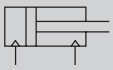
Round shaped cylinder Double acting/single rod

SCM Series

- Bore size: ø20/ø25/ø32/ø40
  ø50/ø63/ø80/ø100

JIS symbol



RoHS CAD

Structure and material restriction

	Structure	Material restriction	Model No.		Structure	Material restriction			Model No.
P7 Series	Exhaust treatment	-	P7	P5 Series (custom order product)	Exhaust treatment	Copper-based materials prohibited	Silicon-based materials prohibited	Halogen-based materials prohibited (fluorine, chlorine, bromine)	P5
	Vacuum treatment	-	P71		Vacuum treatment	Copper-based materials prohibited	Silicon-based materials prohibited	Halogen-based materials prohibited (fluorine, chlorine, bromine)	P51

Specifications

Descriptions		SCM-P7*/P5*							
Bore size mm		ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Actuation		Double acting							
Working fluid		Compressed air							
Max. working pressure MPa		1.0							
Min. working pressure MPa		0.15				0.1			
Proof pressure MPa		1.6							
Ambient temperature °C		-10 to 60(no freezing)							
Port size	With rubber cushion	Rc1/8				Rc1/4		Rc3/8	Rc1/2
	With air cushion	M5		Rc1/8		Rc1/4		Rc3/8	Rc1/2
Port size (relief port)		M5							
Stroke tolerance mm	With rubber cushion	$^{+1.4}_{0}$ (to 1000)			$^{+1.4}_{0}$ (to 1500)	$^{+2.3}_{0}$ (to 1000), $^{+2.7}_{0}$ (to 1500)			
	With air cushion	$^{+1.4}_{0}$ (to 1000)			$^{+1.4}_{0}$ (to 1500)	$^{+1.4}_{0}$ (to 1000), $^{+1.8}_{0}$ (to 1500)			
Working piston speed mm/s		30 to 1000 (Operate within the allowable absorbed energy.)							
Cushion		Either rubber cushion or air cushion can be selected.							
Effective air cushion length mm		8.1	8.1	8.6	8.6	13.4	13.4	15.4	15.4
Lubrication		Not available							
Allowable energy absorption J	With rubber cushion	0.1	0.2	0.5	0.9	1.6	1.6	3.3	5.8
	With air cushion	0.8	1.2	2.5	3.7	8.0	14.4	25.4	45.6
	No cushion	–	–	–	–	0.057	0.057	0.112	0.153

*1: "No cushion" in the allowable absorption energy indicates the allowable absorption energy of the side that is not indicated ("R" → head side, "H" → rod side) when the one-side air cushion is selected.
*2: Without cushions, large energy generated by external loads cannot be absorbed. Please provide an external shock absorber.

Stroke length

Bore size(mm)	Standard stroke length(mm)	Max. stroke length(mm)	Min. stroke length(mm)	Bore size(mm)	Standard stroke length(mm)	Max. stroke length(mm)	Min. stroke length(mm)
ø20	25, 50, 75, 100, 125, 150, 200, 250, 300	1000	10	ø50	25, 50, 75, 100, 125, 150, 200, 250, 300	1500	10
ø25				ø63			
ø32				ø80			
ø40		1500		ø100			

Number of installed switches and the min. stroke length (mm)

● Switch mounting: Rail

Switch quantity	1				2				3				4				5			
Bore size (mm)	Proximity			Reed	Proximity			Reed	Proximity			Reed	Proximity			Reed	Proximity			Reed
	T2,T3	T2W,T3W	T*Y*		T2,T3	T2W,T3W	T*Y*		T2,T3	T2W,T3W	T*Y*		T2,T3	T2W,T3W	T*Y*		T2,T3	T2W,T3W	T*Y*	
ø20	10				25				50	70	70	55	55	70	70	55	75	110	110	90
ø25	10				25				50	70	70	55	55	70	70	55	75	110	110	90
ø32	10				25				50	70	70	55	55	70	70	55	75	110	110	90
ø40	10				25				50	70	70	55	55	70	70	55	75	110	110	90
ø50	10				25				50	65	65	55	55	65	65	55	75	110	110	90
ø63	10				25				50	65	65	55	55	65	65	55	75	110	110	90
ø80	10				25				50	65	65	55	55	65	65	55	75	110	110	90
ø100	10				25				50	65	65	55	55	65	65	55	75	110	110	90

*1: The switch rail mounting position changes for those with one switch and a stroke between 10mm and 25mm. Please refer to page 42 for the mounting position.

● Switch mounting: Band

Switch quantity	1				2				3				4				5			
Bore size (mm)	Proximity			Reed	Proximity			Reed	Proximity			Reed	Proximity			Reed	Proximity			Reed
	T2,T3	T2W,T3W	T*Y*		T0,T5 T2,T3	T2W,T3W	T*Y*		T0,T5 T2,T3	T2W,T3W	T*Y*		T0,T5 T2,T3	T2W,T3W	T*Y*		T0,T5 T2,T3	T2W,T3W	T*Y*	
ø20	10				25	30	35	25	50	55	55	50	70	75	80	70	95	100	100	95
ø25	10				25	30	35	25	50	55	55	50	70	75	80	70	95	100	100	95
ø32	10				25	30	35	25	50	55	55	50	70	75	80	70	95	100	100	95
ø40	10				25	30	35	25	50	55	55	50	70	75	80	70	95	100	100	95
ø50	10				25	30	35	25	50	55	55	50	70	75	80	70	95	100	100	95
ø63	10				25	30	35	25	50	55	55	50	70	75	80	70	95	100	100	95
ø83	10				25	30	35	25	50	55	55	50	70	75	80	70	95	100	100	95
ø100	10				25	30	35	25	50	55	55	50	70	75	80	70	95	100	100	95

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(*3) T2YDT
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	-				DC10 to 28V				-							
Load voltage	AC85 to 265V	DC10 to 30V		DC24V±10%	DC30V or less				DC12/24V	AC110V	DC5/12/24V	AC110V	DC12/24V	AC110V	AC220V	DC24V±10%
Load current	5 to 100mA	5 to 20mA(*2)			100mA or less		50mA or less		5 to 50mA	7 to 20mA	50mA or less	20mA or less	5 to 50mA	7 to 20mA	7 to 10mA	5~20mA
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				0mA							1 mA or less
Weight g	1m:33 3m:87 5m:142	1m:18 3m:49 5m:80	1m:33 3m:87 5m:142	1m:18 3m:49 5m:80	1m:18 3m:49 5m:80		1m:33 3m:87 5m:142	1m:18 3m:49 5m:80	1m:18 3m:49 5m:80			1m:33 3m:87 5m:142				1m:61 3m:166 5m:272

*1: Refer to page 309 for detailed switch specifications, dimensions, etc.
*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: AC magnetic field switches (T2YD and T2YDT) cannot be used in a DC magnetic field environment.

Cylinder weight

(Unit:kg)

Descriptions / Bore size(mm)	Product weight when stroke length (S) = 0 mm: Basic (00)	Axial foot (LB)	Flange (FA/FB)	Switch weight (per 1 pc.)	Additional weight per S = 10 mm	Additional weight per S = 10 mm (With switch rail)	Band weight per switch
ø20	0.14	0.24	0.15	Refer to the weight in the switch specifications.	0.01	0.012	0.007
ø25	0.22	0.34	0.24		0.014	0.016	0.007
ø32	0.33	0.47	0.37		0.018	0.02	0.007
ø40	0.52	0.71	0.57		0.03	0.032	0.007
ø50	0.95	1.38	1.24		0.044	0.046	0.008
ø63	1.30	1.97	1.75		0.052	0.054	0.009
ø80	2.47	3.43	3.18		0.07	0.072	0.010
ø100	3.83	5.58	5.18		0.098	0.10	0.010

Example: Weight of SCM-LB-40B-100-T2H-D-P7
- Product weight when S = 0 mm ····· 0.71kg
- Additional weight when S = 100 mm ····· $0.032\times\frac{100}{10}=0.32$kg
- Weight of 2 switches ····· 0.018×2=0.036kg
- Product weight ····· 0.71+0.32+0.036=1.066kg

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
ø20	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	-	39.6	52.8	79.2	1.06×10^2	1.32×10^2	1.58×10^2	1.85×10^2	2.11×10^2	2.38×10^2	2.64×10^2
ø25	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	-	61.9	82.5	1.24×10^2	1.65×10^2	2.06×10^2	2.47×10^2	2.89×10^2	3.30×10^2	3.71×10^2	4.12×10^2
ø32	Push	-	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	-	1.04×10^2	1.38×10^2	2.07×10^2	2.76×10^2	3.46×10^2	4.15×10^2	4.84×10^2	5.53×10^2	6.22×10^2	6.91×10^2
ø40	Push	-	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	-	1.58×10^2	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
ø50	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
ø63	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
ø80	Push	5.03×10^2	7.54×10^2	1.01×10^3	1.51×10^3	2.01×10^3	2.51×10^3	3.02×10^3	3.52×10^3	4.02×10^3	4.52×10^3	5.03×10^3
	Pull	4.54×10^2	6.80×10^2	9.07×10^2	1.36×10^3	1.81×10^3	2.27×10^3	2.72×10^3	3.17×10^3	3.63×10^3	4.08×10^3	4.54×10^3
ø100	Push	7.85×10^2	1.18×10^3	1.57×10^3	2.36×10^3	3.14×10^3	3.93×10^3	4.71×10^3	5.50×10^3	6.28×10^3	7.07×10^3	7.85×10^3
	Pull	7.15×10^2	1.07×10^3	1.43×10^3	2.14×10^3	2.86×10^3	3.57×10^3	4.29×10^3	5.00×10^3	5.72×10^3	6.43×10^3	7.15×10^3

How to order

Without switch (Magnet for switch incorporated)

SCM - LB - 40 B - 100 ——— Q P7

With switch (Magnet for switch incorporated)

SCM - LB - 40 B - 100 - T2H - D - ○ Q P7

Ⓐ Mounting *1 — Ⓑ Bore size — Ⓒ Cushion — Ⓓ Stroke length — Ⓔ Switch model No. *3 *4 — Ⓕ Switch quantity — Ⓖ Switch mounting — Ⓗ Option *5 — Ⓘ Clean room specifications *6

Code	Content
Ⓐ Mounting	
00	Basic
LB	Axial foot
FA	Rod end flange
FB	Head end flange

Ⓑ Bore size(mm)	
20	ø20
25	ø25
32	ø32
40	ø40
50	ø50
63	ø63
80	ø80
100	ø100

Ⓒ Cushion	
B	Both sides air cushioned
R	Rod end air cushioned
H	Head end air cushion
D	Both sides rubber cushioned

Ⓓ Stroke length(mm)

Bore size	Stroke length *2	Custom stroke length
ø20 to ø32	**10** to **1000**	**By 1 mm increments**
ø40 to ø100	**10** to **1500**	

Ⓔ Switch model No.

Lead wire straight	Lead wire L-shaped	Contact	Voltage AC	Voltage DC	Display	Lead wire
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***			●		3 wires
T3PH*	**T3PV***			●	1 -color display	
T2WH*	**T2WV***			●	2 -color display	2 wires
T2YH*	**T2YV***			●		
T3WH*	**T3WV***			●		3 wires
T3YH*	**T3YV***			●		
T2YD*	**–**			●	2 -color display for AC magnetic field	2 wires
T2YDT*	**–**			●		
T2JH*	**T2JV***			●	1 -color display off-delay	2 wires

***Lead wire length**	
Blank	1m(standard)
3	3m(option)
5	5m(option)

Ⓕ Switch quantity	
R	1 (on rod end)
H	1 (on head end)
D	2
T	3
4	4(when there are more than 4 switches, indicate switch quantity)

Ⓖ Switch mounting	
Blank	Rail
Z	Band

Ⓗ Option	
Q	Switch rail attached at shipment

Ⓘ Clean room specifications

	Structure	Material restriction
P7	Exhaust treatment	–
P71	Vacuum treatment	–
P5	Exhaust treatment	Copper-based/silicon-based/halogen-based materials (fluorine, chlorine, bromine) are prohibited
P51	Vacuum treatment	Copper-based/silicon-based/halogen-based materials (fluorine, chlorine, bromine) are prohibited

⚠ Precautions for model No. selection

*1: Mounting bracket will be shipped with the product.
*2: Refer to page 26 for the number of installed switches and the minimum stroke length.
*3: Ⓔ Switches other than switch model No. are also available. (custom order)
For details, refer to page 309.
*4: T8H/V switches cannot be mounted when the bore size is from ø20 to ø40 and the switch mounting is the rail type.
*5: "Q" (switch rail attached at shipment) is not available for the "Z" switch mounting.
*6: "P5" and "P51" are custom order products.
*7: Mounting 00 does not allow front mounting.
*8: Switches are shipped with the product. Contact CKD when shipment must be assembled.

