

ISO Cylinder

C85 Series

C85 (ISO Standard 6432) Series: $\varnothing 8$, $\varnothing 10$, $\varnothing 12$, $\varnothing 16$, $\varnothing 20$, $\varnothing 25$

C75 Series: $\varnothing 32$, $\varnothing 40$

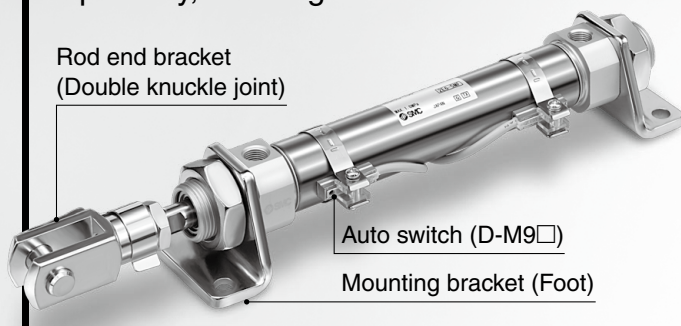
Air Cylinder

C75 Series

RoHS

Part numbers for actuators with mounting brackets, rod end brackets, and auto switches are now available.

As it is no longer necessary to order the bracket and the applicable cylinder separately, ordering time can be reduced.

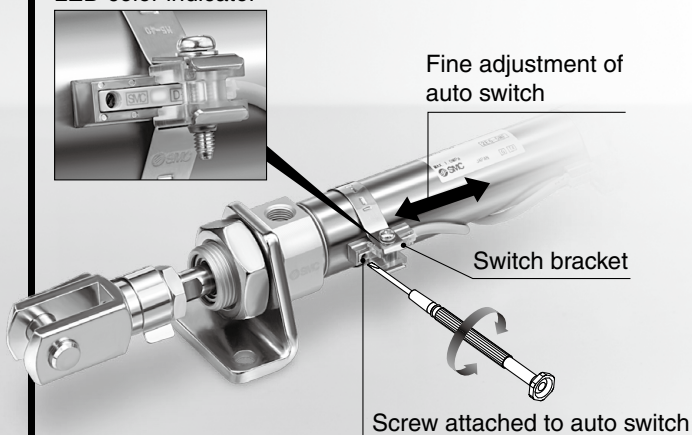


Easy fine adjustment of auto switch position

Fine adjustment of the auto switch position is possible by simply loosening the screw attached to the auto switch.

Transparent switch bracket improves visibility of indicator LED.

LED color indicator



Made to Order

Change of rod end shape: -XA0 to 30

Heat-resistant cylinder (-10 to 150°C): -XB6

Made of stainless steel: -XC6□, etc. have been added.



C85

C85W

C85-S/T

C85K

C85K-S/T

C85R

C75

C75W

C75-S/T

C75K

C75K-S/T

C75R

CP96

CP96K

C96

C96K

C96Y

C55

Auto Switch

Made to Order

Related Products

Part numbers for actuators with mounting brackets, rod end brackets, and auto switches are now available.

Not necessary to order a bracket for the applicable cylinder separately

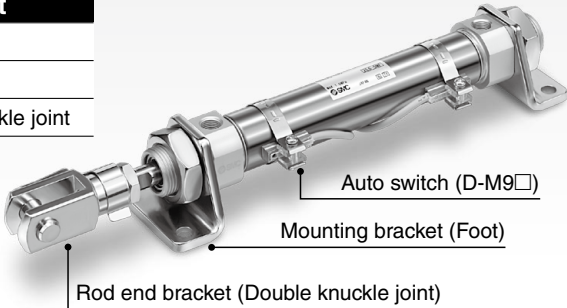
Example) **CD85N20-40CJ L W -B- M9BW**

Mounting bracket	
Nil	None
L	Single foot
M	Double foot
G	Flange
U	Trunnion
N	Clevis

Rod end bracket	
Nil	None
V	Rod end
W*1	Double knuckle joint

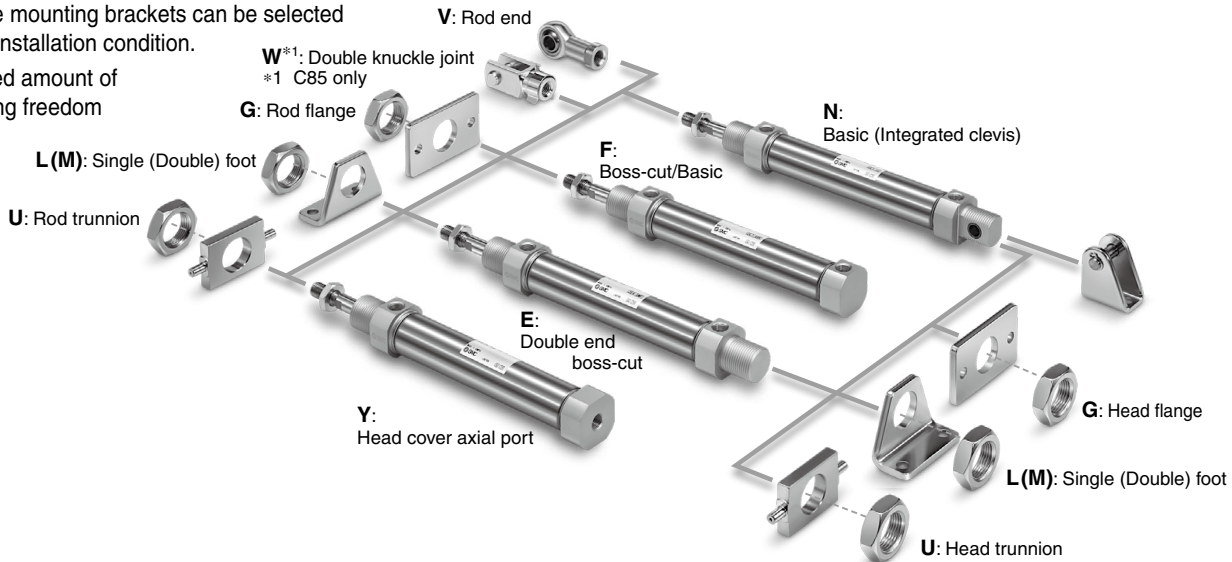
*1 C85 only

Auto switch
Solid state auto switch D-M9□W
Reed auto switch D-A9□



Various mounting bracket options

- Suitable mounting brackets can be selected for the installation condition.
- Improved amount of mounting freedom



Series Variations

ISO Standards	Type	Action	Bore size [mm]								Page
			8	10	12	16	20	25	32	40	
ISO 6432	Standard C85 Series	Double acting, Single rod	●	●	●	●	●	●			6
		Double acting, Double rod	●	●	●	●	●	●			17
		Single acting, Single rod	●	●	●	●	●	●			23
—	Standard C75 Series	Double acting, Single rod							●	●	60
		Double acting, Double rod							●	●	68
		Single acting, Single rod							●	●	74
ISO 6432	Non-rotating rod C85 Series	Double acting, Single rod	●	●	●	●	●	●			37
		Single acting, Single rod	●	●	●	●	●	●			42
—	Non-rotating rod C75 Series	Double acting, Single rod							●	●	85
		Single acting, Single rod							●	●	90
ISO 6432	Direct mount C85 Series	Double acting, Single rod	●	●	●	●	●	●			56
—	Direct mount C75 Series	Double acting, Single rod							●	●	101

ISO Standards

Air Cylinder: Standard Double Acting, Single Rod **C85 Series** ø8, ø10, ø12, ø16, ø20, ø25

RoHS

How to Order

Double acting, Single rod **C D 85 N 20 - 40 C J L V - B - M9BW S -**

Head cover type

N	Basic (Integrated clevis)
E	Double end boss-cut
F	Boss-cut/Basic
Y	Head cover axial port

Bore size

8	8 mm
10	10 mm
12	12 mm
16	16 mm
20	20 mm
25	25 mm

Applicable head cover

Action	N	E	F	Y
Rubber bumper	●	●	●	●
Air cushion	●*1	—	—	—

Cylinder stroke [mm]
Refer to the next page for standard strokes.

Built-in magnet

Nil	None
D	Built-in magnet

Cushion

Nil	Rubber bumper (Standard)
C	Air cushion

Rod boot (ø20, ø25 only)

Nil	Without rod boot
J	Nylon tarpaulin (One end)
K	Heat-resistant tarpaulin (One end)

Accessory*1

Nil	None
V	Rod end
W	Double knuckle joint

*1 Refer to Mounting Brackets/Accessories on page 8 for details of accessories.
* Accessory is shipped together with the product.

Auto switch mounting type*1

A	Rail mounting
B	Band mounting

*1 The symbol is "Nil" for no magnet.

Number of auto switches

Nil	2
S	1
n	n

Auto switch

Nil	Without auto switch
-----	---------------------

* For applicable auto switches, refer to the table below.
* Auto switches are shipped together with the product.

Mounting bracket*1

Nil	None
L	Single foot
M	Double foot
G	Flange
U	Trunnion
N	Clevis

*1 Refer to Mounting Brackets/Accessories on page 8 for details of mounting brackets.
* Mounting bracket is shipped together with the product.

Applicable mounting bracket

Action	Head cover type	L	M	G	U	N
Rubber bumper	N	●	●	●	●	●
	E	●	●	●	●	—
	F	●	—	●	●	—
	Y	●	—	●	●	—
Air cushion	N*1	●	●	●	●	●

*1 Excluding ø8

Made to order
For details, refer to page 7.

Applicable Auto Switches/Refer to the Web Catalog or Best Pneumatics for further information on auto switches.

Type	Special function	Electrical entry	Indicator light	Wiring (Output)	Load voltage		Auto switch model				Lead wire length [m]					Pre-wired connector	Applicable load			
Solid state auto switch	—	Grommet	Yes	3-wire (NPN)	5 V, 12 V	—	Band mounting		Rail mounting		0.5 (Nil)	1 (M)	3 (L)	5 (Z)	None (N)	—	IC circuit			
		3-wire (PNP)		Perpendicular			In-line	Perpendicular	In-line	●	●	●	○	—	○					
	Connector	2-wire		12 V	M9BV		M9B	M9BV	M9B	●	●	●	○	—	○	—	—			
	Diagnostic indication (2-color indicator)	Grommet		3-wire (NPN)	24 V		5 V, 12 V	M9NWV	M9NW	M9NWV	M9NW	●	●	●	○	—	○	IC circuit		
				3-wire (PNP)				M9PWV	M9PW	M9PWV	M9PW	●	●	●	○	—	○			
				2-wire	12 V		M9BWV	M9BW	M9BWV	M9BW	●	●	●	○	—	○	—			
				3-wire (NPN)	5 V, 12 V		M9NAV*1	M9NA*1	M9NAV*1	M9NA*1	○	○	●	○	—	○	IC circuit			
				3-wire (PNP)			M9PAV*1	M9PA*1	M9PAV*1	M9PA*1	○	○	●	○	—	○				
				2-wire	12 V		M9BAV*1	M9BA*1	M9BAV*1	M9BA*1	○	○	●	○	—	○	—			
	With diagnostic output (2-color indicator)	4-wire (NPN)		5 V, 12 V	—		H7NF	—	F79F	●	—	●	○	—	○	IC circuit				
Reed auto switch	—	Grommet	Yes	3-wire (NPN equivalent)	24 V	12 V	5 V	—	A96V	A96	A96V	A96	●	●	●	●	—	○	IC circuit	Relay, PLC
			No	—			200 V	—	—	A72	A72H	●	—	●	—	—	—	—	—	
			Yes	100 V or less			A93V	A93	A93V	A93	●	●	●	●	—	○*2	—	—		
			Yes	—			—	C73C	A73C	—	●	—	●	●	●	—	—			
	Connector	No	24 V or less	—	C80C	A80C	—	●	—	●	●	●	—	—	IC circuit					
	Diagnostic indication (2-color indicator)	Grommet	Yes	—	—	—	A79W	—	●	—	●	—	—	—	—	—				

*1 Water-resistant type auto switches can be mounted on the above models, but SMC cannot guarantee water resistance.

Please contact SMC regarding water-resistant types with the above model numbers.

*2 The load voltage used is 24 VDC.

* Lead wire length symbols: 0.5 m..... Nil (Example) M9NW 3 m..... L (Example) M9NWL 1 m..... M (Example) M9NWM 5 m..... Z (Example) M9NWX

* Since there are other applicable auto switches than listed above, refer to page 115 for details.

* Auto switches marked with "O" are produced upon receipt of order.

* D-A9□/M9□/A7□/A80□/F7□/J7□ auto switches are shipped together, but not assembled. (For band mounting, only the auto switch mounting brackets are assembled before shipment.)

* When mounting a band on bore size ø8, ø10, or ø12, the D-A9□(V) cannot be mounted.

* When mounting a rail on bore size ø8, ø10, or ø12, the D-A9□(V) and A79W cannot be mounted.

* When mounting a rail on bore size ø20 or ø25, the D-M9□(V), M9□W(V), and M9□A(V) cannot be mounted.

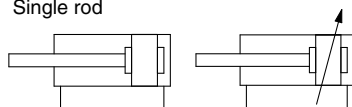
C85 Series



Symbol

Double acting,
Single rod

Air cushion



Refer to pages 105 to 115 for cylinders with auto switches.

- Auto Switch Proper Mounting Position (Detection at stroke end) and Mounting Height
- Minimum Stroke for Auto Switch Mounting
- Operating Range
- Auto Switch Mounting Brackets/Part No.



Made to Order

(For details, refer to pages 119 to 124.)

Symbol	Specifications
-XA	Change of rod end shape*1
-XB6	Heat-resistant cylinder (−10 to 150°C)*2, *3
-XB7	Cold-resistant cylinder (−40 to 70°C)*3, *4
-XB9	Low speed cylinder (10 to 50 mm/s)*4
-XC4	With heavy duty scraper*4
-XC6□	Made of stainless steel

*1 Excludes the ø8 air cushion

*2 Rubber bumper ø10 to ø25 only

*3 Excludes with rod end (Accessory)

*4 Rubber bumper ø20 and ø25 only

Specifications

Bore size [mm]		8	10	12	16	20	25
Type		Pneumatic					
Action		Double acting, Single rod					
Fluid		Air					
Proof pressure		1.5 MPa					
Max. operating pressure		1.0 MPa					
Min. operating pressure	Rubber bumper	0.1 MPa	0.08 MPa		0.05 MPa		
	Air cushion	—	0.08 MPa		0.05 MPa		
Ambient and fluid temperature		Without auto switch: −20°C to 80°C (No freezing)					
		With auto switch: −10°C to 60°C (No freezing)					
Lubricant		Not required (Non-lube)					
Stroke length tolerance		^{+1.0} ₀ mm				^{+1.4} ₀ mm	
Piston speed		50 to 1500 mm/s					
Cushion		Rubber bumper					
		—	Air cushion				
Allowable kinetic energy	Rubber bumper	0.02 J	0.03 J	0.04 J	0.09 J	0.27 J	0.4 J
	Air cushion	—	0.17 J	0.19 J	0.4 J	0.66 J	0.97 J

Standard Strokes

Bore size [mm]	Standard stroke [mm]*2*4	Max. stroke*3 [mm]
8*1	10, 25, 40, 50, 80, 100	200
10		
12	10, 25, 40, 50, 80, 100, 125, 160, 200	400
16		
20	10, 25, 40, 50, 80, 100, 125, 160, 200, 250, 300	1000
25		

*1 Not available with air cushion.

*2 Other strokes are available on request.

*3 For exceeding the standard stroke range, it will be available as a special order (-X2018).

*4 The minimum stroke with air cushion is 25 mm.

Option: Ordering Example of Cylinder Assembly

Cylinder model: CD85N20-50CNW-B-M9BW

Head cover N: Basic (Integrated clevis)
Mounting bracket N: Clevis
Rod end bracket W: Double knuckle joint
Auto switch D-M9BW: Band mounting, 2 pcs.

* Mounting bracket, double knuckle joint, and auto switch are shipped together with the product.

⚠ Precautions

Be sure to read this before handling the products. Refer to page 219 for safety instructions. For actuator and auto switch precautions, refer to the “Handling Precautions for SMC Products” and the “Operation Manual” on the SMC website: <http://www.smcworld.com>

Mounting Brackets/Accessories

Mounting bracket/ Accessory			Standard (mounted to the body)		Mounting bracket (shipped together)							Accessory (shipped together)	
			Mounting nut	Rod end nut	Mounting nut	Foot	Flange	Trunnion	Clevis pivot bracket	Clevis pin	Pin retaining ring	Rod end	Double knuckle joint
Mounting bracket symbol	L	Single foot	● (1 pc.)	● (1 pc.)	—	● (1 pc.)	—	—	—	—	—	—	—
	M	Double foot	● (1 pc.)	● (1 pc.)	● (1 pc.)	● (2 pcs.)	—	—	—	—	—	—	—
	G	Flange	● (1 pc.)	● (1 pc.)	—	—	● (1 pc.)	—	—	—	—	—	—
	U	Trunnion	● (1 pc.)	● (1 pc.)	—	—	—	● (1 pc.)	—	—	—	—	—
	N	Clevis	● (1 pc.)	● (1 pc.)	—	—	—	—	● (1 pc.)	● (1 pc.)	● (2 pcs.)	—	—
Accessory symbol	V	Rod end	● (1 pc.)	● (1 pc.)	—	—	—	—	—	—	—	● (1 pc.)	—
	W	Double knuckle joint	● (1 pc.)	● (1 pc.)	—	—	—	—	—	—	—	—	● (1 pc.)

Mounting Bracket/Accessory Part Nos.

Mounting bracket/Accessory		Bore size [mm]					Contents	
		8	10	12	16	20		25
Mounting bracket	Rod end nut	C85NT10		C85NT16		C85NT20	C85NT25	1 rod end nut
	Mounting nut	C85SN10		C85SN16		C85SN25		1 mounting nut
	Foot (1 pc.)	C85L10A		C85L16A		C85L25A		1 foot bracket
	Foot (2 pcs. with 1 mounting nut)	C85L10B		C85L16B		C85L25B		2 foot brackets, 1 mounting nut
	Foot (1 pc. with 1 mounting nut)	C85L10C		C85L16C		C85L25C		1 foot bracket, 1 mounting nut
	Flange	C85F10		C85F16		C85F25		1 flange
	Trunnion	C85T10		C85T16		C85T25		1 trunnion
	Clevis	C85C10		C85C16		C85C25		1 clevis pivot bracket, 1 clevis pin, 2 pin retaining rings
Accessory	Rod end	KJ4D		KJ6D		KJ8D	KJ10D	1 rod end
	Double knuckle joint	GKM4-8		GKM6-12		GKM8-16	GKM10-20	1 double knuckle joint
	Floating joint	JA10-4-070		JA15-6-100		JA20-8-125	JA30-10-125	1 floating joint

* Refer to page 16 for dimensions of accessories.

Replacement Parts: For Standard Type

Bore size [mm]	Part no.	Note
20	C85A-20PS	Every set includes: 1 rod seal 1 flat washer 1 retaining ring
25	C85A-25PS	

* When replacing the seals, use **grease (GR-S-010: ordered separately)** on the sliding parts.**Weights**

Bore size [mm]			8	10	12	16	20	25
Basic weight	Without magnet	C85N	37	38 (44)	77 (84)	89 (95)	179 (176)	244 (241)
		C85E	39	40	81	93	185	249
		C85F	35	37	71	79	164	227
		C85Y	35	37	72	79	165	228
	With magnet	CD85N	37	39 (44)	78 (84)	90 (96)	183 (179)	248 (245)
		CD85E	39	41	81	93	188	253
		CD85F	35	37	72	80	168	231
		CD85Y	36	37	72	80	168	232
Additional weight per 10 mm of stroke			2.1	2.3	4.1	5.1	8.1	11.3
Mounting bracket	Foot (1 pc.)	C85L□A	20		40		95	
	Foot (2 pcs. with 1 mounting nut)	C85L□B	55		105		210	
	Flange	C85F□	12		25		90	
	Trunnion	C85T□	20		50		75	
	Clevis	C85C□	20		40		85	
Accessory	Rod end	KJ□D	17		25		45	70
	Double knuckle joint	GKM□-□	10		20		50	100
	Floating joint	JA□-□-□	10		20		50	70

(): For air cushion

Calculation example: C85N20-50NV

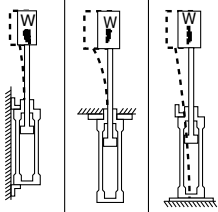
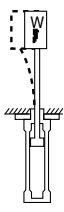
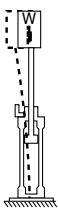
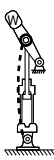
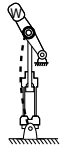
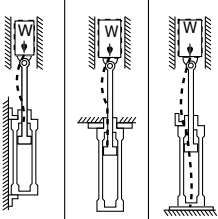
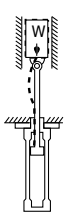
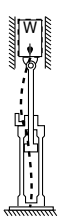
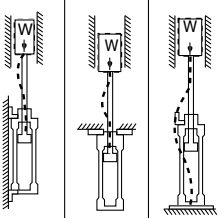
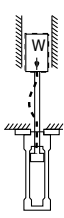
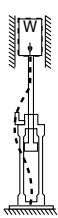
- Basic weight 179 g (ø20)
 - Additional weight ... 8.1 g (at 10 mm stroke)
 - Cylinder stroke 50 mm
 - Mounting bracket: Clevis ... 85 g
 - Accessory: Rod end 45 g
- $$179 + 8.1 \times 50/10 + 85 + 45 \approx 350 \text{ g}$$

Stroke Selection

Relationship between cylinder size and maximum stroke

The below table shows the applicable maximum stroke (in cm units), found by calculation assuming the case where the force generated by the cylinder itself acts as buckling force on the piston rod, or piston rod and cylinder tube. Therefore, it is possible to find the applicable maximum stroke for each cylinder size using the relationship between the size of the operating pressure and the cylinder support type, regardless of the load ratio.

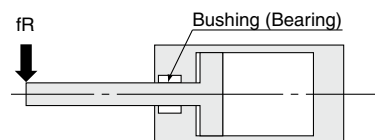
[Reference] If it is stopped with the external stopper on the cylinder extension side, even with a light load, the maximum generated force of the cylinder will act on the cylinder itself.

Mounting				Nominal symbol	Operating pressure [MPa]	Applicable maximum stroke according to buckling strength					
Support bracket nominal symbol and schematic diagram			C85								
			8			10	12	16	20	25	
Foot: M	Rod flange: G	Head flange: G	M	0.3	24	18	36	26	38	48	
			G (Rod side)	0.5	18	14	27	19	29	36	
				0.7	14	11	22	16	23	30	
				G (Head side)	0.3	9	6	15	10	15	20
			0.5		6	4	10	6	10	14	
			0.7		4	3	8	4	8	11	
			Clevis: N		Rod trunnion: U	N	0.3	22	17	35	24
		0.5	16	12	26		18	27	34		
		0.7	13	10	21		14	22	28		
Head trunnion: U			U (Rod side)	0.3	(40)*1	(40)*1	(40)*1	(40)*1	80	(100)*1	
	0.5	38		30	(40)*1	(40)*1	61	77			
	0.7	32		25	(40)*1	35	51	64			
	U (Head side)	0.3	22	17	35	24	37	47			
		0.5	16	12	26	18	27	35			
0.7		13	10	21	14	22	28				
Foot: M	Rod flange: G	Head flange: G	M	0.3	(40)*1	(40)*1	(40)*1	(40)*1	(100)*1	(100)*1	
				G (Rod side)	0.5	(40)*1	(40)*1	(40)*1	(40)*1	89	(100)*1
					0.7	(40)*1	36	(40)*1	(40)*1	74	93
			G (Head side)		0.3	33	26	(40)*1	37	54	69
				0.5	25	19	39	27	41	52	
				0.7	20	15	32	22	33	43	
			Foot: M	Rod flange: G	Head flange: G	M	0.3	(40)*1	(40)*1	(40)*1	(40)*1
			G (Rod side)	0.5	(40)*1		(40)*1	(40)*1	(40)*1	(100)*1	(100)*1
				0.7	(40)*1		(40)*1	(40)*1	(40)*1	(100)*1	(100)*1
				G (Head side)	0.3	(40)*1	38	(40)*1	(40)*1	79	(100)*1
			0.5		37	29	(40)*1	(40)*1	60	76	
			0.7		30	23	(40)*1	34	50	63	

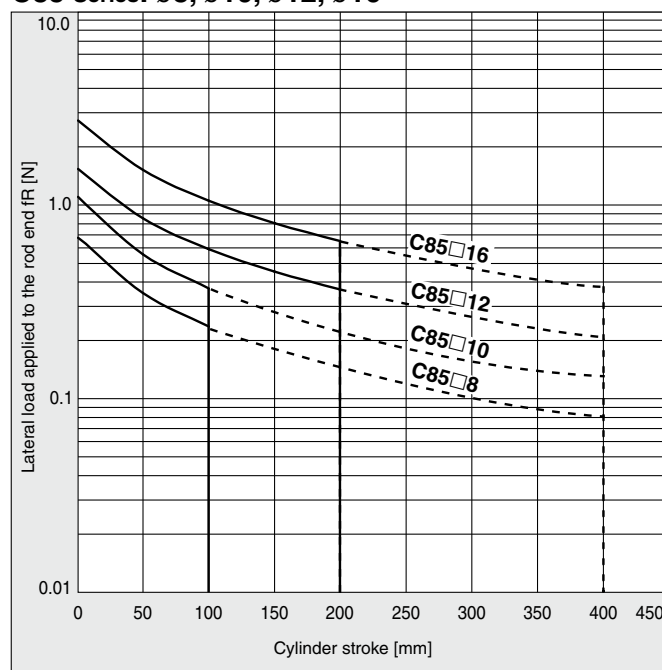
*1 The data in () are limited by max. stroke length.

The maximum stroke at which the cylinder can be operated under a lateral load

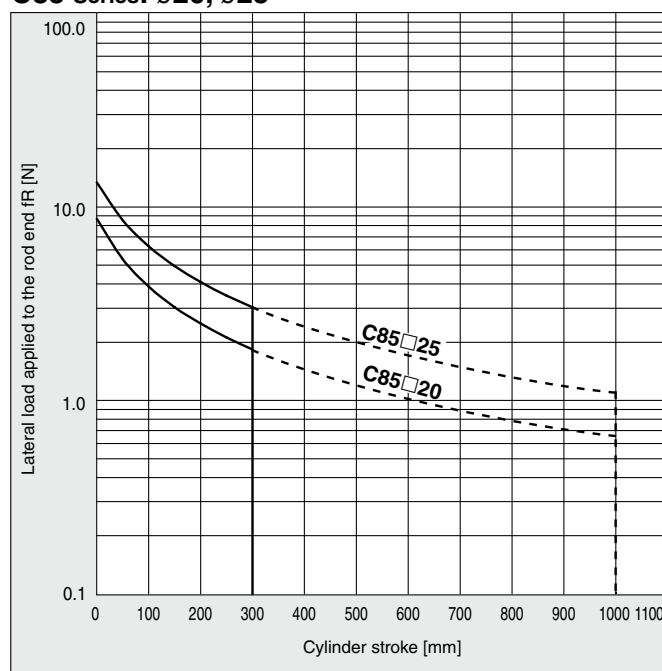
The region that does not exceed the bold solid line represents the allowable lateral load in relation to the cylinder of a given stroke length. In the graph, the range of the broken line shows that the long stroke limit has been exceeded. In this region, as a rule, operate the cylinder by providing a guide along the direction of movement.



C85 Series: ø8, ø10, ø12, ø16



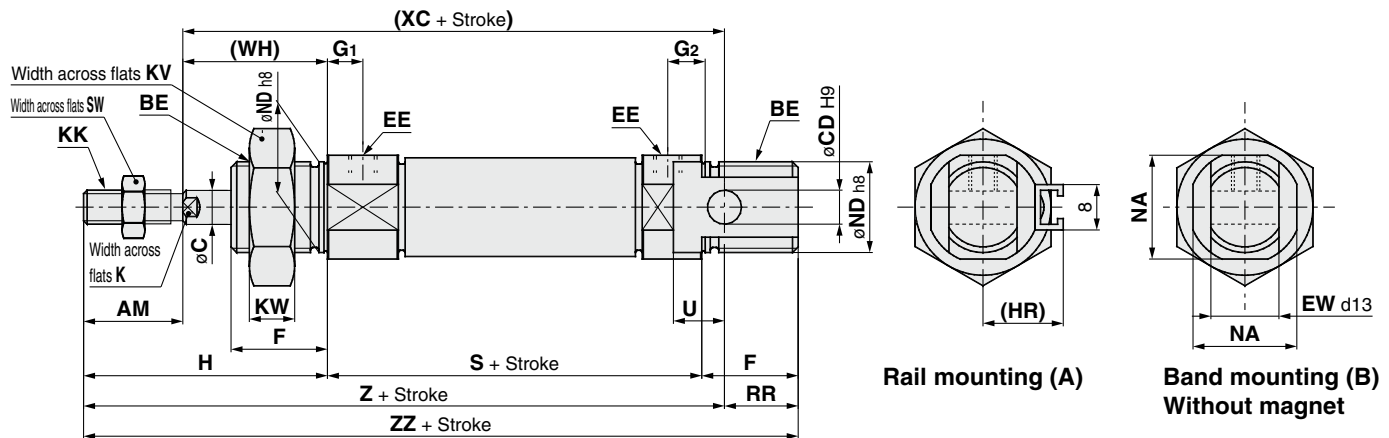
C85 Series: ø20, ø25



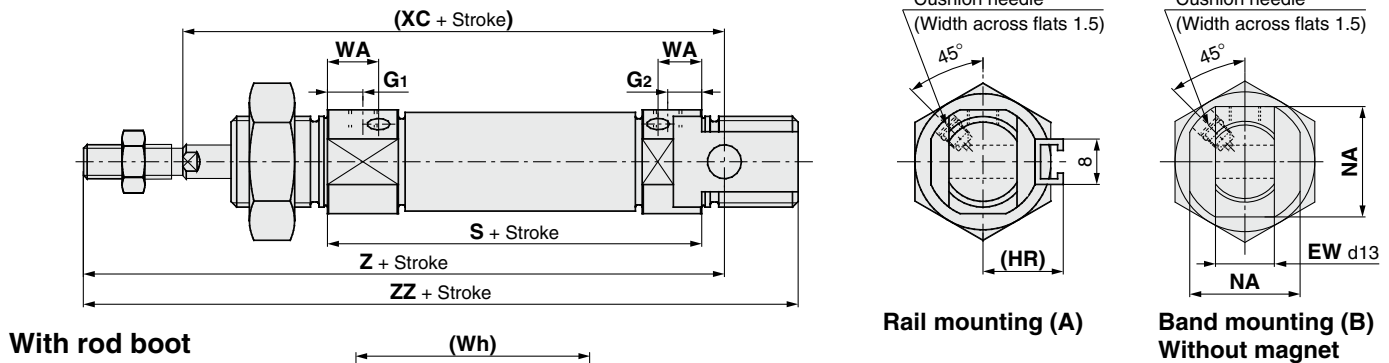
Dimensions

Basic (Integrated clevis)

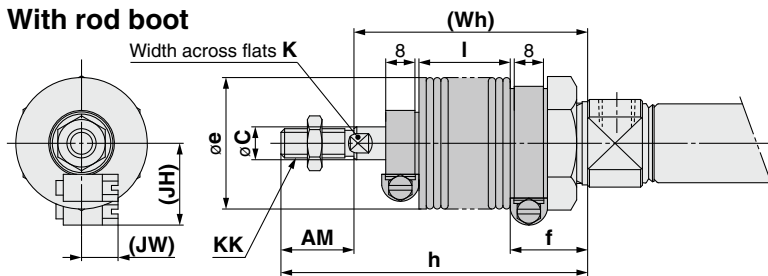
Rubber bumper: C85N Bore size – Stroke –



Air cushion: C□85N Bore size – Stroke C – □



With rod boot



Dimensions

Bore size	AM	BE	C	CD	EE	EW	F	G ₁	G ₂	H	(HR)	K	KK	KV	KW	NA	ND	RR	S	SW	U	WA	(WH)	(XC)	Z	ZZ
8	12	M12 x 1.25	4	4	M5 x 0.8	8	12	7	5	28	13.4	—	M4 x 0.7	19	6	15	12	10	46	7	6	—	16	64	76	86
10	12	M12 x 1.25	4	4	M5 x 0.8	8	12	7 (5.5)	5 (5.5)	28	14.2	—	M4 x 0.7	19	6	15	12	10	46 (53)	7	6	10.5	16	64 (71)	76 (83)	86 (93)
12	16	M16 x 1.5	6	6	M5 x 0.8	12	17	8 (5.5)	6 (5.5)	38	14.2	5	M6 x 1	24	8	18.3	16	14	50 (54)	10	9	9.5	22	75 (79)	91 (95)	105 (109)
16	16	M16 x 1.5	6	6	M5 x 0.8	12	17	8 (5.5)	6 (5.5)	38	14.2	5	M6 x 1	24	8	18.3	16	13	56	10	9	9.5	22	82	98	111
20	20	M22 x 1.5	8	8	G1/8	16	20	8	8	44	17	6	M8 x 1.25	32	11	24	22	11	62	13	12	13	24	95	115	126
25	22	M22 x 1.5	10	8	G1/8	16	22	8	8	50	20	8	M10 x 1.25	32	11	30	22	11	65	17	12	13	28	104	126	137

(): For air cushion

With Rod Boot

Bore size \ Item Stroke	AM	C	e	f	K	KK	h						
							1 to 50	51 to 100	101 to 150	151 to 200	201 to 300	301 to 400	401 to 500
20	20	8	36	22	6	M8 x 1.25	71	84	96	109	134	159	—
25	22	10	36	22	8	M10 x 1.25	74	87	99	112	137	162	187

Bore size	Item	I							(JH)	(JW)	(Wh)						
	Stroke	1 to 50	51 to 100	101 to 150	151 to 200	201 to 300	301 to 400	401 to 500	Reference	Reference	1 to 50	51 to 100	101 to 150	151 to 200	201 to 300	301 to 400	401 to 500
20		12.5	25	37.5	50	75	100	—	23.5	10.5	51	64	76	89	114	139	—
25		12.5	25	37.5	50	75	100	125	23.5	10.5	52	65	77	90	115	140	165

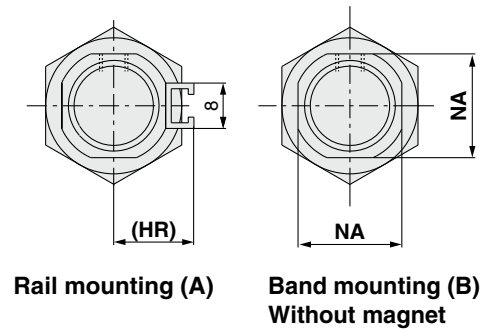
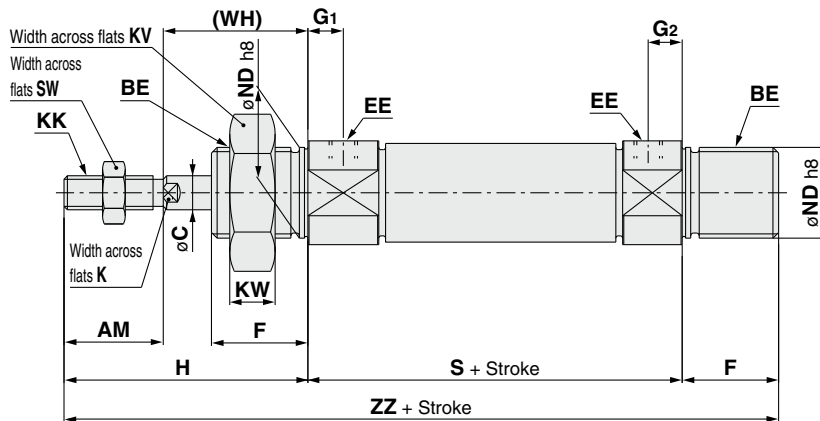
Refer to page 16 of Standard Type Single Rod for details of accessories (rod end, double knuckle joint, floating joint).

C85 Series

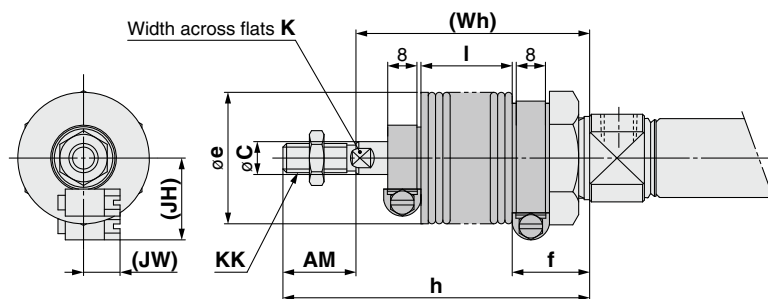
Dimensions

Double end boss-cut

Rubber bumper: C□85E Bore size — Stroke — □



With rod boot



Dimensions

[mm]

Bore size	AM	BE	C	EE	F	G ₁	G ₂	H	(HR)	K	KK	KV	KW	NA	ND	S	SW	(WH)	ZZ
8	12	M12 x 1.25	4	M5 x 0.8	12	7	5	28	13.4	—	M4 x 0.7	19	6	15	12	46	7	16	86
10	12	M12 x 1.25	4	M5 x 0.8	12	7	5	28	14.2	—	M4 x 0.7	19	6	15	12	46	7	16	86
12	16	M16 x 1.5	6	M5 x 0.8	17	8	6	38	14.2	5	M6 x 1	24	8	18.3	16	50	10	22	105
16	16	M16 x 1.5	6	M5 x 0.8	17	8	6	38	14.2	5	M6 x 1	24	8	18.3	16	56	10	22	111
20	20	M22 x 1.5	8	G1/8	20	8	8	44	17	6	M8 x 1.25	32	11	24	22	62	13	24	126
25	22	M22 x 1.5	10	G1/8	22	8	8	50	20	8	M10 x 1.25	32	11	30	22	65	17	28	137

With Rod Boot

[mm]

Item Bore size Stroke	AM	C	e	f	K	KK	h										
							1 to 50	51 to 100	101 to 150	151 to 200	201 to 300	301 to 400	401 to 500				
20	20	8	36	22	6	M8 x 1.25	71	84	96	109	134	159	—				
25	22	10	36	22	8	M10 x 1.25	74	87	99	112	137	162	187				

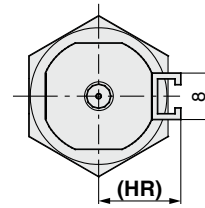
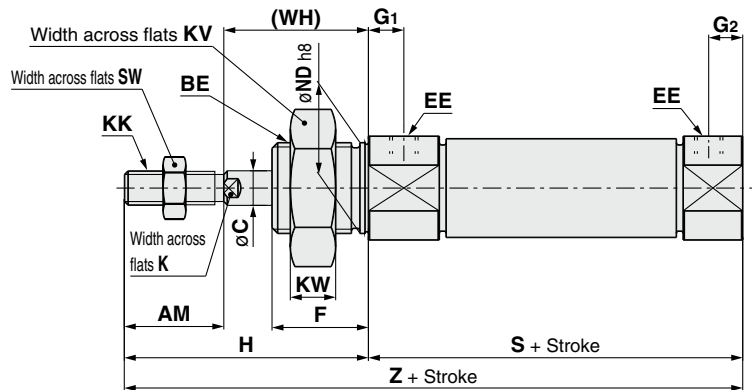
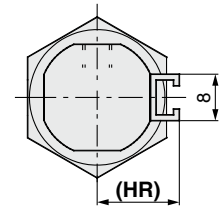
Item Bore size Stroke	I							(JH) Reference	(JW) Reference	(Wh)						
	1 to 50	51 to 100	101 to 150	151 to 200	201 to 300	301 to 400	401 to 500			1 to 50	51 to 100	101 to 150	151 to 200	201 to 300	301 to 400	401 to 500
20	12.5	25	37.5	50	75	100	—	23.5	10.5	51	64	76	89	114	139	—
25	12.5	25	37.5	50	75	100	125	23.5	10.5	52	65	77	90	115	140	165

Refer to page 16 of Standard Type Single Rod for details of accessories (rod end, double knuckle joint, floating joint).

Dimensions

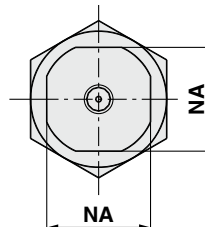
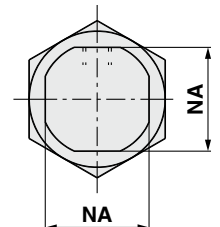
Boss-cut/Basic, Head cover axial port

Rubber bumper: C□85F/Y Bore size – Stroke – □

Head cover
axial port

Boss-cut/Basic

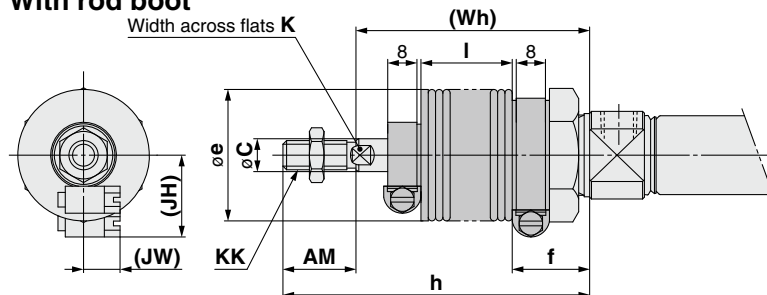
Rail mounting (A)

Head cover
axial port

Boss-cut/Basic

Band mounting (B)
Without magnet

With rod boot



Dimensions

[mm]

Bore size	AM	BE	C	EE	F	G ₁	G ₂	H	(HR)	K	KK	KV	KW	NA	ND	S	SW	(WH)	Z
8	12	M12 x 1.25	4	M5 x 0.8	12	7	5	28	13.4	—	M4 x 0.7	19	6	15	12	46	7	16	74
10	12	M12 x 1.25	4	M5 x 0.8	12	7	5	28	14.2	—	M4 x 0.7	19	6	15	12	46	7	16	74
12	16	M16 x 1.5	6	M5 x 0.8	17	8	6	38	14.2	5	M6 x 1	24	8	18.3	16	50	10	22	88
16	16	M16 x 1.5	6	M5 x 0.8	17	8	6	38	14.2	5	M6 x 1	24	8	18.3	16	50	10	22	88
20	20	M22 x 1.5	8	G1/8	20	8	8	44	17	6	M8 x 1.25	32	11	24	22	62	13	24	106
25	22	M22 x 1.5	10	G1/8	22	8	8	50	20	8	M10 x 1.25	32	11	30	22	65	17	28	115

With Rod Boot

[mm]

Bore size	Item Stroke	AM	C	e	f	K	KK	h						
								1 to 50	51 to 100	101 to 150	151 to 200	201 to 300	301 to 400	401 to 500
20		20	8	36	22	6	M8 x 1.25	71	84	96	109	134	159	—
25		22	10	36	22	8	M10 x 1.25	74	87	99	112	137	162	187

Bore size	Item Stroke	I							(JH)		(JW)		(Wh)						
		1 to 50	51 to 100	101 to 150	151 to 200	201 to 300	301 to 400	401 to 500	Reference	Reference	Reference	Reference	1 to 50	51 to 100	101 to 150	151 to 200	201 to 300	301 to 400	401 to 500
20		12.5	25	37.5	50	75	100	—	23.5	10.5	51	64	76	89	114	139	—	—	—
25		12.5	25	37.5	50	75	100	125	23.5	10.5	52	65	77	90	115	140	165	—	—

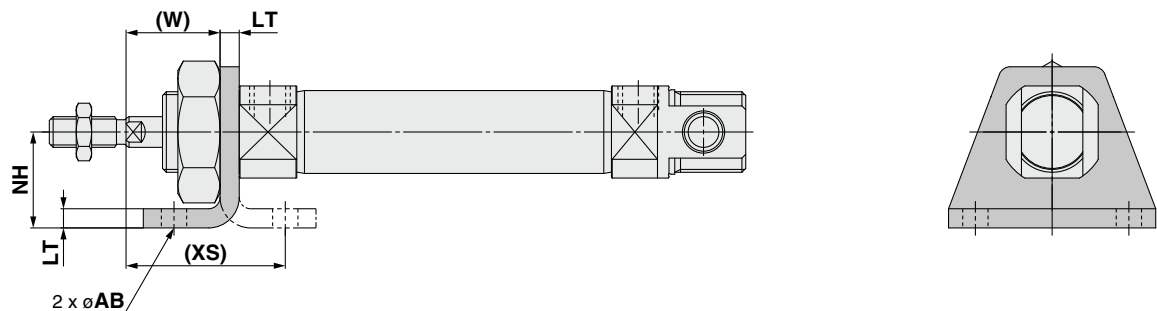
Refer to page 16 of Standard Type Single Rod for details of accessories
(rod end, double knuckle joint, floating joint).

C85 Series

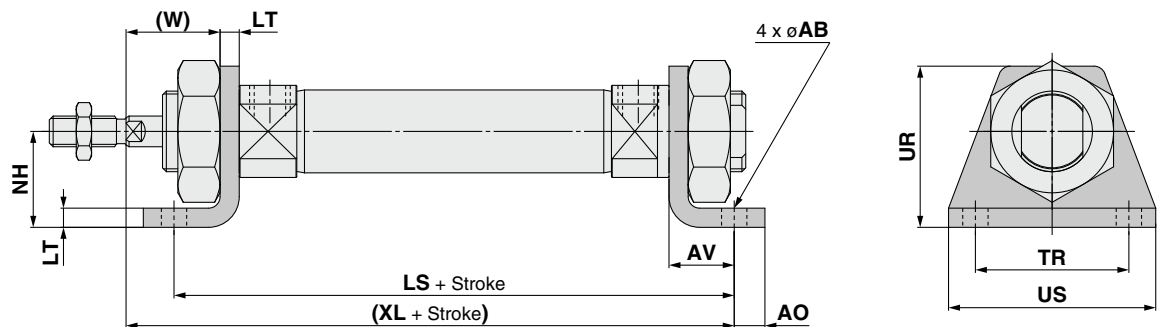
Dimensions

Bracket is shipped together with the product.

Single foot: C□85N□-□L
(With mounting bracket)



Double foot: C□85N□-□M
(With mounting bracket)



[mm]

Bore size	AB	AO	AV	LS	LT	NH	TR _{JS14}	UR	US	(W)	(XL)	(XS)
8	4.5	5	11	68	3.2	16	25	26	35	12.8	73	23.8
10	4.5	5	11	68 (75)	3.2	16	25	26	35	12.8	73 (80)	23.8
12	5.5	6	14	78 (82)	4	20	32	33	42	18	86 (90)	32
16	5.5	6	14	84	4	20	32	33	42	18	92	32
20	6.6	8	17	96	5	25	40	42	54	19	103	36
25	6.6	8	17	99	5	25	40	42	54	23	110	40

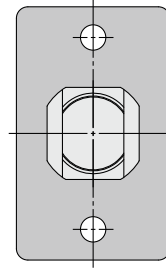
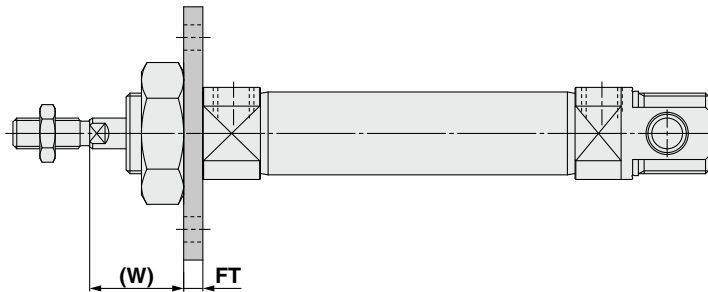
(): For air cushion

Refer to page 16 of Standard Type Single Rod for details of accessories (rod end, double knuckle joint, floating joint).

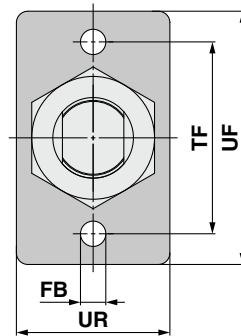
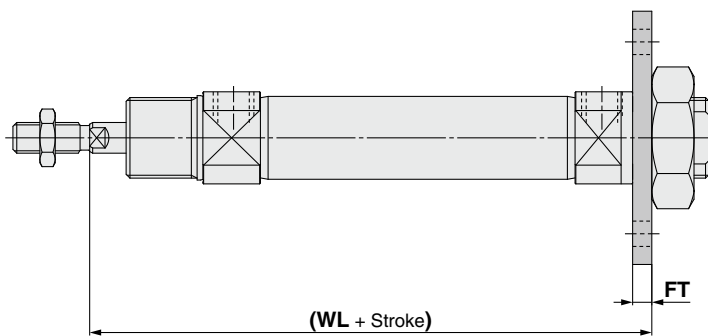
Dimensions

Bracket is shipped together with the product.

Rod flange: C□85N□-□G
(With mounting bracket)



Head flange: C□85N□-□G
(With mounting bracket)



[mm]

Bore size	FB _{H13}	FT	TF	UF	UR	(W)	(WL)
8	4.5	3.2	30	40	22	12.8	65.2
10	4.5	3.2	30	40	22	12.8	65.2 (72.2)
12	5.5	4	40	52	30	18	76 (80)
16	5.5	4	40	52	30	18	82
20	6.6	5	50	66	40	19	91
25	6.6	5	50	66	40	23	98

(): For air cushion

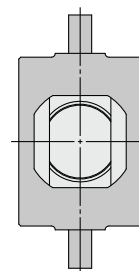
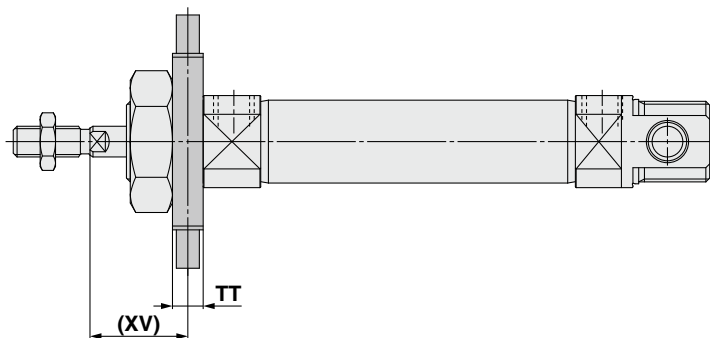
Refer to page 16 of Standard Type Single Rod for details of accessories (rod end, double knuckle joint, floating joint).

C85 Series

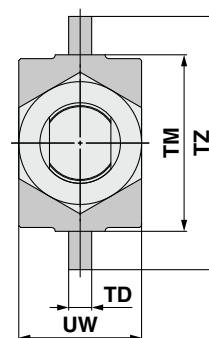
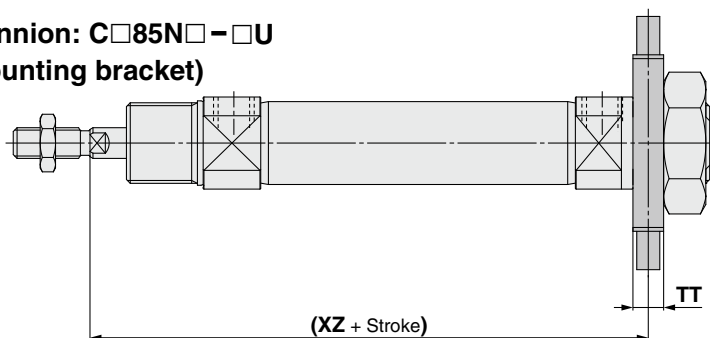
Dimensions

Bracket is shipped together with the product.

Rod trunnion: C□85N□-□U (With mounting bracket)



Head trunnion: C□85N□-□U
(With mounting bracket)

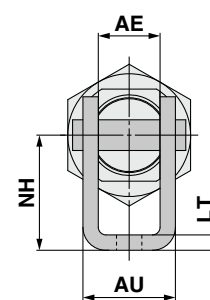
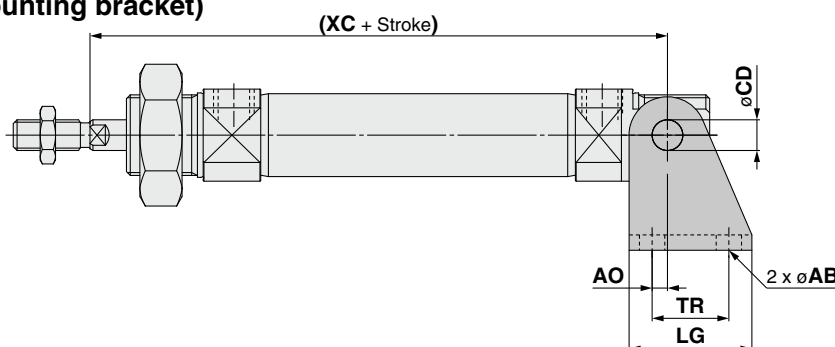


[mm]

Bore size	TD _{e8}	TM	TT	TZ	UW	(XV)	(XZ)
8	4	26	6	38	20	13	65
10	4	26	6	38	20	13	65 (72)
12	6	38	8	58	25	18	76 (80)
16	6	38	8	58	25	18	82
20	6	46	8	66	32	20	90
25	6	46	8	66	32	24	97

(): For air cushion

Clevis: C□85N□-□N
(With mounting bracket)



[mm]

Bore size	AB	AE	AO	AU	CD _{H9}	LG	LT	NH	TR	(XC)
8	4.5	8.1	1.5	13.1	4	20	2.5	24	12.5	64
10	4.5	8.1	1.5	13.1	4	20	2.5	24	12.5	64 (71)
12	5.5	12.1	2	18.5	6	25	3.2	27	15	75 (79)
16	5.5	12.1	2	18.5	6	25	3.2	27	15	82
20	6.6	16.1	4	24.1	8	32	4	30	20	95
25	6.6	16.1	4	24.1	8	32	4	30	20	104

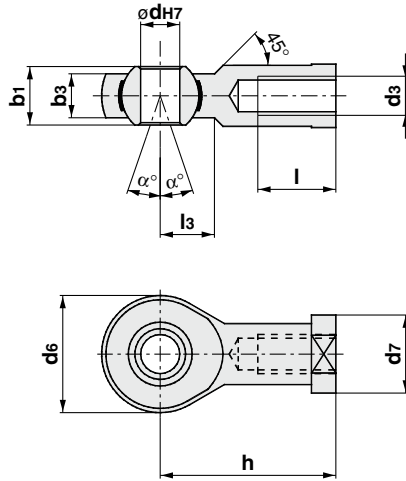
(): For air cushion

Refer to page 16 of Standard Type Single Rod for details of accessories (rod end, double knuckle joint, floating joint).

C85 Series

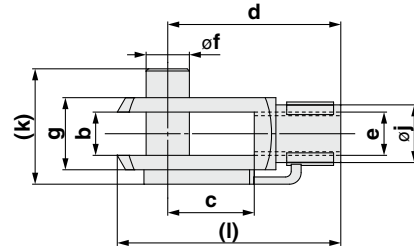
Dimensions of Accessories

Rod End



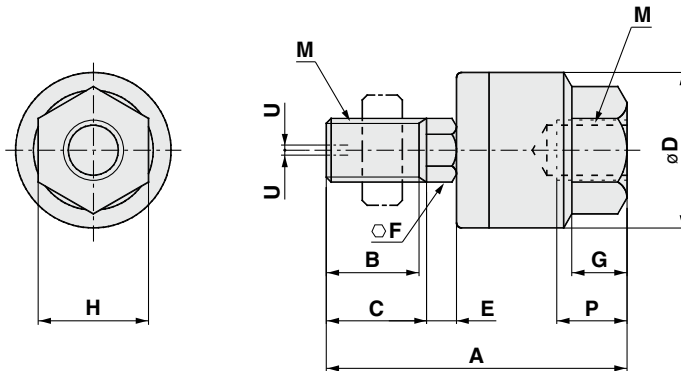
Bore size	Part no.	b1	b3	dH7	d6	d7	h	l	l3	d3	α°
8	KJ4D	8	6.0	5	18	11	27	10	10	M4 x 0.7	13
10	KJ4D	8	6.0	5	18	11	27	10	10	M4 x 0.7	13
12	KJ6D	9	6.75	6	20	13	30	12	11	M6 x 1	13
16	KJ6D	9	6.75	6	20	13	30	12	11	M6 x 1	13
20	KJ8D	12	9	8	24	16	36	16	13	M8 x 1.25	14
25	KJ10D	14	10.5	10	28	19	43	20	15	M10 x 1.25	13

Double Knuckle Joint

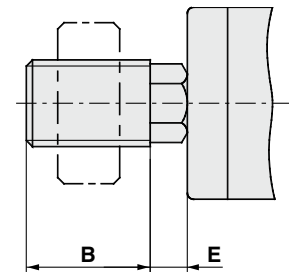


Bore size	Part no.	b	c	d	f	g	j	k	e	l
8	GKM4-8	4	8	16	4	8	8	11	M4 x 0.7	21
10	GKM4-8	4	8	16	4	8	8	11	M4 x 0.7	21
12	GKM6-12	6	12	24	6	12	10	18	M6 x 1	31
16	GKM6-12	6	12	24	6	12	10	18	M6 x 1	31
20	GKM8-16	8	16	32	8	16	14	23	M8 x 1.25	42
25	GKM10-20	10	20	40	10	20	18	27	M10 x 1.25	52

Floating Joint: JA



In the case of dimension without C



Bore size	Part no.	M		A	B	C	D	E	F	G	H	Max. screw-in depth P	Allowable eccentricity U	Max. operating tension and compression power [kN]
		Nominal thread dia.	Pitch											
8, 10	JA10-4-070	4	0.7	26	9	10	12	1.5	4	4	7	5.5	0.5	0.054
12, 16	JA15-6-100	6	1	34.5	12.5	14	16	2	6	5	10	7	0.5	0.123
20	JA20-8-125	8	1.25	44	17.5	—	21	4.5	7	7	13	8	0.5	1.1
25	JA30-10-125	10	1.25	49.5	19.5	—	24	5	8	8	17	9	0.5	2.5

ISO Standards

Air Cylinder: Standard Double Acting, Double Rod **C85W Series** ø8, ø10, ø12, ø16, ø20, ø25

RoHS

How to Order

Double acting, Double rod

C D 85WE 20 - 40 C J L V - B - M9BW S -

Built-in magnet

Nil	None
D	Built-in magnet

Bore size

8	8 mm
10	10 mm
12	12 mm
16	16 mm
20	20 mm
25	25 mm

Cylinder stroke [mm]

Refer to the next page for standard strokes.

Cushion

Nil	Rubber bumper (Standard)
C	Air cushion

Rod boot (ø20, ø25 only)

Nil	Without rod boot
J	Nylon tarpaulin (One end)
K	Heat-resistant tarpaulin (One end)
JJ	Nylon tarpaulin (Both ends)
KK	Heat-resistant tarpaulin (Both ends)

Accessory*1

Nil	None
V	Rod end
W	Double knuckle joint

*1 Refer to Mounting Brackets/Accessories on page 19 for details of accessories.

* Accessory is shipped together with the product.

Auto switch mounting type*1

A	Rail mounting
B	Band mounting

*1 The symbol is "Nil" for no magnet.

Number of auto switches

Nil	2
S	1
n	n

Auto switch

Nil	Without auto switch
-----	---------------------

* For applicable auto switches, refer to the table below.

* Auto switches are shipped together with the product.

Made to order

For details, refer to page 18.

Mounting bracket*1

Nil	None
L	Single foot
M	Double foot
G	Flange
U	Trunnion

*1 Refer to Mounting Brackets/Accessories on page 19 for details of mounting brackets.

* Mounting bracket is shipped together with the product.

Applicable mounting bracket

Action	Mounting bracket			
	L	M	G	U
Rubber bumper	●	●	●	●
Air cushion*1	●	●	●	●

*1 Excluding ø8

Applicable Auto Switches/Refer to the Web Catalog or Best Pneumatics for further information on auto switches.

Type	Special function	Electrical entry	Indicator light	Wiring (Output)	Load voltage		Auto switch model				Lead wire length [m]					Pre-wired connector	Applicable load				
					DC	AC	Band mounting		Rail mounting		0.5 (Nil)	1 (M)	3 (L)	5 (Z)	None (N)						
							Perpendicular	In-line	Perpendicular	In-line											
Solid state auto switch	—	Grommet	Yes	3-wire (NPN)	5 V, 12 V	—	M9NV	M9N	M9NV	M9N	●	●	●	○	—	○	IC circuit	Relay, PLC			
		3-wire (PNP)		M9PV			M9P	M9PV	M9P	●	●	●	○	—	○						
	Connector	2-wire		12 V	M9BV		M9B	M9BV	M9B	●	●	●	○	—	○	—					
	Diagnostic indication (2-color indicator)	Grommet		3-wire (NPN)	5 V, 12 V		M9NVV	M9NW	M9NVV	M9NW	●	●	●	○	—		○		IC circuit		
				3-wire (PNP)			M9PWV	M9PW	M9PWV	M9PW	●	●	●	○	—	○					
				2-wire	12 V		M9BWV	M9BW	M9BWV	M9BW	●	●	●	○	—	○	—				
				3-wire (NPN)	5 V, 12 V		M9NAV*1	M9NA*1	M9NAV*1	M9NA*1	○	○	●	○	—	○			IC circuit		
				3-wire (PNP)			M9PAV*1	M9PA*1	M9PAV*1	M9PA*1	○	○	●	○	—	○					
				2-wire	12 V		M9BAV*1	M9BA*1	M9BAV*1	M9BA*1	○	○	●	○	—	○	—				
				4-wire (NPN)	5 V, 12 V		—	H7NF	—	F79F	●	—	●	○	—	○			IC circuit		
With diagnostic output (2-color indicator)			—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
Reed auto switch	—	Grommet	Yes	3-wire (NPN equivalent)	—	24 V	5 V	—	A96V	A96	A96V	A96	●	●	●	●	—	○	IC circuit	—	
							—	200 V	—	—	A72	A72H	●	—	●	—	—	—	—		—
							2-wire	100 V	A93V	A93	A93V	A93	●	●	●	●	—	○*2	—		—
								100 V or less	A90V	A90	A90V	A90	●	●	●	●	—	○*2	—		IC circuit
	Diagnostic indication (2-color indicator)	Grommet	Yes	2-wire	24 V	—	—	C73C	A73C	—	●	—	●	●	●	—	—	—	Relay, PLC		
						—	—	C80C	A80C	—	●	—	●	●	●	—	—	IC circuit			
						—	—	—	A79W	—	●	—	●	—	—	—	—	—			
						—	—	—	—	—	—	—	—	—	—	—	—	—		—	

*1 Water-resistant type auto switches can be mounted on the above models, but SMC cannot guarantee water resistance.

Please contact SMC regarding water-resistant types with the above model numbers.

*2 The load voltage used is 24 VDC.

* Lead wire length symbols: 0.5 m..... Nil (Example) M9NW 3 m..... L (Example) M9NWL 1 m..... M (Example) M9NWM 5 m..... Z (Example) M9NWX

None..... N (Example) H7CN

* Since there are other applicable auto switches than listed above, refer to page 115 for details.

