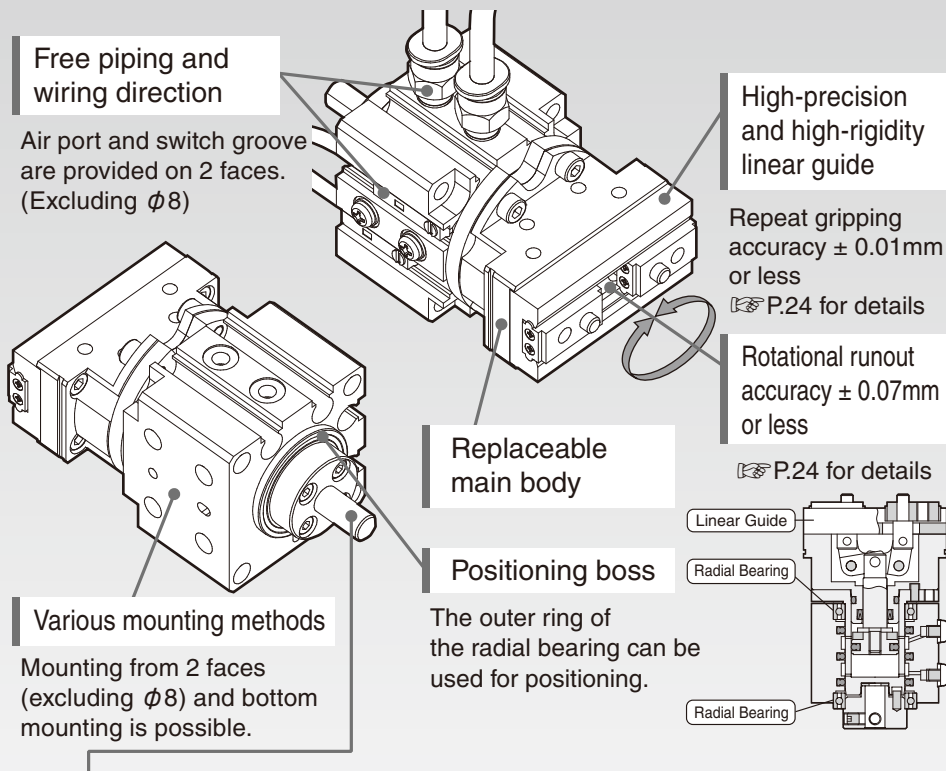


Swivel Gripper

# NEOK Series

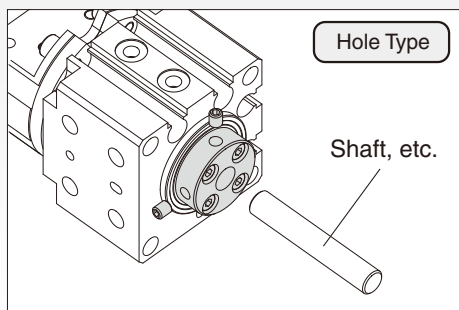
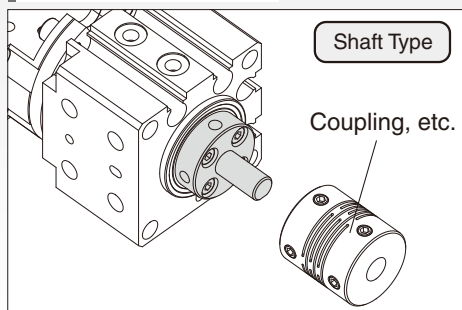
[Bore Size:  $\phi 8$ 、 $\phi 12$ 、 $\phi 16$ 、 $\phi 20$ ]

*Free continuous rotation of high-precision gripper by external drive!*



## Connection Part

Two types of connection parts are available.



