

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



Ultra thin parallel hand

HLD Series

- Operational stroke length: ø12, 16, 20, 30 mm



Specifications

Item	HLD			
	08CS	12CS	16CS	20CS
Size	08CS	12CS	16CS	20CS
Bore size mm	ø8×4	ø12×4	ø16×4	ø20×4
Working fluid	Compressed air			
Max. working pressure MPa	0.7 (≈100 psi, 7 bar)			
Min. working pressure MPa	0.2 (≈29 psi, 2 bar)			
Ambient temperature °C	5 (41°F) to 60 (140°F)			
Port size	M3		M5	
Operating stroke length mm	12	16	20	30
Volumetric capacity (reciprocating) cm ³	3.2	7.8	19.8	43.3
Repeatability mm	±0.01			
Weight kg	0.23	0.29	0.62	1.05
Lubrication	Not required (use turbine oil class 1 ISO VG32 if necessary for lubrication)			

Switch specifications

Item	Proximity 2-wire		Proximity 3-wire	
	T2H/T2V	T2WH/T2WV (2-color display)	T3H/T3V	T3WH/T3WV (2-color display)
Applications	Dedicated for programmable controller		For programmable controller, relay	
Output method	-		NPN output	
Power supply voltage	-		10 to 28 VDC	
Load voltage	10 to 30 VDC	24 VDC ±10%	30 VDC or less	
Load current	5 to 20 mA		100 mA or less	50 mA or less
Indicator lamp	LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)	Red/green 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 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.

How to order

HLD - **08CS** - **T2H** - **R**

Ⓐ Size

Ⓑ Switch model No.

Ⓒ Switch quantity

Code	Description					
Ⓐ Size						
08CS						
12CS						
16CS						
20CS						
Ⓑ Switch model No.						
Axial lead wire	Radial lead wire	Contact	Voltage		Display	Lead wire
			AC	DC		
T2H*	T2V*	Proximity	●		1-color	2-wire
T3H*	T3V*		●		display	3-wire
T2WH*	T2WV*		●		2-color	2-wire
T3WH*	T3WV*		●		display	3-wire
* Lead wire length						
Blank	1 m (standard)					
3	3 m (option)					
5	5 m (option)					
Ⓒ Switch quantity						
R	1 on open side					
H	1 on closed side					
D	2					

[Example of model No.]

HLD-08CS-T2H-R

- Ⓐ Size : 08CS
- Ⓑ Switch model No. : Proximity T2H switch, lead wire 1 m
- Ⓒ Switch quantity : 1 on open side

How to order switch

SW - **T2H**

Switch model No.
(Item Ⓑ above)

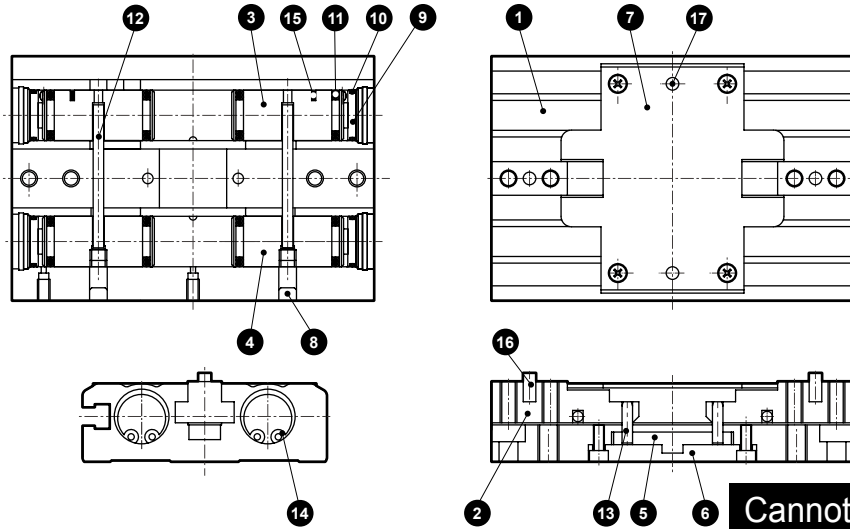
Specifications for rechargeable battery (Catalog No. CC-1226A)

HLD - ... - **P4*** ● Design compatible with rechargeable battery manufacturing process.

* Contact CKD for details.