* Auto switches marked with "○" are produced upon receipt of order.

* D-A9□/M9□/A7□/A80□/F7□/J7□ auto switches are shipped together, but not assembled. (For band mounting, only the auto switch mounting brackets are assembled before shipment.)

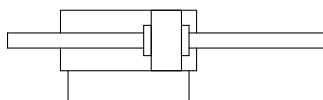
* When mounting a band on bore size ø8, ø10, or ø12, the D-A9□(V) cannot be mounted.

* When mounting a rail on bore size ø8, ø10, or ø12, the D-A9□(V) and A79W cannot be mounted.

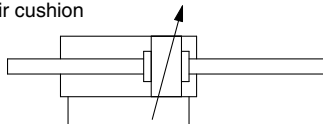
* When mounting a rail on bore size ø20 or ø25, the D-M9□(V), M9□W(V), and M9□A(V) cannot be mounted.

**Symbol**

Rubber bumper



Air cushion



Refer to pages 105 to 115 for cylinders with auto switches.

- Auto Switch Proper Mounting Position (Detection at stroke end) and Mounting Height
- Minimum Stroke for Auto Switch Mounting
- Operating Range
- Auto Switch Mounting Brackets/Part No.

**Made to Order**

(For details, refer to pages 119 to 124.)

Symbol	Specifications
-XA	Change of rod end shape*1
-XB6	Heat-resistant cylinder (-10 to 150°C)*2
-XB7	Cold-resistant cylinder (-40 to 70°C)*3
-XC4	With heavy duty scraper*3
-XC6□	Made of stainless steel*4

*1 Excludes the ø8 air cushion

*2 Rubber bumper ø10 to ø25 only

*3 Rubber bumper ø20 and ø25 only

*4 Rubber bumper only

Specifications

Bore size [mm]		8	10	12	16	20	25
Type		Pneumatic					
Action		Double acting, Double rod					
Fluid		Air					
Proof pressure		1.5 MPa					
Max. operating pressure		1.0 MPa					
Min. operating pressure	Rubber bumper	0.1 MPa	0.08 MPa		0.05 MPa		
	Air cushion	—	0.08 MPa		0.05 MPa		
Ambient and fluid temperature		Without auto switch: −20°C to 80°C (No freezing)					
		With auto switch: −10°C to 60°C (No freezing)					
Lubricant		Not required (Non-lube)					
Stroke length tolerance		$\begin{smallmatrix} +1.0 \\ 0 \end{smallmatrix}$ mm				$\begin{smallmatrix} +1.4 \\ 0 \end{smallmatrix}$ mm	
Piston speed		50 to 1500 mm/s					
Cushion		Rubber bumper					
		—	Air cushion				
Allowable kinetic energy	Rubber bumper	0.02 J	0.03 J	0.04 J	0.09 J	0.27 J	0.4 J
	Air cushion	—	0.17 J	0.19 J	0.4 J	0.66 J	0.97 J

Standard Strokes

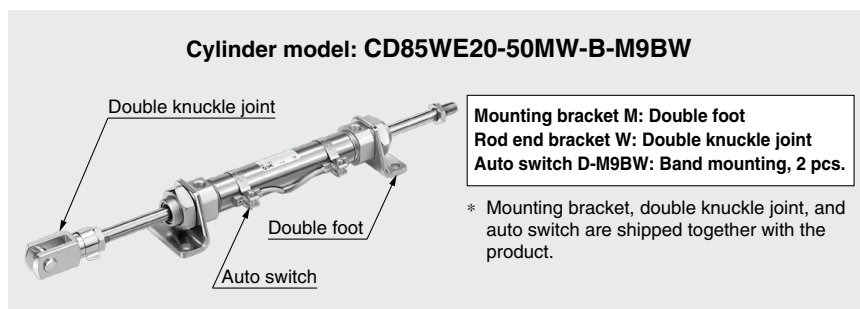
Bore size [mm]	Standard stroke [mm]*2*4	Max. stroke*3 [mm]
8 *1	10, 25, 40, 50, 80, 100	100
10		
12	10, 25, 40, 50, 80, 100, 125, 160, 200	200
16		
20	10, 25, 40, 50, 80, 100, 125, 160, 200, 250, 300	500
25		

*1 Not available with air cushion.

*2 Other strokes are available on request.

*3 For exceeding the standard stroke range, it will be available as a special order (-X2018).

*4 The minimum stroke with air cushion is 25 mm.

Option: Ordering Example of Cylinder Assembly**⚠ Precautions**

Be sure to read this before handling the products. Refer to page 219 for safety instructions. For actuator and auto switch precautions, refer to the “Handling Precautions for SMC Products” and the “Operation Manual” on the SMC website: <http://www.smcworld.com>

C85W Series

Mounting Brackets/Accessories

Mounting bracket/Accessory			Standard (mounted to the body)		Mounting bracket (shipped together)				Accessory (shipped together)	
			Mounting nut	Rod end nut	Mounting nut	Foot	Flange	Trunnion	Rod end	Double knuckle joint
Mounting bracket symbol	L	Single foot	● (1 pc.)	● (2 pcs.)	—	● (1 pc.)	—	—	—	—
	M	Double foot	● (1 pc.)	● (2 pcs.)	● (1 pc.)	● (2 pcs.)	—	—	—	—
	G	Flange	● (1 pc.)	● (2 pcs.)	—	—	● (1 pc.)	—	—	—
	U	Trunnion	● (1 pc.)	● (2 pcs.)	—	—	—	● (1 pc.)	—	—
Accessory symbol	V	Rod end	● (1 pc.)	● (2 pcs.)	—	—	—	—	● (1 pc.)	—
	W	Double knuckle joint	● (1 pc.)	● (2 pcs.)	—	—	—	—	—	● (1 pc.)

Mounting Bracket/Accessory Part Nos.

Mounting bracket/Accessory		Bore size [mm]						Contents
		8	10	12	16	20	25	
Mounting bracket	Rod end nut	C85NT10		C85NT16		C85NT20	C85NT25	1 rod end nut
	Mounting nut	C85SN10		C85SN16		C85SN25		1 mounting nut
	Foot (1 pc.)	C85L10A		C85L16A		C85L25A		1 foot bracket
	Foot (2 pcs. with 1 mounting nut)	C85L10B		C85L16B		C85L25B		2 foot brackets, 1 mounting nut
	Foot (1 pc. with 1 mounting nut)	C85L10C		C85L16C		C85L25C		1 foot bracket, 1 mounting nut
	Flange	C85F10		C85F16		C85F25		1 flange
	Trunnion	C85T10		C85T16		C85T25		1 trunnion
Accessory	Rod end	KJ4D		KJ6D		KJ8D	KJ10D	1 rod end
	Double knuckle joint	GKM4-8		GKM6-12		GKM8-16	GKM10-20	1 double knuckle joint
	Floating joint	JA10-4-070		JA15-6-100		JA20-8-125	JA30-10-125	1 floating joint

* Refer to page 16 for dimensions of accessories.

Replacement Parts: For Standard Type

Bore size [mm]	Part no.	Note
20	C85A-20PS	Every set includes: 1 rod seal 1 flat washer 1 retaining ring
25	C85A-25PS	

* When replacing the seals, use **grease (GR-S-010: ordered separately)** on the sliding parts.
When replacing seals for a double rod actuator, order 2 sets of replacement parts.

Weights

Bore size [mm]			8	10	12	16	20	25
Basic weight	Without magnet	C85WE	43	46 (51)	96 (97)	106 (106)	205 (205)	289 (291)
	With magnet	CD85WE	46	46 (52)	96 (97)	106 (107)	208 (208)	293 (294)
Additional weight per 10 mm of stroke			3.0	3.3	6.4	7.4	12.0	17.5
Mounting bracket	Foot (1 pc.)	C85L□A	20		40		95	
	Foot (2 pcs. with 1 mounting nut)	C85L□B	55		105		210	
	Flange	C85F□	12		25		90	
	Trunnion	C85T□	20		50		75	
Accessory	Rod end	KJ□D	17		25		45	70
	Double knuckle joint	GKM□-□	10		20		50	100
	Floating joint	JA□-□-□	10		20		50	70

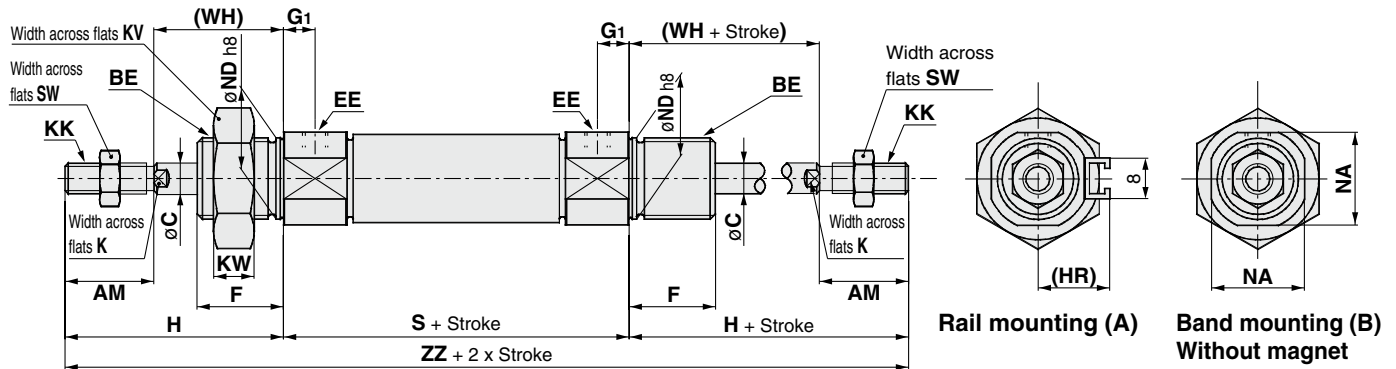
Calculation example: **C85WE20-50MV**

- Basic weight 205 g (ø20)
 - Additional weight ... 12.0 g (at 10 mm stroke)
 - Cylinder stroke 50 mm
 - Mounting bracket: Double foot ... 210 g
 - Accessory: Rod end 45 g
- 205 + 12.0 x 50/10 + 210 + 45 = **520 g**

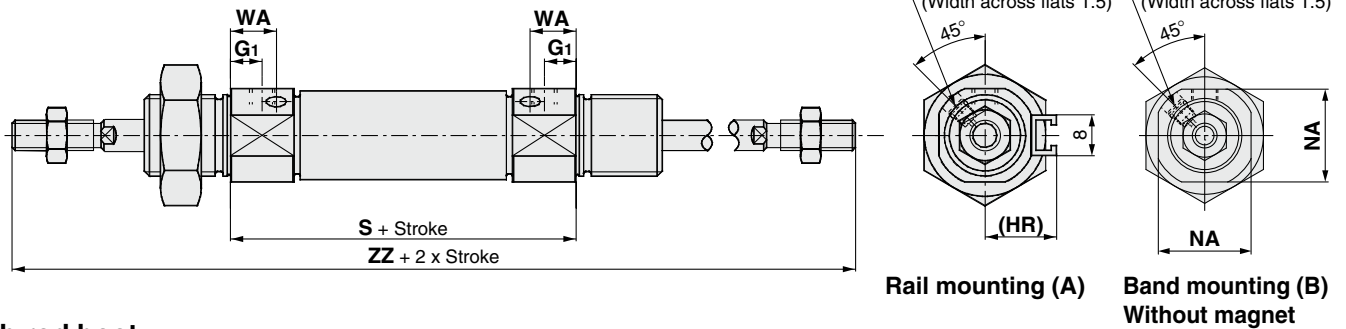
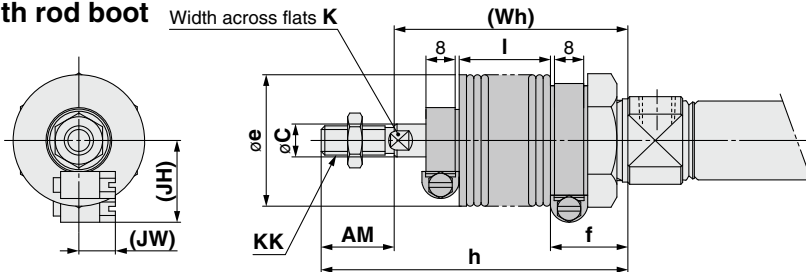
(): For air cushion

Dimensions**Double end boss-cut**

C□85WE Bore size – Stroke – □



Air cushion: C□85WE Bore size – Stroke C – □

**With rod boot****Dimensions**

Bore size	AM	BE	C	EE	F	G ₁	H	(HR)	K	KK	KV	KW	NA	ND	S	SW	WA	(WH)	ZZ
8	12	M12 x 1.25	4	M5 x 0.8	12	7	28	13.4	—	M4 x 0.7	19	6	15	12	48 {54}	7	—	16	104 {110}
10	12	M12 x 1.25	4	M5 x 0.8	12	7 (5.5)	28	14.2	—	M4 x 0.7	19	6	15	12	48 (53)	7	10.5	16	104 (109)
12	16	M16 x 1.5	6	M5 x 0.8	17	8 (5.5)	38	14.2	5	M6 x 1	24	8	18.3	16	52 (54)	10	9.5	22	128 (130)
16	16	M16 x 1.5	6	M5 x 0.8	17	8 (5.5)	38	14.2	5	M6 x 1	24	8	18.3	16	52 (54)	10	9.5	22	128 (130)
20	20	M22 x 1.5	8	G1/8	20	8	44	17	6	M8 x 1.25	32	11	24	22	62	13	13	24	150
25	22	M22 x 1.5	10	G1/8	22	8	50	20	8	M10 x 1.25	32	11	30	22	65	17	13	28	165

() : For air cushion { } : For built-in magnet

With Rod Boot

Item	AM	C	e	f	K	KK	h							(JH)	(JW)	(Wh)						
Bore size	Stroke						1 to 50	51 to 100	101 to 150	151 to 200	201 to 300	301 to 400	401 to 500	Reference	Reference	1 to 50	51 to 100	101 to 150	151 to 200	201 to 300	301 to 400	401 to 500
20	20	8	36	22	6	M8 x 1.25	71	84	96	109	134	159	—	23.5	10.5	51	64	76	89	114	139	—
25	22	10	36	22	8	M10 x 1.25	74	87	99	112	137	162	187	23.5	10.5	52	65	77	90	115	140	165

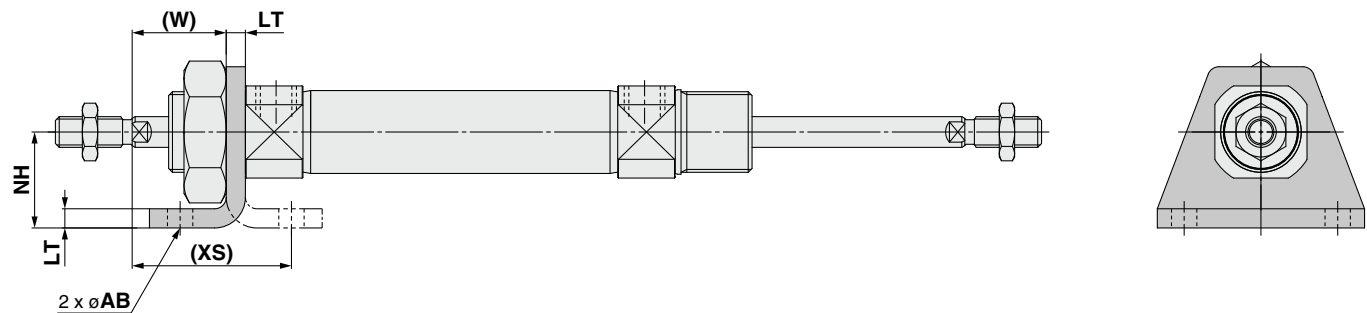
Refer to page 16 of Standard Type Single Rod for details of accessories (rod end, double knuckle joint, floating joint).

C85W Series

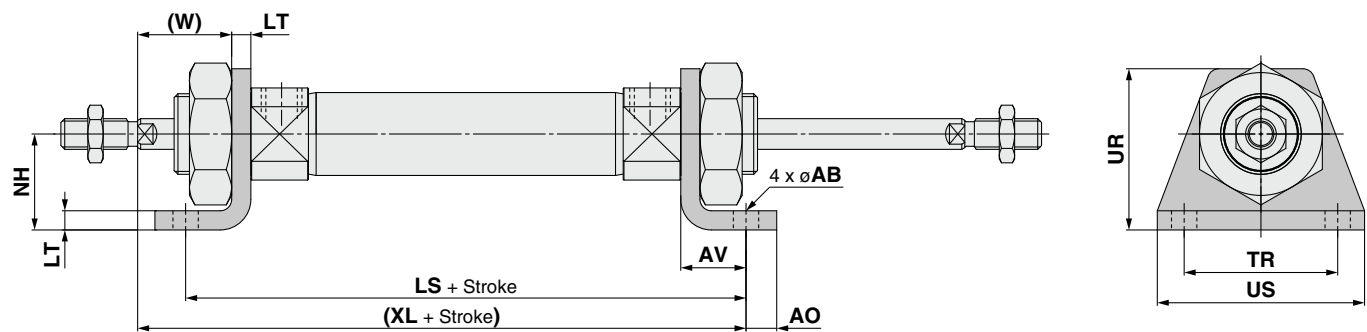
Dimensions

Bracket is shipped together with the product.

Single foot: C□85WE□-□L
(With mounting bracket)



Double foot: C□85WE□-□M
(With mounting bracket)



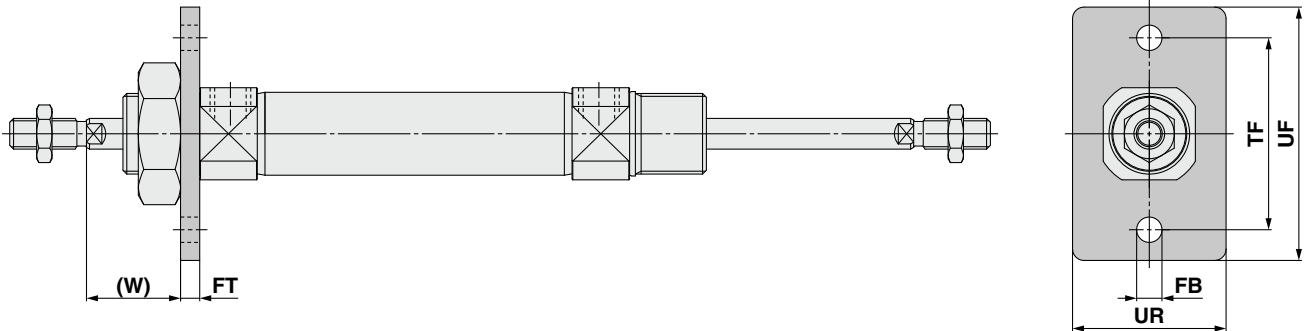
[mm]												
Bore size	AB	AO	AV	LS	LT	NH	TR _{JS14}	UR	US	(W)	(XL)	(XS)
8	4.5	5	11	70 {76}	3.2	16	25	26	35	12.8	75 {81}	23.8
10	4.5	5	11	70 (75)	3.2	16	25	26	35	12.8	75 (80)	23.8
12	5.5	6	14	80 (82)	4	20	32	33	42	18	88 (90)	32
16	5.5	6	14	80 (82)	4	20	32	33	42	18	88 (90)	32
20	6.6	8	17	96	5	25	40	42	54	19	103	36
25	6.6	8	17	99	5	25	40	42	54	23	110	40

(): For air cushion { }: For built-in magnet

Refer to page 16 of Standard Type Single Rod for details of accessories (rod end, double knuckle joint, floating joint).

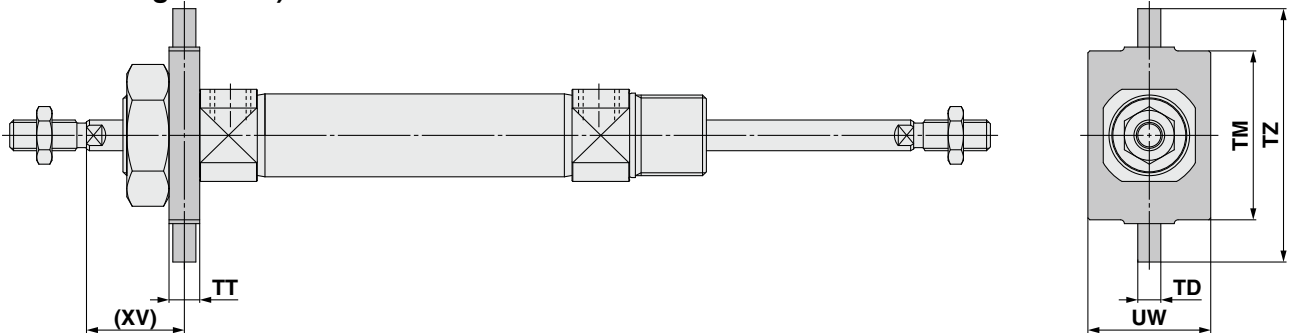
Dimensions

Bracket is shipped together with the product.

Flange: C□85WE□-□G
(With mounting bracket)

[mm]

Bore size	FB _{H13}	FT	TF	UF	UR	(W)
8	4.5	3.2	30	40	22	12.8
10	4.5	3.2	30	40	22	12.8
12	5.5	4	40	52	30	18
16	5.5	4	40	52	30	18
20	6.6	5	50	66	40	19
25	6.6	5	50	66	40	23

Trunnion: C□85WE□-□U
(With mounting bracket)

[mm]

Bore size	TD _{e8}	TM	TT	TZ	UW	(XV)
8	4	26	6	38	20	13
10	4	26	6	38	20	13
12	6	38	8	58	25	18
16	6	38	8	58	25	18
20	6	46	8	66	32	20
25	6	46	8	66	32	24

Refer to page 16 of Standard Type Single Rod for details of accessories
(rod end, double knuckle joint, floating joint).

ISO Standards

Air Cylinder: Standard Single Acting, Spring Return/Extend **C85 Series** ø8, ø10, ø12, ø16, ø20, ø25

RoHS

How to Order

Single acting, Spring return/extend **C D 85 N 20 - 40 S L V - B - M9BW S -**

Built-in magnet

Nil	None
D	Built-in magnet

Head cover type

N	Basic (Integrated clevis)
E	Double end boss-cut
F	Boss-cut/Basic
Y	Head cover axial port

Applicable head cover

Action	Head cover type			
	N	E	F	Y
Single acting, Spring return	●	●	●	●
Single acting, Spring extend	●	●	●	—

Bore size

8	8 mm
10	10 mm
12	12 mm
16	16 mm
20	20 mm
25	25 mm

Cylinder stroke [mm]
Refer to the next page for standard strokes.

Action

S	Single acting, Spring return
T	Single acting, Spring extend

Accessory*1

Nil	None
V	Rod end
W	Double knuckle joint

*1 Refer to Mounting Brackets/Accessories on page 25 for details of accessories.
* Accessory is shipped together with the product.

Auto switch mounting type*1

A	Rail mounting
B	Band mounting

*1 The symbol is "Nil" for no magnet.

Number of auto switches

Nil	2
S	1
n	n

Made to order
For details, refer to page 24.

Auto switch

Nil	Without auto switch
-----	---------------------

* For applicable auto switches, refer to the table below.
* Auto switches are shipped together with the product.

Mounting bracket*1

Nil	None
L	Single foot
M	Double foot
G	Flange
U	Trunnion
N	Clevis

*1 Refer to Mounting Brackets/Accessories on page 25 for details of mounting brackets.
* Mounting bracket is shipped together with the product.

Applicable mounting bracket

Action	Head cover type	Mounting bracket					
		L	M	G	U	N	
Single acting, Spring return	N	●	●	●	●	●	
	E	●	●	●	●	—	
	F	●	—	●	●	—	
	Y	●	—	●	●	—	
Single acting, Spring extend	N	●	●	●	●	●	
	E	●	●	●	●	—	
	F	●	—	●	●	—	
	F	●	—	●	●	—	

Applicable Auto Switches/Refer to the **Web Catalog** or Best Pneumatics for further information on auto switches.

Type	Special function	Electrical entry	Indicator light	Wiring (Output)	Load voltage		Auto switch model				Lead wire length [m]					Pre-wired connector	Applicable load					
					DC	AC	Band mounting		Rail mounting		0.5 (Nil)	1 (M)	3 (L)	5 (Z)	None (N)							
							Perpendicular	In-line	Perpendicular	In-line												
Solid state auto switch	—	Grommet	Yes	3-wire (NPN)	24 V	—	M9NV	M9N	M9NV	M9N	●	●	●	○	—	○	IC circuit					
		3-wire (PNP)		M9PV			M9P	M9PV	M9P	●	●	●	○	—	○							
	Connector	2-wire		12 V			M9BV	M9B	M9BV	M9B	●	●	●	○	—	○	—					
	Diagnostic indication (2-color indicator)	Grommet		3-wire (NPN)			5 V, 12 V	M9NVV	M9NW	M9NVV	M9NW	●	●	●	○	—		○	IC circuit			
				3-wire (PNP)			M9PVV	M9PW	M9PVV	M9PW	●	●	●	○	—	○						
				2-wire			12 V	M9BWV	M9BW	M9BWV	M9BW	●	●	●	○	—	○	—				
				3-wire (NPN)			5 V, 12 V	M9NAV*1	M9NA*1	M9NAV*1	M9NA*1	○	○	●	○	—	○		IC circuit			
				3-wire (PNP)			12 V	M9PAV*1	M9PA*1	M9PAV*1	M9PA*1	○	○	●	○	—	○	—				
				2-wire			5 V, 12 V	M9BAV*1	M9BA*1	M9BAV*1	M9BA*1	○	○	●	○	—	○		—			
				Water-resistant (2-color indicator)			Grommet	2-wire	12 V	M9BAV*1	M9BA*1	M9BAV*1	M9BA*1	○	○	●	○	—		○	—	
4-wire (NPN)			5 V, 12 V		—	H7NF		—	F79F	●	—	●	○	—	○	IC circuit						
With diagnostic output (2-color indicator)	Connector	4-wire (NPN)	5 V, 12 V	—	H7NF	—	F79F	●	—	●	○	—	○	IC circuit								
Reed auto switch	—	Grommet	Yes	3-wire (NPN equivalent)	24 V	—	A96V	A96	A96V	A96	●	●	●	●	—	○	IC circuit	—				
				—			200 V	—	—	A72	A72H	●	—	●	—	—			—			
	Diagnostic indication (2-color indicator)	Grommet		Yes			2-wire	12 V	100 V	A93V	A93	A93V	A93	●	●	●	●	—	○*2	—		
									100 V or less	A90V	A90	A90V	A90	●	●	●	●	—	○*2		IC circuit	
									—	—	C73C	A73C	—	●	—	●	●	●	—	—		—
									24 V or less	—	C80C	A80C	—	●	—	●	●	●	—	—	IC circuit	
									—	—	—	A79W	—	●	—	●	—	—	—	—		—
									Connector	—	—	—	A79W	—	●	—	●	—	—	—	—	
									Grommet	—	—	—	A79W	—	●	—	●	—	—	—	—	—
									—	—	—	—	A79W	—	●	—	●	—	—	—	—	
—	—	—	—	A79W	—	●	—	●	—	—	—	—	—									

*1 Water-resistant type auto switches can be mounted on the above models, but SMC cannot guarantee water resistance.

Please contact SMC regarding water-resistant types with the above model numbers.

*2 The load voltage used is 24 VDC.

* Lead wire length symbols: 0.5 m..... Nil (Example) M9NW 3 m..... L (Example) M9NL None..... N (Example) H7CN
1 m..... M (Example) M9NM 5 m..... Z (Example) M9NZ

* Since there are other applicable auto switches than listed above, refer to page 115 for details.

* Auto switches marked with "○" are produced upon receipt of order.

* D-A9□/M9□/A7□/A80□/F7□/J7□ auto switches are shipped together, but not assembled. (For band mounting, only the auto switch mounting brackets are assembled before shipment.)

* When mounting a band on bore size ø8, ø10, or ø12, the D-A9□(V) cannot be mounted.

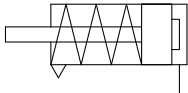
* When mounting a rail on bore size ø8, ø10, or ø12, the D-A9□(V) and A79W cannot be mounted.

* When mounting a rail on bore size ø20 or ø25, the D-M9□(V), M9□W(V), and M9□A(V) cannot be mounted.

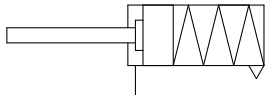


Symbol

Single acting: Spring return, Rubber bumper



Single acting: Spring extend, Rubber bumper



Refer to pages 105 to 115 for cylinders with auto switches.

- Auto Switch Proper Mounting Position (Detection at stroke end) and Mounting Height
- Minimum Stroke for Auto Switch Mounting
- Operating Range
- Auto Switch Mounting Brackets/Part No.



Made to Order
(For details, refer to pages 119 to 124.)

Symbol	Specifications
-XA	Change of rod end shape
-XC6	Made of stainless steel

⚠ Precautions

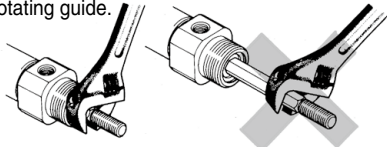
Be sure to read this before handling the products. Refer to page 219 for safety instructions. For actuator and auto switch precautions, refer to the "Handling Precautions for SMC Products" and the "Operation Manual" on the SMC website: <http://www.smcworld.com>

⚠ Caution

1. Avoid using the air cylinder in such a way that rotational torque would be applied to the piston rod.

To screw a bracket or a nut onto the threaded portion at the tip of the piston rod, make sure to retract the piston rod entirely, and place a wrench over the flat portion of the rod that protrudes.

Tighten it by giving consideration to prevent the tightening torque from being applied to the non-rotating guide.



Specifications

Bore size [mm]	8	10	12	16	20	25
Type	Pneumatic					
Action	Single acting, Single rod					
Fluid	Air					
Proof pressure	1.5 MPa					
Max. operating pressure	1.0 MPa					
Min. operating pressure	0.22 MPa	0.18 MPa		0.13 MPa	Return: 0.18 MPa, Extend: 0.23 MPa	
Ambient and fluid temperature	Without auto switch: −20°C to 80°C (No freezing)					
	With auto switch: −10°C to 60°C (No freezing)					
Lubricant	Not required (Non-lube)					
Stroke length tolerance	+0.0 mm				+1.0.4 mm	
Piston speed	50 to 1500 mm/s					
Cushion	Rubber bumper					
Allowable kinetic energy	0.02 J	0.03 J	0.04 J	0.09 J	0.27 J	0.4 J

Standard Strokes

Bore size [mm]	Standard stroke [mm]*1	Max. stroke [mm]
8	10, 25, 50	50
10		
12		
16	10, 25, 50, 100, 150	150
20		
25		

*1 Other strokes are available on request. (Request based production)

Spring Retracting Force

Spring Return

[N]

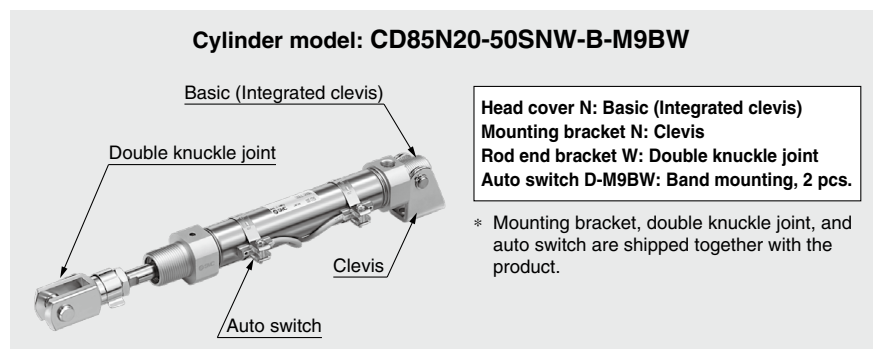
Bore size [mm]	Standard stroke [mm]	Spring force									
		10		25		50		100		150	
		Rod extended	Rod retracted	Rod extended	Rod retracted	Rod extended	Rod retracted	Rod extended	Rod retracted	Rod extended	Rod retracted
8	10, 25, 50	4.4	4.0	4.4	3.4	4.4	2.5	—	—	—	—
10		6.3	5.7	6.3	4.9	6.3	3.5	—	—	—	—
12		7.2	6.6	7.2	5.8	7.2	4.4	—	—	—	—
16	10, 25, 50, 100, 150	13.2	12.1	13.2	10.3	13.2	7.5	13.2	7.5	13.2	7.5
20		21.6	18.6	21.6	16.7	21.6	11.8	39.2	9.8	39.2	9.8
25		27.5	25.3	27.5	22.1	27.5	16.7	47.1	13.7	47.1	15.7

Spring Extend

[N]

Bore size [mm]	Standard stroke [mm]	Spring force									
		10		25		50		100		150	
		Rod retracted	Rod extended	Rod retracted	Rod extended	Rod retracted	Rod extended	Rod retracted	Rod extended	Rod retracted	Rod extended
8	10, 25, 50	5.3	3.9	5.3	3.1	5.3	2.7	—	—	—	—
10		6.0	4.8	6.0	4.0	6.0	3.5	—	—	—	—
12		6.6	5.6	6.6	4.9	6.6	4.5	—	—	—	—
16	10, 25, 50, 100, 150	14.7	11.3	14.7	9.2	14.7	7.9	14.7	7.9	14.7	7.9
20		39.2	33.0	39.2	23.5	39.2	9.8	39.2	9.8	39.2	9.8
25		47.1	40.4	47.1	30.4	47.1	13.7	47.1	13.7	47.1	15.7

Option: Ordering Example of Cylinder Assembly



C85 Series

Mounting Brackets/Accessories

Mounting bracket/ Accessory			Standard (mounted to the body)		Mounting bracket (shipped together)							Accessory (shipped together)	
			Mounting nut	Rod end nut	Mounting nut	Foot	Flange	Trunnion	Clevis pivot bracket	Clevis pin	Pin retaining ring	Rod end	Double knuckle joint
Mounting bracket symbol	L	Single foot	● (1 pc.)	● (1 pc.)	—	● (1 pc.)	—	—	—	—	—	—	—
	M	Double foot	● (1 pc.)	● (1 pc.)	● (1 pc.)	● (2 pcs.)	—	—	—	—	—	—	—
	G	Flange	● (1 pc.)	● (1 pc.)	—	—	● (1 pc.)	—	—	—	—	—	—
	U	Trunnion	● (1 pc.)	● (1 pc.)	—	—	—	● (1 pc.)	—	—	—	—	—
	N	Clevis	● (1 pc.)	● (1 pc.)	—	—	—	—	● (1 pc.)	● (1 pc.)	● (2 pcs.)	—	—
Accessory symbol	V	Rod end	● (1 pc.)	● (1 pc.)	—	—	—	—	—	—	—	● (1 pc.)	—
	W	Double knuckle joint	● (1 pc.)	● (1 pc.)	—	—	—	—	—	—	—	—	● (1 pc.)

Mounting Bracket/Accessory Part Nos.

Mounting bracket/Accessory		Bore size [mm]						Contents
		8	10	12	16	20	25	
Mounting bracket	Rod end nut	C85NT10		C85NT16		C85NT20	C85NT25	1 rod end nut
	Mounting nut	C85SN10		C85SN16		C85SN25		1 mounting nut
	Foot (1 pc.)	C85L10A		C85L16A		C85L25A		1 foot bracket
	Foot (2 pcs. with 1 mounting nut)	C85L10B		C85L16B		C85L25B		2 foot brackets, 1 mounting nut
	Foot (1 pc. with 1 mounting nut)	C85L10C		C85L16C		C85L25C		1 foot bracket, 1 mounting nut
	Flange	C85F10		C85F16		C85F25		1 flange
	Trunnion	C85T10		C85T16		C85T25		1 trunnion
	Clevis	C85C10		C85C16		C85C25		1 clevis pivot bracket, 1 clevis pin, 2 pin retaining rings
Accessory	Rod end	KJ4D		KJ6D		KJ8D	KJ10D	1 rod end
	Double knuckle joint	GKM4-8		GKM6-12		GKM8-16	GKM10-20	1 double knuckle joint
	Floating joint	JA10-4-070		JA15-6-100		JA20-8-125	JA30-10-125	1 floating joint

* Refer to page 16 for dimensions of accessories.

Replacement Parts: For Standard Type (Only for single acting, spring extend)

Bore size [mm]	Part no.	Note
20	C85A-20PS	Every set includes: 1 rod seal 1 flat washer 1 retaining ring
25	C85A-25PS	

* When replacing the seals, use **grease (GR-S-010: ordered separately)** on the sliding parts.
In the single acting, spring return type, there is no rod seal so it is not possible to replace any seals.

Weights

Single Acting, Spring Return (S)

[g]

Bore size [mm]				8	10	12	16	20	25
Basic weight	Without magnet	1 to 50 mm stroke	C85N□-□S	36	40	80	98	185	249
			C85E□-□S	38	42	83	102	190	254
			C85F□-□S	35	38	74	88	170	232
			C85Y□-□S	35	38	74	88	170	233
		51 to 100 mm stroke	C85N□-□S	—	—	—	119	248	340
			C85E□-□S	—	—	—	123	253	345
			C85F□-□S	—	—	—	109	233	323
			C85Y□-□S	—	—	—	109	234	324
		101 to 150 mm stroke	C85N□-□S	—	—	—	140	283	390
			C85E□-□S	—	—	—	144	288	395
			C85F□-□S	—	—	—	131	268	373
			C85Y□-□S	—	—	—	131	268	374
	With magnet	1 to 50 mm stroke	CD85N□-□S	38	42	86	102	188	253
			CD85E□-□S	40	44	89	106	193	258
			CD85F□-□S	37	40	80	90	173	236
			CD85Y□-□S	37	40	80	92	174	237
		51 to 100 mm stroke	CD85N□-□S	—	—	—	123	251	344
			CD85E□-□S	—	—	—	127	257	349
			CD85F□-□S	—	—	—	113	236	326
			CD85Y□-□S	—	—	—	113	237	328
		101 to 150 mm stroke	CD85N□-□S	—	—	—	144	286	394
			CD85E□-□S	—	—	—	148	291	399
			CD85F□-□S	—	—	—	135	271	376
			CD85Y□-□S	—	—	—	135	272	378
Additional weight per 10 mm of stroke				2.1	2.3	4.1	5.1	8.1	11.3
Mounting bracket	Foot (1 pc.)	C85L□A	20		40		95		
	Foot (2 pcs. with 1 mounting nut)	C85L□B	55		105		210		
	Flange	C85F□	12		25		90		
	Trunnion	C85T□	20		50		75		
	Clevis	C85C□	20		40		85		
Accessory	Rod end	KJ□D	17		25		45	70	
	Double knuckle joint	GKM□-□	10		20		50	100	
	Floating joint	JA□-□-□	10		20		50	70	

Calculation example: **C85N20-50SNV**

- Basic weight 185 g (ø20)
 - Additional weight ... 8.1 g (at 10 mm stroke)
 - Cylinder stroke 50 mm
 - Mounting bracket: Clevis ... 85 g
 - Accessory: Rod end 45 g
- 185 + 8.1 x 50/10 + 85 + 45 ≈ **356 g**

Single Acting, Spring Extend (T)

[g]

Bore size [mm]				8	10	12	16	20	25	
Basic weight	Without magnet	1 to 50 mm stroke	C85N□-□T	43	47	90	116	205	274	
			C85E□-□T	45	49	93	120	209	279	
			C85F□-□T	41	46	84	106	189	257	
		51 to 100 mm stroke	C85N□-□T	—	—	—	146	229	309	
			C85E□-□T	—	—	—	150	234	314	
			C85F□-□T	—	—	—	137	214	291	
			101 to 150 mm stroke	C85N□-□T	—	—	—	177	256	344
				C85E□-□T	—	—	—	181	260	349
				C85F□-□T	—	—	—	167	240	327
	With magnet	1 to 50 mm stroke	CD85N□-□T	45	49	93	120	208	278	
			CD85E□-□T	47	51	96	124	213	283	
			CD85F□-□T	43	48	87	110	193	261	
			CD85N□-□T	—	—	—	150	233	312	
		51 to 100 mm stroke	CD85E□-□T	—	—	—	154	238	317	
			CD85F□-□T	—	—	—	141	218	295	
			CD85N□-□T	—	—	—	181	259	348	
			101 to 150 mm stroke	CD85E□-□T	—	—	—	184	264	353
CD85F□-□T		—		—	—	171	244	331		
Additional weight per 10 mm of stroke				2.1	2.3	4.1	5.1	8.1	11.3	
Mounting bracket	Foot (1 pc.)	C85L□A	20		40		95			
	Foot (2 pcs. with 1 mounting nut)	C85L□B	55		105		210			
	Flange	C85F□	12		25		90			
	Trunnion	C85T□	20		50		75			
	Clevis	C85C□	20		40		85			
Accessory	Rod end	KJ□D	17		25		45	70		
	Double knuckle joint	GKM□-□	10		20		50	100		
	Floating joint	JA□-□-□	10		20		50	70		

Calculation example: **C85N20-50TNV**

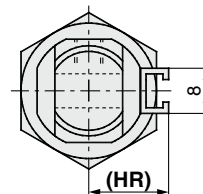
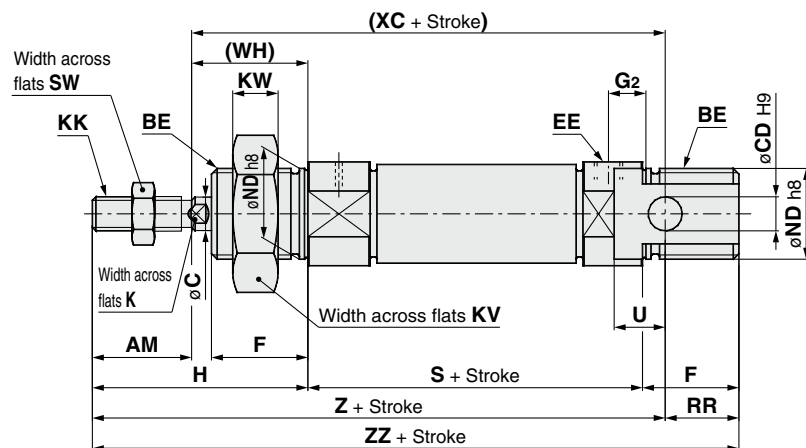
- Basic weight 205 g (ø20)
 - Additional weight ... 8.1 g (at 10 mm stroke)
 - Cylinder stroke 50 mm
 - Mounting bracket: Clevis ... 85 g
 - Accessory: Rod end 45 g
- 205 + 8.1 x 50/10 + 85 + 45 ≈ **376 g**

C85 Series

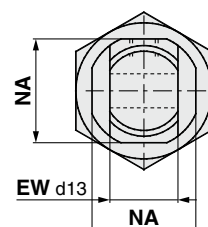
Dimensions: Single Acting, Spring Return

Basic (Integrated clevis)

C□85N Bore size – Stroke S – □



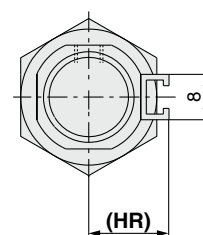
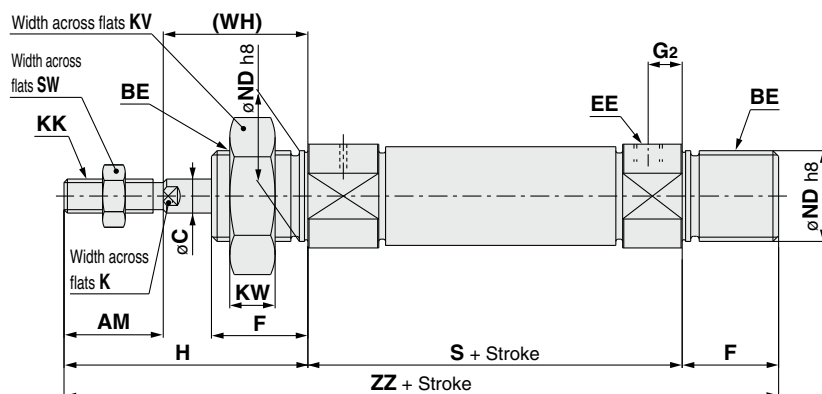
Rail mounting (A)



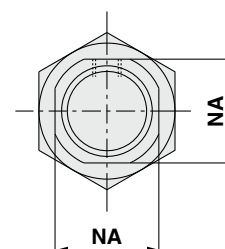
Band mounting (B)
Without magnet

Double end boss-cut

C□85E Bore size – Stroke S – □



Rail mounting (A)



Band mounting (B)
Without magnet

Dimensions

[mm]

Bore size	AM	BE	C	CD	EE	EW	F	G ₂	H	(HR)	K	KK	KV	KW	NA	ND	RR	SW	U	(WH)
8	12	M12 x 1.25	4	4	M5 x 0.8	8	12	5	28	13.4	—	M4 x 0.7	19	6	15	12	10	7	6	16
10	12	M12 x 1.25	4	4	M5 x 0.8	8	12	5	28	14.2	—	M4 x 0.7	19	6	15	12	10	7	6	16
12	16	M16 x 1.5	6	6	M5 x 0.8	12	17	6	38	14.2	5	M6 x 1	24	8	18.3	16	14	10	9	22
16	16	M16 x 1.5	6	6	M5 x 0.8	12	17	6	38	14.2	5	M6 x 1	24	8	18.3	16	13	10	9	22
20	20	M22 x 1.5	8	8	G1/8	16	20	8	44	17	6	M8 x 1.25	32	11	24	22	11	13	12	24
25	22	M22 x 1.5	10	8	G1/8	16	22	8	50	20	8	M10 x 1.25	32	11	30	22	11	17	12	28

Bore size	S			(XC)			Z			ZZ		
	1 to 50	51 to 100	101 to 150	1 to 50	51 to 100	101 to 150	1 to 50	51 to 100	101 to 150	1 to 50	51 to 100	101 to 150
8	46 (52)	—	—	64 (70)	—	—	76 (82)	—	—	86 (92)	—	—
10	46 (50)	—	—	64 (68)	—	—	76 (80)	—	—	86 (90)	—	—
12	50 (53.5)	—	—	75 (78.5)	—	—	91 (94.5)	—	—	105 (108.5)	—	—
16	56 (59.5)	71.5 (75)	87 (90.5)	82 (85.5)	97.5 (101)	113 (116.5)	98 (101.5)	113.5 (117)	129 (132.5)	111 (114.5)	126.5 (130)	142 (145.5)
20	62	112	137	95	145	170	115	165	190	126	176	201
25	65	113.5	138.5	104	152.5	177.5	126	174.5	199.5	137	185.5	210.5

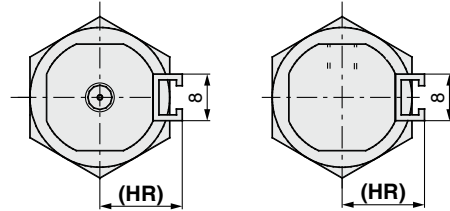
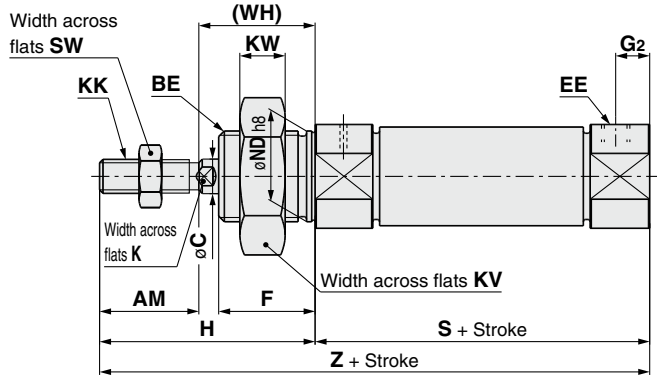
() : For built-in magnet

Refer to page 16 of Standard Type Single Rod for details of accessories (rod end, double knuckle joint, floating joint).

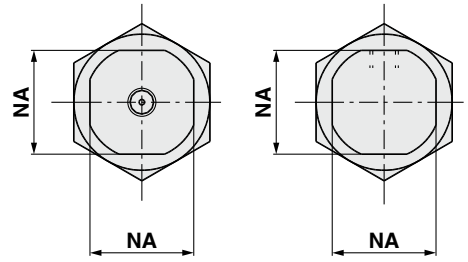
Dimensions: Single Acting, Spring Return

Boss-cut/Basic, Head cover axial port

C□85F/Y Bore size – Stroke S – □



Head cover axial port
Boss-cut/Basic
Rail mounting (A)



Head cover axial port
Boss-cut/Basic
Band mounting (B)
Without magnet

Dimensions

Bore size	AM	BE	C	EE	F	G ₂	H	(HR)	K	KK	KV	KW	NA	ND	SW	(WH)
8	12	M12 x 1.25	4	M5 x 0.8	12	5	28	13.4	—	M4 x 0.7	19	6	15	12	7	16
10	12	M12 x 1.25	4	M5 x 0.8	12	5	28	14.2	—	M4 x 0.7	19	6	15	12	7	16
12	16	M16 x 1.5	6	M5 x 0.8	17	6	38	14.2	5	M6 x 1	24	8	18.3	16	10	22
16	16	M16 x 1.5	6	M5 x 0.8	17	6	38	14.2	5	M6 x 1	24	8	18.3	16	10	22
20	20	M22 x 1.5	8	G1/8	20	8	44	17	6	M8 x 1.25	32	11	24	22	13	24
25	22	M22 x 1.5	10	G1/8	22	8	50	20	8	M10 x 1.25	32	11	30	22	17	28

Bore size	S			Z		
	1 to 50	51 to 100	101 to 150	1 to 50	51 to 100	101 to 150
8	46 (52)	—	—	74 (80)	—	—
10	46 (50)	—	—	74 (78)	—	—
12	50 (53.5)	—	—	88 (91.5)	—	—
16	50 (53.5)	65.5 (69)	81 (84.5)	88 (91.5)	103.5 (107)	119 (122.5)
20	62	112	137	106	156	181
25	65	113.5	138.5	115	163.5	188.5

(): For built-in magnet

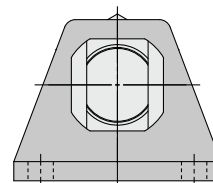
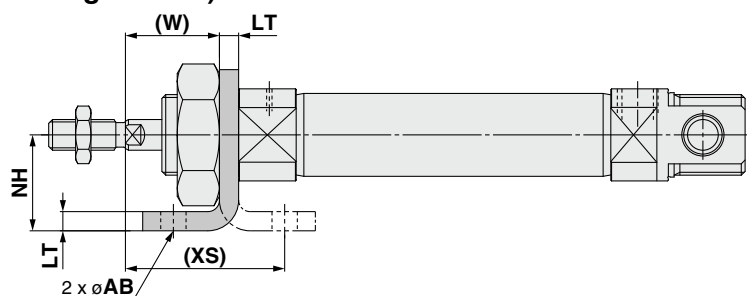
Refer to page 16 of Standard Type Single Rod for details of accessories (rod end, double knuckle joint, floating joint).

C85 Series

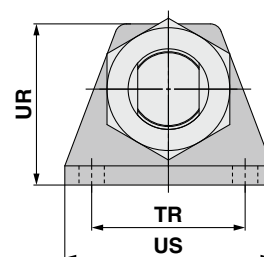
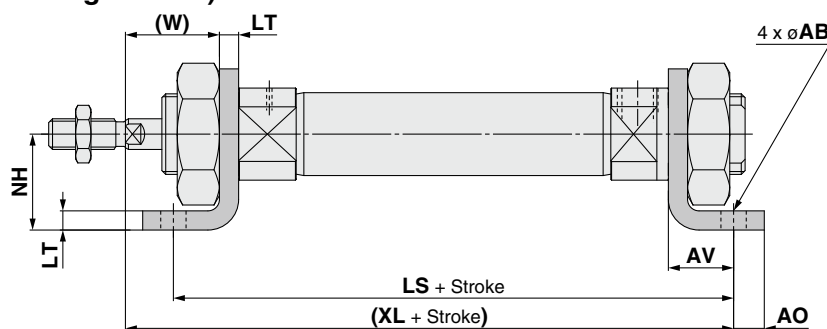
Dimensions: Single Acting, Spring Return

Bracket is shipped together with the product.

Single foot: C□85N□-□SL
(With mounting bracket)



Double foot: C□85N□-□SM
(With mounting bracket)



Bore size	AB	AO	AV	LS			LT	NH	TR _{Js14}	UR	US	(W)	(XS)	(XL)		
				1 to 50	51 to 100	101 to 150								1 to 50	51 to 100	101 to 150
8	4.5	5	11	68 (74)	—	—	3.2	16	25	26	35	12.8	23.8	73 (79)	—	—
10	4.5	5	11	68 (72)	—	—	3.2	16	25	26	35	12.8	23.8	73 (77)	—	—
12	5.5	6	14	78 (81.5)	—	—	4	20	32	33	42	18	32	86 (89.5)	—	—
16	5.5	6	14	84 (87.5)	99.5 (103)	115 (118.5)	4	20	32	33	42	18	32	92 (95.5)	107.5 (111)	123 (126.5)
20	6.6	8	17	96	146	171	5	25	40	42	54	19	36	103	153	178
25	6.6	8	17	96	147.5	172.5	5	25	40	42	54	23	40	110	158.5	183.5

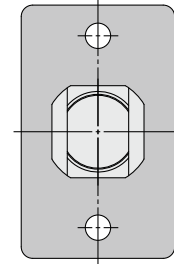
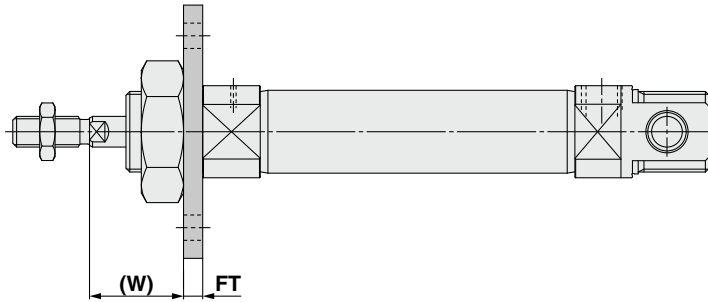
(): For built-in magnet

Refer to page 16 of Standard Type Single Rod for details of accessories (rod end, double knuckle joint, floating joint).

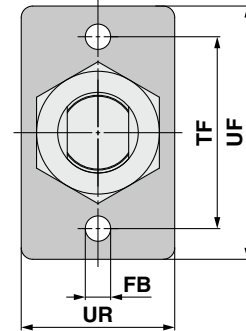
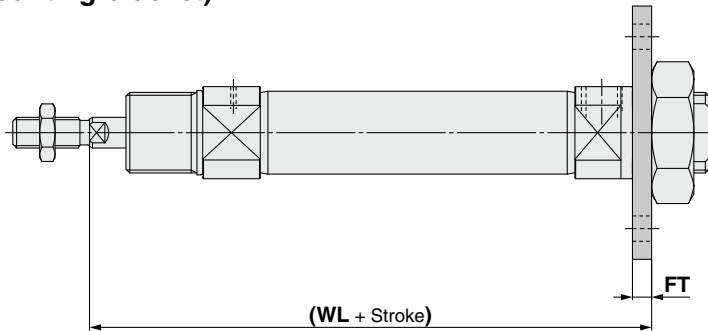
Dimensions: Single Acting, Spring Return

Bracket is shipped together with the product.

Rod flange: C□85N□-□SG
(With mounting bracket)



Head flange: C□85N□-□SG
(With mounting bracket)



[mm]

Bore size	FB _{H13}	FT	TF	UF	UR	(W)	(WL)		
							1 to 50	51 to 100	101 to 150
8	4.5	3.2	30	40	22	12.8	65.2 (71.2)	—	—
10	4.5	3.2	30	40	22	12.8	65.2 (69.2)	—	—
12	5.5	4	40	52	30	18	76 (79.5)	—	—
16	5.5	4	40	52	30	18	82 (85.5)	97.5 (101)	113 (116.5)
20	6.6	5	50	66	40	19	91	141	166
25	6.6	5	50	66	40	23	98	146.5	171.5

(): For built-in magnet

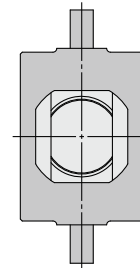
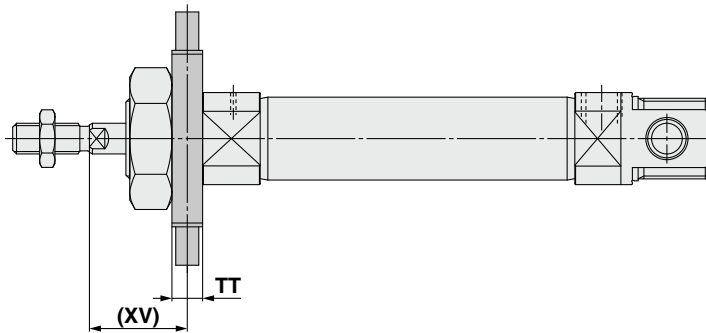
Refer to page 16 of Standard Type Single Rod for details of accessories (rod end, double knuckle joint, floating joint).

C85 Series

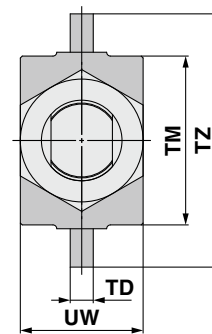
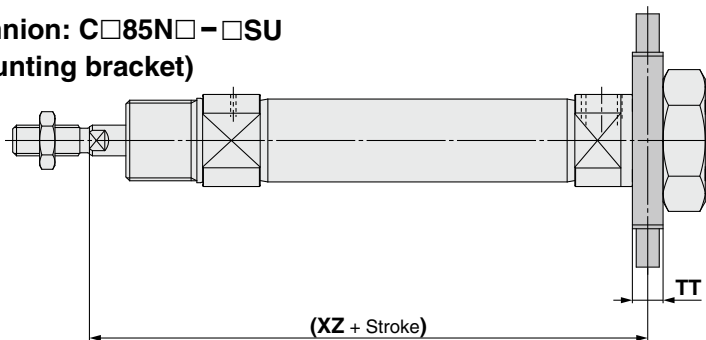
Dimensions: Single Acting, Spring Return

Bracket is shipped together with the product.

Rod trunnion: C□85N□-□SU (With mounting bracket)



Head trunnion: C□85N□-□SU
(With mounting bracket)

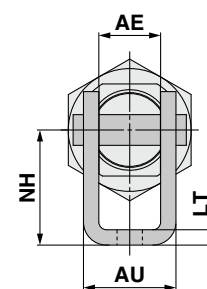
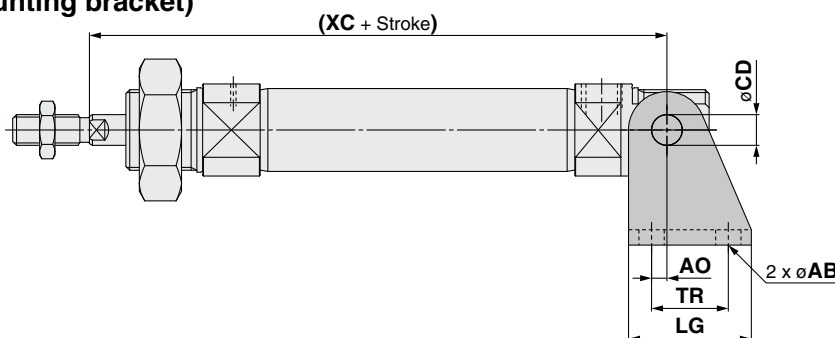


[mm]

Bore size	TD _{e8}	TM	TT	TZ	UW	(XV)	(XZ)		
							1 to 50	51 to 100	101 to 150
8	4	26	6	38	20	13	65 (71)	—	—
10	4	26	6	38	20	13	65 (69)	—	—
12	6	38	8	58	25	18	76 (79.5)	—	—
16	6	38	8	58	25	18	82 (85.5)	97.5 (101)	113 (116.5)
20	6	46	8	66	32	20	90	140	165
25	6	46	8	66	32	24	97	145.5	170.5

() : For built-in magnet

Clevis: C□85N□-□SN
(With mounting bracket)



[mm]

Bore size	AB	AE	AO	AU	CD _{H9}	LG	LT	NH	TR	(XC)		
										1 to 50	51 to 100	101 to 150
8	4.5	8.1	1.5	13.1	4	20	2.5	24	12.5	64 (70)	—	—
10	4.5	8.1	1.5	13.1	4	20	2.5	24	12.5	64 (68)	—	—
12	5.5	12.1	2	18.5	6	25	3.2	27	15	75 (78.5)	—	—
16	5.5	12.1	2	18.5	6	25	3.2	27	15	82 (85.5)	97.5 (101)	113 (116.5)
20	6.6	16.1	4	24.1	8	32	4	30	20	95	145	170
25	6.6	16.1	4	24.1	8	32	4	30	20	104	152.5	177.5

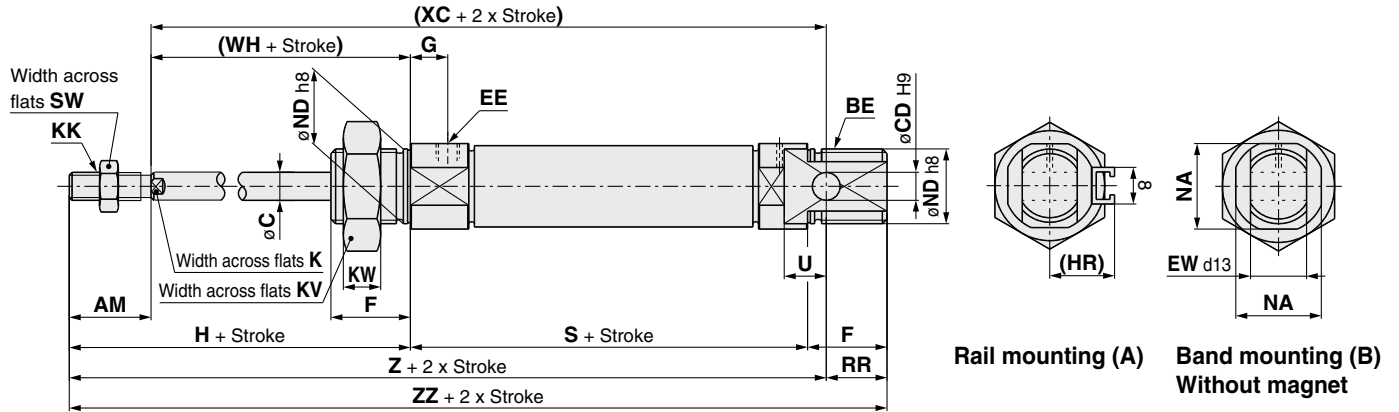
() : For built-in magnet

Refer to page 16 of Standard Type Single Rod for details of accessories (rod end, double knuckle joint, floating joint).

