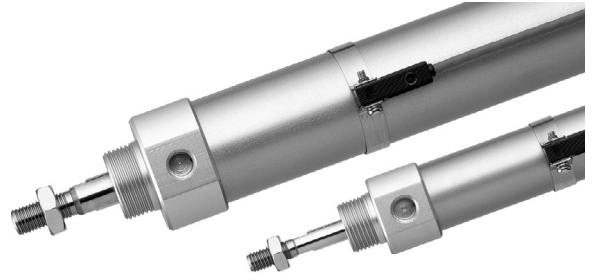


Цилиндр с плавным разгоном и торможением в конце хода

REC

Ø20~40

- Плавный разгон и торможение (менее 0.5 G) независимо от нагрузки, скорости и перепадов давления
- Скорость штока до 500 мм/сек
- Стандартный ход поршня до 1000 мм
- Высокая скорость перемещения нагрузки, при этом цилиндр обеспечивает плавное движение без толчков
- Конструкция цилиндра упрощает пневмосхему и позволяет сэкономить место при монтаже



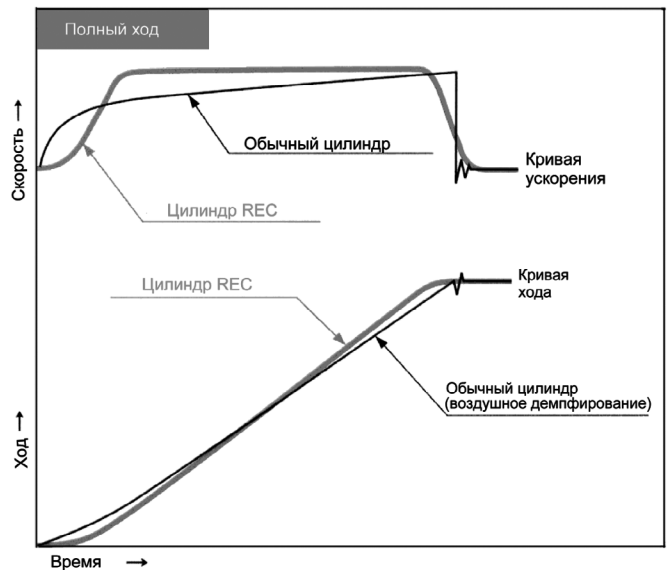
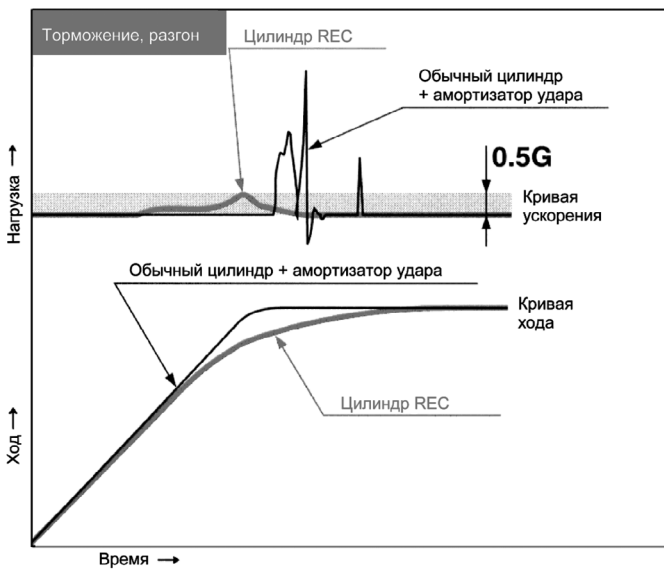
Технические характеристики

Среда	Сжатый воздух
Испытательное давление (МПа)	1.5
Макс. рабочее давление (МПа)	1.0
Мин. рабочее давление (МПа)	0.2
Рабочая температура (°C)	От -10 до +60
Скорость поршня (мм/с)	От 50 до 500
Воздушное демпфирование	есть
Точность резьбы	JIS Класс 2
Допуск по длине хода	+1.4 / 0
Смазка	Не требуется

Применение:

- плавное открывание и закрывание дверей
- плавное и быстрое перемещение хрупких предметов керамики, полупроводниковых, стеклянных изделий, и пр.

Графики, отражающие характеристики цилиндра:



Номер для заказа

REC B 40 - 200

Монтаж	
B	Базовый/прямой
L	Опорные лапы
F	Передний фланец
G	Задний фланец
C	Простая проушина
D	Двойная проушина
U	Передняя поворотная ось
T	Задняя поворотная ось

Ø, мм
20
25
32
40

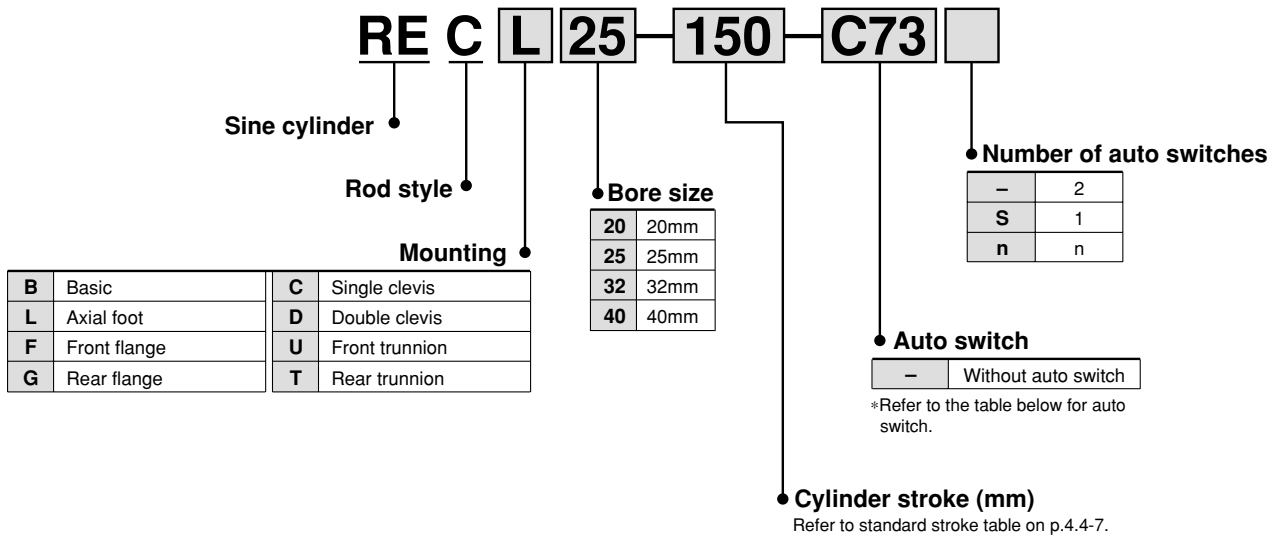
Стандартный ход		
Стандартный ход	Макс. возм. ход	Типоразмер
150 – 700	1500	Цилиндры Ø20, Ø25
150 – 1000	1500	Цилиндры Ø32
200 – 1000	1500	Цилиндры Ø40

Примечание: для заказа цилиндров с нестандартным ходом обращайтесь в SMC

Series REC

ø20, ø25, ø32, ø40

How to Order



Applicable Auto Switches / Refer to p.5.3-2 for further information on auto switch.

