RoHS Compliant

NEO Series

New-Era Original series

Size
8、12、16

New-Era®

CAT No. NEOKS 19-10

Swivel Table

NEOKS Series

Size
8、12、16

Free movement of high-precision table by external drive!

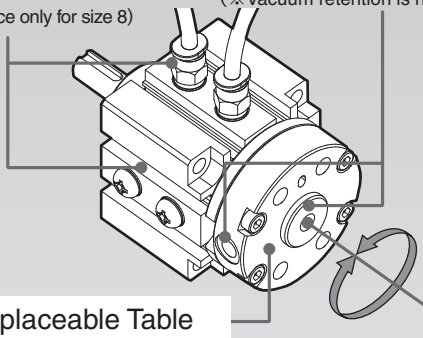
It can be used for vacuuming & free rotation or as rotary joint by using air posts of table

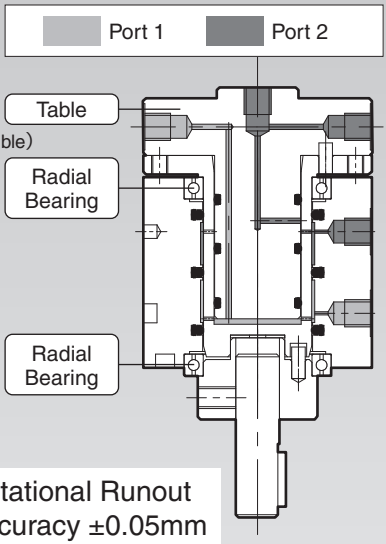
Free Piping & Wiring Direction

Air ports are provided on 2 faces.
(※1 face only for size 8)

Air Port

Can be used under the positive or negative pressure.
(※Vacuum retention is not possible)

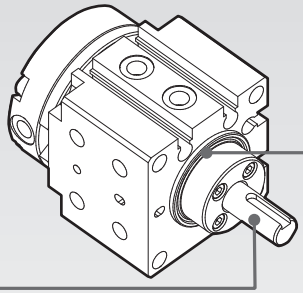




Replaceable Table

Rotational Runout Accuracy ±0.05mm

For details☞ P.13

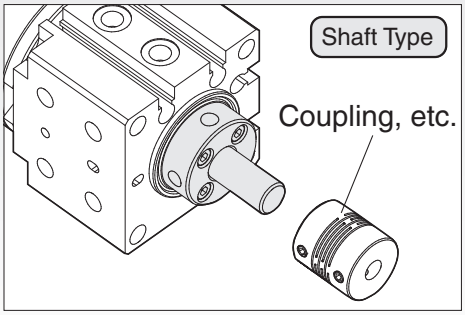


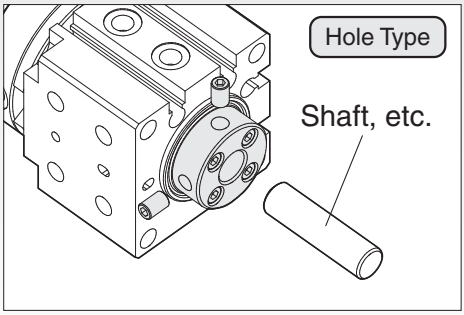
Positioning Boss

The outer ring of the radial bearing can be used for positioning.

Connection Part

Two types of connection parts are available.





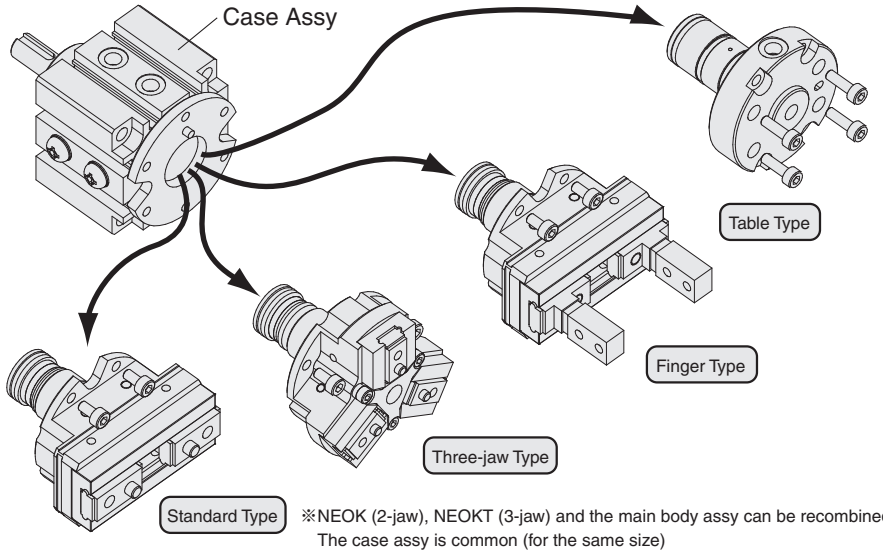
★Rotation angle can be controlled by external force (e.g. motor)

Product Features

A new table type has been added to the NEOK series, which is equipped with a swivel joint on the air gripper and is compactly integrated. The gripper is moved by external drive. Since only the table part can be moved with the main body fixed, air pipes are not twisted.

