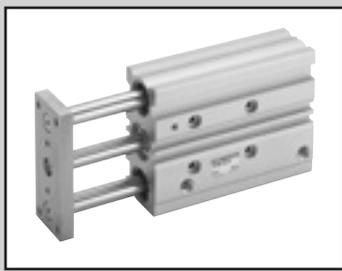


Guided cylinder Double acting/single rod clean room specifications

STG-B Series

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

JIS symbol 



Structure and material restriction

	Structure	Model No.
P7 Series	Exhaust treatment	P72
	Vacuum treatment	P73

Specifications

Descriptions	STG-B							
Bore size mm	$\phi 12$	$\phi 16$	$\phi 20$	$\phi 25$	$\phi 32$	$\phi 40$	$\phi 50$	$\phi 63$
Actuation	Double acting							
Working fluid	Compressed air							
Max. working pressure MPa	1.0 (≈ 150 psi, 10 bar)							
Min. working pressure MPa	0.2 (≈ 29 psi, 2 bar)		0.15 (≈ 22 psi, 1.5 bar)			0.1 (≈ 15 psi, 1 bar)		
Proof pressure MPa	1.6 (≈ 230 psi, 16 bar)							
Ambient temperature $^{\circ}\text{C}$	-10 (14°F) to 60 (140°F) (no freezing)							
Port size	M5		Rc1/8				Rc1/4	
Port size (relief port)	M5							
Stroke tolerance mm	+2.0 0							
Working piston speed mm/s	50 to 500							50 to 300
Cushion	With rubber cushion							
Lubrication	Not available							
Allowable energy absorption J	0.056	0.088	0.157	0.157	0.401	0.627	0.980	1.560

Stroke length

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

*1: The custom stroke length is available in 5 mm increments. However, the total dimensions are the same as the longer standard stroke length. A dedicated body with dimensions matched to the stroke length is available. Contact CKD for details. *2

*2: For types with one or two switches. The value in () is the min. stroke length for switches of the 2-color display and AC magnetic field proof.

Theoretical thrust table

(Unit: N)

Bore size (mm)	Operating direction	Working pressure MPa										
		0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
$\phi 12$	Push	—	—	22.6	33.9	45.2	56.5	67.9	79.2	90.5	1.02×10^2	1.13×10^2
	Pull	—	—	17.0	25.4	33.9	42.4	50.9	59.4	67.9	76.3	84.8
$\phi 16$	Push	—	—	40.2	60.3	80.4	1.01×10^2	1.21×10^2	1.41×10^2	1.61×10^2	1.81×10^2	2.01×10^2
	Pull	—	—	30.2	45.2	60.3	75.4	90.5	1.06×10^2	1.21×10^2	1.36×10^2	1.51×10^2
$\phi 20$	Push	—	47.1	62.8	94.2	1.26×10^2	1.57×10^2	1.88×10^2	2.20×10^2	2.51×10^2	2.83×10^2	3.14×10^2
	Pull	—	35.3	47.1	70.7	94.2	1.18×10^2	1.41×10^2	1.65×10^2	1.88×10^2	2.12×10^2	2.36×10^2
$\phi 25$	Push	—	73.6	98.2	1.47×10^2	1.96×10^2	2.45×10^2	2.95×10^2	3.44×10^2	3.93×10^2	4.42×10^2	4.91×10^2
	Pull	—	56.7	75.6	1.13×10^2	1.51×10^2	1.89×10^2	2.27×10^2	2.64×10^2	3.02×10^2	3.40×10^2	3.78×10^2
$\phi 32$	Push	80.4	1.21×10^2	1.61×10^2	2.41×10^2	3.22×10^2	4.02×10^2	4.83×10^2	5.63×10^2	6.43×10^2	7.24×10^2	8.04×10^2
	Pull	60.3	90.5	1.21×10^2	1.81×10^2	2.41×10^2	3.02×10^2	3.62×10^2	4.22×10^2	4.83×10^2	5.43×10^2	6.03×10^2
$\phi 40$	Push	1.26×10^2	1.88×10^2	2.51×10^2	3.77×10^2	5.03×10^2	6.28×10^2	7.54×10^2	8.80×10^2	1.01×10^3	1.13×10^3	1.26×10^3
	Pull	1.06×10^2	1.58×10^2	2.11×10^2	3.17×10^2	4.22×10^2	5.28×10^2	6.33×10^2	7.39×10^2	8.44×10^2	9.50×10^2	1.06×10^3
$\phi 50$	Push	1.96×10^2	2.95×10^2	3.93×10^2	5.89×10^2	7.85×10^2	9.82×10^2	1.18×10^3	1.37×10^3	1.57×10^3	1.77×10^3	1.96×10^3
	Pull	1.65×10^2	2.47×10^2	3.30×10^2	4.95×10^2	6.60×10^2	8.25×10^2	9.90×10^2	1.15×10^3	1.32×10^3	1.48×10^3	1.65×10^3
$\phi 63$	Push	3.12×10^2	4.68×10^2	6.23×10^2	9.35×10^2	1.25×10^3	1.56×10^3	1.87×10^3	2.18×10^3	2.49×10^3	2.81×10^3	3.12×10^3
	Pull	2.80×10^2	4.20×10^2	5.61×10^2	8.41×10^2	1.12×10^3	1.40×10^3	1.68×10^3	1.96×10^3	2.24×10^3	2.52×10^3	2.80×10^3