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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

Internal structure and parts list

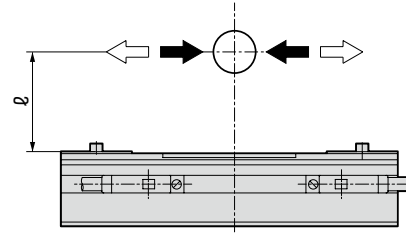


Parts list

No.	Part name	Material	No.	Part name	Material
1	Body	Aluminum alloy	10	Cylinder sealant	Nitrile rubber
2	Finger	Steel	11	Piston seal	Nitrile rubber
3	Piston 1	Aluminum alloy	12	Operation shaft A	Alloy steel
4	Piston 2	Aluminum alloy	13	Operation shaft B	Alloy steel
5	Cam	Steel	14	C type snap ring	Stainless steel
6	Guide block	Aluminum alloy	15	Magnet	
7	Top cover	Stainless steel	16	Positioning pin 1	Alloy steel
8	Cap	Aluminum alloy	17	Positioning pin 2	Alloy steel
9	Cylinder guard	Aluminum alloy			

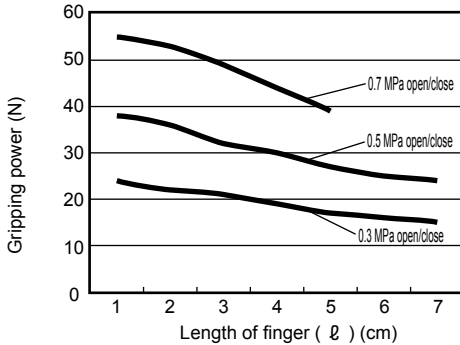
Gripping power performance data

- Gripping power represents the thrust (per one finger) in the arrow direction shown in the figure.
- The gripping power with finger length L of hand and a supply pressure of 0.3, 0.5 and 0.7 MPa is shown.
- Both open direction (◀) and closed direction (▶) - (shown with continuous line)

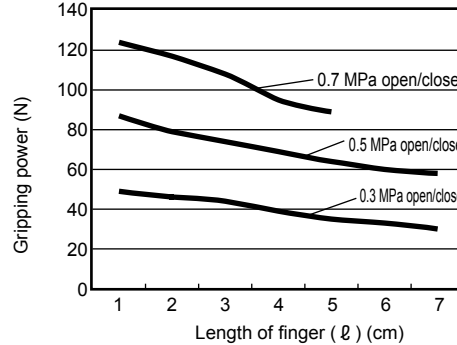


(Note) When making a selection, read the precautions for design and selection on page 1764.

