



Compact cross roller parallel hand Double acting/single acting

BHA Series

● Operating stroke length: 5, 9, 11, 15 mm

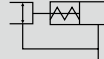
Double acting



Single acting (normally open)



Single acting (normally closed)



Specifications

| Descriptions | | BHA | | | |
|-------------------------------------|-----------------|--|-------|-------|-------|
| Size | | 01CS1 | 03CS1 | 04CS1 | 05CS1 |
| Bore size | mm | φ12 | φ16 | φ20 | φ25 |
| Actuation | | Double acting/single acting | | | |
| Working fluid | | Compressed air | | | |
| Max. working pressure | | 0.7 (≈100 psi, 7 bar) | | | |
| Min. working pressure | Double acting | 0.1 (≈15 psi, 1 bar) | | | |
| | Normally open | 0.3 (≈44 psi, 3 bar) | | | |
| | Normally closed | | | | |
| Ambient temperature | | 5 (41°F) to 60 (140°F) | | | |
| Port size | | M3 | M5 | | |
| Operating stroke length | mm | 5 | 9 | 11 | 15 |
| Rod diameter | mm | φ6 | φ8 | φ10 | φ12 |
| Volumetric capacity (reciprocating) | cm ³ | 0.32 | 1.58 | 2.89 | 6.32 |
| Repeatability | mm | ±0.01 | | | |
| Weight | kg | 0.100 | 0.145 | 0.253 | 0.420 |
| 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 | |

*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.

* The BHA-LN Series with length measuring function (length measuring sensor) is also available. Refer to page 1431 for details.

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

How to order

Without switch (built-in magnet for switch)

BHA - 01CS1 - O

With switch (built-in magnet for switch)

BHA - 01CS1 - O - T2H - R

A Size

B Option
*1

C Switch model No.
* indicates the lead wire length.

D Switch quantity

| Code | Content | | | | |
|---------------------------|------------------------------------|-----------|---------|---------|-----------------|
| A Size | | | | | |
| 01CS1 | | | | | |
| 03CS1 | | | | | |
| 04CS1 | | | | | |
| 05CS1 | | | | | |
| B Option | | | | | |
| Blank | Standard (double acting) | | | | |
| O | Single acting (normally open) | | | | |
| C | Single acting (normally closed) | | | | |
| Y1 | With small jaw (Material S50C) | | | | |
| Y2 | With small jaw (Material MC nylon) | | | | |
| C Switch model No. | | | | | |
| Axial lead wire | Radial lead wire | Contact | Voltage | Display | Lead wire |
| | | | AC | DC | |
| T2H* | T2V* | Proximity | | ● | 1-color display |
| T3H* | T3V* | | | ● | 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 | | | | |

⚠ Precautions for model No. selection

*1: Refer to pages 1634 to 1635 for the dimensions and compatible model of the small jaw. When ordered as an option, two are attached at shipment.

[Example of model No.]

BHA-01CS1-O-T3H-R

Model: Compact cross roller parallel hand

- A** Size : 01CS1
- B** Option : Single acting, normally open type
- C** Switch model No. : Proximity T3H switch, lead wire 1 m
- D** Switch quantity : 1 on open side

How to order switch

SW - T2H

Switch model No.
(Item **C** above)

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

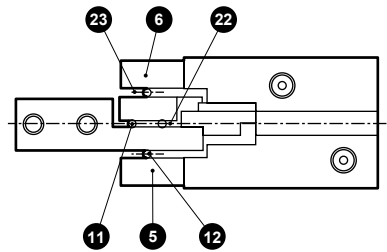
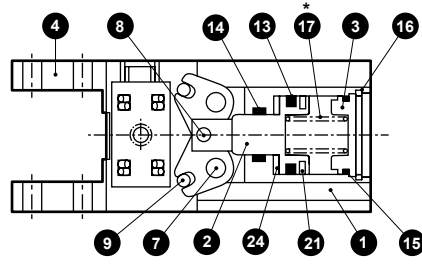
BHA - ... - P4* ● Design compatible with rechargeable battery manufacturing process.

* Contact CKD for details.

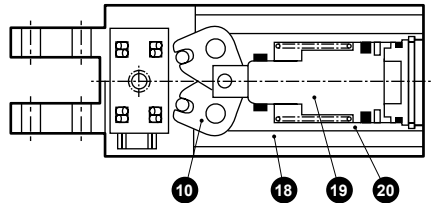
| |
|-------------|
| LCW |
| LCR |
| LCG |
| LCX |
| LCM |
| STM |
| STG |
| STS/STL |
| STR2 |
| UCA2 |
| ULK* |
| JSK/M2 |
| JSG |
| JSC3/JSC4 |
| USSD |
| UFCD |
| USC |
| JSB3 |
| LMB |
| LM |
| HCM |
| HCA |
| LBC |
| CAC4 |
| UCAC2 |
| CAC-N |
| UCAC-N |
| RCC2 |
| RCS |
| PCC |
| SHC |
| MCP |
| 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 |

Internal structure and parts list

Standard (double acting)/
O (normally open)



C (normally closed)



* Standard (double acting) does not contain a 17 spring.

