

AIR HANDS SERIES

Full Line-up



Page 1399

Parallel Type Linear Guide Specification NHC1 Series

- **40% lighter:** Now about 40% lighter than the previous NHB series linear guide specification.
- **45% more compact:** Reduced the width, length, and height.
- **Strong:** Use of high-rigidity linear guide achieves repeatability of $\pm 0.01\text{mm}$ [$\pm 0.0004\text{in.}$] or less. Centering accuracy is also $\pm 0.07\text{mm}$ [$\pm 0.0028\text{in.}$] or less.



Page 1403

Parallel Type Linear Guide Specification

- Lever portion uses a linear guide for long operating life, high precision, long lever travel gripping, and overhang gripping.
- Gripping position repeatability $\pm 0.01\text{mm}$ [$\pm 0.0004\text{in.}$]. Centering accuracy is also $\pm 0.07\text{mm}$ [$\pm 0.0028\text{in.}$].
- Magnet for sensor switch is standard equipment.



Page 1407

Parallel Type Linear Guide Specification Long Stroke

- Open/closed stroke is about double the previous model.
- Gripping position repeatability is $\pm 0.01\text{mm}$ [$\pm 0.0004\text{in.}$].



Page 1411

Parallel Type Linear Guide Specification with Fingers

- Fingers attachment is simple to install.
- Gripping position repeatability is $\pm 0.01\text{mm}$ [$\pm 0.0004\text{in.}$].



Page 1415

Parallel Type Linear Guide Specification with Rubber Cover

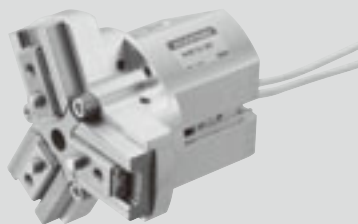
- Dust protection cover is standard equipment.
- Lever portion uses a linear guide for long operating life, high precision, long lever travel gripping, and overhang gripping.
- Gripping position repeatability $\pm 0.01\text{mm}$ [$\pm 0.0004\text{in.}$].
- Magnet for sensor switch is standard equipment.



Page 1419

Parallel Type Linear Guide Specification for Clean Systems

- Clean rating corresponds to Class 4 (during suction).
- Gripping position repeatability is $\pm 0.01\text{mm}$ [$\pm 0.0004\text{in.}$].



Page 1423

Three-finger Type Linear Guide Specification

- Linear guides are used on three-finger hand! Superior load and moment resistance.
Centering accuracy is $\pm 0.05\text{mm}$ [$\pm 0.0020\text{in.}$] or less.
Gripping position repeatability is $\pm 0.01\text{mm}$ [$\pm 0.0004\text{in.}$] or less.
- Body is equipped with a hollow space. Convenient for installing a cylinder for workpiece release, etc.



Page 1426

Parallel Type Cross Roller Bearing Specification

- Lever portion uses cross roller bearings for long operating life and high precision.
- Gripping position repeatability $\pm 0.01\text{mm}$ [$\pm 0.0004\text{in.}$].
- Dust protection cover is optional.
- Magnet for sensor switch is standard equipment.



Page 1430

Parallel Type Plain Bearing Specification

- Lever portion uses a slide plate for long operating life.
- Magnet for sensor switch is standard equipment.
- 3-way direct mounting.



Swing Type

- Lever uses chrome molybdenum steel, with quench hardened major parts, to achieve long operating life.
- Magnet for sensor switch is standard equipment.
- 3-way direct mounting.



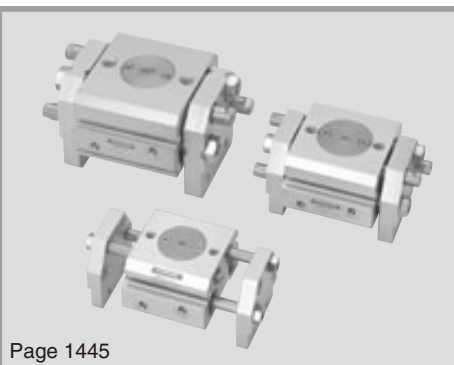
Swing Type High Precision, 180° Open Specification

- Uses a thrust bearing in the lever support area to achieve high precision, high rigidity, and long operating life.
- Uses a link mechanism for compact, high gripping force. Open-close up to 180°.



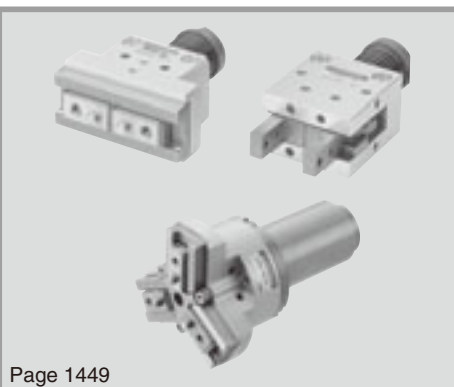
Swing Type 180° Open Specification

- Lever uses chrome molybdenum steel, with quench hardened major parts, to achieve long operating life.
- Open/close angle 180°, to allow gripping and releasing of workpieces without retracting a hand body.
- Magnet for sensor switch is standard equipment.
- 3-way direct mounting.



Rack Operation Parallel Type

- Four types of lever with open/close travel strokes, at 24, 32, 40, and 50mm [0.945, 1.260, 1.575, 1.969in.].
- Magnet for sensor switch is standard equipment.



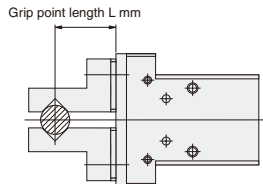
Mechanical Hands

- Because these do not require air piping, these are optimum for locations where air piping cannot reach (such as on index table, etc.).
- Three types available, including parallel type, parallel type linear guide specification, and linear guide specification three-finger type.
- Spring force can be set to strong or weak in response to the workpiece.
- The linear guide specification uses a linear guide on the lever, to achieve high precision ($\pm 0.01\text{mm}$ [$\pm 0.0004\text{in.}$]) and long operating life.