Style	Special function	Electrical entry	Indicator	Wiring (Output)	Load voltage		Auto switch model	Lead wire length* (m)				Applicable load		
					DC	AC		0.5 (-)	3 (L)	5 (Z)	- (N)			
Reed switch	—	Grommet	Yes	3 wire (Equiv. to NPN)	—	5V	—	C76	●	●	—	—	IC circuit	—
								C73	●	●	●	—	—	Relay PLC
			No	2 wire	24V	5V, 12V	≤100V	C80	●	●	—	—	IC circuit	PLC
						12V	100V, 200V	B53	●	●	●	—	—	Relay PLC
			Yes	2 wire	24V	12V	≤200V	B64	●	●	—	—	IC circuit	
						12V	—	C73C	●	●	●	●		—
			No	2 wire	24V	5V, 12V	≤24V	C80C	●	●	●	●	IC circuit	—
						12V	—	A33	—	—	—	●	—	PLC
			Yes	2 wire	24V	12V	100V, 200V	A34	—	—	—	●	—	Relay PLC
						12V	100V, 200V	A44	—	—	—	●	—	
Diagnostic indication (2 colour)	Grommet	2 wire	24V	2 wire	24V	5V, 12V	—	B59W	●	●	—	—	—	—
								—	—	—	—	—	—	—
Solid state switch	—	Grommet	Yes	3 wire (NPN)	24V	5V, 12V	—	H7A1	●	●	○	—	IC circuit	Relay PLC
								H7A2	●	●	○	—	—	
								H7B	●	●	○	—	—	
								H7C	●	●	●	●	—	
	Diagnostic indication (2 colour)	Grommet	Yes	3 wire (NPN)	24V	5V, 12V	—	G39	—	—	—	●	IC circuit	
								K39	—	—	—	●	—	
	Water resistant (2 colour)	Grommet	Yes	3 wire (NPN)	24V	5V, 12V	—	H7NW	●	●	○	—	IC circuit	
								H7PW	●	●	○	—	—	
	With timer	Grommet	Yes	2 wire	24V	12V	—	H7BW	●	●	○	—	—	
								H7BA	—	●	○	—	—	
	With diagnostic output (2 colour)	Grommet	Yes	3 wire (NPN)	24V	5V, 12V	—	G5NT	—	●	○	—	IC circuit	
								H7NF	●	●	○	—	—	
	Latching with diagnostic output (2 colour)	Grommet	Yes	4 wire (NPN)	24V	5V, 12V	—	H7LF	●	●	○	—	—	
								—	—	—	—	—	—	

*Lead wire length 0.5m..... — (Example) C80C 0.5m..... Z (Example) C80CZ
 3m..... L C80CL — N C80CN

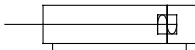
*Solid state switches marked with "○" is manufactured upon receipt of order.

*D-A3□, A44, G39 : Not indicate the symbol "N" for lead wire length.

Standard Specifications



Symbol



Action	Double acting single rod
Fluid	Air
Proof pressure	1.5MPa
Max. operating pressure	1.0MPa
Min. operating pressure	0.2MPa
Ambient and fluid temperature	-10 to 60°C
Piston speed	50 to 500mm/s
Cushion	Air cushion
Lubrication	Not required (Non-lube)
Thread tolerance	JIS class 2
Stroke length tolerance	+1.4 0

Standard Stroke

Bore size (mm)	Standard stroke (mm)	Max.* manufacturable stroke (mm)
20	150 to 700	1500
25		
32	150 to 1000	
40	200 to 1000	

*Please consult SMC representative for availability of stroke other than standard.

Effective Cushioning Stroke

Bore size (mm)	Effective cushioning stroke (mm)
20	45
25	45
32	50
40	60

Cylinder Mounting Bracket/Part No.

Bore size (mm)	20	25	32	40
Axial foot *	CM-L020B	CM-L032B	CM-L040B	
Flange	CM-F020B	CM-F032B	CM-F040B	
Single clevis	CM-C020B	CM-C032B	CM-C040B	
Double clevis (with pin) **	CM-D020B	CM-D032B	CM-D040B	
Trunnion (with nut)	CM-T020B	CM-T032B	CM-T040B	

*When ordering foot brackets for one cylinder, indicate quantity as 2 pcs.

**Clevis pin and retaining ring (cotter pin in case of ø40) are enclosed.

Accessories

Part numbers of single knuckle joint, double knuckle joint, double clevis pin, double knuckle joint pin, rod end nut, mounting nut and trunnion nut are the same as series CM2. Refer to p.1.4-19 and 1.4-20.

Weight

Bore size (mm)		20	25	32	40
Basic weight	Basic	0.32	0.47	0.74	1.25
	Axial foot	0.47	0.63	0.90	1.52
	Flange	0.38	0.56	0.83	1.37
	Single clevis	0.36	0.51	0.78	1.34
	Double clevis	0.37	0.53	0.79	1.38
	Trunnion	0.36	0.54	0.81	1.35
Additional weight per 50 stroke		0.05	0.07	0.09	0.13
Accessories	Clevis bracket (with pin)	0.07	0.07	0.14	0.14
	Single knuckle joint	0.06	0.06	0.06	0.23
	Double knuckle joint (with pin)	0.07	0.07	0.07	0.20

*Calculation example: **REC32-200**

Basic weight 0.90 (Foot style ø 32)

Additional Weight 0.09/50 stroke

Cylinder stroke..... 200 stroke

0.90+0.09 X 200/50=1.26kg

Auto Switch Mounting Bracket (including band and screw)

Applicable auto switch		Bore size (mm)			
		20	25	32	40
Reed	D-C73, D-C76, D-C80 D-C73C, D-C80C	BMA2-020	BMA2-025	BMA2-032	BMA2-040
Solid state	D-H7B, D-H7C, D-H7A1, D-H7A2 D-H7NW, D-H7PW, D-H7BW D-H7LF, D-H7NF, D-F7BAL				
Reed	D-B53, D-B54, D-B64, D-B59W	BA-01	BA-02	BA-32	BA-04
Solid state	D-G5NTL				



*Mounting screw set made of stainless steel

Use the following mounting screw set made of stainless steel according to operating environment.

(Switch mounting band is not included. Therefore, please order separately.)

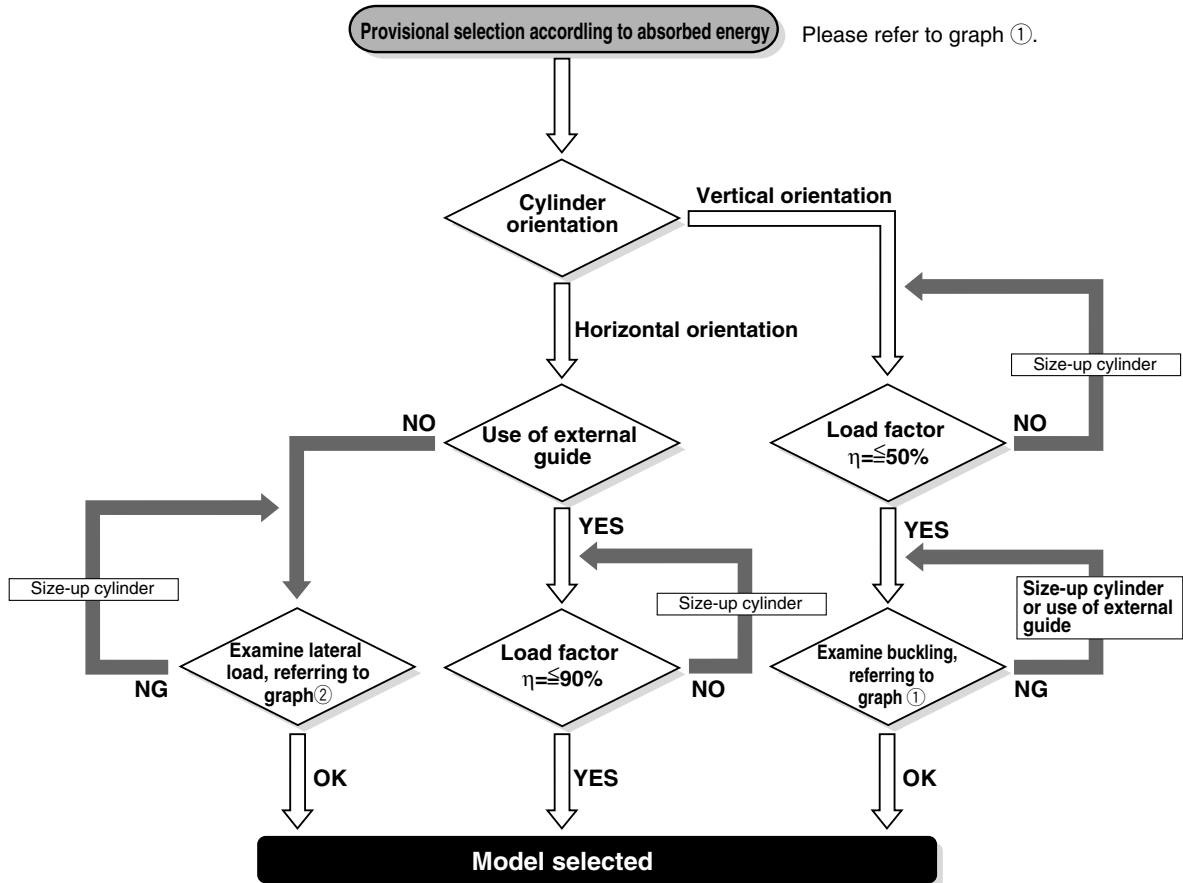
BBA3: For D-B5/B6/G5/K5

BBA4: For D-C7/C8/H7

The above screw made of stainless steel is used for D-H7BAL switch when cylinder mounting is shipped. BBA4 is attached when switch is shipped.

