



New Products

GUIDED CYLINDER STG SERIES


GUIDED CYLINDER STG SERIES

High Precision/
High rigidity
Ecological

New Additional variation



CKD Corporation

CC-781A 

New eco-friendly

guided cylinder



Guided cylinder STG Series (ø12 to ø80) - Remove toxic substances and protect the environment by preventing contamination

RoHS

Ecological product

Harmful substances such as lead and hexavalent chrome that adversely affect the global environment are not used in the cylinder and cylinder switch. This product complies with the RoHS Directives in effect in the EU. (Lead-free solder and lead wires)

Compatible with high loads

The guide rod shaft has been improved and metal bearing material and bearing structure changed. This cylinder is robust with lateral and deflective loads, and has higher withstand load performance than conventional products. Use this cylinder to further improve stability.

Complete maintenance with standard tools
A hexagon wrench is used to install the piston rod, so no special tools are required for maintenance.



Lightweight and resource-saving

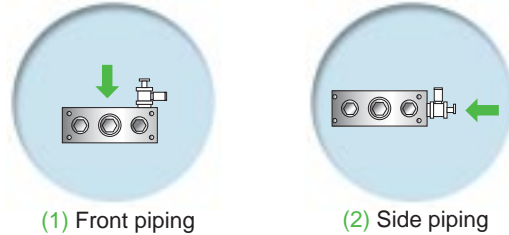
The cylinder's aluminum structure has been reviewed to achieve lighter weight and higher resource saving than conventional products.

High precision/high rigidity

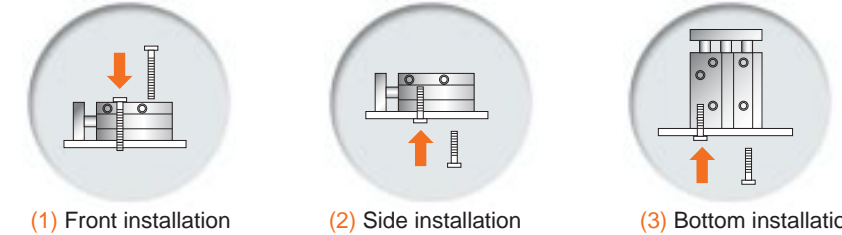
STG-M_B Series

Piping in two directions and installation in three directions

● Piping direction

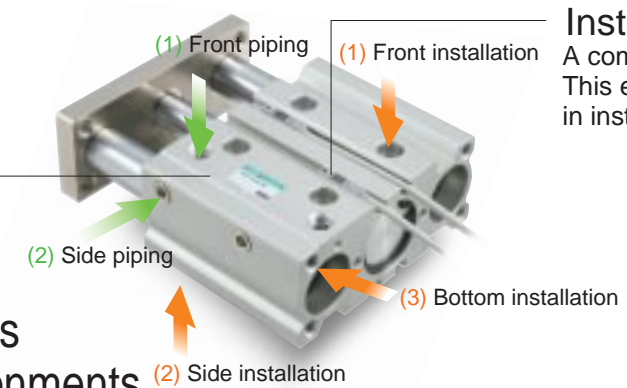


● Installation direction



White exterior

Products match a variety of equipment with a uniform white exterior.



Install different switches
A compact T switch is installed. This eliminates switch protrusion in installation, saving space.

Compatible with various applications and environments

Various new models have been added to this powerful series to match your applications and environment. These new models help realize stable operation.

STG Series Products

Model variation	Type of bearing		Bore size								Clean room specification	Max. stroke length	Switch	Copper and PTFE free specifications	Page	
	Metal bush bearing	Ball bearing	12	16	20	25	32	40	50	63						80
Single rod type	STG-M _B	●	●	●	●	●	●	●	●	●	●	●	●	●	●	3
Rubber-air cushion type New	STG-M _B -* ⁻ -C	●	●	●	●	●	●	●	●	●	●	●	●	●	●	15
Air cushion type New	STG-M _B C	●	●	●	●	●	●	●	●	●	●	●	●	●	●	23
Position locking type New	STG-M _B Q	●	●	●	●	●	●	●	●	●	●	●	●	●	●	33
Rubber scraper type New	STG-M _B G	●	●	●	●	●	●	●	●	●	●	●	●	●	●	41
Coil scraper type New	STG-M _B G1	●	●	●	●	●	●	●	●	●	●	●	●	●	●	41
Coolant proof type New	STG-MG2, MG3	●	●	●	●	●	●	●	●	●	●	●	●	●	●	47
Spatter adherence prevention type New	STG-M _B G4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	53

Note 1: Only the ball bearing "B type" is available for clean room specifications.
 Note 2: Only the copper and PTFE free specifications are available as a standard for the ø12 to ø32 rolling bearing "B type".
 Note 3: ø80 is a custom order part.



Safety precautions

Always read before starting use.

When designing and manufacturing a device using CKD products, the manufacturer is obligated to check that device safety mechanical mechanism, pneumatic control circuit, or water control circuit and the system operated by electrical control that controls the devices is secured.

It is important to select, use, handle, and maintain the product appropriately to ensure that the CKD product is used safely.

Observe warnings and precautions to ensure device safety.

Check that device safety is ensured, and manufacture a safe device.

WARNING

1 This product is designed and manufactured as a general industrial machine part. It must be handled by an operator having sufficient knowledge and experience in handling.

2 Use this product in accordance of specifications.

Contact CKD when using the product outside the unique specifications range, when using it outdoors, and when using it under the conditions and environment below. Do not attempt to modify or additionally machine the product.

- ① Use for special applications requiring safety including nuclear energy, railroad, aviation, ship, vehicle, medical equipment, equipment, or applications coming into contact with beverage or food, amusement equipment, emergency shutoff circuits, press machine, brake circuits, or for safeguard.
- ② Use for applications where life or assets could be adversely affected, and special safety measures are required.

3 Observe corporate standards and regulations, etc., related to the safety of device design and control, etc.


ISO 4414, JIS B 8370 (pneumatic system rules), JPAS 005 (principles for pneumatic cylinder use and selection), High Pressure Gas Maintenance Laws Occupational Safety and Sanitation Laws, and other safety regulations, corporate standards, and regulations.


4 Do not handle, pipe, or remove devices before confirming safety.


- ① Inspect and service the machine and devices after confirming safety of the entire system related to this product.
- ② Note that there may be hot or charged sections even after operation is stopped.
- ③ When inspecting or servicing the device, turn off the energy source (air supply or water supply), and turn off power to the facility. Discharge any compressed air from the system, and pay enough attention to possible water leakage and leakage of electricity.
- ④ When starting or restarting a machine or device that incorporates pneumatic components, make sure that the system safety, such as pop-out prevention measures, is secured.

5 Observe warnings and cautions on the pages below to prevent accidents.

■ The safety cautions are ranked as "DANGER", "WARNING" and "CAUTION" in this section.

 **DANGER:** When a dangerous situation may occur if handling is mistaken leading to fatal or serious injuries, or when there is a high degree of emergency to a warning.

 **WARNING:** When a dangerous situation may occur if handling is mistaken leading to fatal or serious injuries.

 **CAUTION:** When a dangerous situation may occur if handling is mistaken leading to minor injuries or physical damage.

Note that some items described as "CAUTION" may lead to serious results depending on the situation. In any case, important information that must be observed is explained.



Pneumatic components

Safety precautions

Always read before starting use

Refer to pneumatic cylinders (CB-029S) for the general details on cylinders and cylinder switch.

Guided cylinder STG series

Design & Selection

1. Common

CAUTION

- When using the metal bush bearing type with a long stroke and low speed, stick slipping may occur depending on load conditions. Use the ball bearing type in this case.

2. Position locking type STG-^M_BQ

CAUTION

- Keep cylinder load factor at 50% or less.
If load factor is high, the lock may not be released, and the lock section may be damaged.
- Do not use 3 position valve.
Do not use this cylinder with a 3 position (especially closed center metal sealing type) valve. The lock will not be applied if pressure is sealed in the port on the locking mechanism side. Even if locked, the air leaked from the valve may enter into the cylinder, or the lock may be released over time.

3. Coolant proof type STG-MG²₃

CAUTION

- Do not apply the deviated load onto the piston rod.
Service life of scraper and bearing could be shortened.
- Use G1 or G series if cutting oil and water do not splash onto the piston rod.
When using the G2 or G3 series and the coolant or water does not splatter, the piston rod's lubrication could be spent and cause the life to shorten.
- Install a flow control valve on the cylinder.
Install a flow control valve on the cylinder.
Use within the working piston speed range with each cylinder.

4. Spatter adherence prevention type STG-^M_BG4

CAUTION

- The durability of this cylinder in an environment containing spatters is higher than standard cylinder. But durability may be shorter than the general cylinder when used in other environments.

5. Clean room specifications

CAUTION

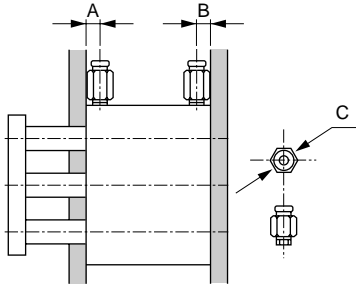
- Precautions for using relief port
The exhaust treatment type (P72) can not be used as vacuum treatment. This also applies for the reverse application. Do not use for this application as it could result in particle scattering or faults.

Installation & Adjustment

1. Common

CAUTION

Install a flow control valve when piping. The following types of joints are used:



Descriptions Bore size(mm)	Port size	Port Position		Applicable joints	Joint O.D. φ C
		A	B		
φ 12	M5 x 0.8	12	7	SC3W-M5-4 SC3W-M5-6 GWS4-M5-S GWS4-M5 GWL4-M5 GWL6-M5 GWS6-M5	φ 12 or less
φ 16		12	7.5		
φ 20	Rc1/8	10.5	8.5	SC3W-6-4-6-8	φ 15 or less
φ 25		11.5	9	GWS4-6 GWS6-6	
φ 32		12.5	9	GWS8-6 GWL4-6	
φ 40		14	10	GWL6-6	
φ 50	Rc1/4	14	11	SC3W-8-6-8-10 GWS4-8 GWS6-8 GWS10-8 GWS12-8	φ 21 or less
φ 63		16.5	15	GWL4 to 12-8	
φ 80	Rc3/8	14.5	42	SC3W-10-8-10-12 GWS6-10 GWS8-10 GWS10-10 GWL6 to 12-10	φ 21 or less

Check that no dents or scratches are made on main tubing installation or end plates that may adversely affect flatness.

Flatness on the counterpart onto which the end plate is installed must be 0.05 mm or less.

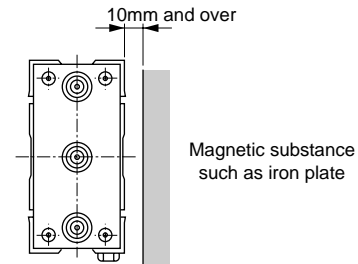
When passing the bolt through the main body and installing, tighten with the following tightening torque.

φ 12	1.5 to 2.7N·m
φ 16	
φ 20, φ 25	3 to 5.4N·m
φ 32, φ 40	5.2 to 9.2N·m
φ 50, φ 63	12.5 to 22N·m
φ 80	24.5 to 44N·m

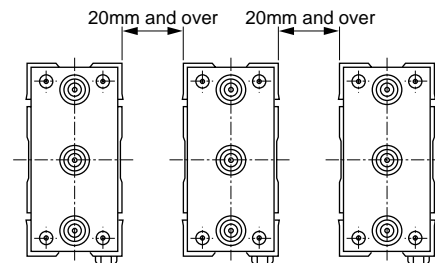
Allowable energy absorption

Use within the range of the allowable energy absorption. If this is exceeded, install an external damper. Refer to specifications or selection guide for the allowable energy absorption value.

The cylinder may malfunction if a magnetic substance, such as a steel plate, is nearby. Move the magnetic substance to at least 10 mm from the cylinder. (Same clearance for all diameters)



The cylinder switch may malfunction if cylinders are installed adjacently. Separate cylinders by the following distances. (Same clearance for all diameters)



2. Position locking type

CAUTION

The lock functions at the stroke end. If the stopper is applied with an external stopper in the middle of the stroke, the lock may not function and result in dropping. Confirm that the lock functions before setting the load.

Supply pressure exceeding minimum working pressure to ports having locks.

If piping on the side with the lock is thin and long, or if the speed controller is separated from the cylinder port, exhaust may slow, taking time for the lock to function.

This may also occur if the silencer on the valve's EXH. port is clogged.

3. Clean room specifications

CAUTION

Open the product in a clean room.

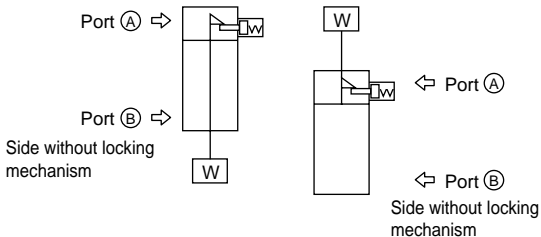
The product is packaged in a clean room. The package should be opened just before piping in a clean room.

During use & Maintenance

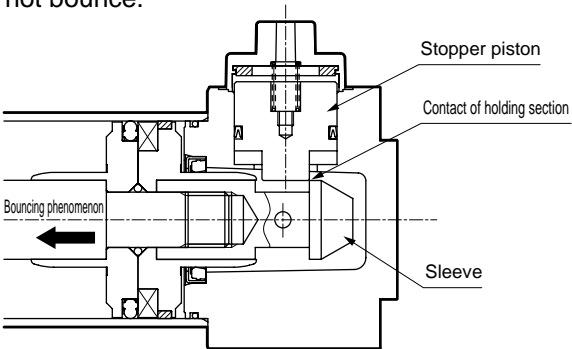
1. Position locking type STG-M_BQ

⚠ WARNING

- For safety purposes, prevent the load from dropping under its own weight during maintenance.
- If pressure is applied from port A in the locked state and with neither port pressurized, it may not be possible to release locks, or the lock may be released suddenly and cause the piston rod to pop out. This is extremely hazardous. When releasing the locking mechanism, supply pressure to port B, and check that there is no load applied to the locking mechanism.



- If lowering speed is to be increased with the quick exhaust valve, the cylinder may move out faster than the lock pin and prevent the locking pin from being released correctly. Do not use a quick exhaust valve with the cylinder with position locking.
- When using the cylinder with air cushion, if the air cushion needle on the lock mechanism side is tightened too tight, the piston could bounce at the stroke end causing the sleeve and stopper piston to collide and damage the locking mechanism. If the air cushion needle is opened too far, the piston could spring back at the stroke end and cause similar damage. Adjust the air cushion needle so that the piston does not bounce.



⚠ CAUTION




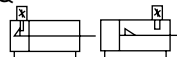



- If negative pressure is applied to the locking mechanism, the lock may be released. Use the solenoid valve as a discrete unit, or use an independently exhausted manifold.
- If the locking mechanism has been manually operated, check and then return it manually to the original position. Do not use manual operations other than during adjustment, as this is very hazardous.
- Release the lock when installing or adjusting the cylinder. The lock could be damaged if the cylinder is installed while the lock is applied.
- Do not use multiple cylinders. Do not move one workpiece using two or more position locking cylinders. It may not be possible to release one of the cylinder's locks.
- Use the speed controller with meter-out control. It may not be possible to release the locks when used with meter-in control.
- Use the side with the lock with the cylinder stroke end. If the cylinder's piston does not reach the stroke end, the lock may not be applied or may not be released.

2. Clean room specifications

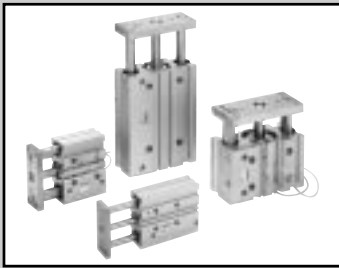
⚠ WARNING

- Fluorine grease is used in P7 series. Lighting a cigarette with fluorine-based grease on hands generates toxic gases.

● : Standard, ◎ : Option, ○ : Custom order, ■ : Not available

Variation	Model no. JIS symbol	Bore size (mm)	Stroke length (mm)																	Max. stroke length (mm)	Type of bearing		Option	Switch	Page			
			Stroke length (mm)										Stroke length (mm)								Metal bush bearing	Ball bearing	Copper and PTFE free Specifications					
			10	20	25	30	40	50	75	100				125	150	175	200	250	300							350	400	M
Double acting single rod type	STG- ^M _B 	φ12, φ16	●	●	■	●	●	●	●	●				●	●	●	●	●	■	■	■	250	●	●	◎	◎	3	
		φ20, φ25	■	●	■	●	●	●	●	●				●	●	●	●	●	●	●	●	●	400	●	●			◎
		φ32, φ40, φ50, φ63	■	■	●	■	■	●	●	●				●	●	●	●	●	●	●	●	●	400	●	●			◎
		φ80	■	■	●	■	■	●	●	●				●	●	●	●	●	●	●	●	●	400	●	●			○
Double acting rubber-air cushioned	STG- ^M _B *C 	φ32, φ40, φ50, φ63	■	■	●	■	■	●	●	●				●	●	●	●	●	●	●	●	400	●	●	○	◎	15	
Double acting air cushioned	STG- ^M _B C 	φ16	■	■	●	■	■	●	●	●				●	●	●	■	■	■			250	●	●	○	◎	23	
		φ20, φ25	■	■	●	■	■	●	●	●				●	●	●	●	●	●	●	●	●	400	●	●			○
		φ32, φ40, φ50, φ63	■	■	●	■	■	●	●	●				●	●	●	●	●	●	●	●	●	400	●	●			○
Double acting position locking type	STG- ^M _B Q 	φ20, φ25 φ32, φ40, φ50, φ63	■	■	●	■	■	●	●	●				●	●	●	●	●	●	●	●	400	●	●	■	◎	33	
Double acting rubber scraper type Coil scraper type	STG- ^M _B G STG- ^M _B G1 	φ20, φ25	■	●	■	●	●	●	●	●				●	●	●	●	●	●	●	●	400	●	●	■	◎	41	
		φ32, φ40, φ50, φ63	■	■	●	■	■	●	●	●				●	●	●	●	●	●	●	●	●	400	●	●			■
Double acting coolant proof type	STG-MG2 STG-MG3 	φ20, φ25	■	●	■	●	●	●	●	●				●	●	●	●	●	●	●	●	400	●	■	■	◎	47	
		φ32, φ40, φ50, φ63	■	■	●	■	■	●	●	●				●	●	●	●	●	●	●	●	●	400	●	■			■
Double acting Spatter adherence prevention type	STG- ^M _B G4 	φ40, φ50, φ63	■	■	●	■	■	●	●	●				●	●	●	●	●	●	●	●	400	●	●	■	◎	53	


Note 1: Copper and PTFE free is available as standard for φ12 to φ32 ball bearing "B".



Guided cylinder, double acting single rod type

STG-M/B Series

● Bore size: $\phi 12$, $\phi 16$, $\phi 20$, $\phi 25$, $\phi 32$, $\phi 40$, $\phi 50$, $\phi 63$, $\phi 80$

JIS symbol 

Specifications

Descriptions	STG-M/B									
	$\phi 12$	$\phi 16$	$\phi 20$	$\phi 25$	$\phi 32$	$\phi 40$	$\phi 50$	$\phi 63$	$\phi 80$	
Bore size mm	$\phi 12$	$\phi 16$	$\phi 20$	$\phi 25$	$\phi 32$	$\phi 40$	$\phi 50$	$\phi 63$	$\phi 80$	
Actuation	Double acting									
Working fluid	Compressed air									
Max. working pressure MPa	1.0									
Min. working pressure MPa	0.15					0.1				
Withstanding pressure MPa	1.6									
Ambient temperature °C	-10 to 60 (to be unfrozen)									
Port size	M5			Rc1/8			Rc1/4		Rc3/8	
Stroke tolerance mm	+2.0 0									
Working piston speed mm/s	50 to 500							50 to 300		
Cushion	Rubber cushioned									
Lubrication	Not required (when lubricating, use turbine oil Class 1 ISOVG32.)									
Allowable energy absorption J	0.056	0.088	0.157	0.157	0.401	0.627	0.980	1.560	2.510	

Stroke length

Bore size	Standard stroke length (mm)	Max. stroke length (mm)	Min. stroke length (mm)	Min. stroke length of types with switch (mm)
$\phi 12$	10, 20, 30, 40, 50, 75, 100	250		
$\phi 16$	125, 150, 175, 200, 250			
$\phi 20$	20, 30, 40, 50, 75, 100, 125	400	5	5
$\phi 25$	150, 175, 200, 250, 300, 350, 400			
$\phi 32$				
$\phi 40$	25, 50, 75, 100			
$\phi 50$	125, 150, 175			
$\phi 63$	200, 250, 300			
$\phi 80$	350, 400			

Note 1: Custom stroke length is available per 5mm increment. Note that the total length is the same as the next longer standard stroke length.

A dedicated body with dimensions matching the stroke length is also available. Contact CKD for details.

Note 2: This applies when 1 or 2 switches are installed.

Switch specifications

● One color/bi-color indicator/strong magnetic field proof

Descriptions	Proximity 2 wire		Proximity 3 wire		Reed 2 wire						Proximity 2 wire
	T2H/T2V/T2JH/T2JV	T2YH/T2YV	T3H/T3V	T3YH/T3YV	T0H/T0V			T5H/T5V			T2YD/T2YDT
Applications	Programmable controller		Programmable controller Controller, relay		Programmable controller, relay			Programmable controller, relay IC circuit (without indicator light), serial connection			Programmable controller
Power voltage	-		28 to 10V DC		-						-
Load voltage	30 to 10V DC		30V DC or less		12/24V DC	110V AC	220V AC	5/12/24V DC	110V AC	220V AC	24V DC ± 10%
Load current	5 to 20mA (note 1)		100mA or less	50mA or less	5 to 50mA	7 to 20mA	7 to 10mA	50mA or less	20mA or less	10mA or less	5 to 20mA
Light	LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)			-			Red/green LED (ON lighting)

Note 1: The maximum load current of 20 mA applies at 25 °C. If the switch's ambient operating temperature exceeds 25 °C, the load current becomes less than 20 mA. (5 to 10mA when 60 °C)

● With preventive maintenance output

Descriptions	Proximity 3 wire		Proximity 4 wire		Proximity 3 wire		Proximity 4 wire		
	T2YFH/V		T3YFH/V		T2YMH/V		T3YMH/V		
Applications	Programmable controller		Programmable controller, relay		Programmable controller		Programmable controller, relay		
Light	Installation position adjustment section		Red/green LED (ON lighting)						
	Preventive maintenance output section		-		Yellow LED (ON lighting)				
Regular Output section	Power voltage	-	28 to 10V DC		-		28 to 10V DC		
	Load voltage	30 to 10V DC		30V DC or less		30 to 10V DC		30V DC or less	
	Load current	5 to 20mA		50mA or less		5 to 20mA		50mA or less	
Preventive maintenance output section	Load voltage	30V DC or less							
	Load current	20mA or less		50mA or less		5 to 20mA (note 1)		50mA or less	

Note 1: The maximum load current of 20 mA applies at 25 °C. If the switch's ambient operating temperature exceeds 25 °C, the load current becomes less than 20 mA. (5 to 10mA when 60 °C)

Cylinder weight

● STG-M

Unit: kg

Descriptions	Stroke length																	Switch weight Grommet
	10	20	25	30	40	50	75	100	125	150	175	200	250	300	350	400		
φ 12	0.23	0.27		0.30	0.34	0.38	0.49	0.57	0.68	0.77	0.86	0.95	1.13				0.018	
φ 16	0.32	0.37		0.42	0.47	0.51	0.66	0.78	0.94	1.06	1.18	1.31	1.55				0.018	
φ 20		0.65		0.73	0.81	0.88	1.13	1.33	1.52	1.71	1.90	2.10	2.55	2.94	3.32	3.71	0.018	
φ 25		0.92		1.02	1.13	1.23	1.60	1.86	2.12	2.40	2.66	2.92	3.56	4.08	4.62	5.14	0.018	
φ 32			1.64			2.01	2.54	2.94	3.34	3.73	4.12	4.51	5.49	6.27	7.07	7.85	0.018	
φ 40			1.89			2.30	2.75	3.15	3.57	3.98	4.39	4.80	5.81	6.64	7.47	8.29	0.018	
φ 50			3.26			3.88	4.59	5.21	5.83	6.45	7.07	7.69	9.25	10.48	11.74	13	0.018	
φ 63			4.05			4.79	5.61	6.34	7.07	7.81	8.54	9.27	11.06	12.51	13.97	15.42	0.018	
φ 80			7.02			8.12	9.51	10.60	11.7	12.80	13.9	15.00	17.80	19.92	22.10	24.30	0.018	

● STG-B

Unit: kg

Descriptions	Stroke length																	Switch weight Grommet
	10	20	25	30	40	50	75	100	125	150	175	200	250	300	350	400		
φ 12	0.23	0.26		0.29	0.34	0.38	0.46	0.54	0.64	0.72	0.81	0.88	1.05				0.018	
φ 16	0.33	0.38		0.42	0.49	0.54	0.65	0.77	0.9	1.01	1.13	1.24	1.46				0.018	
φ 20		0.68		0.75	0.86	0.94	1.11	1.27	1.47	1.64	1.81	1.98	2.35	2.69	3.03	3.37	0.018	
φ 25		0.95		1.04	1.21	1.30	1.52	1.76	2.02	2.24	2.46	2.69	3.17	3.63	4.07	4.52	0.018	
φ 32			1.49			1.79	2.23	2.54	2.90	3.21	3.51	3.82	4.49	5.10	5.71	6.32	0.018	
φ 40			1.74			2.09	2.56	2.91	3.32	3.67	4.02	4.37	5.12	5.82	6.52	7.22	0.018	
φ 50			3.02			3.55	4.28	4.81	5.43	5.97	6.50	7.03	8.23	9.28	10.38	11.45	0.018	
φ 63			3.81			4.45	5.30	5.94	6.67	7.31	7.96	8.60	9.99	11.35	12.61	13.87	0.018	
φ 80			7.25			8.03	9.27	10.30	11.3	12.10	13.31	14.32	16.60	18.60	20.62	22.64	0.018	

How to order

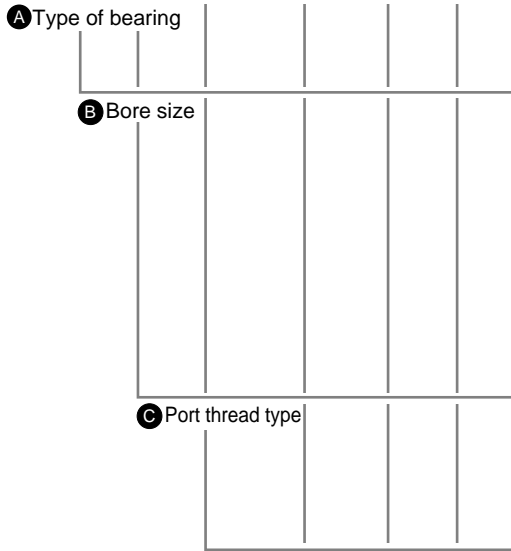
Without switch

STG - M - 32 - 25 - P6

With switch

STG - M - 32 - 25 - T2H - R - P6

Model no.



■ Custom stroke length is available per 5mm increment. Note that the total length is the same as the next longer standard stroke length. A dedicated body with dimensions matching the stroke length is also available. Consult.

E Switch model no.
Note 1

Symbol	Descriptions			
A Type of bearing				
M	Metal bush bearing			
B	Ball bearing			
B Bore size (mm)				
12	φ12			
16	φ16			
20	φ20			
25	φ25			
32	φ32			
40	φ40			
50	φ50			
63	φ63			
80	φ80			
C Port thread type				
Blank	M5 (φ12 to φ16) Rc thread (φ20 to φ80)			
NN	NPT thread (φ20 and over) custom order			
GN	G thread (φ20 and over) custom order			
D Stroke length (mm)				
Refer to the standard stroke length table on following page.				
E Switch model no.				
Axial lead wire	Radial lead wire	Contact	Indicator	Lead wire
T0H*	T0V*	Reed	1 color indicator type	2 wire
T5H*	T5V*		Without indicator light	
T2H*	T2V*	Proximity	1 color indicator type	2 wire
T3H*	T3V*		3 wire	
T2YH*	T2YV*		2 color indicator type	2 wire
T3YH*	T3YV*			3 wire
T2YFH*	T2YFV*		2 color indicator type	3 wire
T3YFH*	T3YFV*			(Without indicator light for preventive maintenance output) 4 wire
T2YMH*	T2YMV*		2 color indicator type	3 wire
T3YMH*	T3YMV*			(With indicator light for preventive maintenance output (1 color)) 4 wire
T2JH*	T2JV*		Off-delay type	2 wire
T2YD*	-		Strong magnetic field proof switch	
T2YDT*	-			
*Lead wire length				
Blank	1m (standard)			
3	3m (option)			
5	5m (option)			
F Switch quantity				
R	One on rod end			
H	One on head end			
D	Two			
T	Three			
G Option				
P6	Copper and PTFE free (STG-B-12 to 32 is copper and PTFE free as standard.)			

Note on model no. selection

Note 1: Switches other than switch model no. (E) are available.(Custom order)
Refer to Pneumatic cylinders (No.CB-029SA) for details.

Note 2: Copper and PTFE free in(G) of STG-M-80 is available as custom order.

F Switch quantity

G Option
Note 2

<Example of model number>

STG-B-40-75-T0H-D

Model: Guided cylinder, double acting single rod type

- A Type of bearing : Ball bearing
- B Bore size : φ40mm
- C Port thread type : Rc thread
- D Stroke length : 75mm
- E Switch model no. : Reed T0H switch, lead wire length 1m
- F Switch quantity : Two

[Standard stroke length table]

	Symbol	Stroke length (mm)	Applicable bore size								
			φ 12	φ 16	φ 20	φ 25	φ 32	φ 40	φ 50	φ 63	φ 80
D Standard stroke length	10	10	●	●							
	20	20	●	●	●	●					
	25	25					●	●	●	●	●
	30	30	●	●	●	●					
	40	40	●	●	●	●					
	50	50	●	●	●	●	●	●	●	●	●
	75	75	●	●	●	●	●	●	●	●	●
	100	100	●	●	●	●	●	●	●	●	●
	125	125	●	●	●	●	●	●	●	●	●
	150	150	●	●	●	●	●	●	●	●	●
	175	175	●	●	●	●	●	●	●	●	●
	200	200	●	●	●	●	●	●	●	●	●
	250	250	●	●	●	●	●	●	●	●	●
	300	300			●	●	●	●	●	●	●
	350	350			●	●	●	●	●	●	●
	400	400			●	●	●	●	●	●	●

How to order switch



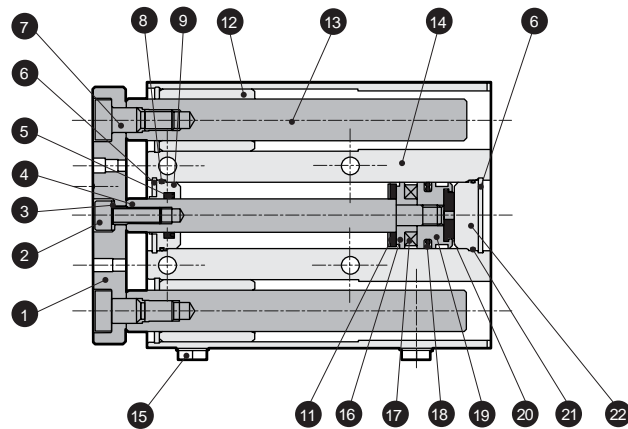
Switch model no.
(E) on previous page

Note: Consult with CKD when using the ecological T type switch.

