



Parallel Gripper Double Acting Type/Single Acting Type

HAP-1C Series

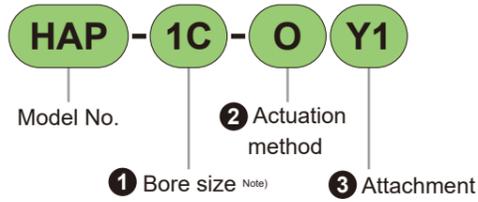
● Operating stroke: 8 mm



HAP-1C Series

Specifications/Gripping Force Performance Data

Model No. Notation Method



Note) Switches cannot be installed on HAP-1C.

1 Bore size

Code	Content
1C	ø15

2 Actuation method

Code	Content
Blank	Standard (Double Acting Type)
O	Single Acting (Normally Open)
C	Single Acting (Normally Closed)

3 Attachment

Code	Content
Blank	Without attachments
Y1	With attachments: Material (S50C)
Y2	With attachments: Material (MC Nylon)

Note) For the outline dimensions and compatible models of the attachments, refer to P. 334 and 335. When ordered as an option, it will be shipped assembled with a quantity of 2.

Rechargeable Battery Compatible Specification

(Catalog No. CC-1226AA)

● Structure usable in rechargeable battery manufacturing processes

HAP- - P4□

*Please contact us for details.

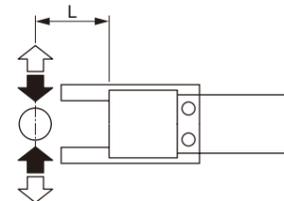
Specifications

Item	HAP-1C
Bore size	mm ø15
Actuation method	Double Acting Type/Single Acting Type
Operating Fluid	Compressed Air
Max. Working Pressure	MPa 0.7
Min. Operating Pressure	MPa 0.3
Ambient Temperature	°C 5 to 60
Port Size	M5
Operating stroke	mm 8
Rod diameter	mm ø8
Internal volume (reciprocating)	cm ³ 2.1
Repeatability	mm ±0.03
Weight	kg 0.10
Lubrication	Not required (When lubricating, use turbine oil Class 1 ISO VG32)

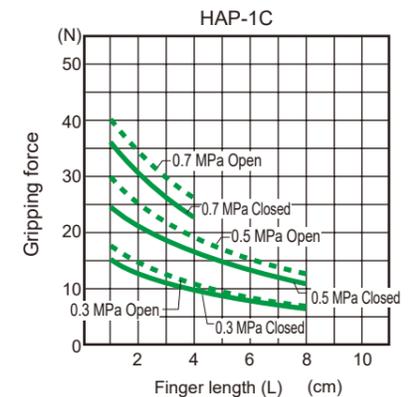
Gripping Force Performance Data

- Gripping force represents the thrust (for one finger) in the direction of the arrow shown in the figure.
- The gripping force in the opening/closing directions with finger length L of hand with a supply pressure of 0.3, 0.5 and 0.7 MPa is shown.

- Open direction (←) (broken line)
- Closing direction (→) (solid line)



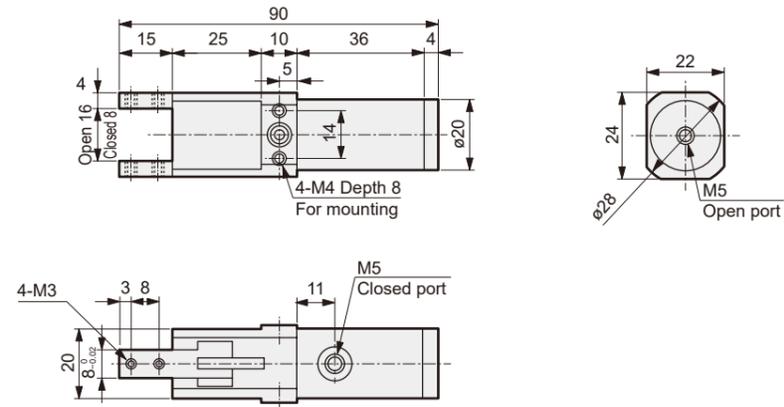
- Note) • O type gripping force is approx. 20 to 30 % lower in the closing direction compared to the double acting type.
- C type gripping force is approx. 10 to 20 % lower in the opening direction compared to the double acting type. When selecting, check the design and selection precautions on P. 336.



