Guided

STG, STG-K

Guided Cylinder

ø12, ø16, ø20, ø25, 32,
ø40, ø50, ø63, 80, ø100

CONTENTS

Guided cylinder

STG Series

Space-saving and lightweight with integrated guide. Supports high loads with High precision and High rigidity

No special tools required

Piston rod mounting bolts can be included and detached with a hexagon wrench. No special tools required for maintenance.

Improved load bearing performance

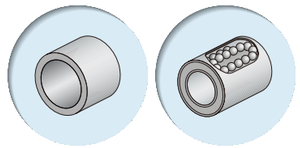
Improved metal bearing and bearing structure, resulting in improved load bearing performance compared to conventional products.

Lightweight, Resource saving

Reviewed and optimized the aluminum body shape of the cylinder body. Achieved lighter weight and resource saving compared to conventional products.

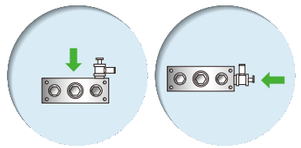
Selectable from 2 bearing types, 2 piping directions and 3 mounting directions

Piping direction



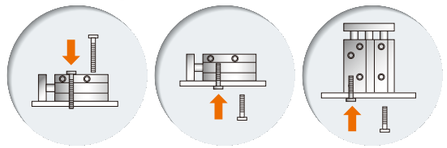
❶ Metal bush bearing ❷ Ball bearing

Mounting direction



❶ Front piping ❷ Side piping

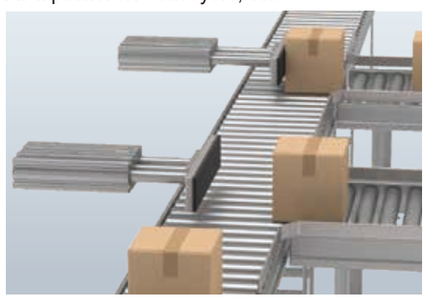
Mounting direction



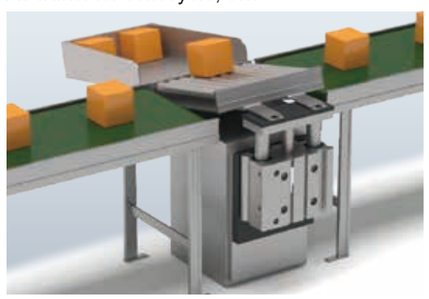
❶ Front mounting ❷ Side mounting ❸ Bottom mounting

Application Example

As a pusher for conveyors, etc.



As a lifter for conveyors, etc.



For stronger impacts!

Heavy-duty guide rod powerfully absorbs impact!

Guided cylinder
Heavy duty guide rod

STG-K Series

Adopts a larger diameter guide rod than the standard STG series, and the fastening method of the guide rod and end plate is also stronger Significantly improved load resistance and impact resistance

STG-K ø32
Guide rod diameter 25mm
STG-M ø50 or equiv.

STG-K ø50
Guide rod diameter 30mm
STG-M ø80 or equiv.

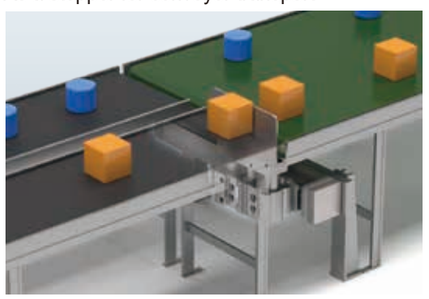
Achieves 2 ranks higher impact resistance performance while maintaining the same bore size.

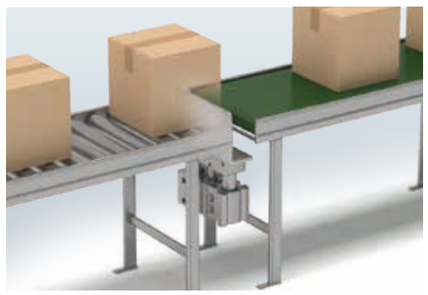
STG series product system

Model variations		Bearing		Bore size (ø)										Max. stroke
		Metal bush M	Ball B	12	16	20	25	32	40	50	63	80	100	MAX
Single rod	STG-MB	●	●	●	●	●	●	●	●	●	●	●	●	400
Rubber-air cushioned	STG-MB-□C	●	●			●	●	●	●	●	●			400
Air cushioned	STG-MBC	●	●		●	●	●	●	●	●	●			400
Position locking	STG-MBQ	●	●			●	●	●	●	●	●			400
Rubber scraper	STG-MBG	●	●			●	●	●	●	●	●			400
Coil scraper	STG-MBG1	●	●			●	●	●	●	●	●			400
Coolant proof	STG-MG2, MG3	●				●	●	●	●	●	●			400
Anti-spatter adherence	STG-MBG4	●	●						●	●	●			400
Environment-resistant scraper	STG-MG5	●				●	●	●	●	●	●	●	●	400
Heavy duty guide rod	STG-K	●						●		●				200

Application Example

As a stopper for conveyor transport





Guided Cylinder
STG Series

●: Standard, ◎: Option, ○: Custom Products, : Not manufacturable

Variation	Model No. Circuit Diagram Symbol	Bore Size (mm)	Standard Stroke (mm) 10	20	25	30	40	50	75	100	125	150	175	200	250	300	350	400	Min. Stroke (mm) *1	Max. Stroke (mm)	Intermediate stroke (per mm) *2	Bearing type: Plain bearing M	Bearing type: Rolling bearing B	Switch	Page
Double Acting/ Single Rod Type	STG-$^{M}_{B}$	ø12, ø16	●	●		●	●	●	●	●	●	●	●	●	●				5 (10)	250	5	●	●	◎	370
		ø20, ø25		●		●	●	●	●	●	●	●	●	●	●	●	●	●		400		●	●		
		ø32, ø40, ø50, ø63			●			●	●	●	●	●	●	●	●	●	●	●		400		●	●		
		ø80, ø100			●			●	●	●	●	●	●	●	●	●	●	●		400		●	●		
Double Acting/With Rubber Air Cushion	STG-$^{M}_{B}$-□C	ø32, ø40, ø50			●			●	●	●	●	●	●	●	●	●	●	●	5 (10)	400	5	●	●	◎	384
		ø63			●			●	●	●	●	●	●	●	●	●	●	●	10			●	●		
Double Acting/ With Air Cushion	STG-$^{M}_{B}$-□C	ø16			●			●	●	●	●	●	●	●	●				15 *3	250	1 (Custom order)	●	●	◎	392
		ø20, ø25			●			●	●	●	●	●	●	●	●	●	●	●		400		●	●		
		ø32, ø40, ø50, ø63			●			●	●	●	●	●	●	●	●	●	●	●		400		●	●		
Double Acting, Drop Prevention Type	STG-$^{M}_{B}$Q	ø20, ø25 ø32, ø40, ø50, ø63			●			●	●	●	●	●	●	●	●	●	●	●	5 (15) *4	400	5	●	●	◎	402
Double acting, Heavy-duty scraper type Coil scraper type	STG-$^{M}_{B}$G STG-$^{M}_{B}$G1	ø20, ø25		●		●	●	●	●	●	●	●	●	●	●	●	●	●	5 (10)	400	5	●	●	◎	410
		ø32, ø40, ø50, ø63			●			●	●	●	●	●	●	●	●	●	●	●		400		●	●		
Double Acting, Coolant Proof Type	STG-MG2 STG-MG3	ø20, ø25		●		●	●	●	●	●	●	●	●	●	●	●	●	●	5 (10)	400	5	●		◎	418
		ø32, ø40, ø50, ø63			●			●	●	●	●	●	●	●	●	●	●	●		400		●			
Double Acting, Spatter Adhesion Prevention Type	STG-$^{M}_{B}$G4	ø40, ø50, ø63			●			●	●	●	●	●	●	●	●	●	●	●	5 (10)	400	5	●	●	◎	424
Double acting, Environment resistant scraper type	STG-MG5	ø20, ø25		○		○	○	○	○	○	○	○	○	○	○	○	○	○	5 (10)	400	5	○		○	430
		ø32, ø40, ø50, ø63, ø80, ø100			○			○	○	○	○	○	○	○	○	○	○	○							
Double acting, Guide rod type	STG-K	ø32, ø50			●			●	●	●	●	●	●	●					5 (10)	200	5			◎	440

*1: The value in ( ) for the minimum stroke indicates the case of a 2-color indicator type switch for AC magnetic fields.
*2: Intermediate strokes are handled by attaching a spacer to a standard stroke cylinder. Please consult us separately for dedicated body support.
*3: Cushion effect cannot be obtained below the minimum stroke with air cushion, so select the basic type.
*4: This is for L-shaped lead wires. Straight type lead wire will be 20 (30).

STG-M (Plain bearing) Series

Combinability table of variations and option items (Plain bearing)

● Mark: Standard
◎ Mark: Option
○ Mark: Custom Products
△ Mark: Manufacturable depending on conditions (Consultation required)
× Mark: Not manufacturable

Category		Code	Double Acting Basic Type M	Drop prevention type Q	With Air Cushion C	Low Speed Type O	Heavy-Duty Scraper Type G	Coil Scraper Type G1	Coolant Proof Scraper Type (NBR) G2	Coolant Proof Scraper Type (FKM) G3	Sputter adhesion prevention type G4	Environment Resistant Scraper Type G5	Piping thread: NPT ø20 or more NN	Piping thread: G ø20 or more GN	Cushion: With Rubber Air Cushion C	Option: Corrosion resistant type *3 M
Variation	Double Acting Basic Type	M		●	●	○	●	●	●	●	●	○	○	○	●	△
	Drop prevention type	Q			*1	×	△	△	△	△	△	△	○	○	*1	△
	With Air Cushion	C				○	○	○	○	○	○	*4	○	○	×	△
	Low Speed Type	O					×	×	×	×	×	×	○	○	○	△
	Heavy-Duty Scraper Type	G						×	×	×	×	×	○	○	○	△
	Coil Scraper Type	G1							×	×	*2	×	○	○	○	△
	Coolant Proof Scraper Type (NBR)	G2								×	×	×	○	○	○	△
	Coolant Proof Scraper Type (FKM)	G3									×	×	○	○	×	△
	Sputter adhesion prevention type	G4										×	○	○	○	△
	Environment Resistant Scraper Type	G5											○	○	○	△
Piping thread	NPT (ø20 or more)	N												×	○	△
	G (ø20 or more)	G													○	△
Cushion	With Rubber Air Cushion	C														△
Option	Corrosion resistant type *3	M														

*1: Only the side opposite the fall prevention is supported. (Example) In the case of head side fall prevention, cushion can only be included to the rod side.
*2: G4 type has a built-in coil scraper.
*3: M: For corrosion resistant type, iron parts are mainly changed to stainless steel, but the bolt (part number 6) connecting the end plate and guide rod remains iron material for manufacturing reasons.
*4: ø25 or more can be manufactured.

[Model Number Notation Example]

STG - M C G - 50 NN - 50 - T0H - D

- STG: Model No.
- M C G: Variation (* Enter codes in order from left to right in the left table)
- 50: ❶ Bore size
- NN: ❷ Piping thread type
- 50: ❸ Stroke
- T0H: ❹ Switch Model No.
- D: ❺ Number of Switches

Model No. : Guided Cylinder
●Variation : Plain bearing, With air cushion, Heavy-duty scraper type
❶ Bore size : ø50mm
❷ Port thread : NPT thread
❸ Stroke : 50 mm
❹ Switch model No. : Solid State TOH Switch, Lead Wire 1 m
❺ Number of Switches : With 2 pcs.

STG-B (Rolling bearing) Series

Variation / Option combinability table

Combinability table of variations and option items (Rolling bearing)

● Mark: Standard
◎ Mark: Option
○ Mark: Custom Products
△ Mark: Manufacturable depending on conditions (Consultation required)
× Mark: Not manufacturable

Category		Code	Double Acting Basic Type B	Drop prevention type Q	With Air Cushion C	Low Speed Type O	Heavy-Duty Scraper Type G	Coil Scraper Type G1	Coolant Proof Scraper Type (NBR) G2	Coolant Proof Scraper Type (FKM) G3	Sputter adhesion prevention type G4	Piping thread: NPT (ø20 or more) N	Piping thread: G (ø20 or more) G	Cushion: With Rubber Air Cushion C	Option: Corrosion resistant type *2 M
Variation	Double Acting Basic Type	B		●	●	○	●	●	×	×	●	○	○	●	×
	Drop prevention type	Q			*1	×	△	△	×	×	△	○	○	*1	×
	With Air Cushion	C				○	○	○	×	×	○	○	○	x	×
	Low Speed Type	O					×	×	×	×	×	○	○	○	×
	Heavy-Duty Scraper Type	G						×	×	×	×	○	○	○	×
	Coil Scraper Type	G1							×	×	*3	○	○	○	×
	Coolant Proof Scraper Type (NBR)	G2								×	×	○	○	○	×
	Coolant Proof Scraper Type (FKM)	G3									×	○	○	×	×
	Sputter adhesion prevention type	G4										○	○	○	×
Piping thread	NPT (ø20 or more)	N											×	○	×
	G (ø20 or more)	G												○	×
Cushion	With Rubber Air Cushion	C													×
Option	Corrosion resistant type *2	M													

*1: Only the side opposite the fall prevention is supported. (Example) In the case of head side fall prevention, cushion can only be included to the rod side.
*2: For corrosion resistant type rolling bearings, bearings cannot be manufactured.
*3: G4 type has a built-in coil scraper.

[Model Number Notation Example]

STG - B C G2 - 50 GN - 50 - T2YLH - D

- STG: Model No.
- B C G2: Variation (* Enter codes in order from left to right in the left table)
- 50: ❶ Bore size
- GN: ❷ Piping thread type
- 50: ❸ Stroke
- T2YLH: ❹ Switch Model No.
- D: ❺ Number of Switches

Model No.
● Variation : Rolling bearing, With air cushion, Cutting oil resistant scraper type (NBR)
❶ Bore size : ø50mm
❷ Port thread : G thread
❸ Stroke : 50 mm
❹ Switch model No. : Solid State T2YLH Switch, Lead Wire 1 m
❺ Number of Switches : With 2 pcs.

Guided cylinder Double acting, Single rod type

STG-$^{M}_{B}$ Series

● Bore size: ø12, ø16, ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100

Circuit Diagram Symbol

RoHS

Model No. Notation Method

Without Switch
(Built-in magnet for switch)

STG - M - 32 [ ] - 25

Model No. ❶ ❷ ❸ ❹

With Switch
(Built-in magnet for switch)

STG - M - 32 [ ] - 25 - T2H - R

Model No. ❷ Bore size ❹ Stroke ❻ Number of Switches
❶ Bearing type ❸ Piping thread type ❺ Switch Model No.

❶ Bearing type

Code	Content
M	Plain bearing
B	Rolling bearing

❷ Bore Size (mm)

Code	Content
12	ø12
16	ø16
20	ø20
25	ø25
32	ø32
40	ø40
50	ø50
63	ø63
80	ø80
100	ø100

❸ Piping thread type

Code	Content
Blank	M5 (ø12 to ø16)
	Rc thread (ø20 to ø100)
NN	NPT thread (ø20 or more) Custom product
GN	G thread (ø20 or more) Custom product

❹ Stroke (mm)

Stroke (mm)		Applicable Bore Size									
		ø12	ø16	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Standard Stroke	10	●	●								
	20	●	●	●	●						
	25					●	●	●	●	●	●
	30	●	●	●	●						
	40	●	●	●	●						
	50	●	●	●	●	●	●	●	●	●	●
	75	●	●	●	●	●	●	●	●	●	●
	100	●	●	●	●	●	●	●	●	●	●
	125	●	●	●	●	●	●	●	●	●	●
	150	●	●	●	●	●	●	●	●	●	●
	175	●	●	●	●	●	●	●	●	●	●
	200	●	●	●	●	●	●	●	●	●	●
	250	●	●	●	●	●	●	●	●	●	●
	300			●	●	●	●	●	●	●	●
	350			●	●	●	●	●	●	●	●
	400			●	●	●	●	●	●	●	●
Intermediate stroke *1, *2		Every 5 mm									

*1: The overall length dimension is the same as the dimension of the longer standard stroke.
*2: A dedicated body with body dimensions matching the stroke is also available. Please consult us. (Custom order)

❺ Switch Model No.

For switch details, please refer to P. 753.
Switches are included to the product and shipped.

Contact	Indicator LED Special Function	Wiring (Output)	Load Voltage (V) AC	Load Voltage (V) DC	Load Current (mA) AC	Load Current (mA) DC	Lead Wire *1 Straight	Lead Wire *1 L-shape	
Solid State	1-Color	2-wire	85 to 265	-	5 to 100	-	T1H□	T1V□	
			-	10 to 30	-	5 to 20 *2	T2H□	T2V□	
		3-wire (NPN)	-	30 or less	-	100 or less	T3H□	T3V□	
		3-wire (PNP)	-		-		T3PH□	T3PV□	
	2-Color	2-wire	-	24 ± 10%	-	5 to 20	T2WH□	T2WV□	
		3-wire (NPN)	-	30 or less	-	50 or less	T3WH□	T3WV□	
	2-Color Improved Water Resistance	2-wire	-	24 ± 10%	-	5 to 20	T2WLH□	T2WLV□	*3
	2-Color for AC Magnetic Field		-	24 ± 10%	-		T2YD□	–	
			-		-		T2YDT□	–	
	1-Color Off-Delay Type		-	10 to 30	-	5 to 20 *2	T2JH□	T2JV□	
	1-Color Flexible Lead Wire Type		-	10 to 30	-		T2HR3	T2VR3	
Reed	1-Color	2-wire	110	12/24	7 to 20	5 to 50	T0H□	T0V□	
	No Indicator LED		110	5/12/24	20 or less	50 or less	T5H□	T5V□	
	1-Color		110/220	12/24	7 to 20 / 7 to 10	5 to 50	T8H□	T8V□	*4

*1: For "□" in the switch model number, enter the code selected from the "*Lead wire length, connector specification" table.
*2: The maximum load current value above, 20 mA, is at 25°C. If the switch operating ambient temperature is higher than 25°C, it will be lower than 20 mA. (At 60°C, it will be 5 to 10 mA.)
*3: This does not guarantee the water resistance of the cylinder. When using in a water-resistant environment, use of an improved water resistance cylinder is recommended.
*4: STG-12, 16 cannot be equipped with T8H/V.
*5: Switches other than the model numbers listed above are also available. (Custom Product) For details, see P. 753.

*** Lead wire length, connector specification**

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)
*6 W	M8 Connector, 1PIN (+), 4PIN (−) Lead Wire 0.3 m

*6: Only T2WLH and T2WLV can be selected.

Example) Lead wire length
1 m TOH
3 m TOH 3
5 m TOH 5

❻ Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs
T	With 3 pcs

Switch Single Unit Model No. Notation Method

SW - T0V

❺ Switch Model No.

*Please consult us separately if using environmentally compatible T-type switches.

About Custom Product Specifications

For details, see P. 466.

Code	Content
-0	Port symmetrical type

Model No. Example)
STG-$^{M}_{B}$-·····-O

For combinations of variations and options, please refer to P. 368, 369.

Clean Specification (Catalog No. CB-033SA)

● Dust prevention structure usable in cleanrooms

STG-$^{M}_{B}$-·····-P7□

Rechargeable Battery Compatible Specification (Catalog No. CC-1226AA)

● Design compatible with rechargeable battery manufacturing process

STG-$^{M}_{B}$-·····-P4□

* Please contact us for details.

Food Manufacturing Process Compatible Specification (Catalog No. CC-1271AA)

● Uses food grade grease that can be used in food manufacturing processes

STG-$^{M}_{B}$-·····-FP1

High Durability Components HP Series (Catalog No. CC-1421AA)

● Long-life actuator that contributes to productivity improvement with stable operation

STG-$^{M}_{B}$-·····-HP□

Specifications

Item		STG-M/B								
Bore Size	mm	ø12	ø16	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Actuation method		Double Acting Type									
Operating Fluid		Compressed Air									
Max. Working Pressure	MPa	1.0									
Min. Operating Pressure	MPa	0.15				0.1					
Proof Pressure	MPa	1.6									
Ambient Temperature	°C	-10 to 60 (No freezing)									
Port Size		M5		Rc1/8				Rc1/4		Rc3/8	
Stroke tolerance	mm	+2.0 0									
Operating Piston Speed	mm/s	50 to 500							50 to 300		
Cushion		With Rubber Cushion									
Lubrication		Not required (When lubricating, use turbine oil Class 1 ISO VG32)									
Allowable Absorbed Energy	J	0.056	0.088	0.157	0.157	0.401	0.627	0.980	1.560	2.510	3.92

Stroke

Bore Size	Standard Stroke (mm)	Max. Stroke (mm)	Min. Stroke (mm)	Min. stroke with switch (mm)	
				T2WL	Other switches
ø12	10, 20, 30, 40, 50, 75, 100	250	5	15	5 (10) *2
ø16	125, 150, 175, 200, 250				
ø20	20, 30, 40, 50, 75, 100, 125	400		10	
ø25	150, 175, 200, 250, 300, 350, 400				
ø32	25, 50, 75, 100 125, 150, 175 200, 250, 300 350, 400				
ø40					
ø50					
ø63					
ø80					
ø100					

*1: Intermediate strokes can be manufactured every 5 mm. However, the overall length dimension is the same as the dimension of the longer standard stroke.
A dedicated body with body dimensions matching the stroke is also available. Please consult us.
*2: This is for the case with 1 or 2 switches. The value in ( ) is the minimum stroke for a 2-color indicator type switch for AC magnetic fields.

Cylinder Weight

● STG-M

Unit: kg

Item	Stroke																Switch weight
Bore Size (mm)	10	20	25	30	40	50	75	100	125	150	175	200	250	300	350	400	
ø12	0.23	0.27	-	0.30	0.34	0.38	0.49	0.57	0.68	0.77	0.86	0.95	1.13	-	-	-	Refer to the mass described in the switch specifications on P. 753
ø16	0.32	0.37	-	0.42	0.47	0.51	0.66	0.78	0.94	1.06	1.18	1.31	1.55	-	-	-	
ø20	-	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	
ø25	-	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	
ø32	-	-	1.64	-	-	2.01	2.54	2.94	3.34	3.73	4.12	4.51	5.49	6.27	7.07	7.85	
ø40	-	-	1.89	-	-	2.30	2.75	3.15	3.57	3.98	4.39	4.80	5.81	6.64	7.47	8.29	
ø50	-	-	3.26	-	-	3.88	4.59	5.21	5.83	6.45	7.07	7.69	9.25	10.48	11.74	13.00	
ø63	-	-	4.05	-	-	4.79	5.61	6.34	7.07	7.81	8.54	9.27	11.06	12.51	13.97	15.42	
ø80	-	-	7.02	-	-	8.12	9.51	10.60	11.70	12.80	13.90	15.00	17.80	19.92	22.10	24.30	
ø100	-	-	10.24	-	-	11.58	13.29	14.63	15.96	17.30	18.64	19.98	23.27	25.94	28.62	31.29	

● STG-B

Unit: kg

Item	Stroke																Switch weight
Bore Size (mm)	10	20	25	30	40	50	75	100	125	150	175	200	250	300	350	400	
ø12	0.23	0.26	-	0.29	0.34	0.38	0.46	0.54	0.64	0.72	0.81	0.88	1.05	-	-	-	Refer to the mass described in the switch specifications on P. 753
ø16	0.33	0.38	-	0.42	0.49	0.54	0.65	0.77	0.90	1.01	1.13	1.24	1.46	-	-	-	
ø20	-	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	
ø25	-	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	
ø32	-	-	1.49	-	-	1.79	2.23	2.54	2.90	3.21	3.51	3.82	4.49	5.10	5.71	6.32	
ø40	-	-	1.74	-	-	2.09	2.56	2.91	3.32	3.67	4.02	4.37	5.12	5.82	6.52	7.22	
ø50	-	-	3.02	-	-	3.55	4.28	4.81	5.43	5.97	6.50	7.03	8.23	9.28	10.38	11.45	
ø63	-	-	3.81	-	-	4.45	5.30	5.94	6.67	7.31	7.96	8.60	9.99	11.35	12.61	13.87	
ø80	-	-	7.25	-	-	8.03	9.27	10.30	11.30	12.10	13.31	14.32	16.60	18.60	20.62	22.64	
ø100	-	-	10.15	-	-	11.69	13.57	14.81	16.05	17.29	18.52	19.76	22.85	25.32	27.80	30.27	

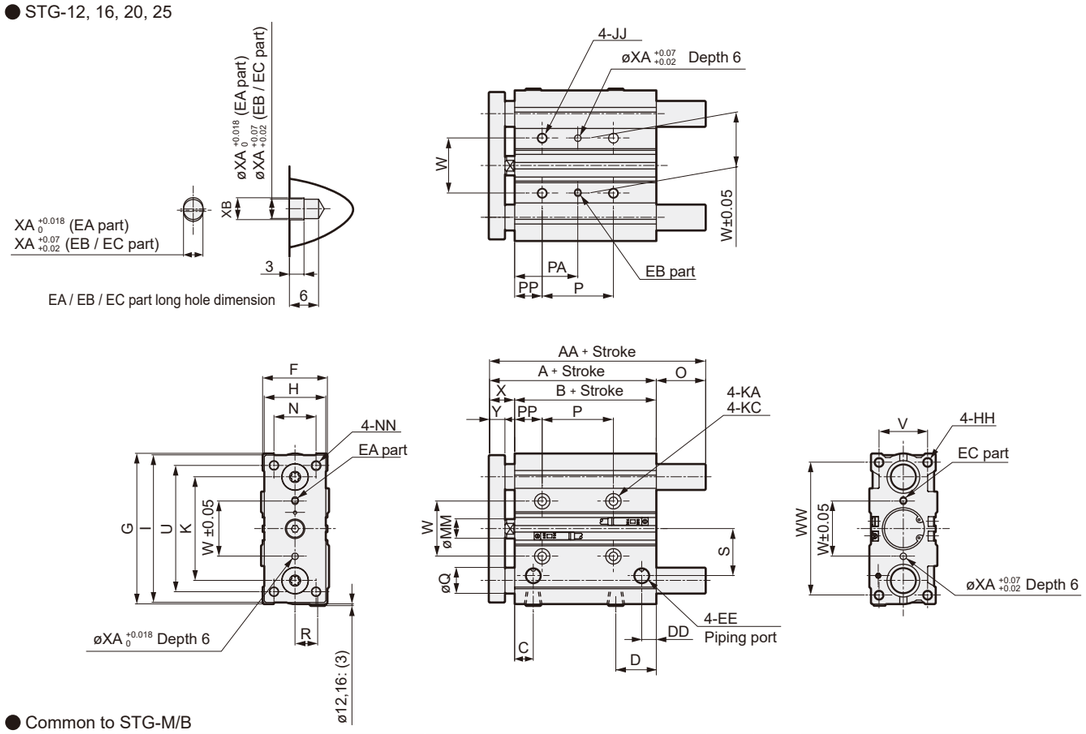
Theoretical Thrust Table

(Unit: N)

Bore Size (mm)	Operating Direction	Operating pressure MPa										
		0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø12	Push	-	17.0	22.6	33.9	45.2	56.5	67.9	79.2	90.5	1.02x10²	1.13 x 10²
	Pull	-	12.7	17.0	25.4	33.9	42.4	50.9	59.4	67.9	76.3	84.8
ø16	Push	-	30.2	40.2	60.3	80.4	1.01 x 10²	1.21 x 10²	1.41 x 10²	1.61 x 10²	1.81 x 10²	2.01 x 10²
	Pull	-	22.6	30.2	45.2	60.3	75.4	90.5	1.06 x 10²	1.21 x 10²	1.36 x 10²	1.51 x 10²
ø20	Push	-	47.1	62.8	94.2	1.26 x 10²	1.57 x 10²	1.88 x 10²	2.20 x 10²	2.51 x 10²	2.83 x 10²	3.14 x 10²
	Pull	-	35.3	47.1	70.7	94.2	1.18 x 10²	1.41 x 10²	1.65 x 10²	1.88 x 10²	2.12 x 10²	2.36 x 10²
ø25	Push	-	73.6	98.2	1.47 x 10²	1.96 x 10²	2.45 x 10²	2.95 x 10²	3.44 x 10²	3.93 x 10²	4.42 x 10²	4.91 x 10²
	Pull	-	56.7	75.6	1.13 x 10²	1.51 x 10²	1.89 x 10²	2.27 x 10²	2.64 x 10²	3.02 x 10²	3.40 x 10²	3.78 x 10²
ø32	Push	80.4	1.21 x 10²	1.61 x 10²	2.41 x 10²	3.22 x 10²	4.02 x 10²	4.83 x 10²	5.63 x 10²	6.43 x 10²	7.24 x 10²	8.04 x 10²
	Pull	60.3	90.5	1.21 x 10²	1.81 x 10²	2.41 x 10²	3.02 x 10²	3.62x10²	4.22 x 10²	4.83 x 10²	5.43x10²	6.03 x 10²
ø40	Push	1.26 x 10²	1.88 x 10²	2.51 x 10²	3.77 x 10²	5.03 x 10²	6.28 x 10²	7.54 x 10²	8.80 x 10²	1.01 x 10³	1.13 x 10³	1.26 x 10³
	Pull	1.06 x 10²	1.58 x 10²	2.11 x 10²	3.17 x 10²	4.22 x 10²	5.28 x 10²	6.33 x 10²	7.39 x 10²	8.44 x 10²	9.50 x 10²	1.06 x 10³
ø50	Push	1.96 x 10²	2.95 x 10²	3.93 x 10²	5.89 x 10²	7.85 x 10²	9.82 x 10²	1.18 x 10³	1.37 x 10³	1.57 x 10³	1.77 x 10³	1.96 x 10³
	Pull	1.65 x 10²	2.47 x 10²	3.30 x 10²	4.95 x 10²	6.60 x 10²	8.25 x 10²	9.90 x 10²	1.15 x 10³	1.32 x 10³	1.48 x 10³	1.65 x 10³
ø63	Push	3.12 x 10²	4.68 x 10²	6.23 x 10²	9.35 x 10²	1.25 x 10³	1.56 x 10³	1.87 x 10³	2.18 x 10³	2.49 x 10³	2.81 x 10³	3.12 x 10³
	Pull	2.80 x 10²	4.20 x 10²	5.61 x 10²	8.41 x 10²	1.12 x 10³	1.40 x 10³	1.68 x 10³	1.96 x 10³	2.24 x 10³	2.52 x 10³	2.80 x 10³
ø80	Push	5.03 x 10²	7.54 x 10²	1.01 x 10³	1.51 x 10³	2.01 x 10³	2.51 x 10³	3.02 x 10³	3.52 x 10³	4.02 x 10³	4.52 x 10³	5.03 x 10³
	Pull	4.54 x 10²	6.80 x 10²	9.07 x 10²	1.36 x 10³	1.81 x 10³	2.27 x 10³	2.72 x 10³	3.17 x 10³	3.63 x 10³	4.08 x 10³	4.54 x 10³
ø100	Push	7.85 x 10²	1.18 x 10³	1.57 x 10³	2.36 x 10³	3.14 x 10³	3.93 x 10³	4.71 x 10³	5.50 x 10³	6.28 x 10³	7.07 x 10³	7.85 x 10³
	Pull	7.15 x 10²	1.07 x 10³	1.43 x 10³	2.14 x 10³	2.86 x 10³	3.57 x 10³	4.29 x 10³	5.00 x 10³	5.72 x 10³	6.43 x 10³	7.15 x 10³

External dimensions diagram (Bore size: ø12, ø16, ø20, ø25)

● STG-12, 16, 20, 25



● Common to STG-M/B

Code / Bore Size (mm)	Standard Stroke (mm)	A	B	C	D	DD	EE	F	G	H	HH	I	JJ
ø12	10, 20, 30, 40, 50, 75, 100, 125, 150, 175, 200, 250	42	29	12	16	7	M5	26	58	22	M4 Depth 10	56	M5 Depth 10
ø16		46	33	12	18	7.5	M5	30	64	25	M5 Depth 12	62	M5 Depth 10
ø20	20, 30, 40, 50, 75, 100, 125, 150, 175, 200, 250, 300, 350, 400	53	37	10.5	24.5	8.5	Rc1/8	36	83	30	M5 Depth 13	81	M6 Depth 12
ø25		53.5	37.5	11.5	25	9	Rc1/8	42	93	38	M6 Depth 15	91	M6 Depth 12

Code / Bore Size (mm)	K	KA	MM	N	NN	KC	P: 30 or less	P: Over 30 and 100 or less	P: Over 100 and 200 or less	P: Over 200 to 300 or Less	P: Over 300
ø12	41	4.3 Through	6	14	M4 Through	7.5 Counterbore depth 4.5	20	40	110	200	–
ø16	46	4.3 Through	8	16	M5 Through	8 Counterbore depth 4.5	24	44	110	200	–
ø20	54	5.2 Through	10	18	M5 Through	9.5 Counterbore depth 5.5	24	44	120	200	300
ø25	64	5.2 Through	12	26	M6 Through	9.5 Counterbore depth 5.5	24	44	120	200	300

Code / Bore Size (mm)	PA: 30 or less	PA: Over 30 and 100 or less	PA: Over 100 and 200 or less	PA: Over 200 to 300 or Less	PA: Over 300	PP	R	S	U	V	W	WW	X	Y	XA	XB
ø12	15	25	60	105	–	5	8	17	48	18	23	50	13 +0.5 0	7.5	3	3.5
ø16	17	27	60	105	–	5	10	18	54	22	24	56	13 +0.5 0	7.5	3	3.5
ø20	29	39	77	117	167	17	11	25	70	24	28	72	16 +0 -0.5	9.5	3	3.5
ø25	29	39	77	117	167	17	14	29	78	30	34	82	16 +0 -0.5	9.5	4	4.5

● STG-M

Code / Bore Size (mm)	AA: 50 or less	AA: Over 50 to 100 or Less	AA: Over 100	Q	O: 50 or less	O: Over 50 to 100 or Less	O: Over 100
ø12	42	55	85	8	0	13	43
ø16	46	63	95	10	0	17	49

Code / Bore Size (mm)	AA: 50 or less	AA: Over 50 and 200 or less	AA: Over 200	Q	O: 50 or less	O: Over 50 and 200 or less	O: Over 200
ø20	53	78	122	12	0	25	69
ø25	53.5	84	122	16	0	30.5	68.5

● STG-B

Code / Bore Size (mm)	AA: 30 or less	AA: Over 30 and 100 or less	AA: Over 100	Q	O: 30 or less	O: Over 30 and 100 or less	O: Over 100
ø12	43	55	85	6	1	13	43
ø16	49	65	95	8	3	19	49

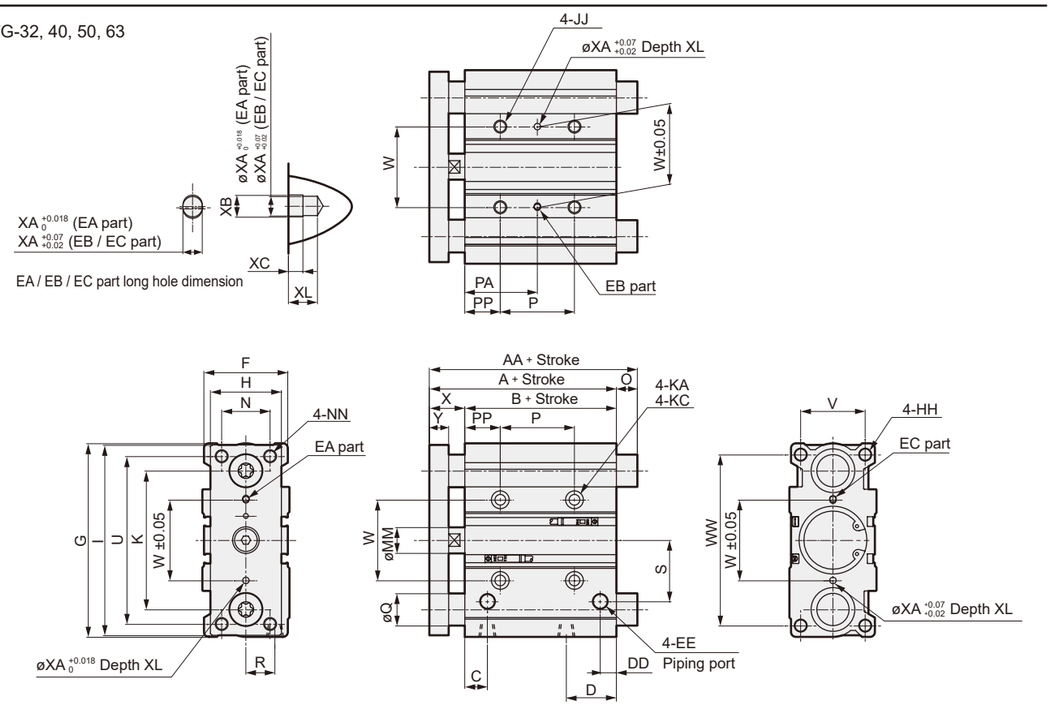
Code / Bore Size (mm)	AA: 30 or less	AA: Over 30 and 100 or less	AA: Over 100 and 200 or less	AA: Over 200	Q	O: 30 or less	O: Over 30 and 100 or less	O: Over 100 and 200 or less	O: Over 200
ø20	59	78	100	122	10	6	25	47	69
ø25	65	84	103	122	13	11.5	30.5	49.5	68.5

*1: For intermediate strokes, the overall length dimension is the same as the dimension of the longer standard stroke.

***2: For dimensions with each switch, refer to P. 446 to 448.**

External dimensions diagram (Bore size: ø32, ø40, ø50, ø63)

● STG-32, 40, 50, 63



● Common to STG-M/B

Code / Bore Size (mm)	Standard Stroke (mm)	A	B	C	D	DD	EE	F	G	H	HH	I	JJ	K	KA
ø32	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 Through
ø40		66	44	14	31	10	Rc1/8	54	120	44	M8 depth 20	118	M8 Depth 16	86	6.3 Through
ø50		72	44	14	35	11	Rc1/4	64	148	60	M10 Depth 22	146	M10 Depth 20	110	8.6 Through
ø63		77	49	16.5	35	15	Rc1/4	78	162	70	M10 Depth 22	158	M10 Depth 20	124	8.6 Through

Code / Bore Size (mm)	KC	MM	N	NN	P: 25 or Less	P: Over 25 and 100 or less	P: Over 100 and 200 or less	P: Over 200 to 300 or Less	P: Over 300	PA: 25 or Less	PA: Over 25 and 100 or less
ø32	11 Counterbore depth 7.5	16	30	M8 Through	24	48	124	200	300	33	45
ø40	11 Counterbore depth 7.5	16	30	M8 Through	24	48	124	200	300	34	46
ø50	14 Counterbore depth 9	20	40	M10 Through	24	48	124	200	300	36	48
ø63	14 Counterbore depth 9	20	50	M10 Through	28	52	128	200	300	38	50

Code / Bore Size (mm)	PA: Over 100 and 200 or less	PA: Over 200 to 300 or Less	PA: Over 300	PP	R	S	U	V	W	WW	X	Y	XA	XB	XC	XL
ø32	83	121	171	21	15	34	96	34	42	98	22 +0.5 0	11.5	4	4.5	3	6
ø40	84	122	172	22	18	38	104	40	50	106	22 +0.5 0	11.5	4	4.5	3	6
ø50	86	124	174	24	21.5	47	130	46	66	130	28 +0.5 0	15.5	5	6	4	8
ø63	88	124	174	24	28	55	130	58	80	142	28 +0.5 0	15.5	5	6	4	8

● STG-M

Code / Bore Size (mm)	AA: 50 or less	AA: Over 50 and 200 or less	AA: Over 200	Q	O: 50 or less	O: Over 50 and 200 or less	O: Over 200
ø32	79	100	140	20	19.5	40.5	80.5
ø40	79	100	140	20	13	34	74
ø50	91	116	161	25	19	44	89
ø63	91	116	161	25	14	39	84

● STG-B

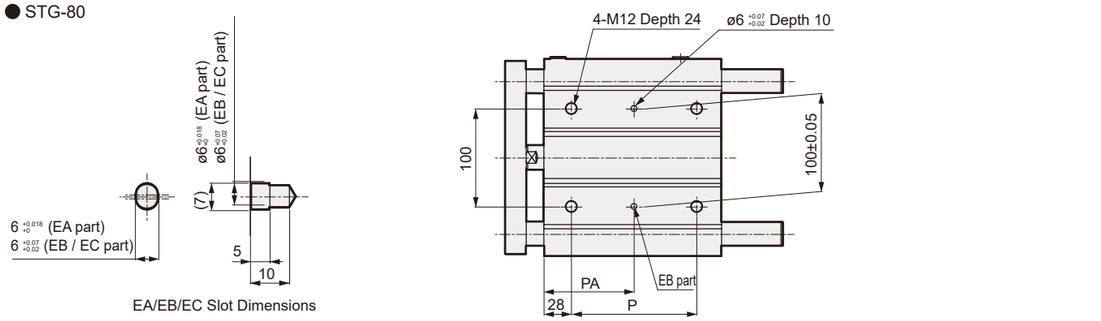
Code / Bore Size (mm)	AA: 50 or less	AA: Over 50 to 100 or Less	AA: Over 100 and 200 or less	AA: Over 200	Q	O: 50 or less	O: Over 50 to 100 or Less	O: Over 100 and 200 or less	O: Over 200
ø32	79	98	118	140	16	19.5	38.5	58.5	80.5
ø40	79	98	118	140	16	13	32	52	74
ø50	91	114	134	161	20	19	42	62	89
ø63	91	114	134	161	20	14	37	57	84

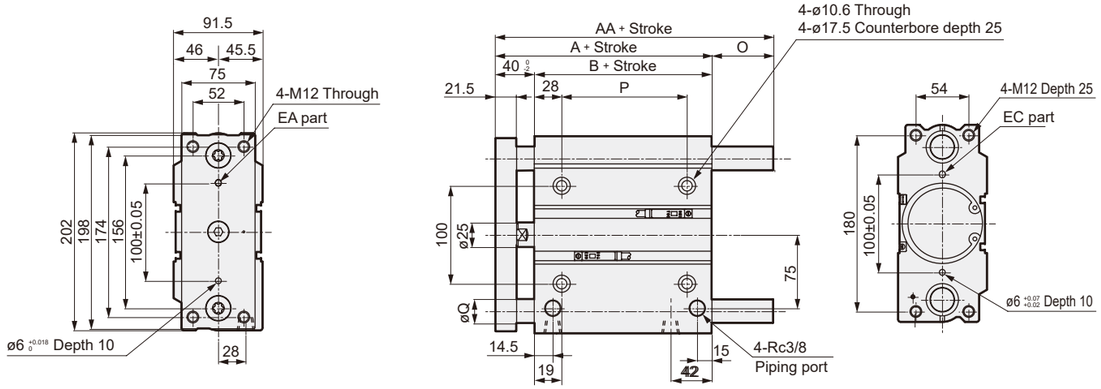
*1: For intermediate strokes, the overall length dimension is the same as the dimension of the longer standard stroke.

