文書 No.DOC1096009

Operation Manual

PRODUCT NAME

Air Slide Table

MODEL/Series /Product Number

MXQ32-***-X2600

SMC Corporation

Contents

Safety Instructions

These safety instructions are intended to prevent hazardous situations and/or equipment damage. These instructions indicate the level of potential hazard with the labels of **"Caution," "Warning"** or **"Danger."** They are all important notes for safety and must be followed in addition to International Standards (ISO/IEC)[*1)], and other safety regulations.

*1) ISO 4414: Pneumatic fluid power - General rules and safety requirements for systems and their components
ISO 4413: Hydraulic fluid power - General rules and safety requirements for systems and their components
IEC 60204-1: Safety of machinery - Electrical equipment of machines - Part 1: General requirements
ISO 10218-1: Robots and robotic devices - Safety requirements for industrial robots - Part 1:Robots
etc.

Danger	**Danger** indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury.
Warning	**Warning** indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.
Caution	**Caution** indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.

Warning

1. The compatibility of the product is the responsibility of the person who designs the equipment or decides its specifications.

Since the product specified here is used under various operating conditions, its compatibility with specific equipment must be decided by the person who designs the equipment or decides its specifications based on necessary analysis and test results. The expected performance and safety assurance of the equipment will be the responsibility of the person who has determined its compatibility with the product. This person should also continuously review all specifications of the product referring to its latest catalog information, with a view to giving due consideration to any possibility of equipment failure when configuring the equipment.

2. Only personnel with appropriate training should operate machinery and equipment.

The product specified here may become unsafe if handled incorrectly. The assembly, operation and maintenance of machines or equipment including our products must be performed by an operator who is appropriately trained and experienced.

3. Do not service or attempt to remove product and machinery/equipment until safety is confirmed.

1. The inspection and maintenance of machinery/equipment should only be performed after measures to prevent falling or runaway of the driven objects have been confirmed.
2. When the product is to be removed, confirm that the safety measures as mentioned above are implemented and the power from any appropriate source is cut, and read and understand the specific product precautions of all relevant products carefully.
3. Before machinery/equipment is restarted, take measures to prevent unexpected operation and malfunction.

4. Our products cannot be used beyond their specifications. Our products are not developed, designed, and manufactured to be used under the following conditions or environments. Use under such conditions or environments is not covered.

1. Conditions and environments outside of the given specifications, or use outdoors or in a place exposed to direct sunlight.
2. Use for nuclear power, railways, aviation, space equipment, ships, vehicles, military application, equipment affecting human life, body, and property, fuel equipment, entertainment equipment, emergency shut-off circuits, press clutches, brake circuits, safety equipment, etc., and use for applications that do not conform to standard specifications such as catalogs and operation manuals.
3. Use for interlock circuits, except for use with double interlock such as installing a mechanical protection function in case of failure. Please periodically inspect the product to confirm that the product is operating properly.

Safety Instructions

⚠ Caution

We develop, design, and manufacture our products to be used for automatic control equipment, and provide them for peaceful use in manufacturing industries.
Use in non-manufacturing industries is not covered.
Products we manufacture and sell cannot be used for the purpose of transactions or certification specified in the Measurement Act.
The new Measurement Act prohibits use of any unit other than SI units in Japan.

Limited warranty and Disclaimer/Compliance Requirements

The product used is subject to the following “Limited warranty and Disclaimer” and “Compliance Requirements”.
Read and accept them before using the product.

Limited warranty and Disclaimer

1. The warranty period of the product is 1 year in service or 1.5 years after the product is delivered, whichever is first.*2)
   Also, the product may have specified durability, running distance or replacement parts. Please consult your nearest sales branch.
2. For any failure or damage reported within the warranty period which is clearly our responsibility, a replacement product or necessary parts will be provided.
   This limited warranty applies only to our product independently, and not to any other damage incurred due to the failure of the product.
3. Prior to using SMC products, please read and understand the warranty terms and disclaimers noted in the specified catalog for the particular products.

***2) Vacuum pads are excluded from this 1 year warranty.**
A vacuum pad is a consumable part, so it is warranted for a year after it is delivered.
Also, even within the warranty period, the wear of a product due to the use of the vacuum pad or failure due to the deterioration of rubber material are not covered by the limited warranty

Compliance Requirements

1. The use of SMC products with production equipment for the manufacture of weapons of mass destruction (WMD) or any other weapon is strictly prohibited.
2. The exports of SMC products or technology from one country to another are governed by the relevant security laws and regulations of the countries involved in the transaction. Prior to the shipment of a SMC product to another country, assure that all local rules governing that export are known and followed.

1. Product Specifications

1-1 Specifications

Model	MXQ32-***-X2600
Bore size (mm)	Φ32
Port size	Rc1/8
Fluid	Air
Action	Double acting
Operating pressure	0.15～0.7MPa
Proof pressure	1.05MPa
Ambient and fluid temperature	-10 to 60℃(No freezing)
Operating speed range (Average operating speed) Note)	50 to 500mm/s
Cushion	Rubber cushion(Standard, adjuster option/rubber stopper) Shock absorber(Adjuster option/shock absorber)
Lubrication	Non-lube
Auto switch	Reed auto switch (2-wire、3-wire) Solid state auto switch (2-wire、3-wire) 2-color indicator solid state auto switch (2-wire、3-wire)
Stroke length tolerance	$^{+2}_{0}$ mm

Note) Average operating speed: Speed that the stroke is divided by a period of time from starting the operation to reaching the end.

1-2 Option

Adjuster Option	Rubber stopper	Extension end (AS)	Stroke adjustment range 0 to 20mm
		Retraction end (AT)	
		Both ends (A)	
	Shock absorber	Extension end (BS)	Stroke adjustment range 0 to 25mm
		Retraction end (BT)	
		Both ends (B)	

2. How to use

⚠ Warning

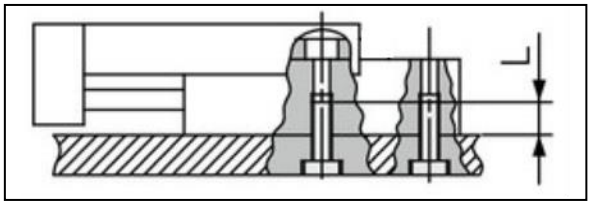
For general actuator use guidelines, be sure to refer to the Actuator/Precautions of the catalog (Best Pneumatics No.③) before using it.

2-1. Mounting

(1) Mounting of body

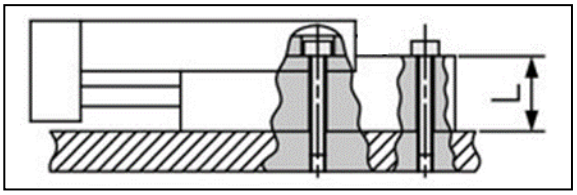
Three types of installation are available according to the machine or work piece.

1. Lateral mounting (Body tapped)



Bolt	Maximum Tightening N・m	Thread depth: L mm
M10x1.5	29.5～34.5	17

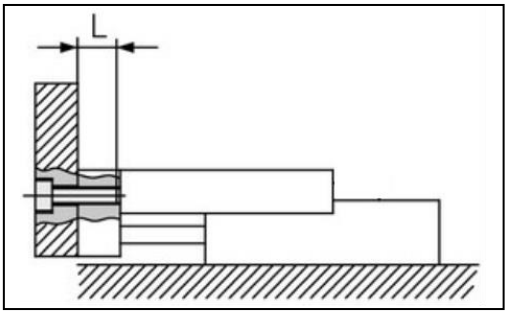
2. Lateral mounting (Body through-hole)



Bolt	Maximum Tightening N・m	Thread depth: L mm
M8x1.25	18.5～22.5	30.7

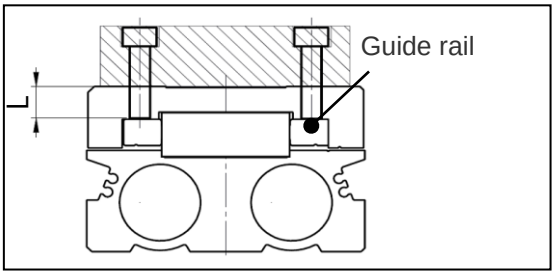
(2) How to mount the workpiece

1. Front mounting



Bolt	Maximum Tightening N・m	Thread depth: L mm
M10x1.5	29.5～34.5	19

2. Top mounting



Bolt	Maximum Tightening N・m	Thread depth: L mm
M8x1.25	15～18.5	12.5

⚠ Caution

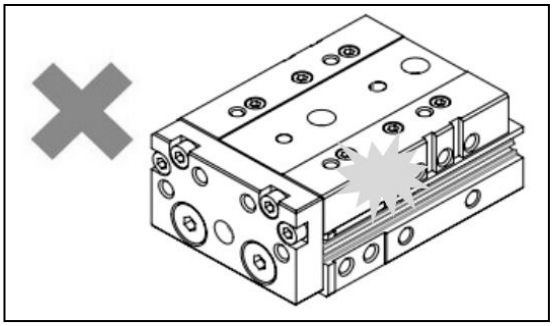
The length of bolt should be shorter than the max. screw depth by 0.5mm or more so that work fixing bolt will not hit guide rail.
If not, bolt may hit guide rail and malfunction.