★Rotation angle can be controlled by external force (e.g. motor)

## Model Code No.

## Main Body Assy + Case Assy

**NEOK F - 12 C - 1 \* JN - ZE235 A 2**

Series Name

Bore Size

8 : 8mm  
12 : 12mm  
16 : 16mm  
20 : 20mm

Action Type

C : Double Acting

Drive Shaft Connection Part

1: Shaft Type ※ P.2  
2: Hole Type

Dust-proof Cover Type  
(Can be mounted for  
finger type only)

No Code: No Cover  
JN: With NBR Rubber Cover  
JS: With Silicon Rubber Cover  
JF: With Fluorine Rubber Cover

Number of Switches

1: 1 Switch ※ Can be mounted  
2: 2 Switches up to 4 switches.  
For orders with 3  
or more switches,  
2 switches are  
assembled, and  
the rest is delivered  
as attachment.

Switch Lead Wire Length

A: 1000mm  
B: 3000mm

● Switch Type No Code: No Switch

ZE135

2 Wire Solid State Switch, Straight Type

ZE235

2 Wire Solid State Switch, L-shaped

ZE155

3 Wire Solid State Switch, Straight Type

ZE255

3 Wire Solid State Switch, L-shaped

●  $\phi 8$  Switch Type No Code: No Switch

RB6

2 Wire Solid State Switch, Straight Type

RC6

2 Wire Solid State Switch, L-shaped

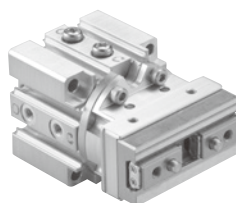
RB7

3 Wire Solid State Switch NPN Output, Straight Type

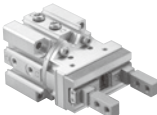
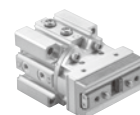
RC7

3 Wire Solid State Switch NPN Output, L-shaped

● Switch details: P.25~29



● Lever Shape

No Code:  
Standard TypeF: Finger (Long  
Attachment) Type

## Case Assy

**DB - NEOK - 12 C - 1**

Series Name

Bore Size

8 : 8mm  
12 : 12mm  
16 : 16mm  
20 : 20mm

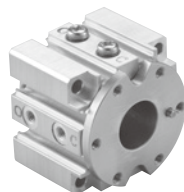
Case Assy

Action Type

C : Double Acting

Drive Shaft Connection Part

1: Shaft Type  
2: Hole Type



## Main Body Assy

**DG - NEOK F - 12 C**

Main Body Assy

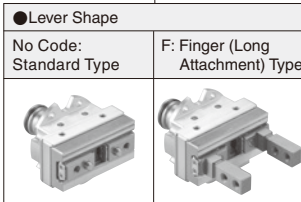
Series Name

Bore Size

8 : 8mm  
12 : 12mm  
16 : 16mm  
20 : 20mm

Action Type

C : Double Acting



## Dust-proof Cover (Can be mounted for NEOKF only)

**JN - NEOKF 12**

Dust-proof Cover

Series Name

Nominal Diameter

JN: With NBR Rubber Cover  
JS: With Silicon Rubber Cover  
JF: With Fluorine Rubber Cover