Main Body

Table part (gripper part) or cylinder part can be purchased separately
Easy setup change and maintenance

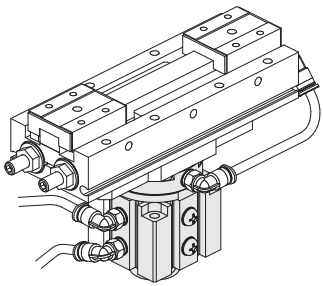


※NEOK (2-jaw), NEOKT (3-jaw) and the main body assy can be recombined.
The case assy is common (for the same size)

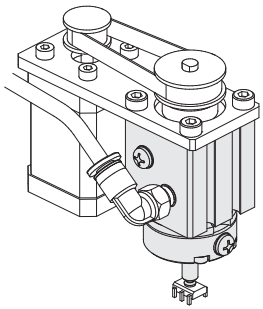
Application Examples

For constant direction, angle control, inversion movement, etc.

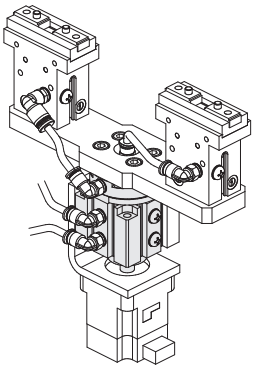
■Rotary Joint



■Vacuuming & Free Swiveling

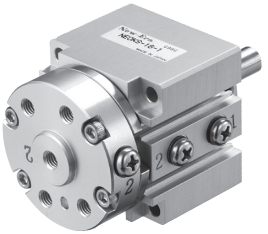


■Rotary Table



Model Code No.

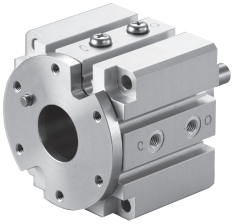
Table + Case Assy



NEOKS – 16 – 1

- NEOKS: Series Name
- 16: Size
  - 8
  - 12
  - 16
- 1: Drive Shaft Connection Part
  - 1 : Shaft Type
  - 2 : Hole Type
  - ※☞See P.2

Case Assy



DB – NEOK – 16 C – 1

- DB: Case Assy
- NEOK: Series Name
- 16: Size
  - 8
  - 12
  - 16
- C: Type of Action
  - C : Double Acting
- 1: Drive Shaft Connection Part
  - 1 : Shaft Type
  - 2 : Hole Type

※The case assy is common to the NEOK, NEOKT and NEOKS series (only for the same size).

Table Assy

DG – NEOKS – 16

- DG: Table Assy
- NEOKS: Series Name
- 16: Size
  - 8
  - 12
  - 16

Rotary Seal Set (Repair Parts Set)

NEOK – 16 C – SS/SET

- NEOK: Series Name
- 16: Size
  - 8
  - 12
  - 16
- C: Type of Action
  - C : Double Acting
- SS/SET: Rotary Seal Set

Blank Plug (With Gasket)

BS – M3

- M3: Size
  - M3 : 8、12
  - M5 : 16

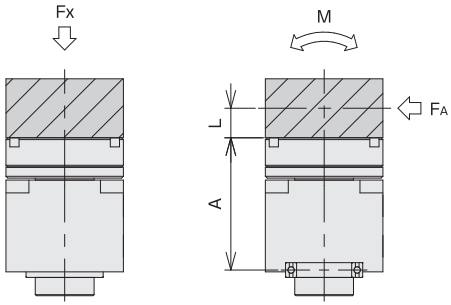
※For the replacement method of the rotary seals,☞see P.13

Specifications

Item \ Model	NEOKS-8	NEOKS-12	NEOKS-16
Size	8	12	16
Fluid	Air		
Operating Pressure Range	Negative Pressure : −100～−10 [kPa] Note1) Positive Pressure : 0.1～0.7 [MPa]		
Operating Temperature Range [℃]	0～60		
Lubrication	Not Required (Regular Maintenance Required) Note2)		
Pipe Bore	M3×0.5		M5×0.8
Effective Cross Section [mm²]	0.21	0.24	0.29
Number of Circuits	2		
Moment of Inertia [kg·m²]	1.6×10^{-6}	5.3×10^{-6}	20.2×10^{-6}
Rotational Runout Accuracy [mm]	±0.05 Note2)		
Running Parallelism of Table [mm]	±0.05 Note2)		
Minimum Starting Torque [N·m]	0.15	0.2	0.25
Allowable Rotational Speed [rpm]	120		
Mass [g]	70	115	280

Note 1) Vacuum retention is not possible.
Note 2) For details about lubrication method, rotational runout accuracy and running parallelism of table, ☞see P.8, P.13