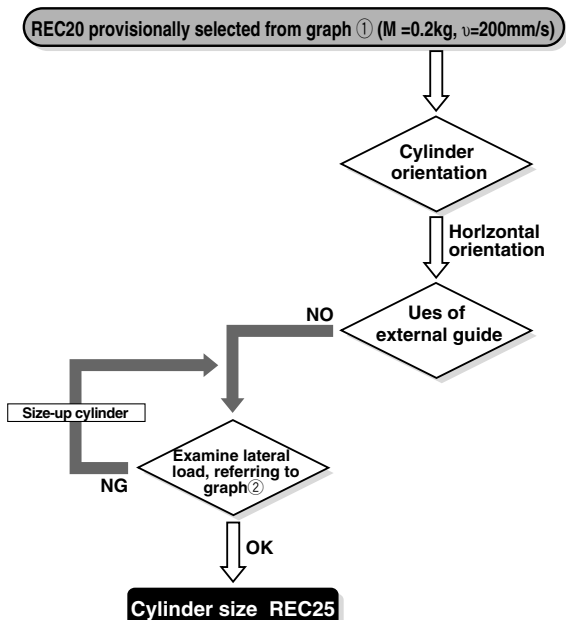
How to Select Model

Selection Procedures



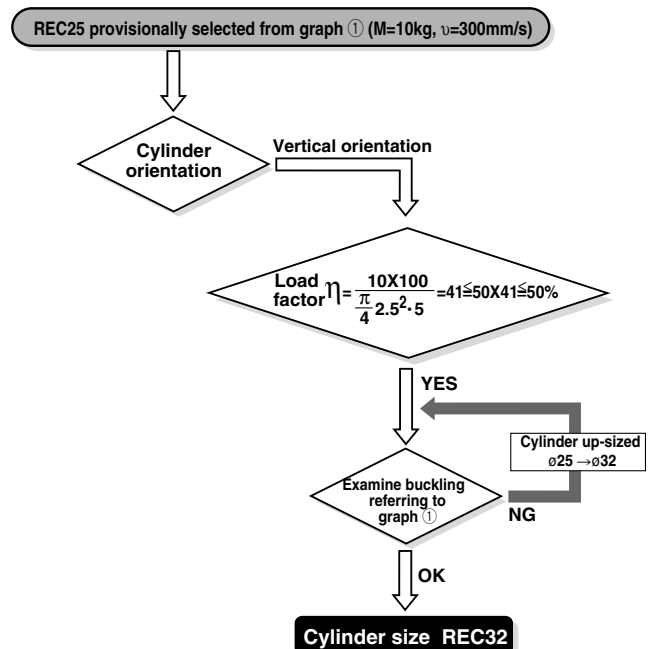
Selection Example 1

Actuating orientation: Horizontal transfer of work (without external guide)
 Max. speed: $v=200\text{mm/s}$
 Supply pressure: $P=0.5\text{MPa}$
 Load weight: $M=0.2\text{kg} \rightarrow 2\text{N}$
 Cylinder stroke: 300mm

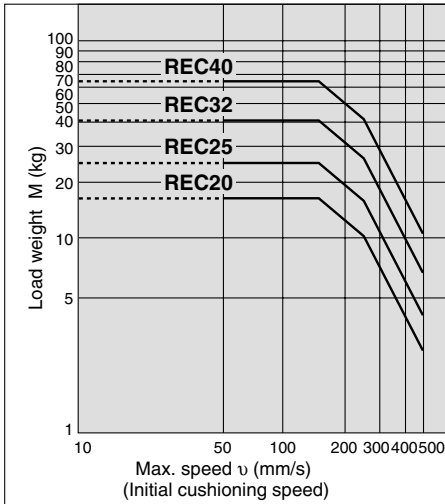


Selection Example 2

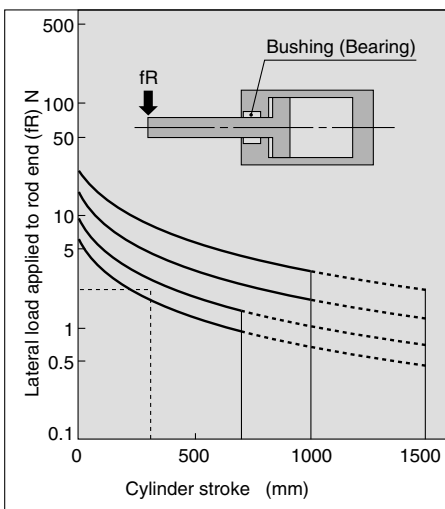
Actuating orientation: Vertical transfer of work (Rear flange)
 Max. speed: $v=300\text{mm/s}$
 Supply pressure: $P=0.5\text{MPa}$
 Load weight: $M=10\text{kg}$
 Cylinder stroke: 500mm



Graph ① Absorbed energy curve



Graph ② Applicable max. stroke against lateral load*



*The above curve in the graph refers to P=0.5MPa of supply pressure.
 If supply pressure is other than P=0.5MPa, please figure out a max. stroke, using proportional calculation.
 Example) If P=0.6MPa, a max. stroke = the respective stroke in the graph $\times \frac{0.6}{0.5}$

Figure ①

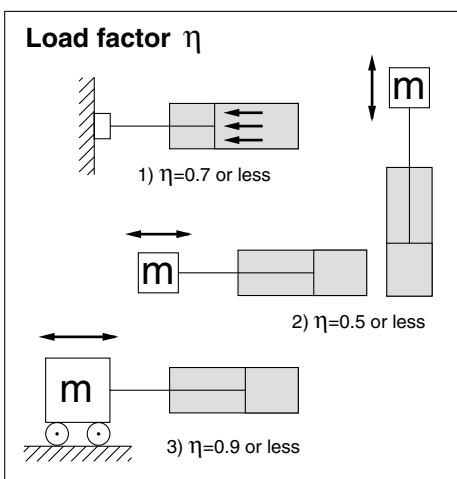


Table ① Relation between cylinder size and a max. stroke

(cm)

Mounting bracket			Symbol	Operating pressure MPa	Applicable max. stroke according to buckling strength			
Mounting bracket symbol and figure					REC			
Foot: L	Front flange: F	Rear flange: G			ø20	ø25	ø32	ø40
 Foot: L	 Front flange: F	 Rear flange: G	L	0.3	39	50	56	61
				0.5	30	38	43	47
			F	0.7	24	31	36	39
				G	0.3	11	17	19
			0.5		7	11	13	13
			0.7		4	7	9	9
 Clevis: C, D	 Front trunnion: U	 Rear trunnion: T	C	0.3	32	42	48	52
				0.5	22	30	35	37
			D	0.7	17	24	27	29
				U	0.3	82	103	116
			0.5		62	79	89	97
			0.7		52	66	75	81
T	0.3	33	43	49	53			
	0.5	23	31	36	39			
	0.7	18	25	29	31			
 Foot: L	 Front flange: F	 Rear flange: G	L	0.3	118	148	167	182
				0.5	90	114	128	140
			F	0.7	76	95	108	117
				G	0.3	51	66	75
			0.5		37	49	55	60
			0.7		30	39	45	49
 Foot: L	 Front flange: F	 Rear flange: G	L	0.3	168	211	237	259
				0.5	129	162	183	199
			F	0.7	109	136	154	168
				G	0.3	76	97	110
			0.5		56	73	83	90
			0.7		46	60	68	74

MK/MK2

RS

RE

REC

C..X

MTS

C..S

MQ

RHC

CC

- 1) In the case where cylinder is used for static action: Load factor $\eta=0.7$ or less
- 2) In the case where cylinder is used for dynamic action: Load factor $\eta=0.5$ or less
- 3) In the case where guide is used in horizontal orientation: Load factor $\eta=0.9$ or less

Series REC

SMC Clean Series

10-REC **Mounting** **Bore size** **Stroke**

• SMC Clean Series

10	Relieving port style
11	Vacuum suction style

This model can be used in class 100 clean room, with special design of double layer seal structure on rod and relieving port, exhausting directly outside.



