

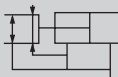
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LCR
LCG
LCW
LCX
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
UB
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCS2
RCC2
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HRL
LN
Hand
Chuk
MecHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending
LSH-HP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



Linear Slide Hand with length measuring function, double acting

LSHM-A Series

● Operating stroke: 4, 6, 10, 14 mm



RoHS

Specifications

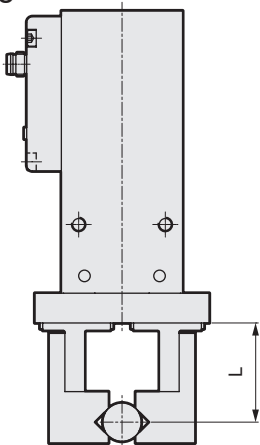
Item		LSHM-A									
Bore size		mm		ø10		ø16		ø20		ø25	
Actuation		Double acting									
Working fluid		Compressed air									
Max. working pressure		MPa		0.7							
Min. working pressure		MPa		0.2		0.1		0.1		0.1	
Port size				M3		M5		M5		M5	
Operating stroke		mm		4		6		10		14	
Power supply voltage		24 VDC ±10%									
Current consumption		25 mA or less									
Indicator lamp		Green LED ON when power applied									
Analog output		When fingers are closed: 1 V; when opened: 5 V [†] , connection load: 100 kΩ or more									
Analog output linearity	Without correction adapter	±3% F.S. or less (ambient temperature 25°C)									
	With correction adapter	±0.5% F.S. or less (ambient temperature 25°C)									
Repeatability of analog output		±0.02 mm or less (ambient temperature 25°C, no deformation or wear of actuator / jig)									
Valid measured range length		mm		4.5		6.5		10		14	
Impact resistance (sensor / amplifier section)		294 m / s ²									
Vibration resistance (sensor / amplifier section)		10 to 55 Hz compound amplitude 1.5 mm, 2 hours per X, Y, Z direction									
Degree of protection (sensor / amplifier section)		IEC standards IP65									
Ambient temperature, humidity		10 to 60°C, 85% RH or less (no freezing)									
Amplifier mounting position		Side		Front		Side		Front		Front	
Weight	kg	0.108	0.120	0.221	0.238	0.437	0.457	0.752	0.773		
	0.226			0.243	0.442	0.462	0.782	0.803			
Lubrication		Not required									

Note: Refer to page 1562 for the correction adapter.

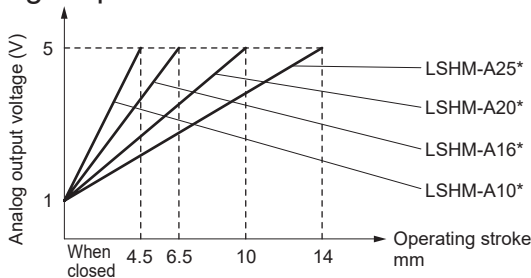
*1: There is output fluctuation of 1 mV / °C.

Unit: N

Gripping force



Analog output characteristics



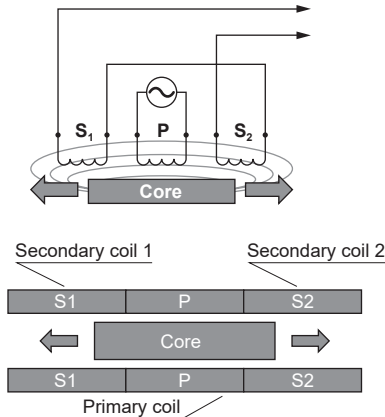
*The analog output voltage at shipment is 1 V on the closed side and 5 V on the open side, with the port closed and pressurized.

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

*Supply pressure: 0.5 MPa, L = 20 mm, value at stroke center

LVDT displacement sensor operation principle

When exciting the primary coil (P), induced voltage is generated in the two secondary coils (S1 / S2) by electromagnetic induction. When the Hand is driven, the core position changes and a difference in induced voltage occurs between S1 and S2. This difference is used to output the position of the core as electric signals.



How to order

LSHM - A 10 D 2 A - N - HP2

A Rubber cover

B Bore size

C Actuation

D Finger

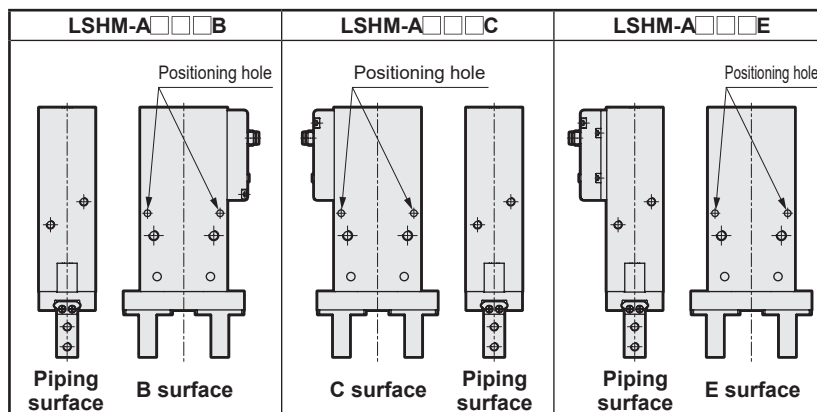
E Amp mounting position / grip center reference, high precision positioning hole

F Correction adapter option

Code	Description
A Rubber cover	
A	Without rubber cover
B Bore size (mm)	
10	ø10
16	ø16
20	ø20
25	ø25
C Actuation	
D	Double acting
D Finger * Refer to the Dimensions for details.	
1	Basic
2	Side tap
3	Through hole
4	Flat
E Amp mounting position / grip center reference, high precision positioning hole *1	
A	Amp side / no positioning hole
B	Amp side / rear with finger below and piping right
C	Amp side / rear with finger below and piping left
D	Amp front / no positioning hole
E	Amp front / rear with finger below and piping right
F Correction adapter option	
N	Without correction adapter
A	Correction adapter attached

*1

Amp mounting position / grip center reference, high precision positioning hole position diagram



Refer to the Dimensions (pages 1550 to 1553) and page 1567 for details.

[Example of model No.]

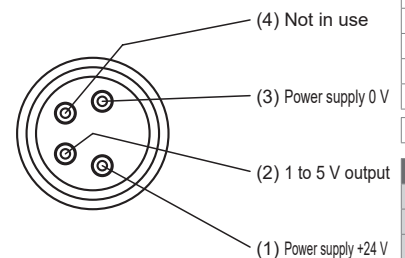
LSHM-A10D2A-N-HP2

Model: Linear Slide Hand

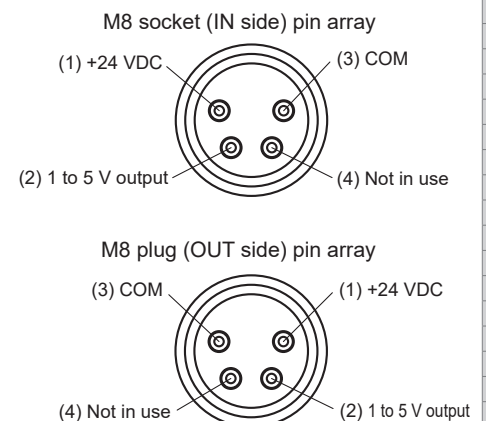
- A** Rubber cover : Without rubber cover
- B** Bore size : ø10
- C** Actuation : Double acting
- D** Finger : Side tap
- E** Amp mounting position / grip center reference, high precision positioning hole : Amp side / no positioning hole
- F** Correction adapter option : Without correction adapter

Plug contact array diagram

·Without correction adapter



·Correction adapter attached

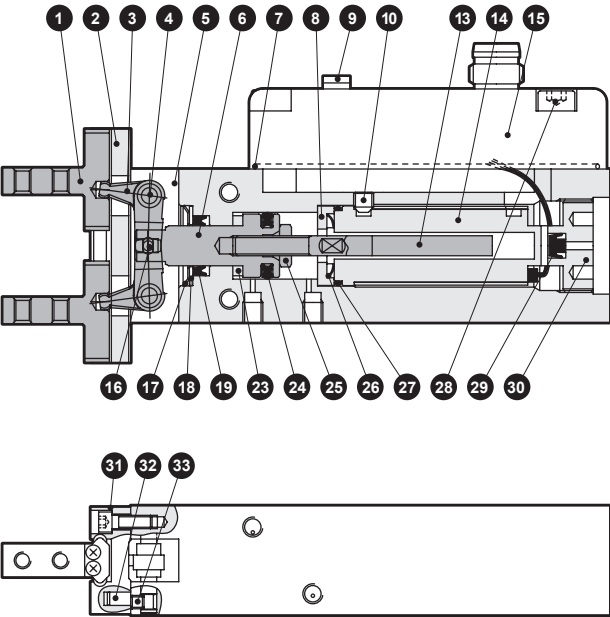


LCM
LCR
LCG
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STM
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JSK/M2
JSG
JSC3/JSC4
USSD
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LMB
LML
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HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCS2
RCC2
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
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LHAG
HAP
HKP
HCP
HGP
HLF2
HLA/HLB
HLAG/HLBG
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HMFB
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HBL
HJL
HMD
HDL
HJD
BHE

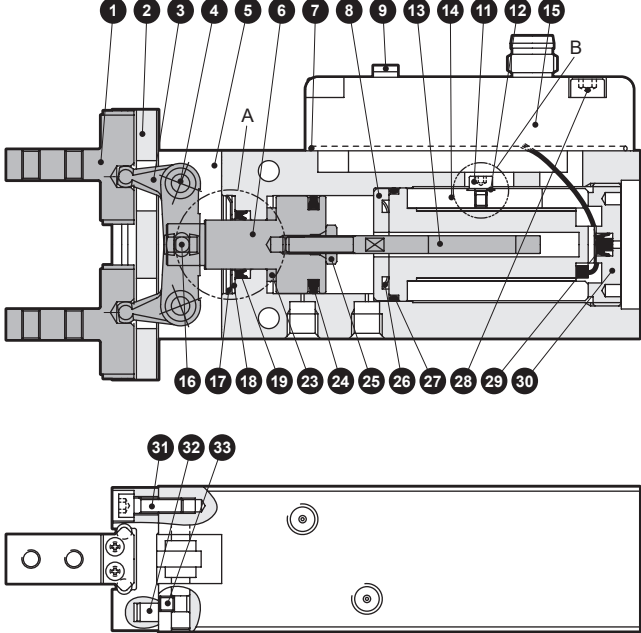
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LCR
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STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
UB
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCS2
RCC2
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HRL
LN
Hand
Chuk
MecHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending

Internal structure and parts list

● Amplifier side mounting
ø10

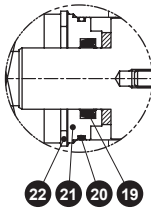


● Amplifier side mounting
ø16 to 25



A part ø20, 25

B part ø20, 25



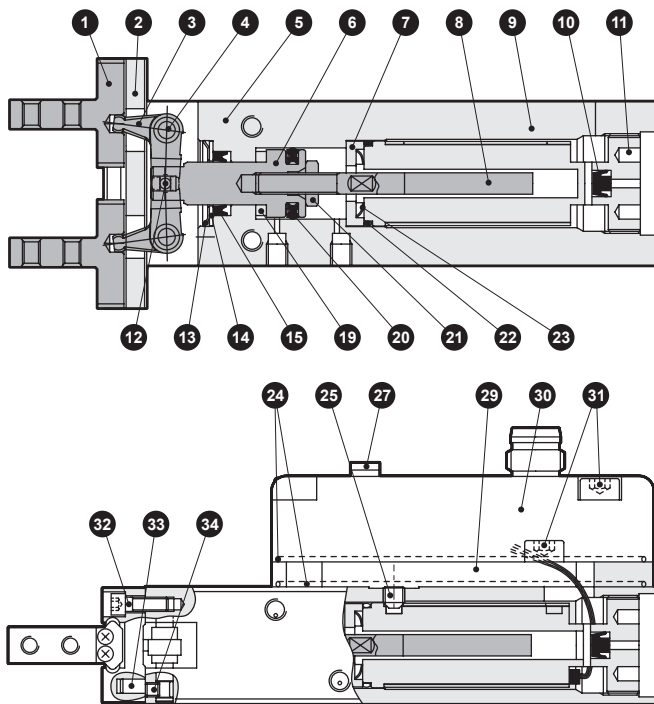
Cannot be disassembled

Parts list

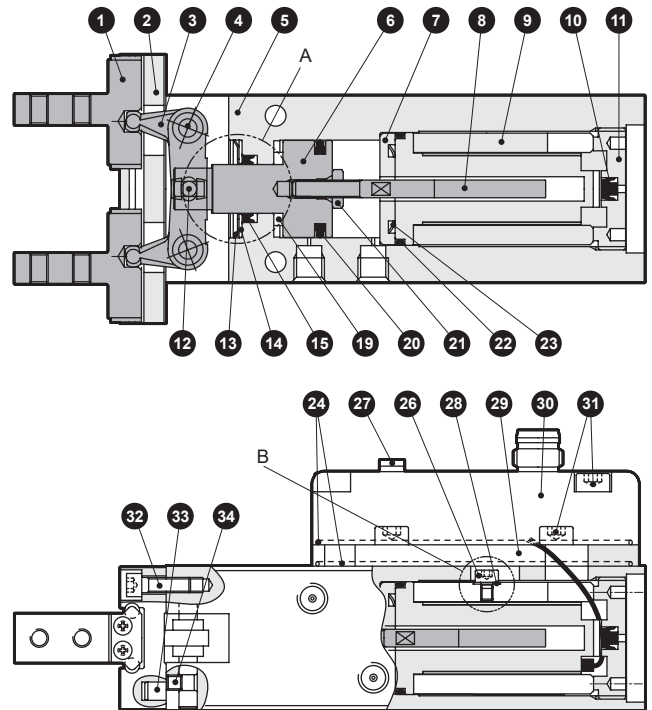
No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Finger	Stainless steel		18	Cap	Stainless steel	
2	Linear guide	Stainless steel		19	Rod packing	Nitrile rubber	
3	Lever	Stainless steel		20	O-ring	Nitrile rubber	
4	Fulcrum axis	Steel		21	Rod metal	Aluminum alloy	
5	Body	Aluminum alloy		22	C-snap ring	Steel	
6	Piston rod	Stainless steel		23	Cushion rubber	Urethane rubber	
7	Gasket	Nitrile rubber		24	Piston packing	Nitrile rubber	
8	Washer retainer	Aluminum alloy		25	Nut	Stainless steel	
9	Plug	Nitrile rubber		26	Wave washer	Stainless steel	
10	Hexagon socket set screw	Stainless steel	ø10	27	O-ring	Nitrile rubber	
11	Hexagon socket head cap screw	Stainless steel	ø16 to 25	28	Hexagon socket head cap screw	Stainless steel	
12	Flat washer	Stainless steel	ø16	29	Check valve	Nitrile rubber	
13	Core shaft	Steel		30	Head cover	Aluminum alloy	
14	Sensor body	-		31	Hexagon socket head cap screw	Stainless steel	
15	Amplifier	-		32	Pin	Steel	
16	Fulcrum axis	Steel		33	Hexagon socket set screw	Stainless steel	
17	CR ring	Stainless steel					