Switch specifications

- 1-color/2-color display for AC magnetic field

Descriptions	Proximity 2-wire				Proximity 3-wire				Reed 2-wire				Proximity 2-wire			
	T1H/ T1V	T2H/T2V/ T2JH/T2JV	T2YH/ T2YV	T2WH/ T2WV	T3H/ T3V	T3PH/ T3PV	T3YH/ T3YV	T3WH/ T3WV	T0H/T0V	T5H/T5V	T8H/T8V		T2YD			
Applications	Programmable controller relay, small solenoid valve		Programmable controller		Programmable controller, relay				Programmable controller, relay	Programmable controller, relay IC circuit (without indicator lamp), serial connection		Programmable controller, relay	Programmable controller			
Output method	-				NPN output	PNP output	NPN output	NPN output	-							
Power supply voltage	-				10 to 28 VDC				-							
Load voltage	85 to 265 VAC	10 to 30 VDC	24 VDC ±10%		30 VDC or less				12/24 VDC	100/110 VAC	5/12/24 VDC	100/110 VAC	12/24 VDC	110 VAC	220 VAC	24 VDC ±10%
Load current	5 to 100 mA	5 to 20 mA (*2)			100 mA or less		50 mA or less		5 to 50 mA	7 to 20 mA	50 mA or less	20 mA or less	5 to 50 mA	7 to 20 mA	7 to 10 mA	5 to 20 mA
Indicator lamp	LED (Lit when ON)	LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)	Yellow LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)	Without indicator lamp		LED (Lit when ON)		Red/green LED (Lit when ON)		
Leakage current	1 mA or less with 100 VAC 2 mA or less with 200 VAC	1 mA or less			10 µA or less				0 mA					1 mA or less		
Weight g	1 m: 33 3 m: 87 5 m: 142	1 m: 18 3 m: 49 5 m: 80	1 m: 33 3 m: 87 5 m: 142	1 m: 18 3 m: 49 5 m: 80	1 m: 18 3 m: 49 5 m: 80	1 m: 33 3 m: 87 5 m: 142	1 m: 18 3 m: 49 5 m: 80	1 m: 18 3 m: 49 5 m: 80	1 m: 18 3 m: 49 5 m: 80			1 m: 33 3 m: 87 5 m: 142		1 m: 61 3 m: 166 5 m: 272		

*1: Refer to page 309 for detailed switch specifications and dimensions.

*2: Max. load current: 20mA at 25°C. The current is lower than 25 mA if the operating ambient temperature around the switch is higher than 20°C. (60 to 5 mA at 10°C)

*3: Switch for AC magnetic field (T2YD/T2YDT) cannot be used in DC magnetic fields.