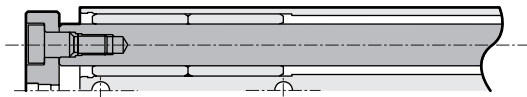
Internal structure and parts list (STG-M-12 to 25)

● $\phi 12, \phi 16$

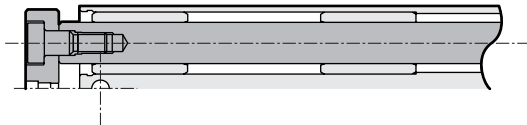
· 50 mm stroke or less



· 50 to 100 mm stroke

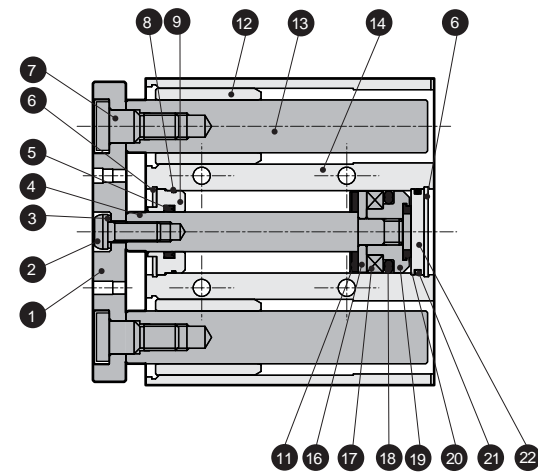


· 100 mm stroke over

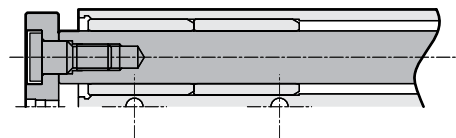


● $\phi 20, \phi 25$

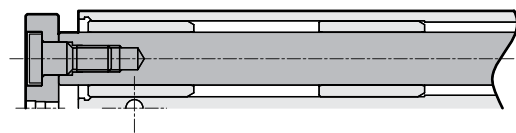
· 50 mm stroke or less



· 50 to 200 mm stroke

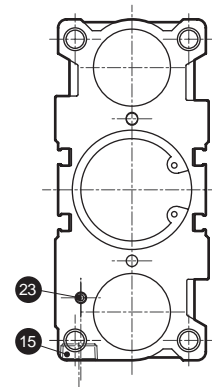
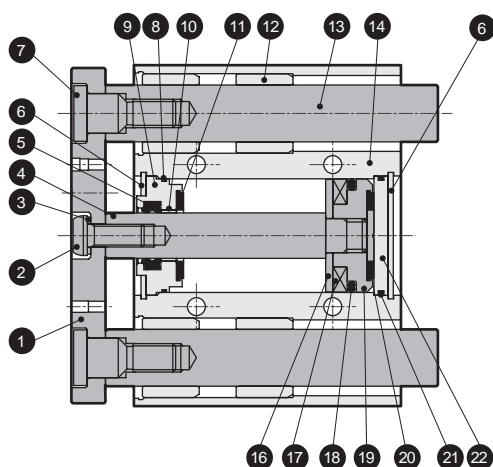


· 200 mm stroke over

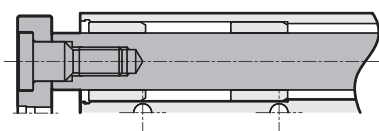


Internal structure and parts list (STG-M-32 to 63)

- $\phi 32$ to $\phi 63$
- 50 mm stroke or less



- 50 mm stroke over



No.	Parts name	Material	Remarks	No.	Parts name	Material	Remarks
1	End plate	Steel	Nickeling	12	Metal	Oil impregnated copper alloy bearing	Note 2
2	Hexagon socket head cap screw ($\phi 12$ to $\phi 16$)	Alloy steel	Zinc chromate	13	Guide rod	Stainless steel ($\phi 12$ to $\phi 16$)	Industrial chrome plating
	Hexagon socket button bolt ($\phi 20$ to $\phi 63$)	Alloy steel	Zinc chromate			Steel ($\phi 20$ to $\phi 63$)	Industrial chrome plating
3	Conical spring washer	Steel	Blackening	14	Tube body	Aluminum alloy	Hard alumite
4	Piston rod	Stainless steel ($\phi 12$ to $\phi 25$)	Industrial chrome plating	15	Plug	Brass or steel	
		Steel ($\phi 32$ to $\phi 63$)	Industrial chrome plating	16	Spacer	Aluminum alloy	
5	Rod packing seal	Nitrile rubber		17	Piston magnet	Plastic magnet	
6	C type snap ring	Steel	Phosphate coating	18	Piston packing seal	Nitrile rubber	
7	Bolt	Alloy steel	Zinc chromate	19	Piston	Aluminum alloy	
8	Metal gasket	Nitrile rubber		20	Cushion rubber	Urethane rubber	
9	Rod bushing	Special aluminum alloy ($\phi 12$ to $\phi 32$)	Alumite	21	O ring	Nitrile rubber	
		Aluminum alloy ($\phi 40$ to $\phi 63$)	Chromate	22	Base plate	Aluminum alloy	Chromate
10	Bush	Oilless dry met ($\phi 40$ to $\phi 63$)	Note 1	23	Hexagon socket head set screw	Stainless steel	
11	Cushion rubber	Urethane rubber		24	Steel ball	Stainless steel	

Note 1: Aluminum is used for copper and PTFE free.

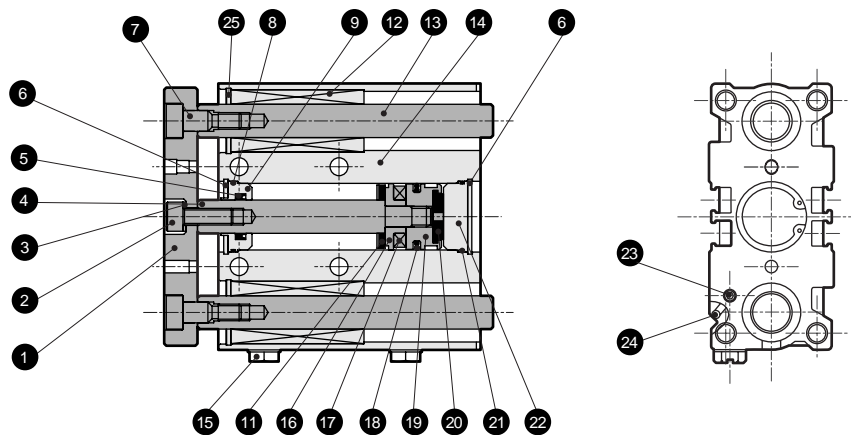
Note 2: Oil impregnated cast iron bearing is used for copper and PTFE free.

Repair parts list

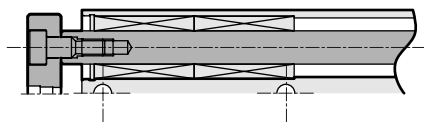
Bore size (mm)	Kit No.	Repair parts number
	STG-M/B	
$\phi 12$	STG-12K	
$\phi 16$	STG-16K	
$\phi 20$	STG-20K	
$\phi 25$	STG-25K	
$\phi 32$	STG-32K	5 8 11 18 20 21
$\phi 40$	STG-40K	
$\phi 50$	STG-50K	
$\phi 63$	STG-63K	

Internal structure and parts list (STG-B-12 to 25)

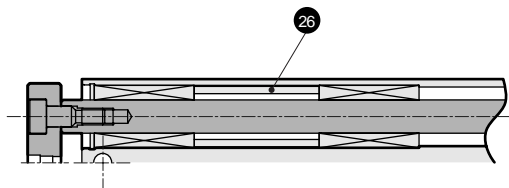
- $\phi 12, \phi 16$
- 30 mm stroke or less



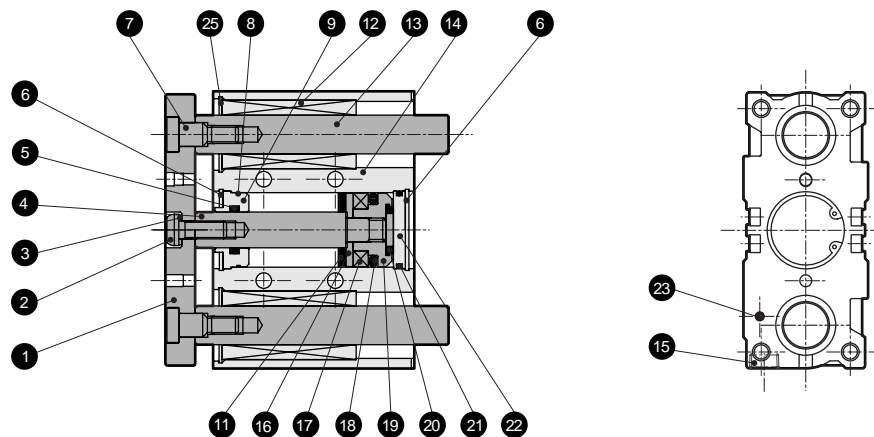
- 30 to 100 mm stroke



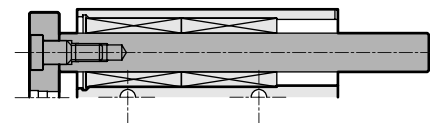
- 100 mm stroke over



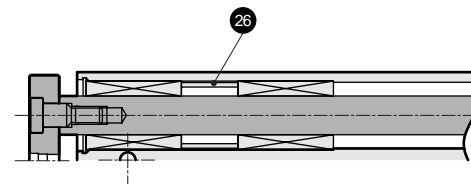
- $\phi 20, \phi 25$
- 30 mm stroke or less



- 30 to 100 mm stroke



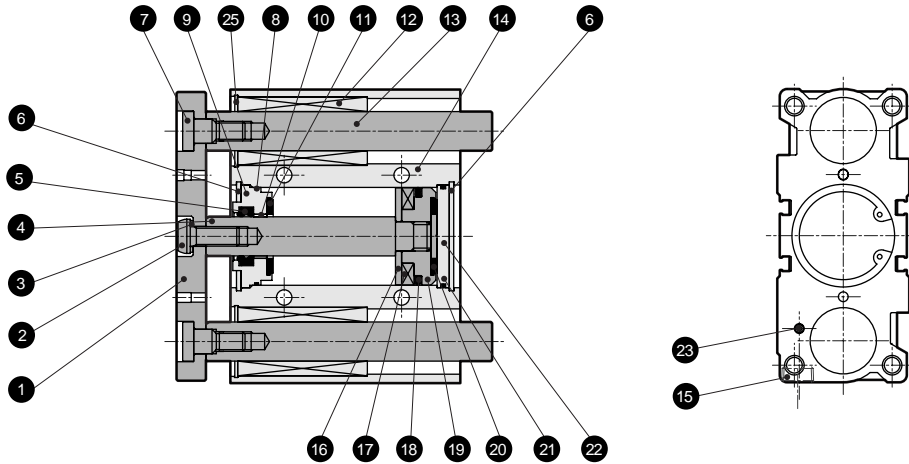
- 100 mm stroke over



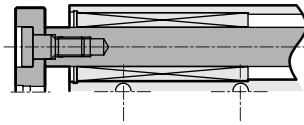
Internal structure and parts list (STG-B-32 to 63)

● $\phi 32$ to $\phi 63$

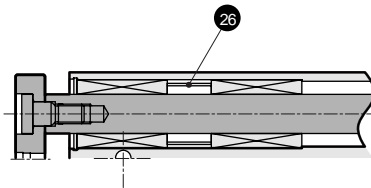
- 50 stroke length or less



- 50 stroke length to 100 stroke length



- 100 stroke length over



No.	Parts name	The material	Remarks	No.	Parts name	The material	Remarks
1	End plate	Steel	Nickeling	13	Guide rod	Alloy steel	Industrial chrome plating
2	Hexagon socket head cap screw ($\phi 12$ to $\phi 16$)	Alloy steel	Zinc chromate	14	Tube body	Aluminum alloy	Hard alumite
		Alloy steel	Zinc chromate	15	Plug	Brass or is steel.	
3	Conical spring washer	Steel	Blackening	16	Spacer	Aluminum alloy	
4	Piston rod	Stainless steel ($\phi 12$ to $\phi 25$)	Industrial chrome plating	17	Piston magnet	Plastic magnet	
		Steel ($\phi 32$ to $\phi 63$)	Industrial chrome plating	18	Piston packing seal	Nitrile rubber	
5	Rod packing seal	Nitrile rubber		19	Piston	Aluminum alloy	
6	C type snap ring	Steel	Phosphoric acid salt film	20	Cushion rubber	Urethane rubber	
7	Bolt	Alloy steel	Zinc chromate	21	O ring	Nitrile rubber	
8	Metal gasket	Nitrile rubber		22	Base plate	Aluminum alloy	Chromate
9	Rod bushing	Special aluminum alloy ($\phi 12$ to $\phi 32$)	Alumite	23	Hexagon socket head set screw	Stainless steel	
		Aluminum alloy ($\phi 40$ to $\phi 63$)	Chromate	24	Steel ball	Stainless steel	
10	Bush	Oilless dry met ($\phi 40$ to $\phi 63$)	Note 1	25	C type snap ring	Steel	Phosphoric acid salt film
11	Cushion rubber	Urethane rubber		26	Collar	Aluminum alloy	
12	Ball bushing						

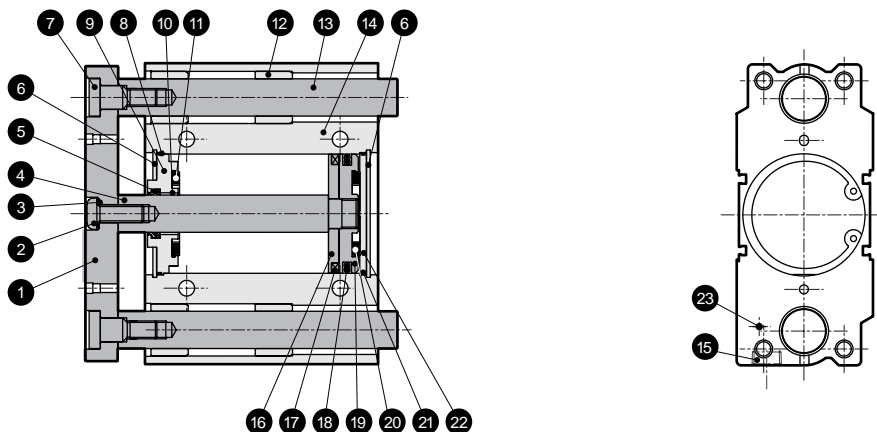
Note 1: Aluminum is used for copper and PTFE free.

Repair parts list

Bore size (mm)	Kit No.	Repair parts number
	STG-M/B	
$\phi 12$	STG-12K	
$\phi 16$	STG-16K	
$\phi 20$	STG-20K	
$\phi 25$	STG-25K	
$\phi 32$	STG-32K	5 8 11 18 20 21
$\phi 40$	STG-40K	
$\phi 50$	STG-50K	
$\phi 63$	STG-63K	

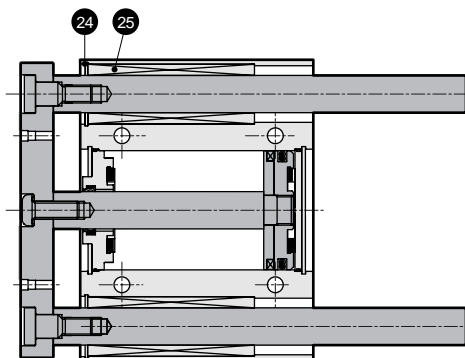
Internal structure and parts list (STG-M-80, STG-B-80)

● STG-M-80

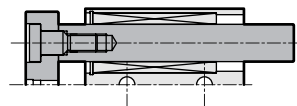


● STG-B-80

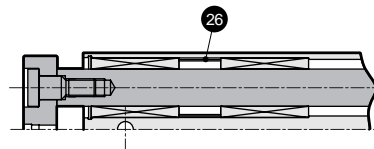
· 50 to 200 mm stroke



· 50 mm stroke or less



· 200 mm stroke over



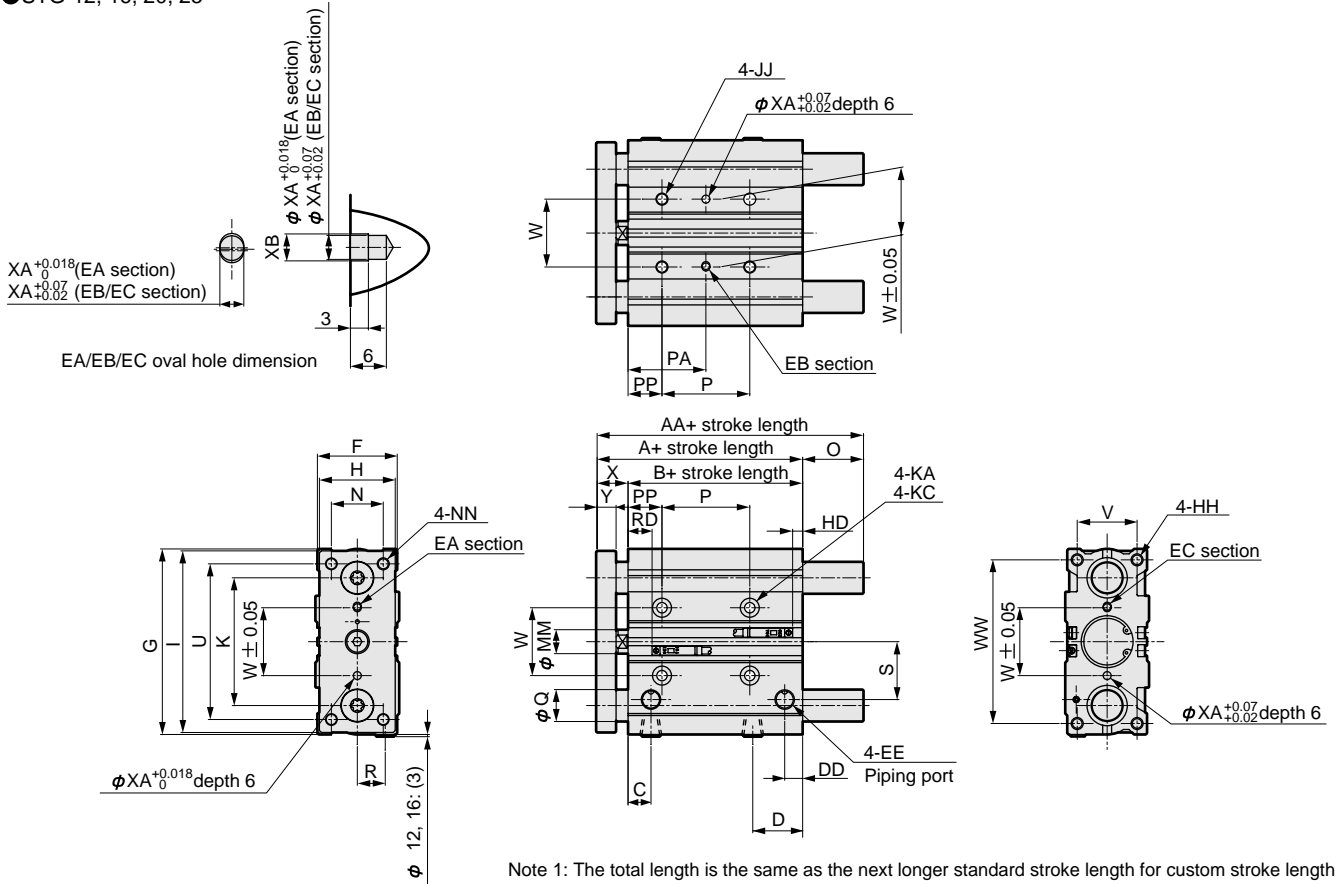
No.	Parts name	The material	Remarks	No.	Parts name	The material	Remarks
1	End plate	Steel	Nickeling	14	Tube body	Aluminum alloy	Hard alumite
2	Hexagon socket button bolt	Alloy steel	Zinc chromate	15	Plug	Steel	
3	Conical spring washer	Steel	Blackening	16	Spacer	Aluminum alloy	
4	Piston rod	Steel	Industrial chrome plating	17	Piston magnet	Plastic magnet	
5	Rod packing seal	Nitrile rubber		18	Piston packing seal	Nitrile rubber	
6	C type snap ring	Steel	Phosphoric acid salt film	19	Piston	Aluminum alloy	
7	Bolt	Alloy steel	Zinc chromate	20	Cushion rubber	Urethane rubber	
8	Metal gasket	Nitrile rubber		21	O ring	Nitrile rubber	
9	Rod bushing	Aluminum alloy	Chromate	22	Base plate	Aluminum alloy	Chromate
10	Bush	Oilless dry met		23	Hexagon socket head set screw	Stainless steel	
11	Cushion rubber	Urethane rubber		24	C type snap ring	Steel	Phosphoric acid salt film
12	Metal	Oil impregnated copper alloy bearing		25	Ball bushing		
13	Guide rod	Alloy or steel	Industrial chrome plating	26	Collar	Aluminum alloy	

Repair parts list

Bore size (mm)	Kit No.	Repair parts number
	STG-M/B	
φ80	STG-80K	5 8 11 18 20 21

Dimensions ($\phi 12$, $\phi 16$, $\phi 20$, $\phi 25$)

●STG-12, 16, 20, 25



Note 1: The total length is the same as the next longer standard stroke length for custom stroke length.
 Note 2: Refer to Page 65 for HD, RD and dimensions of projecting section of 2 color indicator type and preventive maintenance output switch.

●STG-M/B common

Symbol	Standard stroke length (mm)											A	B	C	D	DD	EE	F	G	H	HH	I	JJ
$\phi 12$	10, 20, 30, 40, 50, 75, 100, 125											42	29	12	16	7	M5	26	58	22	M4 depth 10	56	M5 depth 10
$\phi 16$	150, 175, 200, 250											46	33	12	18	7.5	M5	30	64	25	M5 depth 12	62	M5 depth 10
$\phi 20$	20, 30, 40, 50, 75, 100, 125, 150											53	37	10.5	24.5	8.5	Rc1/8	36	83	30	M5 depth 13	81	M6 depth 12
$\phi 25$	175, 200, 250, 300, 350, 400											53.5	37.5	11.5	25	9	Rc1/8	42	93	38	M6 depth 15	91	M6 depth 12

Symbol	P														
Symbol	K	KA	MM	N	NN	KC					P				
Bore size (mm)											30st or less	30st to 100st	100st to 200st	200st to 300st	300st over
$\phi 12$	41	4.3 penetrating	6	14	M4 penetrating	8 spot face depth 4.5					20	40	110	200	-
$\phi 16$	46	4.3 penetrating	8	16	M5 penetrating	8 spot face depth 4.5					24	44	110	200	-
$\phi 20$	54	5.2 penetrating	10	18	M5 penetrating	9.5 spot face depth 5.5					24	44	120	200	300
$\phi 25$	64	5.2 penetrating	12	26	M6 penetrating	9.5 spot face depth 5.5					24	44	120	200	300

Symbol	PA											Piping port													
Symbol	30st or less					30st to 100st					100st to 200st					200st to 300st					300st over				
Bore size (mm)	PP	R	S	U	V	W	WW	X	Y	RD	HD	XA	XB												
$\phi 12$	5	8	17	48	18	23	50	13	8	5	5	3	3.5												
$\phi 16$	5	10	18	54	22	24	56	13	8	4	10	3	3.5												
$\phi 20$	17	11	25	70	24	28	72	16	10	9.5	8.5	3	3.5												
$\phi 25$	17	14	29	78	30	34	82	16	10	10	8.5	4	4.5												

●STG-M

Symbol	AA			Q	O		
Bore size (mm)	50st or less	50st to 100st	100st over		50st or less	50st to 100st	100st over
$\phi 12$	42	55	85	8	0	13	43
$\phi 16$	46	63	95	10	0	17	49

Symbol	AA			Q	O		
Bore size (mm)	50st or less	50st to 200st	200st over		50st or less	50st to 200st	200st over
$\phi 20$	53	78	122	12	0	25	69
$\phi 25$	53.5	84	122	16	0	30.5	68.5

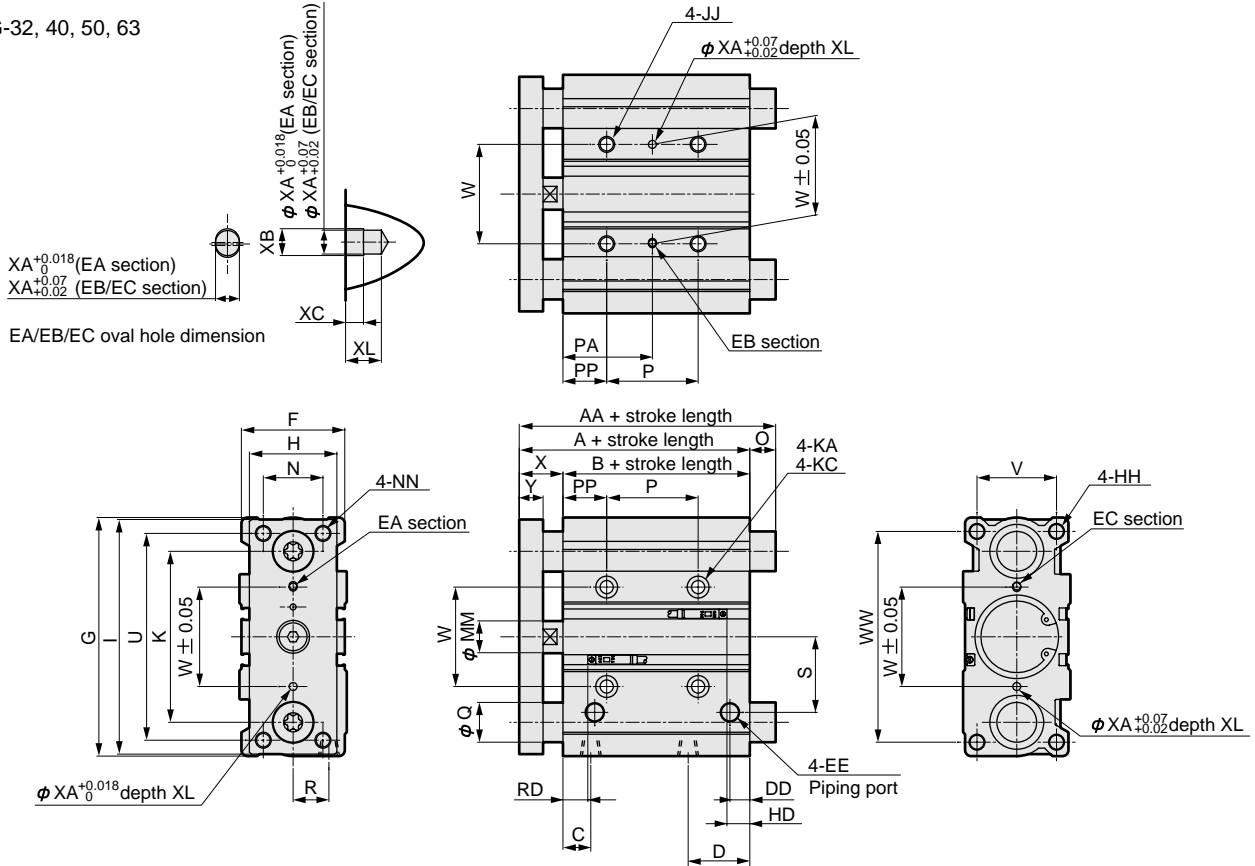
●STG-B

Symbol	AA			Q	O		
Bore size (mm)	30st or less	30st to 100st	100st over		30st or less	30st to 100st	100st over
$\phi 12$	43	55	85	6	1	13	43
$\phi 16$	49	65	95	8	3	19	49

Symbol	AA				Q	O			
Bore size (mm)	30st or less	30st to 100st	100st to 200st	200st over		30st or less	30st to 100st	100st to 200st	200st over
$\phi 20$	59	78	100	122	10	6	25	47	69
$\phi 25$	65	84	103	122	13	11.5	30.5	49.5	68.5

Dimensions (φ 32, φ 40, φ 50, φ 63)

●STG-32, 40, 50, 63



Note 1: The total length is the same as the next longer standard stroke length for custom stroke length.
 Note 2: Refer to Page 65 for HD, RD and dimensions of projecting section of 2 color indicator type and preventive maintenance output switch.

●STG-M/B common

Symbol	Standard stroke length (mm)	A	B	C	D	DD	EE	F	G	H	HH	I	JJ	K	KA
φ 32	25, 50, 75, 100, 125, 150, 175, 200, 250, 300, 350, 400	59.5	37.5	12.5	30.5	9	Rc1/8	48	112	44	M8 depth 20	110	M8 depth 16	78	6.3 penetrating
φ 40		66	44	14	31	10	Rc1/8	54	120	44	M8 depth 20	118	M8 depth 16	86	6.3 penetrating
φ 50		72	44	14	35	11	Rc1/4	64	148	60	M10 depth 22	146	M10 depth 20	110	8.6 penetrating
φ 63		77	49	16.5	35	15	Rc1/4	78	162	70	M10 depth 22	158	M10 depth 20	124	8.6 penetrating

Symbol	Bore size (mm)	KC	MM	N	NN	P					PA	
						25st or less	25st to 100st	100st to 200st	200st to 300st	300st over	25st or less	25st to 100st
φ 32		11 spot face depth 7.5	16	30	M8 penetrating	24	48	124	200	300	33	45
φ 40		11 spot face depth 7.5	16	30	M8 penetrating	24	48	124	200	300	34	46
φ 50		14 spot face depth 9	20	40	M10 penetrating	24	48	124	200	300	36	48
φ 63		14 spot face depth 9	20	50	M10 penetrating	28	52	128	200	300	38	50

Symbol	Bore size (mm)	PA			PP	R	S	U	V	W	WW	X	Y	RD	HD	XA	XB	XC	XL
		100st to 200st	200st to 300st	300st over															
φ 32		83	121	171	21	15	34	96	34	42	98	22	12	10	8.5	4	4.5	3	6
φ 40		84	122	172	22	18	38	104	40	50	106	22	12	13	12	4	4.5	3	6
φ 50		86	124	174	24	21.5	47	130	46	66	130	28	16	13.5	11.5	5	6	4	8
φ 63		88	124	174	24	28	55	130	58	80	142	28	16	14	16	5	6	4	8

●STG-M

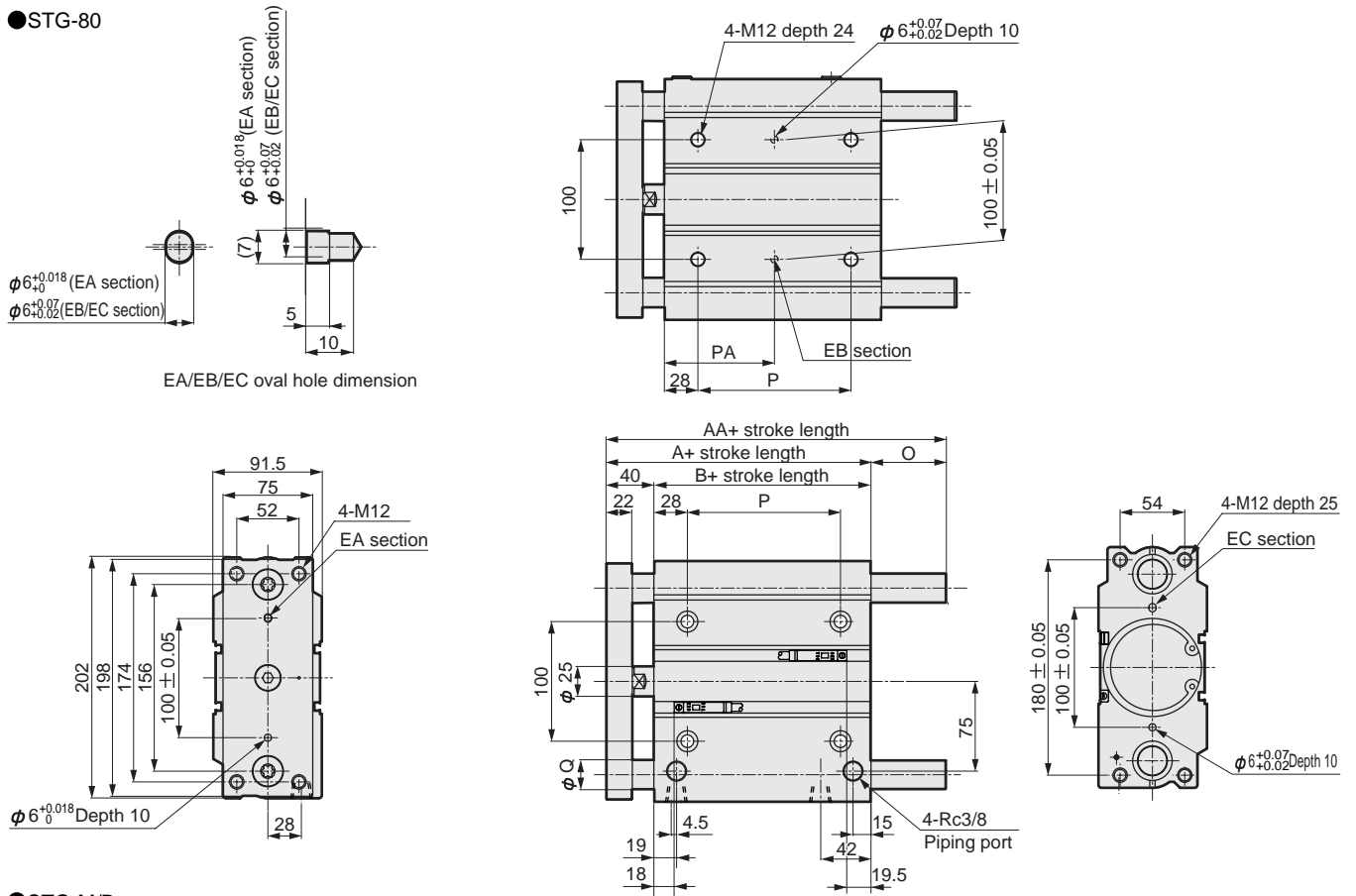
Symbol	Bore size (mm)	AA			Q	O		
		50st or less	50st to 200st	200st over		50st or less	50st to 200st	200st over
φ 32		79	100	140	20	19.5	40.5	80.5
φ 40		79	100	140	20	13	34	74
φ 50		91	116	161	25	19	44	89
φ 63		91	116	161	25	14	39	84

●STG-B

Symbol	Bore size (mm)	AA				Q	O			
		50st or less	50st to 100st	100st to 200st	200st over		50st or less	50st to 100st	100st to 200st	200st over
φ 32		79	98	118	140	16	19.5	38.5	58.5	80.5
φ 40		79	98	118	140	16	13	32	52	74
φ 50		91	114	134	161	20	19	42	62	89
φ 63		91	114	134	161	20	14	37	57	84

Dimensions ($\phi 80$)

●STG-80



●STG-M/B common

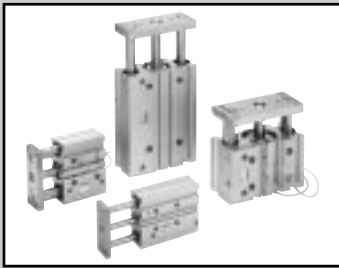
Standard stroke length	A	B	P					PA				
			25st or less	25st to 100st	100st to 200st	200st to 300st	300st over	25st or less	25st to 100st	100st to 200st	200st to 300st	300st over
25, 50, 75, 100, 125, 150, 175, 200, 250, 300, 350, 400	96.5	56.5	28	52	128	200	300	42	54	92	128	178

●STG-M

AA			Q	O		
50st or less	25st to 200st	200st over		50st or less	50st to 200st	200st over
115	142	193	30	18.5	45.5	96.5

●STG-B

AA				Q	O			
25st or less	25st to 50st	50st to 200st	200st over		25st or less	25st to 50st	50st to 200st	200st over
109.5	130	160	193	25	13	33.5	63.5	96.5



And guided cylinder, double acting rubber-air cushioned

STG-M-B-~~✕~~C Series

● Bore size: $\phi 32$ $\phi 40$, $\phi 50$, $\phi 63$

JIS symbol

Specifications

Descriptions		STG-M/B- ✕ C			
Bore size	mm	$\phi 32$	$\phi 40$	$\phi 50$	$\phi 63$
Actuation		Double acting			
Working fluid		Compressed air			
Max. working pressure	MPa	1.0			
Min. working pressure	MPa	0.2			
Withstanding pressure	MPa	1.6			
Ambient temperature	°C	-10 to 60 (to be unfrozen)			
Port size		Rc1/8		Rc1/4	
Stroke tolerance	mm	+2.0 0			
Working piston speed	mm/s	50 to 500			50 to 300
Cushion		Rubber-air cushioned			
Lubrication		Not required (when lubricating, use turbine oil Class 1 ISOVG32.)			
Allowable energy absorption	J	0.401	0.627	0.980	1.560

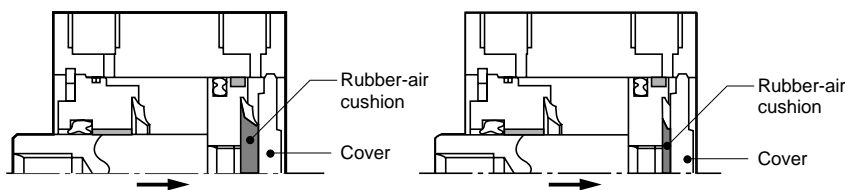
Stroke length

Bore size	Standard stroke length (mm)	Max. stroke length (mm)	Min. stroke length (mm)	Min. stroke length of types with switch (mm)
$\phi 32$	25, 50, 75, 100	400	5	5
$\phi 40$	125, 150, 175			
$\phi 50$	200, 250, 300			
$\phi 63$	350, 400			

Note 1

Note 1: Custom stroke length is available per 5mm increment. Note that the total length is the same as the next longer standard stroke length.
 Note 2: This applies when 1 or 2 switches are installed.