Selection

Effective gripping force

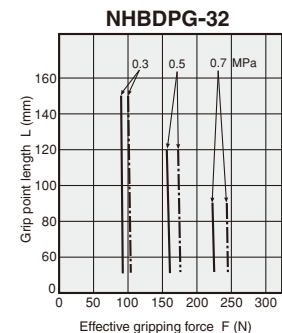
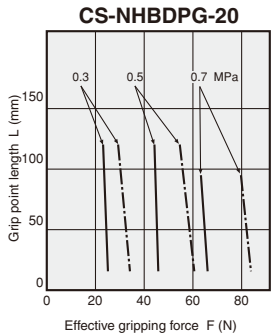
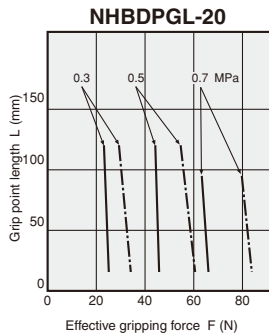
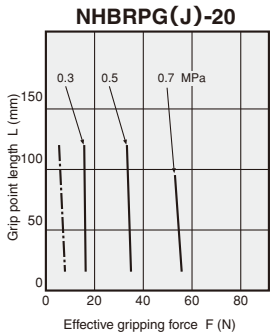
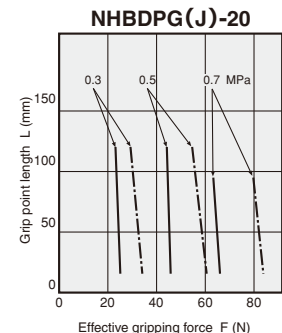
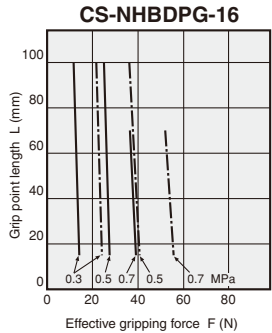
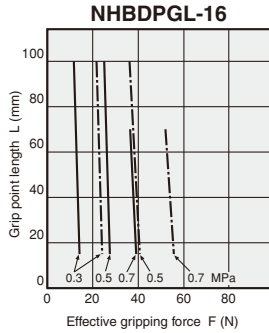
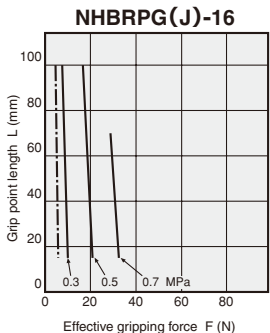
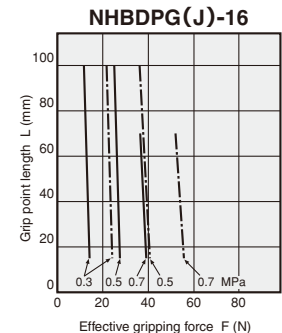
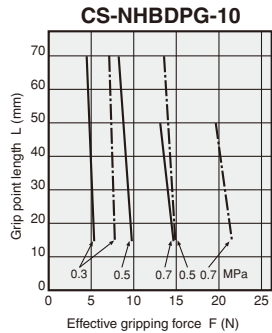
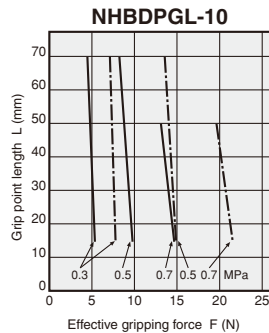
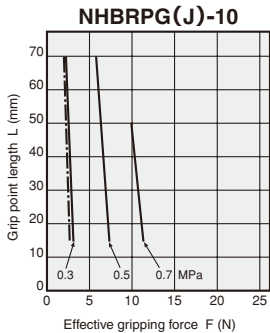
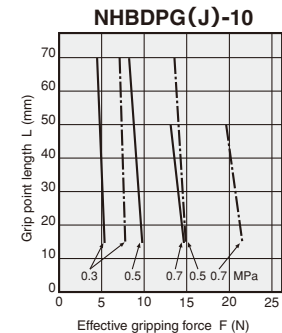
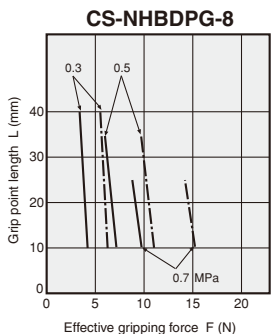
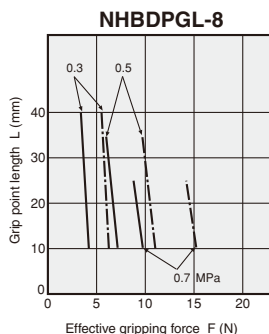
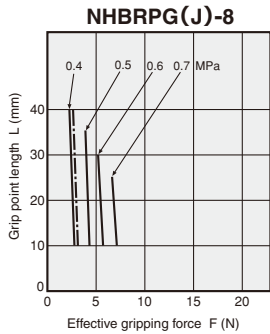
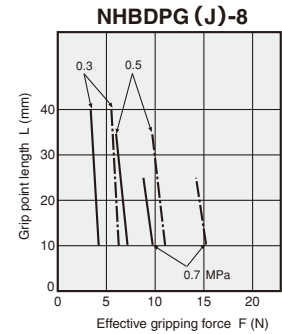


--- : Open side
— : Closed side

● Parallel type Linear guide specification (with rubber cover)

● Linear guide specification Long stroke

● Linear guide specification for clean systems



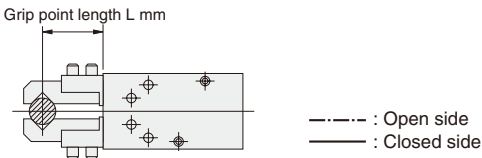
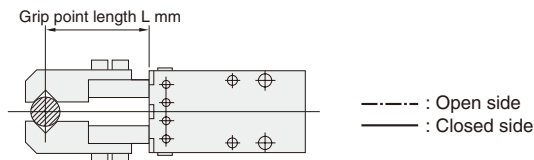
1mm = 0.0394in.
1N = 0.2248lbf.
1MPa = 145psi.

1mm = 0.0394in.
1N = 0.2248lbf.
1MPa = 145psi.

1mm = 0.0394in.
1N = 0.2248lbf.
1MPa = 145psi.

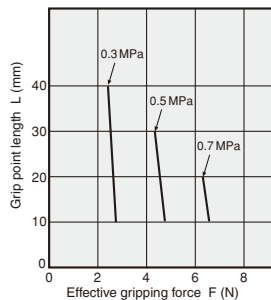
Handling Instructions and Precautions

Effective gripping force

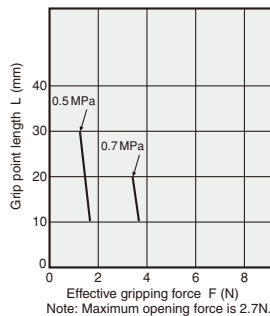


● Parallel type Cross roller bearing specification

NHBDPA-6

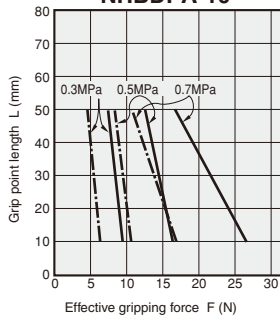


NHBRPA-6

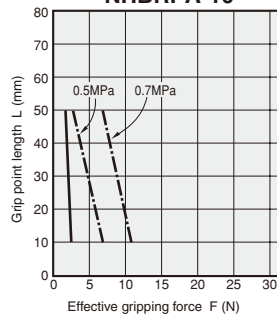


Note: Opening force is equal to or greater than closing force.