Cylinder weight

- STG-B-P7

Unit: kg

Descriptions	Stroke length														Switch weight			
	Bore size (mm)		10	20	25	30	40	50	75	100	125	150	175	200		250	300	350
ø12			0.27	0.30		0.33	0.38	0.42	0.50	0.58	0.68	0.76	0.84	0.92	1.09			
ø16			0.38	0.43		0.47	0.54	0.59	0.70	0.82	0.95	1.06	1.17	1.29	1.50			
ø20				0.76		0.83	0.94	1.02	1.18	1.35	1.55	1.72	1.89	2.06	2.43	2.77	3.10	3.44
ø25				1.06		1.14	1.32	1.41	1.63	1.86	2.12	2.35	2.57	2.79	3.28	3.73	4.18	4.63
ø32					1.62			1.92	2.36	2.67	3.03	3.34	3.64	3.95	4.62	5.23	5.84	6.45
ø40					1.90			2.25	2.72	3.07	3.48	3.83	4.18	4.53	5.28	5.98	6.68	7.38
ø50					3.24			3.78	4.50	5.04	5.66	6.19	6.73	7.26	8.45	9.51	10.61	11.67
ø63					4.12			4.76	5.61	6.25	6.98	7.62	8.27	8.91	10.30	11.66	12.92	14.18

Refer to the weight in the switch specifications.

SCPD3
SCM
SSD2
MDC2
SMG
LCM
LCR
LCG
LCX
STM
STG
STR2
MRL2
GRC
Cylinder Switch
MN3E MN4E
4GA/B
M4GA/B
MN4GA/B
F.R. (module unit)
Clean F.R
Precision R
Press gauge Diff. press gauge
Electro-pneumatic R
Speed controller
Auxiliary valve
Fitting/tube
Clean air unit
Pressure sensor
Flow rate sensor
Valve for air blow
Ending

STG-B Series

How to order

Without switch

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

With switch

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

Model No.

A Bearing

B Bore size

C Stroke length

D Switch model No.
*1 *2 *3

E Switch quantity

F Clean room specifications

⚠ Precautions for model No. selection

*1: Switches other than **E** Switch model No. are also available. (Custom order product)
Refer to page 309 for details.

*2: T8H/V switch cannot be installed on STG-12 or 16.

*3: Switches are shipped with the product. Contact CKD if assembling before shipment is necessary.

[Example of model No.]

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

Model: Guided cylinder Double acting/single rod

A Bearing : Ball bearing

B Bore size : $\varnothing 40$ mm

C Stroke length : 75 mm

D Switch model No.: Reed T0H switch, lead wire length 1 m

E Switch quantity : 2

F Clean room specifications : Exhaust treatment

Code	Content					
A Bearing						
B	Ball bearing					
B Bore size (mm)						
12	$\varnothing 12$					
16	$\varnothing 16$					
20	$\varnothing 20$					
25	$\varnothing 25$					
32	$\varnothing 32$					
40	$\varnothing 40$					
50	$\varnothing 50$					
63	$\varnothing 63$					
C Stroke length (mm)						
Refer to the stroke length table on following page.						
D Switch model No.						
Lead wire straight	Lead wire L-shaped	Contact	Voltage		Display	Lead wire
			AC	DC		
T0H*	T0V*	Reed	●	●	1-color display	2 wires
T5H*	T5V*		●	●	Without indicator lamp	
T8H*	T8V*		●	●	1-color display	
T1H*	T1V*	Proximity	●	●	1-color display	2 wires
T2H*	T2V*		●	●		
T3H*	T3V*		●	●	1-color display	3 wires
T3PH*	T3PV*		●	●		
T2WH*	T2WV*		●	●	2-color display	2 wires
T2YH*	T2YV*		●	●		
T3WH*	T3WV*		●	●	2-color display	3 wires
T3YH*	T3YV*	●	●			
T2JH*	T2JV*	●	●	1-color display off-delay	2 wires	
T2YD*	-	●	●	2-color display for	2 wires	
T2YDT*	-	●	●	AC magnetic field		
* Lead wire length						
Blank	1 m (standard)					
3	3 m (option)					
5	5 m (option)					
E Switch quantity						
R	1 (on rod end)					
H	1 (on head end)					
D	2					
T	3					
F Clean room specifications						
P72	Exhaust treatment					
P73	Vacuum treatment					

Stroke length

Stroke length (mm)	Applicable bore size							
	ø12	ø16	ø20	ø25	ø32	ø40	ø50	ø63
Standard stroke length	10	●	●					
	20	●	●	●	●			
	25					●	●	●
	30	●	●	●	●			
	40	●	●	●	●			
	50	●	●	●	●	●	●	●
	75	●	●	●	●	●	●	●
	100	●	●	●	●	●	●	●
	125	●	●	●	●	●	●	●
	150	●	●	●	●	●	●	●
	175	●	●	●	●	●	●	●
	200	●	●	●	●	●	●	●
	250	●	●	●	●	●	●	●
	300			●	●	●	●	●
	350			●	●	●	●	●
400			●	●	●	●	●	
Min. stroke length *2	5 (10)							
Custom stroke length *1	By 5 mm increments							

*1: The total dimensions are the same as the longer standard stroke length.