(3) Precautions for mounting

⚠ Caution

① Do not dent or scratch the mounting surface of the body, table or end plate.
Damage can cause reduction in flatness, play in the guide and an increase in sliding resistance.

② Do not dent or scratch the rolling surface of the guide rail or guide block.
This could result in looseness, increased operating resistance, etc.



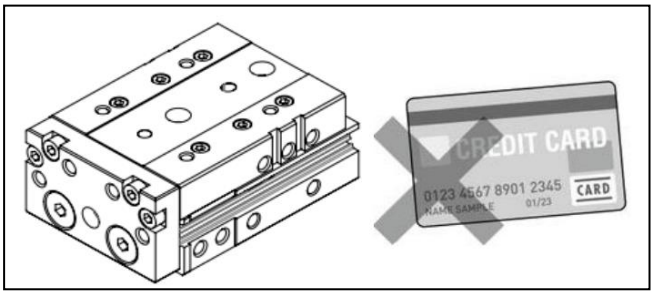
③ When attaching the workpiece, avoid large impacts and moments.
If an external force more than the allowable moment is applied, it may cause play in the guide part and an increase in sliding resistance.

④ Keep the flatness of the mounting surface 0.02mm or less.
Insufficient flatness of a workpiece or base mounted on the product, the base and other parts can cause play in the guide unit and an increase in the sliding resistance.

⑤ When connecting a load with an external support or guide mechanism, be sure to select a suitable connection method and perform careful alignment.

⑥ Do not touch the product while in operation.
An operator's finger may get caught between the optional adjuster and product.
Install a cover as a safety measure if an operator can get close to the slide table during operation.

⑦ Keep away from objects which are influenced by magnets.
As the body magnets are built-in, do not allow close contact with magnetic disks, magnetic cards, or magnetic tapes. Data may be erased.



⑧ Do not touch a magnet to the guide section.
Since the guide is made from the magnetic substance, it could turn to be magnetized, if it stuck by a magnet, etc.
This could cause auto switches, etc. to malfunction.

⑨ When mounting the air slide table, tighten it with screws of appropriate length to the appropriate torque, below the maximum tightening torque.
Tightening to a torque greater than the specified range may cause malfunction, and insufficient tightening may cause displacement or dropping.

2-2. Air supply

⚠ Warning

① Use clean air

Do not use compressed air which contains chemicals, synthetic oils containing organic Solvents, salts or corrosive gases, etc., as this can cause damage or malfunction.

② High levels of condensate
Compressed air containing a large amount of condensate can cause the pneumatic equipment to malfunction. Install an air dryer or water separator upstream of filters.

③ Drain control
If condensate is not discharged from the air filter on a regular basis, the condensate will overflow to the downstream side, causing the pneumatic equipment to malfunction. If it is difficult to discharge condensate, we recommend that you use a filter with an auto drain option. For detailed information regarding the quality of compressed air described above, refer to SMC's "Compressed Air Cleaning System."

④ Types of air
Do not use compressed air that contains chemicals, synthetic oils that include organic solvents, salt, corrosive gases, etc., as they can cause damage or malfunction.

⚠ Caution

① If ultra dry air is used as the fluid, the lubrication characteristics of the equipment will degrade, possibly affecting the reliability (life) of the product.

② Install an air filter.
Install an air filter close to the upstream side of the valve. Choose a filter of 5μm of filtration.

③ Install an aftercooler, air dryer or water droplet separator.
Do not use compressed air containing a lot of condensates, this can cause the operating failure of the product and other pneumatic equipment. Install an aftercooler, air dryer or water droplet separator.

④ Use the product within the specified fluid and ambient temperature range.
When operating at temperatures below 5℃, water in the circuit may freeze and cause the breakdown of seals or malfunction. Corrective measures should be taken to prevent freezing. For compressed air quality, refer to SMC catalog "Compressed Air Purification System".

⑤ Avoid dew condensation

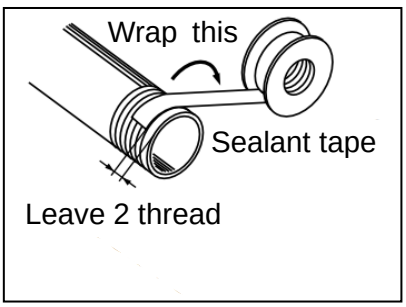
Dew condensation can occur inside a pneumatic system when the temperature drops depending on the piping or operating conditions. This can deteriorate or wash away grease, resulting in shortened service life or malfunctions.
For details, refer to the catalog "Precautionary measures against condensation in a pneumatic system" (CAT.P-E01-11).

2-3. Piping

⚠ Caution

① Before piping
Before piping, perform air blow (flushing) or cleaning to remove any cutting chips, cutting oil, dust, etc. from the piping.

② Sealant tape
When installing piping or a fitting into a port, prevent cutting chips and sealant material from getting inside the piping.
When a pipe tape is used, leave 1.5 to 2 thread ridges exposed at the end of the pipe.



2-4. Operating Environment

⚠ Warning

① Do not use in environments where there is a danger of corrosion.
Refer to the construction drawings regarding cylinder materials.
② Do not subject the product to direct sunlight.
③ Do not operate in a location subject to vibration or impact.
Contact SMC when product is used in such environmental conditions.
④ Shield the product from nearby heat sources.
⑤ Install a cover over the rod if it is used in an area that is dusty, or in an environment in which water or oil splashes on the cylinder.
⑥ When using auto switches, do not operate in an environment with strong magnetic fields, as this can cause the switch to malfunction.
⑦ If the product is equipped with a shock absorber, refer to the individual precautions on shock absorber as well.
⑧ The grease in the guide may deteriorate or leak depending on the properties of the compressed air used in the pneumatic equipment, external environment, or operating conditions. This may degrade the lubrication performance and shorten the life of the product.

⚠ Caution

① Do not use in environments where the product could be exposed to liquids, such as cutting oils, etc.
Using in an environment where the product could be exposed to cutting oil, coolant, oil., could result in looseness, increased operating resistance, air leakage, etc.
② Do not use the product in an environment directly exposed to foreign matter such as dust, cutting chips and spatter.
This can result in play, increased operating resistance, air leakage, etc.
③ Corrosion resistance of the linear guide section.
Rust may occur especially in environments where water droplets adhere due to condensation, etc.
④ The grease in the cylinders and the guide may seep out, depending on the operating conditions (ambient temperature of 40°C or higher, pressurized condition, operation at low frequency, etc.). Be careful if a clean environment is required.

2-5. Lubricating

⚠ Warning

Lubrication of non-lubricating cylinder
The product has been lubricated for life at manufacture and does not require lubrication in service. If a lubricant is used in the system, use turbine oil Class 1 (with no additive) ISO VG302. Stopping lubrication later may lead to malfunction because the new lubricant will displace the original lubricant. Therefore, lubrication must be continued once it has been started.

2-6. Speed adjustment

⚠ Caution

To adjust the cylinder's operation speed, install a speed controller and slowly increase the speed until the desired speed is reached.
Piston speed should be controlled gradually from low speed to the specified speed with a speed controller.