Allowable Load and Allowable Moment

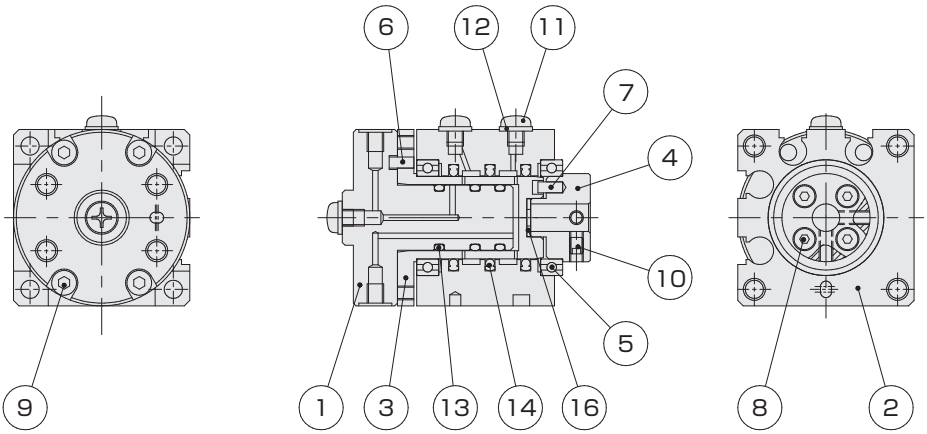


M=FA× (L+A)

Model \ Load and Moment	Fx [N]	M [N·m]	A [mm]
NEOKS-8	12	0.06	36.3
NEOKS-12	50	0.6	36.5
NEOKS-16	120	1.5	49.5

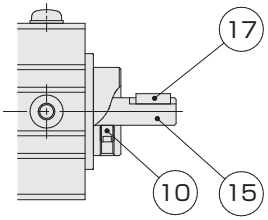
Fx : Workpiece Weight, Pressing Force, etc.
M : Moment of External Force, etc

Internal Structure Drawing



Drive Shaft Connection Part: Hole Type

Drive Shaft Connection Part: Shaft Type



Parts List

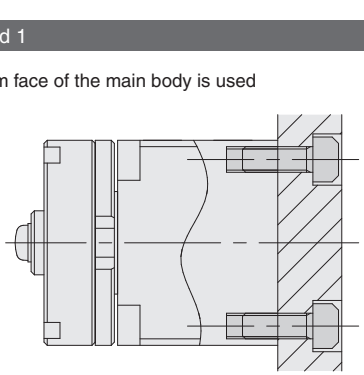
No.	Name	Material	No.	Name	Material
1	Table	Aluminum Alloy	10	Hexagon Socket Head Bolt	Steel
2	Case	Aluminum Alloy	11	Plug Note 1)	Stainless Steel
3	Cylinder Tube	Stainless Steel	12	Gasket Note 1)	Steel, NBR
4	Stopper	Stainless Steel	13	O Ring	NBR
5	Radial Bearing	Steel	14	Rotary Seal	NBR
6	Press-fit Pin	Carbon Tool Steel	15	Shaft Adapter Note 2)	Stainless Steel
7	Press-fit Pin	Carbon Tool Steel	16	Shim	Stainless Steel
8	Hexagon Socket Head Bolt	Stainless Steel	17	Key Note 3)	Carbon Steel
9	Hexagon Socket Head Bolt	Stainless Steel			

Note 1) Bore size 8 is for table port only.
Note 2) Bore sizes 8 and 12 are D-cut.
Note 3) Bore size 16 only.

Main Body Mounting Method

Main Body Mounting Method 1

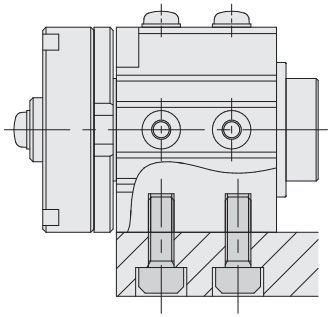
When the screw on the bottom face of the main body is used



Model	Bolt to Be Used	Maximum Tightening Torque [N·m]
NEOKS-8	M3×0.5	0.59
NEOKS-12	M4×0.7	1.37
NEOKS-16	M5×0.8	2.84

Main Body Mounting Method 2

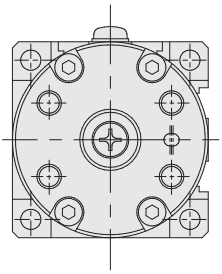
When the screw on the side of the main body is used

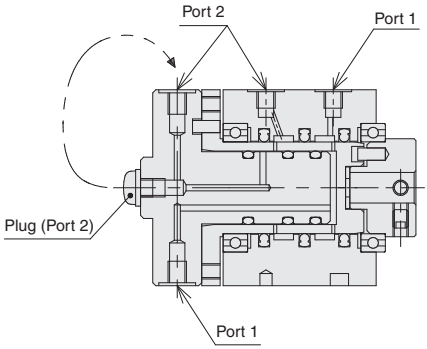


Model	Bolt to Be Used	Maximum Tightening Torque [N·m]
NEOKS-8	M3×0.5	0.59
NEOKS-12	M4×0.7	1.37
NEOKS-16	M5×0.8	2.84