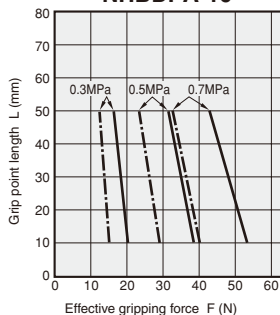
NHBDPA-10



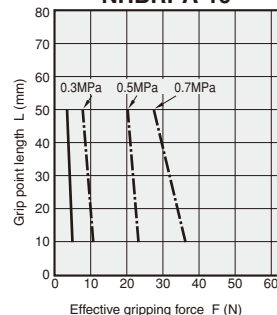
NHBRPA-10



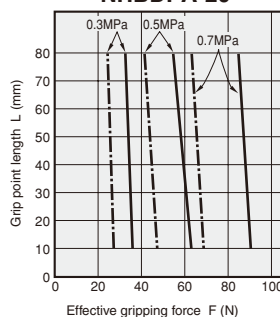
NHBDPA-16



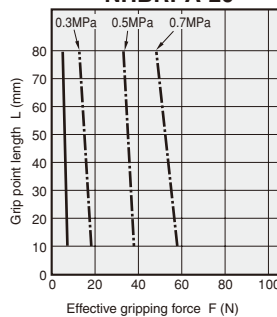
NHBRPA-16



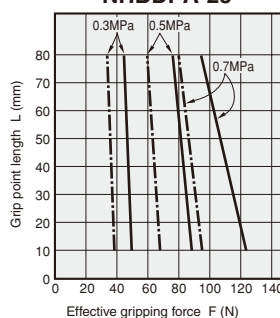
NHBDPA-20



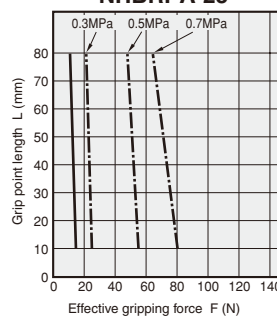
NHBRPA-20



NHBDPA-25

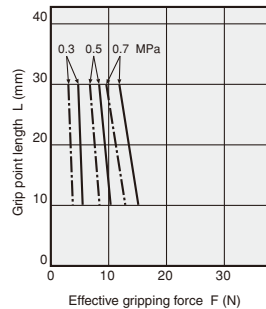


NHBRPA-25

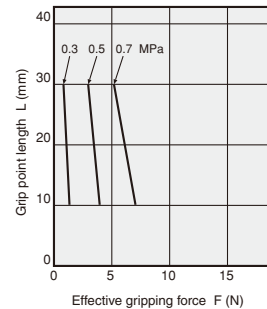


● Parallel type Plain bearing specification

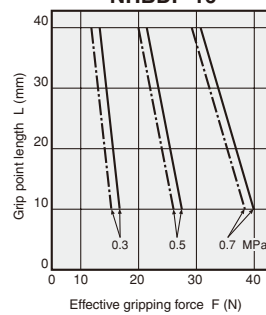
NHBDP-10



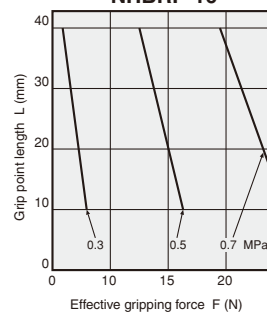
NHBRP-10



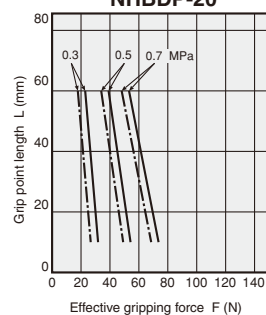
NHBDP-16



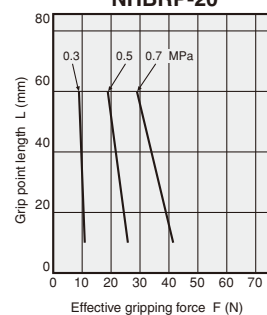
NHBRP-16



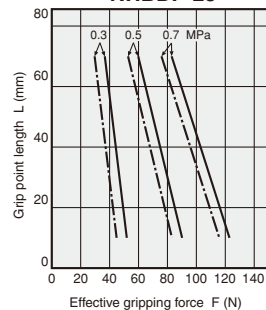
NHBDP-20



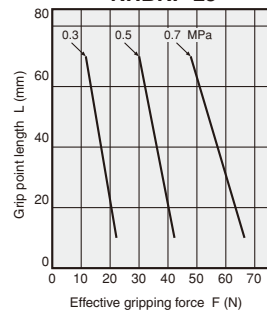
NHBRP-20



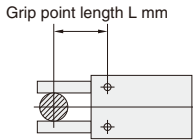
NHBDP-25



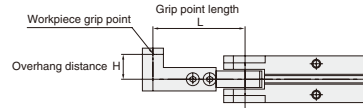
NHBRP-25



1mm = 0.0394in.
1N = 0.2248lbf.
1MPa = 145psi.

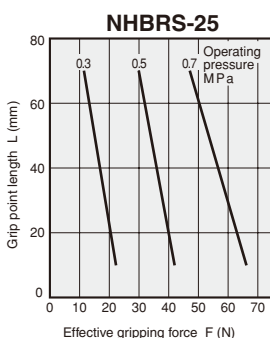
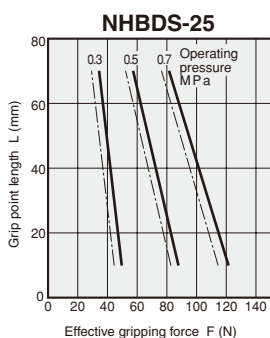
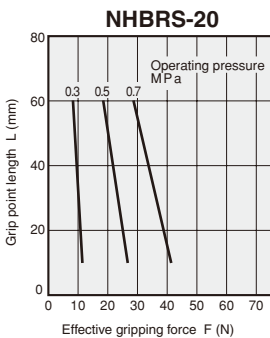
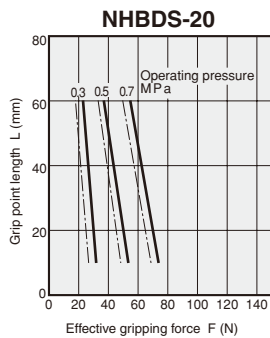
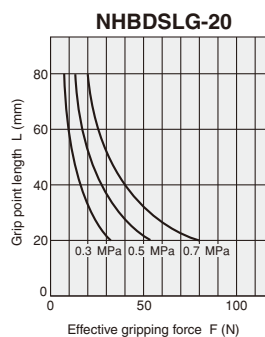
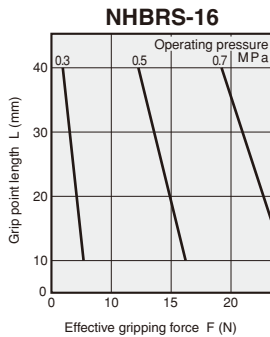
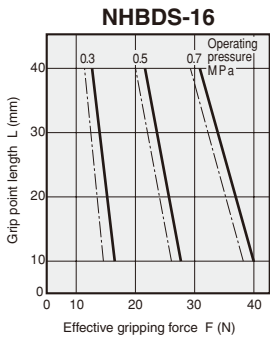
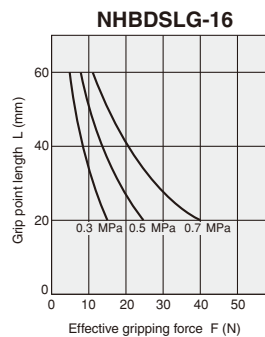
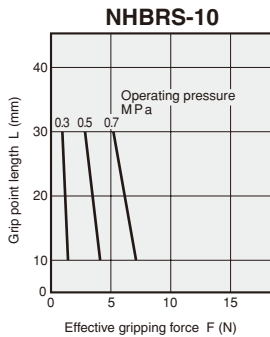
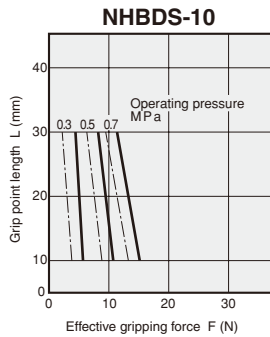
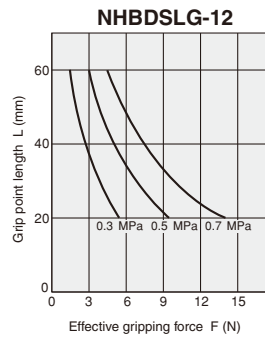
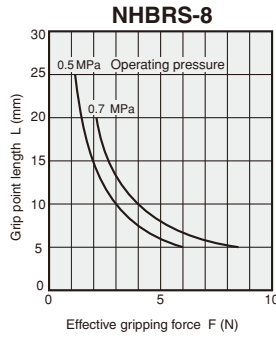
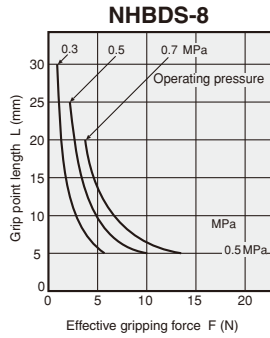


--- : Open side
— : Closed side



● Swing type

● Swing type High precision, 180° open specification

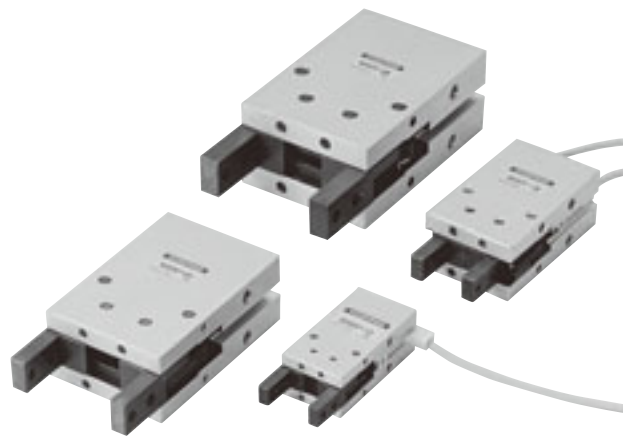


Note: Graphs show the force of closing direction.

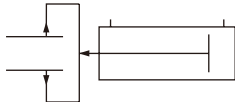
1mm = 0.0394in.
1N = 0.2248lbf.
1MPa = 145psi.