Internal structure and parts list

● Amplifier front mounting ø10

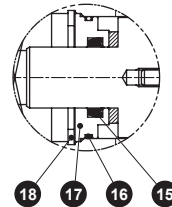


● Amplifier front mounting ø16 to 25



A part ø20, 25

B part ø20, 25



Cannot be disassembled

Parts list

No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Finger	Stainless steel		18	C-snap ring	Steel	
2	Linear guide	Stainless steel		19	Cushion rubber	Urethane rubber	
3	Lever	Stainless steel		20	Piston packing	Nitrile rubber	
4	Fulcrum axis	Steel		21	Nut	Stainless steel	
5	Body	Aluminum alloy		22	O-ring	Nitrile rubber	
6	Piston rod	Stainless steel		23	Wave washer	Stainless steel	
7	Washer retainer	Aluminum alloy		24	Gasket	Nitrile rubber	
8	Core shaft	Steel		25	Hexagon socket set screw	Stainless steel	ø10
9	Sensor body	-		26	Hexagon socket head cap screw	Stainless steel	ø16 to 25
10	Check valve	Nitrile rubber		27	Plug	Nitrile rubber	
11	Head cover	Aluminum alloy		28	Flat washer	Stainless steel	ø16
12	Fulcrum axis	Steel		29	Amplifier adapter	Aluminum alloy	
13	CR ring	Stainless steel		30	Amplifier	-	
14	Cap	Stainless steel		31	Hexagon socket head cap screw	Stainless steel	
15	Rod packing	Nitrile rubber		32	Hexagon socket head cap screw	Stainless steel	
16	O-ring	Nitrile rubber		33	Pin	Steel	
17	Rod metal	Aluminum alloy		34	Hexagon socket set screw	Stainless steel	

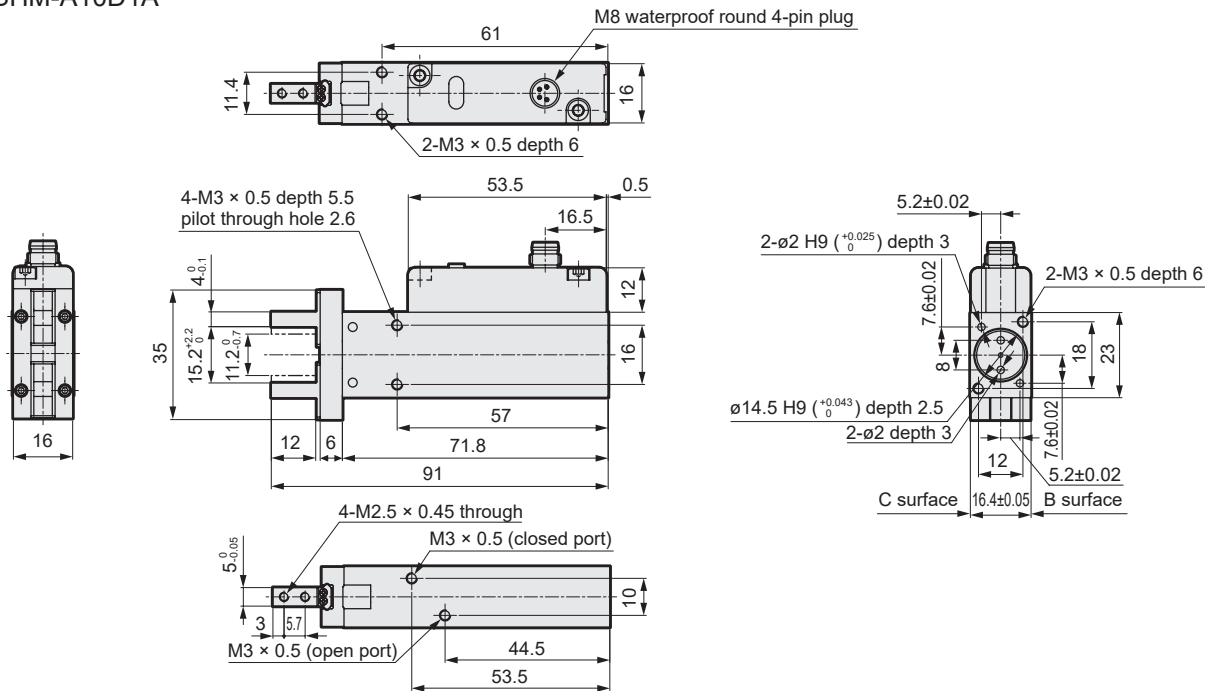
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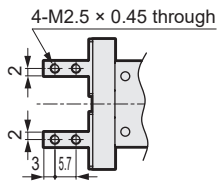
LSHM-A Series

Dimensions (bore size: $\varnothing 10$)

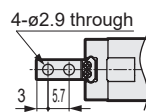
● LSHM-A10D1A



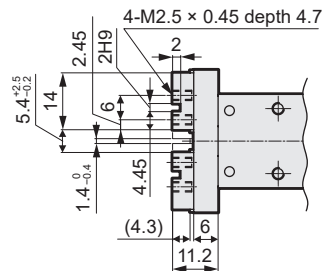
● LSHM-A10D2*



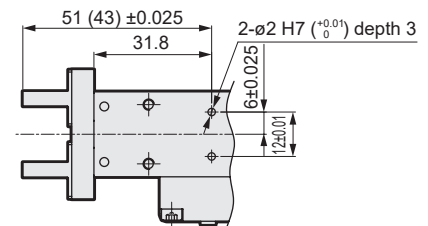
● LSHM-A10D3*



● LSHM-A10D4*



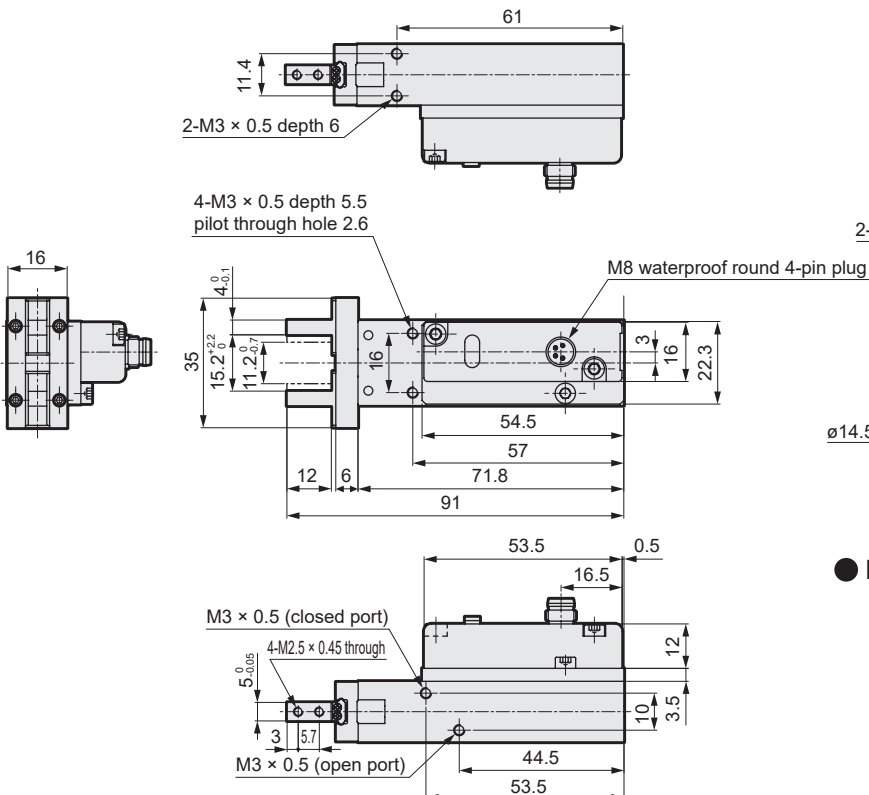
● LSHM-A10D*B/C



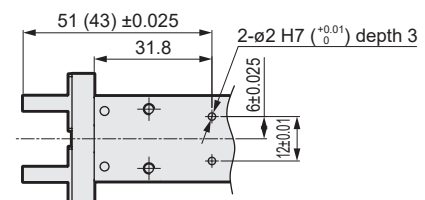
*1: Positioning holes are machined on B surface for LSHM-A10D*B and C surface for LSHM-A10D*C

*2: The dimensions in parentheses are the dimensions for LSHM-A10D4.

● LSHM-A10D1D

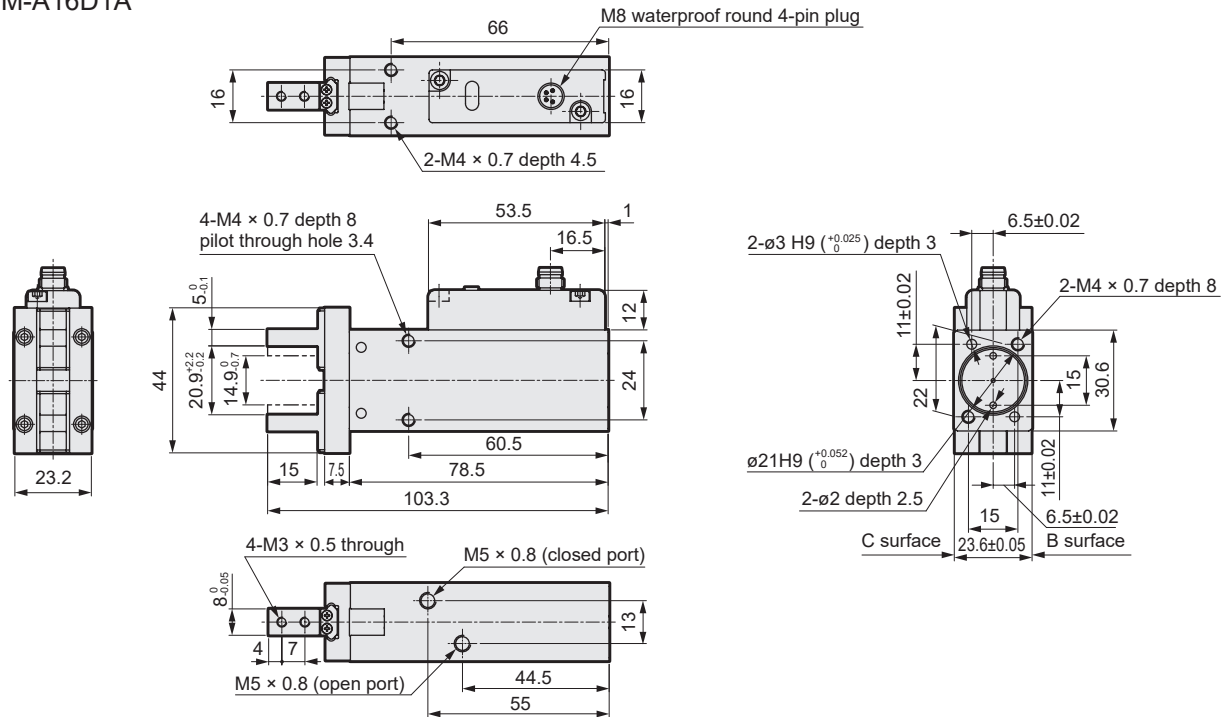


● LSHM-A10D*E

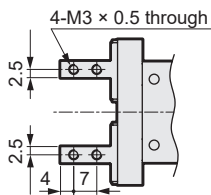


Dimensions (bore size: $\phi 16$)

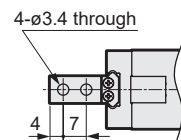
● LSHM-A16D1A



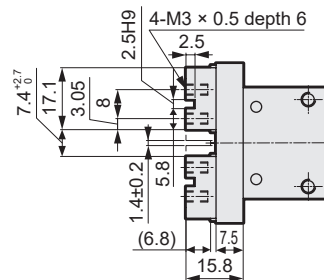
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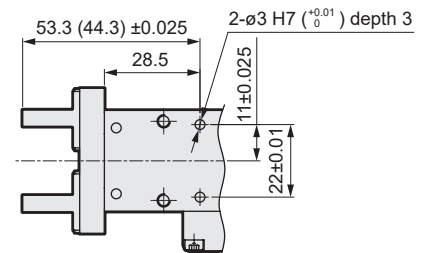
● LSHM-A16D3*