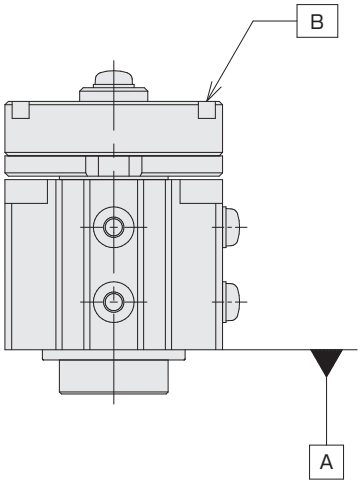
Table Port Position Change

The table has two ports 2, one on the center and one on the side.
Select the plug position according to the application.





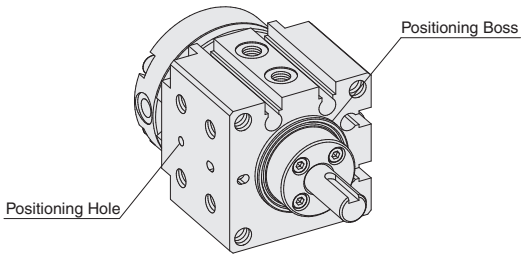
Running Parallelism of Table



Misalignment of running parallelism of the table surface B relative to the case end face A is ± 0.05 mm

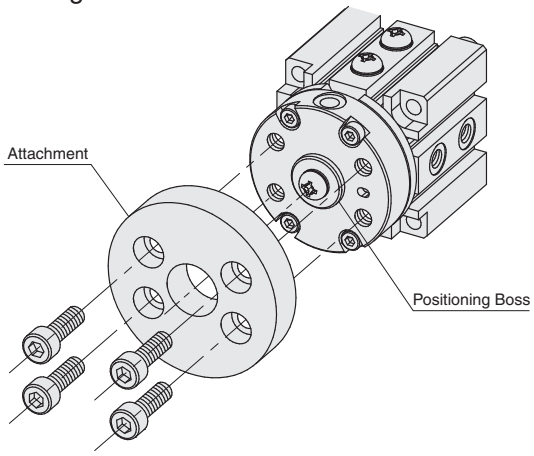
Positioning When Mounting the Main Body

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



Model	Positioning Hole	Positioning Boss
NEOKS-8	$\phi 1.5^{+0.03}_{0}$ depth 1.5	$\phi 18^{0}_{-0.01}$ height 1.5
NEOKS-12	$\phi 2^{+0.03}_{0}$ depth 2	$\phi 21^{0}_{-0.01}$ height 1.5
NEOKS-16	$\phi 2.5^{+0.03}_{0}$ depth 2.5	$\phi 27^{0}_{-0.01}$ height 1.5

Attachment Mounting Method



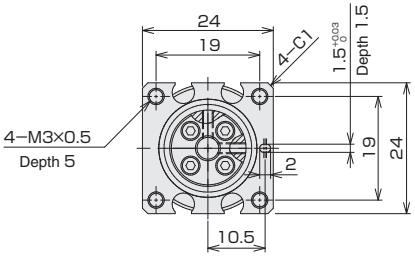
Model	Bolt to Be Used	Maximum Tightening Torque [N·m]	Positioning Boss
NEOKS-8	M3×0.5	0.59	$\phi 7^{-0.01}_{-0.03}$ height 2
NEOKS-12	M4×0.7	1.37	$\phi 10^{-0.01}_{-0.03}$ height 2
NEOKS-16	M5×0.8	2.84	$\phi 15^{-0.01}_{-0.03}$ height 2

