




# ISO Cylinder Series C85

ø8, ø10, ø12, ø16, ø20, ø25

Conforms to ISO 6432 and CETOP RP52P

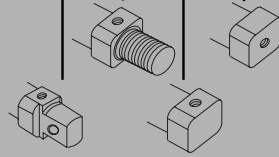


## Variations

Series	Action	Rod style	Cushion	Head cover style				Switch mount		Rot boot (ø20, 25)	Bore (mm)	Page	
				N	E	F	Y	Rail	Band				
<b>Standard Series C85</b> 	Double acting	Single	Rubber	●	●	●	●	●	●	●	3-2		
		Double	Rubber	●	●	●	●	●	●	●			
	Single acting	Single (SR, SE)	Rubber	●	●	●	●	●	●	●		ø8 to 25	3-16
			Air	●	●	●	●	●	●	●			
<b>Non-rotating rod</b> 	Double acting	Single	Rubber	●	●	●	●	●	●	●	ø8 to 25	3-2	
	Single acting	Single (SR, SE)	Rubber	●	●	●	●	●	●	●	ø8 to 25	3-16	
<b>Direct mount</b> 	Base Front	Double acting	Single	Rubber	●	●	●	●	●	●	ø8 to 25	3-30	
					●	●	●	●	●	●			●

Mounting style

SR=Spring return  
SE=Spring extend



Quick Reference Guide  
C55  
**C85**  
C76  
CP95  
C95  
-X (Made to Order)  
D- (Auto Switch)  
Model Selection Procedures

# ISO Cylinder/Standard, Non-rotating Rod: Double Acting

# Series C85

ø8, ø10, ø12, ø16, ø20, ø25

## How to Order

**Double acting  
Single rod**

C D 85

**Double acting  
Double rod**

C D 85 W

**Magnet**

—	None
D	Built-in magnet

**Style**

—	Standard
K	Non-rotating rod (only rubber bumper)

**Head cover style**

Symbol	Mounting
N	Basic integrated clevis
E**	Double end
F**	Boss cut
Y**	Boss cut - End port

\* Double acting/Double rod:  
Only double end style (E).  
\*\* Except for: air cushion,  
single acting (T) style.

**Auto switch mounting style**

A	Rail
B	Band

Applicable auto switches and bands are shown on p.3-35 Please order auto switches and bands separately.

**Other options**

—	None
XA0~30 <sup>1)</sup>	Change of Rod end shape
XB6 <sup>2) 3) 4)</sup>	High Temperature
XB7 <sup>2) 3) 5) 6)</sup>	Low Temperature
XB9 <sup>3) 5) 6) 7)</sup>	Low Speed
XC4 <sup>5) 6) 8)</sup>	Heavy-duty Scraper
XC6A	Stainless steel piston rod and piston rod nut
XC6B	Stainless steel piston rod, piston rod nut and mounting nut

Note 1) ø8 to ø16: only possible XA0/1/10/11 ø20 to ø25 (except Non-rotating type): XA0 to XA30 possible  
ø20 to ø25 (Non-rotating type): XA0/1/6/10/11/13/14/17/19/21  
Note 2) Without magnets  
Note 3) Contact SMC for Non-rotating type  
Note 4) In Double rod and/or air cushion type, only available for ø20 and ø25  
Note 5) Only rubber cushion  
Note 6) Only ø20, ø25  
Note 7) Only single rod  
Note 8) Not applicable for Non-rotating type

**Bore size-Stroke**

Bore size (mm)	Standard stroke (mm)**	Max. stroke***		
		Standard	Non-rotating	Double rod
ø8*	10, 25, 40, 50, 80, 100	200	100	100
ø10		400		
ø12	10, 25, 40, 50, 80, 100, 125, 160, 200		200	200
ø16				
ø20	10, 25, 40, 50, 80, 100, 125, 160, 200, 250, 300	1000	1000	500
ø25				

\* Not available with air cushion.  
\*\* Other strokes available on request.  
\*\*\* When exceeding the standard stroke range, it will be available as made to order (X2018)

**Cushion**

—	Rubber bumper (Standard)
C	Air cushion (only "N" execution, bores 10 to 25mm)

**Rod boot (only ø20, ø25)**

—	Without rod boot
J	Nylon tarpaulin one side
K	Neoprene cloth one side
JJ*	Nylon tarpaulin both sides
KK*	Neoprene cloth both sides

\* In case of double acting/double rod.

### Mounting Bracket Part No.

Bracket	Bore (mm)					
	8	10	12	16	20	25
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	
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

Note) Please order mounting brackets separately.

### Replacement Parts

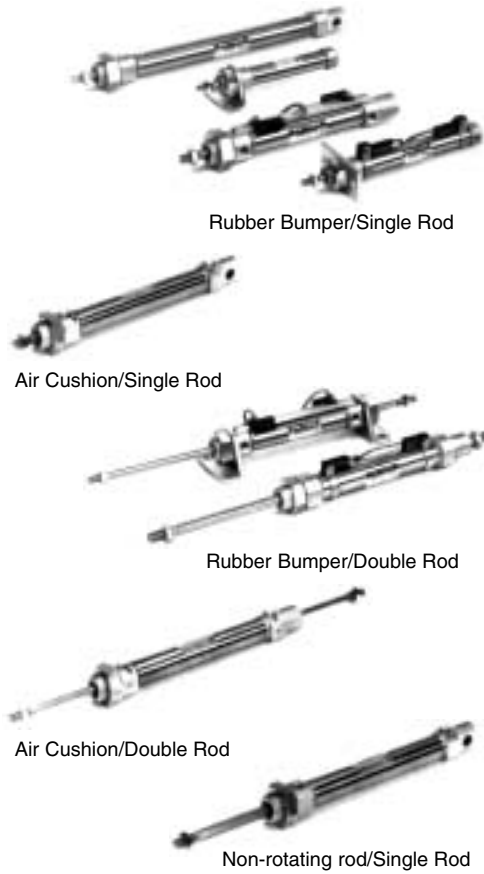
#### For Standard Cylinders

Bore (mm)	Kit No.	Note
20	C85-20PS	Every set includes: 1 rod seal 1 packing retaining washer 1 retaining ring
25	C85-25PS	

#### For Non-rotating Cylinders ("K")

Bore (mm)	Kit No.	Note
20	C85K-20PS	Every set includes: 1 rod seal 1 packing retaining washer 1 retaining ring
25	C85K-25PS	

# ISO Cylinder/Standard, Non-rotating Rod: Double Acting **Series C85**



## Specifications

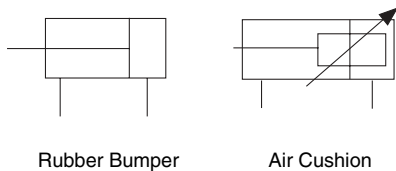
Bore size (mm)		8	10	12	16	20	25
Piston rod dia. (mm)		4	4	6	6	8	10
Piston rod thread		M4	M4	M6	M6	M8	M10 X 1.25
Ports		M5	M5	M5	M5	G1/8	G1/8
Action		Double acting/Single or Double rod					
Fluid		Air					
Proof pressure		1.5MPa					
Max operating pressure		1.0MPa					
Min operating pressure		0.1MPa	0.08MPa		0.05MPa		
Ambient and fluid temperature		-20 to 80°C (Built-in magnet: -10 to 60°C)					
Cushion		Rubber bumper, Air cushion (Except for ø8) (Non-rotating: only rubber bumper)					
Lubrication		Not required. If necessary turbine oil no.1 ISOVG32 is recommended					
Rod boot	Nylon tarpaulin	—				Max ambient temperature 60°C	
	Neoprene cloth	—				Max ambient temperature 110°C*	
Piston speed		50 to 1500mm/s					
Allowable kinetic energy	Rubber bumper	0.02J	0.03J	0.04J	0.09J	0.27J	0.4J
	Air cushion	—	0.17J	0.19J	0.4J	0.66J	0.97J
Non-rotating accuracy**		±1° 30'	±1° 30'	±1°	±1°	±0° 42'	±0° 42'
Stroke tolerance		0/+1				0/+1.4	

\* Maximum ambient temperature of gaiters only.