Dimensions: Single Acting, Spring Extend

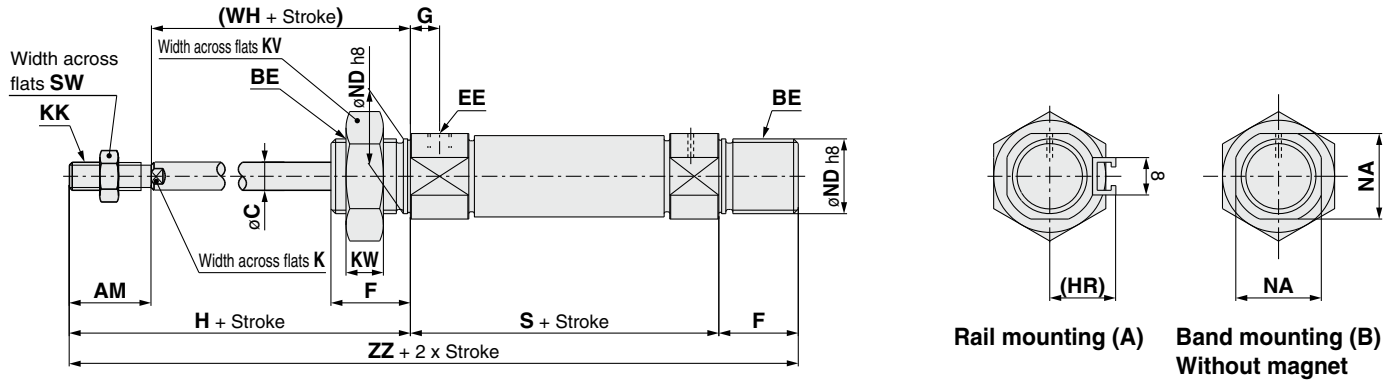
Basic (Integrated clevis)

C□85N Bore size – Stroke T – □



Double end boss-cut

C□85E Bore size – Stroke T – □



Dimensions

Bore size	AM	BE	C	CD	EE	EW	F	G	H	(HR)	K	KK	KV	KW	NA	ND	RR	SW	U	(WH)
8	12	M12 x 1.25	4	4	M5 x 0.8	8	12	7	28	13.4	—	M4 x 0.7	19	6	15	12	10	7	6	16
10	12	M12 x 1.25	4	4	M5 x 0.8	8	12	7	28	14.2	—	M4 x 0.7	19	6	15	12	10	7	6	16
12	16	M16 x 1.5	6	6	M5 x 0.8	12	17	8	38	14.2	5	M6 x 1	24	8	18.3	16	14	10	9	22
16	16	M16 x 1.5	6	6	M5 x 0.8	12	17	8	38	14.2	5	M6 x 1	24	8	18.3	16	13	10	9	22
20	20	M22 x 1.5	8	8	G1/8	16	20	8	44	17	6	M8 x 1.25	32	11	24	22	11	13	12	24
25	22	M22 x 1.5	10	8	G1/8	16	22	8	50	20	8	M10 x 1.25	32	11	30	22	11	17	12	28

Bore size	S			(XC)			Z			ZZ		
	1 to 50	51 to 100	101 to 150	1 to 50	51 to 100	101 to 150	1 to 50	51 to 100	101 to 150	1 to 50	51 to 100	101 to 150
8	64.5 (70.5)	—	—	82.5 (88.5)	—	—	94.5 (100.5)	—	—	104.5 (110.5)	—	—
10	64.5 (68.5)	—	—	82.5 (86.5)	—	—	94.5 (98.5)	—	—	104.5 (108.5)	—	—
12	70 (73.5)	—	—	95 (98.5)	—	—	111 (114.5)	—	—	125 (128.5)	—	—
16	75 (78.5)	101 (104.5)	127 (130.5)	101 (104.5)	127 (130.5)	153 (156.5)	117 (120.5)	143 (146.5)	169 (172.5)	130 (133.5)	156 (159.5)	182 (185.5)
20	87	112	137	120	145	170	140	165	190	151	176	201
25	88.5	113.5	138.5	127.5	152.5	177.5	149.5	174.5	199.5	160.5	185.5	210.5

(): For built-in magnet

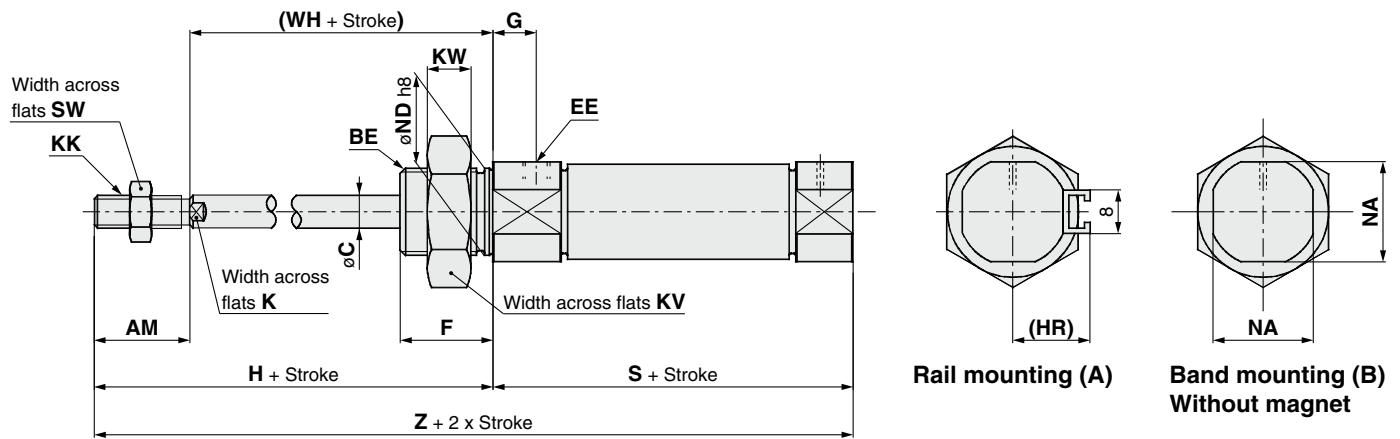
Refer to page 16 of Standard Type Single Rod for details of accessories (rod end, double knuckle joint, floating joint).

C85 Series

Dimensions: Single Acting, Spring Extend

Boss-cut/Basic

C□85F Bore size – Stroke T – □



Dimensions

[mm]

Bore size	AM	BE	C	EE	F	G	H	(HR)	K	KK	KV	KW	NA	ND	SW	(WH)
8	12	M12 x 1.25	4	M5 x 0.8	12	7	28	13.4	—	M4 x 0.7	19	6	15	12	7	16
10	12	M12 x 1.25	4	M5 x 0.8	12	7	28	14.2	—	M4 x 0.7	19	6	15	12	7	16
12	16	M16 x 1.5	6	M5 x 0.8	17	8	38	14.2	5	M6 x 1	24	8	18.3	16	10	22
16	16	M16 x 1.5	6	M5 x 0.8	17	8	38	14.2	5	M6 x 1	24	8	18.3	16	10	22
20	20	M22 x 1.5	8	G1/8	20	8	44	17	6	M8 x 1.25	32	11	24	22	13	24
25	20	M22 x 1.5	10	G1/8	22	8	50	20	8	M10 x 1.25	32	11	30	22	17	28

Bore size	S			Z		
	1 to 50	51 to 100	101 to 150	1 to 50	51 to 100	101 to 150
8	64.5 (70.5)	—	—	92.5 (98.5)	—	—
10	64.5 (68.5)	—	—	92.5 (96.5)	—	—
12	70 (73.5)	—	—	108 (111.5)	—	—
16	69 (72.5)	95 (98.5)	121 (124.5)	107 (110.5)	133 (136.5)	159 (162.5)
20	87	112	137	131	156	181
25	88.5	113.5	138.5	138.5	163.5	188.5

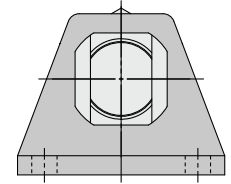
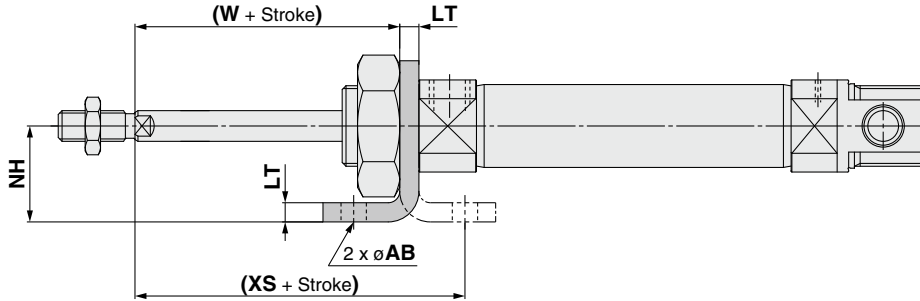
() : For built-in magnet

Refer to page 16 of Standard Type Single Rod for details of accessories (rod end, double knuckle joint, floating joint).

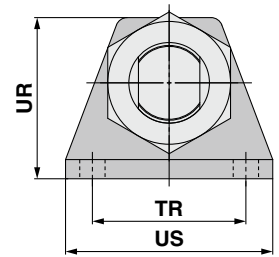
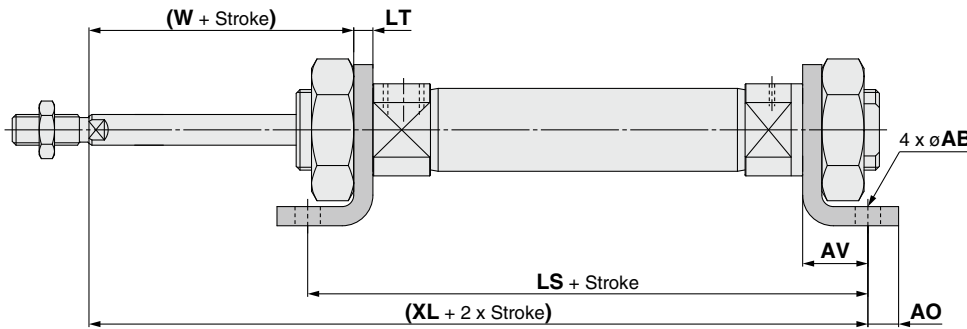
Dimensions: Single Acting, Spring Extend

Bracket is shipped together with the product.

Single foot: C□85N□-□TL
(With mounting bracket)



Double foot: C□85N□-□TM
(With mounting bracket)



Bore size	AB	AO	AV	LS			LT	NH	TR _{Js14}	UR	US	(W)	(XS)	(XL)		
				1 to 50	51 to 100	101 to 150								1 to 50	51 to 100	101 to 150
8	4.5	5	11	86.5 (92.5)	—	—	3.2	16	25	26	35	12.8	23.8	91.5 (97.5)	—	—
10	4.5	5	11	86.5 (90.5)	—	—	3.2	16	25	26	35	12.8	23.8	91.5 (95.5)	—	—
12	5.5	6	14	98 (101.5)	—	—	4	20	32	33	42	18	32	106 (109.5)	—	—
16	5.5	6	14	103 (106.5)	129 (132.5)	155 (158.5)	4	20	32	33	42	18	32	111 (114.5)	137 (140.5)	163 (166.5)
20	6.6	8	17	121	146	171	5	25	40	42	54	19	36	128	153	178
25	6.6	8	17	122.5	147.5	172.5	5	25	40	42	54	23	40	133.5	158.5	183.5

(): For built-in magnet

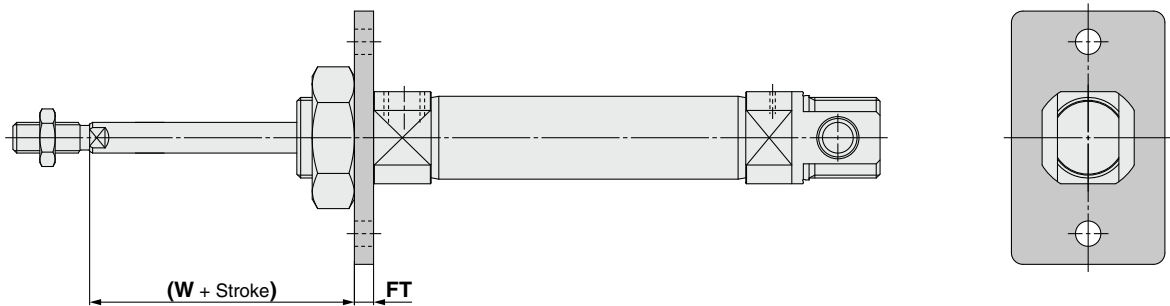
Refer to page 16 of Standard Type Single Rod for details of accessories (rod end, double knuckle joint, floating joint).

C85 Series

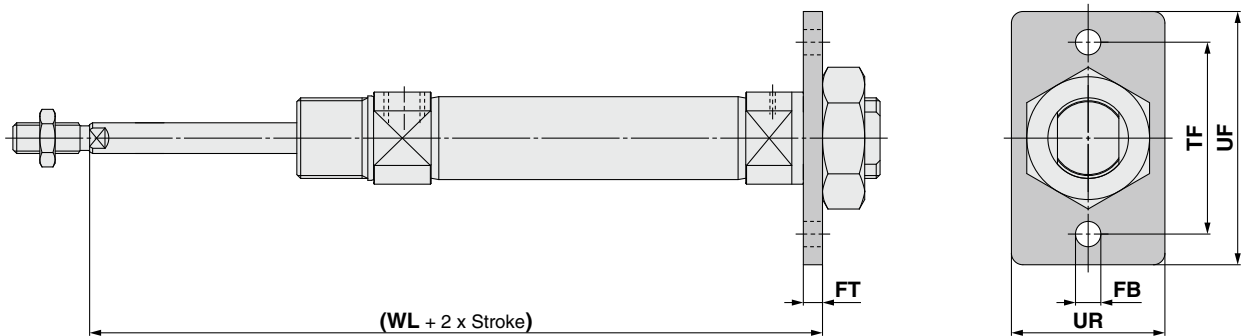
Dimensions: Single Acting, Spring Extend

Bracket is shipped together with the product.

Rod flange: C□85N□-□TG
(With mounting bracket)



Head flange: C□85N□-□TG
(With mounting bracket)



[mm]

Bore size	FB _{H13}	FT	TF	UF	UR	(W)	(WL)		
							1 to 50	51 to 100	101 to 150
8	4.5	3.2	30	40	22	12.8	83.7 (89.7)	—	—
10	4.5	3.2	30	40	22	12.8	83.7 (87.7)	—	—
12	5.5	4	40	52	30	18	96 (99.5)	—	—
16	5.5	4	40	52	30	18	101 (104.5)	127 (130.5)	153 (156.5)
20	6.6	5	50	66	40	19	116	141	166
25	6.6	5	50	66	40	23	121.5	146.5	171.5

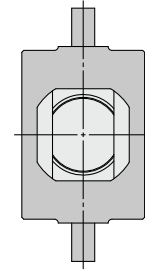
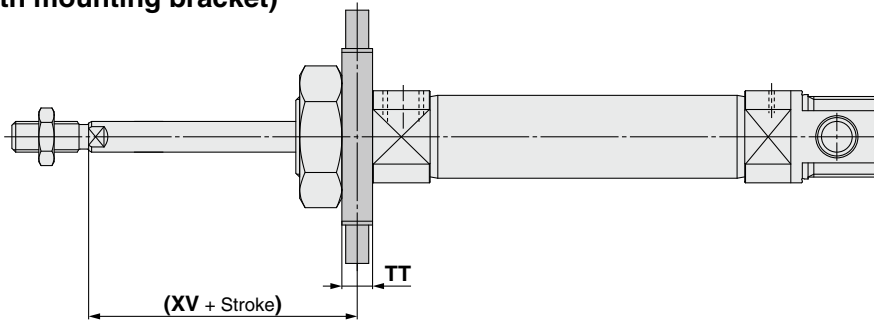
() : For built-in magnet

Refer to page 16 of Standard Type Single Rod for details of accessories (rod end, double knuckle joint, floating joint).

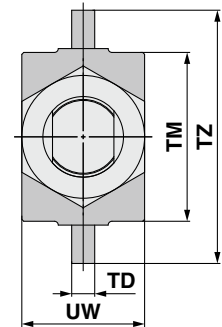
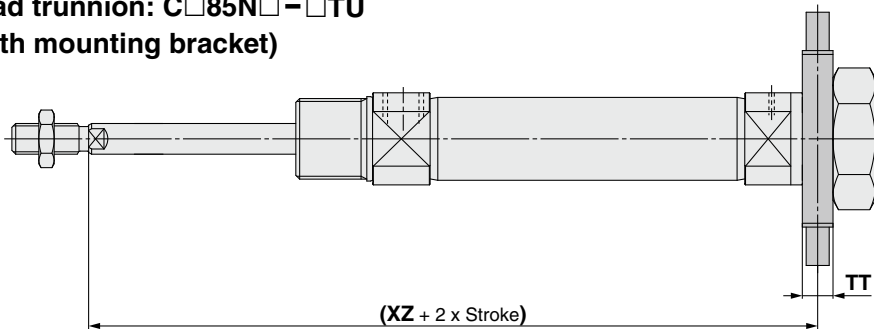
Dimensions: Single Acting, Spring Extend

Bracket is shipped together with the product.

Rod trunnion: C□85N□-□TU
(With mounting bracket)



Head trunnion: C□85N□-□TU
(With mounting bracket)

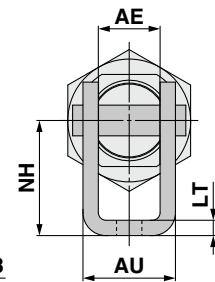
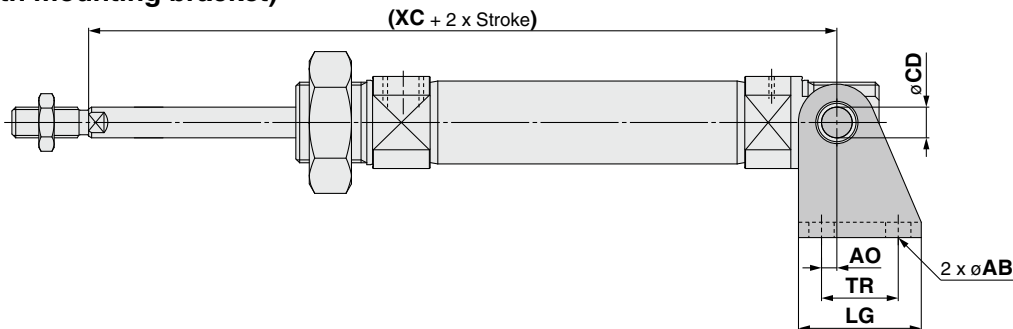


[mm]

Bore size	TD _{e8}	TM	TT	TZ	UW	(XV)	(XZ)		
							1 to 50	51 to 100	101 to 150
8	4	26	6	38	20	13	83.5 (89.5)	—	—
10	4	26	6	38	20	13	83.5 (87.5)	—	—
12	6	38	8	58	25	18	96 (99.5)	—	—
16	6	38	8	58	25	18	101 (104.5)	127 (130.5)	153 (156.5)
20	6	46	8	66	32	20	115	140	165
25	6	46	8	66	32	24	120.5	145.5	170.5

(): For built-in magnet

Clevis: C□85N□-□TN
(With mounting bracket)



[mm]

Bore size	AB	AE	AO	AU	CD _{H9}	LG	LT	NH	TR	(XC)		
										1 to 50	51 to 100	101 to 150
8	4.5	8.1	1.5	13.1	4	20	2.5	24	12.5	82.5 (88.5)	—	—
10	4.5	8.1	1.5	13.1	4	20	2.5	24	12.5	82.5 (86.5)	—	—
12	5.5	12.1	2	18.5	6	25	3.2	27	15	95 (98.5)	—	—
16	5.5	12.1	2	18.5	6	25	3.2	27	15	101 (104.5)	127 (130.5)	153 (156.5)
20	6.6	16.1	4	24.1	8	32	4	30	20	120	145	170
25	6.6	16.1	4	24.1	8	32	4	30	20	127.5	152.5	177.5

(): For built-in magnet

Refer to page 16 of Standard Type Single Rod for details of accessories (rod end, double knuckle joint, floating joint).

ISO Standards

Air Cylinder: Non-rotating Rod Double Acting, Single Rod **C85K Series** ø8, ø10, ø12, ø16, ø20, ø25

RoHS

How to Order

Double acting, Single rod

C D 85K N 20 - 40 L V - B - M9BW S -

Built-in magnet

Nil	None
D	Built-in magnet

Head cover type

N	Basic (Integrated clevis)
E	Double end boss-cut
F	Boss-cut/Basic
Y	Head cover axial port

Applicable head cover

Action	Head cover type			
	N	E	F	Y
Rubber bumper	●	●	●	●

Bore size

8	8 mm
10	10 mm
12	12 mm
16	16 mm
20	20 mm
25	25 mm

Cylinder stroke [mm]

Refer to the next page for standard strokes.

Auto switch mounting type*1

A	Rail mounting
B	Band mounting

*1 The symbol is "Nil" for no magnet.

Accessory*1

Nil	None
V	Rod end
W	Double knuckle joint

*1 Refer to Mounting Brackets/Accessories on page 39 for details of accessories.

* Accessory is shipped together with the product.

Number of auto switches

Nil	2
S	1
n	n

Auto switch

Nil	Without auto switch
-----	---------------------

* For applicable auto switches, refer to the table below.
* Auto switches are shipped together with the product.

Made to order

For details, refer to page 38.

Mounting bracket*1

Nil	None
L	Single foot
M	Double foot
G	Flange
U	Trunnion
N	Clevis

Applicable mounting bracket

Action	Head cover type	Mounting bracket				
		L	M	G	U	N
Rubber bumper	N	●	●	●	●	●
	E	●	●	●	●	—
	F	●	—	●	●	—
	Y	●	—	●	●	—

*1 Refer to Mounting Brackets/Accessories on page 39 for details of mounting brackets.

* Mounting bracket is shipped together with the product.

Applicable Auto Switches/Refer to the Web Catalog or Best Pneumatics for further information on auto switches.

Type	Special function	Electrical entry	Indicator light	Wiring (Output)	Load voltage		Auto switch model				Lead wire length [m]					Pre-wired connector	Applicable load				
					DC	AC	Band mounting		Rail mounting		0.5 (Nil)	1 (M)	3 (L)	5 (Z)	None (N)						
							Perpendicular	In-line	Perpendicular	In-line											
Solid state auto switch	—	Grommet	Yes	3-wire (NPN)	5 V, 12 V	—	M9NV	M9N	M9NV	M9N	●	●	●	○	—	○	IC circuit	Relay, PLC			
		3-wire (PNP)		M9PV			M9P	M9PV	M9P	●	●	●	○	—	○						
	Connector	2-wire	12 V	M9BV	M9B	M9BV	M9B	●	●	●	○	—	○	—							
	Diagnostic indication (2-color indicator)	Grommet	3-wire (NPN)	24 V	5 V, 12 V	—	—	H7C	J79C	—	●	—	●	●	●	—	—				
			3-wire (PNP)				M9NWV	M9NW	M9NWV	M9NW	●	●	●	○	—	○	—		○		
			2-wire				M9PWV	M9PW	M9PWV	M9PW	●	●	●	○	—	○	—				
			3-wire (NPN)				M9BWW	M9BW	M9BWW	M9BW	●	●	●	○	—	○	—				
			3-wire (PNP)				M9NAV*1	M9NA*1	M9NAV*1	M9NA*1	○	○	●	○	—	○	—				
			2-wire				M9PAV*1	M9PA*1	M9PAV*1	M9PA*1	○	○	●	○	—	○	—				
	Water-resistant (2-color indicator)	Grommet	2-wire	12 V	M9BAV*1	M9BA*1	M9BAV*1	M9BA*1	○	○	●	○	—	○	—	—					
With diagnostic output (2-color indicator)	4-wire (NPN)		5 V, 12 V	—	H7NF	—	F79F	●	—	●	○	—	○	—	—						
Reed auto switch	—	Grommet	Yes	3-wire (NPN equivalent)	—	24 V	5 V	—	A96V	A96	A96V	A96	●	●	●	●	—	○	IC circuit	Relay, PLC	
							—	200 V	—	—	A72	A72H	●	—	●	—	—	—	—		
							2-wire	12 V	100 V	A93V	A93	A93V	A93	●	●	●	●	—	○*2		—
									100 V or less	A90V	A90	A90V	A90	●	●	●	●	—	○*2		—
	Diagnostic indication (2-color indicator)	Grommet	Yes	2-wire	24 V or less	—	—	C73C	A73C	—	●	—	●	●	●	—	—				
						—	—	C80C	A80C	—	●	—	●	●	●	—	—				
						—	—	—	A79W	—	●	—	●	—	—	—	—				
						—	—	—	—	—	—	—	—	—	—	—	—	—	—		

*1 Water-resistant type auto switches can be mounted on the above models, but SMC cannot guarantee water resistance.

Please contact SMC regarding water-resistant types with the above model numbers.

*2 The load voltage used is 24 VDC.

* Lead wire length symbols: 0.5 m..... Nil (Example) M9NW 5 m..... Z (Example) M9NWZ
1 m..... M (Example) M9NWM None..... N (Example) H7CN
3 m..... L (Example) M9NWL

* Since there are other applicable auto switches than listed above, refer to page 115 for details.

* Auto switches marked with "○" are produced upon receipt of order.

* D-A9□/M9□/A7□/A80□/F7□/J7□ auto switches are shipped together, but not assembled. (For band mounting, only the auto switch mounting brackets are assembled before shipment.)

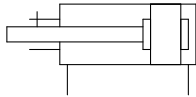
* When mounting a band on bore size ø8, ø10, or ø12, the D-A9□(V) cannot be mounted.

* When mounting a rail on bore size ø8, ø10, or ø12, the D-A9□(V) and A79W cannot be mounted.

* When mounting a rail on bore size ø20 or ø25, the D-M9□(V), M9□W(V), and M9□A(V) cannot be mounted.

**Symbol**

Rubber bumper



Refer to pages 105 to 115 for cylinders with auto switches.

- Auto Switch Proper Mounting Position (Detection at stroke end) and Mounting Height
- Minimum Stroke for Auto Switch Mounting
- Operating Range
- Auto Switch Mounting Brackets/Part No.

**Made to Order**

(For details, refer to pages 119 to 124.)

Symbol	Specifications
-XA	Change of rod end shape
-XC6	Made of stainless steel

Specifications

Bore size [mm]	8	10	12	16	20	25
Type	Pneumatic					
Action	Double acting, Single rod					
Fluid	Air					
Proof pressure	1.5 MPa					
Max. operating pressure	1.0 MPa					
Min. operating pressure	0.1 MPa	0.08 MPa		0.05 MPa		
Ambient and fluid temperature	Without auto switch: -20°C to 80°C (No freezing)					
	With auto switch: -10°C to 60°C (No freezing)					
Lubricant	Not required (Non-lube)					
Stroke length tolerance	^{+1.0} ₀ mm				^{+1.4} ₀ mm	
Piston speed	50 to 1500 mm/s					
Cushion	Rubber bumper					
Allowable kinetic energy	0.02 J	0.03 J	0.04 J	0.09 J	0.27 J	0.4 J
Non-rotating accuracy	±1.5°		±1°		±0.7°	

Standard Strokes

Bore size [mm]	Standard stroke [mm]*1	Max. stroke*2 [mm]
8	10, 25, 40, 50, 80, 100	100
10		
12	10, 25, 40, 50, 80, 100, 125, 160, 200	200
16		
20	10, 25, 40, 50, 80, 100, 125, 160, 200, 250, 300	1000
25		

*1 Other strokes are available on request.

*2 For exceeding the standard stroke range, it will be available as a special order (-X2018).

Option: Ordering Example of Cylinder Assembly

Cylinder model: CD85KN20-50NW-B-M9BW

Head cover N: Basic (Integrated clevis)
Mounting bracket N: Clevis
Rod end bracket W: Double knuckle joint
Auto switch D-M9BW: Band mounting, 2 pcs.

* Mounting bracket, double knuckle joint, and auto switch are shipped together with the product.

⚠ Precautions

Be sure to read this before handling the products. Refer to page 219 for safety instructions. For actuator and auto switch precautions, refer to the “Handling Precautions for SMC Products” and the “Operation Manual” on the SMC website: <http://www.smcworld.com>

C85K Series

Mounting Brackets/Accessories

Mounting bracket/ Accessory			Standard (mounted to the body)		Mounting bracket (shipped together)						Accessory (shipped together)		
			Mounting nut	Rod end nut	Mounting nut	Foot	Flange	Trunnion	Clevis pivot bracket	Clevis pin	Pin retaining ring	Rod end	Double knuckle joint
Mounting bracket symbol	L	Single foot	● (1 pc.)	● (1 pc.)	—	● (1 pc.)	—	—	—	—	—	—	—
	M	Double foot	● (1 pc.)	● (1 pc.)	● (1 pc.)	● (2 pcs.)	—	—	—	—	—	—	—
	G	Flange	● (1 pc.)	● (1 pc.)	—	—	● (1 pc.)	—	—	—	—	—	—
	U	Trunnion	● (1 pc.)	● (1 pc.)	—	—	—	● (1 pc.)	—	—	—	—	—
	N	Clevis	● (1 pc.)	● (1 pc.)	—	—	—	—	● (1 pc.)	● (1 pc.)	● (2 pcs.)	—	—
Accessory symbol	V	Rod end	● (1 pc.)	● (1 pc.)	—	—	—	—	—	—	—	● (1 pc.)	—
	W	Double knuckle joint	● (1 pc.)	● (1 pc.)	—	—	—	—	—	—	—	—	● (1 pc.)

Mounting Bracket/Accessory Part Nos.

Mounting bracket/Accessory		Bore size [mm]						Contents
		8	10	12	16	20	25	
Mounting bracket	Rod end nut	C85NT10		C85NT16		C85NT20	C85NT25	1 rod end nut
	Mounting nut	C85SN10		C85SN16		C85SN25		1 mounting nut
	Foot (1 pc.)	C85L10A		C85L16A		C85L25A		1 foot bracket
	Foot (2 pcs. with 1 mounting nut)	C85L10B		C85L16B		C85L25B		2 foot brackets, 1 mounting nut
	Foot (1 pc. with 1 mounting nut)	C85L10C		C85L16C		C85L25C		1 foot bracket, 1 mounting nut
	Flange	C85F10		C85F16		C85F25		1 flange
	Trunnion	C85T10		C85T16		C85T25		1 trunnion
	Clevis	C85C10		C85C16		C85C25		1 clevis pivot bracket, 1 clevis pin, 2 pin retaining rings
Accessory	Rod end	KJ4D		KJ6D		KJ8D	KJ10D	1 rod end
	Double knuckle joint	GKM4-8		GKM6-12		GKM8-16	GKM10-20	1 double knuckle joint
	Floating joint	JA10-4-070		JA15-6-100		JA20-8-125	JA30-10-125	1 floating joint

* Refer to page 16 for dimensions of accessories.

Replacement Parts: For Non-rotating Rod Type (K)

Bore size [mm]	Part no.	Note
20	C85K-20PS	Every set includes: 1 rod seal 1 flat washer 1 retaining ring
25	C85K-25PS	

* When replacing the seals, use **grease (GR-S-010: ordered separately)** on the sliding parts.

Weights

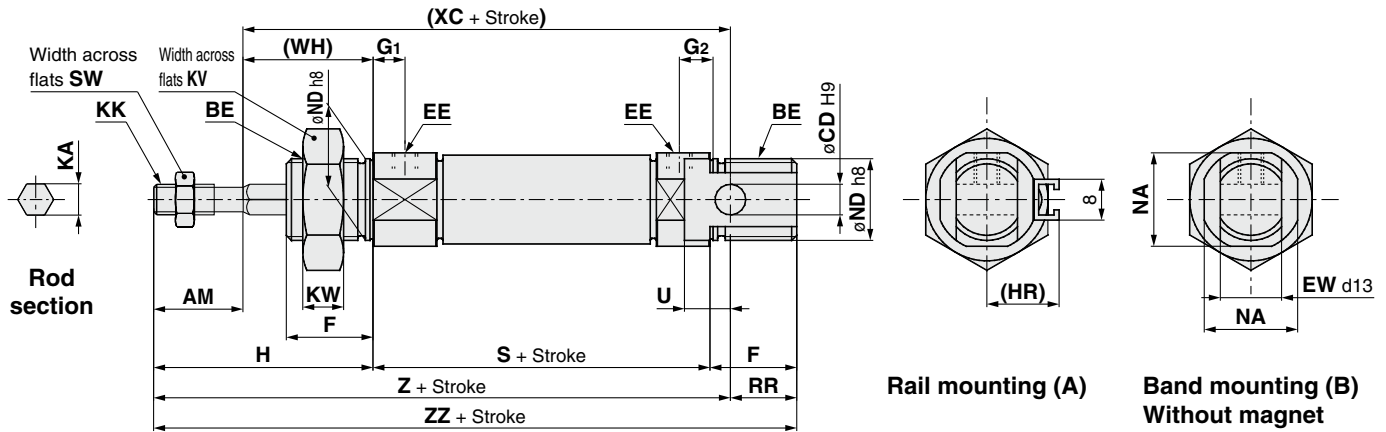
Bore size [mm]			8	10	12	16	20	25
Basic weight	Without magnet	C85KN	39	41	82	95	189	257
		C85KE	41	43	86	98	194	262
		C85KF	37	39	77	85	174	240
		C85KY	37	39	77	85	175	241
	With magnet	CD85KN	39	41	83	95	193	261
		CD85KE	41	43	86	99	198	266
		CD85KF	37	39	77	85	178	244
CD85KY	37	39	78	85	178	245		
Additional weight per 10 mm of stroke			2.3	2.5	4.5	5.5	8.7	12.2
Mounting bracket	Foot (1 pc.)	C85L□A	20		40		95	
	Foot (2 pcs. with 1 mounting nut)	C85L□B	55		105		210	
	Flange	C85F□	12		25		90	
	Trunnion	C85T□	20		50		75	
	Clevis	C85C□	20		40		85	
Accessory	Rod end	KJ□D	17		25		45	70
	Double knuckle joint	GKM□-□	10		20		50	100
	Floating joint	JA□-□-□	10		20		50	70

Calculation example: **C85KN20-50NV**

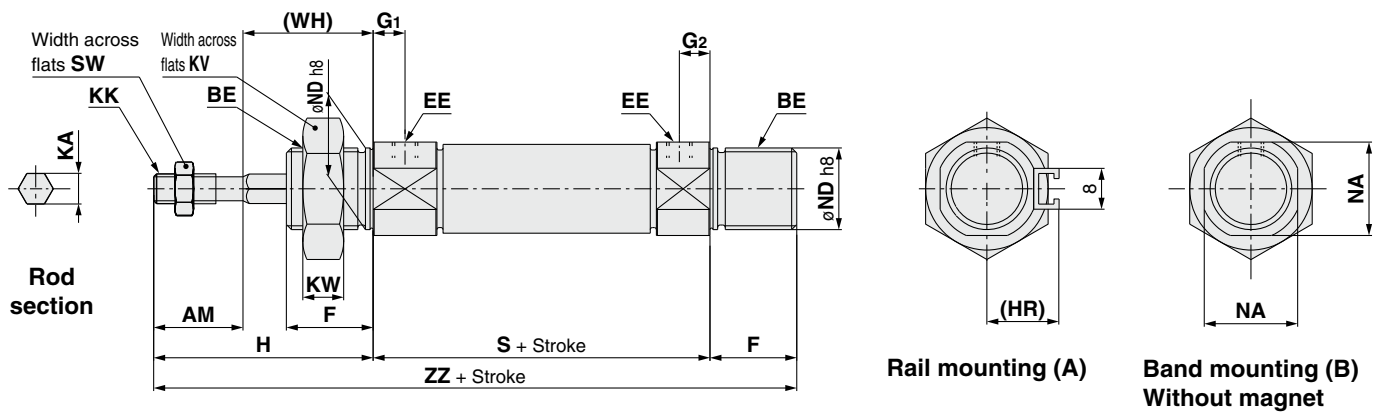
- Basic weight 189 g (ø20)
 - Additional weight ... 8.7 g (at 10 mm stroke)
 - Cylinder stroke 50 mm
 - Mounting bracket: Clevis ... 85 g
 - Accessory: Rod end 45 g
- 189 + 8.7 x 50/10 + 85 + 45 = **363 g**

Dimensions**Basic (Integrated clevis)**

Rubber bumper: C□85KN Bore size – Stroke – □

**Double end boss-cut**

Rubber bumper: C□85KE Bore size – Stroke – □

**Dimensions**

Bore size	AM	BE	CD	EE	EW	F	G ₁	G ₂	H	(HR)	KA	KK	KV	KW	NA	ND	RR	S	SW	U	(WH)	(XC)	Z	ZZ
8	12	M12 x 1.25	4	M5 x 0.8	8	12	7	5	28	13.4	4.2	M4 x 0.7	19	6	15	12	10	46	7	6	16	64	76	86
10	12	M12 x 1.25	4	M5 x 0.8	8	12	7	5	28	14.2	4.2	M4 x 0.7	19	6	15	12	10	46	7	6	16	64	76	86
12	16	M16 x 1.5	6	M5 x 0.8	12	17	8	6	38	14.2	6.2	M6 x 1	24	8	18.3	16	14	50	10	9	22	75	91	105
16	16	M16 x 1.5	6	M5 x 0.8	12	17	8	6	38	14.2	6.2	M6 x 1	24	8	18.3	16	13	56	10	9	22	82	98	111
20	20	M22 x 1.5	8	G1/8	16	20	8	8	44	17	8.2	M8 x 1.25	32	11	24	22	11	62	13	12	24	95	115	126
25	22	M22 x 1.5	8	G1/8	16	22	8	8	50	20	10.2	M10 x 1.25	32	11	30	22	11	65	17	12	28	104	126	137

Refer to pages 13 to 15 of Standard Type Single Rod for details of the mounting brackets, and refer to page 16 of Standard Type Single Rod for details of accessories (rod end, double knuckle joint, floating joint).

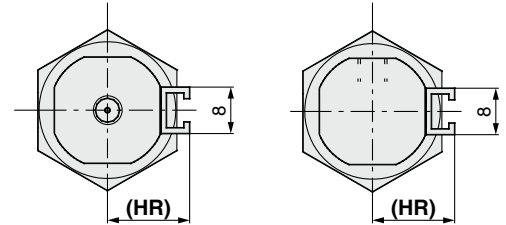
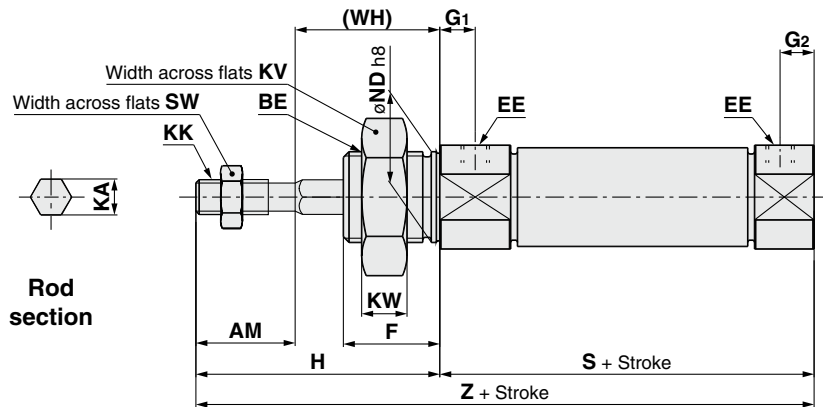
C85K Series

Dimensions

Boss-cut/Basic, Head cover axial port

Rubber bumper: C□85KF/Y Bore size — Stroke — □

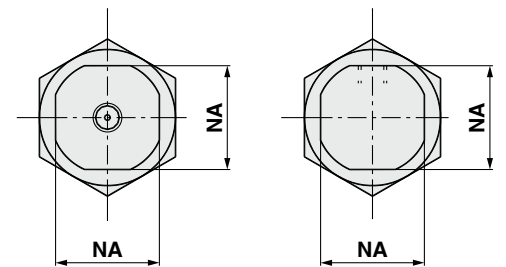
Without magnet/Built-in magnet



Head cover
axial port

Boss-cut/Basic

Rail mounting (A)



Head cover
axial port

Boss-cut/Basic

Band mounting (B)
Without magnet

Dimensions

Bore size	AM	BE	EE	F	G1	G2	H	(HR)	KA	KK	KV	KW	NA	ND	S	SW	(WH)	Z
8	12	M12 x 1.25	M5 x 0.8	12	7	5	28	13.4	4.2	M4 x 0.7	19	6	15	12	46	7	16	74
10	12	M12 x 1.25	M5 x 0.8	12	7	5	28	14.2	4.2	M4 x 0.7	19	6	15	12	46	7	16	74
12	16	M16 x 1.5	M5 x 0.8	17	8	6	38	14.2	6.2	M6 x 1	24	8	18.3	16	50	10	22	88
16	16	M16 x 1.5	M5 x 0.8	17	8	6	38	14.2	6.2	M6 x 1	24	8	18.3	16	50	10	22	88
20	20	M22 x 1.5	G1/8	20	8	8	44	17	8.2	M8 x 1.25	32	11	24	22	62	13	24	106
25	22	M22 x 1.5	G1/8	22	8	8	50	20	10.2	M10 x 1.25	32	11	30	22	65	17	28	115

Refer to pages 13 to 15 of Standard Type Single Rod for details of the mounting brackets, and refer to page 16 of Standard Type Single Rod for details of accessories (rod end, double knuckle joint, floating joint).

ISO Standards

Air Cylinder: Non-rotating Rod Single Acting, Spring Return/Extend

C85K Series

ø8, ø10, ø12, ø16, ø20, ø25

RoHS

How to Order

Single acting, Spring return/extend **C D 85K N 20 - 40 S L V - B - M9BW S -**

Built-in magnet

Nil	None
D	Built-in magnet

Head cover type

N	Basic (Integrated clevis)
E	Double end boss-cut
F	Boss-cut/Basic
Y	Head cover axial port

Applicable head cover

Action	Head cover type			
	N	E	F	Y
Single acting, Spring return	●	●	●	●
Single acting, Spring extend	●	●	●	—

Bore size

8	8 mm
10	10 mm
12	12 mm
16	16 mm
20	20 mm
25	25 mm

Cylinder stroke [mm]
Refer to the next page for standard strokes.

Action

S	Single acting, Spring return
T	Single acting, Spring extend

Accessory*1

Nil	None
V	Rod end
W	Double knuckle joint

*1 Refer to Mounting Brackets/Accessories on page 44 for details of accessories.
* Accessory is shipped together with the product.

Auto switch mounting type*1

A	Rail mounting
B	Band mounting

*1 The symbol is "Nil" for no magnet.

Number of auto switches

Nil	2
S	1
n	n

Auto switch

Nil	Without auto switch
-----	---------------------

* For applicable auto switches, refer to the table below.
* Auto switches are shipped together with the product.

Made to order
For details, refer to page 43.

Mounting bracket*1

Nil	None
L	Single foot
M	Double foot
G	Flange
U	Trunnion
N	Clevis

*1 Refer to Mounting Brackets/Accessories on page 44 for details of mounting brackets.
* Mounting bracket is shipped together with the product.

Applicable mounting bracket

Action	Head cover type	Mounting bracket				
		L	M	G	U	N
Single acting, Spring return	N	●	●	●	●	●
	E	●	●	●	●	—
	F	●	—	●	●	—
Single acting, Spring extend	Y	—	—	—	—	—
	N	●	●	●	●	●
	E	●	●	●	●	—
	F	●	—	●	●	—

Applicable Auto Switches/Refer to the Web Catalog or Best Pneumatics for further information on auto switches.

Type	Special function	Electrical entry	Indicator light	Wiring (Output)	Load voltage		Auto switch model				Lead wire length [m]					Pre-wired connector	Applicable load				
					DC	AC	Band mounting		Rail mounting		0.5 (Nil)	1 (M)	3 (L)	5 (Z)	None (N)						
							Perpendicular	In-line	Perpendicular	In-line											
Solid state auto switch	—	Grommet	Yes	3-wire (NPN)	5 V, 12 V	—	M9NV	M9N	M9NV	M9N	●	●	●	○	—	○	IC circuit				
		3-wire (PNP)		M9PV			M9P	M9PV	M9P	●	●	●	○	—	○						
	Connector	2-wire		12 V	M9BV		M9B	M9BV	M9B	●	●	●	○	—	○	—					
	Diagnostic indication (2-color indicator)	Grommet		3-wire (NPN)	5 V, 12 V		M9NVV	M9NW	M9NVV	M9NW	●	●	●	○	—		○	IC circuit			
				3-wire (PNP)			M9PWV	M9PW	M9PWV	M9PW	●	●	●	○	—	○					
				2-wire	12 V		M9BWW	M9BW	M9BWW	M9BW	●	●	●	○	—	○	—				
				3-wire (NPN)	5 V, 12 V		M9NAV*1	M9NA*1	M9NAV*1	M9NA*1	○	○	●	○	—	○		IC circuit			
				3-wire (PNP)			M9PAV*1	M9PA*1	M9PAV*1	M9PA*1	○	○	●	○	—	○	—				
				2-wire	12 V		M9BAV*1	M9BA*1	M9BAV*1	M9BA*1	○	○	●	○	—	○		IC circuit			
	With diagnostic output (2-color indicator)	4-wire (NPN)		5 V, 12 V	—		H7NF	—	F79F	●	—	●	○	—	○	IC circuit					
Reed auto switch	—	Grommet	Yes	3-wire (NPN equivalent)	—	24 V	5 V	—	A96V	A96	A96V	A96	●	●	●		●	—	○	IC circuit	—
							—	200 V	—	—	A72	A72H	●	—	●	—	—	—	—	—	
							100 V	A93V	A93	A93V	A93	●	●	●	●	—	○*2	IC circuit			
							100 V or less	A90V	A90	A90V	A90	●	●	●	●	—	○*2		IC circuit		
	Connector	—	—	C73C	A73C	—	—	●	—	●	●	●	—	—	IC circuit						
	No	—	—	C80C	A80C	—	—	●	—	●	●	●	—	—		IC circuit					
	Diagnostic indication (2-color indicator)	Grommet	Yes	2-wire	—	—	24 V or less	—	—	A79W	—	—	●	—	●		—	—	—	—	
							—	—	—	—	—	—	—	—	—	—	—	—	—		—

*1 Water-resistant type auto switches can be mounted on the above models, but SMC cannot guarantee water resistance.

Please contact SMC regarding water-resistant types with the above model numbers.

*2 The load voltage used is 24 VDC.

* Lead wire length symbols: 0.5 m..... Nil (Example) M9NW 3 m..... L (Example) M9NWL None..... N (Example) H7CN
1 m..... M (Example) M9NWM 5 m..... Z (Example) M9NWZ

* Since there are other applicable auto switches than listed above, refer to page 115 for details.

* Auto switches marked with "O" are produced upon receipt of order.

* D-A9□/M9□/A7□/A80□/F7□/J7□ auto switches are shipped together, but not assembled. (For band mounting, only the auto switch mounting brackets are assembled before shipment.)

* When mounting a band on bore size ø8, ø10, or ø12, the D-A9□(V) cannot be mounted.

* When mounting a rail on bore size ø8, ø10, or ø12, the D-A9□(V) and A79W cannot be mounted.

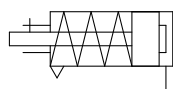
* When mounting a rail on bore size ø20 or ø25, the D-M9□(V), M9□W(V), and M9□A(V) cannot be mounted.

C85K Series

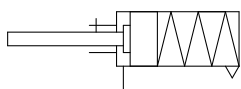


Symbol

Single acting: Spring return,
Rubber bumper



Single acting: Spring extend,
Rubber bumper



Refer to pages 105 to 115 for cylinders with auto switches.

- Auto Switch Proper Mounting Position (Detection at stroke end) and Mounting Height
- Minimum Stroke for Auto Switch Mounting
- Operating Range
- Auto Switch Mounting Brackets/Part No.



Made to Order
(For details, refer to pages 119 to 124.)

Symbol	Specifications
-XA	Change of rod end shape
-XC6	Made of stainless steel

⚠ Precautions

Be sure to read this before handling the products. Refer to page 219 for safety instructions. For actuator and auto switch precautions, refer to the "Handling Precautions for SMC Products" and the "Operation Manual" on the SMC website: <http://www.smcworld.com>

⚠ Caution

1. Avoid using the air cylinder in such a way that rotational torque would be applied to the piston rod.

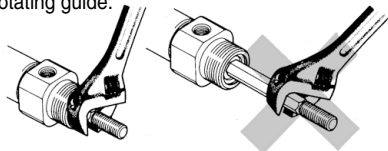
If rotational torque is applied, the non-rotating guide will become deformed, thus affecting the non-rotating accuracy.

Refer to the table below for the approximate values of the allowable range of rotational torque.

Allowable rotational torque (N·m or less)	ø8	ø10	ø12	ø16	ø20	ø25
	0.02	0.04	0.04	0.2	0.25	

To screw a bracket or a nut onto the threaded portion at the tip of the piston rod, make sure to retract the piston rod entirely, and place a wrench over the flat portion of the rod that protrudes.

Tighten it by giving consideration to prevent the tightening torque from being applied to the non-rotating guide.



Specifications

Bore size [mm]	8	10	12	16	20	25		
Type	Pneumatic							
Action	Single acting, Single rod							
Fluid	Air							
Proof pressure	1.5 MPa							
Max. operating pressure	1.0 MPa							
Min. operating pressure	0.22 MPa	0.18 MPa		0.13 MPa	Return: 0.18 MPa, Extend: 0.23 MPa			
Ambient and fluid temperature	Without auto switch: -20°C to 80°C (No freezing)							
	With auto switch: -10°C to 60°C (No freezing)							
Lubricant	Not required (Non-lube)							
Stroke length tolerance	+ ^{1.0} ₀ mm						+ ^{1.4} ₀ mm	
Piston speed	50 to 1500 mm/s							
Cushion	Rubber bumper							
Allowable kinetic energy	0.02 J	0.03 J	0.04 J	0.09 J	0.27 J	0.4 J		
Non-rotating accuracy	±1.5°		±1°		±0.7°			

Standard Strokes

Bore size [mm]	Standard stroke [mm]*1	Max. stroke [mm]
8	10, 25, 50	50
10		
12		
16	10, 25, 50, 100, 150	150
20		
25		

*1 Other strokes are available on request. (Request based production)

Spring Retracting Force

Spring Return

[N]

Bore size [mm]	Standard stroke [mm]	Spring force									
		10		25		50		100		150	
		Rod extended	Rod retracted	Rod extended	Rod retracted	Rod extended	Rod retracted	Rod extended	Rod retracted	Rod extended	Rod retracted
8	10, 25, 50	4.4	4.0	4.4	3.4	4.4	2.5	—	—	—	—
10		6.3	5.7	6.3	4.9	6.3	3.5	—	—	—	—
12		7.2	6.6	7.2	5.8	7.2	4.4	—	—	—	—
16	10, 25, 50, 100, 150	13.2	12.1	13.2	10.3	13.2	7.5	13.2	7.5	13.2	7.5
20		21.6	18.6	21.6	16.7	21.6	11.8	39.2	9.8	39.2	9.8
25		27.5	25.3	27.5	22.1	27.5	16.7	47.1	13.7	47.1	15.7

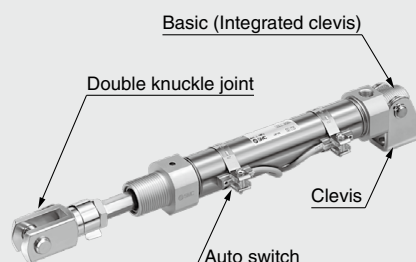
Spring Extend

[N]

Bore size [mm]	Standard stroke [mm]	Spring force									
		10		25		50		100		150	
		Rod retracted	Rod extended	Rod retracted	Rod extended	Rod retracted	Rod extended	Rod retracted	Rod extended	Rod retracted	Rod extended
8	10, 25, 50	5.3	3.9	5.3	3.1	5.3	2.7	—	—	—	—
10		6.0	4.8	6.0	4.0	6.0	3.5	—	—	—	—
12		6.6	5.6	6.6	4.9	6.6	4.5	—	—	—	—
16	10, 25, 50, 100, 150	14.7	11.3	14.7	9.2	14.7	7.9	14.7	7.9	14.7	7.9
20		39.2	33.0	39.2	23.5	39.2	9.8	39.2	9.8	39.2	9.8
25		47.1	40.4	47.1	30.4	47.1	13.7	47.1	13.7	47.1	15.7

Option: Ordering Example of Cylinder Assembly

Cylinder model: CD85KN20-50SNW-B-M9BW



Head cover N: Basic (Integrated clevis)
Mounting bracket N: Clevis
Rod end bracket W: Double knuckle joint
Auto switch D-M9BW: Band mounting, 2 pcs.

* Mounting bracket, double knuckle joint, and auto switch are shipped together with the product.

Mounting Brackets/Accessories

Mounting bracket/ Accessory			Standard (mounted to the body)		Mounting bracket (shipped together)						Accessory (shipped together)		
			Mounting nut	Rod end nut	Mounting nut	Foot	Flange	Trunnion	Clevis pivot bracket	Clevis pin	Pin retaining ring	Rod end	Double knuckle joint
Mounting bracket symbol	L	Single foot	● (1 pc.)	● (1 pc.)	—	● (1 pc.)	—	—	—	—	—	—	
	M	Double foot	● (1 pc.)	● (1 pc.)	● (1 pc.)	● (2 pcs.)	—	—	—	—	—	—	
	G	Flange	● (1 pc.)	● (1 pc.)	—	—	● (1 pc.)	—	—	—	—	—	
	U	Trunnion	● (1 pc.)	● (1 pc.)	—	—	—	● (1 pc.)	—	—	—	—	
	N	Clevis	● (1 pc.)	● (1 pc.)	—	—	—	—	● (1 pc.)	● (1 pc.)	● (2 pcs.)	—	—
Accessory symbol	V	Rod end	● (1 pc.)	● (1 pc.)	—	—	—	—	—	—	—	● (1 pc.)	—
	W	Double knuckle joint	● (1 pc.)	● (1 pc.)	—	—	—	—	—	—	—	—	● (1 pc.)

Mounting Bracket/Accessory Part Nos.

Mounting bracket/Accessory		Bore size [mm]						Contents
		8	10	12	16	20	25	
Mounting bracket	Rod end nut	C85NT10		C85NT16		C85NT20	C85NT25	1 rod end nut
	Mounting nut	C85SN10		C85SN16		C85SN25		1 mounting nut
	Foot (1 pc.)	C85L10A		C85L16A		C85L25A		1 foot bracket
	Foot (2 pcs. with 1 mounting nut)	C85L10B		C85L16B		C85L25B		2 foot brackets, 1 mounting nut
	Foot (1 pc. with 1 mounting nut)	C85L10C		C85L16C		C85L25C		1 foot bracket, 1 mounting nut
	Flange	C85F10		C85F16		C85F25		1 flange
	Trunnion	C85T10		C85T16		C85T25		1 trunnion
	Clevis	C85C10		C85C16		C85C25		1 clevis pivot bracket, 1 clevis pin, 2 pin retaining rings
Accessory	Rod end	KJ4D		KJ6D		KJ8D	KJ10D	1 rod end
	Double knuckle joint	GKM4-8		GKM6-12		GKM8-16	GKM10-20	1 double knuckle joint
	Floating joint	JA10-4-070		JA15-6-100		JA20-8-125	JA30-10-125	1 floating joint

* Refer to page 16 for dimensions of accessories.

Replacement Parts: For Non-rotating Rod Type (K) (Only for single acting, spring extend)

Bore size [mm]	Part no.	Note
20	C85K-20PS	Every set includes: 1 rod seal 1 flat washer 1 retaining ring
25	C85K-25PS	

* When replacing the seals, use **grease (GR-S-010: ordered separately)** on the sliding parts.
In the single acting, spring return type, there is no rod seal so it is not possible to replace any seals.

C85K Series

Weights

Single Acting, Spring Return (S)

[g]

Bore size [mm]				8	10	12	16	20	25
Basic weight	Without magnet	1 to 50 mm stroke	C85KN□-□S	42	47	92	116	228	309
			C85KE□-□S	44	49	95	120	233	314
			C85KF□-□S	40	46	86	106	213	292
			C85KY□-□S	41	46	86	107	214	293
		51 to 100 mm stroke	C85KN□-□S	—	—	—	154	264	361
			C85KE□-□S	—	—	—	157	269	366
			C85KF□-□S	—	—	—	144	249	344
			C85KY□-□S	—	—	—	144	250	345
		101 to 150 mm stroke	C85KN□-□S	—	—	—	191	302	415
			C85KE□-□S	—	—	—	194	307	420
			C85KF□-□S	—	—	—	181	287	397
			C85KY□-□S	—	—	—	181	287	398
	With magnet	1 to 50 mm stroke	CD85KN□-□S	44	49	94	120	231	313
			CD85KE□-□S	46	51	98	124	237	318
			CD85KF□-□S	43	48	89	110	216	296
			CD85KY□-□S	43	48	89	110	217	297
		51 to 100 mm stroke	CD85KN□-□S	—	—	—	158	268	365
			CD85KE□-□S	—	—	—	161	273	370
			CD85KF□-□S	—	—	—	148	252	348
			CD85KY□-□S	—	—	—	148	253	349
		101 to 150 mm stroke	CD85KN□-□S	—	—	—	195	305	418
			CD85KE□-□S	—	—	—	198	310	423
			CD85KF□-□S	—	—	—	185	290	401
			CD85KY□-□S	—	—	—	185	291	402
Additional weight per 10 mm of stroke				2.3	2.5	4.5	5.5	8.7	12.2
Mounting bracket	Foot (1 pc.)	C85L□A	20		40		95		
	Foot (2 pcs. with 1 mounting nut)	C85L□B	55		105		210		
	Flange	C85F□	12		25		90		
	Trunnion	C85T□	20		50		75		
	Clevis	C85C□	20		40		85		
Accessory	Rod end	KJ□D	17		25		45		70
	Double knuckle joint	GKM□-□	10		20		50		100
	Floating joint	JA□-□-□	10		20		50		70

Calculation example: **C85KN20-50SNV**

- Basic weight 228 g (ø20)
- Additional weight ... 8.7 g (at 10 mm stroke)
- Cylinder stroke 50 mm
- Mounting bracket: Clevis ... 85 g
- Accessory: Rod end 45 g

228 + 8.7 x 50/10 + 85 + 45 ≈ **402 g**

Single Acting, Spring Extend (T)

[g]

Bore size [mm]			8	10	12	16	20	25	
Basic weight	Without magnet	1 to 50 mm stroke	C85KN□-□T	43	49	93	119	214	285
			C85KE□-□T	45	51	96	123	218	290
			C85KF□-□T	42	47	87	109	199	268
		51 to 100 mm stroke	C85KN□-□T	—	—	—	149	238	319
			C85KE□-□T	—	—	—	153	243	324
			C85KF□-□T	—	—	—	140	223	302
		101 to 150 mm stroke	C85KN□-□T	—	—	—	180	265	355
			C85KE□-□T	—	—	—	184	269	360
			C85KF□-□T	—	—	—	170	249	338
	With magnet	1 to 50 mm stroke	CD85KN□-□T	46	51	96	123	217	289
			CD85KE□-□T	48	53	99	127	222	294
			CD85KF□-□T	44	49	90	113	202	272
		51 to 100 mm stroke	CD85KN□-□T	—	—	—	154	242	323
			CD85KE□-□T	—	—	—	157	247	328
			CD85KF□-□T	—	—	—	144	227	306
		101 to 150 mm stroke	CD85KN□-□T	—	—	—	184	268	359
			CD85KE□-□T	—	—	—	188	273	364
			CD85KF□-□T	—	—	—	174	253	341
	Additional weight per 10 mm of stroke			2.3	2.5	4.5	5.5	8.7	12.2
	Mounting bracket	Foot (1 pc.)	C85L□A	20		40		95	
		Foot (2 pcs. with 1 mounting nut)	C85L□B	55		105		210	
Flange		C85F□	12		25		90		
Trunnion		C85T□	20		50		75		
Clevis		C85C□	20		40		85		
Accessory	Rod end	KJ□D	17		25		45	70	
	Double knuckle joint	GKM□-□	10		20		50	100	
	Floating joint	JA□-□-□	10		20		50	70	

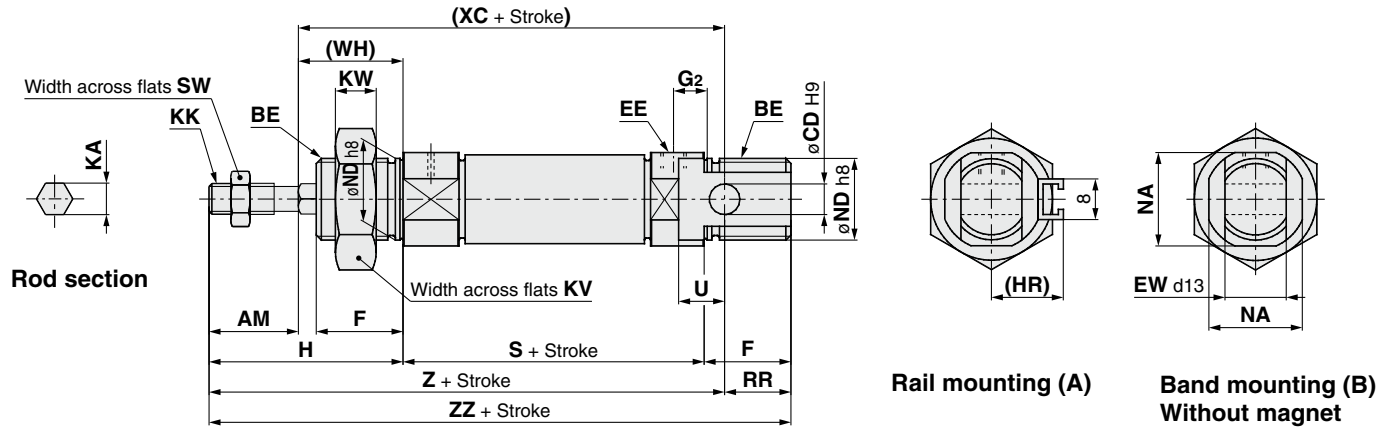
Calculation example: **C85KN20-50TNV**

- Basic weight 214 g (ø20)
- Additional weight ... 8.7 g (at 10 mm stroke)
- Cylinder stroke 50 mm
- Mounting bracket: Clevis ... 85 g
- Accessory: Rod end 45 g

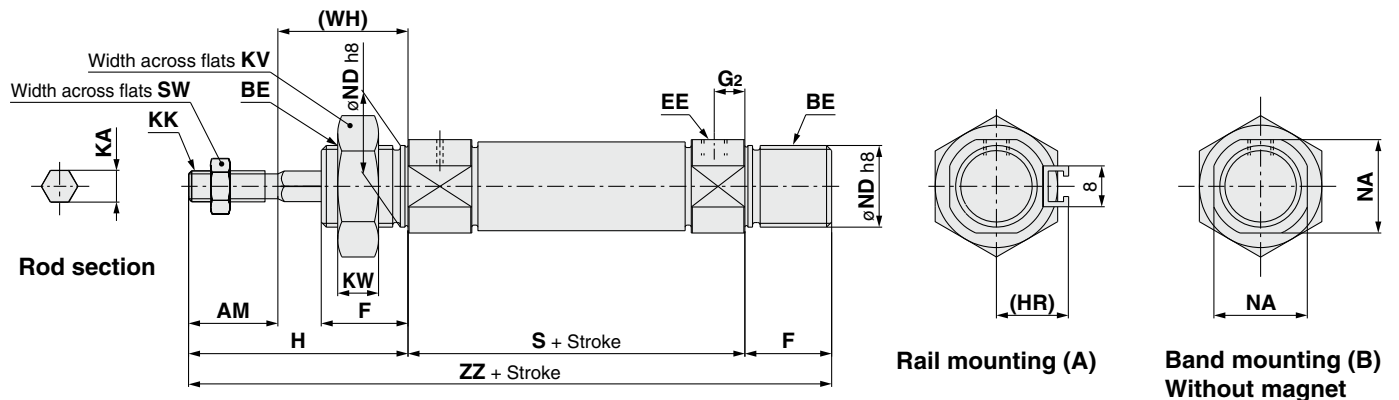
214 + 8.7 x 50/10 + 85 + 45 ≈ **388 g**

Dimensions: Single Acting, Spring Return**Basic (Integrated clevis)**

C□85KN Bore size – Stroke S – □

**Double end boss-cut**

C□85KE Bore size – Stroke S – □

**Dimensions**

[mm]

Bore size	AM	BE	CD	EE	EW	F	G ₂	H	(HR)	KA	KK	KV	KW	NA	ND	RR	SW	U	(WH)
8	12	M12 x 1.25	4	M5 x 0.8	8	12	5	28	13.4	4.2	M4 x 0.7	19	6	15	12	10	7	6	16
10	12	M12 x 1.25	4	M5 x 0.8	8	12	5	28	14.2	4.2	M4 x 0.7	19	6	15	12	10	7	6	16
12	16	M16 x 1.5	6	M5 x 0.8	12	17	6	38	14.2	6.2	M6 x 1	24	8	18.3	16	14	10	9	22
16	16	M16 x 1.5	6	M5 x 0.8	12	17	6	38	14.2	6.2	M6 x 1	24	8	18.3	16	13	10	9	22
20	20	M22 x 1.5	8	G1/8	16	20	8	44	17	8.2	M8 x 1.25	32	11	24	22	11	13	12	24
25	22	M22 x 1.5	8	G1/8	16	22	8	50	20	10.2	M10 x 1.25	32	11	30	22	11	17	12	28

Bore size	S			(XC)			Z			ZZ		
	1 to 50	51 to 100	101 to 150	1 to 50	51 to 100	101 to 150	1 to 50	51 to 100	101 to 150	1 to 50	51 to 100	101 to 150
8	56 (62)	—	—	74 (80)	—	—	86 (92)	—	—	96 (102)	—	—
10	56 (60)	—	—	74 (78)	—	—	86 (90)	—	—	96 (100)	—	—
12	60 (63.5)	—	—	85 (88.5)	—	—	101 (104.5)	—	—	115 (118.5)	—	—
16	66 (69.5)	92 (95.5)	118 (121.5)	92 (95.5)	118 (121.5)	144 (147.5)	108 (111.5)	134 (137.5)	160 (163.5)	121 (124.5)	147 (150.5)	173 (176.5)
20	87	112	137	120	145	170	140	165	190	151	176	201
25	88.5	113.5	138.5	127.5	152.5	177.5	149.5	174.5	199.5	160.5	185.5	210.5

() : For built-in magnet

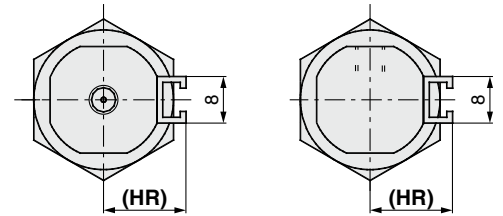
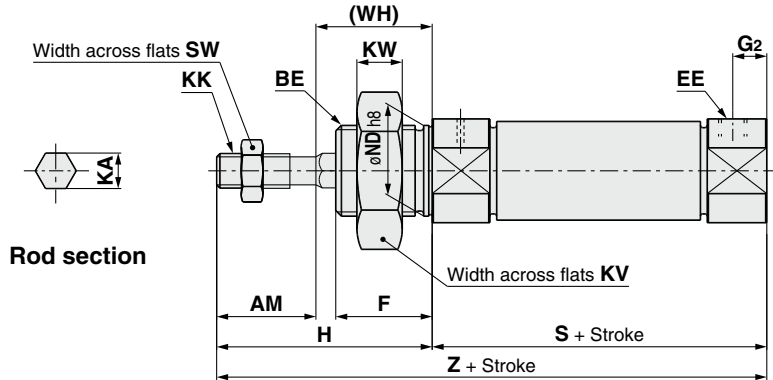
Refer to page 16 of Standard Type Single Rod for details of accessories (rod end, double knuckle joint, floating joint).