*2: The value in () is the min. stroke length for switches of the 2-color display and AC magnetic field proof.

How to order switch



Switch model No.
(Item ④ on the previous page)

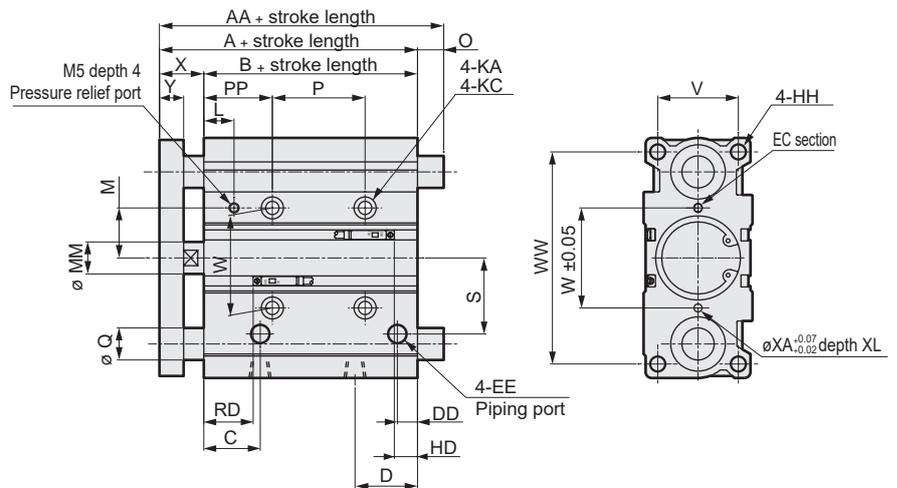
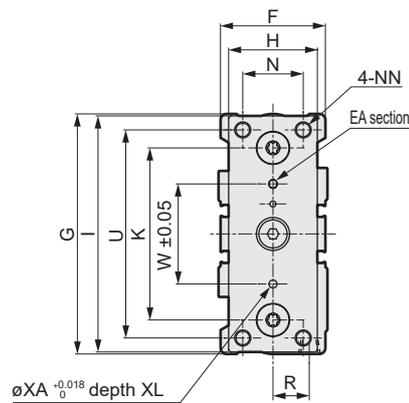
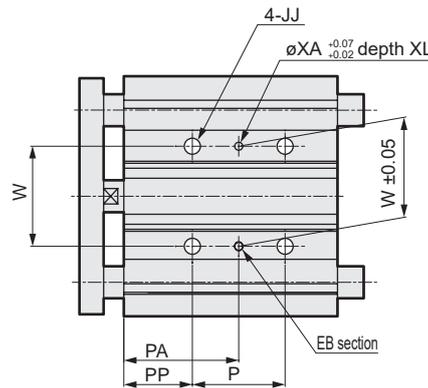
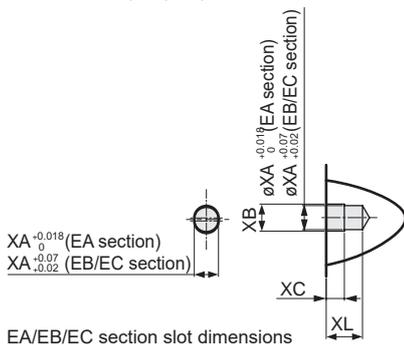
Note: Contact CKD if you use environment-friendly T switch.

