy		26	Rubber-air cushion	Special rubber	
13	C-snap ring	Stainless steel		27	Sealing washer	Stainless steel + nitrile rubber	
14	Operation shaft	Steel alloy					

Dimensions (bore size: $\varnothing 10$, $\varnothing 16$)

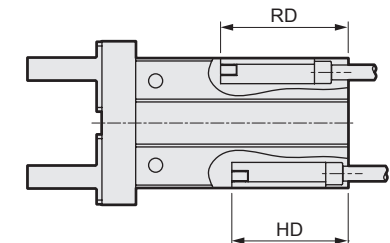
● LSH-10 (Standard)



● LSH-16 (Standard)



● With switch



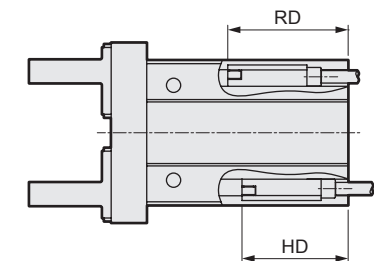
F2/3*	RD	22.5
	HD	20.5
F2S/F3S	RD	23.5
	HD	21.5

*1: RD dimension is the max. sensitivity position at open side end position and HD dimension at closed side end position. The actual mounting position should be adjusted after confirming the operational status of the switch.

*2: Switch cannot be mounted when mounting the body with through holes. Refer to page 1768 for details.

*3: For F□H, the switch lead wire projects from the end face of the head side. If this projection is a problem, use F□V or F□S.

● With switch



F2/3*	RD	25.5
	HD	22.5
F2S/F3S	RD	26.5
	HD	23.5

*1: RD dimension is the max. sensitivity position at open side end position and HD dimension at closed side end position. The actual mounting position should be adjusted after confirming the operational status of the switch.

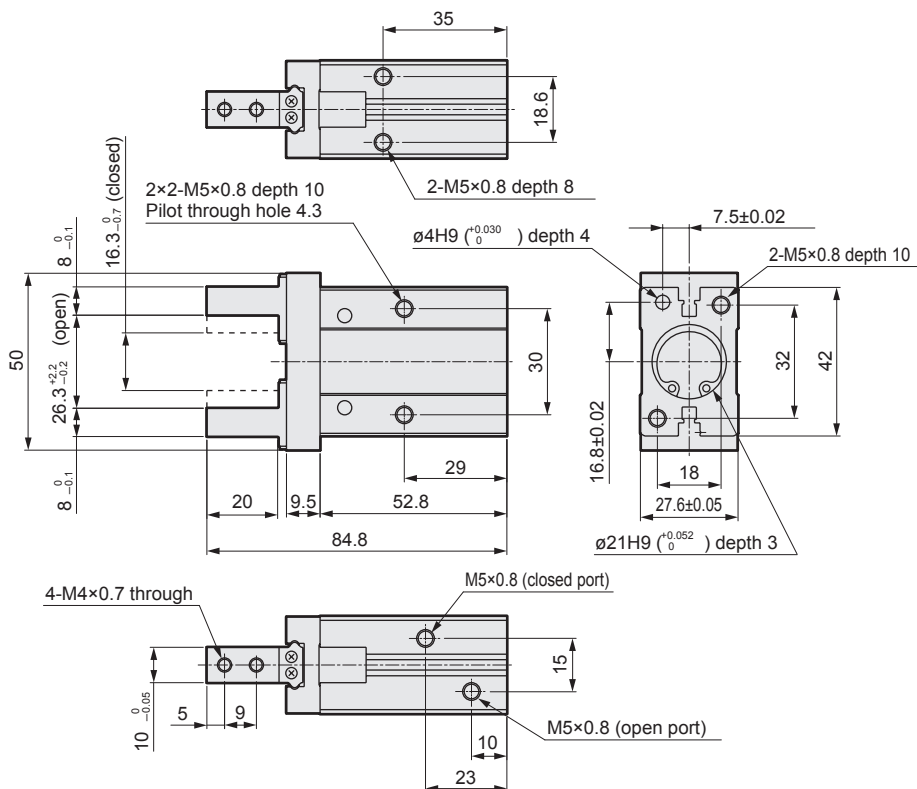
*2: Switch cannot be mounted when mounting the body with through holes. Refer to page 1768 for details.