***2: For dimensions with each switch, refer to P. 446 to 448.**

External dimensions diagram (Bore size: ø80)

● STG-80





● Common to STG-M/B

Standard Stroke	A	B	P					PA				
			25st or less	Over 25st and 100st or less	Over 100st and 200st or less	Over 200st and 300st or less	Over 300st	25st or less	Over 25st and 100st or less	Over 100st and 200st or less	Over 200st and 300st or less	Over 300st
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	Over 50st and 200st or less	Over 200st		50st or less	Over 50st and 200st or less	Over 200st
115	142	193	30	18.5	45.5	96.5

● STG-B

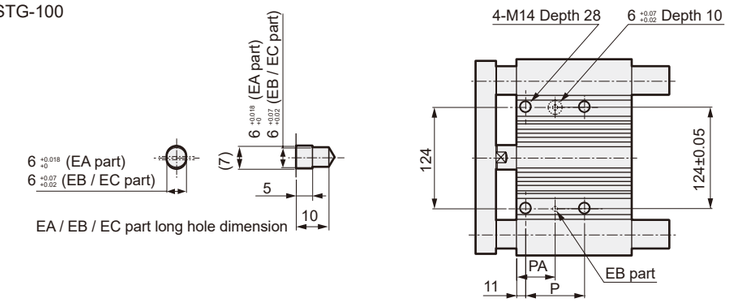
AA				Q	O			
25st or less	Over 25st and 50st or less	Over 50st and 200st or less	Over 200st		25st or less	Over 25st and 50st or less	Over 50st and 200st or less	Over 200st
109.5	130	160	193	25	13	33.5	63.5	96.5

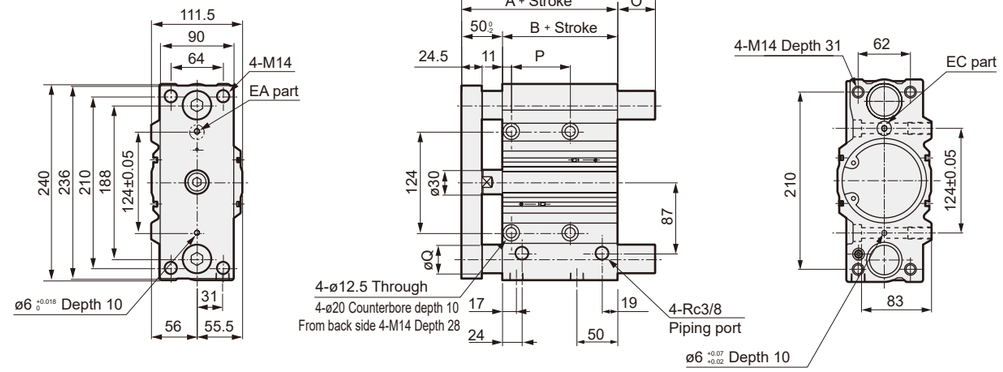
*1: For intermediate strokes, the overall length dimension is the same as the dimension of the longer standard stroke.

***2: For dimensions with each switch, refer to P. 446 to 448.**

External dimensions diagram (Bore size: ø100)

● STG-100





● Common to STS-M/B

Standard Stroke	A	B	P					PA				
			25st or less	Over 25st and 100st or less	Over 100st and 200st or less	Over 200st and 300st or less	Over 300st	25st or less	Over 25st and 100st or less	Over 100st and 200st or less	Over 200st and 300st or less	Over 300st
25,50,75,100,125,150,175200,250,300,350,400	116	66	48	72	148	220	320	35	47	85	121	171

● STG-M

AA			Q	O		
50st or less	Over 50st and 200st or less	Over 200st		50st or less	Over 50st and 200st or less	Over 200st
137	162	203	35	21	46	87

● STG-B

AA				Q	O			
25st or less	Over 25st and 50st or less	Over 50st and 200st or less	Over 200st		25st or less	Over 25st and 50st or less	Over 50st and 200st or less	Over 200st
121	147	180	203	30	5	31	64	87

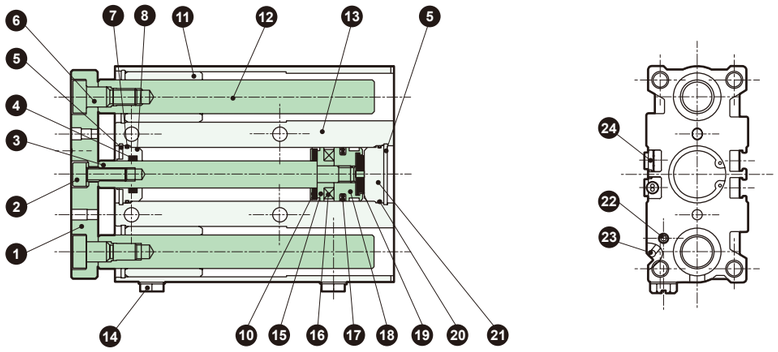
*1: For intermediate strokes, the overall length dimension is the same as the dimension of the longer standard stroke.

***2: For dimensions with each switch, refer to P. 446 to 448.**

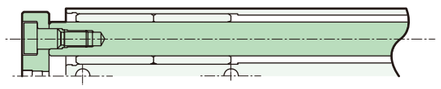
Internal structure diagram / Material (STG-M-12 to 25)

● ø12, ø16

• 50 strokes or less



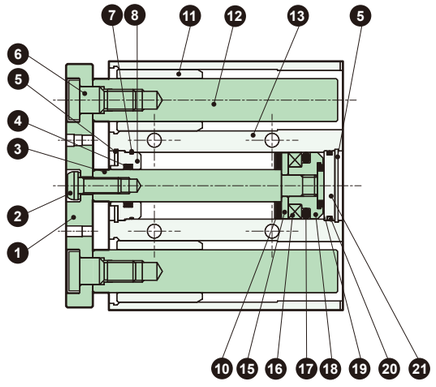
• Over 50 strokes and 100 strokes or less

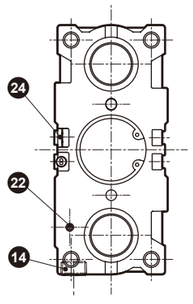


• Over 100 strokes

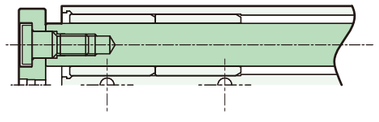
● ø20, ø25

• 50 strokes or less

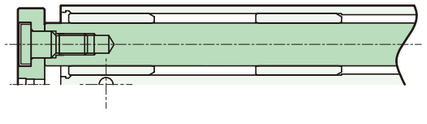




• Over 50 strokes and 200 strokes or less

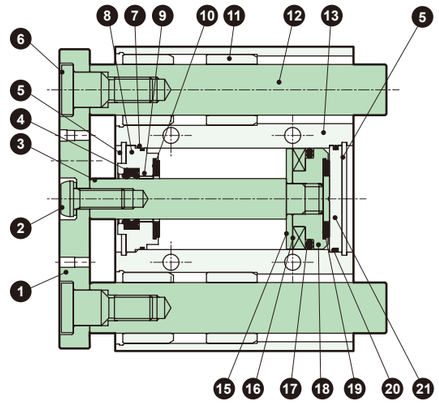


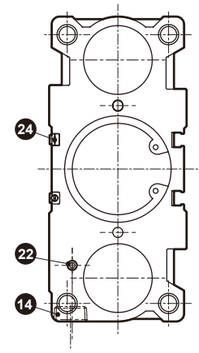
• Over 200 strokes



Internal structure diagram / Material (STG-M-32 to 63)

● ø32 to ø63





Part No.	Part Name	Material	Remarks
1	End plate	Steel	Nickel Plating
2	Hexagon socket head cap screw (ø12 to ø16) Hexagon socket button head cap screw (ø20 to ø63)	Steel	Zinc Chromate
3	Piston Rod	ø12 to ø25: Stainless steel ø32 to ø63: Steel	Industrial Hard Chrome Plating
4	Rod Packing	Nitrile Rubber	
5	C-type retaining ring	Steel	Zinc phosphate
6	Bolt	Steel	Zinc Chromate
7	Metal gasket	Nitrile Rubber	
8	Rod Metal	Aluminum Alloy	ø12 to ø32: Alumite ø40 to ø63: Chromate
9	Bushing	Bearing Alloy	ø40 to ø63 only
10	Cushion Rubber	Urethane Rubber	
11	Metal	Oil-impregnated copper alloy bearing	
12	Guide rod	ø12 to ø16: Stainless steel ø20 to ø63: Steel	Industrial Hard Chrome Plating

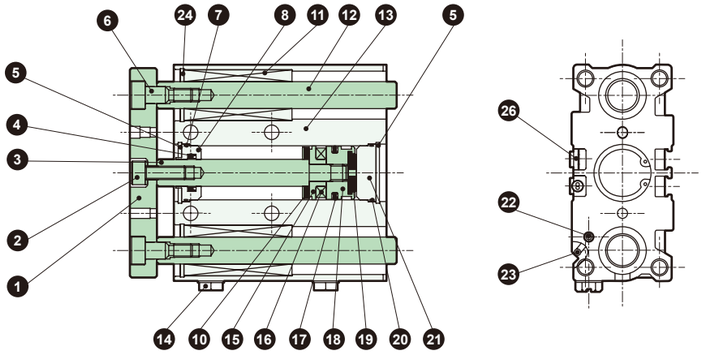
Part No.	Part Name	Material	Remarks
13	Cylinder Body	Aluminum Alloy	Hard Anodized
14	Plug	Copper alloy or steel	
15	Spacer	Aluminum Alloy	
16	Magnet		
17	Piston Packing	Nitrile Rubber	
18	Piston	Aluminum Alloy	
19	Cushion Rubber	Urethane Rubber	
20	O-ring	Nitrile Rubber	
21	Bottom plate	Aluminum Alloy	Chromate
22	Hexagon socket head set screw	Stainless Steel	
23	Steel ball	Stainless Steel	
With Switch			
24	Switch		

For maintenance parts, please visit the CKD Equipment Product Site (https://www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts

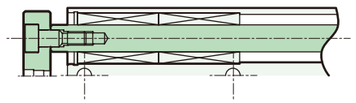
Internal structure diagram / Material (STG-B-12 to 25)

● ø12, ø16

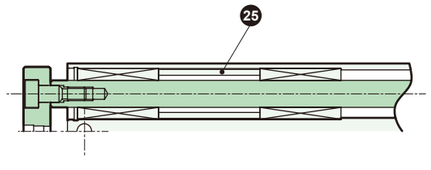
● 30 strokes or less



● Over 30 strokes and 100 strokes or less

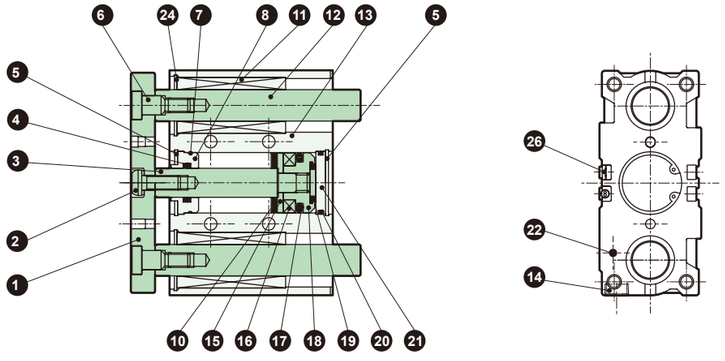


● Over 100 strokes

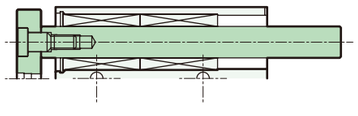


● ø20, ø25

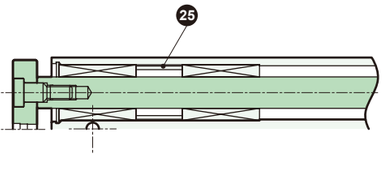
● 30 strokes or less



● Over 30 strokes and 100 strokes or less



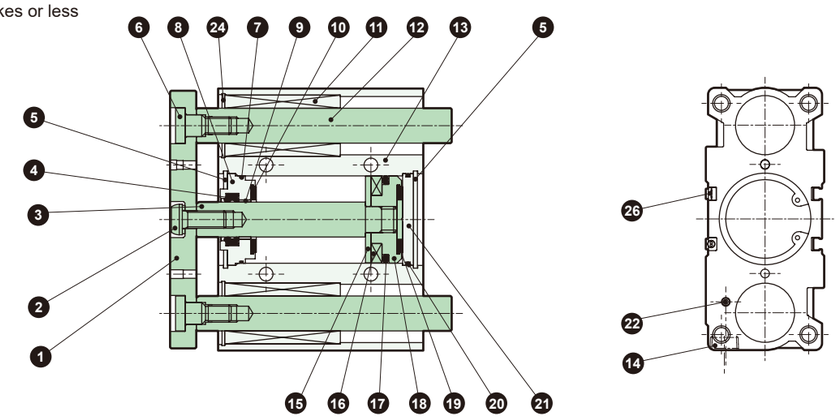
● Over 100 strokes



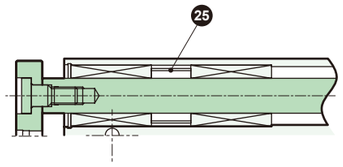
Internal structure diagram / Material (STG-B-32 to 63)

● ø32 to ø63

● 100 strokes or less



● Over 100 strokes

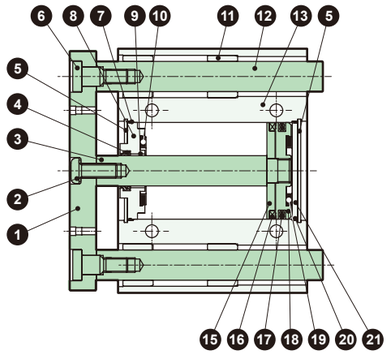


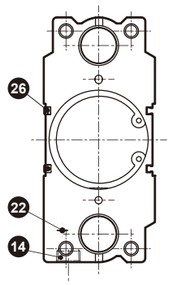
Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	End plate	Steel	Nickel Plating	13	Cylinder Body	Aluminum Alloy	Hard Anodized
2	Hexagon socket head cap screw (ø12 to ø16) Hexagon socket button head cap screw (ø20 to ø63)	Steel	Zinc Chromate	14	Plug	Copper alloy or steel	
				15	Spacer	Aluminum Alloy	
3	Piston Rod	ø12 to ø25: Stainless steel ø32 to ø63: Steel	Industrial Hard Chrome Plating	16	Magnet		
				17	Piston Packing	Nitrile Rubber	
4	Rod Packing	Nitrile Rubber		18	Piston	Aluminum Alloy	
5	C-type retaining ring	Steel	Zinc phosphate	19	Cushion Rubber	Urethane Rubber	
6	Bolt	Steel	Zinc Chromate	20	O-ring	Nitrile Rubber	
7	Metal gasket	Nitrile Rubber		21	Bottom plate	Aluminum Alloy	Chromate
8	Rod Metal	Aluminum Alloy	ø12 to ø32: Alumite ø40 to ø63: Chromate	22	Hexagon socket head set screw	Stainless Steel	
				23	Steel ball	Stainless Steel	
9	Bushing	Bearing Alloy	ø40 to ø63 only	24	C-type retaining ring	Steel	Zinc phosphate
10	Cushion Rubber	Urethane Rubber		25	Collar	Aluminum Alloy	
11	Ball bush			With Switch			
12	Guide rod	Steel	Industrial Hard Chrome Plating	26	Switch		

For maintenance parts, please visit the CKD Equipment Product Site (https://www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts

Internal structure diagram / Material (STG-M-80,100 / STG-B-80,100)

● STG-M-80,100

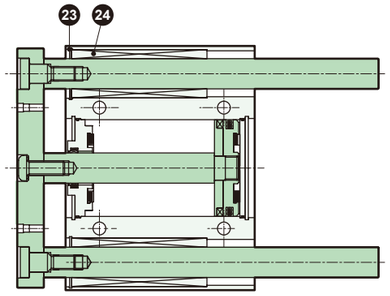




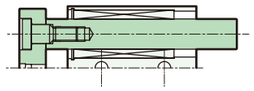
Plain bearing (M)

● STG-B-80,100

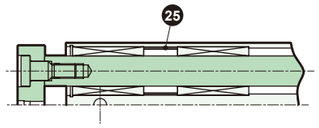
● Over 50 strokes and 200 strokes or less



● 50 strokes or less



● Over 200 strokes



Rolling bearing (B)

Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	End plate	Steel	Nickel Plating	15	Spacer	Aluminum Alloy	
2	Hex Socket Button Head Bolt	Steel	Zinc Chromate	16	Magnet		
3	Piston Rod	Steel	Industrial Hard Chrome Plating	17	Piston Packing	Nitrile Rubber	
4	Rod Packing	Nitrile Rubber		18	Piston	Aluminum Alloy	
5	C-type retaining ring	Steel	Zinc phosphate	19	Cushion Rubber	Urethane Rubber	
6	Bolt	Steel	Zinc Chromate	20	O-ring	Nitrile Rubber	
7	Metal gasket	Nitrile Rubber		21	Bottom plate	Steel	Zinc Chromate
8	Rod Metal	Aluminum Alloy	Chromate	22	Hexagon socket set screw (ø80)	Stainless Steel	
9	Bushing	Bearing Alloy			Plug (ø100)	Steel	Nickel Plating
10	Cushion Rubber	Urethane Rubber		23	C-type retaining ring	Steel	Zinc phosphate
11	Metal	Oil-impregnated copper alloy bearing		24	Ball bush		
12	Guide rod	Steel	Industrial Hard Chrome Plating	25	Collar	Aluminum Alloy	
13	Cylinder Body	Aluminum Alloy	Hard Anodized	With Switch			
14	Plug	Steel		26	Switch		

For maintenance parts, please visit the CKD Equipment Product Site
(https://www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts

MEMO

Guided
STM
STG
STS/STL
STR2
UCA2
Cylinder Switch
Ending

Guided cylinder Double acting, With rubber air cushion

STG-$\frac{M}{B}$-□C Series

●Bore size: ø32, ø40, ø50, ø63

Circuit Diagram
Symbol

RoHS

Model No. Notation Method

Without Switch
(Built-in magnet for switch)

STG - M - 32 [ ] C - 25

Model No. ❶ ❷ ❸ ❹

With Switch
(Built-in magnet for switch)

STG - M - 32 [ ] C - 25 - T2H - R

Model No. ❷ Bore size ❸ Rubber air With Cushion ❺ Switch Model No.
❶ Bearing type ❸ Piping thread type ❹ Stroke ❻ Number of Switches

❶ Bearing type

Code	Content
M	Plain bearing
B	Rolling bearing

❷ Bore Size (mm)

Code	Content
32	ø32
40	ø40
50	ø50
63	ø63

❸ Piping thread type

Code	Content
Blank	Rc Thread
N	NPT Thread (Custom Order Product)
G	G Thread (Custom Order Product)

❹ Stroke (mm)

Stroke (mm)		Applicable Bore Size ø32	ø40	ø50	ø63
Standard Stroke	25	●	●	●	●
	50	●	●	●	●
	75	●	●	●	●
	100	●	●	●	●
	125	●	●	●	●
	150	●	●	●	●
	175	●	●	●	●
	200	●	●	●	●
	250	●	●	●	●
	300	●	●	●	●
	350	●	●	●	●
	400	●	●	●	●
Intermediate stroke *1		Every 5 mm			

*1: The overall length dimension is the same as the dimension of the longer standard stroke.

❺ Switch Model No.

For switch details, please refer to P. 753.
Switches are included to the product and shipped.

Contact	Indicator LED Special Function	Wiring (Output)	Load Voltage (V) AC	Load Voltage (V) DC	Load Current (mA) AC	Load Current (mA) DC	Lead Wire *1 Straight	Lead Wire *1 L-shape	
Solid State	1-Color	2-wire	85 to 265	-	5 to 100	-	T5V□	T1V□	
			-	10 to 30	-	5 to 20 *2	T2H□	T2V□	
		3-wire (NPN)	-	30 or less	-	100 or less	T3H□	T3V□	
		3-wire (PNP)	-		-		T3PH□	T3PV□	
	2-Color	2-wire	-	24 ± 10%	-	5 to 20	T2WH□	T2WV□	
		3-wire (NPN)	-	30 or less	-	50 or less	T3WH□	T3WV□	
	2-color Water resistance Improved	2-wire	-	24 ± 10%	-	5 to 20	T2WLH□	T2WLV□	 *3
	2-Color AC For Magnetic Field		-	24 ± 10%	-		T2YD□	–	
			-		-		T2YDT□	–	
	1-Color Off-Delay Type		-	10 to 30	-	5 to 20 *2	T5V□	T2JV□	
	1-Color Flexible Lead Wire Type		-	10 to 30	-		T2HR3	T2VR3	
Reed	1-Color	2-wire	110	12/24	7 to 20	5 to 50	T0H□	T0V□	
	No Indicator LED		110	5/12/24	20 or less	50 or less	T5H□	T5V□	
	1-Color		110/220	12/24	7 to 20 / 7 to 10	5 to 50	T5V□	T8V□	

*1: For "□" in the switch model number, enter the code selected from the "*Lead wire length, connector specification" table.
*2: The maximum load current value above, 20 mA, is at 25°C. If the switch operating ambient temperature is higher than 25°C, it will be lower than 20 mA. (At 60°C, it will be 5 to 10 mA.)
*3: This does not guarantee the water resistance of the cylinder. When using in a water-resistant environment, use of an improved water resistance cylinder is recommended.
*4: Switches other than the model numbers listed above are also available. (Custom Product) For details, see P. 753.

*** Lead wire length, connector specification**

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)
*5 W	M8 Connector, 1PIN (+), 4PIN (−) Lead Wire 0.3 m

*5: Only T2WLH and T2WLV can be selected.

Example) Lead wire length
1 m TOH
3 m TOH 3
5 m TOH 5

❻ Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs
T	With 3 pcs

Switch Single Unit Model No. Notation Method

SW - T0V

❺ Switch Model No.

About Custom Product Specifications

For details, refer to P. 466.

Code	Content
-0	Port symmetrical type

Model No. Example)
STG-$\frac{M}{B}$-□C-·····-O

For combinations of variations and options, please refer to P. 368, 369.

Food Manufacturing Process Compatible Specification (Catalog No. CC-1271AA)

● Uses food grade grease that can be used in food manufacturing processes

STG-$\frac{M}{B}$-□C-·····-FP1

Rechargeable Battery Compatible Specification (Catalog No. CC-1226AA)

● Design compatible with rechargeable battery manufacturing process

STG-$\frac{M}{B}$-□C-·····-P4□

* Please contact us for details.

Specifications

Item		STG-M/B-□C			
Bore Size	mm	ø32	ø40	ø50	ø63
Actuation method		Double Acting Type			
Operating Fluid		Compressed Air			
Max. Working Pressure	MPa	1.0			
Min. Operating Pressure	MPa	0.2			
Proof Pressure	MPa	1.6			
Ambient Temperature	°C	-10 to 60 (Provided that freezing does not occur)			
Port Size		Rc1/8		Rc1/4	
Stroke tolerance	mm	+2.0 0			
Operating Piston Speed	mm/s	50 to 500			50 to 300
Cushion		With Rubber Air Cushion			
Lubrication		Not required (When lubricating, use turbine oil Class 1 ISO VG32)			
Allowable Absorbed Energy	J	0.401	0.627	0.980	1.560

Stroke

Bore Size	Standard Stroke (mm)	Maximum Stroke (mm)	Min. Stroke (mm)	Min. stroke with switch (mm)	
				T2WL	Other switches
ø32	25, 50, 75, 100, 125, 150, 175, 200, 250, 300, 350, 400	400	5	10	5 (10) *2
ø40					
ø50					
ø63			10		10

*1: Intermediate strokes can be manufactured every 5 mm. However, the overall length dimension is the same as the dimension of the longer standard stroke.
*2: This is for the case with 1 or 2 switches. The value in ( ) is the minimum stroke for a 2-color indicator type switch for AC magnetic fields.

Cylinder Weight

● STG-M-□C

Unit: kg

Item / Bore Size (mm)	Stroke 25	50	75	100	125	150	175	200	250	300	350	400	Switch weight
ø32	1.64	2.01	2.54	2.94	3.34	3.73	4.12	4.51	5.49	6.27	7.07	7.85	Refer to the mass described in the switch specifications on P. 753
ø40	1.89	2.30	2.75	3.15	3.57	3.98	4.39	4.80	5.81	6.64	7.47	8.29	
ø50	3.26	3.88	4.59	5.21	5.83	6.45	7.07	7.69	9.25	10.48	11.74	13.00	
ø63	4.05	4.79	5.61	6.34	7.07	7.81	8.54	9.27	11.06	12.51	13.97	15.42	

● STG-B-□C

Unit: kg

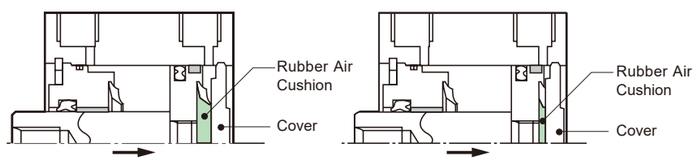
Item / Bore Size (mm)	Stroke 25	50	75	100	125	150	175	200	250	300	350	400	Switch weight
ø32	1.49	1.79	2.23	2.54	2.90	3.21	3.51	3.82	4.49	5.10	5.71	6.32	Refer to the mass described in the switch specifications on P. 753
ø40	1.74	2.09	2.56	2.91	3.32	3.67	4.02	4.37	5.12	5.82	6.52	7.22	
ø50	3.02	3.55	4.28	4.81	5.43	5.97	6.50	7.03	8.23	9.28	10.38	11.45	
ø63	3.81	4.45	5.30	5.94	6.67	7.31	7.96	8.60	9.99	11.35	12.61	13.87	

Theoretical Thrust Table

(Unit: N)

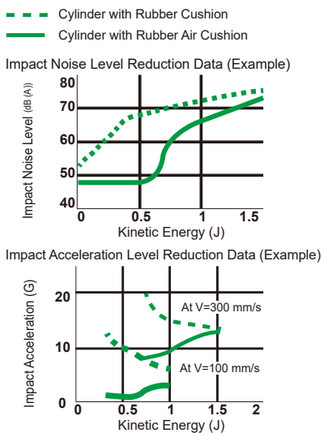
Bore Size (mm)	Operating Direction	Operating pressure MPa 0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø32	Push	1.61 x 10²	2.41 x 10²	3.22 x 10²	4.02 x 10²	4.83 x 10²	5.63 x 10²	6.43 x 10²	7.24 x 10²	8.04 x 10²
	Pull	1.21 x 10²	1.81 x 10²	2.41 x 10²	3.02 x 10²	3.62x10²	4.22 x 10²	4.83 x 10²	5.43x10²	6.03 x 10²
ø40	Push	2.51 x 10²	3.77 x 10²	5.03 x 10²	6.28 x 10²	7.54 x 10²	8.80 x 10²	1.01 x 10³	1.13 x 10³	1.26 x 10³
	Pull	2.11 x 10²	3.17 x 10²	4.22 x 10²	5.28 x 10²	6.33 x 10²	7.39 x 10²	8.44 x 10²	9.50 x 10²	1.06 x 10³
ø50	Push	3.93 x 10²	5.89 x 10²	7.85 x 10²	9.82 x 10²	1.18 x 10³	1.37 x 10³	1.57 x 10³	1.77 x 10³	1.96 x 10³
	Pull	3.30 x 10²	4.95 x 10²	6.60 x 10²	8.25 x 10²	9.90 x 10²	1.15 x 10³	1.32 x 10³	1.48 x 10³	1.65 x 10³
ø63	Push	6.23 x 10²	9.35 x 10²	1.25 x 10³	1.56 x 10³	1.87 x 10³	2.18 x 10³	2.49 x 10³	2.81 x 10³	3.12 x 10³
	Pull	5.61 x 10²	8.41 x 10²	1.12 x 10³	1.40 x 10³	1.68 x 10³	1.96 x 10³	2.24 x 10³	2.52 x 10³	2.80 x 10³

■ Rubber air cushion mechanism



Explanation at Pull

When the piston operates and the rubber air cushion comes into contact with the cover, a sealed air space is formed in ■. The air in this sealed space is compressed as the piston operates and absorbs energy. At the stroke end, energy absorption due to the compressive strain of the rubber air cushion is also added.

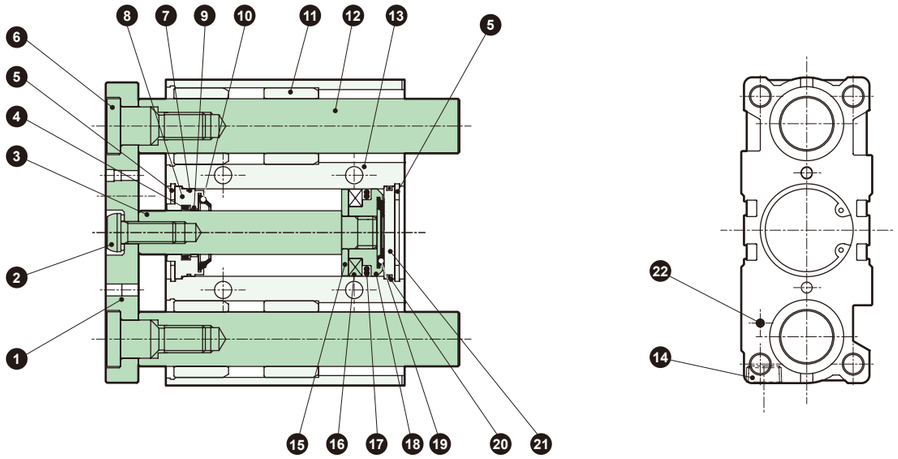


Outline Dimension Drawing

Same as double acting, single rod type STG series. See P. 375.

Internal structure diagram / Material (STG-M-32 to 63C / STG-B-32 to 63C)

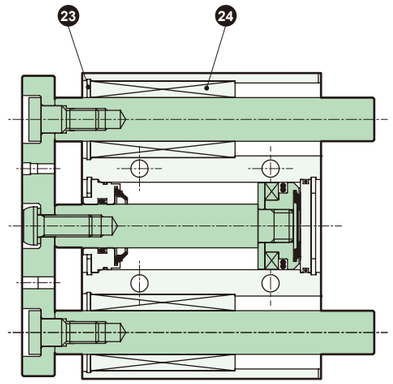
● STG-M-32 to 63C



Plain bearing (M)

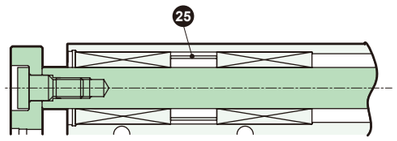
● STG-B-32 to 63C

● 100 strokes or less



Rolling bearing (B)

● Over 100 strokes



Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	End plate	Steel	Nickel Plating	14	Plug	Steel	
2	Hex Socket Button Head Bolt	Alloy Steel	Zinc Chromate	15	Spacer	Aluminum Alloy	Alumite
3	Piston Rod	Steel	Industrial Hard Chrome Plating	16	Magnet	Plastic	
4	Rod Packing	Nitrile Rubber		17	Piston Packing	Nitrile Rubber	
5	C-type retaining ring	Steel	Zinc phosphate	18	Piston	Aluminum Alloy	Alumite
6	Bolt	Alloy Steel	Zinc Chromate	19	Rubber air cushion (H)	Special rubber	
7	Metal gasket	Nitrile Rubber		20	O-ring	Nitrile Rubber	
8	Rod Metal	Aluminum Alloy	Alumite	21	Bottom plate	Aluminum Alloy	Alumite
9	Bushing	Bearing Alloy	(ø40 to ø63 only)	22	Hexagon socket head set screw	Stainless Steel	
10	Rubber air cushion (R)	Special rubber		23	C-type retaining ring	Steel	Zinc phosphate
11	Metal	Oil-impregnated copper alloy bearing		24	Ball bush		
12	Guide rod	Steel	Industrial Hard Chrome Plating	25	Collar	Aluminum Alloy	
13	Cylinder Body	Aluminum Alloy	Hard Anodized				

For maintenance parts, please visit the CKD Equipment Product Site
(https://www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts

MEMO

Guided
STM
STG
STS/STL
STR2
UCA2
Cylinder Switch
Ending

Technical Data

For the guided cylinder model selection guide, please refer to P. 450 to 455.

[Performance Comparison of Impact Noise Level]

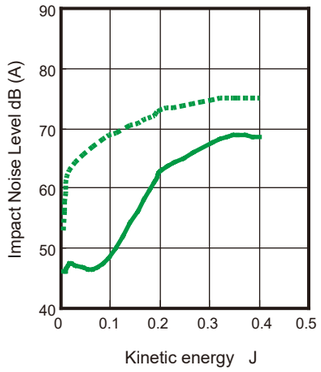
The data is a comparison example under the following conditions.
Values change depending on frame rigidity, etc., so they are not guaranteed values.

(Test conditions)

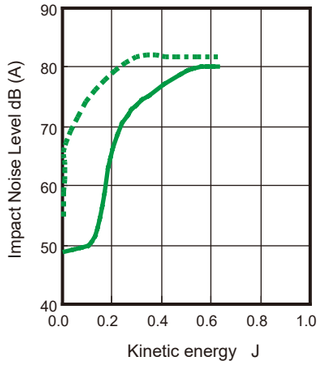
Cylinder type : STG
Cylinder Mounting Direction : Vertically upward
Cylinder supply pressure : 0.5 MPa
Sound level meter measurement position : 1 m from sample

Standard rubber cushion product: - - -
Rubber air cushion product: ———

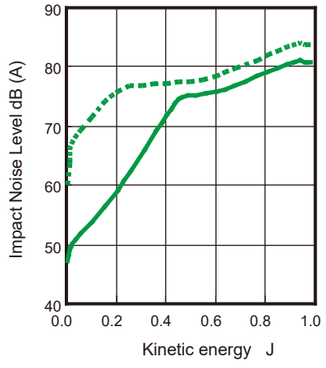
ø32



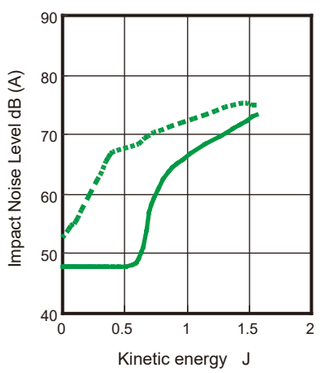
ø40



ø50



ø63

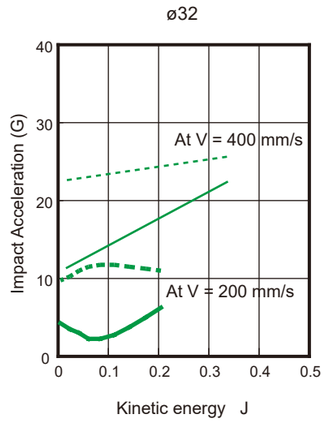


Technical Data

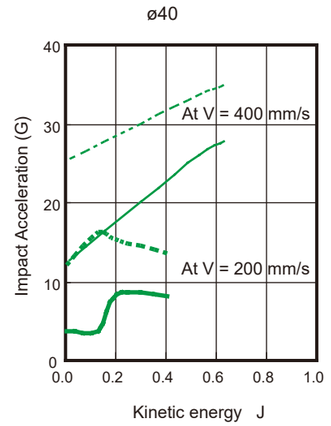
[Performance Comparison of Impact Acceleration]

Standard rubber cushion product: - - -
Rubber air cushion product: ———

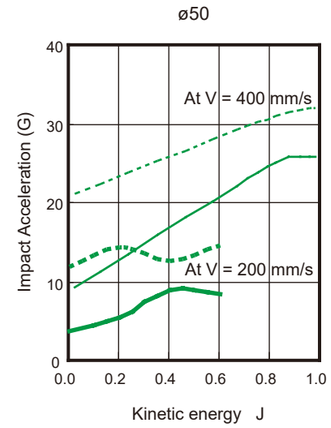
ø32



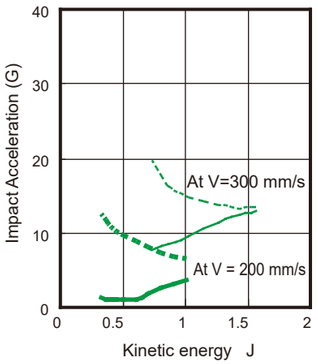
ø40



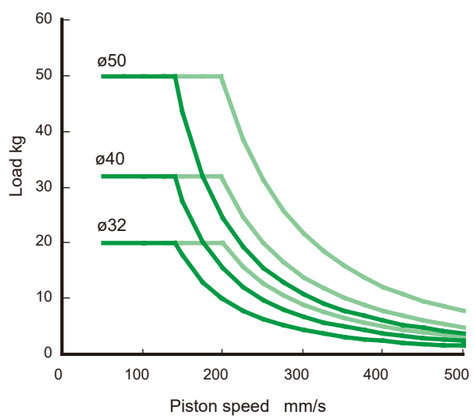
ø50

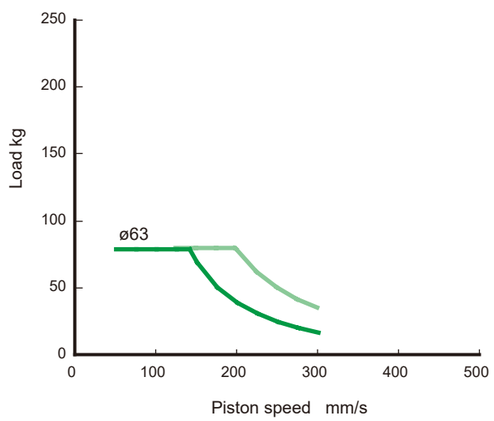


ø63



[Allowable Energy Value]





The usable range is to the lower left of the curve.
It is possible to use within the range indicated by the ——— line in the figure, but it is recommended to use within the range of the solid line to make the silencing effect more effective.

Guided cylinder Double acting, With air cushion

STG-$^{M}_{B}$C Series

● Bore size: ø16, ø20, ø25, ø32, ø40, ø50, ø63

Circuit Diagram
Symbol

RoHS

Model No. Notation Method

Without Switch
(Built-in magnet for switch)

STG - M C - 32 ▢ - 25

Model No. ❶ ❷ ❸ ❹

With Switch
(Built-in magnet for switch)

STG - M C - 32 ▢ - 25 - T2H - R

Model No. ❶ Bearing type ❷ Bore size With Air Cushion ❸ Piping thread type ❹ Stroke ❺ Switch Model No. ❻ Number of Switches

❶ Bearing type

Code	Content
M	Plain bearing
B	Rolling bearing

❷ Bore Size (mm)

Code	Content
16	ø16
20	ø20
25	ø25
32	ø32
40	ø40
50	ø50
63	ø63

❸ Piping thread type

Code	Content
Blank	M5 (ø16)
	Rc thread (ø20 to ø63)
NN	NPT thread (ø20 or more) Custom product
GN	G thread (ø20 or more) Custom product

❹ Stroke (mm)

Stroke (mm)		Applicable Bore Size						
		ø16	ø20	ø25	ø32	ø40	ø50	ø63
Standard Stroke	25	●	●	●	●	●	●	●
	50	●	●	●	●	●	●	●
	75	●	●	●	●	●	●	●
	100	●	●	●	●	●	●	●
	125	●	●	●	●	●	●	●
	150	●	●	●	●	●	●	●
	175	●	●	●	●	●	●	●
	200	●	●	●	●	●	●	●
	250	●	●	●	●	●	●	●
	300		●	●	●	●	●	●
	350		●	●	●	●	●	●
	400		●	●	●	●	●	●
Intermediate stroke *1		Every 1 mm (Custom product)						

*1: The overall length dimension is the dimension of the longer standard stroke.