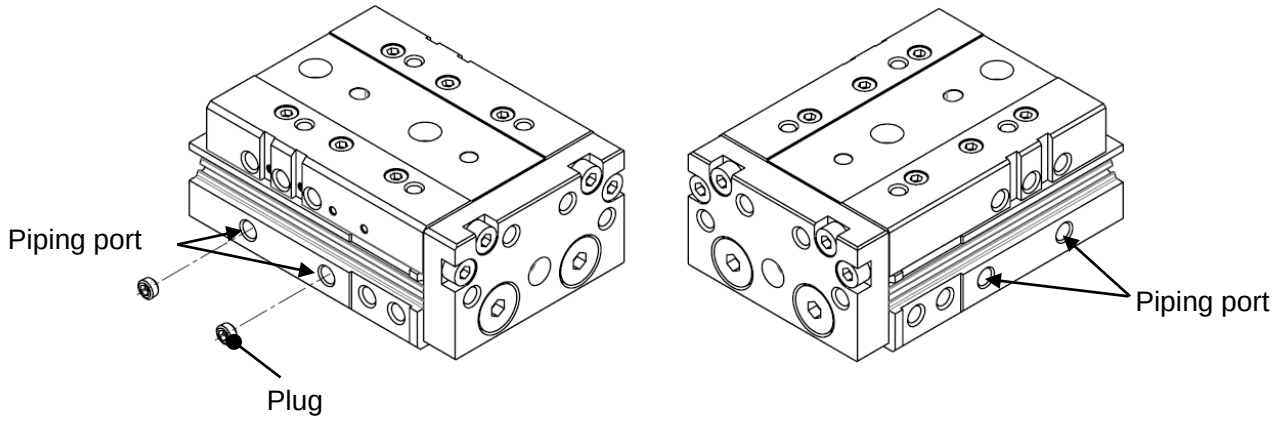
2-7 Piping port plugs

⚠ Caution

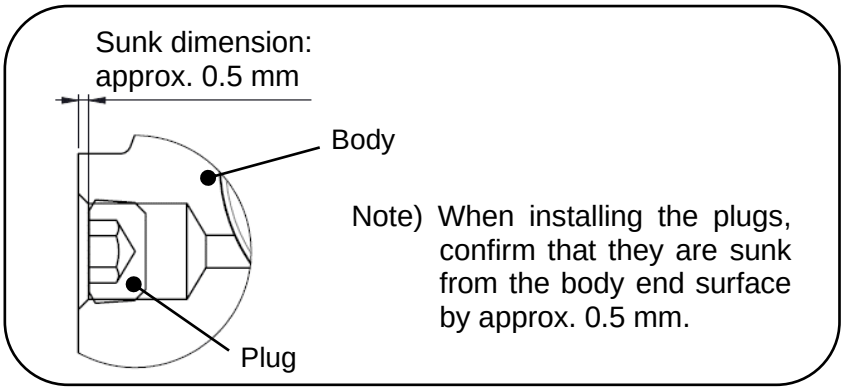
① Plugs(with sealant) for the piping ports are included in the package, but they do not come assembled.

② This product has 2 piping ports on each side. Refer to the operating manual and insert the plugs into any unused piping ports before using the product.

③ When installing the plug(s), tighten to the tightening torques shown in the table below. They are designed to sit sunk into the body end surface, the diagram below shows the approximate depth the plug sits at. Check for air leakage before use.



Thread size	Tightening torque N·m
1/8	7～9



Note) When installing the plugs, confirm that they are sunk from the body end surface by approx. 0.5 mm.

④ If a plug inserted into a piping port is removed, some of the sealant mar peel off, and the seal performance may be affected.
When you use the plugs again, use them by winding sealant tape around them in accordance with "2-3 **Piping**" or use the plug set.
For the plug set, refer to "Replacement parts" on page 18.

2-8. Mounting of optional adjuster

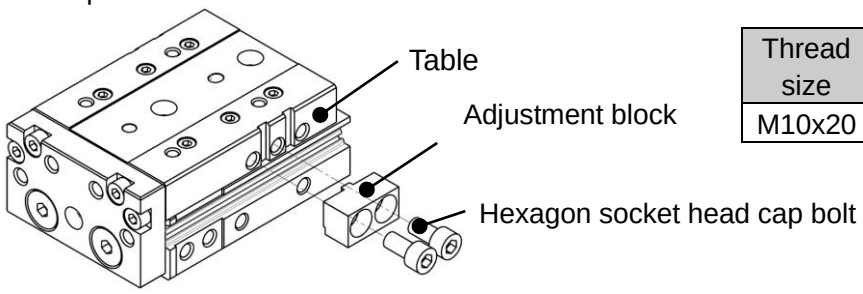
⚠ Caution

① Adjuster options are shipped together with the product.
To correctly install the stroke adjuster, follow the steps below.

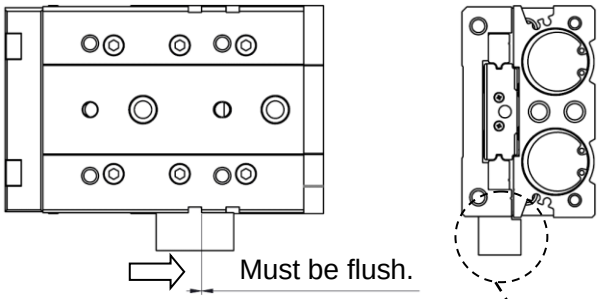
② The bolt length of the body mounting part and the table mounting part are different.
Be aware that the hexagon socket head cap screws for the body mounting part, and the table mounting part of the adjuster on the extension end (AS,BS) are of different lengths.
If assembled incorrectly, looseness or a malfunction may result.
Assembly of the adjuster option with incorrect bolt lengths may cause malfunction.

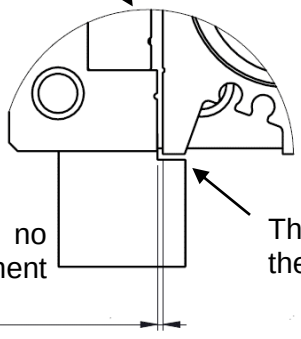
③ Install the extension end adjuster (AS, BS) by the appropriate method in accordance with the figure and table below. Defective installation may result in a decrease of the positioning accuracy, malfunction, or failure.

1. Table mounted part



Thread size	Tightening torque N·m
M10x20	29.5～34.5



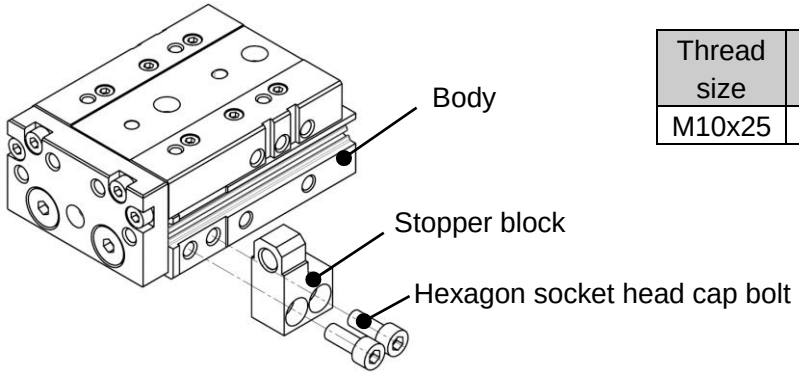


Note) To install the adjustment block, first move it in the direction of the arrow until it is flush with the table, then secure it.
Upon installation. pay attention to the orientation of the adjustment block, and make sure that it does not make contact with the body.

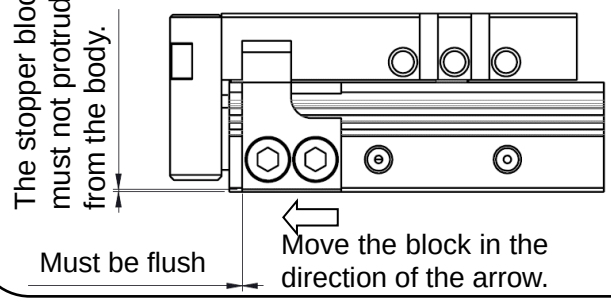
Make sure that there is no contact between the adjustment block and the body.

The recess part must be on the body side.