*3: For F□H, the switch lead wire projects from the end face of the head side. If this projection is a problem, use F□V or F□S.

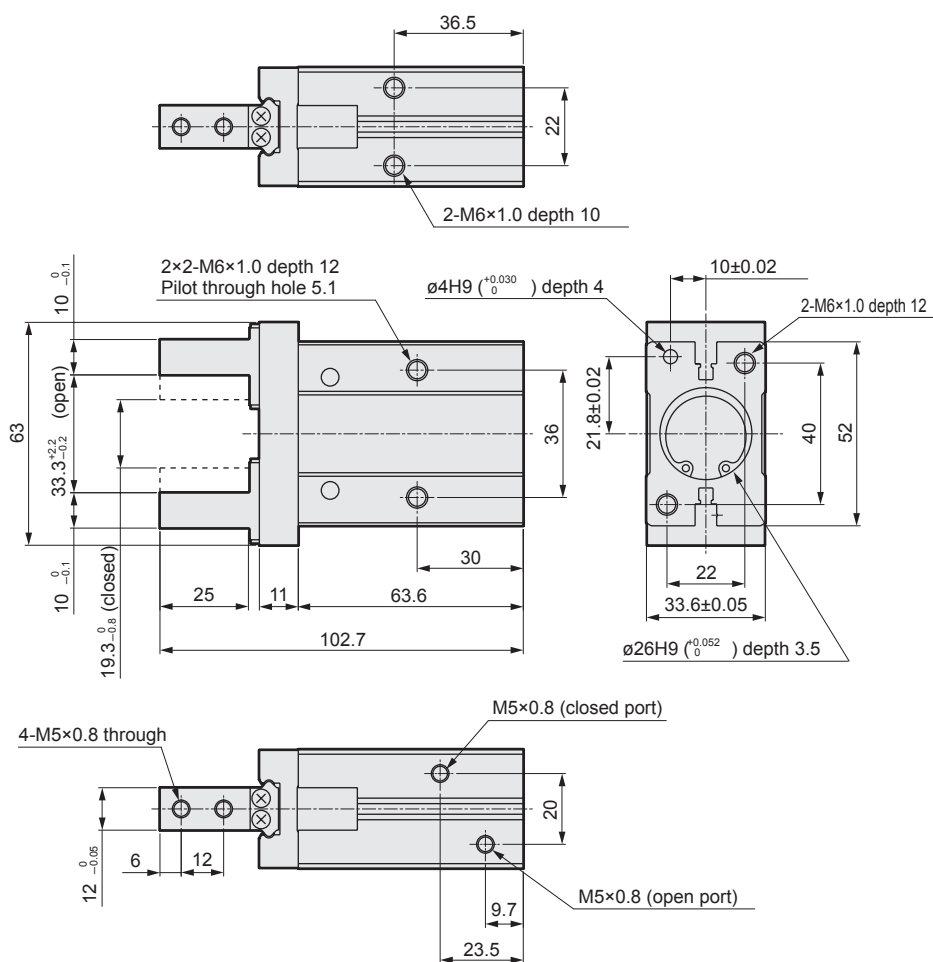
LCM
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UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
UB
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCS2
RCC2
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HRL
LN
Hand
Chuk
MechHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending
LSH-HP
LSH
FH100
BSA2
BHA/BHG
LHA
LAG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

Dimensions (bore size: $\varnothing 20$, $\varnothing 25$)

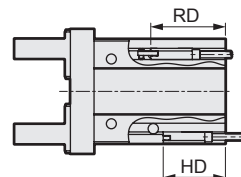
●LSH-20 (Standard)