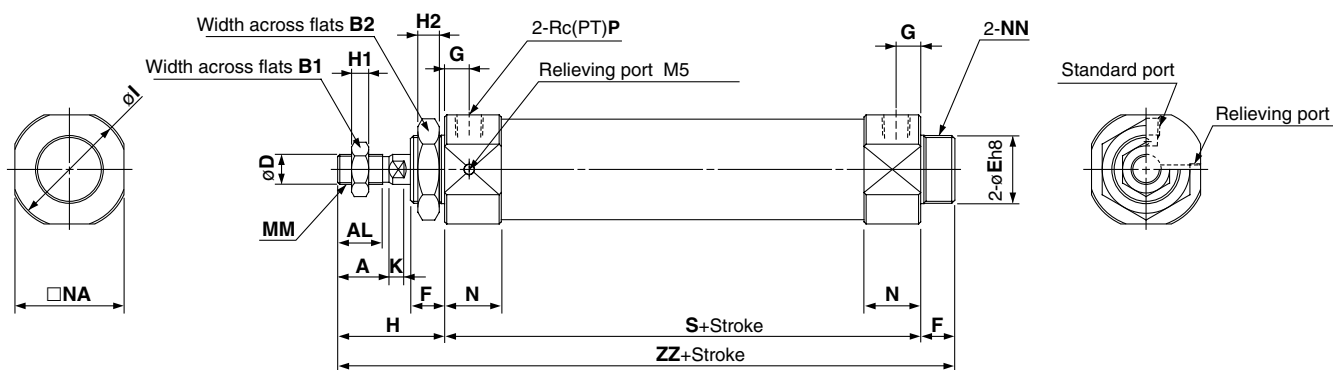
Specifications

Action	Double acting single rod
Bore size	ø20, ø25, ø32, ø40
Max. operating pressure	1.0MPa
Min. operating pressure	0.2MPa
Cushion	Air cushion
Piping	Screw-in
Relieving port size	M5
Piston speed	50 to 500mm/s
Mounting	Basic, Axial foot, Front flange, Rear flange

*Auto switch attachable

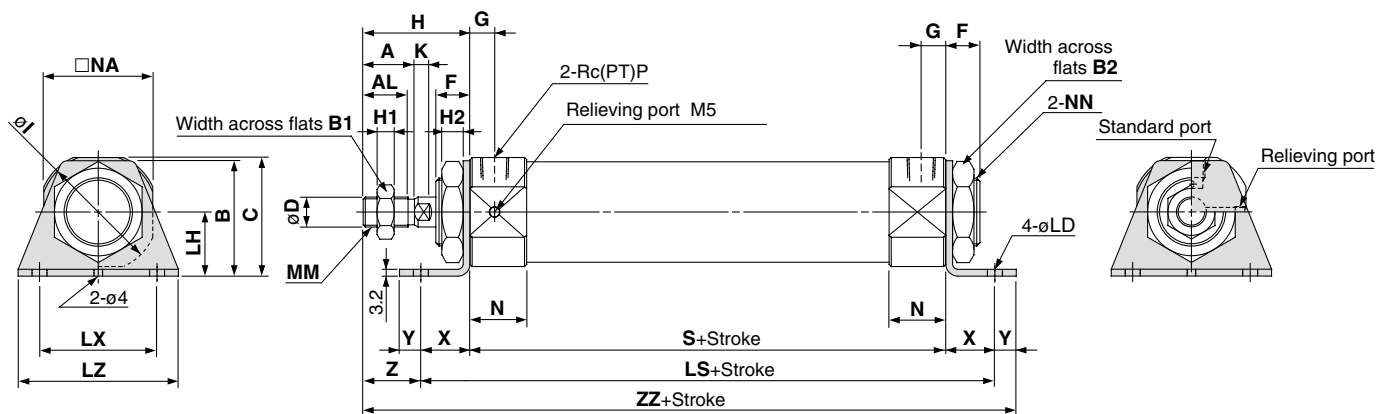
Dimensions

REC B/Basic



Bore size	Stroke range	A	AL	B1	B2	D	E	F	G	H	H1	H2	I	K	MM	N	NA	NN	P	S	ZZ
20	150 to 700	18	15.5	13	26	8	20 ⁰ _{-0.033}	13	10	41	5	8	33.5	5	M8	20	30	M20 X 1.5	1/8	146	200
25	150 to 700	22	19.5	17	32	10	26 ⁰ _{-0.033}	13	10	45	6	8	37.5	5.5	M10 X 1.25	20	34.5	M26 X 1.5	1/8	146	204
32	150 to 1000	22	19.5	17	32	12	26 ⁰ _{-0.033}	13	11	45	6	8	46.5	5.5	M10 X 1.25	22	42.5	M26 X 1.5	1/8	159	217
40	200 to 1000	24	21	22	41	14	32 ⁰ _{-0.039}	16	12.5	50	8	10	56	7	M14 X 1.5	26.5	51	M32 X 2	1/4	181	247

REC L/Axial foot



Bore size	Stroke range	A	AL	B	B1	B2	C	D	F	G	H	H1	H2	I	K	LD	LH	LS	LX	LZ	MM	N	NA
20	150 to 700	18	15.5	40	13	26	40	8	13	10	41	5	8	33.5	5	6.8	25	186	40	55	M8	20	30
25	150 to 700	22	19.5	47	17	32	45.5	10	13	10	45	6	8	37.5	5.5	6.8	28	186	40	55	M10 X 1.25	20	34.5
32	150 to 1000	22	19.5	47	17	32	49.5	12	13	11	45	6	8	46.5	5.5	6.8	28	199	40	55	M10 X 1.25	22	42.5
40	200 to 1000	24	21	54	22	41	55.5	14	16	12.5	50	8	10	56.2	7	7	30	227	55	75	M14 X 1.5	26.5	51

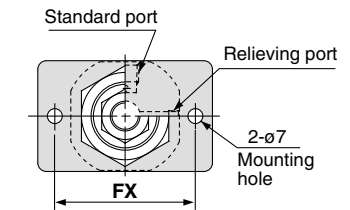
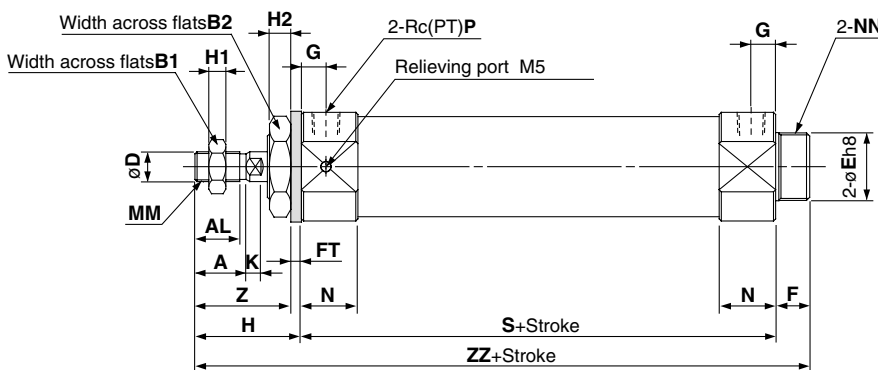
Bore size	Stroke range	NN	P	S	X	Y	Z	ZZ
20	150 to 700	M20 X 1.5	1/8	146	20	8	21	215
25	150 to 700	M26 X 1.5	1/8	146	20	8	25	219
32	150 to 1000	M26 X 1.5	1/8	159	20	8	25	232
40	200 to 1000	M32 X 2	1/4	181	23	10	27	264