❺ Switch Model No.

For switch details, please refer to P. 753.
Switches are included to the product and shipped.

Contact	Indicator LED Special Function	Wiring (Output)	Load Voltage (V) AC	Load Voltage (V) DC	Load Current (mA) AC	Load Current (mA) DC	Lead Wire *1 Straight	Lead Wire *1 L-shape	
Solid State	1-Color	2-wire	85 to 265	-	5 to 100	-	T1H□	T1V□	
			-	10 to 30	-	5 to 20 *2	T2H□	T2V□	
		3-wire (NPN)	-	30 or less	-	100 or less	T3H□	T3V□	
		3-wire (PNP)	-		-		T3PH□	T3PV□	
	2-Color	2-wire	-	24 ± 10%	-	5 to 20	T2WH□	T2WV□	
		3-wire (NPN)	-	30 or less	-	50 or less	T3WH□	T3WV□	
	2-Color Improved Water Resistance	2-wire	-	24 ± 10%	-	5 to 20	T2WLH□	T2WLV□	*3
	2-Color for AC Magnetic Field		-	24 ± 10%	-		T2YD□	–	
			-		-		T2YDT□	–	
	1-Color Off-Delay Type		-	10 to 30	-	5 to 20 *2	T2JH□	T2JV□	
	1-Color Flexible Lead Wire Type		-	10 to 30	-		T2HR3	T2VR3	
Reed	1-Color	2-wire	110	12/24	7 to 20	5 to 50	T0H□	T0V□	
	No Indicator LED		110	5/12/24	20 or less	50 or less	T5H□	T5V□	
	1-Color		110/220	12/24	7 to 20 / 7 to 10	5 to 50	T8H□	T8V□	*4

*1: For "□" in the switch model number, enter the code selected from the "*Lead wire length, connector specification" table.
*2: The maximum load current value above, 20 mA, is at 25°C. If the switch operating ambient temperature is higher than 25°C, it will be lower than 20 mA. (At 60°C, it will be 5 to 10 mA.)
*3: This does not guarantee the water resistance of the cylinder. When using in a water-resistant environment, use of an improved water resistance cylinder is recommended.
*4: STG-$^{M}_{B}$C-16 cannot be equipped with T8H/V.
*5: Switches other than the model numbers listed above are also available. (Custom Product) For details, see P. 753.

* Lead wire length, connector specification

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)
*6 W	M8 Connector, 1PIN (+), 4PIN (−) Lead Wire 0.3 m

*6: Only T2WLH and T2WLV can be selected.

Example) Lead wire length
1 m TOH
3 m TOH 3
5 m TOH 5

❻ Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs
T	With 3 pcs

Switch Single Unit Model No. Notation Method

SW - T0V

❺ Switch Model No.

About Custom Product Specifications

For details, refer to P. 466.

Code	Content
-0	Port symmetrical type

Model No. Example)
STG-$^{M}_{B}$C-·····-O

For combinations of variations and options, please refer to P. 368, 369.

Food Manufacturing Process Compatible Specification (Catalog No. CC-1271AA)

● Uses food grade grease that can be used in food manufacturing processes

STG-MC-·····-FP1

Rechargeable Battery Compatible Specification (Catalog No. CC-1226AA)

● Design compatible with rechargeable battery manufacturing process

STG-$^{M}_{B}$C-·····-P4□

* Please contact us for details.

Specifications

Item		STG-MBC						
Bore Size	mm	ø16	ø20	ø25	ø32	ø40	ø50	ø63
Actuation method		Double Acting/With Air Cushion						
Operating Fluid		Compressed Air						
Max. Working Pressure MPa		1.0						
Min. Operating Pressure MPa		0.15			0.1			
Proof Pressure	MPa	1.6						
Ambient Temperature °C		-10 to 60 (No freezing)						
Port Size		M5	Rc1/8				Rc1/4	
Stroke tolerance	mm	+2.0 0						
Operating Piston Speed mm/s		50 to 500						50 to 300
Cushion		With Air Cushion						
Lubrication		Not required (When lubricating, use turbine oil Class 1 ISO VG32)						
Allowable Absorbed Energy J		0.3	0.7	1.0	2.5	3.7	3.8	5.5

Stroke

Bore Size	Standard Stroke (mm)	Max. Stroke (mm)	Min. Stroke (mm)	Min. stroke with switch (mm)
ø16	25, 50, 75, 100, 125, 150, 175, 200, 250	250	15	15
ø20	25, 50, 75, 100, 125, 150, 175, 200, 250, 300, 350, 400	400		
ø25				
ø32				
ø40				
ø50				
ø63			*2	

*1: Intermediate strokes can be manufactured in 1 mm increments. However, the overall length dimension will be the dimension of the longer standard stroke. (Custom order)

*2: Cushion effect cannot be obtained below the minimum stroke, so select the basic type.

Cylinder Weight

● STG-M

Unit: kg

Item / Bore Size (mm)	Stroke 25	50	75	100	125	150	175	200	250	300	350	400	Switch weight
ø16	0.49	0.61	0.76	0.88	1.04	1.16	1.28	1.41	1.65	-	-	-	Refer to the mass described in the switch specifications on P. 753
ø20	0.85	1.04	1.30	1.49	1.68	1.87	2.06	2.26	2.71	3.10	3.48	3.87	
ø25	1.19	1.45	1.83	2.09	2.35	2.62	2.89	3.15	3.80	4.32	4.86	5.38	
ø32	1.90	2.26	2.80	3.18	3.58	3.96	4.35	4.73	5.71	6.48	7.26	8.03	
ø40	2.28	2.70	3.16	3.58	4.01	4.43	4.86	5.28	6.31	7.17	8.02	8.87	
ø50	3.87	4.51	5.24	5.88	6.51	7.15	7.79	8.43	10.04	11.30	12.60	13.90	
ø63	4.93	5.69	6.53	7.29	8.04	8.80	9.55	10.31	12.15	13.65	15.15	16.64	

● STG-B

Unit: kg

Item / Bore Size (mm)	Stroke 25	50	75	100	125	150	175	200	250	300	350	400	Switch weight
ø16	0.52	0.64	0.75	0.87	1.00	1.11	1.22	1.34	1.55	-	-	-	Refer to the mass described in the switch specifications on P. 753
ø20	0.90	1.10	1.27	1.43	1.63	1.80	1.97	2.14	2.50	2.84	3.18	3.52	
ø25	1.26	1.52	1.75	1.98	2.24	2.46	2.69	2.91	3.40	3.85	4.30	4.74	
ø32	1.75	2.04	2.47	2.77	3.13	3.43	3.72	4.02	4.68	5.27	5.87	6.46	
ø40	2.12	2.48	2.97	3.33	3.75	4.11	4.47	4.83	5.61	6.32	7.04	7.76	
ø50	3.62	4.17	4.92	5.47	6.10	6.65	7.20	7.75	8.98	10.07	11.20	12.30	
ø63	4.69	5.34	6.21	6.87	7.63	8.29	8.96	9.62	11.05	12.45	13.75	15.05	

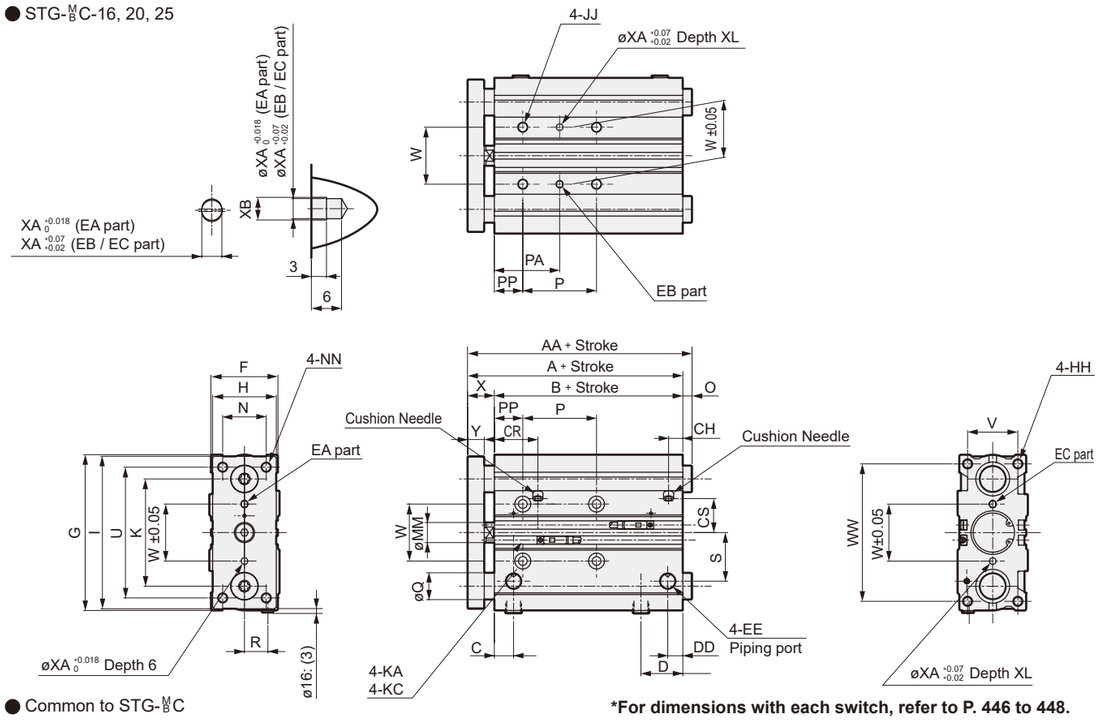
Theoretical Thrust Table

(Unit: N)

Bore Size (mm)	Operating Direction	Operating pressure MPa 0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø16	Push	-	30.2	40.2	60.3	80.4	1.01 x 10²	1.21 x 10²	1.41 x 10²	1.61 x 10²	1.81 x 10²	2.01 x 10²
	Pull	-	22.6	30.2	45.2	60.3	75.4	90.5	1.06 x 10²	1.21 x 10²	1.36 x 10²	1.51 x 10²
ø20	Push	-	47.1	62.8	94.2	1.26 x 10²	1.57 x 10²	1.88 x 10²	2.20 x 10²	2.51 x 10²	2.83 x 10²	3.14 x 10²
	Pull	-	35.3	47.1	70.7	94.2	1.18 x 10²	1.41 x 10²	1.65 x 10²	1.88 x 10²	2.12 x 10²	2.36 x 10²
ø25	Push	-	73.6	98.2	1.47 x 10²	1.96 x 10²	2.45 x 10²	2.95 x 10²	3.44 x 10²	3.93 x 10²	4.42 x 10²	4.91 x 10²
	Pull	-	56.7	75.6	1.13 x 10²	1.51 x 10²	1.89 x 10²	2.27 x 10²	2.64 x 10²	3.02 x 10²	3.40 x 10²	3.78 x 10²
ø32	Push	80.4	1.21 x 10²	1.61 x 10²	2.41 x 10²	3.22 x 10²	4.02 x 10²	4.83 x 10²	5.63 x 10²	6.43 x 10²	7.24 x 10²	8.04 x 10²
	Pull	60.3	90.5	1.21 x 10²	1.81 x 10²	2.41 x 10²	3.02 x 10²	3.62x10²	4.22 x 10²	4.83 x 10²	5.43x10²	6.03 x 10²
ø40	Push	1.26 x 10²	1.88 x 10²	2.51 x 10²	3.77 x 10²	5.03 x 10²	6.28 x 10²	7.54 x 10²	8.80 x 10²	1.01 x 10³	1.13 x 10³	1.26 x 10³
	Pull	1.06 x 10²	1.58 x 10²	2.11 x 10²	3.17 x 10²	4.22 x 10²	5.28 x 10²	6.33 x 10²	7.39 x 10²	8.44 x 10²	9.50 x 10²	1.06 x 10³
ø50	Push	1.96 x 10²	2.95 x 10²	3.93 x 10²	5.89 x 10²	7.85 x 10²	9.82 x 10²	1.18 x 10³	1.37 x 10³	1.57 x 10³	1.77 x 10³	1.96 x 10³
	Pull	1.65 x 10²	2.47 x 10²	3.30 x 10²	4.95 x 10²	6.60 x 10²	8.25 x 10²	9.90 x 10²	1.15 x 10³	1.32 x 10³	1.48 x 10³	1.65 x 10³
ø63	Push	3.12 x 10²	4.68 x 10²	6.23 x 10²	9.35 x 10²	1.25 x 10³	1.56 x 10³	1.87 x 10³	2.18 x 10³	2.49 x 10³	2.81 x 10³	3.12 x 10³
	Pull	2.80 x 10²	4.20 x 10²	5.61 x 10²	8.41 x 10²	1.12 x 10³	1.40 x 10³	1.68 x 10³	1.96 x 10³	2.24 x 10³	2.52 x 10³	2.80 x 10³

External dimensions diagram (Bore size: ø16, ø20, ø25)

● STG-$^{M}_{B}$C-16, 20, 25



● Common to STG-$^{M}_{B}$C

***For dimensions with each switch, refer to P. 446 to 448.**

Code / Bore Size (mm)	Standard Stroke (mm)	A	B	C	D	DD	EE	F	G	H	HH	I	JJ	K	KA
ø16	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 Through
ø20	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 Through
ø25	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 Through

Code / Bore Size (mm)	MM	N	NN	KC	P				PA			
					75st or less	Over 75st and 175st or less	Over 175st and 250st or less	Over 250st and 400st or less	75st or less	Over 75st and 175st or less	Over 175st and 250st or less	Over 250st and 400st or less
ø16	6	16	M5 Through	8 Counterbore depth 4.5	44	110	200	–	27	60	105	–
ø20	8	18	M5 Through	9.5 Counterbore depth 5.5	44	120	200	300	39	77	117	167
ø25	10	26	M6 Through	9.5 Counterbore depth 5.5	44	120	200	300	39	77	117	167

Code / Bore Size (mm)	PP	R	S	U	V	W	WW	X	Y	XA	XB	CR	CH	CS
ø16	5	10	18	54	22	24	56	13 -0 -1.5	7.5	3	3.5	23.5	9	16
ø20	17	11	25	70	24	28	72	16 -2 -0	9.5	3	3.5	25	11	19
ø25	17	14	29	78	30	34	82	16 -2 -0	9.5	4	4.5	26	8.5	20

● STG-MC

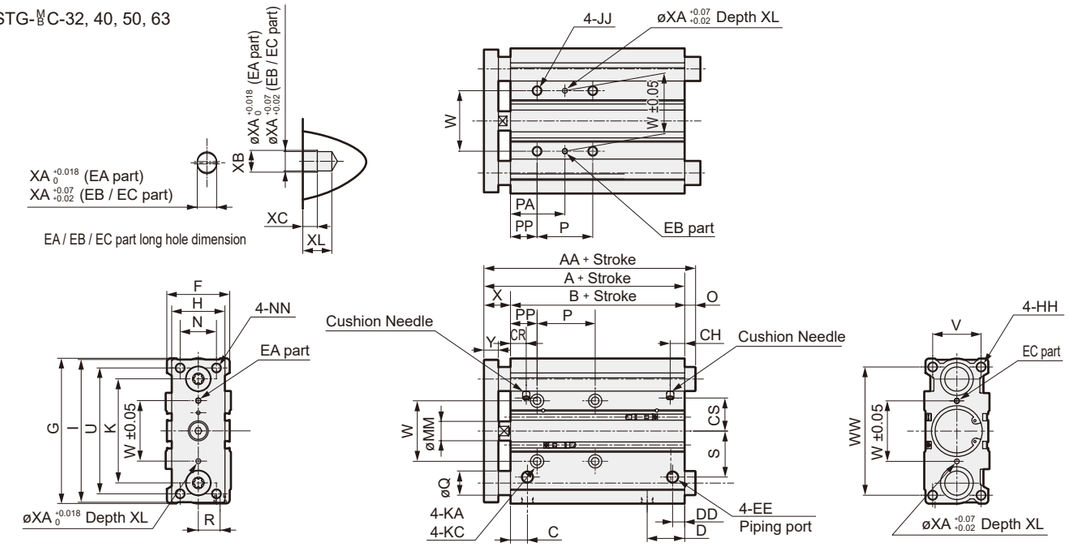
Code / Bore Size (mm)	AA					Q	O				
	25st or less	Over 25st and 50st or less	Over 50st and 100st or less	Over 100st and 200st or less	Over 200st		25st or less	Over 25st and 50st or less	Over 50st and 100st or less	Over 100st and 200st or less	Over 200st
ø16	71	88	71	95	95	10	0	17	0	24	24
ø20	78	84.5	79	79	122	12	0	6.5	1	1	44
ø25	78.5	84	84	84	122	16	0	5.5	5.5	5.5	43.5

● STG-BC

Code / Bore Size (mm)	AA					Q	O				
	25st or less	Over 25st and 75st or less	100st	Over 100st and 200st or less	Over 200st		25st or less	Over 25st and 75st or less	100st	Over 100st and 200st or less	Over 200st
ø16	80	71	71	95	95	8	9	0	0	24	24
ø20	93	79	79	100	122	10	15	1	1	22	44
ø25	99	84	103	103	122	13	20.5	5.5	24.5	24.5	43.5

External dimensions diagram (Bore size: ø32, ø40, ø50, ø63)

● STG-$^{M}_{B}$C-32, 40, 50, 63



● Common to STG-$^{M}_{B}$C

***For dimensions with each switch, refer to P. 446 to 448.**

Code / Bore Size (mm)	Standard Stroke (mm)	A	B	C	D	DD	EE	F	G	H	HH	I	JJ	K	KA
ø32	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 Through
ø40		91	69	14	31	10	Rc1/8	54	120	44	M8 depth 20	118	M8 Depth 16	86	6.3 Through
ø50		97	69	14	35	11	Rc1/4	64	148	60	M10 Depth 22	146	M10 Depth 20	110	8.6 Through
ø63		102	74	16.5	35	15	Rc1/4	78	162	70	M10 Depth 22	158	M10 Depth 20	124	8.6 Through

Code / Bore Size (mm)	KC	MM	N	NN	P				PA			
					75st or less	Over 75st and 175st or less	Over 175st and 250st or less	Over 250st	75st or less	Over 75st and 175st or less	Over 175st and 250st or less	Over 250st
ø32	11 Counterbore depth 7.5	12	30	M8 Through	48	124	200	300	45	83	121	171
ø40	11 Counterbore depth 7.5	16	30	M8 Through	48	124	200	300	46	84	122	172
ø50	14 Counterbore depth 9	20	40	M10 Through	48	124	200	300	48	86	124	174
ø63	14 Counterbore depth 9	20	50	M10 Through	52	128	200	300	50	88	124	174

Code / Bore Size (mm)	PP	R	S	U	V	W	WW	X	Y	XA	XB	XC	XL	CR	CH	CS
ø32	21	15	34	96	34	42	98	22 -0 -2	11.5	4	4.5	3	6	12.5	9.2	25
ø40	22	18	38	104	40	50	106	22 -0 -2	11.5	4	4.5	3	6	13	12	27.5
ø50	24	21.5	47	130	46	66	130	28 -0 -2	15.5	5	6	4	8	15	12.5	39.5
ø63	24	28	55	130	58	80	142	28 -0 -2	15.5	5	6	4	8	32.5	31.5	45.5

● STG-MC

Code / Bore Size (mm)	AA				Q	O			
	25st	50st	Over 50st and 200st or less	Over 200st		25st	50st	Over 50st and 200st or less	Over 200st
ø32	84.5	125	100	140	20	0	40.5	15.5	55.5
ø40	91	125	100	140	20	0	34	9	49
ø50	97	116	116	161	25	0	19	19	64
ø63	102	116	116	161	25	0	14	14	59

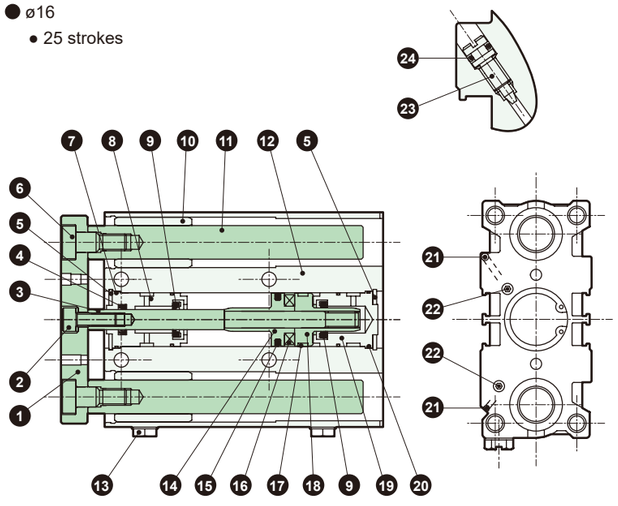
● STG-BC

Code / Bore Size (mm)	AA						Q	O					
	25st	50st	75st	100st	Over 100st and 200st or less	Over 200st		25st	50st	75st	100st	Over 100st and 200st or less	Over 200st
ø32	84.5	123	98	98	118	140	16	0	38.5	13.5	13.5	33.5	55.5
ø40	91	123	98	98	118	140	16	0	32	7	7	27	49
ø50	97	114	114	159	134	161	20	0	17	17	62	37	64
ø63	102	114	114	159	134	161	20	0	12	12	57	32	59

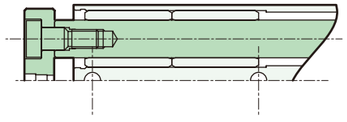
Internal structure diagram / Material (STG-MC-16 to 40)

● ø16

● 25 strokes



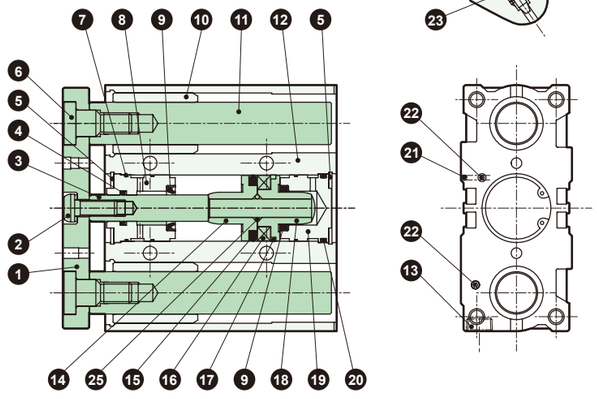
● Over 25 strokes and 100 strokes or less



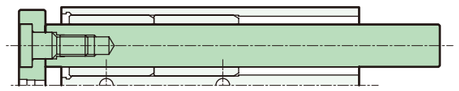
● Over 100 strokes

● ø20 to ø40

● 25 strokes (ø20, ø25)



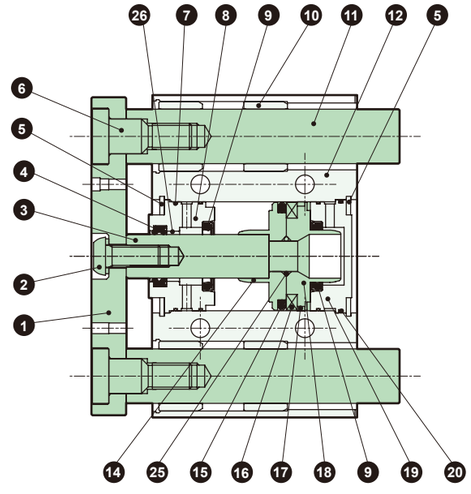
● Over 25 strokes and 200 strokes or less (ø20, ø25)

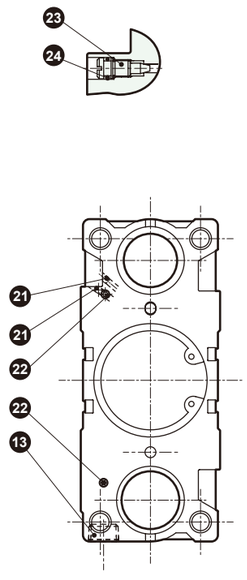


● Over 200 strokes (ø20, ø25, ø32, ø40)

Internal structure diagram / Material (STG-MC-50, 63)

● ø50, ø63





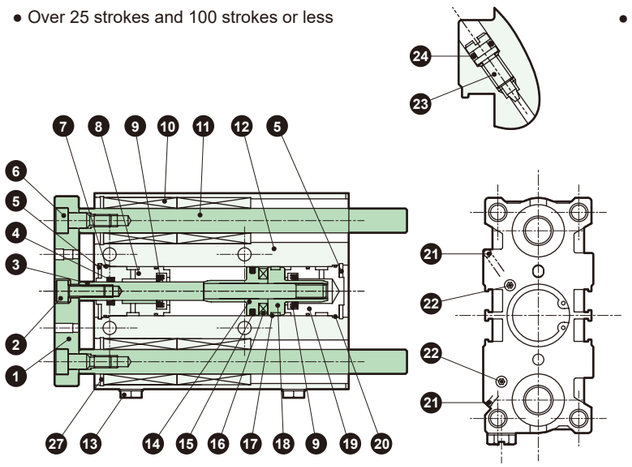
Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	End plate	Steel	Nickel Plating	12	Cylinder Body	Aluminum Alloy	Hard Anodized
2	Hexagon socket head cap screw (ø16) Hexagon socket button head cap screw (ø20 to ø63)	Steel	Zinc Chromate	13	Plug	Copper alloy or steel	
				14	Piston (R)	Aluminum Alloy	Chromate (ø16 to ø32 only)
3	Piston Rod	ø16 to ø25: Stainless steel ø32 to ø63: Steel	Industrial Hard Chrome Plating	15	Piston Packing	Nitrile Rubber	
				16	Magnet		
4	Rod Packing	Nitrile Rubber		17	Wear Ring	Polyacetal	
5	C-type retaining ring	Steel	Zinc phosphate	18	Piston (H)	Aluminum Alloy	Chromate (ø16 to ø32 only)
6	Bolt	Steel	Zinc Chromate	19	Bottom plate	Aluminum Alloy	Chromate
7	Metal gasket	Nitrile Rubber		20	O-ring	Nitrile Rubber	
8	Rod Metal	Aluminum Alloy	ø16 to ø32: Alumite ø40 to ø63: Chromate	21	Steel ball	Stainless Steel	
				22	Hexagon socket head set screw	Stainless Steel	
9	Cushion Packing	Nitrile rubber / Steel		23	Cushion Needle	Copper Alloy	
10	Metal	Oil-Impregnated Bearing Alloy		24	Needle Gasket	Nitrile Rubber	
11	Guide rod	ø16: Stainless steel ø20 to ø63: Steel	Industrial Hard Chrome Plating	25	Piston Gasket	Nitrile Rubber	
				26	Bushing	Bearing Alloy	(ø40 to ø63 only)

For maintenance parts, please visit the CKD Equipment Product Site (https://www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts

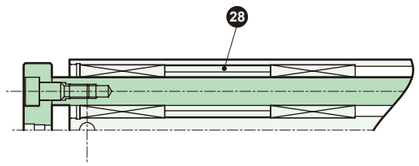
Internal structure diagram / Material (STG-BC-16 to 40)

● ø16

● Over 25 strokes and 100 strokes or less



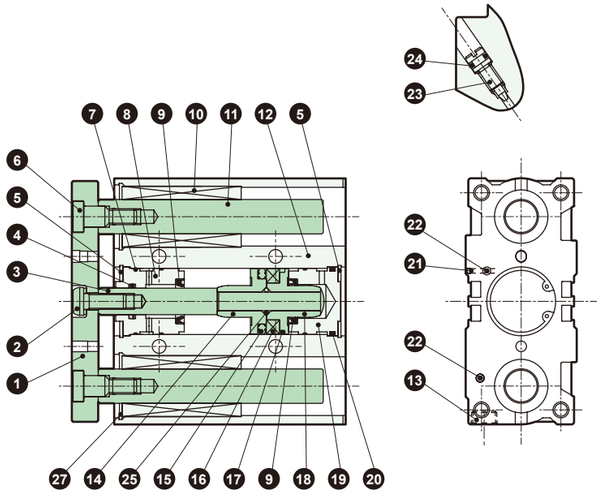
● Over 100 strokes



● ø20 to ø40

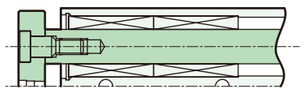
● 25 strokes (ø20, ø25)

● 100 strokes or less (ø32, ø40)



● Over 25 strokes and 100 strokes or less (ø20)

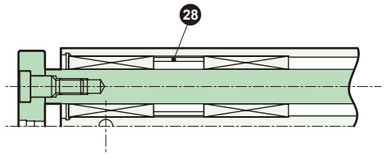
● Over 25 strokes and 75 strokes or less (ø25)



● Over 100 strokes (ø20)

● Over 75 strokes (ø25)

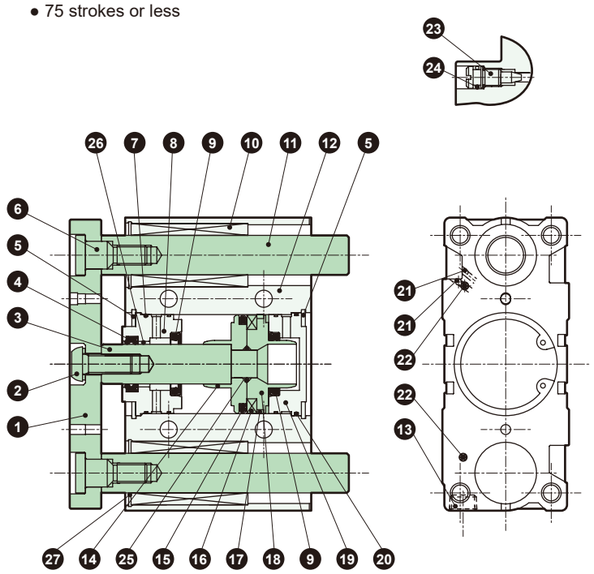
● Over 100 strokes (ø32, ø40)



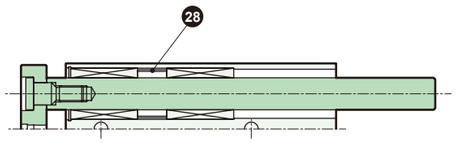
Internal structure diagram / Material (STG-BC-50, 63)

● ø50, ø63

● 75 strokes or less



● Over 75 strokes



Part No.	Part Name	Material	Remarks
1	End plate	Steel	Nickel Plating
2	Hexagon socket head cap screw (ø12 to ø16)	Steel	Zinc Chromate
	Hexagon socket button head cap screw (ø20 to ø63)	Steel	Zinc Chromate
3	Piston Rod	ø16 to ø25: Stainless steel ø32 to ø63: Steel	Industrial Hard Chrome Plating
4	Rod Packing	Nitrile Rubber	
5	C-type retaining ring	Steel	Zinc phosphate
6	Bolt	Steel	Zinc Chromate
7	Metal gasket	Nitrile Rubber	
8	Rod Metal	Aluminum Alloy	ø16 to ø32: Alumite ø40 to ø63: Chromate
9	Cushion Packing	Nitrile Rubber, Steel	
10	Ball bush		
11	Guide rod	Steel	Industrial Hard Chrome Plating
12	Cylinder Body	Aluminum Alloy	Hard Anodized
13	Plug	Copper alloy or steel	

Part No.	Part Name	Material	Remarks
14	Piston (R)	Aluminum Alloy	Chromate (ø16 to ø32 only)
15	Piston Packing	Nitrile Rubber	
16	Magnet		
17	Wear Ring	Polyacetal	
18	Piston (H)	Aluminum Alloy	Chromate (ø16 to ø32 only)
19	Bottom plate	Aluminum Alloy	Chromate
20	O-ring	Nitrile rubber	
21	Steel ball	Stainless steel	
22	Hexagon socket head set screw	Stainless Steel	
23	Cushion Needle	Copper Alloy	
24	Needle Gasket	Nitrile Rubber	
25	Piston Gasket	Nitrile Rubber	
26	Bushing	Bearing Alloy	(ø40 to ø63 only)
27	C-type retaining ring	Steel	Zinc phosphate
28	Collar	Aluminum Alloy	

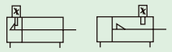
For maintenance parts, please visit the CKD Equipment Product Site
(https://www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts

Guided cylinder Double acting, Drop prevention type

STG-$^{M}_{B}$Q Series

●Bore Size: ø20, ø25, ø32, ø40, ø50, ø63

Circuit Diagram
Symbol



RoHS

Model No. Notation Method

Without Switch
(Built-in magnet for switch)

STG - M Q - 32 [ ] - 25 - H ——— M1

Model No. ❶ ❷ ❸ ❹ ❺ ❽

With Switch
(Built-in magnet for switch)

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

Model No. ❶ Bearing type ❷ Bore size ❸ Piping thread type ❹ Stroke ❺ Drop prevention mechanism ❻ Switch Model No. ❼ Number of Switches ❽ Option

Drop prevention type

❶ Bearing type

Code	Content
M	Plain bearing
B	Rolling bearing

❷ Bore Size (mm)

Code	Content
20	ø20
25	ø25
32	ø32
40	ø40
50	ø50
63	ø63

❸ Piping thread type

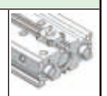
Code	Content
Blank	Rc Thread
NN	NPT Thread (Custom Order Product)
GN	G Thread (Custom Order Product)

❹ Stroke (mm)

Stroke (mm)		Applicable Bore Size					
		ø20	ø25	ø32	ø40	ø50	ø63
Standard Stroke	25	●	●	●	●	●	●
	50	●	●	●	●	●	●
	75	●	●	●	●	●	●
	100	●	●	●	●	●	●
	125	●	●	●	●	●	●
	150	●	●	●	●	●	●
	175	●	●	●	●	●	●
	200	●	●	●	●	●	●
	250	●	●	●	●	●	●
	300	●	●	●	●	●	●
	350	●	●	●	●	●	●
	400	●	●	●	●	●	●
Intermediate stroke *1		Every 5 mm					

*1: The overall length dimension is the same as the dimension of the longer standard stroke.

❺ Drop prevention mechanism

Code	Content	
H	Head side fall prevention mechanism	
R	Rod side fall prevention mechanism	

❻ Switch Model No.

For switch details, please refer to P. 753.
Switches are included to the product and shipped.

Contact	Indicator LED Special Function	Wiring (Output)	Load Voltage (V) AC	Load Voltage (V) DC	Load Current (mA) AC	Load Current (mA) DC	Lead Wire *1 Straight	Lead Wire *1 L-shape	
Solid State	1-Color	2-wire	85 to 265	-	5 to 100	-	T1H□	T1V□	
			-	10 to 30	-	5 to 20 *2	T2H□	T2V□	
		3-wire (NPN)	-	30 or less	-	100 or less	T3H□	T3V□	
		3-wire (PNP)	-		-		T3PH□	T3PV□	
	2-Color	2-wire	-	24 ± 10%	-	5 to 20	T2WH□	T2WV□	
		3-wire (NPN)	-	30 or less	-	50 or less	T3WH□	T3WV□	
	2-Color for AC Magnetic Field	2-wire	-	24 ± 10%	-	5 to 20	T2YD□	–	
			-		-		T2YDT□	–	
	1-Color Off-Delay Type		-	10 to 30	-	5 to 20 *2	T2JH□	T2JV□	
	1-Color Flexible Lead Wire Type		-	10 to 30	-		T2HR3	T2VR3	
Reed	1-Color	2-wire	110	12/24	7 to 20	5 to 50	T0H□	T0V□	
	No Indicator LED		110	5/12/24	20 or less	50 or less	T5H□	T5V□	

*1: For "□" in the switch model number, enter the code selected from the "*Lead wire length" table.
*2: The maximum load current value above, 20 mA, is at 25°C. If the switch operating ambient temperature is higher than 25°C, it will be lower than 20 mA. (At 60°C, it will be 5 to 10 mA.)
*3: Please note that the minimum stroke varies depending on the switch.
*4: In the case of head side fall prevention with 25st or less, it may not be possible to insert the switch from the rod side. In this case, temporarily remove the end plate and install it. For removal and assembly methods of the end plate, please contact us.
*5: Switches other than the model numbers listed above are also available. (Custom Product) For details, see P. 753.

*** Lead wire length**

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)

Example) Lead wire length
1 m TOH
3 m TOH 3
5 m TOH 5

❼ Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs
T	With 3 pcs

❽ Option

Code	Content	
M0	Non-Locking Manual Device (Release bolt attached)	
M1	Locking Manual Device	

*1: ❽ If "M0" or "M1" is not selected as an option, only the non-locking manual device will be provided. Release bolt is not included.

Switch Single Unit Model No. Notation Method

SW - T0V

❻ Switch Model No.

About Custom Product Specifications

For details, refer to P. 466.

Code	Content
-0	Port symmetrical type

Model No. Example)

STG-$^{M}_{B}$Q-·····-O

Rechargeable Battery Compatible Specification (Catalog No. CC-1226AA)

● Design compatible with rechargeable battery manufacturing process

STG-$^{M}_{B}$Q-·····-P4□

* Please contact us for details.

For combinations of variations and options, please refer to P. 368, 369.

Specifications

Item	STG-M/BQ					
Bore Size mm	ø20	ø25	ø32	ø40	ø50	ø63
Actuation method	Double Acting, Drop Prevention Type					
Operating Fluid	Compressed Air					
Max. Working Pressure MPa	1.0					
Min. Operating Pressure MPa	0.2		0.15			
Proof Pressure MPa	1.6					
Ambient Temperature °C	-10 to 60 (No freezing)					
Port Size	Rc1/8				Rc1/4	
Stroke tolerance mm	+2.0 0					
Operating Piston Speed mm/s	50 to 500					50 to 300
Cushion	With Rubber Cushion					
Fall prevention mechanism	Rod side or head side					
Holding Force	Max. Thrust x 0.7					
Lubrication	Not required (When lubricating, use turbine oil Class 1 ISO VG32)					
Allowable Absorbed Energy J	0.157	0.157	0.401	0.627	0.980	1.560

Stroke

Bore Size	Standard Stroke (mm)	Max. Stroke (mm)	Min. Stroke (mm)	Min. stroke with switch (mm)
ø20 ø25 ø32 ø40 ø50 ø63	25, 50, 75, 100, 125, 150, 175, 200, 250, 300, 350, 400	400	5	Refer to the table below

Note) Intermediate strokes can be manufactured in 5 mm increments. However, the overall length dimension will be the same as the dimension of the standard stroke above it.

Min. Stroke with Switch

	T0/T5/T2/T3/T3P	T1/T2J/T2YD/T2YDT
Straight lead wire type T□H	20	30
L-shaped lead wire type T□V	5	15

Note) This is for the case with 1 or 2 switches.

⚠ Be sure to read "Precautions for Use" (Drop prevention type) on P. 468, 469 before use.