8 :  $\phi 8$   
12 :  $\phi 12$   
16 :  $\phi 16$   
20 :  $\phi 20$

NBR Rubber



Silicon Rubber



Fluorine Rubber



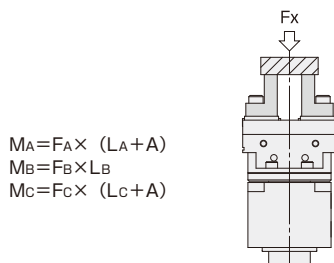
## Specifications

Model Item	NEOK-8 (Standard)	NEOKF-8 (Finger)	NEOK-12 (Standard)	NEOKF-12 (Finger)	NEOK-16 (Standard)	NEOKF-16 (Finger)	NEOK-20 (Standard)	NEOKF-20 (Finger)
	Gripper Part							
Action Type	Double Acting							
Bore Size [mm]	φ 8		φ 12		φ 16		φ 20	
Opening/Closing Stroke [mm]	4		6.5		10		14	
Fluid	Air							
Working Pressure Range [MPa] In ( ), dust-proof cover attached	0.22~0.7	0.22~0.7 (0.3~0.7)	0.15~0.7	0.15~0.7 (0.2~0.7)	0.12~0.7	0.12~0.7 (0.15~0.7)	0.1~0.7	0.1~0.7 (0.15~0.7)
Proof Pressure [MPa]	1.05							
Maximum Operating Cycle [cycle/min]	120							
Operating Temperature [°C]	0~60 (No Freezing)							
Lubrication	Not Required							
Pipe Bore	M3×0.5				M5×0.8			
Effective Gripping Force <small>Note 1)</small> [N]	Opening Force : 10.8 Closing Force : 6.6		Opening Force : 23 Closing Force : 17		Opening Force : 39 Closing Force : 29		Opening Force : 74 Closing Force : 50	
Inertia moment [kg·m <sup>2</sup> ]	1.7×10 <sup>-6</sup>	2.0×10 <sup>-6</sup>	10×10 <sup>-6</sup>	12×10 <sup>-6</sup>	40×10 <sup>-6</sup>	47×10 <sup>-6</sup>	15×10 <sup>-5</sup>	17×10 <sup>-5</sup>
Repeat Gripping Accuracy [mm]	±0.01 <small>Note 2)</small>							
	Swivel Part							
Minimum Starting Torque [N·m]	0.15		0.2		0.25		0.4	
Allowable Rotational Speed [rpm]	120							
Lubrication	Required <small>Note 2)</small>							
	Common							
Rotational Runout Accuracy [mm]	±0.07 <small>Note 2)</small>							
Product Mass [g]	80	85 JN : +1.5 JS : +1.5 JF : +2	142	152 JN : +4.5 JS : +4 JF : +6.5	350	370 JN : +6.5 JS : +6 JF : +9	810	840 JN : +12.5 JS : +10 JF : +18.5

Note 1) It is an effective value when the gripping point L is 30 mm and the pressure is 0.5 MPa. For φ8, effective value when the gripping point L is 20mm and the pressure is 0.5 MPa.

Note 2) For details about repeat gripping accuracy, rotational runout accuracy and lubrication method refer P.24

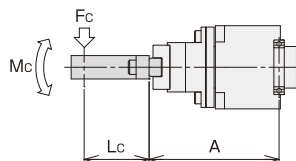
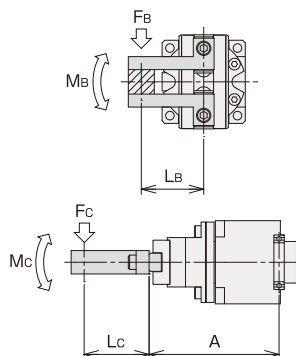
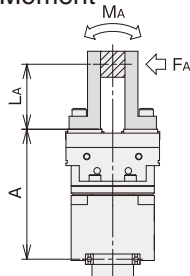
## Allowable Load and Allowable Moment



$$M_A = F_A \times (L_A + A)$$

$$M_B = F_B \times L_B$$

$$M_C = F_C \times (L_C + A)$$

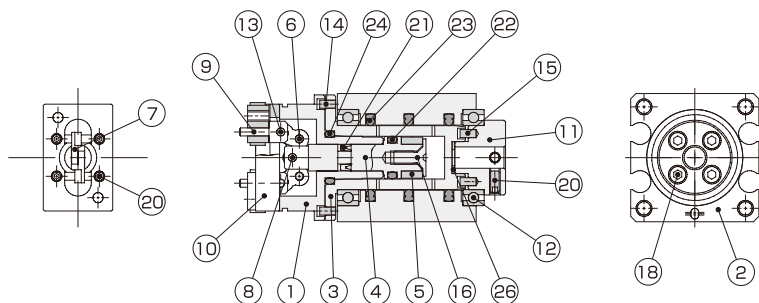


Model	Load and Moment	FX [N]	MA [N·m]	MB [N·m]	MC [N·m]	A [mm]
NEOK-8		12	0.06	0.04	0.06	42.5
NEOK-12		50	0.6	0.4	0.6	50
NEOK-16		120	1.5	1	1.5	67.5
NEOK-20		200	2.2	1.5	2.2	90

