

ISO Cylinder: Standard/Non-rotating Type Single Acting, Spring Return/Extended

Series C85

ø8, ø10, ø12, ø16, ø20, ø25

How to Order

Single acting,
Spring return/
Spring extended

C D 85 K N 16 40 S B

Built-in magnet

Nil	None
D	Built-in magnet

Type

Nil	Standard
K	Non-rotating rod (Rubber cushion only)

Mounting style

Symbol	Mounting
N	Basic integrated clevis
E	Double end
F	Front nose
Y*	Front nose in line port

* Except single acting spring extended type.

Auto switch
mounting style

A	Rail mounting
B	Band mounting

Applicable auto switches and bands are shown on page 6-11-44. Please order auto switches and bands separately.

Option

R	Stainless steel piston rod, rod end nut and mounting nut
R2	Stainless steel piston rod and rod end nut

Bore size

Stroke

Bore size (mm)	Standard stroke (mm)*	Max. stroke
8*	10, 25, 40, 50	50
10		
12		
16	10, 25, 40, 50, 80, 100, 125, 150	150
20		
25		

* Other strokes available on request.

Action

S	Single acting, Spring return
T	Single acting, Spring extended

CJ1

CJP

CJ2

CM2

CG1

MB

MB1

CA2

CS1

C76

C85

C95

CP95

NCM

NCA

D-

-X

20-

Data

Mounting Bracket Part No.

Bore size (mm)		8	10	12	16	20	25
Mounting bracket	Foot (1 pc.)	C85L10A		C85L16A		C85L25A	
	Foot (2 pcs. with mounting nut 1 pc.)	C85L10B		C85L16B		C85L25B	
	Flange	C85F10		C85F16		C85F25	
	Trunnion	C85T10		C85T16		C85T25	
	Clevis	C85C10		C85C16		C85C25	
Accessory	Single knuckle joint	KJ4D		KJ6D		KJ8D	KJ10D
	Double knuckle joint	GKM4-8		GKM6-10		GKM8-16	GKM10-20
	Floating joint	JA10-4-070		JA15-6-100		JA20-8-125	JA30-10-125

Replacement Parts For Standard Cylinders

Bore size (mm)	Part no.	Note
20	C85-20PS	Every set includes: n°1 rod packing n°1 packing retaining washer n°1 retaining ring
25	C85-25PS	

For Non-rotating Cylinders ("K")

Bore size (mm)	Part no.	Note
20	C85K-20PS	Every set includes: n°1 rod packing n°1 packing retaining washer n°1 retaining ring
25	C85K-25PS	

Series C85



Spring return



Spring extended

Rubber cushion

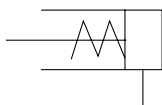


Non-rotating

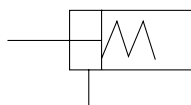
Specifications

Bore size (mm)		8	10	12	16	20	25
Piston rod dia. (mm)		4	4	6	6	8	10
Piston rod thread		M4 x 0.7	M4 x 0.7	M6 x 1	M6 x 1	M8 x 1.25	M10 x 1.25
Port size		M5 x 0.8	M5 x 0.8	M5 x 0.8	M5 x 0.8	G 1/8	G 1/8
Action		Single acting, Single rod, Spring return/extend					
Fluid		Air					
Proof pressure		1.5 MPa					
Max. operating pressure		1.0 MPa					
Min. operating pressure	Spring return	0.22 MPa	0.18 MPa	0.13 MPa	0.18 MPa		
	Spring extended				0.23 MPa		
Ambient and fluid temperature		−20 to 80°C (Built-in magnet type: −10 to 60°C)					
Cushion		Rubber cushion (Standard)					
Lubrication		Not required. Use turbine oil Class 1 ISO VG32, if lubricated.					
Piston speed		50 to 1500 mm/s					
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° 30'	±1° 30'	± 1°	±1°	±0° 42'	±0° 42'
Stroke tolerance (mm)		0/+1				0/+1.4	

JIS Symbol
Standard

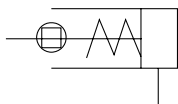


Spring return

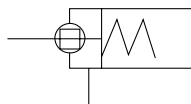


Spring extended

Non-rotating



Spring return



Spring extended

Spring Retracting Force (Standard, Non-rotating)

Spring Return

(N)