Cylinder Weight

● STG-MQ

Unit: kg

Item / Bore Size (mm)	Stroke 25	50	75	100	125	150	175	200	250	300	350	400	Switch weight
ø20	0.71	1.15	1.35	1.54	1.73	1.92	2.12	2.35	2.77	3.15	3.54	3.92	Refer to the mass described in the switch specifications on **P. 753**
ø25	1.00	1.63	1.90	2.16	2.43	2.69	2.95	3.27	3.85	4.38	4.91	5.43	
ø32	2.06	2.60	2.99	3.39	3.78	4.18	4.57	5.06	5.94	6.73	7.52	8.30	
ø40	2.38	2.83	3.24	3.66	4.06	4.48	4.89	5.39	6.32	7.15	7.97	8.79	
ø50	4.02	4.72	5.34	5.96	6.59	7.21	7.83	8.61	10.01	11.25	12.51	13.77	
ø63	5.01	5.82	6.56	7.29	8.02	8.75	9.49	10.38	12.00	13.45	14.91	16.36	

● STG-BQ

Unit: kg

Item / Bore Size (mm)	Stroke 25	50	75	100	125	150	175	200	250	300	350	400	Switch weight
ø20	0.74	1.13	1.29	1.50	1.66	1.84	2.00	2.19	2.54	2.88	3.22	3.56	Refer to the mass described in the switch specifications on **P. 753**
ø25	1.03	1.56	1.79	2.05	2.27	2.50	2.72	2.96	3.43	3.88	4.33	4.78	
ø32	1.85	2.29	2.60	2.96	3.27	3.57	3.88	4.22	4.86	5.47	6.08	6.69	
ø40	2.18	2.65	3.00	3.40	3.75	4.10	4.45	4.84	5.56	6.26	6.96	7.66	
ø50	3.69	4.41	4.95	5.57	6.10	6.63	7.17	8.27	8.90	9.97	11.06	12.13	
ø63	4.66	5.51	6.15	6.89	7.53	8.18	8.82	9.51	10.88	12.19	13.45	14.71	

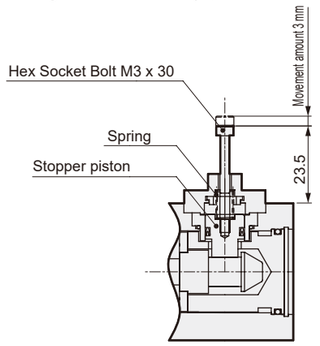
Theoretical Thrust Table

(Unit: N)

Bore Size (mm)	Operating Direction	Operating pressure MPa 0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø20	Push	-	62.8	94.2	1.26 x 10²	1.57 x 10²	1.88 x 10²	2.20 x 10²	2.51 x 10²	2.83 x 10²	3.14 x 10²
	Pull	-	47.1	70.7	94.2	1.18 x 10²	1.41 x 10²	1.65 x 10²	1.88 x 10²	2.12 x 10²	2.36 x 10²
ø25	Push	-	98.2	1.47 x 10²	1.96 x 10²	2.45 x 10²	2.95 x 10²	3.44 x 10²	3.93 x 10²	4.42 x 10²	4.91 x 10²
	Pull	-	75.6	1.13 x 10²	1.51 x 10²	1.89 x 10²	2.27 x 10²	2.64 x 10²	3.02 x 10²	3.40 x 10²	3.78 x 10²
ø32	Push	1.21 x 10²	1.61 x 10²	2.41 x 10²	3.22 x 10²	4.02 x 10²	4.83 x 10²	5.63 x 10²	6.43 x 10²	7.24 x 10²	8.04 x 10²
	Pull	90.5	1.21 x 10²	1.81 x 10²	2.41 x 10²	3.02 x 10²	3.62x10²	4.22 x 10²	4.83 x 10²	5.43x10²	6.03 x 10²
ø40	Push	1.88 x 10²	2.51 x 10²	3.77 x 10²	5.03 x 10²	6.28 x 10²	7.54 x 10²	8.80 x 10²	1.01 x 10³	1.13 x 10³	1.26 x 10³
	Pull	1.58 x 10²	2.11 x 10²	3.17 x 10²	4.22 x 10²	5.28 x 10²	6.33 x 10²	7.39 x 10²	8.44 x 10²	9.50 x 10²	1.06 x 10³
ø50	Push	2.95 x 10²	3.93 x 10²	5.89 x 10²	7.85 x 10²	9.82 x 10²	1.18 x 10³	1.37 x 10³	1.57 x 10³	1.77 x 10³	1.96 x 10³
	Pull	2.47 x 10²	3.30 x 10²	4.95 x 10²	6.60 x 10²	8.25 x 10²	9.90 x 10²	1.15 x 10³	1.32 x 10³	1.48 x 10³	1.65 x 10³
ø63	Push	4.68 x 10²	6.23 x 10²	9.35 x 10²	1.25 x 10³	1.56 x 10³	1.87 x 10³	2.18 x 10³	2.49 x 10³	2.81 x 10³	3.12 x 10³
	Pull	4.20 x 10²	5.61 x 10²	8.41 x 10²	1.12 x 10³	1.40 x 10³	1.68 x 10³	1.96 x 10³	2.24 x 10³	2.52 x 10³	2.80 x 10³

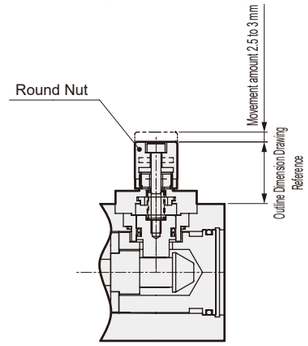
[Explanation of Manual Device]

● Non-locking manual override (Option Code: M0)



Screw the hex socket bolt (M3 x 30) into the stopper piston and pull the bolt with a force of 20N or more, the stopper piston will move and the lock will be released. (Work when no load horizontal mounting or when pressurizing the opposite side port) When the bolt is released, the built-in spring returns the stopper piston to its original position, and if it enters the lock groove, the piston will be locked.

● Locking manual override (Option Code: M1)

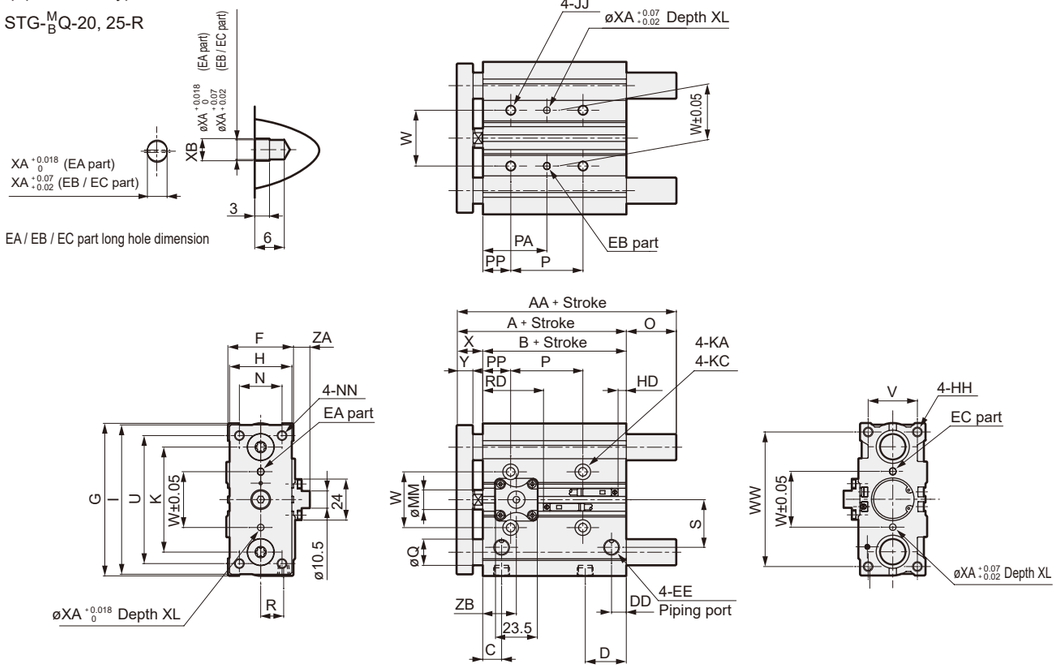


Turning the round nut to the left (counterclockwise) moves the stopper piston and releases the lock. Turning it to the right (clockwise) to the lock position returns the stopper piston, and if it enters the lock groove, the piston will be locked. When locking, if the stopper piston's engagement with the groove is shallow, it may cause damage. Be sure to securely screw the round nut all the way in.

Outline Dimension Drawing (Bore size: ø20, ø25)

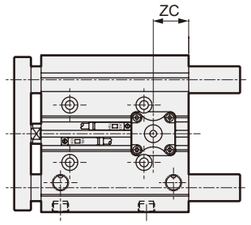
● Drop prevention type / Rod side

• STG-$^{M}_{B}$Q-20, 25-R

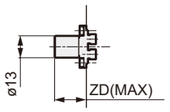


● Drop prevention type / Head side

• STG-$^{M}_{B}$Q-20, 25-H



● Locking manual type (M1)



● Common to STG-$^{M}_{B}$Q

*1: For intermediate strokes, the overall length dimension is the same as the dimension of the longer standard stroke.

***2: For dimensions with each switch, refer to P. 446 to 448.**

Code / Bore Size (mm)	Standard Stroke (mm)	A	B	C	D	DD	EE	F	G	H	HH	I	JJ	K	KA
ø20	25, 50, 75, 100, 125, 150, 175, 200, 250, 300, 350, 400	78	62	10.5	24.5	8.5	Rc1/8	36	83	30	M5 Depth 13	81	M6 Depth 12	54	5.2 Through
ø25		78.5	62.5	11.5	25	9	Rc1/8	42	93	38	M6 Depth 15	91	M6 Depth 12	64	5.2 Through

Code / Bore Size (mm)	MM	N	NN	KC	P				PA			
					75st or less	Over 75st and 175st or less	Over 175st and 250st or less	Over 250st	75st or less	Over 75st and 175st or less	Over 175st and 250st or less	Over 250st
ø20	10	18	M5 Through	9.5 Counterbore depth 5.5	44	120	200	300	39	77	117	167
ø25	12	26	M6 Through	9.5 Counterbore depth 5.5	44	120	200	300	39	77	117	167

Code / Bore Size (mm)	PP	R	S	U	V	W	WW	X	Y	XA	XB	Drop prevention mechanism part			
												ZA	ZB	ZC	ZD
ø20	17	11	25	70	24	28	72	16 +0.2 0	9.5	3	3.5	11	20	23	23
ø25	17	14	29	78	30	34	82	16 +0.2 0	9.5	4	4.5	9	20.5	19	21

● STG-MQ

Code / Bore Size (mm)	AA			Q	O		
	25st or less	Over 25st and 175st or less	Over 175st		25st or less	Over 25st and 175st or less	Over 175st
ø20	78	84.5	122	12	0	6.5	44
ø25	78.5	84	122	16	0	5.5	43.5

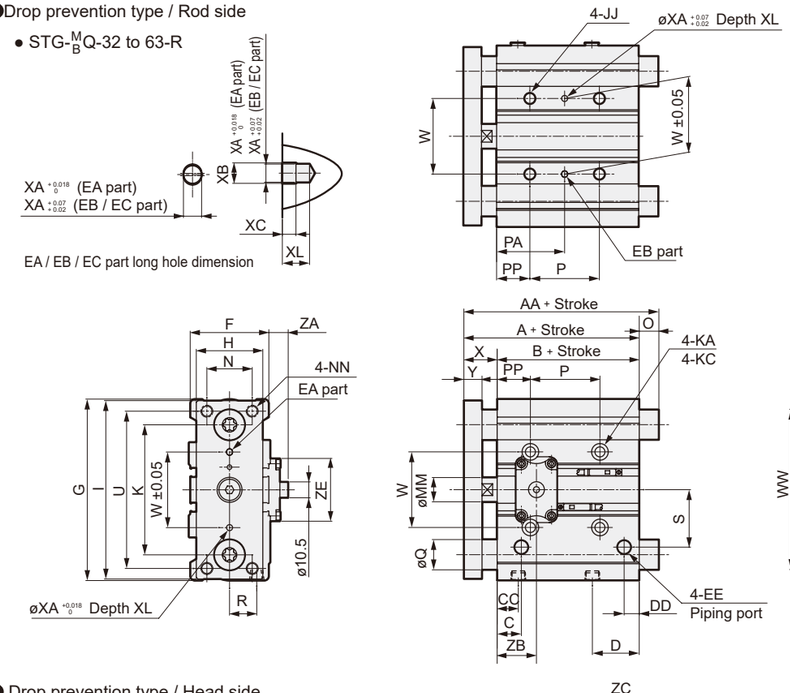
● STG-BQ

Code / Bore Size (mm)	AA			Q	O		
	75st or less	Over 75st and 175st or less	Over 175st		75st or less	Over 75st and 175st or less	Over 175st
ø20	80	100	122	10	2	22	44
ø25	84	103	122	13	5.5	24.5	43.5

Outline Dimension Drawing (Bore size: ø32 to ø63)

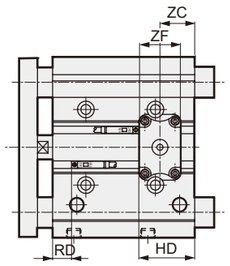
● Drop prevention type / Rod side

• STG-$^{M}_{B}$Q-32 to 63-R

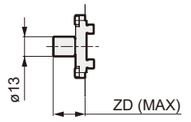


● Drop prevention type / Head side

• STG-$^{M}_{B}$Q-32 to 63-H



● Locking manual type (M1)



● Common to STG-$^{M}_{B}$Q

*1: For intermediate strokes, the overall length dimension is the same as the dimension of the longer standard stroke.

***2: For dimensions with each switch, refer to P. 446 to 448.**

Code / Bore Size (mm)	Standard Stroke (mm)	A	B	C	D	DD	EE	F	G	H	HH	I	JJ	K
ø32	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
ø40		91	69	14	31	10	Rc1/8	54	120	44	M8 depth 20	118	M8 Depth 16	86
ø50		97	69	14	35	11	Rc1/4	64	148	60	M10 Depth 22	146	M10 Depth 20	110
ø63		102	74	16.5	35	15	Rc1/4	78	162	70	M10 Depth 22	158	M10 Depth 20	124

Code / Bore Size (mm)	KA	KC	MM	N	NN	P				PA			
						75st or less	Over 75st and 175st or less	Over 175st and 275st or less	Over 275st	75st or less	Over 75st and 175st or less	Over 175st and 275st or less	Over 275st
ø32	6.3 Through	11 Counterbore depth 7.5	16	30	M8 Through	48	124	200	300	45	83	121	171
ø40	6.3 Through	11 Counterbore depth 7.5	16	30	M8 Through	48	124	200	300	46	84	122	172
ø50	8.6 Through	14 Counterbore depth 9	20	40	M10 Through	48	124	200	300	48	86	124	174
ø63	8.6 Through	14 Counterbore depth 9	20	50	M10 Through	52	128	200	300	50	88	124	174

Code / Bore Size (mm)	PP	R	S	U	V	W	WW	X	Y	XA	XB	XC	XL	Drop prevention mechanism part					
														ZA	ZB	ZC	ZD	ZE	ZF
ø32	21	15	34	96	34	42	98	22 +0.2 0	11.5	4	4.5	3	6	10	21	20	23.5	32.5	21.5
ø40	22	18	38	104	40	50	106	22 +0.2 0	11.5	4	4.5	3	6	12	25	23	23.5	40.5	23
ø50	24	21.5	47	130	46	66	130	28 +0.2 0	15.5	5	6	4	8	12	25	23	24.5	40.5	23
ø63	24	28	55	130	58	80	142	28 +0.2 0	15.5	5	6	4	8	11.5	25	25.5	24	40.5	23

● STG-MQ

Code / Bore Size (mm)	AA			Q	O		
	25st or less	Over 25st and 175st or less	Over 175st		25st or less	Over 25st and 175st or less	Over 175st
ø32	84.5	100	140	20	0	15.5	55.5
ø40	91	100	140	20	0	9	49
ø50	97	116	161	25	0	19	64
ø63	102	116	161	25	0	14	59

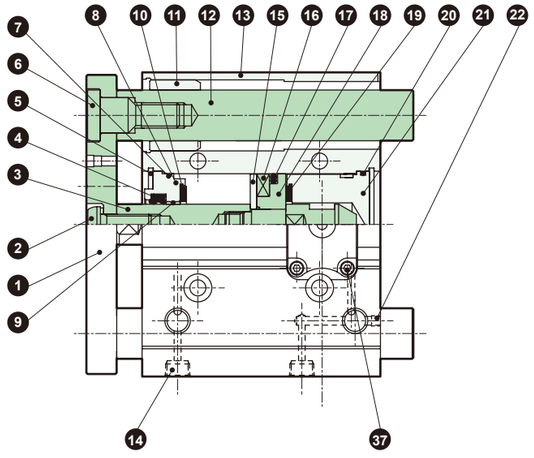
● STG-BQ

Code / Bore Size (mm)	AA				Q	O		
	25st or less	Over 25st and 75st or less	Over 75st and 175st or less	Over 175st		25st or less	Over 25st and 75st or less	Over 75st and 175st or less	Over 175st
ø32	84.5	98	118	140	16	0	13.5	33.5	55.5
ø40	91	98	118	140	16	0	7	27	49
ø50	97	114	134	161	20	0	17	37	64
ø63	102	114	134	161	20	0	12	32	59

Internal Structure Diagram/Material

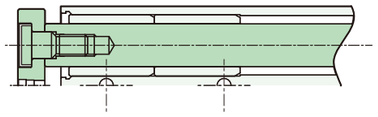
● STG-MQ-20 to 63

• Stroke 25 or less (ø20, ø25)

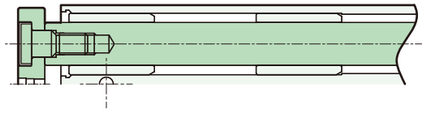


Plain bearing (M)

• Stroke over 25 and 175 or less (ø20, ø25)

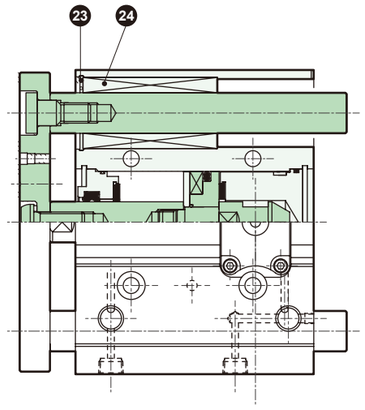


• Stroke over 175 (ø20, ø25)
• All strokes (ø32 to ø63)



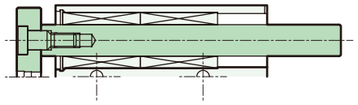
● STG-BQ-20 to 63

• 75 strokes or less (ø32 to ø63)

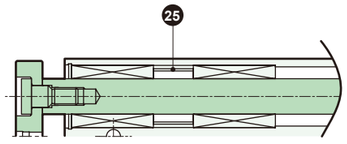


Rolling bearing (B)

• 75 strokes or less (ø20, ø25)

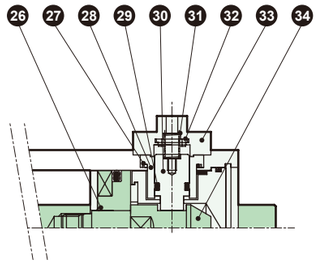


• Over 75 strokes (ø20 to ø63)

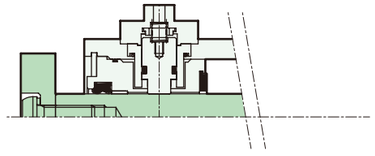


Internal Structure Diagram / Material

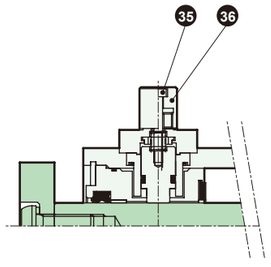
● Head side fall prevention type STG-$^{M}_{B}$Q-H



● Rod side fall prevention type STG-$^{M}_{B}$Q-R



● Locking manual device (M1)



Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	End plate	Steel	Nickel Plating	19	Cushion Rubber	Urethane Rubber	
2	Hex Socket Button Head Bolt	Steel	Zinc Chromate	20	O-ring	Nitrile rubber	
3	Piston Rod	ø20 to ø25: Stainless steel ø32 to ø63: Steel	Industrial Hard Chrome Plating	21	Head Cover	Aluminum Alloy	Chromate
				22	Hexagon socket head set screw	Stainless Steel	
4	Rod Packing	Nitrile Rubber		23	C-type retaining ring	Steel	Zinc phosphate
5	C-type retaining ring	Steel	Zinc phosphate	24	Ball bush		
6	Bolt	Steel	Zinc Chromate	25	Collar	Aluminum Alloy	
7	Metal gasket	Nitrile Rubber		26	O-ring	Nitrile Rubber	
8	Rod Metal	Aluminum Alloy	ø20 to ø25: Alumite ø40 to ø63: Chromate	27	O-ring	Nitrile Rubber	
				28	Stopper housing	ø20 to ø50: Aluminum alloy ø63: Steel	ø20 to ø50: Alumite ø63: Chromate
9	Bushing	Bearing Alloy	*1				
10	Cushion Rubber	Urethane Rubber		29	Stopper packing	Nitrile Rubber	
11	Metal	Oil-Impregnated Bearing Alloy		30	Stopper piston	Steel	Nitriding Treatment
12	Guide rod	Steel	Industrial Hard Chrome Plating	31	Coil Spring	Steel	Painting
13	Cylinder Body	Aluminum Alloy	Hard Anodized	32	Cushion Rubber	Urethane Rubber	
14	Plug	Steel	Nickel Plating	33	Stopper cover	Aluminum Alloy	Chromate
15	Spacer	Aluminum alloy	Chromate	34	Sleeve	Steel	Nitriding Treatment
16	Magnet			35	Hexagon Socket Head Cap Screw	Steel	
17	Piston Packing	Nitrile Rubber		36	Round Nut	Aluminum Alloy	
18	Piston	Aluminum Alloy	Chromate	37	Hexagon Socket Head Cap Screw	Steel	

*1: For head side fall prevention type with ø32 or less, and rod side fall prevention type with ø32 or less, ❾ bush is not included.

For maintenance parts, please visit the CKD Equipment Product Site
(https://www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts

Guided cylinder Double acting, Heavy-duty scraper type Guided cylinder Double acting, Coil scraper type

STG-$^{M}_{B}$G Series STG-$^{M}_{B}$G1 Series

●Bore Size: ø20, ø25, ø32, ø40, ø50, ø63

Circuit Diagram Symbol 

RoHS

Model No. Notation Method

Without Switch
(Built-in magnet for switch)

STG - M (1) G (2) - 32 (3) ( ) (4) - 25 (5)

Model No.

With Switch
(Built-in magnet for switch)

STG - M (1) G (2) - 32 (3) ( ) (4) - 25 (5) - T2H (6) - R (7)

Model No.
(2) Model No.
(4) Piping thread type
(6) Switch Model No.
(1) Bearing type
(3) Bore size
(5) Stroke
(7) Number of Switches

❶ Bearing type

Code	Content
M	Plain bearing
B	Rolling bearing

❷ Model No.

Code	Content
G	Heavy-Duty Scraper Type
G1	Coil Scraper Type

❸ Bore Size (mm)

Code	Content
20	ø20
25	ø25
32	ø32
40	ø40
50	ø50
63	ø63

❹ Piping thread type

Code	Content
Blank	Rc Thread
NN	NPT Thread (Custom Order Product)
GN	G Thread (Custom Order Product)

❺ Stroke (mm)

Stroke (mm)		Applicable Bore Size					
		ø20	ø25	ø32	ø40	ø50	ø63
Standard Stroke	20	●	●				
	25			●	●	●	●
	30	●	●				
	40	●	●				
	50	●	●	●	●	●	●
	75	●	●	●	●	●	●
	100	●	●	●	●	●	●
	125	●	●	●	●	●	●
	150	●	●	●	●	●	●
	175	●	●	●	●	●	●
	200	●	●	●	●	●	●
	250	●	●	●	●	●	●
	300	●	●	●	●	●	●
	350	●	●	●	●	●	●
	400	●	●	●	●	●	●
Intermediate stroke *1		Every 5 mm					

*1: The overall length dimension is the same as the dimension of the longer standard stroke.

❻ Switch Model No.

For switch details, please refer to P. 753.
Switches are included to the product and shipped.

Contact	Indicator LED Special Function	Wiring (Output)	Load Voltage (V) AC	Load Voltage (V) DC	Load Current (mA) AC	Load Current (mA) DC	Lead Wire *1 Straight	Lead Wire *1 L-shape	
Solid State	1-Color	2-wire	85 to 265	-	5 to 100	-	T1H□	T1V□	
			-	10 to 30	-	5 to 20 *2	T2H□	T2V□	
		3-wire (NPN)	-	30 or less	-	100 or less	T3H□	T3V□	
		3-wire (PNP)	-		-		T3PH□	T3PV□	
	2-Color	2-wire	-	24 ± 10%	-	5 to 20	T2WH□	T2WV□	
		3-wire (NPN)	-	30 or less	-	50 or less	T3WH□	T3WV□	
	2-Color Improved Water Resistance	2-wire	-	24 ± 10%	-	5 to 20	T2WLH□	T2WLV□	*3
	2-Color for AC Magnetic Field		-	24 ± 10%	-		T2YD□	–	
			-		-		T2YDT□	–	
	1-Color Off-Delay Type		-	10 to 30	-	5 to 20 *2	T2JH□	T2JV□	
	1-Color Flexible Lead Wire Type		-	10 to 30	-		T2HR3	T2VR3	
Reed	1-Color	2-wire	110	12/24	7 to 20	5 to 50	T0H□	T0V□	
	No Indicator LED		110	5/12/24	20 or less	50 or less	T5H□	T5V□	
	1-Color		110/220	12/24	7 to 20 / 7 to 10	5 to 50	T8H□	T8V□	

*1: For "□" in the switch model number, enter the code selected from the "*Lead wire length, connector specification" table.
*2: The maximum load current value above, 20 mA, is at 25°C. If the switch operating ambient temperature is higher than 25°C, it will be lower than 20 mA. (At 60°C, it will be 5 to 10 mA.)
*3: This does not guarantee the water resistance of the cylinder. When using in a water-resistant environment, use of an improved water resistance cylinder is recommended.
*4: Switches other than the model numbers listed above are also available. (Custom Product) For details, see P. 753.

*** Lead wire length, connector specification**

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)
*5 W	M8 Connector, 1PIN (+), 4PIN (−) Lead Wire 0.3 m

*5: Only T2WLH and T2WLV can be selected.

Example) Lead wire length
1 m TOH
3 m TOH 3
5 m TOH 5

❼ Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs
T	With 3 pcs

Switch Single Unit Model No. Notation Method

SW - T0V

(6) Switch Model No.

About Custom Product Specifications

For details, see P. 466.

Code	Content
-0	Port symmetrical type

Model No. Example)

STG-$^{M}_{B}$G- ····· - O

For combinations of variations and options, please refer to P. 368, 369.

Food Manufacturing Process Compatible Specification (Catalog No. CC-1271AA)

● Uses food grade grease that can be used in food manufacturing processes

STG-$^{M}_{B}$G- ····· - FP1

High Durability Components HP Series (Catalog No. CC-1421AA)

● Long-life actuator that contributes to productivity improvement with stable operation

STG-$^{M}_{B}$G- ····· - HP□

Rechargeable Battery Compatible Specification (Catalog No. CC-1226AA)

● Design compatible with rechargeable battery manufacturing process

STG-$^{M}_{B}$G- ····· - P4□

* Please contact us for details.

Specifications

Item		STG-$^{M}_{B}$G / STG-$^{M}_{B}$G1					
Bore Size	mm	ø20	ø25	ø32	ø40	ø50	ø63
Actuation method		Double acting, Scraper type					
Operating Fluid		Compressed Air					
Max. Working Pressure	MPa	1.0					
Min. Operating Pressure	MPa	0.2		0.15			
Proof Pressure	MPa	1.6					
Ambient Temperature	°C	-10 to 60 (No freezing)					
Port Size		Rc1/8				Rc1/4	
Stroke tolerance	mm	+2.0 0					
Operating Piston Speed	mm/s	50 to 500					50 to 300
Cushion		With Rubber Cushion					
Lubrication		Not required (When lubricating, use turbine oil Class 1 ISO VG32)					
Allowable Absorbed Energy	J	0.157	0.157	0.401	0.627	0.980	1.560

Stroke

Bore Size	Standard Stroke (mm)	Max. Stroke (mm)	Min. Stroke (mm)	Min. stroke with switch (mm)	
				T2WL	Other switches
ø20	20, 30, 40, 50, 75, 100, 125 150, 175, 200, 250, 300, 350, 400	400	5	10	5 (10) *2
ø25					
ø32	25, 50, 75, 100, 125, 150, 175, 200, 250, 300, 350, 400				
ø40					
ø50					
ø63					

*1: Intermediate strokes can be manufactured every 5 mm. However, the overall length dimension will be the same as the dimension of the standard stroke above it.
*2: This is for the case with 1 or 2 switches. The value in ( ) is the minimum stroke for a 2-color indicator type switch for AC magnetic fields.

Cylinder Weight

● STG-MG / STG-MG1

Unit: kg

Item	Stroke															Switch weight
Bore Size (mm)	20	25	30	40	50	75	100	125	150	175	200	250	300	350	400	
ø20	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	Refer to the mass described in the switch specifications on P. 753
ø25	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	
ø32	-	1.76	-	-	2.13	2.66	3.06	3.46	3.85	4.24	4.63	5.61	6.39	7.19	7.97	
ø40	-	2.03	-	-	2.44	2.89	3.29	3.71	4.12	4.53	4.94	5.95	6.78	7.61	8.43	
ø50	-	3.47	-	-	4.09	4.80	5.42	6.04	6.66	7.28	7.90	9.46	10.69	11.95	13.21	
ø63	-	4.31	-	-	5.05	5.87	6.60	7.33	8.07	8.80	9.53	11.32	12.77	14.23	15.68	

● STG-BG / STG-BG1

Unit: kg

Item	Stroke															Switch weight
Bore Size (mm)	20	25	30	40	50	75	100	125	150	175	200	250	300	350	400	
ø20	0.72	-	0.79	0.90	0.98	1.15	1.31	1.51	1.68	1.85	2.02	2.39	2.73	3.07	3.41	Refer to the mass described in the switch specifications on P. 753
ø25	1.01	-	1.10	1.27	1.36	1.58	1.82	2.08	2.30	2.52	2.75	3.23	3.69	4.13	4.58	
ø32	-	1.61	-	-	1.91	2.35	2.66	3.02	3.33	3.63	3.94	4.61	5.22	5.83	6.44	
ø40	-	1.88	-	-	2.23	2.70	3.05	3.46	3.81	4.16	4.51	5.26	5.96	6.66	7.36	
ø50	-	3.23	-	-	3.76	4.49	5.02	5.64	6.18	6.71	7.24	8.44	9.49	10.59	11.66	
ø63	-	4.07	-	-	4.71	5.56	6.20	6.93	7.57	8.22	8.86	10.25	11.61	12.87	14.13	

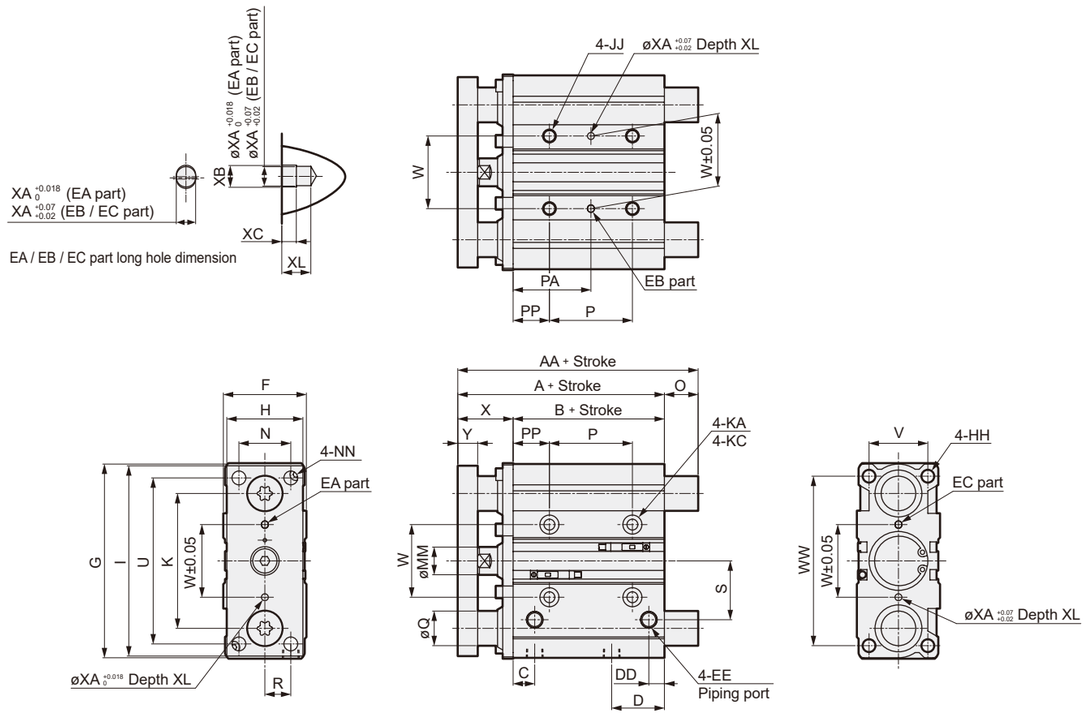
Theoretical Thrust Table

(Unit: N)

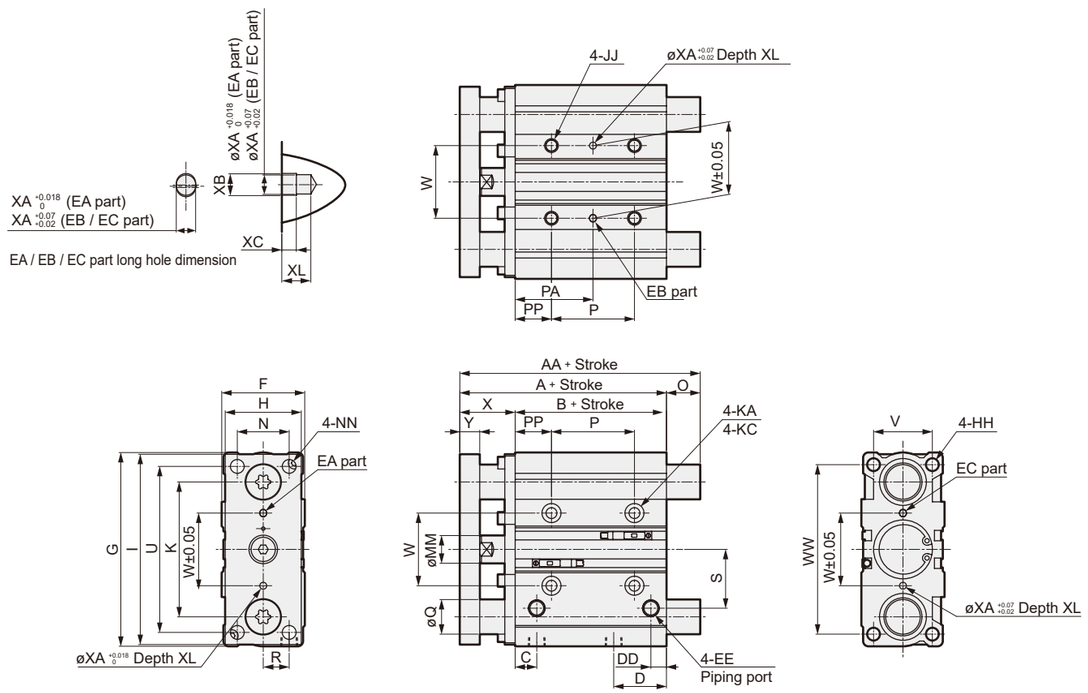
Bore Size (mm)	Operating Direction	Operating pressure MPa									
		0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø20	Push	-	62.8	94.2	1.26 x 10^2	1.57 x 10^2	1.88 x 10^2	2.20 x 10^2	2.51 x 10^2	2.83 x 10^2	3.14 x 10^2
	Pull	-	47.1	70.7	94.2	1.18 x 10^2	1.41 x 10^2	1.65 x 10^2	1.88 x 10^2	2.12 x 10^2	2.36 x 10^2
ø25	Push	-	98.2	1.47 x 10^2	1.96 x 10^2	2.45 x 10^2	2.95 x 10^2	3.44 x 10^2	3.93 x 10^2	4.42 x 10^2	4.91 x 10^2
	Pull	-	75.6	1.13 x 10^2	1.51 x 10^2	1.89 x 10^2	2.27 x 10^2	2.64 x 10^2	3.02 x 10^2	3.40 x 10^2	3.78 x 10^2
ø32	Push	1.21 x 10^2	1.61 x 10^2	2.41 x 10^2	3.22 x 10^2	4.02 x 10^2	4.83 x 10^2	5.63 x 10^2	6.43 x 10^2	7.24 x 10^2	8.04 x 10^2
	Pull	90.5	1.21 x 10^2	1.81 x 10^2	2.41 x 10^2	3.02 x 10^2	3.62x10^2	4.22 x 10^2	4.83 x 10^2	5.43x10^2	6.03 x 10^2
ø40	Push	1.88 x 10^2	2.51 x 10^2	3.77 x 10^2	5.03 x 10^2	6.28 x 10^2	7.54 x 10^2	8.80 x 10^2	1.01 x 10^3	1.13 x 10^3	1.26 x 10^3
	Pull	1.58 x 10^2	2.11 x 10^2	3.17 x 10^2	4.22 x 10^2	5.28 x 10^2	6.33 x 10^2	7.39 x 10^2	8.44 x 10^2	9.50 x 10^2	1.06 x 10^3
ø50	Push	2.95 x 10^2	3.93 x 10^2	5.89 x 10^2	7.85 x 10^2	9.82 x 10^2	1.18 x 10^3	1.37 x 10^3	1.57 x 10^3	1.77 x 10^3	1.96 x 10^3
	Pull	2.47 x 10^2	3.30 x 10^2	4.95 x 10^2	6.60 x 10^2	8.25 x 10^2	9.90 x 10^2	1.15 x 10^3	1.32 x 10^3	1.48 x 10^3	1.65 x 10^3
ø63	Push	4.68 x 10^2	6.23 x 10^2	9.35 x 10^2	1.25 x 10^3	1.56 x 10^3	1.87 x 10^3	2.18 x 10^3	2.49 x 10^3	2.81 x 10^3	3.12 x 10^3
	Pull	4.20 x 10^2	5.61 x 10^2	8.41 x 10^2	1.12 x 10^3	1.40 x 10^3	1.68 x 10^3	1.96 x 10^3	2.24 x 10^3	2.52 x 10^3	2.80 x 10^3

Outline Dimension Drawing

● STG-$^{M}_{B}$G



● STG-$^{M}_{B}$G1



Outline Dimension Drawing

● Common to STG-$^{M}_{B}$G/G1

Code / Bore Size (mm)	Standard Stroke	A	B	C	D	DD	EE	F	G	H	HH	I	JJ	K	KA
ø20	20, 30, 40, 50, 75, 100, 125, 150, 175	63	37	10.5	24.5	8.5	Rc1/8	36	83	30	M5 Depth 13	81	M6 Depth 12	54	5.2 Through
ø25	200, 250, 300, 350, 400	63.5	37.5	11.5	25	9	Rc1/8	42	93	38	M6 Depth 15	91	M6 Depth 12	64	5.2 Through
ø32		69.5	37.5	12.5	30.5	9	Rc1/8	48	112	44	M8 depth 20	110	M8 Depth 16	78	6.3 Through
ø40	25, 50, 75, 100, 125, 150, 175	76	44	14	31	10	Rc1/8	54	120	44	M8 depth 20	118	M8 Depth 16	86	6.3 Through
ø50	200, 250, 300, 350, 400	82	44	14	35	11	Rc1/4	64	148	60	M10 Depth 22	146	M10 Depth 20	110	8.6 Through
ø63		87	49	16.5	35	15	Rc1/4	78	162	70	M10 Depth 22	158	M10 Depth 20	124	8.6 Through

Code / Bore Size (mm)	KC	MM	N	NN	P					PA	
					25 or Less	Over 25 100 or less	Over 100 200 or Less	Over 200 300 or Less	Over 300 0000000000	25 or Less	Over 25 100 or less
ø20	9.5 Counterbore depth 5.5	10	18	M5 Through	24	44	120	200	300	29	39
ø25	9.5 Counterbore depth 5.5	12	26	M6 Through	24	44	120	200	300	29	39
ø32	11 Counterbore depth 7.5	16	30	M8 Through	24	48	124	200	300	33	45
ø40	11 Counterbore depth 7.5	16	30	M8 Through	24	48	124	200	300	34	46
ø50	14 Counterbore depth 9	20	40	M10 Through	24	48	124	200	300	36	48
ø63	14 Counterbore depth 9	20	50	M10 Through	28	52	128	200	300	38	50

Code / Bore Size (mm)	PA			PP	R	S	U	V	W	WW	X	Y	XA	XB	XC	XL
	Over 100 200 or Less	Over 200 300 or Less	300 Over													
ø20	77	117	167	17	11	25	70	24	28	72	26 -0.5	9.5	3	3.5	3	6
ø25	77	117	167	17	14	29	78	30	34	82	26 -0.5	9.5	4	4.5	3	6
ø32	83	121	171	21	15	34	96	34	42	98	32 -0.5	11.5	4	4.5	3	6
ø40	84	122	172	22	18	38	104	40	50	106	32 -0.5	11.5	4	4.5	3	6
ø50	86	124	174	24	21.5	47	130	46	66	130	38 -0.5	15.5	5	6	4	8
ø63	88	124	174	24	28	55	130	58	80	142	38 -0.5	15.5	5	6	4	8

● STG-MG/G1

Code / Bore Size (mm)	AA			Q	O		
	50 or less	Over 50 200 or Less	200 Over		50 or less	Over 50 200 or Less	200 Over
ø20	63	88	132	12	0	25	69
ø25	63.5	94	132	16	0	30.5	68.5
ø32	89	110	150	20	19.5	40.5	80.5
ø40	89	110	150	20	13	34	74
ø50	101	126	171	25	19	44	89
ø63	101	126	171	25	14	39	84

● STG-BG/G1

Code / Bore Size (mm)	AA				Q	O			
	30st or less	Over 30st 100st or less	Over 100st 200st or less	200st Over		30st or less	Over 30st 100st or less	Over 100st 200st or less	200st Over
ø20	69	88	110	132	10	6	25	47	69
ø25	75	94	113	132	13	11.5	30.5	49.5	68.5

Code / Bore Size (mm)	AA				Q	O			
	50st or less	Over 50st 100st or less	Over 100st 200st or less	200st Over		50st or less	Over 50st 100st or less	Over 100st 200st or less	200st Over
ø32	89	108	128	150	16	19.5	38.5	58.5	80.5
ø40	89	108	128	150	16	13	32	52	74
ø50	101	124	144	171	20	19	42	62	89
ø63	101	124	144	171	20	14	37	57	84

*1: For intermediate strokes, the overall length dimension is the same as the dimension of the longer standard stroke.