NHB SERIES PARALLEL TYPE

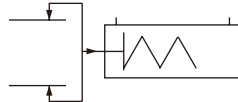
Plain Bearing Specification
Double Acting Type,
Single Acting Normally Open Type



Symbols



Double Acting Type



Single Acting
Normally Open Type

Specifications

● Double acting parallel type

| Basic model | | NHBDP-10 | NHBDP-16 | NHBDP-20 | NHBDP-25 |
|--|------------------|--|-------------------------|-------------------------|---------------------------|
| Item | | | | | |
| Cylinder bore size | mm [in.] | 10 [0.394] | 16 [0.630] | 20 [0.787] | 25 [0.984] |
| Operation type | | Double acting type | | | |
| Media | | Air | | | |
| Operating pressure range | MPa [psi.] | 0.15～0.7 [22～102] | 0.1～0.7 [15～102] | | |
| Proof pressure | MPa [psi.] | 1.05 [152] | | | |
| Operating temperature range | ℃ [°F] | 0～60 [32～140] | | | |
| Maximum operating frequency | cycle/min | 180 | | | |
| Lubrication | Cylinder portion | Not required | | | |
| | Lever portion | Required (Apply grease to the sliding portion) | | | |
| Maximum grip point length | mm [in.] | 30 [1.18] | 40 [1.57] | 60 [2.36] | 70 [2.76] |
| Gripping force ^{Note 1} N [lbf.] | Closed side | 7.8 [1.75] | 23.5 [5.28] | 46.1 [10.36] | 76.5 [17.20] |
| | Open side | 4.9 [1.10] | 17.7 [3.98] | 34.3 [7.71] | 58.8 [13.22] |
| Lever open/closed stroke | mm [in.] | 4 [0.157] | 8 [0.315] | 12 [0.472] | 14 [0.551] |
| Port size | | M3×0.5 | M5×0.8 | | |
| Mass ^{Note 2} | g [oz.] | 47 [1.66] (58 [2.05]) | 120 [4.23] (139 [4.90]) | 230 [8.11] (256 [9.03]) | 388 [13.69] (439 [15.49]) |

Notes: 1. Values are obtained when grip point length is 30mm [1.18in.] under operating pressure 0.5 MPa [73psi.]. For details of the effective gripping force, see the graphs on p.1387.

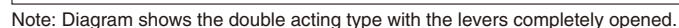
2. () mean the mass with the mounting bracket: -M.

● Single acting normally open parallel type

| Basic model | | NHBRP-10 | NHBRP-16 | NHBRP-20 | NHBRP-25 |
|--|------------------|--|-------------------------|-------------------------|---------------------------|
| Item | | | | | |
| Cylinder bore size | mm [in.] | 10 [0.394] | 16 [0.630] | 20 [0.787] | 25 [0.984] |
| Operation type | | Single acting normally open type | | | |
| Media | | Air | | | |
| Operating pressure range | MPa [psi.] | 0.35～0.7 [51～102] | 0.25～0.7 [36～102] | | |
| Proof pressure | MPa [psi.] | 1.05 [152] | | | |
| Operating temperature range | ℃ [°F] | 0～60 [32～140] | | | |
| Maximum operating frequency | cycle/min | 180 | | | |
| Lubrication | Cylinder portion | Not required | | | |
| | Lever portion | Required (Apply grease to the sliding portion) | | | |
| Maximum grip point length | mm [in.] | 30 [1.18] | 40 [1.57] | 60 [2.36] | 70 [2.76] |
| Gripping force ^{Note 1} N [lbf.] | Closed side | 2.9 [0.65] | 12.7 [2.85] | 22.6 [5.08] | 37.3 [8.39] |
| | Open side | 2.0 [0.45] | 3.9 [0.88] | 6.9 [1.55] | 13.7 [3.08] |
| Lever open/closed stroke | mm [in.] | 4 [0.157] | 8 [0.315] | 12 [0.472] | 14 [0.551] |
| Port size | | M3×0.5 | M5×0.8 | | |
| Mass ^{Note 2} | g [oz.] | 48 [1.69] (59 [2.08]) | 121 [4.27] (140 [4.94]) | 232 [8.18] (258 [9.10]) | 392 [13.83] (443 [15.63]) |

Notes: 1. Values are obtained when grip point length is 30mm [1.18in.] under operating pressure 0.5 MPa [73psi.]. For details of the effective gripping force, see the graphs on p.1387.

2. () mean the mass with the mounting bracket: -M.



| No. | Parts | Materials | Remarks |
|-----|-------------------------|------------------------|-------------------------|
| ① | Body | Aluminum alloy | |
| ② | Head cover | Aluminum alloy | |
| ③ | Piston rod | Stainless steel | |
| ④ | Piston | Aluminum alloy | |
| ⑤ | Magnet holder | Aluminum alloy | |
| ⑥ | Slide lever | Carbon steel | |
| ⑦ | Action lever | Carbon steel | |
| ⑧ | Rod pin | Carbon steel | |
| ⑨ | Slide pin | Carbon steel | |
| ⑩ | Slide guide pin | Carbon steel | |
| ⑪ | Ring | Carbon steel | |
| ⑫ | Fulcrum pin | Carbon steel | |
| ⑬ | Slide plate | Carbon steel | |
| ⑭ | Spring | Spring steel | Single acting type only |
| ⑮ | Magnet | Magnet material | |
| ⑯ | Hexagon socket setscrew | Mild steel | |
| ⑰ | C-shaped snap ring | Steel | |
| ⑱ | Piston seal | Synthetic rubber (NBR) | |
| ⑲ | Rod seal | Synthetic rubber (NBR) | |
| ⑳ | O-ring | Synthetic rubber (NBR) | |

■ Mounting bracket

No mounting bracket
Blank

With mounting bracket
-M

★ Included at shipping

■ Sensor switch

No sensor switch
Blank

With ZE135

With ZE155

With ZE235

With ZE255

● Solid state type
● With indicator lamp
● DC10~28V
● 2-lead wire
● Horizontal lead wire

● Solid state type
● With indicator lamp
● DC4.5~28V
● 3-lead wire
● Horizontal lead wire

● Solid state type
● With indicator lamp
● DC10~28V
● 2-lead wire
● Vertical lead wire

● Solid state type
● With indicator lamp
● DC4.5~28V
● 3-lead wire
● Vertical lead wire

■ Lead wire length

A : 1000mm [39in.]
B : 3000mm [118in.]

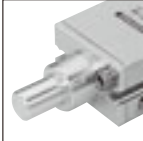
■ Number of sensor switches
(for air hands with sensor switches)

● 1 : With 1 sensor switch
● 2 : With 2 sensor switches

★ Included at shipping

Additional Parts
(To be ordered separately)