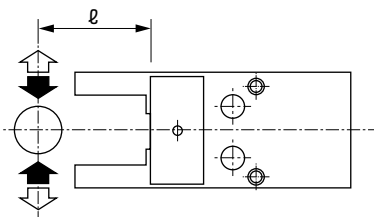
Cannot be disassembled

| No. | Part name | Material | Remarks | No. | Part name | Material | Remarks |
|-----|-------------------|-----------------|---------|-----|-----------------|-----------------|-------------|
| 1 | Body | Aluminum alloy | | 13 | Piston packing | Nitrile rubber | |
| 2 | Piston | Stainless steel | | 14 | Rod packing | Nitrile rubber | |
| 3 | Cylinder guard | Acetal resin | | 15 | Cylinder gasket | Nitrile rubber | |
| 4 | Master key | Steel | | 16 | Snap ring | | |
| 5 | Bearing guide A | Steel | | 17 | Spring | Stainless steel | O type only |
| 6 | Bearing guide B | Steel | | 18 | Body | Aluminum alloy | |
| 7 | Fulcrum axis | Steel | | 19 | Piston | Stainless steel | |
| 8 | Operation shaft A | Steel | | 20 | Spring | Stainless steel | |
| 9 | Operation shaft B | Steel | | 21 | Magnet | | |
| 10 | Arm | Steel | | 22 | Retainer A | Stainless steel | |
| 11 | Cross roller A | Alloy steel | | 23 | Retainer B | Stainless steel | |
| 12 | Cross roller B | Alloy steel | | 24 | Cushion | Urethane rubber | |

Gripping power performance data

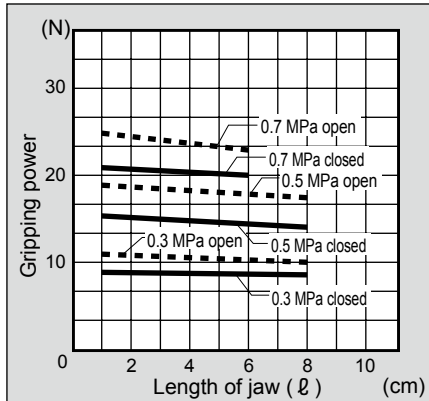
The gripping power in the opening/closing directions with jaw length L of hand with a supply pressure of 0.3, 0.5 and 0.7 MPa is shown.

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

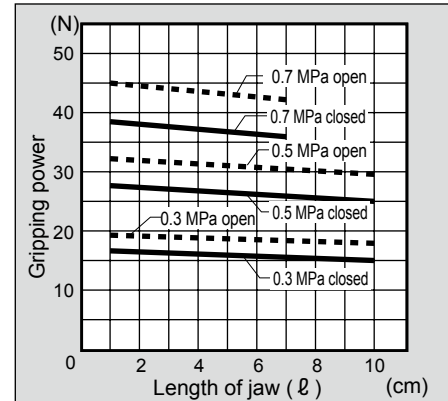


(Note) O type gripping power decreases approximately 20 to 30% in the closed direction compared to double acting. C type gripping power decreases approximately 10 to 20% in the open direction compared to the double acting. When making a selection, read the precautions for design and selection on page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