2. Body mounted part



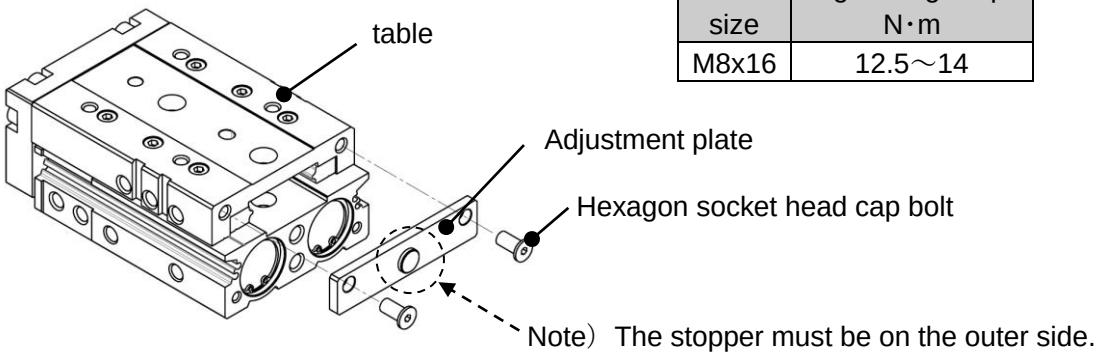
Thread size	Tightening torque N·m
M10x25	29.5～34.5



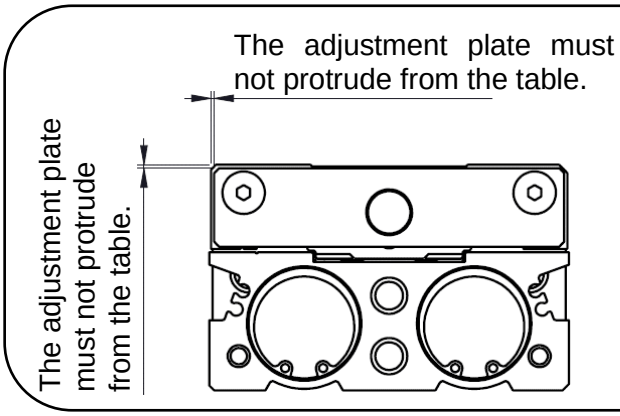
Note) To install the stopper block, first move it in the direction of the arrow until it is flush with the body, then secure it.
Make sure that the stopper block does not protrude from the body.

④ Install the retraction end adjuster (AT, BT) by the appropriate method in accordance with the figure and table below. Defective installation may result in a decrease of the positioning accuracy, malfunction, or failure.

1. Table mounted part



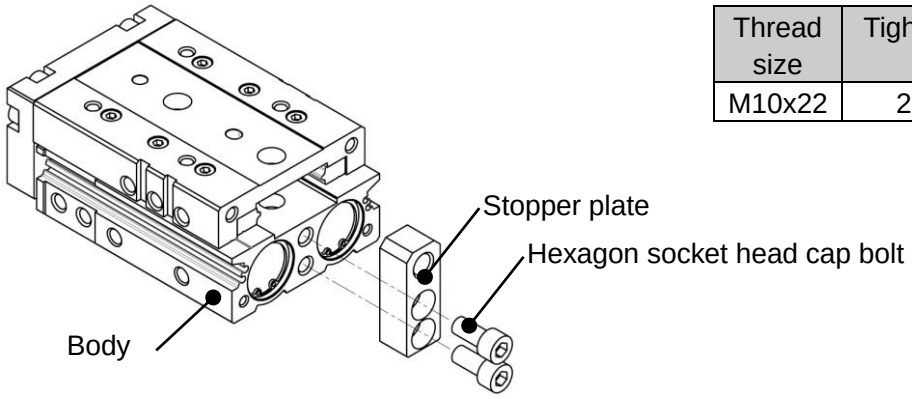
Thread size	Tightening torque N·m
M8x16	12.5～14

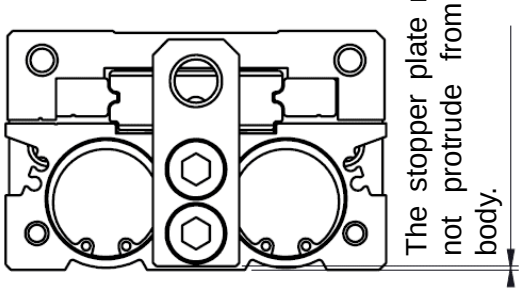


Note) When installing the adjustment plate, make sure it does not protrude from the table.

2. Body mounted part

Thread size	Tightening torque N·m
M10x22	29.5～34.5





Note) When installing the stopper plate, make sure it does not protrude from the table.

2-9. Handling of optional adjuster

●Rubber stopper / Metal stopper

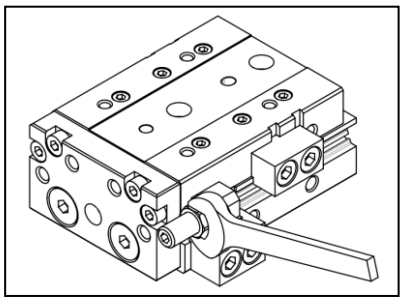
⚠ Caution

① Do not use with a bolt other than the original adjustment bolt.
Using a different bolt could result in looseness and damage due to impact forces etc.

② Tightening torque for the lock nut should be in accordance with the table on the right.
Insufficient torque will result in a decrease in positioning accuracy.

Tightening torque N・m
62～69

③ When adjusting the adjuster, do net hit the table with the wrench.
This could result in looseness.

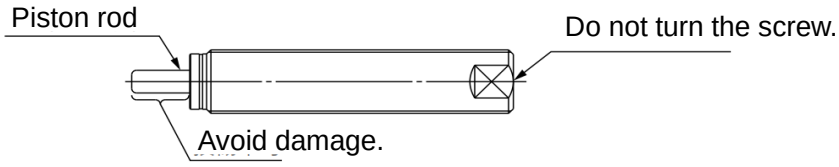


●Shock absorber

⚠ Caution

① Do not rotate the screw on the bottom surface of the shock absorber.
This is not an adjusting screw. Turning it could cause oil leakage.

② Do not scratch the exposed portion of the piston rod.
The durability may be affected and the piston may no longer operate properly.



③ Shock absorber is a consumable. Replace the shock absorber when the energy absorption performance is reduced. Use the tightening torque in the table below for the lock nuts.

Shock absorber model	Tightening torque N・m
RJ1412L	8.8～10.8

④ Service Life and Replacement Period of Shock Absorber.
The allowable number of operating cycle under the specifications in this catalog is show below.

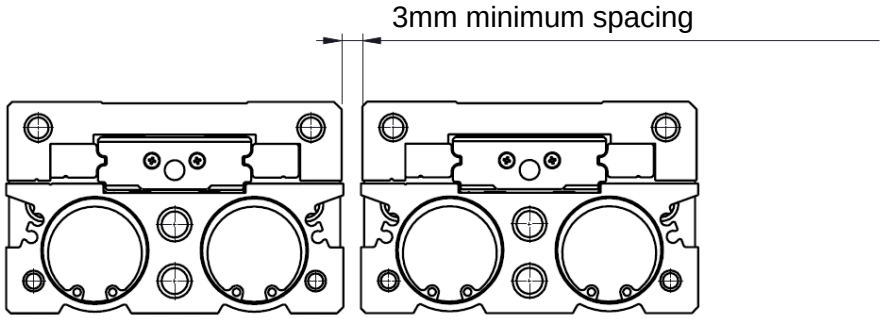
Shock absorber model	Specified service life
RJ1412LN	3 million cycles

Note） Specified service life (suitable replacement period) is the value at room temperature (20 to 25℃). The period may vary depending on the temperature and other conditions. In some cases, the absorber may need to be replaced before the allowable number of operating cycles stated above has been reached.

2-10 Handling of products that are positioned side by side

⚠ Caution

① Ensure a minimum spacing of 3mm when mounting product and product.
If there is not sufficient space between the adjusters, the auto switch may malfunction.



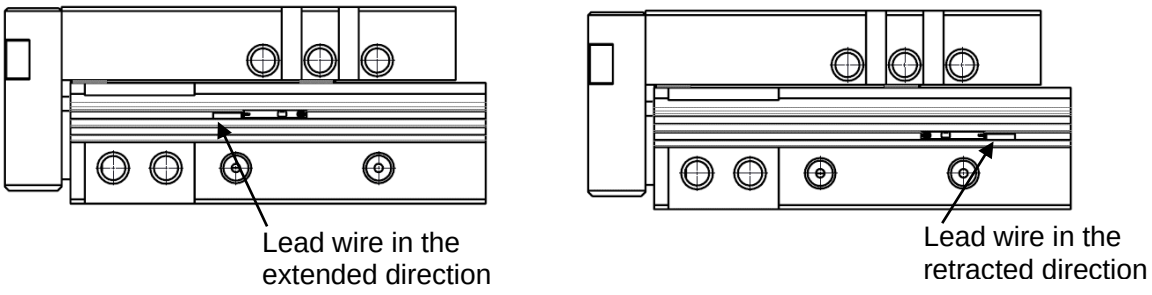
2-11 Mounting of auto switch

⚠ Caution

Mounting precautions

① Auto switch mounting tool.
Auto switch mounting screws (attached to the auto switch), use a watchmaker's screwdriver with a handle diameter of about 5 to 6 mm.