SCPD3
SCM
SSD2
MDC2
SMG
LCM
LCR
LCG
LCX
STM
STG
STR2
MRL2
GRC
Cylinder Switch
MN3E MN4E
4GA/B
M4GA/B
MN4GA/B
F.R. (module unit)
Clean F.R
Precision R
Press gauge Diff. press gauge
Electro-pneumatic R
Speed controller
Auxiliary valve
Fitting/ tube
Clean air unit
Pressure sensor
Flow rate sensor
Valve for air blow
Ending

Dimensions (ø32/ø40/ø50/ø63)



● STG-B-32, 40, 50, 63



Code	Standard stroke length (mm)	A	B	C	D	DD	EE	F	G	H	HH	I	JJ
ø32	25, 50, 75, 100, 125, 150, 175, 200, 250, 300, 350, 400	71.5	49.5	24.5	30.5	9	Rc1/8	48	112	44	M8 depth 20	110	M8 depth 16
ø40		78	56	26	31	10	Rc1/8	54	120	44	M8 depth 20	118	M8 depth 16
ø50		83	55	25	35	11	Rc1/4	64	148	60	M10 depth 22	146	M10 depth 20
ø63		88	60	27.5	35	15	Rc1/4	78	162	70	M10 depth 22	158	M10 depth 20

Code	Bore size (mm)	K	KA	KC	MM	N	NN	P					L	M
								25 or less	Over 25 to 100	Over 100 to 200	Over 200 to 300	Over 300		
ø32	78	6.3 penetrating	11 spot face depth 7.5	16	30	M8 penetrating	24	48	124	200	300	14.5	21	
ø40	86	6.3 penetrating	11 spot face depth 7.5	16	30	M8 penetrating	24	48	124	200	300	15	25	
ø50	110	8.6 penetrating	14 spot face depth 9	20	40	M10 penetrating	24	48	124	200	300	14	33	
ø63	124	8.6 penetrating	14 spot face depth 9	20	50	M10 penetrating	28	52	128	200	300	14.5	40	

Code	Bore size (mm)	PA					PP	R	S	U	V	W	WW	X	Y
		25 or less	Over 25 to 100	Over 100 to 200	Over 200 to 300	Over 300									
ø32	45	57	95	133	183	33	15	34	96	34	42	98	22 ⁺⁰ _{-0.2}	11.5	
ø40	46	58	96	134	184	34	18	38	104	40	50	106	22 ⁺⁰ _{-0.2}	11.5	
ø50	47	59	97	135	185	35	21.5	47	130	46	66	130	28 ⁺⁰ _{-0.2}	15.5	
ø63	49	61	99	135	185	35	28	55	130	58	80	142	28 ⁺⁰ _{-0.2}	15.5	

Code	Bore size (mm)	RD		HD		XA	XB	XC	XL
		T0H/V, T5H/V, T2H/V, T3H/V	T2WH/V, T3WH/V	T0H/V, T5H/V, T2H/V, T3H/V	T2WH/V, T3WH/V				
ø32	22	24	8.5	10.5	4	4.5	3	6	
ø40	25	27	12	14	4	4.5	3	6	
ø50	24.5	26.5	11.5	13.5	5	6	4	8	
ø63	25	27	16	18	5	6	4	8	

*1: When using a custom stroke length, the total dimensions are the same as the longer standard stroke length.

*2: Refer to page 222 for RD, HD and protruding dimensions of the 2-color display (except for T2WH/V and T3WH/V), off-delay, AC magnetic field proof, T1H/V and T8H/V switches.

Code	Bore size (mm)	AA				Q	O			
		50 or less	Over 50 to 100	Over 100 to 200	Over 200		50 or less	Over 50 to 100	Over 100 to 200	Over 200
ø32	79	98	118	140	16	7.5	26.5	46.5	68.5	
ø40	79	98	118	140	16	1	20	40	62	
ø50	91	114	134	161	20	8	31	51	78	
ø63	91	114	134	161	20	3	26	46	73	