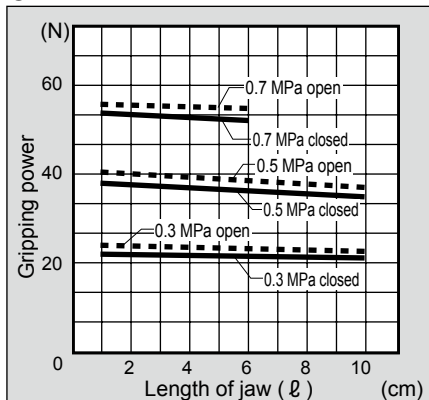
● BHA-01CS1



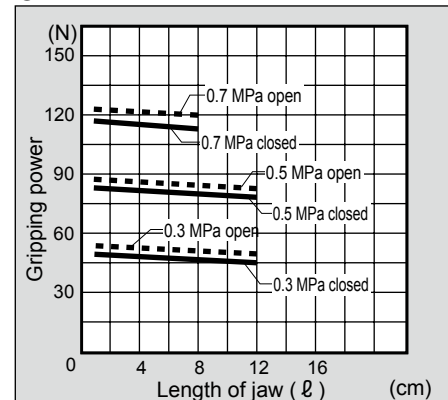
● BHA-03CS1



● BHA-04CS1



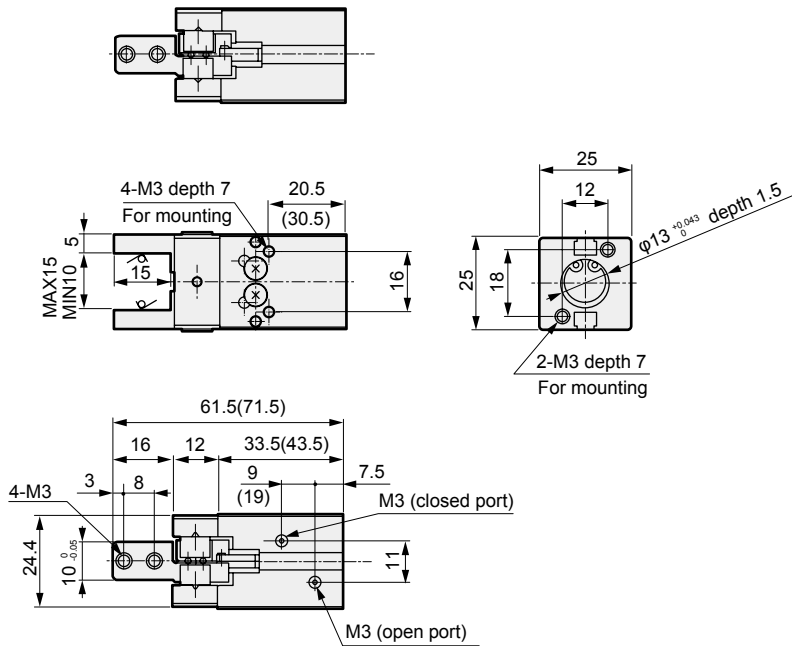
● BHA-05CS1



Dimensions

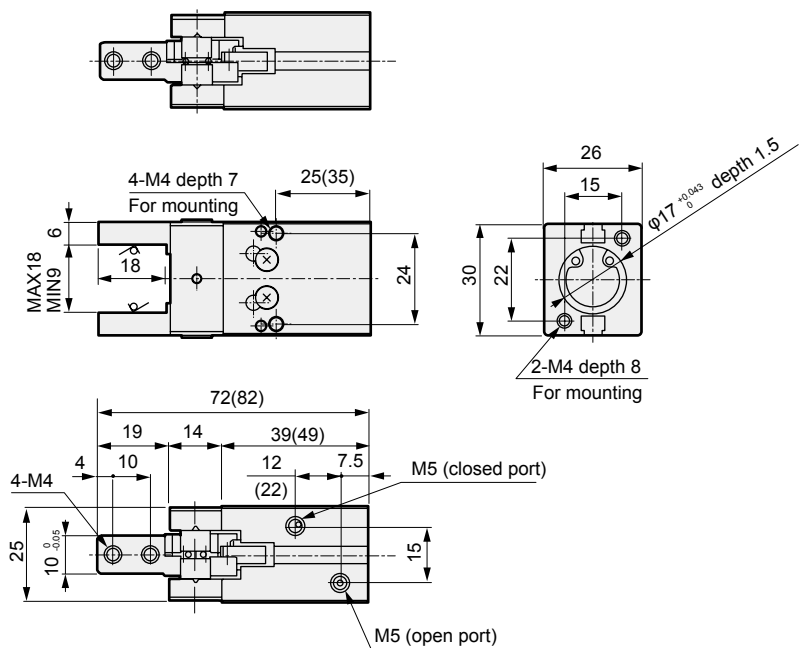
● BHA-01CS1 standard/O/C

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

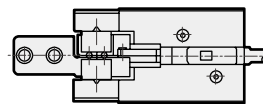
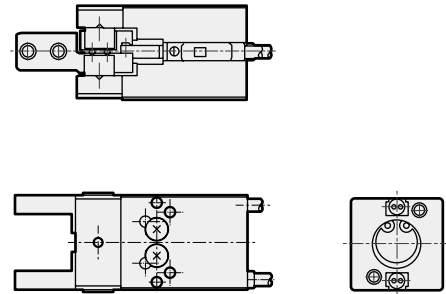


● BHA-03CS1 standard/O/C

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

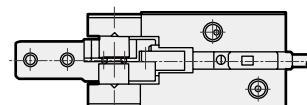
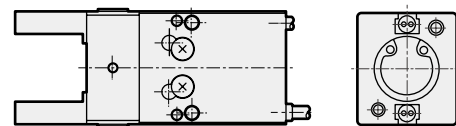
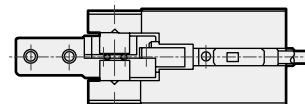


● With switch



Note: When using T□H or T□V, the switches of both project from the end face of body head side.

● With switch



Note: When using T□H or T□V, the switches of both project from the end face of body head side.

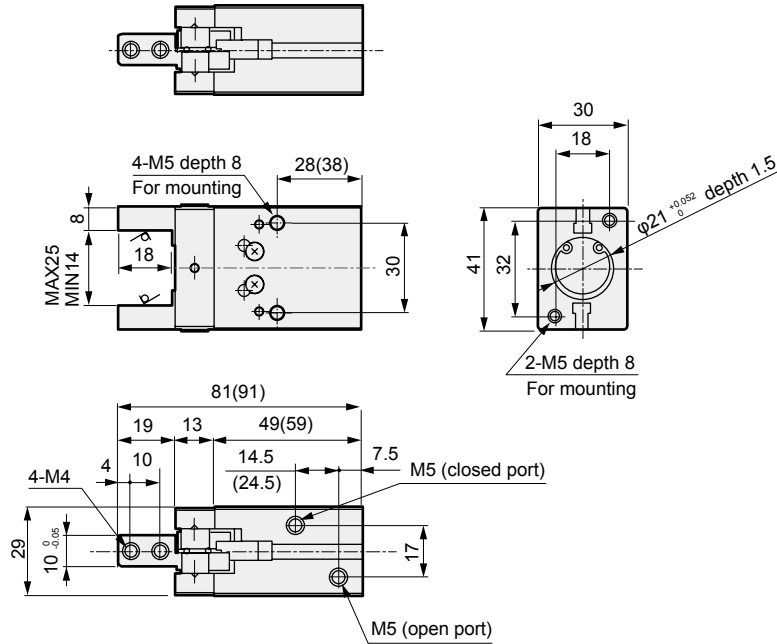
| |
|----------------|
| LCW |
| LCR |
| LCG |
| LCX |
| LCM |
| STM |
| STG |
| STS/STL |
| STR2 |
| UCA2 |
| ULK* |
| JSK/M2 |
| JSG |
| JSC3/JSC4 |
| USSD |
| UFCD |
| USC |
| JSB3 |
| LMB |
| LML |
| HCM |
| HCA |
| LBC |
| CAC4 |
| UCAC2 |
| CAC-N |
| UCAC-N |
| RCC2 |
| RCS |
| PCC |
| SHC |
| 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 |
| HLB |
| HDL |
| HMD |
| HJD |
| HJL |
| BHE |