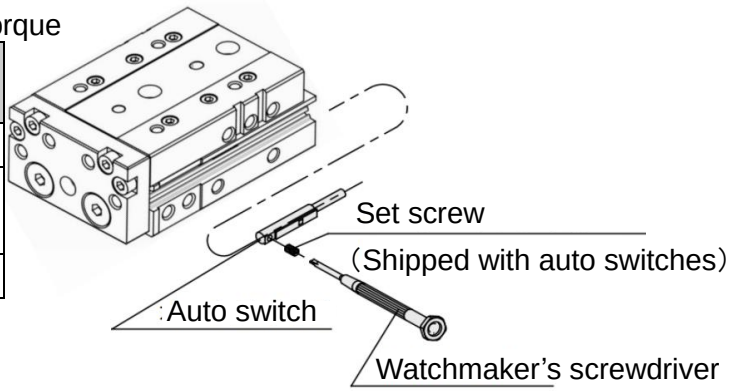
② Auto switch mounting direction.
If the lead wire is positioned like the drawing on the left, the auto switch may malfunction.
Mount the lead wire like the drawing on the right.



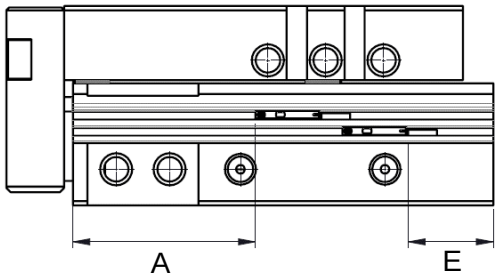
③ Tightening torque

Auto Switch Mounting Screw Tightening Torque

Auto switch model	Tightening torque N·m
D-A9□(V)	0.10～0.20
D-M9□(V) D-M9□W(V)	0.05～0.15
D-M9□A(V)	0.05～0.10



④ Refer to the table below for the appropriate installation position of the auto switch (when stroke end is detected).
For actual setting, please check the operating condition of the auto switch before adjustment.



(mm)

Auto switch model	Stroke A								
	10	20	30	40	50	75	100	125	150
D-M9□/M9□W	76.5	66.5	56.5	66.5	56.5	56.5	56.5	56.5	56.5
D-M9□V/M9□WV	76.5	66.5	56.5	66.5	56.5	56.5	56.5	56.5	56.5
D-M9□A	76.5	66.5	56.5	66.5	56.5	56.5	56.5	56.5	56.5
D-M9□AV	76.5	66.5	56.5	66.5	56.5	56.5	56.5	56.5	56.5
D-A9□/A9□V	72.5	62.5	52.5	62.5	52.5	52.5	52.5	52.5	52.5

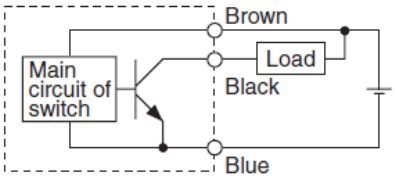
Auto switch model	Stroke E								
	10	20	30	40	50	75	100	125	150
D-M9□/M9□W	36.2	36.2	36.2	26.2	26.2	45.2	45.2	82.2	79.2
D-M9□V/M9□WV	39.2	39.2	39.2	29.2	29.2	48.2	48.2	85.2	82.2
D-M9□A	35	35	35	25	25	44	44	81	78
D-M9□AV	37	37	37	27	27	46	46	83	80
D-A9□/A9□V	41 (38.5)	41 (38.5)	41 (38.5)	41 (28.5)	41 (28.5)	41 (47.5)	41 (47.5)	41 (84.5)	41 (84.5)

* ( ) Figures in parentheses are for D-A90 and A93

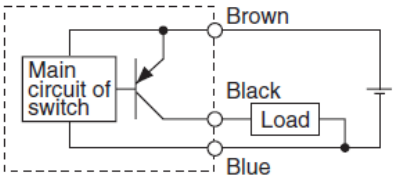
⑤ Please refer to the figure below of the wiring and connection of the auto switch.

Basic Wiring

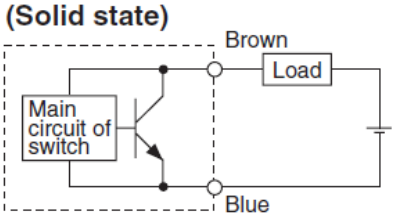
Solid state 3-wire, NPN



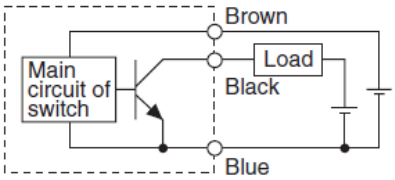
Solid state 3-wire, PNP

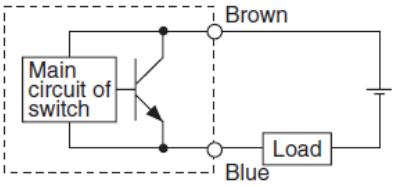


2-wire (Solid state)



(Power supply for switch and load are separate.)

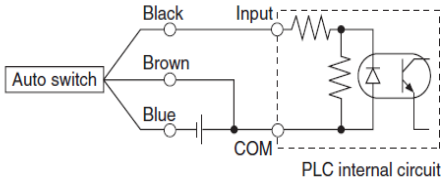




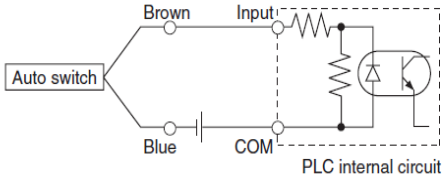
Example of Connection with PLC (Programmable Logic Controller)

• Sink input specifications

3-wire, NPN

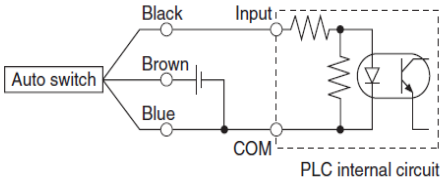


2-wire

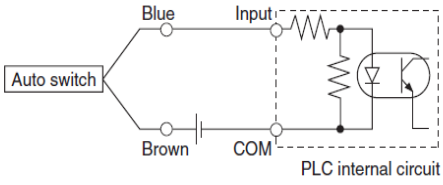


• Source input specifications

3-wire, PNP



2-wire

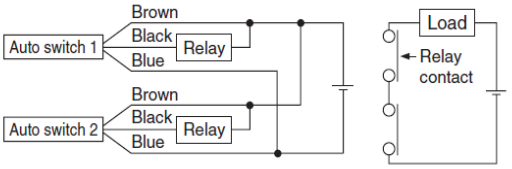


Connect according to the applicable PLC input specifications, as the connection method will vary depending on the PLC input specifications.

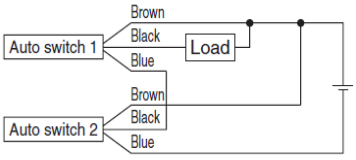
Example of AND (Series) and OR (Parallel) Connection

• 3-wire

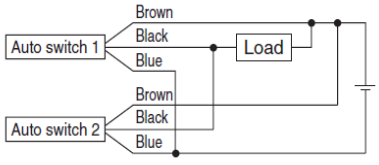
AND connection for NPN output (Using relays)



AND connection for NPN output (Performed with auto switches only)



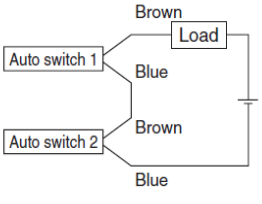
OR connection for NPN output



The indicator lights will light up when both of the auto switches are in the ON state.

• 2-wire

2-wire with 2-switch AND connection

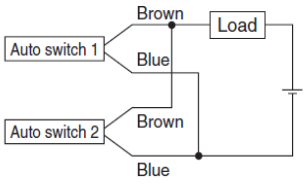


When two auto switches are connected in series, malfunction may occur because the load voltage will decrease in the ON state. The indicator lights will light up when both of the auto switches are in the ON state.

Load voltage at ON = Power supply voltage – Residual voltage x 2 pcs.
= 24 V – 4 V x 2 pcs.
= 16 V

Example: Power supply voltage 24 VDC
Auto switch internal voltage drop 4 V

2-wire with 2-switch OR connection



(Solid state)
When two auto switches are connected in parallel, malfunction may occur because the load voltage will increase in the OFF state.