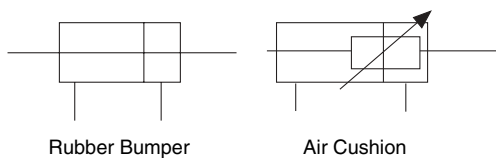
\*\* Applicable to non-rotating models only.

## Symbol

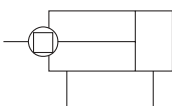
### Double Acting/Single Rod



### Double Acting/Double Rod



### Non-rotating rod: Double Acting/Single Rod



## Weight (Standard, Non-rotating rod)

(g)

Bore size (mm)		8	10	12	16	20	25
Double action	Basic weight	45	49	96	109	183(203)	258(286)
	Double rod	Add'l weight for each 10mm of stroke					
Mounting bracket	C85L□A	20		40		95	
	C85L□B	55		105		210	
	C85F□	12		25		90	
	C85T□	20		50		75	
	C85C□	20		40		85	
Accessories	Single knuckle joint	KJ□D		17		25 45 70	
	Double knuckle joint	GKM□-□		10		20 50 100	
	Floating joint	JA□-□-□		10		20 50 70	

### Calculation Example: C85N10-50, C85F10

Basic weight.....49 (ø10)

Additional weight.....3.2/10mm of stroke

Cylinder stroke.....50mm

Mounting bracket.....12

49+3.2 X 50/10=65 65+12=77

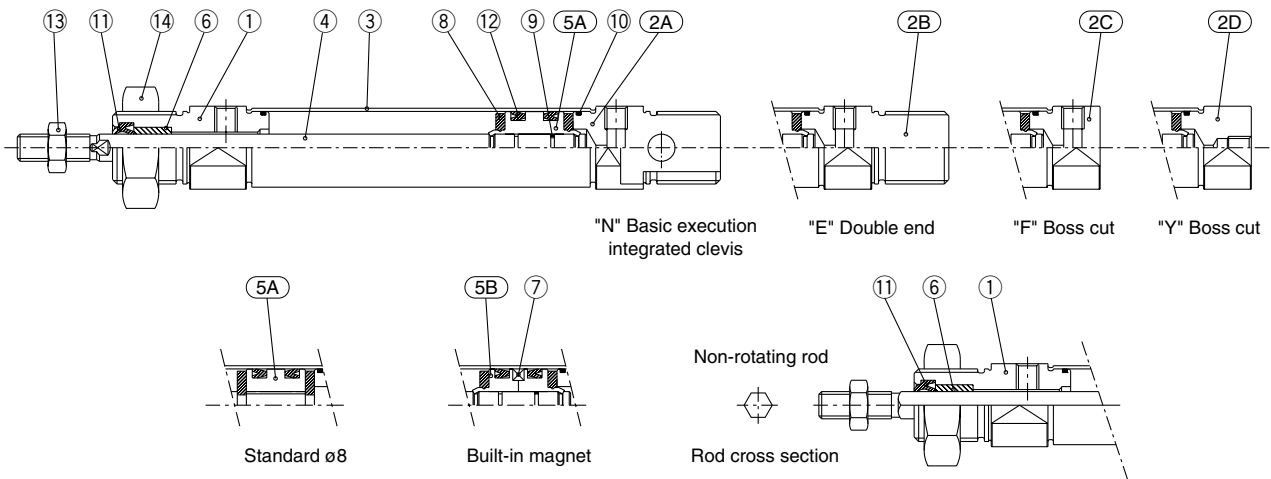
( ): In case of air cushion

# Series C85

## Construction

### Double acting: Single rod

### C□85□8 to16 Rubber bumper (Disassembly is not possible)

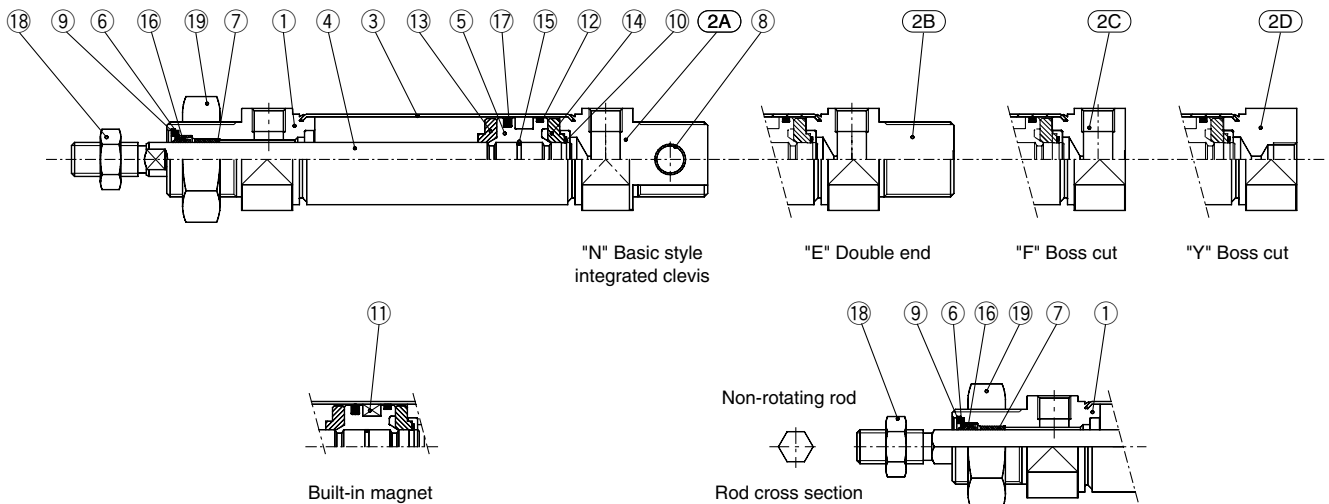


### Component Parts

No.	Description	Material	Quantity	Remarks
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	
⑤A	Piston A	Brass	1	
⑤B	Piston B	Brass	2	(Switch style piston)

No.	Description	Material	Quantity	Remarks
⑥	Bushing	Sintered bronze	1	
⑦	Magnet		1	(Switch style only)
⑧	Bumper	Urethane	2	
⑨	Piston gasket	NBR	1	(2 for switch style)
⑩	Tube gasket	NBR	2	
⑪	Rod seal	NBR	1	
⑫	Piston seal	NBR	2	
⑬	Rod end nut	Carbon steel	1	Nickel plated
⑭	Mounting nut	Carbon steel	1	Nickel plated

### C□85□20, 25 Rubber bumper



### Component Parts

No.	Description	Material	Quantity	Remarks
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	Carbon steel	1	Hard chrome plated
⑤	Piston	Aluminum alloy	1	Chromated
⑥	Plain washer	Carbon steel	1	Nickel plated
⑦	Bushing	Sintered bronze	1	
⑧	Bushing	Sintered bronze	2	

No.	Description	Material	Quantity	Remarks
⑨	Retaining ring	Carbon steel	1	Nickel plated
⑩	Retaining ring	Carbon steel	2	
⑪	Magnet		1	(Switch style only)
⑫	Wear ring	Phenolic resin	1	
⑬	Bumper A	Urethane	1	
⑭	Bumper B	Urethane	1	
⑮	Piston gasket	NBR	1	
⑯	Rod seal	NBR	1	
⑰	Piston seal	NBR	1	
⑱	Rod end nut	Carbon steel	1	Nickel plated
⑲	Mounting nut	Carbon steel	1	Nickel plated