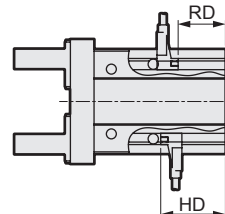
●LSH-25 (Standard)



●With F2H/F3H, F2V/F3V switches



●With F2S/F3S switch



F2/3*	RD	30
	HD	25
F2S/F3S	RD	19
	HD	26

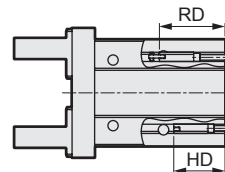
*1: RD dimension is the max. sensitivity position at open side end position and HD dimension at closed side end position. The actual mounting position should be adjusted after confirming the operational status of the switch.

*2: Switch cannot be mounted when mounting the body with through holes. Refer to page 1768 for details.

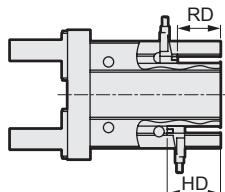
*3: For F□H, the switch lead wire projects from the end face of the head side. If this projection is a problem, use F□V or F□S.

*4: When installing the F2/3H or F2/3V switch in a position with RD dimensions 27.5 to 30, replace the switch fixing nut with the attached long nut according to the switch mounting procedure included with the product.

●With F2H/F3H, F2V/F3V switches



●With F2S/F3S switch



F2/3*	RD	32
	HD	25
F2S/F3S	RD	21
	HD	26

*1: RD dimension is the max. sensitivity position at open side end position and HD dimension at closed side end position. The actual mounting position should be adjusted after confirming the operational status of the switch.

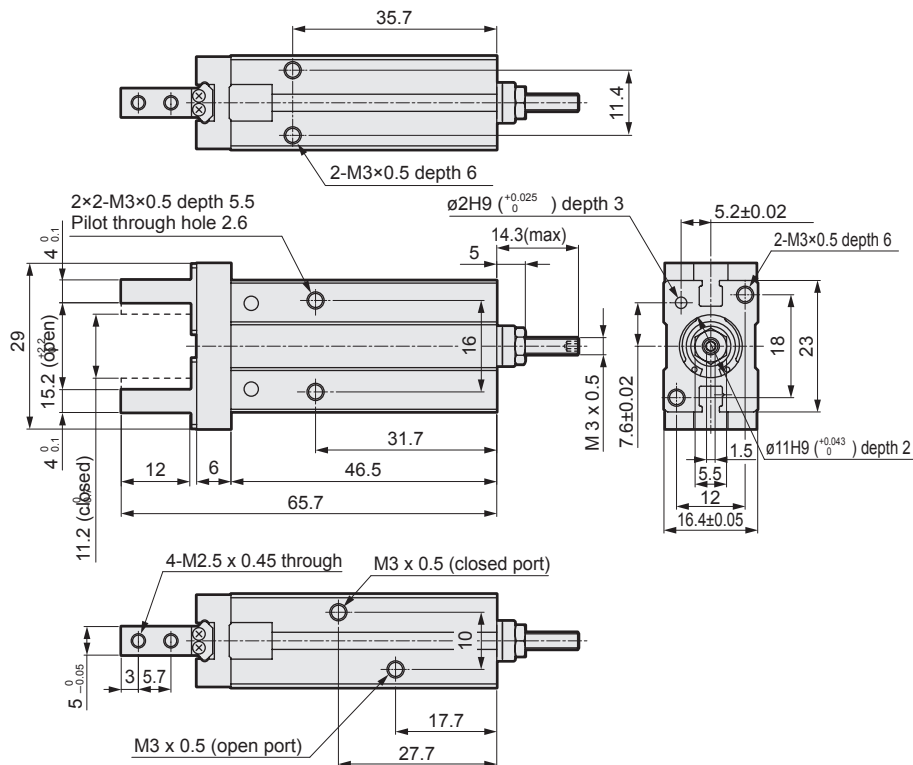
*2 : Switch cannot be mounted when mounting the body with through holes. Refer to page 1768 for details.