Bore size (mm)	Standard stroke (mm)	Spring force									
		10		25		50		100		150	
		Retract	Extended	Retract	Extended	Retract	Extended	Retract	Extended	Retract	Extended
8	10, 25, 50	4.41	4.02	4.41	3.43	4.41	2.45	—	—	—	—
10		6.28	5.69	6.28	4.90	6.28	3.53	—	—	—	—
12		7.16	6.57	7.16	5.79	7.16	4.41	—	—	—	—
16	10, 25, 50, 100, 150	13.2	12.1	13.2	10.3	13.2	7.45	13.2	7.45	13.2	7.45
20		21.6	18.6	21.6	16.7	21.6	11.8	39.2	9.81	39.2	9.81
25		27.5	25.3	27.5	22.1	27.5	16.7	47.1	13.7	47.1	15.7

Spring Extended

(N)

Bore size (mm)	Standard stroke (mm)	Spring force									
		10		25		50		100		150	
		Retract	Extend	Retract	Extend	Retract	Extend	Retract	Extend	Retract	Extend
8	10, 25, 50	5.30	3.92	5.30	3.14	5.30	2.65	—	—	—	—
10		5.98	4.81	5.98	4.02	5.98	3.53	—	—	—	—
12		6.57	5.59	6.57	4.90	6.57	4.51	—	—	—	—
16	10, 25, 50, 100, 150	14.7	11.3	14.7	9.22	14.7	7.85	14.7	7.85	14.7	7.85
20		39.2	33.0	39.2	23.5	39.2	9.81	39.2	9.81	39.2	9.81
25		47.1	40.4	47.1	30.4	47.1	13.7	47.1	13.7	47.1	15.7

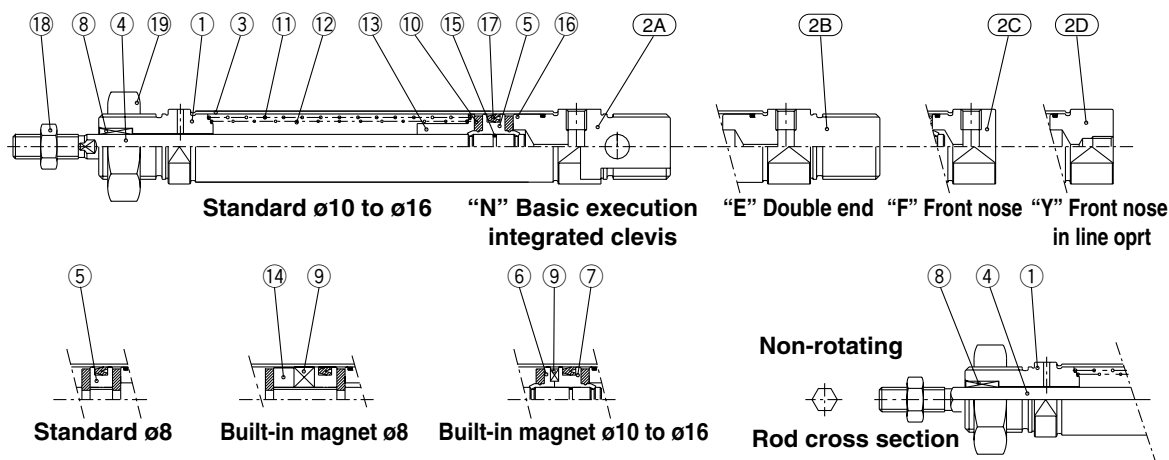
Series C85

Construction

[First angle projection]

Single acting, Single rod

Spring return: C□85□8 to 16-□S (Disassembly is not possible.)