C85K Series

Dimensions: Single Acting, Spring Return

Boss-cut/Basic, Head cover axial port

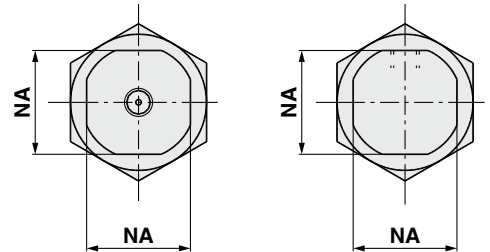
C□85KF/Y Bore size – Stroke S – □



Head cover
axial port

Boss-cut/Basic

Rail mounting (A)



Head cover
axial port

Boss-cut/Basic

Band mounting (B)
Without magnet

Dimensions

[mm]

Bore size	AM	BE	EE	F	G ₂	H	(HR)	KA	KK	KV	KW	NA	ND	SW	(WH)
8	12	M12 x 1.25	M5 x 0.8	12	5	28	13.4	4.2	M4 x 0.7	19	6	15	12	7	16
10	12	M12 x 1.25	M5 x 0.8	12	5	28	14.2	4.2	M4 x 0.7	19	6	15	12	7	16
12	16	M16 x 1.5	M5 x 0.8	17	6	38	14.2	6.2	M6 x 1	24	8	18.3	16	10	22
16	16	M16 x 1.5	M5 x 0.8	17	6	38	14.2	6.2	M6 x 1	24	8	18.3	16	10	22
20	20	M22 x 1.5	G1/8	20	8	44	17	8.2	M8 x 1.25	32	11	24	22	13	24
25	22	M22 x 1.5	G1/8	22	8	50	20	10.2	M10 x 1.25	32	11	30	22	17	28

Bore size	S			Z		
	1 to 50	51 to 100	101 to 150	1 to 50	51 to 100	101 to 150
8	56 (62)	—	—	84 (90)	—	—
10	56 (60)	—	—	84 (88)	—	—
12	60 (63.5)	—	—	98 (101.5)	—	—
16	60 (63.5)	86 (89.5)	112 (115.5)	98 (101.5)	124 (127.5)	150 (153.5)
20	87	112	137	131	156	181
25	88.5	113.5	138.5	138.5	163.5	188.5

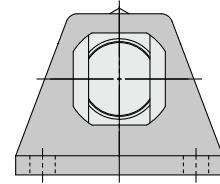
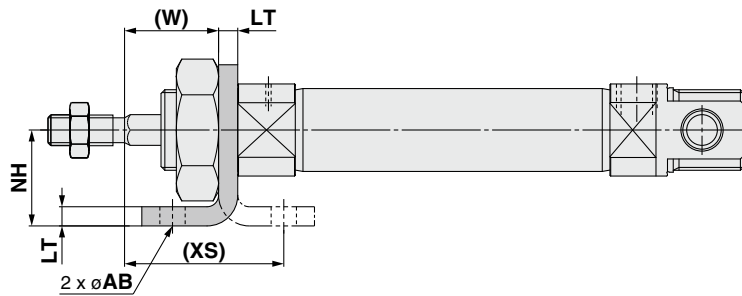
() : For built-in magnet

Refer to page 16 of Standard Type Single Rod for details of accessories (rod end, double knuckle joint, floating joint).

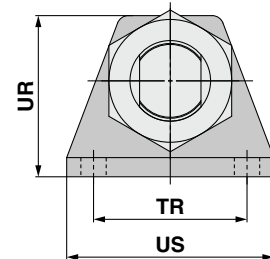
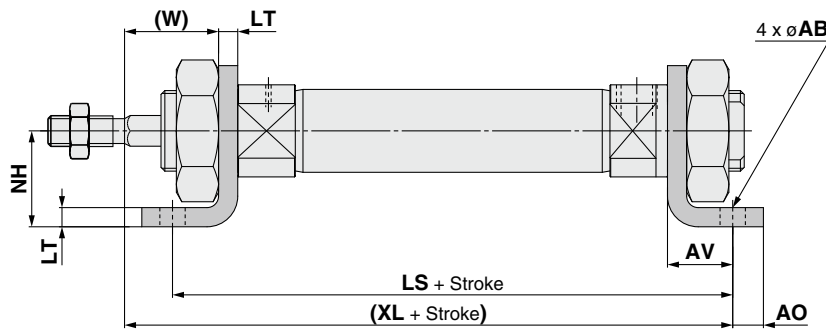
Dimensions: Single Acting, Spring Return

Bracket is shipped together with the product.

Single foot: C□85KN□-□SL
(With mounting bracket)



Double foot: C□85KN□-□SM
(With mounting bracket)



Bore size	AB	AO	AV	LS			LT	NH	TR _{JS14}	UR	US	(W)	(XL)			(XS)
				1 to 50	51 to 100	101 to 150							1 to 50	51 to 100	101 to 150	
8	4.5	5	11	78 (84)	—	—	3.2	16	25	26	35	12.8	83 (89)	—	—	23.8
10	4.5	5	11	78 (82)	—	—	3.2	16	25	26	35	12.8	83 (87)	—	—	23.8
12	5.5	6	14	88 (91.5)	—	—	4	20	32	33	42	18	96 (99.5)	—	—	32
16	5.5	6	14	94 (97.5)	120 (123.5)	146 (149.5)	4	20	32	33	42	18	102 (105.5)	128 (131.5)	154 (157.5)	32
20	6.6	8	17	121	146	171	5	25	40	42	54	19	128	153	178	36
25	6.6	8	17	122.5	147.5	172.5	5	25	40	42	54	23	133.5	158.5	183.5	40

(): For built-in magnet

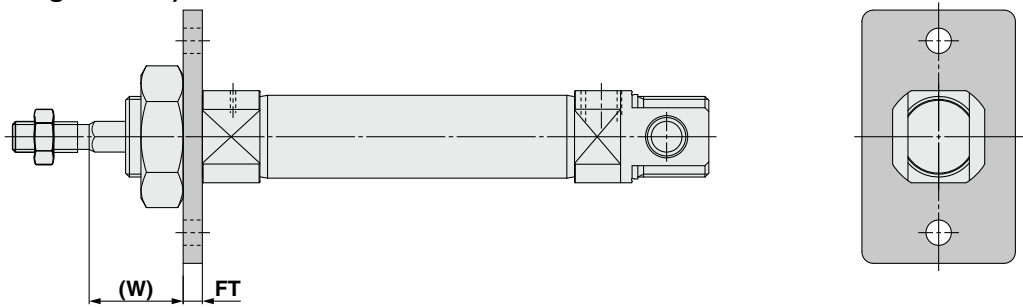
Refer to page 16 of Standard Type Single Rod for details of accessories (rod end, double knuckle joint, floating joint).

C85K Series

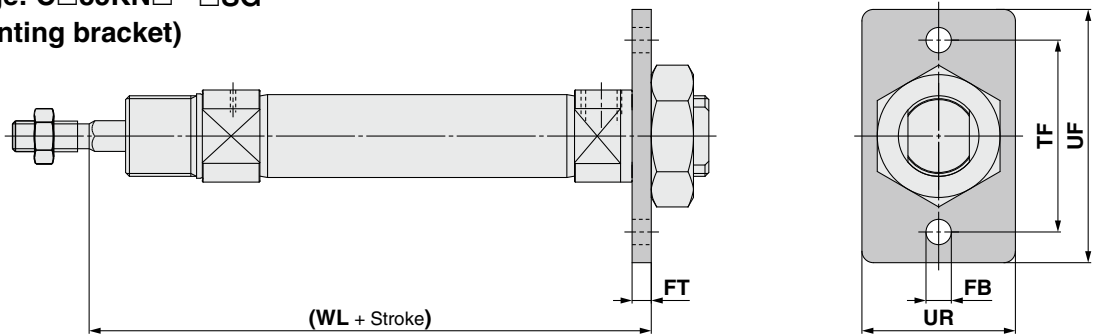
Dimensions: Single Acting, Spring Return

Bracket is shipped together with the product.

Rod flange: C□85KN□ – □SG
(With mounting bracket)



Head flange: C□85KN□ – □SG
(With mounting bracket)



[mm]

Bore size	FB _{H13}	FT	TF	UF	UR	(W)	(WL)		
							1 to 50	51 to 100	101 to 150
8	4.5	3.2	30	40	22	12.8	75.2 (81.2)	—	—
10	4.5	3.2	30	40	22	12.8	75.2 (79.2)	—	—
12	5.5	4	40	52	30	18	86 (89.5)	—	—
16	5.5	4	40	52	30	18	92 (95.5)	118 (121.5)	144 (147.5)
20	6.6	5	50	66	40	19	116	141	166
25	6.6	5	50	66	40	23	121.5	146.5	171.5

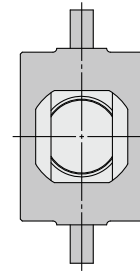
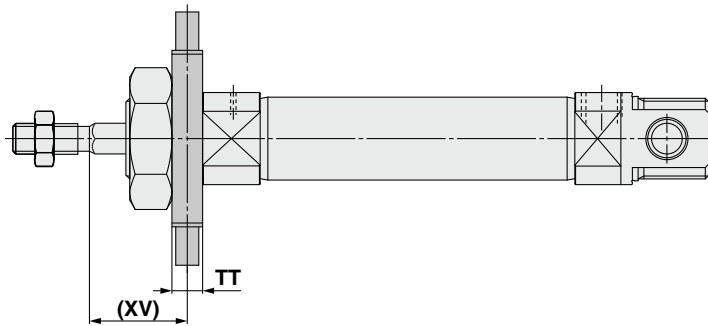
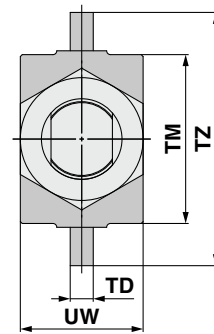
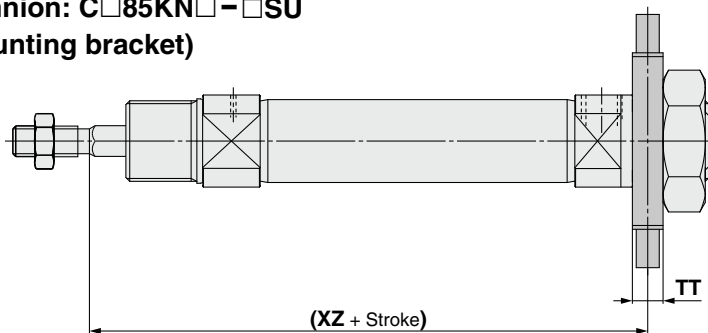
(): For built-in magnet

Refer to page 16 of Standard Type Single Rod for details of accessories (rod end, double knuckle joint, floating joint).

Dimensions: Single Acting, Spring Return

Bracket is shipped together with the product.

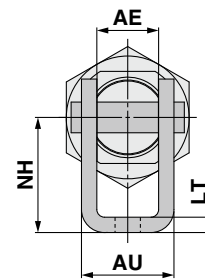
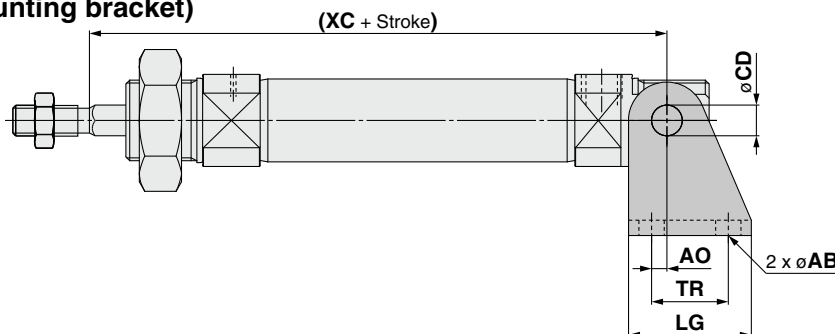
Rod trunnion: C□85KN□-□SU (With mounting bracket)

Head trunnion: C□85KN□-□SU
(With mounting bracket)

[mm]

Bore size	TD _{e8}	TM	TT	TZ	UW	(XV)	(XZ)		
							1 to 50	51 to 100	101 to 150
8	4	26	6	38	20	13	75 (81)	—	—
10	4	26	6	38	20	13	75 (79)	—	—
12	6	38	8	58	25	18	86 (89.5)	—	—
16	6	38	8	58	25	18	92 (95.5)	118 (121.5)	144 (147.5)
20	6	46	8	66	32	20	115	140	165
25	6	46	8	66	32	24	120.5	145.5	170.5

(): For built-in magnet

Clevis: C□85KN□-□SN
(With mounting bracket)

[mm]

Bore size	AB	AE	AO	AU	CD _{H9}	LG	LT	NH	TR	(XC)		
										1 to 50	51 to 100	101 to 150
8	4.5	8.1	1.5	13.1	4	20	2.5	24	12.5	74 (80)	—	—
10	4.5	8.1	1.5	13.1	4	20	2.5	24	12.5	74 (78)	—	—
12	5.5	12.1	2	18.5	6	25	3.2	27	15	85 (88.5)	—	—
16	5.5	12.1	2	18.5	6	25	3.2	27	15	92 (95.5)	118 (121.5)	144 (147.5)
20	6.6	16.1	4	24.1	8	32	4	30	20	120	145	170
25	6.6	16.1	4	24.1	8	32	4	30	20	127.5	152.5	177.5

(): For built-in magnet

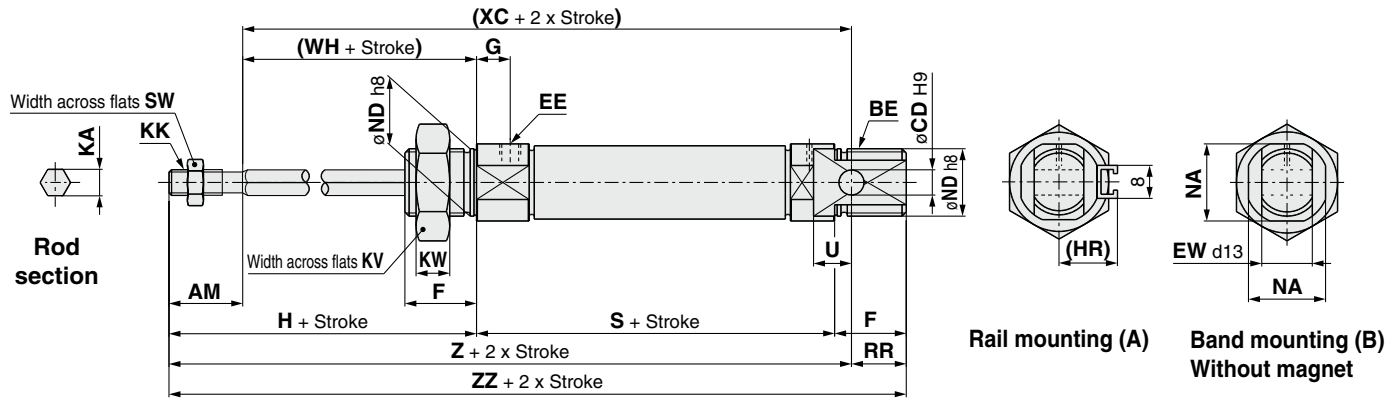
Refer to page 16 of Standard Type Single Rod for details of accessories (rod end, double knuckle joint, floating joint).

C85K Series

Dimensions: Single Acting, Spring Extend

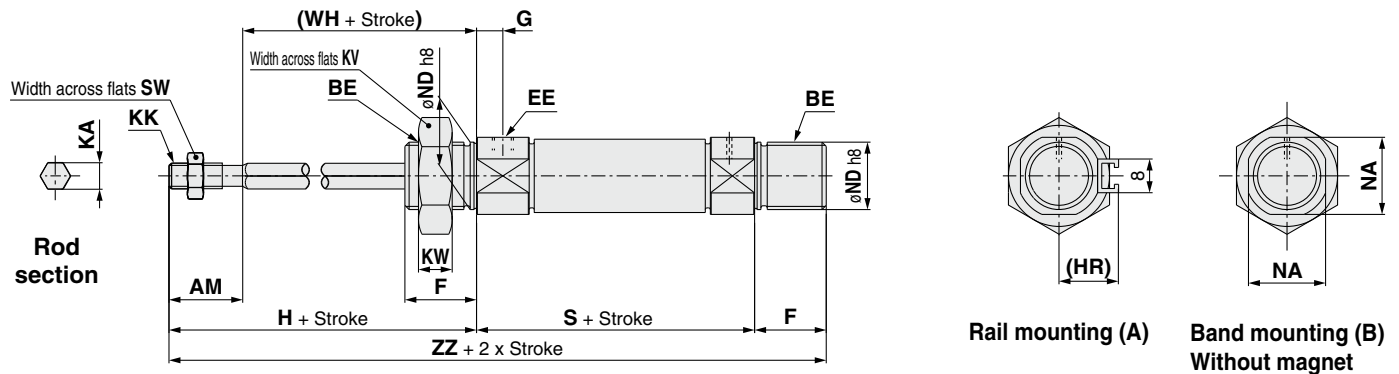
Basic (Integrated clevis)

C□85KN Bore size – Stroke T – □



Double end boss-cut

C□85KE Bore size – Stroke T – □



Dimensions

Bore size	AM	BE	CD	EE	EW	F	G	H	(HR)	KA	KK	KV	KW	NA	ND	RR	SW	U	(WH)
8	12	M12 x 1.25	4	M5 x 0.8	8	12	7	28	13.4	4.2	M4 x 0.7	19	6	15	12	10	7	6	16
10	12	M12 x 1.25	4	M5 x 0.8	8	12	7	28	14.2	4.2	M4 x 0.7	19	6	15	12	10	7	6	16
12	16	M16 x 1.5	6	M5 x 0.8	12	17	8	38	14.2	6.2	M6 x 1	24	8	18.3	16	14	10	9	22
16	16	M16 x 1.5	6	M5 x 0.8	12	17	8	38	14.2	6.2	M6 x 1	24	8	18.3	16	13	10	9	22
20	20	M22 x 1.5	8	G1/8	16	20	8	44	17	8.2	M8 x 1.25	32	11	24	22	11	13	12	24
25	22	M22 x 1.5	8	G1/8	16	22	8	50	20	10.2	M10 x 1.25	32	11	30	22	11	17	12	28

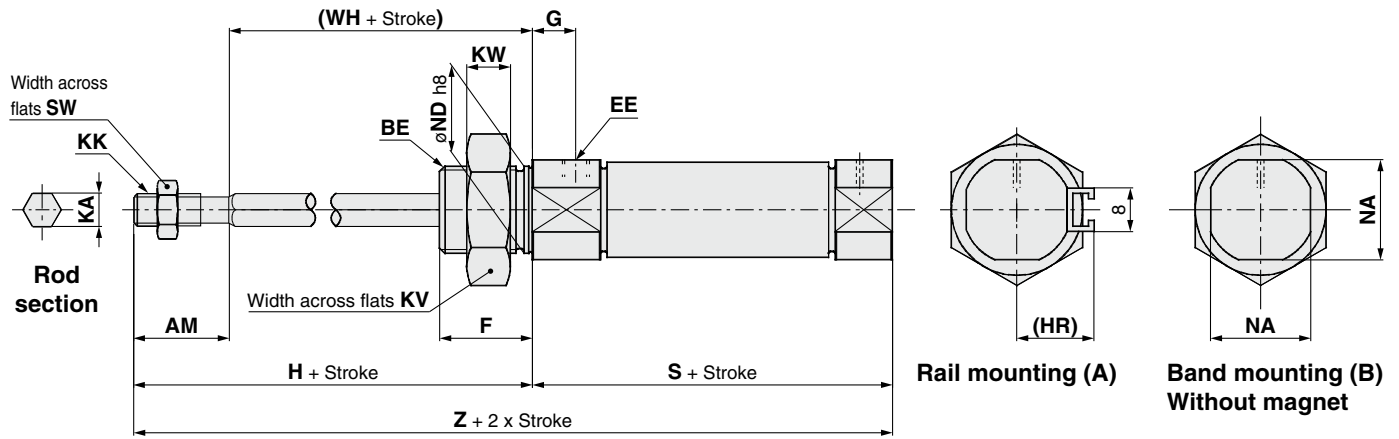
Bore size	S			(XC)			Z			ZZ		
	1 to 50	51 to 100	101 to 150	1 to 50	51 to 100	101 to 150	1 to 50	51 to 100	101 to 150	1 to 50	51 to 100	101 to 150
8	64.5 (70.5)	—	—	82.5 (88.5)	—	—	94.5 (100.5)	—	—	104.5 (110.5)	—	—
10	64.5 (68.5)	—	—	82.5 (86.5)	—	—	94.5 (98.5)	—	—	104.5 (108.5)	—	—
12	70 (73.5)	—	—	95 (98.5)	—	—	111 (114.5)	—	—	125 (128.5)	—	—
16	75 (78.5)	101 (104.5)	127 (130.5)	101 (104.5)	127 (130.5)	153 (156.5)	117 (120.5)	143 (146.5)	169 (172.5)	130 (133.5)	156 (159.5)	182 (185.5)
20	87	112	137	120	145	170	140	165	190	151	176	201
25	88.5	113.5	138.5	127.5	152.5	177.5	149.5	174.5	199.5	160.5	185.5	210.5

() : For built-in magnet

Refer to page 16 of Standard Type Single Rod for details of accessories (rod end, double knuckle joint, floating joint).

Dimensions: Single Acting, Spring Extend**Boss-cut/Basic**

C□85KF Bore size — Stroke T — □

**Dimensions**

Bore size	AM	BE	EE	F	G	H	(HR)	KA	KK	KV	KW	NA	ND	SW	(WH)
8	12	M12 x 1.25	M5 x 0.8	12	7	28	13.4	4.2	M4 x 0.7	19	6	15	12	7	16
10	12	M12 x 1.25	M5 x 0.8	12	7	28	14.2	4.2	M4 x 0.7	19	6	15	12	7	16
12	16	M16 x 1.5	M5 x 0.8	17	8	38	14.2	6.2	M6 x 1	24	8	18.3	16	10	22
16	16	M16 x 1.5	M5 x 0.8	17	8	38	14.2	6.2	M6 x 1	24	8	18.3	16	10	22
20	20	M22 x 1.5	G1/8	20	8	44	17	8.2	M8 x 1.25	32	11	24	22	13	24
25	20	M22 x 1.5	G1/8	22	8	50	20	10.2	M10 x 1.25	32	11	30	22	17	28

Bore size	S			Z		
	1 to 50	51 to 100	101 to 150	1 to 50	51 to 100	101 to 150
8	64.5 (70.5)	—	—	92.5 (98.5)	—	—
10	64.5 (68.5)	—	—	92.5 (96.5)	—	—
12	70 (73.5)	—	—	108 (111.5)	—	—
16	69 (72.5)	95 (98.5)	121 (124.5)	107 (110.5)	133 (136.5)	159 (162.5)
20	87	112	137	131	156	181
25	88.5	113.5	138.5	138.5	163.5	188.5

(): For built-in magnet

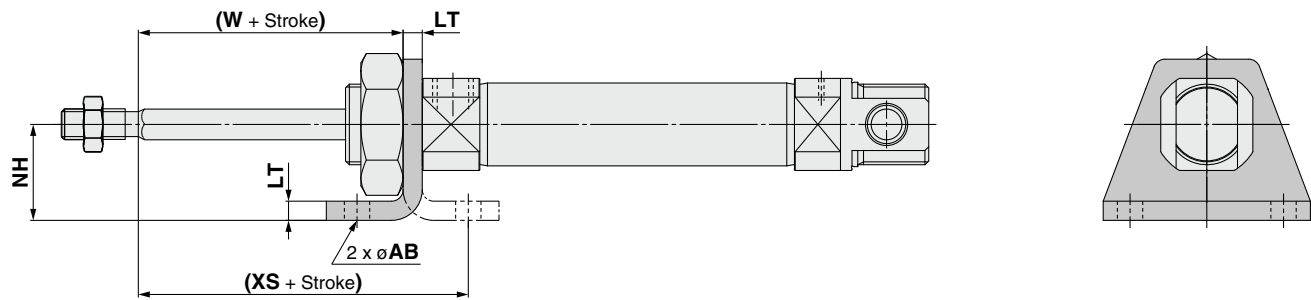
Refer to page 16 of Standard Type Single Rod for details of accessories (rod end, double knuckle joint, floating joint).

C85K Series

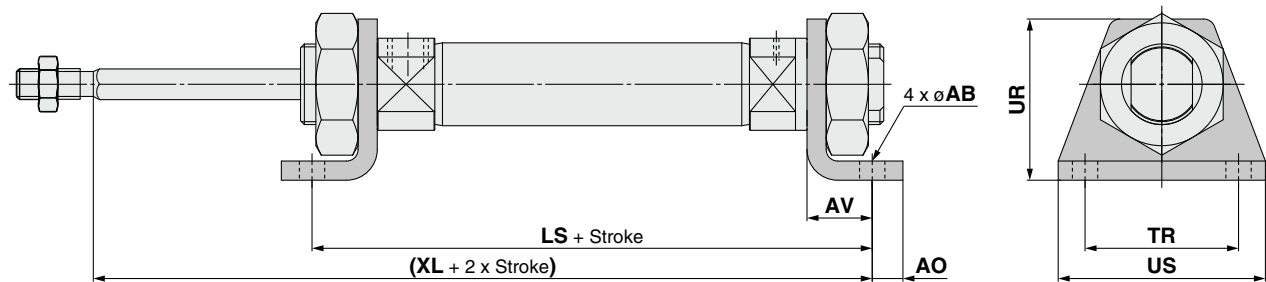
Dimensions: Single Acting, Spring Extend

Bracket is shipped together with the product.

Single foot: C□85KN□-□TL
(With mounting bracket)



Double foot: C□85KN□-□TM
(With mounting bracket)



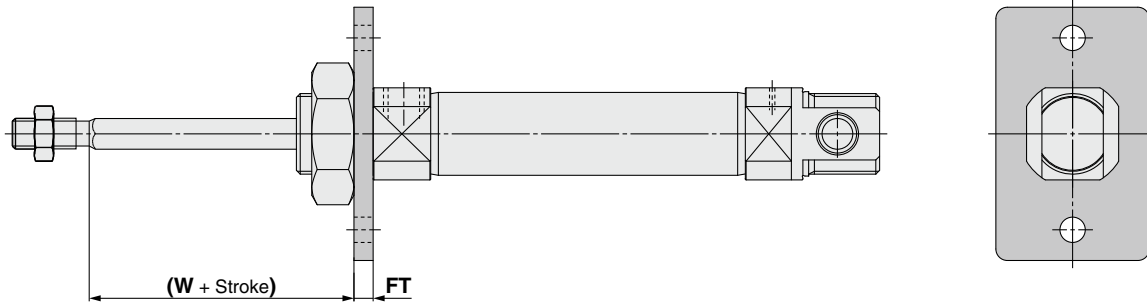
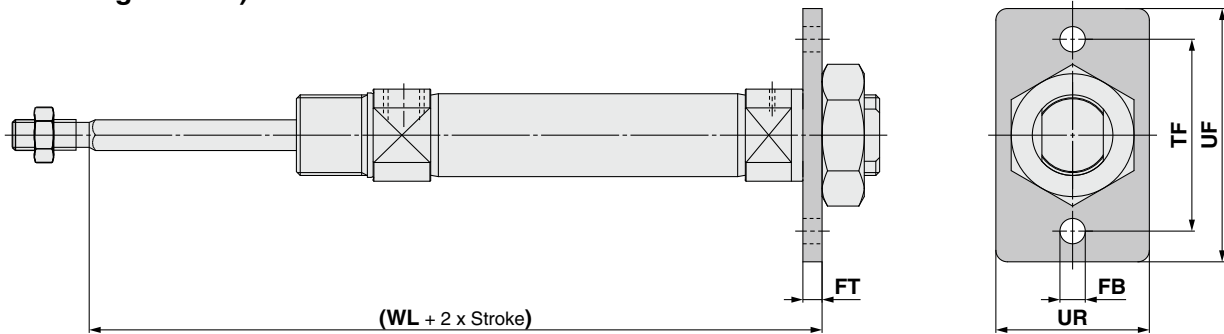
Bore size	AB	AO	AV	LS			LT	NH	TR _{Js14}	UR	US	(W)	(XS)	(XL)		
				1 to 50	51 to 100	101 to 150								1 to 50	51 to 100	101 to 150
8	4.5	5	11	86.5 (92.5)	—	—	3.2	16	25	26	35	12.8	23.8	91.5 (97.5)	—	—
10	4.5	5	11	86.5 (90.5)	—	—	3.2	16	25	26	35	12.8	23.8	91.5 (95.5)	—	—
12	5.5	6	14	98 (101.5)	—	—	4	20	32	33	42	18	32	106 (109.5)	—	—
16	5.5	6	14	103 (106.5)	129 (132.5)	155 (158.5)	4	20	32	33	42	18	32	111 (114.5)	137 (140.5)	163 (166.5)
20	6.6	8	17	121	146	171	5	25	40	42	54	19	36	128	153	178
25	6.6	8	17	122.5	147.5	172.5	5	25	40	42	54	23	40	133.5	158.5	183.5

() : For built-in magnet

Refer to page 16 of Standard Type Single Rod for details of accessories (rod end, double knuckle joint, floating joint).

Dimensions: Single Acting, Spring Extend

Bracket is shipped together with the product.

Rod flange: C□85KN□ - □TG
(With mounting bracket)Head flange: C□85KN□ - □TG
(With mounting bracket)

[mm]

Bore size	FB _{H13}	FT	TF	UF	UR	(W)	(WL)		
							1 to 50	51 to 100	101 to 150
8	4.5	3.2	30	40	22	12.8	83.7 (89.7)	—	—
10	4.5	3.2	30	40	22	12.8	83.7 (87.7)	—	—
12	5.5	4	40	52	30	18	96 (99.5)	—	—
16	5.5	4	40	52	30	18	101 (104.5)	127 (130.5)	153 (156.5)
20	6.6	5	50	66	40	19	116	141	166
25	6.6	5	50	66	40	23	121.5	146.5	171.5

(): For built-in magnet

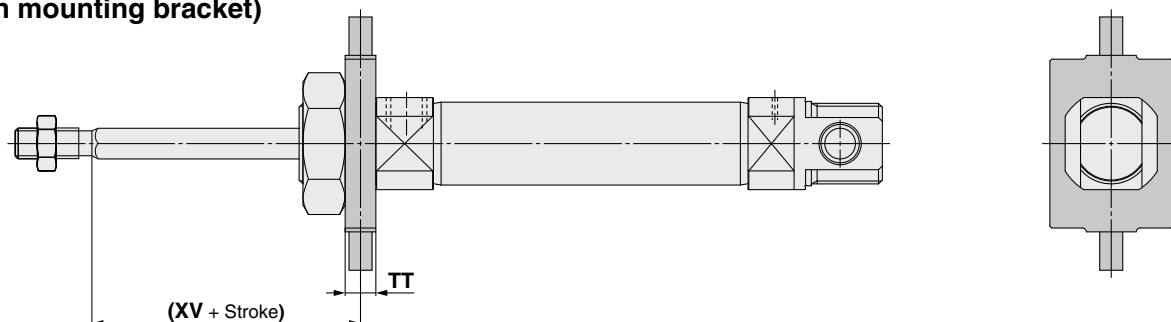
Refer to page 16 of Standard Type Single Rod for details of accessories (rod end, double knuckle joint, floating joint).

C85K Series

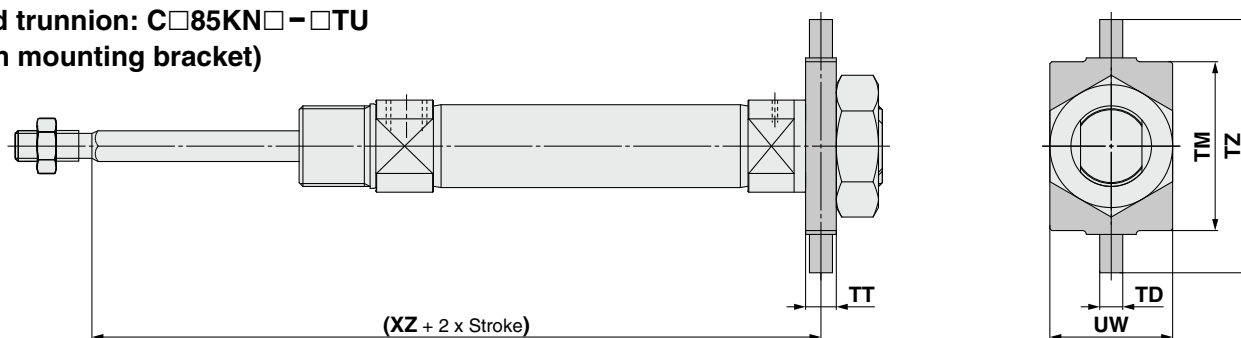
Dimensions: Single Acting, Spring Extend

Bracket is shipped together with the product.

Rod trunnion: C□85KN□-□TU
(With mounting bracket)



Head trunnion: C□85KN□-□TU
(With mounting bracket)

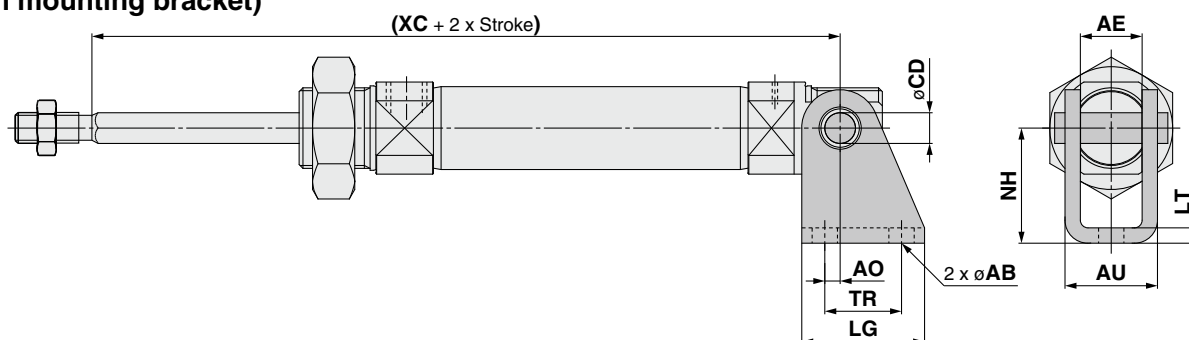


[mm]

Bore size	TD _{e8}	TM	TT	TZ	UW	(XV)	(XZ)		
							1 to 50	51 to 100	101 to 150
8	4	26	6	38	20	13	83.5 (89.5)	—	—
10	4	26	6	38	20	13	83.5 (87.5)	—	—
12	6	38	8	58	25	18	96 (99.5)	—	—
16	6	38	8	58	25	18	101 (104.5)	127 (130.5)	153 (156.5)
20	6	46	8	66	32	20	115	140	165
25	6	46	8	66	32	24	120.5	145.5	170.5

(): For built-in magnet

Clevis: C□85KN□-□TN
(With mounting bracket)



[mm]

Bore size	AB	AE	AO	AU	CD _{H9}	LG	LT	NH	TR	(XC)		
										1 to 50	51 to 100	101 to 150
8	4.5	8.1	1.5	13.1	4	20	2.5	24	12.5	82.5 (88.5)	—	—
10	4.5	8.1	1.5	13.1	4	20	2.5	24	12.5	82.5 (86.5)	—	—
12	5.5	12.1	2	18.5	6	25	3.2	27	15	95 (98.5)	—	—
16	5.5	12.1	2	18.5	6	25	3.2	27	15	101 (104.5)	127 (130.5)	153 (156.5)
20	6.6	16.1	4	24.1	8	32	4	30	20	120	145	170
25	6.6	16.1	4	24.1	8	32	4	30	20	127.5	152.5	177.5

(): For built-in magnet

Refer to page 16 of Standard Type Single Rod for details of accessories (rod end, double knuckle joint, floating joint).

ISO Standards

Air Cylinder: Direct Mount Double Acting, Single Rod **C85R Series** ø8, ø10, ø12, ø16, ø20, ø25

RoHS

How to Order

Double acting, Single rod

C D 85R A F 20 - 40 V - B - M9BW S -

Built-in magnet

Nil	None
D	Built-in magnet

Type

A	Bottom side mounting
B*1	Front side mounting

*1 ø20, ø25 only.

Head cover type

F	Boss-cut/Basic
Y	Head cover axial port

Bore size

8	8 mm
10	10 mm
12	12 mm
16	16 mm
20	20 mm
25	25 mm

Cylinder stroke [mm]

Refer to the next page for standard strokes.

Accessory*1

Nil	None
V	Rod end
W	Double knuckle joint

*1 Refer to Mounting Brackets/Accessories on page 58 for details of accessories.

* Accessory is shipped together with the product.

Number of auto switches

Nil	2
S	1
n	n

Made to order

For details, refer to page 57.

Auto switch

Nil	Without auto switch
-----	---------------------

* For applicable auto switches, refer to the table below.

* Auto switches are shipped together with the product.

Auto switch mounting type*1

B	Band mounting
---	---------------

*1 The symbol is "Nil" for no magnet.

Applicable Auto Switches/Refer to the Web Catalog or Best Pneumatics for further information on auto switches.

Type	Special function	Electrical entry	Indicator light	Wiring (Output)	Load voltage		Auto switch model		Lead wire length [m]					Pre-wired connector	Applicable load					
					DC	AC	Band mounting		0.5 (Nil)	1 (M)	3 (L)	5 (Z)	None (N)							
							Perpendicular	In-line												
Solid state auto switch	—	Grommet	Yes	3-wire (NPN)	24 V	5 V, 12 V	—	M9NV	M9N	●	●	●	○	—	○	IC circuit				
				3-wire (PNP)				M9PV	M9P	●	●	●	○	—	○					
		Connector		2-wire				M9BV	M9B	●	●	●	○	—	○		—			
				—				H7C	●	—	●	●	—	—						
	Diagnostic indication (2-color indicator)	Grommet		3-wire (NPN)				24 V	5 V, 12 V	—	M9NWV	M9NW	●	●	●	○	—	○	IC circuit	
				3-wire (PNP)							M9PWV	M9PW	●	●	●	○	—	○		
				2-wire							M9BWV	M9BW	●	●	●	○	—	○		—
				3-wire (NPN)							M9NAV*1	M9NA*1	○	○	●	○	—	○		
	Water-resistant (2-color indicator)	Grommet		3-wire (PNP)				M9PAV*1	M9PA*1	○	○	●	○	—	○					
				2-wire				M9BAV*1	M9BA*1	○	○	●	○	—	○	—				
				4-wire (NPN)				—	H7NF	●	—	●	○	—	○		IC circuit			
				With diagnostic output (2-color indicator)																
Reed auto switch	—	Grommet	Yes	3-wire (NPN equivalent)	24 V	12 V	—	A96V	A96	●	●	●	●	—	○	IC circuit				
				No				2-wire	100 V	A93V	A93	●	●	●	●		—	○*2	—	
									100 V or less	A90V	A90	●	●	●	●		—	○*2		IC circuit
		Connector		No				—	—	C73C	●	—	●	●	●	—	—	—		
								24 V or less	—	C80C	●	—	●	●	●	—	—		IC circuit	

*1 Water-resistant type auto switches can be mounted on the above models, but SMC cannot guarantee water resistance.

Please contact SMC regarding water-resistant types with the above model numbers.

*2 The load voltage used is 24 VDC.

* Lead wire length symbols: 0.5 m..... Nil (Example) M9NW 5 m..... Z (Example) M9NWZ
1 m..... M (Example) M9NWM None..... N (Example) H7CN
3 m..... L (Example) M9NWL

* Since there are other applicable auto switches than listed above, refer to page 115 for details.

* Auto switches marked with "○" are produced upon receipt of order.

* D-A9□/M9□ auto switches are shipped together, but not assembled. (Only the auto switch mounting brackets are assembled before shipment.)

* D-A9□(V) cannot be mounted on ø8, ø10, and ø12.

C85
C85W
C85-S7
C85K
C85K-S7
C85R
C75
C75W
C75-S7
C75K
C75K-S7
C75R
CP96
CP96K
C96
C96K
C96Y
C55
Auto Switch
Made to Order
Related Products

C85R Series

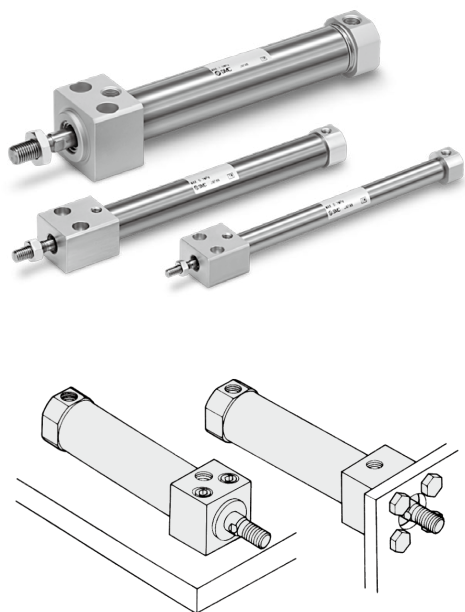
Square rod cover makes direct mounting possible

Space saving

Because it is a directly mounted type without using brackets, its overall length is shorter, and its installation pitch can be made smaller. Thus, the space that is required for installation has been dramatically reduced.

2 mounting types

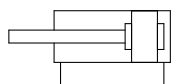
Front side mounting and bottom side mounting available to suit your applications.



Bottom side mounting Front side mounting

Symbol

Double acting, Single rod



Refer to pages 105 to 115 for cylinders with auto switches.

- Auto Switch Proper Mounting Position (Detection at stroke end) and Mounting Height
- Minimum Stroke for Auto Switch Mounting
- Operating Range
- Auto Switch Mounting Brackets/Part No.



Made to Order

(For details, refer to pages 119 to 124.)

Symbol	Specifications
-XA	Change of rod end shape
-XB6	Heat-resistant cylinder (−10 to 150°C)*1, *2
-XB7	Cold-resistant cylinder (−40 to 70°C)*1, *2
-XB9	Low speed cylinder (10 to 50 mm/s)*1
-XC6A	Made of stainless steel*1

*1 ø20, ø25 only

*2 Excludes with rod end (Accessory)

Specifications

Bore size [mm]	8	10	12	16	20	25
Type	Pneumatic					
Action	Double acting, Single rod					
Fluid	Air					
Proof pressure	1.5 MPa					
Max. operating pressure	1.0 MPa					
Min. operating pressure	0.1 MPa	0.08 MPa		0.05 MPa		
Ambient and fluid temperature	Without auto switch: −20°C to 80°C (No freezing)					
	With auto switch: −10°C to 60°C (No freezing)					
Lubricant	Not required (Non-lube)					
Stroke length tolerance	^{+1.0} ₀ mm				^{+1.4} ₀ mm	
Piston speed	50 to 1500 mm/s					
Cushion	Rubber bumper					
Allowable kinetic energy	0.02 J	0.03 J	0.04 J	0.09 J	0.27 J	0.4 J

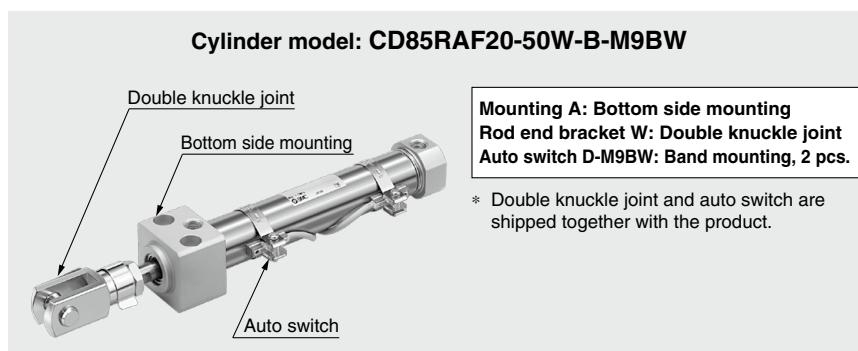
Standard Strokes

Bore size [mm]	Standard stroke [mm]*1	Max. stroke*2 [mm]
8	10, 25, 40, 50, 80, 100	200
10		400
12		400
16	10, 25, 40, 50, 80, 100, 125, 160	400
20		1000
25		1000

*1 Other strokes are available on request.

*2 For exceeding the standard stroke range, it will be available as a special order (-X2018).

Option: Ordering Example of Cylinder Assembly



⚠ Precautions

Be sure to read this before handling the products. Refer to page 219 for safety instructions. For actuator and auto switch precautions, refer to the “Handling Precautions for SMC Products” and the “Operation Manual” on the SMC website: <http://www.smcworld.com>

Mounting Brackets/Accessories

Mounting bracket/Accessory			Standard (mounted to the body)	Accessory (shipped together)	
			Rod end nut	Rod end	Double knuckle joint
Accessory symbol	V	Rod end	● (1 pc.)	● (1 pc.)	—
	W	Double knuckle joint	● (1 pc.)	—	● (1 pc.)

Mounting Bracket/Accessory Part Nos.

Description		Bore size [mm]						Contents
		8	10	12	16	20	25	
Accessory	Rod end	KJ4D		KJ6D		KJ8D	KJ10D	1 rod end
	Double knuckle joint	GKM4-8		GKM6-12		GKM8-16	GKM10-20	1 double knuckle joint
	Floating joint	JA10-4-070		JA15-6-100		JA20-8-125	JA30-10-125	1 floating joint

* Refer to page 16 for dimensions of accessories.

Replacement Parts

Bore size [mm]	Part no.	Note
20	C85A-20PS	Every set includes: 1 rod seal 1 flat washer 1 retaining ring
25	C85A-25PS	

* When replacing the seals, use **grease (GR-S-010: ordered separately)** on the sliding parts.

Weights

Bore size [mm]			8	10	12	16	20	25
Basic weight	Without magnet	C85RAF	38	39	72	78	151	231
		C85RAY	38	39	72	79	152	232
		C85RBF	—	—	—	—	148	230
		C85RBY	—	—	—	—	148	231
	With magnet	CD85RAF	38	40	72	79	154	235
		CD85RAY	38	40	73	79	155	236
		CD85RBF	—	—	—	—	151	234
		CD85RBY	—	—	—	—	152	235
Additional weight per 10 mm of stroke			2.1	2.3	4.1	5.1	8.1	11.3
Accessory	Rod end	KJ□D	17		25		45	70
	Double knuckle joint	GKM□-□	10		20		50	100
	Floating joint	JA□-□-□	10		20		50	70

Calculation example: **C85RAF20-50V**

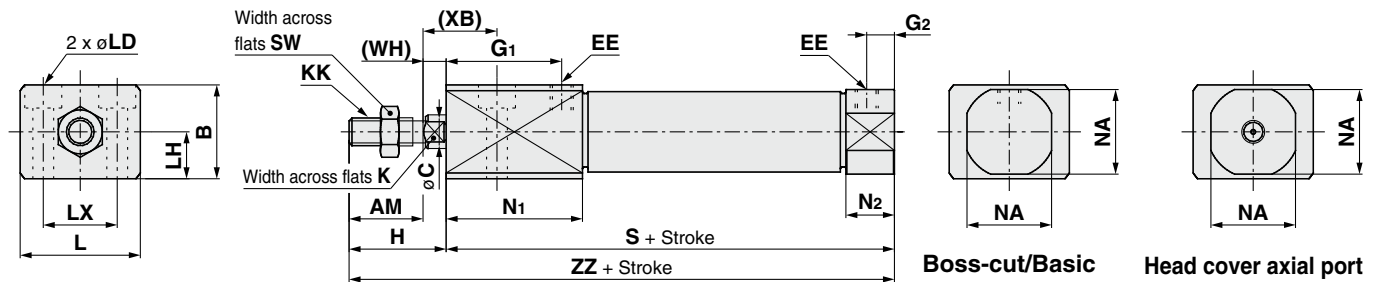
- Basic weight 151 g (ø20)
- Additional weight ... 8.1 g (at 10 mm stroke)
- Cylinder stroke 50 mm
- Accessory: Rod end 45 g

$$151 + 8.1 \times 50/10 + 45 \approx 237 \text{ g}$$

C85R Series

Dimensions

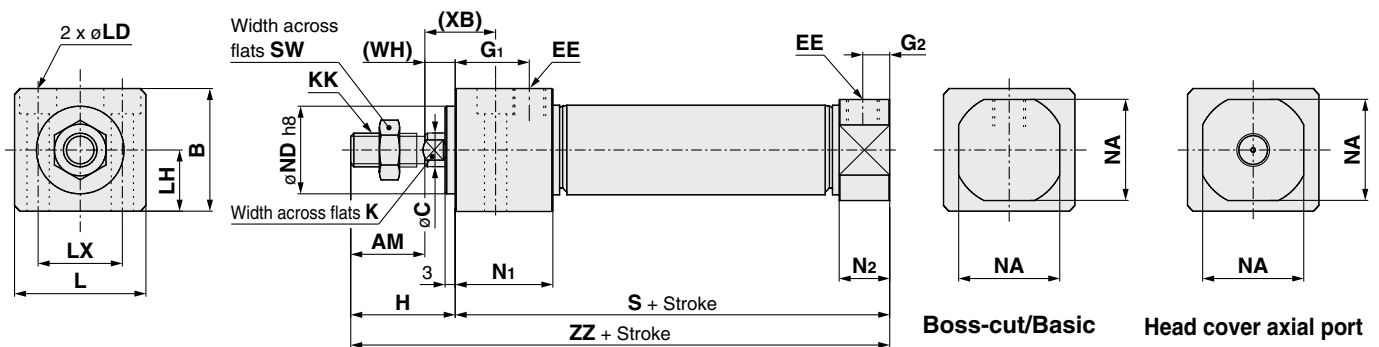
Bottom side mounting: C□85RAF/Y 8 to 16 – Stroke – B



Dimensions

Bore size	AM	B	C	EE	G ₁	G ₂	H	K	KK	L	LD	LH	LX	N ₁	N ₂	NA	S	SW	(WH)	(XB)	ZZ
8	12	16	4	M5 x 0.8	19	5	16	—	M4 x 0.7	23	ø3.5, ø6.5 counterbore depth 4	8	14	23.5	9.5	15	58	7	4	12	74
10	12	16	4	M5 x 0.8	19	5	16	—	M4 x 0.7	23	ø3.5, ø6.5 counterbore depth 4	8	14	23.5	9.5	15	58	7	4	12	74
12	16	20	6	M5 x 0.8	25	6	21	5	M6 x 1	26	ø4.5, ø8 counterbore depth 5	10	16	29.5	10.5	18.3	67	10	5	16	88
16	16	20	6	M5 x 0.8	25	6	21	5	M6 x 1	26	ø4.5, ø8 counterbore depth 5	10	16	29.5	10.5	18.3	67	10	5	16	88

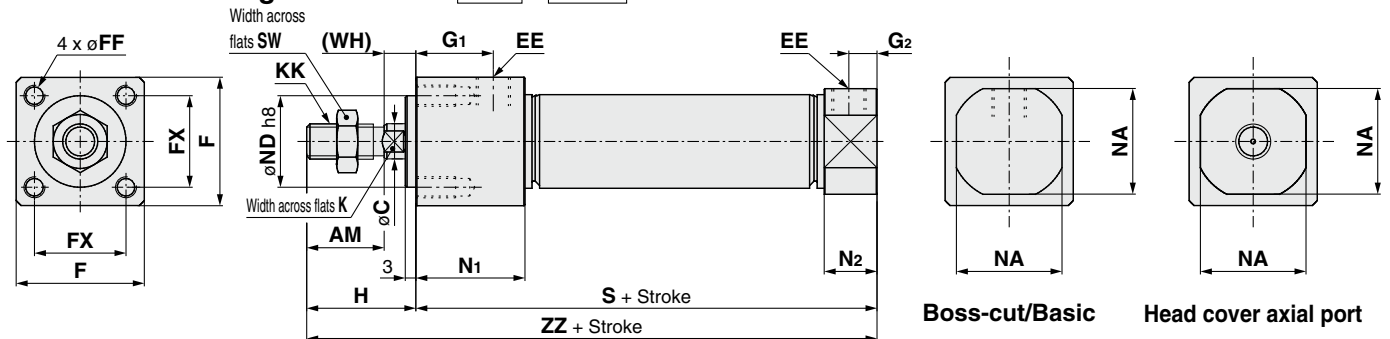
Bottom side mounting: C□85RAF/Y 20/25 – Stroke – B



Dimensions

Bore size	AM	B	C	EE	G ₁	G ₂	H	K	KK	L	LD	LH	LX	N ₁	N ₂	NA	ND	S	SW	(WH)	(XB)	ZZ
20	20	30.3	8	G 1/8	22	8	30	6	M8 x 1.25	33.5	ø5.5, ø9.5 counterbore depth 6.5	15	21	29	15	24	20 ⁰ _{-0.033}	76	13	10	22	106
25	22	36.6	10	G 1/8	22	8	36	8	M10 x 1.25	39	ø6.6, ø11 counterbore depth 7.5	18	25	29	15	30	26 ⁰ _{-0.033}	79	17	14	26	115

Front side mounting: C□85RBF/Y 20/25 – Stroke – B



Dimensions

Bore size	AM	C	EE	F	FF	FX	G ₁	G ₂	H	K	KK	N ₁	N ₂	NA	ND	S	SW	(WH)	ZZ
20	20	8	G 1/8	30.4	M5 x 0.8 depth 9	22	22	8	30	6	M8 x 1.25	29	15	24	20 ⁰ _{-0.033}	76	13	10	106
25	22	10	G 1/8	36.4	M6 x 1 depth 11	26	22	8	36	8	M10 x 1.25	29	15	30	26 ⁰ _{-0.033}	79	17	14	115

Refer to page 16 of Standard Type Single Rod for details of accessories (rod end, double knuckle joint, floating joint).

Air Cylinder: Standard Double Acting, Single Rod **C75 Series** ø32, ø40

RoHS

How to Order

Double acting, Single rod **C D 75 E 32 - 100 C J L V - B - M9BW**

Built-in magnet

Nil	None
D	Built-in magnet

Head cover type

E	Double end boss-cut
F	Boss-cut/Basic
Y	Head cover axial port

Applicable head cover

Action	Head cover type
Rubber bumper	E F Y
Air cushion	— — —

Bore size

32	32 mm
40	40 mm

Cylinder stroke [mm]
Refer to the next page for standard strokes.

Cushion

Nil	Rubber bumper (Standard)
C	Air cushion

Rod boot

Nil	Without rod boot
J	Nylon tarpaulin (One end)
K	Heat-resistant tarpaulin (One end)

Auto switch mounting type*1

A	Rail mounting
B	Band mounting

*1 The symbol is "Nil" for no magnet.

Accessory*1

Nil	None
V	Rod end

*1 Refer to Mounting Brackets/Accessories on page 62 for details of accessories.
* Accessory is shipped together with the product.

Auto switch

Nil	Without auto switch
-----	---------------------

* For applicable auto switches, refer to the table below.
* Auto switches are shipped together with the product.

Number of auto switches

Nil	2
S	1
n	n

Mounting bracket*1

Nil	None
L	Single foot
M	Double foot
G	Flange
U	Trunnion
N	Clevis

*1 Refer to Mounting Brackets/Accessories on page 62 for details of mounting brackets.
* Mounting bracket is shipped together with the product.

Applicable mounting bracket

Action	Head cover type	L	M	G	U	N
Rubber bumper	E	●	●	●	●	●
	F	●	—	●	●	●
	Y	●	—	●	●	●
Air cushion	E	●	●	●	●	●

Made to order
For details, refer to page 61.

Applicable Auto Switches/Refer to the Web Catalog or Best Pneumatics for further information on auto switches.

Type	Special function	Electrical entry	Indicator/light	Wiring (Output)	Load voltage		Auto switch model				Lead wire length [m]					Pre-wired connector	Applicable load		
					DC	AC	Band mounting		Rail mounting		0.5 (Nil)	1 (M)	3 (L)	5 (Z)	None (N)				
							Perpendicular	In-line	Perpendicular	In-line									
Solid state auto switch	—	Grommet	Yes	3-wire (NPN)	5 V, 12 V	—	M9NV	M9N	F7NV	F79	●	●	●	○	—	○	IC circuit	Relay, PLC	
		3-wire (PNP)		M9PV			M9P	F7PV	F7P	●	●	●	○	—	○				
	Connector	2-wire		12 V	M9BV		M9B	F7BV	J79	●	●	●	○	—	○	—			
	Diagnostic indication (2-color indicator)	Grommet		3-wire (NPN)	5 V, 12 V		M9NWV	M9NW	F7NWV	F79W	●	●	●	○	—	○	IC circuit		
				3-wire (PNP)			M9PWV	M9PW	—	F7PW	●	●	●	○	—	○			
				2-wire			12 V	M9BWV	M9BW	F7BWV	J79W	●	●	●	○	—	○		—
				3-wire (NPN)			5 V, 12 V	M9NAV*1	M9NA*1	—	—	○	○	●	○	—	○		IC circuit
	3-wire (PNP)	M9PAV*1		M9PA*1	—			—	○	○	●	○	—	○					
	2-wire	12 V		M9BAV*1	M9BA*1			F7BAV*1	F7BA*1	○	○	●	○	—	○	—			
	With diagnostic output (2-color indicator)	4-wire (NPN)		5 V, 12 V	—		H7NF	—	F79F	●	—	●	○	—	○	IC circuit			
Reed auto switch	—	Grommet	Yes	3-wire (NPN equivalent)	—	5 V	—	A96V	A96	—	A76H*2	●	●	●	●	—	○	IC circuit	Relay, PLC
						—	200 V	—	—	A72	A72H	●	—	●	—	—	—	—	
		Connector	No	2-wire	24 V	12 V	100 V	A93V	A93	A73*2	A73H*2	●	●	●	●	—	○*3	—	
							100 V or less	A90V	A90	A80*2	A80H*2	●	●	●	●	—	○*3	IC circuit	
	Grommet	Yes	—	—			C73C	A73C	—	—	●	—	●	●	●	—	—		
			24 V or less	—			C80C	A80C	—	—	●	—	●	●	●	—	IC circuit		
			—	—	—	—	A79W	—	—	●	—	●	—	—	—				

*1 Water-resistant type auto switches can be mounted on the above models, but SMC cannot guarantee water resistance.

Please contact SMC regarding water-resistant types with the above model numbers.