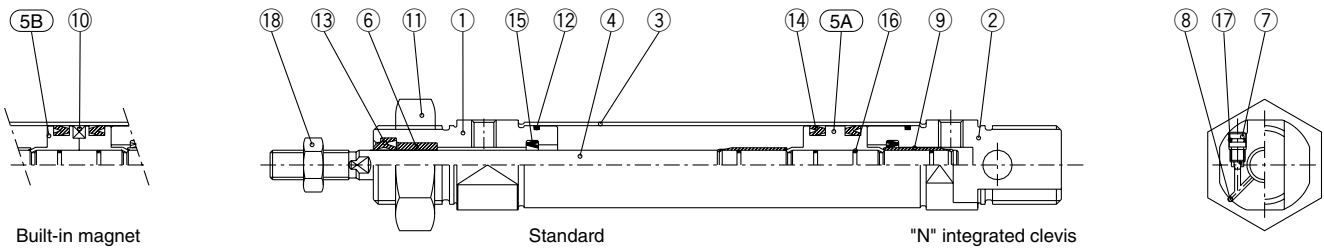
\* Stainless steel (Non-rotating rod)

# ISO Cylinder/Standard, Non-rotating Rod: Double Acting **Series C85**

## Construction

### Double acting: Single rod

C□85□10 to 16 Air cushion (Disassembly is not possible)

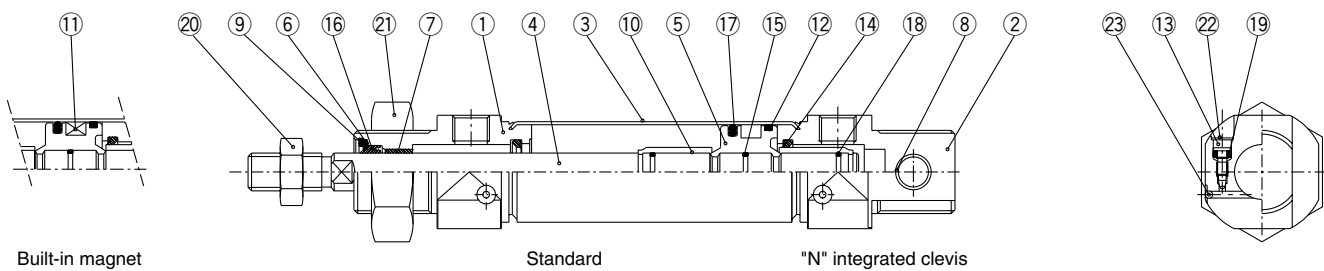


### Component Parts

No.	Description	Material	Quantity	Remarks
①	Rod cover	Aluminum alloy	1	White anodized
②	Head cover N	Aluminum alloy	1	White anodized
③	Cylinder tube	Stainless steel	1	
④	Piston rod	Stainless steel	1	
⑤A	Piston A	Brass	1	
⑤B	Piston B	Brass	2	(Switch style piston)
⑥	Bush	Sintered bronze	1	
⑦	Cushion needle	Stainless steel	2	
⑧	Steel ball	Bearing steel	2	

No.	Description	Material	Quantity	Remarks
⑨	Cushion ring	Brass	2	
⑩	Magnet		1	
⑪	Mounting nut	Carbon steel	1	Nickel plated
⑫	Tube gasket	NBR	2	
⑬	Rod seal	NBR	1	
⑭	Piston seal	NBR	2	
⑮	Check seal	NBR	2	
⑯	Piston gasket & cushion ring gasket	NBR	3	
⑰	Needle seal	NBR	2	
⑱	Rod end nut	Carbon steel	1	Nickel plated

### C□85□20, 25 Air cushion



### Component Parts

No.	Description	Material	Quantity	Remarks
①	Rod cover	Aluminum alloy	1	White anodized
②	Head cover N	Aluminum alloy	1	White anodized
③	Cylinder tube	Stainless steel	1	
④	Piston rod	Carbon steel	1	Hard chrome plated
⑤	Piston	Aluminum alloy	1	Chromated
⑥	Plain washer	Carbon steel	1	Nickel plated
⑦	Bushing	Sintered bronze	1	
⑧	Bushing	Sintered bronze	1	
⑨	Retaining ring	Carbon steel	1	Nickel plated
⑩	Cushion ring	Copper alloy	2	Hard chrome plated
⑪	Magnet		1	
⑫	Wear ring	Phenolic resin	1	

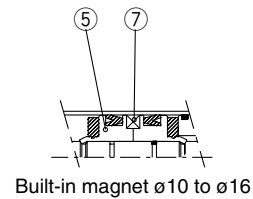
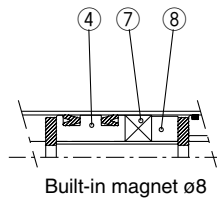
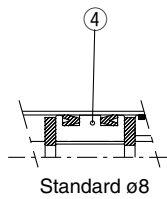
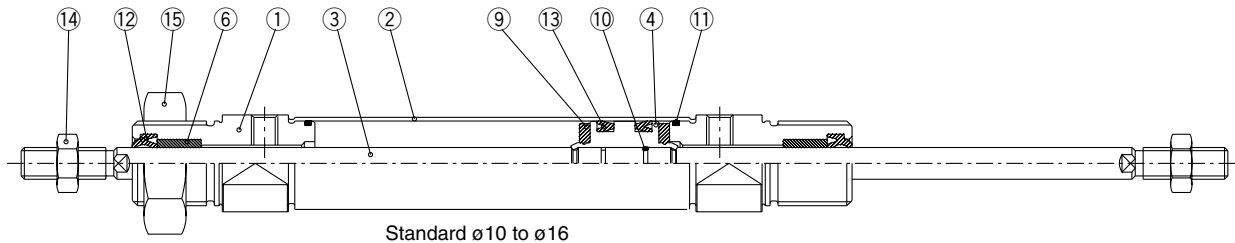
No.	Description	Material	Quantity	Remarks
⑬	Cushion valve	Carbon steel	2	Nickel plated
⑭	Cushion seal	Urethane	2	
⑮	Piston gasket	NBR	1	
⑯	Rod seal	NBR	1	
⑰	Piston seal	NBR	1	
⑱	Cushion ring gasket	NBR	2	
⑲	Cushion valve packing	NBR	2	
⑳	Rod end nut	Carbon steel	1	Nickel plated
㉑	Mounting nut	Carbon steel	1	Nickel plated
㉒	Self locking ring	Stainless steel	2	
㉓	Steel ball	Stainless steel	2	

# Series C85

## Construction

Double acting: Double rod

C□85WE 8 to 16 Rubber bumper (Disassembly is not possible)

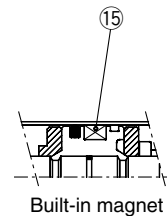
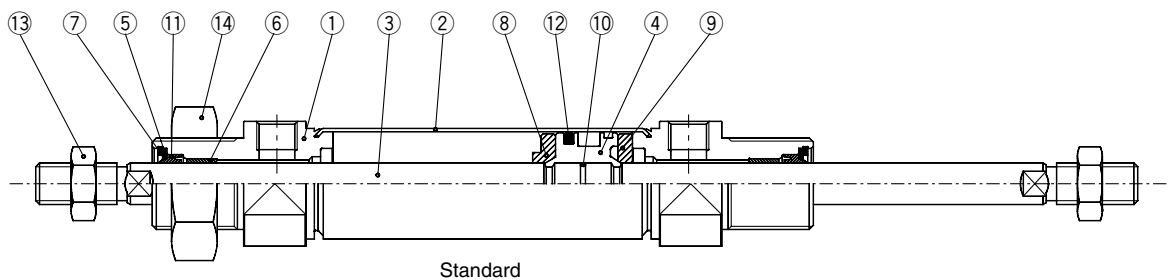