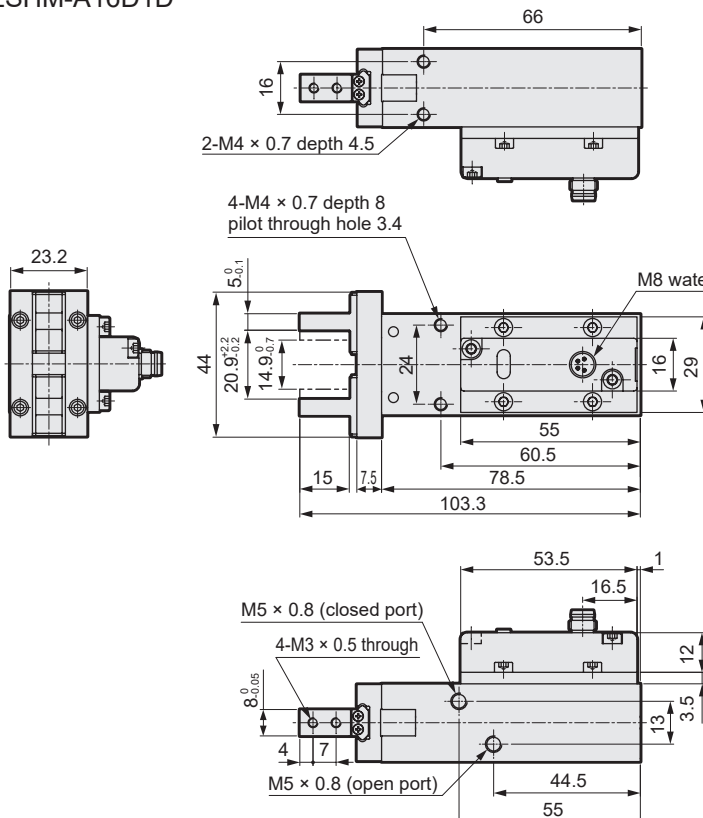
● LSHM-A16D4*



● LSHM-A16D*B / C

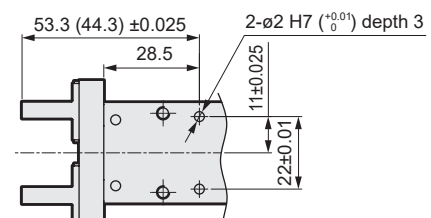


● LSHM-A16D1D



*1: Positioning holes are machined on B surface for LSHM-A16D*B and C surface for LSHM-A16D*C
 *2: The dimensions in parentheses are the dimensions for LSHM-A16D4.

● LSHM-A16D*E

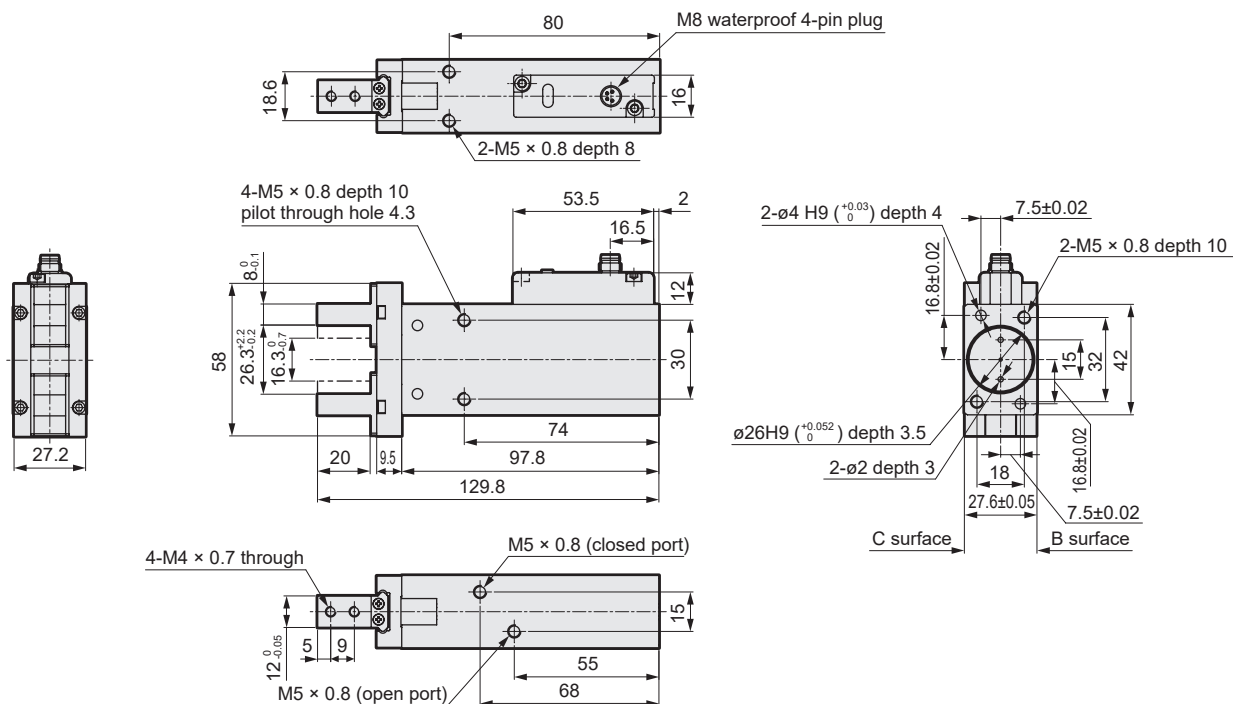


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RCC2
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GLC
MFC
BBS
RRC
GRC
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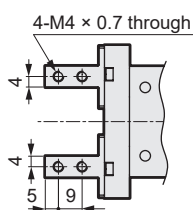
LSHM-A Series

Dimensions (bore size: $\varnothing 20$)

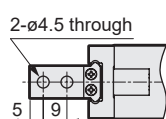
● LSHM-A20D1A



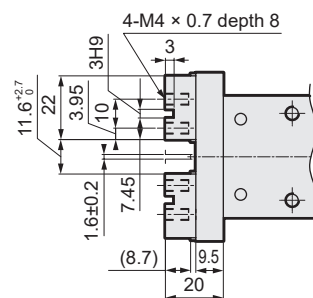
● LSHM-A20D2*



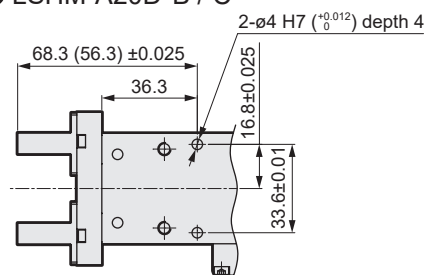
● LSHM-A20D3*



● LSHM-A20D4*

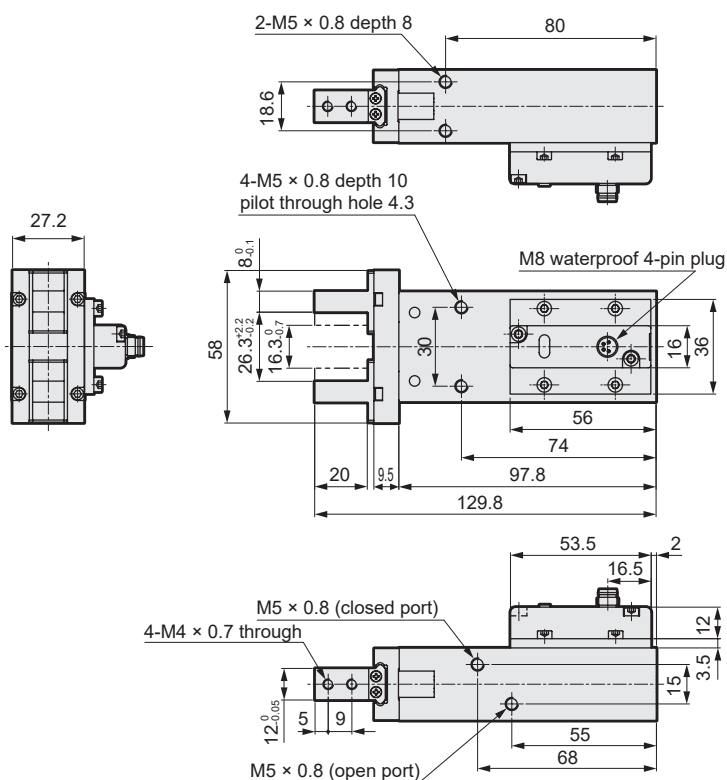


● LSHM-A20D*B / C

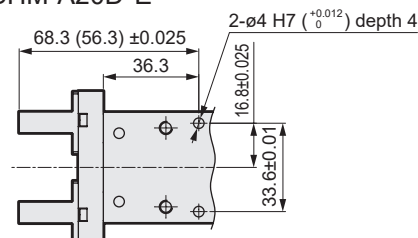


*1: Positioning holes are machined on B surface for LSHM-A20D*B and C surface for LSHM-A20D*C
*2: The dimensions in parentheses are the dimensions for LSHM-A20D4.

● LSHM-A20D1D

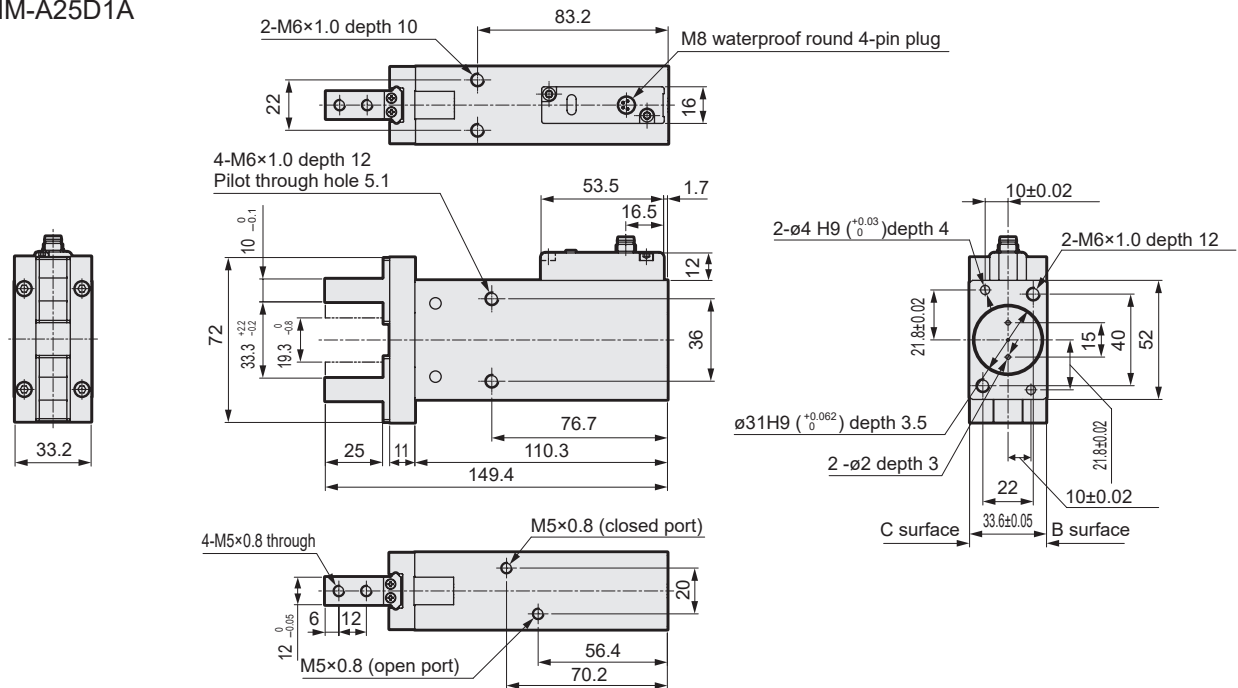


● LSHM-A20D*E

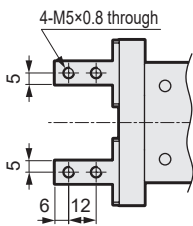


Dimensions (bore size: $\varnothing 25$)

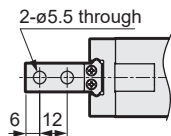
● LSHM-A25D1A



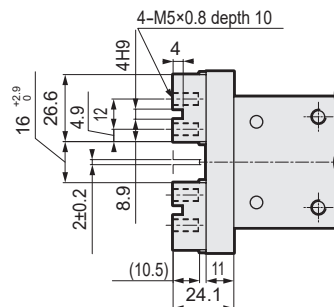
● LSHM-A25D2*



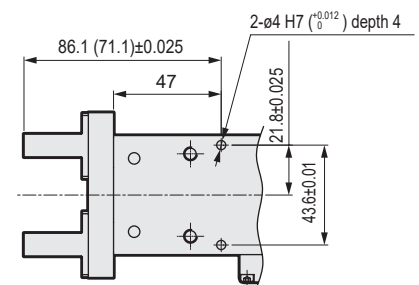
● LSHM-A25D3*



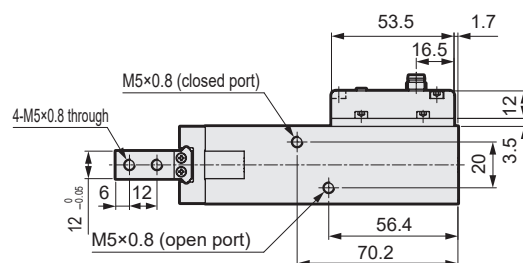
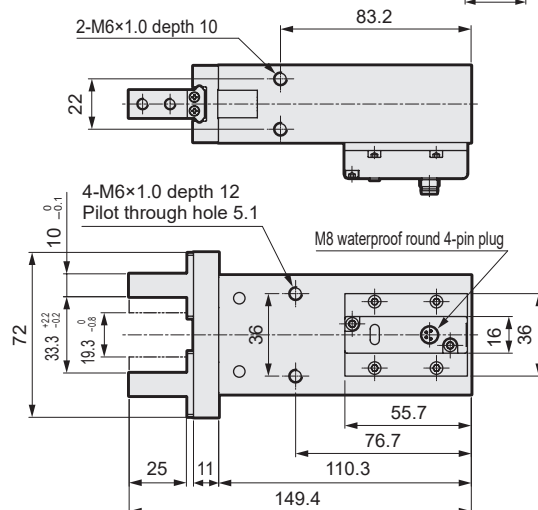
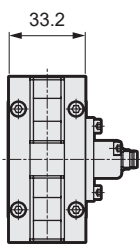
● LSHM-A25D4*



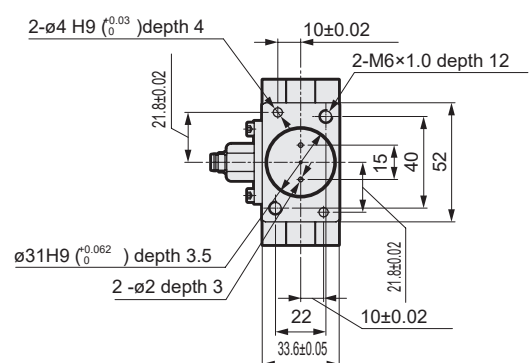
● LSHM-A25D*B/C



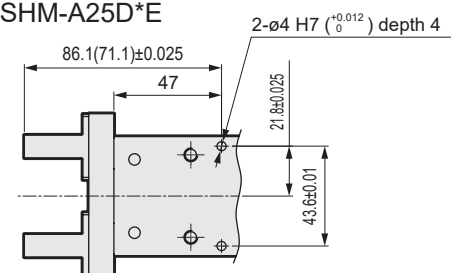
● LSHM-A25D1D



*1: Positioning holes are machined on surface B for LSHM-A25D*B and C for LSHM-A25D*C
*2: Dimensions shown in () are for LSHM-A25D4.