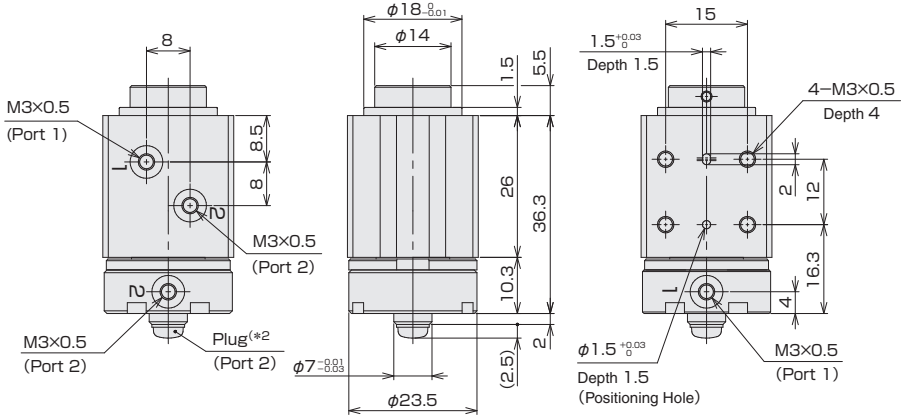
Dimensions

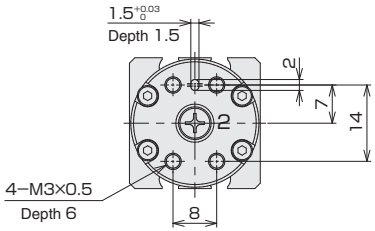
NEOKS-8-□

Drive Shaft Connection Part

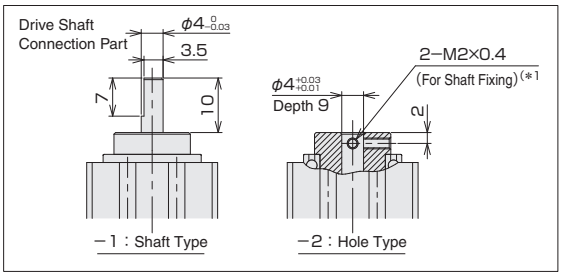
1: Shaft Type
2: Hole Type







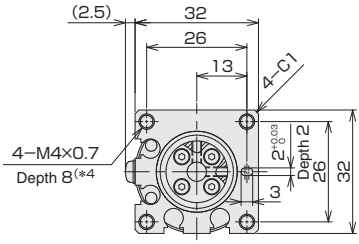
*1) For the hole type, 2 shaft fixing screws (M2×4L) are attached.
*2) For the position change of the table ports 2 , see P.8.
*3) Switch can not be used.

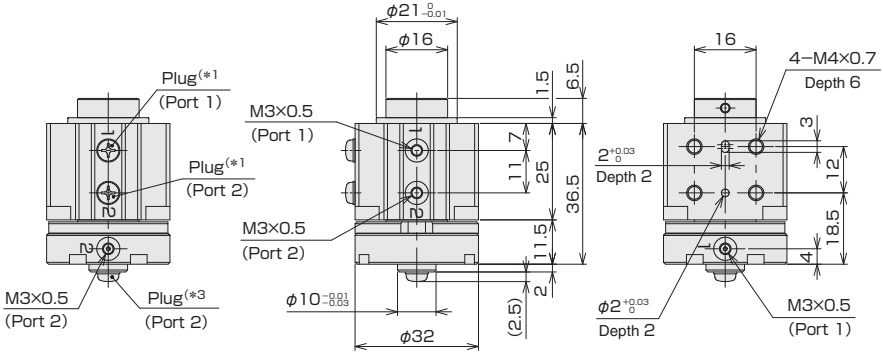


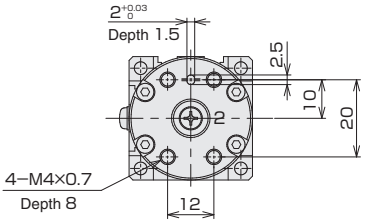
Dimensions

NEOKS-12-□

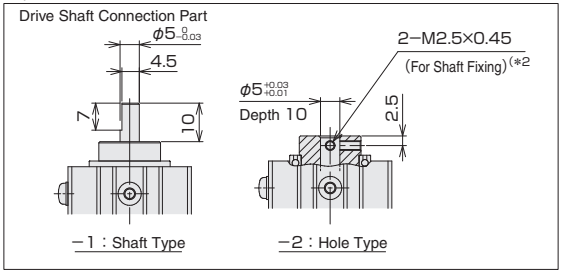
Drive Shaft Connection Part
1: Shaft Type
2: Hole Type







∗1) There is an air port on each of the two faces of the case. Select the one you use according to the mounting condition.
∗2) For the hole type, 2 shaft fixing screws (M2.5× 3L) are attached.
∗3) For the position change of the table ports 2, see P.8.
∗4) The through hole cannot be used for installation.
∗5) Switch can not be used.