REC F/Front flange

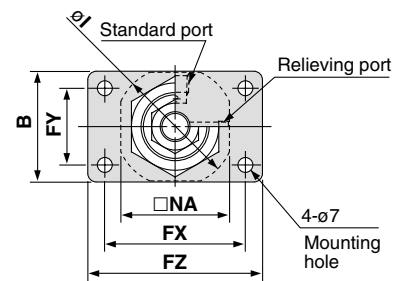
(mm)

Bore size	Stroke range	A	AL	B	B1	B2	D	E	F	FT	FX	FY	FZ	G	H
20	150 to 700	18	15.5	34	13	26	8	20 ⁰ _{-0.033}	13	4	60	—	75	10	41
25	150 to 700	22	19.5	40	17	32	10	26 ⁰ _{-0.033}	13	4	60	—	75	10	45
32	150 to 1000	22	19.5	40	17	32	12	26 ⁰ _{-0.033}	13	4	60	—	75	11	45
40	200 to 1000	24	21	52	22	41	14	32 ⁰ _{-0.039}	16	5	66	36	82	12.5	50

Bore size	Stroke range	H1	H2	I	K	MM	N	NA	NN	P	S	Z	ZZ
20	150 to 700	5	8	33.5	5	M8	20	30	M20 X 1.5	1/8	146	37	200
25	150 to 700	6	8	37.5	5.5	M10 X 1.25	20	34.5	M26 X 1.5	1/8	146	41	204
32	150 to 1000	6	8	46.5	5.5	M10 X 1.25	22	42.5	M26 X 1.5	1/8	159	41	217
40	200 to 1000	8	10	56.2	7	M14 X 1.5	26.5	51	M32 X 2	1/4	181	45	247



ø20, ø25, ø32



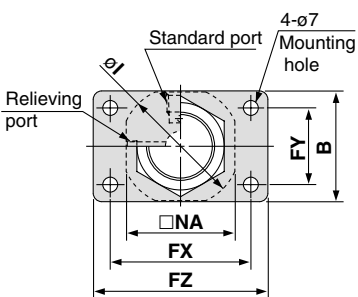
ø40

REC G/Rear flange

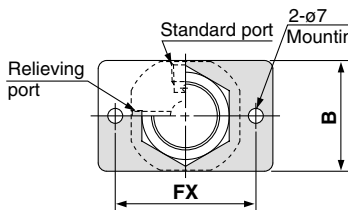
(mm)

Bore size	Stroke range	A	AL	B	B1	B2	D	E	F	FT	FX	FY	FZ	G	H
20	150 to 700	18	15.5	34	13	26	8	20 ⁰ _{-0.033}	13	4	60	—	75	10	41
25	150 to 700	22	19.5	40	17	32	10	26 ⁰ _{-0.033}	13	4	60	—	75	10	45
32	150 to 1000	22	19.5	40	17	32	12	26 ⁰ _{-0.033}	13	4	60	—	75	11	45
40	200 to 1000	24	21	52	22	41	14	32 ⁰ _{-0.039}	16	5	66	36	82	12.5	50

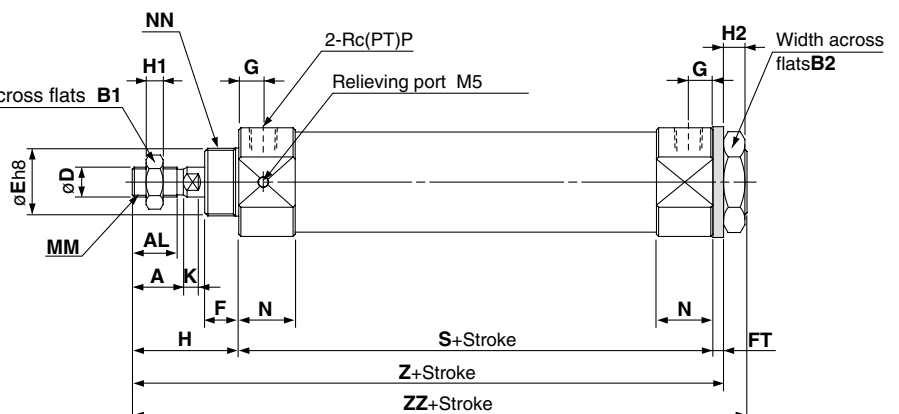
Bore size	Stroke range	H1	H2	I	K	MM	N	NA	NN	P	S	Z	ZZ
20	150 to 700	5	8	33.5	5	M8	20	30	M20 X 1.5	1/8	146	191	200
25	150 to 700	6	8	37.5	5.5	M10 X 1.25	20	34.5	M26 X 1.5	1/8	146	195	204
32	150 to 1000	6	8	46.5	5.5	M10 X 1.25	22	42.5	M26 X 1.5	1/8	159	208	217
40	200 to 1000	8	10	56.2	7	M14 X 1.5	26.5	51	M32 X 2	1/4	181	236	247