### Component Parts

No.	Description	Material	Quantity	Remarks
①	Rod cover	Aluminum alloy	2	White anodized
②	Cylinder tube	Stainless steel	1	
③	Piston rod	Stainless steel	1	2 for ø8
④	Piston A	Brass	1	
⑤	Piston B	Brass	2	(Switch style piston)
⑥	Bushing	Sintered bronze	2	
⑦	Magnet		1	(Switch style only)
⑧	Spacer	Brass	1	

No.	Description	Material	Quantity	Remarks
⑨	Bumper	Urethane	2	
⑩	Piston gasket	NBR	1	2 for switch style
⑪	Tube gasket	NBR	2	
⑫	Rod seal	NBR	2	
⑬	Piston seal	NBR	2	
⑭	Rod end nut	Carbon steel	2	Nickel plated
⑮	Mounting nut	Carbon steel	1	Nickel plated

### C□85WE 20, 25 Rubber bumper



### Component Parts

No.	Description	Material	Quantity	Remarks
①	Rod cover	Aluminum alloy	2	White anodized
②	Cylinder tube	Stainless steel	1	
③	Piston rod	Carbon steel	1	Hard chrome plated
④	Piston	Aluminum alloy	1	Chromated
⑤	Plain washer	Carbon steel	2	Nickel plated
⑥	Bushing	Sintered bronze	2	
⑦	Retaining ring	Carbon steel	2	Nickel plated
⑧	Bumper A	Urethane	1	

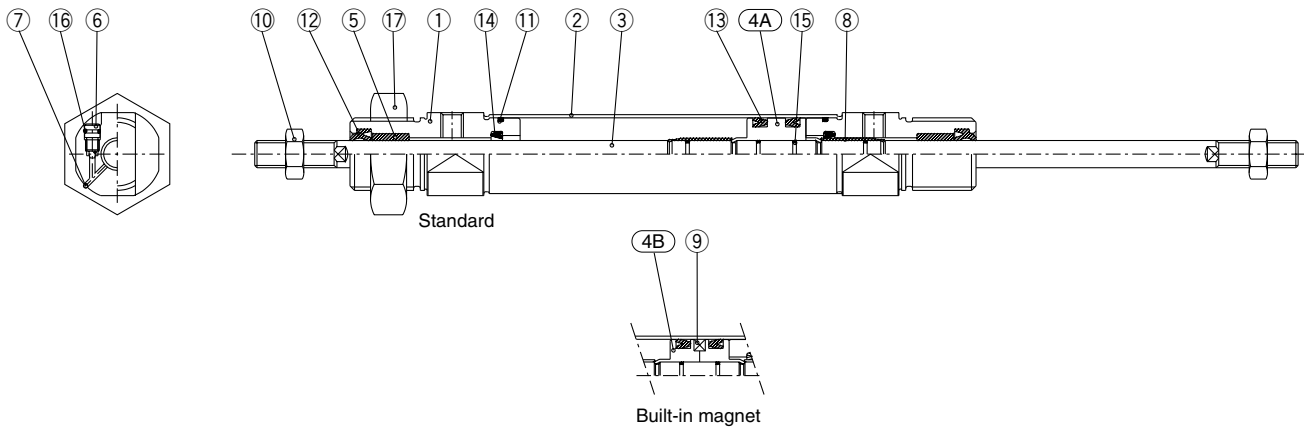
No.	Description	Material	Quantity	Remarks
⑨	Bumper B	Urethane	1	
⑩	Piston gasket	NBR	1	
⑪	Rod seal	NBR	2	
⑫	Piston seal	NBR	1	
⑬	Rod end nut	Carbon steel	2	Nickel plated
⑭	Mounting nut	Carbon steel	1	Nickel plated
⑮	Magnet		1	(Switch style only)

# ISO Cylinder/Standard, Non-rotating Rod: Double Acting **Series C85**

## Construction

Double acting: Double rod

C□85WE 10 to 16 Air cushion (Disassembly is not possible)

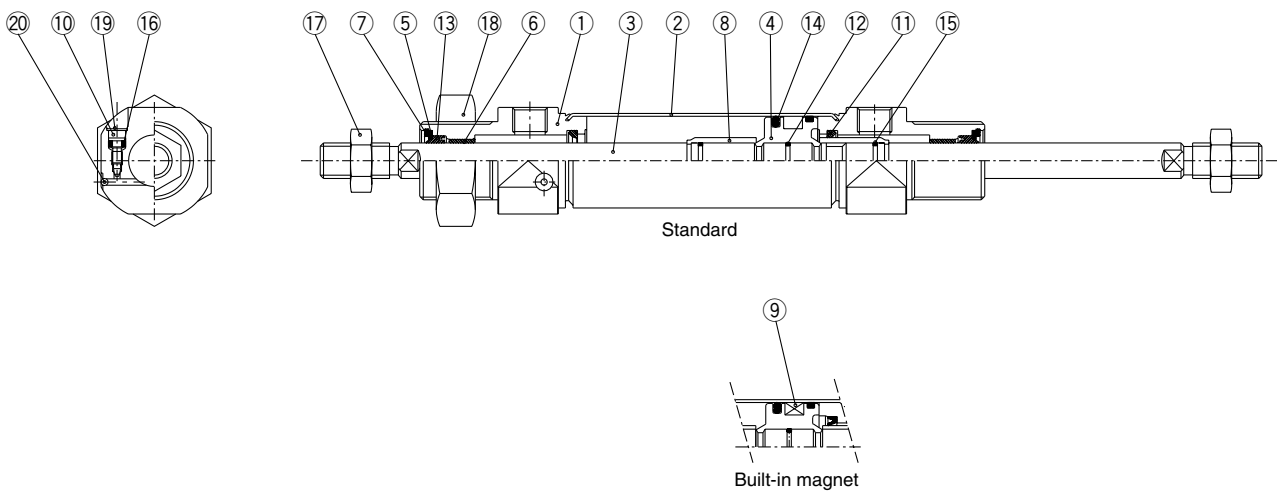


### Component Parts

No.	Description	Material	Quantity	Remarks
①	Rod cover	Aluminum alloy	2	White anodized
②	Cylinder tube	Stainless steel	1	
③	Piston rod	Stainless steel	1	
④A	Piston A	Brass	1	
④B	Piston B	Brass	2	(Switch style piston)
⑤	Bushing	Sintered bronze	2	
⑥	Cushion needle	Stainless steel	2	
⑦	Steel ball	Bearing steel	2	
⑧	Cushion ring	Brass	2	

No.	Description	Material	Quantity	Remarks
⑨	Magnet		1	
⑩	Rod end nut	Carbon steel	2	Nickel plated
⑪	Tube gasket	NBR	2	
⑫	Rod seal	NBR	2	
⑬	Piston seal	NBR	2	
⑭	Check seal	NBR	2	
⑮	Piston gasket & cushion ring gasket	NBR	3	
⑯	Needle seal	NBR	2	
⑰	Mounting nut	Carbon steel	1	Nickel plated

### C□85WE 20, 25 Air cushion



### Component Parts

No.	Description	Material	Quantity	Remarks
①	Rod cover	Aluminum alloy	2	White anodized
②	Cylinder tube	Stainless steel	1	
③	Piston rod	Carbon steel	1	Hard chrome plated
④	Piston	Aluminum alloy	1	Chromated
⑤	Plain washer	Carbon steel	2	Nickel plated
⑥	Bushing	Sintered bronze	2	
⑦	Retaining ring	Carbon steel	2	Nickel plated
⑧	Cushion ring	Copper alloy	2	Hard chrome plated
⑨	Magnet			
⑩	Cushion valve	Carbon steel	2	Nickel plated