[Example of model No.]

SCM-LB-40B-100-T2H-D-QP7

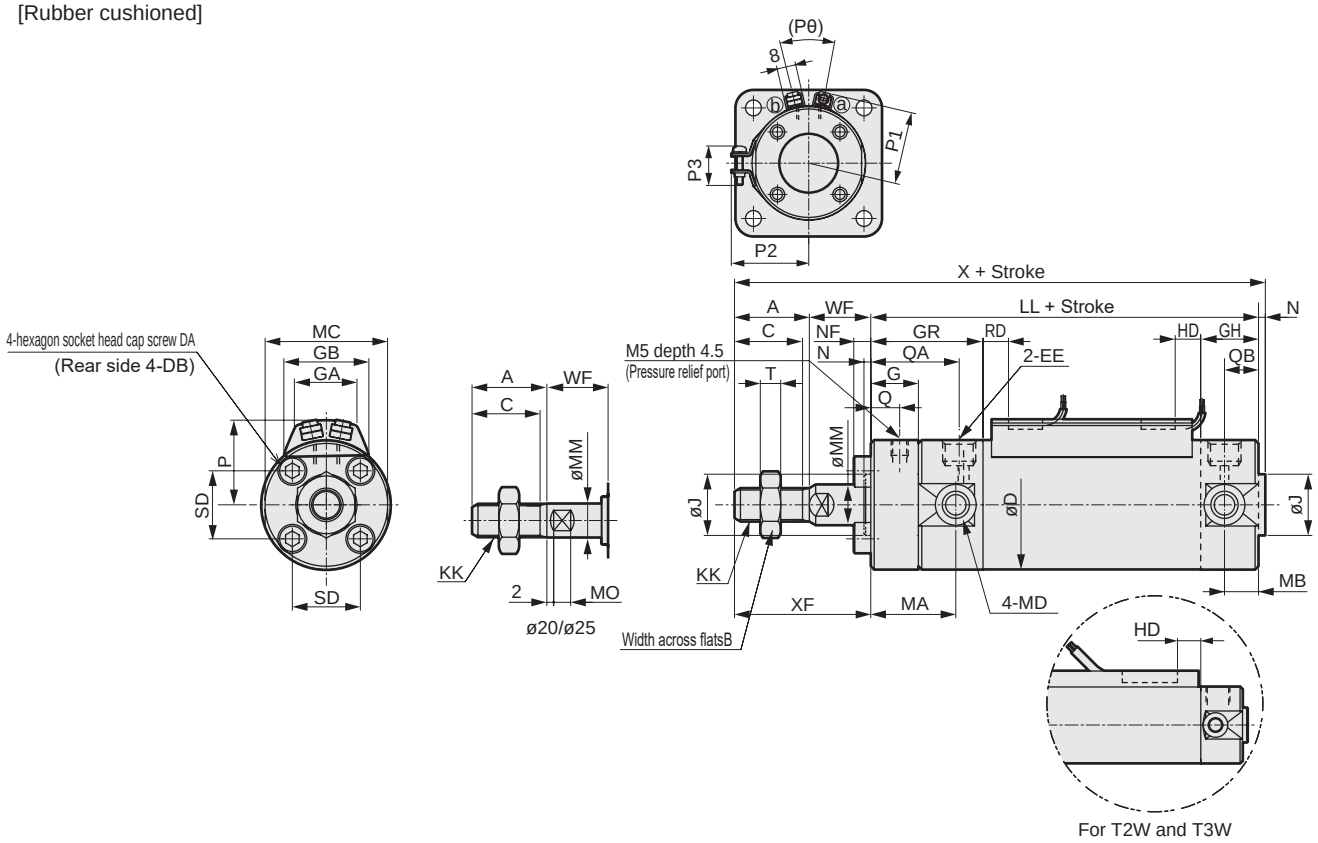
Model: Round shaped cylinder, double acting

Ⓐ Mounting : Axial foot
Ⓑ Bore size : ø40 mm
Ⓒ Cushion : ir cushion on both sides
Ⓓ Stroke length : 100mm
Ⓔ Switch model No. : Proximity T2H switch, lead wire 1 m
Ⓕ Switch quantity : 2
Ⓖ Switch mounting : Rail
Ⓗ Option : Switch rail attached at shipment
Ⓘ Clean room specifications : Exhaust treatmen

Dimensions

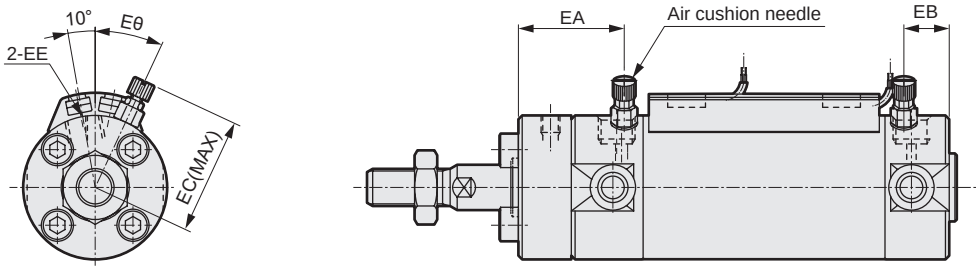
● Basic(00)
[Rubber cushioned]

• Switch mounting: Rail



[Air cushioned]

• Switch mounting: Rail



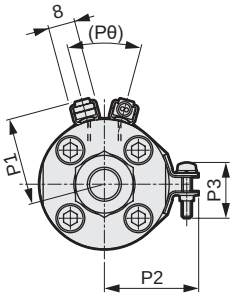
Code	Basic (00) basic dimensions																					
Bore size(mm)	A	B	C	D	DA	DB	EE	J	KK	LL	MA	MB	MC	MD	MM	MN	MO	N	G	Q	QA	QB
ø20	18	13	15.5	26	M4×20	M4 depth 6.5	Rc1/8	12	M8	83	25	11	24	M5	8	6	4	2	14	8.5	26	10
ø25	22	17	19.5	31	M5×20	M5 depth 6.5	Rc1/8	14	M10×1.25	83	25	11	29	M6	10	8	5	2	14	8.5	26	10
ø32	22	17	19.5	38	M5×20	M5 depth 7.5	Rc1/8	18	M10×1.25	85	25	10	36	M8	12	10	5.5	2	14	8.5	26	10
ø40	30	22	27	47	M6×25	M6 depth 12	Rc1/8	25	M14×1.5	92	26	10	44	M10	16	14	6	2	14	8.5	27	12
ø50	35	27	32	58	M8×25	M8 depth 16	Rc1/4	30	M18×1.5	104	27	12	55	M12	20	17	8	2	14	8.5	29	12
ø63	35	27	32	72	M10×30	M10 depth 16	Rc1/4	32	M18×1.5	104	27	12	69	M14	20	17	8	2	14	8.5	29	12
ø80	40	32	37	89	M10×30	M10 depth 22	Rc3/8	40	M22×1.5	123	–	–	80	–	25	22	11	3	15	9	30	15
ø100	40	41	37	110	M12×30	M12 depth 22	Rc1/2	50	M26×1.5	124	–	–	100	–	30	27	13	3	16	10	31	15

Code	Basic (00) basic dimensions						Air cushion					With switch											
														Rail mounting									
																	HD			RD		
Bore size(mm)	SD	T	NF	WF	X	XF	EA	EB	EC	EE'	Eθ	GH	GR	P	GA	GB	T0,T5	T2,T3	T2W T3W	T0,T5	T2,T3	T2W T3W
ø20	14	5	4.5	17	120	35	28	12	27	M5	30°	17	33	19.5	18	23	3.0	6.5	8.5	7.5	7.5	9.5
ø25	16.5	6	5.6	18	125	40	28	12	29.5	M5	30°	17	33	22	18	24.4	2.0	5.5	7.5	8.5	8.5	10.5
ø32	20	6	5.6	18	127	40	28	12	32.8	Rc1/8	25°	17	33	25.5	18	25	3.0	6.5	8.5	9.5	9.5	11.5
ø40	26	8	6.6	20	144	50	29	14	36.6	Rc1/8	20°	19	34	30	18	25.7	5.0	8.5	10.5	11.5	11.5	13.5
ø50	32	11	8.9	23	164	58	32.5	15.5	43	Rc1/4	20°	22	39	35.5	18	26.2	7.5	11.0	13.0	13.0	13.0	15.0
ø63	38	11	11.1	23	164	58	32.5	15.5	50	Rc1/4	20°	22	39	42.5	18	26.5	7.5	11.0	13.0	13.0	13.0	15.0
ø80	50	13	11.1	31	197	71	35	20	58.5	Rc3/8	20°	28	43	51	18	26.7	9.5	13.0	15.0	20.0	20.0	22.0
ø100	60	16	13.2	31	198	71	36	20	69	Rc1/2	20°	28	44	61.5	18	26.7	10.0	13.5	15.5	19.5	19.5	21.5

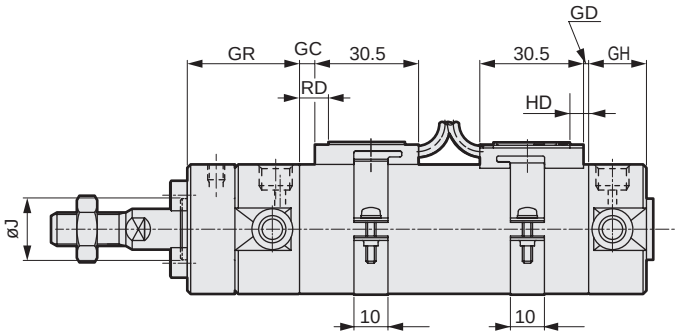
1: Refer to page 42 for dimensions of HD, RD and projections of T2Y, T3Y, T8, and T1.

Dimensions

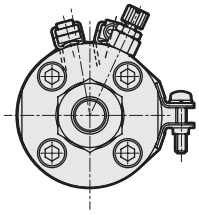
● Basic (00)
[Rubber cushioned]



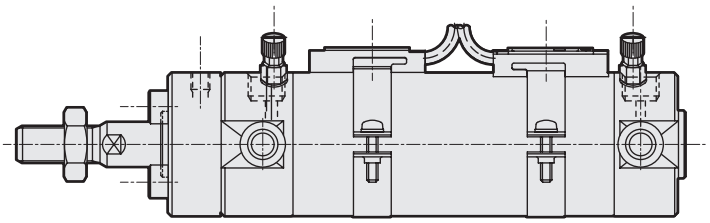
• Switch mounting: Band



[Air cushioned]



• Switch mounting: Band



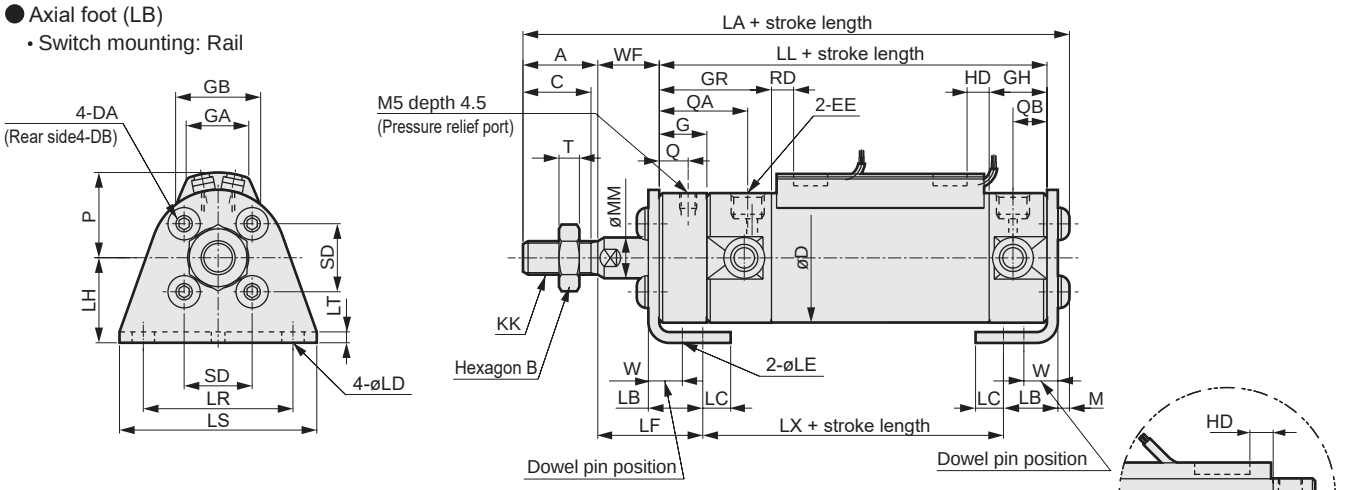
Code	With switch																	
	GH	GR	Band mounting															
			P1	P2	P3	(Pθ)	GD			GC			HD			RD		
Bore size(mm)							T0,T5	T2,T3	T2W T3W	T0,T5	T2,T3	T2W T3W	T0,T5	T2,T3	T2W T3W	T0,T5	T2,T3	T2W T3W
ø20	17	33	19.6	21.5	14	38°	2.5	2.5	4.5	3.5	3.5	5.5	6.5	6.5	8.5	7.5	7.5	9.5
ø25	17	33	22.1	23.9	14	34°	1.5	1.5	3.5	4.5	4.5	6.5	5.5	5.5	7.5	8.5	8.5	10.5
ø32	17	33	25.6	27.6	16	30°	2.5	2.5	4.5	5.5	5.5	7.5	6.5	6.5	8.5	9.5	9.5	11.5
ø40	19	34	30.2	32.1	16	26°	4.5	4.5	6.5	7.5	7.5	9.5	8.5	8.5	10.5	11.5	11.5	13.5
ø50	22	39	35.7	37.4	16	22°	7.0	7.0	9.0	9.0	9.0	11.0	11.0	11.0	13.0	13.0	13.0	15.0
ø63	22	39	42.7	44.4	16	20°	7.0	7.0	9.0	9.0	9.0	11.0	11.0	11.0	13.0	13.0	13.0	15.0
ø80	28	43	51.2	53.0	16	16°	9.0	9.0	11.0	16.0	16.0	18.0	13.0	13.0	15.0	20.0	20.0	22.0
ø100	28	44	61.7	63.5	16	16°	9.5	9.5	11.5	15.5	15.5	17.5	13.5	13.5	15.5	19.5	19.5	21.5