Dimensions

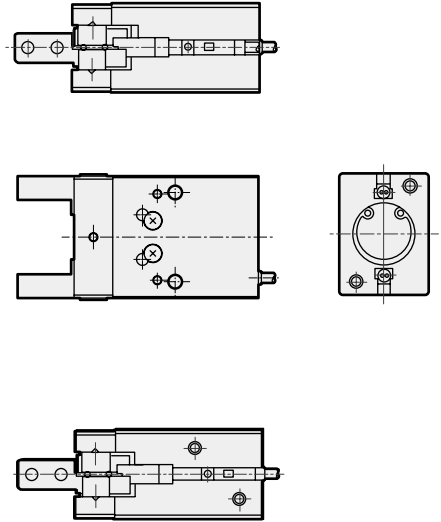


● BHA-04CS1 standard/O/C

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

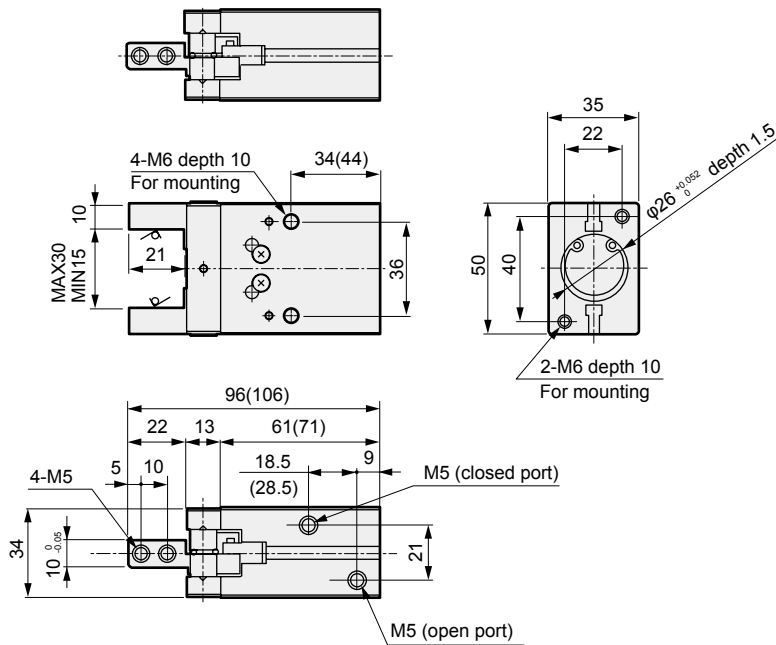


● With switch

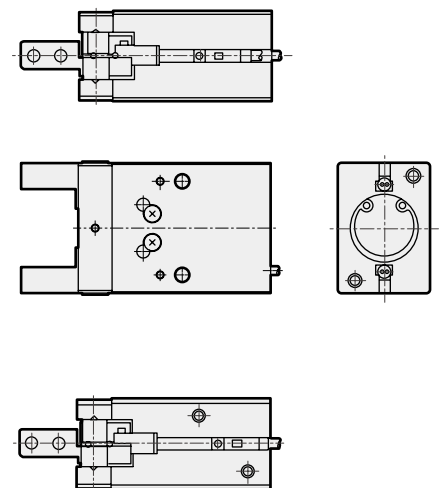


● BHA-05CS1 standard/O/C

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



● With switch



| |
|-------------|
| 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 |

MEMO

| |
|----------------|
| 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 |



Compact cross roller parallel hand with rubber cover
Double acting/single acting

BHG Series

● Operating stroke length: 5, 9, 11, 15 mm

Double acting

Single acting (normally open)

Single acting (normally closed)



Specifications

| Descriptions | | BHG | | | |
|-------------------------------------|-----------------|--|-------|-------|-------|
| Size | | 01CS | 03CS | 04CS | 05CS |
| Bore size | mm | φ12 | φ16 | φ20 | φ25 |
| Actuation | | Double acting/single acting | | | |
| Working fluid | | Compressed air | | | |
| Max. working pressure | MPa | 0.7 (≈100 psi, 7 bar) | | | |
| Min. working pressure | Double acting | 0.15 (≈22 psi, 1.5 bar) | | | |
| | Normally open | 0.3 (≈44 psi, 3 bar) | | | |
| | Normally closed | | | | |
| Ambient temperature | °C | 5 (41°F) to 60 (140°F) | | | |
| Port size | | M3 | M5 | | |
| Operating stroke length | mm | 5 | 9 | 11 | 15 |
| Rod diameter | mm | φ6 | φ8 | φ10 | φ12 |
| Volumetric capacity (reciprocating) | cm ³ | 0.32 | 1.58 | 2.89 | 6.32 |
| Repeatability | mm | ±0.01 | | | |
| Weight | kg | 0.118 | 0.165 | 0.238 | 0.455 |
| Lubrication | | Not required (use turbine oil class 1 ISO VG32 if necessary for lubrication) | | | |

Switch specifications and variations

| Descriptions | Proximity 2-wire | Proximity 3-wire |
|----------------------|---------------------------------------|------------------------------------|
| | T2H/V | T3H/V |
| Applications | Dedicated for programmable controller | For programmable controller, relay |
| Output method | — | Output method |
| 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 | |

*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.