No.	Description	Material	Quantity	Remarks
⑪	Cushion seal	Urethane	2	
⑫	Piston gasket	NBR	1	
⑬	Rod seal	NBR	2	
⑭	Piston seal	NBR	1	
⑮	Cushion ring gasket	NBR	2	
⑯	Cushion valve packing	NBR	2	
⑰	Rod end nut	Carbon steel	2	Nickel plated
⑱	Mounting nut	Carbon steel	1	Nickel plated
⑲	Self locking ring	Stainless steel	2	
⑳	Steel ball	Stainless steel	2	

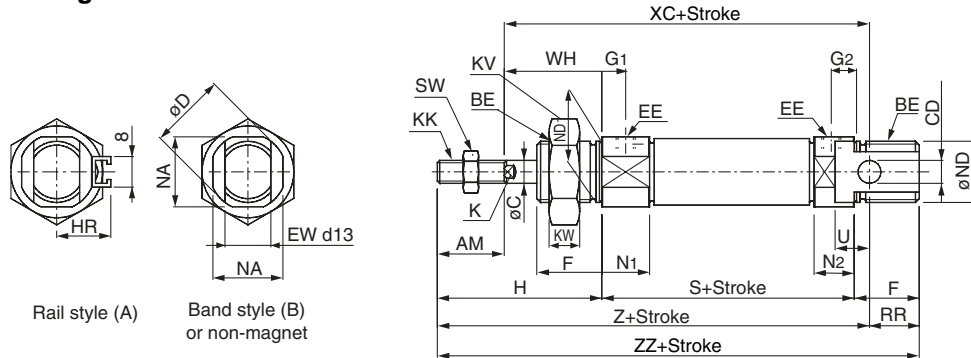
# Series C85

## Dimensions

Double acting: Single rod

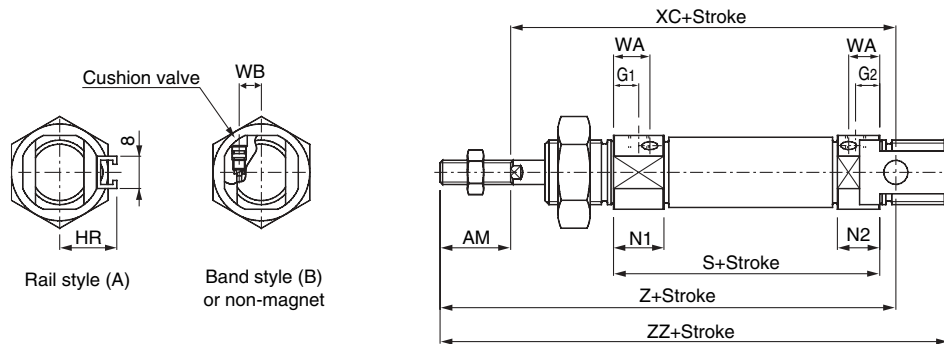
Rubber bumper/C□85N

Without magnet, Built-in magnet

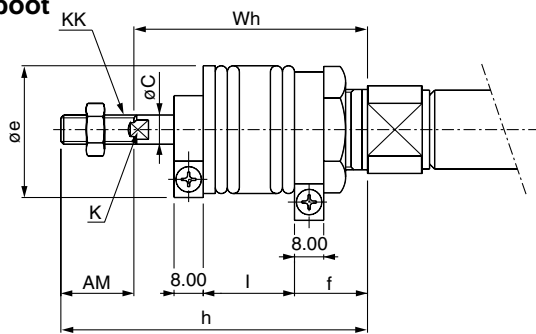


Air cushion/C□85N

Without magnet, Built-in magnet

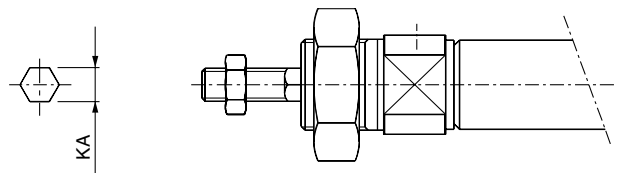


With rod boot



C□85KN

Non-rotating rod (Rubber bumper only)



Rod cross section

Unit: (mm)

Bore	AM	BE	øC	CD	øD	EE	EW	F	G1	G2	WA	WB	H	HR	K	KA	KK	KV	KW	N1	N2	NA	øND(h8)	RR	S	SW	U	WH	XC	Z	ZZ
ø8	12	M12 X 1.25	4	4 <sup>+0.030</sup> <sub>0</sub>	16.7	M5	8	12	7	5	—	—	28	10	—	4.2	M4	19	6	11.5	9.5	15	12	10	46	7	6	16	64	76	86
ø10	12	M12 X 1.25	4	4 <sup>+0.030</sup> <sub>0</sub>	16.7	M5	8	12	7 <sup>(5.5)</sup>	5 <sup>(5.5)</sup>	10.5	4.5	28	10.5	—	4.2	M4	19	6	11.5 <sup>(13.5)</sup>	9.5 <sup>(13.5)</sup>	15	12	10	46 <sup>(53)</sup>	7	6	16	64 <sup>(71)</sup>	76 <sup>(83)</sup>	86 <sup>(93)</sup>
ø12	16	M16 X 1.5	6	6 <sup>+0.030</sup> <sub>0</sub>	19.7	M5	12	17	8 <sup>(5.5)</sup>	6 <sup>(5.5)</sup>	9.5	5.5	38	14	5	6.2	M6	24	8	12.5 <sup>(12.5)</sup>	10.5 <sup>(12.5)</sup>	18	16	14	50 <sup>(54)</sup>	10	9	22	75 <sup>(79)</sup>	91 <sup>(95)</sup>	105 <sup>(109)</sup>
ø16	16	M16 X 1.5	6	6 <sup>+0.030</sup> <sub>0</sub>	19.7	M5	12	17	8 <sup>(5.5)</sup>	6 <sup>(5.5)</sup>	9.5	5.5	38	14	5	6.2	M6	24	8	12.5 <sup>(12.5)</sup>	10.5 <sup>(12.5)</sup>	18	16	13	56 <sup>(56)</sup>	10	9	22	82 <sup>(82)</sup>	98 <sup>(98)</sup>	111 <sup>(111)</sup>
ø20	20	M22 X 1.5	8	8 <sup>+0.036</sup> <sub>-0.006</sub>	28	G1/8	16	20	8	8	13	8.5	44	17	6	8.2	M8	32	10	15(17)	15(17)	24	22	11	62	13	12	24	95	115	126
ø25	22	M22 X 1.5	10	8 <sup>+0.036</sup> <sub>-0.006</sub>	33.5	G1/8	16	22	8	8	13	10.5	50	20	8	10.2	M10 X 1.25	32	10	15(17)	15(17)	30	22	11	65	17	12	28	104	126	137

( ): In case of air cushion.