ø40



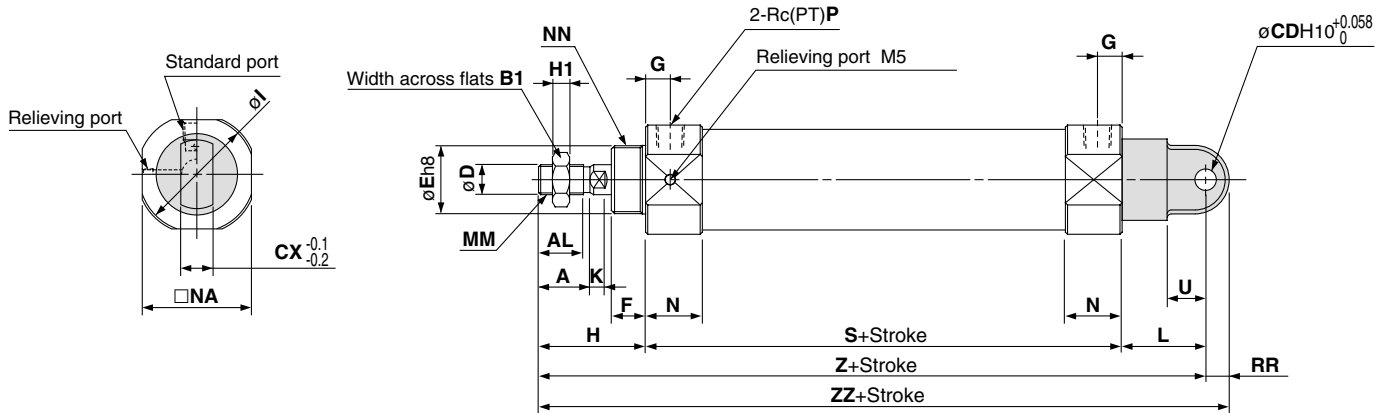
ø20, ø25, ø32



Series REC

Dimensions

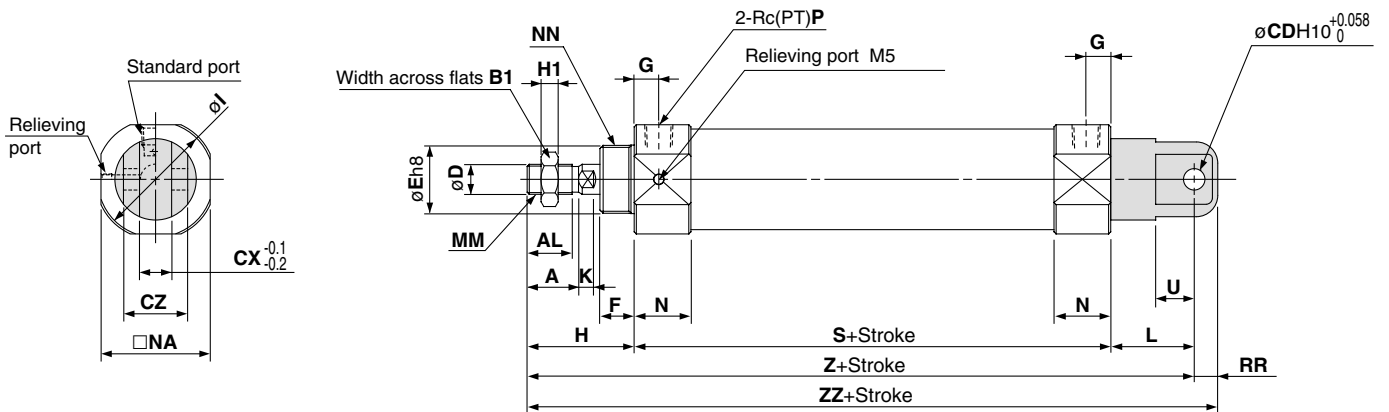
REC C/Single clevis



Bore size	Stroke range	A	AL	B1	CD	CX	D	E	F	G	H	H1	I	K	L	MM	N	NA
20	150 to 700	18	15.5	13	9	10	8	$20_{-0.033}^0$	13	10	41	5	33.5	5	30	M8	20	30
25	150 to 700	22	19.5	17	9	10	10	$26_{-0.033}^0$	13	10	45	6	37.5	5.5	30	M10 X 1.25	20	34.5
32	150 to 1000	22	19.5	17	9	10	12	$26_{-0.033}^0$	13	11	45	6	46.5	5.5	30	M10 X 1.25	22	42.5
40	200 to 1000	24	21	22	10	15	14	$32_{-0.039}^0$	16	12.5	50	8	56.2	7	39	M14 X 1.5	26.5	51

Bore size	Stroke range	NN	P	RR	S	U	Z	ZZ
20	150 to 700	M20 X 1.5	$\frac{1}{8}$	9	146	14	217	226
25	150 to 700	M26 X 1.5	$\frac{1}{8}$	9	146	14	221	230
32	150 to 1000	M26 X 1.5	$\frac{1}{8}$	9	159	14	234	243
40	200 to 1000	M32 X 2	$\frac{1}{4}$	11	181	18	270	281

REC D/Double clevis



Bore size	Stroke range	A	AL	B1	CD	CX	CZ	D	E	F	G	H	H1	I	K	L	MM	N
20	150 to 700	18	15.5	13	9	10	19	8	$20_{-0.033}^0$	13	10	41	5	33.5	5	30	M8	20
25	150 to 700	22	19.5	17	9	10	19	10	$26_{-0.033}^0$	13	10	45	6	37.5	5.5	30	M10 X 1.25	20
32	150 to 1000	22	19.5	17	9	10	19	12	$26_{-0.033}^0$	13	11	45	6	46.5	5.5	30	M10 X 1.25	22
40	200 to 1000	24	21	22	10	15	30	14	$32_{-0.039}^0$	16	12.5	50	8	56.2	7	39	M14 X 1.5	26.5

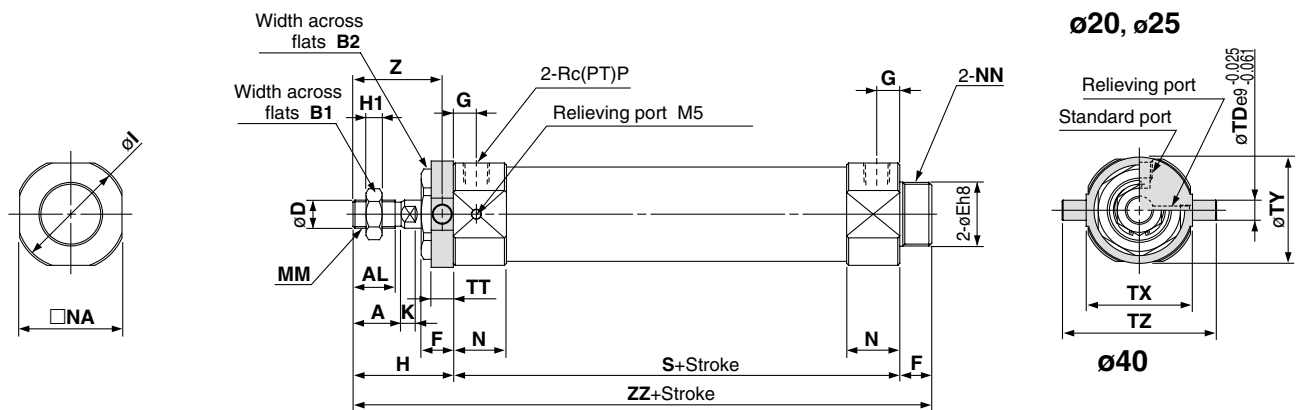
Bore size	Stroke range	NA	NN	P	RR	S	U	Z	ZZ
20	150 to 700	30	M20 X 1.5	$\frac{1}{8}$	9	146	14	217	226
25	150 to 700	34.5	M26 X 1.5	$\frac{1}{8}$	9	146	14	221	230
32	150 to 1000	42.5	M26 X 1.5	$\frac{1}{8}$	9	159	14	234	243
40	200 to 1000	51	M32 X 2	$\frac{1}{4}$	11	181	18	270	281

REC U/Front trunnion

(mm)

Bore size	Stroke range	A	AL	B1	B2	D	E	F	G	H	H1	I	K	MM
20	150 to 700	18	15.5	13	26	8	20 ⁰ _{-0.033}	13	10	41	5	33.5	5	M8
25	150 to 700	22	19.5	17	32	10	26 ⁰ _{-0.033}	13	10	45	6	37.5	5.5	M10 X 1.25
32	150 to 1000	22	19.5	17	32	12	26 ⁰ _{-0.033}	13	11	45	6	46.5	5.5	M10 X 1.25
40	200 to 1000	24	21	22	41	14	32 ⁰ _{-0.039}	16	12.5	50	8	56.2	7	M14 X 1.5

Bore size	Stroke range	N	NA	NN	P	S	TD	TT	TX	TY	TZ	Z	ZZ
20	150 to 700	20	30	M20 X 1.5	1/8	146	8	10	32	32	52	36	200
25	150 to 700	20	34.5	M26 X 1.5	1/8	146	9	10	40	40	60	40	204
32	150 to 1000	22	42.5	M26 X 1.5	1/8	159	9	10	40	40	60	40	217
40	200 to 1000	26.5	51	M32 X 2	1/4	181	10	11	53	53	77	44.5	247



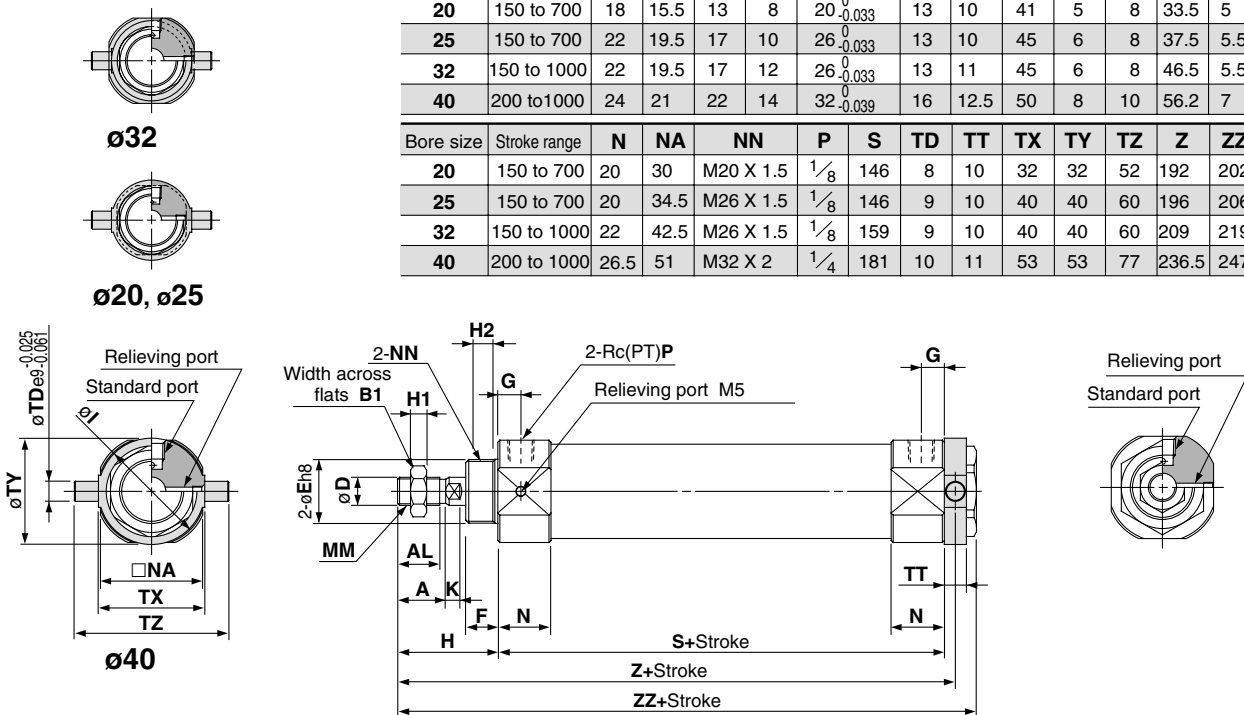
- MK/MK2
- RS
- RE
- REC**
- C..X
- MTS
- C..S
- MQ
- RHC
- CC