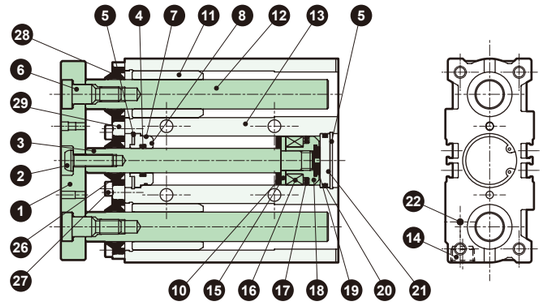
***2: For dimensions with each switch, refer to P. 446 to 448.**

Internal Structure Diagram / Material

Heavy-Duty Scraper Type

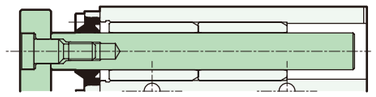
● STG-MG-20 to 63

- 50 strokes or less (ø20, 25)

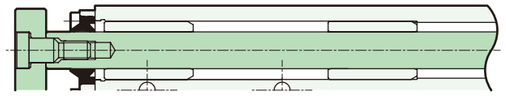


Plain bearing (M)

- Over 50 strokes and 200 strokes or less (ø20, 25)

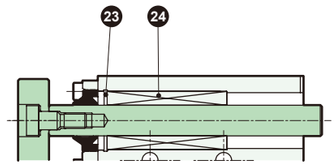


- Over 200 strokes (ø20, 25)
- All strokes (ø32 to 63)



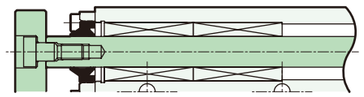
● STG-BG-20 to 63

- 30 strokes or less (ø20, 25)
- 100 strokes or less (ø32 to 63)

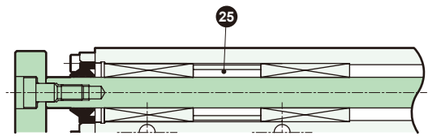


Rolling bearing (B)

- Over 30 strokes and 100 or less (ø20, 25)



- Over 100 strokes (ø20 to ø63)



Part No.	Part Name	Material	Remarks
1	End plate	Steel	Nickel Plating
2	Hex Socket Button Head Bolt	Steel	Zinc Chromate
3	Piston Rod	ø20 to ø25: Stainless steel ø32 to ø63: Steel	Industrial Hard Chrome Plating
4	Rod Packing	Nitrile Rubber	
5	C-type retaining ring	Steel	Zinc phosphate
6	Bolt	Steel	Zinc Chromate
7	Metal gasket	Nitrile Rubber	
8	Rod Metal	Aluminum Alloy	ø20 to ø32: Alumite ø40 to ø63: Chromate
9	Bushing	Bearing Alloy	ø40 to ø63 only
10	Cushion Rubber	Urethane Rubber	
11	Metal	Oil-Impregnated Bearing Alloy	
12	Guide rod	Steel	Industrial Hard Chrome Plating
13	Cylinder Body	Aluminum Alloy	Hard Anodized
14	Plug	Steel	

Part No.	Part Name	Material	Remarks
15	Spacer	Aluminum Alloy	Chromate (ø20 to ø25 only)
16	Magnet		
17	Piston Packing	Nitrile Rubber	
18	Piston	Aluminum Alloy	Chromate (ø20 to ø25 only)
19	Cushion Rubber	Urethane Rubber	
20	O-ring	Nitrile rubber	
21	Bottom plate	Aluminum Alloy	Chromate
22	Hexagon socket head set screw	Stainless Steel	
23	C-type retaining ring	Steel	Zinc phosphate
24	Ball bush		
25	Collar	Aluminum Alloy	
26	Heavy-duty Scraper	Nitrile Rubber, Steel	
27	Hexagon Socket Head Cap Screw	Alloy Steel	Zinc Chromate
28	Heavy-duty Scraper	Nitrile Rubber, Steel	
29	Adapter plate	Aluminum Alloy	Chromate

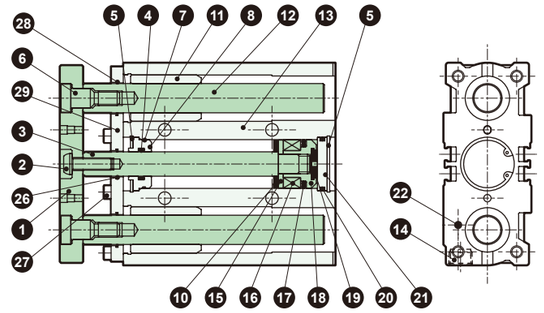
For maintenance parts, please visit the CKD Equipment Product Site
(https://www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts

Internal Structure Diagram / Material

Coil Scraper Type

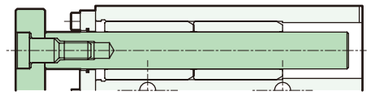
● STG-MG1-20 to 63

- 50 strokes or less (ø20, 25)

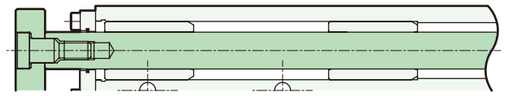


Plain bearing (M)

- Over 50 strokes and 200 strokes or less (ø20, 25)

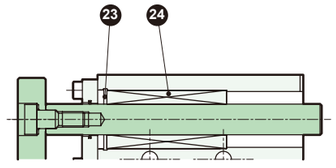


- Over 200 strokes (ø20, 25)
- All strokes (ø32 to 63)



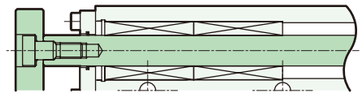
● STG-BG1-20 to 63

- 30 strokes or less (ø20, 25)
- 100 strokes or less (ø32 to ø63)

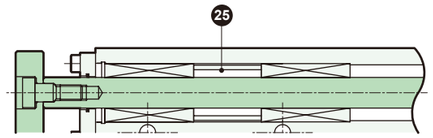


Rolling bearing (B)

- Over 30 strokes and 100 strokes or less (ø20, 25)



- Over 100 strokes (ø20 to ø63)



Part No.	Part Name	Material	Remarks
1	End plate	Steel	Nickel Plating
2	Hex Socket Button Head Bolt	Steel	Zinc Chromate
3	Piston Rod	ø20 to ø25: Stainless steel ø32 to ø63: Steel	Industrial Hard Chrome Plating
4	Rod Packing	Nitrile Rubber	
5	C-type retaining ring	Steel	Zinc phosphate
6	Bolt	Steel	Zinc Chromate
7	Metal gasket	Nitrile Rubber	
8	Rod Metal	Aluminum Alloy	ø20 to ø32: Alumite ø40 to ø63: Chromate
9	Bushing	Bearing Alloy	ø40 to ø63 only
10	Cushion Rubber	Urethane Rubber	
11	Metal	Oil-impregnated copper alloy bearing	
12	Guide rod	Steel	Industrial Hard Chrome Plating
13	Cylinder Body	Aluminum Alloy	Hard Anodized
14	Plug	Steel	

Part No.	Part Name	Material	Remarks
15	Spacer	Aluminum Alloy	Chromate (ø20 to ø25 only)
16	Magnet		
17	Piston Packing	Nitrile Rubber	
18	Piston	Aluminum Alloy	Chromate (ø20 to ø25 only)
19	Cushion Rubber	Urethane Rubber	
20	O-ring	Nitrile rubber	
21	Bottom plate	Aluminum Alloy	Chromate
22	Hexagon socket head set screw	Stainless Steel	
23	C-type retaining ring	Steel	Zinc phosphate
24	Ball bush		
25	Collar	Aluminum Alloy	
26	Coil scraper	Copper Alloy	
27	Hexagon Socket Head Cap Screw	Alloy Steel	Zinc Chromate
28	Coil scraper	Copper Alloy	
29	Adapter plate	Aluminum Alloy	Chromate

For maintenance parts, please visit the CKD Equipment Product Site
(https://www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts

Guided cylinder Double acting, Cutting oil resistant type

STG-MG 2 3 Series

● Bore Size: ø20, ø25, ø32, ø40, ø50, ø63

Circuit Diagram
Symbol

RoHS

Model No. Notation Method

Without Switch
(Built-in magnet for switch)

STG - M G2 - 32 ( ) - 25

Model No. ❶ ❷ ❸ ❹

With Switch
(Built-in magnet for switch)

STG - M G2 - 32 ( ) - 25 - T2YLH - R

Model No. / Plain bearing / ❶ Protection structure level: / ❷ Bore size / ❸ Piping thread type / ❹ Stroke / ❺ Switch Model No. / ❻ Number of Switches

❶ Protection structure level

Code	Content
G2	Cutting Oil Resistant Scraper + NBR Packing
G3	Cutting Oil Resistant Scraper + FKM Packing

❷ Bore Size (mm)

Code	Content
20	ø20
25	ø25
32	ø32
40	ø40
50	ø50
63	ø63

❸ Piping thread type

Code	Content
Blank	Rc Thread
NN	NPT Thread (Custom Order Product)
GN	G Thread (Custom Order Product)

❹ Stroke (mm)

Stroke (mm)		Applicable Bore Size					
		ø20	ø25	ø32	ø40	ø50	ø63
Standard Stroke	20	●	●				
	25			●	●	●	●
	30	●	●				
	40	●	●				
	50	●	●	●	●	●	●
	75	●	●	●	●	●	●
	100	●	●	●	●	●	●
	125	●	●	●	●	●	●
	150	●	●	●	●	●	●
	175	●	●	●	●	●	●
	200	●	●	●	●	●	●
	250	●	●	●	●	●	●
	300	●	●	●	●	●	●
	350	●	●	●	●	●	●
	400	●	●	●	●	●	●
Intermediate stroke *1		Every 5 mm					

*1: The overall length dimension is the same as the dimension of the longer standard stroke.

❺ Switch Model No.

For switch details, please see P. 753.
Switches are included to the product and shipped.

Contact	Indicator LED Special Function	Wiring (Output)	Load Voltage (V) AC	Load Voltage (V) DC	Load Current (mA) AC	Load Current (mA) DC	Lead Wire *1 Straight	Lead Wire *1 L-shape	
Solid State	For 2-Color Cutting Oil	2-wire	-	10 to 30	-	5 to 20	T2YLH□	T2YLV□	
		3-wire (NPN)	-	30 or less	-	50 or less	T3YLH□	T3YLV□	
	2-Color Improved Water Resistance	2-wire	-	24 ± 10%	-	5 to 20	T2WLH□	T2WLV□	 *2

*1: For "□" in the switch model number, enter the code selected from the "*Lead wire length" table.
*2: This does not guarantee the water resistance of the cylinder. When using in a water-resistant environment, use of an improved water resistance cylinder is recommended.
*3: Switches other than the model numbers listed above are also available. (Custom Product) For details, see P. 753.

* Lead wire length

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)
W	M8 Connector, 1PIN (+), 4PIN (−) Lead Wire 0.3 m

*4: Only T2WLH and T2WLV can be selected.

Example) Lead wire length
1 m T2YLH
3 m T2YLH 3
5 m T2YLH 3

❻ Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs
T	With 3 pcs

Switch Single Unit Model No. Notation Method

SW - T2YLH

❺ Switch Model No.

About Custom Product Specifications

For details, see P. 466.

Code	Content
-0	Port symmetrical type

Model No. Example)
STG-MG 2 3 - ····· - O

Food Manufacturing Process Compatible Specification (Catalog No. CC-1271AA)

● Uses food grade grease that can be used in food manufacturing processes

STG-MG 2 3 - • • • • - FP1

For combinations of variations and options, please refer to P. 368, 369.

Specifications

Item	STG-MG$^{2}_{3}$					
Bore Size mm	ø20	ø25	ø32	ø40	ø50	ø63
Actuation method	Double Acting, Coolant Proof Type					
Operating Fluid	Compressed Air					
Max. Working Pressure MPa	1.0					
Min. Operating Pressure MPa	0.2		0.15			
Proof Pressure MPa	1.6					
Ambient Temperature °C	-10 to 60 (No freezing)					
Port Size	Rc1/8				Rc1/4	
Stroke tolerance mm	+2.0 0					
Operating Piston Speed mm/s	50 to 500					50 to 300
Cushion	With rubber cushion (Urethane rubber)					
Lubrication	Not required (When lubricating, use turbine oil Class 1 ISO VG32)					
Allowable Absorbed Energy J	0.157	0.157	0.401	0.627	0.980	1.560

Stroke

Bore Size	Standard Stroke (mm)	Max. Stroke (mm)	Min. Stroke (mm)	Min. stroke with switch (mm)
ø20	20, 30, 40, 50, 75, 100, 125 150, 175, 200, 250, 300, 350, 400	400	5	10 *2
ø25				
ø32	25, 50, 75, 100, 125, 150, 175, 200, 250, 300, 350, 400			
ø40				
ø50				
ø63				

*1: Intermediate strokes can be manufactured every 5 mm. However, the overall length dimension will be the same as the dimension of the standard stroke above it.
*2: This is for the case with 1 or 2 switches.

Cylinder Weight

● STG-MG2 / STG-MG3

Unit: kg

Item / Bore Size (mm)	Stroke 20	25	30	40	50	75	100	125	150	175	200	250	300	350	400	Switch weight
ø20	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	Refer to the mass described in the switch specifications on P. 753
ø25	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	
ø32	-	1.68	-	-	2.05	2.58	2.98	3.38	3.77	4.16	4.55	5.53	6.31	7.11	7.89	
ø40	-	1.93	-	-	2.34	2.79	3.19	3.61	4.02	4.43	4.84	5.85	6.68	7.51	8.33	
ø50	-	3.32	-	-	3.94	4.65	5.27	5.89	6.51	7.13	7.75	9.31	10.54	11.80	13.06	
ø63	-	4.15	-	-	4.89	5.71	6.44	7.17	7.91	8.64	9.37	11.16	12.61	14.07	15.52	

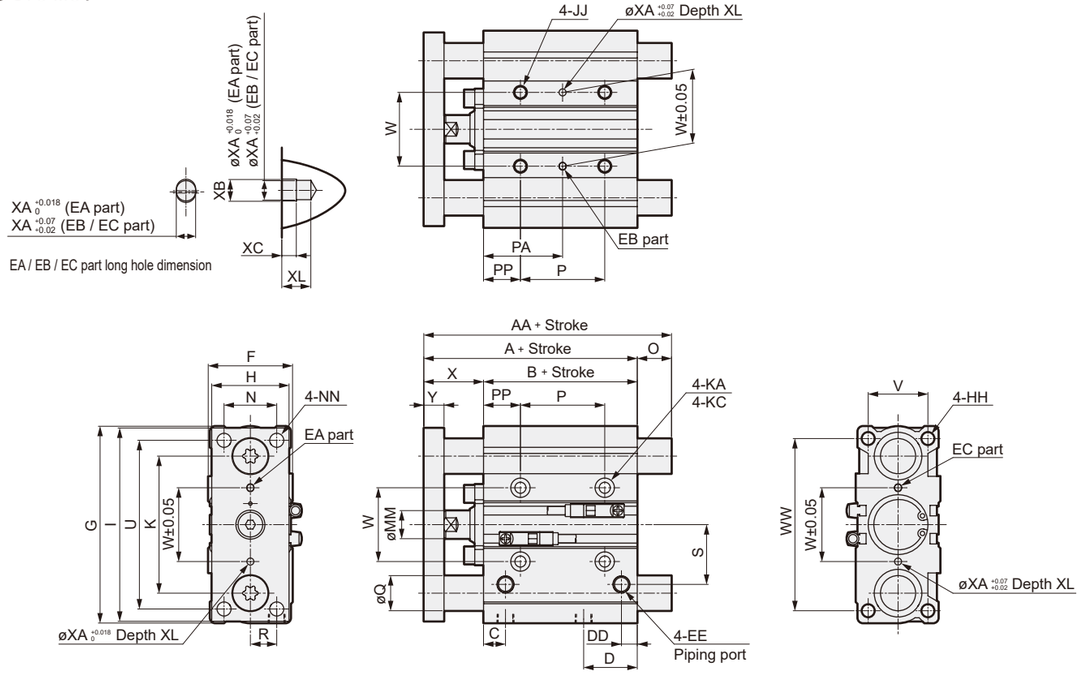
Theoretical Thrust Table

(Unit: N)

Bore Size (mm)	Operating Direction	Operating pressure MPa 0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø20	Push	-	62.8	94.2	1.26 x 10²	1.57 x 10²	1.88 x 10²	2.20 x 10²	2.51 x 10²	2.83 x 10²	3.14 x 10²
	Pull	-	47.1	70.7	94.2	1.18 x 10²	1.41 x 10²	1.65 x 10²	1.88 x 10²	2.12 x 10²	2.36 x 10²
ø25	Push	-	98.2	1.47 x 10²	1.96 x 10²	2.45 x 10²	2.95 x 10²	3.44 x 10²	3.93 x 10²	4.42 x 10²	4.91 x 10²
	Pull	-	75.6	1.13 x 10²	1.51 x 10²	1.89 x 10²	2.27 x 10²	2.64 x 10²	3.02 x 10²	3.40 x 10²	3.78 x 10²
ø32	Push	1.21 x 10²	1.61 x 10²	2.41 x 10²	3.22 x 10²	4.02 x 10²	4.83 x 10²	5.63 x 10²	6.43 x 10²	7.24 x 10²	8.04 x 10²
	Pull	90.5	1.21 x 10²	1.81 x 10²	2.41 x 10²	3.02 x 10²	3.62x10²	4.22 x 10²	4.83 x 10²	5.43x10²	6.03 x 10²
ø40	Push	1.88 x 10²	2.51 x 10²	3.77 x 10²	5.03 x 10²	6.28 x 10²	7.54 x 10²	8.80 x 10²	1.01 x 10³	1.13 x 10³	1.26 x 10³
	Pull	1.58 x 10²	2.11 x 10²	3.17 x 10²	4.22 x 10²	5.28 x 10²	6.33 x 10²	7.39 x 10²	8.44 x 10²	9.50 x 10²	1.06 x 10³
ø50	Push	2.95 x 10²	3.93 x 10²	5.89 x 10²	7.85 x 10²	9.82 x 10²	1.18 x 10³	1.37 x 10³	1.57 x 10³	1.77 x 10³	1.96 x 10³
	Pull	2.47 x 10²	3.30 x 10²	4.95 x 10²	6.60 x 10²	8.25 x 10²	9.90 x 10²	1.15 x 10³	1.32 x 10³	1.48 x 10³	1.65 x 10³
ø63	Push	4.68 x 10²	6.23 x 10²	9.35 x 10²	1.25 x 10³	1.56 x 10³	1.87 x 10³	2.18 x 10³	2.49 x 10³	2.81 x 10³	3.12 x 10³
	Pull	4.20 x 10²	5.61 x 10²	8.41 x 10²	1.12 x 10³	1.40 x 10³	1.68 x 10³	1.96 x 10³	2.24 x 10³	2.52 x 10³	2.80 x 10³

Outline Dimension Drawing

● STG-MG 2/3



Code / Bore Size (mm)	Standard Stroke	A	B	C	D	DD	EE	F	G	H	HH	I	JJ	K	KA
ø20	20, 30, 40, 50, 75, 100, 125, 150, 175	66	37	10.5	24.5	8.5	Rc1/8	36	83	30	M5 Depth 13	81	M6 Depth 12	54	5.2 Through
ø25	200, 250, 300, 350, 400	67.5	37.5	11.5	25	9	Rc1/8	42	93	38	M6 Depth 15	91	M6 Depth 12	64	5.2 Through
ø32		71.5	37.5	12.5	30.5	9	Rc1/8	48	112	44	M8 depth 20	110	M8 Depth 16	78	6.3 Through
ø40	25, 50, 75, 100, 125, 150, 175	78	44	14	31	10	Rc1/8	54	120	44	M8 depth 20	118	M8 Depth 16	86	6.3 Through
ø50	200, 250, 300, 350, 400	83	44	14	35	11	Rc1/4	64	148	60	M10 Depth 22	146	M10 Depth 20	110	8.6 Through
ø63		88	49	16.5	35	15	Rc1/4	78	162	70	M10 Depth 22	158	M10 Depth 20	124	8.6 Through

Code / Bore Size (mm)	KC	MM	N	NN	P: 25 or Less	P: Over 25 and 100 or less	P: Over 100 and 200 or less	P: Over 200 to 300 or Less	P: Over 300	PA: 25 or Less	PA: Over 25 and 100 or less
ø20	9.5 Counterbore depth 5.5	10	18	M5 Through	24	44	120	200	300	29	39
ø25	9.5 Counterbore depth 5.5	12	26	M6 Through	24	44	120	200	300	29	39
ø32	11 Counterbore depth 7.5	16	30	M8 Through	24	48	124	200	300	33	45
ø40	11 Counterbore depth 7.5	16	30	M8 Through	24	48	124	200	300	34	46
ø50	14 Counterbore depth 9	20	40	M10 Through	24	48	124	200	300	36	48
ø63	14 Counterbore depth 9	20	50	M10 Through	28	52	128	200	300	38	50

Code / Bore Size (mm)	PA: Over 100 and 200 or less	PA: Over 200 to 300 or Less	PA: Over 300	PP	R	S	U	V	W	WW	X	Y	XA	XB	XC	XL
ø20	77	117	167	17	11	25	70	24	28	72	29 -2°	9.5	3	3.5	3	6
ø25	77	117	167	17	14	29	78	30	34	82	30 -2°	9.5	4	4.5	3	6
ø32	83	121	171	21	15	34	96	34	42	98	34 -2°	11.5	4	4.5	3	6
ø40	84	122	172	22	18	38	104	40	50	106	34 -2°	11.5	4	4.5	3	6
ø50	86	124	174	24	21.5	47	130	46	66	130	39 -2°	15.5	5	6	4	8
ø63	88	124	174	24	28	55	130	58	80	142	39 -2°	15.5	5	6	4	8

Code / Bore Size (mm)	AA: 50st or less	AA: Over 50st and 200st or less	AA: Over 200st	Q	O: 50st or less	O: Over 50st and 200st or less	O: Over 200st
ø20	66	91	135	12	0	25	69
ø25	67.5	98	136	16	0	30.5	68.5
ø32	91	112	152	20	19.5	40.5	80.5
ø40	91	112	152	20	13	34	74
ø50	102	127	172	25	19	44	89
ø63	102	127	172	25	14	39	84

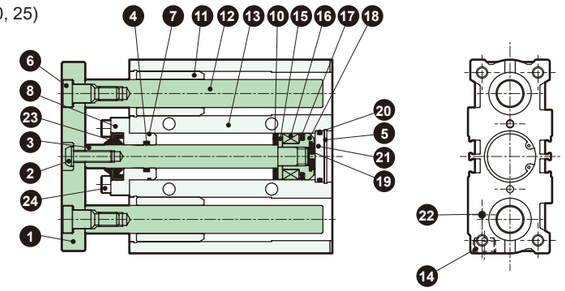
*1: For intermediate strokes, the overall length dimension is the same as the dimension of the longer standard stroke.
***2: For dimensions with each switch, refer to P. 446 to 448.**

Internal Structure Diagram/Material

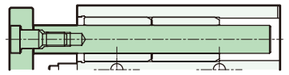
● STG-MG 2/3 -20 to 63

● ø20 to ø32

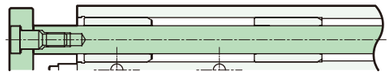
50 strokes or less (ø20, 25)



Over 50 strokes and 200 strokes or less (ø20, 25)

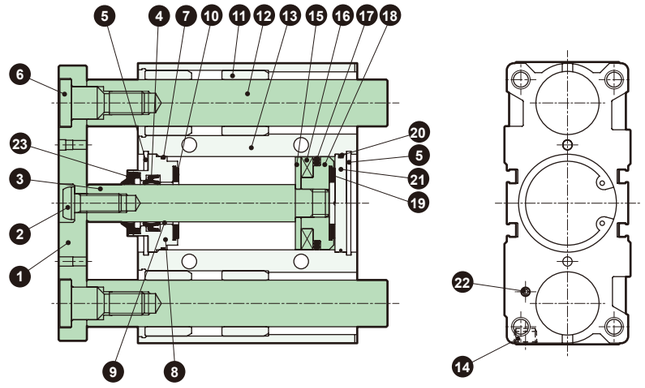


Over 200 strokes (ø20, 25)
All strokes (ø32)



● ø40 to ø63

Full stroke



Part No.	Part Name		Material	Remarks
1	End plate		Steel	Nickel Plating
2	Hex Socket Button Head Bolt		Stainless Steel	
3	Piston Rod		Stainless Steel	Industrial Hard Chrome Plating
4	Rod Packing	G2	Nitrile Rubber	
		G3	Fluoro Rubber	
5	C-type retaining ring		Stainless Steel	
6	Bolt		Steel	Zinc Chromate
7	Metal gasket	G2	G2: Nitrile rubber	
		G3	G3: Fluoro rubber	
8	Rod cover (ø20 to ø32)		Aluminum Alloy	Alumite
	Rod metal (ø40 to ø63)		Aluminum Alloy	Alumite
9	Bushing		Bearing Alloy	ø40 to ø63 only
10	Cushion Rubber		Urethane Rubber	
11	Metal		Oil-impregnated copper alloy bearing	
12	Guide rod		Stainless Steel	Industrial Hard Chrome Plating
13	Cylinder Body		Aluminum Alloy	Hard Anodized
14	Plug		Stainless Steel	
15	Spacer		Aluminum alloy	Chromate
16	Magnet			
17	Piston Packing	G2	Nitrile Rubber	
		G3	Fluoro Rubber	
18	Piston		Aluminum Alloy	Chromate
19	Cushion Rubber		Urethane Rubber	
20	O-ring	G2	Nitrile Rubber	
		G3	Fluoro Rubber	
21	Bottom plate		Aluminum Alloy	Chromate
22	Hexagon socket head set screw		Stainless Steel	
23	Heavy-duty Scraper	G2	Nitrile Rubber	
		G3	Fluoro Rubber	
24	Hexagon socket head cap screw (ø20 to ø32)		Stainless Steel	

For maintenance parts, please visit the CKD Equipment Product Site
(https://www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts

Guided cylinder Double acting, Spatter adhesion prevention type

STG-MBG4 Series

● Bore size: ø40, ø50, ø63

Circuit Diagram
Symbol

RoHS

Model No. Notation Method

Without Switch
(Built-in magnet for switch)

STG M G4 - 40 [ ] - 25

Model No. ❶ ❷ ❸ ❹

With Switch
(Built-in magnet for switch)

STG - M G4 - 40 [ ] - 25 - T2YD - R

Model No. Spatter adhesion prevention type ❸ Piping thread type ❺ Switch Model No.

❶ Bearing type ❷ Bore size ❹ Stroke ❻ Number of Switches

❶ Bearing type

Code	Content
M	Plain bearing
B	Rolling bearing

❷ Bore Size (mm)

Code	Contents
40	ø40
50	ø50
63	ø63

❸ Piping thread type

Code	Content
Blank	Rc Thread
NN	NPT Thread (Custom Order Product)
GN	G Thread (Custom Order Product)

❹ Stroke (mm)

Stroke (mm)		Applicable Bore Size ø40	ø50	ø63
Standard Stroke	25	●	●	●
	50	●	●	●
	75	●	●	●
	100	●	●	●
	125	●	●	●
	150	●	●	●
	175	●	●	●
	200	●	●	●
	250	●	●	●
	300	●	●	●
	350	●	●	●
	400	●	●	●
Intermediate stroke *1		Every 5 mm		

*1: The overall length dimension is the same as the dimension of the longer standard stroke.

❺ Switch Model No.

For switch details, please refer to P. 753.
Switches are included to the product and shipped.

	Indicator LED Special Function	Wiring (Output)	Load Voltage (V) AC	Load Voltage (V) DC	Load Current (mA) AC	Load Current (mA) DC	Lead Wire *1 Straight	Lead Wire *1 L-shape	
Contact									
Solid State	2-Color for AC Magnetic Field	2-wire	-	24 ± 10%	-	5 to 20	T2YD□	–	
			-		-		T2YDT□	–	

*1: For "□" in the switch model number, enter the code selected from the "*Lead wire length" table.
*2: Switches other than the model numbers listed above are also available. (Custom Product) For details, see P. 753.

*** Lead wire length**

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)

Example) Lead wire length
1 m T2YD
3 m T2YD 3
5 m T2YD 5

❻ Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs
T	With 3 pcs

Switch Single Unit Model No. Notation Method

SW - T2YD

❺ Switch Model No.

About Custom Product Specifications

For details, see P. 466.

Code	Content
-0	Port symmetrical type

Model No. Example)
STG-MBG4-·····-O

For combinations of variations and options, please refer to P. 368, 369.

Specifications

Item	STG-MBG4		
Bore Size mm	ø40	ø50	ø63
Actuation method	Double Acting, Spatter Adhesion Prevention Type		
Operating Fluid	Compressed Air		
Max. Working Pressure MPa	1.0		
Min. Operating Pressure MPa	0.15		
Proof Pressure MPa	1.6		
Ambient Temperature °C	-10 to 60 (No freezing)		
Port Size	Rc1/8	Rc1/4	
Stroke tolerance mm	+2.0 0		
Operating Piston Speed mm/s	50 to 500		50 to 300
Cushion	With Rubber Cushion		
Lubrication	Not required (When lubricating, use turbine oil Class 1 ISO VG32)		
Allowable Absorbed Energy J	0.627	0.980	1.560

Stroke

Bore Size	Standard Stroke (mm)	Max. Stroke (mm)	Min. Stroke (mm)	Min. stroke with switch (mm)
ø40	25, 50, 75, 100, 125	400	5	10
ø50	150, 175, 200, 250			
ø63	300, 350, 400			*2

*1: Intermediate strokes can be manufactured every 5 mm. However, the overall length dimension will be the same as the dimension of the standard stroke above it.

*2: This is for the case with 1 or 2 switches.

Cylinder Weight

● STG-MG4

Unit: kg

Item / Bore Size (mm)	Stroke 25	50	75	100	125	150	175	200	250	300	350	400	Switch weight
ø40	2.03	2.44	2.89	3.29	3.71	4.12	4.53	4.94	5.95	6.78	7.61	8.43	Refer to the mass described in the switch specifications on P. 753
ø50	3.47	4.09	4.80	5.42	6.04	6.66	7.28	7.90	9.46	10.69	11.95	13.21	
ø63	4.31	5.05	5.87	6.60	7.33	8.07	8.80	9.53	11.32	12.77	14.23	15.68	

● STG-BG4

Unit: kg

Item / Bore Size (mm)	Stroke 25	50	75	100	125	150	175	200	250	300	350	400	Switch weight
ø40	1.88	2.23	2.70	3.05	3.46	3.81	4.16	4.51	5.26	5.96	6.66	7.36	Refer to the mass described in the switch specifications on P. 753
ø50	3.23	3.76	4.49	5.02	5.64	6.18	6.71	7.24	8.44	9.49	10.59	11.66	
ø63	4.07	4.71	5.56	6.20	6.93	7.57	8.22	8.86	10.25	11.61	12.87	14.13	

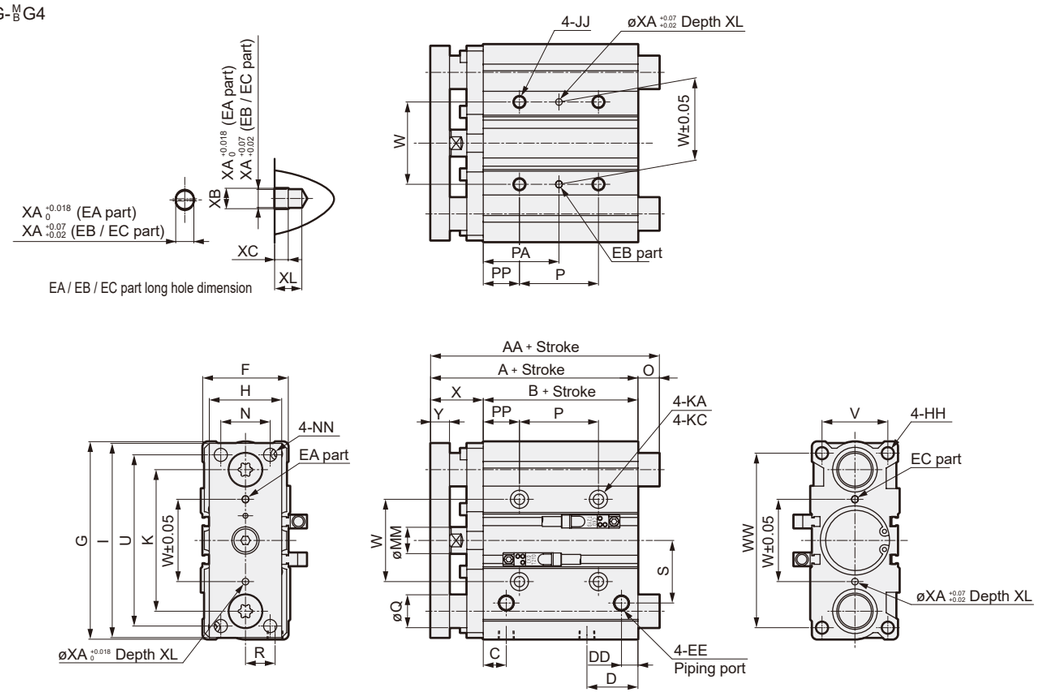
Theoretical Thrust Table

(Unit: N)

Bore Size (mm)	Operating Direction	Operating pressure MPa 0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø40	Push	1.88 x 10²	2.51 x 10²	3.77 x 10²	5.03 x 10²	6.28 x 10²	7.54 x 10²	8.80 x 10²	1.01 x 10³	1.13 x 10³	1.26 x 10³
	Pull	1.58 x 10²	2.11 x 10²	3.17 x 10²	4.22 x 10²	5.28 x 10²	6.33 x 10²	7.39 x 10²	8.44 x 10²	9.50 x 10²	1.06 x 10³
ø50	Push	2.95 x 10²	3.93 x 10²	5.89 x 10²	7.85 x 10²	9.82 x 10²	1.18 x 10³	1.37 x 10³	1.57 x 10³	1.77 x 10³	1.96 x 10³
	Pull	2.47 x 10²	3.30 x 10²	4.95 x 10²	6.60 x 10²	8.25 x 10²	9.90 x 10²	1.15 x 10³	1.32 x 10³	1.48 x 10³	1.65 x 10³
ø63	Push	4.68 x 10²	6.23 x 10²	9.35 x 10²	1.25 x 10³	1.56 x 10³	1.87 x 10³	2.18 x 10³	2.49 x 10³	2.81 x 10³	3.12 x 10³
	Pull	4.20 x 10²	5.61 x 10²	8.41 x 10²	1.12 x 10³	1.40 x 10³	1.68 x 10³	1.96 x 10³	2.24 x 10³	2.52 x 10³	2.80 x 10³

Outline Dimension Drawing

● STG-$^{M}_{B}$G4



● Common to STG-$^{M}_{B}$G4

Code / Bore Size (mm)	Standard Stroke (mm)	A	B	C	D	DD	EE	F	G	H	HH	I	JJ	K	KA
ø40	25, 50, 75, 100,	76	44	14	31	10	Rc1/8	54	120	44	M8 depth 20	118	M8 Depth 16	86	6.3 Through
ø50	125, 150, 175, 200,	82	44	14	35	11	Rc1/4	64	148	60	M10 Depth 22	146	M10 Depth 20	110	8.6 Through
ø63	250, 300, 350, 400	87	49	16.5	35	15	Rc1/4	78	162	70	M10 Depth 22	158	M10 Depth 20	124	8.6 Through

Code / Bore Size (mm)	KC	MM	N	NN	P					PA	
					25 or Less	Over 25 and 100 or less	Over 100 and 200 or less	Over 200 to 300 or Less	Over 300	25 or Less	Over 25 to 100 or less
ø40	11 Counterbore depth 7.5	16	30	M8 Through	24	48	124	200	300	34	46
ø50	14 Counterbore depth 9	20	40	M10 Through	24	48	124	200	300	36	48
ø63	14 Counterbore depth 9	20	50	M10 Through	28	52	128	200	300	38	50

Code / Bore Size (mm)	PA			PP	R	S	U	V	W	WW	X	Y	XA	XB	XC	XL
	Over 100 and 200 or less	Over 200 to 300 or Less	Over 300													
ø40	84	122	172	22	18	38	104	40	50	106	32$^{0}_{-2}$	11.5	4	4.5	3	6
ø50	86	124	174	24	21.5	47	130	46	66	130	38$^{0}_{-2}$	15.5	5	6	4	8
ø63	88	124	174	24	28	55	130	58	80	142	38$^{0}_{-2}$	15.5	5	6	4	8

● STG-MG4

Code / Bore Size (mm)	AA			Q	O		
	50 or less	Over 50 and 200 or less	Over 200		50 or less	Over 50 and 200 or less	Over 200
ø40	89	110	150	20	13	34	74
ø50	101	126	171	25	19	44	89
ø63	101	126	171	25	14	39	84

● STG-BG4

Code / Bore Size (mm)	AA				Q	O			
	30 or less	Over 30 and 100 or less	Over 100 and 200 or less	Over 200		30 or less	Over 30 and 100 or less	Over 100 and 200 or less	Over 200
ø40	89	108	128	150	16	13	32	52	74
ø50	101	124	144	171	20	19	42	62	89
ø63	101	124	144	171	20	14	37	57	84

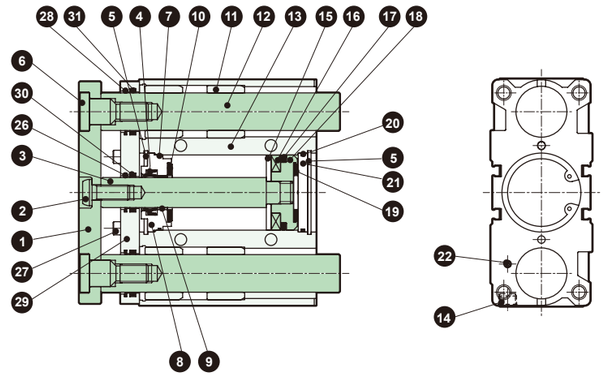
*1: For intermediate strokes, the overall length dimension is the same as the dimension of the longer standard stroke.

***2: For dimensions with each switch, refer to P. 446 to 448.**

Internal Structure Diagram/Material

● STG-MG4-40 to 63

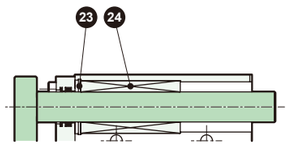
● All strokes



Plain bearing (M)

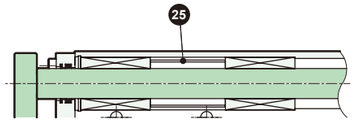
● STG-BG4-40 to 63

● 100 strokes or less



Rolling bearing (B)

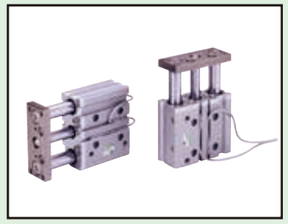
● Over 100 strokes



Part No.	Part Name	Material	Remarks
1	End plate	Steel	Nickel Plating
2	Hex Socket Button Head Bolt	Steel	Zinc Chromate
3	Piston Rod	ø20 to ø25: Stainless steel ø32 to ø63: Steel	Industrial Hard Chrome Plating
4	Rod Packing	Nitrile Rubber	
5	C-type retaining ring	Steel	Zinc phosphate
6	Bolt	Steel	Zinc Chromate
7	Metal gasket	Nitrile Rubber	
8	Rod Metal	Aluminum Alloy	ø20 to ø32: Alumite ø40 to ø63: Chromate
9	Bushing	Bearing Alloy	ø40 to ø63 only
10	Cushion Rubber	Urethane Rubber	
11	Metal	Oil-impregnated copper alloy bearing	
12	Guide rod	Steel	Industrial Hard Chrome Plating
13	Cylinder Body	Aluminum Alloy	Hard Anodized
14	Plug	Steel	
15	Spacer	Aluminum Alloy	

Part No.	Part Name	Material	Remarks
16	Magnet		
17	Piston Packing	Nitrile Rubber	
18	Piston	Aluminum Alloy	
19	Cushion Rubber	Urethane Rubber	
20	O-ring	Nitrile Rubber	
21	Bottom plate	Aluminum Alloy	Chromate
22	Hexagon socket head set screw	Stainless Steel	
23	C-type retaining ring	Steel	Zinc phosphate
24	Ball bush		
25	Collar	Aluminum Alloy	
26	Coil scraper	Copper Alloy	
27	Hexagon Socket Head Cap Screw	Alloy Steel	Zinc Chromate
28	Heavy-duty Scraper	Copper Alloy	
29	Adapter plate	Aluminum Alloy	Chromate
30	Lube keeper	Special rubber	
31	Lube keeper	Special rubber	

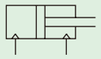
For maintenance parts, please visit the CKD Equipment Product Site (https://www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts



Guided cylinder Double acting, Single rod, Environment resistant scraper type

STG-MG5 Series

● Bore size: ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100

Circuit Diagram Symbol 

Custom Products RoHS

Model No. Notation Method

Without Switch
(Built-in magnet for switch)

STG - M G5 - 32 ❶ ❷ - 25 ❸

Model No.