Rubber-air cushion mechanism



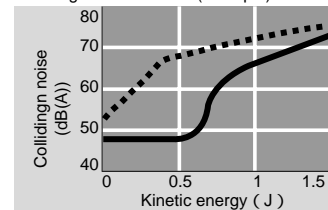
PULL time explanation

When the piston moves and the rubber-air cushion and cover contact, a sealed air space is formed in the shaded section.

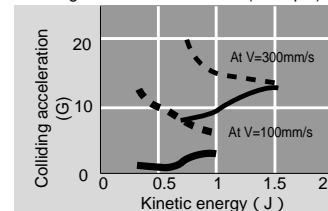
The air in the shaded section is compressed as the piston moves, and energy is absorbed. Energy absorbed by the rubber air cushion's compression strain is also calculated at the stroke end.

- Rubber cushioned cylinder
- Rubber-air cushioned cylinder

Colliding noise decrease(example)



Colliding acceleration decrease(example)



Switch specifications

- One color/bi-color indicator/strong magnetic field proof

Descriptions	Proximity 2 wire		Proximity 3 wire		Reed 2 wire						Proximity 2 wire
	T2H/T2V/T2JH/T2JV	T2YH/T2YV	T3H/T3V	T3YH/T3YV	T0H/T0V			T5H/T5V			T2YD/T2YDT
Applications	Programmable controller		Programmable Controller, relay		Programmable controller, relay			Programmable controller, relay IC circuit (without indicator light), serial connection			Programmable controller
Power voltage	-		28 to 10V DC		-						-
Load voltage	30 to 10V DC		30V DC or less		12/24V DC	110V AC	220V AC	5/12/24V DC	110V AC	220V AC	24V DC±10%
Load current	5 to 20mA (note 1)		100mA or less	50mA or less	5 to 50mA	7 to 20mA	7 to 10mA	50mA or less	20mA or less	10mA or less	5 to 20mA
Light	LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)			-			Red/green LED (ON lighting)

Note 1: Maximum load current above: 20mA applies at 25℃. If the switch's ambient operating temperature exceeds 25℃, the load current becomes less than 20 mA.(5 to 10mA when 60℃)

- With preventive maintenance output

Descriptions	Proximity 3 wire		Proximity 4 wire		Proximity 3 wire		Proximity 4 wire		
	T2YFH/V		T3YFH/V		T2YMH/V		T3YMH/V		
Applications	Programmable controller		Programmable controller, relay		Programmable controller		Programmable controller, relay		
Light	Installation position adjustment section		Red/green LED (ON lighting)						
	Preventive maintenance output section		-		Yellow LED (ON lighting)				
Regular Output section	Power voltage	-	28 to 10V DC		-		28 to 10V DC		
	Load voltage	30 to 10V DC		30V DC or less		30 to 10V DC		30V DC or less	
	Load current	5 to 20mA		50mA or less		5 to 20mA		50mA or less	
Preventive maintenance Output section	Load voltage	30V DC or less							
	Load current	20mA or less		50mA or less		5 to 20mA (note 1)		50mA or less	

Note 1: Maximum load current above: 20mA applies at 25℃. If the switch's ambient operating temperature exceeds 25℃, the load current becomes less than 20 mA.(5 to 10mA when 60℃)

Cylinder weight

- STG-M-※C

Unit: kg

Descriptions	Stroke length												Switch weight Grommet
	25	50	75	100	125	150	175	200	250	300	350	400	
φ32	1.64	2.01	2.54	2.94	3.34	3.73	4.12	4.51	5.49	6.27	7.07	7.85	0.018
φ40	1.89	2.30	2.75	3.15	3.57	3.98	4.39	4.80	5.81	6.64	7.47	8.29	0.018
φ50	3.26	3.88	4.59	5.21	5.83	6.45	7.07	7.69	9.25	10.48	11.74	13.00	0.018
φ63	4.05	4.79	5.61	6.34	7.07	7.81	8.54	9.27	11.06	12.51	13.97	15.42	0.018

- STG-B-※C

Unit: kg

Descriptions	Stroke length												Switch weight Grommet
	25	50	75	100	125	150	175	200	250	300	350	400	
φ32	1.49	1.79	2.23	2.54	2.90	3.21	3.51	3.82	4.49	5.10	5.71	6.32	0.018
φ40	1.74	2.09	2.56	2.91	3.32	3.67	4.02	4.37	5.12	5.82	6.52	7.22	0.018
φ50	3.02	3.55	4.28	4.81	5.43	5.97	6.50	7.03	8.23	9.28	10.38	11.45	0.018
φ63	3.81	4.45	5.30	5.94	6.67	7.31	7.96	8.60	9.99	11.35	12.61	13.87	0.018

How to order

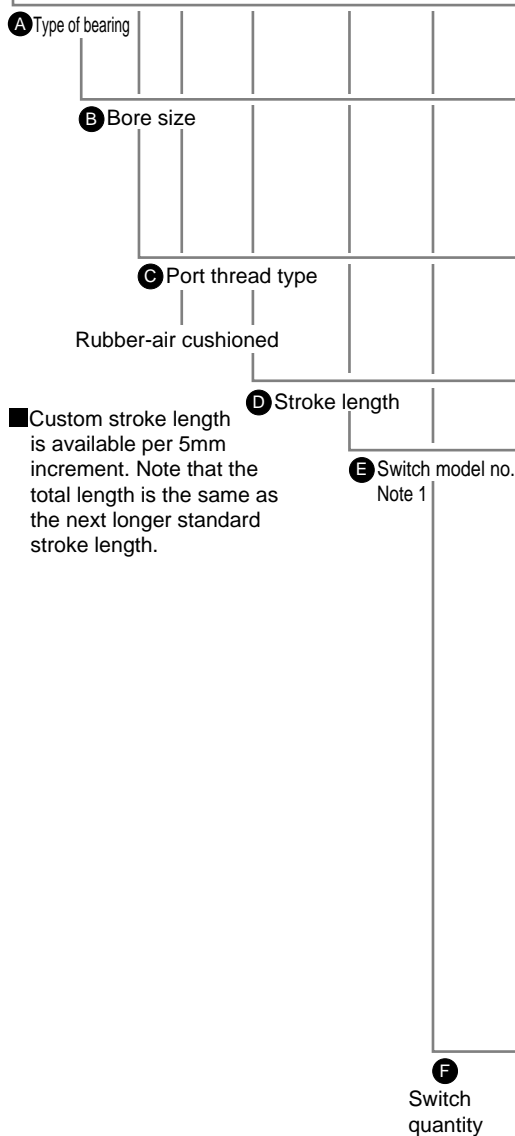
Without switch

STG - **M** - **32** - **C** - **25**

With switch

STG - **M** - **32** - **C** - **25** - **T2H** - **R**

Model no.



Symbol	Descriptions			
A Type of bearing				
M	Metal bush bearing			
B	Ball bearing			
B Bore size (mm)				
32	φ32			
40	φ40			
50	φ50			
63	φ63			
C Port thread type				
Blank	Rc thread			
N	NPT thread (custom order)			
G	G thread (custom order)			
D Stroke length (mm)				
Refer to the following page standard stroke length table.				
E Switch model no.				
Axial lead wire	Radial lead wire	Contact	Indicator	Lead wire
T0H*	T0V*	Reed	1 color indicator type	2 wire
T5H*	T5V*		Without indicator light	
T2H*	T2V*		Proximity	1 color indicator type
T3H*	T3V*	2 color indicator type		3 wire
T2YH*	T2YV*	2 color indicator type		3 wire
T3YH*	T3YV*	2 color indicator type		3 wire
T2YFH*	T2YFV*	(Without indicator light for preventive maintenance output)		4 wire
T3YFH*	T3YFV*	2 color indicator type		3 wire
T2YMH*	T2YMV*	(With indicator light for preventive maintenance output (1 color))		4 wire
T3YMH*	T3YMV*	Off-delay type		2 wire
T2YD*	-	Strong magnetic field proof switch		2 wire
T2YDT*	-			
* Lead wire length				
Blank	1m (standard)			
3	3m (option)			
5	5m (option)			
F Switch quantity				
R	One on rod end			
H	One on head end			
D	Two			
T	Three			

⚠ Note on model no. selection

Note 1: Switches other than switch model no. (E) are available.(Custom order)
Refer to Pneumatic cylinders (No.CB-029SA) for details.

<Example of model number>

STG-M-32C-50-T0H-R

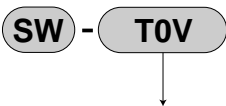
Model: Guided cylinder, double acting rubber-air cushioned

- A** Type of bearing : Metal bush bearing
- B** Bore size : φ 32mm
- C** Port thread type : Rc thread
- D** Stroke length : 50mm
- E** Switch model no. : Reed T0H switch, lead wire length 1m
- F** Switch quantity : One on rod side

(Standard stroke length table)

Standard stroke length	Symbol	Stroke length (mm)	Applicable bore size			
			φ 32	φ 40	φ 50	φ 63
25	25	25	●	●	●	●
50	50	50	●	●	●	●
75	75	75	●	●	●	●
100	100	100	●	●	●	●
125	125	125	●	●	●	●
150	150	150	●	●	●	●
175	175	175	●	●	●	●
200	200	200	●	●	●	●
250	250	250	●	●	●	●
300	300	300	●	●	●	●
350	350	350	●	●	●	●
400	400	400	●	●	●	●

How to order switch



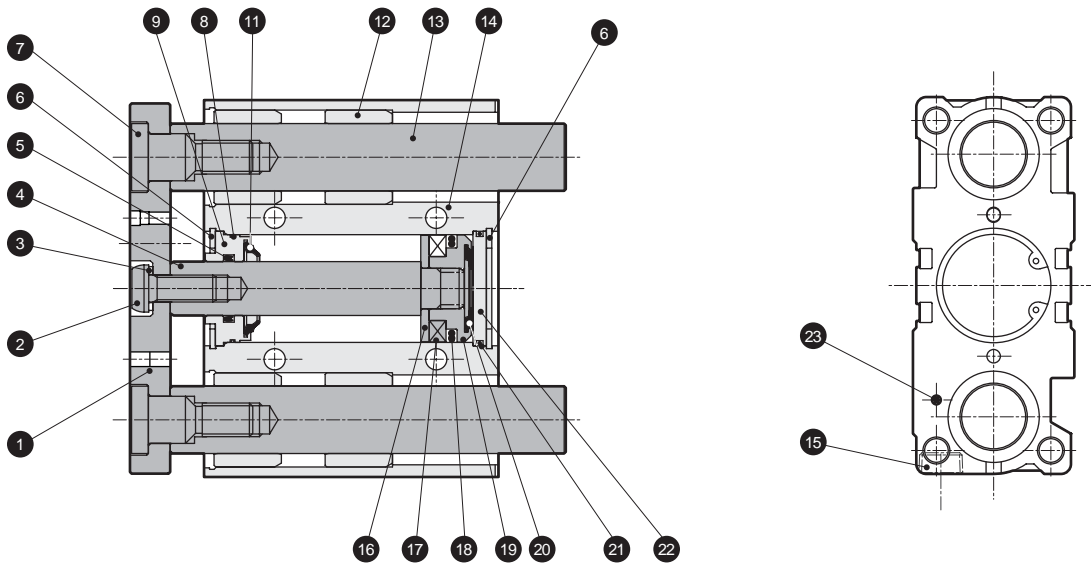
Switch model no.
(E) Previous page No.)

Note: Consult with CKD when using the ecological T type switch.

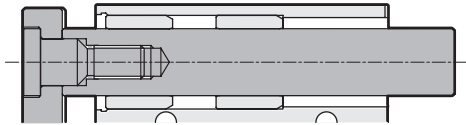
Internal structure and parts list

● STG-M-32 to 63 ($\phi 32$ to $\phi 63$)

· 50 mm stroke or less

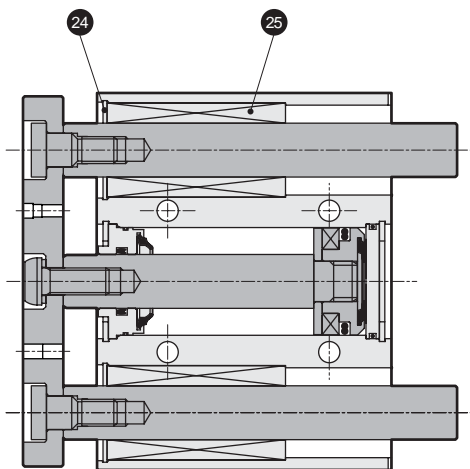


· 50 mm stroke over

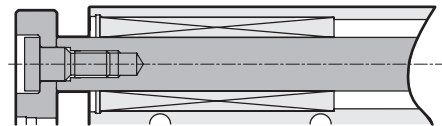


● STG-B-32 to 63 ($\phi 32$ to $\phi 63$)

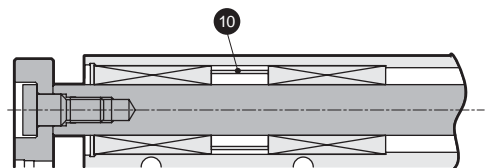
· 50 mm stroke or less



· 50 to 100 mm stroke



· 100 mm stroke over



Internal structure and parts list

No.	Parts name	Material	Remarks	No.	Parts name	Material	Remarks
1	End plate	Steel	Nickeling	14	Tube body	Aluminum alloy	Hard alumite
2	Hexagon socket head cap screw	Alloy steel	Zinc chromate	15	Plug	Steel	
3	Conical spring washer	Steel	Blackening	16	Spacer	Aluminum alloy	Alumite
4	Piston rod	Steel	Industrial chrome plating	17	Piston magnet	Plastic magnet	
5	Rod packing seal	Nitrile rubber		18	Piston packing seal	Nitrile rubber	
6	C type snap ring	Steel	Phosphate coating	19	Piston	Aluminum alloy	Alumite
7	Bolt	Alloy steel	Zinc chromate	20	Rubber-air cushion (H)	Special rubber	
8	Metal gasket	Nitrile rubber		21	O ring	Nitrile rubber	
9	Rod bushing	Aluminum alloy	Alumite	22	Base plate	Aluminum alloy	Alumite
10	Collar	Aluminum alloy		23	Hexagon socket head set screw	Stainless steel	
11	Rubber-air cushion (R)	Special rubber		24	C type snap ring	Steel	Phosphate coating
12	Metal	Oil impregnated copper alloy bearing		25	Ball bushing		
13	Guide rod	Steel	Industrial chrome plating				

Repair parts list

Bore size (mm)	Kit No.	Repair parts number
	STG-M/B	
φ32	STG-32CK	5 8 11 18 20 21
φ40	STG-40CK	
φ50	STG-50CK	
φ63	STG-63CK	

Dimensions

The dimensions are the same as the double-acting single rod. Refer to Pages 14 and 13.

Technical data

Refer to Page 67 for guided cylinder selection guide.



(Comparison of colliding noise level performance)

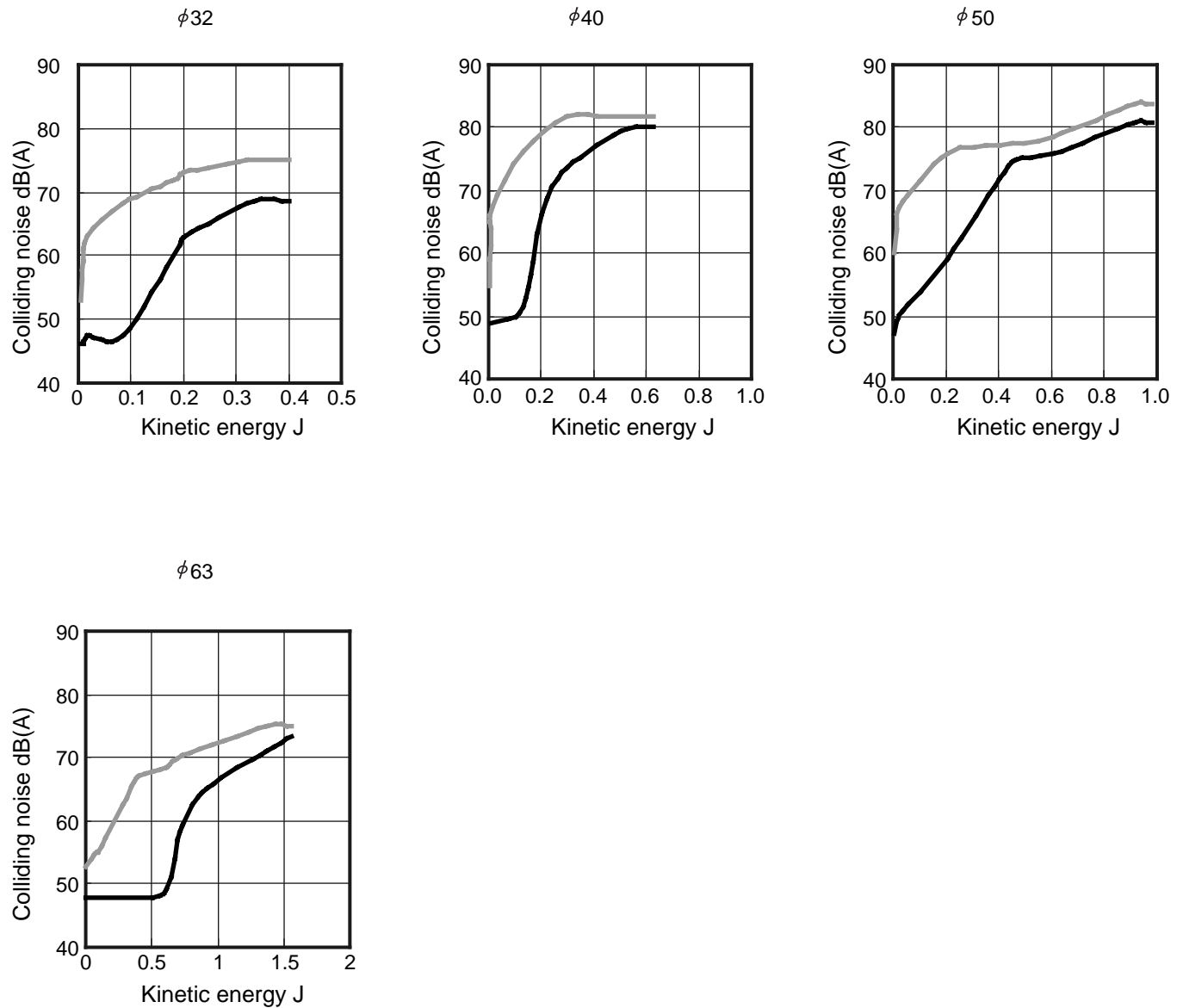
Data show an example of comparison with conditions below.

A number varies depending on the frame rigidity, etc, and it is not guaranteed values.

(Test conditions)



Cylinder type : STG
 Cylinder installation attitude : Vertical rod upward
 Cylinder supply pressure : 0.5MPa
 Noise mater measurement position : 1 m from specimen

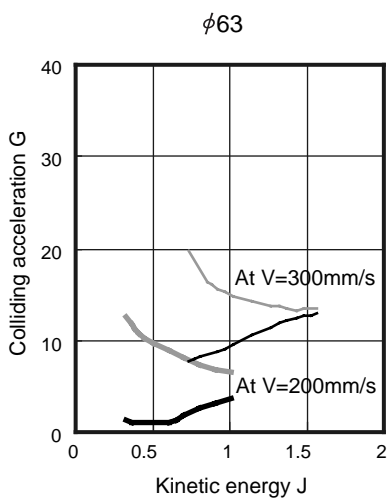
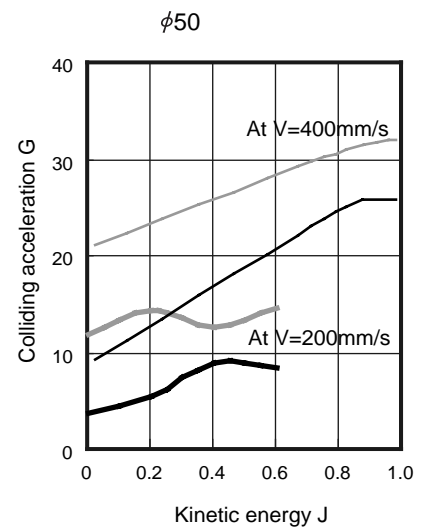
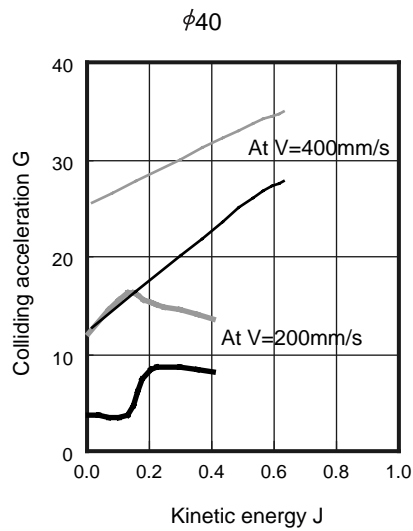
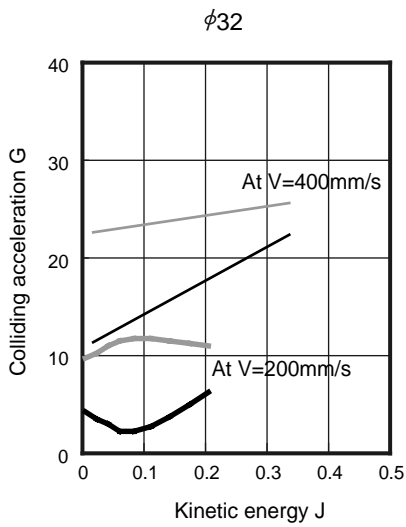
Standard rubber cushion: 
 Rubber-air cushion: 



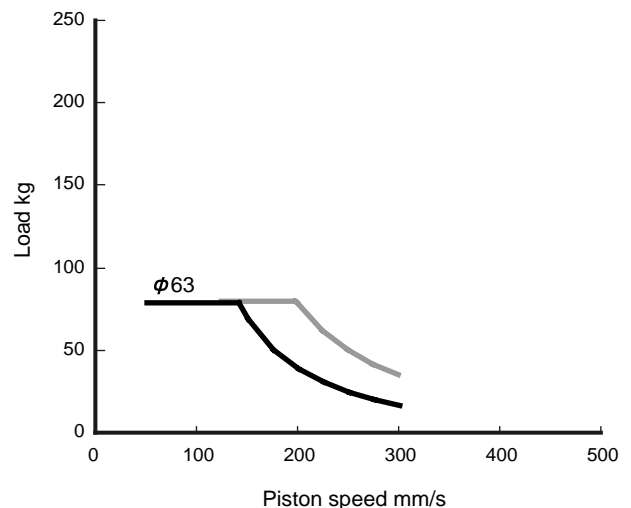
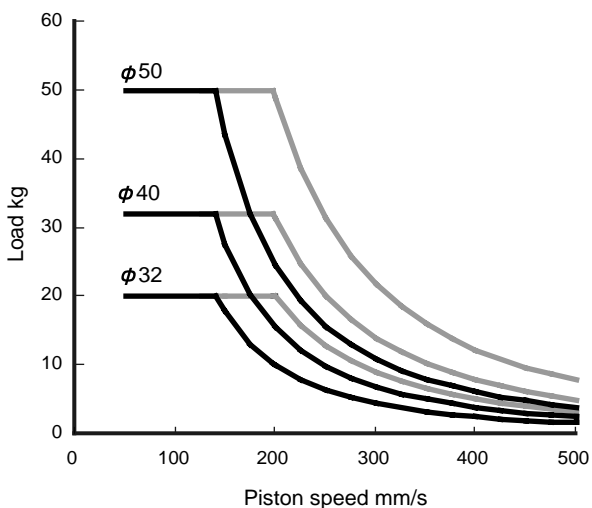
Technical data

[Comparison of colliding acceleration performance]


Standard rubber cushion: 
 Rubber-air cushion: 



[Allowable energy]



The product is used in the range at the lower left of the curve.


Use is possible within the range shown with the  line in the graph, but to effectively use the silencing effect, the product should be used within the range shown with the solid line.



Guided cylinder, double acting air cushioned

STG-^M_BC Series

● Bore size: $\phi 16$, $\phi 20$, $\phi 25$, $\phi 32$, $\phi 40$, $\phi 50$, $\phi 63$

JIS symbol 

Specifications

Descriptions	STG- ^M _B C						
Bore size mm	$\phi 16$	$\phi 20$	$\phi 25$	$\phi 32$	$\phi 40$	$\phi 50$	$\phi 63$
Actuation	Double acting air cushioned						
Working fluid	Compressed air						
Max. working pressure MPa	1.0						
Min. working pressure MPa	0.15			0.1			
Withstanding pressure MPa	1.6						
Ambient temperature °C	-10 to 60 (to be unfrozen)						
Port size	M5	Rc1/8			Rc1/4		
Stroke tolerance mm	+2.0 0						
Working piston speed mm/s	50 to 500					50 to 300	
Cushion	Air cushioned						
Lubrication	Not required (when lubricating, use turbine oil Class 1 ISOVG32.)						
Allowable energy absorption J	0.3	0.7	1.0	2.5	3.7	3.8	5.5

Stroke length

Bore size	Standard stroke length (mm)	Max. stroke length (mm)	Min. stroke length (mm)	Min. stroke length of types with switch (mm)
$\phi 16$	25, 50, 75, 100, 125, 150, 175, 200, 250	250	5	5
$\phi 20$	25, 50, 75, 100 125, 150, 175 200, 250, 300 350, 400	400		
$\phi 25$				
$\phi 32$				
$\phi 40$				
$\phi 50$				
$\phi 63$				

Note 1: Custom stroke length is available per 1mm increment. (Custom order)

Note 2: This applies when 1 or 2 switches are installed.

Switch specifications

● One color/bi-color indicator/strong magnetic field proof

Descriptions	Proximity 2 wire		Proximity 3 wire		Reed 2 wire					Proximity 2 wire	
	T2H/T2V/T2JH/T2JV	T2YH/T2YV	T3H/T3V	T3YH/T3YV	T0H/T0V			T5H/T5V		T2YD/T2YDT	
Applications	Programmable controller		Programmable controller Controller, relay		Programmable controller and relay			Programmable controller, relay IC circuit (without indicator light), serial connection		Programmable controller	
Power voltage	-		28 to 10V DC		-					-	
Load voltage	30 to 10V DC		30V DC or less		12/24V DC	110V AC	220V AC	5/12/24V DC	110V AC	220V AC	24V DC ± 10%
Load current	5 to 20mA (Note 1)		100mA or less	50mA or less	5 to 50mA	7 to 20mA	7 to 10mA	50mA or less	20mA or less	10mA or less	5 to 20mA
Light	LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)			-		Red/green LED (ON lighting)	

Note 1: The maximum load current of 20 mA applies at 25°C. If the switch's ambient operating temperature exceeds 25°C, the load current becomes less than 20 mA. (5 to 10mA when 60°C)

● With preventive maintenance output

Descriptions	Proximity 3 wire		Proximity 4 wire		Proximity 3 wire		Proximity 4 wire		
	T2YFH/V		T3YFH/V		T2YMH/V		T3YMH/V		
Applications	Programmable controller		Programmable controller, relay		Programmable controller		Programmable controller, relay		
Light	Installation position adjustment section		Red/green LED (ON lighting)						
	Preventive maintenance output section		-				Yellow LED (ON lighting)		
Regular Output section	Power voltage	-	28 to 10V DC		-		28 to 10V DC		
	Load voltage	30 to 10V DC		30V DC or less		30 to 10V DC		30V DC or less	
	Load current	5 to 20mA		50mA or less		5 to 20mA		50mA or less	
Preventive maintenance Output section	Load voltage	30V DC or less							
	Load current	20mA or less		50mA or less		5 to 20mA (note 1)		50mA or less	

Note 1: The maximum load current of 20 mA applies at 25°C. If the switch's ambient operating temperature exceeds 25°C, the load current becomes less than 20 mA. (5 to 10mA when 60°C)

Cylinder weight

● STG-M

Unit: kg

Descriptions	Stroke length												Switch weight Grommet
	25	50	75	100	125	150	175	200	250	300	350	400	
φ16	0.49	0.61	0.76	0.88	1.04	1.16	1.28	1.41	1.65				0.018
φ20	0.85	1.04	1.30	1.49	1.68	1.87	2.06	2.26	2.71	3.10	3.48	3.87	0.018
φ25	1.19	1.45	1.83	2.09	2.35	2.62	2.89	3.15	3.80	4.32	4.86	5.38	0.018
φ32	1.90	2.26	2.80	3.18	3.58	3.96	4.35	4.73	5.71	6.48	7.26	8.03	0.018
φ40	2.28	2.70	3.16	3.58	4.01	4.43	4.86	5.28	6.31	7.17	8.02	8.87	0.018
φ50	3.87	4.51	5.24	5.88	6.51	7.15	7.79	8.43	10.04	11.30	12.60	13.90	0.018
φ63	4.93	5.69	6.53	7.29	8.04	8.80	9.55	10.31	12.15	13.65	15.15	16.64	0.018

● STG-B

Unit: kg

Descriptions	Stroke length												Switch weight Grommet
	25	50	75	100	125	150	175	200	250	300	350	400	
φ16	0.52	0.64	0.75	0.87	1.00	1.11	1.22	1.34	1.55				0.018
φ20	0.90	1.10	1.27	1.43	1.63	1.80	1.97	2.14	2.50	2.84	3.18	3.52	0.018
φ25	1.26	1.52	1.75	1.98	2.24	2.46	2.69	2.91	3.40	3.85	4.30	4.74	0.018
φ32	1.75	2.04	2.47	2.77	3.13	3.43	3.72	4.02	4.68	5.27	5.87	6.46	0.018
φ40	2.12	2.48	2.97	3.33	3.75	4.11	4.47	4.83	5.61	6.32	7.04	7.76	0.018
φ50	3.62	4.17	4.92	5.47	6.10	6.65	7.20	7.75	8.98	10.07	11.20	12.30	0.018
φ63	4.69	5.34	6.21	6.87	7.63	8.29	8.96	9.62	11.05	12.45	13.75	15.05	0.018

How to order

Without switch

STG - **M** **C** - **32** - **25**

With switch

STG - **M** **C** - **32** - **25** - **T2H** - **R**

Model no.

