

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



Wide angle hand Double acting/single acting

HDL Series

● Open/close angle: 0° to 180°

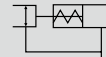
Double acting



Single acting (normally open)



Single acting (normally closed)



Specifications

Descriptions	HDL	
Size	3CS	4CS
Bore size mm	φ25	φ40
Actuation	Double acting/single acting	
Working fluid	Compressed air	
Max. working pressure MPa	0.7 (≈100 psi, 7 bar)	
Min. working pressure MPa	0.3 (≈44 psi, 3 bar)	
Ambient temperature °C	5 (41°F) to 60 (140°F)	
Port size	M5	Rc1/8
Open and close angle °	0 to 180	
Rod diameter mm	φ14	φ16
Volumetric capacity (reciprocating) cm ³	7.8	53.2
Repeatability mm	±0.2	±0.1
Weight kg	0.6	2.40
Lubrication	Not required (use turbine oil class 1 ISO VG32 if necessary for lubrication)	

Switch specifications

Descriptions	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 *3	

*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 other switch specifications.

*3 : The weight of switch mounting bracket is 1.5 g.

How to order

Without switch (built-in magnet for switch)

HDL - **3CS** - **O**

With switch (built-in magnet for switch)

HDL - **3CS** - **O** - **T2H** - **R**

A Size

B Option

C Switch model No.

* indicates the lead wire length.

D Switch quantity

Code	Content					
A Size						
3CS						
4CS						
B Option						
Blank	Standard (double acting)					
O	Single acting (normally open)					
C	Single acting (normally closed)					
C 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
* Lead wire length						
Blank	1 m (standard)					
3	3 m (option)					
5	5 m (option)					
D Switch quantity						
R	1 on open side					
H	1 on closed side					
D	2					

[Example of model No.]

HDL-3CS-O-T2H-R

Model : Wide angle hand

- A** Size : 3CS
- B** Option : Single acting, normally open
- C** Switch model No. : Proximity T2H switch, lead wire 1 m
- D** Switch quantity : 1 on open side

How to order switch

● For switch T*H*

· Switch body + mounting bracket set

HDL - **T2H**

Switch model No.
(Item ③ above)

· Switch body

SW - **T2H**

Switch model No.
(Item ③ above)

· Mounting bracket set

HDL - **T**

● For switch T*V*

· Switch body + mounting bracket set

HDL - **T2V** - *

Switch model No.
(Item ③ above)

· Switch body

SW - **T2V**

Switch model No.
(Item ③ above)

· Mounting bracket set

HDL - **TV** - *

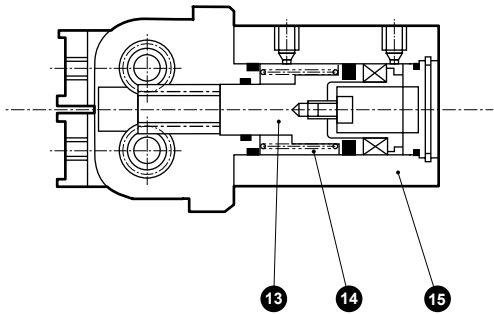
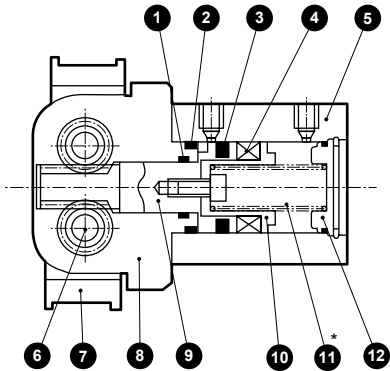
(Select either R (open side) or H (closed side) for sections marked with an asterisk (*).)

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Internal structure and parts list

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

● C (normally closed)



Cannot be disassembled

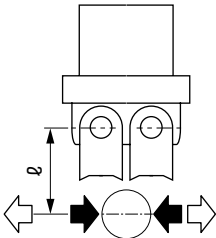
* Standard (double acting) does not contain 11 spring.

No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Rod packing	Nitrile rubber		9	Piston A	Stainless steel	
2	Cylinder gasket	Nitrile rubber		10	Piston B	Acetal resin	
3	Piston packing	Nitrile rubber		11	Spring	Stainless steel	O type only
4	Magnet			12	Cylinder guard	Acetal resin	
5	Cylinder	Aluminum alloy		13	Piston	Stainless steel	
6	Pinion gear	Steel		14	Spring	Stainless steel	
7	Master key	Steel		15	Cylinder	Aluminum alloy	
8	Body	Aluminum alloy					

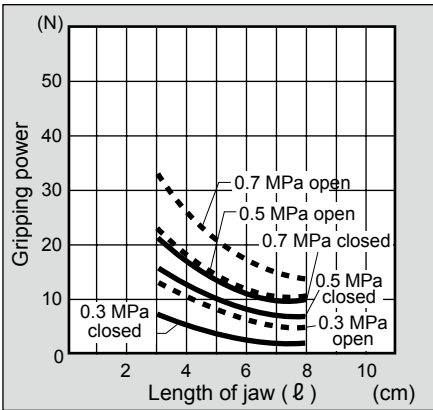
Gripping power performance data

The gripping power in the opening/closing directions with jaw length L of hand with a supply pressure of 0.3, 0.5 and 0.7 MPa is shown.