* The BHG-LN Series with length measuring function (length measuring sensor) is also available. Refer to page 1431 for details.

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
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HLC
HGP
FH500
HBL
HDL
HMD
HJD
HJL
BHE

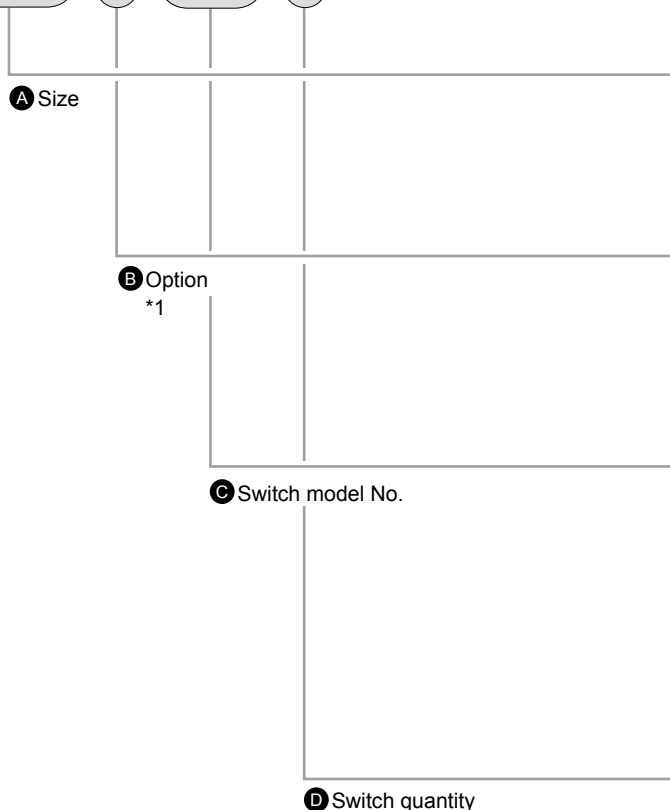
How to order

Without switch (built-in magnet for switch)

BHG - 01CS - O

With switch (built-in magnet for switch)

BHG - 01CS - O - T2H - R



| Code | Content | | | | |
|----------------------------------|------------------------------------|-----------|---------|---------|-----------------|
| A Size | | | | | |
| 01CS | | | | | |
| 03CS | | | | | |
| 04CS | | | | | |
| 05CS | | | | | |
| B Option | | | | | |
| Blank | Standard (double acting) | | | | |
| O | Single acting (normally open) | | | | |
| C | Single acting (normally closed) | | | | |
| Y1 | With small jaw (Material S50C) | | | | |
| Y2 | With small jaw (Material MC nylon) | | | | |
| C Switch model No. | | | | | |
| Axial lead wire | Radial lead wire | Contact | Voltage | Display | Lead wire |
| | | | AC | DC | |
| T2H* | T2V* | Proximity | | ● | 1-color display |
| T3H* | T3V* | | | ● | 3-wire |
| * Lead wire length 3-wire | | | | | |
| 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 | | | | |

⚠ Precautions for model No. selection

*1: Refer to pages 1634 to 1635 for the dimensions and compatible model of the small jaw. When ordered as an option, two are attached at shipment.

[Example of model No.]

BHG-01CS-O-T3H-R

Model: Compact cross roller parallel hand with rubber cover

- A** Size : 01CS
- B** Option : Single acting, normally open
- C** Switch model No.: Proximity T3H switch, lead wire 1 m
- D** Switch quantity : 1 on open side

How to order switch

SW - T2H

↓
Switch model No.
(Item C above)

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

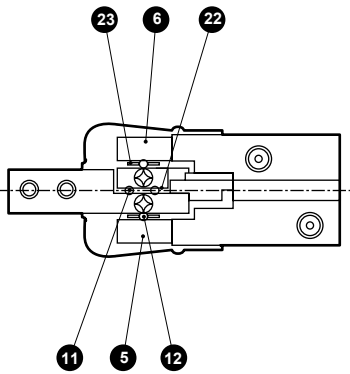
BHG - ... - P4* ● Design compatible with rechargeable battery manufacturing process.

* Contact CKD for details.

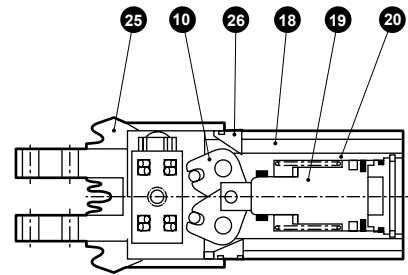
| |
|-------------|
| LCW |
| LCR |
| LCG |
| LCX |
| LCM |
| STM |
| STG |
| STS/STL |
| STR2 |
| UCA2 |
| ULK* |
| JSK/M2 |
| JSG |
| JSC3/JSC4 |
| USSD |
| UFCD |
| USC |
| JSB3 |
| LMB |
| LML |
| HCM |
| HCA |
| LBC |
| CAC4 |
| UCAC2 |
| CAC-N |
| UCAC-N |
| RCC2 |
| RCS |
| PCC |
| SHC |
| MCP |
| 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 |

Internal structure and parts list

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



● C (normally closed)



* Standard (double acting) does not contain a 17 spring.