● LSHM-A25D*E



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
HLAGHLBG
HLC
HLD
HMF
HMF-G
HMFB
HFP
FH500
HBL
HJL
HMD
HDL
HJD
BHE

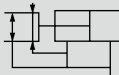
LCM
LCR
LCG
LCW
LCX
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
UB
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCS2
RCC2
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HRL
LN
Hand
Chuk
MecHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending
LSH-HP
LSH
FH100
BSA2
BHA/BHG
LHA
LHAG
HAP
HKP
HCP
HGP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



Linear Slide Hand with length measuring function, double acting with rubber cover

LSHM-G / LSHM-F Series

● Operating stroke length: 4, 6, 10, 14 mm

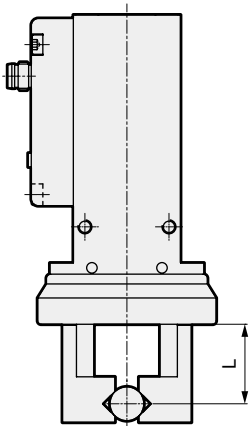


Specifications

Item		LSHM-G / LSHM-F							
Bore size	mm	ø10		ø16		ø20		ø25	
Actuation		Double acting							
Working fluid		Compressed air							
Max. working pressure	MPa	0.7							
Min. working pressure	MPa	0.2	0.1		0.1		0.1		
Port size		M3	M5		M5		M5		
Operating stroke length	mm	4	6		10		14		
Power supply voltage		24 VDC ±10%							
Current consumption		25 mA or less							
Display lamp		Green LED ON when power applied							
Analog output		When fingers are closed: 1 V; when opened: 5 V [†] , connection load: 100 kΩ or more							
Analog output linearity	Without correction adapter	±3% F.S. or less (ambient temperature 25°C)							
	With correction adapter	±0.5% F.S. or less (ambient temperature 25°C)							
Repeatability of analog output		±0.02 mm or less (ambient temperature 25°C, no deformation or wear of actuator / jig)							
Valid measured range length	mm	4.5	6.5		10		14		
Impact resistance (sensor / amplifier section)		294 m / s ²							
Vibration resistance (sensor / amplifier section)		10 to 55 Hz compound amplitude 1.5 mm, 2 hours per X, Y, Z direction							
Degree of protection (sensor / amplifier section)		IEC standards IP65							
Ambient temperature, humidity		10 to 60°C, 85% RH or less (no freezing)							
Amplifier mounting position		Side	Front	Side	Front	Side	Front	Side	Front
Weight	kg	0.113	0.125	0.236	0.253	0.462	0.482	0.792	0.813
Lubrication		Not required							

Note: Refer to page 1562 for the correction adapter.
*1: There is output fluctuation of 1 mV / °C.

Gripping power



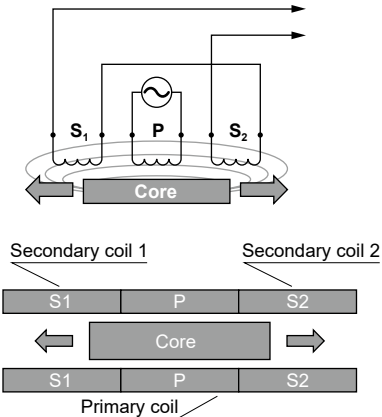
Unit: N

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

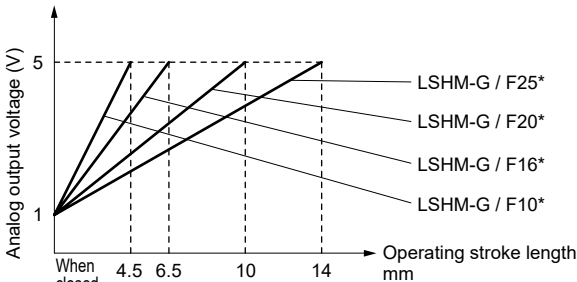
*Supply pressure: 0.5 MPa, L = 20 mm, value at stroke center

LVDT displacement sensor operation principle

When exciting the primary coil (P), induced voltage is generated in the two secondary coils (S1 / S2) by electromagnetic induction. When the Hand is driven, the core position changes and a difference in induced voltage occurs between S1 and S2. This difference is used to output the position of the core as electric signals.



Analogue output characteristics



*The analogue output voltage at shipment is 1 V on the closed side and 5 V on the open side, with the port closed and pressurized.

How to order

LSHM - G 10 D 1 A - N - HP2

A Rubber cover

B Bore size

C Actuation

D Finger

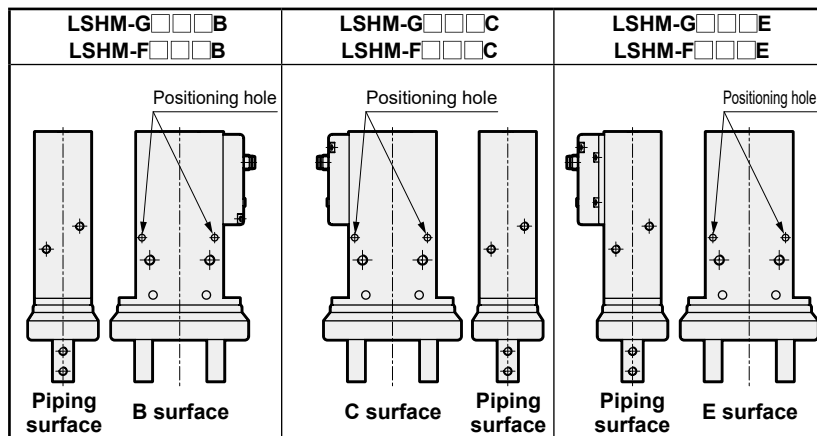
E Amp mounting position / grip center reference, high precision positioning hole

F Correction adapter option

Code	Description
A Rubber cover	
G	Chloroprene rubber
F	Fluoro rubber
B Bore size (mm)	
10	ø10
16	ø16
20	ø20
25	ø25
C Actuation	
D	Double acting
D Finger	
1	Basic
E Amp mounting position / grip center reference, high precision positioning hole ^{*1}	
A	Amp side / no positioning hole
B	Amp side / rear with finger below and piping right
C	Amp side / rear with finger below and piping left
D	Amp front / no positioning hole
E	Amp front / rear with finger below and piping right
F Correction adapter option	
N	Without correction adapter
A	Correction adapter attached

*1

Amp mounting position / grip center reference, high precision positioning hole position diagram



Refer to the Dimensions (pages 1558 to 1561) and page 1567 for details.

[Example of model No.]

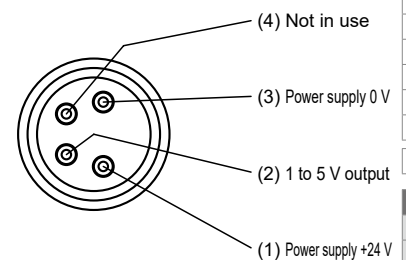
LSHM-G10D1A-N-HP2

Model: Linear Slide Hand

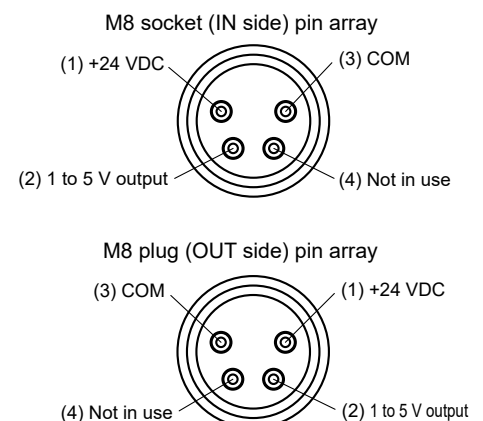
- A** Rubber cover : Chloroprene rubber
- B** Bore size : ø10
- C** Actuation : Double acting
- D** Finger : Basic
- E** Amp mounting position / grip center reference, high precision positioning hole : Amp side / no positioning hole
- F** Correction adapter option : Without correction adapter

Plug contact array diagram

·Without correction adapter



·Correction adapter attached

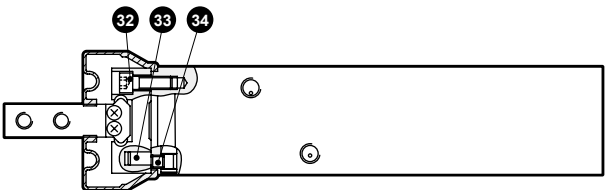
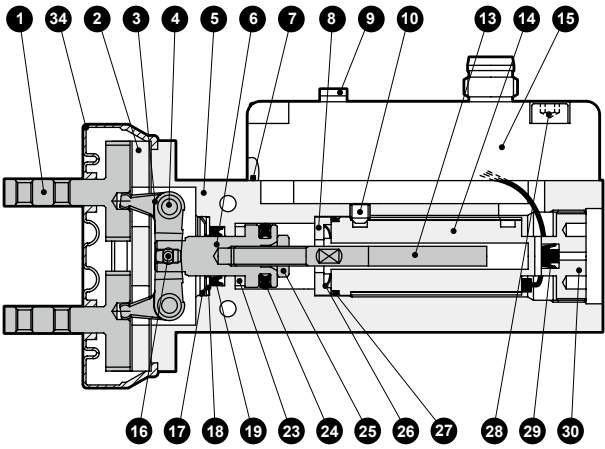


LCM
LCR
LCG
LCW
LCX
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
UB
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCS2
RCC2
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HRL
LN
Hand
Chuk
MechHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending
LSH-HP
LSH
FH100
BSA2
BHA/BHG
LHA
LHAG
HAP
HKP
HCP
HGP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

LSHM-G / LSHM-F Series

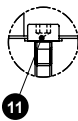
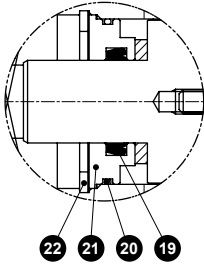
Internal structure and parts list

● Amplifier side mounting ø10

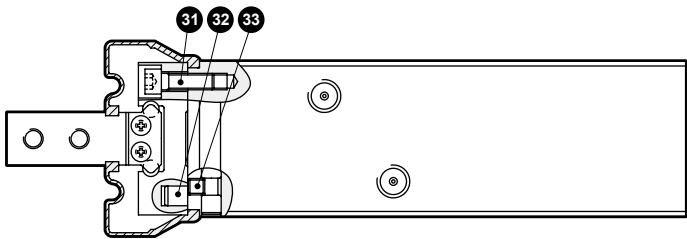
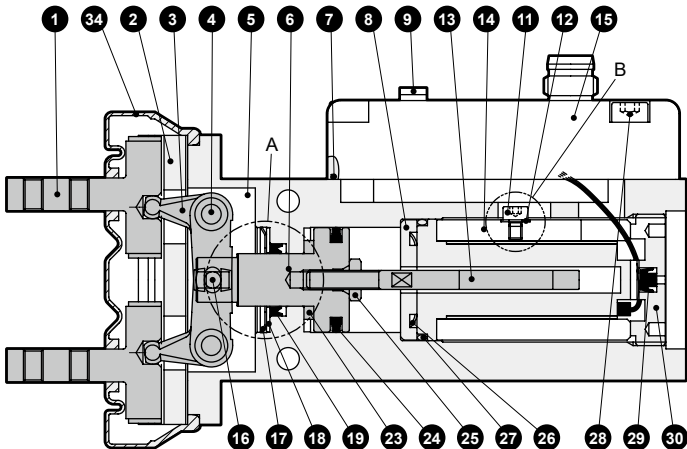