Air cushioned

A Type of bearing

B Bore size

C Port thread type

D Stroke length

E Switch model no.
Note 1

F Switch quantity

Symbol	Descriptions			
A Type of bearing				
M	Metal bush bearing			
B	Ball bearing			
B Bore size (mm)				
16	φ16			
20	φ20			
25	φ25			
32	φ32			
40	φ40			
50	φ50			
63	φ63			
C Port thread type				
Blank	M5 (φ16) Rc thread (φ20 to φ63)			
NN	NPT thread (φ20 and over) custom order			
GN	G thread (φ20 and over) custom order			
D Stroke length (mm)				
Refer to the following page standard stroke length table.				
E Switch model no.				
Axial lead wire	Axial lead wire	Contact	Indicator	Axial lead wire
Axial	Radial			
T0H*	T0V*	Reed	1 color indicator type	2 wire
T5H*	T5V*		Without indicator light	
T2H*	T2V*		Proximity	1 color indicator type
T3H*	T3V*	3 wire		
T2YH*	T2YV*	2 color indicator type		2 wire
T3YH*	T3YV*	3 wire		
T2YFH*	T2YFV*	2 color indicator type		3 wire
T3YFH*	T3YFV*	(Without indicator light for preventive maintenance output)		4 wire
T2YMH*	T2YMV*	2 color indicator type		3 wire
T3YMH*	T3YMV*	(With indicator light for preventive maintenance output (1 color))		4 wire
T2JH*	T2JV*	Off-delay type		2 wire
T2YD*	-	Strong magnetic field proof switch		2 wire
T2YDT*	-			
*Lead wire length				
Blank	1m (standard)			
3	3m (option)			
5	5m (option)			
F Switch quantity				
R	One on rod end			
H	One on head end			
D	Two			
T	Three			

Note on model no. selection

Note 1: Switches other than switch model no. (E) are available.(Custom order)
Refer to Pneumatic cylinders (No.CB-029SA) for details.

<Example of model number>

STG-MC-25-50-T0H3-D

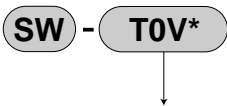
Model: Guided cylinder, double acting air cushioned

- A** Type of bearing : Metal bush bearing
- B** Bore size : φ25mm
- C** Port thread type : Rc thread
- D** Stroke length : 50mm
- E** Switch model no. : Reed T0H switch, lead wire length 3m
- F** Switch quantity : Two

[Standard stroke length table]

	Symbol	Stroke length (mm)	Applicable bore size						
			φ 16	φ 20	φ 25	φ 32	φ 40	φ 50	φ 63
D Standard stroke length	25	25	●	●	●	●	●	●	●
	50	50	●	●	●	●	●	●	●
	75	75	●	●	●	●	●	●	●
	100	100	●	●	●	●	●	●	●
	125	125	●	●	●	●	●	●	●
	150	150	●	●	●	●	●	●	●
	175	175	●	●	●	●	●	●	●
	200	200	●	●	●	●	●	●	●
	250	250	●	●	●	●	●	●	●
	300	300		●	●	●	●	●	●
	350	350		●	●	●	●	●	●
	400	400		●	●	●	●	●	●

How to order switch



Switch model no.
(E) on previous page)

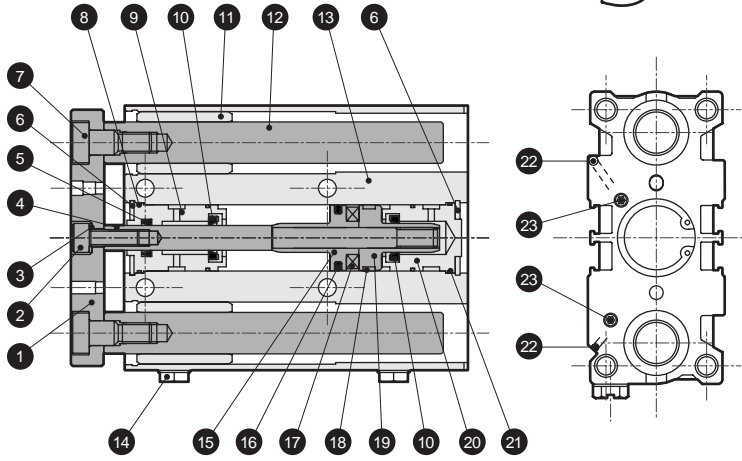
Note: Consult with CKD when using the ecological T type switch.

STG-MC Series

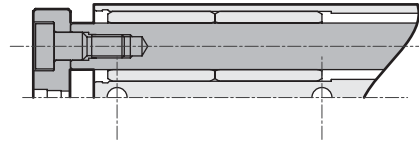
Internal structure and parts list (STG-MC-16 to 40)

● $\phi 16$

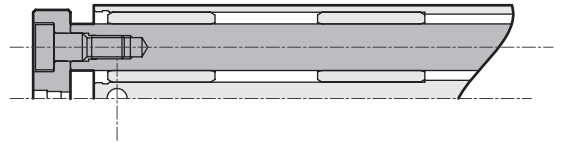
· 25 mm stroke



· 25 to 100 mm stroke

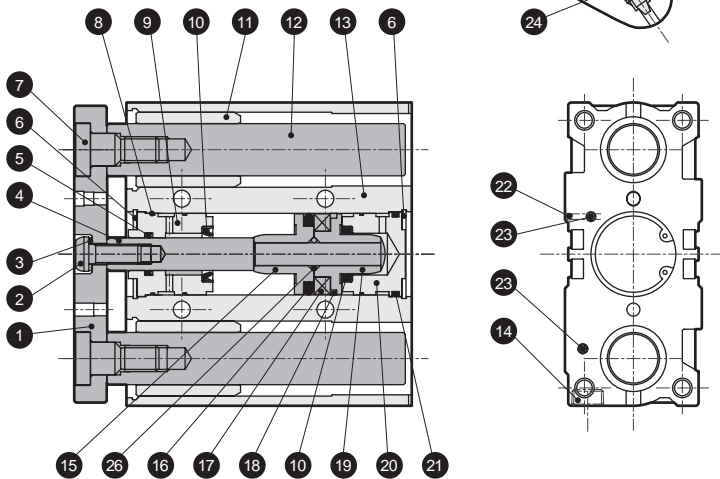


· 100 mm stroke over

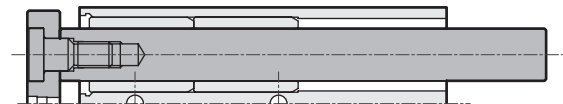


● $\phi 20$ to $\phi 40$

· 25 mm stroke



· 25 to 200 mm stroke ($\phi 20$, $\phi 25$)



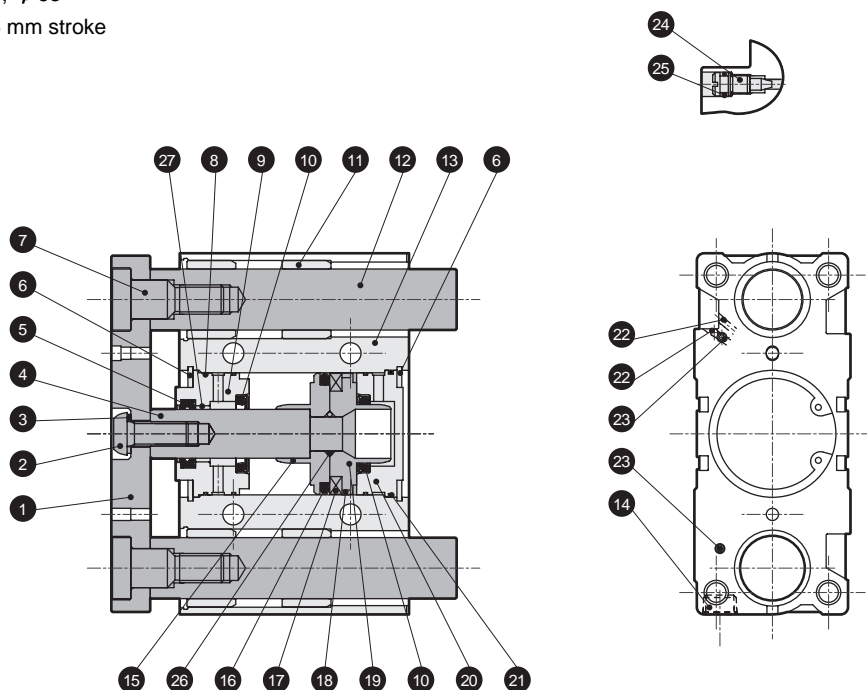
· 200 mm stroke over ($\phi 20$, $\phi 25$)

· 25 mm stroke and over ($\phi 32$, $\phi 40$)



Internal structure and parts list (STG-MC-50, 63)

● $\phi 50$, $\phi 63$
 - 25 mm stroke



No.	Parts name	Material	Remarks	No.	Parts name	Material	Remarks
1	End plate	Steel	Nickeling	15	Piston (R)	Aluminum alloy	Chromate ($\phi 12$ to $\phi 32$)
2	Hexagon socket bolt ($\phi 12$ to $\phi 16$)	Alloy steel	Zinc chromate	16	Piston packing seal	Nitrile rubber	
	Hexagon socket button bolt ($\phi 20$ to $\phi 63$)	Alloy steel	Zinc chromate	17	Piston magnet	Plastic magnet	
3	Conical spring washer	Steel	Blackening	18	Wear ring	Acetar resin	
4	Piston rod	Stainless steel ($\phi 12$ to $\phi 25$)	Industrial chrome plating	19	Piston (H)	Aluminum alloy	Chromate ($\phi 12$ to $\phi 32$)
		Steel ($\phi 32$ to $\phi 63$)	Industrial chrome plating	20	Base plate	Aluminum alloy	Chromate
5	Rod packing seal	Nitrile rubber		21	O ring	Nitrile rubber	
6	C type snap ring	Steel	Phosphate coating	22	Steel ball	Stainless steel	
7	Bolt	Alloy steel	Zinc chromate	23	Hexagon socket head set screw	Stainless steel	
8	Metal gasket	Nitrile rubber		24	Cushion needle	Brass	
9	Rod bushing	Special aluminum alloy ($\phi 12$ to $\phi 32$)	Alumite	25	Needle gasket	Nitrile rubber	
		Aluminum alloy ($\phi 40$ to $\phi 63$)	Chromate	26	Piston gasket	Nitrile rubber	
10	Cushion packing seal	Nitrile rubber and steel		27	Bush	Oilless dry met ($\phi 40$ to $\phi 63$)	
11	Metal	Oil impregnated bearing alloy		28	Ball bushing		
12	Guide rod	Stainless steel ($\phi 12$ to $\phi 16$)	Industrial chrome plating	29	Guide rod	Alloy steel	Industrial chrome plating
		Steel ($\phi 20$ to $\phi 63$)	Industrial chrome plating	30	C type snap ring	Steel	Phosphate coating
13	Tube body	Aluminum alloy	Hard alumite	31	Collar	Aluminum alloy	
14	Plug	Brass or is steel.					

Repair parts list

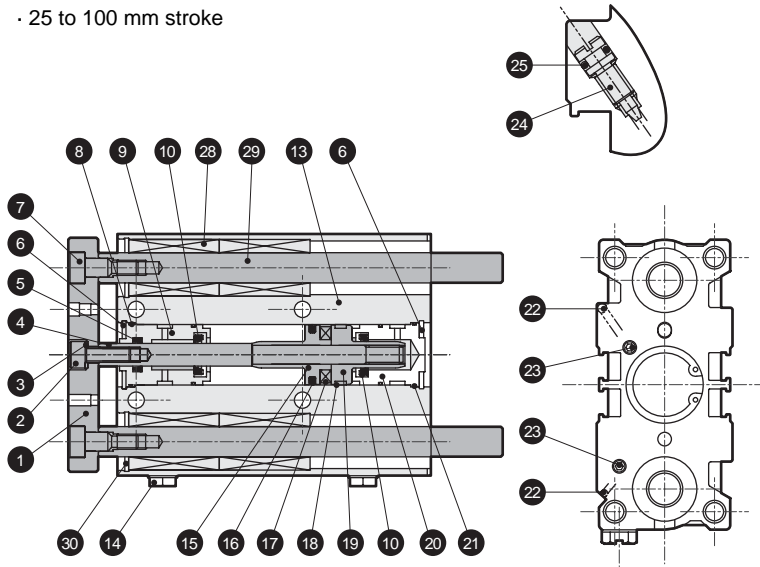
Bore size (mm)	Kit No.	Repair parts number
	STG-M/B	
$\phi 16$	STG-C-16K	
$\phi 20$	STG-C-20K	
$\phi 25$	STG-C-25K	
$\phi 32$	STG-C-32K	
$\phi 40$	STG-C-40K	
$\phi 50$	STG-C-50K	
$\phi 63$	STG-C-63K	

STG-BC Series

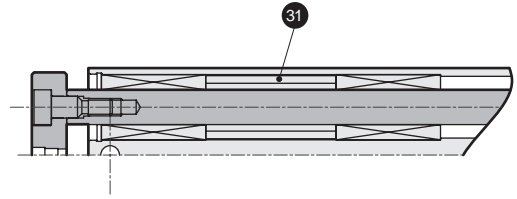
Internal structure and parts list (STG-BC-16 to 40)

● $\phi 16$

· 25 to 100 mm stroke

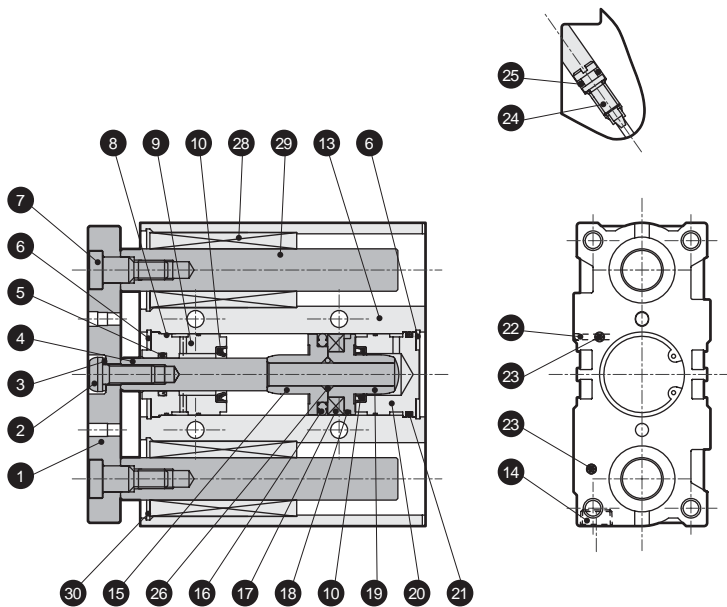


· 100 mm stroke over

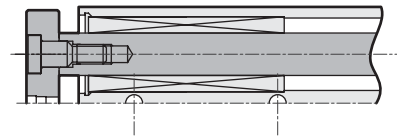


● $\phi 20$ to $\phi 40$

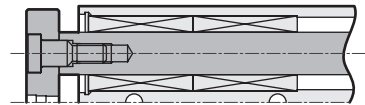
· 25 mm stroke



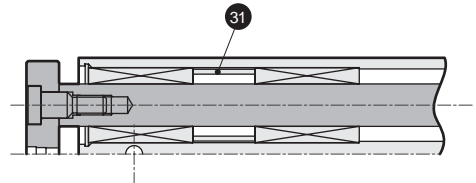
· 25 to 100 mm stroke ($\phi 32$, $\phi 40$)



· 25 to 100 mm stroke ($\phi 20$)
· 25 to 75 mm stroke ($\phi 25$)

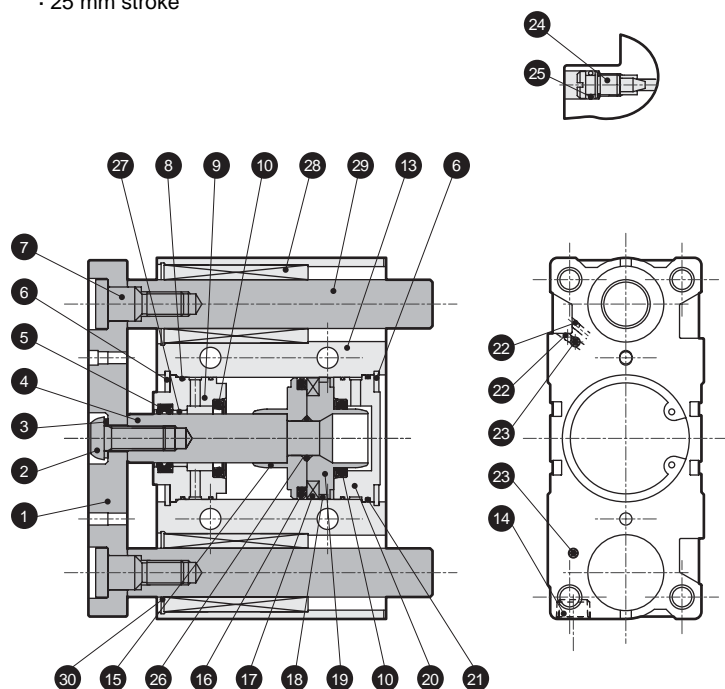


· 100 mm stroke over ($\phi 20$)
· 75 mm stroke over ($\phi 25$)
· 100 mm stroke over ($\phi 32$, $\phi 40$)

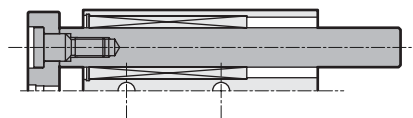


Internal structure and parts list (STG-BC-50, 63)

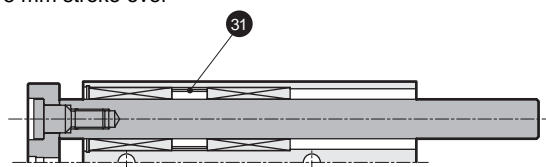
● $\phi 50, \phi 63$
 · 25 mm stroke



· 25 to 75 mm stroke



· 75 mm stroke over



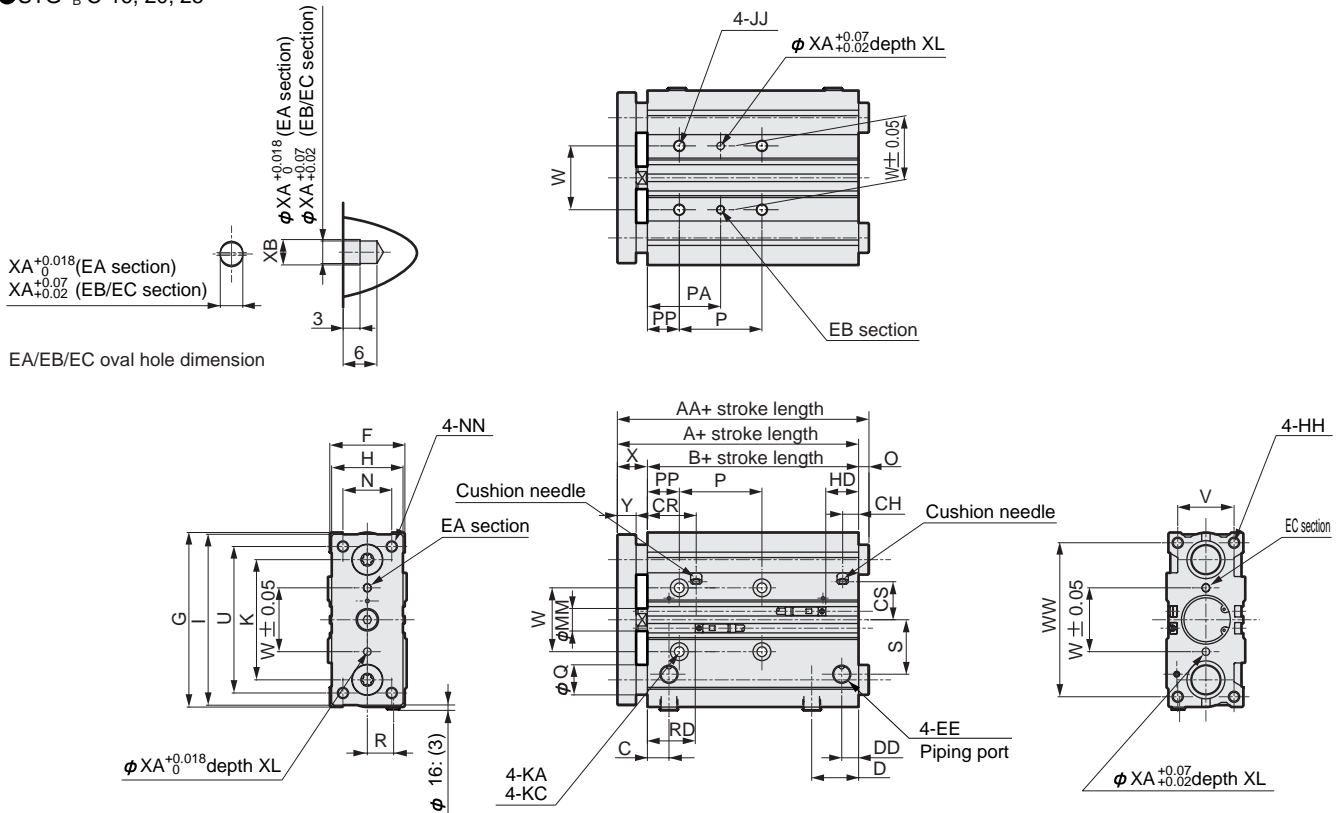
No.	Parts name	Material	Remarks	No.	Parts name	Material	Remarks
1	End plate	Steel	Nickeling	15	Piston (R)	Aluminum alloy	Chromate ($\phi 12$ to $\phi 32$)
2	Hexagon socket head cap screw ($\phi 12$ to $\phi 16$)	Alloy steel	Zinc chromate	16	Piston packing seal	Nitrile rubber	
		Alloy steel	Zinc chromate	17	Piston magnet	Plastic magnet	
3	Conical spring washer	Steel	Blackening	18	Wear ring	Acetar resin	
4	Piston rod	Stainless steel ($\phi 12$ to $\phi 25$)	Industrial chrome plating	19	Piston (H)	Aluminum alloy	Chromate ($\phi 12$ to $\phi 32$)
		Steel ($\phi 32$ to $\phi 63$)	Industrial chrome plating	20	Base plate	Aluminum alloy	Chromate
5	Rod packing seal	Nitrile rubber		21	O ring	Nitrile rubber	
6	C type snap ring	Steel	Phosphate coating	22	Steel ball	Stainless steel	
7	Bolt	Alloy steel	Zinc chromate	23	Hexagon socket head set screw	Stainless steel	
8	Metal gasket	Nitrile rubber		24	Cushion needle	Brass	
9	Rod bushing	Special aluminum alloy ($\phi 12$ to $\phi 32$)	Alumite	25	Needle gasket	Nitrile rubber	
		Aluminum alloy ($\phi 40$ to $\phi 63$)	Chromate	26	Piston gasket	Nitrile rubber	
10	Cushion packing seal	Nitrile rubber and steel		27	Bush	Oilless dry met ($\phi 40$ to $\phi 63$)	
11	Metal	Oil impregnated bearing alloy		28	Ball bushing		
12	Guide rod	Stainless steel ($\phi 12$ to $\phi 16$)	Industrial chrome plating	29	Guide rod	Alloy steel	Industrial chrome plating
		Steel ($\phi 20$ to $\phi 63$)	Industrial chrome plating	30	C type snap ring	Steel	Phosphate coating
13	Tube body	Aluminum alloy	Hard alumite	31	Collar	Aluminum alloy	
14	Plug	Brass or is steel.					

Repair parts list

Bore size (mm)	Kit No.	Repair parts number
	STG-M/B	
$\phi 16$	STG-C-16K	
$\phi 20$	STG-C-20K	
$\phi 25$	STG-C-25K	
$\phi 32$	STG-C-32K	
$\phi 40$	STG-C-40K	
$\phi 50$	STG-C-50K	
$\phi 63$	STG-C-63K	

Dimensions (φ16, φ20, φ25)

●STG-M_BC-16, 20, 25



●STG-M_BC common

Note 1: Refer to Page 65 for HD, RD and dimensions of projecting section of 2 color indicator type and preventive maintenance output switch.

Symbol	Standard stroke length (mm)		A	B	C	D	DD	EE	F	G	H	HH	I	JJ	K	KA
φ16	25, 50, 75, 100, 125, 150, 175, 200, 250		71	58	12	18	7.5	M5	30	64	25	M5 depth 12	62	M5 depth 10	46	4.3 penetrating
φ20	25, 50, 75, 100, 125, 150		78	62	10.5	24.5	8.5	Rc1/8	36	83	30	M5 depth 13	81	M6 depth 12	54	5.2 penetrating
φ25	175, 200, 250, 300, 350, 400		78.5	62.5	11.5	25	9	Rc1/8	42	93	38	M6 depth 15	91	M6 depth 12	64	5.2 penetrating

Symbol	Bore size (mm)	MM	N	NN	KC	P				PA				PP	R	S
						75st or less	75st to 175st	175st to 250st	250st to 400st	75st or less	75st to 175st	175st to 250st	250st to 400st			
φ16		8	16	M5 penetrating	8 spot face depth 4.5	44	110	200	-	27	60	105	-	5	10	18
φ20		10	18	M5 penetrating	9.5 spot face depth 5.5	44	120	200	300	39	77	117	167	17	11	25
φ25		12	26	M6 penetrating	9.5 spot face depth 5.5	44	120	200	300	39	77	117	167	17	14	29

Symbol	U	V	W	WW	X	Y	RD	HD	XA	XB	CR	CH	CS
φ16	54	22	24	56	13	8	20.5	18	3	3.5	23.5	9	16
φ20	70	24	28	72	16	10	23.5	19.5	3	3.5	25	11	19
φ25	78	30	34	82	16	10	25.5	17.5	4	4.5	26	9	20

●STG-MC

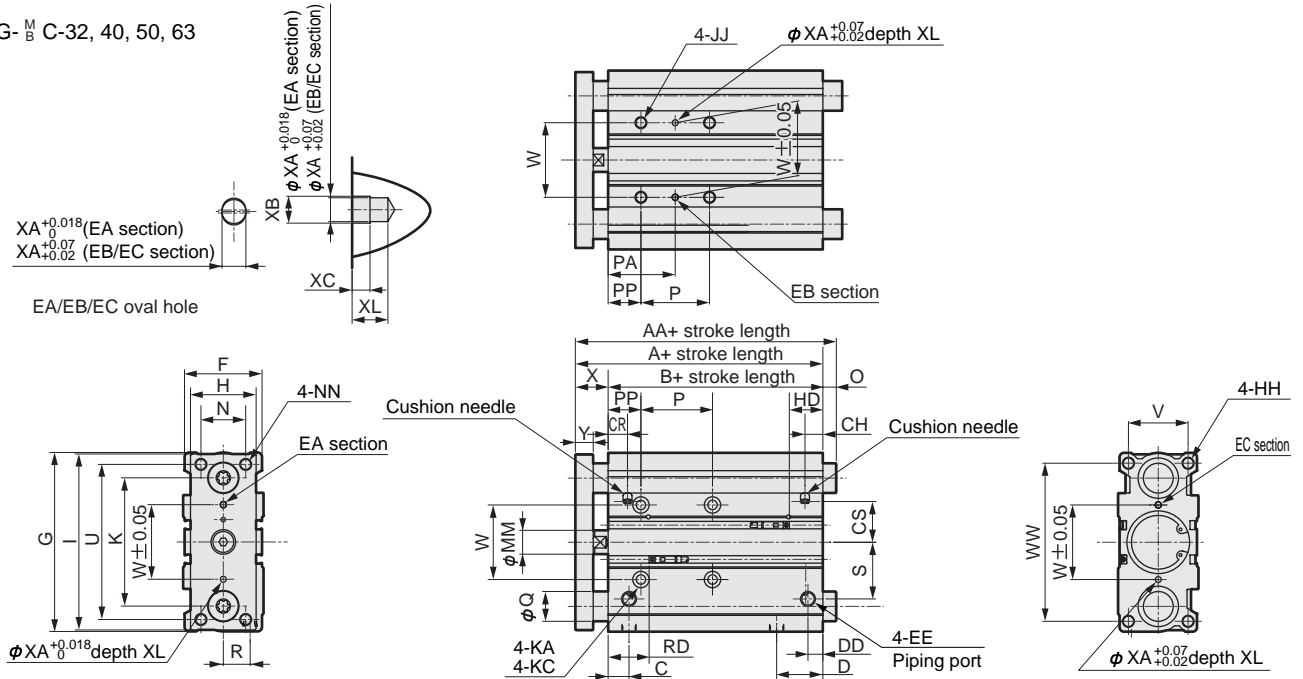
Symbol	AA					Q	O				
	25st or less	25st to 50st	50st to 100st	100st to 200st	200st over		25st or less	25st to 50st	50st to 100st	100st to 200st	200st over
φ16	71	88	71	95	95	10	0	17	0	24	24
φ20	78	84.5	79	79	122	12	0	6.5	1	1	44
φ25	78.5	84	84	84	122	16	0	5.5	5.5	5.5	43.5

●STG-BC

Symbol	AA					Q	O				
	25st or less	25st to 75st	100st	100st to 200st	200st over		25st or less	25st to 75st	100st	100st to 200st	200st over
φ16	80	71	71	95	95	8	9	0	0	24	24
φ20	93	79	79	100	122	10	15	1	1	22	44
φ25	99	84	103	103	122	13	20.5	5.5	24.5	24.5	43.5

Dimensions ($\phi 32, \phi 40, \phi 50, \phi 63$)

● STG-M_BC-32, 40, 50, 63



● STG-M_BC common

Note 1: Refer to Page 65 for HD, RD and dimensions of projecting section of 2 color indicator type and preventive maintenance output switch.