REC T/Rear trunnion

(mm)

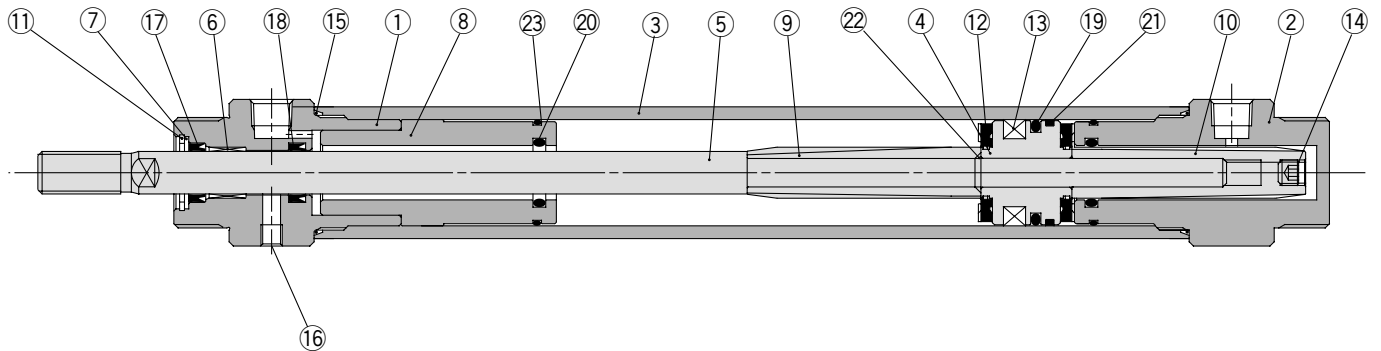
Bore size	Stroke range	A	AL	B1	D	E	F	G	H	H1	H2	I	K	MM
20	150 to 700	18	15.5	13	8	20 ⁰ _{-0.033}	13	10	41	5	8	33.5	5	M8
25	150 to 700	22	19.5	17	10	26 ⁰ _{-0.033}	13	10	45	6	8	37.5	5.5	M10 X 1.25
32	150 to 1000	22	19.5	17	12	26 ⁰ _{-0.033}	13	11	45	6	8	46.5	5.5	M10 X 1.25
40	200 to 1000	24	21	22	14	32 ⁰ _{-0.039}	16	12.5	50	8	10	56.2	7	M14 X 1.5

Bore size	Stroke range	N	NA	NN	P	S	TD	TT	TX	TY	TZ	Z	ZZ
20	150 to 700	20	30	M20 X 1.5	1/8	146	8	10	32	32	52	192	202
25	150 to 700	20	34.5	M26 X 1.5	1/8	146	9	10	40	40	60	196	206
32	150 to 1000	22	42.5	M26 X 1.5	1/8	159	9	10	40	40	60	209	219
40	200 to 1000	26.5	51	M32 X 2	1/4	181	10	11	53	53	77	236.5	247



Series REC

Construction



Component Parts

No.	Description	Material	Qty	Remarks
①	Rod cover	Aluminum alloy	1	White anodized
②	Head cover	Aluminum alloy	1	White anodized
③	Cylinder tube	Aluminum alloy	1	Hard anodized
④	Piston	Aluminum alloy	1	Chromated
⑤	Piston rod	Stainless steel	1	Hard chromate plated
⑥	Bushing	Sintered oil-impregnated bearing	1	
⑦	Seal holder	Rolled steel	1	
⑧	Cushion seal holder	Aluminum alloy	1	Chromated

Component Parts

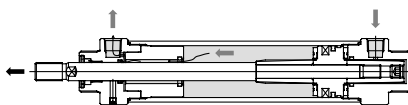
No.	Description	Material	Qty	Remarks
⑨	Cushion spear A	Brass	1	Electroless nickel plated
⑩	Cushion spear B	Brass	1	Electroless nickel plated
⑪	Retaining ring	Carbon tooling steel	1	Nickel plated
⑫	Bumper	Urethane	2	
⑬	Magnet	Resin	1	
⑭	Hexagon socket head screw	Carbon steel	1	Zinc chromated
⑮	Cylinder tube gasket	NBR	2	
⑯	Hexagon socket head screw	Carbon steel	1	Nickel plated

Replacement Parts (except No. 22 Piston gasket)

No.	Description	Material	Qty
⑰	Rod seal A	NBR	1
⑱	Rod seal B	NBR	1
⑲	Piston seal	NBR	1
⑳	Cushion seal	NBR	2
㉑	Wear ring	Resin	1
㉒	Piston gasket	NBR	1
㉓	Holder gasket	NBR	2

Operation Principles

1. In-rush



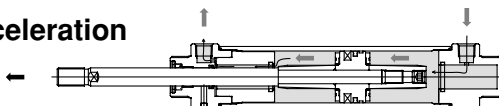
Actuating air passes from cylinder head and enters the right chamber of the cylinder from space between cushion seal and U-shaped groove on the outer surface of cushion spear. Air in the left chamber of the cylinder passes through space between cushion seal and piston rod, and is released to the cylinder port on rod side.

2. In-rush / acceleration



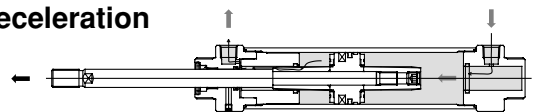
Differential pressure (theoretical thrust) generated on the left and right sides of piston becomes larger than starting resistance, and piston starts to actuate. With the actuation, U-shaped groove on the cushion spear outer surface gradually becomes deeper, air flow necessary for piston enters the right chamber of the cylinder, and piston accelerates. This acceleration process can be achieved smoothly (as a SINE function) by using a cushion spear on which a U-shaped groove is machined.

3. Acceleration



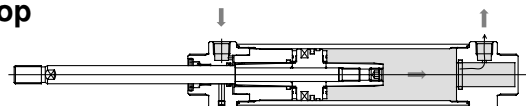
When piston starts to actuate, air can go in and out freely because cushion spear on head side is released from cushion seal. With this actuation, piston speed accelerates (or maintains the same speed).

4. Deceleration



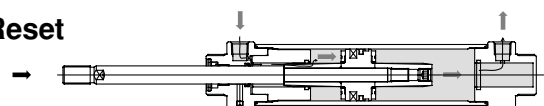
When cushion spear on rod side meets cushion packing, air in cushion chamber on rod side flows through space between cushion spear groove and cushion seal. Since the space is reduced as a SINE function, the cylinder rod decelerates smoothly.

5. Stop



The piston stops at the stroke end on rod side with smooth cushioning. Air flow which is switched by solenoid valve is reversed from the one indicated in the above "1 In-rush".

6. Reset



Air enters left chamber of piston from cylinder port on rod side through space between cushion packing and U-shaped groove on outer surface of cushion seal. Also, air in right chamber of piston is exhausted from cylinder port. As U-shaped groove on the cushion spear outer surface gradually becomes deeper, the cylinder accelerates.

Series REC Auto Switch Specifications

Refer to p.5.3-2 for the detailed specifications of auto switch.