*3: For F□H, the switch lead wire projects from the end face of the head side. If this projection is a problem, use F□V or F□S.

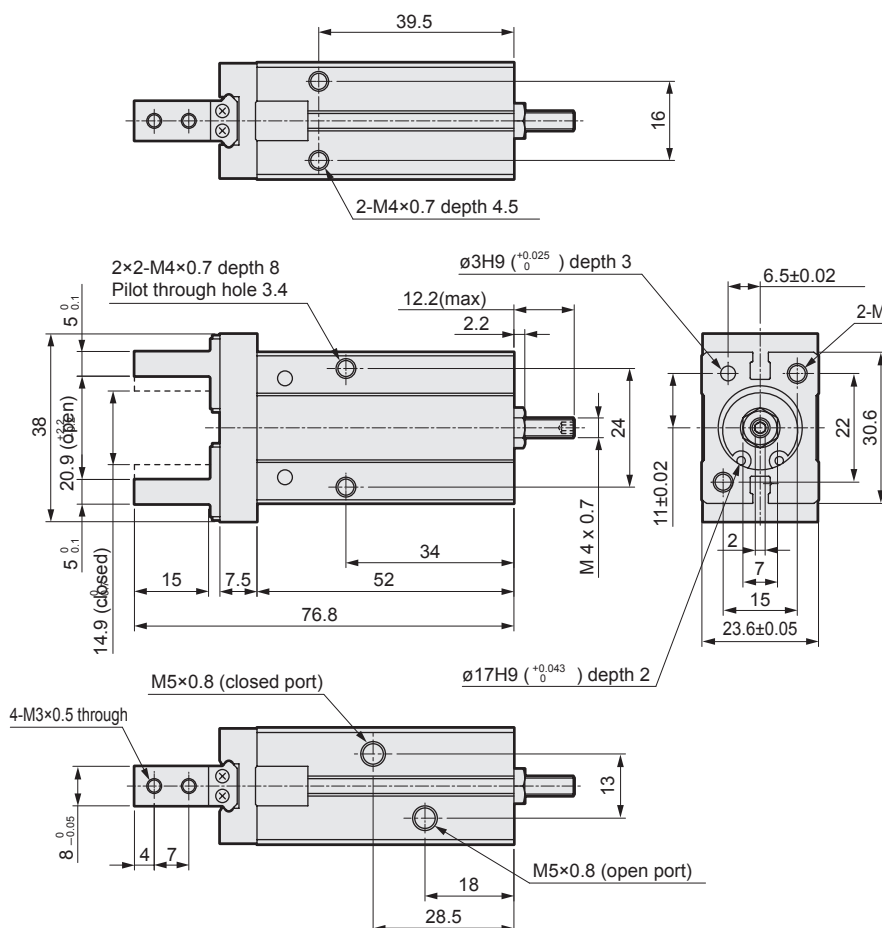
*4: When mounting the F2/3H or F2/3V switch to RD dimensions 29 to 33, replace the switch fixing nut with the attached long nut according to the switch mounting procedure included with the product.

Dimensions (bore size: ø10, ø16)

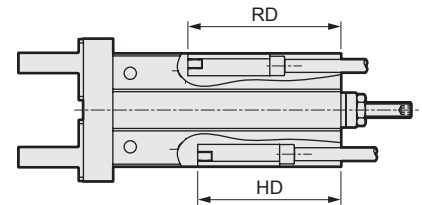
●LSH-10-C (Shockless (closed side only))



●LSH-16-C (Shockless (closed side only))



● With switch



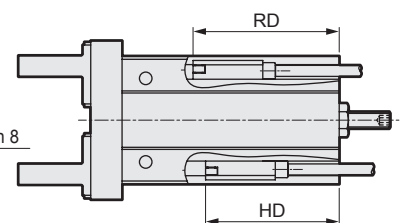
F2/3*	RD	31
	HD	29
F2S/F3S	RD	32
	HD	30

*1: RD dimension is the max. sensitivity position at open side end position and HD dimension at closed side end position. The actual mounting position should be adjusted after confirming the operational status of the switch.