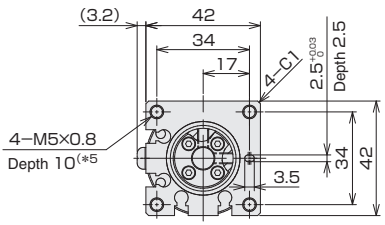


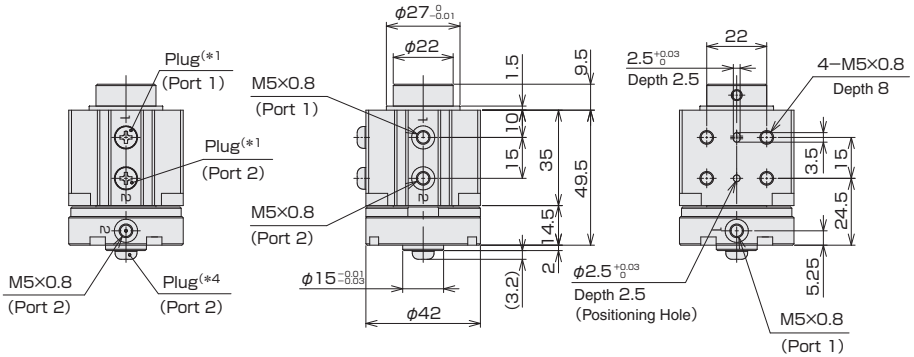
Dimensions

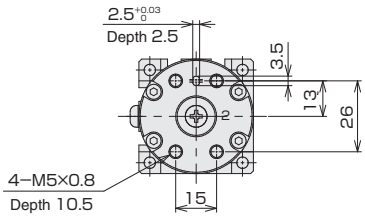
NEOKS-16-□

Drive Shaft Connection Part

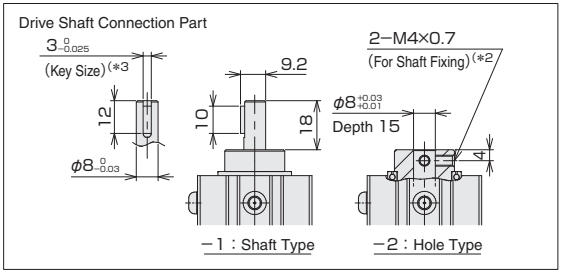
1: Shaft Type
2: Hole Type



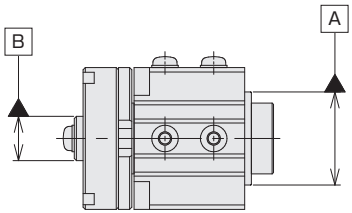




∗1) There is an air port on each of the two faces of the case. Select the one you use according to the mounting condition.
∗2) For the hole type, 2 shaft fixing screws (M4× 6L) are attached.
∗3) The key is delivered as attachment.
∗4) For the position change of the table ports 2, see P.8.
∗5) The through hole cannot be used for installation.
∗6) Switch can not be used.



Rotational Runout Accuracy



Rotation misalignment of the table inlay center B relative to the positioning boss center A is ± 0.05mm

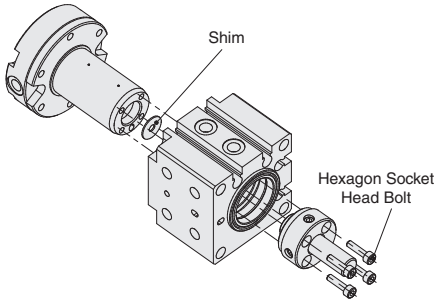
Lubrication

Although the swivel joint is coated with lubricant, operation may become less smooth depending on the rotational speed, usage conditions and ambient environment, so it is recommended to fill lubricant regularly.If it is used in that condition, the wear of the sliding part will increase, which may result in a shorter life.

The grease supplying period varies depending on usage conditions and ambient environment, but the total number of rotations 2 million is generally used as a guide. The swivel joint can be disassembled after removing the hexagon socket head bolt shown in the figure.

After disassembly, apply lithium soap base grease after wiping off old grease of the rotary seal inside the case.During disassembly, be careful to avoid loss of internal part (shim).

In case of difficult disassembly, it is also possible to fill from the air port.Turbine oil (ISO, VG32) can also be used.



Rotary Seal Replacement

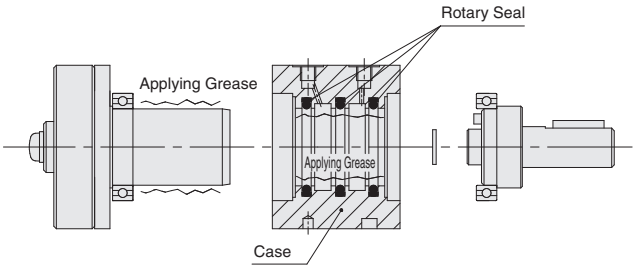
After disassembly, the rotary seal installed inside the case can be replaced.

The rotary seals are installed at the 3 locations shown in the figure below. After removing the rotary seals with a flat-blade screwdriver with no sharp tip, install new rotary seals with grease evenly applied to the housing.

When installing, make sure that the rotary seals are free from dust and that they are not twisted or cut.

When reassembling, apply grease to the outer peripheral surface of the table assy and the inner surface of the case.

(After installing the table assy in the case, wipe off any excess grease.)



Actuator Precaution ①

Please read the following instructions before use.

Design

⚠ WARNING

◆Abnormal action

Actuators may cause a kind of impact when force change occurs due to rattle in the sliding part of a machine.In this case, actuators may result in bodily damage (e.g. hands or legs being caught) or machine damage. Therefore, adjust actuators for smooth mechanical movement and design them to prevent bodily damage.

◆Protective cover

When there is a risk that a system or a product is harmful to human body during operation, install a protective cover.

◆Impact relaxation

When the driven object moves at a high speed or its mass is large, it is difficult to absorb impact using the cushion of the cylinder only. Therefore, install a circuit to reduce the speed before going to the cushion to release impact.In this case, consider the rigidity of the mechanical system fully.

◆Power source failures and supply pressure drop

If the power source (e.g. electric, pneumatic pressure, hydraulic source) has a failure or the air pressure drops due to troubles, cylinder power will drop, thus leading to load decrease. Take measures to prevent damage to human bodies and equipment.