A part ø20, 25

B part ø20, 25



● Amplifier side mounting ø16 to 25



Cannot be disassembled

Parts list

No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Finger	Stainless steel		19	Rod packing	Nitrile rubber	
2	Linear guide	Stainless steel		20	O-ring	Nitrile rubber	
3	Lever	Stainless steel		21	Rod metal	Aluminum alloy	
4	Fulcrum axis	Steel		22	C-snap ring	Steel	
5	Body	Aluminum alloy		23	Cushion rubber	Urethane rubber	
6	Piston rod	Stainless steel		24	Piston packing	Nitrile rubber	
7	Gasket	Nitrile rubber		25	Nut	Stainless steel	
8	Washer retainer	Aluminum alloy		26	Wave washer	Stainless steel	
9	Plug	Nitrile rubber		27	O-ring	Nitrile rubber	
10	Hexagon socket set screw	Stainless steel	ø10	28	Hexagon socket head cap screw	Stainless steel	
11	Hexagon socket head cap screw	Stainless steel	ø16 to 25	29	Check valve	Nitrile rubber	
12	Flat washer	Stainless steel	ø16	30	Head cover	Aluminum alloy	
13	Core shaft	Steel		31	Hexagon socket head cap screw	Stainless steel	
14	Sensor body	-		32	Pin	Steel	
15	Amplifier	-		33	Hexagon socket set screw	Stainless steel	
16	Fulcrum axis	Steel		34	Rubber cover	Chloroprene rubber	LSHM-G*
17	CR ring	Stainless steel				Fluoro rubber	LSHM-F*
18	Cap	Stainless steel					

Repair parts list

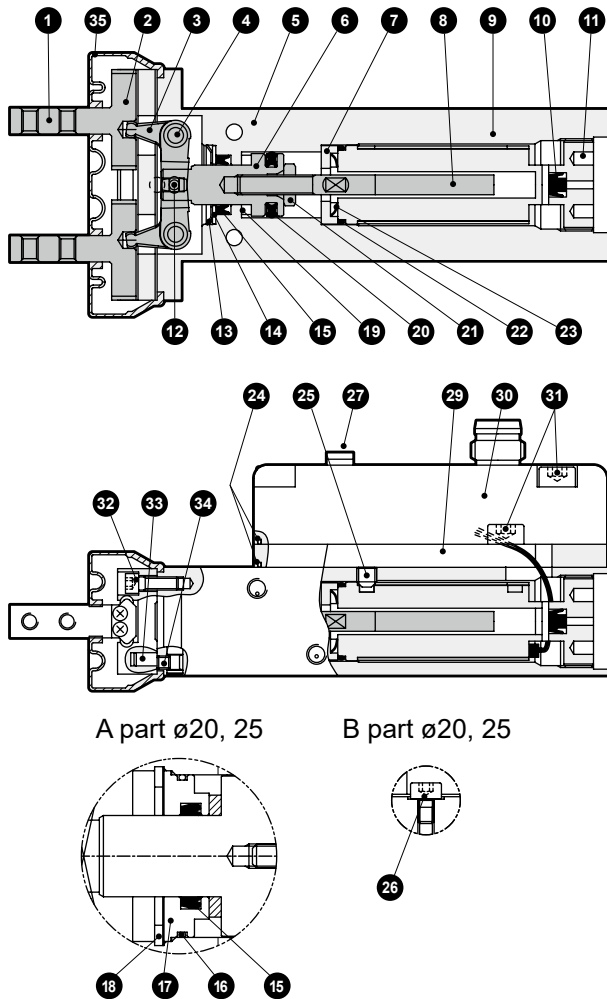
Bore size (mm)	Material	Kit No.	Repair part No.	Bore size (mm)	Material	Kit No.	Repair part No.
ø10	Chloroprene rubber	LSH-G10K	34	ø20	Chloroprene rubber	LSH-G20K	34
	Fluoro rubber	LSH-F10K			Fluoro rubber	LSH-F20K	
ø16	Chloroprene rubber	LSH-G16K		ø25	Chloroprene rubber	LSH-G25K	
	Fluoro rubber	LSH-F16K			Fluoro rubber	LSH-F25K	

LSHM-G / LSHM-F Series

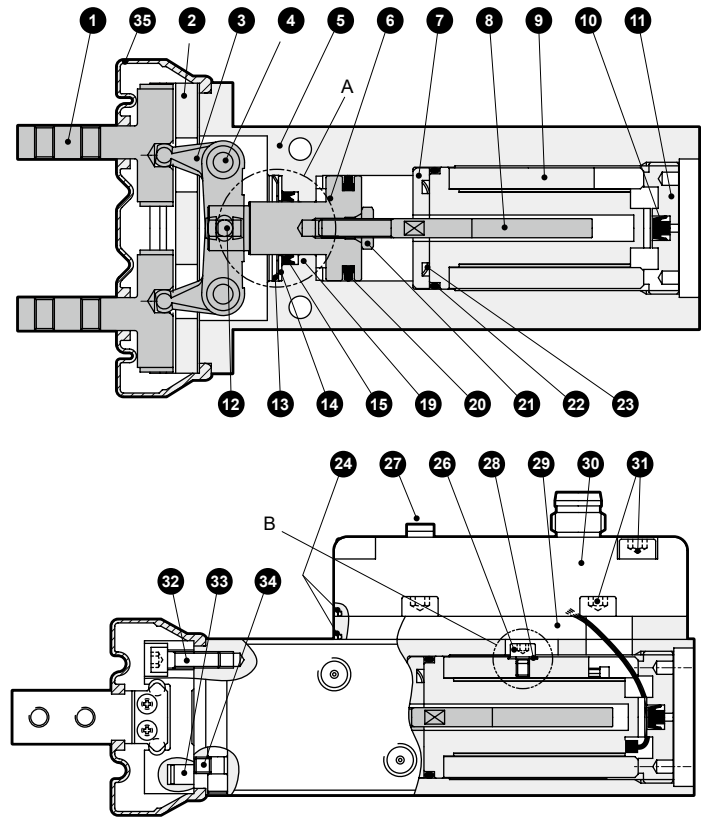
Internal structure and parts list

Internal structure and parts list

● Amplifier front mounting ø10



● Amplifier front mounting ø16 to 25



Cannot be disassembled

Parts list

No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Finger	Stainless steel		19	Cushion rubber	Urethane rubber	
2	Linear guide	Stainless steel		20	Piston packing	Nitrile rubber	
3	Lever	Stainless steel		21	Nut	Stainless steel	
4	Fulcrum axis	Steel		22	O-ring	Nitrile rubber	
5	Body	Aluminum alloy		23	Wave washer	Stainless steel	
6	Piston rod	Stainless steel		24	Gasket	Nitrile rubber	
7	Washer retainer	Aluminum alloy		25	Hexagon socket set screw	Stainless steel	ø10
8	Core shaft	Steel		26	Hexagon socket head cap screw	Stainless steel	ø16 to 25
9	Sensor body	-		27	Plug	Nitrile rubber	
10	Check valve	Nitrile rubber		28	Flat washer	Stainless steel	ø16
11	Head cover	Aluminum alloy		29	Amplifier adapter	Aluminum alloy	
12	Fulcrum axis	Steel		30	Amplifier	-	
13	CR ring	Stainless steel		31	Hexagon socket head cap screw	Stainless steel	
14	Cap	Stainless steel		32	Hexagon socket head cap screw	Stainless steel	
15	Rod packing	Nitrile rubber		33	Pin	Steel	
16	O-ring	Nitrile rubber		34	Hexagon socket set screw	Stainless steel	
17	Rod metal	Aluminum alloy		35	Rubber cover	Chloroprene rubber	LSHM-G*
18	C-snap ring	Steel				Fluoro rubber	LSHM-F*

Repair parts list

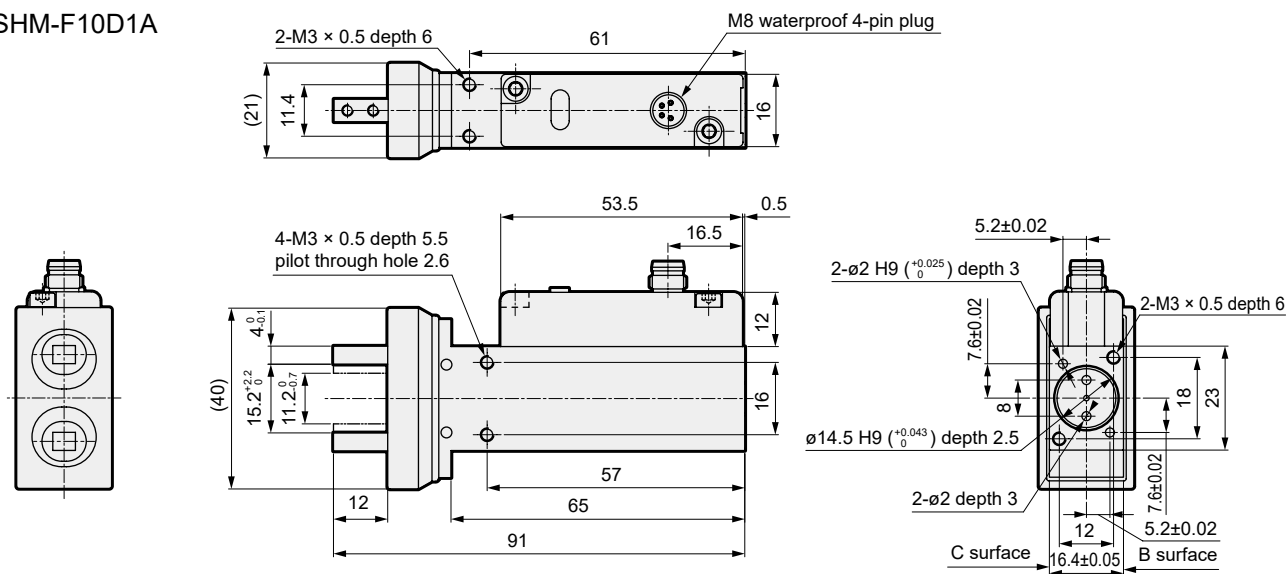
Bore size (mm)	Material	Kit No.	Repair part No.	Bore size (mm)	Material	Kit No.	Repair part No.
ø10	Chloroprene rubber	LSH-G10K	35	ø20	Chloroprene rubber	LSH-G20K	35
	Fluoro rubber	LSH-F10K			Fluoro rubber	LSH-F20K	
ø16	Chloroprene rubber	LSH-G16K		ø25	Chloroprene rubber	LSH-G25K	
	Fluoro rubber	LSH-F16K			Fluoro rubber	LSH-F25K	

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
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LSH-HP
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LHA
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HKP
HCP
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HLF2
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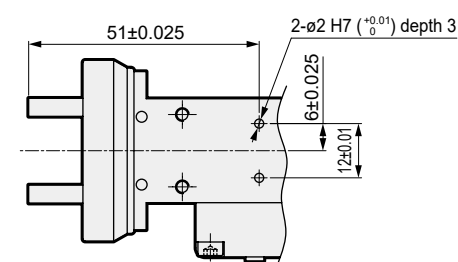
LSHM-G / LSHM-F Series

Dimensions (bore size: $\varnothing 10$)

● LSHM-G10D1A LSHM-F10D1A

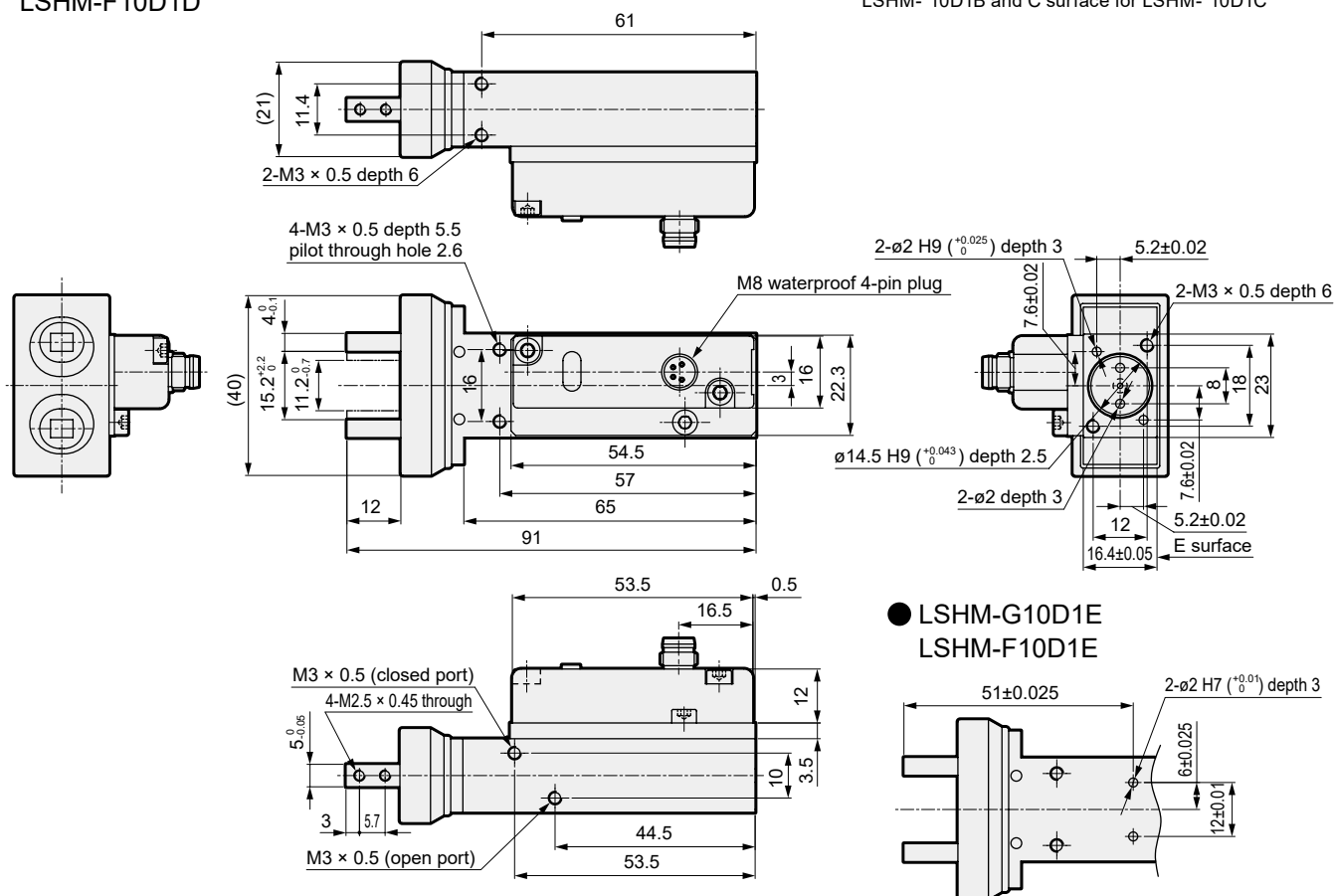


● LSHM-G10D1B / C LSHM-F10D1B / C

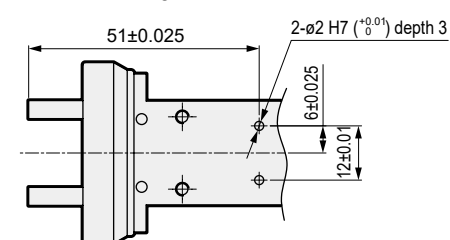


*1: Positioning holes are machined on B surface for LSHM-*10D1B and C surface for LSHM-*10D1C