Cannot be disassembled

| No. | Part name | Material | Remarks | No. | Part name | Material | Remarks |
|-----|-------------------|-----------------|---------|-----|-----------------|-----------------|-------------|
| 1 | Body | Aluminum alloy | | 14 | Rod packing | Nitrile rubber | |
| 2 | Piston | Stainless steel | | 15 | Cylinder gasket | Nitrile rubber | |
| 3 | Cylinder guard | Acetal resin | | 16 | Snap ring | Stainless steel | |
| 4 | Master key | Steel | | 17 | Spring | Stainless steel | O type only |
| 5 | Bearing guide A | Steel | | 18 | Body | Aluminum alloy | |
| 6 | Bearing guide B | Steel | | 19 | Piston | Stainless steel | |
| 7 | Fulcrum axis | Steel | | 20 | Spring | Stainless steel | |
| 8 | Operation shaft A | Steel | | 21 | Magnet | | |
| 9 | Operation shaft B | Steel | | 22 | Retainer A | Stainless steel | |
| 10 | Arm | Steel | | 23 | Retainer B | Stainless steel | |
| 11 | Cross roller A | Alloy steel | | 24 | Cushion | Urethane rubber | |
| 12 | Cross roller B | Alloy steel | | 25 | Rubber cover | Nitrile rubber | |
| 13 | Piston packing | Nitrile rubber | | 26 | Bracket | Aluminum alloy | |

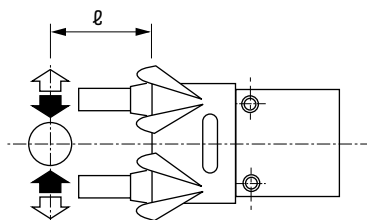
Rubber cover part model No.

| Size | Part model No. | Part No. |
|------|----------------|----------|
| 01CS | BHG-01K | 25 |
| 03CS | BHG-03K | |
| 04CS | BHG-04K | |
| 05CS | BHG-05K | |

Gripping power performance data

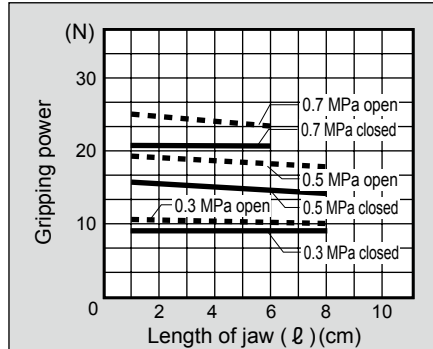
The gripping power in the opening/closing directions with jaw length L of hand with a supply pressure of 0.3, 0.5 and 0.7 MPa is shown.

- Open direction (◁) ----- (shown with broken line)
- Closed direction (▶) ——— (shown with continuous line)

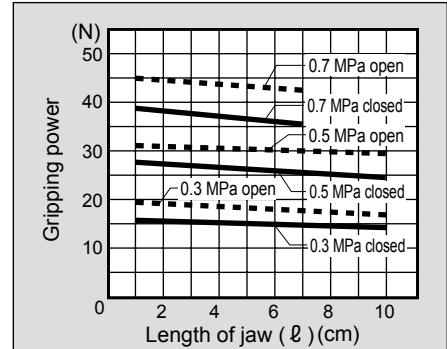


(Note) O type gripping power decreases approximately 20 to 30% in the closed direction compared to double acting. C type gripping power decreases approximately 10 to 20% in the open direction compared to the double acting. When making a selection, read the precautions for design and selection on page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