Hand (Gripper)
LSH-HP
LSH
FH100
BSA2
BHA
BHG
BHE
LHA
LHAG
HAP-1C
HAP-2 to 4CS
HKP
HCP
HGP
LST-HP
HLF2
HLA/HLB
HLAG/HLBG
HLC
HLD
HMC-HP
HMF
HMF-G
HMF-B
HFP
FH500
HBL
HJL
HMD
HDL
HJD
Cylinder Switch
Ending

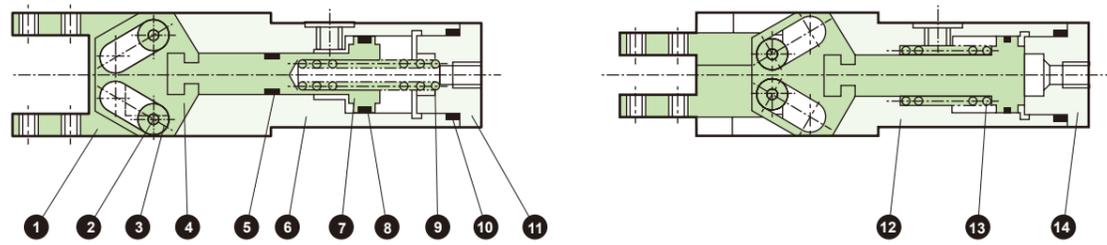
Hand (Gripper)
LSH-HP
LSH
FH100
BSA2
BHA
BHG
BHE
LHA
LHAG
HAP-1C
HAP-2 to 4CS
HKP
HCP
HGP
LST-HP
HLF2
HLA/HLB
HLAG/HLBG
HLC
HLD
HMC-HP
HMF
HMF-G
HMF-B
HFP
FH500
HBL
HJL
HMD
HDL
HJD
Cylinder Switch
Ending

Outline Dimension Drawing



Internal Structure Diagram/Material

● Standard (double acting), O (normally open) type ● C (Normally Closed) Type



Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Finger	Alloy Steel		8	Piston Packing	Nitrile Rubber	
2	Pivot Shaft	Alloy Steel		9	Coil Spring	Steel	O type only
3	Bearing	Alloy Steel		10	Gasket	Nitrile rubber	
4	Cam	Stainless Steel		11	Head Cover	Aluminum Alloy	
5	Rod Packing	Nitrile Rubber		12	Body	Aluminum Alloy	
6	Body	Aluminum Alloy		13	Coil Spring	Steel	
7	Piston	Stainless Steel		14	Head Cover	Aluminum Alloy	

MEMO

Do not disassemble



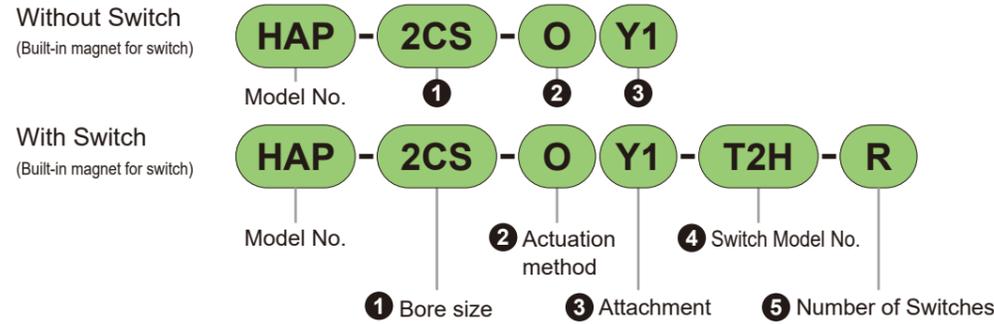
Parallel Gripper Double Acting Type/Switch Acting Type

HAP-²/₄CS Series

●Operating stroke: 16, 26, 41 mm



Model No. Notation Method



1 Bore Size (mm)

Code	Content
2CS	ø20
3CS	ø25
4CS	ø40

2 Actuation method

Code	Content
Blank	Standard (Double Acting Type)
O	Single Acting (Normally Open)
C	Single Acting (Normally Closed)

3 Attachment

Code	Content
Blank	Without attachments
Y1	With attachments: Material (S50C)
Y2	With attachments: Material (MC Nylon)

Note) For the outline dimensions and compatible models of the attachments, refer to P. 334 and 335. When ordered as an option, it will be shipped assembled with a quantity of 2.

4 Switch Model No.

For switch details, please refer to P. 573. Switches are included with the product and shipped.