*2: Switch cannot be mounted when mounting the body with through holes. For details, refer to page 1768.

*3: For F□H, the switch lead wire projects from the end face of the head side. If this projection is a problem, use F□V or F□S.

●With switch



F2/3*	RD	35
	HD	32
F2S/F3S	RD	36
	HD	33

*1: RD dimension is the max. sensitivity position at open side end position and HD dimension at closed side end position. The actual mounting position should be adjusted after confirming the operational status of the switch.

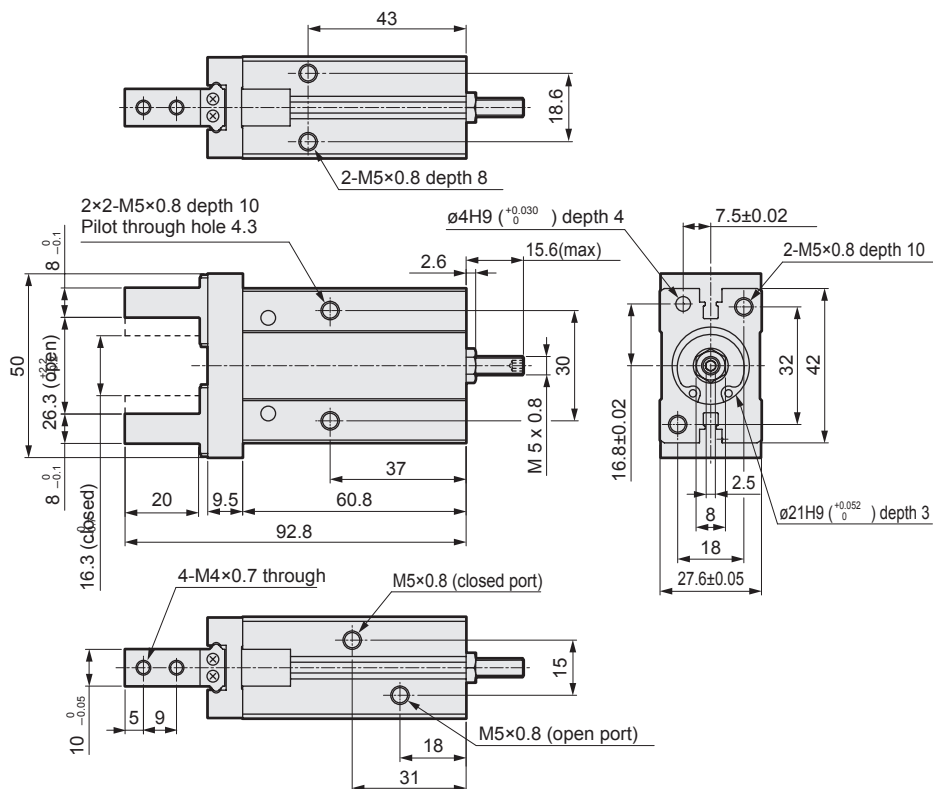
*2: Switch cannot be mounted when mounting the body with through holes. For details, refer to page 1768.

*3: For F□H, the switch lead wire projects from the end face of the head side. If this projection is a problem, use F□V or F□S.