1: Refer to page 43 for HD, RD, and protrusion dimensions for T2Y, T3Y, T8, and T1.

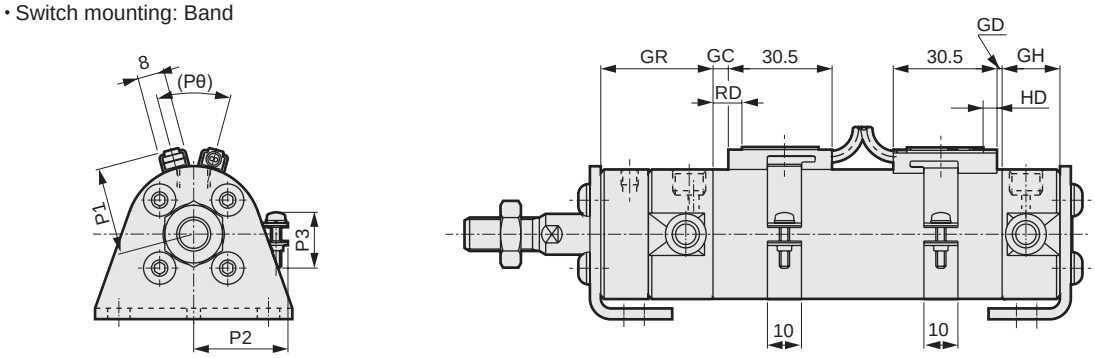
Dimensions

● Axial foot (LB)

• Switch mounting: Rail



• Switch mounting: Band



*Dimensions related to the needle and the port sizes of the air cushion are identical to those of the basic.

Code	Axial foot (LB) basic dimensions																		
Bore size (mm)	A	B	C	D	DA	DB	EE	G	KK	LA	LB	LC	LD	LE	LF	LH	LL	LR	LS	LT
ø20	18	13	15.5	26	M4×22	M4	Rc1/8	14	M8	123.8	15.1	7.1	5.7	4	28.9	20	83	32	44	3.2
ø25	22	17	19.5	31	M5×22	M5	Rc1/8	14	M10×1.25	129.6	15.1	7.1	5.7	4	29.9	22	83	36	49	3.2
ø32	22	17	19.5	38	M5×22	M5	Rc1/8	14	M10×1.25	131.6	16.1	8.1	6.8	4	30.9	25	85	44	58	3.2
ø40	30	22	27	47	M6×25	M6	Rc1/8	14	M14×1.5	149.2	16.6	9.1	6.8	4	33.4	30	92	54	71	3.2
ø50	35	27	32	58	M8×30	M8	Rc1/4	14	M18×1.5	171.5	22	11	9	5	40.5	40	104	66	86	4.5
ø63	35	27	32	72	M10×30	M10	Rc1/4	14	M18×1.5	171.5	22	13	11	5	40.5	45	104	82	106	4.5
ø80	40	32	37	89	M10×40	M10	Rc3/8	15	M22×1.5	204.5	28.5	14	11	6	55	55	123	100	125	4.5
ø100	40	41	37	110	M12X40	M12	Rc1/2	16	M26×1.5	208	30	16	14	6	55	65	124	120	150	6

Code										
Bore size (mm)	LX	M	MM	Q	QA	QB	SD	T	W	WF
ø20	59.2	2.6	8	8.5	26	10	14	5	10	17
ø25	59.2	3.4	10	8.5	26	10	16.5	6	10	18
ø32	59.2	3.4	12	8.5	26	10	20	6	10	18
ø40	65.2	4	16	8.5	27	12	26	8	10	20
ø50	69	5	20	8.5	29	12	32	11	17.5	23
ø63	69	5	20	8.5	29	12	38	11	17.5	23
ø80	75	6	25	9	30	15	50	13	20	31
ø100	76	7	30	10	31	15	60	16	20	31

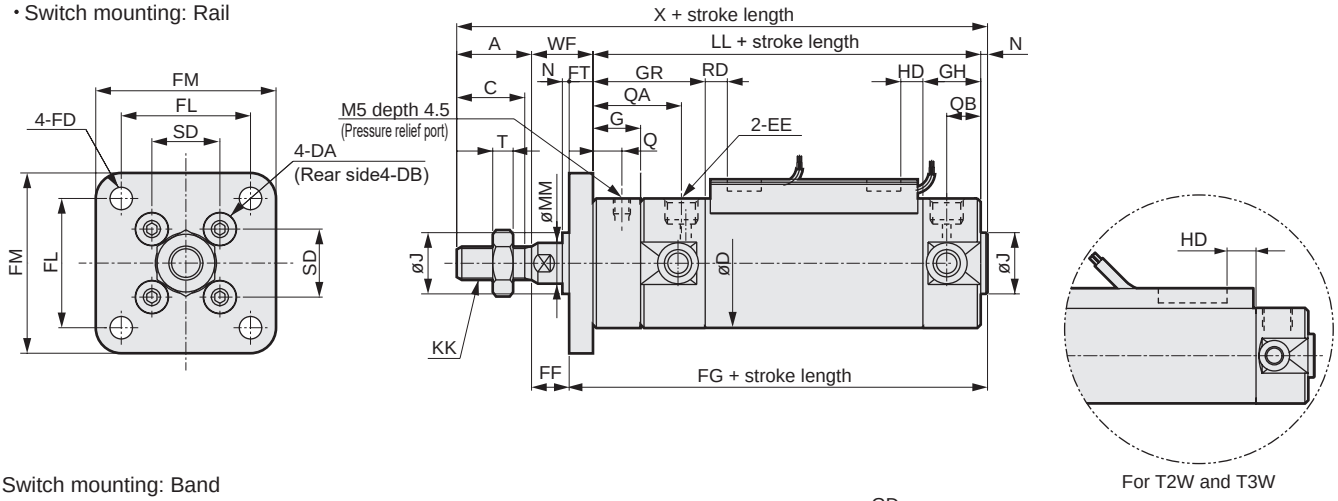
Code	With switch																										
	GH	GR	Rail mounting									Band mounting															
			P	GA	GB	HD			RD			P1	P2	P3	(Pθ)	GD			GC			HD			RD		
Bore size (mm)						T0,T5	T2,T3	T2W T3W	T0,T5	T2,T3	T2W T3W					T0,T5	T2,T3	T2W T3W	T0,T5	T2,T3	T2W T3W	T0,T5	T2,T3	T2W T3W	T0,T5	T2,T3	T2W T3W
ø20	17	33	19.5	18	23	3.0	6.5	8.5	7.5	7.5	9.5	19.6	21.5	14	38°	2.5	2.5	4.5	3.5	3.5	5.5	6.5	6.5	8.5	7.5	7.5	9.5
ø25	17	33	22	18	24.4	2.0	5.5	7.5	8.5	8.5	10.5	22.1	23.9	14	34°	1.5	1.5	3.5	4.5	4.5	6.5	5.5	5.5	7.5	8.5	8.5	10.5
ø32	17	33	25.5	18	25	3.0	6.5	8.5	9.5	9.5	11.5	25.6	27.6	16	30°	2.5	2.5	4.5	5.5	5.5	7.5	6.5	6.5	8.5	9.5	9.5	11.5
ø40	19	34	30	18	25.7	5.0	8.5	10.5	11.5	11.5	13.5	30.2	32.1	16	26°	4.5	4.5	6.5	7.5	7.5	9.5	8.5	8.5	10.5	11.5	11.5	13.5
ø50	22	39	35.5	18	26.2	7.5	11.0	13.0	13.0	13.0	15.0	35.7	37.4	16	22°	7.0	7.0	9.0	9.0	9.0	11.0	11.0	11.0	13.0	13.0	13.0	15.0
ø63	22	39	42.5	18	26.5	7.5	11.0	13.0	13.0	13.0	15.0	42.7	44.4	16	20°	7.0	7.0	9.0	9.0	9.0	11.0	11.0	11.0	13.0	13.0	13.0	15.0
ø80	28	43	51	18	26.7	9.5	13.0	15.0	20.0	20.0	22.0	51.2	53.0	16	16°	9.0	9.0	11.0	16.0	16.0	18.0	13.0	13.0	15.0	20.0	20.0	22.0
ø100	28	44	61.5	18	26.7	10.0	13.5	15.5	19.5	19.5	21.5	61.7	63.5	16	16°	9.5	9.5	11.5	15.5	15.5	17.5	13.5	13.5	15.5	19.5	19.5	21.5

1: Refer to pages 42 and 43 for HD, RD, and protruding dimensions of T2Y, T3Y, T8, T1.

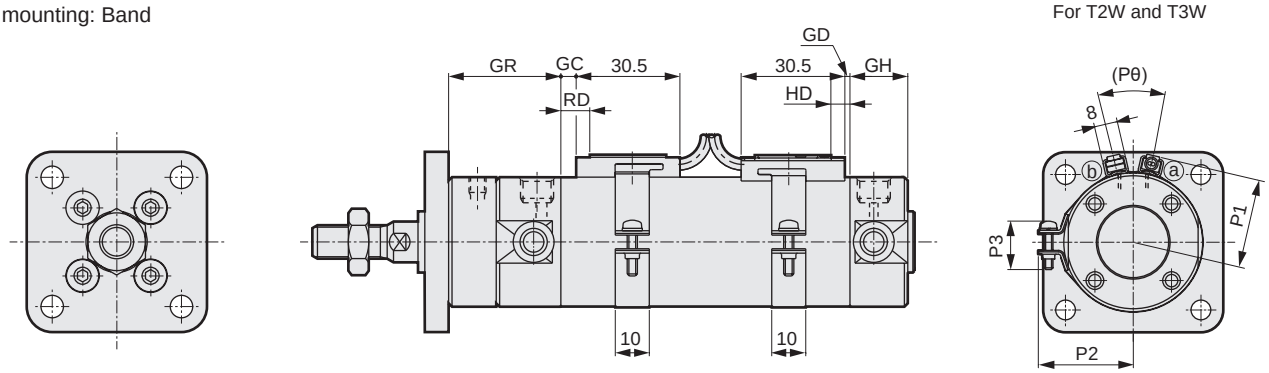
Dimensions

● Rod end flange (FA)

• Switch mounting: Rail



• Switch mounting: Band



*Dimensions related to the needle and the port sizes of the air cushion are identical to those of the basic.