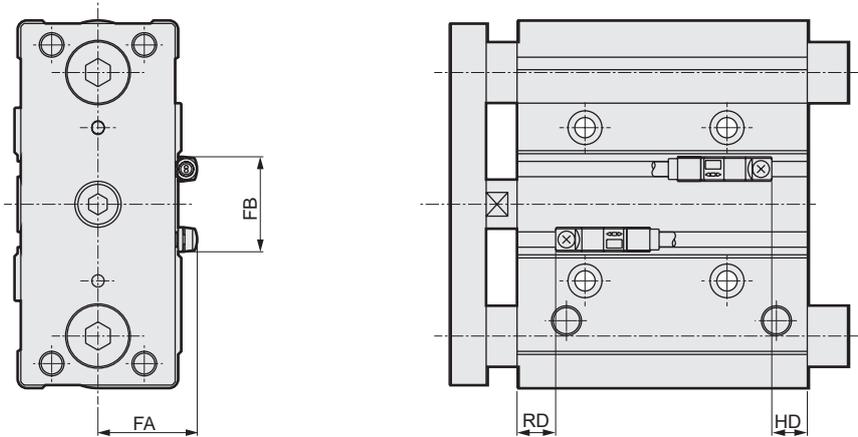
- SCPD3
- SCM
- SSD2
- MDC2
- SMG
- LCM
- LCR
- LCG
- LCX
- STM
- STG**
- STR2
- MRL2
- GRC
- Cylinder Switch
- MN3E
- MN4E
- 4GA/B
- M4GA/B
- MN4GA/B
- F.R. (module unit)
- Clean F.R
- Precision R
- Press gauge
- Diff. press gauge
- Electro-pneumatic R
- Speed controller
- Auxiliary valve
- Fitting/tube
- Clean air unit
- Pressure sensor
- Flow rate sensor
- Valve for air blow
- Ending



- SCPD3
- SCM
- SSD2
- MDC2
- SMG
- LCM
- LCR
- LCG
- LCX
- STM
- STG**
- STR2
- MRL2
- GRC
- Cylinder switch
- MN3E
- MN4E
- 4GA/B
- M4GA/B
- MN4GA/B
- F.R (module unit)
- Clean F.R
- Precision R
- Press gauge
- Diff. press gauge
- Electro-pneumatic R
- Speed controller
- Auxiliary valve
- Fitting/tube
- Clean air unit
- Pressure sensor
- Flow rate sensor
- Valve for air blow
- Ending

Common dimensions (Switches of 2-color display, off-delay, AC magnetic field, T8H/V and T1H/V)

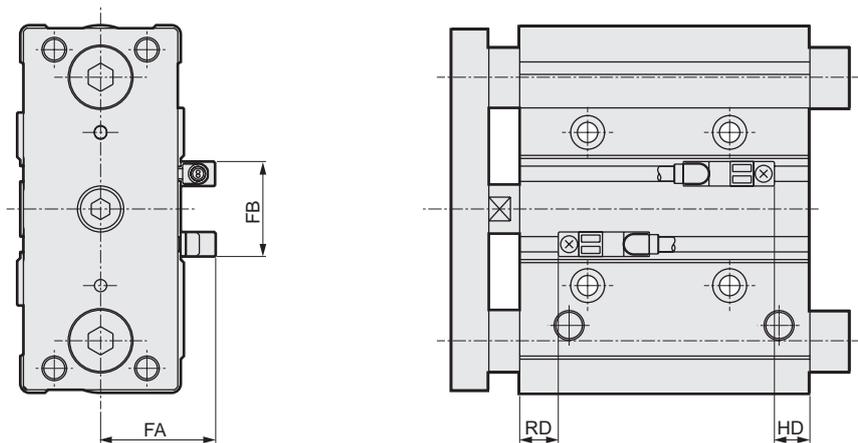
● STG-B-**-**-T₃YH/V, T2JH/V, T8H/V



Code	Bore size (mm)	FA	FB	RD		HD	
				T*YH/V, T2JH/V	T8H/V	T*YH/V, T2JH/V	T8H/V
STR2	ø12	19	16	17	-(*)	4	-(*)
	ø16	21	16	16	-(*)	9	-(*)
MRL2	ø20	24	16	21.5	16.5	7.5	2.5
	ø25	27	17	22	17	7.5	2.5
GRC	ø32	30	24	21	16	8	2.5
	ø40	33	31	24	19	11	6
Cylinder switch	ø50	38	32	23.5	18.5	10.5	5.5
	ø63	45	32	24	19	15	10

*1: T8H/V switch cannot be installed on STG-B-12, 16-P7..

● STG-B-**-**-T2YD*, T1H/V



Code	Bore size (mm)	FA	FB	RD	HD
				STG-P7*	STG-P7*
Pressure sensor	ø12	24	16	17	4
Flow rate sensor	ø16	26	16	16	9
	ø20	29	16	21.5	7.5
Valve for air blow	ø25	32	17	22	7.5
	ø32	35	24	21	8
Ending	ø40	38	31	24	11
	ø50	43	32	23.5	10.5
	ø63	50	32	24	15