Mounting bracket

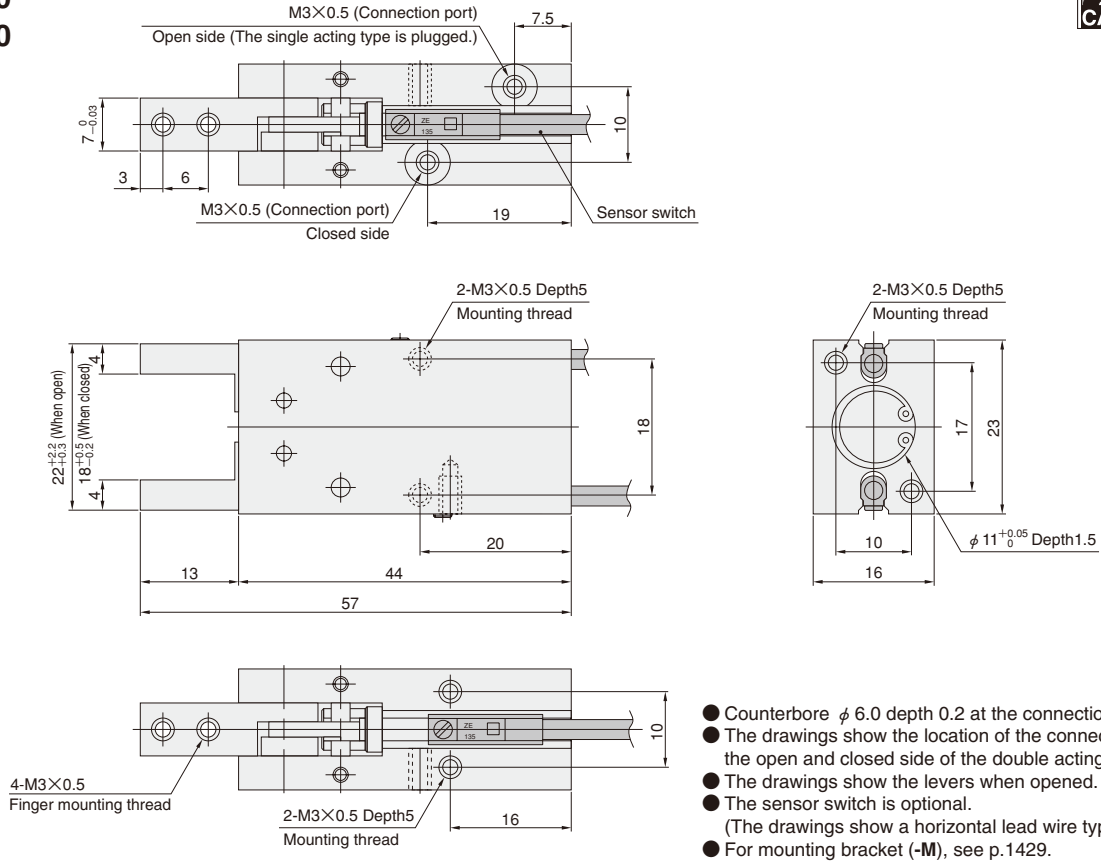


● For ϕ 10 [0.394in.]
— NHB-M10
● For ϕ 16 [0.630in.]
— NHB-M16
● For ϕ 20 [0.787in.]
— NHB-M20
● For ϕ 25 [0.984in.]
— NHB-M25

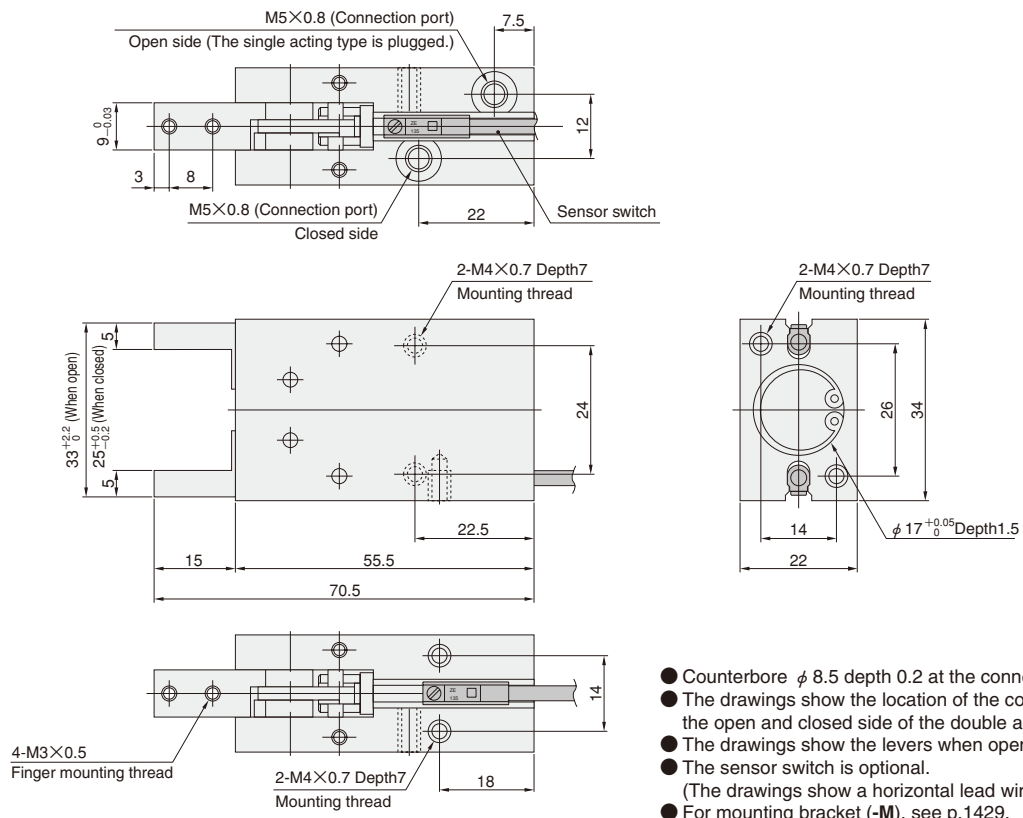
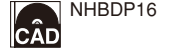
| | Basic model | Cylinder bore size | | | | |
|----------------------------------|-------------|--------------------------|----|--------------------------------------|--------|--------|
| Double acting type | NHBDP | -10 -16 -20 -25 | -M | -ZE135 -ZE155 -ZE235 -ZE255 | A B | 1 2 |
| Single acting normally open type | NHBRP | -10 -16 -20 -25 | -M | -ZE135 -ZE155 -ZE235 -ZE255 | A B | 1 2 |

Dimensions of Parallel Type Plain Bearing Specification (mm)