Code	Rod end flange (FA) basic dimensions																		
Bore size(mm)	A	B	C	D	DA	DB	EE	FD	FF	FG	FL	FM	FT	G	J	KK	LL	MM
ø20	18	13	15.5	26	M4×22	M4 depth 6.5	Rc1/8	5.5	11	91	28	40	6	14	12	M8	83	8
ø25	22	17	19.5	31	M5×22	M5 depth 6.5	Rc1/8	5.5	11	92	32	44	7	14	14	M10×1.25	83	10
ø32	22	17	19.5	38	M5×22	M5 depth 7.5	Rc1/8	6.6	11	94	38	53	7	14	18	M10×1.25	85	12
ø40	30	22	27	47	M6×25	M6 depth 12	Rc1/8	6.6	12	102	46	61	8	14	25	M14×1.5	92	16
ø50	35	27	32	58	M8×30	M8 depth 16	Rc1/4	9	14	115	58	76	9	14	30	M18×1.5	104	20
ø63	35	27	32	72	M10×30	M10 depth 16	Rc1/4	11	14	115	70	92	9	14	32	M18×1.5	104	20
ø80	40	32	37	89	M10×40	M10 depth 22	Rc3/8	11	20	137	82	104	11	15	40	M22×1.5	123	25
ø100	40	41	37	110	M12×40	M12 depth 22	Rc1/2	13	17	141	100	128	14	16	50	M26×1.5	124	30

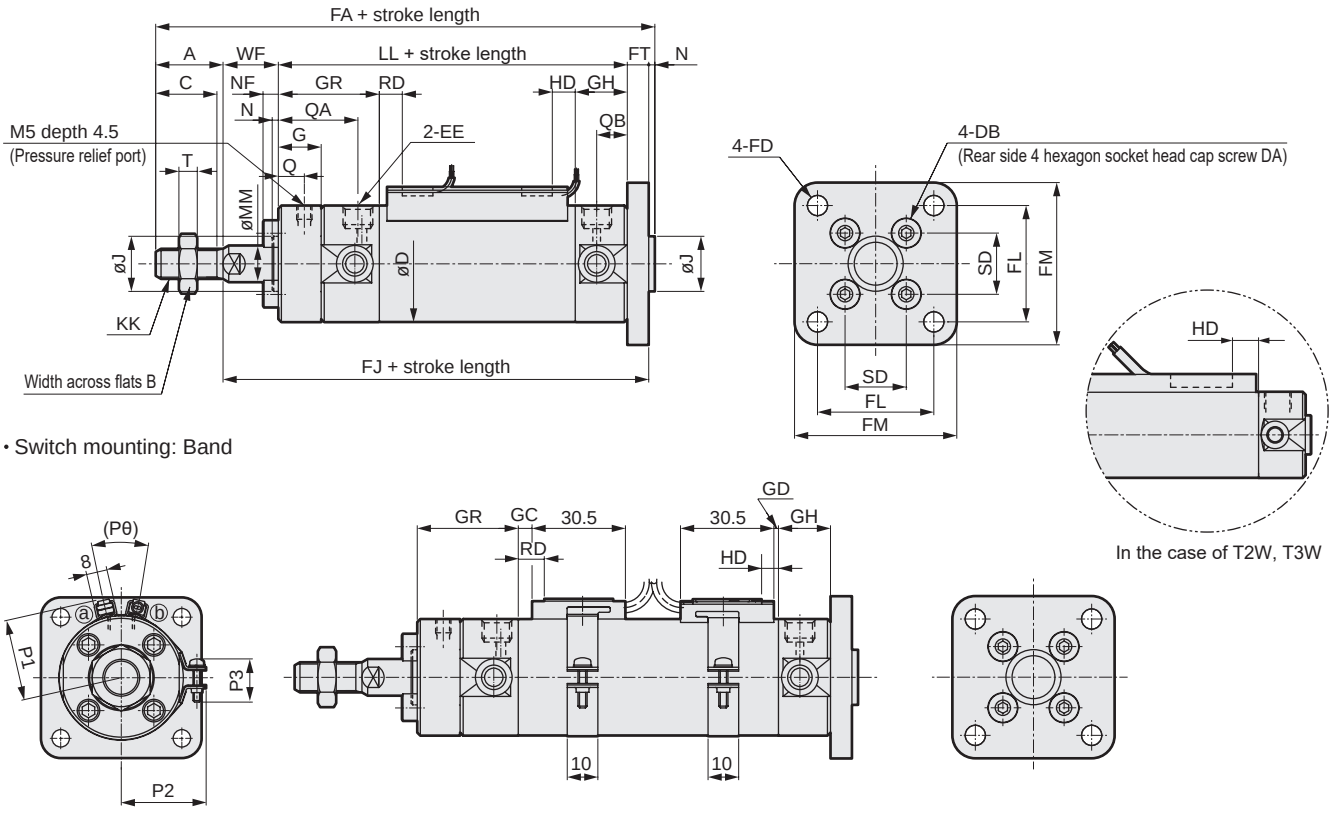
Code								
Bore size(mm)	N	Q	QA	QB	SD	T	WF	X
ø20	2	8.5	26	10	14	5	17	120
ø25	2	8.5	26	10	16.5	6	18	125
ø32	2	8.5	26	10	20	6	18	127
ø40	2	8.5	27	12	26	8	20	144
ø50	2	8.5	29	12	32	11	23	164
ø63	2	8.5	29	12	38	11	23	164
ø80	3	9	30	15	50	13	31	197
ø100	3	10	31	15	60	16	31	198

Code	With switch																								
	GH	GR	Rail mounting									Band mounting													
			P	GA	GB	HD			RD			P1	P2	P3	(Pθ)	GD			GC			HD			RD		
Bore size(mm)						T0,T5	T2,T3	T2W T3W	T0,T5	T2,T3	T2W T3W					T0,T5	T2,T3	T2W T3W	T0,T5	T2,T3	T2W T3W	T0,T5	T2,T3	T2W T3W	T0,T5	T2,T3	T2W T3W
ø20	17	33	19.5	18	23	3.0	6.5	8.5	7.5	7.5	9.5	19.6	21.5	14.4	38°	2.5	2.5	4.5	3.5	3.5	5.5	6.5	6.5	8.5	7.5	7.5	9.5
ø25	17	33	22	18	24.4	2.0	5.5	7.5	8.5	8.5	10.5	22.1	23.9	14.4	34°	1.5	1.5	3.5	4.5	4.5	6.5	5.5	5.5	7.5	8.5	8.5	10.5
ø32	17	33	25.5	18	25	3.0	6.5	8.5	9.5	9.5	11.5	25.6	27.6	16.4	30°	2.5	2.5	4.5	5.5	5.5	7.5	6.5	6.5	8.5	9.5	9.5	11.5
ø40	19	34	30	18	25.7	5.0	8.5	10.5	11.5	11.5	13.5	30.2	32.1	16.4	26°	4.5	4.5	6.5	7.5	7.5	9.5	8.5	8.5	10.5	11.5	11.5	13.5
ø50	22	39	35.5	18	26.2	7.5	11.0	13.0	13.0	13.0	15.0	35.7	37.4	16.4	22°	7.0	7.0	9.0	9.0	9.0	11.0	11.0	11.0	13.0	13.0	13.0	15.0
ø63	22	39	42.5	18	26.5	7.5	11.0	13.0	13.0	13.0	15.0	42.7	44.4	16.4	20°	7.0	7.0	9.0	9.0	9.0	11.0	11.0	11.0	13.0	13.0	13.0	15.0
ø80	28	43	51	18	26.7	9.5	13.0	15.0	20.0	20.0	22.0	51.2	53.0	16.4	16°	9.0	9.0	11.0	16.0	16.0	18.0	13.0	13.0	15.0	20.0	20.0	22.0
ø100	28	44	61.5	18	26.7	10.0	13.5	15.5	19.5	19.5	21.5	61.7	63.5	16.4	16°	9.5	9.5	11.5	15.5	15.5	17.5	13.5	13.5	15.5	19.5	19.5	21.5

1: Refer to pages 42 and 43 for HD, RD, and protruding dimensions of T2Y, T3Y, T8, T1.

Dimensions

● Head end flange (FB)
• Switch mounting: Rail



• Switch mounting: Band

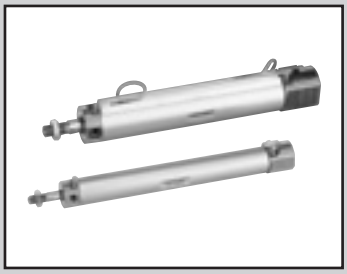
*Dimensions related to the needle and the port sizes of the air cushion are identical to those of the basic.

Code	Rod end flange (FA) basic dimensions																	
Bore size(mm)	A	B	C	D	DA	DB	EE	FA	FD	FJ	FL	FM	FT	G	J	KK	LL	MM
ø20	18	13	15.5	26	M4×20	M4	Rc1/8	126	5.5	106	28	40	6	14	12	M8	83	8
ø25	22	17	19.5	31	M5×20	M5	Rc1/8	132	5.5	108	32	44	7	14	14	M10×1.25	83	10
ø32	22	17	19.5	38	M5×20	M5	Rc1/8	134	6.6	110	38	53	7	14	18	M10×1.25	85	12
ø40	30	22	27	47	M6×25	M6	Rc1/8	152	6.6	120	46	61	8	14	25	M14×1.5	92	16
ø50	35	27	32	58	M8×25	M8	Rc1/4	173	9	136	58	76	9	14	30	M18×1.5	104	20
ø63	35	27	32	72	M10×30	M10	Rc1/4	173	11	136	70	92	9	14	32	M18×1.5	104	20
ø80	40	32	37	89	M10×30	M10	Rc3/8	208	11	165	82	104	11	15	40	M22×1.5	123	25
ø100	40	41	37	110	M12×30	M12	Rc1/2	212	13	169	100	128	14	16	50	M26×1.5	124	30

Code								
Bore size(mm)	N	Q	QA	QB	SD	NF	T	WF
ø20	2	8.5	26	10	14	4.5	5	17
ø25	2	8.5	26	10	16.5	5.6	6	18
ø32	2	8.5	26	10	20	5.6	6	18
ø40	2	8.5	27	12	26	6.6	8	20
ø50	2	8.5	29	12	32	8.9	11	23
ø63	2	8.5	29	12	38	11.1	11	23
ø80	3	9	30	15	50	11.1	13	31
ø100	3	10	31	15	60	13.2	16	31

Code	With switch																										
	GH	GR	Rail mounting									Band mounting															
			P	GA	GB	HD			RD			P1	P2	P3	(Pθ)	GD			GC			HD			RD		
Bore size(mm)						T0,T5	T2,T3	T2W T3W	T0,T5	T2,T3	T2W T3W					T0,T5	T2,T3	T2W T3W	T0,T5	T2,T3	T2W T3W	T0,T5	T2,T3	T2W T3W	T0,T5	T2,T3	T2W T3W
ø20	17	33	19.5	18	23	3.0	6.5	8.5	7.5	7.5	9.5	19.6	21.5	14.4	38°	2.5	2.5	4.5	3.5	3.5	5.5	6.5	6.5	8.5	7.5	7.5	9.5
ø25	17	33	22	18	24.4	2.0	5.5	7.5	8.5	8.5	10.5	22.1	23.9	14.4	34°	1.5	1.5	3.5	4.5	4.5	6.5	5.5	5.5	7.5	8.5	8.5	10.5
ø32	17	33	25.5	18	25	3.0	6.5	8.5	9.5	9.5	11.5	25.6	27.6	16.4	30°	2.5	2.5	4.5	5.5	5.5	7.5	6.5	6.5	8.5	9.5	9.5	11.5
ø40	19	34	30	18	25.7	5.0	8.5	10.5	11.5	11.5	13.5	30.2	32.1	16.4	26°	4.5	4.5	6.5	7.5	7.5	9.5	8.5	8.5	10.5	11.5	11.5	13.5
ø50	22	39	35.5	18	26.2	7.5	11.0	13.0	13.0	13.0	15.0	35.7	37.4	16.4	22°	7.0	7.0	9.0	9.0	9.0	11.0	11.0	11.0	13.0	13.0	13.0	15.0
ø63	22	39	42.5	18	26.5	7.5	11.0	13.0	13.0	13.0	15.0	42.7	44.4	16.4	20°	7.0	7.0	9.0	9.0	9.0	11.0	11.0	11.0	13.0	13.0	13.0	15.0
ø80	28	43	51	18	26.7	9.5	13.0	15.0	20.0	20.0	22.0	51.2	53.0	16.4	16°	9.0	9.0	11.0	16.0	16.0	18.0	13.0	13.0	15.0	20.0	20.0	22.0
ø100	28	44	61.5	18	26.7	10.0	13.5	15.5	19.5	19.5	21.5	61.7	63.5	16.4	16°	9.5	9.5	11.5	15.5	15.5	17.5	13.5	13.5	15.5	19.5	19.5	21.5

1: Refer to pages 42 and 43 for HD, RD, and protruding dimensions of T2Y, T3Y, T8, T1.