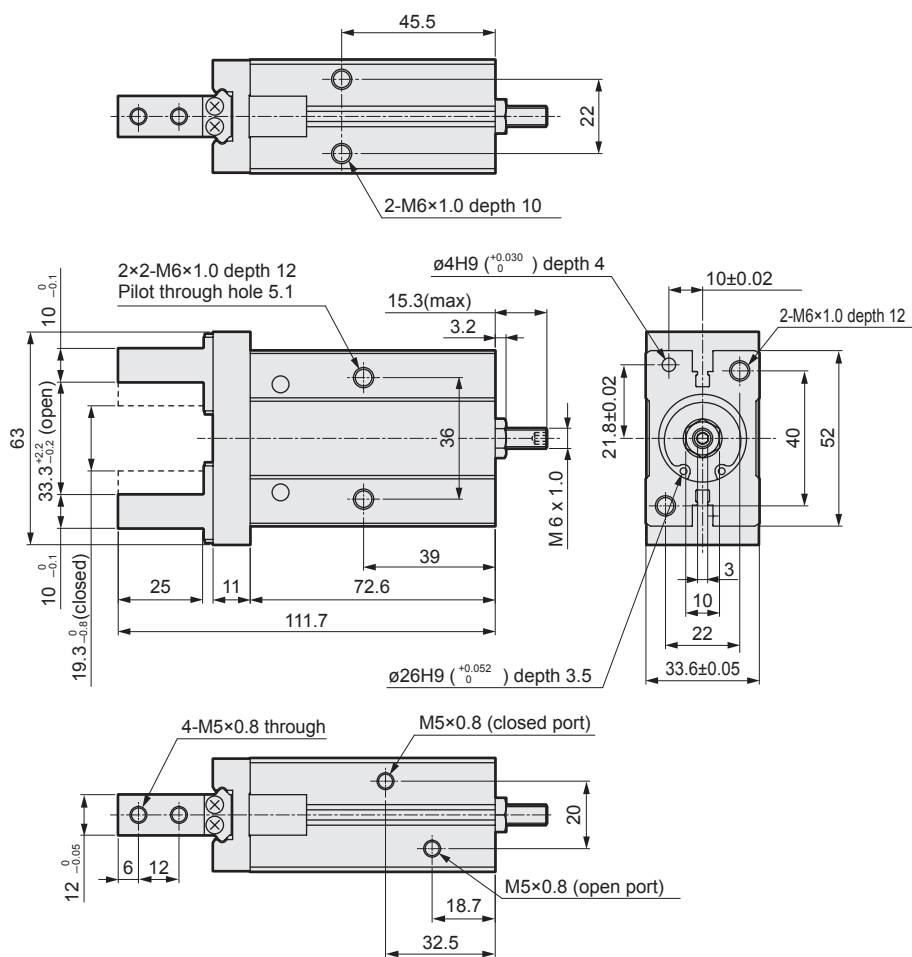
LCM
LCR
LCG
LCW
LCX
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC
USSD
UFCD
USC
UB
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCS2
RCC2
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HRL
LN
Hand
Chuk
MeHnd/Chuk
ShkAbs
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HLA/HLB
HLAG/HLBG
HLC
HLD
HMF
HMF-G
HMFB
HFP
FH500
HBL
HJL
HMD
HDL
HJD
RHE

Dimensions (bore size: $\varnothing 20$, $\varnothing 25$)

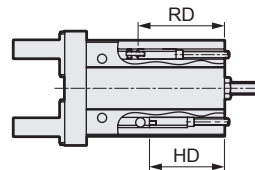
● LSH-20-C (Shockless (closed side only))



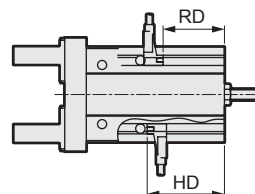
● LSH-25-C (Shockless (closed side only))



● With F2H/F3H, F2V/F3V switches



● With F2S/F3S switch



F2/3*	RD	38
	HD	33
F2S/F3S	RD	27
	HD	34

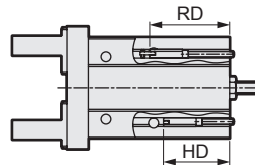
*1: RD dimension is the max. sensitivity position at open side end position and HD dimension at closed side end position. The actual mounting position should be adjusted after confirming the operational status of the switch.

*2: Switch cannot be mounted when mounting the body with through holes. For details, refer to page 1768.