NHBDP-10
NHBRP-10

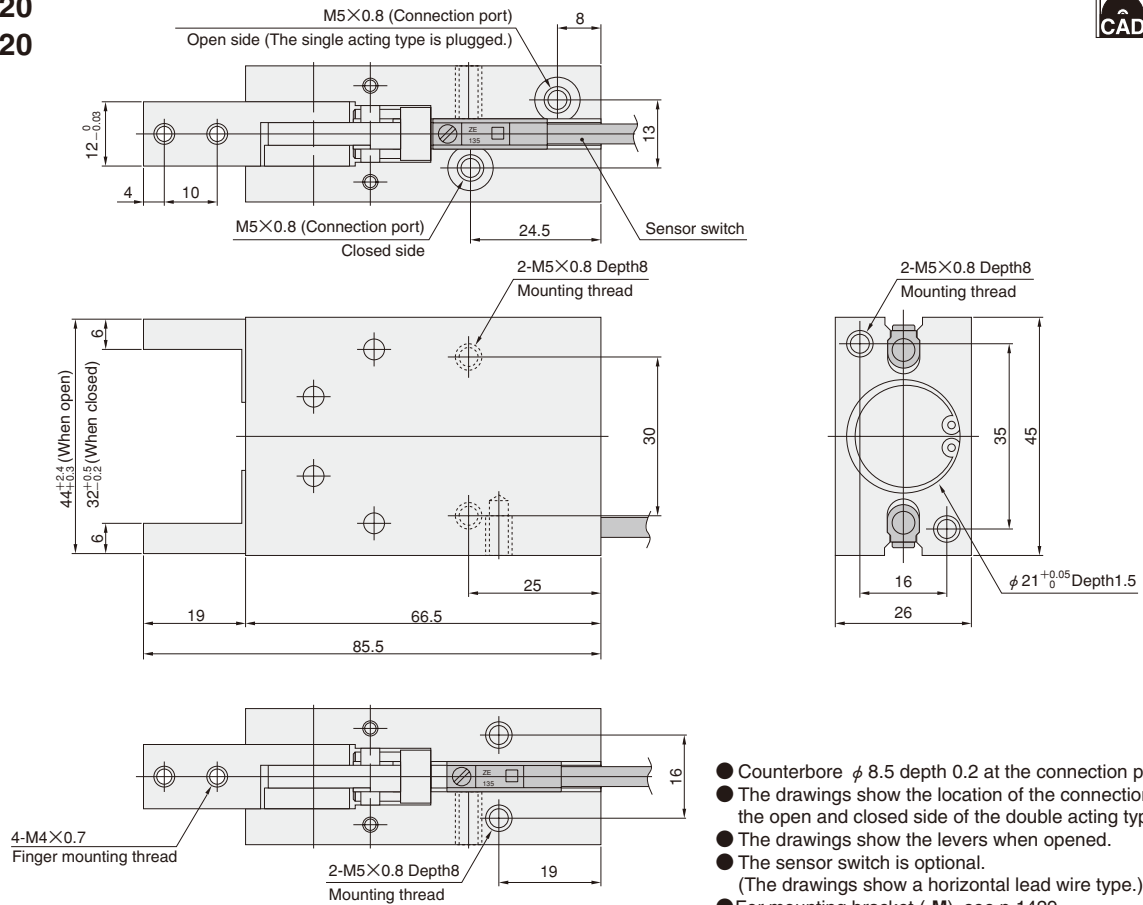


NHBDP-16
NHBRP-16



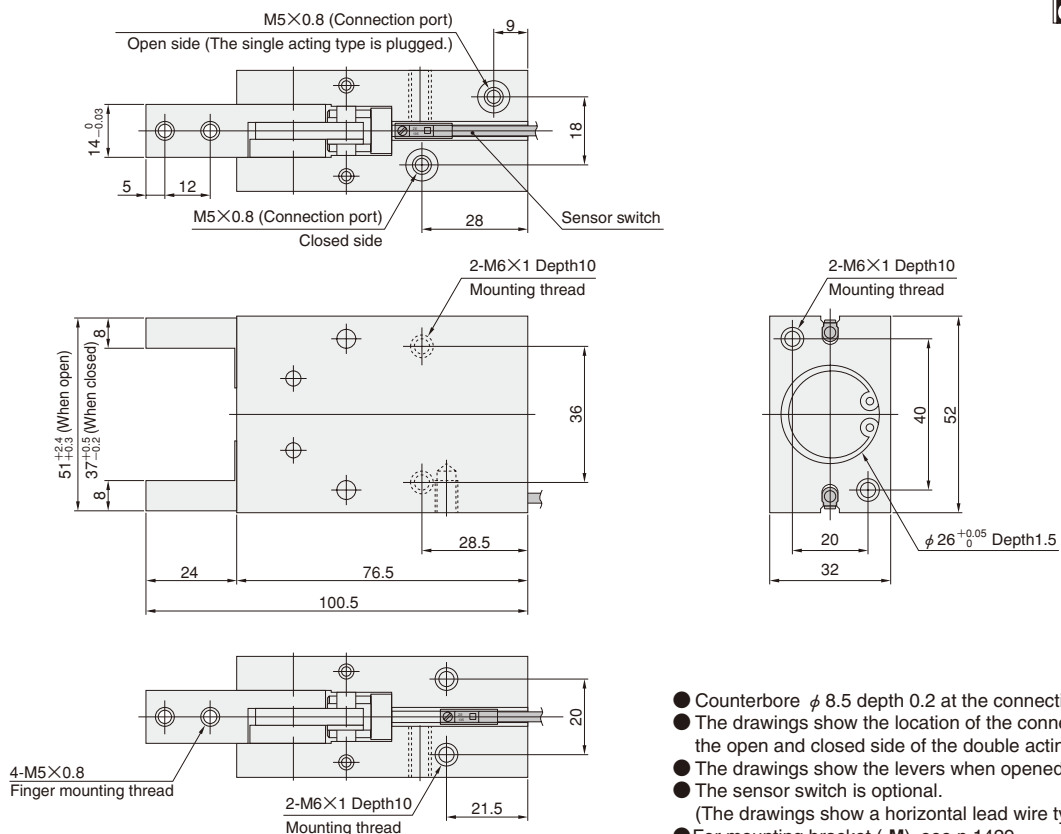
Dimensions of Parallel Type Plain Bearing Specification (mm)

NHBDP-20 NHBRP-20



- Counterbore $\phi 8.5$ depth 0.2 at the connection port.
- The drawings show the location of the connection ports for the open and closed side of the double acting type.
- The drawings show the levers when opened.
- The sensor switch is optional.
(The drawings show a horizontal lead wire type.)
- For mounting bracket (-M), see p.1429.

NHBDP-25 NHBRP-25

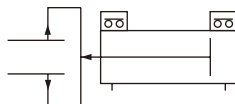


- Counterbore $\phi 8.5$ depth 0.2 at the connection port.
- The drawings show the location of the connection ports for the open and closed side of the double acting type.
- The drawings show the levers when opened.
- The sensor switch is optional.
(The drawings show a horizontal lead wire type.)
- For mounting bracket (-M), see p.1429.

SENSOR SWITCHES

Solid State Type

Symbol



Order Codes

● Sensor switch only

● NHC1 series

— NHC

Lead wire length

A — 1000mm [39in.]

B — 3000mm [118in.]

Sensor switch

ZE135 — Solid state type 2-lead wire with indicator lamp DC10~28V Horizontal lead wire

ZE235 — Solid state type 2-lead wire with indicator lamp DC10~28V Vertical lead wire

ZE155 — Solid state type 3-lead wire with indicator lamp DC4.5~28V Horizontal lead wire

ZE255 — Solid state type 3-lead wire with indicator lamp DC4.5~28V Vertical lead wire

● NHB series

— NHB

Sensor switch

ZE135 — Solid state type 2-lead wire

ZE235 — Solid state type 2-lead wire

ZE155 — Solid state type 3-lead wire

ZE255 — Solid state type 3-lead wire

Lead wire length

A — 1000mm [39in.]

B — 3000mm [118in.]

● WHDP series

— WHDP

Sensor switch

ZE235 — Solid state type 2-lead wire

ZE255 — Solid state type 3-lead wire

Lead wire length

A — 1000mm [39in.]

B — 3000mm [118in.]

● Three-finger type linear guide specification (air hands)

— NHE

Lead wire length

A — 1000mm [39in.]

B — 3000mm [118in.]

Sensor switch

ZE135 — Solid state type 2-lead wire with indicator lamp DC10~28V Horizontal lead wire

ZE235 — Solid state type 2-lead wire with indicator lamp DC10~28V Vertical lead wire

ZE155 — Solid state type 3-lead wire with indicator lamp DC4.5~28V Horizontal lead wire

ZE255 — Solid state type 3-lead wire with indicator lamp DC4.5~28V Vertical lead wire

Caution: Sensor switch cannot be mounted on the mechanical hands.

● For details of sensor switches, see p.1544.

Sensor Switch Operating Range and Response Differential

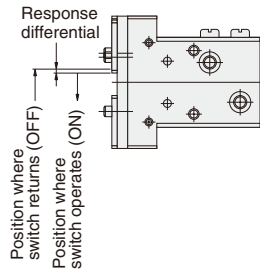
● Open/closed stroke differential (Open/closed angle differential)

The stroke differential (angle differential) between the point where the lever on one side moves and turns the switch ON and the point where the switch is turned OFF as the lever travels in the opposite direction.

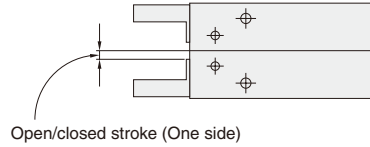
● Operating position repeatability

When the lever on one side moves in the same direction, operating position repeatability is defined as the range of the deviation of the position where the switch is turned ON or turned OFF.

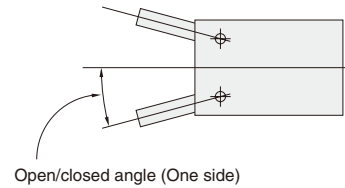
Parallel type linear guide specification



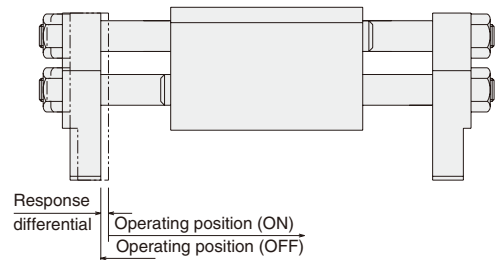
Parallel type



Swing type



Rack operation parallel type



● NHC1 series

mm [in.]

| Model | Open/closed stroke differential | Operating position repeatability |
|----------|---------------------------------|----------------------------------|
| NHC1D-10 | 0.2 [0.008] | 0.1 [0.004] |
| NHC1D-16 | 0.2 [0.008] | 0.1 [0.004] |
| NHC1D-20 | 0.2 [0.008] | 0.1 [0.004] |
| NHC1D-25 | 0.2 [0.008] | 0.1 [0.004] |

Remark: The above table shows reference values.