Round shaped cylinder Double acting/position locking

SCM-Q Series

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

JIS symbol

RoHS CAD

Structure and material restriction

	Structure	Material restriction	Model No.		Structure	Material restriction			Model No.
P7 Series	Exhaust treatment	-	P7	P5 Series (custom order product)	Exhaust treatment	Copper-based materials prohibited	Silicon-based materials prohibited	Halogen-based materials prohibited (fluorine, chlorine, bromine)	P5
	Vacuum treatment	-	P71		Vacuum treatment	Copper-based materials prohibited	Silicon-based materials prohibited	Halogen-based materials prohibited (fluorine, chlorine, bromine)	P51

Specifications

Descriptions		SCM-Q-P7*/P5*							
Bore size mm		ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Actuation		Double acting/position locking							
Working fluid		Compressed air							
Max. working pressure MPa		1.0							
Min. working pressure MPa		0.2				0.15			
Proof pressure MPa		1.6							
Ambient temperature °C		–10 to 60 (no freezing)							
Port size		M5		Rc1/8		Rc1/4		Rc3/8	Rc1/2
Port size (relief port)		M5							
Stroke tolerance mm		+1.4 0 (to 1000)			+1.4 0 (to 1500)	+1.4 0 (to 1000)		+1.8 0 (to 1500)	
Working piston speed mm/s		30 to 200(Use this cushion within allowable energy absorption.)							
Cushion		Air cushion							
Effective air cushion length mm		8.1	8.1	8.6	8.6	13.4	13.4	15.4	15.4
Lubrication		Not available							
Position locking mechanism		Head end or rod end							
Holding force N		Max. thrust × 0.7							
Allowable absorbed energy J	Cushioned	0.8	1.2	2.5	3.7	8.0	14.4	25.4	45.6
	No cushion	–	–	–	–	0.057	0.057	0.112	0.153

*1: "No cushion" in the allowable absorption energy indicates the allowable absorption energy of the side that is not indicated ("R" → head side, "H" → rod side) when the one-side air cushion is selected.

*2: Without a cushion, large energy generated by the external load cannot be absorbed. Please provide an external shock absorber.

Stroke length

Bore size(mm)	Standard stroke length (mm)	Max. stroke length (mm)	Min. stroke length (mm)	Bore size (mm)	Standard stroke length (mm	Max. stroke length (mm)	Min. stroke length (mm)
ø20	25/50/75 100/125/150 200/250/300	1000	10	ø50	25/50/75 100/125/150 200/250/300	1500	10
ø25				ø63			
ø32				ø80			
ø40		1500		ø100			

Number of installed switches and the min. stroke length (mm)

● Switch mounting: Rail

Switch quantity	1				2				3				4				5			
Bore size(mm)	Proximity			Reed	Proximity			Reed	Proximity			Reed	Proximity			Reed	Proximity			Reed
	T2,T3	T2W,T3W	T*Y*		T2,T3	T2W,T3W	T*Y*		T2,T3	T2W,T3W	T*Y*		T2,T3	T2W,T3W	T*Y*		T2,T3	T2W,T3W	T*Y*	
ø20	10				25				50	70	70	55	55	70	70	55	75	110	110	90
ø25	10				25				50	70	70	55	55	70	70	55	75	110	110	90
ø32	10				25				50	70	70	55	55	70	70	55	75	110	110	90
ø40	10				25				50	70	70	55	55	70	70	55	75	110	110	90
ø50	10				25				50	65	65	55	55	65	65	55	75	110	110	90
ø63	10				25				50	65	65	55	55	65	65	55	75	110	110	90
ø80	10				25				50	65	65	55	55	65	65	55	75	110	110	90
ø100	10				25				50	65	65	55	55	65	65	55	75	110	110	90

● Switch mounting: Band

Switch quantity	1				2				3				4				5			
Bore size(mm)	Proximity			Reed	Proximity			Reed	Proximity			Reed	Proximity			Reed	Proximity			Reed
	T2,T3	T2W,T3W	T*Y*		T2,T3	T2W,T3W	T*Y*		T2,T3	T2W,T3W	T*Y*		T2,T3	T2W,T3W	T*Y*		T2,T3	T2W,T3W	T*Y*	
ø20	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
ø25	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
ø32	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
ø40	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
ø50	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
ø63	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
ø83	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
ø100	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95

*1: The switch rail mounting position changes for those with one switch and a stroke between 10mm and 25mm.Please refer to page 42 for the mounting position.

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(*3) T2YDT
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	-				DC10 to 28V				-								
Load voltage	AC85 to 265V	DC10 to 30V		DC24V±10%	DC30V or less				DC12/24V	AC110V	DC5/12/24V	AC110V	DC12/24V	AC110V	AC220V		DC24V±10%
Load current	5 to 100mA	5 to 20mA (*2)			100mA or less		50mA or less		5 to 50mA	7 to 20mA	50mA or less	20mA or less	5 to 50mA	7 to 20mA	7 to 10mA		5 to 20mA
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	1mA or less			10μA or less				0mA								1mA or less
Weight g	1m:33	1m:18	1m:33	1m:18	1m:18		1m:33	1m:18	1m:18 3m:49 5m:80				1m:33				1m:61
	3m:87	3m:49	3m:87	3m:49	3m:49		3m:87	3m:49					3m:87				3m:166
	5m:142	5m:80	5m:142	5m:80	5m:80		5m:142	5m:80					5m:142				5m:272

*1: Refer to page 309 for detailed switch specifications, dimensions, etc.
*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: AC magnetic field switches (T2YD and T2YDT) cannot be used in a DC magnetic field environment.

Theoretical thrust table

(Unit: N)

Bore size (mm)	Operating direction	Working 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	1.26×10^2	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	-	52.8	79.2	1.06×10^2	1.32×10^2	1.58×10^2	1.85×10^2	2.11×10^2	2.38×10^2	2.64×10^2
ø25	Push	-	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	-	82.5	1.24×10^2	1.65×10^2	2.06×10^2	2.47×10^2	2.89×10^2	3.30×10^2	3.71×10^2	4.12×10^2
ø32	Push	-	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	-	1.38×10^2	2.07×10^2	2.76×10^2	3.46×10^2	4.15×10^2	4.84×10^2	5.53×10^2	6.22×10^2	6.91×10^2
ø40	Push	-	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	-	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
ø50	Push	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	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
ø63	Push	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	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
ø80	Push	7.54×10^2	1.01×10^3	1.51×10^3	2.01×10^3	2.51×10^3	3.02×10^3	3.52×10^3	4.02×10^3	4.52×10^3	5.03×10^3
	Pull	6.80×10^2	9.07×10^2	1.36×10^3	1.81×10^3	2.27×10^3	2.72×10^3	3.17×10^3	3.63×10^3	4.08×10^3	4.54×10^3
ø100	Push	1.18×10^3	1.57×10^3	2.36×10^3	3.14×10^3	3.93×10^3	4.71×10^3	5.50×10^3	6.28×10^3	7.07×10^3	7.85×10^3
	Pull	1.07×10^3	1.43×10^3	2.14×10^3	2.86×10^3	3.57×10^3	4.29×10^3	5.00×10^3	5.72×10^3	6.43×10^3	7.15×10^3

⚠ Be sure to read the "safety precautions" 3. Position locking: **SCM-Q** (pages 44 through 46).

How to order

Without switch (Magnet for switch incorporated)

SCM-Q - LB - 40 B - 100 - R ——— Q P7

With switch (Magnet for switch incorporated)

SCM-Q - LB - 40 B - 100 - R - T2H - D - ○ Q P7

Ⓐ Mounting *1, *2 | Ⓑ Bore size | Ⓒ Cushion | Ⓓ Stroke length | Ⓔ Position locking mechanism | Ⓕ Switch model No. *4 *5 | Ⓖ Switch quantity | Ⓗ Switch mounting | Ⓘ Option *6 | Ⓙ Clean room specifications *7

Code	Content
Ⓐ Mounting	
00	Basic
LB	Axial foot
FA	Rod end flange
FB	Head end flange
Ⓑ Bore size (mm)	
20	ø20
25	ø25
32	ø32
40	ø40
50	ø50
63	ø63
80	ø80
100	ø100
Ⓒ Cushion	
B	Both sides air cushioned
R	Rod end air cushioned
H	Head end air cushion

Ⓓ Stroke length (mm)

Bore size	Stroke length Note 3	Custom stroke length
ø20 to ø32	**10 to 1000**	**By 1mm increments**
ø40 to ø100	**10 to 1500**	

Code	Content
Ⓔ Position locking mechanism	
R	With rod end position locking
H	With head end position locking

Ⓕ Switch model No.

Lead wire straight	Lead wire L-shaped	Contact	Voltage AC	Voltage DC	Display	Leadwire
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***			●		3 wires
T3PH*	**T3PV***			●	1-color display	
T2WH*	**T2WV***			●	2-color display	2 wires
T2YH*	**T2YV***			●		
T3WH*	**T3WV***			●		3 wires
T3YH*	**T3YV***			●		
T2YD*	**–**			●	2-color display for AC magnetic field	2 wires
T2YDT*	**–**			●		
T2JH*	**T2JV***			●	1-color display off-delay	2 wires

Code	Content
***Lead wire length**	
Blank	1m(standard))
3	3m(option)
5	5m(option)
Ⓖ Switch quantity	
R	1 (on rod end)
H	1 (on rod end)
D	2
T	3
4	4 (indicate switch quantity for more than 4 switches.)
Ⓗ Switch mounting	
Blank	Rail
Z	Band
Ⓘ Option	
Q	Switch rail attached at shipment

Ⓙ Clean room specifications

	Structure	Material restriction
P7	Exhaust treatment	–
P71	Vacuum treatment	–
P5	Exhaust treatment	Copper-based/silicon-based/halogen-based materials (fluorine, chlorine, bromine) are prohibited
P51	Vacuum treatment	Copper-based/silicon-based/halogen-based materials (fluorine, chlorine, bromine) are prohibited

⚠ Precautions for model No. selection

*1: Mounting brackets are shipped with the product.
*2: When the mounting is LB, the cylinder cannot be mounted on the frame if a bracket is already attached to the cylinder. Refer to Safety precautions for details.
*3: Refer to page 34 for the number of installed switches and the minimum stroke length.
*4: Switches other than Ⓕ switch model No. are also available. (custom order)
For details, refer to page 309.
*5: T8H/V switches cannot be mounted when the bore size is from ø20 to ø40 and the switch mounting is the rail.
*6: "Q" (switch rail attached at shipment) is not available for the "Z" switch mounting.
*7: "P5" and "P51" are custom order products.
*8: Mounting 00 does not allow front mounting.
*9: Switches are shipped with the product. Contact CKD when shipment must be assembled.

[Example of model No.]

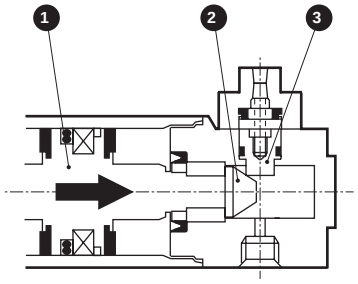
SCM-Q-LB-40B-100-R-T2H-D-QP7

Model: Round shaped cylinder, position locking

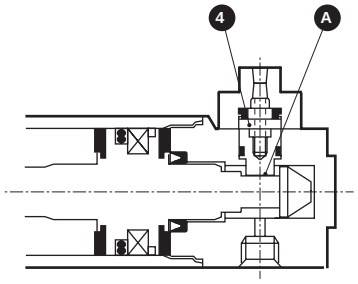
Ⓐ Mounting	: Axial foot
Ⓑ Bore size	: ø40mm
Ⓒ Cushion	: Air cushion on both sides
Ⓓ Stroke length	: 100mm
Ⓔ Position locking mechanism	: With rod end position locking
Ⓕ Switch model No.	: Proximity T2H switch, lead wire 1 m
Ⓖ Switch quantity	: 2
Ⓗ Switch mounting	: Rail
Ⓘ Option	: Switch rail attached at shipment
Ⓙ Clean room specifications	: Exhaust treatment

Operational explanation

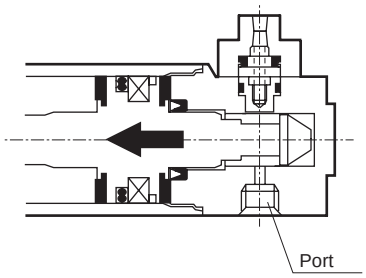
● When locked
When the piston (1) of the cylinder moves toward the stroke end, the stopper pin (3) is pushed up along the slope of the sleeve (2).



When the piston of the cylinder comes to the stroke end and the sleeve groove Ⓐ reaches the stopper piston position, the stopper piston is pushed down by the spring 4 and fits into the groove, completing the lock action.