With Switch
(Built-in magnet for switch)

STG - M G5 - 32 ❷ - 25 ❹ - T2H - R ❺

Model No. / Environment Resistant Scraper Type / ❷ Piping thread type / ❹ Switch Model No. / ❺ Number of Switches

Plain bearing / ❶ Bore size / ❸ Stroke

❶ Bore Size (mm)

Code	Content
20	ø20
25	ø25
32	ø32
40	ø40
50	ø50
63	ø63
80	ø80
100	ø100

❷ Piping thread type

Code	Content
Blank	Rc Thread
NN	NPT Thread (Custom Order Product)
GN	G Thread (Custom Order Product)

❸ Stroke (mm)

Stroke (mm)		Applicable Bore Size							
		ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Standard Stroke	10								
	20	●	●						
	25			●	●	●	●	●	●
	30	●	●						
	40	●	●						
	50	●	●	●	●	●	●	●	●
	75	●	●	●	●	●	●	●	●
	100	●	●	●	●	●	●	●	●
	125	●	●	●	●	●	●	●	●
	150	●	●	●	●	●	●	●	●
	175	●	●	●	●	●	●	●	●
	200	●	●	●	●	●	●	●	●
	250	●	●	●	●	●	●	●	●
	300	●	●	●	●	●	●	●	●
	350	●	●	●	●	●	●	●	●
	400	●	●	●	●	●	●	●	●
Intermediate stroke *1		Every 5 mm							

*1: The overall length dimension is the same as the dimension of the longer standard stroke.

❹ Switch Model No.

For switch details, please refer to P. 753.
Switches are included to the product and shipped.

Contact	Indicator LED Special Function	Wiring (Output)	Load Voltage (V) AC	Load Voltage (V) DC	Load Current (mA) AC	Load Current (mA) DC	Lead Wire *1 Straight	Lead Wire *1 L-shape	
Solid State	1-Color	2-wire	85 to 265	-	5 to 100	-	T1H□	T1V□	
			-	10 to 30	-	5 to 20 *2	T2H□	T2V□	
		3-wire (NPN)	-	30 or less	-	100 or less	T3H□	T3V□	
		3-wire (PNP)	-		-		T3PH□	T3PV□	
	2-Color	2-wire	-	24 ± 10%	-	5 to 20	T2WH□	T2WV□	
		3-wire (NPN)	-	30 or less	-	50 or less	T3WH□	T3WV□	
	2-Color Water Resistance Improved	2-wire	-	24 ± 10%	-	5 to 20	T2WLH□	T2WLV□	*3
	2-Color AC For Magnetic Field		-	24 ± 10%	-		T2YD□	–	
			-		-		T2YDT□	–	
	1-Color Off-Delay Type		-	10 to 30	-	5 to 20 *2	T2JH□	T2JV□	
	1-Color Flexible Lead Wire Type		-	10 to 30	-		T2HR3	T2VR3	
Reed	1-Color	2-wire	110	12/24	7 to 20	5 to 50	T0H□	T0V□	
	No Indicator LED		110	5/12/24	20 or less	50 or less	T5H□	T5V□	
	1-Color		110/220	12/24	7 to 20 / 7 to 10	5 to 50	T8H□	T8V□	

*1: For "□" in the switch model number, enter the code selected from the "*Lead wire length, connector specification" table.
*2: The maximum load current value above, 20 mA, is at 25°C. If the switch operating ambient temperature is higher than 25°C, it will be lower than 20 mA. (At 60°C, it will be 5 to 10 mA.)
*3: This does not guarantee the water resistance of the cylinder. When using in a water-resistant environment, use of an improved water resistance cylinder is recommended.
*4: Switches other than the model numbers listed above are also available. (Custom Product) For details, see P. 753.

*Lead wire length, connector specification

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)
*5 W	M8 Connector, 1PIN (+), 4PIN (−) Lead Wire 0.3 m

*5: Only T2WLH and T2WLV can be selected.

Example) Lead wire length
1 m TOH
3 m TOH 3
5 m TOH 5

❺ Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs
T	With 3 pcs

Switch Single Unit Model No. Notation Method

SW - T0V

❹ Switch Model No.

Food Manufacturing Process Compatible Specification (Catalog No. CC-1271AA)

●Uses food grade grease that can be used in food manufacturing processes

STG-MG5 - ····· - FP1

About Custom Product Specifications

For details, see P. 466.

Code	Content
-0	Port symmetrical type

Model No. Example)

STG-MG5 - ····· - O

For combinations of variations and options, please refer to P. 368, 369.

Specifications

Item		STG-MG5							
Bore Size	mm	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Actuation method		Double Acting Type							
Operating Fluid		Compressed Air							
Maximum Operating Pressure	MPa	1.0							
Min. Operating Pressure	MPa	0.25					0.2		
Proof Pressure	MPa	1.6							
Ambient Temperature	°C	-10 to 60 (However, no freezing)							
Port Size		Rc1/8				Rc1/4		Rc3/8	
Stroke tolerance	mm	+2.0 0							
Operating piston speed	mm/s	50 to 500					50 to 300		
Cushion		With Rubber Cushion							
Lubrication		Not required (When lubricating, use turbine oil class 1 ISO VG32)							
Allowable Absorption Energy	J	0.157	0.157	0.401	0.627	0.980	1.560	2.510	3.92

Stroke

Bore Size	Standard Stroke (mm)	Maximum Stroke (mm)	Min. Stroke (mm)	Min. stroke with switch (mm)	
				T2WL	Other switches
ø20	20, 30, 40, 50, 75, 100, 125, 150, 175, 200, 250, 300, 350, 400	400	5	10	5 (10) *2
ø25					
ø32	25, 50, 75, 100, 125, 150, 175, 200, 250, 300, 350, 400				
ø40					
ø50					
ø63					
ø80					
ø100					

*1: Intermediate strokes can be manufactured every 5 mm. However, the overall length dimension is the same as the dimension of the longer standard stroke.
*2: This is for the case with 1 or 2 switches. The value in ( ) is the minimum stroke for a 2-color indicator type switch for AC magnetic fields.

Cylinder Weight Table

(Unit: kg)

Item	Stroke														Switch weight
Bore Size (mm)	20	25	30	40	50	75	100	125	150	175	200	250	300	350	400	
ø20	0.68	-	0.75	0.83	0.91	1.16	1.35	1.55	1.73	1.93	2.12	2.58	2.96	3.34	3.73	Refer to the mass described in the switch specifications on P. 753
ø25	0.95	-	1.05	1.16	1.26	1.63	1.89	2.16	2.43	2.69	2.95	3.59	4.12	4.65	5.17	
ø32	-	1.73	-	-	2.10	2.63	3.02	3.43	3.82	4.21	4.60	5.58	6.36	7.15	7.94	
ø40	-	2.00	-	-	2.41	2.86	3.27	3.68	4.09	4.51	4.91	5.92	6.76	7.58	8.41	
ø50	-	3.44	-	-	4.06	4.77	5.39	6.01	6.63	7.25	7.87	9.44	10.66	11.92	13.18	
ø63	-	4.31	-	-	5.05	5.87	6.60	7.33	8.07	8.80	9.53	11.32	12.77	14.23	15.68	
ø80	-	7.65	-	-	8.75	10.14	11.23	12.33	13.43	14.53	15.63	18.43	20.55	22.73	24.93	
ø100	-	11.04	-	-	12.38	14.09	15.43	16.76	18.10	19.44	20.78	24.07	26.74	29.42	32.09	

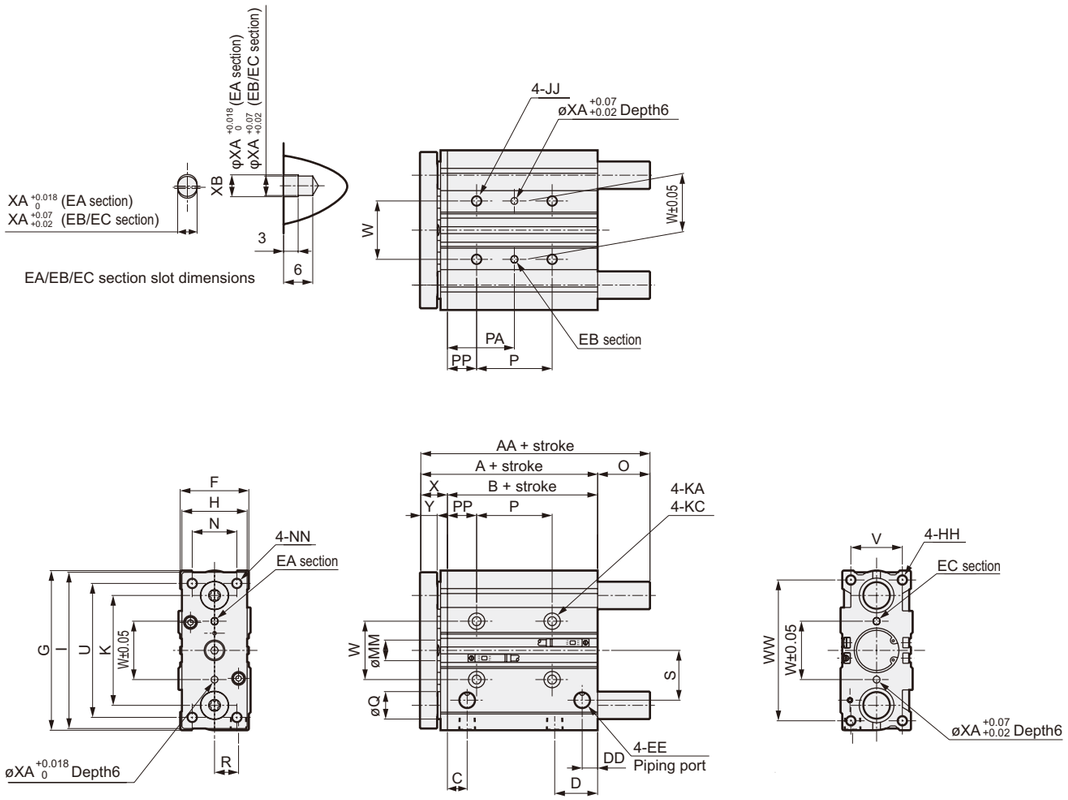
Theoretical thrust table (Double acting type)

(Unit: N)

Bore Size (mm)	Operating Direction	Operating pressure MPa									
		0.2	0.25	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø20	Push	-	78.5	94.2	1.26 x 10²	1.57 x 10²	1.88 x 10²	2.20 x 10²	2.51 x 10²	2.83 x 10²	3.14 x 10²
	Pull	-	58.9	70.7	94.2	1.18 x 10²	1.41 x 10²	1.65 x 10²	1.88 x 10²	2.12 x 10²	2.36 x 10²
ø25	Push	-	1.23x10²	1.47 x 10²	1.96 x 10²	2.45 x 10²	2.95 x 10²	3.44 x 10²	3.93 x 10²	4.42 x 10²	4.91 x 10²
	Pull	-	94.4	1.13 x 10²	1.51 x 10²	1.89 x 10²	2.27 x 10²	2.64 x 10²	3.02 x 10²	3.40 x 10²	3.78 x 10²
ø32	Push	-	2.01 x 10²	2.41 x 10²	3.22 x 10²	4.02 x 10²	4.83 x 10²	5.63 x 10²	6.43 x 10²	7.24 x 10²	8.04 x 10²
	Pull	-	1.51 x 10²	1.81 x 10²	2.41 x 10²	3.02 x 10²	3.62x10²	4.22 x 10²	4.83 x 10²	5.43x10²	6.03x10²
ø40	Push	-	3.14 x 10²	3.77 x 10²	5.03 x 10²	6.28 x 10²	7.54 x 10²	8.80 x 10²	1.01 x 10³	1.13 x 10³	1.26 x 10³
	Pull	-	2.64 x 10²	3.17 x 10²	4.22 x 10²	5.28 x 10²	6.33 x 10²	7.39 x 10²	8.44 x 10²	9.50 x 10²	1.06 x 10³
ø50	Push	-	4.91 x 10²	5.89 x 10²	7.85 x 10²	9.82 x 10²	1.18 x 10³	1.37 x 10³	1.57 x 10³	1.77 x 10³	1.96 x 10³
	Pull	-	4.12x10²	4.95 x 10²	6.60 x 10²	8.25 x 10²	9.90 x 10²	1.15 x 10³	1.32 x 10³	1.48 x 10³	1.65 x 10³
ø63	Push	6.23 x 10²	7.79x10²	9.35 x 10²	1.25 x 10³	1.56 x 10³	1.87 x 10³	2.18 x 10³	2.49 x 10³	2.81 x 10³	3.12 x 10³
	Pull	5.61 x 10²	7.01x10²	8.41 x 10²	1.12 x 10³	1.40 x 10³	1.68 x 10³	1.96 x 10³	2.24 x 10³	2.52 x 10³	2.80 x 10³
ø80	Push	1.01 x 10³	1.26 x 10³	1.51 x 10³	2.01 x 10³	2.51 x 10³	3.02 x 10³	3.52 x 10³	4.02 x 10³	4.52 x 10³	5.03 x 10³
	Pull	9.07 x 10²	1.13 x 10³	1.36 x 10³	1.81 x 10³	2.27 x 10³	2.72 x 10³	3.17 x 10³	3.63 x 10³	4.08 x 10³	4.54 x 10³
ø100	Push	1.57 x 10³	1.96 x 10³	2.36 x 10³	3.14 x 10³	3.93 x 10³	4.71 x 10³	5.50 x 10³	6.28 x 10³	7.07 x 10³	7.85 x 10³
	Pull	1.43 x 10³	1.79x10³	2.14 x 10³	2.86 x 10³	3.57 x 10³	4.29 x 10³	5.00 x 10³	5.72 x 10³	6.43 x 10³	7.15 x 10³

External dimensions diagram (Bore size: ø20, ø25)

● STG-MG5-20, 25



Code / Bore Size	Standard Stroke (mm)	A	B	C	D	DD	EE	F	G	H	HH	I	JJ
ø20	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
ø25	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

Code / Bore Size	K	KA	MM	N	NN	KC	P				
							30 or less	Over 30 and 100 or less	Over 100 and 200 or less	Over 200 to 300 or Less	Over 300
ø20	54	5.2 Through	10	18	M5 Through	9.5 Counterbore depth 5.5	24	44	120	200	300
ø25	64	5.2 Through	12	26	M6 Through	9.5 Counterbore depth 5.5	24	44	120	200	300

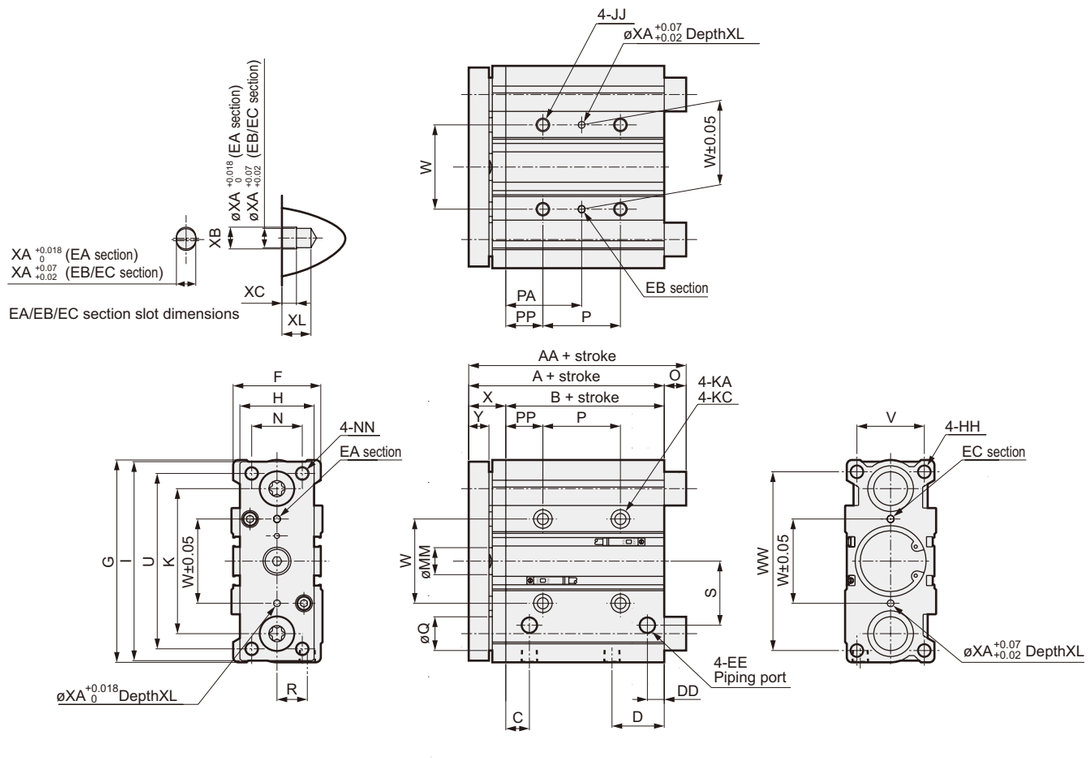
Code / Bore Size	PA					PP	R	S	U	V	W	WW	X	Y	XA	XB
	30 or less	Over 30 and 100 or less	Over 100 and 200 or less	Over 200 to 300 or Less	Over 300											
ø20	29	39	77	117	167	17	11	25	70	24	28	72	16	9.5	3	3.5
ø25	29	39	77	117	167	17	14	29	78	30	34	82	16	9.5	4	4.5

Code / Bore Size	AA			Q	O		
	50 or less	Over 50 and 200 or less	Over 200		50 or less	Over 50 and 200 or less	Over 200
ø20	53	78	122	12	0	25	69
ø25	53.5	84	122	16	0	30.5	68.5

*1: For intermediate strokes, the overall length dimension is the same as the dimension of the longer standard stroke.
*2: For dimensions with each switch, refer to P. 446 to 448.

External dimensions diagram (Bore size: ø32, ø40, ø50, ø63)

● STG-MG5-32, 40, 50, 63



Code / Bore Size	Standard Stroke (mm)	A	B	C	D	DD	EE	F	G	H	HH	I	JJ	K	KA
ø32	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 Through
ø40		66	44	14	31	10	Rc1/8	54	120	44	M8 depth 20	118	M8 Depth 16	86	6.3 Through
ø50		72	44	14	35	11	Rc1/4	64	148	60	M10 Depth 22	146	M10 Depth 20	110	8.6 Through
ø63		77	49	16.5	35	15	Rc1/4	78	162	70	M10 Depth 22	158	M10 Depth 20	124	8.6 Through

Code / Bore Size	KC	MM	N	NN	P					PA	
					25 or Less	Over 25 and 100 or less	Over 100 and 200 or less	Over 200 to 300 or Less	Over 300	25 or Less	Over 25 to 100 or less
ø32	11 Counterbore depth 7.5	16	30	M8 Through	24	48	124	200	300	33	45
ø40	11 Counterbore depth 7.5	16	30	M8 Through	24	48	124	200	300	34	46
ø50	14 Counterbore depth 9	20	40	M10 Through	24	48	124	200	300	36	48
ø63	14 Counterbore depth 9	20	50	M10 Through	28	52	128	200	300	38	50

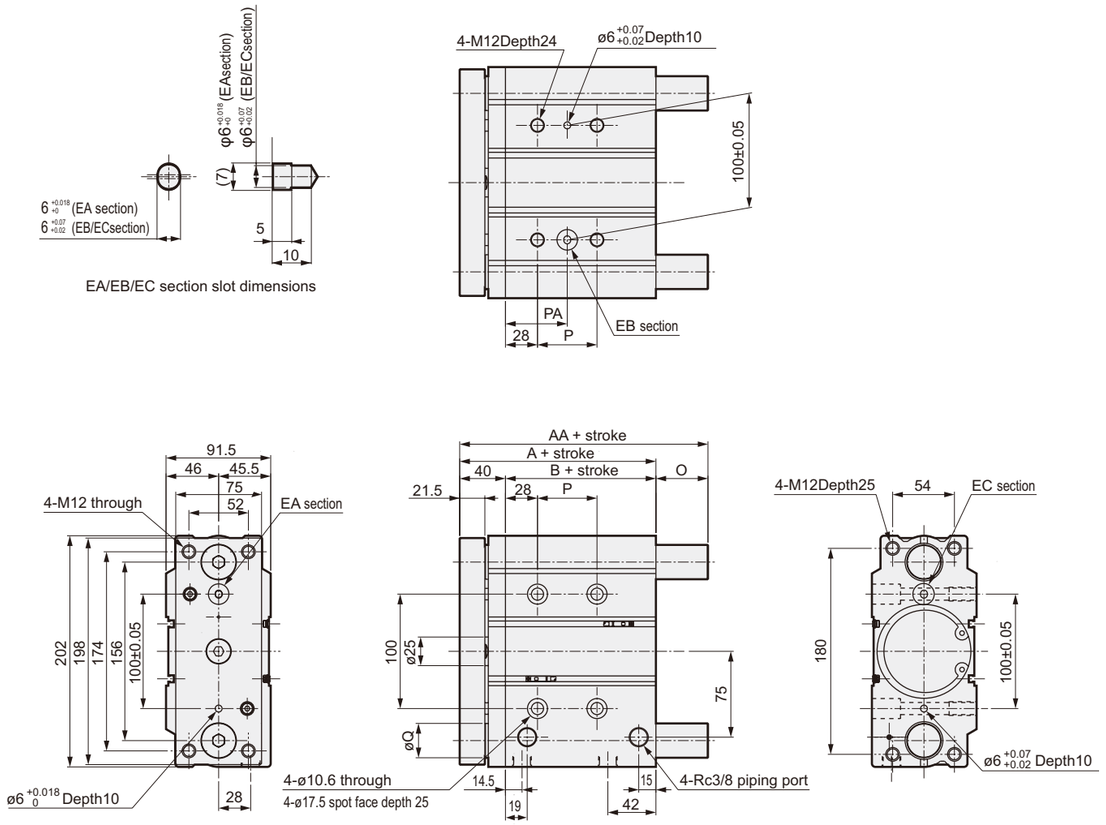
Code / Bore Size	PA			PP	R	S	U	V	W	WW	X	Y	XA	XB	XC	XL
	Over 100 and 200 or less	Over 200 to 300 or Less	Over 300													
ø32	83	121	171	21	15	34	96	34	42	98	22	11.5	4	4.5	3	6
ø40	84	122	172	22	18	38	104	40	50	106	22	11.5	4	4.5	3	6
ø50	86	124	174	24	21.5	47	130	46	66	130	28	15.5	5	6	4	8
ø63	88	124	174	24	28	55	130	58	80	142	28	15.5	5	6	4	8

Code / Bore Size	AA			Q	O		
	50 or less	Over 50 and 200 or less	Over 200		50 or less	Over 50 and 200 or less	Over 200
ø32	79	100	140	20	19.5	40.5	80.5
ø40	79	100	140	20	13	34	74
ø50	91	116	161	25	19	44	89
ø63	91	116	161	25	14	39	84

*1: For intermediate strokes, the overall length dimension is the same as the dimension of the longer standard stroke.
***2: For dimensions with each switch, refer to P. 446 to 448.**

External dimensions diagram (Bore size: ø80)

● STG-MG5-80



Standard Stroke (mm)	A	B	P					PA				
			25st or less	Over 25st and 100st or less	Over 100st and 200st or less	Over 200st and 300st or less	Over 300st	25st or less	Over 25st and 100st or less	Over 100st and 200st or less	Over 200st and 300st or less	Over 300st
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

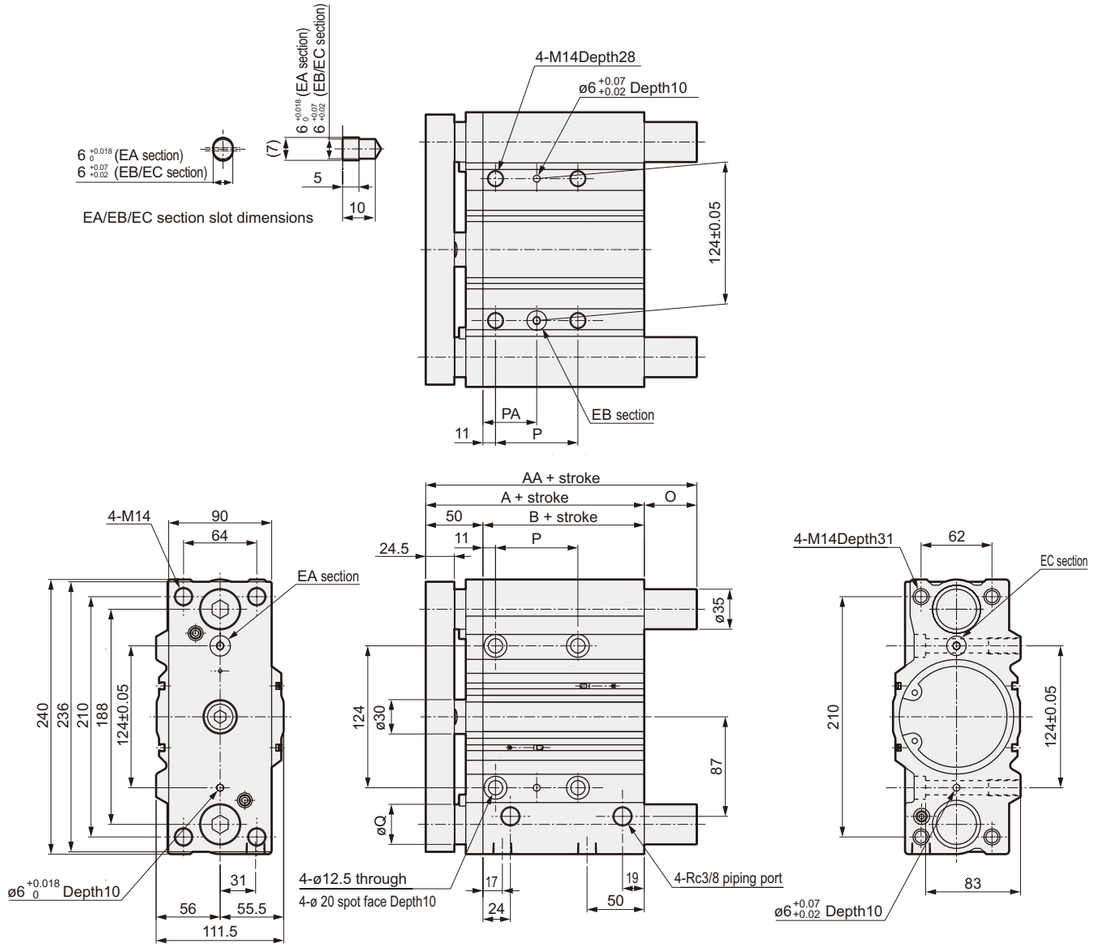
AA			Q	O		
50st or less	Over 50st and 200st or less	Over 200st		50st or less	Over 50st and 200st or less	Over 200st
115	142	193	30	18.5	45.5	96.5

*1: For intermediate strokes, the overall length dimension is the same as the dimension of the longer standard stroke.

***2: For dimensions with each switch, refer to P. 446 to 448.**

External dimensions diagram (Bore size: ø100)

● STG-MG5-100



Standard Stroke (mm)	A	B	P					PA				
			25st or less	Over 25st and 100st or less	Over 100st and 200st or less	Over 200st and 300st or less	Over 300st	25st or less	Over 25st and 100st or less	Over 100st and 200st or less	Over 200st and 300st or less	Over 300st
25, 50, 75, 100, 125, 150, 175, 200, 250, 300, 350, 400	116	66	48	72	148	220	320	35	47	85	121	171

AA			Q	O		
50st or less	Over 50st and 200st or less	Over 200st		50st or less	Over 50st and 200st or less	Over 200st
137	162	203	35	21	46	87

*1: For intermediate strokes, the overall length dimension is the same as the dimension of the longer standard stroke.

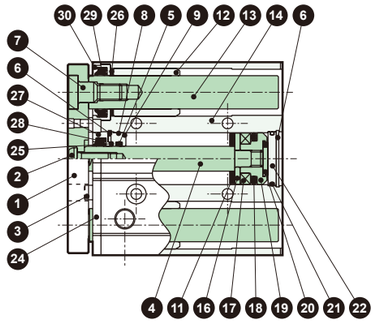
***2: For dimensions with each switch, refer to P. 446 to 448.**

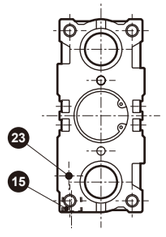
Internal structure diagram / Material (STG-MG5-20 to 63)

● STG-MG5-20 to 63

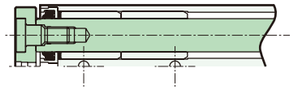
● ø20, ø25

50 strokes or less

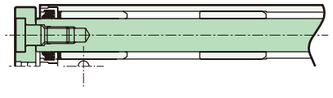




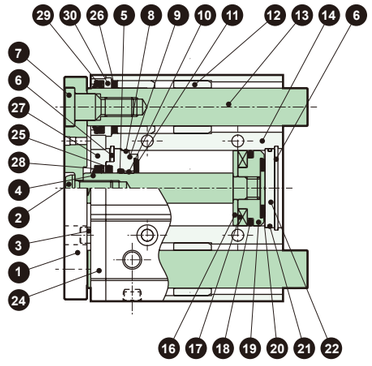
Over 50 strokes and 200 strokes or less

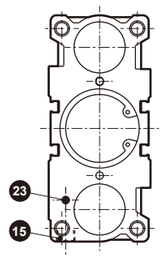


Over 200 strokes



● ø32 to ø63



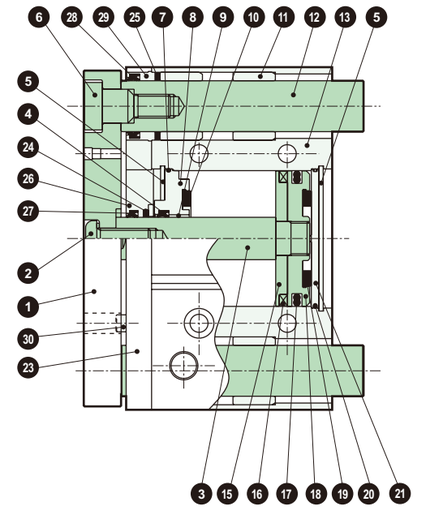


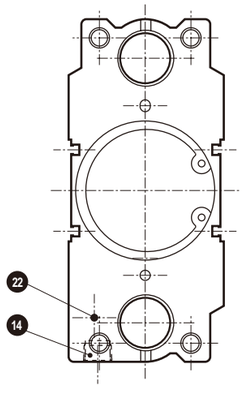
Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	End plate	Steel	Nickel Plating	15	Plug	Copper alloy or steel	
2	Hex Socket Button Head Bolt	Steel	Zinc Chromate	16	Spacer	Aluminum Alloy	
3	Hexagon Socket Head Cap Screw	Steel	Zinc Chromate	17	Magnet		
4	Piston Rod	ø20 to ø25: Stainless steel ø32 to ø63: Steel	Industrial Hard Chrome Plating	18	Piston Packing	Nitrile Rubber	
				19	Piston	Aluminum Alloy	
5	Rod Packing	Nitrile Rubber		20	Cushion Rubber	Urethane Rubber	
6	C-type retaining ring	Steel	Zinc phosphate	21	O-ring	Nitrile Rubber	
7	Bolt	Steel	Zinc Chromate	22	Bottom plate	Aluminum Alloy	Chromate
8	Metal gasket	Nitrile Rubber		23	Hexagon socket head set screw	Stainless Steel	
9	Rod Metal	Aluminum Alloy	ø20 to ø32: Alumite ø40 to ø63: Chromate	24	Adapter plate	Aluminum Alloy	Alumite
				25	Lube keeper	Special rubber	
10	Bushing	Bearing Alloy		26	Lube keeper	Special rubber	
11	Cushion Rubber	Urethane Rubber		27	Holder R	Aluminum Alloy	Chromate
12	Metal	Oil-impregnated copper alloy bearing		28	Scraper	Nitrile Rubber	
13	Guide rod	Steel	Industrial Hard Chrome Plating	29	Scraper	Nitrile Rubber	
14	Cylinder Body	Aluminum Alloy	Hard Anodized	30	Holder G	Aluminum Alloy	Chromate

For maintenance parts, please visit the CKD Equipment Product Site
(https://www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts

Internal structure diagram / Material (STG-MG5-80 to 100)

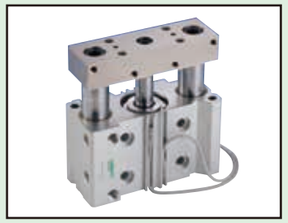
● ø80, ø100





Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	End plate	Steel	Nickel Plating	17	Piston Packing	Nitrile Rubber	
2	Hex Socket Button Head Bolt	Steel	Zinc Chromate	18	Piston	Aluminum Alloy	
3	Piston Rod	Steel	Industrial Hard Chrome Plating	19	Cushion Rubber	Urethane Rubber	
4	Rod Packing	Nitrile Rubber		20	O-ring	Nitrile Rubber	
5	C-type retaining ring	Steel	Zinc phosphate	21	Bottom plate	ø80: Aluminum alloy ø100: Steel	ø80: Chromate ø100: Zinc chromate
6	Bolt	Steel	Zinc Chromate				
7	Metal gasket	Nitrile Rubber		22	Hexagon socket set screw (ø80)	Stainless Steel	
8	Rod Metal	Aluminum Alloy	Chromate		Plug (ø100)	Steel	Nickel Plating
9	Bushing	Bearing Alloy		23	Adapter plate	Aluminum Alloy	Alumite
10	Cushion Rubber	Urethane Rubber		24	Lube keeper	Special rubber	
11	Metal	Oil-impregnated copper alloy bearing		25	Lube keeper	Special rubber	
12	Guide rod	Steel	Industrial Hard Chrome Plating	26	Holder R	Aluminum Alloy	Chromate
13	Cylinder Body	Aluminum Alloy	Hard Anodized	27	Scraper	Nitrile Rubber	
14	Plug	Steel		28	Scraper	Nitrile Rubber	
15	Spacer	Aluminum Alloy		29	Holder G	Aluminum Alloy	Chromate
16	Magnet			30	Hexagon Socket Head Cap Screw	Steel	Zinc Chromate

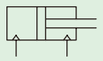
For maintenance parts, please visit the CKD Equipment Product Site
(https://www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts



Guided cylinder Double acting, Heavy-duty guide rod type

STG-K Series

● Bore size: ø32, ø50

Circuit Diagram Symbol 

RoHS

Model No. Notation Method

Without Switch
(Built-in magnet for switch)

STG - K - 50 ( ) ( ) - 25

Model No. ❶ ❷ ❸ ❹

With Switch
(Built-in magnet for switch)

STG - K - 50 ( ) ( ) - 25 - T2H - R

Model No. ❶ Bore size ❸ Cushion ❺ Switch Model No.

Heavy-Duty Guide Rod Type (Plain bearing) ❷ Piping thread type ❹ Stroke ❻ Number of Switches

❶ Bore Size (mm)

Code	Content
32	ø32
50	ø50

❷ Piping thread type

Code	Content
Blank	Rc Thread
NN	NPT Thread (Custom Order Product)
GN	G Thread (Custom Order Product)

❸ Cushion

Code	Content
Blank	With Rubber Cushion
C	With Rubber Air Cushion

❹ Stroke (mm)

Code	Content
25	25
50	50
75	75
100	100
125	125
150	150
175	175
200	200

*Intermediate strokes can be manufactured every 5 mm. However, the overall length dimension will be the same as the standard stroke above it.

❺ Switch Model No.

For switch details, please refer to P. 753.
Switches are included to the product and shipped.

Contact	Indicator LED Special Function	Wiring (Output)	Load Voltage (V) AC	Load Voltage (V) DC	Load Current (mA) AC	Load Current (mA) DC	Lead Wire *1 Straight	Lead Wire *1 L-shape	
Solid State	1-Color	2-wire	85 to 265	-	5 to 100	-	T1H□	T1V□	
			-	10 to 30	-	5 to 20 *2	T2H□	T2V□	
		3-wire (NPN)	-	30 or less	-	100 or less	T3H□	T3V□	
		3-wire (PNP)	-		-		T3PH□	T3PV□	
	2-Color	2-wire	-	24 ± 10%	-	5 to 20	T2WH□	T2WV□	
		3-wire (NPN)	-	30 or less	-	50 or less	T3WH□	T3WV□	
	2-Color Improved Water Resistance	2-wire	-	24 ± 10%	-	5 to 20	T2WLH□	T2WLV□	 *3
	2-Color for AC Magnetic Field		-	24 ± 10%	-		T2YD□	–	
			-		-		T2YDT□	–	
	1-Color Off-Delay Type		-	10 to 30	-	5 to 20 *2	T2JH□	T2JV□	
	1-Color Flexible Lead Wire Type		-	10 to 30	-		T2HR3	T2VR3	
Reed	1-Color	2-wire	110	12/24	7 to 20	5 to 50	T0H□	T0V□	
	No Indicator LED		110	5/12/24	20 or less	50 or less	T5H□	T5V□	
	1-Color		110/220	12/24	7 to 20 / 7 to 10	5 to 50	T8H□	T8V□	

*1: For "□" in the switch model number, enter the code selected from the "*Lead wire length, connector specification" table.
*2: The maximum load current value above, 20 mA, is at 25°C. If the switch operating ambient temperature is higher than 25°C, it will be lower than 20 mA. (At 60°C, it will be 5 to 10 mA.)
*3: This does not guarantee the water resistance of the cylinder. When using in a water-resistant environment, use of an improved water resistance cylinder is recommended.
*4: Switches other than the model numbers listed above are also available. (Custom Product) For details, see P. 753.

*** Lead wire length, connector specification**

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)
W	M8 Connector, 1PIN (+), 4PIN (−) Lead Wire 0.3 m

*5: Only T2WLH and T2WLV can be selected.

Example) Lead wire length
1 m TOH
3 m TOH 3
5 m TOH 5

❻ Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs
T	With 3 pcs

Switch Single Unit Model No. Notation Method

SW - T0H

❺ Switch Model No.

About Custom Product Specifications

For details, see P. 466.

Code	Content
-0	Port symmetrical type

Model No. Example)

STG-K - ····· - O

For combinations of variations and options, please refer to P. 368, 369.

Specifications

Item		STG-K		
Bore Size	mm	ø32	ø50	
Actuation method		Double Acting Type		
Operating Fluid		Compressed Air		
Max. working pressure	MPa	1.0		
Min. Operating Pressure	MPa	0.1		*1
Proof Pressure	MPa	1.6		
Ambient Temperature	°C	-10 to 60 (Provided that freezing does not occur)		
Port Size		Rc1/8	Rc1/4	
Stroke Tolerance	mm	+2.0 0		
Operating Piston Speed	mm/s	50 to 400		
Cushion		With Rubber Cushion		
Lubrication		Not required (When lubricating, use turbine oil Class 1 ISO VG32)		
Allowable Absorbed Energy	J	0.401	0.980	

*1: For rubber air cushion, it will be 0.2MPa.

Stroke

Standard Stroke (mm)	Max. Stroke (mm)	Min. Stroke (mm)	Min. stroke with switch (mm)	
			T2WL	Other switches
25, 50, 75, 100, 125, 150, 175, 200	200	5	10	5 (10) *2

*1: Intermediate strokes can be manufactured every 5 mm.
However, the overall length dimension will be the same as the dimension of the standard stroke above it.
*2: This is for the case with 1 or 2 switches. The value in ( ) is the minimum stroke for a 2-color indicator type switch for AC magnetic fields.