Contact	Indicator LED Special Function	Wiring (Output)	Load Voltage (V)		Load Current (mA)		Lead wire *1	
			AC	DC	AC	DC	Straight	L-shape
Solid State	1-Color	2-wire	-	10 to 30	-	5 to 20 *2	T2H□	T2V□
	1-Color Flexible Lead Wire	2-wire	-	10 to 30	-	5 to 20 *2	T2HR3	T2VR3
	1-Color	3-wire (NPN)	-	30 or less	-	100 or less	T3H□	T3V□
3-wire (PNP)	-	T3PH□	T3PV□					

*1: For "□" in the switch model No., enter the code selected from the "Lead wire length" table.

*2: The maximum load current value above, 20 mA, is at 25 °C. If the switch operating ambient temperature is higher than 25 °C, it will be lower than 20 mA. (At 60 °C, it will be 5 to 10 mA.)

*3: Switches other than the model No.s listed above are also available. (Custom Product) For details, see P. 573.

*Lead wire length

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)

Example) Lead wire length
1 m T2H
3 m T2H₃
5 m T2H₅

5 Number of Switches

Code	Content
R	With 1 pc. on Open Side
H	With 1 pc. on Close Side
D	With 2 pcs

Rechargeable Battery Compatible Specification (Catalog No. CC-1226AA)

●Structure usable in rechargeable battery manufacturing processes

HAP- ... - P4□

*Please contact us for details.

Switch Single Unit Model No. Notation Method

●For switch T□H□

●Switch body + Mounting bracket set *1

HAP - T2H

4 Switch Model No.

●Switch body

SW - T2H

4 Switch Model No.

●Mounting bracket set *1

HAP - T

●For switch T□V□

●Switch body + Mounting bracket set *1

HAP - T2V - R

4 Switch Model No.

●Switch body

SW - T2V

4 Switch Model No.

●Mounting bracket set *1

HAP - TV - R

Code	Content
R	Open side (3CS, 4CS only)
H	Closed side

Code	Content
R	Open side (3CS, 4CS only)
H	Closed side

*1 The weight of the switch mounting bracket is 1.5 g.

Hand (Gripper)

LSH-HP

LSH

FH100

BSA2

BHA

BHG

BHE

LHA

LHAG

HAP-1C

HAP-2 to 4CS

HKP

HCP

HGP

LST-HP

HLF2

HLA/HLB

HLAG/HLBG

HLC

HLD

HMC-HP

HMF

HMF-G

HMF-B

HFP

FH500

HBL

HJL

HMD

HDL

HJD

Cylinder Switch

Ending

Hand (Gripper)