Symbol	Standard stroke length (mm)	A	B	C	D	DD	EE	F	G	H	HH	I	JJ	K	KA
$\phi 32$	25, 50, 75, 100, 125, 150, 175, 200, 250, 300, 350, 400	84.5	62.5	12.5	30.5	9	Rc1/8	48	112	44	M8 depth 20	110	M8 depth 16	78	6.3 penetrating
$\phi 40$		91	69	14	31	10	Rc1/8	54	120	44	M8 depth 20	118	M8 depth 16	86	6.3 penetrating
$\phi 50$		97	69	14	35	11	Rc1/4	64	148	60	M10 depth 22	146	M10 depth 20	110	8.6 penetrating
$\phi 63$		102	74	16.5	35	15	Rc1/4	78	162	70	M10 depth 22	158	M10 depth 20	124	8.6 penetrating

Symbol	Bore size (mm)	KC	MM	N	NN	P				PA				PP	R	S	U
						25st to 75st	75st to 175st	175st to 250st	250st over	25st to 75st	75st to 175st	175st to 250st	250st over				
$\phi 32$		11 spot face depth 7.5	16	30	M8 penetrating	48	124	200	300	45	83	121	171	21	15	34	96
$\phi 40$		11 spot face depth 7.5	16	30	M8 penetrating	48	124	200	300	46	84	122	172	22	18	38	104
$\phi 50$		14 spot face depth 9	20	40	M10 penetrating	48	124	200	300	48	86	124	174	24	21.5	47	130
$\phi 63$		14 spot face depth 9	20	50	M10 penetrating	52	128	200	300	50	88	124	174	24	28	55	130

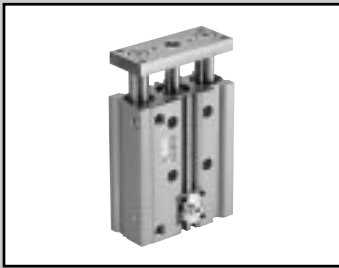
Symbol	V	W	WW	X	Y	RD	HD	XA	XB	XC	XL	CR	CH	CS
$\phi 32$	34	42	98	22	12	23.5	20	4	4.5	3	6	12.5	9.2	25
$\phi 40$	40	50	106	22	12	27.5	22.5	4	4.5	3	6	13	12	27.5
$\phi 50$	46	66	130	28	16	30	20.5	5	6	4	8	15	12.5	39.5
$\phi 63$	58	80	142	28	16	31	24	5	6	4	8	32.5	31.5	45.5

● STG-MC

Symbol	AA				Q	O			
	25st	50st	50st to 200st	200st over		25st	50st	50st to 200st	200st over
$\phi 32$	84.5	125	100	140	20	0	40.5	15.5	55.5
$\phi 40$	91	125	100	140	20	0	34	9	49
$\phi 50$	97	116	116	161	25	0	19	19	64
$\phi 63$	102	116	116	161	25	0	14	14	59

● STG-BC

Symbol	AA						Q	O					
	25st	50st	75st	100st	100st to 200st	200st over		25st	50st	75st	100st	100st to 200st	200st over
$\phi 32$	84.5	123	98	98	118	140	16	0	38.5	13.5	13.5	33.5	55.5
$\phi 40$	91	123	98	98	118	140	16	0	32	7	7	27	49
$\phi 50$	97	114	114	159	134	161	20	0	17	17	62	37	64
$\phi 63$	102	114	114	159	134	161	20	0	12	12	57	32	59

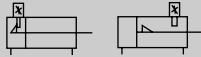


Guided cylinder, double acting position locking type

STG-M/BQ Series

● Bore size: $\phi 20$, $\phi 25$, $\phi 32$, $\phi 40$, $\phi 50$, $\phi 63$

JIS symbol



Specifications

Descriptions	STG-M/BQ					
Bore size mm	$\phi 20$	$\phi 25$	$\phi 32$	$\phi 40$	$\phi 50$	$\phi 63$
Actuation	Double acting position locking type					
Working fluid	Compressed air					
Max. working pressure MPa	1.0					
Min. working pressure MPa	0.2		0.15			
Withstanding pressure MPa	1.6					
Ambient temperature °C	-10 to 60 (to be unfrozen)					
Port size	Rc1/8			Rc1/4		
Stroke tolerance mm	+2.0 0					
Working piston speed mm/s	50 to 500				50 to 300	
Cushion	Rubber cushioned					
Position locking mechanism	Rod side or head side					
Holding force	Maximum thrust X 0.7					
Lubrication	Not required (when lubricating, use turbine oil Class 1 ISOVG32.)					
Allowable energy absorption J	0.157	0.157	0.401	0.627	0.980	1.560

Stroke length

Bore size	Standard stroke length (mm)	Max. stroke length (mm)	Min. stroke length (mm)	Min. stroke length of types with switch (mm)
$\phi 20$	25, 50, 75, 100 125, 150, 175 200, 250, 300 350, 400	400	5	5
$\phi 25$				
$\phi 32$				
$\phi 40$				
$\phi 50$				
$\phi 63$				

Note 1: Custom stroke length is available per 5mm increment. Note that the total length is the same as the next longer standard stroke length.

Note 2: This applies when 1 or 2 switches are installed.

⚠ Always read " safety precautions " **Position locking type** on the Pages 2 to 4 in the introduction before starting use.

Switch specifications

- One color/bi-color indicator/strong magnetic field proof

Descriptions	Proximity 2 wire		Proximity 3 wire		Reed 2 wire						Proximity 2 wire
	T2H/T2V/T2JH/T2JV	T2YH/T2YV	T3H/T3V	T3YH/T3YV	T0H/T0V			T5H/T5V			T2YD/T2YDT
Applications	Programmable controller		Programmable controller Controller, relay		Programmable controller, relay			Programmable controller, relay, IC circuit (without indicator light) and serial connection			Programmable controller
Power voltage	-		28 to 10V DC		-						-
Load voltage	30 to 10V DC		30V DC or less		12/24V DC	110V AC	220V AC	5/12/24V DC	110V AC	220V AC	24V DC ± 10%
Load current	5 to 20mA (note 1)		100mA or less	50mA or less	5 to 50mA	7 to 20mA	7 to 10mA	50mA or less	20mA or less	10mA or less	5 to 20mA
Light	LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)			-			Red/green LED (ON lighting)

Note 1: The maximum load current of 20 mA applies at 25 °C .If the switch's ambient operating temperature exceeds 25 °C , the load current becomes less than 20 mA.(5 to 10mA when 60 °C)

- With preventive maintenance output

Descriptions	Proximity 3 wire		Proximity 4 wire		Proximity 3 wire		Proximity 4 wire			
	T2YFH/V	T3YFH/V	T2YMH/V	T3YMH/V						
Applications	Programmable controller		Programmable controller, relay		Programmable controller		Programmable controller, relay			
Light	Installation position adjustment section		Red/green LED (ON lighting)							
	Preventive maintenance output section		-		Yellow LED (ON lighting)					
Preventive maintenance output section	Power voltage	-		28 to 10V DC		-		28 to 10V DC		
	Load voltage	30 to 10V DC		30V DC or less		30 to 10V DC		30V DC or less		
	Load current	5 to 20mA		50mA or less		5 to 20mA		50mA or less		
	Load voltage	30V DC or less								
Load current	20mA or less		50mA or less		5 to 20mA (note 1)		50mA or less			

Note 1: The maximum load current of 20 mA applies at 25 °C .If the switch's ambient operating temperature exceeds 25 °C , the load current becomes less than 20 mA.(5 to 10mA when 60 °C)

Cylinder weight

- STG-MQ

Unit: kg

Descriptions	Stroke length												Switch weight Grommet
	25	50	75	100	125	150	175	200	250	300	350	400	
φ 20	0.71	1.15	1.35	1.54	1.73	1.92	2.12	2.35	2.77	3.15	3.54	3.92	0.018
φ 25	1.00	1.63	1.9	2.16	2.43	2.69	2.95	3.27	3.85	4.38	4.91	5.43	0.018
φ 32	2.06	2.60	2.99	3.39	3.78	4.18	4.57	5.06	5.94	6.73	7.52	8.30	0.018
φ 40	2.38	2.83	3.24	3.66	4.06	4.48	4.89	5.39	6.32	7.15	7.97	8.79	0.018
φ 50	4.02	4.72	5.34	5.96	6.59	7.21	7.83	8.61	10.01	11.25	12.51	13.77	0.018
φ 63	5.01	5.82	6.56	7.29	8.02	8.75	9.49	10.38	12.00	13.45	14.91	16.36	0.018

- STG-BQ

Unit: kg

Descriptions	Stroke length												Switch weight Grommet
	25	50	75	100	125	150	175	200	250	300	350	400	
φ 20	0.74	1.13	1.29	1.50	1.66	1.84	2.00	2.19	2.54	2.88	3.22	3.56	0.018
φ 25	1.03	1.56	1.79	2.05	2.27	2.5	2.72	2.96	3.43	3.88	4.33	4.78	0.018
φ 32	1.85	2.29	2.6	2.96	3.27	3.57	3.88	4.22	4.86	5.47	6.08	6.69	0.018
φ 40	2.18	2.65	3.00	3.4	3.75	4.10	4.45	4.84	5.56	6.26	6.96	7.66	0.018
φ 50	3.69	4.41	4.95	5.57	6.1	6.63	7.17	8.27	8.90	9.97	11.06	12.13	0.018
φ 63	4.66	5.51	6.15	6.89	7.53	8.18	8.82	9.51	10.88	12.19	13.45	14.71	0.018

How to order

Without switch

STG - M - Q - 32 - 25 - H - M1

With switch

STG - M - Q - 32 - 25 - H - T2H - R - M1

Model no.

Position locking type

A Type of bearing

B Bore size

C Port thread type

D Stroke length

E Position locking mechanism

F Switch model no.
Note 1

G Switch quantity

H Option

■ Custom stroke length is available per 5mm increment. Note that the total length is the same as the next longer standard stroke length.

Symbol	Descriptions			
A Type of bearing				
M	Metal bush bearing			
B	Ball bearing			
B Bore size (mm)				
20	φ20			
25	φ25			
32	φ32			
40	φ40			
50	φ50			
63	φ63			
C Port thread type				
Blank	Rc thread			
NN	NPT thread (custom order)			
GN	G thread (custom order)			
D Stroke length (mm)				
Refer to the standard stroke length table on following page.				
E Position locking mechanism				
H	Head end position locking mechanism			
R	Rod end position locking mechanism			
F Switch model no.				
Axial lead wire	Axial lead wire	Contact	Indicator	Axial lead wire
Axial	Radial			
T0H*	T0V*	Reed	1 color indicator type	2 wire
T5H*	T5V*		Without indicator light	
T2H*	T2V*		Proximity	1 color indicator type
T3H*	T3V*	3 wire		
T2YH*	T2YV*	2 color indicator type		2 wire
T3YH*	T3YV*	3 wire		
T2YFH*	T2YFV*	2 color indicator type		3 wire
T3YFH*	T3YFV*	(Without indicator light for preventive maintenance output)		4 wire
T2YMH*	T2YMV*	2 color indicator type		3 wire
T3YMH*	T3YMV*	(With indicator light for preventive maintenance output (1 color))		4 wire
T2JH*	T2JV*	Off-delay type		2 wire
T2YD*	-	Strong magnetic field proof switch		2 wire
T2YDT*	-			
*Lead wire length				
Blank	1m (standard)			
3	3m (option)			
5	5m (option)			
G Switch quantity				
R	One on rod end			
H	One on head end			
D	Two			
T	Three			
H Option				
M0	Non-locking manual override			
M1	Locking manual override			

⚠ Note on model no. selection

Note 1: Switches other than switch model no. (F) are available.(Custom order)
Refer to Pneumatic cylinders (No.CB-029SA) for details.

<Example of model number>

STG-BQ-50-75-H-T0H-D-M0

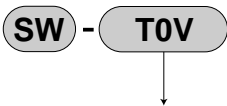
Model: Guided cylinder, double acting position locking type

- A Type of bearing : Ball bearing
- B Bore size : φ50mm
- C Port thread type : Rc thread
- D Stroke length : 75mm
- E Position locking mechanism : head side position locking mechanism
- F Switch model no. : Reed T0H switch, lead wire length 1m
- G Switch quantity : Two
- H Option : Non-locking manual override

[Standard stroke length table]

Standard stroke length	Symbol	Stroke length (mm)	Applicable bore size					
			φ 20	φ 25	φ 32	φ 40	φ 50	φ 63
25	25	25	●	●	●	●	●	●
50	50	50	●	●	●	●	●	●
75	75	75	●	●	●	●	●	●
100	100	100	●	●	●	●	●	●
125	125	125	●	●	●	●	●	●
150	150	150	●	●	●	●	●	●
175	175	175	●	●	●	●	●	●
200	200	200	●	●	●	●	●	●
250	250	250	●	●	●	●	●	●
300	300	300	●	●	●	●	●	●
350	350	350	●	●	●	●	●	●
400	400	400	●	●	●	●	●	●

How to order switch

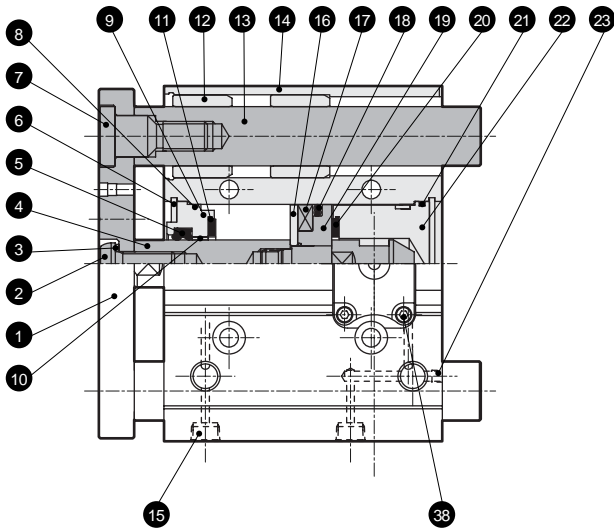


Switch model no.
(E on previous page)

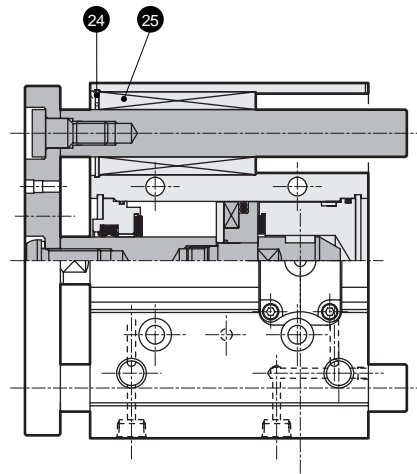
Note: Consult with CKD when using the ecological T type switch.

Internal structure and parts list

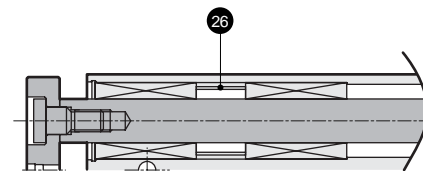
● Metal bush bearing type STG-MQ



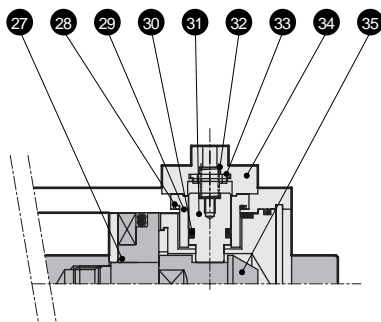
● Ball bearing type STG-BQ



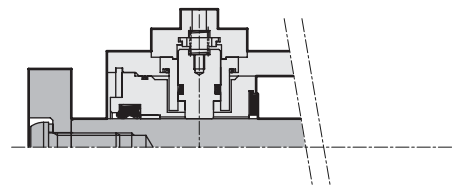
· 100 mm stroke and over



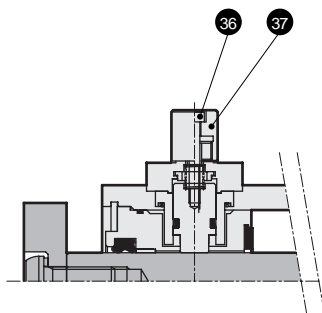
● Head end position locking type STG-M_BQ-H



● Rod end position locking type STG-M_BQ-R



● Locking manual override (M1)



Parts list

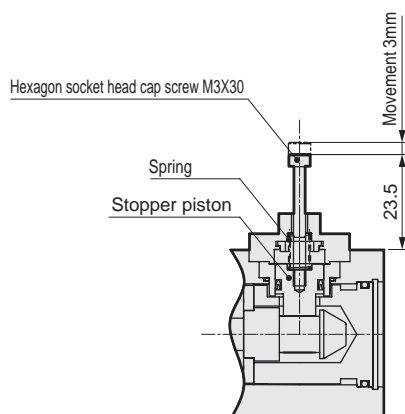
No.	Parts name	Material	Remarks	No.	Parts name	Material	Remarks
1	End plate	Steel	Nickeling	20	Cushion rubber	Urethane rubber	
2	Hexagon socket button bolt	Alloy steel	Zinc chromate	21	O ring	Nitrile rubber	
3	Conical spring washer	Steel	Blackening	22	Head cover	Aluminum alloy	Chromate
4	Piston rod	Stainless steel ($\phi 20$ to $\phi 25$)	Industrial chrome plating	23	Hexagon socket head set screw	Stainless steel	
		Steel ($\phi 32$ to $\phi 63$)	Industrial chrome plating	24	C type snap ring	Steel	Phosphate coating
5	Rod packing seal	Nitrile rubber		25	Ball bushing		
6	C type snap ring	Steel	Phosphate coating	26	Collar	Aluminum alloy	
7	Bolt	Alloy steel	Zinc chromate	27	O ring	Nitrile rubber	
8	Metal gasket	Nitrile rubber		28	O ring	Nitrile rubber	
9	Rod bushing	Special aluminum alloy ($\phi 20$ to $\phi 25$)	Alumite	29	Stopper housing	Aluminum alloy ($\phi 20$ to $\phi 50$)	Alumite
		Aluminum alloy ($\phi 40$ to $\phi 63$)	Chromate			Alloy steel ($\phi 63$)	Chromate
10	Bush	Oilless dry met	H: $\phi 40$ and over	30	Stopper packing seal	Nitrile rubber	
			R: $\phi 32$ and over	31	Stopper piston	Stainless steel ($\phi 20$ to $\phi 40$)	
11	Cushion rubber	Urethane rubber			Alloy steel ($\phi 50, 63$)	Nickeling	
12	Metal	Oil impregnated bearing alloy		32	Coil spring	Steel	Paint
13	Guide rod	Steel	Industrial chrome plating	33	Cushion rubber	Urethane rubber	
14	Tube body	Aluminum alloy	Hard alumite	34	Stopper cover	Aluminum alloy	Chromate
15	Plug	Steel	Nickeling	35	Sleeve	Stainless steel	
16	Spacer	Aluminum alloy	Chromate	36	Hexagon socket head cap screw	Alloy steel	
17	Piston magnet	Plastic magnet		37	Round nut	Aluminum alloy	
18	Piston packing seal	Nitrile rubber		38	Hexagon socket head cap screw	Alloy steel	
19	Piston	Aluminum alloy	Chromate				

Repair parts list

Bore size (mm)	Kit No.	Repair parts number
$\phi 20$	STG-Q-20K	
$\phi 25$	STG-Q-25K	
$\phi 32$	STG-Q-32K	
$\phi 40$	STG-Q-40K	
$\phi 50$	STG-Q-50K	
$\phi 63$	STG-Q-63K	

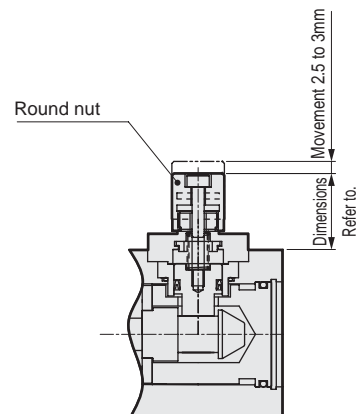
<Explanation of manual override>

● Non-locking manual override (option symbol: M0)



Screw a hexagon socket bolt (M3x30) into the stopper piston, and pull the bolt up with a force of 20N or more. (The stopper piston moves and the lock is released. Work must be done during no-load horizontal installation or when the counter port is pressurized.) When the hand is released from the bolt, and the stopper piston returns by the internal spring and enters the piston rod groove, the piston is locked.

● Locking manual override (option symbol: M1)

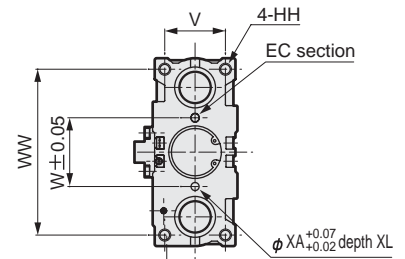
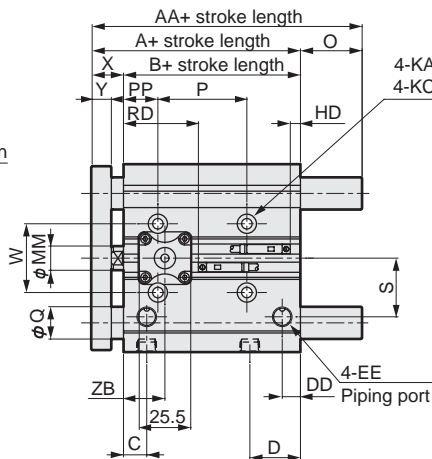
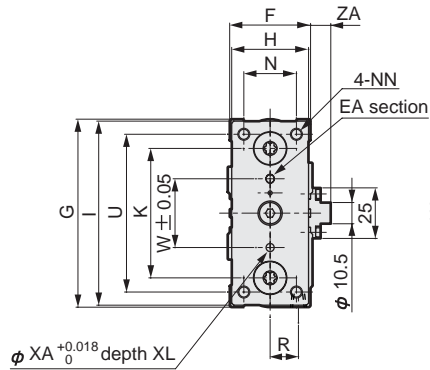
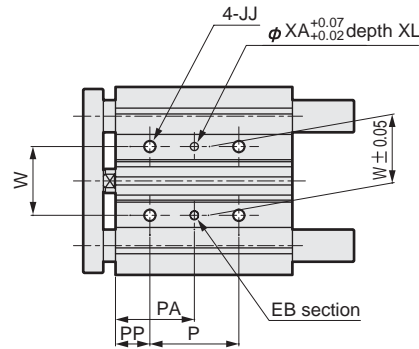
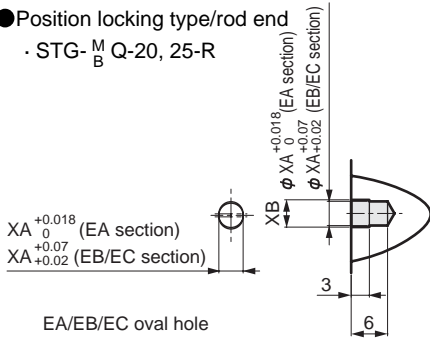


When the round nut is turned counterclockwise, the stopper piston moves and the lock is released. When the nut is turned clockwise to the lock position, the stopper piston returns. When it fits into the piston rod groove again, the piston is locked. If the stopper piston is not deeply fit into the slot when locked, damage could occur. Check the round nut fits into the back.

Dimensions

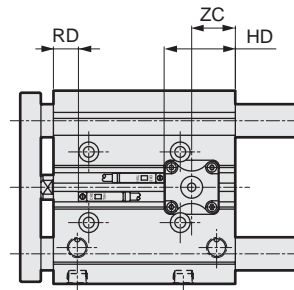
● Position locking type/rod end

· STG-M_BQ-20, 25-R

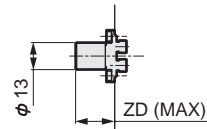


● Position locking type/head end

· STG-M_BQ-20, 25-H



· Locking manual override type (M1)



● STG-M/B common

Symbol	Standard stroke length (mm)		A	B	C	D	DD	EE	F	G	H	HH	I	JJ	K	KA
φ20	25, 50, 75, 100, 125, 150		78	62	10.5	24.5	8.5	Rc1/8	36	83	30	M5 depth 13	81	M6 depth 12	54	5.2 penetrating
φ25	175, 200, 250, 300, 350, 400		78.5	62.5	11.5	25	9	Rc1/8	42	93	38	M6 depth 15	91	M6 depth 12	64	5.2 penetrating

Symbol	MM	N	NN	KC	P				PA				PP	R	S
					75st or less over	250st to 175st	175st to 250st	250st over	75st or less over	75st to 175st	175st to 250st	250st over			
φ20	10	18	M5 penetrating	9.5 spot face depth 5.5	44	120	200	300	39	77	117	167	17	11	25
φ25	12	26	M6 penetrating	9.5 spot face depth 5.5	44	120	200	300	39	77	117	167	17	14	29

Symbol	U	V	W	WW	X	Y	XA	XB	Position locking mechanism section				Head side position locking		Rod side position locking	
									ZA	ZB	ZC	ZD	RD	HD	RD	HD
φ20	70	24	28	72	16	10	3	3.5	11	20	23	23	9.5	36	34.5	8.5
φ25	78	30	34	82	16	10	4	4.5	9	20.5	21	21	10	34	35	8.5

● STS-MQ

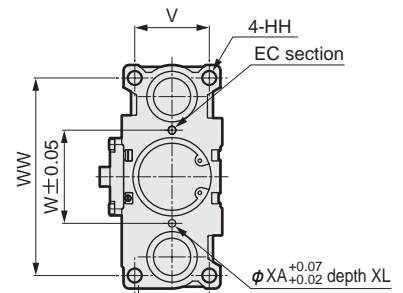
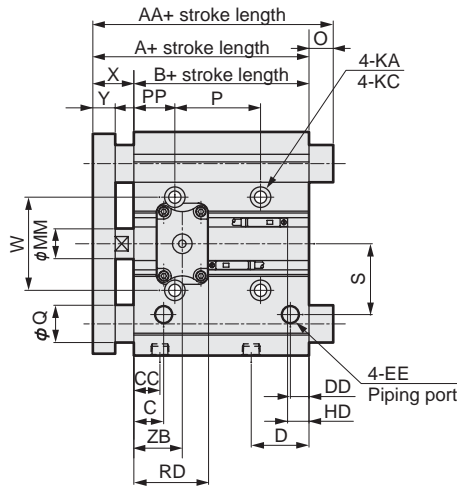
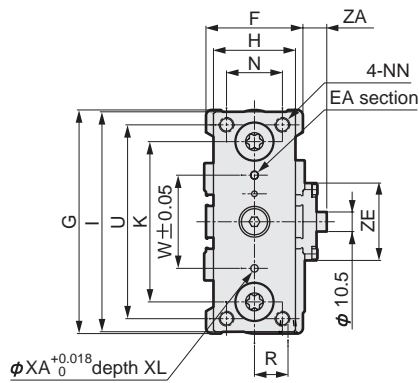
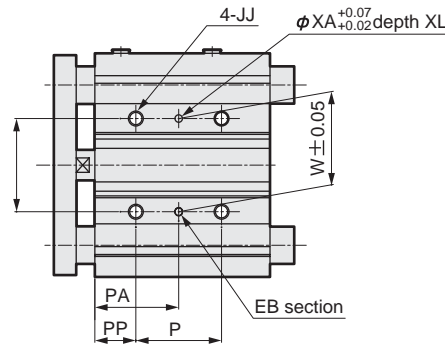
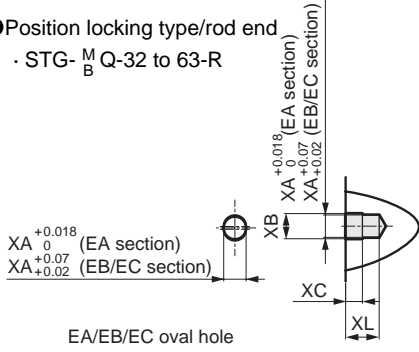
Symbol	AA			Q	O		
	25st or less	25st to 175st	175st over		25st or less	25st to 175st	175st over
φ20	78	84.5	122	12	0	6.5	44
φ25	78.5	84	122	16	0	5.5	43.5

● STS-BQ

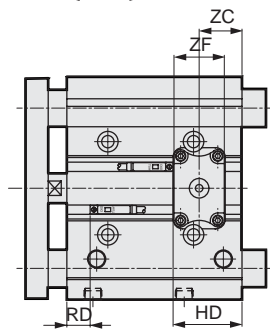
Symbol	AA			Q	O		
	75st or less	75st to 175st	175st over		75st or less	75st to 175st	175st over
φ20	80	104	122	10	2	26	44
φ25	84	103	122	13	5.5	24.5	43.5

Dimensions

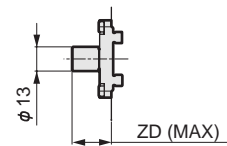
- Position locking type/rod end
 - STG-M_BQ-32 to 63-R



- Position locking type/head end
 - STG-M_BQ-32 to 63-H



- Locking manual override type (M1)



- STG-Q-32 to 63

Symbol	Standard stroke length (mm)	A	B	C	D	DD	EE	F	G	H	HH	I	JJ	K	KA	KC	MM	N
φ 32	25, 50, 75, 100, 125,	84.5	62.5	12.5	30.5	9	Rc1/8	48	112	44	M8 depth 20	110	M8 depth 16	78	6.3 penetrating	11 spot face depth 7.5	16	30
φ 40	150, 175, 200, 250,	91	69	14	31	10	Rc1/8	54	120	44	M8 depth 20	118	M8 depth 16	86	6.3 penetrating	11 spot face depth 7.5	16	30
φ 50	300, 350, 400	97	69	14	35	11	Rc1/4	64	148	60	M10 depth 22	146	M10 depth 20	110	8.6 penetrating	14 spot face depth 9	20	40
φ 63		102	74	16.5	35	15	Rc1/4	78	162	70	M10 depth 22	158	M10 depth 20	124	8.6 penetrating	14 spot face depth 9	20	50

Symbol	Bore size (mm)	NN	P				PA				PP	R	S	U	V	W	WW	X	Y	RD	HD	XA	XB
			75st or less	75st to 175st	175st to 275st	275st over	75st or less	75st to 175st	175st to 275st	275st over													
φ 32	M8 penetrating	48	124	200	300	45	83	121	171	21	15	34	96	34	42	98	22	12	10	8.5	4	4.5	
φ 40	M8 penetrating	48	124	200	300	46	84	122	172	22	18	38	104	40	50	106	22	12	13	12	4	4.5	
φ 50	M10 penetrating	48	124	200	300	48	86	124	174	24	21.5	47	130	46	66	130	28	16	13.5	11.5	5	6	
φ 63	M10 penetrating	52	128	200	300	50	88	124	174	24	28	55	130	58	80	142	28	16	14	16	5	6	

Symbol	Bore size (mm)	XC	XL	Position locking mechanism section						Head side position locking		Rod side position locking	
				ZA	ZB	ZC	ZD	ZE	ZF	RD	HD	RD	HD
φ 32		3	6	10	21	21	23.5	33.5	26.5	10	34.5	35	8.5
φ 40		3	6	12	26	23	23.5	41.5	27	13	37	40	12
φ 50		4	8	12	25	23	24.5	41.5	27	13.5	37	39	11.5
φ 63		4	8	11.5	25	25.5	24	41.5	27	14	40	39	16

- STG-MQ

Symbol	Bore size (mm)	AA			Q	O		
		25st or less	25st to 175st over	175st over		25st or less	25st to 175st over	175st over
φ 32		84.5	100	140	20	0	15.5	55.5
φ 40		91	100	140	20	0	9	49
φ 50		97	116	161	25	0	19	64
φ 63		102	116	161	25	0	14	59

- STG-QB

Symbol	Bore size (mm)	AA				Q	O			
		25st or less	25st to 75st over	75st to 175st over	175st over		25st or less	25st to 75st over	75st to 175st over	175st over
φ 32		84.5	96	118	140	16	0	11.5	33.5	55.5
φ 40		91	98	118	140	16	0	7	27	49
φ 50		97	114	134	161	20	0	17	37	64
φ 63		102	114	134	161	20	0	12	32	59




Guided cylinder, double acting rubber scraper type

Guided cylinder, double acting coil scraper type

STG-M_BG Series

STG-M_BG1 Series

● Bore size: $\phi 20$, $\phi 25$, $\phi 32$, $\phi 40$, $\phi 50$, $\phi 63$

JIS symbol 

Specifications

Descriptions	STG-M _B G/STG-M _B G1					
	$\phi 20$	$\phi 25$	$\phi 32$	$\phi 40$	$\phi 50$	$\phi 63$
Bore size mm	$\phi 20$	$\phi 25$	$\phi 32$	$\phi 40$	$\phi 50$	$\phi 63$
Actuation	Double acting scraper type					
Working fluid	Compressed air					
Max. working pressure MPa	1.0					
Min. working pressure MPa	0.2		0.15			
Withstanding pressure MPa	1.6					
Ambient temperature °C	-10 to 60 (to be unfrozen)					
Port size	Rc1/8			Rc1/4		
Stroke tolerance mm	+2.0 0					
Working piston speed mm/s	50 to 500				50 to 300	
Cushion	Rubber cushioned					
Lubrication	Not required (when lubricating, use turbine oil Class 1 ISOVG32.)					
Allowable energy absorption J	0.157	0.157	0.401	0.627	0.980	1.560

Stroke length

Bore size	Standard stroke length (mm)	Max. stroke length (mm)	Min. stroke length (mm)	Min. stroke length of types with switch (mm)
$\phi 20$	20, 30, 40, 50, 75, 100, 125	400	5	5
$\phi 25$	150, 175, 200, 250, 300, 350, 400			
$\phi 32$	25, 50, 75, 100			
$\phi 40$	125, 150, 175			
$\phi 50$	200, 250, 300			
$\phi 63$	350, 400			

Note 1: Custom stroke length is available per 5mm increment. Note that the total length is the same as the next longer standard stroke length.