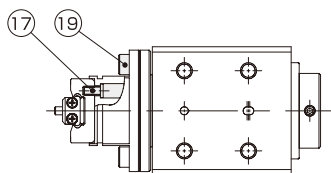
※For example of attachment design  
refer P.13

## Internal Structure Drawing

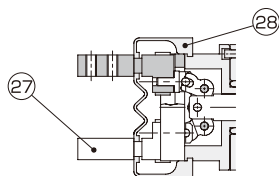
φ8



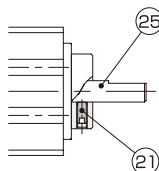
Drive Shaft Connection Type: Hole Type



Lever Shape: Finger Type



Drive Shaft Connection Part: Shaft Type

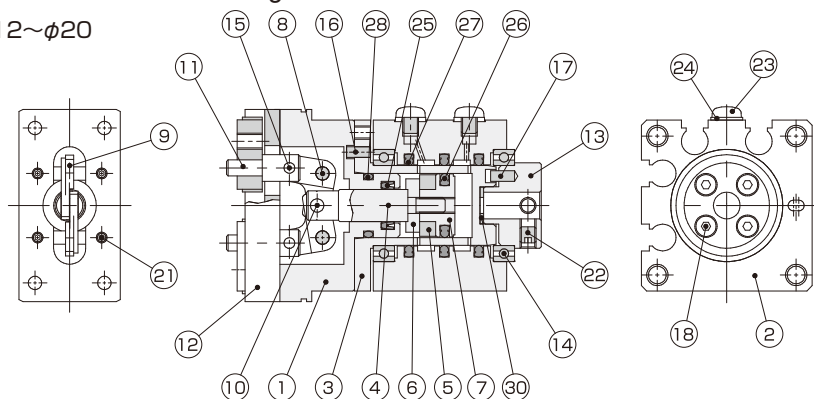


## Parts List

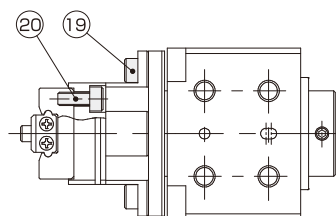
No	Name	Material	No	Name	Material	No	Name	Material
1	Body	Aluminium Alloy	12	Radial Bearing	Steel	23	Rotating Seal	NBR
2	Case	Aluminium Alloy	13	Press Fit Pin	Carbon Tool Steel	24	O Ring	NBR
3	Cylinder Tube	Stainless Steel	14	Press Fit Pin	Carbon Tool Steel	25	Shaft Adapter	Stainless Steel
4	Piston Rod	Stainless Steel	15	Press Fit Pin	Carbon Tool Steel	26	Shim	Stainless Steel
5	Magnet	Rare-earth Magnet	16	Cross-recessed Head Screw	Steel	27	Linear Guide	Steel
6	Fulcrum Pin	Carbon Tool Steel	17	Cross-recessed Head Screw	Soft Steel	28	Dust-proof Cover	NBR
7	Action Lever	Carbon Steel	18	Hexagon Socket Head Bolt	Stainless Steel			Silicon
8	Press Fit Pin	Carbon Tool Steel	19	Hexagon Socket Head Bolt	Stainless Steel			Fluorine
9	Knuckle	Stainless Steel	20	Hexagon Socket Head Setscrew	Steel			
10	Bearing	Bearing Steel	21	Rod Packing	NBR			
11	Stopper	Stainless Steel	22	Piston Packing	NBR			