With rod boot

Item	Bore	Stroke	AM	øC	øe	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	35	20	6	M8	71	84	96	109	134	159	—	
	25		22	10	35	20	8	M10 X 1.25	74	87	99	112	137	162	187	

Item	Bore	Stroke	l								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	—	51	64	76	89	114	139	—		
	25		12.5	25	37.5	50	75	100	125	52	65	77	90	115	140	165		



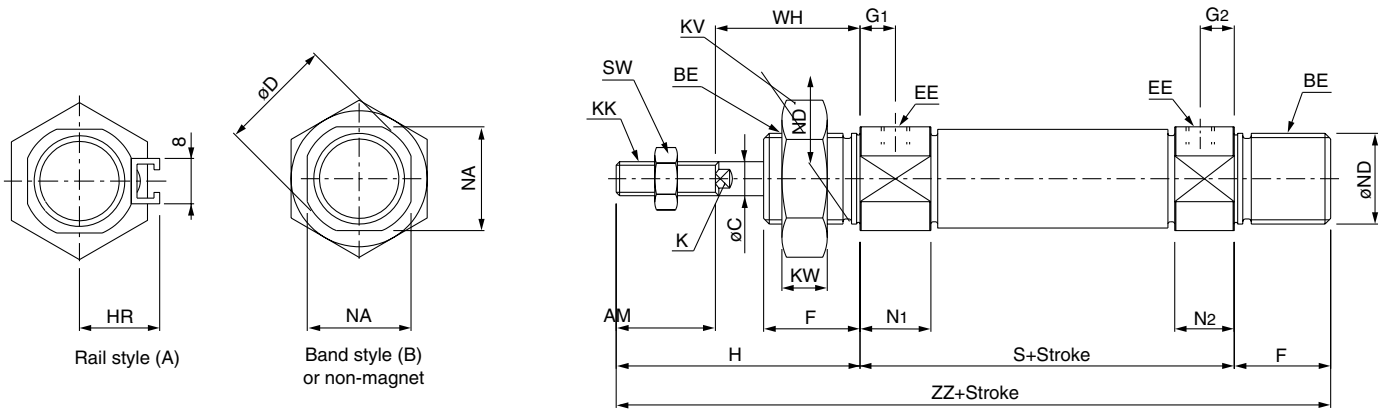
# ISO Cylinder/Standard, Non-rotating Rod: Double Acting **Series C85**

## Dimensions

Double acting: Single rod

Rubber bumper/C□85E **Bore**  **Stroke**

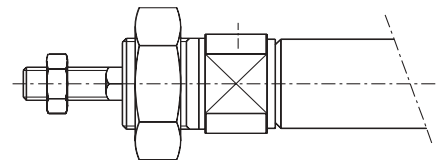
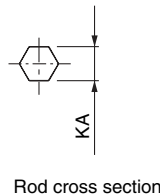
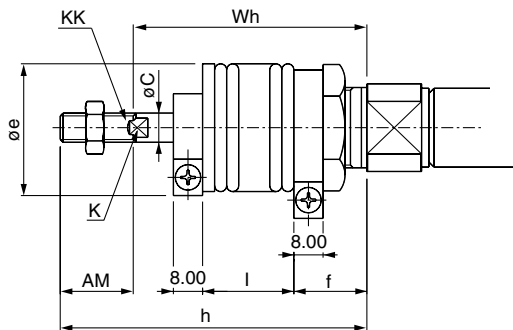
Without magnet, Built-in magnet



With rod boot

C□85KE

Non-rotating rod (Rubber bumper only)



Unit: (mm)

Bore	AM	BE	øC	øD	EE	F	G1	G2	H	HR	K	KA	KK	KV	KW	N1	N2	NA	øND(h8)	S	SW	WH	ZZ
ø8	12	M12 X 1.25	4	16.7	M5	12	7	5	28	10	—	4.2	M4	19	6	11.5	9.5	15	12	46	7	16	86
ø10	12	M12 X 1.25	4	16.7	M5	12	7	5	28	10.5	—	4.2	M4	19	6	11.5	9.5	15	12	46	7	16	86
ø12	16	M16 X 1.5	6	19.7	M5	17	8	6	38	14	5	6.2	M6	24	8	12.5	10.5	18	16	50	10	22	105
ø16	16	M16 X 1.5	6	19.7	M5	17	8	6	38	14	5	6.2	M6	24	8	12.5	10.5	18	16	56	10	22	111
ø20	20	M22 X 1.5	8	27.9	G1/8	20	8	8	44	17	6	8.2	M8	32	10	15	15	24	22	62	13	24	126
ø25	22	M22 X 1.5	10	33.4	G1/8	22	8	8	50	20	8	10.2	M10 X 1.25	32	10	15	15	30	22	65	17	28	137

With rod boot

Bore	Item Stroke	AM	øC	øe	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	35	20	6	M8	71	84	96	109	134	159	—
25		22	10	35	20	8	M10 X 1.25	74	87	99	112	137	162	187

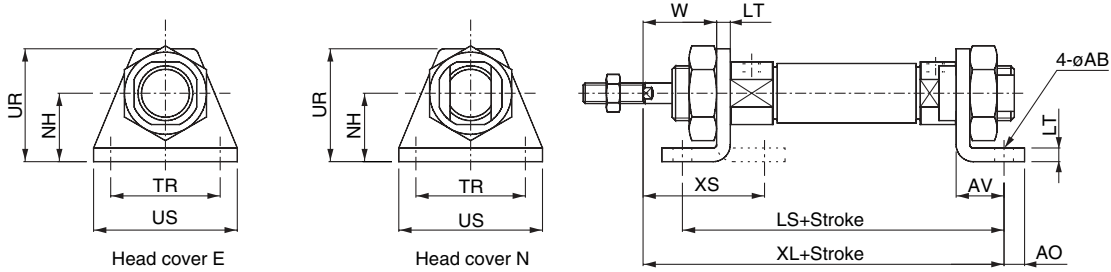
Bore	Item Stroke	l								Wh							
		1 to 50	51 to 100	101 to 150	151 to 200	201 to 300	301 to 400	401 to 500	1 to 50	51 to 100	101 to 150	151 to 200	201 to 300	301 to 400	401 to 500		
20		12.5	25	37.5	50	75	100	—	51	64	76	89	114	139	—		
25		12.5	25	37.5	50	75	100	125	52	65	77	90	115	140	165		

# Series C85

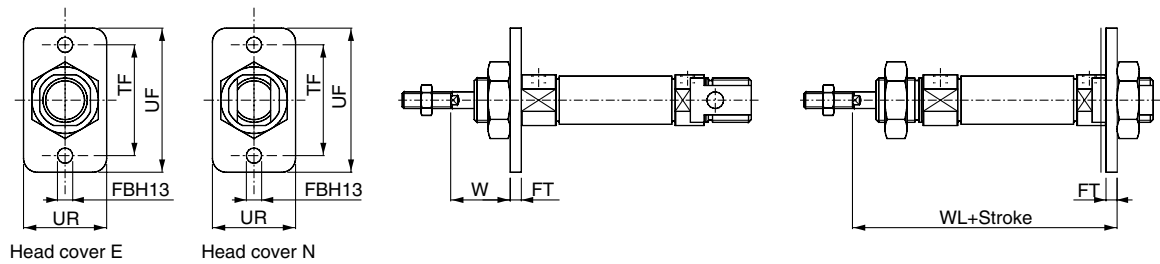
## Dimensions with Mounting Brackets

### Double acting: Single rod

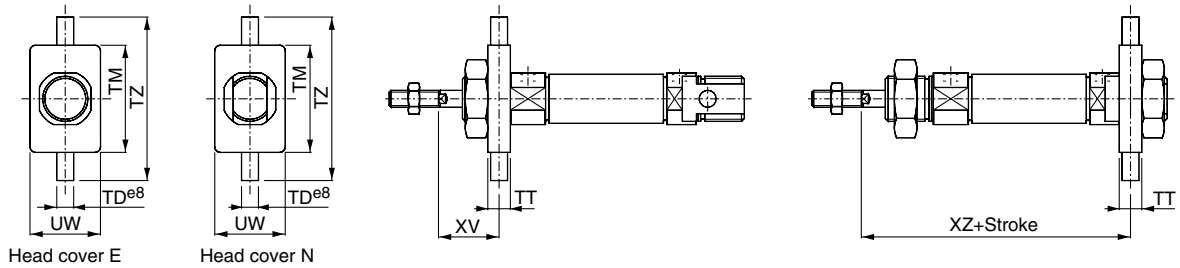
Front foot, Front and rear foot: C85L10<sup>A</sup><sub>B</sub>, C85L16<sup>A</sup><sub>B</sub>, C85L25<sup>A</sup><sub>B</sub>