◆Jumping prevention circuit

When the cylinder is driven by the exhaust center type directional control valve or one side of the piston is pressed under the condition that air has been exhausted from the cylinder (such as when starting after the residual pressure has been exhausted from the circuit), driven objects will jump out at a high speed. Such situation may be harmful to the human body (e.g. hands or legs getting caught) or machine damage. Therefore, select equipment and design circuits to prevent driven objects from jumping.

◆Emergency stop, abnormal stop

Design actuators so that their motions do not damage human bodies or equipment even in case of emergency/ abnormal stop of the system or when the system is re-started after stop.

Selection

⚠ WARNING

◆Operating pressure range

If the system is used with the maximum working pressure or above, each part will be worn or damaged, thus resulting in breakage or operation failures. If the system is used with the minimum working pressure or less, the specified thrust force cannot be generated, thus causing malfunctions such as failure to move smoothly. Therefore, use products within the specified operating pressure range.
(See the specifications.)

◆Intermediate stop

When the 3-position closed center type directional control valve is used to stop the cylinder piston in the intermediate position, it cannot stop it correctly and accurately because it uses not hydraulic pressure but compressed air.
Also, it is not assured that valves and cylinders leak no air. Therefore, pistons may not be able to stop for a long time.
Consult us if you need to realize long time stop position retention.

Mounting

⚠ WARNING

◆Locking in mounting

Product fixing bolts and attachment/jig mounting bolts must have a locking. Mount bases must have a structure to prevent deformation and breakage due to thrust force or inertia force at stopping.

⚠ CAUTION

◆Precautions in operating

Do not use the product until it is confirmed that equipment operate properly.
After mounting, repair or modification, connect compressed air and power and conduct appropriate functional tests and leak inspection to check if the mounting is appropriate.

◆Equipment operation check

After mounting the product to the system, do not start the system immediately but check if the product has been properly mounted for safety.

◆Product handling

Dropping or hitting the product or pinching the product with a tool will result in product deformation, thus causing accuracy deterioration and operational failure.

◆Speed adjustment

Adjust the cylinder drive speed gradually to the specified speed with a speed controller from the low speed side.

◆Precautions in magnetic products

Bringing magnetic products such as a magnetic disk, a magnetic guard and a magnetic tape close to the built-in switch sensing magnet type may result in data erase. Also, do not bring them close to any equipment that may cause malfunction due to magnetism.

Actuator Precaution ②

Please read the following instructions before use.

Piping

⚠ CAUTION

◆Seal tape winding

When you screw in pipes and joints, be careful not to make piping screw chips and sealing materials enter into the inside of the pipes.

When you use a seal tape, wind a screw with the tape so that 1.5 to 2 turns of the screw head is not winded.

Lubrication

⚠ CAUTION

◆Use in lubrication circuit

If the system needs lubricating, use additive-free turbine oil class 1 ISO VG32 or ISO VG46. Do not use machine oil and spindle oil because they will damage packings, thus causing operation failures. Do not stop lubricating in the middle of lubricating because doing so will cause flowout of lubrication grease, thus accelerating damage of packings and other parts, resulting in operation failures.

Air source

⚠ CAUTION

◆Quality of compressed air

Compressed air containing drain (e.g. dust, water, salt, degraded compressor oil, oil carbon particles) and corrosive gas will damage packings and other parts, thus causing operation failures and damages. Therefore, use clean compressed air.

◆Drain removal measure

Compressed air containing a large amount of drain not only causes operation failures of the air compressor but also causes environmental contamination. Install equipment such as an after-cooler, an air dryer and an air filter (nominal filtration rating: 50μm or less).

The air cleaning system to drive actuators is recommended in JPAS005 "Guidelines for Use and Selection of Pneumatic Cylinders".

◆Temperature of compressed air

Hot compressed air will accelerate damage of packings and other parts. Even when the environmental temperature is within the specified range, heat may transmit through jigs connected to the actuator and driven objects. When the environmental temperature is low, drain and moisture will become solidified or frozen, thus resulting in damaged packings and parts and operation failures. Therefore, measures to prevent freezing must be taken.

Usage environment

⚠ WARNING

◆Outdoor use

Do not use the product in places where the product is directly or indirectly exposed to wind and rain, is exposed to direct sunlight, or any outdoor place where the product is influenced by temperature or any other factors because this product is not resistant to weather.

◆Use in the corrosive environment

Do not use the product in water or places where the product is exposed to salt water, acid, alkaline fluid splash, iron powder or in their gases or moisture vapors.

◆Cover installation

Attachment of dust, water, oil, chips, iron powder, or spatter to the rod and the sliding parts will result in damaged shafts and packings, thus causing air leak and operation failures. Install a cover to prevent them from attaching.

◆Operating temperature range

Use with a temperature exceeding the maximum operating temperature will result in deterioration acceleration such as hardening of packings, thus causing operation failures. Even when the environmental temperature is within the specified range, heat may transmit through jigs and driven objects. When the product is working at a high speed, its sliding surfaces will locally overheat, thus causing similar problems, freezing due to adiabatic expansion or surface dew condensation.