Note 2: This applies when 1 or 2 switches are installed.

Switch specifications

- One color/bi-color indicator/strong magnetic field proof

Descriptions	Proximity 2 wire		Proximity 3 wire		Reed 2 wire						Proximity 2 wire
	T2H/T2V/T2JH/T2JV	T2YH/T2YV	T3H/T3V	T3YH/T3YV	T0H/T0V			T5H/T5V			T2YD/T2YDT
Applications	Programmable controller		Programmable controller Controller, relay		Programmable controller, relay			Programmable controller, relay, IC circuit (without indicator light), serial connection			Programmable controller
Power voltage	-		28 to 10V DC		-						-
Load voltage	30 to 10V DC		30V DC or less		12/24V DC	110V AC	220V AC	5/12/24V DC	110V AC	220V AC	24V DC ± 10%
Load current	5 to 20mA (note 1)		100mA or less	50mA or less	5 to 50mA	7 to 20mA	7 to 10mA	50mA or less	20mA or less	10mA or less	5 to 20mA
Light	LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)			-			Red/green LED (ON lighting)

Note 1: The maximum load current of 20 mA applies at 25 °C. If the switch's ambient operating temperature exceeds 25 °C, the load current becomes less than 20 mA. (5 to 10mA when 60 °C)

- With preventive maintenance output

Descriptions	Proximity 3 wire		Proximity 4 wire		Proximity 3 wire		Proximity 4 wire		
	T2YFH/V		T3YFH/V		T2YMH/V		T3YMH/V		
Applications	Programmable controller		Programmable controller, relay		Programmable controller		Programmable controller, relay		
Light	Installation position adjustment section		Red/green LED (ON lighting)						
	Preventive maintenance output section		-		Yellow LED (ON lighting)				
Regular maintenance output section	Power voltage	-	28 to 10V DC		-		28 to 10V DC		
	Load voltage	30 to 10V DC		30V DC or less		30 to 10V DC		30V DC or less	
	Load current	5 to 20mA		50mA or less		5 to 20mA		50mA or less	
	Load voltage	30V DC or less							
Preventive maintenance output section	Load current	20mA or less		50mA or less		5 to 20mA (note 1)		50mA or less	

Note 1: The maximum load current of 20 mA applies at 25 °C. If the switch's ambient operating temperature exceeds 25 °C, the load current becomes less than 20 mA. (5 to 10 mA when 60 °C)

Cylinder weight

- STG-MG/STG-MG1

Unit: kg

Descriptions	Stroke length															Switch weight Grommet
	20	25	30	40	50	75	100	125	150	175	200	250	300	350	400	
φ20	0.69		0.77	0.85	0.92	1.17	1.37	1.56	1.75	1.94	2.14	2.59	2.98	3.36	3.75	0.018
φ25	0.98		1.08	1.19	1.29	1.66	1.92	2.18	2.46	2.72	2.98	3.62	4.14	4.68	5.20	0.018
φ32		1.76			2.13	2.66	3.06	3.46	3.85	4.24	4.63	5.61	6.39	7.19	7.97	0.018
φ40		2.03			2.44	2.89	3.29	3.71	4.12	4.53	4.94	5.95	6.78	7.61	8.43	0.018
φ50		3.47			4.09	4.8	5.42	6.04	6.66	7.28	7.90	9.46	10.69	11.95	13.21	0.018
φ63		4.31			5.05	5.87	6.6	7.33	8.07	8.80	9.53	11.32	12.77	14.23	15.68	0.018

- STG-BG/STG-BG1

Unit: kg

Descriptions	Stroke length															Switch weight Grommet
	20	25	30	40	50	75	100	125	150	175	200	250	300	350	400	
φ20	0.72		0.79	0.9	0.98	1.15	1.31	1.51	1.68	1.85	2.02	2.39	2.73	3.07	3.41	0.018
φ25	1.01		1.1	1.27	1.36	1.58	1.82	2.08	2.3	2.52	2.75	3.23	3.69	4.13	4.58	0.018
φ32		1.61			1.91	2.35	2.66	3.02	3.33	3.63	3.94	4.61	5.22	5.83	6.44	0.018
φ40		1.88			2.23	2.7	3.05	3.46	3.81	4.16	4.51	5.26	5.96	6.66	7.36	0.018
φ50		3.23			3.76	4.49	5.02	5.64	6.18	6.71	7.24	8.44	9.49	10.59	11.66	0.018
φ63		4.07			4.71	5.56	6.2	6.93	7.57	8.22	8.86	10.25	11.61	12.87	14.13	0.018

STG-M^BG/STG-M^BG1 Series

How to order

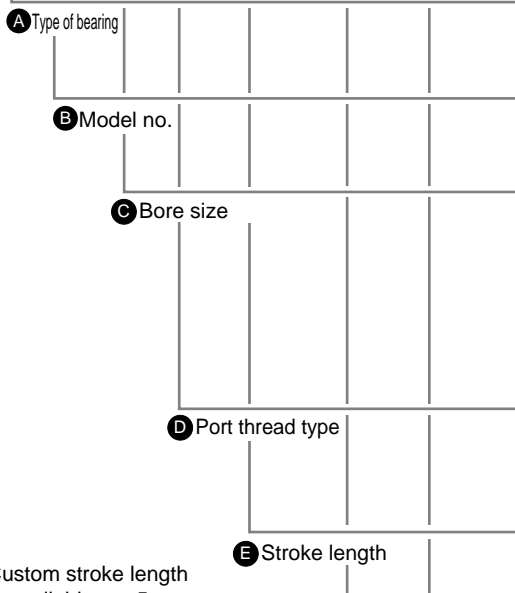
Without switch

STG - M G - 32 - 25

With switch

STG - M G - 32 - 25 - T2H - R

Model no.



■ Custom stroke length is available per 5mm increment. Note that the total length is the same as the next longer standard stroke length.

F Switch model no.
Note 1

G Switch quantity

Symbol	Descriptions			
A Type of bearing				
M	Metal bush bearing			
B	Ball bearing			
B Model no.				
G	Rubber scraper type			
G1	Coil scraper type			
C Bore size (mm)				
20	φ20			
25	φ25			
32	φ32			
40	φ40			
50	φ50			
63	φ63			
D Port thread type				
Blank	Rc thread			
NN	NPT thread (custom order)			
GN	G thread (custom order)			
E Stroke length (mm)				
Refer to the standard stroke length table on following page.				
F Switch model no.				
Lead wire Axial	Lead wire Radial	Contact	Indicator	Lead wire
T0H*	T0V*	Reed	1 color indicator type	2 wire
T5H*	T5V*		Without indicator light	
T2H*	T2V*		Proximity	1 color indicator type
T3H*	T3V*	3 wire		
T2YH*	T2YV*	2 color indicator type		2 wire
T3YH*	T3YV*	3 wire		
T2YFH*	T2YFV*	2 color indicator type		3 wire
T3YFH*	T3YFV*	(Without indicator light for preventive maintenance output)		4 wire
T2YMH*	T2YMV*	2 color indicator type		3 wire
T3YMH*	T3YMV*	(With indicator light for preventive maintenance output (1 color))		4 wire
T2JH*	T2JV*	Off-delay type		2 wire
T2YD*	-	Strong magnetic field proof switch		2 wire
T2YDT*	-			
*Lead wire length				
Blank	1m (standard)			
3	3m (option)			
5	5m (option)			
G Switch quantity				
R	One on rod end			
H	One on head end			
D	Two			
T	Three			

⚠ Note on model no. selection

Note 1: Switches other than switch model no. (F) are available.(Custom order)
Refer to Pneumatic cylinders (No.CB-029SA) for details.

<Example of model number>

STG-MG1-40-50-T0H-H

Model: Guided cylinder, double acting coil scraper type

- A Type of bearing : Metal bush bearing
- B Model no. : Coil scraper type
- C Bore size : φ40mm
- D Port thread type : Rc thread
- E Stroke length : 50mm
- F Switch model no. : Reed T0H switch, lead wire length 1m
- G Switch quantity : One on head end

[Standard stroke length table]

	Symbol	Stroke length (mm)	Applicable bore size					
			φ 20	φ 25	φ 32	φ 40	φ 50	φ 63
D Standard stroke length	20	20	●	●				
	25	25			●	●	●	●
	30	30	●	●				
	40	40	●	●				
	50	50	●	●	●	●	●	●
	75	75	●	●	●	●	●	●
	100	100	●	●	●	●	●	●
	125	125	●	●	●	●	●	●
	150	150	●	●	●	●	●	●
	175	175	●	●	●	●	●	●
	200	200	●	●	●	●	●	●
	250	250	●	●	●	●	●	●
	300	300	●	●	●	●	●	●
	350	350	●	●	●	●	●	●
	400	400	●	●	●	●	●	●

How to order switch

SW - TOV

Switch model no.
(F on previous page)

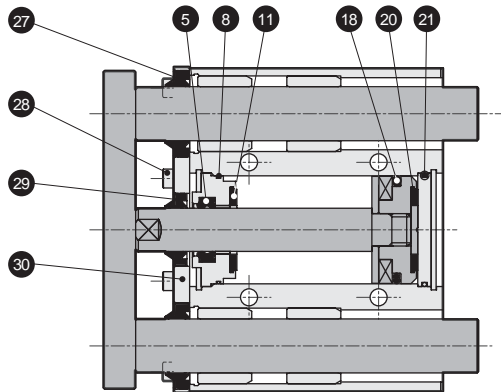
Note: Consult with CKD when using the ecological T type switch.

STG-M_BG/STG-M_BG1 Series

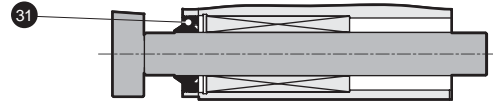
Internal structure and parts list

● Rubber scraper type

· STG-MG

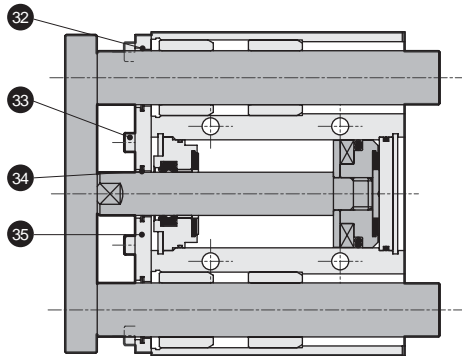


· STG-BG

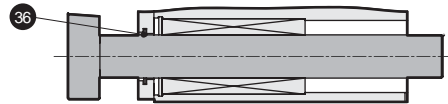


● Coil scraper type

· STG-MG1



· STG-BG1



Parts list

* Parts other than those listed below are the same as double acting standard single rod type. Refer to Pages 10 to 7.

No.	Parts name	Material	Remarks	No.	Parts name	Material	Remarks
STG-M/BG (rubber scraper type)				STG-M/GG1 (coil scraper type)			
27	Rubber scraper	Nitrile rubber + steel		32	Coil scraper	Phosphor bronze	
28	Hexagon socket head cap screw	Alloy steel	Zinc chromate	33	Hexagon socket head cap screw	Alloy steel	Zinc chromate
29	Rubber scraper	Nitrile rubber + steel		34	Hexagon socket head cap screw	Phosphor bronze	
30	Adaptor plate A	Aluminum alloy	Chromate	35	Adaptor plate B	Aluminum alloy	Alumite
31	Rubber scraper	Nitrile rubber + steel		36	Coil scraper	Phosphor bronze	

Repair parts list (Note: Specify the kit No. when placing an order.)

● STG-MG (rubber scraper type)

Bore size (mm)	Kit No.	Repair parts number
φ 20	STG-MG-20K	
φ 25	STG-MG-25K	
φ 32	STG-MG-32K	5 8 11 18
φ 40	STG-MG-40K	20 21 27 29
φ 50	STG-MG-50K	
φ 63	STG-MG-63K	

● STG-BG (rubber scraper type)

Bore size (mm)	Kit No.	Repair parts number
φ 20	STG-BG-20K	
φ 25	STG-BG-25K	
φ 32	STG-BG-32K	5 8 11 18
φ 40	STG-BG-40K	20 21 29 31
φ 50	STG-BG-50K	
φ 63	STG-BG-63K	

● STG-MG1 (coil scraper type)

Bore size (mm)	Kit No.	Repair parts number
φ 20	STG-MG1-20K	
φ 25	STG-MG1-25K	
φ 32	STG-MG1-32K	5 8 11 18
φ 40	STG-MG1-40K	20 21 32 34
φ 50	STG-MG1-50K	
φ 63	STG-MG1-63K	

● STG-BG1 (coil scraper type)

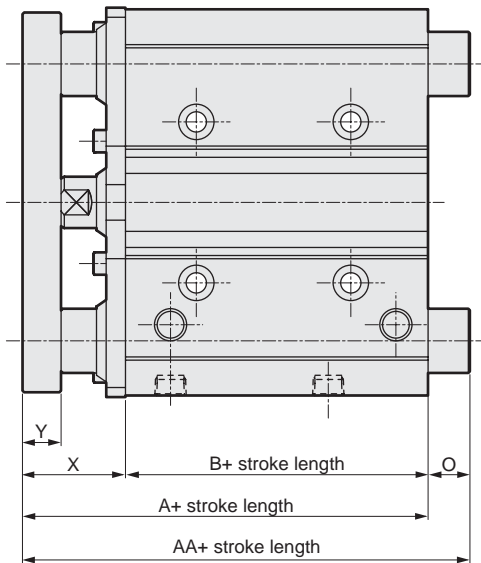
Bore size (mm)	Kit No.	Repair parts number
φ 20	STG-BG1-20K	
φ 25	STG-BG1-25K	
φ 32	STG-BG1-32K	5 8 11 18
φ 40	STG-BG1-40K	20 21 34 36
φ 50	STG-BG1-50K	
φ 63	STG-BG1-63K	

STG-M_BG/STG-B_BG1 Series

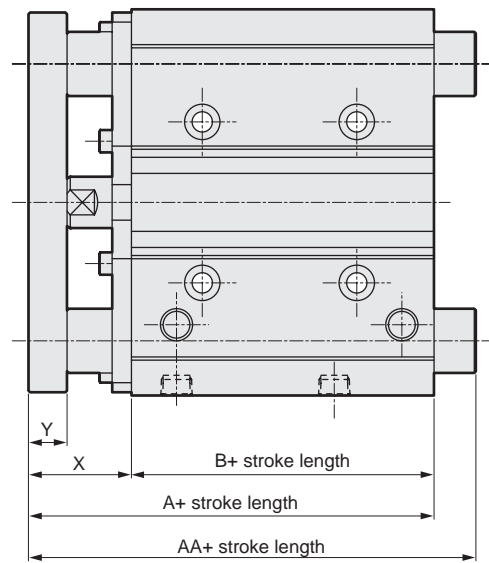
Double acting rubber scraper type, double acting coil scraper type

Dimensions

●STG-M_BG



●STG-M_BG1



●STG-M-G/G1

*Dimensions other than those listed below are the same as the double-acting, single rod shown on pages 12 and 13.

Symbol Bore size (mm)	Standard stroke length	A	AA				B	O			X	Y
			50st or less	50st to 200st	100st to 200st	200st over		50st or less	50st to 200st	200st over		
φ20	20, 30, 40, 50, 75, 100, 125, 150, 175	63	63	88	132	37	0	25	69	26	10	
φ25	200, 250, 300, 350, 400	63.5	63.5	94	132	37.5	0	30.5	68.5	26	10	
φ32	25, 50, 75, 100, 125, 150, 175 200, 250, 300, 350, 400	69.5	89	110	150	37.5	19.5	40.5	80.5	32	12	
φ40		76	89	110	150	44	13	34	74	32	12	
φ50		82	101	126	171	44	19	44	89	38	16	
φ63		87	101	126	171	49	14	39	84	38	16	

●STG-B-G/G1


Symbol Bore size (mm)	Standard stroke length	A	AA				B	O				X	Y
			30st or less	30st to 100st	100st to 200st	200st over		30st or less	30st to 100st	100st to 200st	200st over		
φ20	20, 30, 40, 50, 75, 100, 125, 150, 175	63	69	88	110	132	37	6	25	47	69	26	10
φ25	200, 250, 300, 350, 400	63.5	75	94	113	132	37.5	11.5	30.5	49.5	68.5	26	10
Symbol Bore size (mm)	Standard stroke length 25, 50, 75, 100, 125, 150, 175 200, 250, 300, 350, 400	A	AA				B	O				X	Y
50st or less			50st to 100st	100st to 200st	200st over	50st or less		50st to 100st	100st to 200st	200st over			
		69.5					89				108	128	150
φ32		76	89	108	128	150	44	13	32	52	74	32	12
φ40	82	101	124	144	171	44	19	42	62	89	38	16	
φ50	87	101	124	144	171	49	14	37	57	84	38	16	
φ63													



Guided cylinder, double acting coolant proof type

STG-MG₃² Series

● Bore size: $\phi 20$, $\phi 25$, $\phi 32$, $\phi 40$, $\phi 50$, $\phi 63$

JIS symbol 

Specifications

Descriptions	STG-MG ₃ ²					
	$\phi 20$	$\phi 25$	$\phi 32$	$\phi 40$	$\phi 50$	$\phi 63$
Bore size mm	$\phi 20$	$\phi 25$	$\phi 32$	$\phi 40$	$\phi 50$	$\phi 63$
Actuation	Double acting coolant proof type					
Working fluid	Compressed air					
Max. working pressure MPa	1.0					
Min. working pressure MPa	0.2		0.15			
Withstanding pressure MPa	1.6					
Ambient temperature °C	-10 to 60 (to be unfrozen)					
Port size	Rc1/8			Rc1/4		
Stroke tolerance mm	+2.0 0					
Working piston speed mm/s	50 to 500				50 to 300	
Cushion	Rubber cushioned (urethane rubber)					
Lubrication	Not required (when lubricating, use turbine oil Class 1 ISOVG32.)					
Allowable energy absorption J	0.157	0.157	0.401	0.627	0.980	1.560

Stroke length

Bore size	Standard stroke length (mm)	Max. stroke length (mm)	Min. stroke length (mm)	Min. stroke length of types with switch (mm)
$\phi 20$	20, 30, 40, 50, 75, 100, 125	400	5	5
$\phi 25$	150, 175, 200, 250, 300, 350, 400			
$\phi 32$	25, 50, 75, 100			
$\phi 40$	125, 150, 175			
$\phi 50$	200, 250, 300			
$\phi 63$	350, 400			

Note 1: Custom stroke length is available per 5mm increment. Note that the total length is the same as the next longer standard stroke length.

Note 2: This applies when 1 or 2 switches are installed.

Switch specifications

Type/model no.	Proximity switch specifications	
Descriptions	T2YLH/T2YLV	T3YLH/T3YLV
Applications	Programmable controller	Programmable controller, relay
Power voltage	-	28 to 10V DC
Load voltage and current	10 to 30V DC, 5 to 20 mA Note 1	30V DC or less, 50 mA or less
Light	Red/green LED (ON lighting)	
Maximum shock resistance	980 m/S ²	

Note 1: The maximum load current of 20 mA applies at 25°C. If the switch's ambient operating temperature exceeds 25°C, the load current becomes less than 20 mA. (5 to 10 mA when 60°C.)

Cylinder weight

● STG-MG2, STG-MG3

Unit: kg

Descriptions	Stroke length															Switch weight Grommet
	20	25	30	40	50	75	100	125	150	175	200	250	300	350	400	
φ20	0.68		0.76	0.84	0.91	1.16	1.36	1.55	1.74	1.93	2.13	2.58	2.97	3.35	3.74	0.018
φ25	0.96		1.06	1.17	1.27	1.64	1.90	2.16	2.44	2.70	2.96	3.60	4.12	4.66	5.18	0.018
φ32		1.68			2.05	2.58	2.98	3.38	3.77	4.16	4.55	5.53	6.31	7.11	7.89	0.018
φ40		1.93			2.34	2.79	3.19	3.61	4.02	4.43	4.84	5.85	6.68	7.51	8.33	0.018
φ50		3.32			3.94	4.65	5.27	5.89	6.51	7.13	7.75	9.31	10.54	11.80	13.06	0.018
φ63		4.15			4.89	5.71	6.44	7.17	7.91	8.64	9.37	11.16	12.61	14.07	15.52	0.018

STG-MG₃ Series

How to order

Without switch

STG - M **G2** - **32** - **25**

With switch

STG - M **G2** - **32** - **25** - **T2YLH** - **R**

Model no.

A Protective structure level

B Bore size

C Port thread type

D Stroke length

■ Custom stroke length is available per 5mm increment. Note that the total length is the same as the next longer standard stroke length.

E Switch model no.

F Switch quantity

Symbol	Descriptions			
A Protective structure level				
G2	Coolant proof scraper + packing seal NBR			
G3	Coolant proof scraper + packing seal FKM			
B Bore size (mm)				
20	φ20			
25	φ25			
32	φ32			
40	φ40			
50	φ50			
63	φ63			
C Port thread type				
Blank	Rc thread			
NN	NPT thread (custom order)			
GN	G thread (custom order)			
D Stroke length (mm)				
Refer to the standard stroke length table on following page.				
E Switch model no.				
Lead wire Axial	Lead wire Radial	Contact	Indicator	Lead wire
T2YLH*	T2YLV*			
T3YLH*	T3YLV*	3 wire		
*Lead wire length				
Blank	1m (standard)			
3	3m (option)			
5	5m (option)			
F Switch quantity				
R	One on rod end			
H	One on head end			
D	Two			
T	Three			

<Example of model number>

STG-MG2-20-50-T2YLH-R

Model: Guided cylinder, double acting coolant proof type

- A** Protective structure : Coolant proof scraper + packing seal NBR
- B** Bore size : φ20mm
- C** Port thread type : Rc thread
- D** Stroke length : 50mm
- E** Switch model no. : Proximity T2YLH switch, lead wire length 1m
- F** Switch quantity : One on rod end

[Standard stroke length table]

	Symbol	Stroke length (mm)	Applicable bore size					
			φ 20	φ 25	φ 32	φ 40	φ 50	φ 63
D Standard stroke length	20	20	●	●				
	25	25			●	●	●	●
	30	30	●	●				
	40	40	●	●				
	50	50	●	●	●	●	●	●
	75	75	●	●	●	●	●	●
	100	100	●	●	●	●	●	●
	125	125	●	●	●	●	●	●
	150	150	●	●	●	●	●	●
	175	175	●	●	●	●	●	●
	200	200	●	●	●	●	●	●
	250	250	●	●	●	●	●	●
	300	300	●	●	●	●	●	●
	350	350	●	●	●	●	●	●
	400	400	●	●	●	●	●	●

How to order switch

SW - **T2YLH**

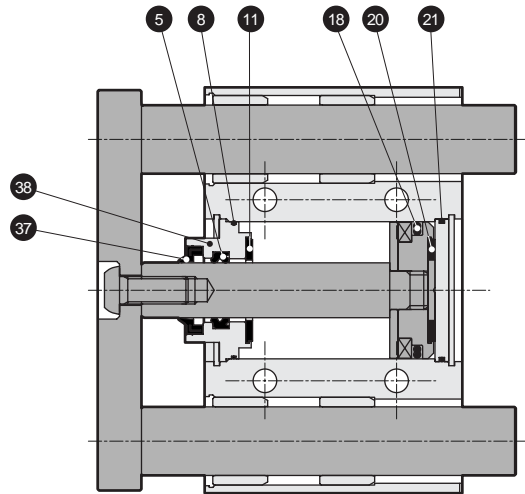
Switch model no.
(E on previous page)

Note: Consult with CKD when using the ecological T type switch.

STG-MG₃ Series

Internal structure and parts list

●STG-MG2/MG3



Parts list

* Parts other than those listed below are the same as double acting single rod type. Refer to Pages 10 to 7.

No.	Parts name	Material	Remarks	No.	Parts name	Material	Remarks
37	Scraper	Rubber + steel	G2: nitrile rubber G3: fluoro rubber	38	Rod bushing	Aluminum alloy	Alumite treatment

Repair parts list (Note: Specify the kit No. when placing an order.)

●STG-MG2 (the packing seal material: nitrile rubber)

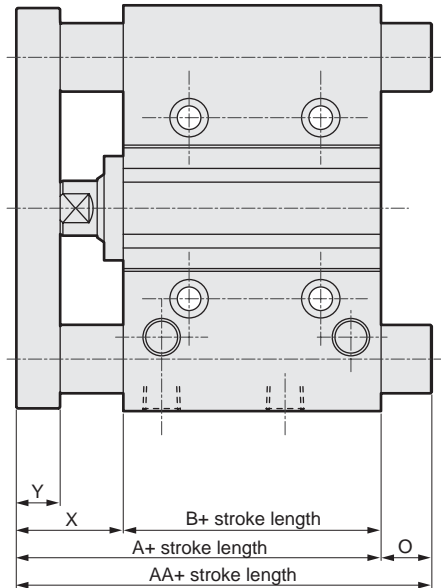
Bore size (mm)	Kit No.	Repair parts number
φ20	STG-MG2-20K	
φ25	STG-MG2-25K	
φ32	STG-MG2-32K	
φ40	STG-MG2-40K	
φ50	STG-MG2-50K	
φ63	STG-MG2-63K	

●STG-MG3 (the packing seal material: fluoro rubber)

Bore size (mm)	Kit No.	Repair parts number
φ20	STG-MG3-20K	
φ25	STG-MG3-25K	
φ32	STG-MG3-32K	
φ40	STG-MG3-40K	
φ50	STG-MG3-50K	
φ63	STG-MG3-63K	

Dimensions

● STG-MG₃



● STG-M-G2/G3

*Dimensions other than those listed below are the same as the double-acting, single rod shown on pages 12 and 13.


Symbol Bore size (mm)	Standard stroke length	A	AA			B	O			X	Y
			50st or less	50st to 200st	200st over		50st or less	50st to 200st	200st over		
φ 20	20, 30, 40, 50, 75, 100, 125, 150, 175	66	66	91	135	37	0	25	69	29	10
φ 25	200, 250, 300, 350, 400	67.5	67.5	98	136	37.5	0	30.5	68.5	30	10
φ 32	25, 50, 75, 100, 125, 150, 175 200, 250, 300, 350, 400	71.5	91	112	152	37.5	19.5	40.5	80.5	34	12
φ 40		89	91	112	152	44	13	34	74	34	12
φ 50		83	102	127	172	44	19	44	89	39	16
φ 63		88	102	127	172	49	14	39	84	39	16



Guided cylinder, double acting spatter adherence prevention type

STG-^M_BG4 Series

● Bore size: $\phi 40$, $\phi 50$, $\phi 63$

JIS symbol 

Specifications

Descriptions	STG- ^M _B G4		
	$\phi 40$	$\phi 50$	$\phi 63$
Bore size mm	$\phi 40$	$\phi 50$	$\phi 63$
Actuation	Double acting spatter adherence prevention type		
Working fluid	Compressed air		
Max. working pressure MPa	1.0		
Min. working pressure MPa	0.15		
Withstanding pressure MPa	1.6		
Ambient temperature °C	-10 to 60 (to be unfrozen)		
Port size	Rc1/8	Rc1/4	
Stroke tolerance mm	+2.0 0		
Working piston speed mm/s	50 to 500		50 to 300
Cushion	Rubber cushioned		
Lubrication	Not required (when lubricating, use turbine oil Class 1 ISOVG32.)		
Allowable energy absorption J	0.627	0.980	1.560

Stroke length

Bore size	Standard stroke length (mm)	Max. stroke length (mm)	Min. stroke length (mm)	Min. stroke length of types with switch (mm)
$\phi 40$	25, 50, 75, 100, 125	400	5	5 Note 1
$\phi 50$	150, 175, 200, 250			
$\phi 63$	300, 350, 400			

Note 1: Custom stroke length is available per 5mm increment. Note that the total length is the same as the next longer standard stroke length.
 Note 2: This applies when 1 or 2 switches are installed.

Switch specifications

Descriptions	Proximity 2 wire	
	T2YD	T2YDT
Applications	Programmable controller	
Light	Red/green LED (ON lighting)	
Load voltage	24V DC \pm 10%	
Load current	DC5 to 20mA	
Internal voltage drop	6V or less	
Leakage current	1.0mA or less	
Output delay hour Note 1 (ON delay, OFF delay)	30 to 60ms	
Lead wire length Note 2	1m (2-conductor oil resistant vinyl cabtire code 0.5mm ²) (standard)	1m (2-conductor flame resistant vinyl cabtire cord 0.5mm ²) (option)
Insulation resistance	100M Ω and over at 500V DC megger	
Withstand voltage	No abnormality when 1000V AC is applied for one minute	
Maximum shock resistance	980m/s ²	
Ambient temperature	-10 to +60 $^{\circ}$ C	
Protective structure	JIS C0920 (water tight type), IEC standards IP67, oil resistance	

Note 1: This indicates the time from detection of the piston magnet by the magnetic sensor to switch output.

Note 2: Lead wire length is available in 3m and 5m as an option.

Cylinder weight

●STG-MG4

Unit: kg

Descriptions	Stroke length												Switch weight Grommet
	25	50	75	100	125	150	175	200	250	300	350	400	
ϕ 40	2.03	2.44	2.89	3.29	3.71	4.12	4.53	4.94	5.95	6.78	7.61	8.43	0.018
ϕ 50	3.47	4.09	4.80	5.42	6.04	6.66	7.28	7.90	9.46	10.69	11.95	13.21	0.018
ϕ 63	4.31	5.05	5.87	6.60	7.33	8.07	8.80	9.53	11.32	12.77	14.23	15.68	0.018

●STG-BG4

Unit: kg

Descriptions	Stroke length												Switch weight Grommet
	25	50	75	100	125	150	175	200	250	300	350	400	
ϕ 40	1.88	2.23	2.7	3.05	3.46	3.81	4.16	4.51	5.26	5.96	6.66	7.36	0.018
ϕ 50	3.23	3.76	4.49	5.02	5.64	6.18	6.71	7.24	8.44	9.49	10.59	11.66	0.018
ϕ 63	4.07	4.71	5.56	6.2	6.93	7.57	8.22	8.86	10.25	11.61	12.87	14.13	0.018

How to order

Without switch

STG - **M** **G4** - **40** - **○** - **25**

With switch

STG - **M** **G4** - **40** - **○** - **25** - **T2H** - **R**

Model no.

Spatter adherence prevention type

A Type of bearing

B Bore size

C Port thread type

D Stroke length

E Switch model no.
Note 1

F Switch quantity

■ Custom stroke length is available per 5mm increment. Note that the total length is the same as the next longer standard stroke length.