● LSHM-G10D1D LSHM-F10D1D

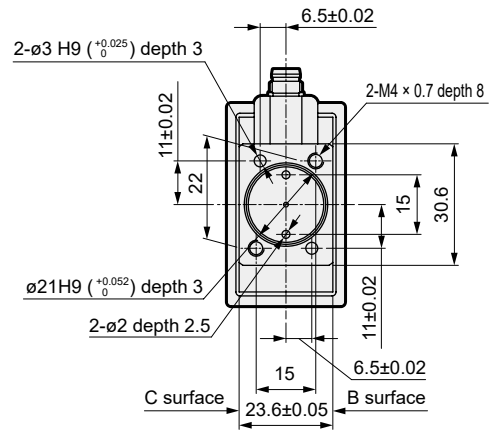
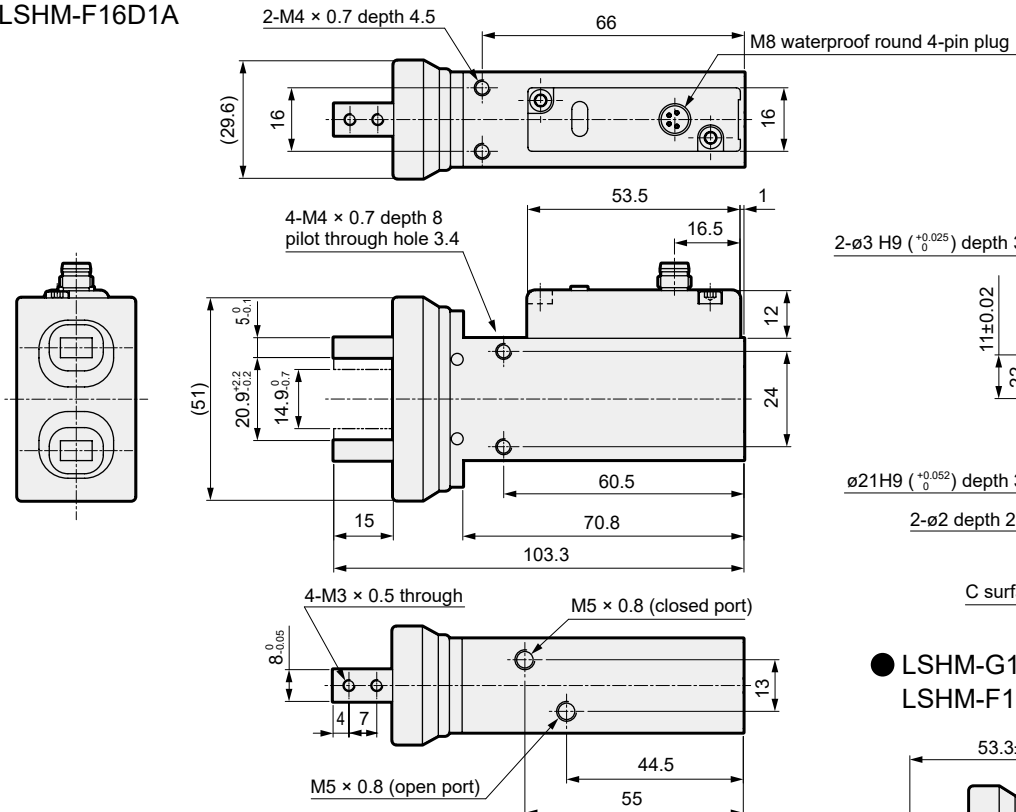


● LSHM-G10D1E LSHM-F10D1E

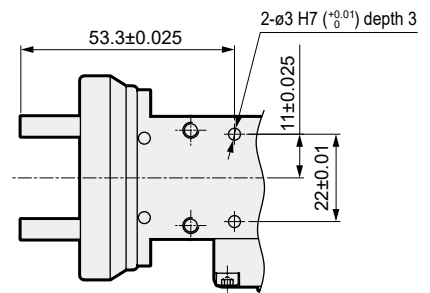


Dimensions (bore size: $\phi 16$)

● LSHM-G16D1A LSHM-F16D1A

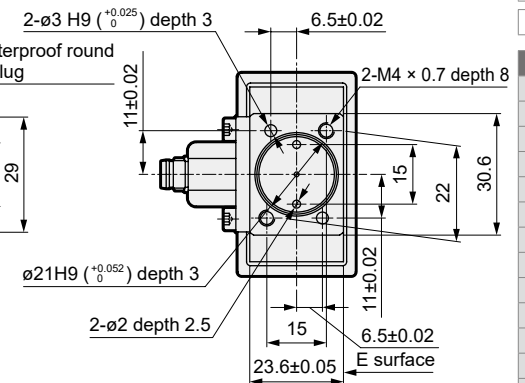
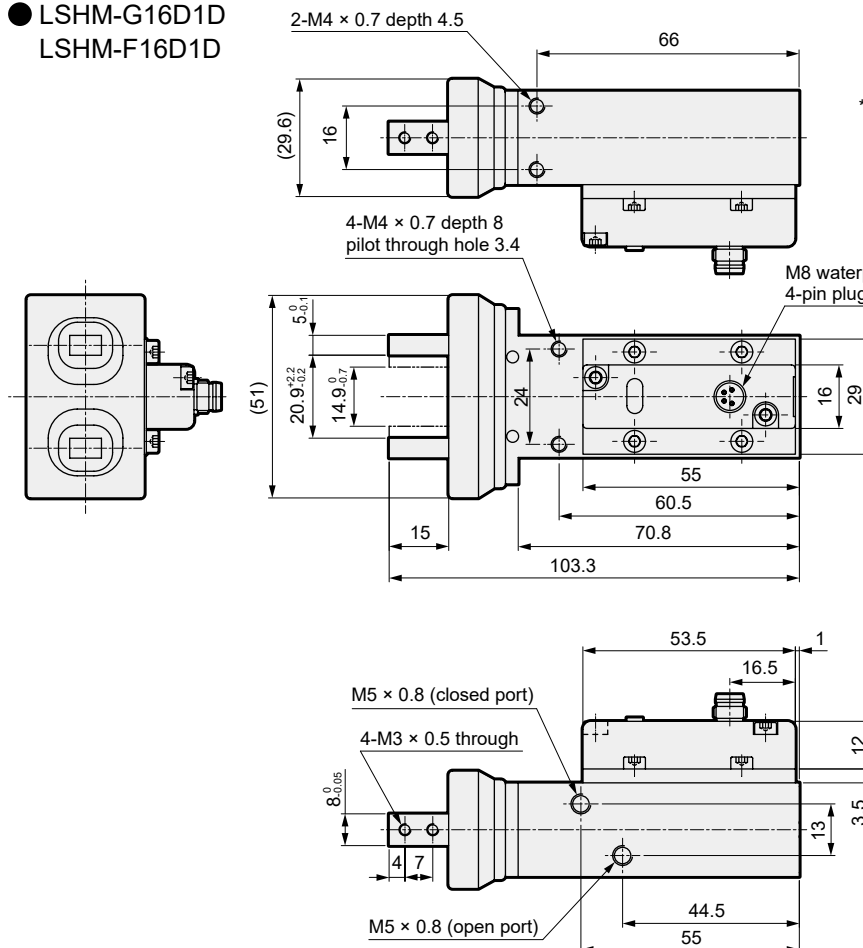


● LSHM-G16D1B / C LSHM-F16D1B / C

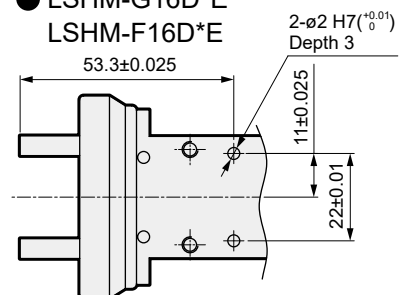


*1: Positioning holes are machined on B surface for LSHM-*16D1B and C surface for LSHM-*16D1C

● LSHM-G16D1D LSHM-F16D1D



● LSHM-G16D*E LSHM-F16D*E

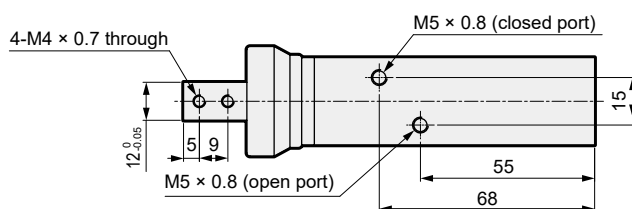
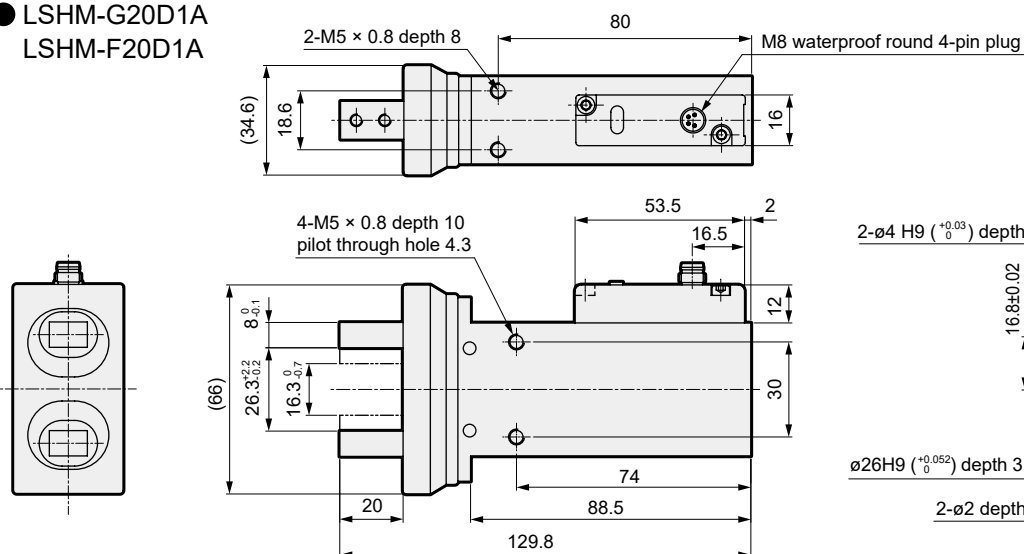


LCM
LCR
LCG
LCW
LCX
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
UB
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCS2
RCC2
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HRL
LN
Hand
Chuk
MechHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending
LSH-HP
LSH
FH100
BSA2
BHABHG
LHA
LHAG
HAP
HKP
HCP
HGP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

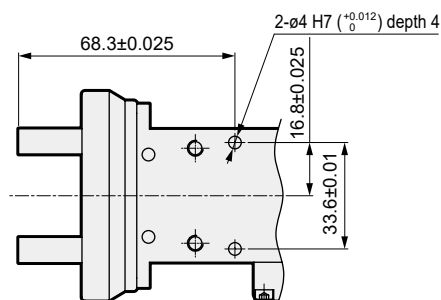
LSHM-G / LSHM-F Series

Dimensions (bore size: $\varnothing 20$)