● Parallel type

mm [in.]

| Model | Open/closed stroke differential | Operating position repeatability |
|-----------|---------------------------------|----------------------------------|
| NHB□PA-6 | 0.5 [0.020] | 0.2 [0.008] |
| NHB□P□-10 | 0.5 [0.020] | 0.2 [0.008] |
| NHB□P□-16 | 0.6 [0.024] | 0.2 [0.008] |
| NHB□P□-20 | 0.6 [0.024] | 0.2 [0.008] |
| NHB□P□-25 | 0.6 [0.024] | 0.2 [0.008] |

Remark: The above table shows reference values.

● Swing type

| Model | Open/closed angle differential | Operating position repeatability |
|----------|--------------------------------|----------------------------------|
| NHB□S-8 | 3.0° | 1.0° |
| NHB□S-10 | 2.0° | 1.0° |
| NHB□S-16 | 1.5° | 0.6° |
| NHB□S-20 | 1.5° | 0.5° |
| NHB□S-25 | 1.0° | 0.5° |

Remark: The above table shows reference values.

● Parallel type linear guide specification (with rubber cover)

mm [in.]

| Model | Open/closed stroke differential | Operating position repeatability |
|--------------|---------------------------------|----------------------------------|
| NHB□PG(J)-8 | 0.5 [0.020] | 0.2 [0.008] |
| NHB□PG(J)-10 | 0.5 [0.020] | 0.2 [0.008] |
| NHB□PG(J)-16 | 0.8 [0.031] | 0.2 [0.008] |
| NHB□PG(J)-20 | 0.8 [0.031] | 0.2 [0.008] |
| NHBDPG-32 | 0.8 [0.031] | 0.2 [0.008] |

Remark: The above table shows reference values.

● Swing type 180° open specification

| Model | Open/closed angle differential | Operating position repeatability |
|-----------|--------------------------------|----------------------------------|
| NHBDSL-12 | 1.5° | 0.5° |
| NHBDSL-16 | 1.0° | 0.25° (one side) |
| NHBDSL-20 | 2.0° | 0.2° (one side) |
| NHBDSL-25 | 3.0° | 0.5° |

Remark: The above table shows reference values.

● Rack operation parallel type

mm [in.]

| Model | Open/closed stroke differential | Operating position repeatability |
|---------|---------------------------------|----------------------------------|
| WHDP-12 | 0.6 [0.024] | 0.2 [0.008] |
| WHDP-16 | 0.6 [0.024] | 0.2 [0.008] |
| WHDP-20 | 0.5 [0.020] | 0.2 [0.008] |
| WHDP-25 | 0.5 [0.020] | 0.2 [0.008] |

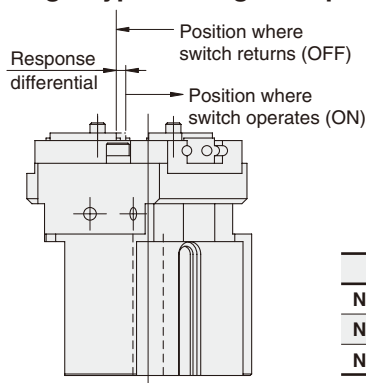
Remark: The above table shows reference values.

● Swing type high precision, 180° open specification

| Model | Open/closed angle differential | Operating position repeatability |
|-----------|--------------------------------|----------------------------------|
| NHBDSL-12 | 3.0° | 0.5° |
| NHBDSL-16 | 1.5° | 0.5° |
| NHBDSL-20 | 2.5° | 0.5° |

Remark: The above table shows reference values.

● Three-finger type linear guide specification (air hands)



mm [in.]

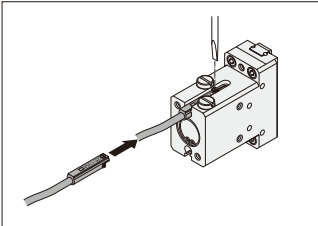
| Model | Maximum response differential |
|----------|-------------------------------|
| NHE1D-16 | 0.5 [0.020] |
| NHE1D-20 | 0.6 [0.024] |
| NHE1D-25 | 0.5 [0.020] |

Mounting Sensor Switch

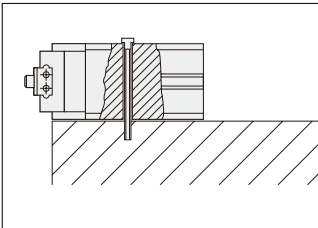
● NHB series

Tighten the mounting screw after the sensor switch is inserted in the switch mounting groove in the direction of the arrow in the diagram and move to the proper location. Tightening torque of the mounting screw is 0.1~0.2N・m [0.9~1.8in・lbf].

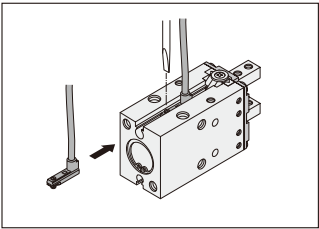
Caution: Care must be exercised that the sensor switch cannot be inserted into the switch mounting groove from the digram's top direction.



Caution: NHC1 series
 NHB□PG(Y, L, J) series
 CS-NHBDPG series
 NHB□PA series
 NHB□S-8
 NHBDSLГ series
 (Except NHB□PG-32 and NHB□PA-6)
 Care must be exercised that a sensor switch cannot be mounted when the body is installed by using thru holes, as shown in the diagram to the right.

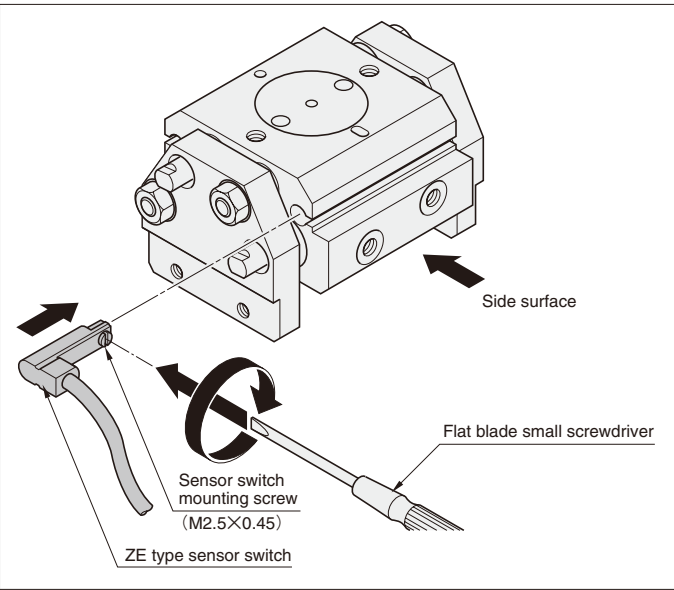


Caution: NHB□PA-25
 When using a sensor switch on the lever open side, select the vertical lead wire type ZE235 or ZE255, and mount it in the facing shown in the illustration to the right.



● WHDP series

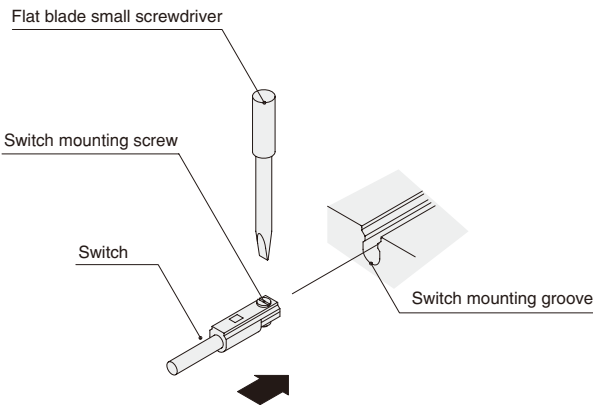
Tighten the mounting screw after the sensor switch is inserted in the switch mounting groove in the direction of the arrow in the diagram below and move to the proper location. Tightening torque of the mounting screw is 0.1~0.2N・m [0.9~1.8in・lbf].