*2 The type with a 1 m or 5 m lead wire is only compatible with the D-A9□(V).

*3 The load voltage used is 24 VDC.

* Lead wire length symbols: 0.5 m..... Nil (Example) M9NW 3 m..... L (Example) M9NWL None..... N (Example) H7CN
1 m..... M (Example) M9NWM 5 m..... Z (Example) M9NWZ

* Since there are other applicable auto switches than listed above, refer to page 115 for details.

* Auto switches marked with "○" are produced upon receipt of order.

* D-A9□/M9□/A7□/A80□/F7□/J7□ auto switches are shipped together, but not assembled. (For band mounting, only the auto switch mounting brackets are assembled before shipment.)

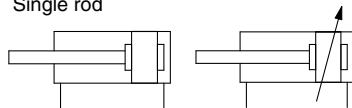
C75 Series



Symbol

Double acting,
Single rod

Air cushion



Refer to pages 105 to 115 for cylinders with auto switches.

- Auto Switch Proper Mounting Position (Detection at stroke end) and Mounting Height
- Minimum Stroke for Auto Switch Mounting
- Operating Range
- Auto Switch Mounting Brackets/Part No.



Made to Order
(For details, refer to pages 119 to 124.)

Symbol	Specifications
-XA	Change of rod end shape
-XB6	Heat-resistant cylinder (−10 to 150°C)*1, *2
-XB7	Cold-resistant cylinder (−40 to 70°C)*1, *2
-XB9	Low speed cylinder (10 to 50 mm/s)*1
-XC4	With heavy duty scraper*1
-XC6□	Made of stainless steel

*1 Rubber bumper only

*2 Excludes with rod end (Accessory)

Specifications

Bore size [mm]		32	40
Type		Pneumatic	
Action		Double acting, Single rod	
Fluid		Air	
Proof pressure		1.5 MPa	
Max. operating pressure		1.0 MPa	
Min. operating pressure	Rubber bumper	0.05 MPa	
	Air cushion	0.05 MPa	
Ambient and fluid temperature		Without auto switch: −20°C to 80°C (No freezing)	
		With auto switch: −10°C to 60°C (No freezing)	
Lubricant		Not required (Non-lube)	
Stroke length tolerance		$+1.4$ 0 mm	
Piston speed		50 to 1500 mm/s	
Cushion		Rubber bumper Air cushion	
Allowable kinetic energy	Rubber bumper	0.65 J	1.2 J
	Air cushion	1.07 J	2.35 J

Standard Strokes

Bore size [mm]	Standard stroke [mm]*1*3	Max. stroke*2 [mm]
32	10, 25, 40, 50, 80, 100, 125, 160, 200, 250, 300	1000
40		

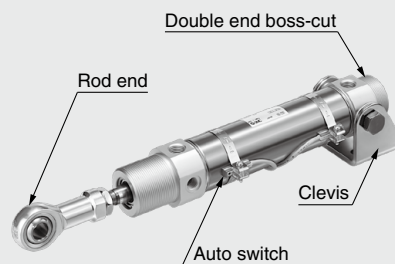
*1 Other strokes are available on request.

*2 For exceeding the standard stroke range, it will be available as a special order (-X2018).

*3 The minimum stroke with air cushion is 25 mm.

Option: Ordering Example of Cylinder Assembly

Cylinder model: CD75E40-50NV-B-M9BW



Head cover E: Double end boss-cut
Mounting bracket N: Clevis
Rod end bracket V: Rod end
Auto switch D-M9BW: Band mounting, 2 pcs.

* Mounting bracket, rod end, and auto switch are shipped together with the product.



Precautions

Be sure to read this before handling the products. Refer to page 219 for safety instructions. For actuator and auto switch precautions, refer to the “Handling Precautions for SMC Products” and the “Operation Manual” on the SMC website: <http://www.smcworld.com>

Mounting Brackets/Accessories

Mounting bracket/Accessory			Standard (mounted to the body)		Mounting bracket (shipped together)						Accessory (shipped together)
			Mounting nut	Rod end nut	Mounting nut	Foot/Flange	Trunnion pin	Trunnion washer	Clevis pivot bracket	Clevis bolt	Rod end
Mounting bracket symbol	L	Single foot	● (1 pc.)	● (1 pc.)	—	● (1 pc.)	—	—	—	—	—
	M	Double foot	● (1 pc.)	● (1 pc.)	● (1 pc.)	● (2 pcs.)	—	—	—	—	—
	G	Flange	● (1 pc.)	● (1 pc.)	—	● (1 pc.)	—	—	—	—	—
	U	Trunnion	● (1 pc.)	● (1 pc.)	—	—	● (2 pcs.)	● (2 pcs.)	—	—	—
	N	Clevis	● (1 pc.)	● (1 pc.)	—	—	—	● (2 pcs.)	● (1 pc.)	● (2 pcs.)	—
Accessory symbol	V	Rod end	● (1 pc.)	● (1 pc.)	—	—	—	—	—	—	● (1 pc.)

Mounting Bracket/Accessory Part Nos.

Mounting bracket/Accessory		Bore size [mm]		Contents
		32	40	
Mounting bracket	Rod end nut	C75NT32Z	C75NT40Z	1 rod end nut
	Mounting nut	C75SN32Z	C75SN40Z	1 mounting nut
	Flange, Foot (1 pc.)	C75F32AZ	C75F40AZ	1 flange, 1 foot bracket
	Flange, Foot (2 pcs. with 1 mounting nut)	C75F32BZ	C75F40BZ	2 flanges, 2 foot brackets, 1 mounting nut
	Flange, Foot (1 pc. with 1 mounting nut)	C75F32CZ	C75F40CZ	1 flange, 1 foot bracket, 1 mounting nut
	Trunnion	C75T32Z	C75T40Z	2 trunnion pins, 2 trunnion washers
	Clevis	C75C32Z	C75C40Z	1 clevis pivot bracket, 2 clevis bolts, 2 trunnion washers
Accessory	Rod end	KJ10DA	KJ12DA	1 rod end
	Floating joint	JA25-10-150	JA40-12-175	

* Refer to page 67 for dimensions of accessories.

Replacement Parts: For Standard Type

Bore size [mm]	Part no.	Note
32	C75A-32PS	Every set includes: 1 rod seal 1 flat washer 1 retaining ring
40	C75A-40PS	

* When replacing the seals, use **grease (GR-S-010: ordered separately)** on the sliding parts.

Weights

Bore size [mm]			32	40
Basic weight	Without magnet	C75E	0.34 (0.37)	0.65 (0.64)
		C75F	0.31	0.61
		C75Y	0.31	0.61
	With magnet	CD75E	0.34 (0.37)	0.66 (0.65)
		CD75F	0.32	0.61
		CD75Y	0.32	0.61
Additional weight per 10 mm of stroke			0.02	0.03
Mounting bracket	Flange, Foot (1 pc.)	C75F□AZ	0.11	0.2
	Flange, Foot (2 pcs. with 1 mounting nut)	C75F□BZ	0.25	0.46
	Trunnion	C75T□Z	0.02	0.03
	Clevis	C75C□Z	0.17	0.31
Accessory	Rod end	KJ□DA	0.07	0.11
	Floating joint	JA□-□-□	0.07	0.16

(): For air cushion

Calculation example: **C75E32-50NV**

- Basic weight 0.34 kg (ø32)
- Additional weight ... 0.02 kg (at 10 mm stroke)
- Cylinder stroke 50 mm
- Mounting bracket: Clevis ... 0.17 kg
- Accessory: Rod end 0.07 kg

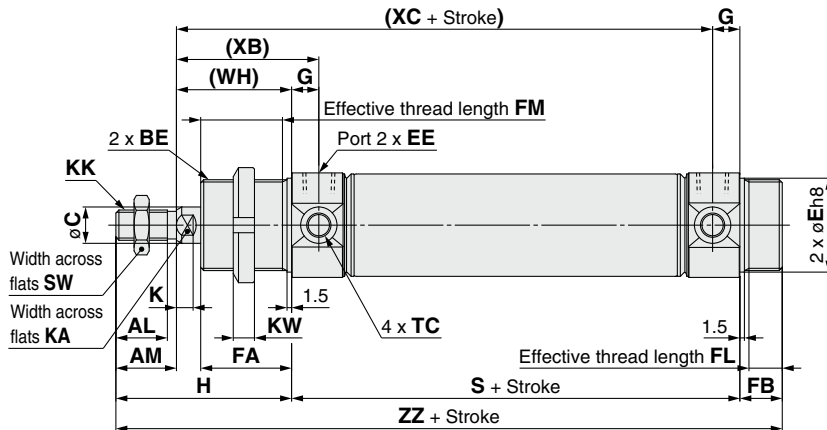
$$0.34 + 0.02 \times 50/10 + 0.17 + 0.07 = \mathbf{0.68 \text{ kg}}$$

C75 Series

Dimensions

Double end boss-cut

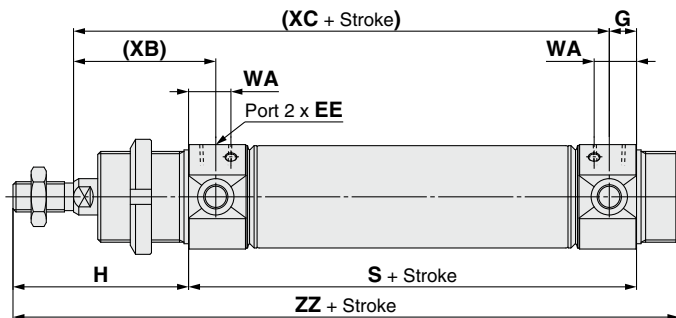
Rubber bumper: C□75E Bore size – Stroke – □



Rail mounting (A)

Band mounting (B)
Without magnet

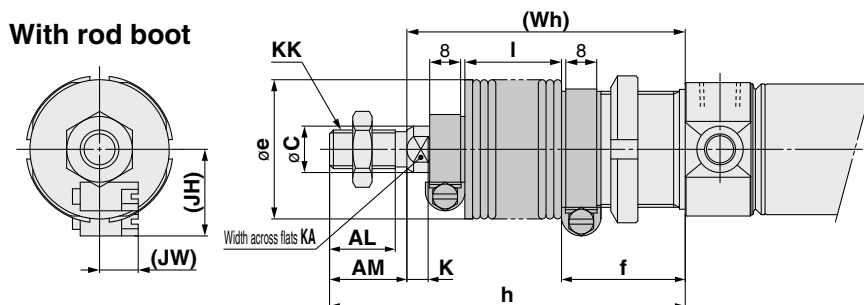
Air cushion: C□75E Bore size – Stroke C – □



Rail mounting (A)

Band mounting (B)
Without magnet

With rod boot



Dimensions

[mm]

Bore size	AL	AM	BE	C	D	E	EE	FA	FB	FM	FL	G	H	(HR)	K	KA	KK	KV
32	17	20	M30 x 1.5	12	37.5	30	G1/8	30	14	27	11	9	58	23.8	5.5	10	M10 x 1.5	38
40	21	24	M38 x 1.5	14	46.5	38	G1/4	35	16	32	13	12	69	28.3	7	12	M12 x 1.75	50

Bore size	KW	NB	S	SW	TC	TD	TW	WA	(WH)	(XB)	(XC)	ZZ
32	7	34.5	68	17	M8 x 1	12 ^{+0.08} ₀	33.1	14	38	47	97	140
40	8	42.5	89	19	M10 x 1	14 ^{+0.08} ₀	39.5	20	45	57	122	174

With Rod Boot

[mm]

Bore size	Item Stroke	AL	AM	C	e	f	K	KA	KK	h							
										1 to 50	51 to 100	101 to 150	151 to 200	201 to 300	301 to 400	401 to 500	
32		17	20	12	36	32	5.5	10	M10 x 1.5	77	90	102	115	140	165	190	
40		21	24	14	46	37	7	12	M12 x 1.75	88	101	113	126	151	176	201	

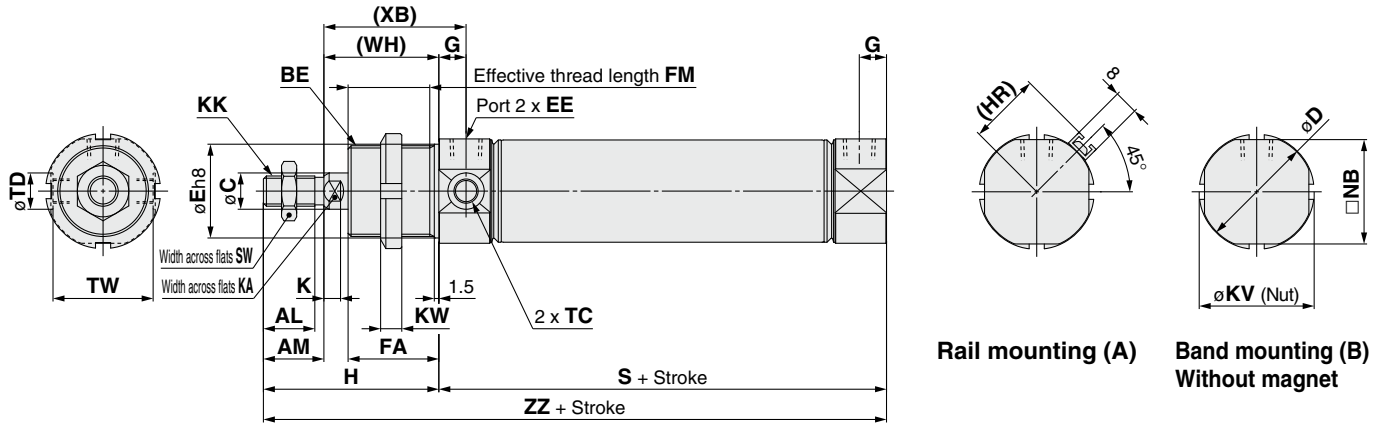
Bore size	Item Stroke	I							(JH) (JW)		(Wh)							
		1 to 50	51 to 100	101 to 150	151 to 200	201 to 300	301 to 400	401 to 500	Reference	Reference	1 to 50	51 to 100	101 to 150	151 to 200	201 to 300	301 to 400	401 to 500	
32		12.5	25	37.5	50	75	100	125	23.5	10.5	57	70	82	95	120	145	170	
40		12.5	25	37.5	50	75	100	125	27	10.5	64	77	89	102	127	152	177	

Refer to page 67 of Standard Type Single Rod for details of accessories (rod end, floating joint).

Dimensions

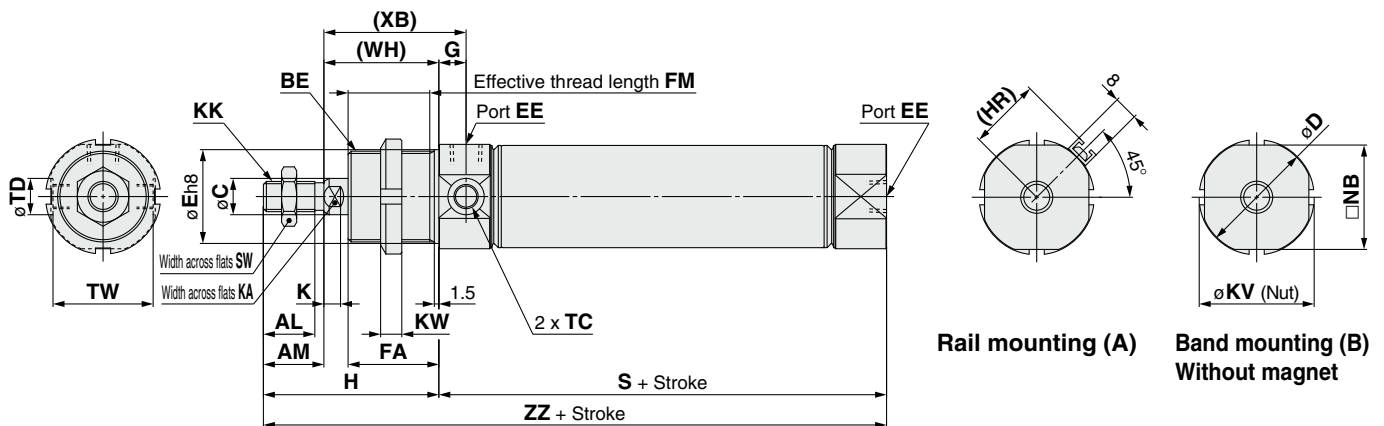
Boss-cut/Basic

Rubber bumper: C□75F Bore size – Stroke – □



Head cover axial port

Rubber bumper: C□75Y Bore size – Stroke – □



Dimensions

Bore size	AL	AM	BE	C	D	E	EE	FA	FM	G	H	(HR)	K	KA	KK	KV	KW
32	17	20	M30 x 1.5	12	37.5	30	G1/8	30	27	9	58	23.8	5.5	10	M10 x 1.5	38	7
40	21	24	M38 x 1.5	14	46.5	38	G1/4	35	32	12	69	28.3	7	12	M12 x 1.75	50	8

Bore size	NB	S	SW	TC	TD	TW	(WH)	(XB)	ZZ
32	34.5	68	17	M8 x 1	12 ^{+0.08} ₀	33.1	38	47	126
40	42.5	89	19	M10 x 1	14 ^{+0.08} ₀	39.5	45	57	158

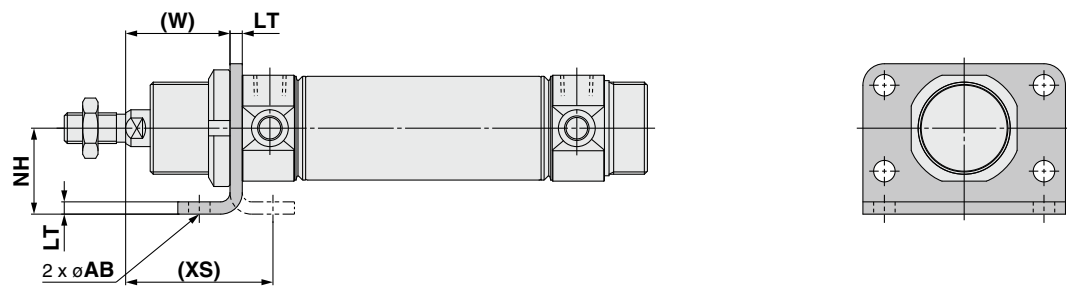
Refer to page 67 of Standard Type Single Rod for details of accessories (rod end, floating joint).

C75 Series

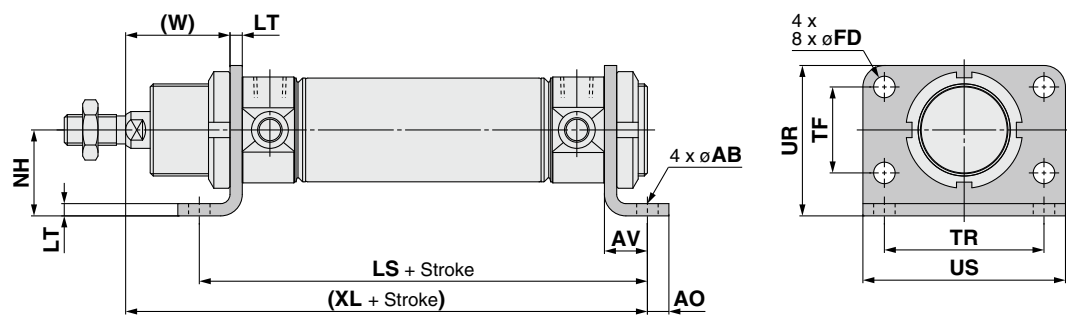
Dimensions

Bracket is shipped together with the product.

Single foot: C□75E□-□L/Flange: C□75E□-□G (With mounting bracket)

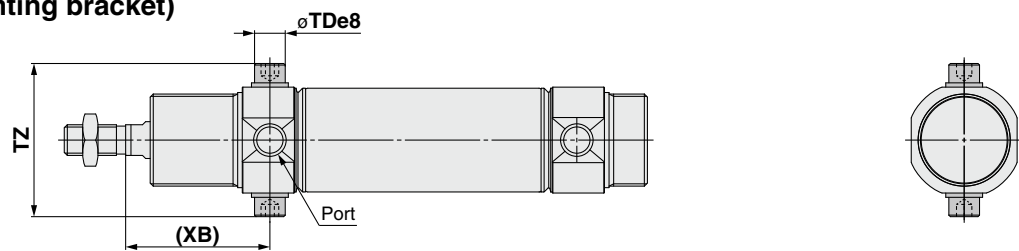


Double foot: C□75E□-□M (With mounting bracket)

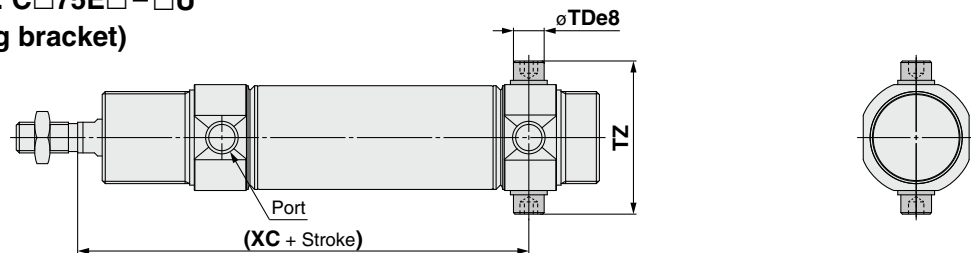


														[mm]
Bore size	AB	AO	AV	FD	LS	LT	NH	TF	TR	UR	US	(W)	(XL)	(XS)
32	7	7	14	7	96	4	28	28	52	49	66	34	120	48
40	9	10	20	9	129	5	33	30	60	58	80	40	154	60

Rod trunnion: C□75E□-□U
(With mounting bracket)



Head trunnion: C□75E□-□U
(With mounting bracket)



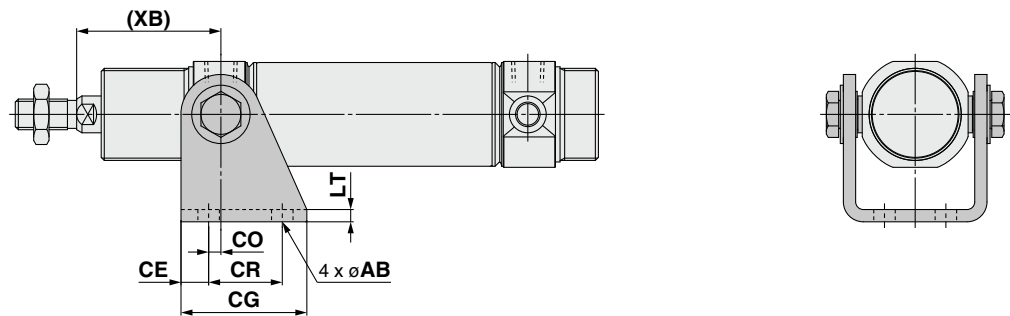
[mm]				
Bore size	TDe8	TZ	(XB)	(XC)
32	10 ^{-0.025} _{-0.047}	49.9	47	97
40	12 ^{-0.032} _{-0.059}	62.3	57	122

Refer to page 67 of Standard Type Single Rod for details of accessories (rod end, floating joint).

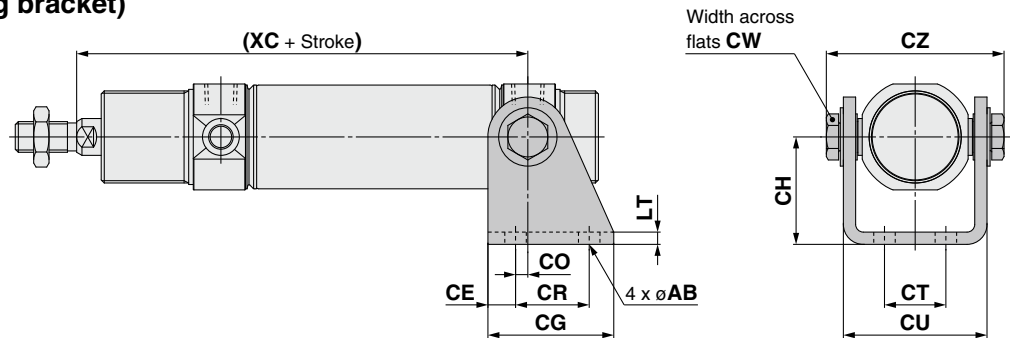
Dimensions

Bracket is shipped together with the product.

Rod clevis: C□75E□-□N
(With mounting bracket)



Head clevis: C□75E□-□N
(With mounting bracket)



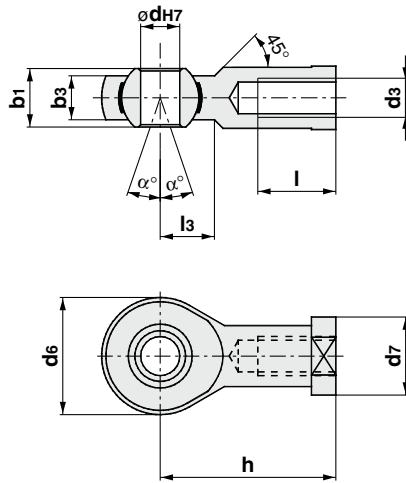
[mm]												
Bore size	AB	CE	CG	CH	CO	CR	CT	CU	CW	CZ	LT	(XB) (XC)
32	7	9	41	35	4	24	20	46.8	13	57.9	4	47 97
40	9	12	52	40	3	30	28	58.2	17	72.3	5	57 122

Refer to page 67 of Standard Type Single Rod for details of accessories (rod end, floating joint).

C75 Series

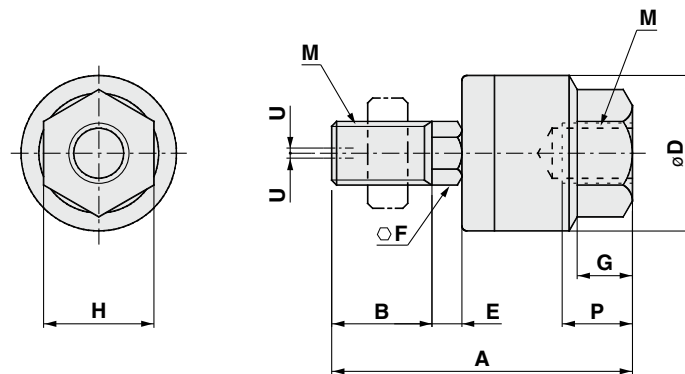
Dimensions of Accessories

Rod End



[mm]											
Bore size	Part no.	b1	b3	dH7	d6	d7	h	l	l3	d3	α°
32	KJ10DA	14	10.5	10	28	19	43	20	15	M10 x 1.5	13
40	KJ12DA	16	12	12	32	22	50	22	17	M12 x 1.75	13

Floating Joint: JA



[mm]													
Bore size	Part no.	M		A	B	D	E	F	G	H	Max. screw-in depth P	Allowable eccentricity U	Max. operating tension and compression power [kN]
		Nominal thread dia.	Pitch										
32	JA25-10-150	10	1.5	49.5	19.5	24	5	8	8	17	9	0.5	2.5
40	JA40-12-175	12	1.75	60	20	31	6	11	11	22	13	0.75	4.4

Air Cylinder: Standard Double Acting, Double Rod **C75W Series** ø32, ø40

RoHS

How to Order

Double acting, Double rod **C D 75WE 32 - 100 C J L V - B - M9BW**

Built-in magnet

Nil	None
D	Built-in magnet

Bore size

32	32 mm
40	40 mm

Cylinder stroke [mm]
Refer to the next page for standard strokes.

Cushion

Nil	Rubber bumper (Standard)
C	Air cushion

Rod boot

Nil	Without rod boot
J	Nylon tarpaulin (One end)
K	Heat-resistant tarpaulin (One end)
JJ	Nylon tarpaulin (Both ends)
KK	Heat-resistant tarpaulin (Both ends)

Mounting bracket*1

Nil	None
L	Single foot
M	Double foot
G	Flange
U	Trunnion
N	Clevis

Applicable mounting bracket

Action	Mounting bracket				
	L	M	G	U	N
Rubber bumper	●	●	●	●	●
Air cushion	●	●	●	●	●

Auto switch

Nil	Without auto switch
-----	---------------------

* For applicable auto switches, refer to the table below.
* Auto switches are shipped together with the product.

Auto switch mounting type*1

A	Rail mounting
B	Band mounting

*1 The symbol is "Nil" for no magnet.

Number of auto switches

Nil	2
S	1
n	n

Made to order
For details, refer to page 69.

Accessory*1

Nil	None
V	Rod end

*1 Refer to Mounting Brackets/Accessories on page 70 for details of accessories.
* Accessory is shipped together with the product.

Applicable Auto Switches/Refer to the Web Catalog or Best Pneumatics for further information on auto switches.

Type	Special function	Electrical entry	Indicator/light	Wiring (Output)	Load voltage		Auto switch model				Lead wire length [m]					Pre-wired connector	Applicable load		
					DC	AC	Band mounting		Rail mounting		0.5 (Nil)	1 (M)	3 (L)	5 (Z)	None (N)				
							Perpendicular	In-line	Perpendicular	In-line									
Solid state auto switch	—	Grommet	Yes	3-wire (NPN)	5 V, 12 V	—	M9NV	M9N	F7NV	F79	●	●	●	○	—	○	IC circuit	Relay, PLC	
		3-wire (PNP)		M9PV			M9P	F7PV	F7P	●	●	●	○	—	○				
	Connector	2-wire		12 V	M9BV		M9B	F7BV	J79	●	●	●	○	—	○	—			
	Diagnostic indication (2-color indicator)	Grommet		3-wire (NPN)	5 V, 12 V		M9NWV	M9NW	F7NWV	F79W	●	●	●	○	—	○	IC circuit		
				3-wire (PNP)			M9PWV	M9PW	—	F7PW	●	●	●	○	—	○			
				2-wire	12 V		M9BWV	M9BW	F7BWV	J79W	●	●	○	—	○	—			
				3-wire (NPN)	5 V, 12 V		M9NAV*1	M9NA*1	—	—	○	○	●	○	—	○	IC circuit		
				3-wire (PNP)			M9PAV*1	M9PA*1	—	—	○	○	●	○	—	○			
				2-wire	12 V		M9BAV*1	M9BA*1	F7BAV*1	F7BA*1	○	○	●	○	—	○	—		
	With diagnostic output (2-color indicator)	4-wire (NPN)		5 V, 12 V	—		H7NF	—	F79F	●	—	●	○	—	○	IC circuit			
Reed auto switch	—	Grommet	Yes	3-wire (NPN equivalent)	—	5 V	—	A96V	A96	—	A76H*2	●	●	●	●	—	○	IC circuit	Relay, PLC
						—	200 V	—	—	A72	A72H	●	—	●	—	—	—	—	
		Connector	No	2-wire	24 V	12 V	100 V or less	A93V	A93	A73*2	A73H*2	●	●	●	●	—	○*3	IC circuit	
							—	—	C73C	A73C	—	●	—	●	●	●	—		
	Diagnostic indication (2-color indicator)	Grommet	Yes	24 V or less	—	C80C	A80C	—	●	—	●	●	●	—	—	IC circuit			
				—	—	—	—	A79W	—	●	—	●	—	—	—				
				—	—	—	—	—	—	—	—	—	—	—	—				

*1 Water-resistant type auto switches can be mounted on the above models, but SMC cannot guarantee water resistance.

Please contact SMC regarding water-resistant types with the above model numbers.

*2 The type with a 1 m or 5 m lead wire is only compatible with the D-A9□(V).

*3 The load voltage used is 24 VDC.

* Lead wire length symbols: 0.5 m..... Nil (Example) M9NW 5 m..... Z (Example) M9NWZ
1 m..... M (Example) M9NWM None..... N (Example) H7CN
3 m..... L (Example) M9NWL

* Since there are other applicable auto switches than listed above, refer to page 115 for details.

* Auto switches marked with "○" are produced upon receipt of order.

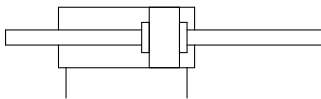
* D-A9□/M9□/A7□/A80□/F7□/J7□ auto switches are shipped together, but not assembled. (For band mounting, only the auto switch mounting brackets are assembled before shipment.)

C75W Series

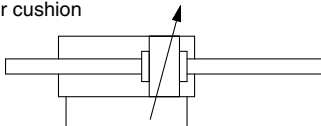


Symbol

Rubber bumper



Air cushion



Refer to pages 105 to 115 for cylinders with auto switches.

- Auto Switch Proper Mounting Position (Detection at stroke end) and Mounting Height
- Minimum Stroke for Auto Switch Mounting
- Operating Range
- Auto Switch Mounting Brackets/Part No.



Made to Order
(For details, refer to pages 119 to 124.)

Symbol	Specifications
-XA	Change of rod end shape
-XB6	Heat-resistant cylinder (−10 to 150°C)*1
-XB7	Cold-resistant cylinder (−40 to 70°C)*1
-XC6□	Made of stainless steel

*1 Rubber bumper only

Specifications

Bore size [mm]		32	40
Type		Pneumatic	
Action		Double acting, Double rod	
Fluid		Air	
Proof pressure		1.5 MPa	
Max. operating pressure		1.0 MPa	
Min. operating pressure	Rubber bumper	0.08 MPa	
	Air cushion	0.08 MPa	
Ambient and fluid temperature		Without auto switch: −20°C to 80°C (No freezing)	
		With auto switch: −10°C to 60°C (No freezing)	
Lubricant		Not required (Non-lube)	
Stroke length tolerance		$+1.4$ 0 mm	
Piston speed		50 to 1500 mm/s	
Cushion		Rubber bumper Air cushion	
Allowable kinetic energy	Rubber bumper	0.65 J	1.2 J
	Air cushion	1.07 J	2.35 J

Standard Strokes

Bore size [mm]	Standard stroke [mm]*1*3	Max. stroke*2 [mm]
32	10, 25, 40, 50, 80, 100, 125, 160, 200, 250, 300	500
40		

*1 Other strokes are available on request.

*2 For exceeding the standard stroke range, it will be available as a special order (-X2018).

*3 The minimum stroke with air cushion is 25 mm.

Option: Ordering Example of Cylinder Assembly

Cylinder model: CD75WE40-50MV-B-M9BW

Mounting bracket M: Double foot
Rod end bracket V: Rod end
Auto switch D-M9BW: Band mounting, 2 pcs.

* Mounting bracket, rod end, and auto switch are shipped together with the product.

⚠ Precautions

Be sure to read this before handling the products. Refer to page 219 for safety instructions. For actuator and auto switch precautions, refer to the “Handling Precautions for SMC Products” and the “Operation Manual” on the SMC website: <http://www.smcworld.com>

Mounting Brackets/Accessories

Mounting bracket/Accessory			Standard (mounted to the body)		Mounting bracket (shipped together)						Accessory (shipped together)
			Mounting nut	Rod end nut	Mounting nut	Foot/Flange	Trunnion pin	Trunnion washer	Clevis pivot bracket	Clevis bolt	Rod end
Mounting bracket symbol	L	Single foot	● (1 pc.)	● (2 pcs.)	—	● (1 pc.)	—	—	—	—	—
	M	Double foot	● (1 pc.)	● (2 pcs.)	● (1 pc.)	● (2 pcs.)	—	—	—	—	—
	G	Flange	● (1 pc.)	● (2 pcs.)	—	● (1 pc.)	—	—	—	—	—
	U	Trunnion	● (1 pc.)	● (2 pcs.)	—	—	● (2 pcs.)	● (2 pcs.)	—	—	—
	N	Clevis	● (1 pc.)	● (2 pcs.)	—	—	—	● (2 pcs.)	● (1 pc.)	● (2 pcs.)	—
Accessory symbol	V	Rod end	● (1 pc.)	● (2 pcs.)	—	—	—	—	—	—	● (1 pc.)

Mounting Bracket/Accessory Part Nos.

Mounting bracket/Accessory		Bore size [mm]		Contents
		32	40	
Mounting bracket	Rod end nut	C75NT32Z	C75NT40Z	1 rod end nut
	Mounting nut	C75SN32Z	C75SN40Z	1 mounting nut
	Flange, Foot (1 pc.)	C75F32AZ	C75F40AZ	1 flange, 1 foot bracket
	Flange, Foot (2 pcs. with 1 mounting nut)	C75F32BZ	C75F40BZ	2 flanges, 2 foot brackets, 1 mounting nut
	Flange, Foot (1 pc. with 1 mounting nut)	C75F32CZ	C75F40CZ	1 flange, 1 foot bracket, 1 mounting nut
	Trunnion	C75T32Z	C75T40Z	2 trunnion pins, 2 trunnion washers
	Clevis	C75C32Z	C75C40Z	1 clevis pivot bracket, 2 clevis bolts, 2 trunnion washers
Accessory	Rod end	KJ10DA	KJ12DA	1 rod end
	Floating joint	JA25-10-150	JA40-12-175	

* Refer to page 67 for dimensions of accessories.

Replacement Parts: For Standard Type

Bore size [mm]	Part no.	Note
32	C75A-32PS	Every set includes: 1 rod seal 1 flat washer 1 retaining ring
40	C75A-40PS	

* When replacing the seals, use **grease (GR-S-010: ordered separately)** on the sliding parts.
When replacing seals for a double rod actuator, order 2 sets of replacement parts.

Weights

Bore size [mm]			[kg]	
			32	40
Basic weight	Without magnet	C75WE	0.41 (0.45)	0.77 (0.79)
	With magnet	CD75WE	0.42 (0.46)	0.78 (0.8)
Additional weight per 10 mm of stroke			0.03	0.04
Mounting bracket	Flange, Foot (1 pc.)	C75F□AZ	0.11	0.2
	Flange, Foot (2 pcs. with 1 mounting nut)	C75F□BZ	0.25	0.46
	Trunnion	C75T□Z	0.02	0.03
	Clevis	C75C□Z	0.17	0.31
Accessory	Rod end	KJ□DA	0.07	0.11
	Floating joint	JA□-□-□	0.07	0.16

() : For air cushion

Calculation example: C75WE32-50MV

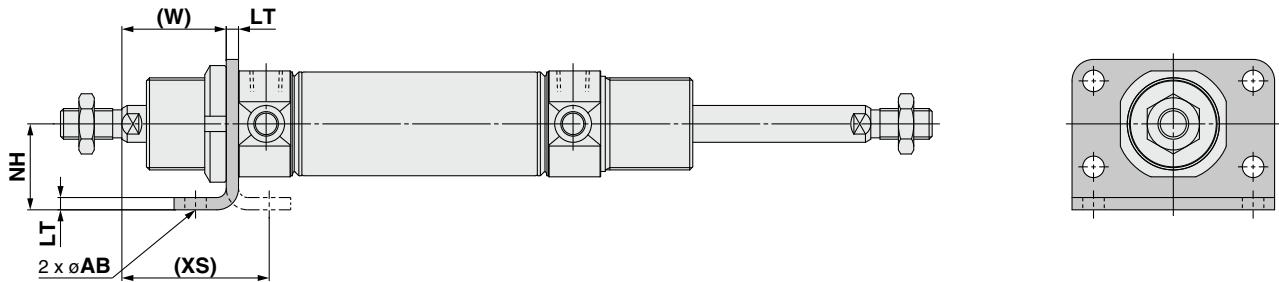
- Basic weight 0.41 kg (ø32)
- Additional weight ... 0.03 kg (at 10 mm stroke)
- Cylinder stroke 50 mm
- Mounting bracket: Double foot ... 0.25 kg
- Accessory: Rod end 0.07 kg

$$0.41 + 0.03 \times 50/10 + 0.25 + 0.07 = \mathbf{0.88 \text{ kg}}$$

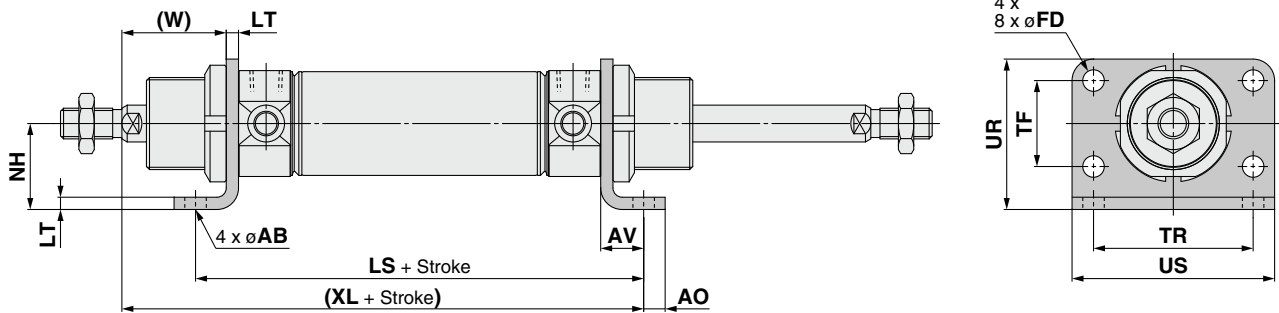
Dimensions

Bracket is shipped together with the product.

Single foot: C□75WE□ - □L/Flange: C□75WE□ - □G
(With mounting bracket)



Double foot: C□75WE□ - □M
(With mounting bracket)



[mm]

Bore size	AB	AO	AV	FD	LS	LT	NH	TF	TR	UR	US	(W)	(XL)	(XS)
32	7	7	14	7	96	4	28	28	52	49	66	34	120	48
40	9	10	20	9	129	5	33	30	60	58	80	40	154	60

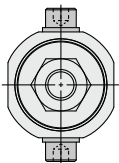
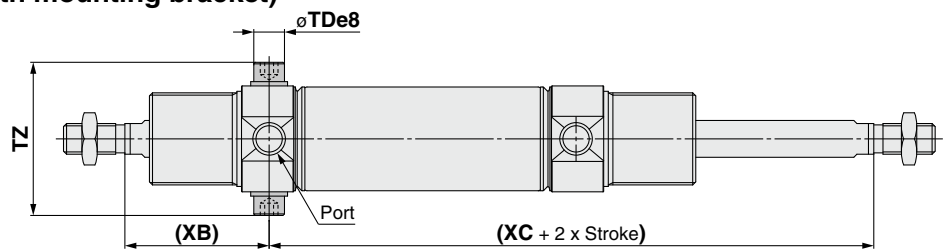
Refer to page 67 of Standard Type Single Rod for details of accessories (rod end, floating joint).

C75W Series

Dimensions

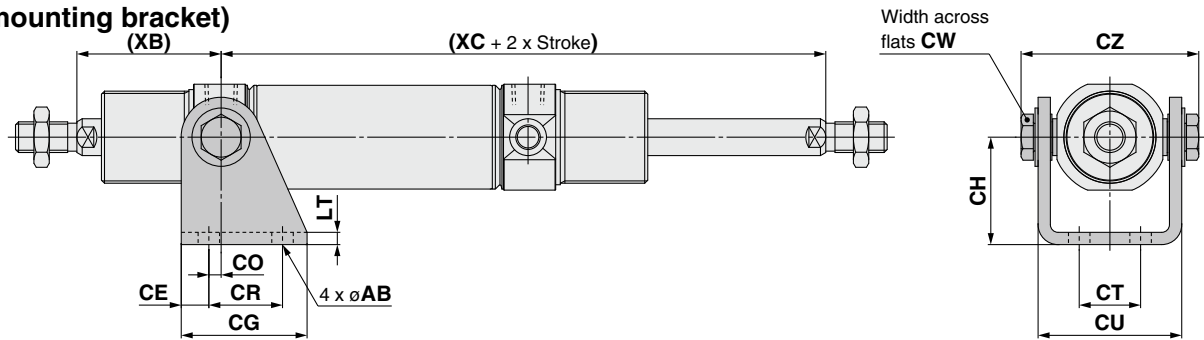
Bracket is shipped together with the product.

Trunnion: C□75WE□-□U
(With mounting bracket)



Bore size	TDe8	TZ	[mm]	
			(XB)	(XC)
32	10 ^{-0.025} _{-0.047}	49.9	47	97
40	12 ^{-0.032} _{-0.059}	62.3	57	122

Clevis: C□75WE□-□N
(With mounting bracket)



Bore size	AB	CE	CG	CH	CO	CR	CT	CU	CW	CZ	LT	[mm]	
												(XB)	(XC)
32	7	9	41	35	4	24	20	46.8	13	57.9	4	47	97
40	9	12	52	40	3	30	28	58.2	17	72.3	5	57	122

Refer to page 67 of Standard Type Single Rod for details of accessories (rod end, floating joint).

Air Cylinder: Standard Single Acting, Spring Return/Extend

C75 Series

ø32, ø40

RoHS

How to Order

Single acting, Spring return/extend

C D 75 E 32 - 100 S L V - B - M9BW

Built-in magnet

Nil	None
D	Built-in magnet

Head cover type

E	Double end boss-cut
F	Boss-cut/Basic
Y	Head cover axial port

Applicable head cover

Action	Head cover type	E	F	Y
Single acting, Spring return		●	●	●
Single acting, Spring extend		●	●	—

Bore size

32	32 mm
40	40 mm

Cylinder stroke [mm]

Refer to the next page for standard strokes.

Action

S	Single acting, Spring return
T	Single acting, Spring extend

Auto switch mounting type*1

A	Rail mounting
B	Band mounting

*1 The symbol is "Nil" for no magnet.

Accessory*1

Nil	None
V	Rod end

*1 Refer to Mounting Brackets/Accessories on page 76 for details of accessories.
* Accessory is shipped together with the product.

Number of auto switches

Nil	2
S	1
n	n

Auto switch

Nil	Without auto switch
-----	---------------------

* For applicable auto switches, refer to the table below.
* Auto switches are shipped together with the product.

Made to order

For details, refer to page 75.

Mounting bracket*1

Nil	None
L	Single foot
M	Double foot
G	Flange
U	Trunnion
N	Clevis

*1 Refer to Mounting Brackets/Accessories on page 76 for details of mounting brackets.

* Mounting bracket is shipped together with the product.

Applicable mounting bracket

Action	Head cover type	L	M	G	U	N
Single acting, Spring return	E	●	●	●	●	●
Single acting, Spring return	F	●	—	●	●	●
Single acting, Spring return	Y	●	—	●	●	●
Single acting, Spring extend	E	●	●	●	●	●
Single acting, Spring extend	F	●	—	●	●	●

Applicable Auto Switches/Refer to the Web Catalog or Best Pneumatics for further information on auto switches.

Type	Special function	Electrical entry	Indicator/light	Wiring (Output)	Load voltage		Auto switch model				Lead wire length [m]					Pre-wired connector	Applicable load		
					DC	AC	Band mounting		Rail mounting		0.5 (Nil)	1 (M)	3 (L)	5 (Z)	None (N)				
							Perpendicular	In-line	Perpendicular	In-line									
Solid state auto switch	—	Grommet	Yes	3-wire (NPN)	5 V, 12 V	—	M9NV	M9N	F7NV	F79	●	●	●	○	—	○	IC circuit	Relay, PLC	
		3-wire (PNP)		M9PV			M9P	F7PV	F7P	●	●	●	○	—	○				
	Connector	2-wire		12 V	M9BV		M9B	F7BV	J79	●	●	●	○	—	○	—			
	Diagnostic indication (2-color indicator)	Grommet		3-wire (NPN)	5 V, 12 V		M9NWV	M9NW	F7NWV	F79W	●	●	●	○	—	○	IC circuit		
				3-wire (PNP)			M9PWV	M9PW	—	F7PW	●	●	●	○	—	○			
				2-wire	12 V		M9BWV	M9BW	F7BWV	J79W	●	●	●	○	—	○	—		
				3-wire (NPN)	5 V, 12 V		M9NAV*1	M9NA*1	—	—	○	○	●	○	—	○	IC circuit		
				3-wire (PNP)			M9PAV*1	M9PA*1	—	—	○	○	●	○	—	○			
				2-wire	12 V		M9BAV*1	M9BA*1	F7BAV*1	F7BA*1	○	○	●	○	—	○	—		
	With diagnostic output (2-color indicator)	4-wire (NPN)		5 V, 12 V	—		H7NF	—	F79F	●	—	●	○	—	○	IC circuit			
Reed auto switch	—	Grommet	Yes	3-wire (NPN equivalent)	—	5 V	—	A96V	A96	—	A76H*2	●	●	●	●	—	○	IC circuit	Relay, PLC
						—	200 V	—	—	A72	A72H	●	—	●	—	—	—	—	
				2-wire	24 V	12 V	100 V	A93V	A93	A73*2	A73H*2	●	●	●	●	—	○*3	—	
							100 V or less	A90V	A90	A80*2	A80H*2	●	●	●	●	—	○*3	IC circuit	
	Diagnostic indication (2-color indicator)	Grommet	No	—		—	—	C73C	A73C	—	—	●	—	●	●	—	—		
				—		—	—	C80C	A80C	—	—	●	—	●	●	—	IC circuit		
				—	—	—	—	A79W	—	—	●	—	●	—	—	—			

*1 Water-resistant type auto switches can be mounted on the above models, but SMC cannot guarantee water resistance.

Please contact SMC regarding water-resistant types with the above model numbers.

*2 The type with a 1 m or 5 m lead wire is only compatible with the D-A9□(V).

*3 The load voltage used is 24 VDC.

* Lead wire length symbols: 0.5 m..... Nil (Example) M9NW 5 m..... Z (Example) M9NWZ
1 m..... M (Example) M9NWM None..... N (Example) H7CN
3 m..... L (Example) M9NWL

* Since there are other applicable auto switches than listed above, refer to page 115 for details.

* Auto switches marked with "○" are produced upon receipt of order.

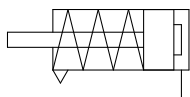
* D-A9□/M9□/A7□/A80□/F7□/J7□ auto switches are shipped together, but not assembled. (For band mounting, only the auto switch mounting brackets are assembled before shipment.)

C75 Series

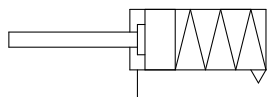


Symbol

Single acting: Spring return, Rubber bumper



Single acting: Spring extend, Rubber bumper



Refer to pages 105 to 115 for cylinders with auto switches.

- Auto Switch Proper Mounting Position (Detection at stroke end) and Mounting Height
- Minimum Stroke for Auto Switch Mounting
- Operating Range
- Auto Switch Mounting Brackets/Part No.



Made to Order
(For details, refer to pages 119 to 124.)

Symbol	Specifications
-XA	Change of rod end shape
-XC6	Made of stainless steel

⚠ Precautions

Be sure to read this before handling the products. Refer to page 219 for safety instructions. For actuator and auto switch precautions, refer to the "Handling Precautions for SMC Products" and the "Operation Manual" on the SMC website: <http://www.smcworld.com>

Specifications

Bore size [mm]	32	40
Type	Pneumatic	
Action	Single acting, Single rod	
Fluid	Air	
Proof pressure	1.5 MPa	
Max. operating pressure	1.0 MPa	
Min. operating pressure	Spring return: 0.18 MPa Spring extend: 0.23 MPa	
Ambient and fluid temperature	Without auto switch: -20°C to 80°C (No freezing) With auto switch: -10°C to 60°C (No freezing)	
Lubricant	Not required (Non-lube)	
Stroke length tolerance	$^{+1.4}_0$ mm	
Piston speed	50 to 750 mm/s	
Cushion	Rubber bumper	
Allowable kinetic energy	0.65 J	1.2 J

Standard Strokes

Bore size [mm]	Standard stroke [mm]*2	Max. stroke [mm]
32	10, 25, 50, 100, 150, 200, 250*1	200
40		250

*1 Not available for ø32.

*2 Other strokes are available on request. (Request based production)

Spring Retracting Force

Spring Return

[N]

Bore size [mm]	Standard stroke [mm]	Spring force													
		10		25		50		100		150		200		250	
		Rod extended	Rod retracted	Rod extended	Rod retracted	Rod extended	Rod retracted	Rod extended	Rod retracted	Rod extended	Rod retracted	Rod extended	Rod retracted	Rod extended	Rod retracted
32	10, 25, 50, 100, 150, 200	53.9	48.8	53.9	41.2	53.9	28.4	66.7	19.6	66.7	18.1	66.7	19.6	—	—
40	10, 25, 50, 100, 150, 200, 250	78.5	72.6	78.5	63.7	78.5	49.0	76.5	23.5	76.5	23.5	76.5	23.5	76.5	23.5

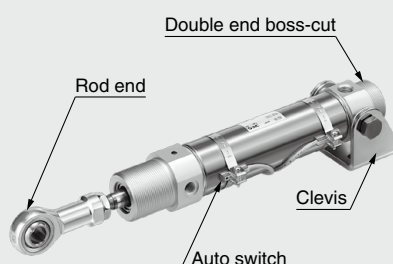
Spring Extend

[N]

Bore size [mm]	Standard stroke [mm]	Spring force													
		10		25		50		100		150		200		250	
		Rod retracted	Rod extended	Rod retracted	Rod extended	Rod retracted	Rod extended	Rod retracted	Rod extended	Rod retracted	Rod extended	Rod retracted	Rod extended	Rod retracted	Rod extended
32	10, 25, 50, 100, 150, 200	66.7	56.3	66.7	40.7	66.7	14.7	66.7	19.6	66.7	18.1	66.7	19.6	—	—
40	10, 25, 50, 100, 150, 200, 250	76.5	65.9	76.5	50.0	76.5	23.5	76.5	23.5	76.5	23.5	76.5	23.5	76.5	23.5

Option: Ordering Example of Cylinder Assembly

Cylinder model: CD75E40-50SNV-B-M9BW



Head cover E: Double end boss-cut
Mounting bracket N: Clevis
Rod end bracket V: Rod end
Auto switch D-M9BW: Band mounting, 2 pcs.

* Mounting bracket, rod end, and auto switch are shipped together with the product.

Mounting Brackets/Accessories

Mounting bracket/Accessory			Standard (mounted to the body)		Mounting bracket (shipped together)						Accessory (shipped together)
			Mounting nut	Rod end nut	Mounting nut	Foot/Flange	Trunnion pin	Trunnion washer	Clevis pivot bracket	Clevis bolt	Rod end
Mounting bracket symbol	L	Single foot	● (1 pc.)	● (1 pc.)	—	● (1 pc.)	—	—	—	—	—
	M	Double foot	● (1 pc.)	● (1 pc.)	● (1 pc.)	● (2 pcs.)	—	—	—	—	—
	G	Flange	● (1 pc.)	● (1 pc.)	—	● (1 pc.)	—	—	—	—	—
	U	Trunnion	● (1 pc.)	● (1 pc.)	—	—	● (2 pcs.)	● (2 pcs.)	—	—	—
	N	Clevis	● (1 pc.)	● (1 pc.)	—	—	—	● (2 pcs.)	● (1 pc.)	● (2 pcs.)	—
Accessory symbol	V	Rod end	● (1 pc.)	● (1 pc.)	—	—	—	—	—	—	● (1 pc.)

Mounting Bracket/Accessory Part Nos.

Mounting bracket/Accessory		Bore size [mm]		Contents
		32	40	
Mounting bracket	Rod end nut	C75NT32Z	C75NT40Z	1 rod end nut
	Mounting nut	C75SN32Z	C75SN40Z	1 mounting nut
	Flange, Foot (1 pc.)	C75F32AZ	C75F40AZ	1 flange, 1 foot bracket
	Flange, Foot (2 pcs. with 1 mounting nut)	C75F32BZ	C75F40BZ	2 flanges, 2 foot brackets, 1 mounting nut
	Flange, Foot (1 pc. with 1 mounting nut)	C75F32CZ	C75F40CZ	1 flange, 1 foot bracket, 1 mounting nut
	Trunnion	C75T32Z	C75T40Z	2 trunnion pins, 2 trunnion washers
	Clevis	C75C32Z	C75C40Z	1 clevis pivot bracket, 2 clevis bolts, 2 trunnion washers
Accessory	Rod end	KJ10DA	KJ12DA	1 rod end
	Floating joint	JA25-10-150	JA40-12-175	

* Refer to page 67 for dimensions of accessories.

Replacement Parts: For Standard Type (Only for single acting, spring extend)

Bore size [mm]	Part no.	Note
32	C75A-32PS	Every set includes: 1 rod seal 1 flat washer 1 retaining ring
40	C75A-40PS	

* When replacing the seals, use **grease (GR-S-010: ordered separately)** on the sliding parts.
In the single acting, spring return type, there is no rod seal so it is not possible to replace any seals.

C75 Series

Weights

Single Acting, Spring Return (S)

[kg]

Bore size [mm]				32	40
Basic weight	Without magnet	1 to 50 mm stroke	C75E□-□S	0.34	0.65
			C75F□-□S	0.32	0.61
			C75Y□-□S	0.32	0.61
		51 to 100 mm stroke	C75E□-□S	0.55	0.86
			C75F□-□S	0.53	0.81
			C75Y□-□S	0.53	0.81
		101 to 150 mm stroke	C75E□-□S	0.65	0.97
			C75F□-□S	0.62	0.92
			C75Y□-□S	0.62	0.92
		151 to 200 mm stroke	C75E□-□S	0.74	1.07
			C75F□-□S	0.71	1.03
			C75Y□-□S	0.71	1.03
	201 to 250 mm stroke	C75E□-□S	—	1.17	
		C75F□-□S	—	1.13	
		C75Y□-□S	—	1.13	
	With magnet	1 to 50 mm stroke	CD75E□-□S	0.35	0.66
			CD75F□-□S	0.32	0.61
			CD75Y□-□S	0.32	0.62
		51 to 100 mm stroke	CD75E□-□S	0.56	0.86
			CD75F□-□S	0.54	0.82
			CD75Y□-□S	0.54	0.82
		101 to 150 mm stroke	CD75E□-□S	0.65	0.97
			CD75F□-□S	0.63	0.93
			CD75Y□-□S	0.63	0.93
151 to 200 mm stroke		CD75E□-□S	0.74	1.08	
		CD75F□-□S	0.72	1.03	
		CD75Y□-□S	0.72	1.04	
201 to 250 mm stroke	CD75E□-□S	—	1.18		
	CD75F□-□S	—	1.13		
	CD75Y□-□S	—	1.14		
Additional weight per 10 mm of stroke				0.02	0.03
Mounting bracket	Flange, Foot (1 pc.)		C75F□AZ	0.11	0.2
	Flange, Foot (2 pcs. with 1 mounting nut)		C75F□BZ	0.25	0.46
	Trunnion		C75T□Z	0.02	0.03
	Clevis		C75C□Z	0.17	0.31
Accessory	Rod end		KJ□DA	0.07	0.11
	Floating joint		JA□-□-□	0.07	0.16

Calculation example: C75E32-50SNV

- Basic weight 0.34 kg (ø32)
- Additional weight ... 0.02 kg (at 10 mm stroke)
- Cylinder stroke 50 mm
- Mounting bracket: Clevis ... 0.17 kg
- Accessory: Rod end 0.07 kg

$$0.34 + 0.02 \times 50/10 + 0.17 + 0.07 = \mathbf{0.68 \text{ kg}}$$

Single Acting, Spring Extend (T)

[kg]

Bore size [mm]			32	40	
Basic weight	Without magnet	1 to 50 mm stroke	C75E□-□T	0.39	0.71
			C75F□-□T	0.36	0.67
		51 to 100 mm stroke	C75E□-□T	0.45	0.8
			C75F□-□T	0.42	0.75
		101 to 150 mm stroke	C75E□-□T	0.51	0.88
			C75F□-□T	0.48	0.84
		151 to 200 mm stroke	C75E□-□T	0.57	0.96
			C75F□-□T	0.54	0.92
		201 to 250 mm stroke	C75E□-□T	—	1.04
			C75F□-□T	—	0.99
	With magnet	1 to 50 mm stroke	CD75E□-□T	0.39	0.72
			CD75F□-□T	0.37	0.67
		51 to 100 mm stroke	CD75E□-□T	0.45	0.8
			CD75F□-□T	0.43	0.76
		101 to 150 mm stroke	CD75E□-□T	0.51	0.89
			CD75F□-□T	0.49	0.84
		151 to 200 mm stroke	CD75E□-□T	0.57	0.97
			CD75F□-□T	0.55	0.92
201 to 250 mm stroke	CD75E□-□T	—	1.04		
	CD75F□-□T	—	1.0		
Additional weight per 10 mm of stroke			0.02	0.03	
Mounting bracket	Flange, Foot (1 pc.)	C75F□AZ	0.11	0.2	
	Flange, Foot (2 pcs. with 1 mounting nut)	C75F□BZ	0.25	0.46	
	Trunnion	C75T□Z	0.02	0.03	
	Clevis	C75C□Z	0.17	0.31	
Accessory	Rod end	KJ□DA	0.07	0.11	
	Floating joint	JA□-□-□	0.07	0.16	

Calculation example: C75E32-50TNV

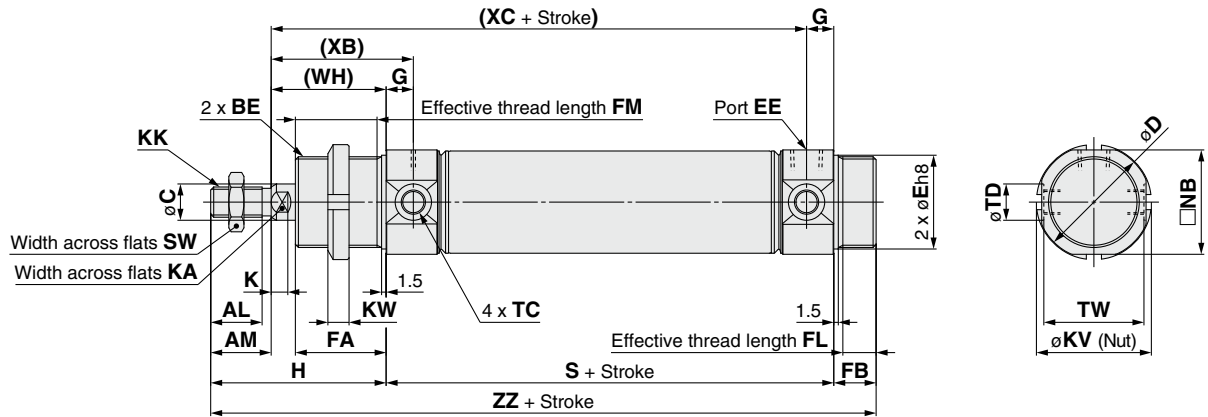
- Basic weight 0.39 kg (ø32)
- Additional weight ... 0.02 kg (at 10 mm stroke)
- Cylinder stroke 50 mm
- Mounting bracket: Clevis ... 0.17 kg
- Accessory: Rod end 0.07 kg

$$0.39 + 0.02 \times 50/10 + 0.17 + 0.07 = \mathbf{0.73 \text{ kg}}$$

Dimensions: Single Acting, Spring Return

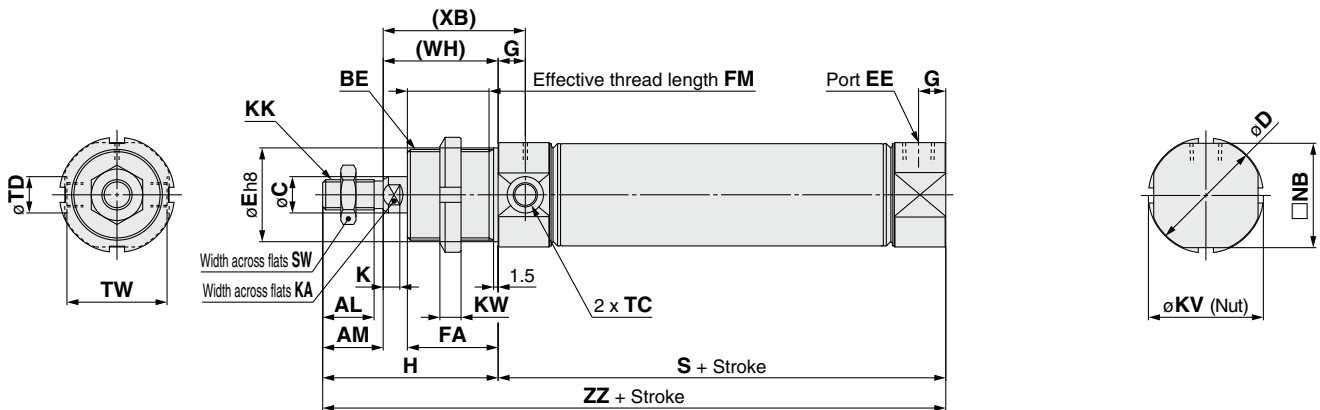
Double end boss-cut

C□75E Bore size – Stroke S – □



Boss-cut/Basic

C□75F Bore size – Stroke S – □



Dimensions

Bore size	AL	AM	BE	C	D	E	EE	FA	FB	FM	FL	G	H	K	KA	KK	KV	KW
32	17	20	M30 x 1.5	12	37.5	30	G1/8	30	14	27	11	9	58	5.5	10	M10 x 1.5	38	7
40	21	24	M38 x 1.5	14	46.5	38	G1/4	35	16	32	13	12	69	7	12	M12 x 1.75	50	8

Bore size	NB	SW	TC	TD	TW	(WH)	(XB)
32	34.5	17	M8 x 1	12 ^{+0.08} ₀	33.1	38	47
40	42.5	19	M10 x 1	14 ^{+0.08} ₀	39.5	45	57

Double End Boss-cut

Bore size	Item	S					(XC)					ZZ				
	Stroke	1 to 50	51 to 100	101 to 150	151 to 200	201 to 250	1 to 50	51 to 100	101 to 150	151 to 200	201 to 250	1 to 50	51 to 100	101 to 150	151 to 200	201 to 250
32		68	118	143	168	—	97	147	172	197	—	140	190	215	240	—
40		89	139	164	189	214	122	172	197	222	247	174	224	249	274	299

Boss-cut/Basic

Item		S					ZZ				
Bore size	Stroke	1 to 50	51 to 100	101 to 150	151 to 200	201 to 250	1 to 50	51 to 100	101 to 150	151 to 200	201 to 250
32		68	118	143	168	—	126	176	201	226	—
40		89	139	164	189	214	158	208	233	258	283

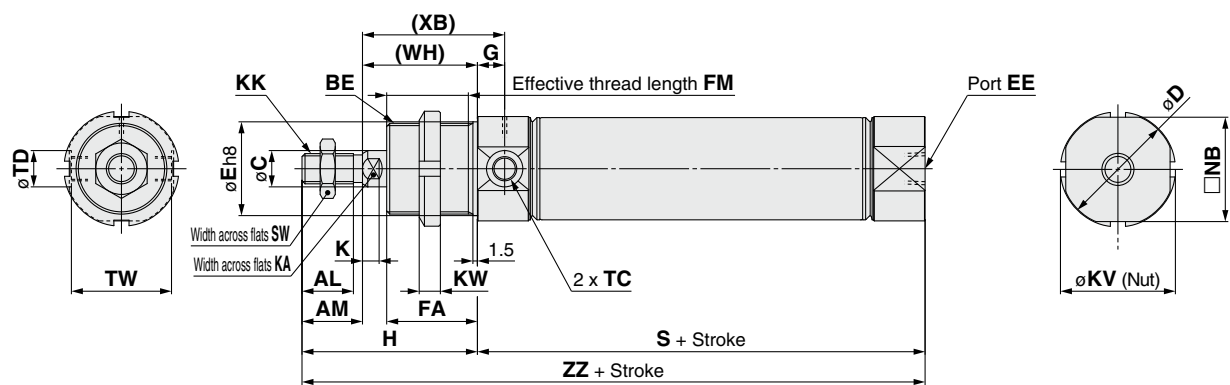
Refer to page 67 of Standard Type Single Rod for details of accessories (rod end, floating joint).