● LSHM-G20D1A LSHM-F20D1A

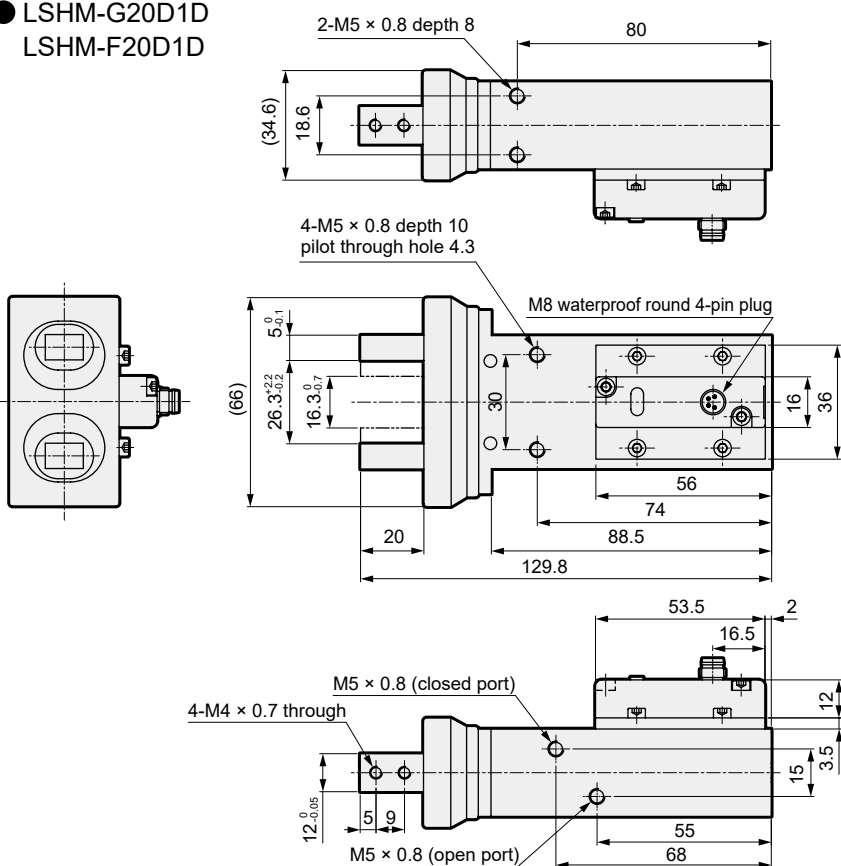


● LSHM-G20D1B / C LSHM-F20D1B / C

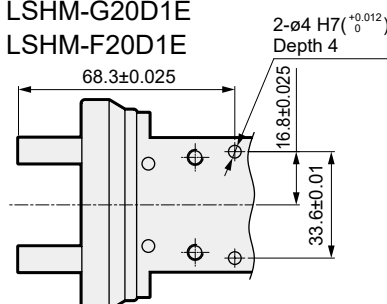


*1: Positioning holes are machined on B surface for LSHM-*20D1B and C surface for LSHM-*20D1C

● LSHM-G20D1D LSHM-F20D1D

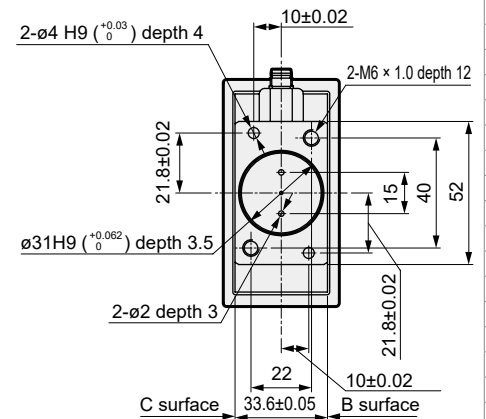
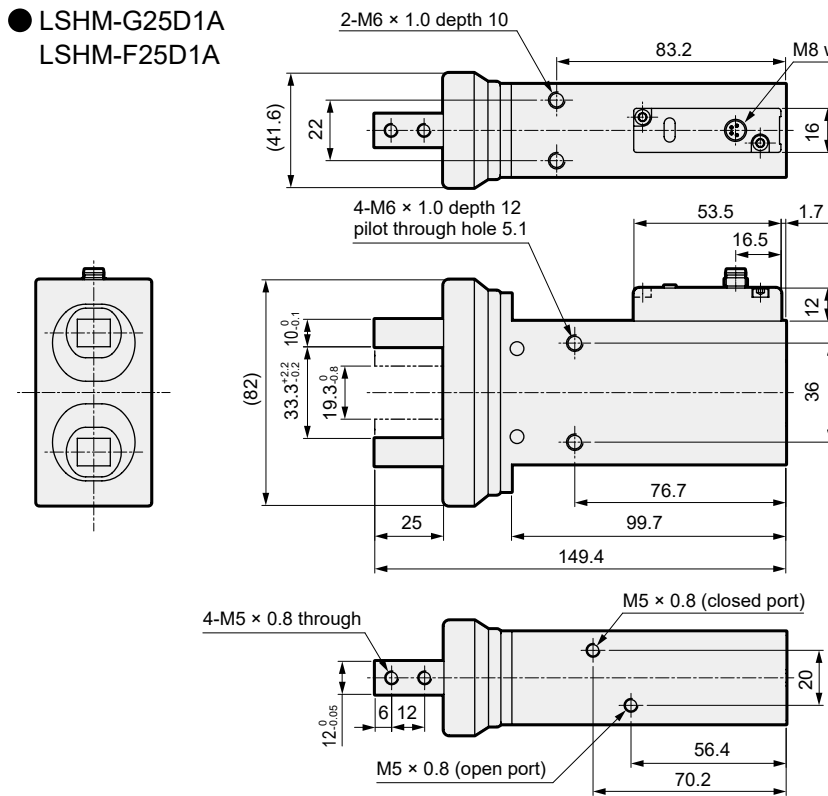


● LSHM-G20D1E LSHM-F20D1E

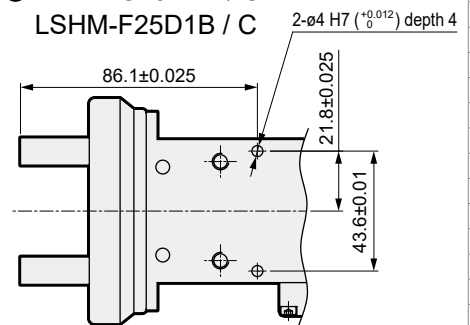


Dimensions (bore size: $\varnothing 25$)

● LSHM-G25D1A LSHM-F25D1A

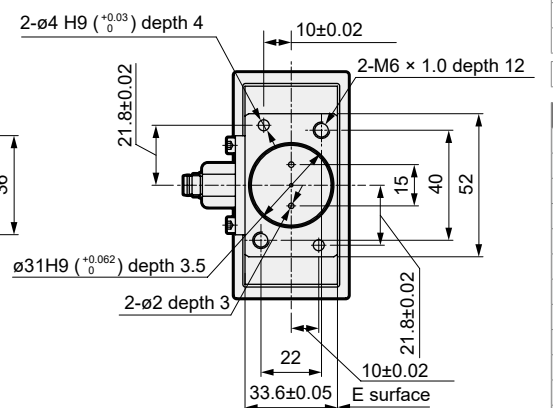
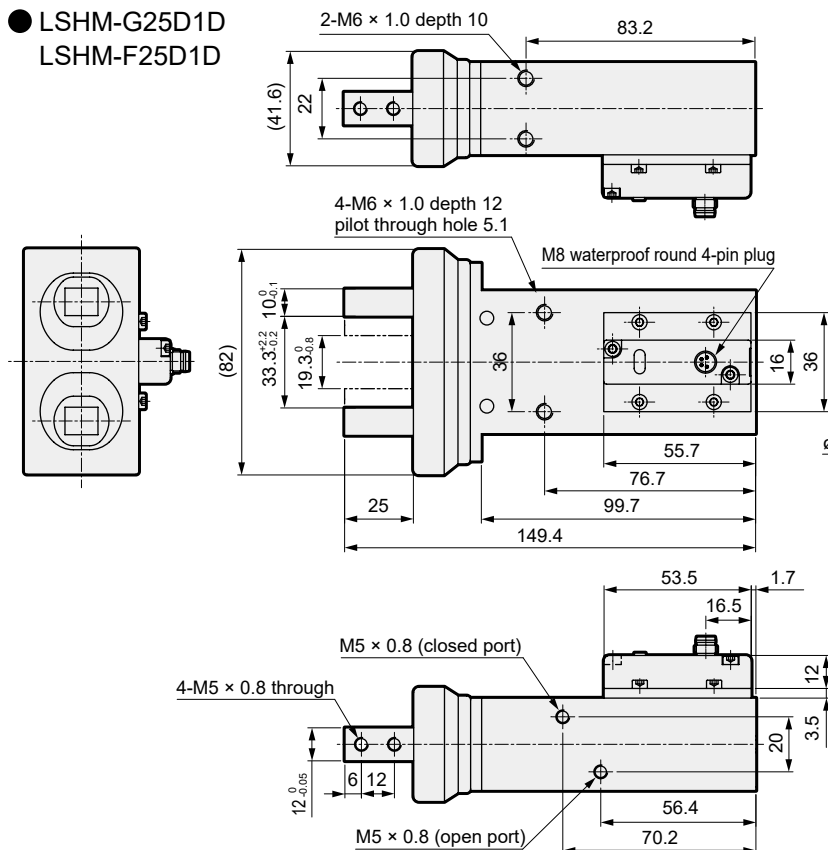


● LSHM-G25D1B / C LSHM-F25D1B / C

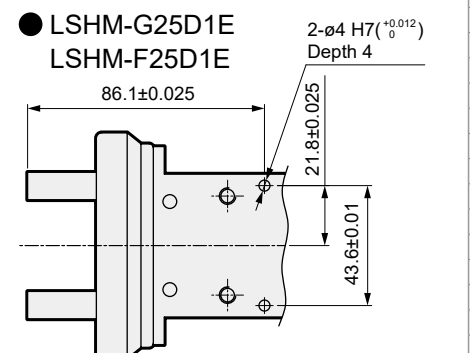


*1: Positioning holes are machined on B surface for LSHM-*25D1B and C surface for LSHM-*25D1C

● LSHM-G25D1D LSHM-F25D1D



● LSHM-G25D1E LSHM-F25D1E



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
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FH100
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BHA/BHG
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LHAG
HAP
HKP
HCP
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HLF2
HLA/HLB
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HMF
HMF-G
HMFB
HFP
FH500
HBL
HJL
HMD
HDL
HJD
BHE

LCM
LCR
LCG
LCW
LCX
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
UB
JSB3
LMB
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Correction adapter

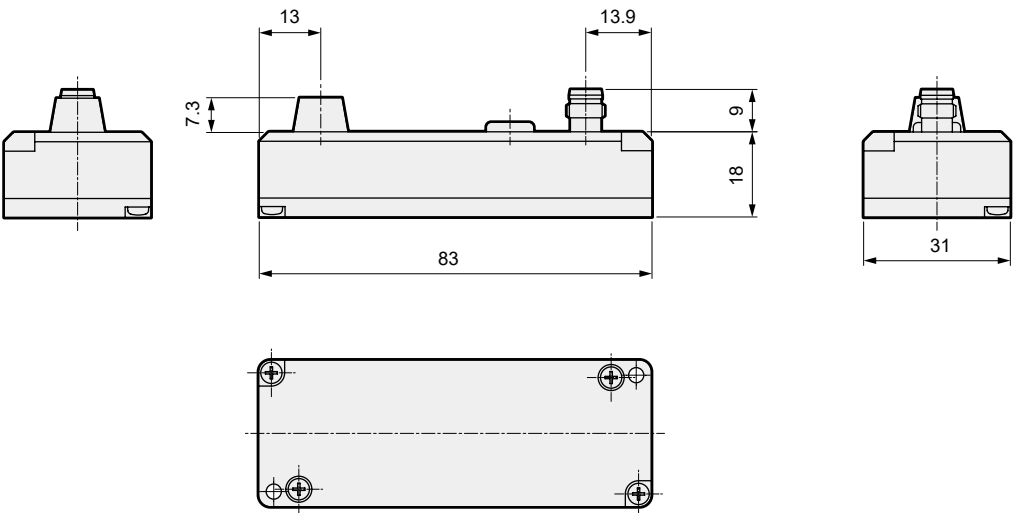
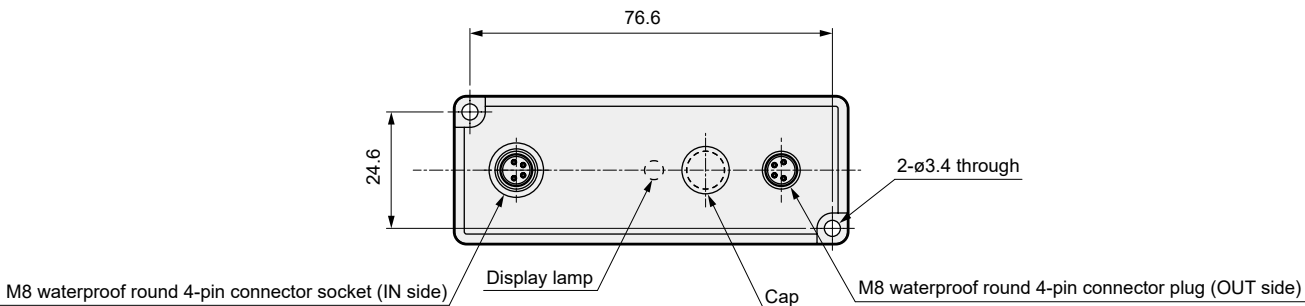
The analog output linearity will be corrected. Please use for applications where high-accuracy linearity is required.

Specifications

Item	Description
Power supply voltage	24 VDC $\pm 10\%$
Current consumption	35 mA or less
Display lamp	Red LED lit when power applied
Analog input	1 to 5 V (LSHM Series output voltage)
Analog output	1 to 5 V, connection load 50 k Ω or more
Analog output linearity	$\pm 0.5\%$ F.S. or less (ambient temperature 25°C, LSHM Series connection, CKD provided measuring method)
Repeatability of analog output	± 0.02 mm or less (ambient temperature 25°C, no deformation or wear of actuator/jig)
Input connector	M8 waterproof round 4-pin connector socket
Output connector	M8 waterproof round 4-pin connector plug
Impact resistance	294 m/s ²
Degree of protection	IEC standards IP65
Ambient temperature, humidity	10 to 60°C, 85% RH or less
Mounting method	Direct mounting
Weight	40 g

*Use the default combination of LSHM and correction adapter.