Load voltage at OFF = Leakage current x 2 pcs. x Load impedance
= 1 mA x 2 pcs. x 3 kΩ
= 6 V

Example: Load impedance 3 kΩ
Auto switch leakage current 1 mA

(Reed)
Because there is no leakage current, the load voltage will not increase in the OFF state. However, depending on the number of auto switches in the ON state, the indicator lights may sometimes grow dim or not light up, due to the dispersion and reduction of the current flowing to the auto switches.

3. Maintenance

3-1 Precautions on maintenance

⚠ Caution

① Maintenance should be done according to the procedures of 〝Operation Manual〞.
Wrong handling may result in breakage or malfunction of product.

② Dismantling of product and supply / exhaust of compressed air.
properly provided, shut the power source of air supplied, and exhaust compressed air in the system. When starting operation again, operate the product with care after ensuring that a treatment for preventing extrusion is properly provided.

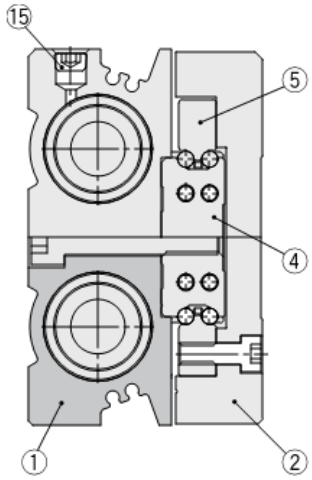
3-2 Replenishment of grease

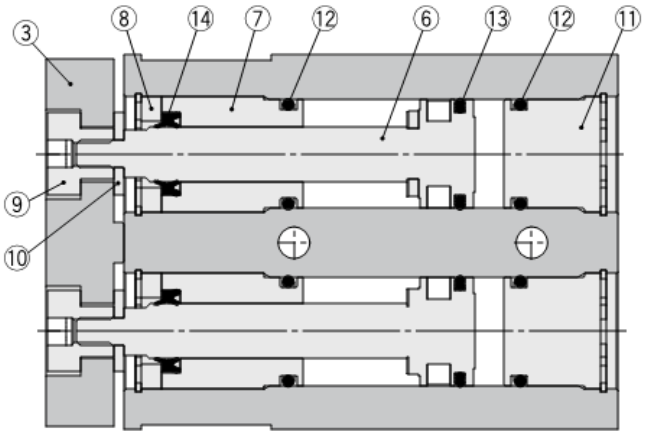
⚠ Caution

① Replenishment of grease to the guide unit.
No grease replenishment is necessary for pre-lubrication. When it is necessary to replenish grease should be used.

② Replenishment of grease during piston packing replacement.
We offer a seal kit and specified grease. Apply them to the seals and sliding parts.

3-3 Structure/Parts list





Component parts

No.	Description
1	Body
2	Table
3	End Plate
4	Guide block
5	Guide rail
6	Piston assembly
7	Rod cover
8	Seal support
9	Floating bush A
10	Floating bush B
11	Head cap
12	O-ring
13	Piston seal
14	Rod seal
15	Hexagon socket head taper plug

Replacement parts(Plug set)

Part No.	Contents
MXQ-PLG	Set of part No. 15

Replacement parts(Seal kit)

Part No.	Contents
MXQ32-PS	Set of part No. 12,13,14

Replacement parts(Grease pack)

Greased area	Grease pack product number
Guide unit	GR-S-010(10g)
	GR-S-020(20g)
Cylinder unit	GR-L-005(5g)
	GR-L-010(10g)

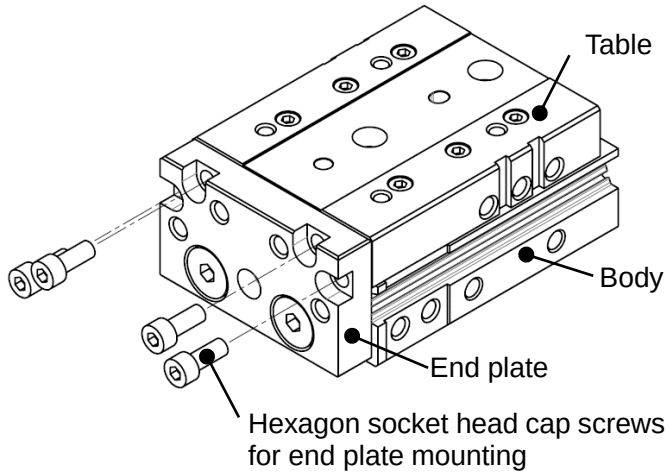
3-4 Replacement Procedure of Seal

⚠ Caution

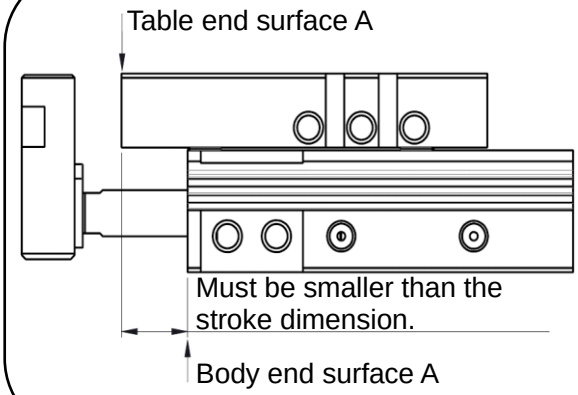
Do not disassemble the linear guide section of the air slide table.

（replacement procedure）

① Remove the hexagon socket head cap screws that connect the end plate and table.



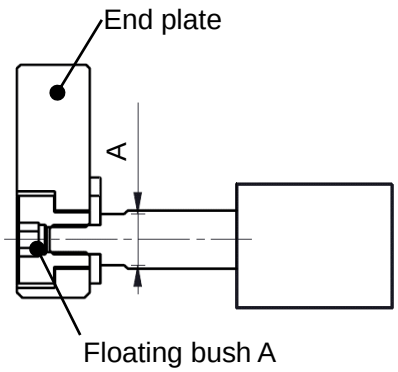
Hexagon socket head cap screws for end plate mounting
Thread size
M8x1.25



Note) When removing the end plate, take care that table end surface A does not protrude from body end surface A by the value greater than or equal to the stroke dimension.
Also pay due attention so that the table end surface A is not recessed from the body end surface A. (Otherwise, the seal ball of the guide may fall.)

② Remove the floating bushes A. (Hold the rod still with a wrench using the provided flats.)

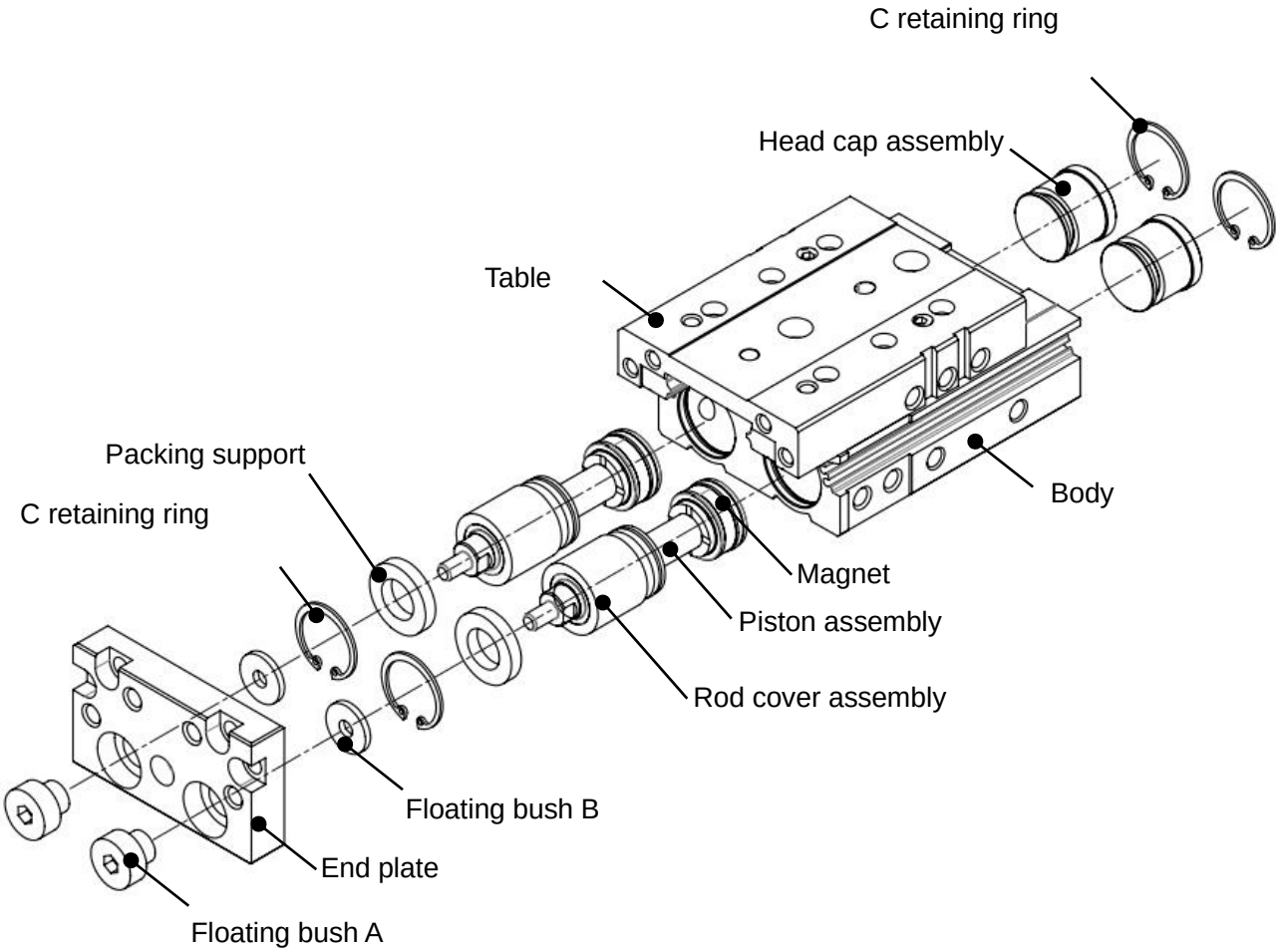
③ Remove the end plate.