# Internal Structure Drawing

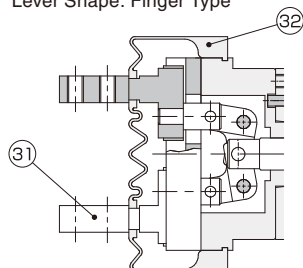
φ12~φ20



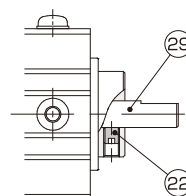
Drive Shaft Connection Type: Hole Type



Lever Shape: Finger Type



Drive Shaft Connection Part: Shaft Type



## Parts List

No	Name	Material	No	Name	Material	No	Name	Material
1	Body	Aluminium Alloy	12	Bearing	Bearing Steel	23	Plug	Stainless Steel
2	Case	Aluminium Alloy	13	Stopper	Stainless Steel	24	Gasket	Steel, NBR
3	Cylinder Tube	Stainless Steel	14	Radial Bearing	Steel	25	Rod Packing	NBR
4	Piston Rod	Stainless Steel	15	Press Fit Pin	Carbon Tool Steel	26	Piston Packing	NBR
5	Magnet	Rare-earth Magnet	16	Press Fit Pin	Carbon Tool Steel	27	Rotating Seal	NBR
6	Pressure Cover	Aluminium Alloy	17	Press Fit Pin	Carbon Tool Steel	28	O Ring	NBR
7	Piston	Aluminium Alloy	18	Hexagon Socket Head Bolt	Stainless Steel	29	Shaft Adapter	Stainless Steel
8	Fulcrum Pin	Carbon Tool Steel	19	Hexagon Socket Head Bolt	Stainless Steel	30	Shim	Stainless Steel
9	Action Lever	Carbon Steel	20	Hexagon Socket Head Bolt	Stainless Steel	31	Linear Guide	Steel
10	Press Fit Pin	Carbon Tool Steel	21	Hexagon Socket Head Setscrew	Steel	32	Dust-proof Cover	NBR
11	Knuckle	Stainless Steel	22	Hexagon Socket Head Setscrew	Steel			Silicon Fluorine

## Example of Attachment Design

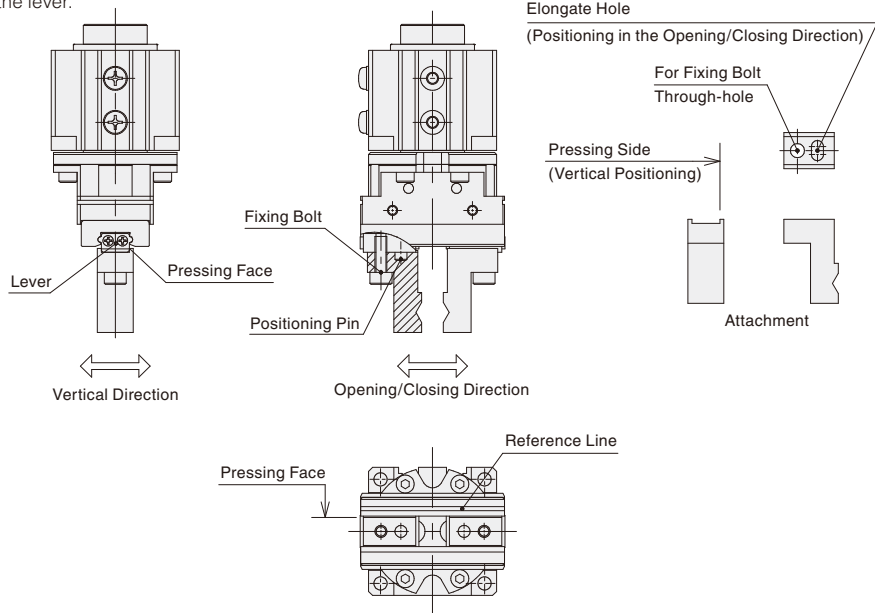
When you want to precisely position the attachment or when you need mounting repeatability, the following mounting methods are effective.

### Positioning in the Opening/Closing Direction

The position in the opening/closing direction is determined by processing an elongate hole for the positioning pin on the attachment in the vertical direction, and fitting it to the positioning pin of the lever. (NEOKF has no positioning pin.)