C75 Series

Dimensions: Single Acting, Spring Return

Head cover axial port

C□75Y Bore size – Stroke S – □



Dimensions

[mm]

Bore size	AL	AM	BE	C	D	E	EE	FA	FM	G	H	K	KA	KK	KV	KW	NB	SW
32	17	20	M30 x 1.5	12	37.5	30	G1/8	30	27	9	58	5.5	10	M10 x 1.5	38	7	34.5	17
40	21	24	M38 x 1.5	14	46.5	38	G1/4	35	32	12	69	7	12	M12 x 1.75	50	8	42.5	19

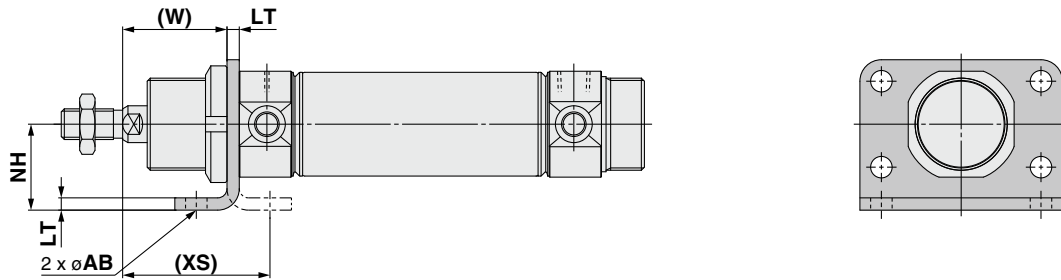
Bore size	TC	TD	TW	(WH)	(XB)	S					ZZ				
						1 to 50	51 to 100	101 to 150	151 to 200	201 to 250	1 to 50	51 to 100	101 to 150	151 to 200	201 to 250
32	M8 x 1	12 ^{+0.08} ₀	33.1	38	47	68	118	143	168	—	126	176	201	226	—
40	M10 x 1	14 ^{+0.08} ₀	39.5	45	57	89	139	164	189	214	158	208	233	258	283

Refer to page 67 of Standard Type Single Rod for details of accessories (rod end, floating joint).

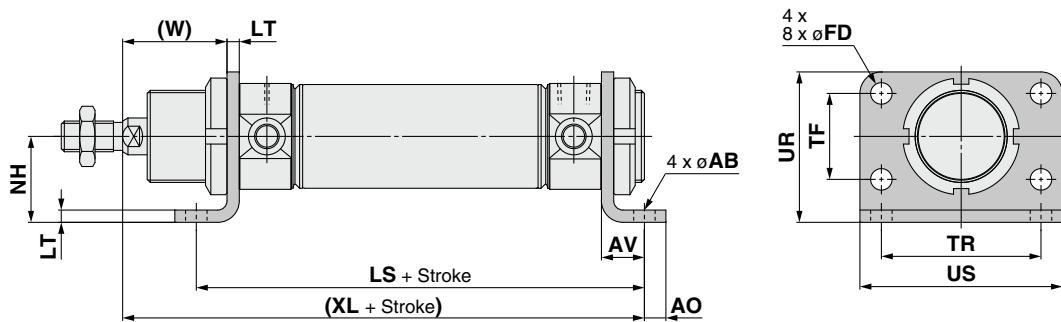
Dimensions: Single Acting, Spring Return

Bracket is shipped together with the product.

Single foot: C□75E□ - □SL/Flange: C□75E□ - □SG (With mounting bracket)

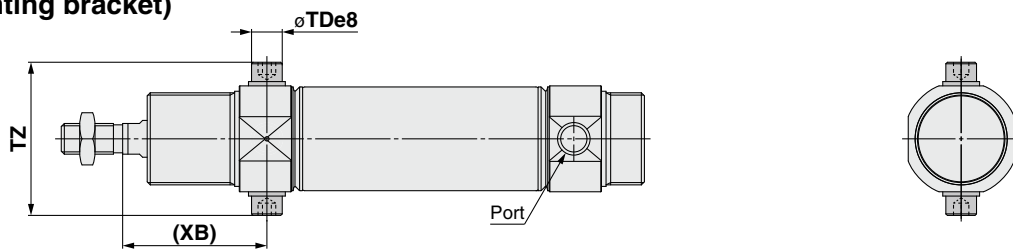


Double foot: C□75E□ - □SM (With mounting bracket)

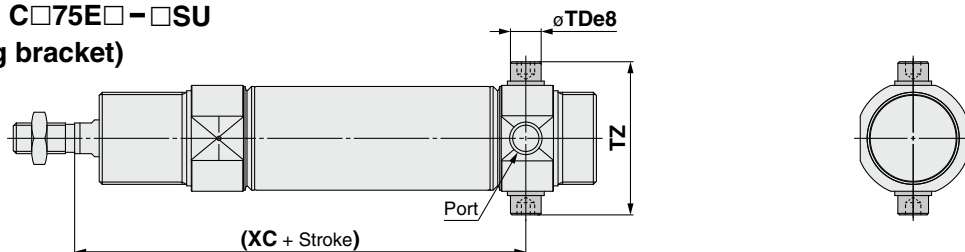


Bore size	AB	AO	AV	FD	LS					LT	NH	TF	TR	UR	US	(W)	(XL)					(XS)
					1 to 50	51 to 100	101 to 150	151 to 200	201 to 250								1 to 50	51 to 100	101 to 150	151 to 200	201 to 250	
32	7	7	14	7	96	146	171	196	—	4	28	28	52	49	66	34	120	170	195	220	—	48
40	9	10	20	9	129	179	204	229	254	5	33	30	60	58	80	40	154	204	229	254	279	60

Rod trunnion: C□75E□ - □SU
(With mounting bracket)



Head trunnion: C□75E□ - □SU
(With mounting bracket)



Bore size	TDe8	TZ	(XB)	(XC)				
				1 to 50	51 to 100	101 to 150	151 to 200	201 to 250
32	10 ^{-0.025} _{-0.047}	49.9	47	97	147	172	197	—
40	12 ^{-0.032} _{-0.059}	62.3	57	122	172	197	222	247

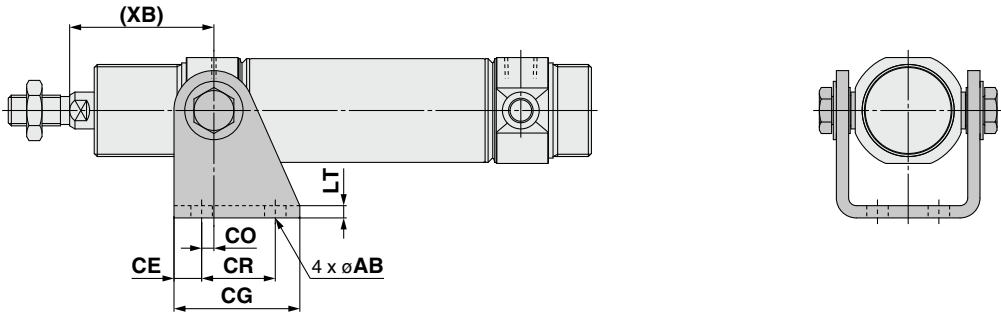
Refer to page 67 of Standard Type Single Rod for details of accessories (rod end, floating joint).

C75 Series

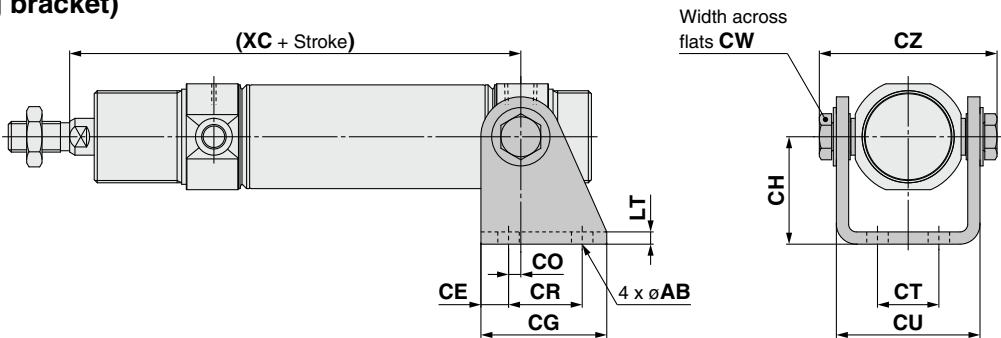
Dimensions: Single Acting, Spring Return

Bracket is shipped together with the product.

Rod clevis: C□75E□ – □SN
(With mounting bracket)



Head clevis: C□75E□ – □SN
(With mounting bracket)



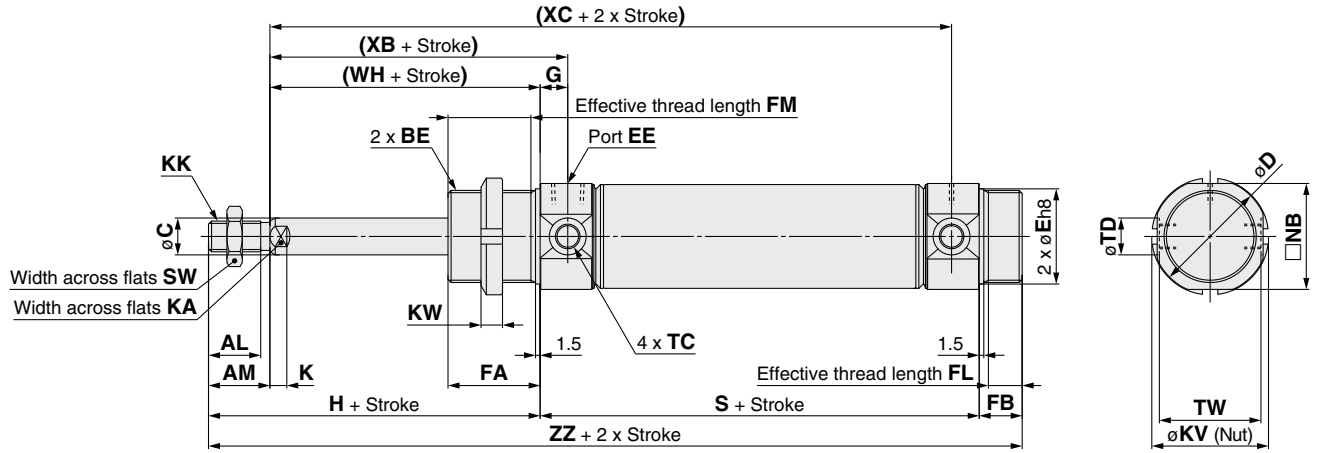
Bore size	AB	CE	CG	CH	CO	CR	CT	CU	CW	CZ	LT	(XB)	(XC)				
													1 to 50	51 to 100	101 to 150	151 to 200	201 to 250
32	7	9	41	35	4	24	20	46.8	13	57.9	4	47	97	147	172	197	—
40	9	12	52	40	3	30	28	58.2	17	72.3	5	57	122	172	197	222	247

Refer to page 67 of Standard Type Single Rod for details of accessories (rod end, floating joint).

Dimensions: Single Acting, Spring Extend

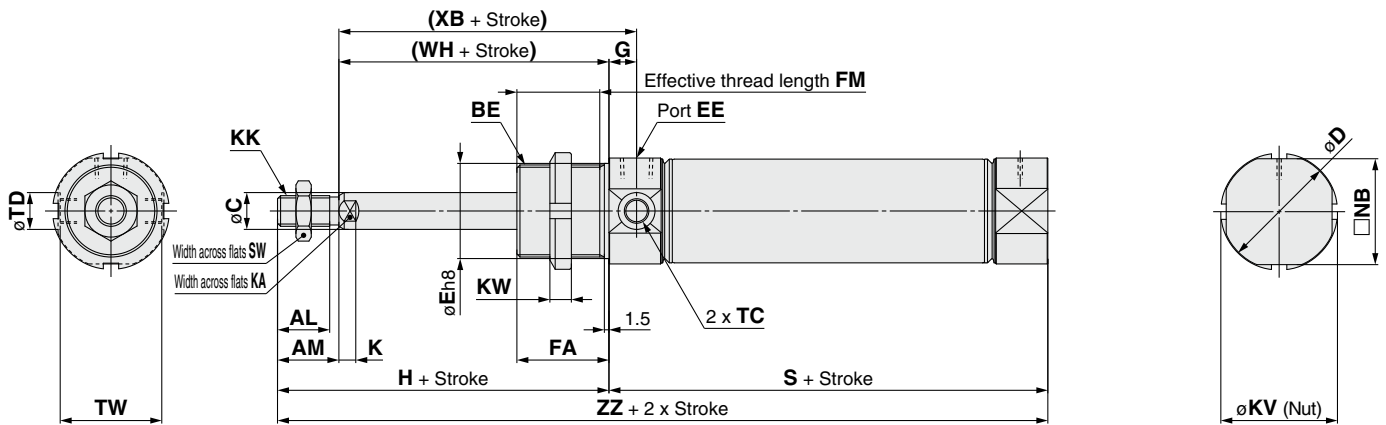
Double end boss-cut

C□75E Bore size – Stroke T – □



Boss-cut/Basic

C□75F Bore size – Stroke T – □



Dimensions

Bore size	AL	AM	BE	C	D	E	EE	FA	FB	FM	FL	G	H	K	KA	KK	KV	KW	NB	SW	TC	TD	TW	(WH)	(XB)
32	17	20	M30 x 1.5	12	37.5	30	G1/8	30	14	27	11	9	58	5.5	10	M10 x 1.5	38	7	34.5	17	M8 x 1	12 ^{+0.08} ₀	33.1	38	47
40	21	24	M38 x 1.5	14	46.5	38	G1/4	35	16	32	13	12	69	7	12	M12 x 1.75	50	8	42.5	19	M10 x 1	14 ^{+0.08} ₀	39.5	45	57

Double End Boss-cut

Bore size	Item Stroke	S					(XC)					ZZ				
		1 to 50	51 to 100	101 to 150	151 to 200	201 to 250	1 to 50	51 to 100	101 to 150	151 to 200	201 to 250	1 to 50	51 to 100	101 to 150	151 to 200	201 to 250
32		93	118	143	168	—	122	147	172	197	—	165	190	215	240	—
40		114	139	164	189	214	147	172	197	222	247	199	224	249	274	299

Boss-cut/Basic

Bore size	Item Stroke	S					ZZ				
		1 to 50	51 to 100	101 to 150	151 to 200	201 to 250	1 to 50	51 to 100	101 to 150	151 to 200	201 to 250
32		93	118	143	168	—	151	176	201	226	—
40		114	139	164	189	214	183	208	233	258	283

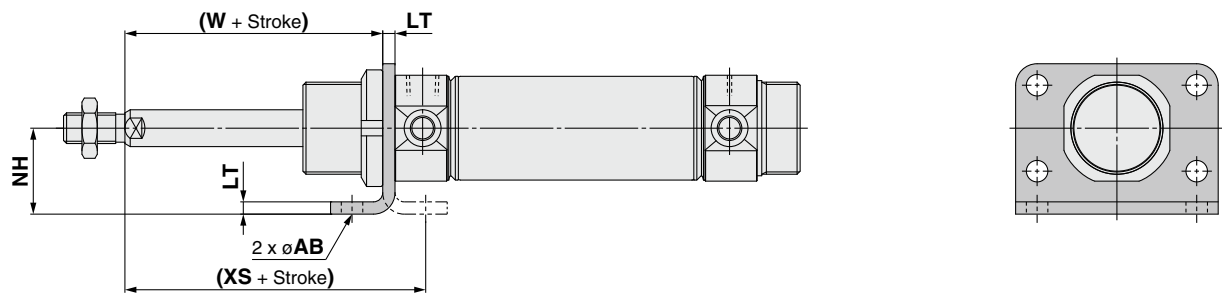
Refer to page 67 of Standard Type Single Rod for details of accessories (rod end, floating joint).

C75 Series

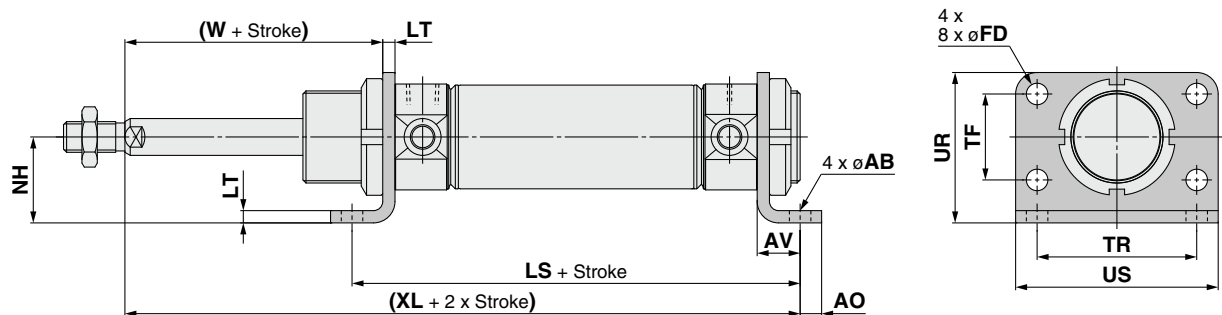
Dimensions: Single Acting, Spring Extend

Bracket is shipped together with the product.

Single foot: C□75E□ – □TL/Flange: C□75E□ – □TG (With mounting bracket)

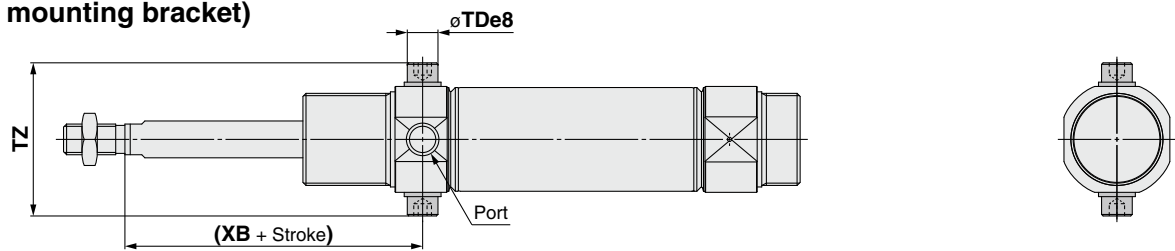


Double foot: C□75E□ – □TM (With mounting bracket)

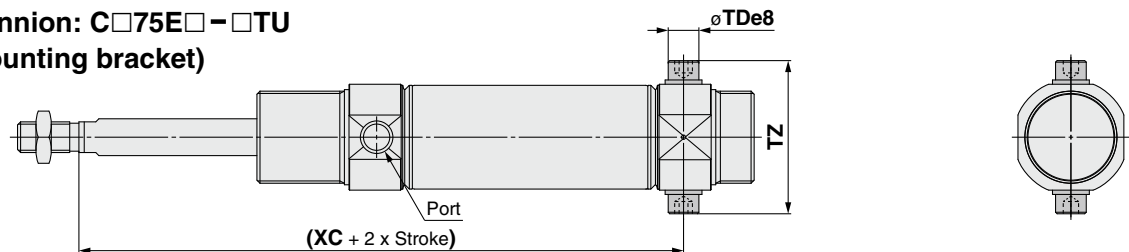


Bore size	AB	AO	AV	FD	LS					LT	NH	TF	TR	UR	US	(W)	(XL)					(XS)
					1 to 50	51 to 100	101 to 150	151 to 200	201 to 250								1 to 50	51 to 100	101 to 150	151 to 200	201 to 250	
32	7	7	14	7	121	146	171	196	—	4	28	28	52	49	66	34	145	170	195	220	—	48
40	9	10	20	9	154	179	204	229	254	5	33	30	60	58	80	40	179	204	229	254	279	60

Rod trunnion: C□75E□ – □TU
(With mounting bracket)



Head trunnion: C□75E□ – □TU
(With mounting bracket)



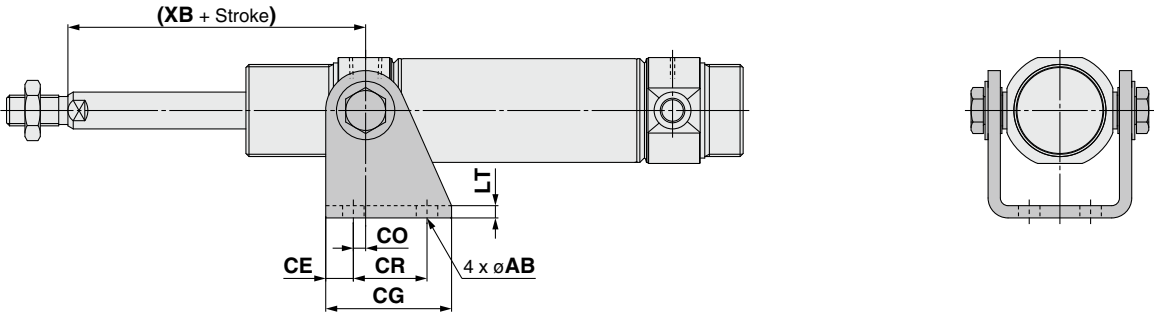
Bore size	TDe8	TZ	(XB)	(XC)				
				1 to 50	51 to 100	101 to 150	151 to 200	201 to 250
32	10 ^{-0.025} _{-0.047}	49.9	47	122	147	172	197	—
40	12 ^{-0.032} _{-0.059}	62.3	57	147	172	197	222	247

Refer to page 67 of Standard Type Single Rod for details of accessories (rod end, floating joint).

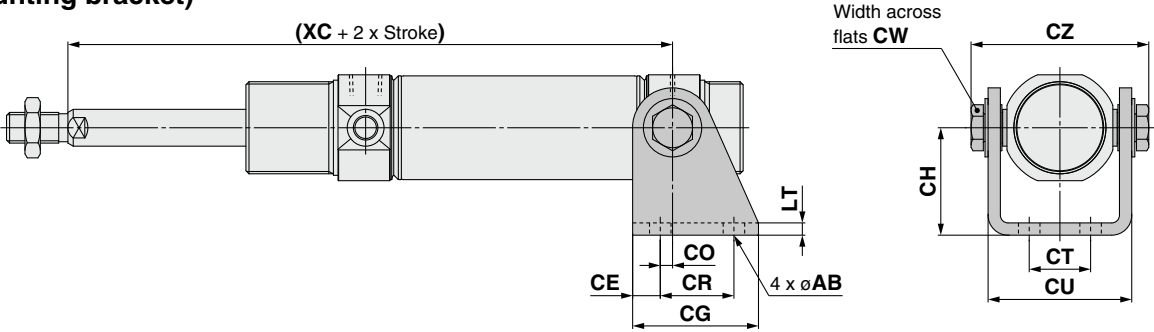
Dimensions: Single Acting, Spring Extend

Bracket is shipped together with the product.

Rod clevis: C□75E□ – □TN
(With mounting bracket)



Head clevis: C□75E□ – □TN
(With mounting bracket)



Bore size	AB	CE	CG	CH	CO	CR	CT	CU	CW	CZ	LT	(XB)	(XC)				
													1 to 50	51 to 100	101 to 150	151 to 200	201 to 250
32	7	9	41	35	4	24	20	46.8	13	57.9	4	47	122	147	172	197	—
40	9	12	52	40	3	30	28	58.2	17	72.3	5	57	147	172	197	222	247

Refer to page 67 of Standard Type Single Rod for details of accessories (rod end, floating joint).

C85

C85W

C85-ST

C85K

C85K-ST

C85R

C75

C75W

C75-ST

C75K

C75K-ST

C75R

C96

CP96

CP96K

C96

C96K

C96Y

C55

Auto Switch

Made to Order

Related Products

Air Cylinder: Non-rotating Rod Double Acting, Single Rod **C75K Series** ø32, ø40

RoHS

How to Order

Double acting, Single rod

C D 75K E 32 - 100 L V - B - M9BW

Built-in magnet

Nil	None
D	Built-in magnet

Head cover type

E	Double end boss-cut
F	Boss-cut/Basic
Y	Head cover axial port

Applicable head cover

Action	Head cover type		
	E	F	Y
Rubber bumper	●	●	●

Bore size

32	32 mm
40	40 mm

Cylinder stroke [mm]

Refer to the next page for standard strokes.

Auto switch mounting type*1

A	Rail mounting
B	Band mounting

*1 The symbol is "Nil" for no magnet.

Accessory*1

Nil	None
V	Rod end

*1 Refer to Mounting Brackets/Accessories on page 87 for details of accessories.

* Accessory is shipped together with the product.

Number of auto switches

Nil	2
S	1
n	n

Auto switch

Nil	Without auto switch
-----	---------------------

* For applicable auto switches, refer to the table below.

* Auto switches are shipped together with the product.

Made to order

For details, refer to page 86.

Mounting bracket*1

Nil	None
L	Single foot
M	Double foot
G	Flange
U	Trunnion
N	Clevis

*1 Refer to Mounting Brackets/Accessories on page 87 for details of mounting brackets.

* Mounting bracket is shipped together with the product.

Applicable mounting bracket

Action	Head cover type	Mounting bracket				
		L	M	G	U	N
Rubber bumper	E	●	●	●	●	●
	F	●	—	●	●	●
	Y	●	—	●	●	●

Applicable Auto Switches/Refer to the Web Catalog or Best Pneumatics for further information on auto switches.

Type	Special function	Electrical entry	Indicator/light	Wiring (Output)	Load voltage		Auto switch model				Lead wire length [m]					Pre-wired connector	Applicable load				
					DC	AC	Band mounting		Rail mounting		0.5 (Nil)	1 (M)	3 (L)	5 (Z)	None (N)						
							Perpendicular	In-line	Perpendicular	In-line											
Solid state auto switch	—	Grommet	Yes	3-wire (NPN)	5 V, 12 V	—	M9NV	M9N	F7NV	F79	●	●	●	○	—	○	IC circuit	Relay, PLC			
		3-wire (PNP)		M9PV			M9P	F7PV	F7P	●	●	●	○	—	○						
	Connector	2-wire		12 V	M9BV		M9B	F7BV	J79	●	●	●	○	—	○	—					
	Diagnostic indication (2-color indicator)	Grommet		3-wire (NPN)	24 V		5 V, 12 V	M9NWV	M9NW	F7NWV	F79W	●	●	●	○	—	○		IC circuit		
				3-wire (PNP)				M9PWV	M9PW	—	F7PW	●	●	●	○	—	○				
				2-wire				12 V	M9BWV	M9BW	F7BWV	J79W	●	●	●	○	—			○	—
				3-wire (NPN)				5 V, 12 V	M9NAV*1	M9NA*1	—	—	○	○	●	○	—			○	IC circuit
	3-wire (PNP)	M9PAV*1		M9PA*1	—		—		○	○	●	○	—	○							
	2-wire	12 V		M9BAV*1	M9BA*1		F7BAV*1		F7BA*1	○	○	●	○	—	○	—					
	With diagnostic output (2-color indicator)	4-wire (NPN)		5 V, 12 V	—		H7NF	—	F79F	●	—	●	○	—	○	IC circuit					
Reed auto switch	—	Grommet	Yes	3-wire (NPN equivalent)	24 V	12 V	5 V	—	A96V	A96	—	A76H*2	●	●	●	●	—	○	IC circuit	Relay, PLC	
							—	200 V	—	—	A72	A72H	●	—	●	—	—	—	—		
				2-wire			100 V	A93V	A93	A73*2	A73H*2	●	●	●	●	—	○*3	—			
							100 V or less	A90V	A90	A80*2	A80H*2	●	●	●	●	—	○*3	IC circuit			
	Connector	No	2-wire	—	—	C73C	A73C	—	—	●	—	●	●	●	—	—					
				24 V or less	—	C80C	A80C	—	—	●	—	●	●	●	—	IC circuit					
	Diagnostic indication (2-color indicator)	Grommet	Yes	2-wire	—	—	—	—	A79W	—	—	—	—	—	—	—					
					—	—	—	—	—	—	—	—	—	—	—	—					

*1 Water-resistant type auto switches can be mounted on the above models, but SMC cannot guarantee water resistance.

Please contact SMC regarding water-resistant types with the above model numbers.

*2 The type with a 1 m or 5 m lead wire is only compatible with the D-A9□(V).

*3 The load voltage used is 24 VDC.

* Lead wire length symbols: 0.5 m..... Nil (Example) M9NW 5 m..... Z (Example) M9NWZ
1 m..... M (Example) M9NWM None..... N (Example) H7CN
3 m..... L (Example) M9NWL

* Since there are other applicable auto switches than listed above, refer to page 115 for details.

* Auto switches marked with "○" are produced upon receipt of order.

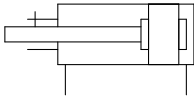
* D-A9□/M9□/A7□/A80□/F7□/J7□ auto switches are shipped together, but not assembled. (For band mounting, only the auto switch mounting brackets are assembled before shipment.)

Air Cylinder: Non-rotating Rod Double Acting, Single Rod **C75K Series**



Symbol

Rubber bumper



Refer to pages 105 to 115 for cylinders with auto switches.

- Auto Switch Proper Mounting Position (Detection at stroke end) and Mounting Height
- Minimum Stroke for Auto Switch Mounting
- Operating Range
- Auto Switch Mounting Brackets/Part No.



Made to Order
(For details, refer to pages 119 to 124.)

Symbol	Specifications
-XA	Change of rod end shape

Specifications

Bore size [mm]		32	40
Type		Pneumatic	
Action		Double acting, Single rod	
Fluid		Air	
Proof pressure		1.5 MPa	
Max. operating pressure		1.0 MPa	
Min. operating pressure	Rubber bumper	0.05 MPa	
Ambient and fluid temperature		Without auto switch: −20°C to 80°C (No freezing)	
		With auto switch: −10°C to 60°C (No freezing)	
Lubricant		Not required (Non-lube)	
Stroke length tolerance		+1.4 0 mm	
Piston speed		50 to 1500 mm/s	
Cushion		Rubber bumper	
Allowable kinetic energy		0.65 J	1.2 J
Non-rotating accuracy		±0.5°	

Standard Strokes

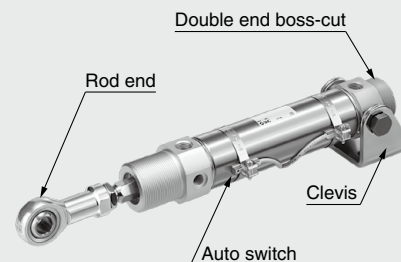
Bore size [mm]	Standard stroke [mm]*1	Max. stroke*2 [mm]
32	10, 25, 40, 50, 80, 100, 125, 160, 200, 250, 300	1000
40		

*1 Other strokes are available on request.

*2 For exceeding the standard stroke range, it will be available as a special order (-X2018).

Option: Ordering Example of Cylinder Assembly

Cylinder model: CD75KE40-50NV-B-M9BW



Head cover E: Double end boss-cut
Mounting bracket N: Clevis
Rod end bracket V: Rod end
Auto switch D-M9BW: Band mounting, 2 pcs.

* Mounting bracket, rod end, and auto switch are shipped together with the product.

⚠ Precautions

Be sure to read this before handling the products. Refer to page 219 for safety instructions. For actuator and auto switch precautions, refer to the "Handling Precautions for SMC Products" and the "Operation Manual" on the SMC website: <http://www.smcworld.com>

C75K Series

Mounting Brackets/Accessories

Mounting bracket/Accessory			Standard (mounted to the body)		Mounting bracket (shipped together)						Accessory (shipped together)
			Mounting nut	Rod end nut	Mounting nut	Foot/Flange	Trunnion pin	Trunnion washer	Clevis pivot bracket	Clevis bolt	Rod end
Mounting bracket symbol	L	Single foot	● (1 pc.)	● (1 pc.)	—	● (1 pc.)	—	—	—	—	—
	M	Double foot	● (1 pc.)	● (1 pc.)	● (1 pc.)	● (2 pcs.)	—	—	—	—	—
	G	Flange	● (1 pc.)	● (1 pc.)	—	● (1 pc.)	—	—	—	—	—
	U	Trunnion	● (1 pc.)	● (1 pc.)	—	—	● (2 pcs.)	● (2 pcs.)	—	—	—
	N	Clevis	● (1 pc.)	● (1 pc.)	—	—	—	● (2 pcs.)	● (1 pc.)	● (2 pcs.)	—
Accessory symbol	V	Rod end	● (1 pc.)	● (1 pc.)	—	—	—	—	—	—	● (1 pc.)

Mounting Bracket/Accessory Part Nos.

Mounting bracket/Accessory		Bore size [mm]		Contents
		32	40	
Mounting bracket	Rod end nut	C75NT32Z	C75NT40Z	1 rod end nut
	Mounting nut	C75SN32Z	C75SN40Z	1 mounting nut
	Flange, Foot (1 pc.)	C75F32AZ	C75F40AZ	1 flange, 1 foot bracket
	Flange, Foot (2 pcs. with 1 mounting nut)	C75F32BZ	C75F40BZ	2 flanges, 2 foot brackets, 1 mounting nut
	Flange, Foot (1 pc. with 1 mounting nut)	C75F32CZ	C75F40CZ	1 flange, 1 foot bracket, 1 mounting nut
	Trunnion	C75T32Z	C75T40Z	2 trunnion pins, 2 trunnion washers
	Clevis	C75C32Z	C75C40Z	1 clevis pivot bracket, 2 clevis bolts, 2 trunnion washers
Accessory	Rod end	KJ10DA	KJ12DA	1 rod end
	Floating joint	JA25-10-150	JA40-12-175	

* Refer to page 67 for dimensions of accessories.

Replacement Parts: For Non-rotating Rod Type (K)

Bore size [mm]	Part no.	Note
32	C75K-32PS	Every set includes: 1 rod seal 1 flat washer 1 retaining ring
40	C75K-40PS	

* When replacing the seals, use **grease (GR-S-010: ordered separately)** on the sliding parts.

Weights

Bore size [mm]			32	40
Basic weight	Without magnet	C75KE	0.36	0.69
		C75KF	0.34	0.64
		C75KY	0.34	0.64
	With magnet	CD75KE	0.37	0.69
		CD75KF	0.34	0.65
		CD75KY	0.34	0.65
Additional weight per 10 mm of stroke			0.02	0.03
Mounting bracket	Flange, Foot (1 pc.)	C75F□AZ	0.11	0.2
	Flange, Foot (2 pcs. with 1 mounting nut)	C75F□BZ	0.25	0.46
	Trunnion	C75T□Z	0.02	0.03
	Clevis	C75C□Z	0.17	0.31
Accessory	Rod end	KJ□DA	0.07	0.11
	Floating joint	JA□-□-□	0.07	0.16

Calculation example: C75KE32-50NV

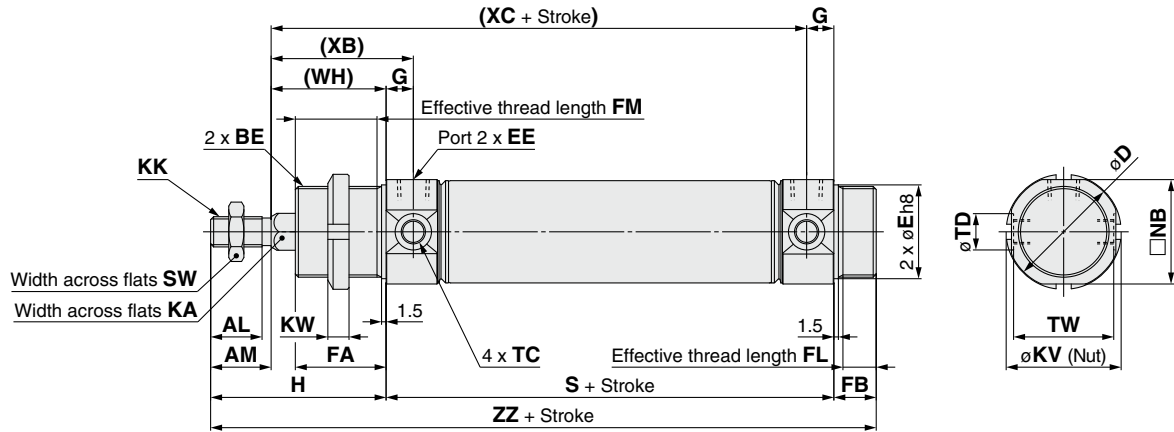
- Basic weight 0.36 kg (ø32)
- Additional weight ... 0.02 kg (at 10 mm stroke)
- Cylinder stroke 50 mm
- Mounting bracket: Clevis ... 0.17 kg
- Accessory: Rod end 0.07 kg

$$0.36 + 0.02 \times 50/10 + 0.17 + 0.07 = \mathbf{0.7 \text{ kg}}$$

Dimensions

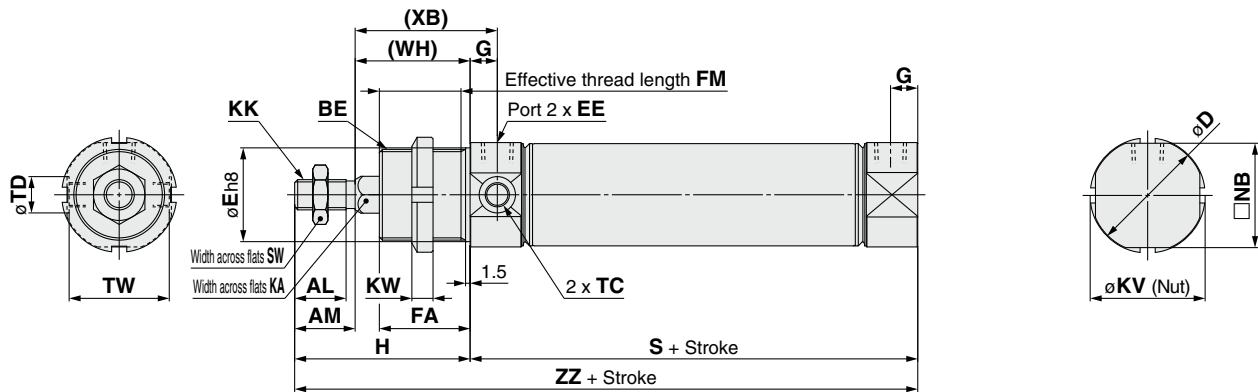
Double end boss-cut

C□75KE Bore size – Stroke – □



Boss-cut/Basic

C□75KF Bore size – Stroke – □



Dimensions

Bore size	AL	AM	BE	D	E	EE	FA	FB	FM	FL	G	H	KA	KK	KV	KW	NB
32	17	20	M30 x 1.5	37.5	30	G1/8	30	14	27	11	9	58	12.2	M10 x 1.5	38	7	34.5
40	21	24	M38 x 1.5	46.5	38	G1/4	35	16	32	13	12	69	14.2	M12 x 1.75	50	8	42.5

Bore size	S	SW	TC	TD	TW	(WH)	(XB)	(XC)
32	68	17	M8 x 1	12 ^{+0.08} ₀	33.1	38	47	97
40	89	19	M10 x 1	14 ^{+0.08} ₀	39.5	45	57	122

Double End Boss-cut

Bore size	ZZ
32	140
40	174

Boss-cut/Basic

Bore size	ZZ
32	126
40	158

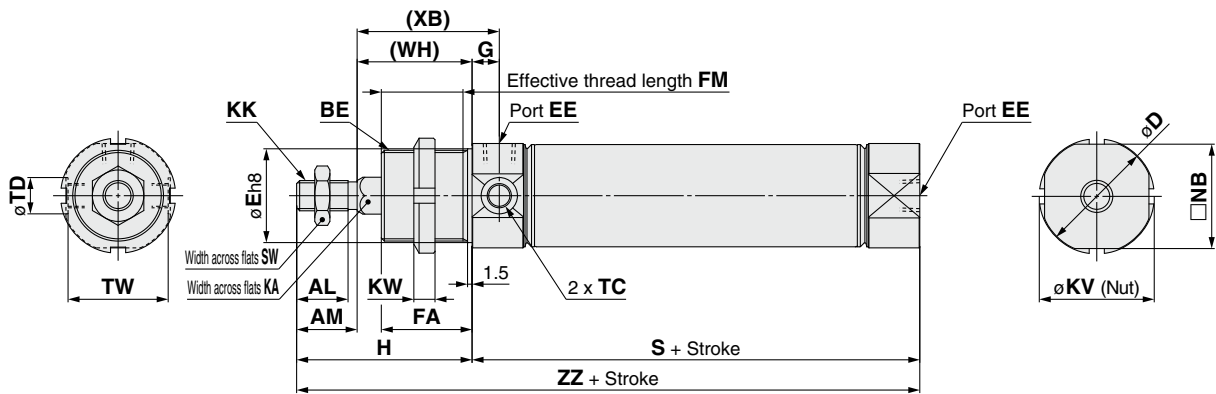
Refer to pages 65 and 66 of Standard Type Single Rod for details of the mounting brackets, and refer to page 67 of Standard Type Single Rod for details of accessories (rod end, floating joint).

C75K Series

Dimensions

Head cover axial port

C□75KY Bore size – Stroke – □



Dimensions																							[mm]
Bore size	AL	AM	BE	D	E	EE	FA	FM	G	H	KA	KK	KV	KW	NB	S	SW	TC	TD	TW	(WH)	(XB)	ZZ
32	17	20	M30 x 1.5	37.5	30	G1/8	30	27	9	58	12.2	M10 x 1.5	38	7	34.5	68	17	M8 x 1	12 ^{+0.08} ₀	33.1	38	47	126
40	21	24	M38 x 1.5	46.5	38	G1/4	35	32	12	69	14.2	M12 x 1.75	50	8	42.5	89	19	M10 x 1	14 ^{+0.08} ₀	39.5	45	57	158

Refer to pages 65 and 66 of Standard Type Single Rod for details of the mounting brackets, and refer to page 67 of Standard Type Single Rod for details of accessories (rod end, floating joint).

Air Cylinder: Non-rotating Rod Single Acting, Spring Return/Extend

C75K Series

ø32, ø40

RoHS

How to Order

Single acting, Spring return/extend

C D 75K E 32 - 100 S L V - B - M9BW

Built-in magnet

Nil	None
D	Built-in magnet

Head cover type

E	Double end boss-cut
F	Boss-cut/Basic
Y	Head cover axial port

Applicable head cover

Action	Head cover type		
	E	F	Y
Single acting, Spring return	●	●	●
Single acting, Spring extend	●	●	—

Bore size

32	32 mm
40	40 mm

Cylinder stroke [mm]

Refer to the next page for standard strokes.

Action

S	Single acting, Spring return
T	Single acting, Spring extend

Auto switch mounting type*1

A	Rail mounting
B	Band mounting

*1 The symbol is "Nil" for no magnet.

Accessory*1

Nil	None
V	Rod end

*1 Refer to Mounting Brackets/Accessories on page 92 for details of accessories.

* Accessory is shipped together with the product.

Number of auto switches

Nil	2
S	1
n	n

Auto switch

Nil	Without auto switch
-----	---------------------

* For applicable auto switches, refer to the table below.

* Auto switches are shipped together with the product.

Made to order

For details, refer to page 91.

Mounting bracket*1

Nil	None
L	Single foot
M	Double foot
G	Flange
U	Trunnion
N	Clevis

*1 Refer to Mounting Brackets/Accessories on page 92 for details of mounting brackets.

* Mounting bracket is shipped together with the product.

Applicable mounting bracket

Action	Head cover type	Mounting bracket				
		L	M	G	U	N
Single acting, Spring return	E	●	●	●	●	●
	F	—	—	●	●	●
Single acting, Spring extend	Y	●	—	●	●	●
	E	●	●	●	●	●
	F	●	—	●	●	●

Applicable Auto Switches/Refer to the Web Catalog or Best Pneumatics for further information on auto switches.

Type	Special function	Electrical entry	Indicator/light	Wiring (Output)	Load voltage		Auto switch model				Lead wire length [m]					Pre-wired connector	Applicable load					
					DC	AC	Band mounting		Rail mounting		0.5 (Nil)	1 (M)	3 (L)	5 (Z)	None (N)							
							Perpendicular	In-line	Perpendicular	In-line												
Solid state auto switch	—	Grommet	Yes	3-wire (NPN)	5 V, 12 V	—	M9NV	M9N	F7NV	F79	●	●	●	○	—	○	IC circuit	Relay, PLC				
		3-wire (PNP)		M9PV			M9P	F7PV	F7P	●	●	●	○	—	○							
	Connector	2-wire		12 V	M9BV		M9B	F7BV	J79	●	●	●	○	—	○	—						
	Diagnostic indication (2-color indicator)	Grommet		3-wire (NPN)	5 V, 12 V		M9NWV	M9NW	F7NWV	F79W	●	●	●	○	—	○	IC circuit					
				3-wire (PNP)	12 V		M9PWV	M9PW	—	F7PW	●	●	●	○	—	○						
				2-wire	12 V		M9BWV	M9BW	F7BWV	J79W	●	●	●	○	—	○	—					
				Water-resistant (2-color indicator)	Grommet		3-wire (NPN)	5 V, 12 V	M9NAV*1	M9NA*1	—	—	○	○	●	○	—		○	IC circuit		
	3-wire (PNP)	12 V					M9PAV*1	M9PA*1	—	—	○	○	●	○	—	○						
	2-wire	12 V					M9BAV*1	M9BA*1	F7BAV*1	F7BA*1	○	○	●	○	—	○	—					
	With diagnostic output (2-color indicator)	4-wire (NPN)					5 V, 12 V	—	H7NF	—	F79F	●	—	●	○	—	○		IC circuit			
Reed auto switch	—	Grommet	Yes	3-wire (NPN equivalent)	—	5 V	—	A96V	A96	—	A76H*2	●	●	●	●	—	○	IC circuit	—			
								—	200 V	—	—	A72	A72H	●	—	●	—			—	—	
								2-wire	24 V	100 V	A93V	A93	A73*2	A73H*2	●	●	●	●		—	○*3	—
										100 V or less	A90V	A90	A80*2	A80H*2	●	●	●	●		—	○*3	IC circuit
	Connector	—	—	C73C	A73C	—	●			—	●	●	●	—	—							
		24 V or less	—	C80C	A80C	—	●			—	●	●	●	—	IC circuit							
	Diagnostic indication (2-color indicator)	Grommet	Yes	2-wire	24 V	—	—	—	—	A79W	—	●	—	●	—	—	—	—				

*1 Water-resistant type auto switches can be mounted on the above models, but SMC cannot guarantee water resistance.

Please contact SMC regarding water-resistant types with the above model numbers.

*2 The type with a 1 m or 5 m lead wire is only compatible with the D-A9□(V).

*3 The load voltage used is 24 VDC.

* Lead wire length symbols: 0.5 m..... Nil (Example) M9NW 5 m..... Z (Example) M9NWZ
1 m..... M (Example) M9NWM None..... N (Example) H7CN
3 m..... L (Example) M9NWL

* Since there are other applicable auto switches than listed above, refer to page 115 for details.

* Auto switches marked with "○" are produced upon receipt of order.

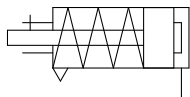
* D-A9□/M9□/A7□/A80□/F7□/J7□ auto switches are shipped together, but not assembled. (For band mounting, only the auto switch mounting brackets are assembled before shipment.)

C75K Series

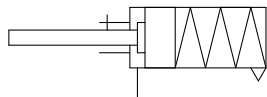


Symbol

Single acting: Spring return, Rubber bumper



Single acting: Spring extend, Rubber bumper



Refer to pages 105 to 115 for cylinders with auto switches.

- Auto Switch Proper Mounting Position (Detection at stroke end) and Mounting Height
- Minimum Stroke for Auto Switch Mounting
- Operating Range
- Auto Switch Mounting Brackets/Part No.



Made to Order
(For details, refer to pages 119 to 124.)

Symbol	Specifications
-XA	Change of rod end shape

Specifications

Bore size [mm]		32	40
Type		Pneumatic	
Action		Single acting, Single rod	
Fluid		Air	
Proof pressure		1.5 MPa	
Max. operating pressure		1.0 MPa	
Min. operating pressure	Rubber bumper	Spring return: 0.18 MPa Spring extend: 0.23 MPa	
Ambient and fluid temperature		Without auto switch: -20°C to 80°C (No freezing) With auto switch: -10°C to 60°C (No freezing)	
Lubricant		Not required (Non-lube)	
Stroke length tolerance		^{+1.4} ₀ mm	
Piston speed		50 to 750 mm/s	
Cushion		Rubber bumper	
Allowable kinetic energy		0.65 J	1.2 J
Non-rotating accuracy		±0.5°	

Standard Strokes

Bore size [mm]	Standard stroke [mm]*2	Max. stroke [mm]
32	10, 25, 50, 100, 150, 200, 250*1	200
40		250

*1 Not available for ø32.

*2 Other strokes are available on request. (Request based production)

Spring Retracting Force

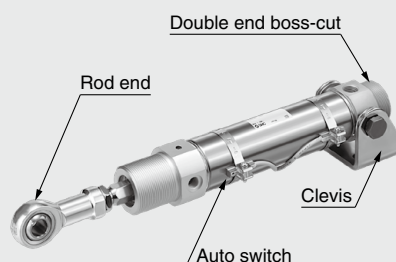
		Spring force [N]													
Bore size [mm]	Standard stroke [mm]	Spring force													
		10		25		50		100		150		200		250	
		Rod extended	Rod retracted	Rod extended	Rod retracted	Rod extended	Rod retracted	Rod extended	Rod retracted	Rod extended	Rod retracted	Rod extended	Rod retracted	Rod extended	Rod retracted
32	10, 25, 50, 100, 150, 200	53.9	48.8	53.9	41.2	53.9	28.4	66.7	19.6	66.7	18.1	66.7	19.6	—	—
40	10, 25, 50, 100, 150, 200, 250	78.5	72.6	78.5	63.7	78.5	49.0	76.5	23.5	76.5	23.5	76.5	23.5	76.5	23.5

Spring Extend

		Spring force [N]													
Bore size [mm]	Standard stroke [mm]	Spring force													
		10		25		50		100		150		200		250	
		Rod retracted	Rod extended	Rod retracted	Rod extended	Rod retracted	Rod extended	Rod retracted	Rod extended	Rod retracted	Rod extended	Rod retracted	Rod extended	Rod retracted	Rod extended
32	10, 25, 50, 100, 150, 200	66.7	56.3	66.7	40.7	66.7	14.7	66.7	19.6	66.7	18.1	66.7	19.6	—	—
40	10, 25, 50, 100, 150, 200, 250	76.5	65.9	76.5	50.0	76.5	23.5	76.5	23.5	76.5	23.5	76.5	23.5	76.5	23.5

Option: Ordering Example of Cylinder Assembly

Cylinder model: CD75KE40-50SNV-B-M9BW



Head cover E: Double end boss-cut
Mounting bracket N: Clevis
Rod end bracket V: Rod end
Auto switch D-M9BW: Band mounting, 2 pcs.

* Mounting bracket, rod end, and auto switch are shipped together with the product.

⚠ Precautions

Be sure to read this before handling the products. Refer to page 219 for safety instructions. For actuator and auto switch precautions, refer to the "Handling Precautions for SMC Products" and the "Operation Manual" on the SMC website: <http://www.smcworld.com>

Mounting Brackets/Accessories

Mounting bracket/Accessory			Standard (mounted to the body)		Mounting bracket (shipped together)						Accessory (shipped together)	
			Mounting nut	Rod end nut	Mounting nut	Foot/Flange	Trunnion pin	Trunnion washer	Clevis pivot bracket	Clevis bolt	Rod end	
Mounting bracket symbol	L	Single foot	● (1 pc.)	● (1 pc.)	—	● (1 pc.)	—	—	—	—	—	
	M	Double foot	● (1 pc.)	● (1 pc.)	● (1 pc.)	● (2 pcs.)	—	—	—	—	—	
	G	Flange	● (1 pc.)	● (1 pc.)	—	● (1 pc.)	—	—	—	—	—	
	U	Trunnion	● (1 pc.)	● (1 pc.)	—	—	● (2 pcs.)	● (2 pcs.)	—	—	—	
	N	Clevis	● (1 pc.)	● (1 pc.)	—	—	—	● (2 pcs.)	● (1 pc.)	● (2 pcs.)	—	
Accessory symbol	V	Rod end	● (1 pc.)	● (1 pc.)	—	—	—	—	—	—	● (1 pc.)	

Mounting Bracket/Accessory Part Nos.

Mounting bracket/Accessory		Bore size [mm]		Contents
		32	40	
Mounting bracket	Rod end nut	C75NT32Z	C75NT40Z	1 rod end nut
	Mounting nut	C75SN32Z	C75SN40Z	1 mounting nut
	Flange, Foot (1 pc.)	C75F32AZ	C75F40AZ	1 flange, 1 foot bracket
	Flange, Foot (2 pcs. with 1 mounting nut)	C75F32BZ	C75F40BZ	2 flanges, 2 foot brackets, 1 mounting nut
	Flange, Foot (1 pc. with 1 mounting nut)	C75F32CZ	C75F40CZ	1 flange, 1 foot bracket, 1 mounting nut
	Trunnion	C75T32Z	C75T40Z	2 trunnion pins, 2 trunnion washers
	Clevis	C75C32Z	C75C40Z	1 clevis pivot bracket, 2 clevis bolts, 2 trunnion washers
Accessory	Rod end	KJ10DA	KJ12DA	1 rod end
	Floating joint	JA25-10-150	JA40-12-175	

* Refer to page 67 for dimensions of accessories.

Replacement Parts: For Non-rotating Rod Type (K) (Only for single acting, spring extend)

Bore size [mm]	Part no.	Note
32	C75K-32PS	Every set includes: 1 rod seal 1 flat washer 1 retaining ring
40	C75K-40PS	

* When replacing the seals, use **grease (GR-S-010: ordered separately)** on the sliding parts.
In the single acting, spring return type, there is no rod seal so it is not possible to replace any seals.