Cylinder Weight

Unit: kg

Item / Bore Size (mm)	Stroke 25	50	75	100	125	150	175	200	Switch weight
ø32	2.36	2.86	3.54	4.04	4.53	5.03	5.53	6.03	Refer to the mass described in the switch specifications on P. 753
ø50	3.90	4.64	5.64	6.38	7.13	7.87	8.61	9.36	

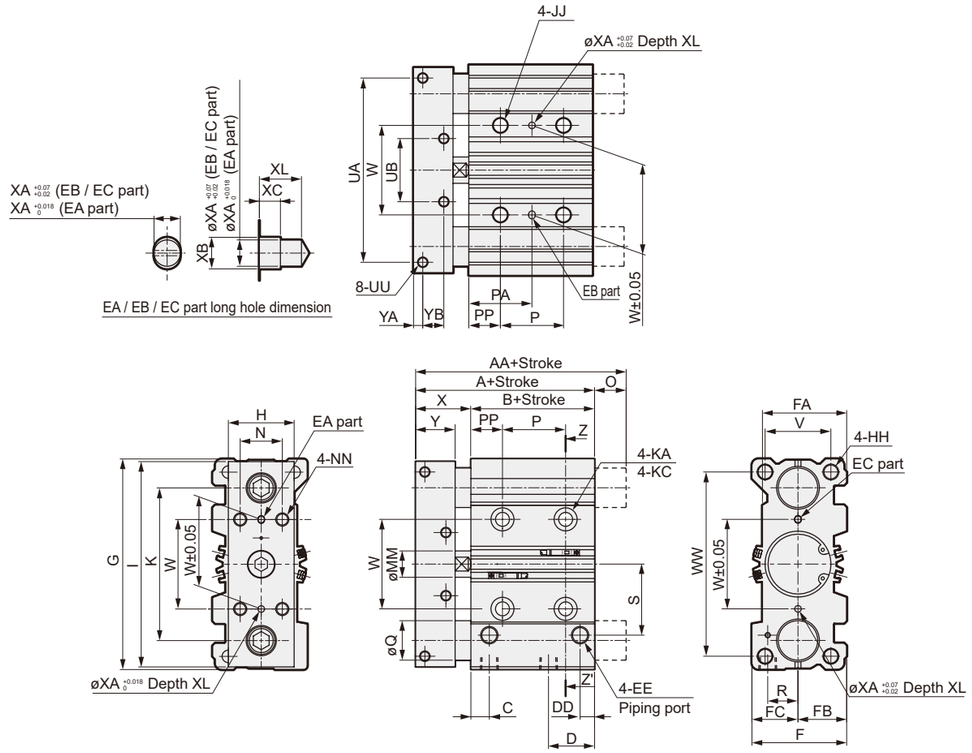
Theoretical Thrust Table

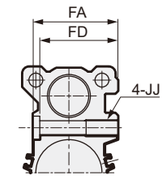
(Unit: N)

Bore Size (mm)	Operating Direction	Operating pressure MPa 0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø32	Push	80.4	1.21 x 10²	1.61 x 10²	2.41 x 10²	3.22 x 10²	4.02 x 10²	4.83 x 10²	5.63 x 10²	6.43 x 10²	7.24 x 10²	8.04 x 10²
	Pull	60.3	90.5	1.21 x 10²	1.81 x 10²	2.41 x 10²	3.02 x 10²	3.62x10²	4.22 x 10²	4.83 x 10²	5.43x10²	6.03x10²
ø50	Push	1.96 x 10²	2.95 x 10²	3.93 x 10²	5.89 x 10²	7.85 x 10²	9.82 x 10²	1.18 x 10³	1.37 x 10³	1.57 x 10³	1.77 x 10³	1.96 x 10³
	Pull	1.65 x 10²	2.47 x 10²	3.30 x 10²	4.95 x 10²	6.60 x 10²	8.25 x 10²	9.90 x 10²	1.15 x 10³	1.32 x 10³	1.48 x 10³	1.65 x 10³

Outline Dimension Drawing

● STG-K-ø32, ø50





Code / Bore Size (mm)	A	AA 25, 50st	AA Over 50st	B	C	D	DD	EE	F	FA	FB	FC	FD	G	H	HH
ø32	72	72	90.5	37.5	12.5	30.5	9	Rc1/8	54	47	27	27	42	130	44	M10 Depth 18
ø50	86	86	109	44	14	35	11	Rc1/4	72	64	37	35	59	160	50	M12 Depth 20

Code / Bore Size (mm)	I	JJ	K	KA	KC	MM	N	NN	O 25, 50st	O Over 50st	P 25st	P 50, 75, 100st	P Over 100st	PA 25st	PA 50, 75, 100st
ø32	126	M10 Depth 20	88	8.6 Through	14 Counterbore depth 5	16	24	M8 Depth 16	0	18.5	24	48	124	33	45
ø50	156	M12 Depth 24	116	10.6 Through	17.5 Counterbore depth 5	20	32	M10 Depth 20	0	23	24	48	124	36	48

Code / Bore Size (mm)	PA Over 100st	PP	Q	R	S	UA	UB	UU	V	W	WW	X	XA	XB	XC	XL
ø32	83	21	25	18	39.5	112	27	M6 Depth 10	37	44	113	34.5 -2 0	4	4.5	3	6
ø50	86	24	30	23	54	140	48	M8 Depth 14	50	68	140	42 -2 0	5	6	4	8

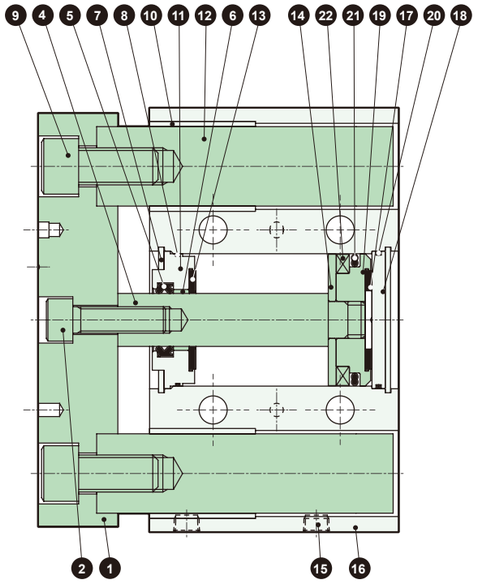
Code / Bore Size (mm)	Y	YA	YB
ø32	25	6	13
ø50	30	7	16

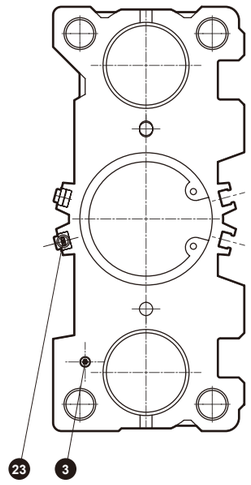
*1: For intermediate strokes, the overall length dimension is the same as the dimension of the longer standard stroke.
***2: For dimensions with each switch, refer to P. 446 to 448.**

Internal Structure Diagram/Material

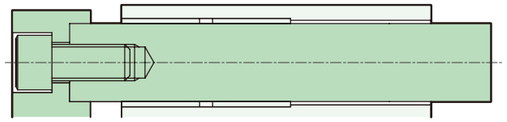
● STG-K-32, 50

• 50 strokes or less





• Over 50 strokes



Part No.	Part Name	Material	Remarks
1	End plate	Steel	Nickel Plating
2	Hexagon Socket Head Cap Screw	Steel	Black Oxide
3	Hexagon socket head set screw	Stainless Steel	
4	Piston Rod	Steel	Industrial Hard Chrome Plating
5	Rod Packing	Nitrile Rubber	
6	Bushing	Bearing Alloy	ø50 only
7	C-type retaining ring for hole	Steel	Zinc phosphate
8	O-ring	Nitrile Rubber	
9	Hexagon socket bolt	Steel	Black Oxide
10	Metal	Oil-impregnated copper alloy bearing	
11	Rod Metal	Aluminum Alloy	ø32: Hard alumite ø50: Chromate
12	Guide rod	Steel	Industrial Hard Chrome Plating
13	Cushion Rubber	Urethane Rubber	
14	Spacer	Aluminum Alloy	
15	Plug	Steel	
16	Cylinder Body	Aluminum Alloy	Hard Anodized
17	Cushion Rubber	Urethane Rubber	
18	Cover	Aluminum Alloy	Chromate
19	Piston	Aluminum Alloy	
20	O-ring	Nitrile Rubber	
21	Piston Packing	Nitrile Rubber	
22	Magnet		
With Switch			
23	Switch		

Consumable Parts List

Bore Size (mm)	Kit Number	Consumable Part Number
ø32	**STG-32K**	5 8 13
ø50	**STG-50K**	17 20 21

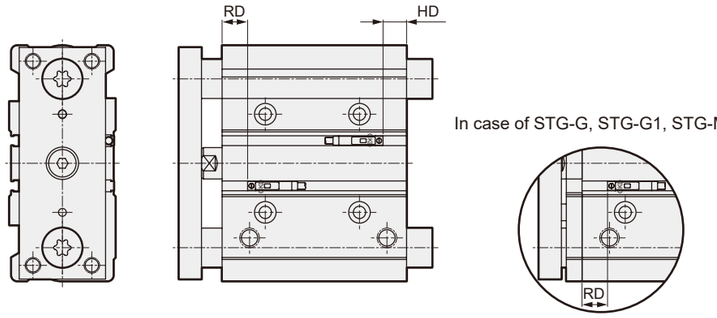
MEMO

Guided
STM
STG
STS/STL
STR2
UCA2
Cylinder Switch
Ending

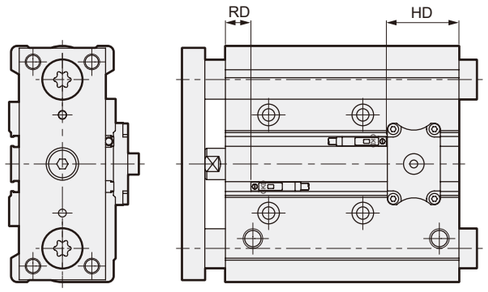
STG Series Switch External Dimensions Diagram

● T0H/V, T5H/V, T2H/V, T2□R3, T3PH/V, T2WH/V, T3WH/V, T2WLH/V

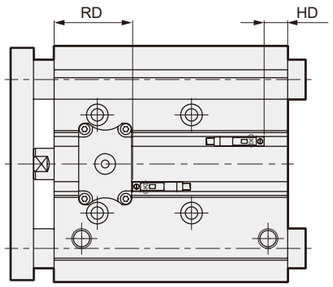
● STG,STG-□C,STG-C,STG-G,STG-G1,STG-MG5



● STG-Q-H



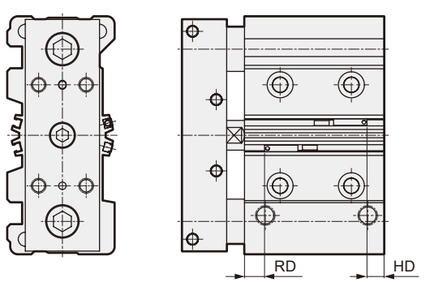
● STG-Q-R



Code	STG,STG-□C,STG-G,STG-G1,STG-MG5				STG-C				STG-Q-H				STG-Q-R			
	T0,T5,T2,T2□R3,T3P		T2W,T3W,T2WL		T0,T5,T2,T2□R3,T3P		T2W,T3W,T2WL		T0,T5,T2,T2□R3,T3P		T2W,T3W,T2WL		T0,T5,T2,T2□R3,T3P		T2W,T3W,T2WL	
Bore Size (mm)	RD	HD	RD	HD	RD	HD	RD	HD	RD	HD	RD	HD	RD	HD	RD	HD
ø12	5	5	7	7	-	-	-	-	-	-	-	-	-	-	-	-
ø16	4	10	6	12	20.5	18	22.5	20	-	-	-	-	-	-	-	-
ø20	9.5	8.5	11.5	10.5	23.5	19.5	25.5	21.5	6.5	39	8.5	41	34.5	8.5	36.5	10.5
ø25	10	8.5	12	10.5	25.5	17.5	27.5	19.5	10	34	12	36	35	8.5	37	10.5
ø32	10	8.5	12	10.5	23.5	20	25.5	22	10	34.5	12	36.5	35	8.5	37	10.5
ø40	13	12	15	14	27.5	22.5	29.5	24.5	13	37	15	39	40	12	42	14
ø50	13.5	11.5	15.5	13.5	30	20.5	32	22.5	13.5	37	15.5	39	39	11.5	41	13.5
ø63	14	16	16	18	31	24	33	26	14	40	16	42	39	16	41	18
ø80	18	19.5	20	21.5	-	-	-	-	-	-	-	-	-	-	-	-
ø100	22	25.5	24	27.5	-	-	-	-	-	-	-	-	-	-	-	-

*For switch mountability, refer to the model No. notation method for each variation.

● STG-K

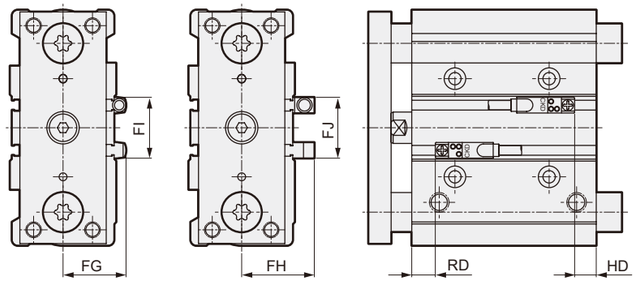


Code	STG-K			
	T0,T5,T2,T2*R3,T3P		T2W,T3W,T2WL	
Bore Size (mm)	RD	HD	RD	HD
ø32	10	8.5	12	10.5
ø50	13.5	11.5	15.5	13.5

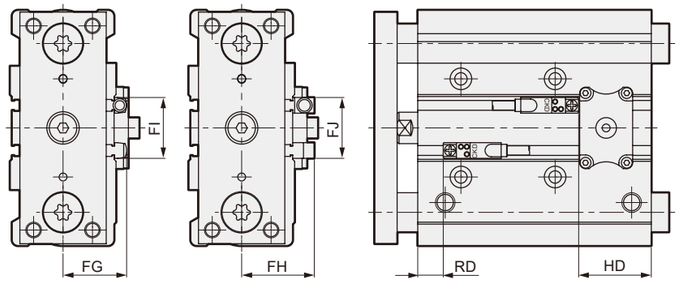
STG Series Switch External Dimensions Diagram

● T2JH/V, T2YLH, T3YLH, T8H/V, T1H/V, T2YD, T2YDT

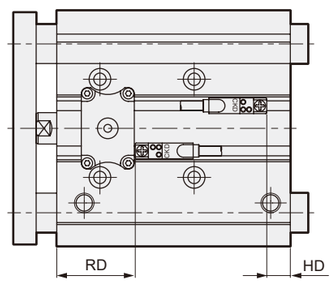
● STG,STG-*C,STG-C,STG-G,STG-G1,STG-MG2,STG-MG3,STG-G4,STG-MG5



● STG-Q-H



● STG-Q-R



Code	STG,STG-□C,STG-G,STG-G1,STG-MG2,STG-MG3,STG-G4,STG-MG5										STG-C									
	FG	FI	T2J,T2Y,T3Y		T8		FH	FJ	T1,T2YD,T2YDT		FG	FI	T2J,T2Y,T3Y		T8		FH	FJ	T1,T2YD,T2YDT	
Bore Size (mm)			RD	HD	RD	HD			RD	HD			RD	HD	RD	HD			RD	HD
ø12	19	16	4	4	- *2	- *2	24	16	4	4	19	16	-	-	-	-	24	16	-	-
ø16	21	16	3	9	- *2	- *2	26	16	3	9	21	16	19.5	17	- *2	- *2	26	16	19.5	17
ø20	24	16	8.5	7.5	3.5	2.5	29	16	8.5	7.5	24	16	22.5	18.5	17.5	13.5	29	16	22.5	18.5
ø25	27	17	9	7.5	4	2.5	32	17	9	7.5	27	17	24.5	16.5	19.5	11.5	32	17	24.5	16.5
ø32	30	24	9	7.5	4	2.5	35	24	9	7.5	30	24	22.5	19	17.5	14	35	24	22.5	19
ø40	33	31	12	11	7	6	38	31	12	11	33	31	26.5	21.5	21.5	16.5	38	31	26.5	21.5
ø50	38	32	12.5	10.5	7.5	5.5	43	32	12.5	10.5	38	32	29	19.5	24	14.5	43	32	29	19.5
ø63	45	32	13	15	8	10	50	32	13	15	45	32	30	23	25	18	50	32	30	23
ø80	51	56	17	18.5	12	13.5	56	56	17	18.5	51	56	-	-	-	-	56	56	-	-
ø100	60	62	21	24.5	16	19.5	65	62	21	24.5	60	62	-	-	-	-	65	62	-	-

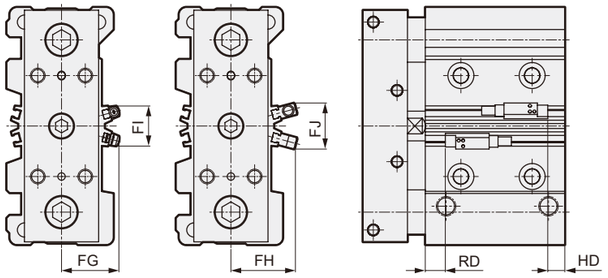
Code	STG-Q-H								STG-Q-R							
	FG	FI	T2J,T2Y,T3Y		FH	FJ	T1,T2YD,T2YDT		FG	FI	T2J,T2Y,T3Y		FH	FJ	T1,T2YD,T2YDT	
Bore Size (mm)			RD	HD			RD	HD			RD	HD			RD	HD
ø12	19	16	-	-	24	16	-	-	19	16	-	-	24	16	-	-
ø16	21	16	-	-	26	16	-	-	21	16	-	-	26	16	-	-
ø20	24	16	5.5	39	29	16	5.5	39	24	16	34	7.5	29	16	34	7.5
ø25	27	17	9	34	32	17	9	34	27	17	34.5	7.5	32	17	34.5	7.5
ø32	30	24	9	34.5	35	24	9	34.5	30	24	34.5	8	35	24	34.5	8
ø40	33	31	12	36.5	38	31	12	36.5	33	31	39.5	11	38	31	39.5	11
ø50	38	32	12.5	37	43	32	12.5	37	38	32	39	10.5	43	32	39	10.5
ø63	45	32	13	39	50	32	13	39	45	32	39	15	50	32	39	15
ø80	51	56	-	-	56	56	-	-	51	56	-	-	56	56	-	-
ø100	60	62	-	-	65	62	-	-	60	62	-	-	65	62	-	-

*1: For switch mountability, refer to the model number notation method for each variation.
*2: STG-12,16, STG-C-16, STG-Q-20 to 63 (R/H) cannot be equipped with T8H/V.

STG-K Series Switch External Dimensions Diagram

● T2JH/V, T2YLH, T3YLH, T8H/V, T1H/V, T2YD, T2YDT

• STG-K



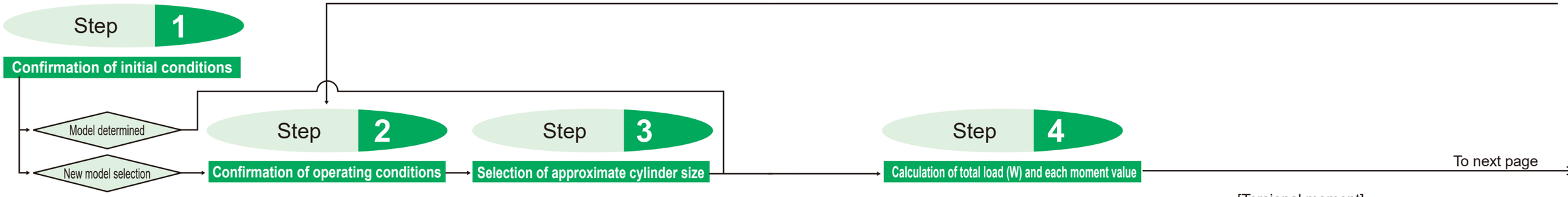
Code	STG-K							
	FG	FH	FI	FJ	T2J,T2Y,T3Y,T1,T2YD,T2YDT		T8	
Bore Size (mm)					RD	HD	RD	HD
ø32	30	36	22	26	9	7.5	4	2.5
ø50	39	45	27	31	12.5	10.5	7.5	5.5

*For switch mountability, refer to the model No. notation method for each variation.

MEMO

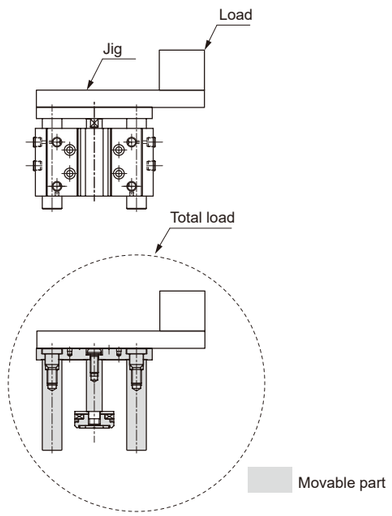
Model selection guide

Since the selection conditions are different from general air cylinders, please check the suitability using the selection guide.



Step 2 Confirmation of operating conditions

1. Operating pressure P (MPa)
2. Total load W (N)
   [Total load]
   When determining the total load, consider the weight of the movable part of the cylinder body.
   W = (Load) + (Jig load) +
   Value for the (weight of the movable part: Fa).
   The movable part own weight force calculation formula is calculated from the movable part weight table on P. 465.
   Fa=Max10
   Ma: Moving part weight (kg)
   Fa: Weight of the movable part (N)



3. Mounting direction
   [Operating method]
   Horizontal, Vertical - Ascending, Vertical - Descending
4. Stroke ST (mm)
5. Operating time t (s)
6. Stroke end speed V (m/s)
   V=ST /t x (1+1.5xα/100)
   Note) Load factor α is calculated in 5-1 ②

Step 3 Selection of approximate cylinder size

● Cylinder size (I.D.) calculation formula

$F=\pi/4 \times D_2 \times P$

$\therefore D=\sqrt{4F/\pi P}$

D: Cylinder inner diameter (mm)
P: Operating Pressure (MPa)
F: Cylinder theoretical thrust (N)

● When obtaining from the theoretical thrust value in Table 1
Approximate required thrust ≥ Load x 2
(x2 of Load x 2 is when the load factor is about 50% as a safety factor)
[Example] Operating pressure 0.5 (MPa)
Load 25 (N)
Required thrust is 25 (N)x2=50 (N)
From Table 1, if you select a bore size with a theoretical thrust of 50N or more at an operating pressure of 0.5 mPa, it will be ø12 or more.
D=ø12

[Cylinder theoretical thrust]

Table 1 Cylinder theoretical thrust table

Theoretical thrust table ø12, ø16 Unit: N

Operating direction	Pressure MPa	Bore size mm	
		ø12	ø16
At push	0.15	17	22.6
	0.2	22.6	30.2
	0.3	33.9	45.2
	0.4	45.2	60.3
	0.5	56.6	75.4
	0.6	67.8	90.5
	0.7	79.1	106
	0.8	90.4	121
	0.9	101.8	136

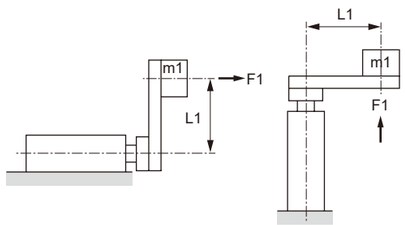
* For the theoretical thrust table, please refer to P. 373.

Step 4 Calculation of total load (W) and each moment value

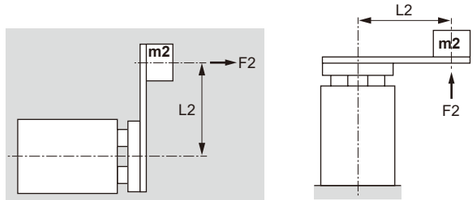
● Static load depending on the cylinder mounting state of the load
Calculate (W_0), moment (M).
W_0 = (Load) + (Jig load) (N)
$M_1 = F_1 \times L_1$ (N·m)
$M_2 = F_2 \times L_2$ (N·m)
$M_3 = F_3 \times L_3$ (N·m)
Use Figure 2 for the values of F_1, F_2, F_3

Figure 2 Calculation formula for each moment
Calculate each moment from the total load, inertial force coefficient, and eccentric distance.

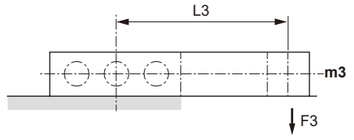
[Bending moment]
$M_1 = F_1 \times L_1 = 10 \times m_1 \times G \times L_1$



[Lateral bending moment]
$M_2 = F_2 \times L_2 = 10 \times m_2 \times G \times L_2$

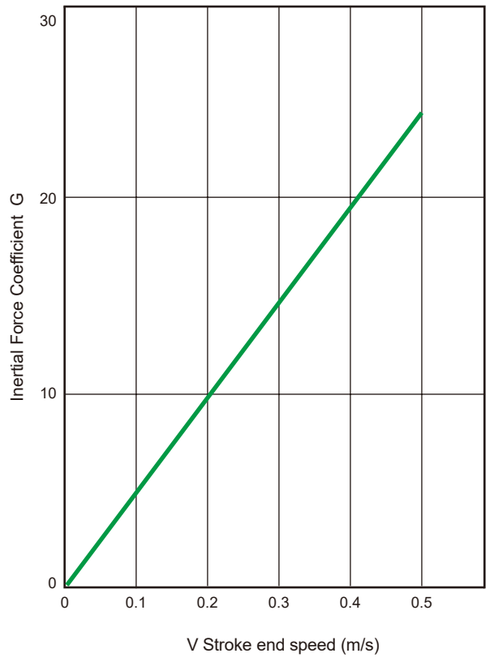


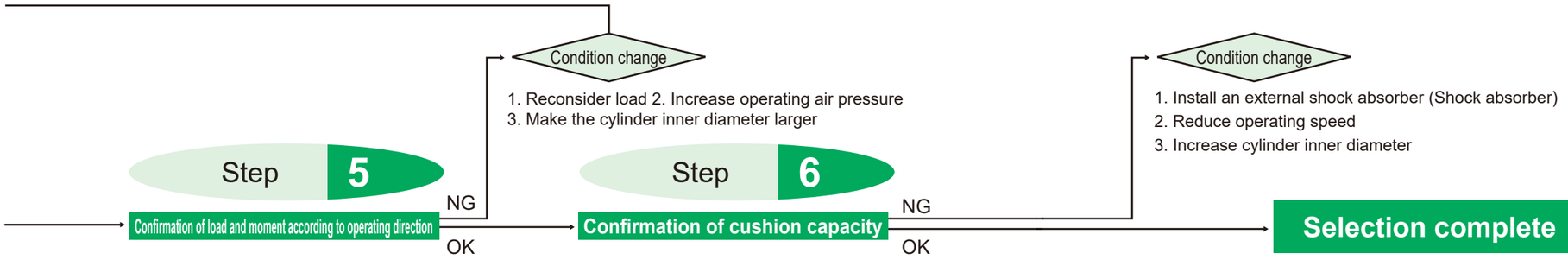
[Torsional moment]
$M_3 = F_3 \times L_3 = 10 \times m_3 \times L_3$



m_1 :
m_2 : } Load weight (kg)
m_3 :
L_1 :
L_2 : } Eccentric distance (m)
L_3 :
G: Inertial force coefficient

Figure 3 Trend of inertial force coefficient of guided cylinder





Step 5 Confirmation of load and moment according to operating direction

5-1 Confirmation of load

❶ During horizontal operation

Static load should be less than or equal to the allowable load value

Torsional moment Static load Wo — Value calculated in Step 4

Allowable lateral load Wmax — Select from Table 2 or the graph depending on the stroke

(For intermediate strokes, select the longer standard stroke)

Wo≤Wmax

Table 2 Allowable lateral load (Unit: N)

Tube Inner diameter (mm)	Model No.	Bearing type	Stroke (mm)			
			10	20	25	30
ø12	STG-M	Plain bearing	29	24	-	20
	STG-B	Rolling bearing	38	27	-	22
ø16	STG-M	Plain bearing	51	42	-	36
	STG-B	Rolling bearing	49	35	-	29
ø20	STG-M	Plain bearing	-	67	-	58
	STG-B	Rolling bearing	-	52	-	42
ø25	STG-M	Plain bearing	-	125	-	110
	STG-B	Rolling bearing	-	81	-	66
ø32	STG-M	Plain bearing	-	-	223	-
	STG-B	Rolling bearing	-	-	171	-

* For allowable lateral load, please refer to P. 460. Also, for eccentric loads, please refer to the graphs on P. 462 to P. 464.

❷ During vertical operation

Total load should be a value considering the load factor for the theoretical thrust value

● Calculation of load factor

Total load W — Value calculated in Step 2

Theoretical thrust of cylinder F — Select according to the pressure from the Theoretical Thrust Table on P. 373.

α=W/F x 100 (%)

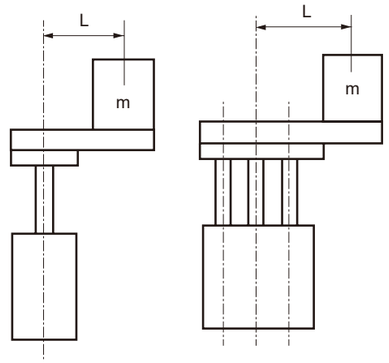
● The load factor is determined considering the stability margin and life of the cylinder operating speed, and the usage conditions. For general use, the range in Table 3 is desirable.

Table 3 Appropriate range of load factor (Reference value)

Operating pressure (MPa)	Load factor (%)
0.1 to 0.3	α≤40
0.3 to 0.6	α≤50
0.6 to 1.0	α≤60

● Confirmation during eccentric load

Allowable load weight should be less than or equal to that from the eccentric distance and load weight graphs on P. 454 and P. 455



5-2 Confirmation of moment

❶ Table of bending moment and lateral bending moment

Divide by the value of 4, obtain the moment ratio, and the total value of the moment ratio should be 1.0 or less

● Calculation of moment ratio

Bending moment in step 4: M_1, M_2 — Torsional moment calculated value

$M_1/M_{1\,max} + M_2 / M_{2\,max} \leq 1.0$

Table 4 Allowable moment value (N·m)

Bore size (mm)	Allowable bending moment M_{1max}, M_{2max} (N·m)	
	Bearing type	
	STG-M Plain bearing	STG-B Rolling bearing
ø12	11.2	7.0
ø16	19.2	11.2
ø20	35.3	19.2
ø25	51.9	35.3
ø32	171.5	51.9
ø40	171.5	51.9
ø50	294.0	171.5
ø63	294.0	171.5
ø80	509.6	294.0
ø100	793.8	509.6

❷ Torsional moment should be less than or equal to the allowable rotational torque

Torsional moment M3 — Value calculated in Step 4

Allowable rotational torque

M_{3max} — Select from Table 5 according to stroke

(For intermediate strokes, select the longer standard stroke)

$M_3 \leq M_{3\,max}$

Table 5 Allowable rotational torque (N·m)

Tube Bore size (mm)	Model No.	Bearing type	Stroke (mm)		
			10	20	25
ø12	STG-M	Plain bearing	0.30	0.25	-
	STG-B	Rolling bearing	0.39	0.28	-
ø16	STG-M	Plain bearing	0.59	0.49	-
	STG-B	Rolling bearing	0.56	0.41	-
ø20	STG-M	Plain bearing	-	0.90	-
	STG-B	Rolling bearing	-	0.70	-
ø25	STG-M	Plain bearing	-	2.00	-
	STG-B	Rolling bearing	-	1.29	-
ø32	STG-M	Plain bearing	-	-	4.35
	STG-B	Rolling bearing	-	-	3.33
ø40	STG-M	Plain bearing	-	-	4.80
	STG-B	Rolling bearing	-	-	3.68
ø50	STG-M	Plain bearing	-	-	9.56
	STG-B	Rolling bearing	-	-	4.99
ø63	STG-M	Plain bearing	-	-	10.78
	STG-B	Rolling bearing	-	-	5.63
ø80	STG-M	Plain bearing	-	-	15.01
	STG-B	Rolling bearing	-	-	5.02
ø100	STG-M	Plain bearing	-	-	24.98
	STG-B	Rolling bearing	-	-	8.04

* For allowable rotational torque, please refer to P. 460.

Step 6 CONFIRMATION OF CUSHION CAPACITY

Calculate the kinetic energy of the load actually used and check if it can be absorbed by the allowable absorption energy of the cylinder.

● Use the values in the graph below for the allowable absorption energy (E) of the cylinder.

● Kinetic energy calculation formula for load

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

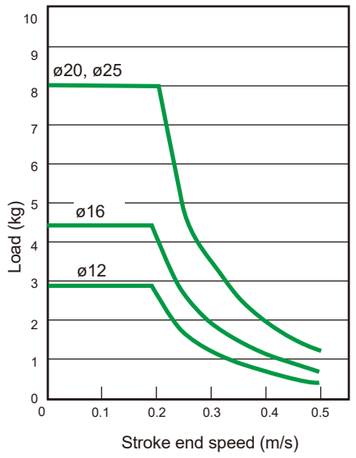
W1: Load (kg) W2: Cylinder movable part weight (kg)

V: Stroke end speed (m/s)

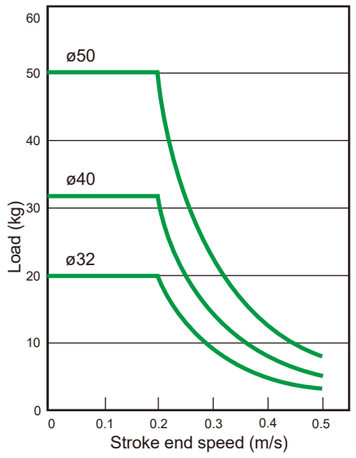
Allowable absorption energy value

Use within the range to the lower left of the curve. If using in the upper right range, provide a separate external shock absorber.

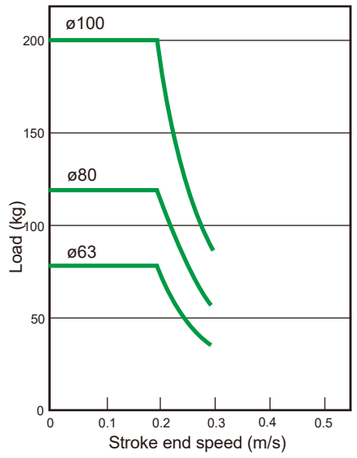
● STG-12 to 25



● STG-32 to 50



● STG-63 to 100



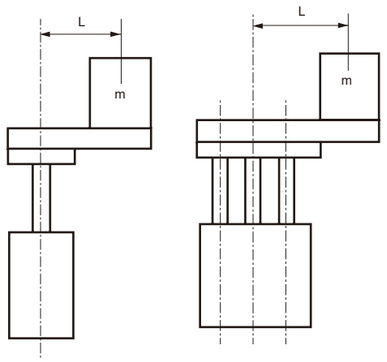
Model selection guide

In case of vertical mounting

● Select the bore size so that the ratio of the total load weight to the theoretical thrust is less than or equal to the values in the table below.

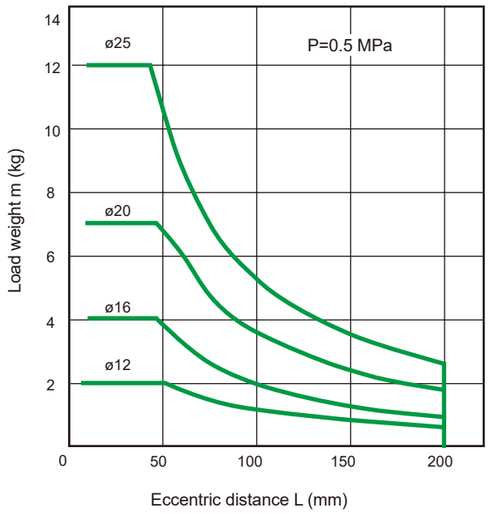
Bore Size	Load factor relative to theoretical thrust
12, 16	40% or less
20, 25	50% or less
32 to 80	60% or less
100	60% or less

Note1) For copper and PTFE free specifications, M: For plain bearings only, design with allowable value in the table below x 0.7.



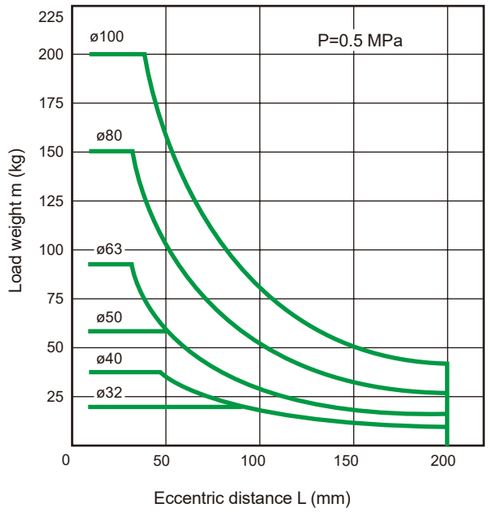
● STG-M-12 to 25

● Stroke 50 mm or less



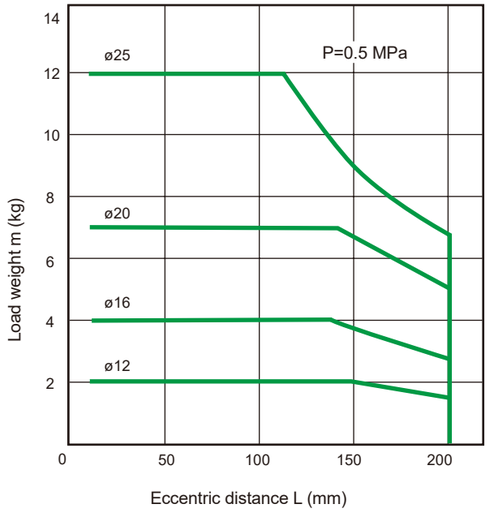
● STG-M-32 to 100

● Stroke 50 mm or less



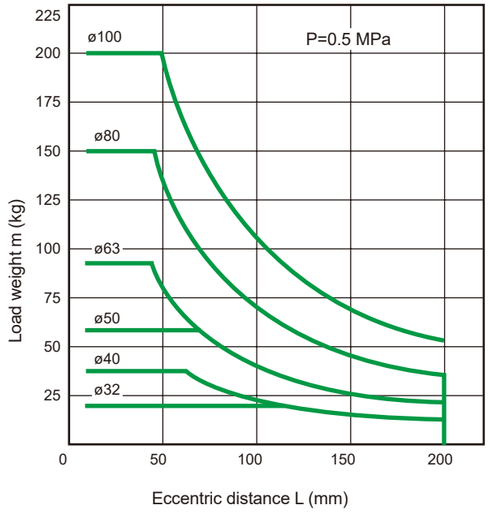
● STG-M-12 to 25

● Stroke over 50 mm



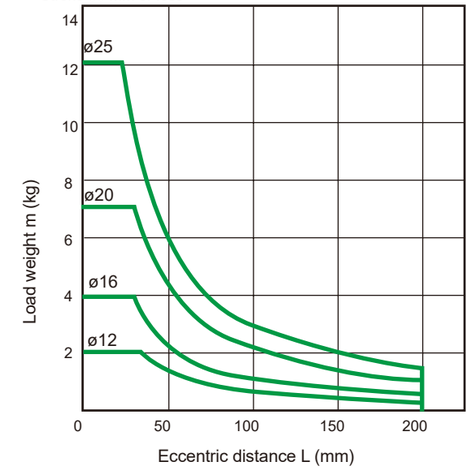
● STG-M-32 to 100

● Stroke over 50 mm



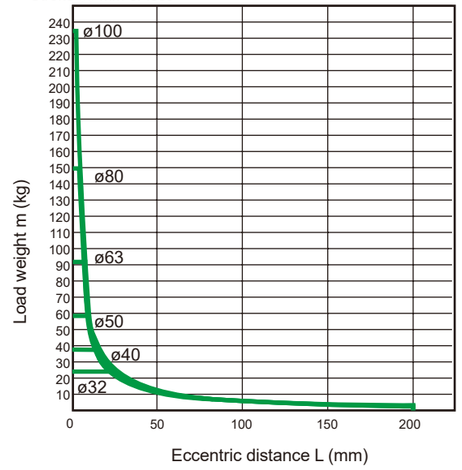
● STG-B-12 to 25

● Stroke 30 mm or less



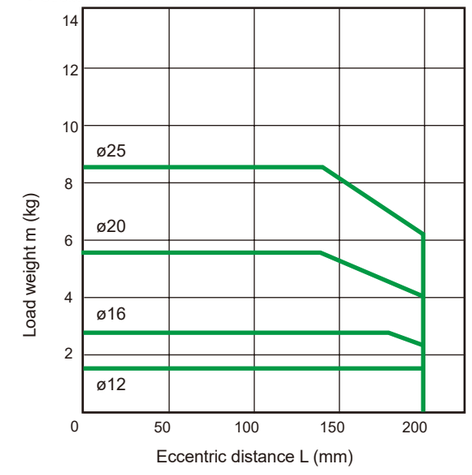
● STG-B-32 to 100

● Stroke 50 mm or less



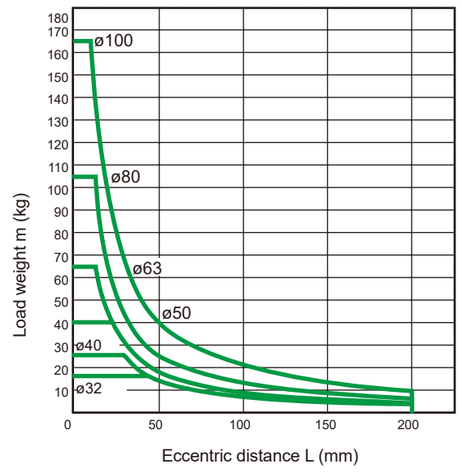
● STG-B-12 to 25

● Stroke over 30 mm and 100 mm or less



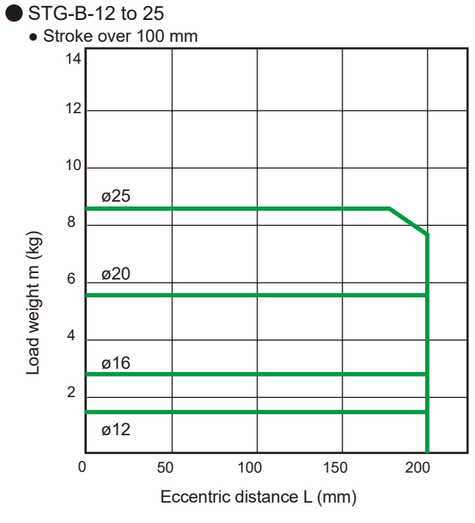
● STG-B-32 to 63 ● STG-B-80, 100

● Stroke over 50 mm and 100 mm or less ● Stroke over 50 mm and 200 mm or less



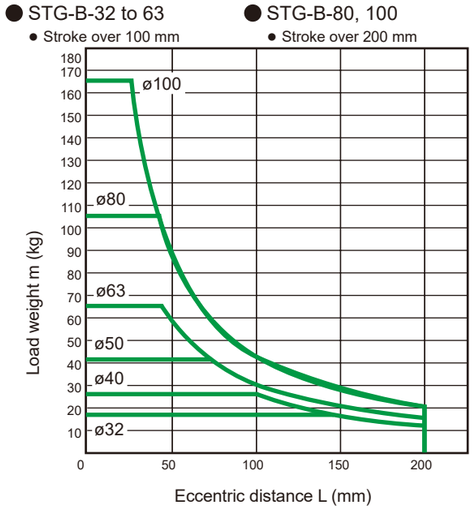
● STG-B-12 to 25

● Stroke over 100 mm



● STG-B-32 to 63 ● STG-B-80, 100

● Stroke over 100 mm ● Stroke over 200 mm

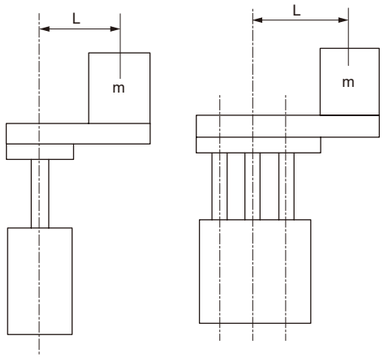


Model selection guide

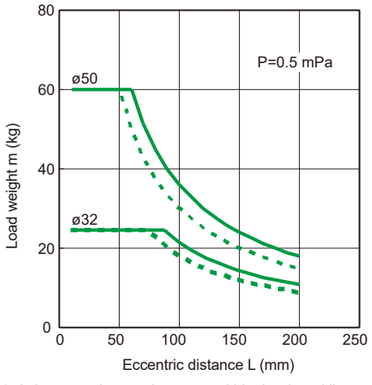
In case of vertical mounting

● Select the total load weight so that the ratio of the load to the theoretical thrust is less than or equal to the values in the table below.