### Vertical Positioning

By making a projection on one side of the attachment and pressing it against the side of the lever on the reference line side, the position in the vertical direction can be determined. If there is concern about position misalignment during operation, make projections on both sides of the attachment and fit them to the lever.



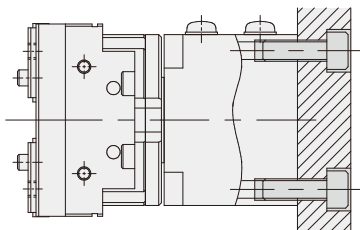
## Attachment Mass

Please make the attachment mounted to the lever as light as possible. Be careful not to exceed the masses shown below. It shall be lighter when great acceleration or impact is applied during workpiece conveyance. Noted that applying large inertial load to the lever may cause breakage of internal parts.

Model	Mass [g]
NEOK(F)-8	10
NEOK(F)-12	50
NEOK(F)-16	100
NEOK(F)-20	150

**Main Body Mounting Method****Main Body Mounting Method 1**

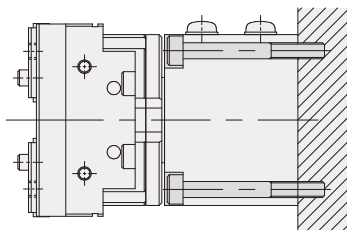
When the screw on the bottom face of the main body is used



Model	Bolt to be Used	Maximum Tightening Torque [N·m]
NEOK-8	M3×0.5	0.59
NEOK-12	M4×0.7	1.37
NEOK-16	M5×0.8	2.84
NEOK-20	M6×1.0	4.92

**Main Body Mounting Method 2**

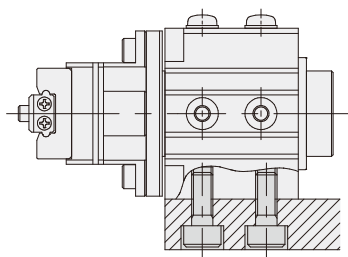
When the through-hole of the main body is used



Model	Bolt to be Used	Maximum Tightening Torque [N·m]
NEOK-8	Not Applicable	—
NEOK-12	M3×0.5	0.59
NEOK-16	M4×0.7	1.37
NEOK-20	M5×0.8	2.84

**Main Body Mounting Method 3**

When the screw on the side of the main body is used



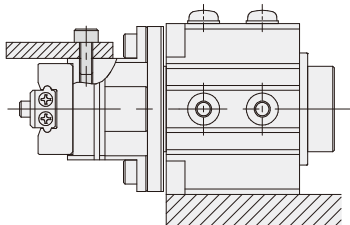
Model	Bolt to be Used	Maximum Tightening Torque [N·m]
NEOK-8	M3×0.5	0.59
NEOK-12	M4×0.7	1.37
NEOK-16	M5×0.8	2.84
NEOK-20	M6×1.0	4.92

## Attachment Mounting Method

### Attachment Mounting Method

When the screw on the top face of the main body is used

(Excluding NEOK-8)



Model	Bolt to be Used	Maximum Tightening Torque [N·m]
NEOK-12	M2.5×0.45	0.34
NEOK-16		
NEOK-20		

## Positioning When Mounting the Main Body

If positioning and reproducibility is required when mounting the main body, use positioning hole or boss according to mounting method.

Model	Bolt to be Used	Positioning Boss
NEOK-8	$\phi 1.5^{+0.03}_0$ Depth 1.5	$\phi 18^{0}_{-0.01}$ Height 1.5
NEOK-12	$\phi 2^{+0.03}_0$ Depth 2	$\phi 21^{0}_{-0.01}$ Height 1.5
NEOK-16	$\phi 2.5^{+0.03}_0$ Depth 2.5	$\phi 27^{0}_{-0.01}$ Height 1.5
NEOK-20	$\phi 4^{+0.03}_0$ Depth 4	$\phi 37^{0}_{-0.01}$ Height 3