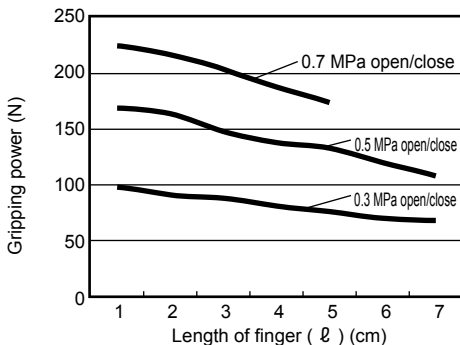
● HLD-08CS



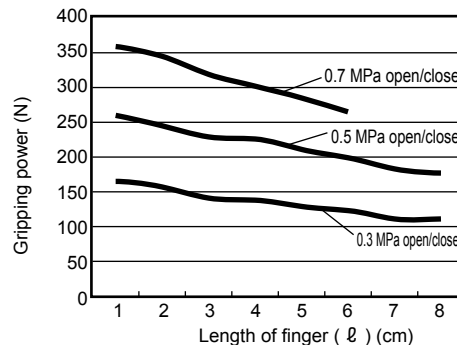
● HLD-12CS



● HLD-16CS

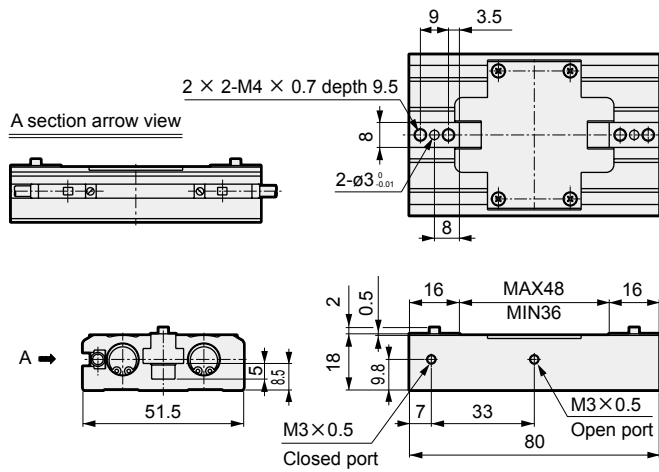


● HLD-20CS

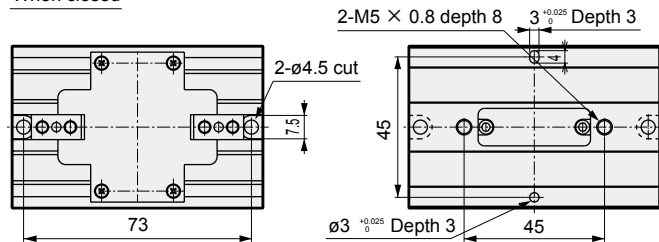


Dimensions

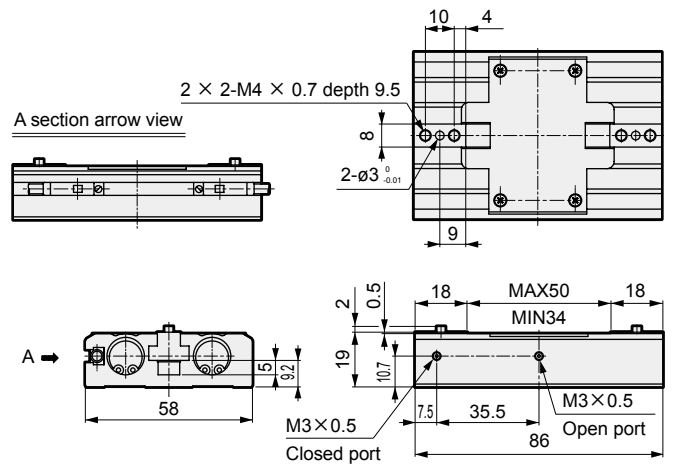
● HLD-08CS



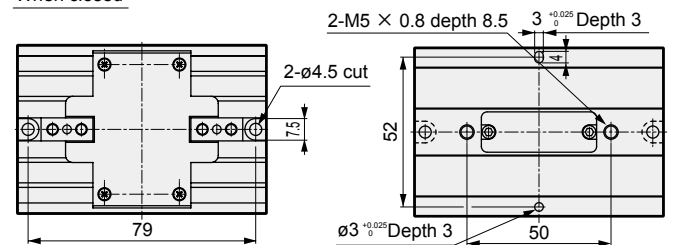
When closed



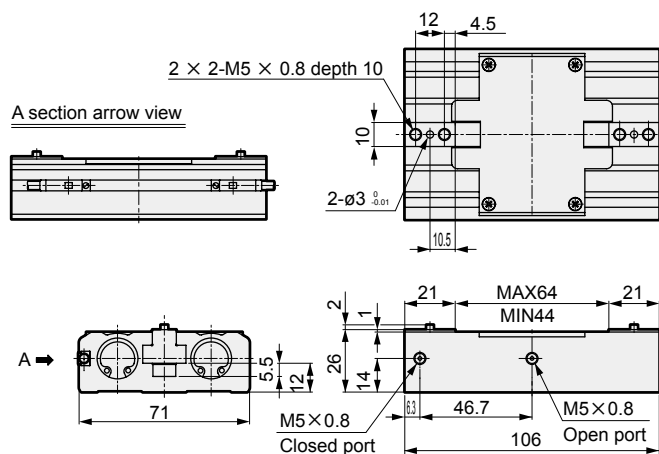
● HLD-12CS



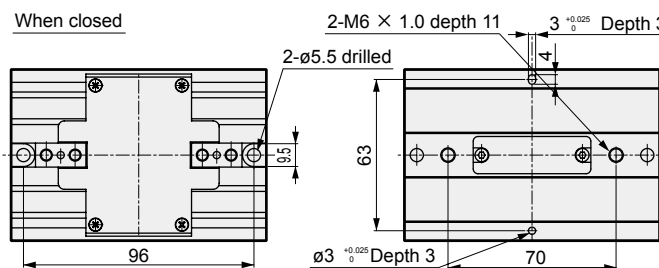
When closed



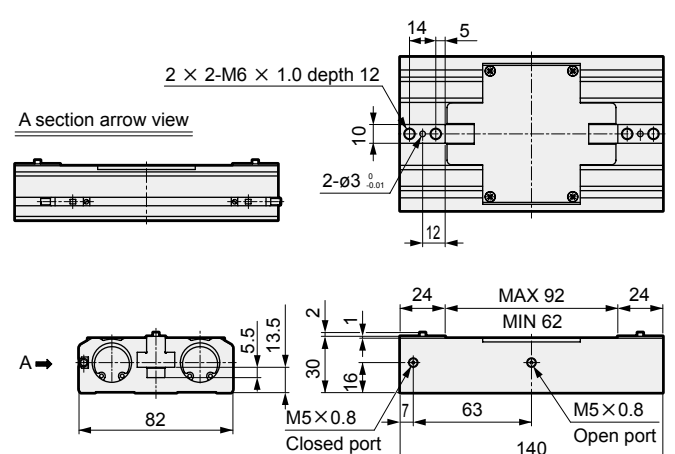
● HLD-16CS



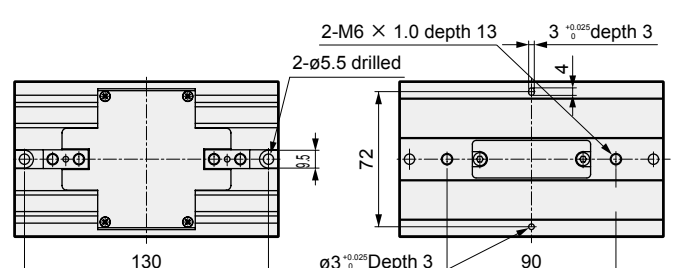
When closed



● HLD-20CS



When closed



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STM
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STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
UB
JSB3
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LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCS2
RCC2
PCC
SHC
MCP
GLC
MFC
BBS
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