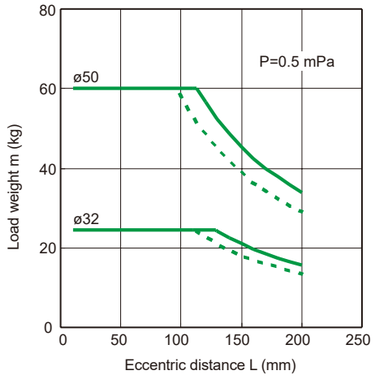
Item / Bore Size (mm)	Load factor relative to theoretical thrust
ø32	60% or less
ø50	



● Stroke 50 mm or less

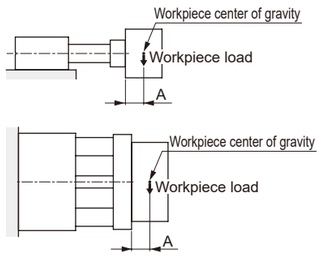


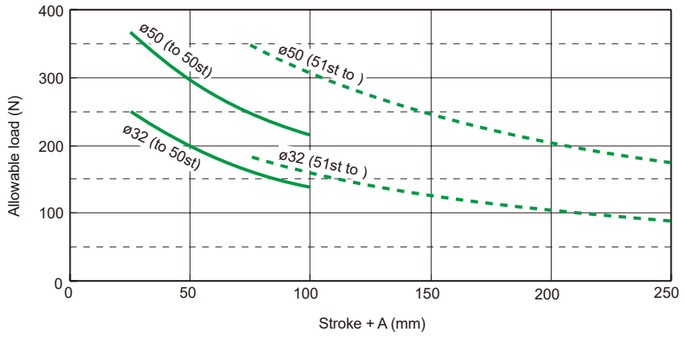
● Stroke over 50 mm



Note 1: At low speeds, use the range within the dotted line as a guide.

Allowable Lateral Load

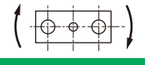




The allowable lateral load is the value when the load acts on the end face of the end plate. If the center of gravity of the workpiece included to the end plate is offset, replace the offset amount with stroke for selection.

Allowable rotational torque

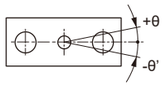
Torque: T (N·m)



Unit: N·m

Item / Bore Size (mm)	Stroke (mm) 25	50	75	100	125	150	175	200
ø32	8.0	6.3	6.6	5.7	5.1	4.5	4.1	3.7
ø50	15	12	17	15	13	12	11	10

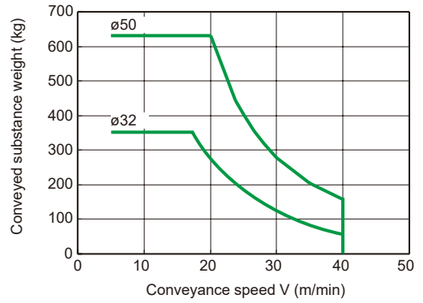
Non-rotation accuracy

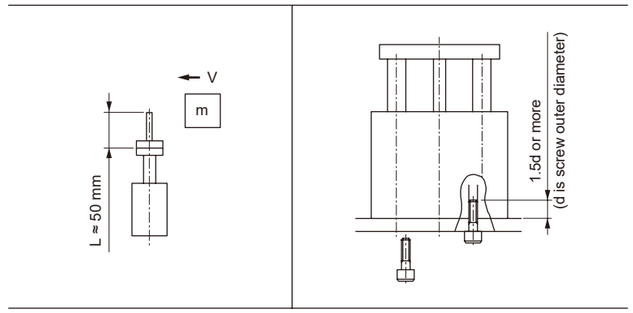


Item / Bore Size (mm)	Non-rotation Accuracy θ (degrees)
ø32	±0.05
ø50	

Model selection guide

■ Operating range when used as a stopper





Notes on Use

Note1) When using as a stopper, select 50 strokes or less.
Note2) The total length of the stopper part should be L=50 mm or less.
Note3) When fixing the cylinder body, ensure the bolt screw-in depth is 1.5d or more, and consider measures to prevent loosening (adhesive, spring washer, etc.).

■ Movable part weight table

Unit: kg

Item / Bore Size (mm)	Stroke 25	50	75	100	125	150	175	200
ø32	1.62	1.85	2.24	2.47	2.71	2.94	3.17	3.40
ø50	2.71	3.05	3.66	4.00	4.34	4.68	5.01	5.35

■ Calculation of allowable absorption energy

Calculate the kinetic energy of the load actually used and check if it can be absorbed by the allowable absorption energy of the cylinder.

● Use the values in the graph on the right for the allowable absorption energy (E) of the cylinder.

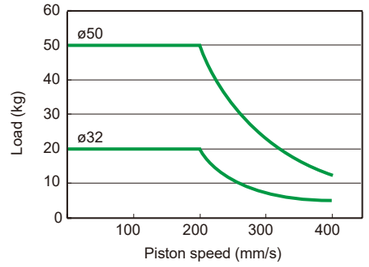
● Kinetic energy calculation formula for load

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

W1: Load (kg) W2: Cylinder movable part weight (kg)
V: Cylinder speed (m/s)

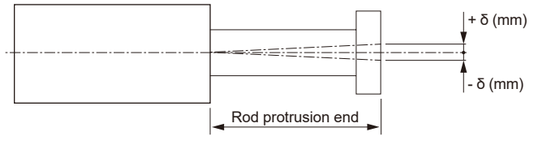
■ Allowable absorption energy value

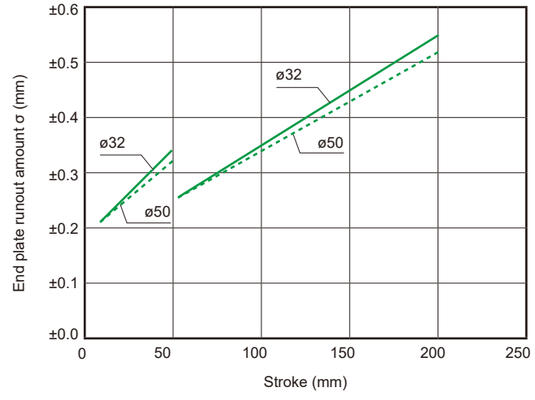
Use within the range to the lower left of the curve. If using in the upper right range, provide a separate external shock absorber.



■ Runout accuracy

The runout amount σ generated at the tip of the end plate when no load is applied is based on the values in the graph below. (Excluding guide rod deflection amount)

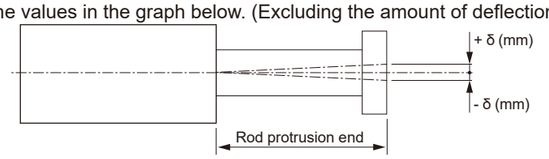




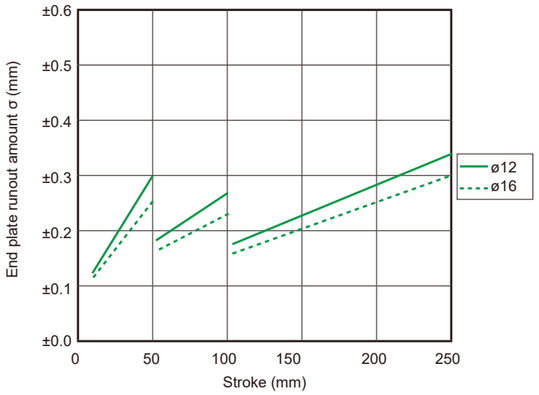
Model selection guide

Runout accuracy

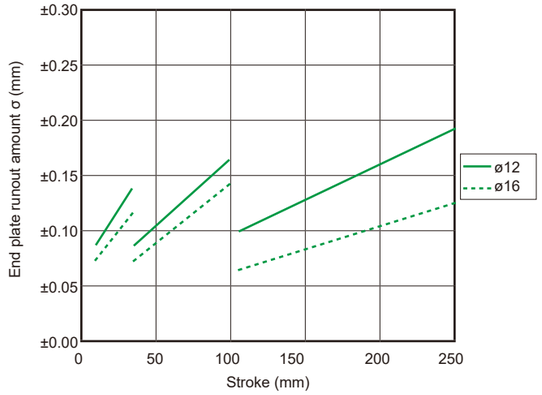
The amount of runout δ that occurs at the tip of the end plate when there is no load is estimated by the values in the graph below. (Excluding the amount of deflection of the guide rod)



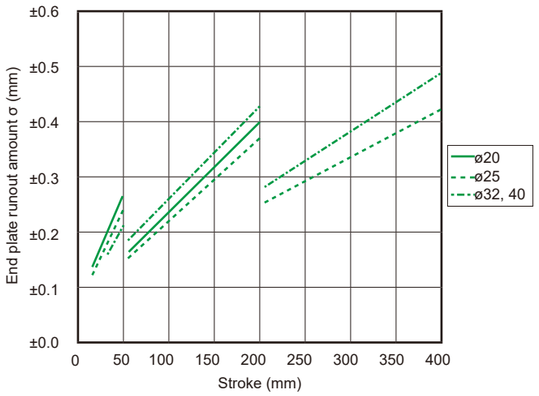
● ø12, ø16 Plain bearing
STG-M



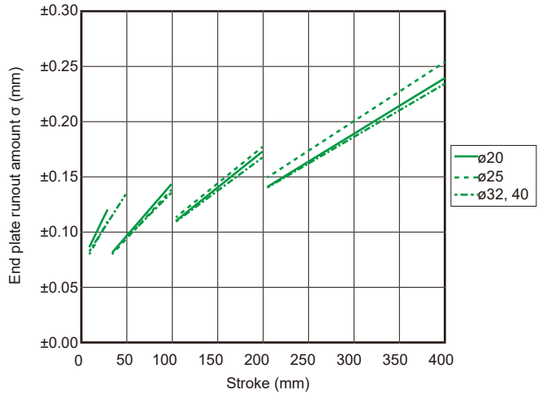
● ø12, ø16 Rolling bearing
STG-B



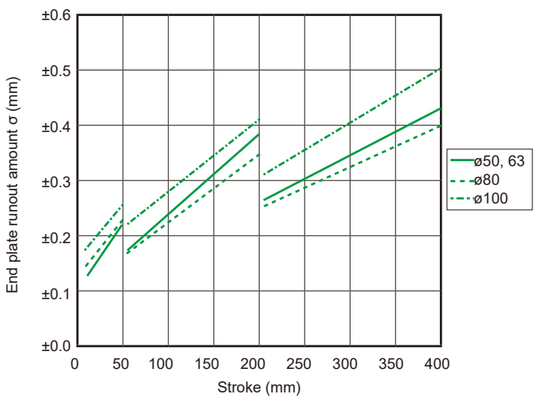
● ø20 to ø40 Plain bearing
STG-M



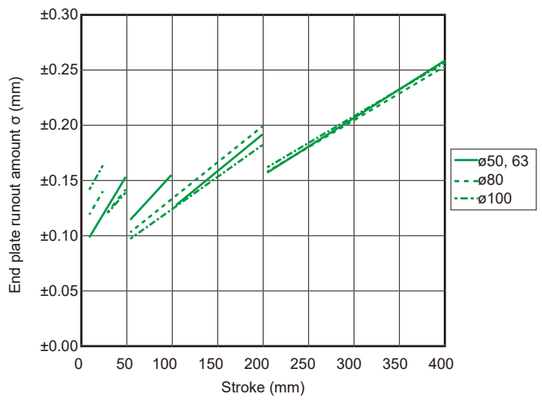
● ø20 to ø40 Rolling bearing
STG-B



● ø50 to ø100 Plain bearing
STG-M

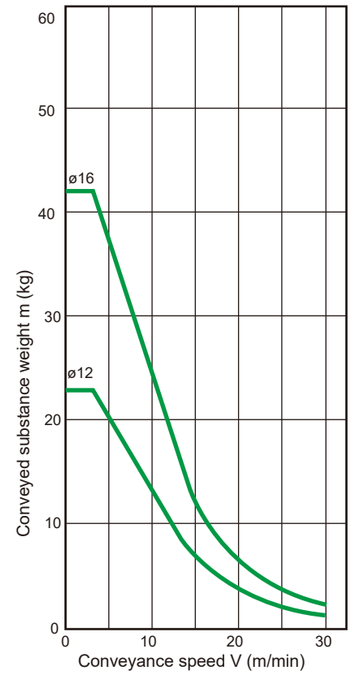


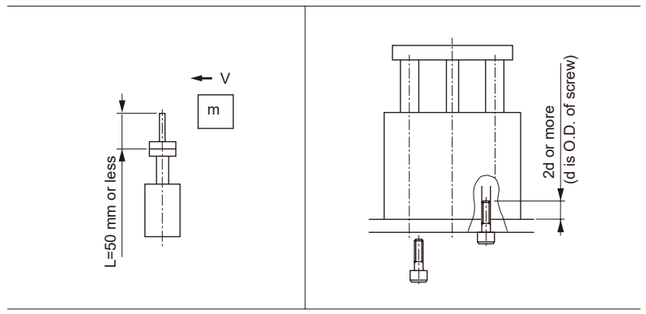
● ø50 to ø100 Rolling bearing
STG-B



Operating range when used as a stopper

Impact load
STG-M-12, 16 (Plain bearing)

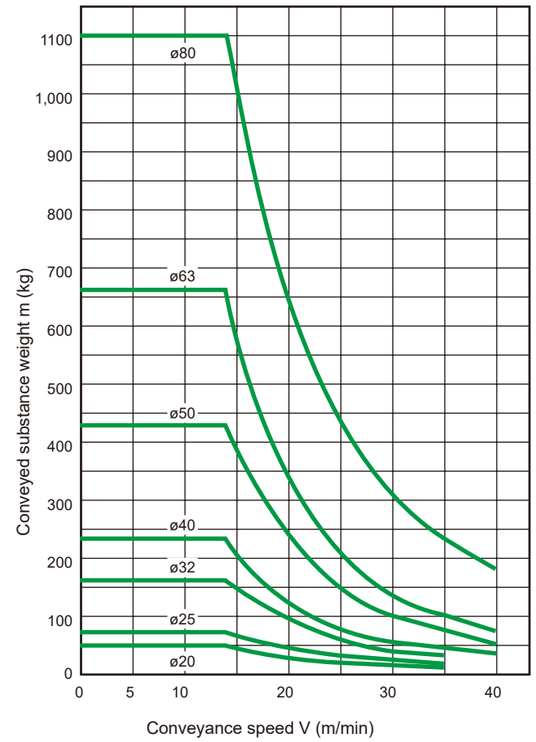




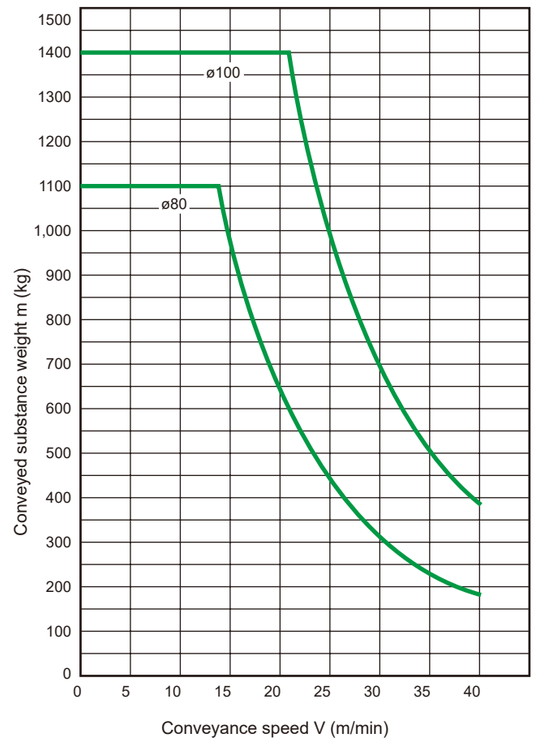
Notes on Use

Note1) When using as a stopper, select a model with 50 strokes or less (STG-M). (ø12 to ø16 is 30 strokes or less)
Note2) The total length of the stopper part should be L=50 mm or less.
Note3) When fixing the cylinder body, ensure the bolt screw-in depth is 2d or more, and consider measures to prevent loosening (adhesive, spring washer, etc.). (for ø80, make sure that the screw insertion depth is 1d. d is thread outer diameter)
Note4) STG-B (rolling bearing) cannot be used as a stopper.

Impact load
STG-M-20 to 63 (Plain bearing)



Impact load
STG-M-80 / 100 (Plain bearing)

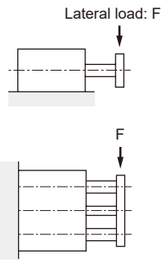


STG Series

Model selection guide

Model selection guide

Allowable Lateral Load

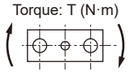


Unit: N

Bore Size (mm)	Model No.	Bearing type	Stroke (mm)																
			10	20	25	30	40	50	75	100	125	150	175	200	250	300	350	400
ø12	STG-M	Plain bearing	29	24	-	20	18	16	20	17	15	13	12	10	9	-	-	-
	STG-B	Rolling bearing	38	27	-	22	34	29	21	16	12	11	9	8	6	-	-	-
ø16	STG-M	Plain bearing	51	42	-	36	32	28	36	31	27	24	21	19	16	-	-	-
	STG-B	Rolling bearing	49	35	-	29	50	43	31	25	20	17	15	13	10	-	-	-
ø20	STG-M	Plain bearing	-	67	-	58	51	46	60	51	45	40	36	33	28	24	21	19
	STG-B	Rolling bearing	-	52	-	42	76	65	49	38	60	51	44	39	32	27	23	20
ø25	STG-M	Plain bearing	-	125	-	110	98	88	112	97	85	76	69	63	53	46	41	37
	STG-B	Rolling bearing	-	81	-	66	108	94	70	56	81	69	60	53	42	36	30	27
ø32	STG-M	Plain bearing	-	-	223	-	-	180	179	156	138	124	112	103	88	77	68	61
	STG-B	Rolling bearing	-	-	171	-	-	120	190	159	123	106	93	83	66	56	48	42
ø40	STG-M	Plain bearing	-	-	223	-	-	180	179	156	138	124	112	103	88	77	68	61
	STG-B	Rolling bearing	-	-	171	-	-	120	190	159	123	106	93	83	66	56	48	42
ø50	STG-M	Plain bearing	-	-	348	-	-	286	292	257	230	208	190	174	150	132	118	106
	STG-B	Rolling bearing	-	-	181	-	-	129	215	181	139	121	106	95	78	67	58	50
ø63	STG-M	Plain bearing	-	-	348	-	-	286	292	257	230	208	190	174	150	132	118	106
	STG-B	Rolling bearing	-	-	181	-	-	129	215	181	139	121	106	95	78	67	58	50
ø80	STG-M	Plain bearing	-	-	385	-	-	326	345	309	280	256	235	218	190	169	151	137
	STG-B	Rolling bearing	-	-	129	-	-	183	263	226	199	178	162	148	83	71	62	54
ø100	STG-M	Plain bearing	-	-	531	-	-	460	475	429	392	360	333	310	272	243	219	199
	STG-B	Rolling bearing	-	-	171	-	-	249	330	285	251	226	205	187	122	105	91	81

Allowable rotational torque

Torque: T (N·m)

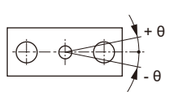


Unit: N·m

Bore Size (mm)	Model No.	Bearing type	Stroke (mm)																
			10	20	25	30	40	50	75	100	125	150	175	200	250	300	350	400
ø12	STG-M	Plain bearing	0.30	0.25	-	0.21	0.18	0.16	0.21	0.18	0.15	0.13	0.12	0.11	0.09	-	-	-
	STG-B	Rolling bearing	0.39	0.28	-	0.23	0.35	0.30	0.21	0.17	0.13	0.11	0.09	0.08	0.07	-	-	-
ø16	STG-M	Plain bearing	0.59	0.49	-	0.42	0.36	0.32	0.42	0.35	0.31	0.27	0.24	0.22	0.18	-	-	-
	STG-B	Rolling bearing	0.56	0.41	-	0.33	0.58	0.50	0.36	0.28	0.23	0.19	0.17	0.15	0.12	-	-	-
ø20	STG-M	Plain bearing	-	0.90	-	0.78	0.69	0.62	0.80	0.69	0.61	0.54	0.49	0.44	0.37	0.32	0.29	0.26
	STG-B	Rolling bearing	-	0.70	-	0.57	1.02	0.88	0.66	0.52	0.80	0.69	0.60	0.53	0.43	0.36	0.31	0.27
ø25	STG-M	Plain bearing	-	2.00	-	1.75	1.56	1.41	1.80	1.55	1.37	1.22	1.10	1.00	0.85	0.74	0.66	0.59
	STG-B	Rolling bearing	-	1.29	-	1.06	1.74	1.50	1.13	0.90	1.29	1.11	0.96	0.85	0.68	0.57	0.49	0.42
ø32	STG-M	Plain bearing	-	-	4.35	-	-	3.50	3.48	3.04	2.69	2.42	2.19	2.01	1.72	1.50	1.33	1.20
	STG-B	Rolling bearing	-	-	3.33	-	-	2.34	3.70	3.10	2.40	2.07	1.82	1.61	1.29	1.09	0.94	0.82
ø40	STG-M	Plain bearing	-	-	4.80	-	-	3.86	3.84	3.35	2.97	2.66	2.42	2.21	1.89	1.65	1.47	1.32
	STG-B	Rolling bearing	-	-	3.68	-	-	2.58	4.08	3.42	2.65	2.28	2.00	1.78	1.43	1.20	1.03	0.90
ø50	STG-M	Plain bearing	-	-	9.56	-	-	7.86	8.02	7.07	6.32	5.71	5.21	4.79	4.13	3.63	3.23	2.92
	STG-B	Rolling bearing	-	-	4.99	-	-	3.56	5.90	4.99	3.83	3.32	2.93	2.61	2.16	1.83	1.58	1.39
ø63	STG-M	Plain bearing	-	-	10.78	-	-	8.86	9.04	7.97	7.12	6.44	5.88	5.41	4.66	4.09	3.65	3.29
	STG-B	Rolling bearing	-	-	5.63	-	-	4.01	6.66	5.62	4.32	3.75	3.30	2.94	2.43	2.06	1.78	1.57
ø80	STG-M	Plain bearing	-	-	15.01	-	-	12.70	13.46	12.05	10.92	9.98	9.18	8.51	7.42	6.58	5.90	5.36
	STG-B	Rolling bearing	-	-	5.02	-	-	7.13	10.25	8.81	7.77	6.96	6.30	5.76	3.23	2.76	2.40	2.12
ø100	STG-M	Plain bearing	-	-	24.98	-	-	21.60	22.32	20.17	18.40	16.92	15.66	14.57	12.79	11.40	10.28	9.37
	STG-B	Rolling bearing	-	-	8.04	-	-	11.69	15.53	13.38	11.81	10.60	9.62	8.81	5.75	4.92	4.29	3.79

Non-rotation accuracy

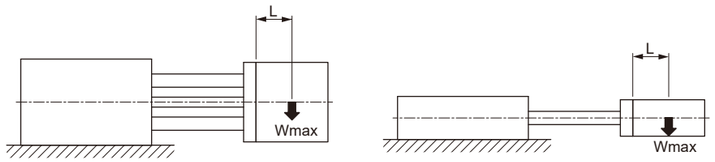
(Reference value)



Item / Bore Size (mm)	Non-rotation Accuracy θ (degrees)	
	Plain bearing	Rolling bearing
ø12	± 0.08	± 0.06
ø16		
ø20	± 0.07	± 0.05
ø25		
ø32	± 0.06	± 0.04
ø40		
ø50	± 0.05	± 0.03
ø63		
ø80		
ø100		

(PULL time initial value) Note) Excluding guide rod deflection amount

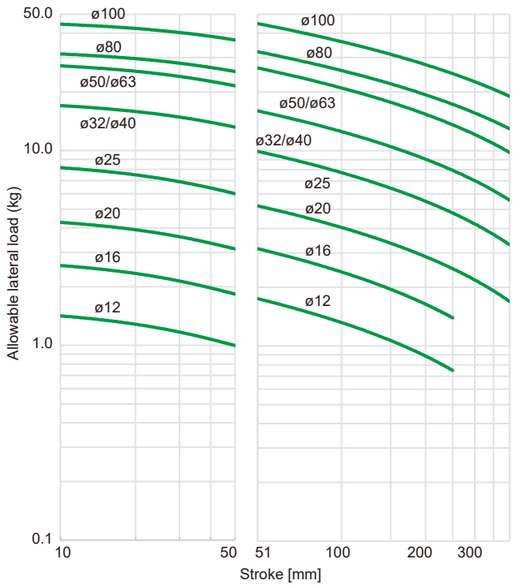
Allowable Lateral Load Plain bearing



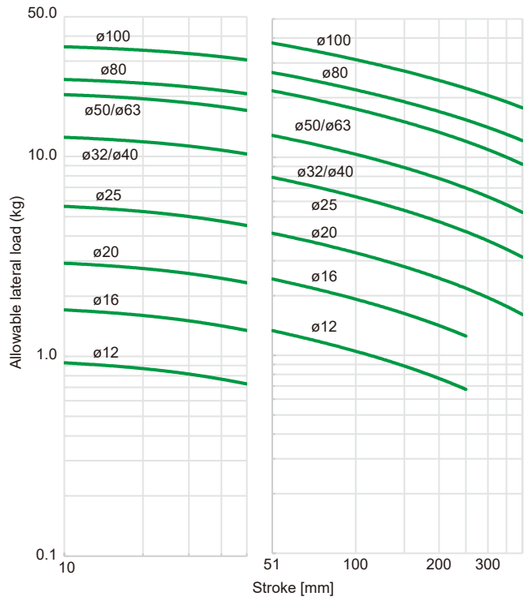
Wmax : Lateral load (kg)
L : Load's center of gravity position (mm)

STG-M-12 to 100

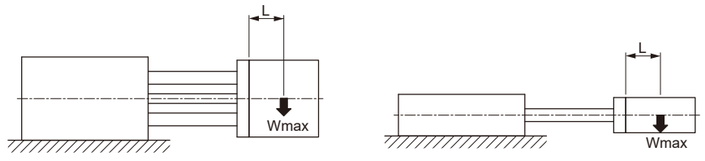
● When L=50 mm



● When L=100 mm



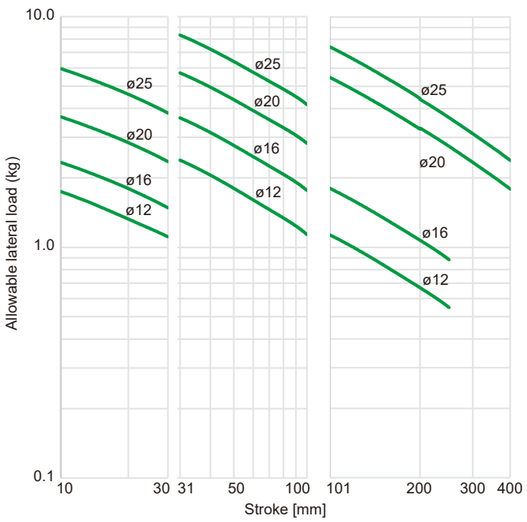
Allowable Lateral Load Rolling bearing



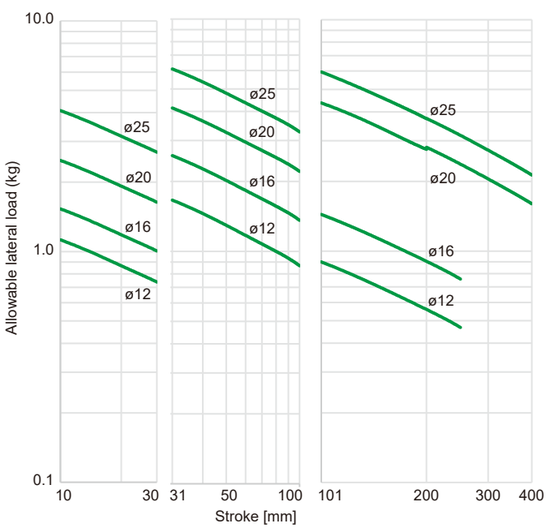
Wmax : Lateral load (kg)
L : Load's center of gravity position (mm)

STG-B-12 to 25

● When L=50 mm

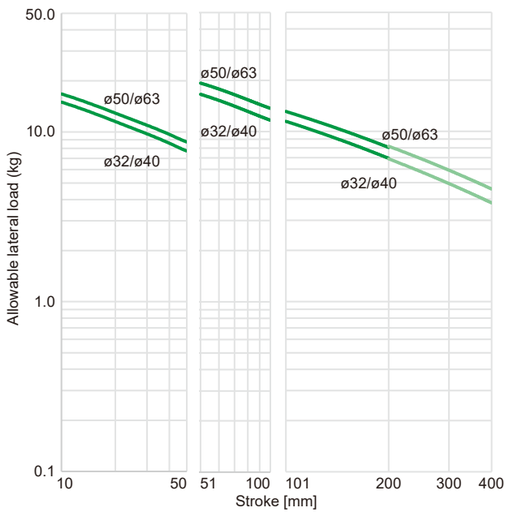


● When L=100 mm

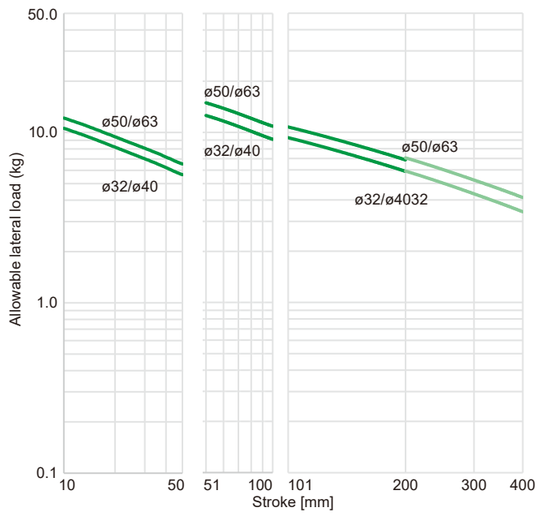


STG-B-32 to 63

● When L=50 mm

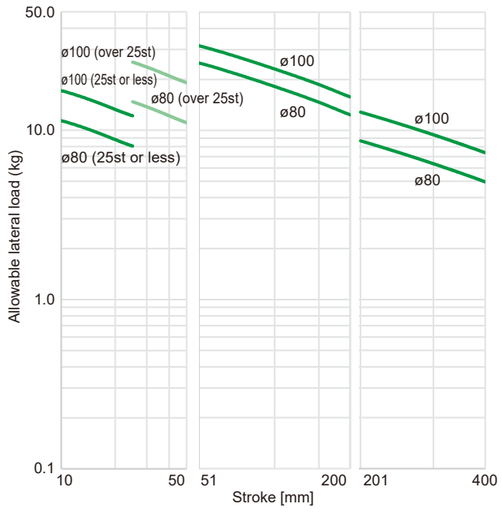


● When L=100 mm

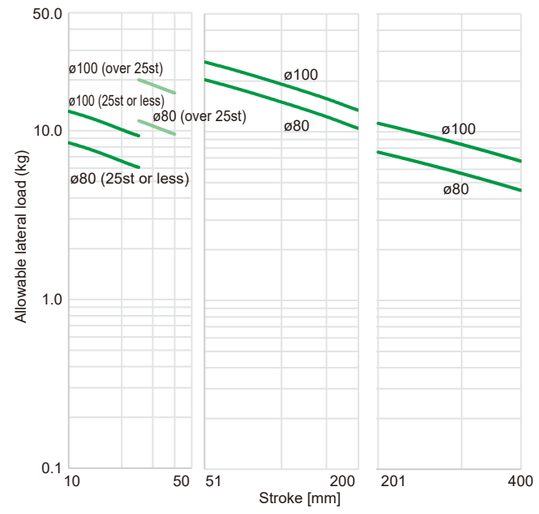


STG-B-80 / 100

● When L=50 mm



● When L=100 mm



Model selection guide

■ Movable part weight table

● STG-M Movable part weight table

Unit: kg

Bore Size (mm)	Stroke (mm)															
	10	20	25	30	40	50	75	100	125	150	175	200	250	300	350	400
ø12	0.12	0.13	-	0.14	0.15	0.16	0.20	0.23	0.27	0.30	0.32	0.35	0.40	-	-	-
ø16	0.16	0.18	-	0.19	0.21	0.22	0.29	0.33	0.41	0.45	0.49	0.53	0.62	-	-	-
ø20	-	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
ø25	-	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
ø32	-	-	1.07	-	-	1.23	1.42	1.58	1.74	1.90	2.07	2.23	2.73	3.06	3.40	3.71
ø40	-	-	1.14	-	-	1.30	1.49	1.65	1.81	1.98	2.14	2.30	2.82	3.13	3.47	3.78
ø50	-	-	2.15	-	-	2.40	2.75	3.00	3.26	3.51	3.76	4.02	4.85	5.37	5.88	6.38
ø63	-	-	2.50	-	-	2.75	3.09	3.35	3.60	3.86	4.11	4.36	5.19	5.70	6.21	6.72
ø80	-	-	3.76	-	-	3.99	4.38	4.61	4.84	5.08	5.31	5.54	6.29	6.76	7.23	7.69
ø100	-	-	6.56	-	-	7.08	7.96	8.48	8.99	9.50	10.01	10.53	12.17	13.19	14.22	15.24

● STG-B Movable part weight table

Unit: kg

Bore Size (mm)	Stroke (mm)															
	10	20	25	30	40	50	75	100	125	150	175	200	250	300	350	400
ø12	0.11	0.11	-	0.12	0.13	0.14	0.16	0.17	0.20	0.22	0.23	0.25	0.29	-	-	-
ø16	0.15	0.16	-	0.17	0.20	0.21	0.24	0.27	0.32	0.35	0.38	0.41	0.47	-	-	-
ø20	-	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
ø25	-	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
ø32	-	-	0.82	-	-	0.94	1.11	1.23	1.40	1.53	1.65	1.77	2.07	2.30	2.54	2.78
ø40	-	-	0.89	-	-	1.01	1.18	1.30	1.48	1.60	1.72	1.83	2.14	2.38	2.61	2.84
ø50	-	-	1.77	-	-	1.95	2.24	2.45	2.71	1.89	3.08	3.27	3.76	4.13	4.50	4.87
ø63	-	-	2.11	-	-	2.30	2.59	2.77	3.05	3.25	3.43	3.61	4.11	4.48	4.84	5.21
ø80	-	-	3.54	-	-	3.81	4.12	4.31	4.50	4.69	4.88	5.07	5.58	5.97	6.35	6.73
ø100	-	-	6.21	-	-	6.91	7.69	8.10	8.51	8.93	9.34	9.75	10.83	11.65	12.48	13.30

Port symmetrical type (-O)

Content: Position the port opposite to the standard port position.

Model No. Notation Method

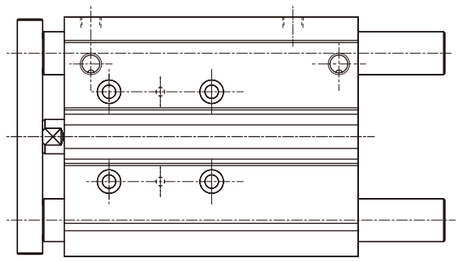
STG - M - 50 - 50 O

Model No.

Please see the STG Series model No. notation method.

Outer Dimensions Diagram

● STG



↑ For standard products, this side is the port surface.

MEMO

Guided
STM
STG
STS/ STL
STR2
UCA2
Cylinder Switch
Ending

To Use This Product Safely

Be sure to read this before use.
For general cylinder information, see Opening Section P. 41, and for cylinder switches, see P. 808.

Individual Precautions: Guided cylinder STG Series

During Design / Selection

1. Common

Caution

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

2. With rubber air cushion STG-□C

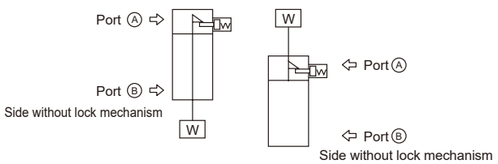
Caution

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

3. Drop prevention type STG-$^{M}_{B}$Q

Warning

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



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

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

Caution

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

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

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

4. Cutting oil resistant type STG-MG$^{2}_{3}$

Caution

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

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

5. Spatter adhesion prevention type STG-$^{M}_{B}$G4

Caution

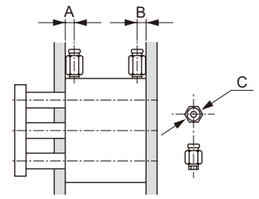
■This cylinder series has improved durability in a spatter scattering atmosphere compared to general-purpose cylinders. However, please note that durability may be inferior to general type cylinders when used in other atmospheres.

During Use

1. Common

Caution

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



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

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

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

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

2. Drop prevention type STG-$^{M}_{B}$Q

Warning

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

Caution

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

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

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

3. With rubber air cushion STG-$^{M}_{B}$-□C

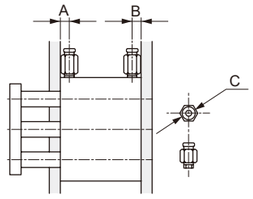
Caution

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

4. Heavy-duty guide rod type STG-K

⚠ Caution

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



Item / Bore Size (mm)	Port Size	Port position dimension A	Port position dimension B	Usable Fittings	Fitting outer diameter øC
ø32	Rc1/8	12.5	9	SC3W-6-4 / 6 / 8 GWS4-6 GWS6-6 GWS8-6 GWL4-6 GWL6-6	ø15 or less
ø50	Rc1/4	14	11	SC3W-8-6 / 8 / 10 GWS4-8 GWS6-8 GWS10-8 GWS12-8 GWL4 to 12-8	ø21 or less

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

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

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

MEMO

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