C75K Series

Weights

Single Acting, Spring Return (S)

[kg]

Bore size [mm]			32	40	
Basic weight	Without magnet	1 to 50 mm stroke	C75KE□-□S	0.45	0.81
			C75KF□-□S	0.42	0.76
			C75KY□-□S	0.42	0.77
		51 to 100 mm stroke	C75KE□-□S	0.55	0.86
			C75KF□-□S	0.53	0.81
			C75KY□-□S	0.53	0.81
		101 to 150 mm stroke	C75KE□-□S	0.64	0.97
			C75KF□-□S	0.62	0.92
			C75KY□-□S	0.62	0.92
		151 to 200 mm stroke	C75KE□-□S	0.73	1.07
			C75KF□-□S	0.71	1.03
			C75KY□-□S	0.71	1.03
	201 to 250 mm stroke	C75KE□-□S	—	1.27	
		C75KF□-□S	—	1.23	
		C75KY□-□S	—	1.23	
	With magnet	1 to 50 mm stroke	CD75KE□-□S	0.45	0.81
			CD75KF□-□S	0.43	0.77
			CD75KY□-□S	0.43	0.77
		51 to 100 mm stroke	CD75KE□-□S	0.56	0.86
			CD75KF□-□S	0.53	0.82
			CD75KY□-□S	0.53	0.82
		101 to 150 mm stroke	CD75KE□-□S	0.65	0.97
			CD75KF□-□S	0.62	0.93
			CD75KY□-□S	0.62	0.93
151 to 200 mm stroke		CD75KE□-□S	0.74	1.08	
		CD75KF□-□S	0.71	1.03	
		CD75KY□-□S	0.72	1.04	
201 to 250 mm stroke	CD75KE□-□S	—	1.28		
	CD75KF□-□S	—	1.23		
	CD75KY□-□S	—	1.23		
Additional weight per 10 mm of stroke			0.02	0.03	
Mounting bracket	Flange, Foot (1 pc.)	C75F□AZ	0.11	0.2	
	Flange, Foot (2 pcs. with 1 mounting nut)	C75F□BZ	0.25	0.46	
	Trunnion	C75T□Z	0.02	0.03	
	Clevis	C75C□Z	0.17	0.31	
Accessory	Rod end	KJ□DA	0.07	0.11	
	Floating joint	JA□-□-□	0.07	0.16	

Calculation example: C75KE32-50SNV

- Basic weight 0.45 kg (ø32)
- Additional weight ... 0.02 kg (at 10 mm stroke)
- Cylinder stroke 50 mm
- Mounting bracket: Clevis ... 0.17 kg
- Accessory: Rod end 0.07 kg

$$0.45 + 0.02 \times 50/10 + 0.17 + 0.07 = 0.79 \text{ kg}$$

Single Acting, Spring Extend (T)

[kg]

Bore size [mm]			32	40	
Basic weight	Without magnet	1 to 50 mm stroke	C75KE□-□T	0.42	0.76
			C75KF□-□T	0.39	0.72
		51 to 100 mm stroke	C75KE□-□T	0.48	0.85
			C75KF□-□T	0.45	0.8
		101 to 150 mm stroke	C75KE□-□T	0.54	0.93
			C75KF□-□T	0.51	0.89
		151 to 200 mm stroke	C75KE□-□T	0.6	1.01
			C75KF□-□T	0.57	0.97
		201 to 250 mm stroke	C75KE□-□T	—	1.09
			C75KF□-□T	—	1.04
	With magnet	1 to 50 mm stroke	CD75KE□-□T	0.42	0.77
			CD75KF□-□T	0.4	0.73
		51 to 100 mm stroke	CD75KE□-□T	0.48	0.85
			CD75KF□-□T	0.46	0.81
		101 to 150 mm stroke	CD75KE□-□T	0.54	0.94
			CD75KF□-□T	0.52	0.89
		151 to 200 mm stroke	CD75KE□-□T	0.6	1.02
			CD75KF□-□T	0.58	0.98
201 to 250 mm stroke	CD75KE□-□T	—	1.09		
	CD75KF□-□T	—	1.05		
Additional weight per 10 mm of stroke			0.02	0.03	
Mounting bracket	Flange, Foot (1 pc.)	C75F□AZ	0.11	0.2	
	Flange, Foot (2 pcs. with 1 mounting nut)	C75F□BZ	0.25	0.46	
	Trunnion	C75T□Z	0.02	0.03	
	Clevis	C75C□Z	0.17	0.31	
Accessory	Rod end	KJ□DA	0.07	0.11	
	Floating joint	JA□-□-□	0.07	0.16	

Calculation example: C75KE32-50TNV

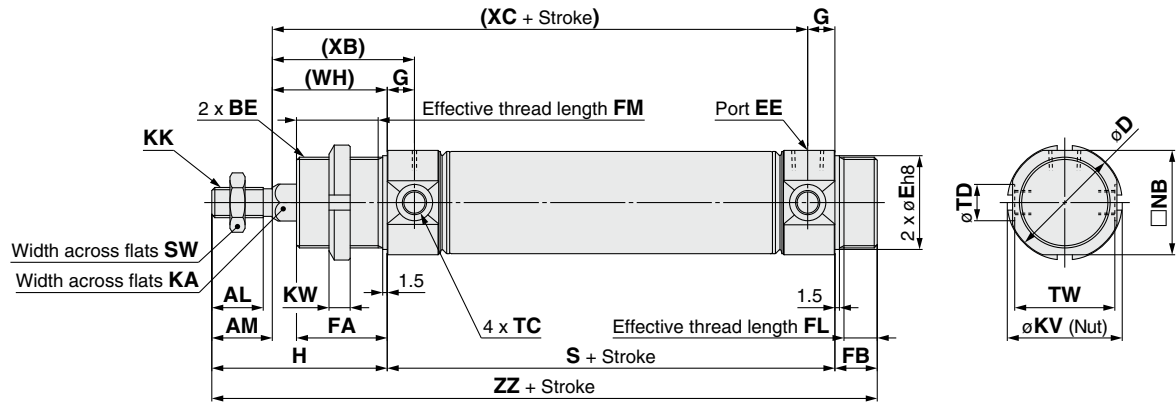
- Basic weight 0.42 kg (ø32)
- Additional weight ... 0.02 kg (at 10 mm stroke)
- Cylinder stroke 50 mm
- Mounting bracket: Clevis ... 0.17 kg
- Accessory: Rod end 0.07 kg

$$0.42 + 0.02 \times 50/10 + 0.17 + 0.07 = 0.76 \text{ kg}$$

Dimensions: Single Acting, Spring Return

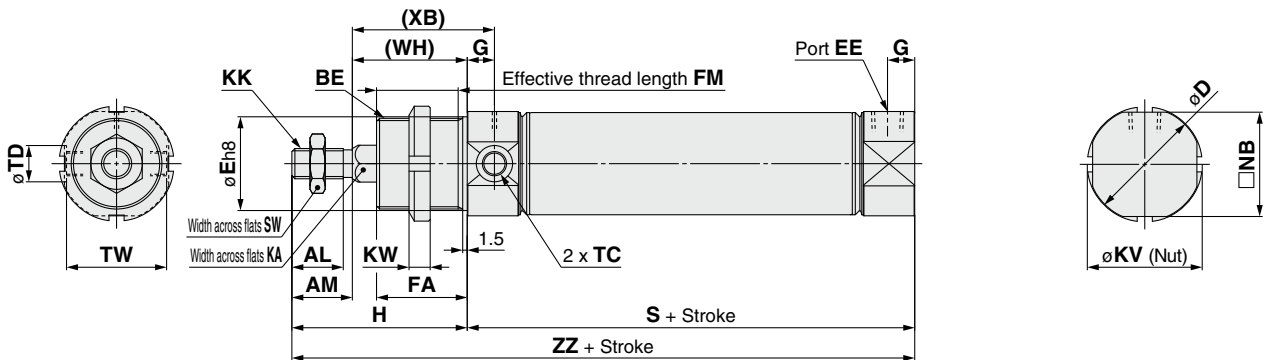
Double end boss-cut

C□75KE Bore size — Stroke S — □



Boss-cut/Basic

C□75KF Bore size — Stroke S — □



Dimensions

Bore size	AL	AM	BE	D	E	EE	FA	FB	FM	FL	G	H	KA	KK	KV	KW	NB	SW	TC	TD	TW	(WH)	(XB)
32	17	20	M30 x 1.5	37.5	30	G1/8	30	14	27	11	9	58	12.2	M10 x 1.5	38	7	34.5	17	M8 x 1	12 ^{+0.08} ₀	33.1	38	47
40	21	24	M38 x 1.5	46.5	38	G1/4	35	16	32	13	12	69	14.2	M12 x 1.75	50	8	42.5	19	M10 x 1	14 ^{+0.08} ₀	39.5	45	57

Double End Boss-cut

Bore size	Item	S					(XC)					ZZ				
	Stroke	1 to 50	51 to 100	101 to 150	151 to 200	201 to 250	1 to 50	51 to 100	101 to 150	151 to 200	201 to 250	1 to 50	51 to 100	101 to 150	151 to 200	201 to 250
32		93	118	143	168	—	122	147	172	197	—	165	190	215	240	—
40		114	139	164	189	214	147	172	197	222	247	199	224	249	274	299

Boss-cut/Basic

Item		S					ZZ				
Bore size	Stroke	1 to 50	51 to 100	101 to 150	151 to 200	201 to 250	1 to 50	51 to 100	101 to 150	151 to 200	201 to 250
32		93	118	143	168	—	151	176	201	226	—
40		114	139	164	189	214	183	208	233	258	283

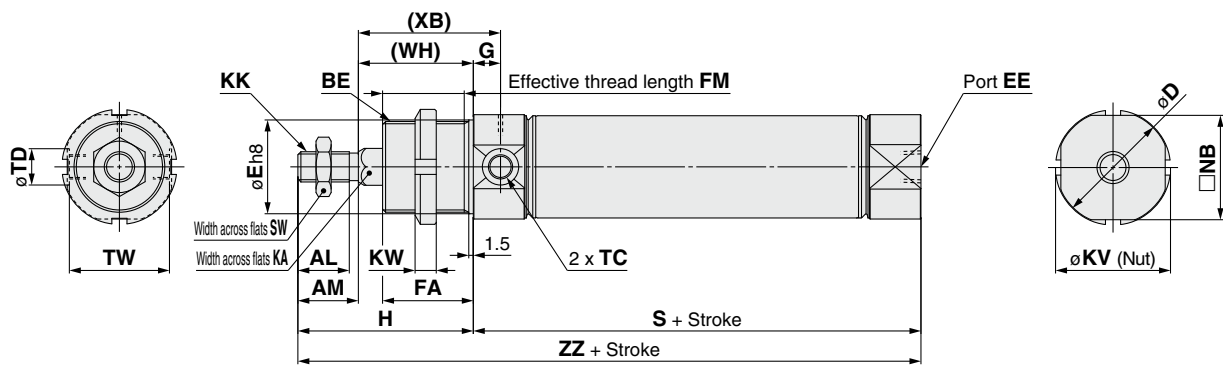
Refer to page 67 of Standard Type Single Rod for details of accessories (rod end, floating joint).

C75K Series

Dimensions: Single Acting, Spring Return

Head cover axial port

C□75KY Bore size – Stroke S – □



Dimensions

																				[mm]	
Bore size	AL	AM	BE	D	E	EE	FA	FM	G	H	KA	KK	KV	KW	NB	SW	TC	TD	TW	(WH)	(XB)
32	17	20	M30 x 1.5	37.5	30	G1/8	30	27	9	58	12.2	M10 x 1.5	38	7	34.5	17	M8 x 1	12 ^{+0.08} ₀	33.1	38	47
40	21	24	M38 x 1.5	46.5	38	G1/4	35	32	12	69	14.2	M12 x 1.75	50	8	42.5	19	M10 x 1	14 ^{+0.08} ₀	39.5	45	57

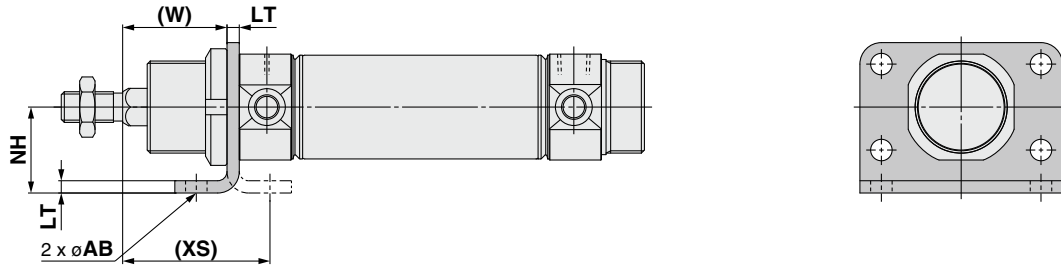
Bore size	S					ZZ				
	1 to 50	51 to 100	101 to 150	151 to 200	201 to 250	1 to 50	51 to 100	101 to 150	151 to 200	201 to 250
32	93	118	143	168	—	151	176	201	226	—
40	114	139	164	189	214	183	208	233	258	283

Refer to page 67 of Standard Type Single Rod for details of accessories (rod end, floating joint).

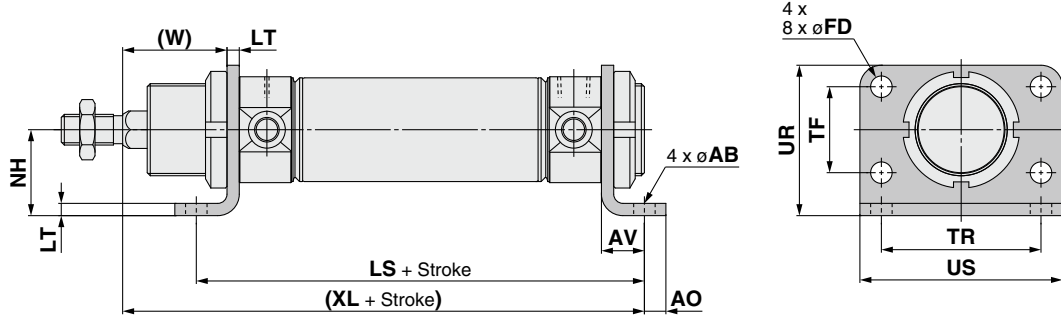
Dimensions: Single Acting, Spring Return

Bracket is shipped together with the product.

Single foot: C□75KE□ - □SL/Flange: C□75KE□ - □SG (With mounting bracket)

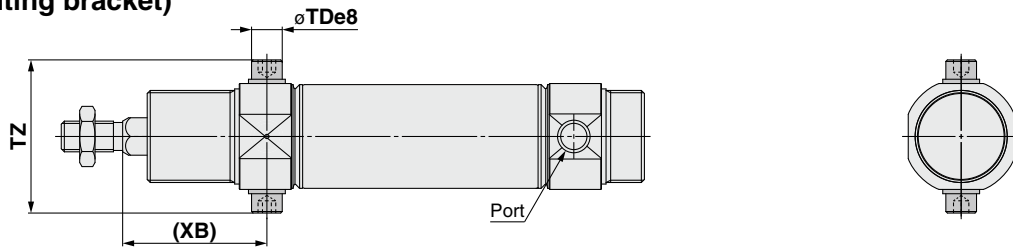


Double foot: C□75KE□ - □SM (With mounting bracket)

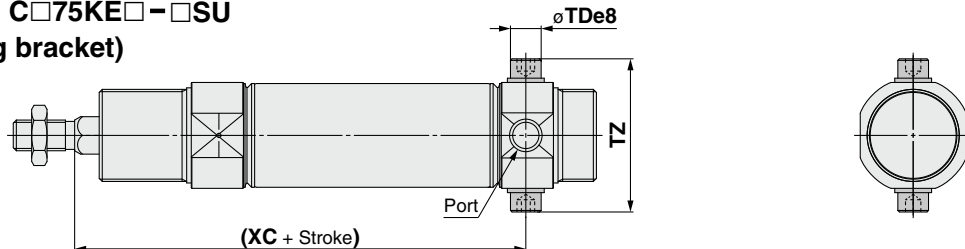


Bore size	AB	AO	AV	FD	LS					LT	NH	TF	TR	UR	US	(W)	(XL)					(XS)
					1 to 50	51 to 100	101 to 150	151 to 200	201 to 250								1 to 50	51 to 100	101 to 150	151 to 200	201 to 250	
32	7	7	14	7	121	146	171	196	—	4	28	28	52	49	66	34	145	170	195	220	—	48
40	9	10	20	9	154	179	204	229	254	5	33	30	60	58	80	40	179	204	229	254	279	60

Rod trunnion: C□75KE□ - □SU
(With mounting bracket)



Head trunnion: C□75KE□ - □SU
(With mounting bracket)



Bore size	TDe8	TZ	(XB)	(XC)				
				1 to 50	51 to 100	101 to 150	151 to 200	201 to 250
32	10 ^{-0.025} _{-0.047}	49.9	47	122	147	172	197	—
40	12 ^{-0.032} _{-0.059}	62.3	57	147	172	197	222	247

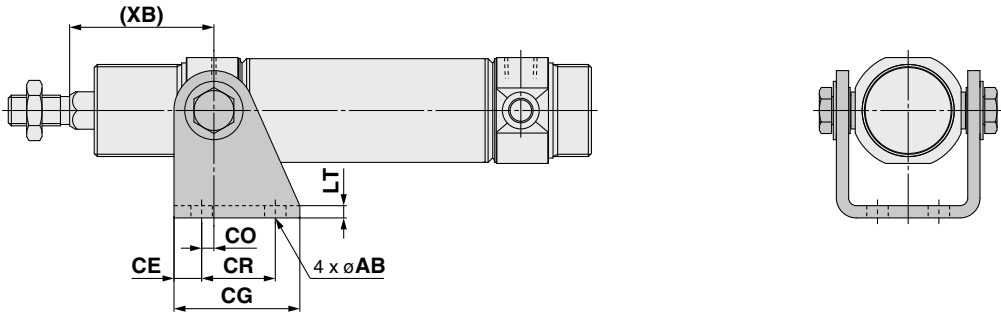
Refer to page 67 of Standard Type Single Rod for details of accessories (rod end, floating joint).

C75K Series

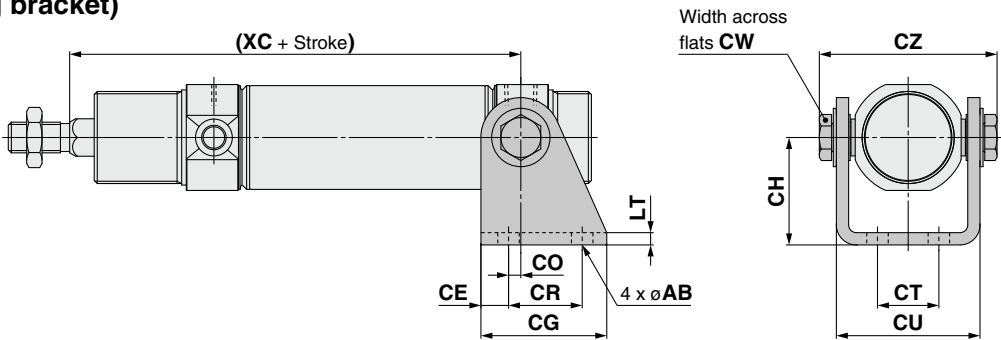
Dimensions: Single Acting, Spring Return

Bracket is shipped together with the product.

Rod clevis: C□75KE□-□SN
(With mounting bracket)



Head clevis: C□75KE□-□SN
(With mounting bracket)



[mm]

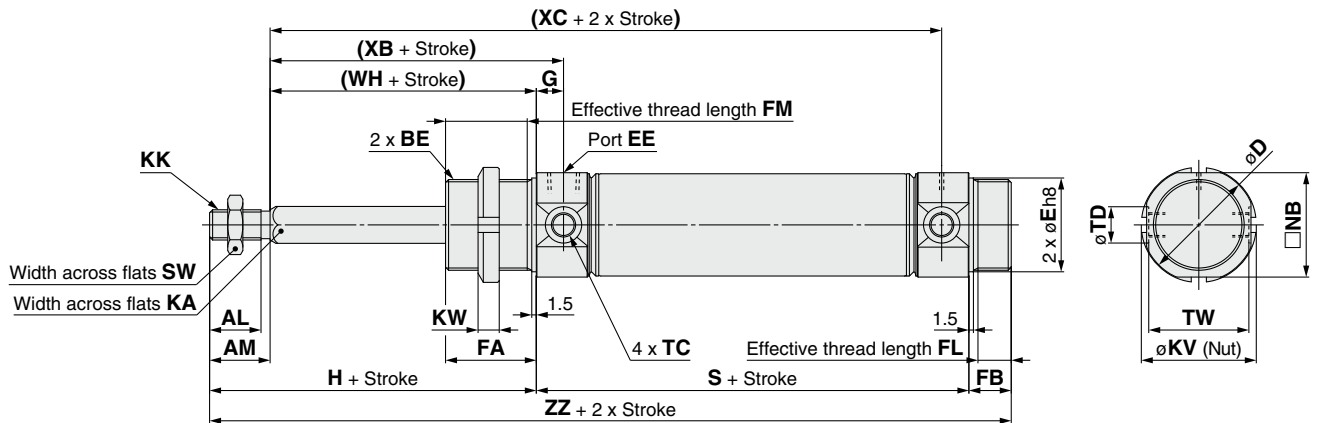
Bore size	AB	CE	CG	CH	CO	CR	CT	CU	CW	CZ	LT	(XB)	(XC)				
													1 to 50	51 to 100	101 to 150	151 to 200	201 to 250
32	7	9	41	35	4	24	20	46.8	13	57.9	4	47	122	147	172	197	—
40	9	12	52	40	3	30	28	58.2	17	72.3	5	57	147	172	197	222	247

Refer to page 67 of Standard Type Single Rod for details of accessories (rod end, floating joint).

Dimensions: Single Acting, Spring Extend

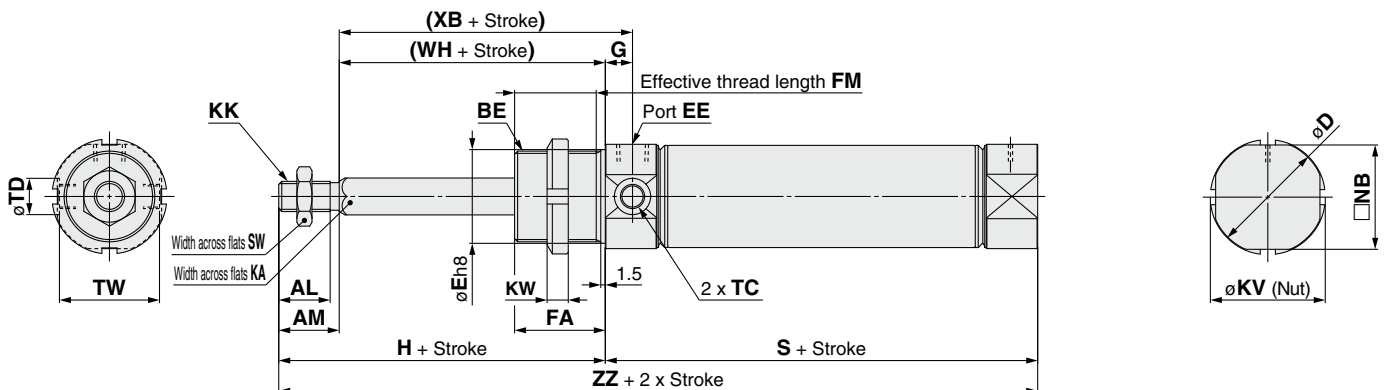
Double end boss-cut

C□75KE Bore size – Stroke T – □



Boss-cut/Basic

C□75KF Bore size – Stroke T – □



Dimensions

Bore size	AL	AM	BE	D	E	EE	FA	FB	FM	FL	G	H	KA	KK	KV	KW	NB	SW	TC	TD	TW	(WH)	(XB)
32	17	20	M30 x 1.5	37.5	30	G1/8	30	14	27	11	9	58	12.2	M10 x 1.5	38	7	34.5	17	M8 x 1	12 ^{+0.08} ₀	33.1	38	47
40	21	24	M38 x 1.5	46.5	38	G1/4	35	16	32	13	12	69	14.2	M12 x 1.75	50	8	42.5	19	M10 x 1	14 ^{+0.08} ₀	39.5	45	57

Double End Boss-cut

Bore size	Item	S					(XC)					ZZ				
	Stroke	1 to 50	51 to 100	101 to 150	151 to 200	201 to 250	1 to 50	51 to 100	101 to 150	151 to 200	201 to 250	1 to 50	51 to 100	101 to 150	151 to 200	201 to 250
32		93	118	143	168	—	122	147	172	197	—	165	190	215	240	—
40		114	139	164	189	214	147	172	197	222	247	199	224	249	274	299

Boss-cut/Basic

Item		S					ZZ				
Bore size	Stroke	1 to 50	51 to 100	101 to 150	151 to 200	201 to 250	1 to 50	51 to 100	101 to 150	151 to 200	201 to 250
32		93	118	143	168	—	151	176	201	226	—
40		114	139	164	189	214	183	208	233	258	283

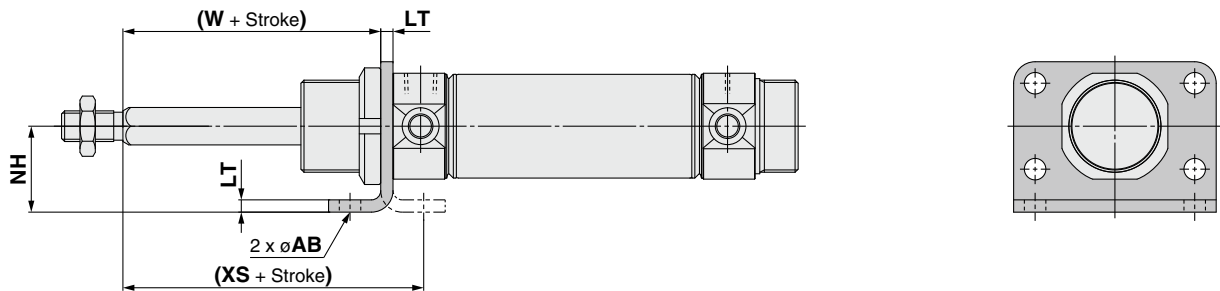
Refer to page 67 of Standard Type Single Rod for details of accessories (rod end, floating joint).

C75K Series

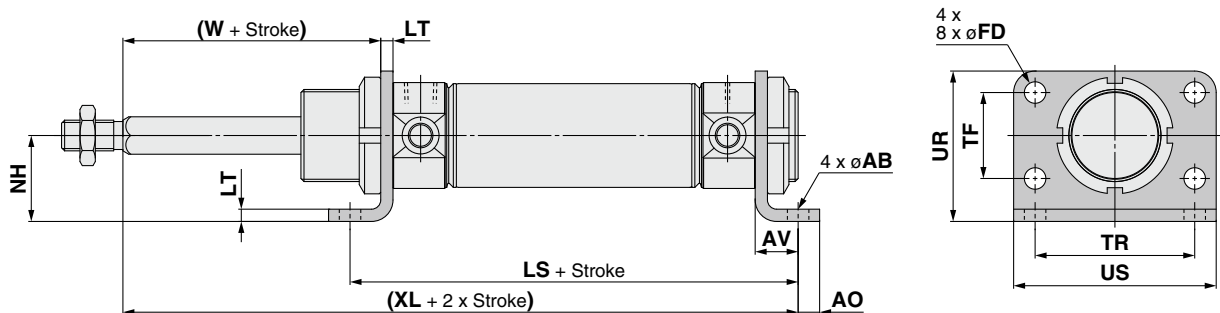
Dimensions: Single Acting, Spring Extend

Bracket is shipped together with the product.

Single foot: C□75KE□ – □TL/Flange: C□75KE□ – □TG (With mounting bracket)

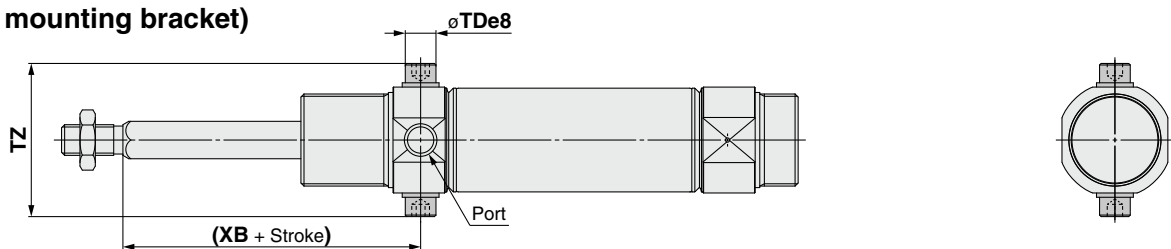


Double foot: C□75KE□ – □TM (With mounting bracket)

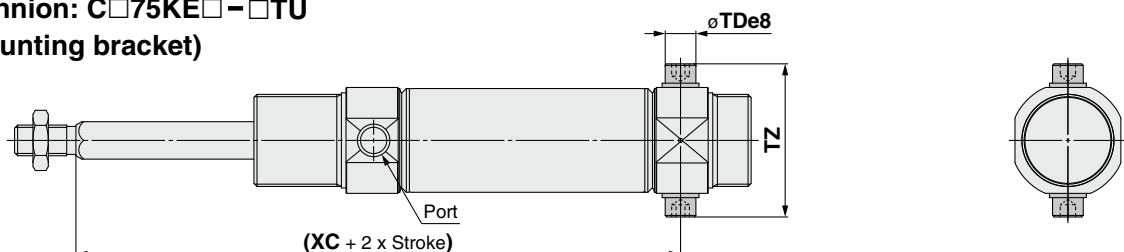


Bore size	AB	AO	AV	FD	LS					LT	NH	TF	TR	UR	US	(W)	(XL)					(XS)
					1 to 50	51 to 100	101 to 150	151 to 200	201 to 250								1 to 50	51 to 100	101 to 150	151 to 200	201 to 250	
32	7	7	14	7	121	146	171	196	—	4	28	28	52	49	66	34	145	170	195	220	—	48
40	9	10	20	9	154	179	204	229	254	5	33	30	60	58	80	40	179	204	229	254	279	60

Rod trunnion: C□75KE□ – □TU
(With mounting bracket)



Head trunnion: C□75KE□ – □TU
(With mounting bracket)



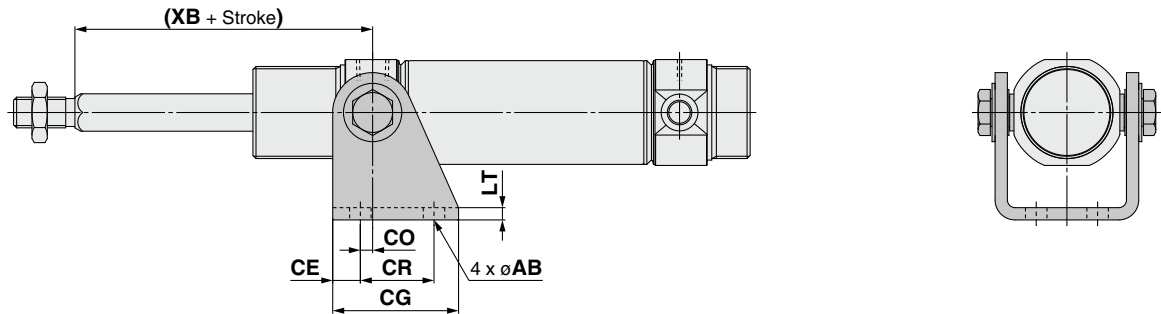
Bore size	TDe8	TZ	(XB)	(XC)				
				1 to 50	51 to 100	101 to 150	151 to 200	201 to 250
32	10 ^{-0.025} _{-0.047}	49.9	47	122	147	172	197	—
40	12 ^{-0.032} _{-0.059}	62.3	57	147	172	197	222	247

Refer to page 67 of Standard Type Single Rod for details of accessories (rod end, floating joint).

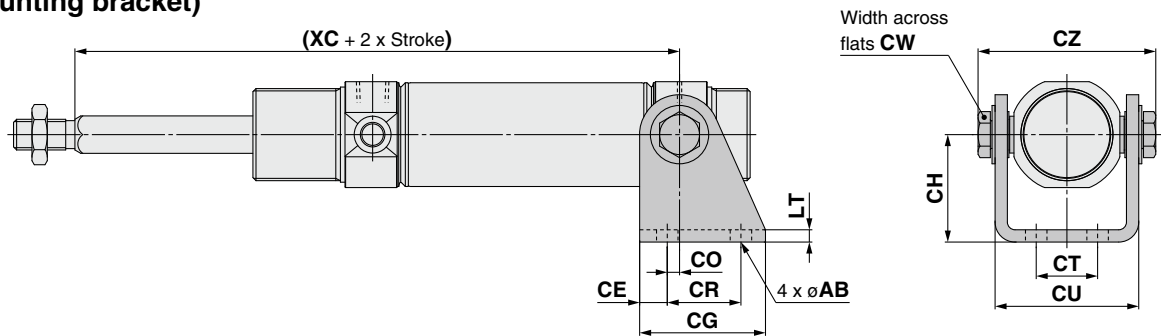
Dimensions: Single Acting, Spring Extend

Bracket is shipped together with the product.

Rod clevis: C□75KE□-□TN
(With mounting bracket)



Head clevis: C□75KE□-□TN
(With mounting bracket)



Bore size	AB	CE	CG	CH	CO	CR	CT	CU	CW	CZ	LT	(XB)	(XC)				
													1 to 50	51 to 100	101 to 150	151 to 200	201 to 250
32	7	9	41	35	4	24	20	46.8	13	57.9	4	47	122	147	172	197	—
40	9	12	52	40	3	30	28	58.2	17	72.3	5	57	147	172	197	222	247

Refer to page 67 of Standard Type Single Rod for details of accessories (rod end, floating joint).

Air Cylinder: Direct Mount Double Acting, Single Rod **C75R Series** ø32, ø40

RoHS

How to Order

Double acting, Single rod

C D 75R A F 32 - 100 V - B - M9BW

Built-in magnet

Nil	None
D	Built-in magnet

Type

A	Bottom side mounting
B	Front side mounting

Head cover type

F	Boss-cut/Basic
Y	Head cover axial port

Bore size

32	32 mm
40	40 mm

Cylinder stroke [mm]

Refer to the next page for standard strokes.

Accessory*1

Nil	None
V	Rod end

*1 Refer to Mounting Brackets/Accessories on page 103 for details of accessories.

* Accessory is shipped together with the product.

Number of auto switches

Nil	2
S	1
n	n

Made to order

For details, refer to page 102.

Auto switch

Nil	Without auto switch
-----	---------------------

* For applicable auto switches, refer to the table below.

* Auto switches are shipped together with the product.

Auto switch mounting type*1

B	Band mounting
---	---------------

*1 The symbol is "Nil" for no magnet.

Applicable Auto Switches/Refer to the Web Catalog or Best Pneumatics for further information on auto switches.

Type	Special function	Electrical entry	Indicator light	Wiring (Output)	Load voltage		Auto switch model		Lead wire length [m]					Pre-wired connector	Applicable load						
					DC	AC	Band mounting		0.5 (Nil)	1 (M)	3 (L)	5 (Z)	None (N)								
							Perpendicular	In-line													
Solid state auto switch	—	Grommet	Yes	3-wire (NPN)	24 V	5 V, 12 V	—	M9NV	M9N	●	●	●	○	—	○	IC circuit	Relay, PLC				
				3-wire (PNP)				M9PV	M9P	●	●	●	○	—	○						
		Connector		2-wire				12 V	M9BV	M9B	●	●	●	○	—			○	—		
				—				H7C	●	—	●	●	—	—							
	Diagnostic indication (2-color indicator)	Grommet		3-wire (NPN)				24 V	5 V, 12 V	M9NWV	M9NW	●	●	●	○	—		○	IC circuit		
				3-wire (PNP)						M9PWV	M9PW	●	●	●	○	—		○			
				2-wire						12 V	M9BWW	M9BW	●	●	●	○		—		○	—
				3-wire (NPN)						5 V, 12 V	M9NAV*1	M9NA*1	○	○	●	○		—		○	
	3-wire (PNP)		M9PAV*1	M9PA*1	○	○	●				○	—	○								
	2-wire		12 V	M9BAV*1	M9BA*1	○	○				●	○	—	○	—						
	4-wire (NPN)		5 V, 12 V	—	H7NF	●	—				●	○	—	○		IC circuit					
Reed auto switch	—		Grommet	Yes	3-wire (NPN equivalent)	—	5 V			—	A96V	A96	●	●	●	●	—	○	IC circuit	—	
		2-wire			24 V			12 V	100 V		A93V	A93	●	●	●	●	—	○*2	—		
									100 V or less		A90V	A90	●	●	●	●	—	○*2	IC circuit		
									—		—	C73C	●	—	●	●	●	—	—		
		Connector	No	—		24 V or less	—		C80C	●	—	●	●	●	—	—	IC circuit				

*1 Water-resistant type auto switches can be mounted on the above models, but SMC cannot guarantee water resistance. Please contact SMC regarding water-resistant types with the above model numbers.

*2 The load voltage used is 24 VDC.

* Lead wire length symbols: 0.5 m..... Nil (Example) M9NW 5 m..... Z (Example) M9NWZ
1 m..... M (Example) M9NWM None..... N (Example) H7CN
3 m..... L (Example) M9NWL

* Since there are other applicable auto switches than listed above, refer to page 115 for details.

* Auto switches marked with "○" are produced upon receipt of order.

* D-A9□/M9□/A7□/A80□F7□/J7□ auto switches are shipped together, but not assembled. (For band mounting, only the auto switch mounting brackets are assembled before shipment.)

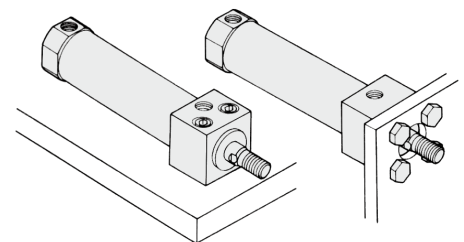
Square rod cover makes direct mounting possible

Space saving

Because it is a directly mounted type without using brackets, its overall length is shorter, and its installation pitch can be made smaller. Thus, the space that is required for installation has been dramatically reduced.

2 mounting types

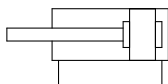
Front side mounting and bottom side mounting available to suit your applications.



Bottom side mounting Front side mounting

Symbol

Double acting, Single rod



Refer to pages 105 to 115 for cylinders with auto switches.

- Auto Switch Proper Mounting Position (Detection at stroke end) and Mounting Height
- Minimum Stroke for Auto Switch Mounting
- Operating Range
- Auto Switch Mounting Brackets/Part No.



Made to Order

(For details, refer to pages 119 to 124.)

Symbol	Specifications
-XA	Change of rod end shape
-XB6	Heat-resistant cylinder (−10 to 150°C)*1
-XB7	Cold-resistant cylinder (−40 to 70°C)*1
-XB9	Low speed cylinder (10 to 50 mm/s)
-XC6A	Made of stainless steel

*1 Excludes with rod end (Accessory)

Specifications

Bore size [mm]	32	40
Type	Pneumatic	
Action	Double acting, Single rod	
Fluid	Air	
Proof pressure	1.5 MPa	
Max. operating pressure	1.0 MPa	
Min. operating pressure	0.05 MPa	
Ambient and fluid temperature	Without auto switch: −20°C to 80°C (No freezing) With auto switch: −10°C to 60°C (No freezing)	
Lubricant	Not required (Non-lube)	
Stroke length tolerance	$^{+1.4}_0$ mm	
Piston speed	50 to 1500 mm/s	
Cushion	Rubber bumper	
Allowable kinetic energy	0.65 J	1.2 J

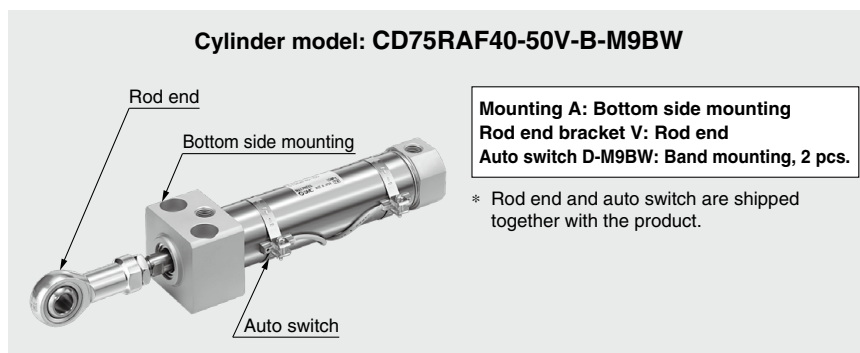
Standard Strokes

Bore size [mm]	Standard stroke [mm]*1	Max. stroke*2 [mm]
32	10, 25, 40, 50, 80, 100, 125, 160, 200	300
40	10, 25, 40, 50, 80, 100, 125, 160, 200, 250, 300	

*1 Other strokes are available on request.

*2 For exceeding the standard stroke range, it will be available as a special order (-X2018).

Option: Ordering Example of Cylinder Assembly



⚠ Precautions

Be sure to read this before handling the products. Refer to page 219 for safety instructions. For actuator and auto switch precautions, refer to the “Handling Precautions for SMC Products” and the “Operation Manual” on the SMC website: <http://www.smcworld.com>

C75R Series

Mounting Brackets/Accessories

Mounting bracket/Accessory		Standard (mounted to the body)	Accessory (shipped together)
		Rod end nut	Rod end
Accessory symbol	V	Rod end	● (1 pc.)

Mounting Bracket/Accessory Part Nos.

Description		Bore size [mm]		Contents
		32	40	
Accessory	Rod end	KJ10DA	KJ12DA	1 rod end
	Floating joint	JA25-10-150	JA40-12-175	

* Refer to page 67 for dimensions of accessories.

Replacement Parts

Bore size [mm]	Part no.	Note
32	C75A-32PS	Every set includes: 1 rod seal 1 flat washer 1 retaining ring
40	C75A-40PS	

* When replacing the seals, use **grease (GR-S-010: ordered separately)** on the sliding parts.

Weights

Bore size [mm]			32	40
Basic weight	Without magnet	C75RAF	0.35	0.69
		C75RAY	0.35	0.69
		C75RBF	0.35	0.68
		C75RBY	0.35	0.69
	With magnet	CD75RAF	0.35	0.69
		CD75RAY	0.36	0.69
		CD75RBF	0.36	0.69
		CD75RBY	0.36	0.69
Additional weight per 10 mm of stroke		0.02	0.03	
Accessory	Rod end	KJ□DA	0.07	0.11
	Floating joint	JA□-□-□	0.07	0.16

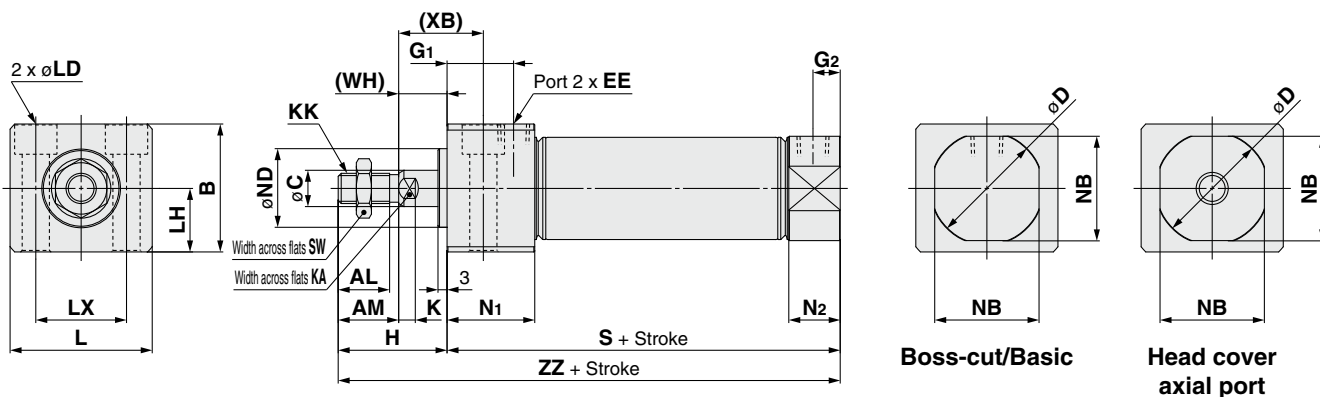
Calculation example: **C75RAF32-50V**

- Basic weight 0.35 kg (ø32)
- Additional weight ... 0.02 kg (at 10 mm stroke)
- Cylinder stroke 50 mm
- Accessory: Rod end 0.07 kg

$$0.35 + 0.02 \times 50/10 + 0.07 = \mathbf{0.52 \text{ kg}}$$

Dimensions

Bottom side mounting: C□75RAF/Y Bore size – Stroke – B

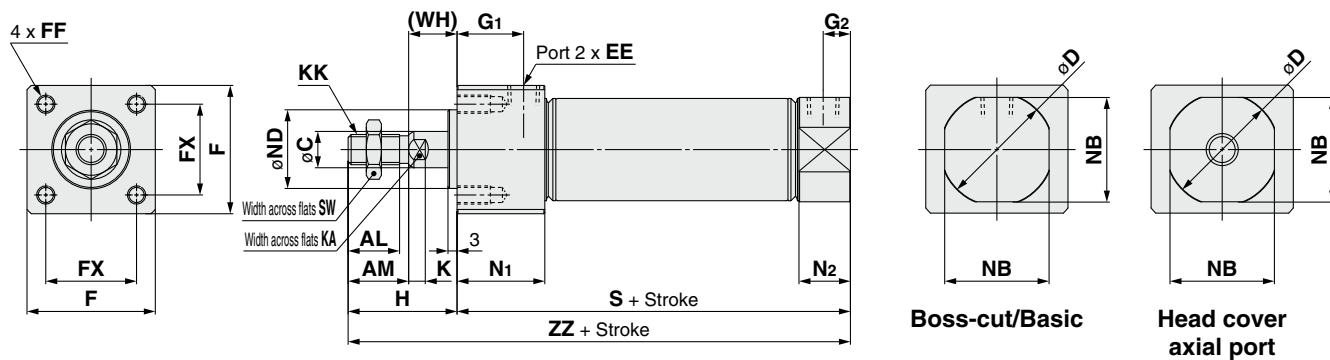


Dimensions

Bore size	AL	AM	B	C	D	EE	G1	G2	H	K	KA	KK	L	LD	LH
32	17	20	42.3	12	37.5	G1/8	22	9	36	5.5	10	M10 x 1.5	47	ø9, ø14 counterbore depth 10	21
40	21	24	52.3	14	46.5	G1/4	27	12	40	7	12	M12 x 1.75	58.5	ø11, ø17.5 counterbore depth 12.5	26

Bore size	LX	N1	N2	NB	ND	S	SW	(WH)	(XB)	ZZ
32	30	29	17	34.5	26 ⁰ _{-0.033}	80	17	16	28	116
40	38	38	22	42.5	32 ⁰ _{-0.039}	105	19	16	31	145

Front side mounting: C□75RBF/Y Bore size – Stroke – B



Dimensions

Bore size	AL	AM	C	D	EE	F	FF	FX	G1	G2	H	K	KA	KK	N1	N2	NB	ND	S	SW	(WH)	ZZ
32	17	20	12	37.5	G1/8	42.4	M6 x 1 depth 11	30	22	9	36	5.5	10	M10 x 1.5	29	17	34.5	26 ⁰ _{-0.033}	80	17	16	116
40	21	24	14	46.5	G1/4	52.4	M8 x 1.25 depth 14	36	27	12	40	7	12	M12 x 1.75	38	22	42.5	32 ⁰ _{-0.039}	105	19	16	145

Refer to page 67 of Standard Type Single Rod for details of accessories (rod end, floating joint).

C85/C75 Series

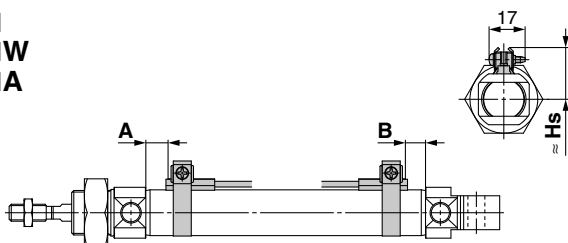
Auto Switch Mounting

Auto Switch Proper Mounting Position (Detection at stroke end) and Mounting Height

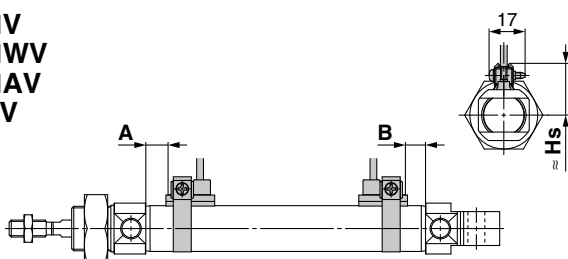
Applicable series: CD85□

Double acting/Single acting: Band mounting

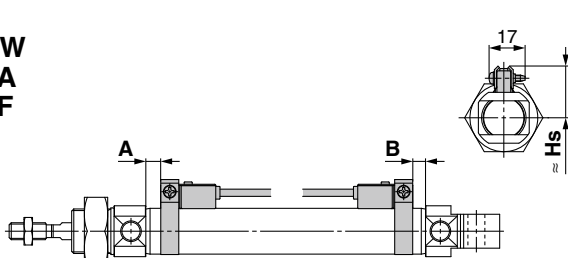
D-M9□
D-M9□W
D-M9□A
D-A9□



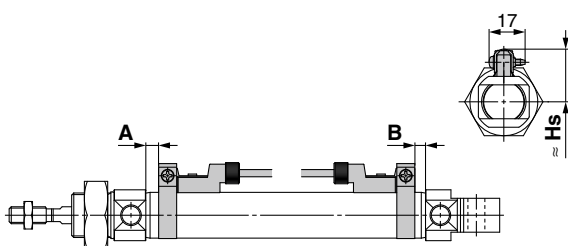
D-M9□V
D-M9□WV
D-M9□AV
D-A9□V



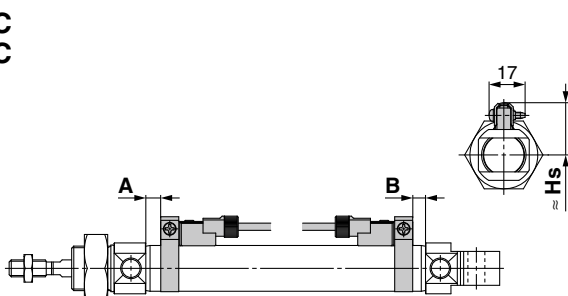
D-H7□
D-H7□W
D-H7BA
D-H7NF
D-C7□
D-C80



D-H7C

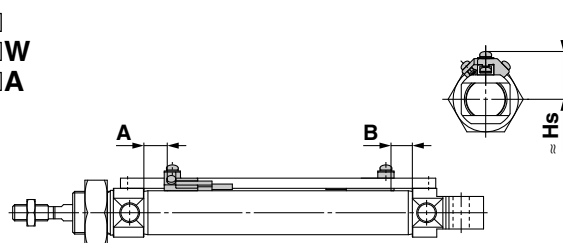


D-C73C
D-C80C

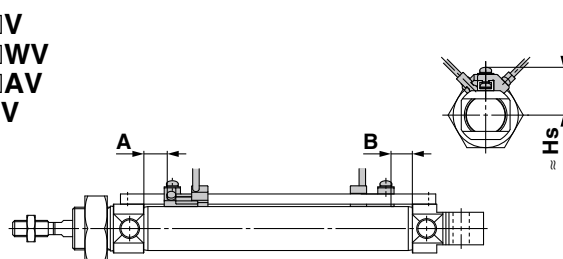


Double acting/Single acting: Rail mounting

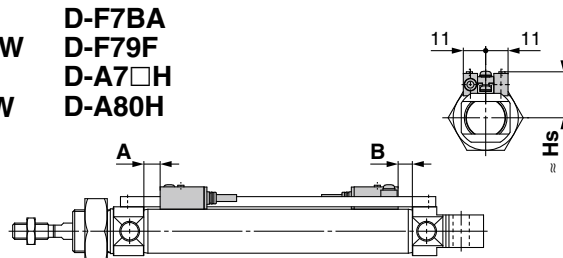
D-M9□
D-M9□W
D-M9□A
D-A9□



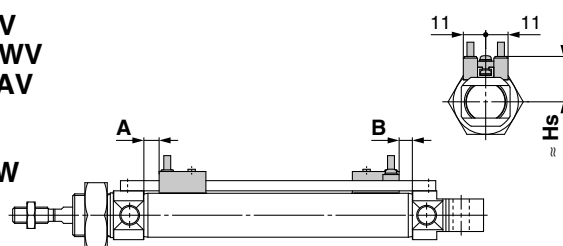
D-M9□V
D-M9□WV
D-M9□AV
D-A9□V



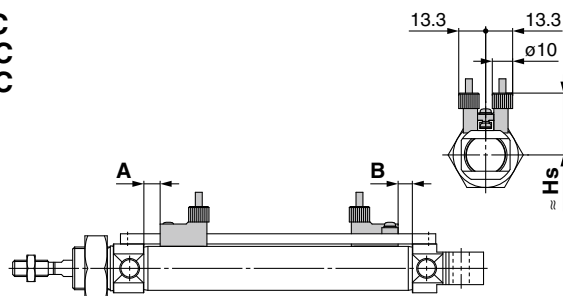
D-F7□
D-F7□W
D-J79
D-J79W
D-F7BA
D-F79F
D-A7□H
D-A80H



D-F7□V
D-F7□WV
D-F7BAV
D-A7□
D-A80
D-A79W



D-J79C
D-A73C
D-A80C

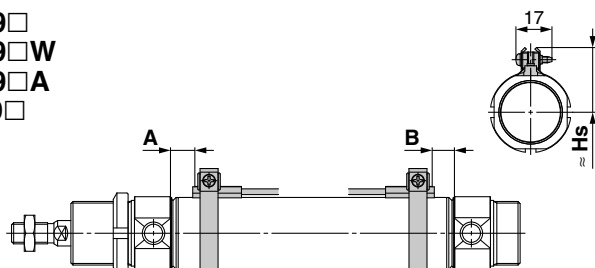


Auto Switch Proper Mounting Position (Detection at stroke end) and Mounting Height

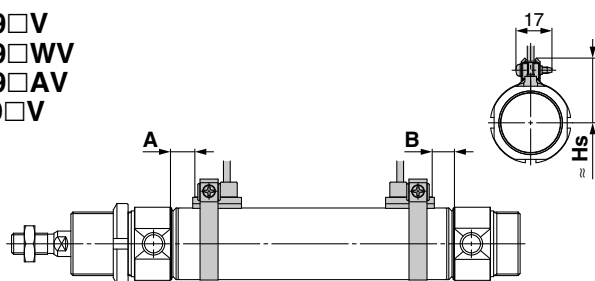
Applicable series: CD75□

Double acting/Single acting: Band mounting

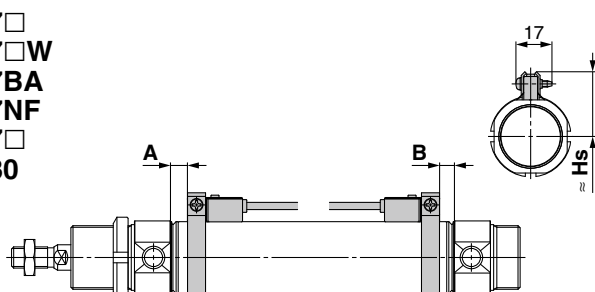
D-M9□
D-M9□W
D-M9□A
D-A9□



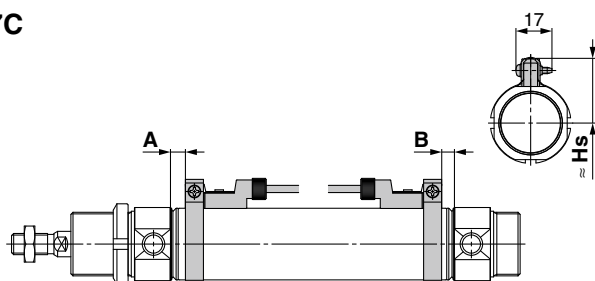
D-M9□V
D-M9□WV
D-M9□AV
D-A9□V



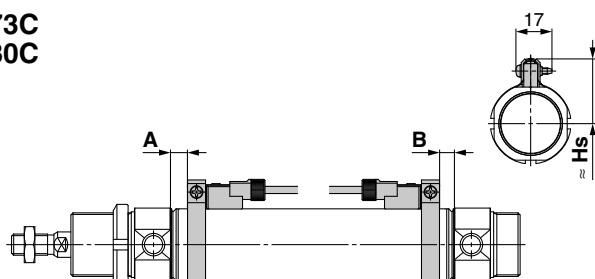
D-H7□
D-H7□W
D-H7BA
D-H7NF
D-C7□
D-C80



D-H7C

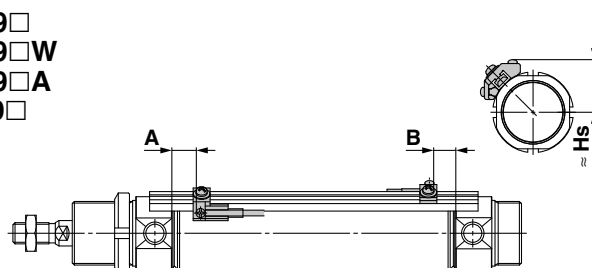


D-C73C
D-C80C

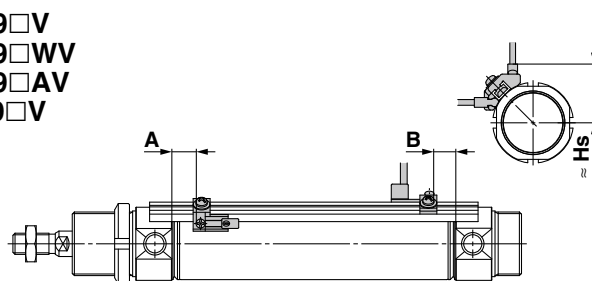


Double acting/Single acting: Rail mounting

D-M9□
D-M9□W
D-M9□A
D-A9□

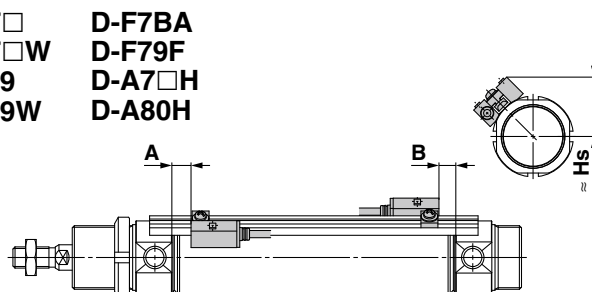


D-M9□V
D-M9□WV
D-M9□AV
D-A9□V

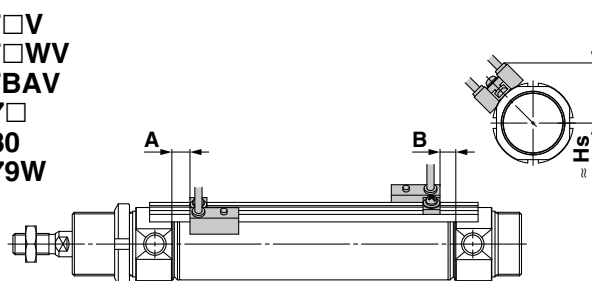


D-F7□
D-F7□W
D-J79
D-J79W

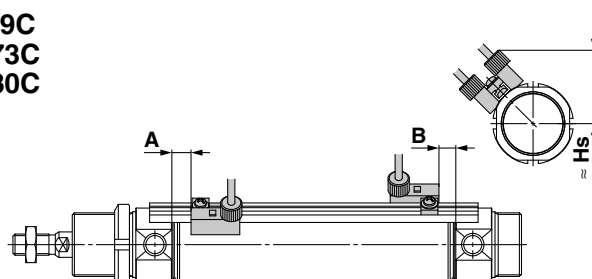
D-F7BA
D-F79F
D-A7□H
D-A80H



D-F7□V
D-F7□WV
D-F7BAV
D-A7□
D-A80
D-A79W



D-J79C
D-A73C
D-A80C



C85/C75 Series

Auto Switch Proper Mounting Position (Detection at stroke end) and Mounting Height

Applicable series: CD85 (Double acting, Single rod), CD85W (Double acting, Double rod), CD85K (Non-rotating rod), CD85R (Direct mount)

Auto Switch Proper Mounting Position [mm]

Auto switch model	Band mounting							
	D-M9□ D-M9□V D-M9□W D-M9□WV D-M9□A D-M9□AV		D-A9□ D-A9□V		D-H7□ D-H7C D-H7□W D-H7BA D-H7NF		D-C7□ D-C80 D-C73C D-C80C	
Bore size	A	B	A	B	A	B	A	B
8	6.5	6.5	—	—	2	2	3	3
10	6.5 (7)	6.5 (7)	—	—	2 (2.5)	2 (2.5)	3 (3.5)	3 (3.5)
12	7.5 (8.5)	7.5 (8.5)	—	—	3 (4)	3 (4)	4 (5)	4 (5)
16	7.5 (8.5)	13.5 (10.5) [7.5]	3.5 (4.5)	9.5 (6.5) [3.5]	3 (4)	9 (6) [3]	4 (5)	10 (7) [4]
20	10.5 (8.5)	9.5 (7.5)	6.5 (4.5)	5.5 (3.5)	6 (4)	5 (3)	7 (5)	6 (4)
25	12 (10)	11 (9)	8 (6)	7 (5)	7.5 (5.5)	6.5 (4.5)	8.5 (6.5)	7.5 (5.5)

- * The value in () is in cases with air cushion.
- * The value in [] is in cases of CD85F16, CD85Y.
- * D-A9□ type cannot be mounted on bore size ø8, ø10, or ø12 cylinder.
- * Adjust the auto switch after confirming the operating conditions in the actual setting.

Auto Switch Mounting Height [mm]

Auto switch model	Band mounting				
	D-M9□ D-M9□V D-M9□W D-M9□WV D-M9□A D-A9□*1	D-M9□V D-M9□WV D-M9□AV D-A9□V*1	D-H7□ D-H7C D-H7□W D-H7BA D-H7NF D-C7□ D-C80	D-H7C	D-C73C D-C80C
Bore size	Hs	Hs	Hs	Hs	Hs
8	16	16.5	17	19	18.5
10	17.5	18	18	20	19.5
12	18.5	19	19	21	20.5
16	20.5	21	21	23	22.5
20	24.5	24.5	24.5	25.5	25
25	27	27	27	27.5	27

- *1 D-A9□(V) type cannot be mounted on bore size ø8, ø10, or ø12 cylinder.

Auto Switch Proper Mounting Position [mm]

Auto switch model	Rail mounting									
	D-M9□ D-M9□V D-M9□W D-M9□WV D-M9□A D-M9□AV		D-A9□ D-A9□V		D-F7□/J79 D-F7□W/J79W D-F7□V D-F7□WV D-F79F/J79C D-F7BA D-F7BAV D-A72/A7□H D-A80H D-A73C/A80C		D-A73 D-A80		D-A79W	
Bore size	A	B	A	B	A	B	A	B	A	B
8	5	5	—	—	4	4	3.5	3.5	—	—
10	5 (5.5)	5 (5.5)	—	—	4 (4.5)	4 (4.5)	3.5 (4)	3.5 (4)	—	—
12	6 (7)	6 (7)	—	—	5 (6)	5 (6)	4.5 (5.5)	4.5 (5.5)	—	—
16	6 (7)	12 (9) [6]	3.5 (4.5)	9.5 (6.5) [3.5]	5 (6)	11 (8) [5]	4.5 (5.5)	10.5 (7.5) [4.5]	2 (3)	8 (5) [2]
20	—	—	6.5 (4.5)	5.5 (3.5)	8 (6)	7 (5)	7.5 (5.5)	6.5 (4.5)	5 (3)	4 (2)
25	—	—	8 (6)	7 (5)	9.5 (7.5)	8.5 (6.5)	9 (7)	8 (6)	6.5 (4.5)	5.5 (3.5)

- * The value in () is in cases with air cushion.
- * The value in [] is in cases of CD85F16, CD85Y.
- * D-A9□(V) and A79W types cannot be mounted on bore size ø8, ø10, or ø12 cylinder.
- * D-M9□(V), M9□W(V), and M9□A(V) types cannot be mounted on bore size ø20 or ø25 cylinder.
- * No rail mounting is available with CD85R (direct mount type).
- * Adjust the auto switch after confirming the operating conditions in the actual setting.

Auto Switch Mounting Height [mm]

Auto switch model	Rail mounting						
	D-M9□*1 D-M9□V D-M9□W D-M9□WV D-M9□A D-M9□AV D-A9□*2 D-A9□V	D-F7□ D-J79 D-F7□W D-J79W D-F79F D-F7BA D-A7□H D-A80H	D-F7□V D-F7□WV D-F7BAV	D-J79C	D-A7□ D-A80	D-A73C D-A80C	D-A79W*2
Bore size	Hs	Hs	Hs	Hs	Hs	Hs	Hs
8	16	16	19	21	16	22.5	—
10	17	17	20	22	17	23.5	—
12	20.5	20.5	23	25	19.5	26.5	—
16	20.5	20.5	23	25	19.5	26.5	22
20	23.5	23.5	26	29	22.5	29.5	25
25	26.5	26.5	29	32	25.5	32.5	28

- *1 D-M9□(V), M9□W(V), and M9□A(V) types cannot be mounted on bore size ø20 or ø25 cylinder.
- *2 D-A9□(V) and A79W types cannot be mounted on bore size ø8, ø10, or ø12 cylinder.
- *3 No rail mounting is available with CD85R (direct mount type).

Auto Switch Proper Mounting Position (Detection at stroke end) and Mounting Height

Applicable series: CD75 (Double acting, Single rod), CD75W (Double acting, Double rod), CD75K (Non-rotating rod), CD75R (Direct mount)

Auto Switch Proper Mounting Position

Auto switch model Bore size	D-M9□ D-M9□V D-M9□W D-M9□WV D-M9□A D-M9□AV		D-A9□ D-A9□V		D-C7□ D-C80 D-C73C D-C80C		D-A73 D-A80		D-A7□H/A80H/A72 D-A73C/A80C D-F7□/J79 D-F7□W/J79W D-J79C/F7BAL D-F79F		D-H7□ D-H7C D-H7□W D-H7BAL D-H7NF		D-A79W	
	A	B	A	B	A	B	A	B	A	B	A	B	A	B
32	11.5	10.5	7.5	6.5	8 (6)	7 (5)	8.5 (6.5)	7.5 (5.5)	9 (7)	8 (6)	7 (5)	6 (4)	6 (4)	5 (3)
40	17.5	15.5	13.5	11.5	14 (11)	12 (9)	14.5 (11.5)	12.5 (9.5)	15 (12)	13 (10)	13 (10)	11 (8)	12 (9)	10 (7)

* The value in () is for air cushion.

* The above-mentioned value is a guide for auto switch mounting positions for stroke end detection.

Adjust the auto switch after confirming the operating conditions in the actual setting.

* A/B dimensions are the distance from the cover to the end surface of the auto switch.