LSH-HP

LSH

FH100

BSA2

BHA

BHG

BHE

LHA

LHAG

HAP-1C

HAP-2 to 4CS

HKP

HCP

HGP

LST-HP

HLF2

HLA/HLB

HLAG/HLBG

HLC

HLD

HMC-HP

HMF

HMF-G

HMF-B

HFP

FH500

HBL

HJL

HMD

HDL

HJD

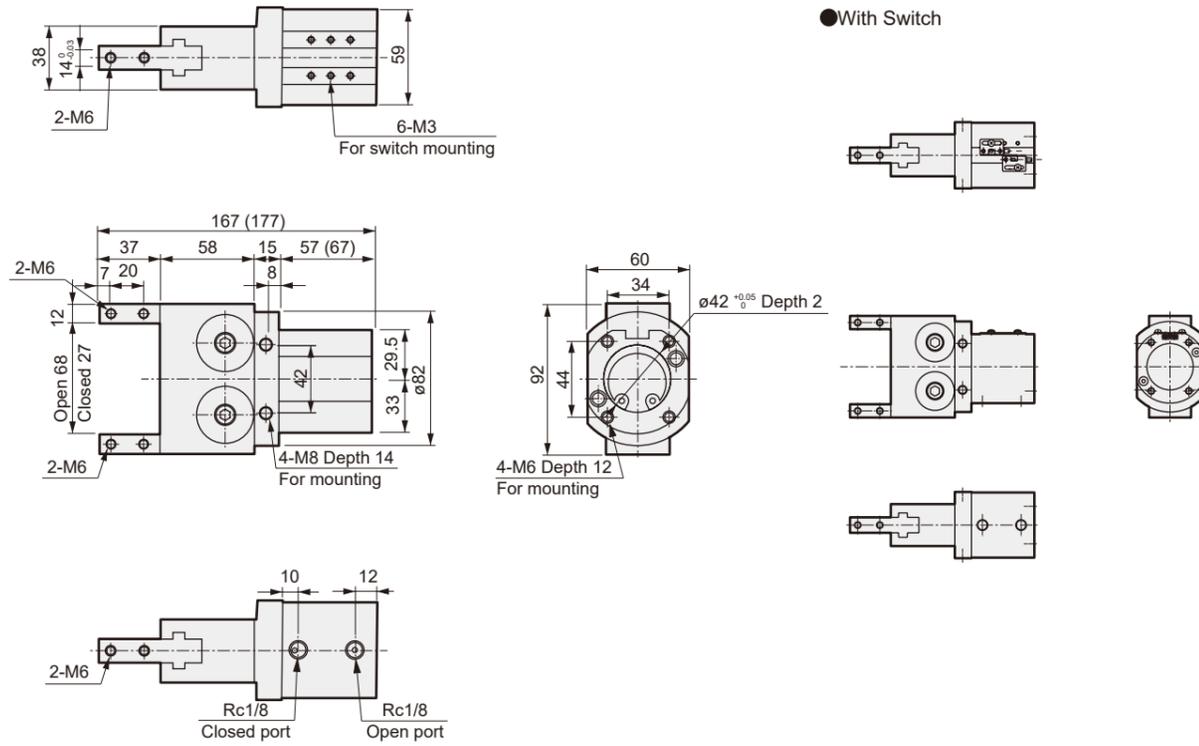
Cylinder Switch

Ending

Outline Dimension Drawing

● HAP-4CS Standard/O/C

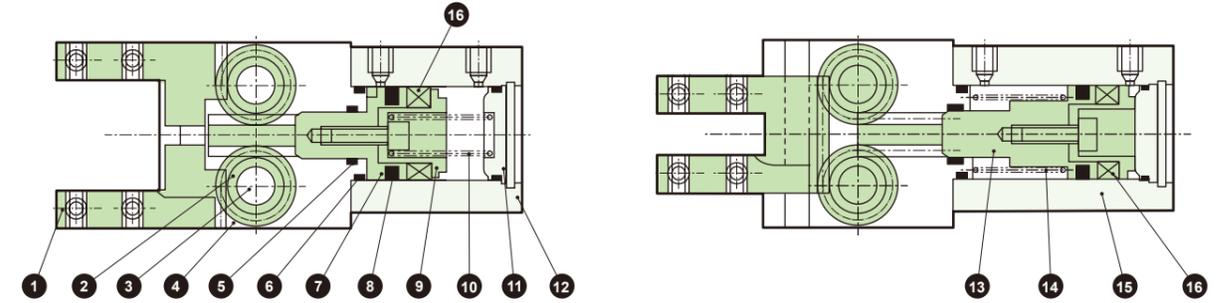
● () Dimensions are for C (Normally Closed) type.



Internal Structure Diagram/Material

● Standard (double acting), O (normally open) type

● C (Normally Closed) Type



Do not disassemble

Part No.	Part Name	Material	Remarks	Part No.	Material	Part Name	Remarks
1	Finger	Steel		9	Piston B	Polyacetal	Standard, O type only
2	Pinion gear	Steel		10	Coil Spring	Stainless Steel	O type only
3	Pinion gear shaft	Steel		11	Cover	Polyacetal	
4	Body	Aluminum Alloy		12	Body	Aluminum Alloy	
5	Rod Packing	Nitrile Rubber		13	Piston	Stainless Steel	C type only
6	Gasket	Nitrile Rubber		14	Coil Spring	Stainless Steel	C type only
7	Piston A	Stainless Steel	Standard, O type only	15	Body	Aluminum Alloy	C type only
8	Piston Packing	Nitrile Rubber		16	Magnet	Plastic	

Hand (Gripper)

- LSH-HP
- LSH
- FH100
- BSA2
- BHA
- BHG
- BHE
- LHA
- LHAG
- HAP-1C
- HAP-2 to 4CS**
- HKP
- HCP
- HGP
- LST-HP
- HLF2
- HLA/HLB
- HLAG/HLBG
- HLC
- HLD
- HMC-HP
- HMF
- HMF-G
- HMFB
- HFP
- FH500
- HBL
- HJL
- HMD
- HDL
- HJD
- Cylinder Switch
- Ending

Hand (Gripper)

- LSH-HP
- LSH
- FH100
- BSA2
- BHA
- BHG
- BHE
- LHA
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- HAP-1C
- HAP-2 to 4CS**
- HKP
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