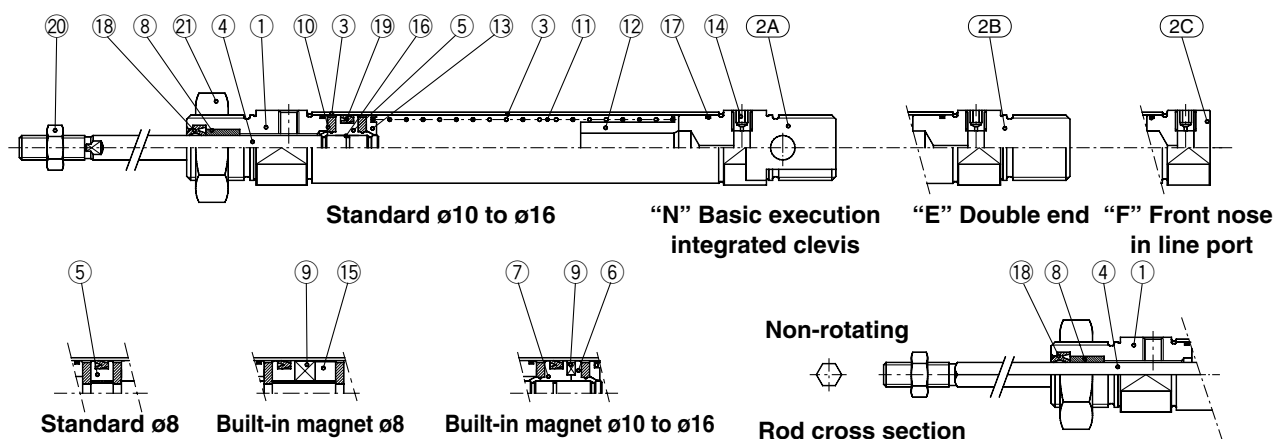


Component Parts

No.	Description	Material	Qty.	Note
①	Rod cover	Aluminum alloy	1	White anodized
②A	Head cover N	Aluminum alloy	1	White anodized
②B	Head cover E	Aluminum alloy	1	White anodized
②C	Head cover F	Aluminum alloy	1	White anodized
②D	Head cover Y	Aluminum alloy	1	White anodized
③	Cylinder tube	Stainless steel	1	
④	Piston rod	Stainless steel	1	
⑤	Piston	Brass	1	
⑥	Piston A	Brass	1	(Switch type only)
⑦	Piston B	Brass	1	(Switch type only)
⑧	Bush	Sintered bronze	1	

No.	Description	Material	Qty.	Note
⑨	Magnet	Magnet	1	(Switch type only)
⑩	Bumper	Urethane	2	
⑪	Return spring A	Piano wire	1	
⑫	Return spring B	Piano wire	1	
⑬	Spring guide	Brass	1	
⑭	Spacer	Brass	1	
⑮	Piston gasket	NBR	1	(2 for switch type)
⑯	Tube gasket	NBR	1	
⑰	Piston seal	NBR	1	
⑱	Rod end nut	Carbon steel	1	Nickel plating
⑲	Mounting nut	Carbon steel	1	Nickel plating

Spring Extended: C□85□8 to 16-□T (Disassembly is not possible.)



Component Parts

No.	Description	Material	Qty.	Note
①	Rod cover	Aluminum alloy	1	White anodized
②A	Head cover N	Aluminum alloy	1	White anodized
②B	Head cover E	Aluminum alloy	1	White anodized
②C	Head cover F	Aluminum alloy	1	White anodized
③	Cylinder tube	Stainless steel	1	
④	Piston rod	Stainless steel	1	
⑤	Piston	Brass	1	
⑥	Piston A	Brass	1	(Switch type only)
⑦	Piston B	Brass	1	(Switch type only)
⑧	Bush	Sintered bronze	1	
⑨	Magnet	Magnet	1	(Switch type only)

No.	Description	Material	Qty.	Note
⑩	Bumper	Urethane	2	
⑪	Return spring C	Piano wire	1	
⑫	Spring guide	Brass	1	
⑬	Spring seat	Brass	1	
⑭	Plug	Steel	1	
⑮	Spacer	Brass	1	
⑯	Piston gasket	NBR	1	(2 for switch type)
⑰	Tube gasket	NBR	1	
⑱	Rod seal	NBR	1	
⑲	Piston seal	NBR	1	
⑳	Rod end nut	Carbon steel	1	Nickel plating
㉑	Mounting nut	Carbon steel	1	Nickel plating