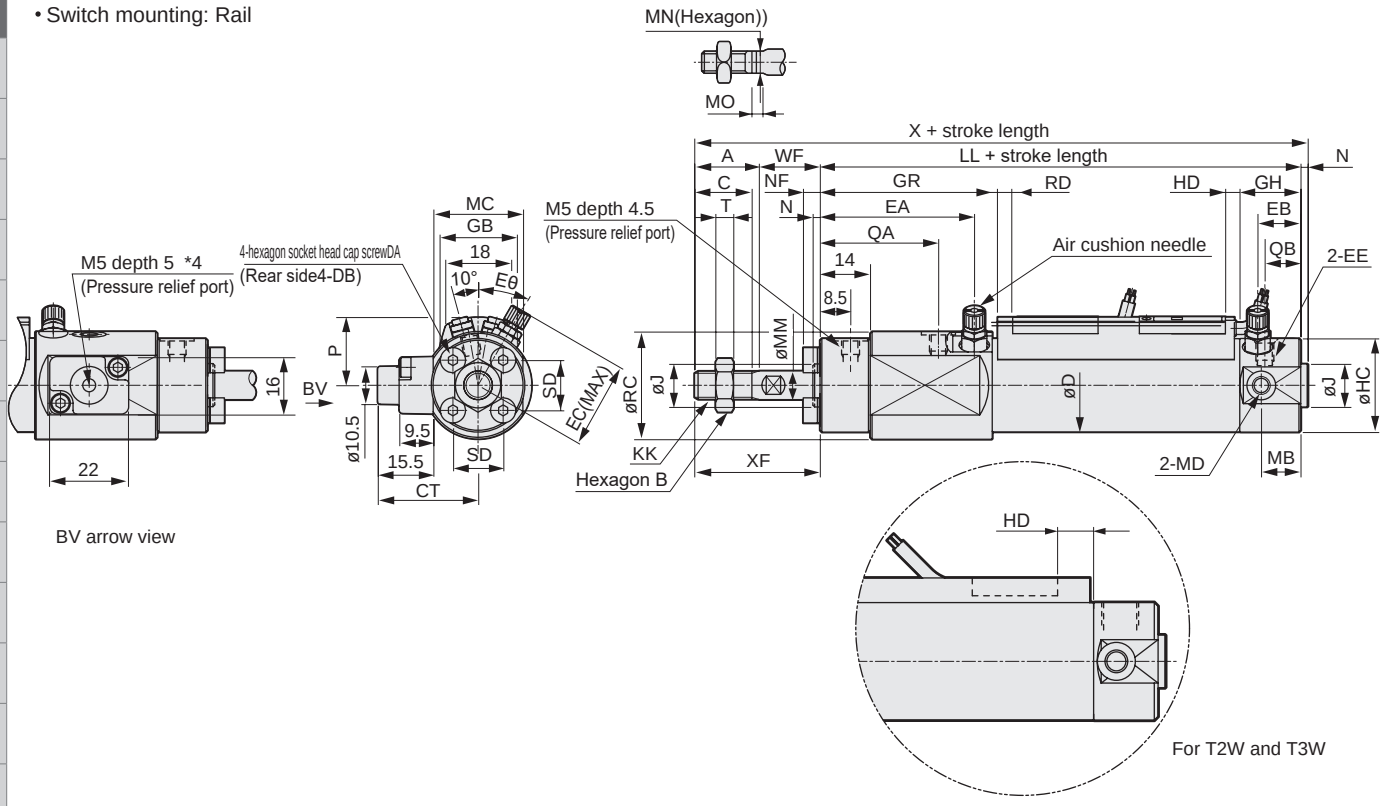
● When unlocked
When pressure is supplied to the port, the stopper piston pushes up the spring and slips out of the sleeve groove, releasing the lock.



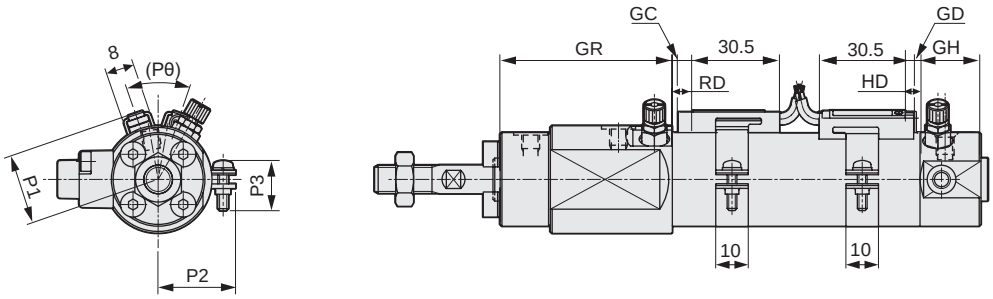
Dimensions (ø20 to ø32)

● Basic (00) with rod end position locking (R)

• Switch mounting: Rail



• Switch mounting: Band



*1: For the mounting of LB, the cylinder with a bracket attached cannot be installed on the frame. Refer to Safety precautions for details.
2: Refer to page 42 and 43 for dimensions of HD and RD of T2Y, T3Y, T8, and T1.
3: Refer to page 42 and 43 for dimensions of projections of T2Y, T3Y, T8, and T1.
*4: Do not perform vacuum treatment of the relief port of the positioning lock. Refer to Safety precautions for details.

Code	Basic (00) basic dimensions															
Bore size(mm)	A	B	C	D	CT	DA	DB	EC	EE	Eθ	J	KK	LL	MC	MD	MM
ø20	18	13	15.5	26	28	M4×20	M4 depth 6.5	29	M5	30°	12	M8	98	25	M5	8
ø25	22	17	19.5	31	31	M5×20	M5 depth 6.5	31.5	M5	30°	14	M10×1.25	98	31	M6	10
ø32	22	17	19.5	38	31.5	M5×20	M5 depth 7.5	32.8	Rc1/8	25°	18	M10×1.25	100	32	M8	12

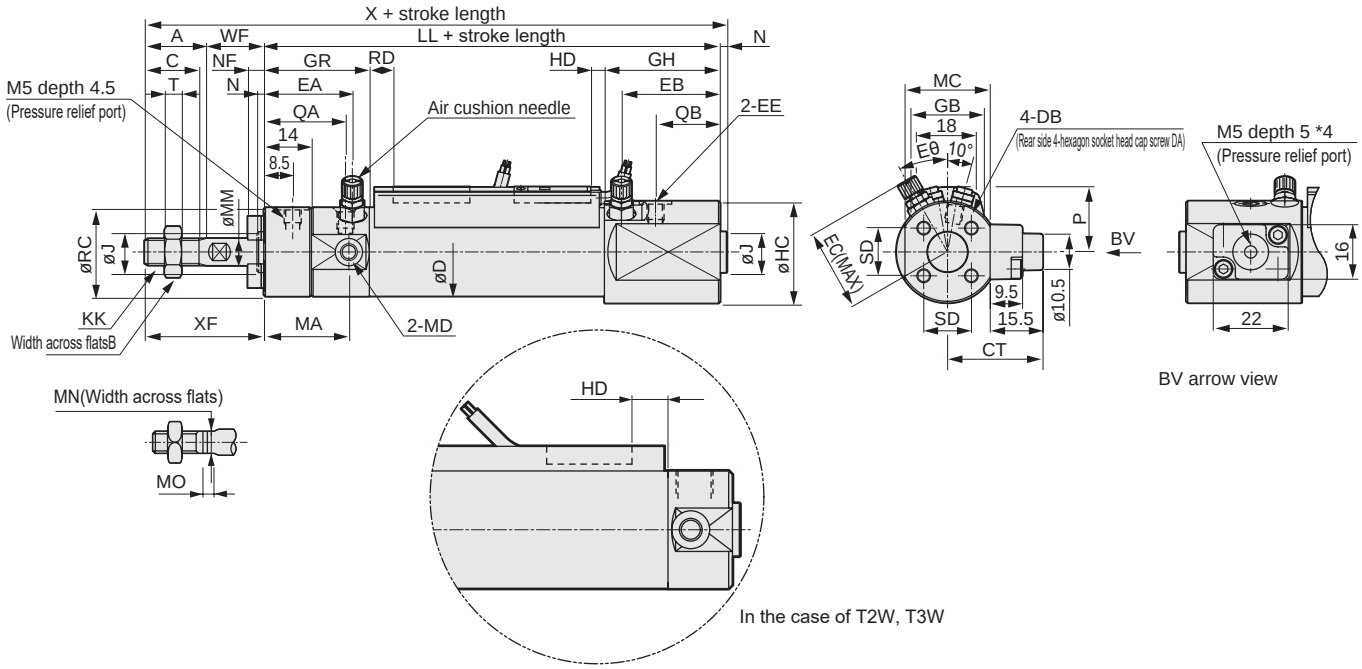
Code										Rod end position locking						
Bore size(mm)	MO	MN	N	NF	SD	T	WF	X	XF	MB	RC	HC	QA	QB	EA	EB
ø20	4	6	2	4.5	14	5	17	135	35	11	30	26	33	10	43	12
ø25	5	8	2	5.6	16.5	6	18	140	40	11	35	31	33	10	43	12
ø32	5.5	10	2	5.6	20	6	18	142	40	10	38	38	33	10	43	12

Code	With switch																							
	GH	GR	Rail mounting								Band mounting													
			P	GB	HD			RD			P1	P2	P3	(Pθ)	GC			GD			HD			RD		
Bore size(mm)					T0,T5	T2,T3	T2W T3W	T0,T5	T2,T3	T2W T3W					T0,T5	T2,T3	T2W T3W	T0,T5	T2,T3	T2W T3W	T0,T5	T2,T3	T2W T3W	T0,T5	T2,T3	T2W T3W
ø20	17	48	19.5	23	3.0	6.5	8.5	7.5	7.5	9.5	19.6	21.5	14	38°	3.5	3.5	5.5	2.5	2.5	4.5	6.5	6.5	8.5	7.5	7.5	9.5
ø25	17	48	22	24.4	2.0	5.5	7.5	8.5	8.5	10.5	22.1	23.9	14	34°	4.5	4.5	6.5	1.5	1.5	3.5	5.5	5.5	7.5	8.5	8.5	10.5
ø32	17	48	25.5	25	3.0	6.5	8.5	9.5	9.5	11.5	25.6	27.6	16	30°	5.5	5.5	7.5	2.5	2.5	4.5	6.5	6.5	8.5	9.5	9.5	11.5

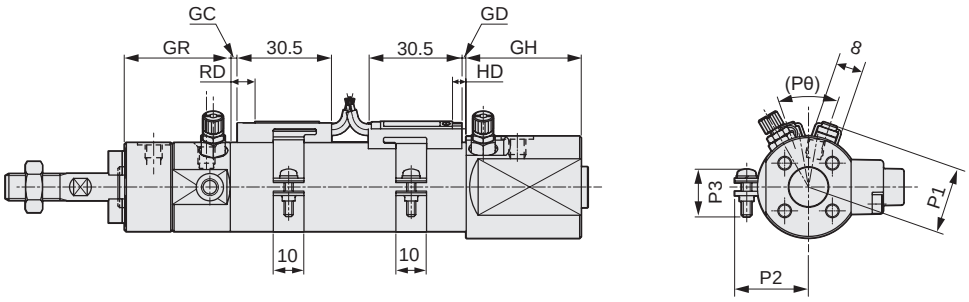
*1: Mounting dimensions of the mounting types are the same as those of SCM (double acting). Refer to pages 31 and 33.

Dimensions (ø20 to ø32)

● Basic (00) with head end position locking (H)
• Switch mounting: Rail



• Switch mounting: Band



*1: For the mounting of LB, the cylinder with a bracket attached cannot be installed on the frame. Refer to Safety precautions for details.
2: Refer to page 42 and 43 for dimensions of HD and RD of T2Y, T3Y, T8, and T1.
3: Refer to page 42 and 43 for dimensions of projections of T2Y, T3Y, T8, and T1.
*4: Do not perform vacuum treatment of the relief port of the positioning lock. Refer to Safety precautions for details.

