



To Use This Product Safely

Be sure to read this before use.

For general cylinder information, see Opening Section P. 41, and for cylinder switches, see P. 808.

Individual Precautions: Guided cylinder STG Series

During Design / Selection

1. Common

⚠ Caution

■ When using a plain bearing type with a long stroke at low speed, stick-slip may occur depending on the load conditions. In this case, use a rolling bearing type.

2. With rubber air cushion STG-□C

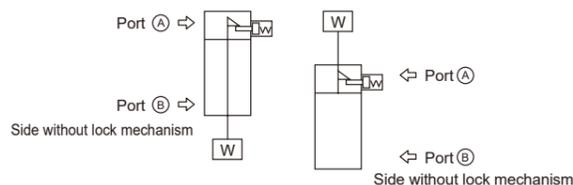
⚠ Caution

■ Due to the structure, if the air supply is cut off, the stroke end position cannot be maintained. Please be careful. When detecting the stroke end with a switch, it may be outside the detection range, so set the switch position in an air-pressurized state.

3. Drop prevention type STG-^M_BQ

⚠ Warning

■ In the locked state, if pressure is supplied to port A from a state where both side ports are not pressurized, the lock may not be released, or the lock may suddenly be released and the piston rod may fly out, which is very dangerous. When releasing the lock mechanism, always supply pressure to port B and release it from a state where no load is applied to the lock mechanism.



■ When using a quick exhaust valve to increase the lowering speed, the cylinder body may start moving before the lock pin operates, and normal release may not be possible. Do not use a quick exhaust valve with a drop prevention type cylinder.

■ Do not use 3-position valves. Do not use in combination with 3-position valves (especially closed center metal seal type). If pressure is sealed in the port on the side with the lock mechanism, the lock will not engage. Also, even if locked once, air leaking from the valve may enter the cylinder, and the lock may be released over time.

⚠ Caution

■ Keep the cylinder load factor at 50% or less. If the load factor is high, the lock may not be released, or it may lead to damage to the lock part.

■ If back pressure is applied to the lock mechanism side, the lock may be released, so use a single valve or a manifold with individual exhaust.

■ Do not use multiple cylinders synchronized. Do not use a method where two or more fall prevention type cylinders are synchronized to move one workpiece. The lock of one of the cylinders may become unremovable.

4. Cutting oil resistant type STG-MG²₃

⚠ Caution

■ Do not apply an eccentric load to the piston rod. This may reduce the life of scrapers and bearings.

■ If there is no splashing of cutting oil or water on the piston rod, use the G or G1 series. Please note that if there is no scattering of cutting oil or water with G2 and G3 series, the lubrication of the piston rod will be cut off and the service life will be reduced.

5. Spatter adhesion prevention type STG-^M_BG4

⚠ Caution

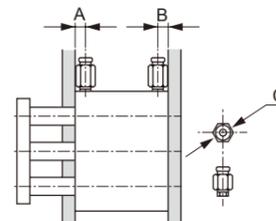
■ This cylinder series has improved durability in a spatter scattering atmosphere compared to general-purpose cylinders. However, please note that durability may be inferior to general type cylinders when used in other atmospheres.

During Use

1. Common

⚠ Caution

■ Be sure to use a speed controller when piping. Also, the usable fittings are as follows.



Item	Port Size	Port position dimension		Usable Fittings	Fitting outer diameter
		A	B		
ø12	M5x0.8	12	7	SC3W-M5-4 SC3W-M5-6 GWS4-M5-S GWS4-M5 GWL4-M5 GWL6-M5 GWS6-M5	ø12 or less
ø16		12	7.5		
ø20	Rc1/8	10.5	8.5	SC3W-6-4 / 6 / 8 GWS4-6 GWS6-6 GWS8-6 GWL4-6 GWL6-6	ø15 or less
ø25		11.5	9		
ø32		12.5	9		
ø40		14	10		
ø50		14	11		
ø63	Rc1/4	16.5	15	SC3W-8-6 / 8 / 10 GWS4-8 GWS6-8 GWS10-8 GWS12-8 GWL4 to 12-8	ø21 or less
ø80	Rc3/8	19	15	SC3W-10-8 / 10 / 12 GWS6-10 GWS8-10 GWS10-10 GWL6 to 12-10	ø28 or less
ø100	Rc3/8	17	19	SC3W-10-8 / 10 / 12 GWS6-10 GWS8-10 GWS10-10 GWL6 to 12-10	ø28 or less