Reed Switch Specifications

PLC: Programmable Logic Controller

Auto switch model	Supply voltage	Max. load current and load current range	Indicator light (Light at ON) ◎2 colour indication	Contact protection circuit	Applications
D-C73	24V DC	5 to 40	●	—	Relay, PLC
	100V AC	5 to 20			IC circuit
D-C76	4 to 8V DC	20	●	—	IC circuit, Relay, PLC
D-C80	24V or less ^{AC} _{DC}	50	—	—	PLC
	48V ^{AC} _{DC}	40			IC circuit, Relay, PLC
	100V ^{AC} _{DC}	20			
D-C73C	24V DC	5 to 40	●	—	PLC
D-C80C	24V or less ^{AC} _{DC}	50	—	—	IC circuit, Relay, PLC
D-B53,A33	24V DC	5 to 50	●	●	PLC
D-B54 D-A34 D-A44	24V DC	5 to 50			Relay, PLC
	100V AC	5 to 25			
D-B64	200V AC	5 to 12.5	—	—	Relay, PLC
	24V or less ^{AC} _{DC}	50	—	—	
	100V AC	25			
200V AC	12.5				
D-B59W	24V DC	5 to 40	◎2 colour**	●	

* Use contact protection box when using "D-C7" or "D-C8" type in the following conditions.

- Induction load
- Lead wire length greater than 5m (Standard model: 0.5m)
- 100VAC

**In case of "D-B59W", red light illuminates at sensitive position and green illuminates at most sensitive position.

MK/MK2
RS
RE
REC
C..X
MTS
C..S
MQ
RHC
CC

Solid State Switch Specifications (Load voltage: ≤ 28V DC)

Auto switch model	Wiring output	Max. load current and load current range	Internal voltage drop/Load current at 10mA	Indicator light (Light at ON) ◎ 2 color	Function	Applications
D-H7B	2 wire	40mA or less	3V or less	●	—	24V DC relay, PLC
D-H7C					—	
D-H7NW	3 wire NPN	80mA or less	0.8V or less	◎	—	Relay, IC circuit, PLC
D-H7PW	3 wire PNP				—	
D-H7BW	2 wire	40mA or less	4V or less	◎	—	24V DC relay, PLC
D-H7BAL					Water resistant	
D-H7NF	4 wire NPN	40mA or less	—	◎	With diagnostic output	Relay, IC circuit, PLC
D-H7LF					Latching with diagnostic output	24V DC relay, PLC
D-H7A1	3 wire NPN	80mA or less	0.8V or less	●	—	Relay, IC circuit, PLC
D-H7A2	3 wire PNP				—	
D-G39	3 wire NPN	40mA or less	3V or less	●	—	24V DC relay, PLC
D-K39	2 wire				—	
D-G5NTL	3 wire NPN	80mA or less	0.8V or less	●	Built-in OFF delay timer	PLC

*Leakage current of 2 wire type at OFF: 1mA or less

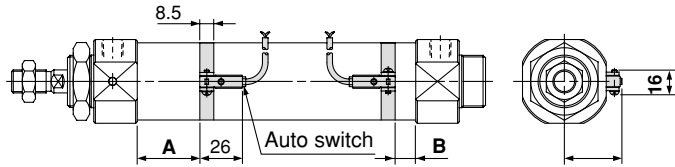
Under Oily Atmospheres

Using in coolant, washing solvent or various oils have an adverse effect on auto switches. Contact SMC if used under above conditions.

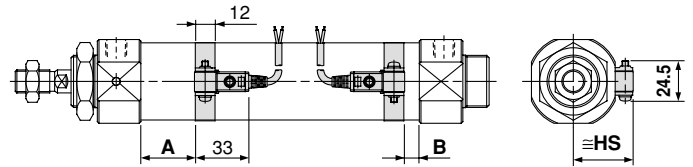
Series REC

Auto Switch Setting Position/Mounting Height

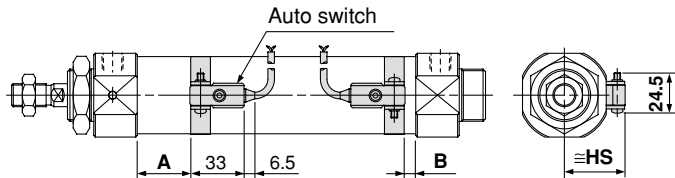
D-C7/C8



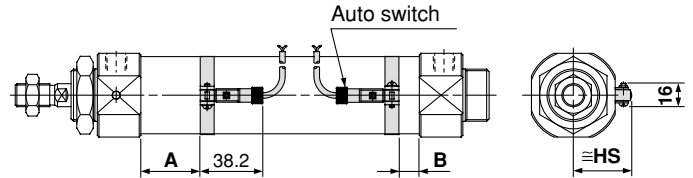
D-G5NTL



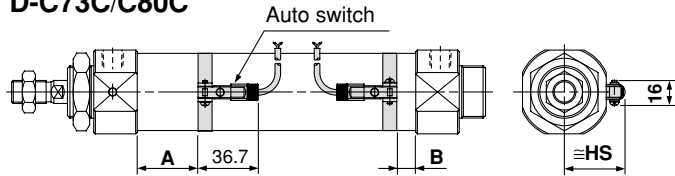
D-B5/B6/B59W



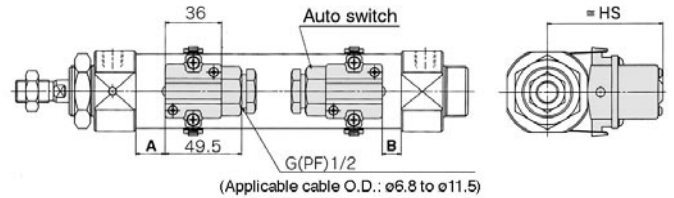
D-H7C



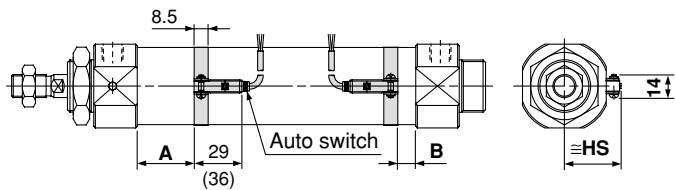
D-C73C/C80C



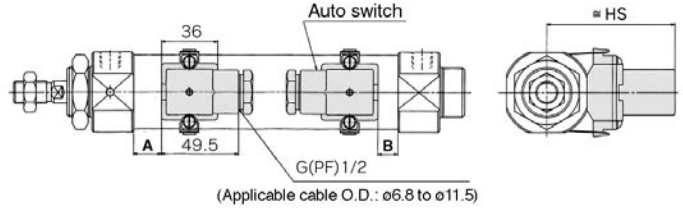
D-A3/G3/K3



D-H7□/H7□W/H7□F/H7BAL



D-A4



*(): In case of D-H7LF

Auto Switch Setting Position

(mm)

Bore size (mm)	D-C7 D-C8		D-B5 D-B6		D-H7□ D-H7C		D-G5NTL		D-H7□W D-H7□F D-H7BAL		D-B59W		D-G39 D-K39 D-A33, A34 D-A44	
	A	B	A	B	A	B	A	B	A	B	A	B	A	B
	20	56.0	31.5	50.0	25.5	55.0	30.5	51.5	27.0	53.5	29.0	53.0	28.5	49.5
25	56.0	31.5	50.0	25.5	55.0	30.5	51.5	27.0	53.5	29.0	53.0	28.5	49.5	25.0
32	59.5	36.5	53.5	30.5	58.0	35.5	55.0	32.5	57.0	34.0	56.5	33.5	53.0	30.0
40	70.0	39.5	64.0	33.5	69.0	38.5	65.5	35.5	67.5	37.0	67.0	36.5	63.5	33.0

Auto Switch Mounting Height

(mm)

Bore size (mm)	D-C7 D-C8 D-H7 D-H7□W D-H7□F D-H7BAL	D-B5 D-B6 D-B59W D-G5NTL D-H7C	D-C73C D-C80C	D-G39 D-K39 D-A33 D-A34	D-A44
	HS	HS	HS	HS	HS
20	24.5	27.5	27	62	69.5
25	27	30	29.5	64.5	72
32	30.5	33.5	33	68	75.5
40	35	38	37.5	72.5	80.0