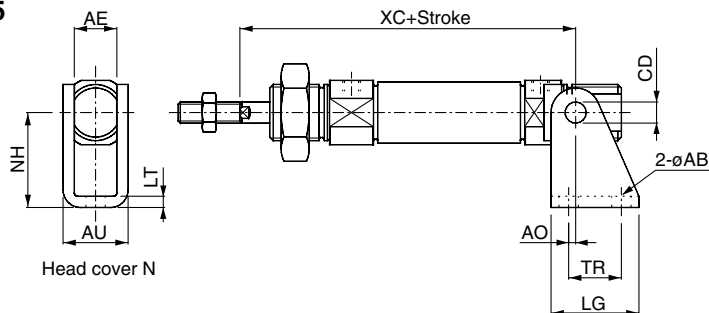
### Front flange, Rear flange: C85F10, C85F16, C85F25



### Front trunnion, Rear trunnion: C85T10, C85T16, C85T25



### Clevis: C85C10, C85C16, C85C25



Unit: (mm)

Bore	Front foot, Front and rear foot												Front flange, Rear flange						
	AO	US	øAB	LT	NH	LS	XL	TR JS14	XS	AV	UR	W	UR	FBH13	FT	TF	UF	W	WL
ø8	5	35	4.5	3.2	16	68	73	25	23.8	11	26	12.8	22	4.5	3.2	30	40	12.8	65.2
ø10	5	35	4.5	3.2	16	68(75)	73(80)	25	23.8	11	26	12.8	22	4.5	3.2	30	40	12.8	65.2(72.2)
ø12	6	42	5.5	4	20	78(82)	86(90)	32	32	14	33	18	30	5.5	4	40	52	18	76(80)
ø16	6	42	5.5	4	20	84(84)	92(92)	32	32	14	33	18	30	5.5	4	40	52	18	82(82)
ø20	8	54	6.6	5	25	96	103	40	36	17	42	19	40	6.6	5	50	66	19	91
ø25	8	54	6.6	5	25	99	110	40	40	17	42	23	40	6.6	5	50	66	23	98

Bore	Front trunnion, Rear trunnion							Clevis									
	TT	UW	TD ø8	TM	TZ	XV	XZ	CD	AE	øAB	AO	AU	TR	LG	NH	LT	XC
ø8	6	20	4	26	38	13	65	4 <sup>+0.030</sup> <sub>0</sub>	8.1	4.5	1.5	13.1	12.5	20	24	2.5	64
ø10	6	20	4	26	38	13	65(72)	4 <sup>+0.030</sup> <sub>0</sub>	8.1	4.5	1.5	13.1	12.5	20	24	2.5	64(71)
ø12	8	25	6	38	58	18	76(80)	6 <sup>+0.030</sup> <sub>0</sub>	12.1	5.5	2	18.5	15	25	27	3.2	75(79)
ø16	8	25	6	38	58	18	82(82)	6 <sup>+0.030</sup> <sub>0</sub>	12.1	5.5	2	18.5	15	25	27	3.2	82(82)
ø20	8	32	6	46	66	20	90	8 <sup>+0.036</sup> <sub>0</sub>	16.1	6.6	4	24.1	20	32	30	4	95
ø25	8	32	6	46	66	24	97	8 <sup>+0.036</sup> <sub>0</sub>	16.1	6.6	4	24.1	20	32	30	4	104

( ): In case of air cushion.

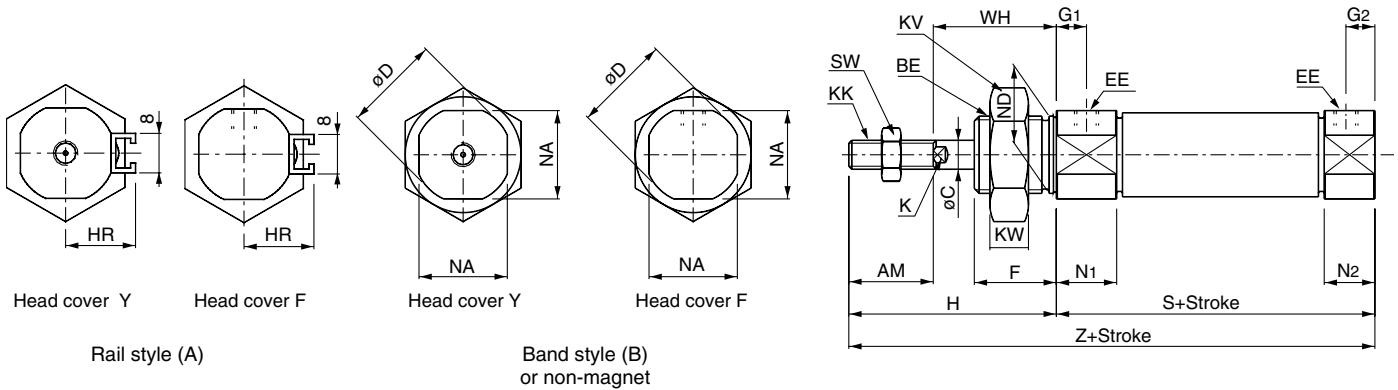
# ISO Cylinder/Standard, Non-rotating Rod: Double Acting **Series C85**

## Dimensions

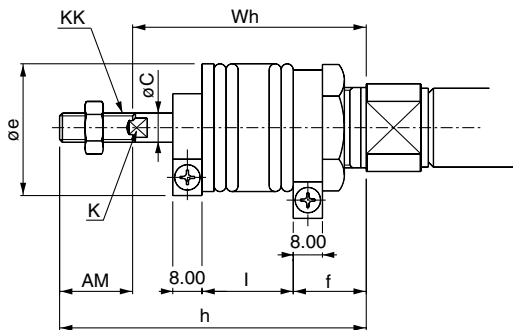
Double acting: Single rod

Rubber bumper/C□85F, Y

Without magnet, Built-in magnet

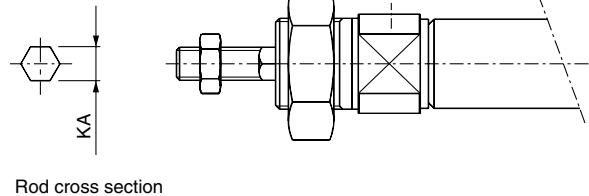


With rod boot



C□85KF, Y

Non-rotating rod (Rubber bumper only)



Unit: (mm)

Bore	AM	BE	øC	øD	EE	F	G1	G2	H	HR	K	KA	KK	KV	KW	N1	N2	NA	øND(h8)	S	SW	WH	Z
ø8	12	M12 X 1.25	4	16.7	M5	12	7	5	28	10	—	4.2	M4	19	6	11.5	9.5	15	12	46	7	16	74
ø10	12	M12 X 1.25	4	16.7	M5	12	7	5	28	10.5	—	4.2	M4	19	6	11.5	9.5	15	12	46	7	16	74
ø12	16	M16 X 1.5	6	19.7	M5	17	8	6	38	14	5	6.2	M6	24	8	12.5	10.5	18	16	50	10	22	88
ø16	16	M16 X 1.5	6	19.7	M5	17	8	6	38	14	5	6.2	M6	24	8	12.5	10.5	18	16	50	10	22	88
ø20	20	M22 X 1.5	8	27.9	G1/8	20	8	8	44	17	6	8.2	M8	32	10	15	15	24	22	62	13	24	106
ø25	22	M22 X 1.5	10	33.4	G1/8	22	8	8	50	20	8	10.2	M10 X 1.25	32	10	15	15	30	22	65	17	28	115