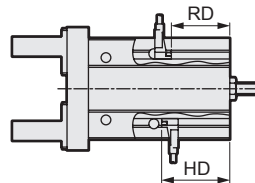
*3: For F□H, the switch lead wire projects from the end face of the head side. If this projection is a problem, use F□V or F□S.

*4: When installing the F2/3H or F2/3V switch in a position with RD dimensions 35.5 to 38, replace the switch fixing nut with the attached long nut according to the switch mounting procedure included with the product.

● With F2H/F3H, F2V/F3V switches



● With F2S/F3S switch



F2/3*	RD	41
	HD	34
F2S/F3S	RD	30
	HD	35

*1: RD dimension is the max. sensitivity position at open side end position and HD dimension at closed side end position. The actual mounting position should be adjusted after confirming the operational status of the switch.

*2: Switch cannot be mounted when mounting the body with through holes. For details, refer to page 1768.

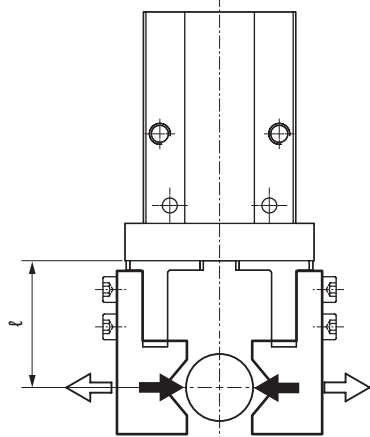
*3: For F□H, the switch lead wire projects from the end face of the head side. If this projection is a problem, use F□V or F□S.

*4: When mounting the F2/3H or F2/3V switch to RD dimensions 38 to 42, replace the switch fixing nut with the attached long nut according to the switch mounting procedure included with the product.

Gripping force performance data

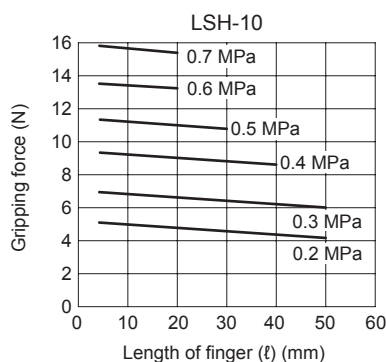
- Gripping force represents the thrust (per finger) in the arrow direction shown in the figure.
- The gripping force in the opening/closing directions with finger length l with a supply pressure of 0.2 to 0.7 MPa is shown.

- Open direction (←)
- Closed direction (→)