Symbol	Descriptions			
A Type of bearing				
M	Metal bush bearing			
B	Ball bearing			
B Bore size (mm)				
40	φ40			
50	φ50			
63	φ63			
C Port thread type				
Blank	Rc thread			
NN	NPT thread (custom order)			
GN	G thread (custom order)			
D Stroke length (mm)				
Refer to the standard stroke length table on following page.				
E Switch model no.				
Axial lead wire		Contact	Indicator	Axial lead wire
Axial				
T2YD*		Proximity	Strong magnetic field proof switch	2 wire
T2YDT*				
*Lead wire length				
Blank		1m (standard)		
3		3m (option)		
5		5m (option)		
F Switch quantity				
R		One on rod end		
H		One on head end		
D		Two		
T		Three		

<Example of model number>

STG-BG4-50-100-T2YD3-D

Model: Guided cylinder, double acting spatter adherence prevention type

- A** Type of bearing : Ball bearing
- B** Bore size : φ50mm
- C** Port thread type : Rc thread
- D** Stroke length : 100mm
- E** Switch model no. : Proximity T2YD switch, lead wire length 3m
- F** Switch quantity : Two

[Standard stroke length table]

Standard stroke length	Symbol	Stroke length (mm)	Applicable bore size		
			φ 40	φ 50	φ 63
25	25	25	●	●	●
50	50	50	●	●	●
75	75	75	●	●	●
100	100	100	●	●	●
125	125	125	●	●	●
150	150	150	●	●	●
175	175	175	●	●	●
200	200	200	●	●	●
250	250	250	●	●	●
300	300	300	●	●	●
350	350	350	●	●	●
400	400	400	●	●	●

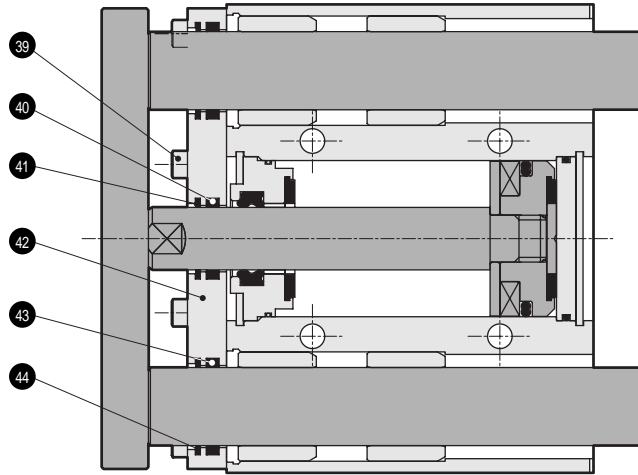
How to order switch

SW - T2YD

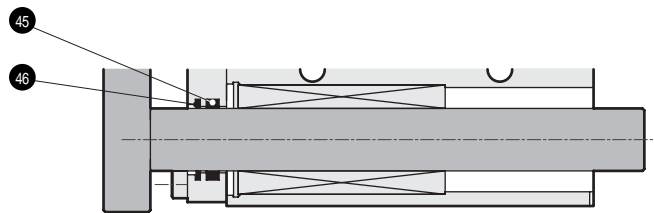
↓
Switch model no.
(E on previous page)

Internal structure and parts list

●STG-MG4



●STG-BG4



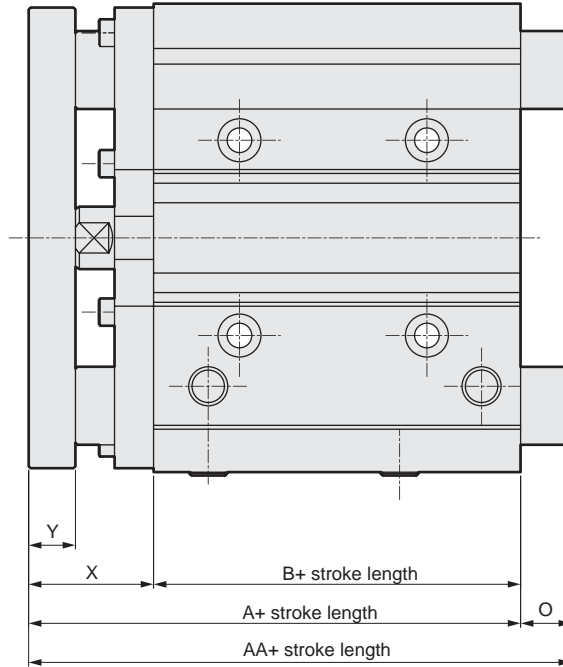
Parts list

* Parts other than those listed below are the same as double acting single rod type. Refer to Pages 10 to 7.

No.	Parts name	Material	Remarks	No.	Parts name	Material	Remarks
39	Hexagon socket head cap screw	Alloy steel	Zinc chromate	43	Lube keeping structure	Special rubber	
40	Lube keeping structure	Special rubber		44	Coil scraper	Phosphor bronze	
41	Coil scraper	Phosphor bronze		45	Lube keeping structure	Special rubber	
42	Adaptor	Aluminum alloy	Alumite	46	Coil scraper	Phosphor bronze	

Dimensions

●STG-M_BG4



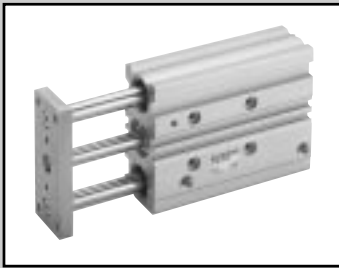
●STG-MG4

* Dimensions other than those listed below are the same as double acting single rod type shown on Pages 12 and 13.

Symbol Bore size (mm)	Standard stroke length	A	AA			B	O			X	Y
			50st or less	50st to 200st	200st over		50st or less	50st to 200st	200st over		
φ40	25, 50, 75, 100, 125, 150, 175 200, 250, 300, 350, 400	76	89	110	150	44	13	34	74	32	12
φ50		82	101	126	171	44	19	44	89	38	16
φ63		87	101	126	171	49	14	39	84	38	16

●STG-BG4


Symbol Bore size (mm)	Standard stroke length	A	AA				B	O				X	Y
			30st or less	30st to 100st	100st to 200st	200st over		30st or less	30st to 100st	100st to 200st	200st over		
φ40	25, 50, 75, 100, 125, 150, 175 200, 250, 300, 350, 400	76	89	108	128	150	44	13	32	52	74	32	12
φ50		82	101	124	144	171	44	19	42	62	89	38	16
φ63		87	101	124	144	171	49	14	37	57	84	38	16



Guided cylinder, double acting single rod type clean room specifications

STG-B -P7*Series

● Bore size: $\phi 12$, $\phi 16$, $\phi 20$, $\phi 25$, $\phi 32$, $\phi 40$, $\phi 50$, $\phi 63$

JIS symbol 

Specifications

Descriptions	STG-B							
	$\phi 12$	$\phi 16$	$\phi 20$	$\phi 25$	$\phi 32$	$\phi 40$	$\phi 50$	$\phi 63$
Bore size mm	$\phi 12$	$\phi 16$	$\phi 20$	$\phi 25$	$\phi 32$	$\phi 40$	$\phi 50$	$\phi 63$
Actuation	Double acting							
Working fluid	Compressed air							
Max. working pressure MPa	1.0							
Min. working pressure MPa	0.2		0.15			0.1		
Withstanding pressure MPa	1.6							
Ambient temperature °C	-10 to 60 (to be unfrozen)							
Port size	M5		Rc1/8				Rc1/4	
Relief port size	M5							
Stroke tolerance mm	+2.0 0							
Working piston speed mm/s	50 to 500							50 to 300
Cushion	Rubber cushioned							
Lubrication	Not available							
Allowable energy absorption J	0.056	0.088	0.157	0.157	0.401	0.627	0.980	1.560

Stroke length

Bore size	Standard stroke length (mm)	Max. stroke length (mm)	Min. stroke length (mm)	Min. stroke length of types with switch (mm)
$\phi 12$	10, 20, 30, 40, 50, 75, 100	250	5	5
$\phi 16$	125, 150, 175, 200, 250			
$\phi 20$	20, 30, 40, 50, 75, 100, 125	400	5	Note 2
$\phi 25$	150, 175, 200, 250, 300, 350, 400			
$\phi 32$	25, 50, 75, 100			
$\phi 40$	125, 150, 175			
$\phi 50$	200, 250, 300			
$\phi 63$	350, 400			

Note 1: Custom stroke length is available per 5mm increment. Note that the total length is the same as the next longer standard stroke length.

Note 2: This applies when 1 or 2 switches are installed.

Switch specifications

- One color/bi-color indicator/strong magnetic field proof

Descriptions	Proximity 2 wire		Proximity 3 wire		Reed 2 wire						Proximity 2 wire
	T2H/T2V/T2JH/T2JV	T2YH/T2YV	T3H/T3V	T3YH/T3YV	T0H/T0V			T5H/T5V			T2YD/T2YDT
Applications	Programmable controller		Programmable controller Controller, relay		Programmable controller, relay			Programmable controller, relay, IC circuit (without indicator light), serial connection IC circuit (without indicator light), serial connection			Programmable controller
Power voltage	-		28 to 10V DC		-						-
Load voltage	30 to 10V DC		30V DC or less		12/24V DC	110V AC	220V AC	5/12/24V DC	110V AC	220V AC	24V DC ±10%
Load current	5 to 20mA (note 1)		100mA or less	50mA or less	5 to 50mA	7 to 20mA	7 to 10mA	50mA or less	20mA or less	10mA or less	5 to 20mA
Light	LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)			-			Red/green LED (ON lighting)

Note 1: The maximum load current of 20 mA applies at 25°C. If the switch's ambient operating temperature exceeds 25°C, the load current becomes less than 20 mA. (5 to 10mA when 60°C)

- With preventive maintenance output

Descriptions	Proximity 3 wire		Proximity 4 wire		Proximity 3 wire		Proximity 4 wire		
	T2YFH/V		T3YFH/V		T2YMH/V		T3YMH/V		
Applications	Programmable controller		Programmable controller, relay		Programmable controller		Programmable controller, relay		
Light	Installation position adjustment section		Red/green LED (ON lighting)						
	Preventive maintenance output section		-		Yellow LED (ON lighting)				
Regular Output section	Power voltage	-	28 to 10V DC		-		28 to 10V DC		
	Load voltage	30 to 10V DC		30V DC or less		30 to 10V DC		30V DC or less	
	Load current	5 to 20mA		50mA or less		5 to 20mA		50mA or less	
Preventive maintenance output section	Load voltage	30V DC or less							
	Load current	20mA or less		50mA or less		5 to 20mA (note 1)		50mA or less	

Note 1: The maximum load current of 20 mA applies at 25°C. If the switch's ambient operating temperature exceeds 25°C, the load current becomes less than 20 mA. (5 to 10mA when 60°C)

Cylinder weight

- STG-B-P7

Unit: kg

Descriptions	Stroke length																	Switch weight Grommet
	10	20	25	30	40	50	75	100	125	150	175	200	250	300	350	400		
φ 12	0.27	0.30		0.33	0.38	0.42	0.50	0.58	0.68	0.76	0.84	0.92	1.09					0.018
φ 16	0.38	0.43		0.47	0.54	0.59	0.70	0.82	0.95	1.06	1.17	1.29	1.50					0.018
φ 20		0.76		0.83	0.94	1.02	1.18	1.35	1.55	1.72	1.89	2.06	2.43	2.77	3.10	3.44		0.018
φ 25		1.06		1.14	1.32	1.41	1.63	1.86	2.12	2.35	2.57	2.79	3.28	3.73	4.18	4.63		0.018
φ 32			1.62			1.92	2.36	2.67	3.03	3.34	3.64	3.95	4.62	5.23	5.84	6.45		0.018
φ 40			1.90			2.25	2.72	3.07	3.48	3.83	4.18	4.53	5.28	5.98	6.68	7.38		0.018
φ 50			3.24			3.78	4.50	5.04	5.66	6.19	6.73	7.26	8.45	9.51	10.61	11.67		0.018
φ 63			4.12			4.76	5.61	6.25	6.98	7.62	8.27	8.91	10.3	11.66	12.92	14.18		0.018

STG-P7* Series

How to order

Without switch

STG - **B** - **32** - **25** ————— **P72**

With switch

STG - **B** - **32** - **25** - **T2H** - **R** - **P72**

Model no.

A Type of bearing

B Bore size

C Stroke length

D Switch model no.
Note 1

E Switch quantity

F Clean room specifications

■ Custom stroke length is available per 5mm increment. Note that the total length is the same as the next longer standard stroke length.

Symbol	Descriptions			
A Type of bearing				
B	Ball bearing			
B Bore size (mm)				
12	φ 12			
16	φ 16			
20	φ 20			
25	φ 25			
32	φ 32			
40	φ 40			
50	φ 50			
63	φ 63			
C Stroke length (mm)				
Refer to the standard stroke length table on following page.				
D Switch model no.				
Axial lead wire	Axial lead wire	Contact	Indicator	Axial lead wire
Axial	Radial			
T0H*	T0V*	Reed	1 color indicator type	2 wire
T5H*	T5V*		Without indicator light	
T2H*	T2V*		Proximity	1 color indicator type
T3H*	T3V*	3 wire		
T2YH*	T2YV*	2 color indicator type		2 wire
T3YH*	T3YV*	3 wire		
T2YFH*	T2YFV*	2 color indicator type		3 wire
T3YFH*	T3YFV*	(Without indicator light for preventive maintenance output)		4 wire
T2YMH*	T2YMV*	2 color indicator type		3 wire
T3YMH*	T3YMV*	(With indicator light for preventive maintenance output (1 color))		4 wire
T2JH*	T2JV*	Off-delay type		2 wire
T2YD*	-	Strong magnetic field proof switch		
T2YDT*	-			2 wire
*Lead wire length				
Blank	1m (standard)			
3	3m (option)			
5	5m (option)			
E Switch quantity				
R	One on rod side			
H	One on head side			
D	Two			
T	Three			
F Clean room specifications				
P72	Exhaust treatment			
P73	Vacuum treatment			

⚠ Note on model no. selection

Note 1: Switches other than switch model no. (D) are available.(Custom order)
Refer to Pneumatic cylinders (No.CB-029SA) for details.

<Example of model number>

STG-B-40-75-T0H-D-P72

Model: Guided cylinder, double acting single rod type

- A** Type of bearing : Ball bearing
- B** Bore size : φ 40mm
- C** Stroke length : 75mm
- D** Switch model no. : Reed T0H switch, lead wire length 1m
- E** Switch quantity : Two
- F** Clean room specifications : Exhaust treatment

[Standard stroke length table]

Standard stroke length	Symbol	Stroke length (mm)	Applicable bore size							
			φ 12	φ 16	φ 20	φ 25	φ 32	φ 40	φ 50	φ 63
10	10	10	●	●						
20	20	20	●	●	●	●				
25	25	25					●	●	●	●
30	30	30	●	●	●	●				
40	40	40	●	●	●	●				
50	50	50	●	●	●	●	●	●	●	●
75	75	75	●	●	●	●	●	●	●	●
100	100	100	●	●	●	●	●	●	●	●
125	125	125	●	●	●	●	●	●	●	●
150	150	150	●	●	●	●	●	●	●	●
175	175	175	●	●	●	●	●	●	●	●
200	200	200	●	●	●	●	●	●	●	●
250	250	250	●	●	●	●	●	●	●	●
300	300	300			●	●	●	●	●	●
350	350	350			●	●	●	●	●	●
400	400	400			●	●	●	●	●	●

How to order switch



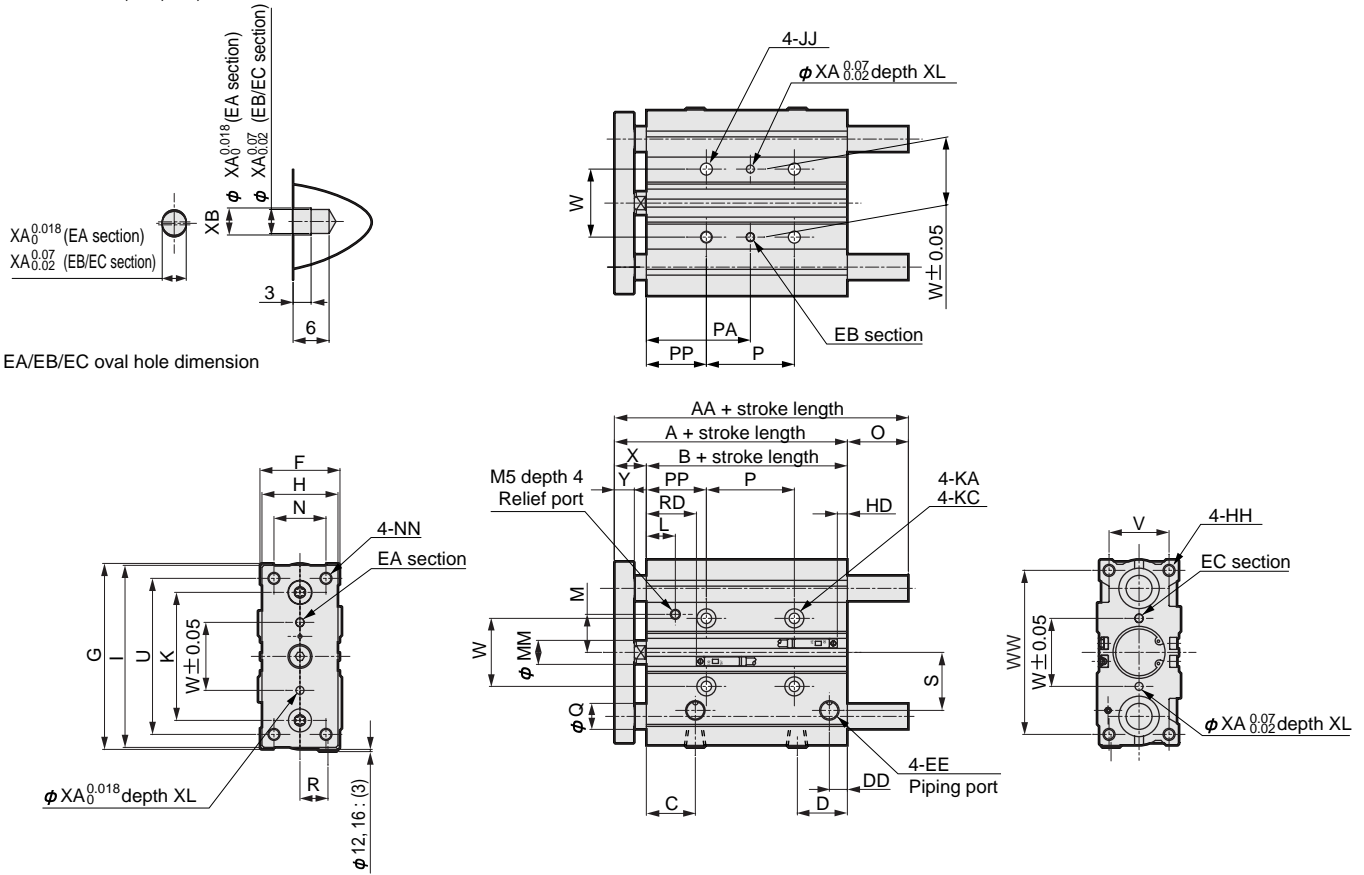
Switch model no.
(D on previous page)

Note: Consult with CKD when using the ecological T type switch.

STG-P7* Series

Dimensions (φ12, φ16, φ20, φ25)

● STG-B-12, 16, 20, 25



Symbol	Standard stroke length (mm)												A	B	C	D	DD	EE	F	G	H	HH	I	JJ
Bore size (mm)																								
φ12	10, 20, 30, 40, 50, 75, 100, 125												55	42	25	16	7	M5	26	58	22	M4 depth 10	56	M5 depth 10
φ16	150, 175, 200, 250												59	46	25	18	7.5	M5	30	64	25	M5 depth 12	62	M5 depth 10
φ20	20, 30, 40, 50, 75, 100, 125, 150												66	50	23.5	24.5	8.5	Rc1/8	36	83	30	M5 depth 13	81	M6 depth 12
φ25	175, 200, 250, 300, 350, 400												66.5	50.5	24.5	25	9	Rc1/8	42	93	38	M6 depth 15	91	M6 depth 12

Symbol	P												L	M
Bore size (mm)	K	KA	MM	N	NN	KC								
							30st or less	30st to 100st	100st to 200st	200st to 300st	300st over			
φ12	41	4.3 penetrating	6	14	M4 penetrating	8 spot face depth 4.5	20	40	110	200	-	9	12.5	
φ16	46	4.3 penetrating	8	16	M5 penetrating	8 spot face depth 4.5	24	44	110	200	-	8.5	13	
φ20	54	5.2 penetrating	10	18	M5 penetrating	9.5 spot face depth 5.5	24	44	120	200	300	13.5	14	
φ25	64	5.2 penetrating	12	26	M6 penetrating	9.5 spot face depth 5.5	24	44	120	200	300	14.5	17	

Symbol	PA										PP	R	S	U	V	W	WW	X	Y															
Bore size (mm)	30st or less					30st to 100st					100st to 200st					200st to 300st					300st over													
φ12	28					38					73					118					-					18	8	17	48	18	23	50	13	8
φ16	30					40					73					118					-					18	10	18	54	22	24	56	13	8
φ20	42					52					90					130					180					30	11	25	70	24	28	72	16	10
φ25	42					52					90					130					180					30	14	29	78	30	34	82	16	10

Symbol	RD	HD	XA	XB
φ12	18	5	3	3.5
φ16	17	10	3	3.5
φ20	22.5	8.5	3	3.5
φ25	23	8.5	4	4.5

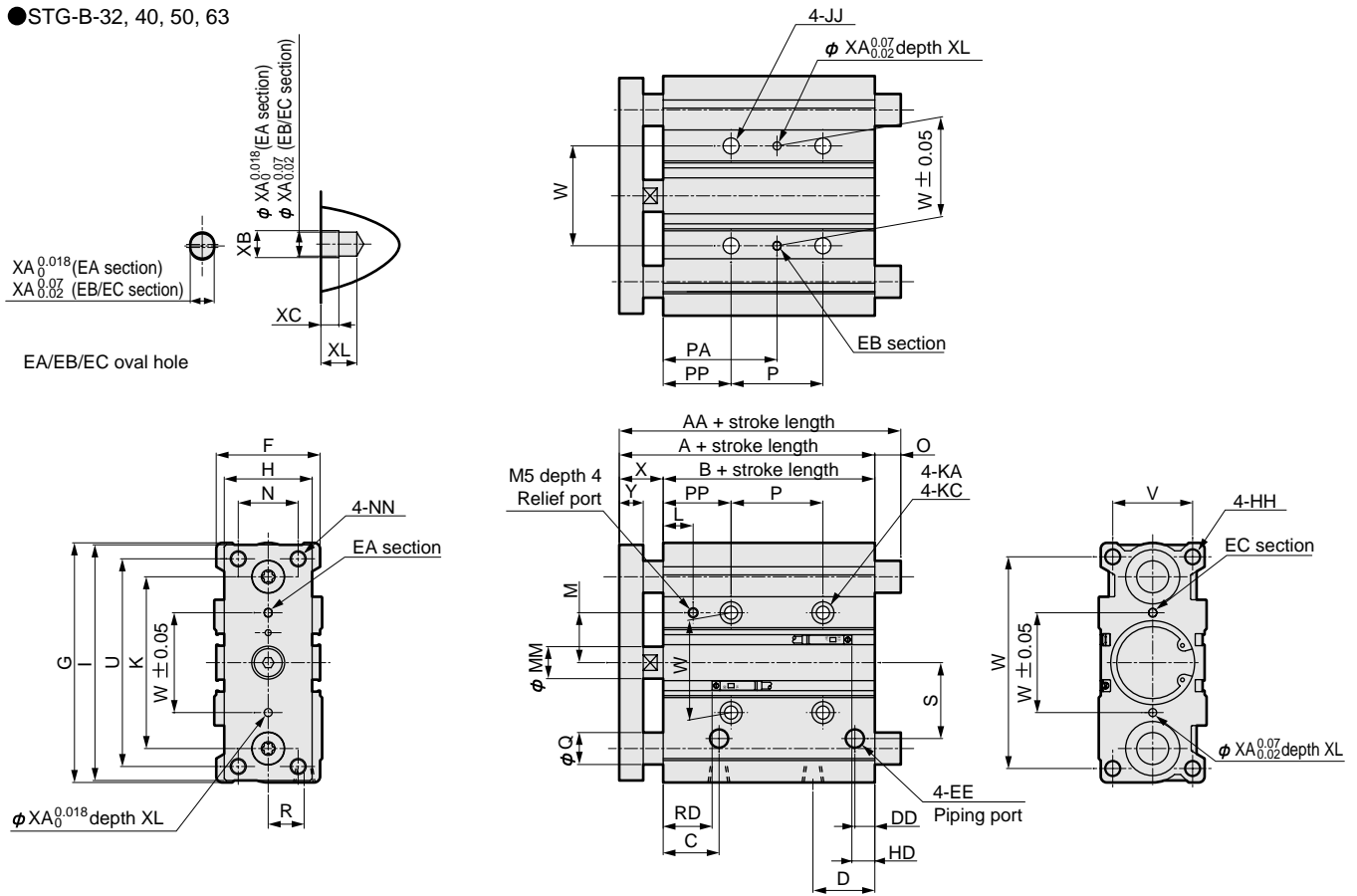
Note 1: The total length is the same as the next longer standard stroke length for custom stroke length.
 Note 2: Refer to Page 65 for HD, RD, dimensions of projecting section of 2 color indicator type and preventive maintenance output switch.

Symbol	AA				Q	O				
Bore size (mm)	30st or less		30st to 100st		100st over					
φ12	55		55		85		6	0	0	30
φ16	59		65		95		8	0	6	36

Symbol	AA				Q	O							
Bore size (mm)	30st or less		30st to 100st		100st to 200st		200st over						
φ20	66		78		100		122		10	0	12	34	56
φ25	66.5		84		103		122		13	0	17.5	36.5	55.5

Dimensions (φ32, φ40, φ50, φ63)

●STG-B-32, 40, 50, 63



Symbol	Standard stroke length (mm)											
Bore size (mm)	A	B	C	D	DD	EE	F	G	H	HH	I	JJ
φ32	71.5	49.5	24.5	30.5	9	Rc1/8	48	112	44	M8 depth 20	110	M8 depth 16
φ40	78	56	26	31	10	Rc1/8	54	120	44	M8 depth 20	118	M8 depth 16
φ50	83	55	25	35	11	Rc1/4	64	148	60	M10 depth 22	146	M10 depth 20
φ63	88	60	27.5	35	15	Rc1/4	78	162	70	M10 depth 22	158	M10 depth 20

Symbol	P												
Bore size (mm)	K	KA	KC	MM	N	NN	25st or less	25st to 100st	100st to 200st	200st to 300st	300st over	L	M
φ32	78	6.3 penetrating	11 spot face depth 7.5	16	30	M8 penetrating	24	48	124	200	300	14.5	21
φ40	86	6.3 penetrating	11 spot face depth 7.5	16	30	M8 penetrating	24	48	124	200	300	15	25
φ50	110	8.6 penetrating	14 spot face depth 9	20	40	M10 penetrating	24	48	124	200	300	14	33
φ63	124	8.6 penetrating	14 spot face depth 9	20	50	M10 penetrating	28	52	128	200	300	14.5	40

Symbol	PA													
Bore size (mm)	25st or less	25st to 100st	100st to 200st	200st to 300st	300st over	PP	R	S	U	V	W	WW	X	Y
φ32	45	57	95	133	183	33	15	34	96	34	42	98	22	12
φ40	46	58	96	134	184	34	18	38	104	40	50	106	22	12
φ50	47	59	97	135	185	35	21.5	47	130	46	66	130	28	16
φ63	49	61	99	135	185	35	28	55	130	58	80	142	28	16

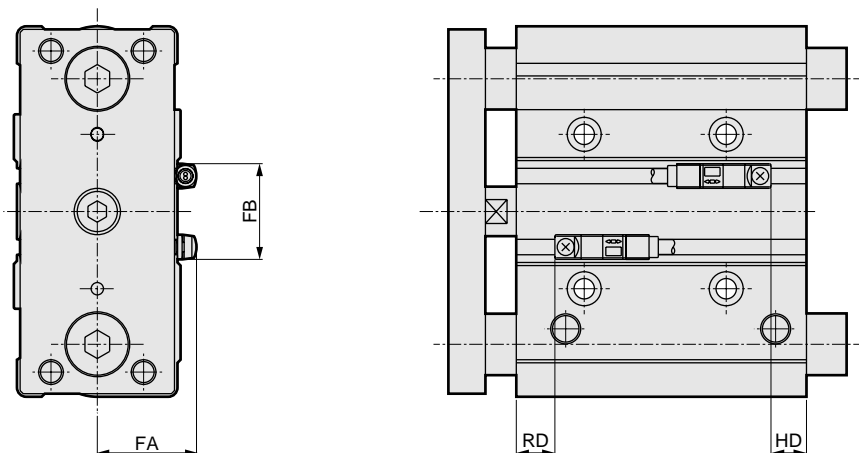
Symbol	AA					
Bore size (mm)	RD	HD	XA	XB	XC	XL
φ32	22	8.5	4	4.5	3	6
φ40	25	12	4	4.5	3	6
φ50	24.5	11.5	5	6	4	8
φ63	25	16	5	6	4	8

Symbol	AA				Q	O			
Bore size (mm)	50st or less	50st to 100st	100st to 200st	200st over		50st or less	50st to 100st	100st to 200st	200st over
φ32	79	98	118	140	16	7.5	26.5	46.5	68.5
φ40	79	98	118	140	16	1	20	40	62
φ50	91	114	134	161	20	8	31	51	78
φ63	91	114	134	161	20	3	26	46	73

Note 1: The total length is the same as the next longer standard stroke length for custom stroke length.
 Note 2: Refer to Page 65 for HD, RD and dimensions of projecting section of 2 color indicator type and preventive maintenance output switch.

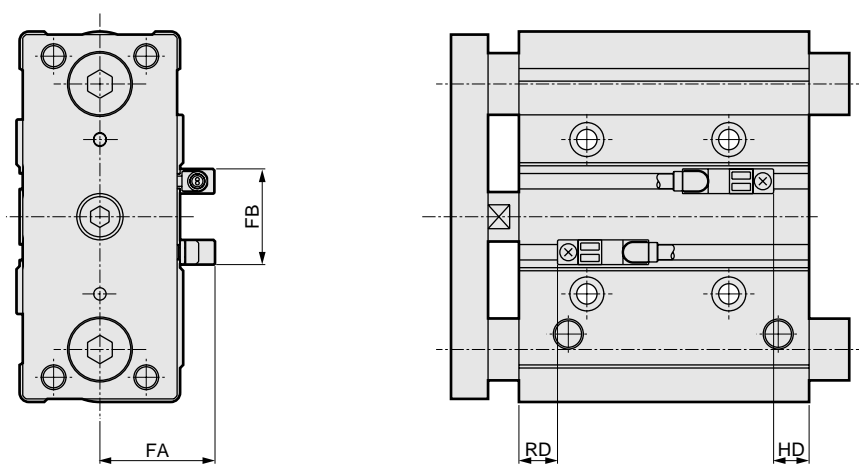
STG series common (2 color indicator type, preventive maintenance output and switch) dimensions

●STG-**-**-T²₃YH/V



Symbol Bore size (mm)	FA	FB	RD					HD			
			STG	STG-P7*	STG-C	STG-Q-R Rod side position locking	STG-Q-H Head side position locking	STG STG-P7*	STG-C	STG-Q-R Rod side position locking	STG-Q-H Head side position locking
φ 12	19	16	4	17	19.5	-	-	4	17	-	-
φ 16	21	16	3	16	22.5	-	-	9	18.5	-	-
φ 20	24	17	8.5	21.5	24.5	34	8.5	7.5	16.5	7.5	36
φ 25	27	24	9	22	22.5	34.5	9	7.5	19	7.5	34
φ 32	30	24	9	21	26.5	34.5	9	8	21.5	8	34.5
φ 40	33	31	12	24	29	39.5	12	11	19.5	11	36.5
φ 50	38	32	12.5	23.5	30	39	12.5	10.5	23	10.5	37
φ 63	45	32	13	24	-	39	13	15	-	15	39
φ 80	51	56	17	-	-	-	-	18.5	-	-	-

●STG-**-**-T²₃YFH/V, T²₃YMH/V



Symbol Bore size (mm)	FA	FB	RD					HD			
			STG	STG-P7*	STG-C	STG-Q-R Rod side position locking	STG-Q-H Head side position locking	STG STG-P7*	STG-C	STG-Q-R Rod side position locking	STG-Q-H Head side position locking
φ 12	24	16	4	17	19.5	-	-	4	17	-	-
φ 16	26	16	3	16	22.5	-	-	9	18.5	-	-
φ 20	29	17	8.5	21.5	24.5	34	8.5	7.5	16.5	7.5	36
φ 25	32	24	9	22	22.5	34.5	9	7.5	19	7.5	34
φ 32	35	24	9	21	26.5	34.5	9	8	21.5	8	34.5
φ 40	38	31	12	24	29	39.5	12	11	19.5	11	36.5
φ 50	43	32	12.5	23.5	30	39	12.5	10.5	23	10.5	37
φ 63	50	32	13	24	-	39	13	15	-	15	39
φ 80	56	56	17	-	-	-	-	18.5	-	-	-

MEMO

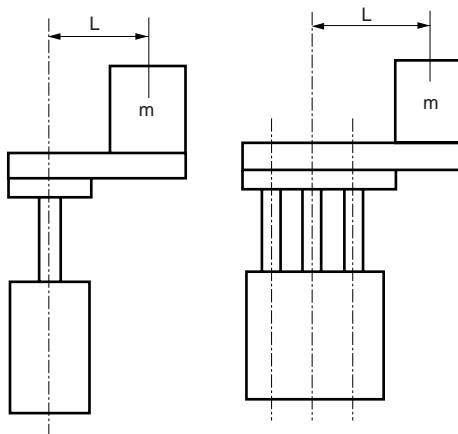
Selection guide

Vertical installation

- Select bore size so that load ratio for theoretical thrust in load total mass is less than the table below.