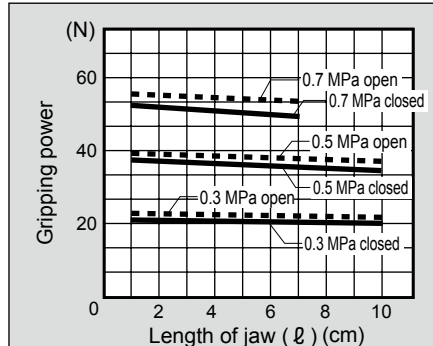
● BHG-01CS



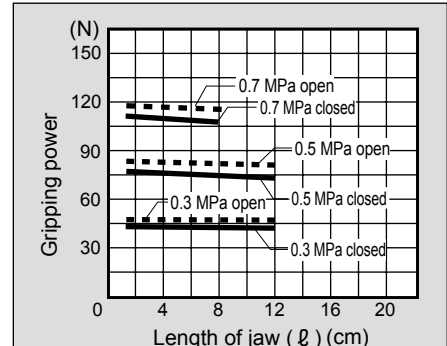
● BHG-03CS



● BHG-04CS



● BHG-05CS

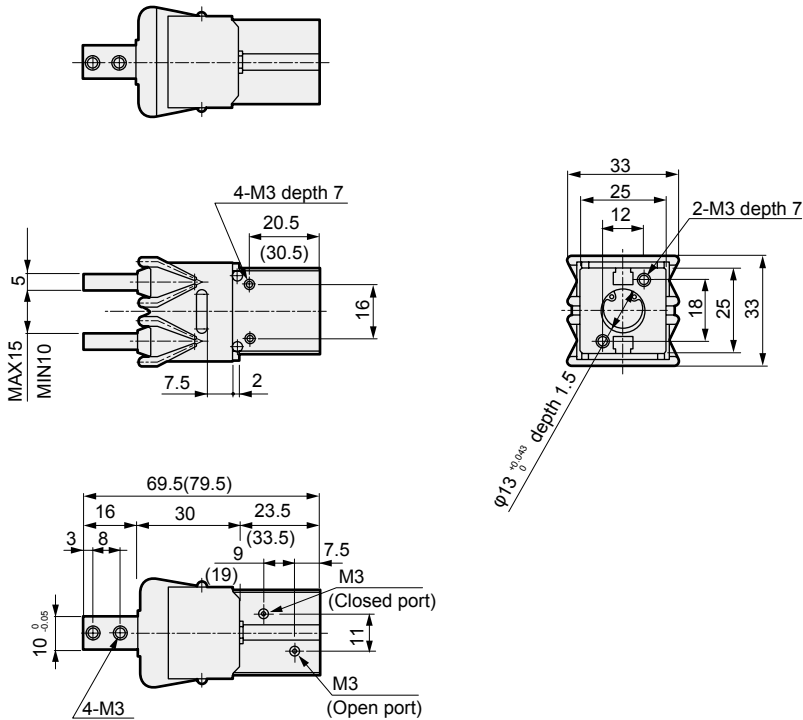


Dimensions

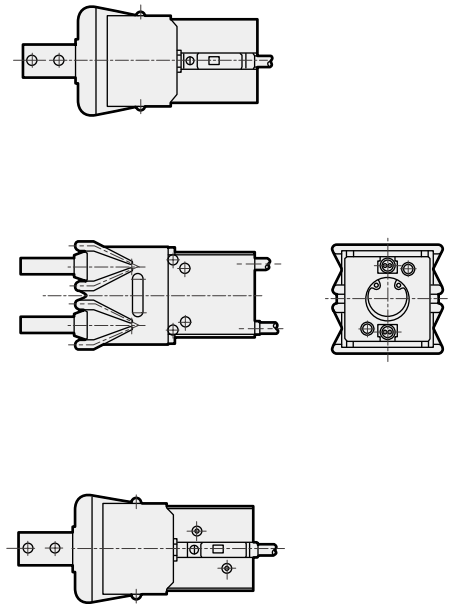


● BHG-01CS standard/O/C

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



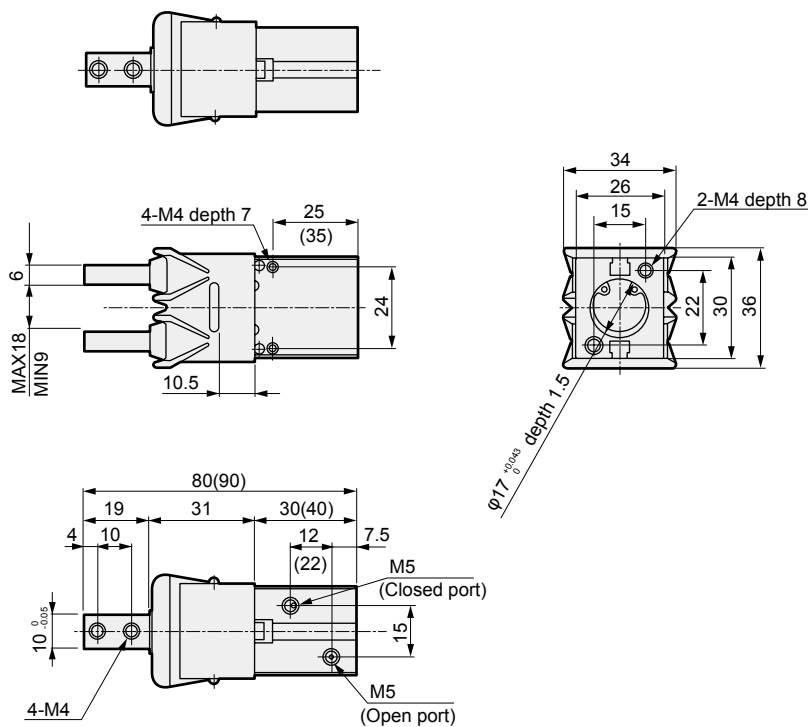
● With switch



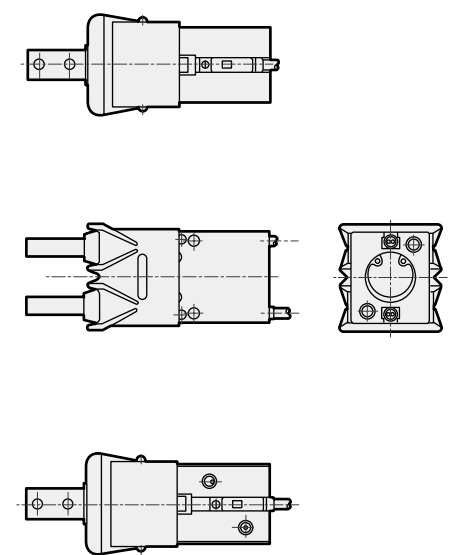
Note: When using T□H or T□V, the switches of both project from the end face of body head side.

● BHG-03CS standard/O/C

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



● With switch



Note: When using T□H or T□V, the switches of both project from the end face of body head side.