■ To prevent an increase in sliding resistance, do not make dents or scratches on the tube body mounting surface and end plate surface that may impair flatness. The flatness of the mating side to be included to the end plate should be 0.03 mm or less. If it is difficult to ensure the above flatness, insert shims (customer prepared), etc. between the end plate and the workpiece to adjust the gap. This may help prevent an increase in sliding resistance.

■ Allowable absorption energy value
Use within the range of allowable absorbed energy. If used exceeding the allowable absorbed energy, provide a separate external shock absorber. For the allowable absorption energy value, please refer to the specifications section or model selection guide.

■ Do not rotate the piston rod except when disassembling the product for maintenance, etc. Misalignment may occur and operation may become unstable, so do not rotate the piston rod.

2. Drop prevention type STG-^M_BQ

⚠ Warning

■ During equipment maintenance, please take separate measures for safety so that the load does not fall due to its own weight.

⚠ Caution

■ Keep the cylinder load factor at 50% or less. If the load factor is high, the lock may not be released, or it may lead to damage to the lock part.

■ Use the speed controller with meter-out control. Lock may not be released with meter-in control.

■ On the side with the lock, be sure to use the cylinder to the stroke end. If the cylinder piston has not reached the stroke end, the lock may not engage, or it may not be possible to release the lock.

3. With rubber air cushion STG-^M_B□C

⚠ Caution

■ Do not rapidly exhaust the air in the cylinder after operating at low speed outside the catalog specification range. (Example Removing piping or couplers, etc.) The rubber air cushion may come off. Please be especially careful as this is more likely to occur when the air pressure is high.

Guided

STM

STG

STS/
STL

STR2

UCA2

Guided

STM

STG

STS/
STL

STR2

UCA2

Cylinder
Switch

Ending

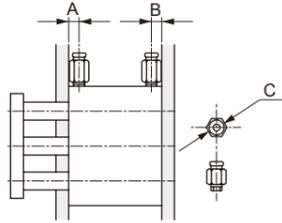
Cylinder
Switch

Ending

4. Heavy-duty guide rod type STG-K

Caution

■ Be sure to use a speed controller when piping. Also, the usable fittings are as follows.



Item	Port Size	Port position dimension		Usable Fittings	Fitting outer diameter
		A	B		
STM	ø32	Rc1/8	12.5	9	ø15 or less
STG					
STS/STL	ø50	Rc1/4	14	11	ø21 or less
STR2					
UCA2					

■ To prevent an increase in sliding resistance, do not make dents or scratches on the tube body mounting surface and end plate surface that may impair flatness. The flatness of the mating side to be included to the end plate should be 0.03 mm or less. If it is difficult to ensure the above flatness, insert shims (customer prepared), etc. between the end plate and the workpiece to adjust the gap. This may help prevent an increase in sliding resistance.

■ Allowable absorption energy value
Use within the range of allowable absorbed energy. If used exceeding the allowable absorbed energy, provide a separate external shock absorber. For the allowable absorption energy value, please refer to the specifications section or model selection guide.

■ Do not rotate the piston rod except when disassembling the product for maintenance, etc. Misalignment may occur and operation may become unstable, so do not rotate the piston rod.

MEMO

For precautions regarding mounting, installation, adjustment, use, and maintenance, please see "Precautions for Use" in this catalog and the CKD Components Product website (<https://www.ckd.co.jp/kiki/en/>) → "Model No." → [Instruction Manual](#).