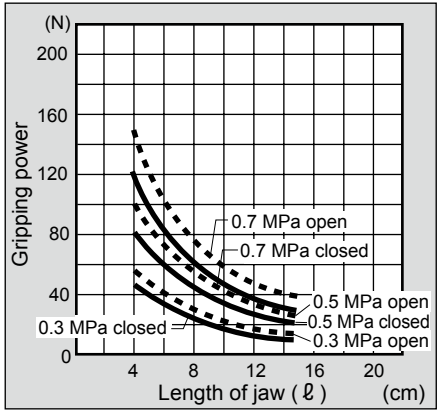
- Open direction (←) --- (shown with broken line)
- Closed direction (→) — (shown with continuous line)



● HDL-3CS



● HDL-4CS

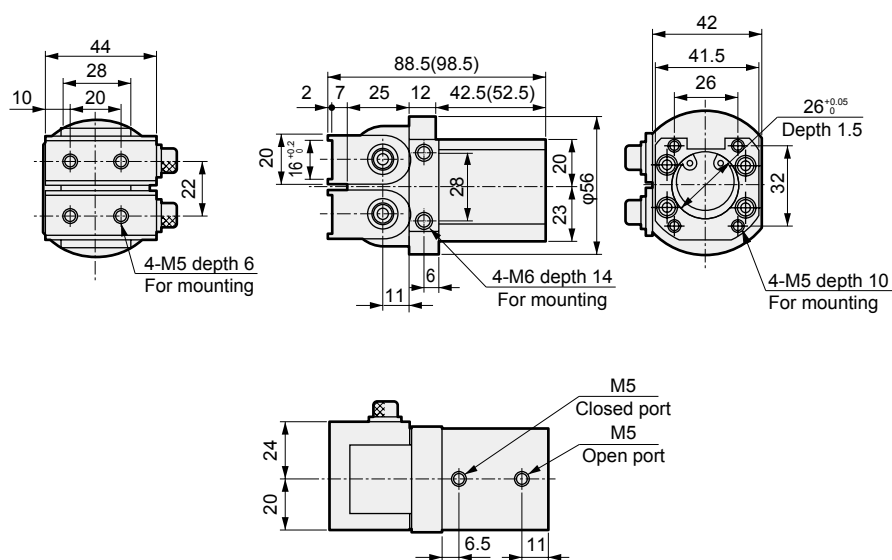


(Note) O type gripping power decreases approximately 20 to 30% in the closed direction compared to double acting.
C type gripping power decreases approximately 10 to 20% in the open direction compared to the double acting.
When making a selection, read the precautions for design and selection on page 1636.

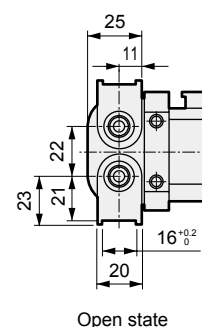
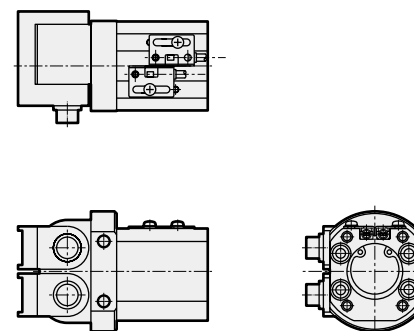
Dimensions

● HDL-3CS Standard/O/C

● Dimensions in () are for C [normally closed] specifications.

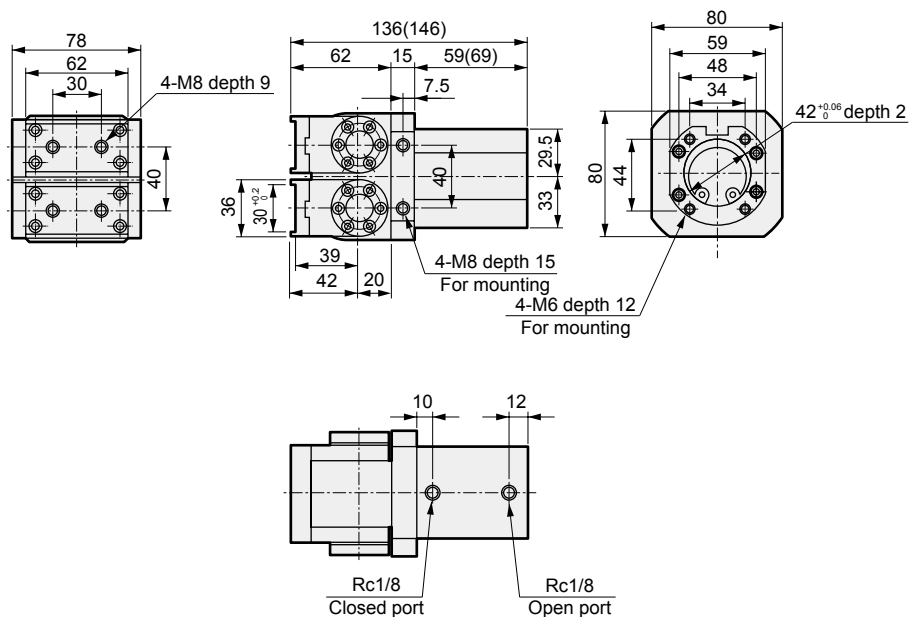


● With switch

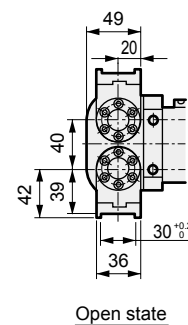
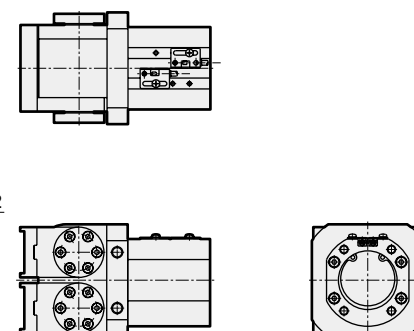


● HDL-4CS Standard/O/C

● Dimensions in () are for C [normally closed] specifications.



● With switch



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