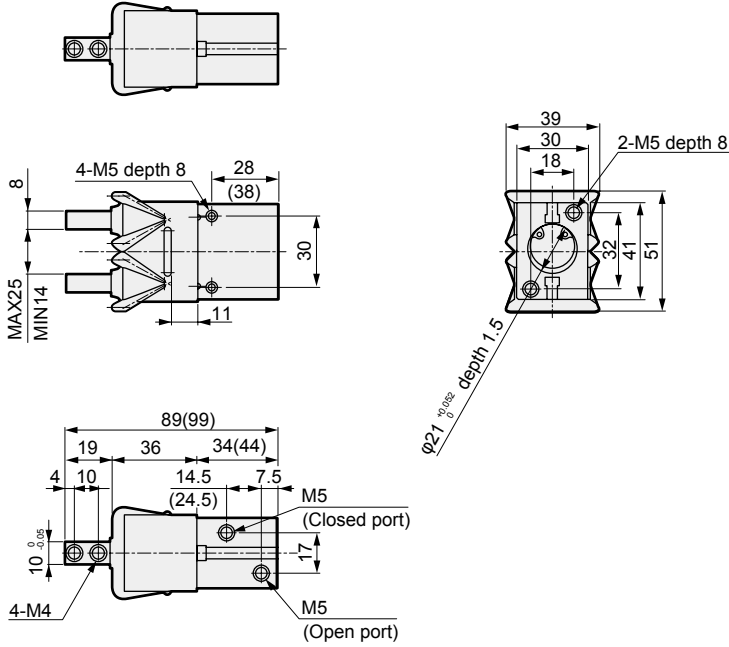
| |
|----------------|
| LCW |
| LCR |
| LCG |
| LCX |
| LCM |
| STM |
| STG |
| STS/STL |
| STR2 |
| UCA2 |
| ULK* |
| JSK/M2 |
| JSG |
| JSC3/JSC4 |
| USSD |
| UFCD |
| USC |
| JSB3 |
| LMB |
| LML |
| HCM |
| HCA |
| LBC |
| CAC4 |
| UCAC2 |
| CAC-N |
| UCAC-N |
| RCC2 |
| RCS |
| PCC |
| SHC |
| 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 |

Dimensions

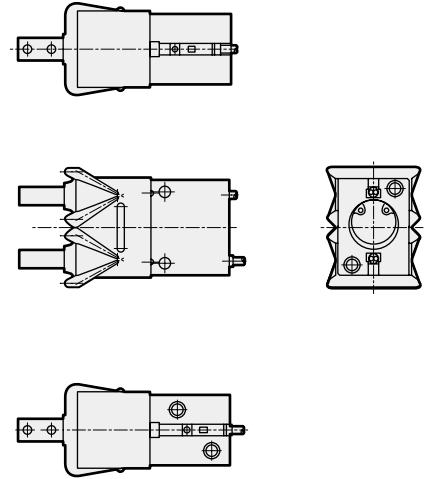


● BHG-04CS standard/O/C

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

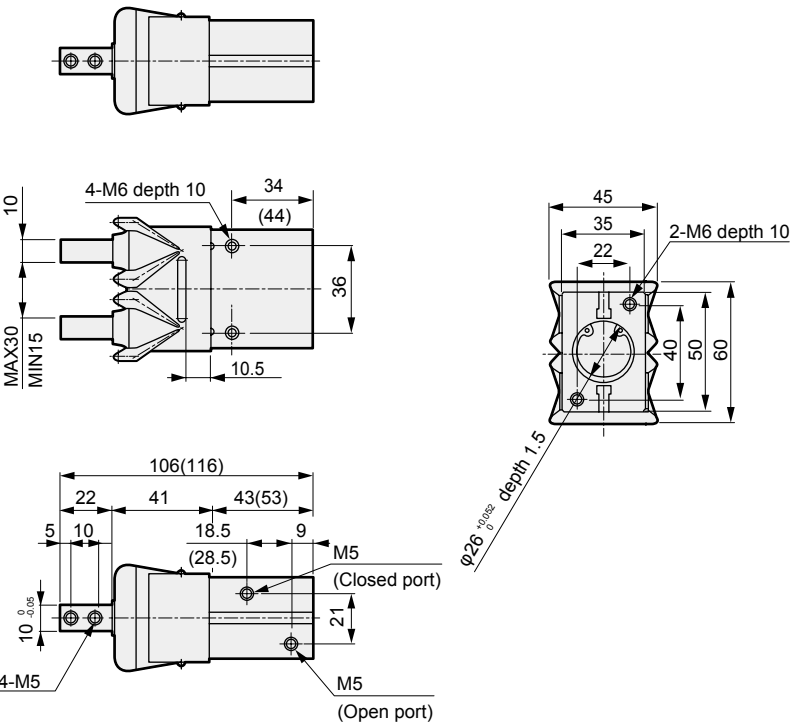


● With switch

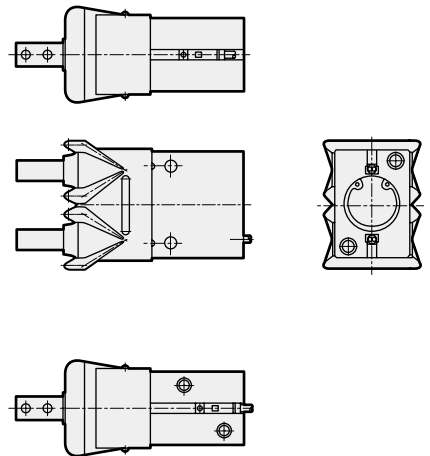


● BHG-05CS standard/O/C

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



● With switch



| |
|----------------|
| 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 |