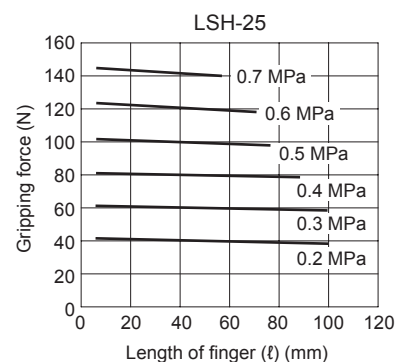
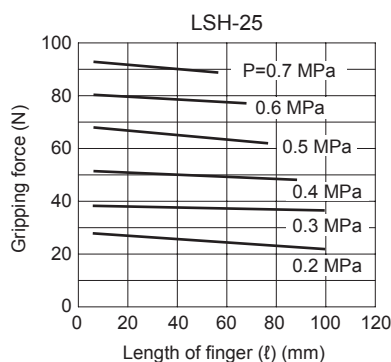
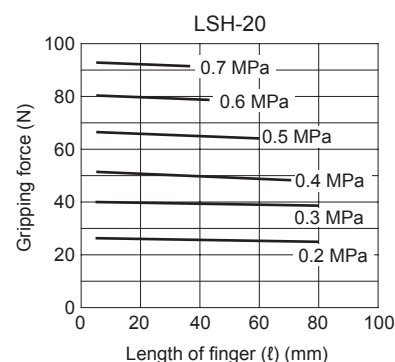
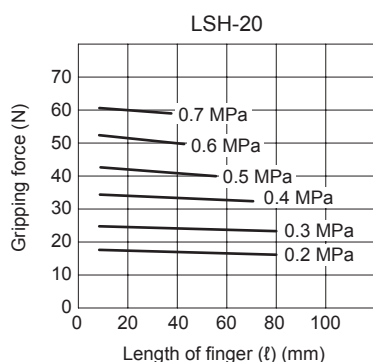
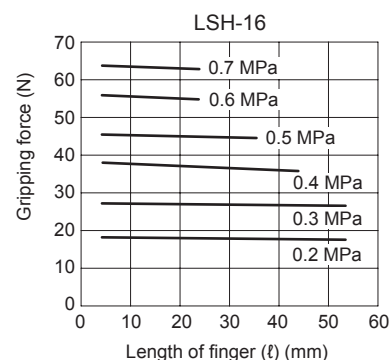
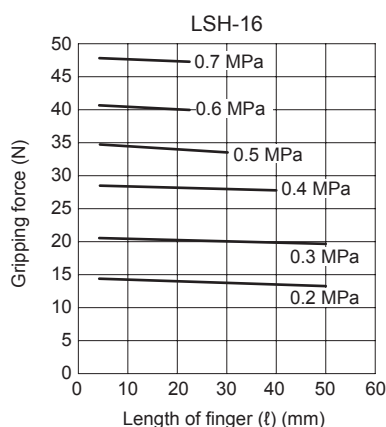
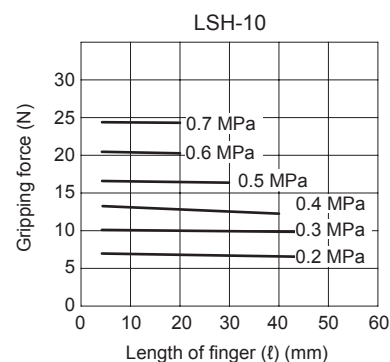


(Note) When making a selection, read the precautions for design and selection on page 1764.

Closed direction



Open direction

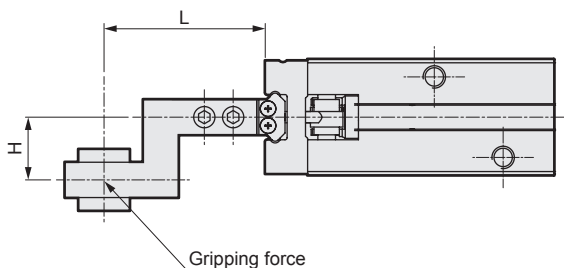


LCM
LCR
LCG
LCW
LCX
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
UB
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCS2
RCC2
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HRL
LN
Hand
Chuk
MechHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending
LSH-HP
LSH
FH100
BSA2
BHA/BHG
LHA
LHAG
HAP
HKP
HCP
HGP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

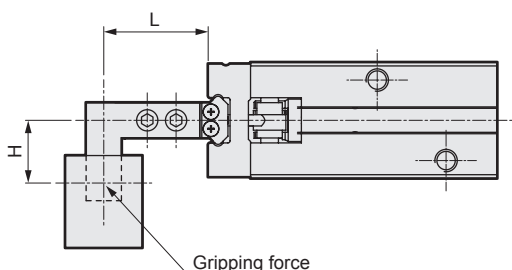
Finger length

When mounting an L-shaped attachment, use within the range given in the figure at right.

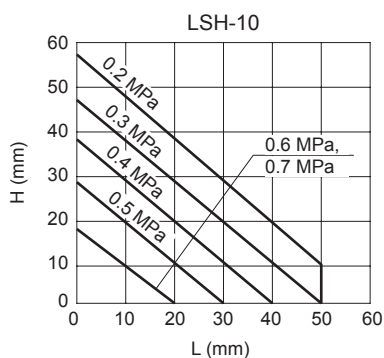
Closed direction



Open direction



Closed direction



Open direction