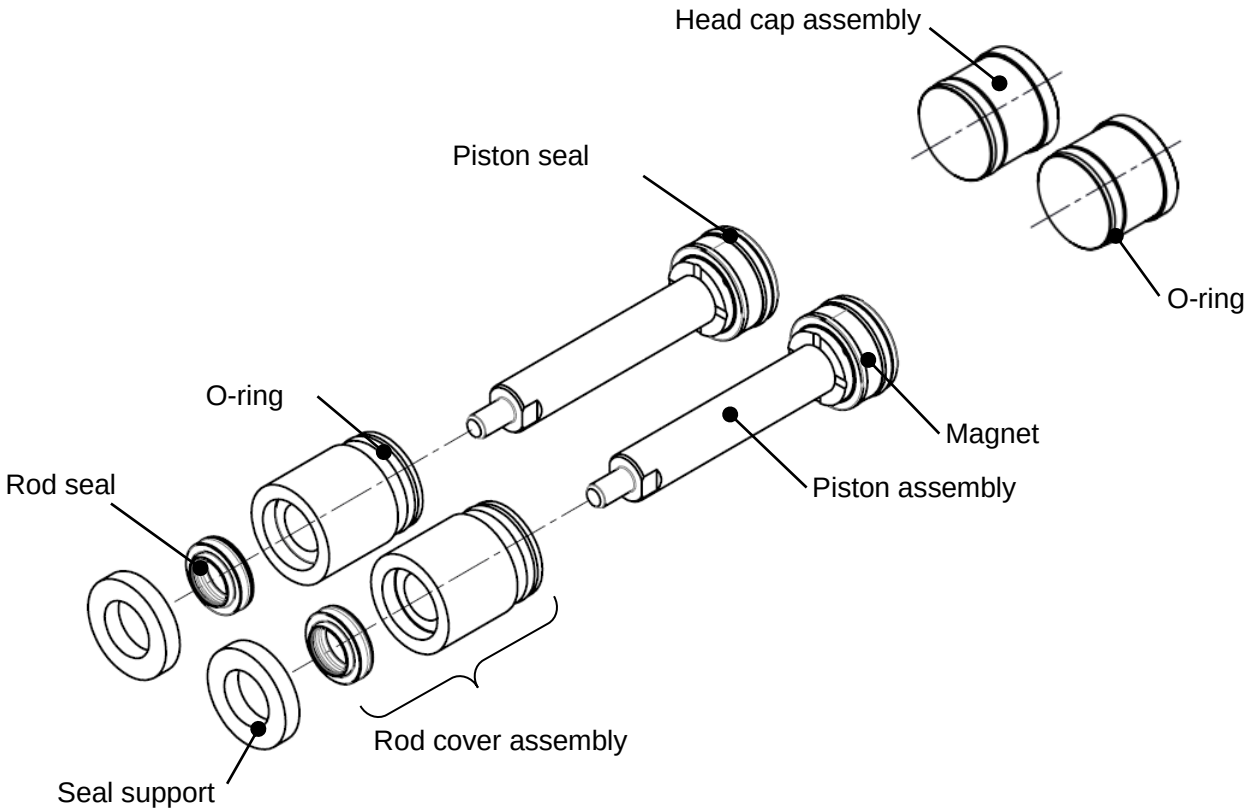
Floating bush A width across flats mm	Rod width across flats A dimension mm
8	14

Note) When floating bush A is removed, (depending on how the flats are used to fix the rod,) it may create burrs. If this is the case, remove the burrs with a file or other tool.
After removing burrs, cleanly wipe the rod's flats with cleaning alcohol. (This needs to be done as the seal could be damaged by the burrs.)

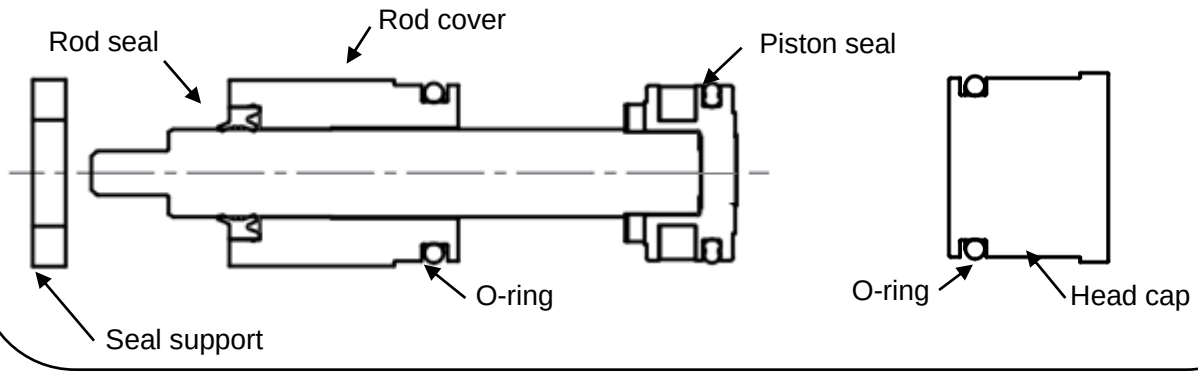
④ Remove the floating bushes B.
⑤ Remove the Circlips. (Use Circlip pliers.)
⑥ Remove the piston rod and head cap assemblies from the body.