Code	Basic (00) basic dimensions														
Bore size(mm)	A	B	C	D	CT	DA	DB	EC	EE	Eθ	J	KK	LL	MC	MD	MM
ø20	18	13	15.5	26	28	M4×20	M4 depth 6.5	29	M5	30°	12	M8	98	25	M5	8
ø25	22	17	19.5	31	31	M5×20	M5 depth 6.5	31.5	M5	30°	14	M10×1.25	98	31	M6	10
ø32	22	17	19.5	38	31.5	M5×20	M5 depth 7.5	32.8	Rc1/8	25°	18	M10×1.25	100	32	M8	12

Code										Head end position locking						
Bore size(mm)	MO	MN	N	NF	SD	T	WF	X	XF	MA	RC	HC	QA	QB	EA	EB
ø20	4	6	2	4.5	14	5	17	135	35	25	26	30	26	17	28	27
ø25	5	8	2	5.6	16.5	6	18	140	40	25	31	35	26	17	28	27
ø32	5.5	10	2	5.6	20	6	18	142	40	25	38	38	26	17	28	27

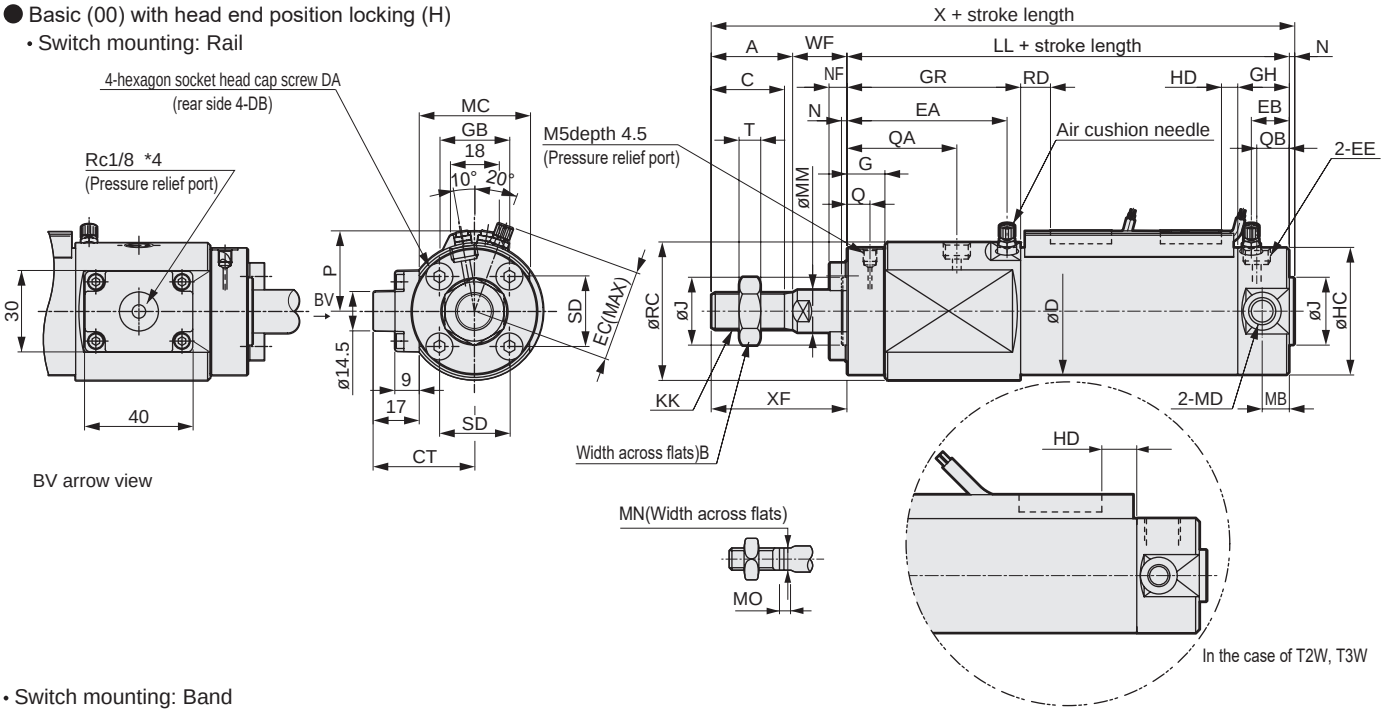
Code	With switch																							
	GH	GR	Rail mounting								Band mounting													
			P	GB	HD			RD			P1	P2	P3	(Pθ)	GC			GD			HD			RD		
Bore size(mm)					T0,T5	T2,T3	T2W T3W	T0,T5	T2,T3	T2W T3W					T0,T5	T2,T3	T2W T3W	T0,T5	T2,T3	T2W T3W	T0,T5	T2,T3	T2W T3W	T0,T5	T2,T3	T2W T3W
ø20	32	33	19.5	23	3.0	6.5	8.5	7.5	7.5	9.5	19.6	21.5	14	38°	3.5	3.5	5.5	2.5	2.5	4.5	6.5	6.5	8.5	7.5	7.5	9.5
ø25	32	33	22	24.4	2.0	5.5	7.5	8.5	8.5	10.5	22.1	23.9	14	34°	4.5	4.5	6.5	1.5	1.5	3.5	5.5	5.5	7.5	8.5	8.5	10.5
ø32	32	33	25.5	25	3.0	6.5	8.5	9.5	9.5	11.5	25.6	27.6	16	30°	5.5	5.5	7.5	2.5	2.5	4.5	6.5	6.5	8.5	9.5	9.5	11.5

*1: Mounting dimensions of the mounting types are the same as those of SCM (double acting). Refer to pages 31 and 33.

Dimensions (ø40 to ø100)

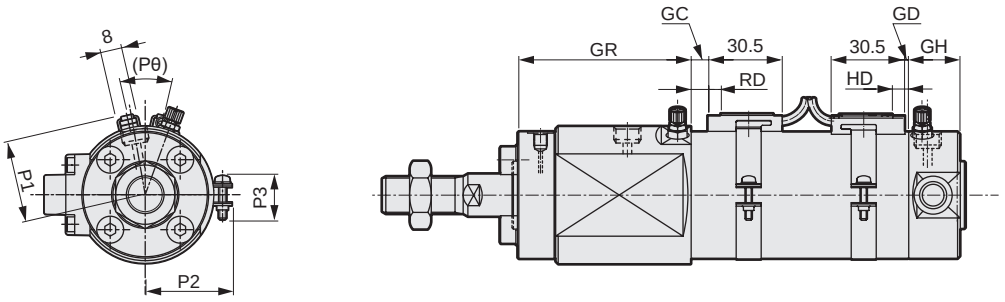
● Basic (00) with head end position locking (H)

• Switch mounting: Rail



BV arrow view

• Switch mounting: Band



*1: For the mounting of LB, the cylinder with a bracket attached cannot be installed on the frame. Refer to Safety precautions for details.
2: Refer to page 42 and 43 for dimensions of HD and RD of T2Y, T3Y, T8, and T1.
3: Refer to page 42 and 43 for dimensions of projections of T2Y, T3Y, T8, and T1.
*4: Do not perform vacuum treatment of the relief port of the positioning lock. Refer to Safety precautions for details.

Code	Basic (00) basic dimensions														
Bore size(mm)	A	B	C	D	CT	DA	DB	EC	EE	J	KK	LL	MB	MC	MD
ø40	30	22	27	47	37.5	M6×25	M6depth 12	38.6	Rc1/8	25	M14×1.5	122	10	41	M10
ø50	35	27	32	58	43.5	M8×25	M8depth 16	44.5	Rc1/4	30	M18×1.5	134	12	53	M12
ø63	35	27	32	72	49.5	M10×30	M10depth 16	50	Rc1/4	32	M18×1.5	134	12	65	M14
ø80	40	32	37	89	57.5	M10×30	M10depth 22	58.5	Rc3/8	40	M22×1.5	153	–	81	–
ø100	40	41	37	110	68.5	M12×30	M12depth 22	69	Rc1/2	50	M26×1.5	154	–	103	–

Code													Rod end position locking					
Bore size(mm)	MM	MO	MN	N	SD	T	WF	X	XF	NF	Q	G	QA	QB	RC	HC	EA	EB
ø40	16	6	14	2	26	8	20	174	50	6.6	8.5	14	40.5	12	51	47	59	14
ø50	20	8	17	2	32	11	23	194	58	8.9	8.5	14	44	12	61	58	62.5	15.5
ø63	20	8	17	2	38	11	23	194	58	11.1	8.5	14	44	12	72	72	62.5	15.5
ø80	25	11	22	3	50	13	31	227	71	11.1	9	15	46.5	15	89	89	65	20
ø100	30	13	27	3	60	16	31	228	71	13.2	10	16	47.5	15	110	110	66	20

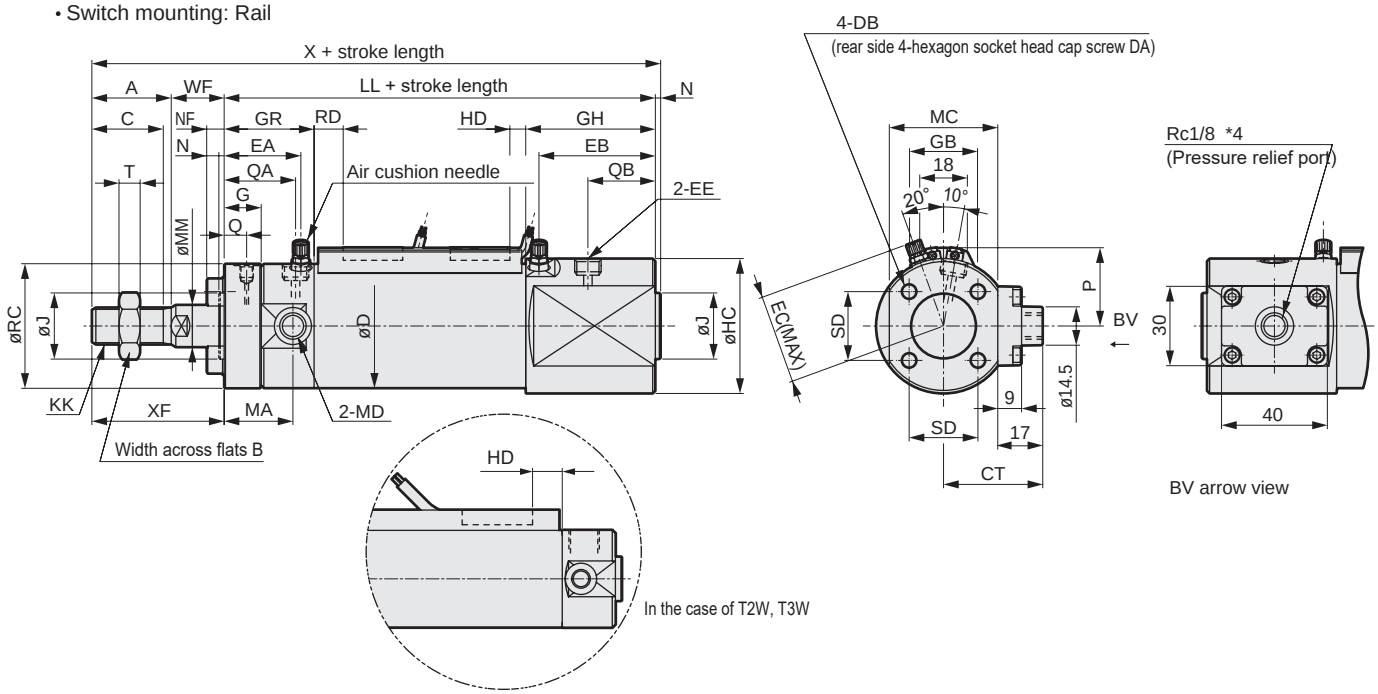
Code	With switch																							
	GH	GR	Rail mounting							Band mounting														
			P	GB	HD			RD			P1	P2	P3	(Pθ)	GC			GD			HD			RD		
Bore size(mm)					T0,T5	T2,T3	T2W T3W	T0,T5	T2,T3	T2W T3W					T0,T5	T2,T3	T2W T3W	T0,T5	T2,T3	T2W T3W	T0,T5	T2,T3	T2W T3W	T0,T5	T2,T3	T2W T3W
ø40	19	64	30	25.7	5.0	8.5	10.5	11.5	11.5	13.5	30.2	32.1	16	26°	7.5	7.5	9.5	4.5	4.5	6.5	8.5	8.5	10.5	11.5	11.5	13.5
ø50	22	69	35.5	26.2	7.5	11.0	13.0	13.0	13.0	15.0	35.7	37.4	16	22°	9.0	9.0	11.0	7.0	7.0	9.0	11.0	11.0	13.0	13.0	13.0	15.0
ø63	22	69	42.5	26.5	7.5	11.0	13.0	13.0	13.0	15.0	42.7	44.4	16	20°	9.0	9.0	11.0	7.0	7.0	9.0	11.0	11.0	13.0	13.0	13.0	15.0
ø80	28	73	51	26.7	9.5	13.0	15.0	20.0	20.0	22.0	51.2	53.0	16	16°	16.0	16.0	18.0	9.0	9.0	11.0	13.0	13.0	15.0	20.0	20.0	22.0
ø100	28	74	61.5	26.7	10.0	13.5	15.5	19.5	19.5	21.5	61.7	63.5	16	16°	15.5	15.5	17.5	9.5	9.5	11.5	13.5	13.5	15.5	19.5	19.5	21.5

*1: Mounting dimensions of the mounting types are the same as those of SCM (double acting). Refer to pages 31 and 33.