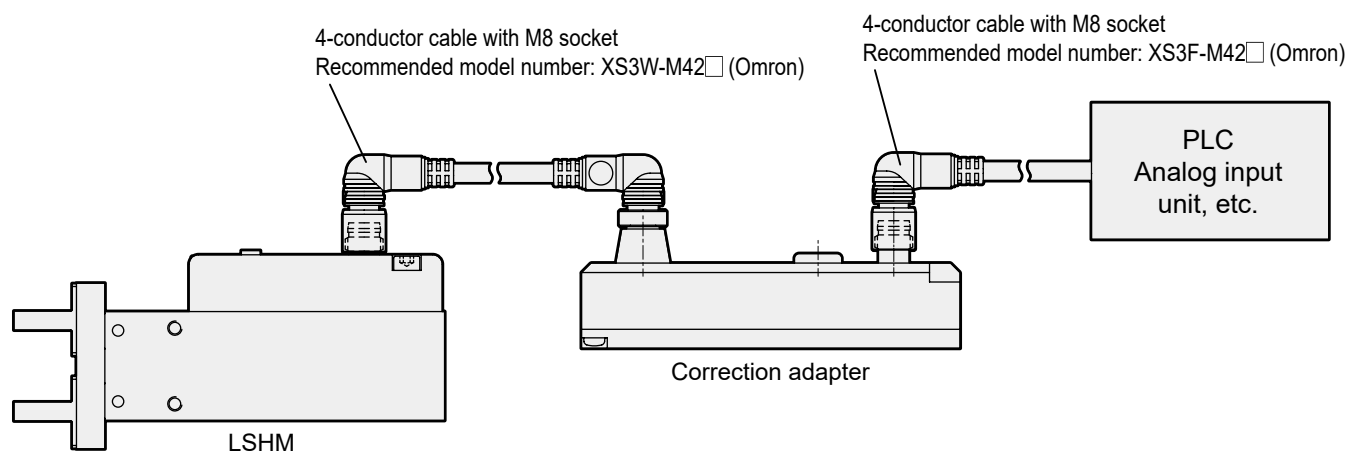
Dimensions



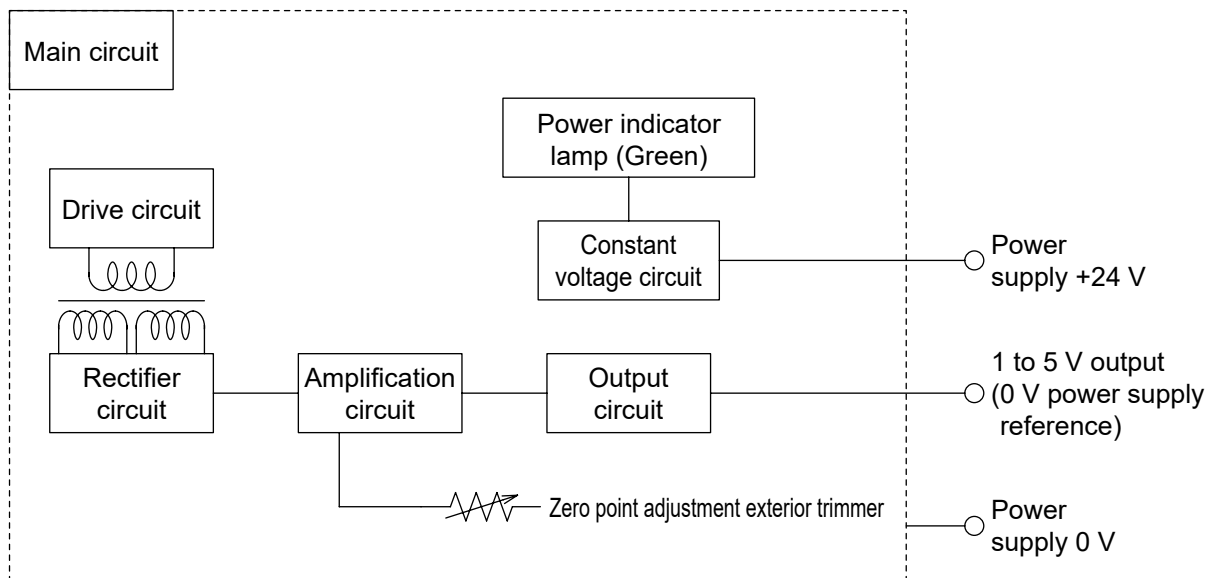
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STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
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MecHnd/Chuk
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System configuration

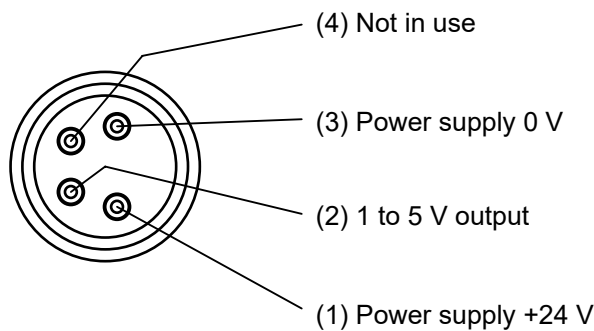


Internal circuit

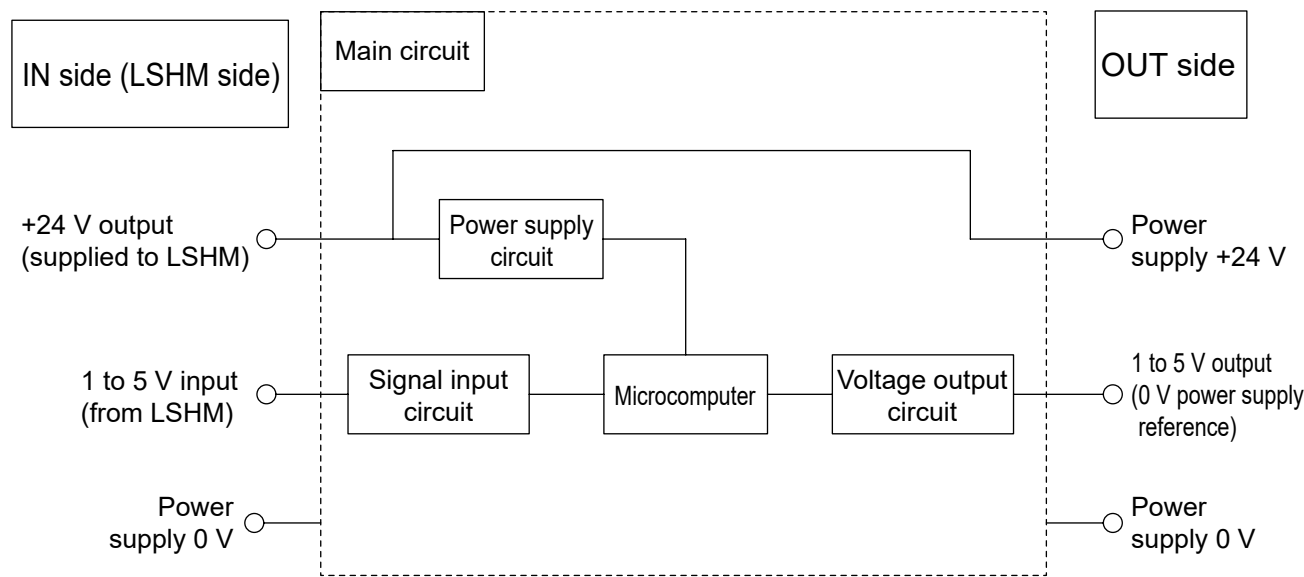


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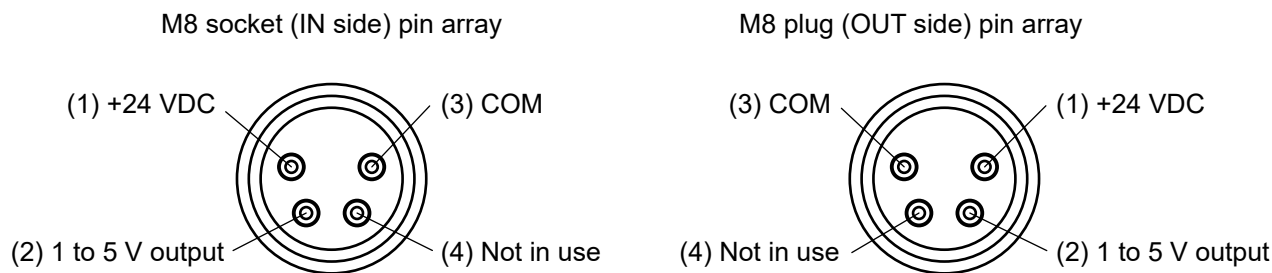
Plug contact array diagram (LSHM)



Internal circuit (correction adapter)



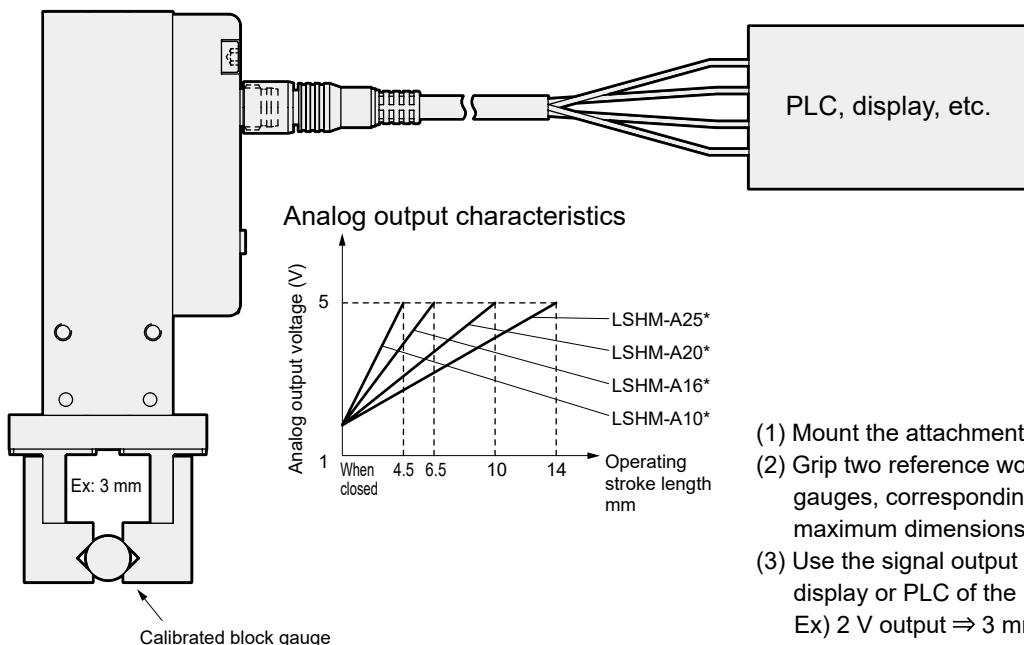
Plug contact array diagram (correction adapter)



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Workpiece measurement using the entire operating stroke length range

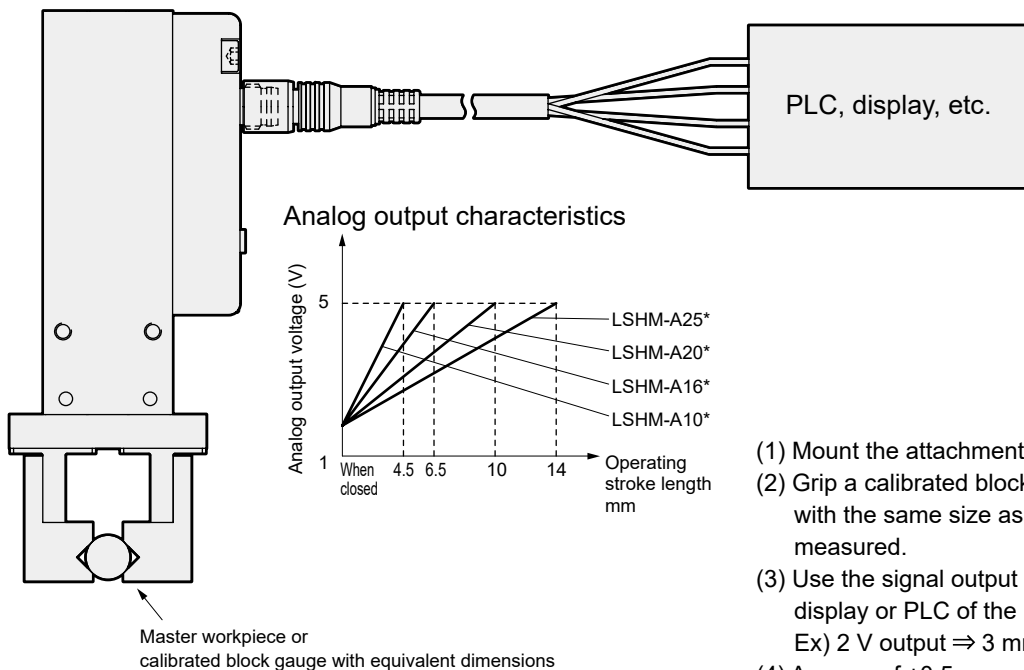
Ex) Judgment of workpiece model in multi-model production equipment, etc.



- (1) Mount the attachment.
- (2) Grip two reference workpieces such as block gauges, corresponding to the minimum and maximum dimensions of the workpiece to be used.
- (3) Use the signal output from the sensor to set the display or PLC of the receiving side.
Ex) 2 V output $\Rightarrow$ 3 mm, 4 V output $\Rightarrow$ 8 mm
- (4) After setting, length measurement is possible with linearity of $\pm 3\%$ F.S. ($\pm 0.5\%$ F.S. with correction adapter option) over the entire stroke

Higher-precision measurement through limiting the measurement range

Ex) Confirming that workpiece dimensions are within tolerance range, confirming wear and deformation of attachments and jigs, etc.



- (1) Mount the attachment.
- (2) Grip a calibrated block gauge or master workpiece with the same size as the workpiece to be measured.
- (3) Use the signal output from the sensor to set the display or PLC of the receiving side.
Ex) 2 V output $\Rightarrow$ 3 mm
- (4) A range of ± 0.5 mm around the set dimensions can be measured with linearity of $\pm 0.5\%$ FS (reference value when without correction adapter).