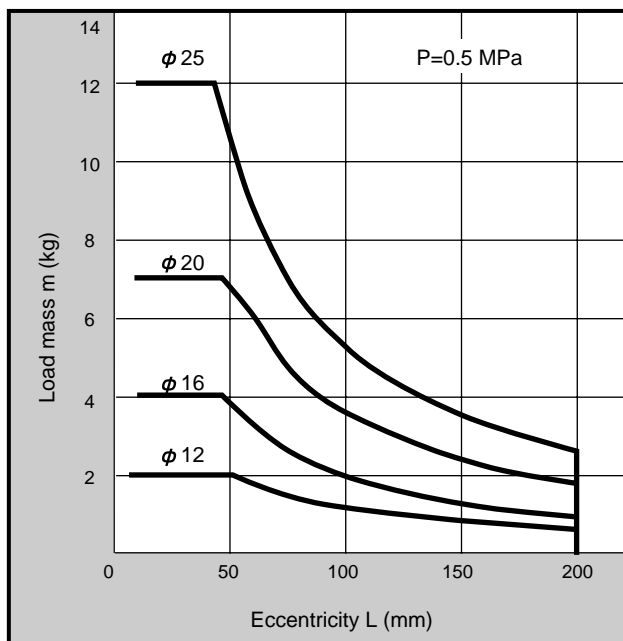
Bore size	Load factor for theoretical thrust
12, 16	40% or less
20, 25	50% or less
32 to 80	60% or less

Note 1: When designing for the copper and PTFE free with only M : metal bush bearing, use the allowable values below X 0.7.



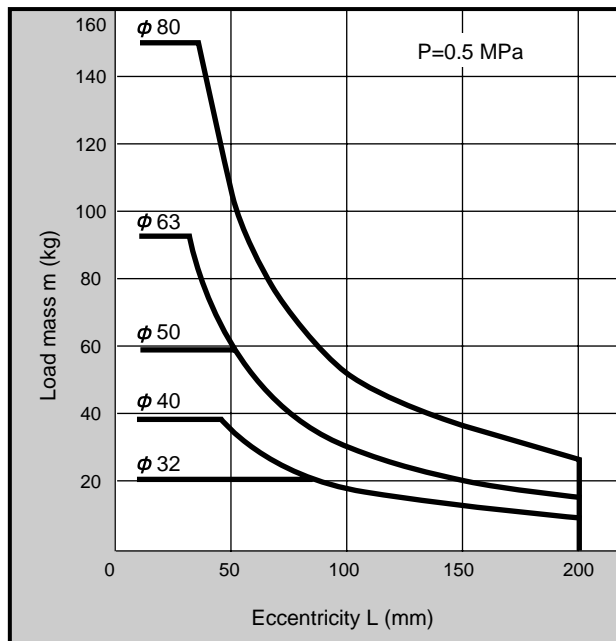
● STG-M-12 to 25

· 50 mm stroke or less



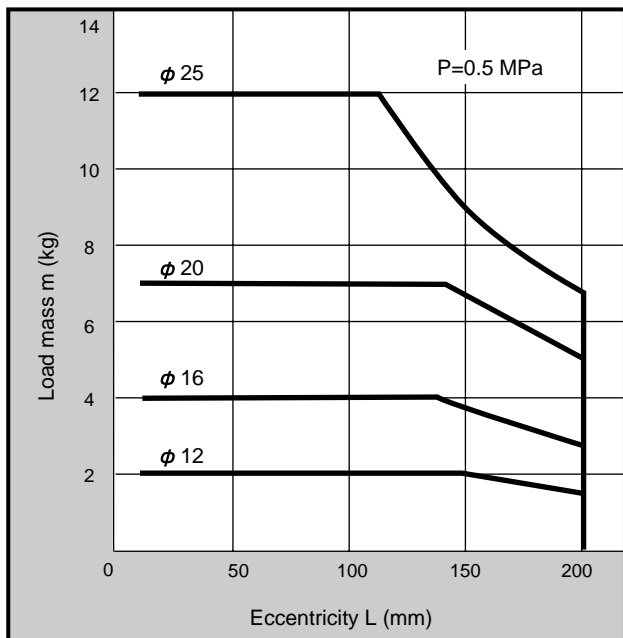
● STG-M-32 to 80

· 50 mm stroke or less



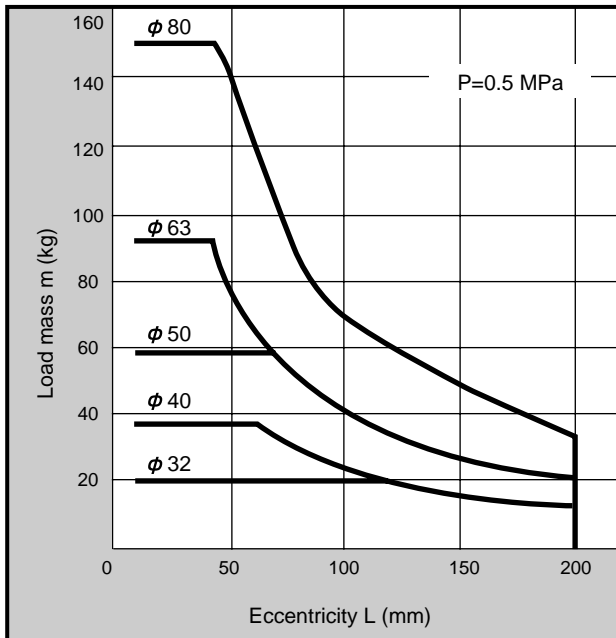
● STG-M-12 to 25

· 50 mm stroke over

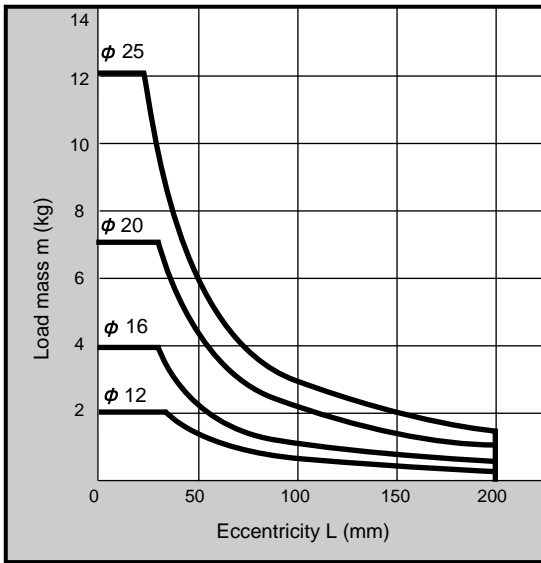


● STG-M-32 to 80

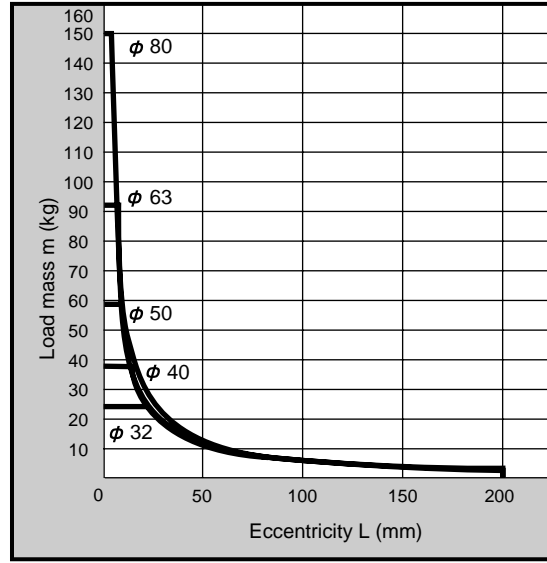
· 50 mm stroke over



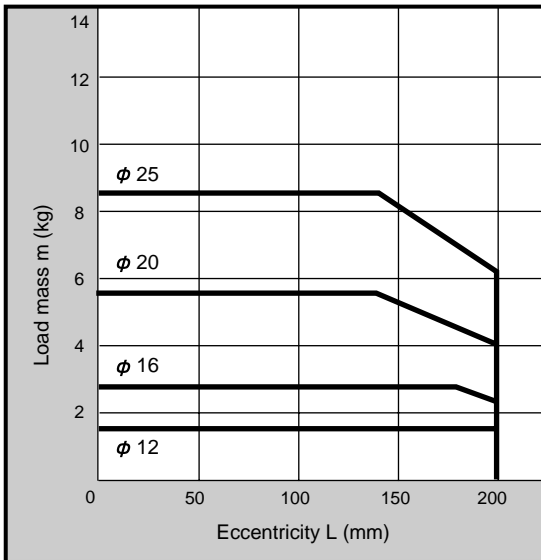
● STG-B-12 to 25
· 30 mm stroke or less



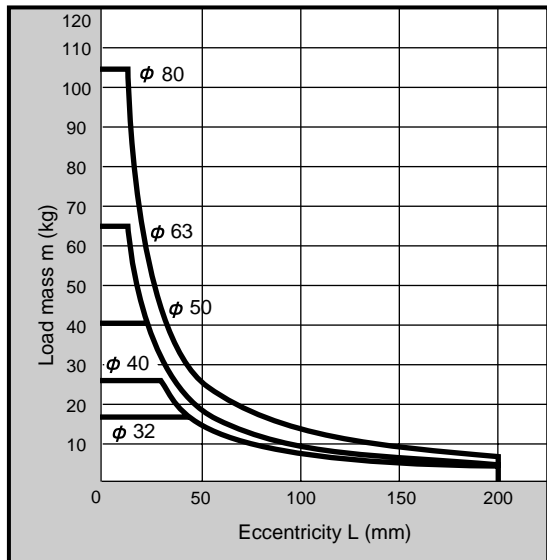
● STG-B-32 to 63
· 50 mm stroke or less



● STG-B-12 to 25
· 30 to 100 mm stroke

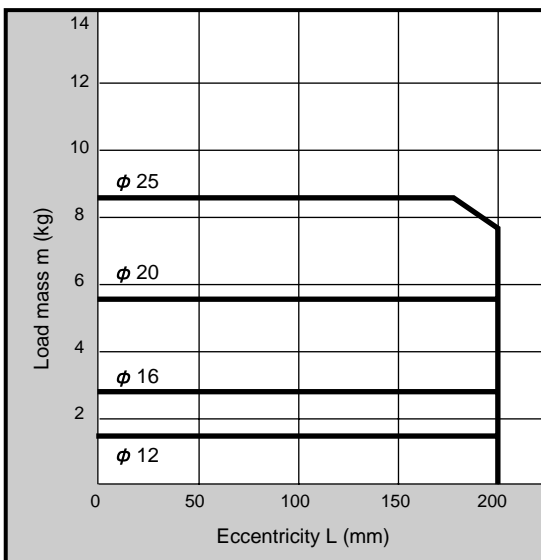


● STG-B-32 to 63
· 50 to 100 mm stroke

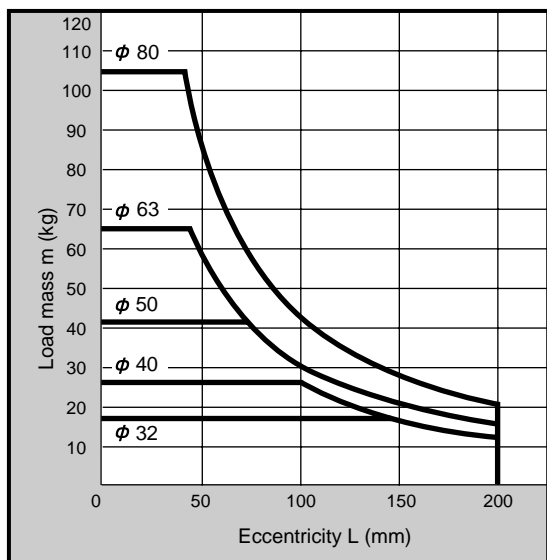


● STG-B-80
· 50 to 200 mm stroke

● STG-B-12 to 25
· 100 mm stroke over



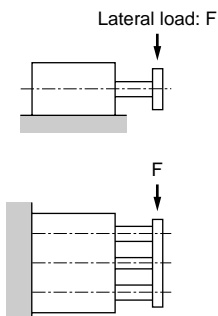
● STG-B-32 to 63
· 100 mm stroke over



● STG-B-80
· 200 mm stroke over

Selection guide

Allowable lateral load

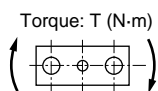


Unit: N

Bore size (mm)	Model no.	Type of bearing	Stroke length (mm)				
			10	20	25	30	
φ 12	STG-M	Metal bush bearing	29	24		20	
	STG-B	Ball bearing	38	27		22	
φ 16	STG-M	Metal bush bearing	51	42		36	
	STG-B	Ball bearing	49	35		29	
φ 20	STG-M	Metal bush bearing		67		58	
	STG-B	Ball bearing		52		42	
φ 25	STG-M	Metal bush bearing		125		110	
	STG-B	Ball bearing		81		66	
φ 32	STG-M	Metal bush bearing			223		
	STG-B	Ball bearing			171		
φ 40	STG-M	Metal bush bearing			223		
	STG-B	Ball bearing			171		
φ 50	STG-M	Metal bush bearing			348		
	STG-B	Ball bearing			181		
φ 63	STG-M	Metal bush bearing			348		
	STG-B	Ball bearing			181		
φ 80	STG-M	Metal bush bearing			385		
	STG-B	Ball bearing			129		

Note 1: When designing for the copper and PTFE free with only M: metal bush bearing, use the allowable values above X 0.7.

Allowable torque

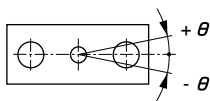


Unit: N

Bore size (mm)	Model no.	Type of bearing	Stroke length (mm)				
			10	20	25	30	
φ 12	STG-M	Metal bush bearing	0.30	0.25		0.21	
	STG-B	Ball bearing	0.39	0.28		0.23	
φ 16	STG-M	Metal bush bearing	0.59	0.49		0.42	
	STG-B	Ball bearing	0.56	0.41		0.33	
φ 20	STG-M	Metal bush bearing		0.90		0.78	
	STG-B	Ball bearing		0.70		0.57	
φ 25	STG-M	Metal bush bearing		2.00		1.75	
	STG-B	Ball bearing		1.29		1.06	
φ 32	STG-M	Metal bush bearing			4.35		
	STG-B	Ball bearing			3.33		
φ 40	STG-M	Metal bush bearing			4.80		
	STG-B	Ball bearing			3.68		
φ 50	STG-M	Metal bush bearing			9.56		
	STG-B	Ball bearing			4.99		
φ 63	STG-M	Metal bush bearing			10.78		
	STG-B	Ball bearing			5.63		
φ 80	STG-M	Metal bush bearing			15.01		
	STG-B	Ball bearing			5.02		

Revolvable angle tolerance

(Reference value)



Unit: N

Stroke length (mm)												
	40	50	75	100	125	150	175	200	250	300	350	400
	18	16	20	17	15	13	12	10	9			
	34	29	21	16	12	11	9	8	6			
	32	28	36	31	27	24	21	19	16			
	50	43	31	25	20	17	15	13	10			
	51	46	60	51	45	40	36	33	28	24	21	19
	76	65	49	38	60	51	44	39	32	27	23	20
	98	88	112	97	85	76	69	63	53	46	41	37
	108	94	70	56	81	69	60	53	42	36	30	27
		180	179	156	138	124	112	103	88	77	68	61
		120	190	159	123	106	93	83	66	56	48	42
		180	179	156	138	124	112	103	88	77	68	61
		120	190	159	123	106	93	83	66	56	48	42
		286	292	257	230	208	190	174	150	132	118	106
		129	215	181	139	121	106	95	78	67	58	50
		286	292	257	230	208	190	174	150	132	118	106
		129	215	181	139	121	106	95	78	67	58	50
		326	345	309	280	256	235	218	190	169	151	137
		183	263	226	199	178	162	148	83	71	62	54

Unit: N·m

Stroke length (mm)												
	40	50	75	100	125	150	175	200	250	300	350	400
	0.18	0.16	0.21	0.18	0.15	0.13	0.12	0.11	0.09			
	0.35	0.30	0.21	0.17	0.13	0.11	0.09	0.08	0.07			
	0.36	0.32	0.42	0.35	0.31	0.27	0.24	0.22	0.18			
	0.58	0.5	0.36	0.28	0.23	0.19	0.17	0.15	0.12			
	0.69	0.62	0.80	0.69	0.61	0.54	0.49	0.44	0.37	0.32	0.29	0.26
	1.02	0.88	0.66	0.52	0.80	0.69	0.60	0.53	0.43	0.36	0.31	0.27
	1.56	1.41	1.80	1.55	1.37	1.22	1.10	1.00	0.85	0.74	0.66	0.59
	1.74	1.50	1.13	0.90	1.29	1.11	0.96	0.85	0.68	0.57	0.49	0.42
		3.50	3.48	3.04	2.69	2.42	2.19	2.01	1.72	1.50	1.33	1.20
		2.34	3.70	3.10	2.40	2.07	1.82	1.61	1.29	1.09	0.94	0.82
		3.86	3.84	3.35	2.97	2.66	2.42	2.21	1.89	1.65	1.47	1.32
		2.58	4.08	3.42	2.65	2.28	2.00	1.78	1.43	1.20	1.03	0.90
		7.86	8.02	7.07	6.32	5.71	5.21	4.79	4.13	3.63	3.23	2.92
		3.56	5.90	4.99	3.83	3.32	2.93	2.61	2.16	1.83	1.58	1.39
		8.86	9.04	7.97	7.12	6.44	5.88	5.41	4.66	4.09	3.65	3.29
		4.01	6.66	5.62	4.32	3.75	3.30	2.94	2.43	2.06	1.78	1.57
		12.70	13.46	12.05	10.92	9.98	9.18	8.51	7.42	6.58	5.90	5.36
		7.13	10.25	8.81	7.77	6.96	6.30	5.76	3.23	2.76	2.40	2.12

Descriptions Bore size (mm)	Revolvable angle tolerance θ (degree)	
	Metal bush bearing	Ball bearing
$\phi 12$	± 0.08	± 0.06
$\phi 16$		
$\phi 20$		
$\phi 25$	± 0.07	± 0.05
$\phi 32$		
$\phi 40$		
$\phi 50$	± 0.06	± 0.04
$\phi 63$		
$\phi 80$		
	± 0.05	± 0.03

(Default for PULL) Note: Excluding deflection of guide rod

Selection guide

Movable part weight table

STG-M movable part weight table

Unit: kg

Bore size (mm)	Stroke length (mm)															
	10	20	25	30	40	50	75	100	125	150	175	200	250	300	350	400
φ12	0.12	0.13		0.14	0.15	0.16	0.20	0.23	0.27	0.30	0.32	0.35	0.40			
φ16	0.16	0.18		0.19	0.21	0.22	0.29	0.33	0.41	0.45	0.49	0.53	0.62			
φ20		0.33		0.35	0.38	0.40	0.52	0.58	0.64	0.70	0.76	0.82	1.00	1.13	1.24	1.35
φ25		0.52		0.56	0.60	0.64	0.84	0.95	1.05	1.15	1.25	1.34	1.66	1.87	2.06	2.26
φ32			1.07			1.23	1.42	1.58	1.74	1.90	2.07	2.23	2.73	3.06	3.40	3.71
φ40			1.14			1.30	1.49	1.65	1.81	1.98	2.14	2.30	2.82	3.13	3.47	3.78
φ50			2.15			2.40	2.75	3.00	3.26	3.51	3.76	4.02	4.85	5.37	5.88	6.38
φ63			2.50			2.75	3.09	3.35	3.60	3.86	4.11	4.36	5.19	5.70	6.21	6.72
φ80			3.76			3.99	4.38	4.61	4.84	5.08	5.31	5.54	6.29	6.76	7.23	7.69

STG-B movable part weight table

Unit: kg

Bore size (mm)	Stroke length (mm)															
	10	20	25	30	40	50	75	100	125	150	175	200	250	300	350	400
φ12	0.11	0.11		0.12	0.13	0.14	0.16	0.17	0.20	0.22	0.23	0.25	0.29			
φ16	0.15	0.16		0.17	0.20	0.21	0.24	0.27	0.32	0.35	0.38	0.41	0.47			
φ20		0.31		0.33	0.37	0.39	0.44	0.48	0.56	0.60	0.65	0.70	0.80	0.90	1.00	1.09
φ25		0.49		0.52	0.58	0.61	0.69	0.76	0.88	0.95	1.02	1.10	1.28	1.44	1.58	1.72
φ32			0.82			0.94	1.11	1.23	1.40	1.53	1.65	1.77	2.07	2.30	2.54	2.78
φ40			0.89			1.01	1.18	1.30	1.48	1.60	1.72	1.83	2.14	2.38	2.61	2.84
φ50			1.77			1.95	2.24	2.45	2.71	1.89	3.08	3.27	3.76	4.13	4.5	4.87
φ63			2.11			2.30	2.59	2.77	3.05	3.25	3.43	3.61	4.11	4.48	4.84	5.21
φ80			3.54			3.81	4.12	4.31	4.50	4.69	4.88	5.07	5.58	5.97	6.35	6.73

Calculation of allowable energy absorption

Calculate actual load kinetic energy to check if it can be absorbed with the cylinder allowable energy absorption or not.

- The values in the graph below are used for the allowable energy absorption (E) of the cylinder.
- Expression of load kinetic energy

$$E = \frac{1}{2} \times (W1+W2) \times V^2$$

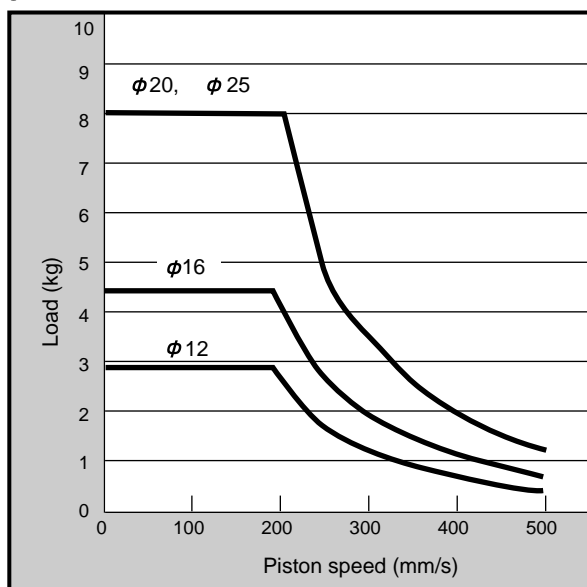
W1: load (kg) W2: cylinder movable part mass (kg)

V : cylinder speed (m/s)

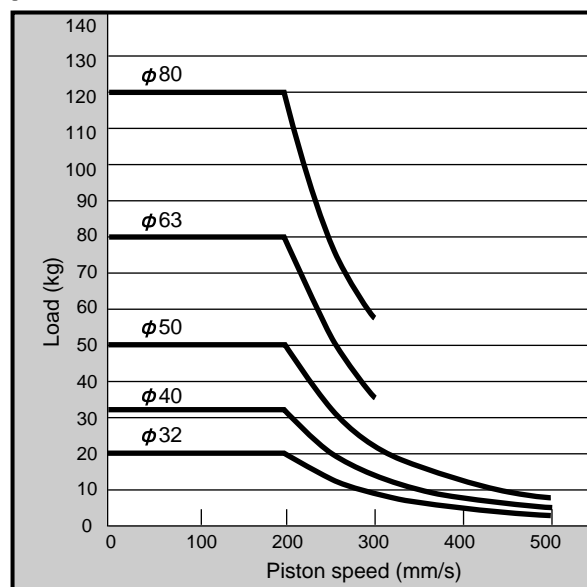
Allowable energy absorption

Use the cylinder in the lower left range of the curve. Install an external damper for use in the upper right range.

● STG-12 to 25



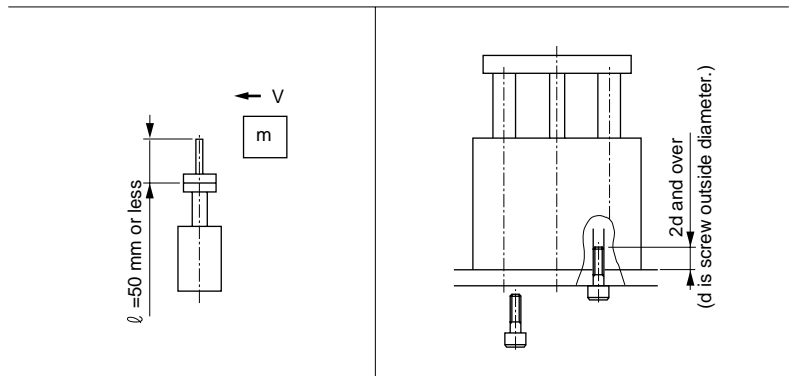
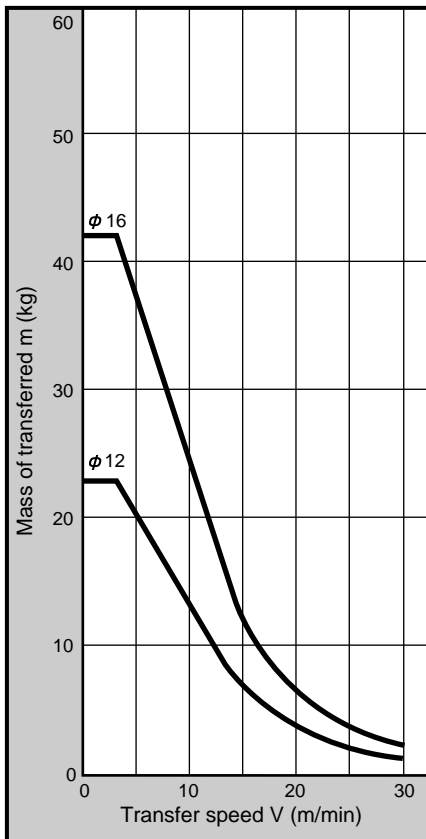
● STG-32 to 63



Usage range when used as stopper

Shock load

STG-M-12, 16 (metal bush bearing)



Precautions for use up

Note 1: When used as a stopper, select a model of 50 mm stroke or less (STG-M) .

(30 mm stroke or less for $\phi 12$ to $\phi 16$)

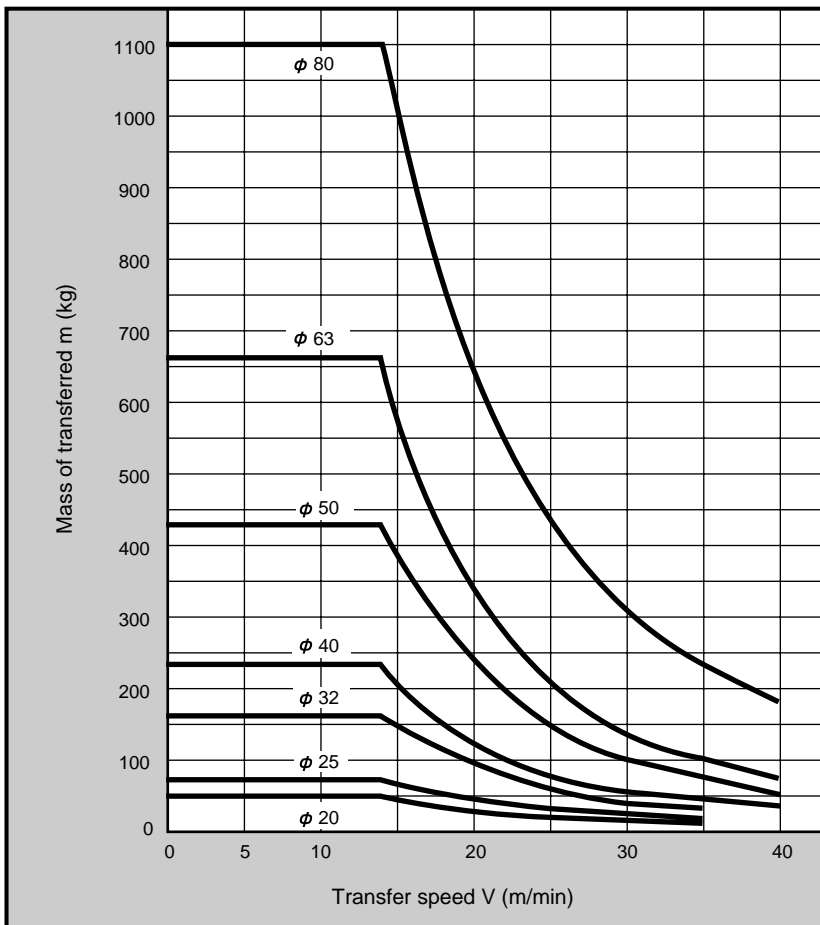
Note 2: The stopper section must be $l=50$ mm long or less.

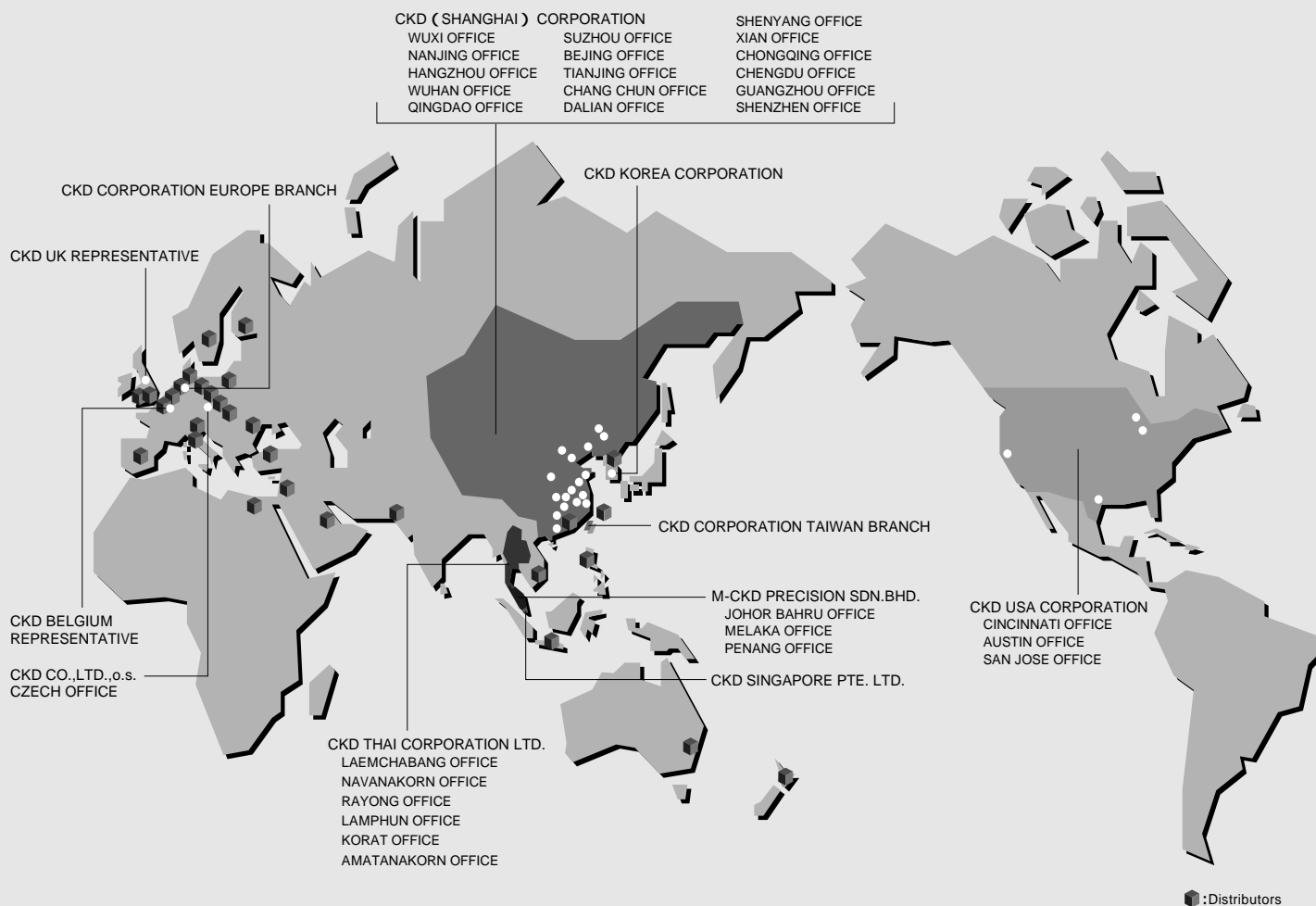
Note 3: When fixing the cylinder body, the bolt must be screwed in $2d$ deeper, and consider countermeasures such as loose prevention (adhesive and spring washer, etc) .
($\phi 80$ indicates screw depth $1d$. d indicates screw diameter.)

Note 4: STG-B (ball bearing) can not be used as a stopper.

Shock load

STG-M-20 to 63 (metal bush bearing)





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