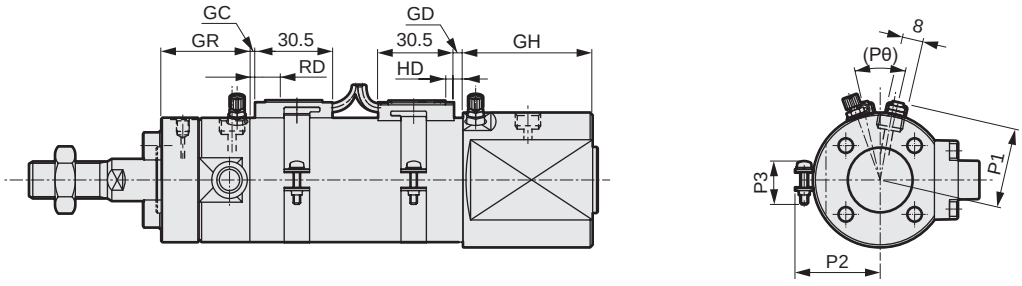
Dimensions (ø40 to ø100)

● Basic (00) with head end position locking (H)

• Switch mounting: Rail



• Switch mounting: Band



*1: For the mounting of LB, the cylinder with a bracket attached cannot be installed on the frame. Refer to Safety precautions for details.
2: Refer to page 42 and 43 for dimensions of HD and RD of T2Y, T3Y, T8, and T1.
3: Refer to page 42 and 43 for dimensions of projections of T2Y, T3Y, T8, and T1.
*4: Do not perform vacuum treatment of the relief port of the positioning lock. Refer to Safety precautions for details.

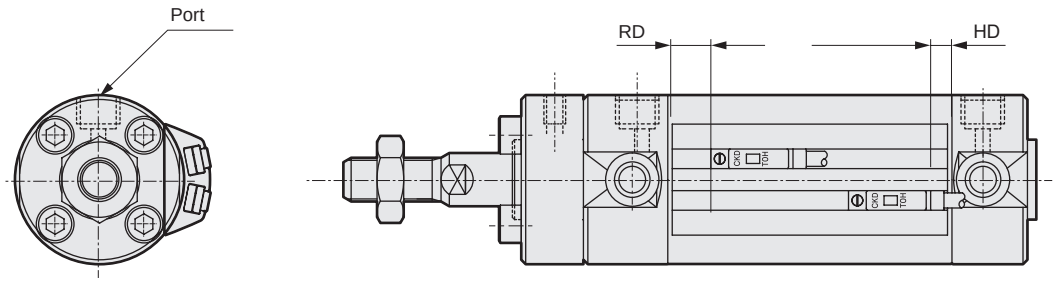
Code	Basic (00) basic dimensions														
Bore size(mm)	A	B	C	D	CT	DA	DB	EC	EE	J	KK	LL	MA	MC	MD
ø40	30	22	27	47	37.5	M6×25	M6depth 12	38.6	Rc1/8	25	M14×1.5	122	26	41	M10
ø50	35	27	32	58	43.5	M8×25	M8depth 16	44.5	Rc1/4	30	M18×1.5	134	27	53	M12
ø63	35	27	32	72	49.5	M10×30	M10depth 16	50	Rc1/4	32	M18×1.5	134	27	65	M14
ø80	40	32	37	89	57.5	M10×30	M10depth 22	58.5	Rc3/8	40	M22×1.5	153	–	81	–
ø100	40	41	37	110	68.5	M12×30	M12depth 22	69	Rc1/2	50	M26×1.5	154	–	103	–

Code													Head end position locking					
Bore size(mm)	MM	MO	MN	N	SD	T	WF	X	XF	NF	Q	G	QA	QB	RC	HC	EA	EB
ø40	16	6	14	2	26	8	20	174	50	6.6	8.5	14	27	25.5	47	51	29	44
ø50	20	8	17	2	32	11	23	194	58	8.9	8.5	14	29	27	58	61	32.5	45.5
ø63	20	8	17	2	38	11	23	194	58	11.1	8.5	14	29	27	72	72	32.5	45.5
ø80	25	11	22	3	50	13	31	227	71	11.1	9	15	30	315	89	89	35	50
ø100	30	13	27	3	60	16	31	228	71	13.2	10	16	31	31.5	110	110	36	50

Code	With switch																							
	GH	GR	Rail mounting								Band mounting													
			P	GB	HD			RD			P1	P2	P3	(Pθ)	GC			GD			HD			RD		
Bore size(mm)					T0,T5	T2,T3	T2W T3W	T0,T5	T2,T3	T2W T3W					T0,T5	T2,T3	T2W T3W	T0,T5	T2,T3	T2W T3W	T0,T5	T2,T3	T2W T3W	T0,T5	T2,T3	T2W T3W
ø40	49	34	30	25.7	5.0	8.5	10.5	11.5	11.5	13.5	30.2	32.1	16	26°	7.5	7.5	9.5	4.5	4.5	6.5	8.5	8.5	10.5	11.5	11.5	13.5
ø50	52	39	35.5	26.2	7.5	11.0	13.0	13.0	13.0	15.0	35.7	37.4	16	22°	9.0	9.0	11.0	7.0	7.0	9.0	11.0	11.0	13.0	13.0	13.0	15.0
ø63	52	39	42.5	26.5	7.5	11.0	13.0	13.0	13.0	15.0	42.7	44.4	16	20°	9.0	9.0	11.0	7.0	7.0	9.0	11.0	11.0	13.0	13.0	13.0	15.0
ø80	58	43	51	26.7	9.5	13.0	15.0	20.0	20.0	22.0	51.2	53.0	16	16°	16.0	16.0	18.0	9.0	9.0	11.0	13.0	13.0	15.0	20.0	20.0	22.0
ø100	58	44	61.5	26.7	10.0	13.5	15.5	19.5	19.5	21.5	61.7	63.5	16	16°	15.5	15.5	17.5	9.5	9.5	11.5	13.5	13.5	15.5	19.5	19.5	21.5

*1: Mounting dimensions of the mounting types are the same as those of SCM (double acting). Refer to pages 31 and 33.

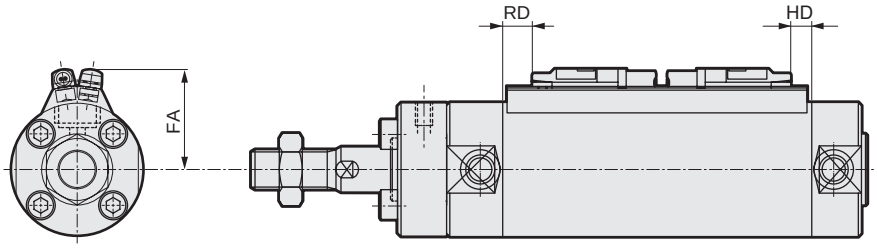
Switch rail installation position (rail installation position for stroke length of 10 mm and over and less than 25 mm with 1 switch)



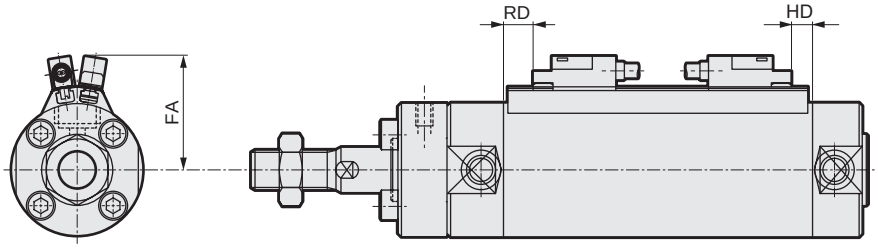
1. The switch rail is mounted at the position inclined by 90˚ from the standard position.
2. Dimensions for HD and RD are identical to the standard dimensions.

Switch mounting: Rail 2-color display AC magnetic field use, off-delay, T1H/V, T8H/V switch mounting, dimensions of projecting section

● SCM-* T2Y$^{H}/_{V}$, T3Y$^{H}/_{V}$, T2J$^{H}/_{V}$, T8$^{H}/_{V}$



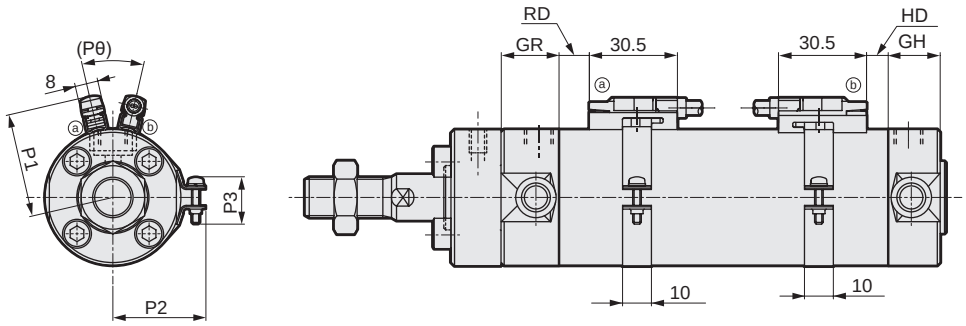
● SCM-* T2YD*, T1$^{H}/_{V}$



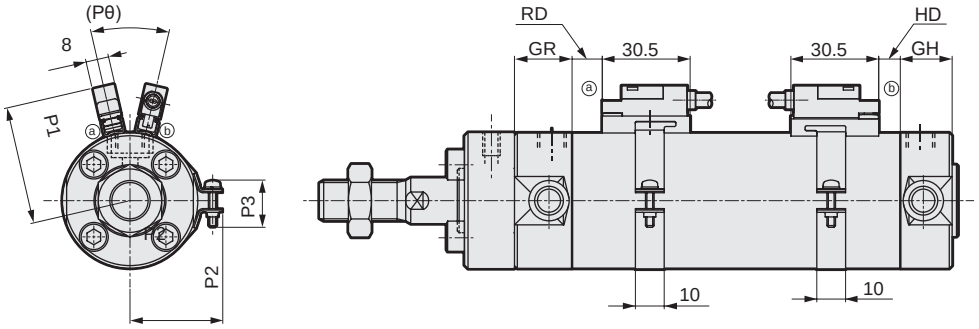
Bore size(mm)	FA				RD		HD	
	T*YH, T8H T2JH	T*YV, T8V T2JV	T2YD*, T1H	T1V	T*YH/V, T1H/V, T2JH/V, T2YD*	T8H/V	T*YH/V, T1H/V, T2JH/V, T2YD*	T8H/V
ø20	24	27	29.5	32.5	6.5	–	5.5	–
ø25	26.5	29.5	32	35	7.5	–	4.5	–
ø32	30	33	35.5	38.5	8.5	–	5.5	–
ø40	34.5	37.5	40	43	10.5	–	7.5	–
ø50	40	43	45.5	48.5	12	7	10	5
ø63	47	50	52.5	55.5	12	7	10	5
ø80	55.5	58.5	61	64	19	14	12	7
ø100	66	69	71.5	74.5	18.5	13.5	12.5	7.5

Switch mounting: Band 2-color display switch mounting, AC magnetic field use, off-delay, T1H/V, T8H/V dimensions of projecting section

● SCM-* T2Y$^{H}_{V}$, T3Y$^{H}_{V}$, T8$^{H}_{V}$



● SCM-* T2YD*, T1$^{H}_{V}$



Bore size(mm)	P1				P2	P3	(P)	RD		HD	
	T*YH, T8H T2JH	T*YV, T8V T2JV	T2YD*, T1H	T1V				T*YH/V, T1H/V, T2JH/V, T2YD*	T8H/V	T*YH/V, T1H/V, T2JH/V, T2YD*	T8H/V
ø20	25.4	28.4	30.4	33.4	21.5	14.4	38°	6.5	1.5	5.5	0.5
ø25	27.9	30.9	32.9	35.9	23.9	14.4	34°	7.5	2.5	4.5	0
ø32	31.4	34.4	36.4	39.4	27.6	16.4	30°	8.5	3.5	5.5	0.5
ø40	36	39	41	44	32.1	16.4	26°	10.5	5.5	7.5	2.5
ø50	41.5	44.5	46.5	49.5	37.4	16.4	22°	12	7	10	5
ø63	48.5	51.5	53.5	56.5	44.4	16.4	20°	12	7	10	5
ø80	57	60	62	65	53.0	16.4	16°	19	14	12	7
ø100	67.5	70.5	72.5	75.5	63.5	16.4	16°	18.5	13.5	12.5	7.5