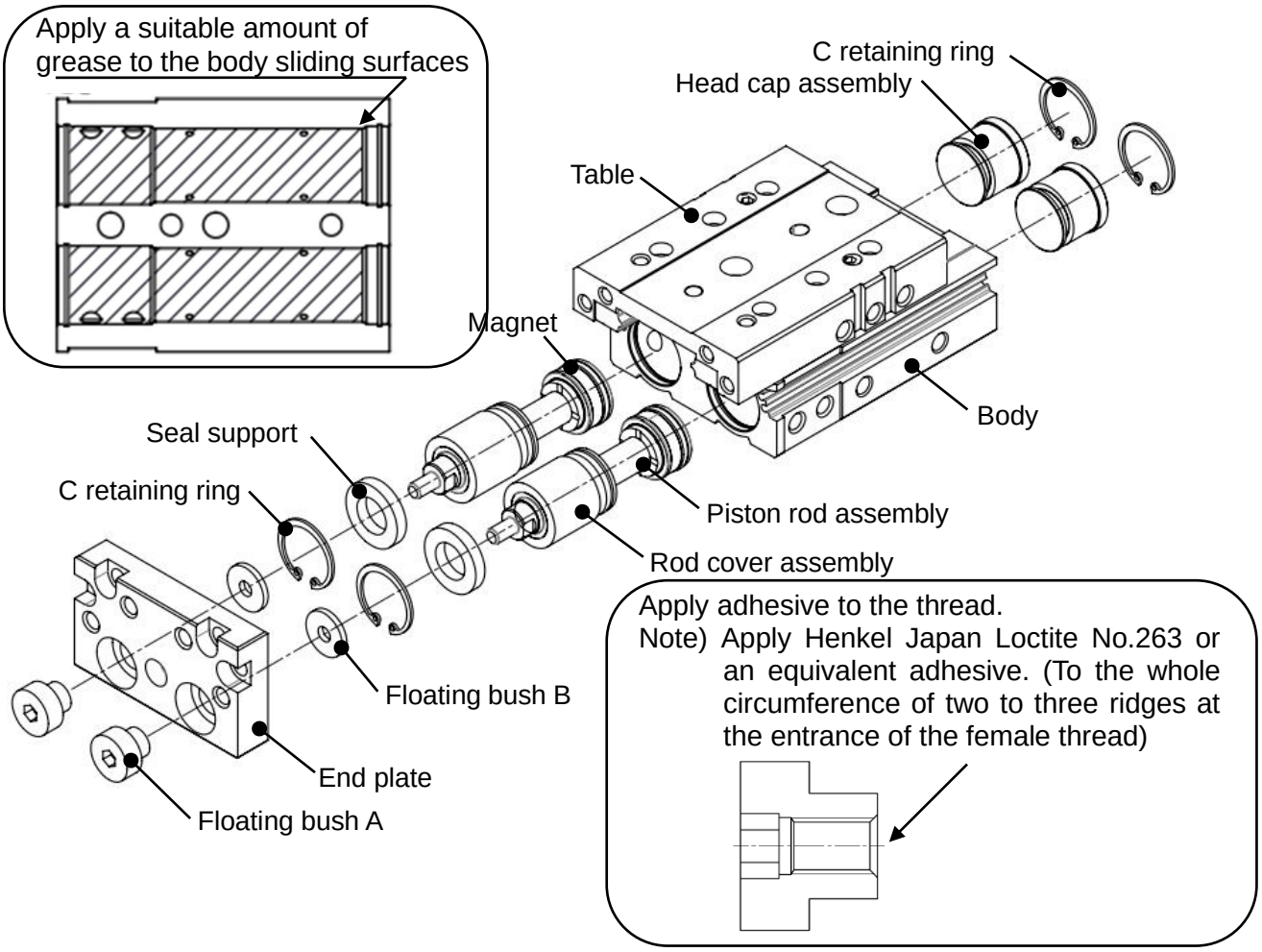
⑦ Remove the seal supports.
⑧ Remove the seals from the rod cover, piston rod, and head cap assemblies.
⑨ Apply grease to the new O-rings, rod seals, and piston seals, and then insert the new seals.



Note) When performing the replacement, pay attention to the installation orientation of the rod seals.
Make sure that the piston seals are not twisted at the time of installation.

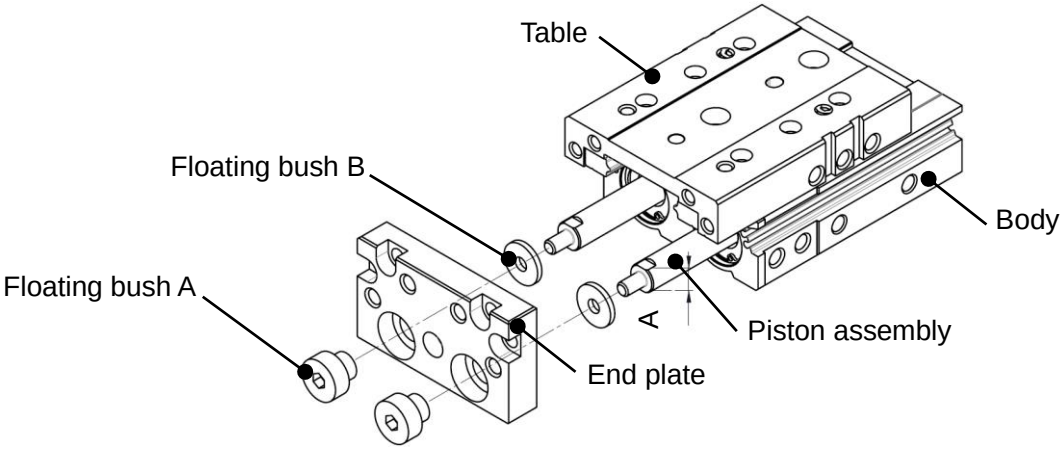


⑩ Mount the rod cover assemblies and seal supports on the piston rod assemblies and insert them to the body.
⑪ Insert the head cap assembly into the body.
⑫ Mount the Circlips. (Use Circlip pliers.)
⑬ Install the floating bushes B on the piston rod assemblies.
⑭ Apply adhesive to the thread of the floating bushes A.



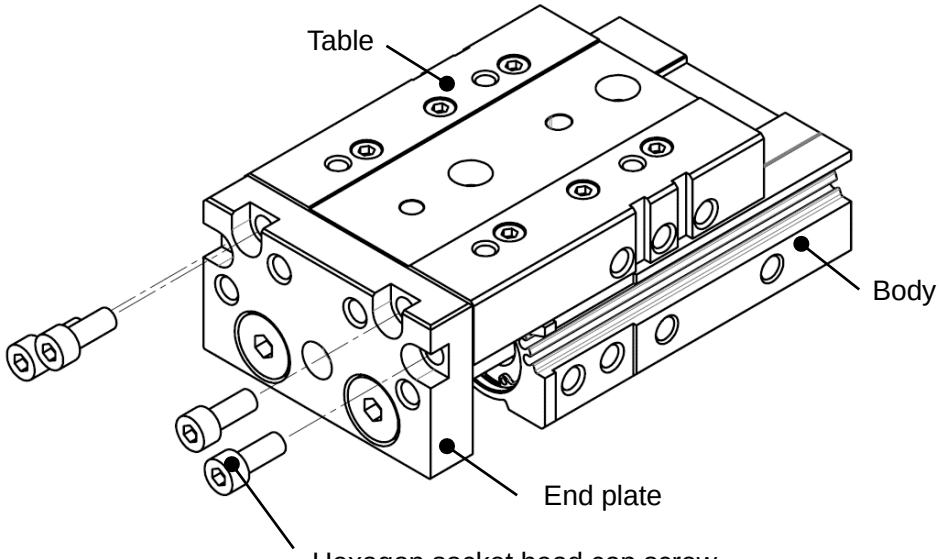
⑮ Tighten the floating bushes A to the proper tightening torque.
(Hold the rod still with a wrench using the provided flats.)

Floating bush A		Rod width across flats A dimension mm
Width across flats mm	Tightening torque N・m	
8	12～15	14

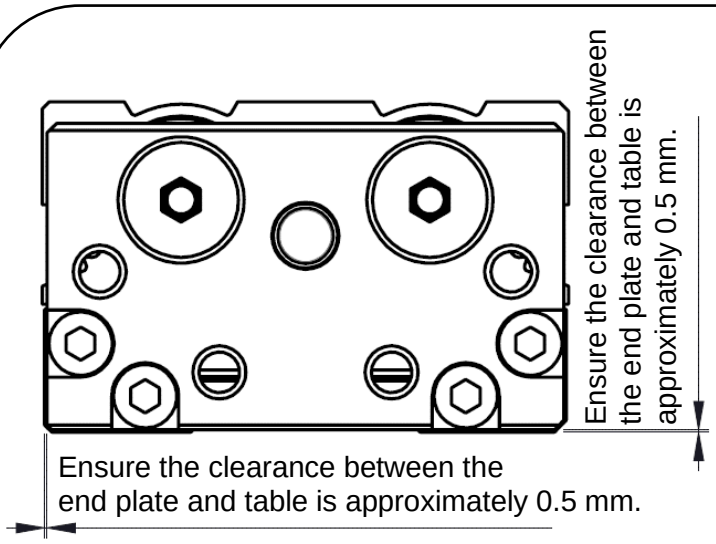


⑯ Apply adhesive to the hexagon socket head cap screws. (See Note Below)
⑰ Tighten the hexagon socket head cap screws that connect the end plate and table to the proper tightening torque.

Hexagon socket head cap screw for end plate mounting	
Thread size	Tightening torque N・m
M8x1.25	14.8～18.2



Hexagon socket head cap screw
for end plate mounting
Note) Apply Henkel Japan Loctite No.263 or an equivalent adhesive. (To the whole circumference of two to three ridges at the entrance of the female thread)



Clearance mm
0.5

Revision history

SMC Corporation

Tel: + 81 3 5207 8249 Fax: +81 3 5298 5362
URL https://www.smcworld.com