Series C85

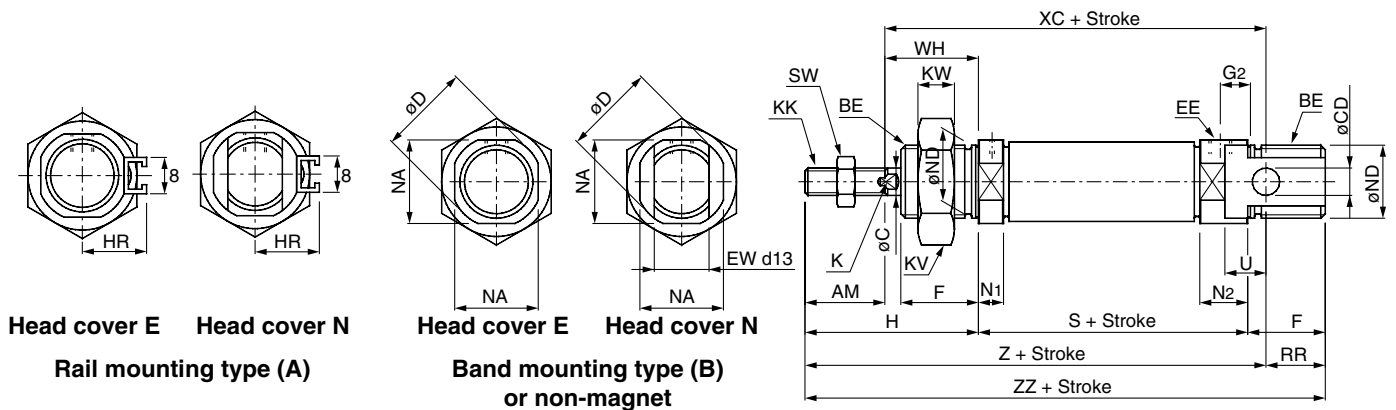
Dimensions

[First angle projection]

Single acting, Spring return

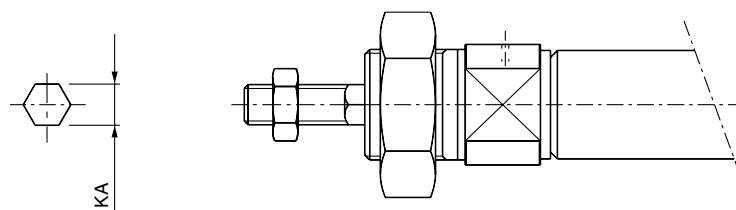
C $\square$ 85 $\begin{smallmatrix} \text{N} \\ \text{E} \end{smallmatrix}$ **Bore** – **Stroke** S – $\square$

Without magnet, Built-in magnet



C□85KN, C□85KE

Non-rotating (Piston rod)



Rod cross section

																									(mm)
Bore	AM	BE	øC	øCD H9	øD	EE	EW	F	G2	H	HR	K	KA	KK	KV	KW	N1	N2	NA	øND h8	RR	SW	U	WH	
8	12	M12 x 1.25	4	4	16.7	M5 x 0.8	8	12	5	28	10	—	4.2	M4 x 0.7	19	6	5.5	9.5	15	12	10	7	6	16	
10	12	M12 x 1.25	4	4	16.7	M5 x 0.8	8	12	5	28	10.5	—	4.2	M4 x 0.7	19	6	5.5	9.5	15	12	10	7	6	16	
12	16	M16 x 1.5	6	6	19.7	M5 x 0.8	12	17	6	38	14	5	6.2	M6 x 1	24	8	5.5	10.5	18.3	16	14	10	9	22	
16	16	M16 x 1.5	6	6	19.7	M5 x 0.8	12	17	6	38	14	5	6.2	M6 x 1	24	8	5.5	10.5	18.3	16	13	10	9	22	
20	20	M22 x 1.5	8	8	28	G 1/8	16	20	8	44	17	6	8.2	M8 x 1.25	32	11	15	15	24	22	11	13	12	24	
25	22	M22 x 1.5	10		33.5	G 1/8	16	22	8	50	20	8	10.2	M10 x 1.25	32	11	15	15	30	22	11	17	12	28	

(mm)												
Bore	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}{56{62}}	—	—	64{70}{74{80}}	—	—	76{82}{86{92}}	—	—	86{92}{96{102}}	—	—
10	46{50}{56{60}}	—	—	64{68}{74{78}}	—	—	76{80}{86{90}}	—	—	86{90}{96{100}}	—	—
12	50{53.5}{60{63.5}}	—	—	75{78.5}{85{88.5}}	—	—	91{94.5}{101{104.5}}	—	—	105{108.5}{115{118.5}}	—	—
16	56{59.5}{66{69.5}}	71.5{75}{92{95.5}}	87{90.5}{118{121.5}}	82{85.5}{92{95.5}}	97.5{101}{118{121.5}}	113{116.5}{144{147.5}}	98{101.5}{108{111.5}}	113.5{117}{134{137.5}}	129{132.5}{160{163.5}}	111{114.5}{121{124.5}}	126.5{130}{147{150.5}}	142{145.5}{173{176.5}}
20	62{87}	112	137	95{120}	145	170	115{140}	165	190	126{151}	176	201
25	65{88.5}	113.5	138.5	104{127.5}	152.5	177.5	126{149.5}	174.5	199.5	137{160.5}	185.5	210.5

(): In the case of auto switch style. { }: In the case of non-rotating rod.