Auto Switch Mounting Height

Auto switch model Bore size	D-M9□ D-M9□V D-M9□W D-M9□WV D-M9□A D-M9□AV D-A9□ D-A9□V	D-C7□/C80 D-H7□ D-H7□W D-H7BAL D-H7NF	D-C73C D-C80C	D-A7□ D-A80	D-A7□H D-A80H	D-F7□/J79 D-F7□W D-J79W D-F7BAL D-F79F	D-A73C D-A80C	D-H7C	D-A79W	D-J79C
	Hs	Hs	Hs	Hs	Hs	Hs	Hs	Hs	Hs	Hs
32	30.5	30.5	31	30	30.5	30	36	31.5	31.5	34.5
40	35.5	35.5	35	34.5	35	34.5	40.5	35.5	36	39

C85/C75 Series

Auto Switch Proper Mounting Position (Detection at stroke end) and Mounting Height

Applicable series: CD85□-□S (Single acting, Spring return)

Auto Switch Proper Mounting Position

[mm]

Auto switch model		Bore size	A dimensions			B
			5 to 50 st	51 to 100 st	101 to 150 st	
Band mounting	D-M9□ D-M9□V D-M9□W D-M9□WV D-M9□A D-M9□AV	8	18.5	18.5	18.5	6.5
		10	16.5	16.5	16.5	6.5
		12	18	18	18	7.5
		16	18	33.5	49	13.5 [7.5]
		20	10.5 (35.5)	60.5	85.5	9.5
		25	10.5 (35.5)	60.5	85.5	11
	D-A9□	16	14	29.5	45	9.5 [3.5]
		20	6.5 (31.5)	56.5	81.5	5.5
		25	6.5 (31.5)	56.5	81.5	7
	D-H7□ D-H7C D-H7□W D-H7BA D-H7NF	8	14	14	14	2
		10	12	12	12	2
		12	13.5	13.5	13.5	3
		16	13.5	29	44.5	9 [3]
		20	6 (31)	56	81	5
		25	6 (31)	56	81	6.5
	D-C7□ D-C80 D-C73C D-C80C	8	15	15	15	3
		10	13	13	13	3
		12	14.5	14.5	14.5	4
		16	14.5	30	45.5	10 [4]
		20	7 (32)	57	82	6
		25	7 (32)	57	82	7.5

* The value in () is in cases of non-rotating.

* The value in [] is in cases of CD85F16, CD85Y.

* D-A9□(V) and A79W types cannot be mounted on bore size ø8, ø10, or ø12 cylinder.

* When mounting a rail on bore size ø20 or ø25 cylinder, D-M9□(V), M9□W(V) and M9□A(V) types cannot be mounted.

* Adjust the auto switch after confirming the operating conditions in the actual setting.

Auto Switch Mounting Height

[mm]

Auto switch model	Band mounting				
	D-M9□ D-M9□W D-M9□A D-A9□*1	D-M9□V D-M9□WV D-M9□AV D-A9□V*1	D-H7□ D-H7□W D-H7BA D-H7NF D-C7□ D-C80	D-H7C	D-C73C D-C80C
Bore size	Hs	Hs	Hs	Hs	Hs
8	16	16.5	17	19	18.5
10	17.5	18	18	20	19.5
12	18.5	19	19	21	21
16	20.5	21	21	23	23
20	24.5	24.5	24.5	25	25
25	27	27	27	27.5	27.5

*1 D-A9□(V) type cannot be mounted on bore size ø8, ø10, or ø12 cylinder.

		[mm]				
Auto switch model		Bore size	A dimensions			B
			5 to 50 st	51 to 100 st	101 to 150 st	
Rail mounting	D-M9□	8	17	17	17	5
	D-M9□V	10	15	15	15	5
	D-M9□W	12	16.5	16.5	16.5	6
	D-M9□WV	16	16.5	32	47.5	12
	D-M9□A					[6]
	D-M9□AV					
	D-A9□ D-A9□V D-A79W	16	12.5	28	43.5	8 [2]
		20	5 (30)	55	80	4
		25	5 (30)	55	80	5.5
	D-F7□/J79 D-F7□W D-J79W D-F7□V D-F7□WV D-F79F/J79C D-F7BA D-F7BAV D-A72 D-A7□H/A80H D-A73C/A80C	8	16	16	16	4
		10	14	14	14	4
		12	15.5	15.5	15.5	5
		16	15.5	31	46.5	11 [5]
		20	8 (33)	58	83	7
		25	8 (33)	58	83	8.5
		8	15.5	15.5	15.5	3.5
		10	13.5	13.5	13.5	3.5
		12	15	15	15	4.5
	D-A73 D-A80	16	15	30.5	46	10.5 [4.5]
		20	7.5 (32.5)	57.5	82.5	6.5
25		7.5 (32.5)	57.5	82.5	8	

Auto switch model	Rail mounting						
	D-M9□*1 D-M9□V D-M9□W D-M9□WV D-M9□A D-M9□AV D-A9□*2 D-A9□V	D-F7□ D-J79 D-F7□W D-J79W D-F79F D-F7BA D-A7□H D-A80H	D-F7□V D-F7□WV D-F7BAV	D-J79C	D-A7□ D-A80	D-A73C D-A80C	D-A79W*2
Bore size	Hs	Hs	Hs	Hs	Hs	Hs	Hs
8	16	16	19	21	16	22.5	—
10	17	17	20	22	17	23.5	—
12	20.5	20.5	23	25	19.5	26.5	—
16	20.5	20.5	23	25	19.5	26.5	22
20	23.5	23.5	26	29	22.5	29.5	25
25	26.5	26.5	29	32	25.5	32.5	28

*1 D-M9□(V), M9□W(V), and M9□A(V) types cannot be mounted on bore size ø20 or ø25 cylinder.

*2 D-A9□(V) and A79W types cannot be mounted on bore size ø8, ø10, or ø12 cylinder.

Auto Switch Proper Mounting Position (Detection at stroke end) and Mounting Height

Applicable series: CD75□-□S (Single acting, Spring return)

Auto Switch Proper Mounting Position

[mm]

Auto switch model	Bore size	Single acting, Spring return					
		A dimensions					B
		1 to 50 st	51 to 100 st	101 to 150 st	151 to 200 st	151 to 200 st	
D-M9□ D-M9□V D-M9□W D-M9□WV D-M9□A D-M9□AV	32	11.5 (36.5)	61.5	86.5	111.5	136.5	10.5
	40	16.5 (41.5)	66.5	91.5	116.5	141.5	15.5
D-A9□ D-A9□V	32	7.5 (32.5)	57.5	82.5	107.5	132.5	6.5
	40	12.5 (37.5)	62.5	87.5	112.5	137.5	11.5
D-C7□/C80 D-C73C/C80C	32	8 (33)	58	83	108	—	7
	40	13 (38)	63	88	113	138	12
D-A73 D-A80	32	8.5 (33.5)	58.5	83.5	108.5	—	7.5
	40	13.5 (38.5)	63.5	88.5	113.5	138.5	12.5
D-A72/A7□H/A80H D-A73C/A80C D-F7□/F7□W D-J79/J79W D-F7□WV D-J79C D-F7BAL, D-F79F	32	9 (34)	59	84	109	—	8
	40	14 (39)	64	89	114	139	13
D-A79WL	32	6 (31)	56	81	106	—	5
	40	11 (36)	61	86	111	136	10
D-H7□/H7C/H7□W D-H7BAL, D-H7NF	32	7 (32)	57	82	107	—	6
	40	12 (37)	62	87	112	137	11

* The value in () is for air cushion.

* The above-mentioned value is a guide for auto switch mounting positions for stroke end detection.

Adjust the auto switch after confirming the operating conditions in the actual setting.

* A/B dimensions are the distance from the cover to the end surface of the auto switch.

Auto Switch Mounting Height

[mm]

Auto switch model	D-M9□ D-M9□V D-M9□W D-M9□WV D-M9□A D-M9□AV D-A9□ D-A9□V	D-C7□/C80 D-H7□ D-H7□W D-H7BAL D-H7NF	D-C73C D-C80C	D-A7□ D-A80	D-A7□H D-A80H	D-F7□/J79 D-F7□W D-J79W D-F7BAL D-F79F	D-A73C D-A80C	D-H7C	D-A79W	D-J79C
Bore size	Hs	Hs	Hs	Hs	Hs	Hs	Hs	Hs	Hs	Hs
32	30.5	30.5	31	30	30.5	30	36	31.5	31.5	34.5
40	35.5	35.5	35	34.5	35	34.5	40.5	35.5	36	39

C85/C75 Series

Auto Switch Proper Mounting Position (Detection at stroke end) and Mounting Height

Applicable series: CD85□-□T (Single acting, Spring extend)

Auto Switch Proper Mounting Position

[mm]

Auto switch model	Bore size	A	B dimensions		
			5 to 50 st	51 to 100 st	101 to 150 st
Band mounting	D-M9□ D-M9□V D-M9□W D-M9□WV D-M9□A D-M9□AV	8	6.5	31	31
		10	6.5	29	29
		12	7.5	31	31
		16	7.5	36 [30]	62 [56]
		20	10.5	34.5	59.5
		25	12	34.5	59.5
	D-A9□ D-A9□V	16	3.5	32 [26]	58 [52]
		20	6.5	30.5	55.5
		25	8	30.5	55.5
	D-H7□ D-H7C D-H7□W D-H7BA D-H7NF	8	2	26.5	26.5
		10	2	24.5	24.5
		12	3	26.5	26.5
		16	3	31.5 [25.5]	57.5 [51.5]
		20	6	30	55
		25	7.5	30	55
D-C7□ D-C80 D-C73C D-C80C	8	3	27.5	27.5	27.5
		10	3	25.5	25.5
		12	4	27.5	27.5
		16	4	32.5 [26.5]	58.5 [52.5]
		20	7	31	56
		25	8.5	31	56

[mm]

Auto switch model	Bore size	A	B dimensions		
			5 to 50 st	51 to 100 st	101 to 150 st
Rail mounting	D-M9□ D-M9□V D-M9□W D-M9□WV D-M9□A D-M9□AV	8	5	29.5	29.5
		10	5	27.5	27.5
		12	6	29.5	29.5
		16	6	34.5 [28.5]	60.5 [54.5]
		20	2	30.5 [24.5]	56.5 [50.5]
		25	5	29	54
	D-A9□ D-A9□V D-A79W	16	2	30.5 [24.5]	56.5 [50.5]
		20	5	29	54
		25	6.5	29	54
	D-F7□/J79 D-F7□W D-J79W D-F7□V D-F7□WV D-F79F/J79C D-F7BA D-F7BAV D-A72 D-A7□H/A80H D-A73C/A80C	8	4	28.5	28.5
		10	4	26.5	26.5
		12	5	28.5	28.5
		16	5	33.5 [27.5]	59.5 [53.5]
		20	8	32	57
		25	9.5	32	57
D-A73 D-A80	8	3.5	28	28	28
		10	3.5	26	26
		12	4.5	28	28
		16	4.5	33 [27]	59 [53]
		20	7.5	31.5	56.5
		25	9	31.5	56.5

* The value in [] is in cases of CD85F16, CD85Y.

* D-A9□(V) and A79W types cannot be mounted on bore size ø8, ø10, or ø12 cylinder.

* When mounting a rail on bore size ø20 or ø25 cylinder, D-M9□(V), M9□W(V) and M9□A(V) types cannot be mounted.

* Adjust the auto switch after confirming the operating conditions in the actual setting.

Auto Switch Mounting Height

[mm]

Auto switch model	Band mounting				
	D-M9□ D-M9□V D-M9□W D-M9□WV D-M9□A D-A9□*1	D-M9□V D-M9□WV D-M9□AV D-A9□V*1	D-H7□ D-H7□W D-H7BA D-H7NF D-C7□ D-C80	D-H7C	D-C73C D-C80C
Bore size	Hs	Hs	Hs	Hs	Hs
8	16	16.5	17	19	18.5
10	17.5	18	18	20	19.5
12	18.5	19	19	21	20.5
16	20.5	21	21	23	22.5
20	24.5	24.5	24.5	25.5	25
25	27	27	27	27.5	27

*1 D-A9□(V) type cannot be mounted on bore size ø8, ø10, or ø12 cylinder.

[mm]

Auto switch model	Rail mounting						
	D-M9□*1 D-M9□V D-M9□W D-M9□WV D-M9□A D-M9□AV D-A9□*2 D-A9□V	D-F7□ D-J79 D-F7□W D-J79W D-F79F D-F7BA D-A7□H D-A80H	D-F7□V D-F7□WV D-F7BAV	D-J79C	D-A7□ D-A80	D-A73C D-A80C	D-A79W*2
Bore size	Hs	Hs	Hs	Hs	Hs	Hs	Hs
8	16	16	19	21	16	22.5	—
10	17	17	20	22	17	23.5	—
12	20.5	20.5	23	25	19.5	26.5	—
16	20.5	20.5	23	25	19.5	26.5	22
20	23.5	23.5	26	29	22.5	29.5	25
25	26.5	26.5	29	32	25.5	32.5	28

*1 D-M9□(V), M9□W(V), and M9□A(V) types cannot be mounted on bore size ø20 or ø25 cylinder.

*2 D-A9□(V) and A79W types cannot be mounted on bore size ø8, ø10, or ø12 cylinder.

Auto Switch Proper Mounting Position (Detection at stroke end) and Mounting Height

Applicable series: CD75□-□T (Single acting, Spring extend)

Auto Switch Proper Mounting Position

[mm]

Auto switch model	Bore size	Single acting, Spring extend					
		A	B dimensions				
			1 to 50 st	51 to 100 st	101 to 150 st	151 to 200 st	151 to 200 st
D-M9□ D-M9□V D-M9□W D-M9□WV D-M9□A D-M9□AV	32	11.5	35.5	60.5	85.5	110.5	—
	40	16.5	40.5	65.5	90.5	115.5	140.5
D-A9□ D-A9□V	32	7.5	31.5	56.5	81.5	106.5	—
	40	12.5	36.5	61.5	86.5	111.5	136.5
D-C7□/C80 D-C73C/C80C	32	8	32	57	82	107	—
	40	13	37	62	87	112	137
D-A73 D-A80	32	8.5	32.5	57.5	82.5	107.5	—
	40	13.5	37.5	62.5	87.5	112.5	137.5
D-A72/A7□H/A80H D-A73C/A80C D-F7□/F7□W D-J79/J79W D-F7□WV D-J79C D-F7BAL, D-F79F	32	9	33	58	83	108	—
	40	14	38	63	88	113	138
D-A79WL	32	6	30	55	80	105	—
	40	11	35	60	85	110	135
D-H7□/H7C/H7□W D-H7BAL, D-H7NF	32	7	31	56	81	106	—
	40	12	36	61	86	111	136

* The value in () is for air cushion.

* The above-mentioned value is a guide for auto switch mounting positions for stroke end detection. Adjust the auto switch after confirming the operating conditions in the actual setting.

* A/B dimensions are the distance from the cover to the end surface of the auto switch.

Auto Switch Mounting Height

[mm]

Auto switch model	D-M9□ D-M9□V D-M9□W D-M9□WV D-M9□A D-M9□AV D-A9□ D-A9□V	D-C7□/C80 D-H7□ D-H7□W D-H7BAL D-H7NF	D-C73C D-C80C	D-A7□ D-A80	D-A7□H D-A80H	D-F7□/J79 D-F7□W D-J79W D-F7BAL D-F79F	D-A73C D-A80C	D-H7C	D-A79W	D-J79C
Bore size	Hs	Hs	Hs	Hs	Hs	Hs	Hs	Hs	Hs	Hs
32	30.5	30.5	31	30	30.5	30	36	31.5	31.5	34.5
40	35.5	35.5	35	34.5	35	34.5	40.5	35.5	36	39

C85/C75 Series

Minimum Stroke for Auto Switch Mounting

C85: ø8, ø10, ø12, ø16 n: Number of auto switches [mm]

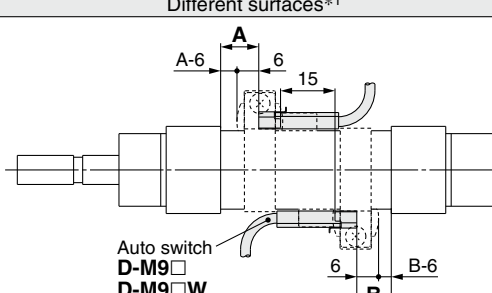
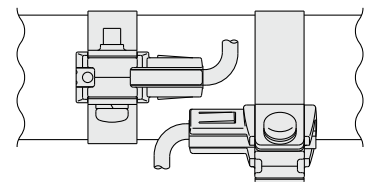
Auto switch model		Number of auto switches				
		1	2		n	
			Different surfaces	Same surface	ø8 to ø16	
					Different surfaces	Same surface
Band mounting	D-M9□ D-M9□V D-M9□W D-M9□WV D-M9□A D-M9□AV D-A9□*2 D-A9□V	10	*1 15	*1 45	15 + 35 $\frac{(n-2)}{2}$ (n = 2, 4, 6...)	45 + 15 (n - 2) (n = 2, 4, 6...)
	D-C7□ D-C80	10	15	50	15 + 40 $\frac{(n-2)}{2}$ (n = 2, 4, 6...)	50 + 20 (n - 2) (n = 2, 4, 6...)
	D-H7□ D-H7□W D-H7BA D-H7NF	10	15	60	15 + 45 $\frac{(n-2)}{2}$ (n=2, 4, 6...)	60 + 22.5 (n - 2) (n = 2, 4, 6...)
	D-H7C D-C73C D-C80C	10	15	65	15 + 50 $\frac{(n-2)}{2}$ (n = 2, 4, 6...)	50 + 27.5 (n - 2) (n = 2, 4, 6...)
Rail mounting	D-M9□V D-F7□V D-J79C	5	—	5	—	10 + 10 (n - 2) (n = 4, 6...)
	D-F7□ D-J79	5	—	5	—	15 + 15 (n - 2) (n = 4, 6...)
	D-A9□V*2	5	—	10	—	10 + 15 (n - 2) (n = 4, 6...)
	D-A7□ D-A80 D-A73C D-A80C	5	—	10	—	15 + 10 (n - 2) (n = 4, 6...)
	D-A7□H D-A80H	5	—	10	—	15 + 15 (n - 2) (n = 4, 6...)
	D-M9□ D-A9□*2	10	—	10	—	15 + 15 (n - 2) (n = 4, 6...)
	D-F7□WV D-F7BAV D-A79W*2	10	—	15	—	10 + 15 (n - 2) (n = 4, 6...)
	D-M9□WV D-M9□AV	10	—	15	—	15 + 15 (n - 2) (n = 4, 6...)
	D-F7□W D-J79W D-F7BA	10	—	15	—	15 + 20 (n - 2) (n = 4, 6...)
	D-M9□W	15	—	15	—	15 + 15 (n - 2) (n = 4, 6...)
	D-M9□A	15	—	20	—	20 + 15 (n - 2) (n = 4, 6...)

C85: ø20, ø25

n: Number of auto switches [mm]

Auto switch model		Number of auto switches				
		1	2		n	
			Different surfaces	Same surface	ø20, ø25	
					Different surfaces	Same surface
Band mounting	D-M9□ D-M9□V D-M9□W D-M9□WV D-M9□A D-M9□AV D-A9□ D-A9□V	10	*1 15	*1 45	$15 + 45 \frac{(n-2)}{2}$ (n = 2, 4, 6...)	45 + 45 (n - 2) (n = 2, 4, 6...)
	D-C7□ D-C80	10	15	50		50 + 45 (n - 2) (n = 2, 4, 6...)
	D-H7□ D-H7□W D-H7BA D-H7NF	10	15	60		60 + 45 (n - 2) (n = 2, 4, 6...)
	D-H7C D-C73C D-C80C	10	15	65	$15 + 50 \frac{(n-2)}{2}$ (n = 2, 4, 6...)	65 + 50 (n - 2) (n = 2, 4, 6...)
Rail mounting	D-F7□V D-J79C	5	—	5	—	10 + 10 (n - 2) (n = 4, 6...)
	D-F7□ D-J79	5	—	5	—	15 + 15 (n - 2) (n = 4, 6...)
	D-A9□ D-A9□V	5	—	10	—	10 + 15 (n - 2) (n = 4, 6...)
	D-A7□ D-A80 D-A73C D-A80C	5	—	10	—	15 + 10 (n - 2) (n = 4, 6...)
	D-A7□H D-A80H	5	—	10	—	15 + 15 (n - 2) (n = 4, 6...)
	D-F7□WV D-F7BAV D-A79W	10	—	15	—	10 + 15 (n - 2) (n = 4, 6...)
	D-F7□W D-J79W D-F7BA	10	—	15	—	15 + 20 (n - 2) (n = 4, 6...)

*1 Auto switch mounting (With the stroke range within the below, an adjustment is required as shown in the chart below).

Auto switch model	With 2 auto switches	
	Different surfaces*1	Same surface*1
	 The proper auto switch mounting position is 6 mm inward from the switch holder edge.	 The auto switch is mounted by slightly displacing it in a direction (cylinder tube circumferential exterior) so that the auto switch and lead wire do not interfere with each other.
D-A93	—	45 to less than 50 strokes
D-M9□/M9□W	15 to less than 20 strokes	45 to less than 55 strokes

*2 D-A9□(V) and A79W types cannot be mounted on bore size ø8, ø10, or ø12 cylinder.

* When mounting a rail on bore size ø20 or ø25 cylinder, D-M9□(V), M9□W(V) and M9□A(V) types cannot be mounted.

Minimum Stroke for Auto Switch Mounting

C75: ø32, ø40

n: Number of auto switches [mm]

Auto switch model		Number of auto switches				
		1	2		n	
			Different surfaces	Same surface	ø32, ø40	
Band mounting	D-C73, D-C80 D-H7A1, D-H7A2 D-H7B	10	15	50		50 + 45 (n - 2)
	D-C73C D-C80C D-H7C	10	15	65	$15 + 45 \frac{(n-2)}{2}$ (n = 2, 4...)	65 + 50 (n - 2)
	D-H7NW D-H7PW D-H7BW	10	15	75		75 + 55 (n - 2)
Rail mounting	D-A73, D-A80 D-A73H, D-A80H D-A73C, D-A80C D-F79, D-J79 D-F7P, D-J79C	5	—	10	—	$15 + 35 \frac{(n-2)}{2}$ (n = 2, 4...)
	D-A79W, D-F79W D-F7PW D-J79W	10	—	15	—	

Operating Range

Auto switch model		Bore size [mm]							
		8	10	12	16	20	25	32	40
Band mounting	D-M9□ D-M9□V D-M9□W D-M9□WV D-M9□A D-M9□AV	2	2.5	2.5	3	3	3	3	3
	D-A9□*1 D-A9□V*1	—	—	—	7	6	6	6	6
	D-H7□ D-H7□W D-H7BA D-H7NF	3	3	3	4	4	4	4.5	5
	D-H7C	8	8	8	9	7	8.5	9	10
	D-C7□/C80 D-C73C/C80C	7	7	7	7	7	8	8	8
	D-M9□/M9□V*2,3 D-M9□W/M9□WV*2,3 D-M9□A/M9□AV*2,3	2.5	3	3.5	3.5	—	—	—	—
Rail mounting	D-A9□*1,3 D-A9□V*1,3	—	—	—	6.5	5.5	6	—	—
	D-F7□/J79 D-F7□V/J79C D-F7□W/J79W D-F7□WV D-F79F D-F7BA/F7BAV	5	5	6	5	5	6	4.5	4.5
	D-A7□/A80 D-A7□H/A80H D-A73C/A80C	8	8	9	9	7	7	7.5	7.5
	D-A79W*1	—	—	—	13	10	10.5	11.5	11.5

*1 D-A9□(V) and A79W types cannot be mounted on bore size ø8, ø10, or ø12 cylinder.

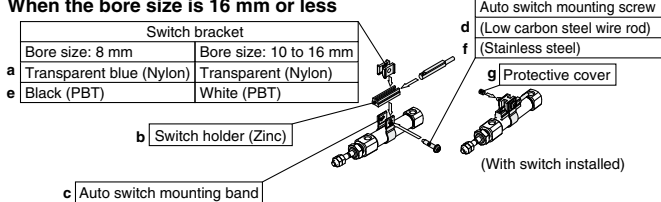
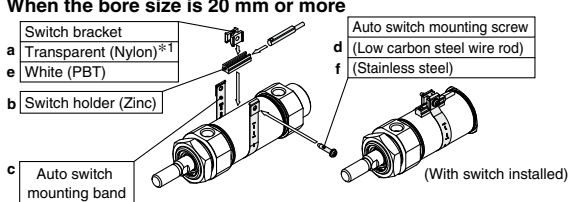
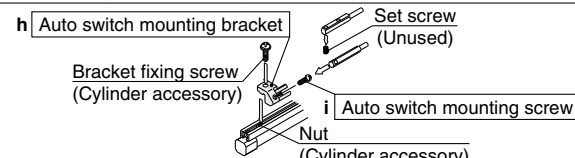
*2 When mounting a rail on bore size ø20 or ø25 cylinder, D-M9□(V), M9□W(V) and M9□A(V) types cannot be mounted.

*3 When mounting a rail on bore size ø32 or ø40 cylinder, D-M9□(V), M9□W(V), M9□A(V) and A9□(V) types cannot be mounted.

* Values which include hysteresis are for guideline purposes only, they are not a guarantee (assuming approximately ±30% dispersion) and may change substantially depending on the ambient environment.

C85/C75 Series

Auto Switch Mounting Bracket/Set Part Nos.

Auto switch mounting	Auto switch model	C85 Series						C75 Series	
		Bore size [mm]							
		ø8	ø10	ø12	ø16	ø20	ø25	ø32	ø40
*3 *4 Band mounting	D-M9□(V) D-M9□W(V) D-A9□(V)*7	*1 BJ6-008 (A set of a, b, c, d, g)	*1 BJ6-010 (A set of a, b, c, d, g)	*1 BJ6-012 (A set of a, b, c, d, g)	*1 BJ6-016 (A set of a, b, c, d, g)	*1 BM5-020 (A set of a, b, c, d)	*1 BM5-025 (A set of a, b, c, d)	*1 BM5-032 (A set of a, b, c, d)	*1 BM5-040 (A set of a, b, c, d)
	D-M9□A(V)*2	BJ6-008S (A set of b, c, e, f, g)	BJ6-010S (A set of b, c, e, f, g)	BJ6-012S (A set of b, c, e, f, g)	BJ6-016S (A set of b, c, e, f, g)	BM5-020S (A set of b, c, e, f)	BM5-025S (A set of b, c, e, f)	BM5-032S (A set of b, c, e, f)	BM5-040S (A set of b, c, e, f)
	When the bore size is 16 mm or less								
									
	When the bore size is 20 mm or more								
									
*5 *6 Rail mounting	D-H7□ D-H7□W D-H7NF D-C7□/C80 D-C73C/C80C	BJ2-008 (A set of c, d, g)	BJ2-010 (A set of c, d, g)	BJ2-012 (A set of c, d, g)	BJ2-016 (A set of c, d, g)	BM2-020A (A set of c and d)	BM2-025A (A set of c and d)	BM2-032A (A set of c and d)	BM2-040A (A set of c and d)
	D-H7BA	BJ2-008S (A set of c, f, g)	BJ2-010S (A set of c, f, g)	BJ2-012S (A set of c, f, g)	BJ2-016S (A set of c, f, g)	BMA2-020AS (A set of c and f)	BMA2-025AS (A set of c and f)	BMA2-032AS (A set of c and f)	BMA2-040AS (A set of c and f)
	D-M9□(V)*8 D-M9□W(V)*8 D-M9□A(V)*8 D-A9□(V)*7	BQ2-012 (S) (A set of h and i)							
									

- *1 Since the switch bracket for band mounting (made from nylon) are affected in an environment where alcohol, chloroform, methylamines, hydrochloric acid or sulfuric acid is splashed over, so it cannot be used. Please contact SMC regarding other chemicals.
- *2 When mounting a D-M9□A(V) type auto switch, if the switch bracket is mounted on the indicator light, it may damage the auto switch. Therefore, be sure to avoid mounting the switch bracket on the indicator light.
- *3 For band mounting, switch brackets are mounted on the cylinder when small switches are specified. (switches are not mounted, but packaged together).
- *4 For band mounting, when specifying the switches other than the small switches, auto switch(s) are mounted on the cylinder.
- *5 For rail mounting, the auto switches and auto switch mounting brackets are packed together (not assembled).
- *6 For rail mounting, when D-M9□A(V) is ordered separately, select the stainless steel mounting screw set BQ2-012S.
- *7 When mounting a band and/or a rail on bore size ø8, ø10 or ø12 cylinder, D-A9□(V) type cannot be mounted.
- *8 When mounting a rail on bore size ø20 or ø25 cylinder, D-M9□(V), M9□W(V) and M9□A(V) types cannot be mounted.

Auto Switch Mounting Bracket/Single Unit Part Nos.

Auto switch model	C85 Series						C75 Series	
	ø8	ø10	ø12	ø16	ø20	ø25	ø32	ø40
D-M9□(V) D-M9□W(V) D-A9□(V)	BJ2-008 (A set of c, d, g)	BJ2-010 (A set of c, d, g)	BJ2-012 (A set of c, d, g)	BJ2-016 (A set of c, d, g)	BM2-020A (A set of c and d)	BM2-025A (A set of c and d)	BM2-032A (A set of c and d)	BM2-040A (A set of c and d)
	BJ5-2 (A set of a and b)	BJ5-1 (A set of a and b)						
D-M9□A(V)	BJ2-008S (A set of c, f, g)	BJ2-010S (A set of c, f, g)	BJ2-012S (A set of c, f, g)	BJ2-016S (A set of c, f, g)	BM2-020AS (A set of c and f)	BM2-025AS (A set of c and f)	BM2-032AS (A set of c and f)	BM2-040AS (A set of c and f)
	BJ4-2 (A set of b and e)	BJ4-1 (A set of b and e)						

[Stainless Steel Mounting Screw]

The following stainless steel mounting screw kit is available. Use it in accordance with the operating environment. (Since the auto switch mounting bracket is not included, order it separately.)

BBA4: For D-C7/C8/H7 types

* Refer to the **Web Catalog** or Best Pneumatics for details on the BBA4.

When the D-H7BA type auto switch is shipped independently, the BBA4 is attached.

Other than the applicable auto switches listed in “How to Order”, the following auto switches are mountable.

Refer to Best Pneumatics for the detailed specifications.

Type	Model	Electrical entry	Features	Mounting	Applicable bore size
Reed	D-C73, C76	Grommet (In-line)	—	Band	ø8 to ø25
	D-C80		Without indicator light		
Solid state	D-H7A1, H7A2, H7B	Grommet (In-line)	—	Band	ø8 to ø25
	D-H7NW, H7PW, H7BW		Diagnostic indication (2-color indicator)		

* Normally closed (NC = b contact) solid state auto switches (D-M9□E(V)) are also available. For details, refer to Best Pneumatics.

* With pre-wired connector is also available for solid state switches. For details, refer to Best Pneumatics.

C85/C75 Series

How to Mount and Move the Auto Switch

Mounting Bracket Band Mounting Type

<Applicable auto switch>

Solid state... D-M9N, M9P, M9B, M9NV, M9PV, M9BV
D-M9NW, M9PW, M9BW, M9NVV, M9PVV, M9BWW
D-M9NA, M9PA, M9BA, M9NAV, M9PAV, M9BAV
Reed..... D-A90, A93, A96, A90V, A93V, A96V

■ How to Mount and Move the Auto Switch

Mounting the Auto Switch

1. Wrap the auto switch mounting band around the cylinder where the auto switch will be mounted without bending the reinforcing plates.
2. Connect the switch holder and switch bracket, and place them between the two ends of the auto switch mounting band (1).
3. Hook the bent part of the auto switch mounting band reinforcing plates onto the upper surface of the switch bracket. Bend the base of the auto switch mounting band reinforcing plates until the through holes of the switch bracket, the through holes of the auto switch mounting band, and the holes of the M3 female thread are aligned. Adjust the switch bracket so that both ends of the auto switch mounting band are inserted into the inner walls on both side surfaces of the switch bracket. For the D-M9□A(V) type auto switch, do not install the switch bracket on the indicator light.
4. Pass the auto switch mounting screw (M3) supplied with the auto switch mounting band from the through-hole side of the auto switch mounting band and engage it with the M3 female thread of the auto switch mounting band through the through-hole in the switch bracket.
5. Tighten the auto switch mounting screw with the specified tightening torque to secure the switch bracket and switch holder.

Tightening torque for auto switch mounting screw [N·m]

Cylinder series	Bore size [mm]	
	ø8 to ø16	ø20 to ø40
C85/C75	0.8 to 1.0	0.6 to 0.7

6. Insert the auto switch into the auto switch mounting groove of the switch holder (2).
7. After checking the detection position, tighten the set screw (M2.5) supplied with the auto switch to secure the auto switch. At this time, the tightening torque for the set screw (M2.5) supplied with the auto switch must be 0.05 to 0.1 N·m. When tightening the set screw supplied with the auto switch, use a watchmaker's screw driver with a handle diameter of 5 to 6 mm.
8. Attach a protective cover to the tip of the auto switch mounting screw (M3).

Adjusting the Auto Switch Position

- (1) To make the fine adjustment, loosen the set screw (M2.5) supplied with the auto switch and slide the auto switch inside the auto switch mounting groove to adjust the position.
- (2) To move the auto switch setting position largely, loosen the screw (M3) that secures the auto switch mounting band and slide the auto switch together with the switch holder on the cylinder tube to adjust the position.

<Applicable auto switch>

Solid state... D-H7A1, D-H7A2, D-H7B, D-H7BA
D-H7C, D-H7NF, D-H7NW, D-H7PW, D-H7BW
Reed..... D-C73, D-C76, D-C80, D-C73C, D-C80C

■ How to Mount and Move the Auto Switch

1. **For ø16 or less:** Put a mounting bracket on the cylinder tube.
For ø20 or more: Wrap the auto switch mounting band around the cylinder where the auto switch will be mounted without bending the reinforcing plates.
2. **For ø16 or less:** Put the mounting section of the auto switch between the band mounting holes, then adjust the position of mounting holes of switch to those of mounting band.
For ø20 or more: Hook the bent part of the auto switch mounting band reinforcing plates onto the upper surface of the switch. Bend the base of the auto switch mounting band reinforcing plates until the through holes of the switch bracket, the through holes of the auto switch mounting band, and the holes of the M3 female thread are aligned. Adjust the switch bracket so that both ends of the auto switch mounting band are inserted into the inner walls on both side surfaces of the switch bracket.
3. Lightly thread the auto switch mounting screw (M3) through the mounting hole into the thread part of band fitting.
4. After setting the whole body to the detecting position by sliding, tighten the mounting screw (M3) to secure the auto switch while properly contacting the auto switch bottom part and the cylinder tube. (The tightening torque of M3 screw should be as below.)
ø8 to ø16: 0.8 to 1.0 N·m
ø20 to ø40: 0.6 to 1.0 N·m
5. Modification of the detection position should be made in the condition of 3.
6. After auto switch is mounted and fixed, attach a protective tube on the tip of an auto switch mounting screw (M3). (For ø8 to ø16)

[Stainless Steel Mounting Screw]

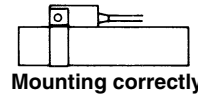
The following stainless steel mounting screw kit is available. Use it in accordance with the operating environment. (Since the auto switch mounting band is not included, order it separately.) BBA4: For D-C7/C8/H7 "D-H7BA" switch is set on the cylinder with the stainless steel screws above when shipped. When only an auto switch is shipped independently, the BBA4 is attached.

Stainless Steel Mounting Screw Set

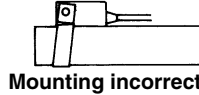
Part no.	Contents		Applicable auto switch mounting bracket part nos.	Applicable auto switch
	Description	Quantity		
BBA4	Auto switch mounting screw	1	BJ2-008S, BJ2-010S, BJ2-012S, BJ2-016S BM2-020AS, BM2-025AS, BM2-032AS, BM2-040AS	D-C7, C8 D-H7

⚠ Caution

1. Tighten screws with the proper tightening torque.
2. Set the auto switch mounting band perpendicularly to cylinder tube.

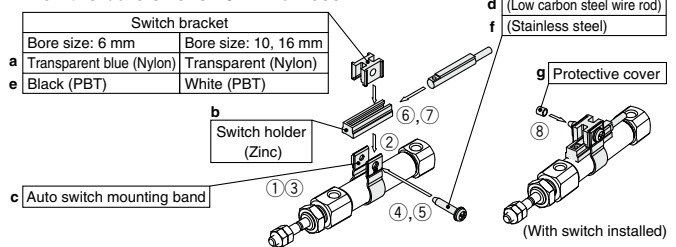


Mounting correctly

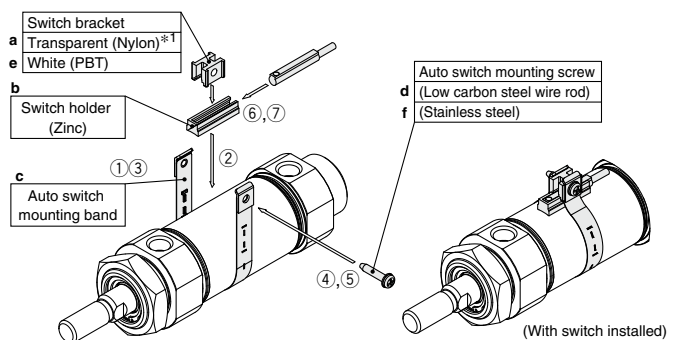


Mounting incorrectly

When the bore size is 16 mm or less

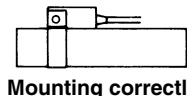


When the bore size is 20 mm or more

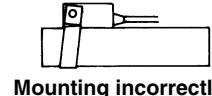


⚠ Caution

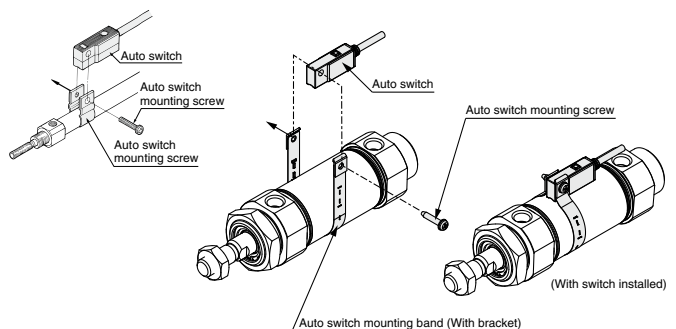
1. Tighten the screw under the specified torque when mounting auto switch.
2. Set the auto switch mounting band perpendicularly to cylinder tube.



Mounting correctly



Mounting incorrectly



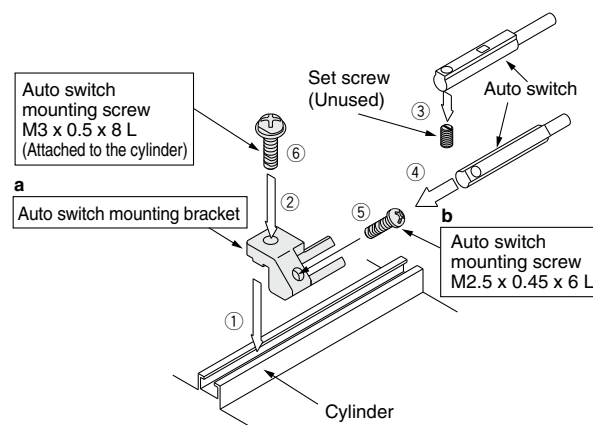
Mounting Bracket Rail Mounting Type

<Applicable auto switch>

Solid state.....D-M9N(V), D-M9P(V), D-M9B(V),
D-M9NW(V), D-M9PW(V), D-M9BW(V),
D-M9NA(V), D-M9PA(V), D-M9BA(V)

Reed.....D-A90(V), A93(V), A96(V)

1. Slide the auto switch mounting nut inserted into the mounting rail and set it at the auto switch mounting position.
2. Fit the convex part of the auto switch mounting bracket arm over the concave part of the rail, and slide the arm to the nut position.
3. Push the auto switch mounting screw lightly into the hexagon nut through the hole of the auto switch mounting arm.
4. Remove the set screw (M2.5) attached to the auto switch.
5. Insert the auto switch in the auto switch attachment part of the auto switch mounting bracket.
6. Secure the auto switch mounting screw (M2.5). (Tightening torque of M2.5 screw: 0.1 to 0.2 N·m)
7. Secure the auto switch mounting screw (3) (M3) after confirming the detecting position. (Tightening torque of M3 screw: 0.5 to 0.7 N·m)
8. Modify the detecting position while the auto switch is secured at the position of (3) in the figure.



• BQ2-012 is a set of a and b shown above.

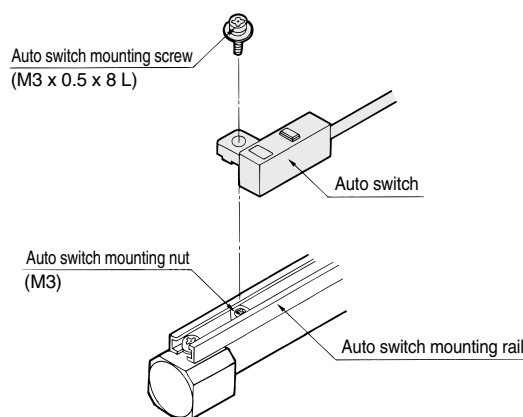
<Applicable auto switch>

Solid state.....D-F79, D-F7P, D-J79, D-F7NV,
D-F7PV, D-F7BV, D-J79C,
D-F79W, D-F7PW, D-J79W,
D-F7NWV, D-F7BWV, D-F79F,
D-F7BA, D-F7BAV,

Reed.....D-A72, D-A73, D-A80,
D-A72H, D-A73H,
D-A76H, D-A80H,
D-A73C, D-A80C, D-A79W

■ How to Mount and Move the Auto Switch

1. Slide the auto switch mounting nut (M3) inserted into the mounting rail and set it at the auto switch mounting position.
2. Fit the convex part of auto switch mounting arm into the concave part of auto switch mounting rail. Then slide the switch over the nut.
3. Push the auto switch mounting screw (M3) lightly into the mounting nut (M3) through the hole of auto switch mounting arm.
4. After reconfirming the detecting position, tighten the mounting screw (M3) to secure the auto switch. (Tightening torque of M3 screw should be 0.5 to 0.7 N·m.)
5. Modification of the detecting position should be made in the condition of 3.



[Stainless Steel Mounting Screw]

The following stainless steel mounting screw kit (including nuts) is available. Use it in accordance with the operating environment. (Since the auto switch spacer is not included, order it separately.)

BBA2: For D-A7/A8/F7/J7

"D-F7BA" auto switch is set on the cylinder with the stainless steel screws above when shipped.

When only an auto switch is shipped independently, the BBA2 is attached.

Stainless Steel Mounting Screw Set

Part no.	Contents				Applicable auto switch mounting bracket part nos.	Applicable auto switch
	No.	Description	Size	Quantity		
BBA2	1	Auto switch mounting screw	M3 x 0.5 x 6 L	1	BMU1-025	D-A7, A8 D-F7, J7
			M3 x 0.5 x 8 L	1	BQ-1	
			M3 x 0.5 x 10 L	1	BQ-2	
	2	Auto switch mounting nut (Hexagon nut)	M3 x 0.5	1	BQ-1	
	3	Auto switch mounting nut (Convex shape)	M3 x 0.5	1	BQ-2	

* A spacer for BQ-2 (black resin) is not included.

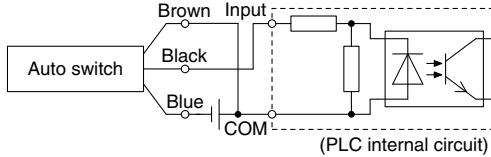
* When using D-A9□(V)/M9□(V)/M9□W(V)/M9□A(V) auto switches with BQ2-012, use stainless steel screws suitable for the auto switch mounting bracket.

Prior to Use

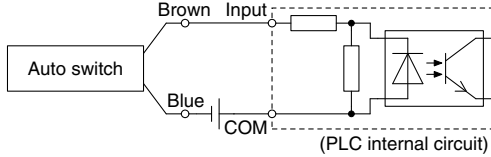
Auto Switch Connections and Examples

Sink Input Specifications

3-wire, NPN

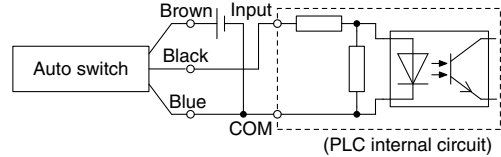


2-wire

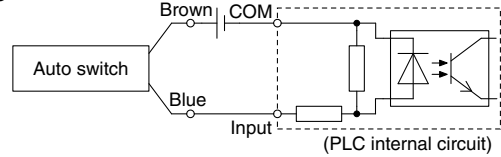


Source Input Specifications

3-wire, PNP



2-wire

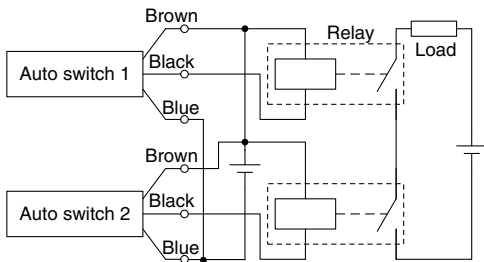


Connect according to the applicable PLC input specifications, as the connection method will vary depending on the PLC input specifications.

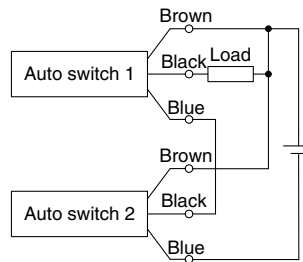
Examples of AND (Series) and OR (Parallel) Connections

* When using solid state auto switches, ensure the application is set up so the signals for the first 50 ms are invalid.

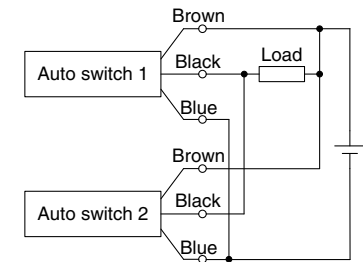
3-wire AND connection for NPN output (Using relays)



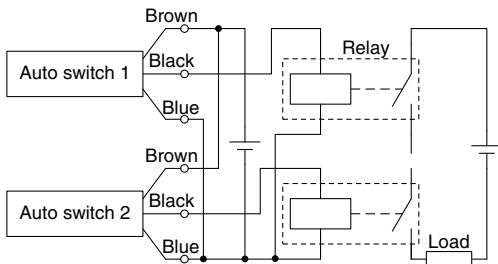
(Performed with auto switches only)



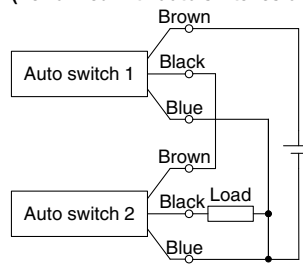
3-wire OR connection for NPN output



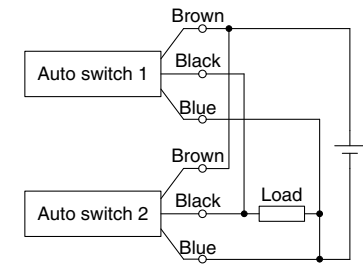
3-wire AND connection for PNP output (Using relays)



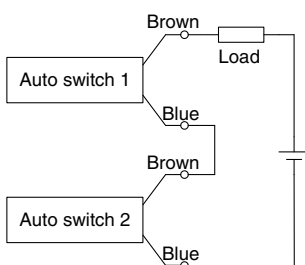
(Performed with auto switches only)



3-wire OR connection for PNP output



2-wire AND connection

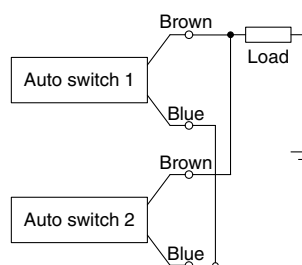


When two auto switches are connected in series, a load may malfunction because the load voltage will decline when in the ON state. The indicator lights will light up when both of the auto switches are in the ON state. Auto switches with a load voltage less than 20 V cannot be used.

$$\begin{aligned} \text{Load voltage at ON} &= \text{Power supply voltage} - \\ &\quad \text{Residual voltage} \times 2 \text{ pcs.} \\ &= 24 \text{ V} - 4 \text{ V} \times 2 \text{ pcs.} \\ &= 16 \text{ V} \end{aligned}$$

Example: Power supply is 24 VDC
Internal voltage drop in auto switch is 4 V.

2-wire OR connection



(Solid state)
When two auto switches are connected in parallel, malfunction may occur because the load voltage will increase when in the OFF state.

(Reed)
Because there is no current leakage, the load voltage will not increase when turned OFF. However, depending on the number of auto switches in the ON state, the indicator lights may sometimes grow dim or not light up, due to the dispersion and reduction of the current flowing to the auto switches.

$$\begin{aligned} \text{Load voltage at OFF} &= \text{Leakage current} \times 2 \text{ pcs.} \times \\ &\quad \text{Load impedance} \\ &= 1 \text{ mA} \times 2 \text{ pcs.} \times 3 \text{ k}\Omega \\ &= 6 \text{ V} \end{aligned}$$

Example: Load impedance is 3 k Ω .
Leakage current from auto switch is 1 mA.

C85/C75 Series

Simple Specials/Made to Order



Please contact SMC for detailed specifications, delivery, and prices.

Simple Specials

The following special specifications can be ordered as a simplified Made-to-Order. Please contact your local sales representative for more details.

Symbol	Specifications	C85 (Standard)					C85K (Not-rotating rod)	
		Double acting				Single acting	Double acting	Single acting
		Single rod		Double rod		Single rod	Single rod	
		Rubber	Air	Rubber	Air	Rubber	Rubber	
-XA0 to 30	Change of rod end shape*1	●	●	●	●	●	●	●

Made to Order

Symbol	Specifications	C85 (Standard)					C85K (Not-rotating rod)	
		Double acting				Single acting	Double acting	Single acting
		Single rod		Double rod		Single rod	Single rod	
		Rubber	Air	Rubber	Air	Rubber	Rubber	
-XB6	Heat-resistant cylinder (−10 to 150°C)*2	●		●				
-XB7	Cold-resistant cylinder (−40 to 70°C)*3	●		●				
-XB9	Low speed cylinder (10 to 50 mm/s)*3	●		●				
-XC4	With heavy duty scraper*3	●		●				
-XC6□	Made of stainless steel	●	●	●	●	●	●	●

*1 Excludes the ø8 air cushion

*2 Rubber bumper ø10 to ø40 only

*3 Rubber bumper ø20, ø25, ø32 and ø40 only

*4 For front mounting, only the ø20 and ø25 are available.

*5 For XB6, XB7 and XB9, only the ø20 and ø25 are available.

C85R (Direct mount)*4		C75 (Standard)					C75K (Not-rotating rod)		C75R (Direct mount)		Symbol	Page
Double acting (Bottom side mounting)	Double acting (Front side mounting)	Double acting				Single acting	Double acting	Single acting	Double acting (Bottom side mounting)	Double acting (Front side mounting)		
Single rod		Single rod		Double rod		Single rod	Single rod		Single rod			
Rubber		Rubber	Air	Rubber	Air	Rubber	Rubber		Rubber			
●	●	●	●	●	●	●	●	●	●	●	-XA0 to 30	121

C85R (Direct mount)*4		C75 (Standard)					C75K (Not-rotating rod)		C75R (Direct mount)		Symbol	Page
Double acting (Bottom side mounting)	Double acting (Front side mounting)	Double acting				Single acting	Double acting	Single acting	Double acting (Bottom side mounting)	Double acting (Front side mounting)		
Single rod		Single rod		Double rod		Single rod	Single rod		Single rod			
Rubber		Rubber	Air	Rubber	Air	Rubber	Rubber		Rubber			
●	●	●		●					●	●	-XB6	123
●	●	●		●					●	●	-XB7	123
●	●	●		●					●	●	-XB9	124
		●									-XC4	124
●	●	●		●		●			●	●	-XC6□	124

C85

C85W

C85-S/T

C85K

C85K-S/T

C85R

C75

C75W

C75-S/T

C75K

C75K-S/T

C75R

CP96

CP96K

C96

C96K

C96Y

C55

Auto Switch

Made to Order

Related Products

C85/C75 Series Simple Specials

The following changes are dealt with through the Simple Specials System.

For details, refer to the Simple Specials
in the Web Catalog.
<http://www.smcworld.com>

1 Change of Rod End Shape

Symbol

-XA0 to XA30

Applicable Series

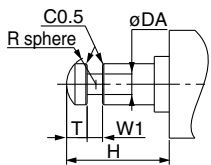
Series	Description	Model	Action	Note
C85	Standard	C85	Double acting, Single rod	Excludes the ø8 air cushion
		C85W	Double acting, Double rod	Excludes the ø8 air cushion
		C85	Single acting (Spring return/extend)	
	Non-rotating rod	C85K	Double acting, Single rod	
		C85K	Single acting (Spring return/extend)	
	Direct mount	C85R	Double acting, Single rod	For front mounting, only the ø20 and ø25 are available.
C75	Standard	C75	Double acting, Single rod	
		C75W	Double acting, Double rod	
		C75	Single acting (Spring return/extend)	
	Non-rotating rod	C75K	Double acting, Single rod	
		C75K	Single acting (Spring return/extend)	
	Direct mount	C75R	Double acting, Single rod	

Precautions

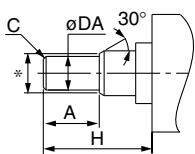
- SMC will make appropriate arrangements if no dimension, tolerance, or finish instructions are given in the diagram.
- Standard dimensions marked with "*" will be as follows to the rod diameter (D). Enter any special dimension you require.
 $D \leq 6 \rightarrow D-1 \text{ mm}$, $6 < D \leq 25 \rightarrow D-2 \text{ mm}$, $D > 25 \rightarrow D-4 \text{ mm}$
- In the case of the double rod type and single acting retraction type, enter the dimensions when the rod is retracted.
- "A0" is the same shape as the standard type. (The specifications of A0 are that only dimensions A and H are changed from the standard type.)

Symbol: A0 	Symbol: A1 	Symbol: A2 	Symbol: A3
Symbol: A4 	Symbol: A5 	Symbol: A6 	Symbol: A7
Symbol: A8 	Symbol: A9 	Symbol: A10 	Symbol: A11

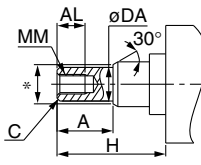
Symbol: **A12**



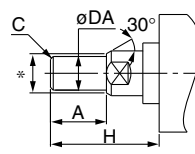
Symbol: **A13**



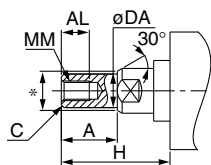
Symbol: **A14**



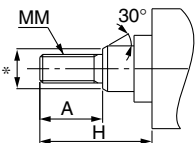
Symbol: **A15**



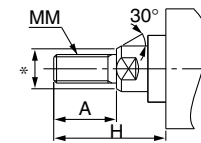
Symbol: **A16**



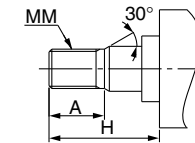
Symbol: **A17**



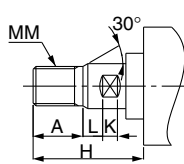
Symbol: **A18**



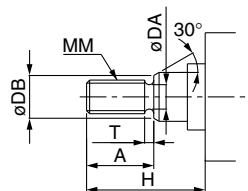
Symbol: **A19**



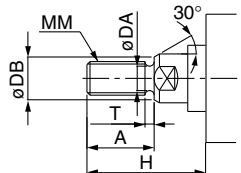
Symbol: **A20**



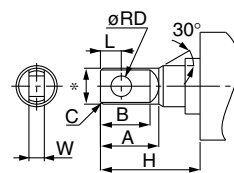
Symbol: **A21**



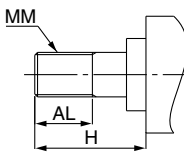
Symbol: **A22**



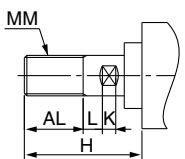
Symbol: **A23**



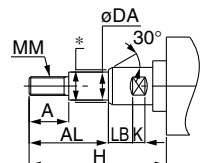
Symbol: **A24**



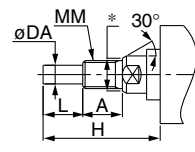
Symbol: **A25**



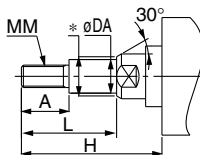
Symbol: **A26**



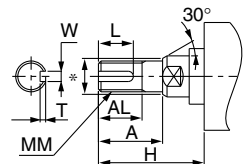
Symbol: **A27**



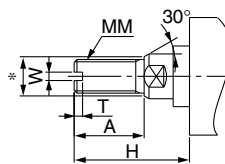
Symbol: **A28**



Symbol: **A29**



Symbol: **A30**



C85

C85W

C85-S/T

C85K

C85K-S/T

C85R

C75

C75W

C75-S/T

C75K

C75K-S/T

C75R

CP96

CP96K

C96

C96K

C96Y

C55

Auto Switch

Made to Order

Related Products

C85/C75 Series

Made to Order

Please contact SMC for detailed dimensions, specifications, and lead times.



1 Heat-resistant Cylinder (–10 to 150°C)

Symbol

-XB6

Air cylinder which changed the seal material and grease, so that it could be used even at higher temperature up to 150 from –10°C.

Applicable Series

Series	Description	Model	Action	Note
C85	Standard	C85	Double acting, Single rod	Rubber bumper ø10 to ø25 only Excludes with rod end (Accessory)
		C85W	Double acting, Double rod	Rubber bumper ø10 to ø25 only
	Direct mount	C85R	Double acting, Single rod	ø20, ø25 only Excludes with rod end (Accessory)
C75	Standard	C75	Double acting, Single rod	Rubber bumper only Excludes with rod end (Accessory)
		C75W	Double acting, Double rod	Rubber bumper only
	Direct mount	C75R	Double acting, Single rod	Excludes with rod end (Accessory)

- * Operate without lubrication from a pneumatic system lubricator.
- * Please contact SMC for details on the maintenance intervals for this cylinder, which differ from those of the standard cylinder.
- * In principle, it is impossible to make built-in magnet type and the one with auto switch. But, as for the one with auto switch, and the heat-resistant cylinder with heat-resistant auto switch, please contact SMC.
- * Piston speed is ranged from 50 to 500 mm/s.

How to Order

Standard model no.

– XB6

Heat-resistant cylinder ●

Specifications

Ambient temperature range	–10°C to 150°C
Seal material	Fluororubber
Grease	Heat-resistant grease
Auto switch	Not mountable*1
Dimensions	Same as standard
Specifications other than above	Same as standard

*1 Manufacturing built-in magnet type and the one with auto switch is impossible.

Warning Precautions

Be aware that smoking cigarettes etc. after your hands have come into contact with the grease used in this cylinder can create a gas that is hazardous to humans.

2 Cold-resistant Cylinder (–40 to 70°C)

Symbol

-XB7

Air cylinder which changed the seal material and grease, so that it could be used even at lower temperature down to –40°C.

Applicable Series

Series	Description	Model	Action	Note
C85	Standard	C85	Double acting, Single rod	Rubber bumper ø20 and ø25 only Excludes with rod end (Accessory)
		C85W	Double acting, Double rod	Rubber bumper ø20 and ø25 only
	Direct mount	C85R	Double acting, Single rod	ø20, ø25 only Excludes with rod end (Accessory)
C75	Standard	C75	Double acting, Single rod	Rubber bumper only Excludes with rod end (Accessory)
		C75W	Double acting, Double rod	Rubber bumper only
	Direct mount	C75R	Double acting, Single rod	Excludes with rod end (Accessory)

- * Operate without lubrication from a pneumatic system lubricator.
- * Use dry air which is suitable for heatless air dryer etc. not to cause the moisture to be frozen.
- * Please contact SMC for details on the maintenance intervals for this cylinder, which differ from those of the standard cylinder.
- * Manufacturing built-in magnet type and mounting an auto switch are impossible.
- * No cushion type is adopted. Piston speed is ranged from 50 to 500 mm/s.

How to Order

Standard model no.

– XB7

Cold-resistant cylinder ●

Specifications

Ambient temperature range	–40°C to 70°C
Seal material	Low nitrile rubber
Grease	Cold-resistant grease
Auto switch	Not mountable*1
Dimensions	Same as standard
Specifications other than above	Same as standard

*1 Manufacturing built-in magnet type and the one with auto switch is impossible.

Warning Precautions

Be aware that smoking cigarettes etc. after your hands have come into contact with the grease used in this cylinder can create a gas that is hazardous to humans.

3 Low Speed Cylinder (10 to 50 mm/s)

Symbol
-XB9

Even if driving at lower speeds 10 to 50 mm/s, there would be no stick-slip phenomenon and it can run smoothly.

Applicable Series

Series	Description	Model	Action	Note
C85	Standard	C85	Double acting, Single rod	Rubber bumper ø20 and ø25 only
	Direct mount	C85R	Double acting, Single rod	ø20, ø25 only
C75	Standard	C75	Double acting, Single rod	Rubber bumper only
	Direct mount	C75R	Double acting, Single rod	

How to Order

Standard model no. **- XB9**
Low speed cylinder

Specifications

Piston speed	10 to 50 mm/s
Dimensions	Same as standard
Specifications other than above	Same as standard

* Operate without lubrication from a pneumatic system lubricator.

Warning Precautions

Be aware that smoking cigarettes etc. after your hands have come into contact with the grease used in this cylinder can create a gas that is hazardous to humans.

4 With Heavy Duty Scraper

Symbol
-XC4

It is suitable for using cylinders under the environment, where there are much dusts in a surrounding area by using a heavy duty scraper on the wiper ring, or using cylinders under earth and sand exposed to the die-casted equipment, construction machinery, or industrial vehicles.

Applicable Series

Series	Description	Model	Action	Note
C85	Standard	C85	Double acting, Single rod	Rubber bumper ø20 to ø25 only
		C85W	Double acting, Double rod	Rubber bumper ø20 to ø25 only
C75	Standard	C75	Double acting, Single rod	Rubber bumper only

How to Order

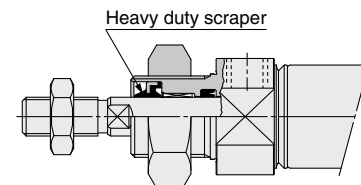
Standard model no. **- XC4**
With heavy duty scraper

Specifications: Same as standard

Caution

Either heavy duty scraper or rod seal cannot be replaced.

Construction (Dimensions are the same as standard.)



5 Made of Stainless Steel

Symbol
-XC6

Suitable for the cases it is likely to generate rust by being immersed in the water and corrosion.

Applicable Series

Series	Description	Model	Action	Note
C85	Standard	C85	Double acting, Single rod	
		C85W	Double acting, Double rod	
		C85	Single acting (Spring return/extend)	
	Non-rotating rod	C85K	Double acting, Single rod	
		C85K	Single acting (Spring return/extend)	
C75	Direct mount	C85R	Double acting, Single rod	XC6A only
		C75	Double acting, Single rod	
	Standard	C75W	Double acting, Double rod	
		C75	Single acting (Spring return/extend)	
	Direct mount	C75R	Double acting, Single rod	XC6A only

How to Order

Standard model no. **- XC6 A**
Made of stainless steel
Parts changed to stainless steel

A	Piston rod, Rod end nut
B	Piston rod, Rod end nut, Mounting nut

Specifications

Parts changed to stainless steel	Piston rod, Rod end nut
Specifications other than above and external dimensions	Same as standard

Description	Bore size [mm]					
	8	10	12	16	20	25
Rod end nut	C85NT08A-S	C85NT08A-S	C85NT10A-S	C85NT10A-S	C85NT20A-S	C85NT25A-S
Mounting nut	C85NT08B-S	C85NT08B-S	C85NT10B-S	C85NT10B-S	C85NT20B-S	C85NT20B-S

Description	Bore size [mm]	
	32	40
Rod end nut	C76NT32A-S	C76NT40A-S
Mounting nut	C76NT32B-S	C76NT40B-S