When the temperature is lower than the minimum operating temperature, drain and moisture will become solidified or frozen, thus resulting in damaged packings and operation failures. Therefore, measures to prevent freezing must be taken.

Maintenance and check

⚠ WARNING

◆Removing equipment, and supplying and exhausting compressed air

Before removing equipment, make sure that driven object fall prevention measures and runaway prevention measures have been taken, cut off supply air, turn off the power of the equipment and exhaust compressed air from the system.

Before re-starting the equipment, make sure that the jumping prevention measures have been taken and do it carefully.

⚠ CAUTION

◆Draining air filter

Operating the equipment without maintaining or draining the air dryer and the air filter will result in life shortening or equipment failures. Drain tends to increase in summer in particular, so drain them frequently in summer. Use of a type with an auto drain function is recommended.

Warranty and Disclaimer

1 Warranty Period

The warranty period for our products is 12 months from the delivery date of our factory.

2 Warranty Coverage and Disclaimer

- If a failure or damage caused by our responsibility is revealed during the warranty period, we will repair or replace it free of charge.
- The warranty of our products is the warranty of our product only. In addition, we will not be liable for any damages caused by malfunctions or functional deterioration of our products, or for damages to other equipment resulting from them. And we are not responsible for the cost of repairing or replacing our products.
- We are not liable for any damages caused by modification, change or repair by the customer.
- We are not liable for any damages resulting from use, storage or installation beyond the range of the product specifications described in the catalog and instruction manual.
- We are not liable for any failures or damages caused by fires, earthquakes, lightning strikes, or other natural disasters.
- We are not liable for any damages caused by product failure due to negligence in handling.

● MEMO ●

● MEMO ●

Guide to Our Website

http://www.newera.co.jp

- Check the latest New-Era information including new products
- Download CAD data
- Request catalogs and information materials

Please refer to the above website for the CAD data download procedure.

Introduction of Various Rotors

RT01 Series
Rotary Table

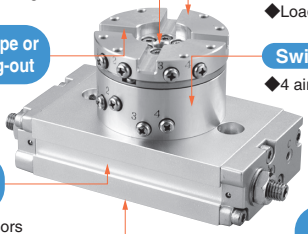
**2/3/4-position stop is possible!
Wiring is reduced, and air pipe
and lead wire are not twisted.**

Through-hole
◆Can be used for wiring, etc.

High Precision Table
◆High precision & high rigidity bearing
◆Load can be mounted directly

Groove for Air Pipe or Lead Wire Taking-out

Swivel Joint Structure
◆4 air ports

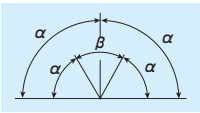


Groove for Sensor Mounting
◆Two types of sensors can be mounted

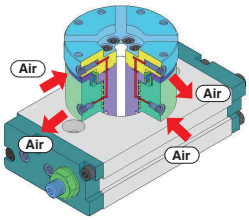
Reference hole for centering on the back

What is multi-position stop type?

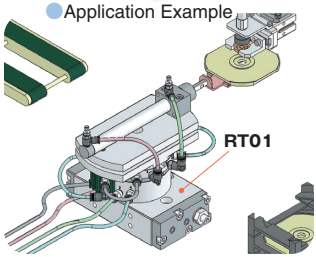
α and β angles are specified to stop at 3 or 4 points as shown on the right



Internal Structure



Application Example



CTRV Series
Pico Rotary

**High rigidity with two rolling bearings on the top and bottom!
Extremely compact due to its unique structure.With a hollow hole.**

Positioning
Reproducibility of mounting is secured by the reference hole and pin hole provided on the table and body.

Mounting from 3 Directions
The cube-shaped compact body can be mounted from the top, bottom and back.

Rack & Pinion
The longitudinal dimension has been greatly shortened due to the overlap structure with a cylinder built-in in the rack.

Copper Part Countermeasures
Copper parts are not used.

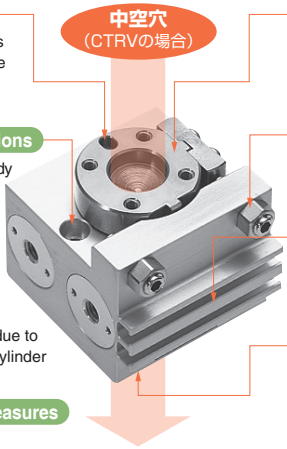


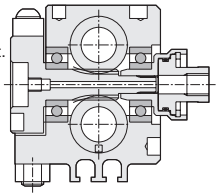
Table
Workpiece and tools can be mounted directly on the table integrated with the output shaft.

Angle Adjustment
Each swing end can be adjusted by ±5°.

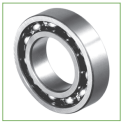
Switch
The switch position and angle can be adjusted on the same face.

Rolling Bearings
A large moment can be borne due to the rolling bearings on the top and bottom of the body.

Internal Structure Drawing



Rolling Bearing Used



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