



Pneumatic components

Safety Precautions

Be sure to read this section before use.

Refer to Intro Page 73 for general information of the cylinder, and to Intro Page 80 for general information of the cylinder switch.

Product-specific cautions: Shuttle mover SM Series

Design/selection

⚠ WARNING

■ These products cannot be used in water, oil, or powder, or in places where the unit will be exposed to cutting fluid, coolant, etc., or cutting chips.

■ Consider safety by always placing an interlock in the control circuit for moving the carrier.

■ It is not possible to fix the carrier and use the rail portion as a mobile unit.

■ Avoid scratching the cylinder tube or rail with a workpiece, etc., that has been dropped by mistake during mounting or removal of a workpiece. Otherwise, malfunctions may result.

⚠ CAUTION

■ Check that the cross-section of the pipe connecting the cylinder and directional control valve has sufficient effective cross-sectional area to attain specified piston speed.

■ Use an interval of 2 m as a guide for the mounting pitch for the legs.

■ Consider the space described below near the end unit.

- Securing of space necessary for mounting and removing workpieces
- Securing of space for an adjustment of ± 10 mm from the stroke end of the carrier
- Securing of space to enable movement when the tube piping to the piping port of the end is adjusted by ± 10 mm, and space for adjustment of the speed controller
- Securing of space for removal of end rail related components during piston maintenance

Mounting, installation and adjustment

⚠ WARNING

■ Be sure to install a safety cover in cases when this unit will be crossing pathways or working areas of people, or as a measure to prevent collapse and protect the operating region in areas where a human hand can reach inside.

■ Do not move this unit by striking it with a hammer or hang it directly with wire ropes, etc.

■ Immediately after completing installation (before supplying air), manually slide the carrier to make sure that there are no objects that will cause interference within the operating region.

■ The adjustments of the stroke end by ± 10 mm are to be made by sliding the entire end block. The magnetic connection between the carrier and the piston will become detached if the screw-in volumes of the shock absorber and the stopper are adjusted.

⚠ CAUTION

■ The block of the port will slide to enable adjustment of the stroke end by ± 10 mm. Use a nylon or urethane tube for piping in these areas and ensure that there is enough slack in length. Use $\varnothing 12 \times \varnothing 8$ mm as a guide for the tube size.

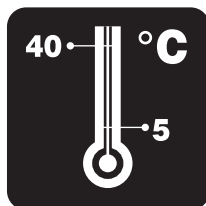
■ When torsion, bending, or tension is applied to the rail due to installation of the legs, air will leak from the fitting areas. Do not apply excessive force.

■ Prevent foreign matter, such as cutting chips from drills used during installation work, from entering the cylinder tubes during installation and assembly.

Use/maintenance

⚠ WARNING

- The most desirable range of the ambient temperature for use of the cylinders is 5 to 40°C. Do not use the unit if the temperature exceeds 40°C, or damage and/or misoperations may occur. If the temperature is less than 5°C, moisture in the circuit may freeze and lead to damage or faults. Take measures to prevent freezing.



- The shuttle mover is a magnetic rodless cylinder. As a magnet is embedded, do not bring objects that are affected by magnets (magnetic disks, magnetic cards, magnetic tape, testers, etc.) near the unit.
- When an external force that is greater than or equal to the magnetic holding force is applied, the magnetic connection between the carrier and the piston will become detached.
- Sandwiching a foreign object between the carrier and the rail will cause defective operation.
- Grease has been applied within the cylinder tubes. Be careful that foreign matter such as cutting chips does not enter the unit during assembly or disassembly.

⚠ CAUTION

- When operation becomes unstable due to a shortage of lubrication, remove the piston and apply grease. Refer to the instruction manual for details on applying grease. Use the driving distance of 2,000 km as a guide for the timing of periodic applications of grease.
- Regular cleaning is necessary to improve the rotation of the guide rollers when using the product in a place where the rail, etc., is likely to become dirty.

SCP*3

CMK2

CMA2

SCM

SCG

SCA2

SCS2

CKV2

CAV2/
COVP/N2

SSD2

SSG

SSD

CAT

MDC2

MVC

SMG

MSD/
MSDG

FC*

STK

SRL3

SRG3

SRM3

SRT3

MRL2

MRG2

SM-25

ShkAbs

FJ

FK

Spd
Contr

Ending