Caution: Care must be exercised that the sensor switch cannot be inserted into the switch mounting groove from the digram's side surface direction.

● Three-finger type linear guide specification (air hands)

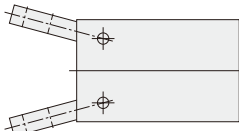
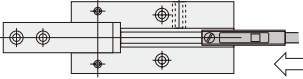
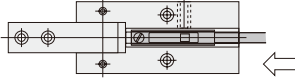
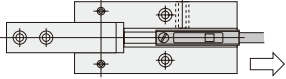
Insert the switch into the switch mounting groove. After setting in the mounting position, use a flat blade small screwdriver to tighten the switch mounting screw. Set the tightening torque to about 0.1~0.2N・m [0.9~1.8in・lbf]. Be sure to mount the sensor switch so that the side showing the model marking surface faces up.



Mounting Sensor Switch

● For swing type (Mount the sensor switch so that the model marking surface faces up.)

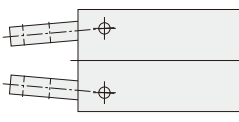
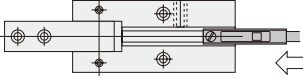
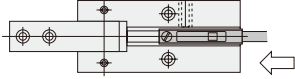
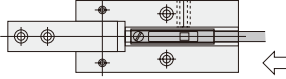
《For inside gripping》

- 1) Confirm the levers are completely open.
- 2) Push the switch into the groove on the body in the direction of the arrow.
- 3) By moving the sensor switch in the direction of the arrow, the lamp turns ON, and by moving it further, the lamp turns OFF.
- 4) By moving back the sensor switch in the direction of the arrow (opposite direction), the lamp turns ON, and it should be secured by the sensor switch mounting screw after moving it about 0.3 mm [0.012in.] further.

1) Confirm workpiece is inside gripped one.

《For outside gripping》


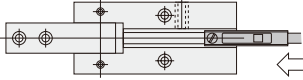
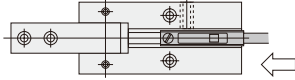
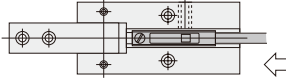
- 1) Confirm the levers are completely closed.
- 2) Push the switch into the groove on the body in the direction of the arrow.
- 3) By moving the switch in the direction of the arrow, the lamp turns ON.
- 4) Secure the sensor switch by the mounting screw after moving it about 0.3 mm [0.012in.] further in the direction of the arrow from where the lamp turned ON in step 3).

1) Confirm workpiece is outside gripped one.

Remark: Step 1) shows the location where you want to confirm the switch turns ON. Install and adjust it in accordance with step 1) ~ 4) above.

● For parallel type (Mount the sensor switch so that the model marking surface faces up.)

《For inside gripping》


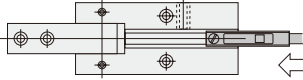
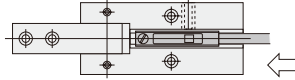
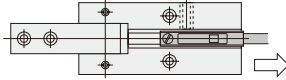





- 1) Confirm the levers are completely open.
- 2) Push the switch into the groove on the body in the direction of the arrow.
- 3) By moving the switch in the direction of the arrow, the lamp turns ON.
- 4) Secure the sensor switch by the mounting screw after moving it about 0.3 mm [0.012in.] further in the direction of the arrow from where the lamp turned ON in step 3).

1) Confirm workpiece is inside gripped one.

● For NHBDP□, NHBRP□

《For outside gripping》

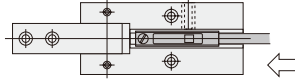
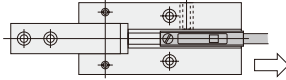





- 1) Confirm the levers are completely closed.
- 2) Push the switch into the groove on the body in the direction of the arrow.
- 3) By moving the switch in the direction of the arrow, the lamp turns ON, and by moving it further, the lamp turns OFF.
- 4) By moving back the sensor switch in the direction of the arrow (opposite direction), the lamp turns ON, and it should be secured by the mounting screw after moving it about 0.3 mm [0.012in.] further.

1) Confirm workpiece is outside gripped one.

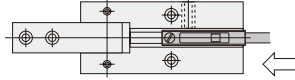
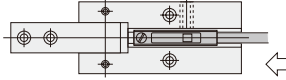
● For NHBPA□, NHBRA□

● For NHBDP□, NHBRP□

- 3) By moving the switch in the direction of the arrow, the lamp turns ON, and by moving it further, the lamp turns OFF.
- 4) By moving back the sensor switch in the direction of the arrow (opposite direction), the lamp turns ON, and it should be secured by the mounting screw after moving it about 0.3 mm [0.012in.] further.

● For NHBPA□, NHBRA□

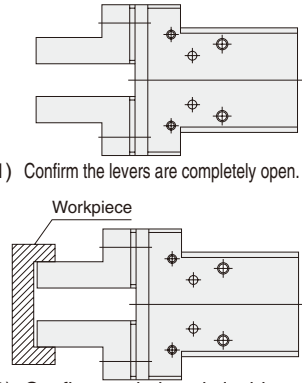
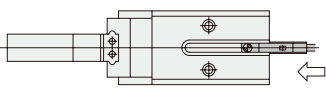
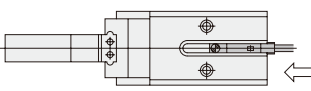
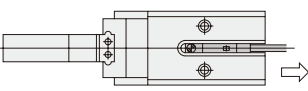
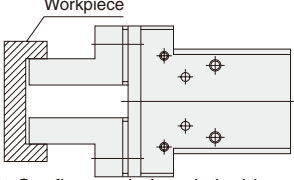



- 3) By moving the switch in the direction of the arrow, the lamp turns ON.
- 4) Secure the sensor switch by the mounting screw after moving it about 0.3 mm [0.012in.] further in the direction of the arrow from where the lamp turned ON in step 3).

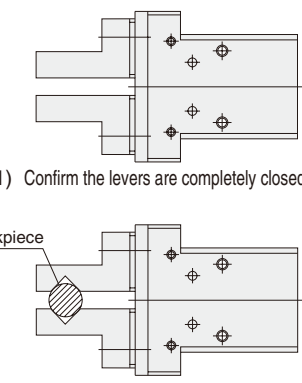
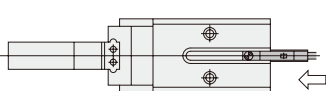
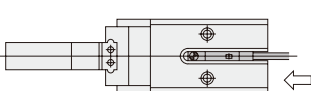
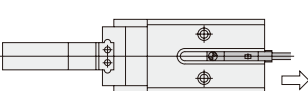
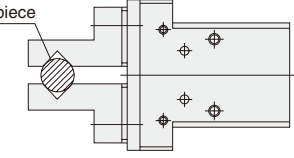
Remark: Step 1) shows the location where you want to confirm the switch turns ON. Install and adjust it in accordance with step 1) ~ 4) above.

● **For parallel type linear guide specification (with rubber cover)** (Mount the sensor switch so that the model marking surface faces up.)

《For inside gripping》

- 
- 1) Confirm the levers are completely open.
- 
- 2) Insert the switch into the groove on the body in the direction of the arrow.
- 
- 3) By moving the sensor switch in the direction of the arrow, the lamp turns ON, and by moving it further, the lamp turns OFF.
- 
- 4) By moving back the sensor switch in the direction of the arrow (opposite direction), the lamp turns ON, and it should be secured by the sensor switch mounting screw after moving it about 0.3 mm [0.012in.] further.
- 
- 1) Confirm workpiece is inside gripped one.

《For outside gripping》

- 
- 1) Confirm the levers are completely closed.
- 
- 2) Insert the switch into the groove on the body in the direction of the arrow.
- 
- 3) By moving the switch in the direction of the arrow, the lamp turns ON.
- 
- 4) Secure the sensor switch by the mounting screw after moving it about 0.3 mm [0.012in.] further in the direction of the arrow from where the lamp turned ON in step 3).
- 
- 1) Confirm workpiece is outside gripped one.

Remark: Step 1) shows the location where you want to confirm the switch turns ON. Install and adjust it in accordance with step 1) ~ 4) above.