With rod boot

Bore	Item Stroke	AM	øC	øe	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	35	20	6	M8	71	84	96	109	134	159	—
25		22	10	35	20	8	M10 X 1.25	74	87	99	112	137	162	187

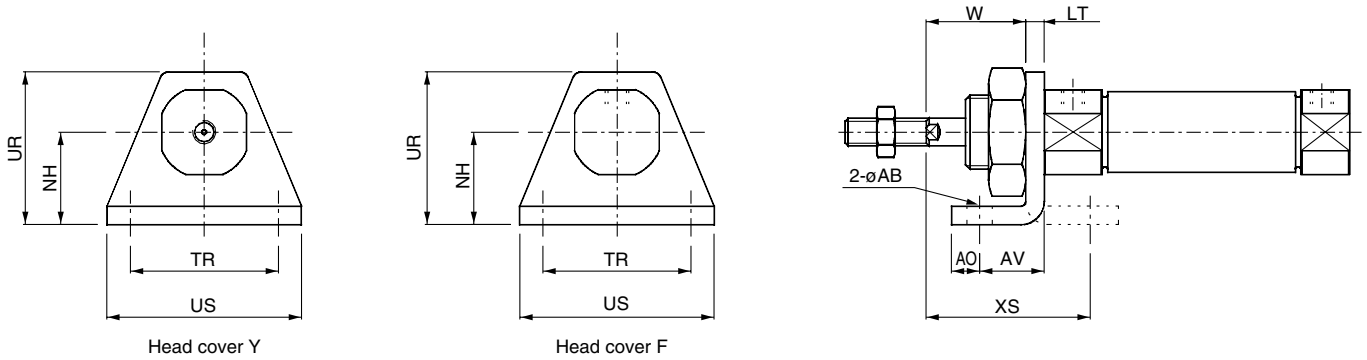
Bore	Item Stroke	l							Wh						
		1 to 50	51 to 100	101 to 150	151 to 200	201 to 300	301 to 400	401 to 500	1 to 50	51 to 100	101 to 150	151 to 200	201 to 300	301 to 400	401 to 500
20		12.5	25	37.5	50	75	100	—	51	64	76	89	114	139	—
25		12.5	25	37.5	50	75	100	125	52	65	77	90	115	140	165

# Series C85

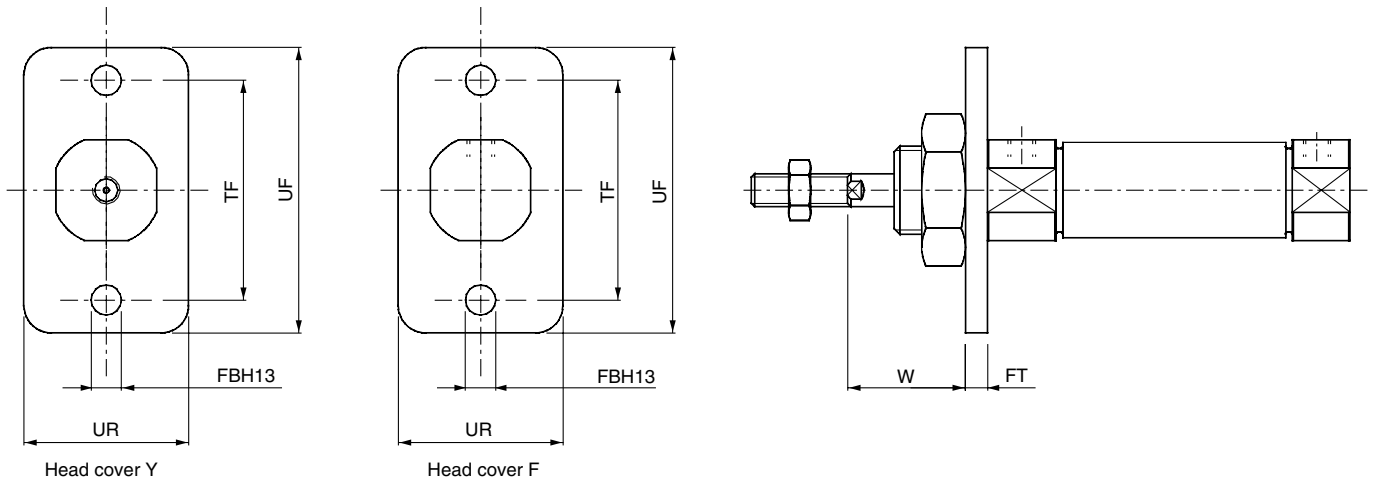
## Dimensions with Mounting Brackets

Double acting: Single rod

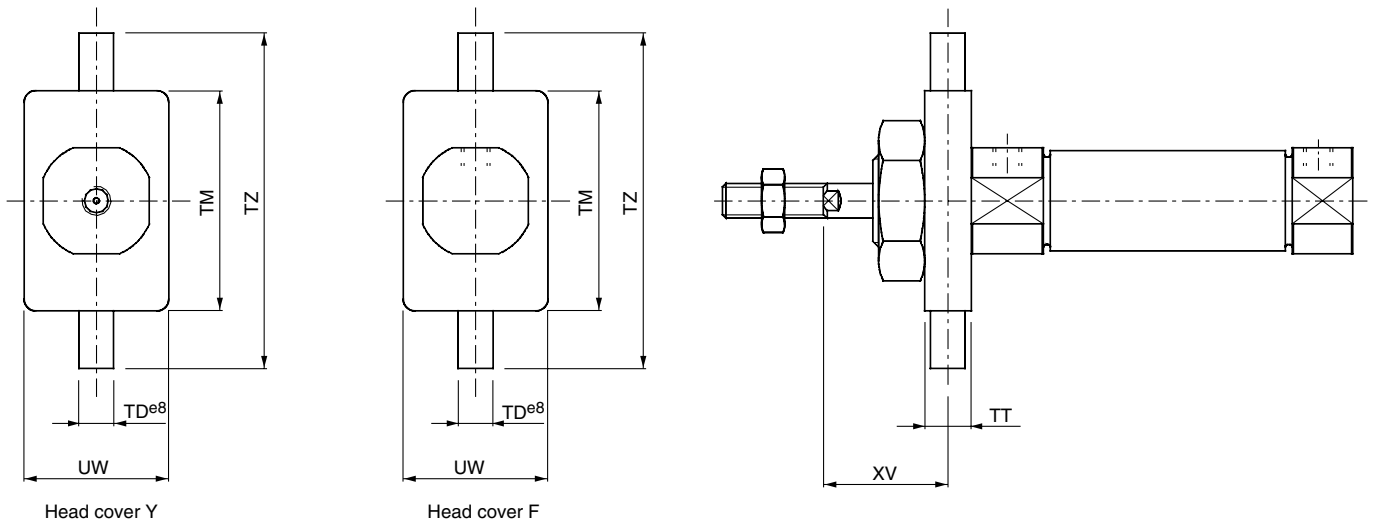
Front foot: C85L10A, C85L16A, C85L25A



Front flange: C85F10, C85F16, C85F25



Front trunnion: C85T10, C85T16, C85T25



Unit: (mm)

Bore	Front foot											Front flange					Front trunnion						
	AO	US	øAB	LT	NH	TR	JS14	XS	AV	UR	W	UR	FBH13	FT	TF	UF	W	TT	UW	TD e8	TM	TZ	XV
ø8	5	35	4.5	3.2	16	25		23.8	11	26	12.8	22	4.5	3.2	30	40	12.8	6	20	4	26	38	13
ø10	5	35	4.5	3.2	16	25		23.8	11	26	12.8	22	4.5	3.2	30	40	12.8	6	20	4	26	38	13
ø12	6	42	5.5	4	20	32		32	14	33	18	30	5.5	4	40	52	18	8	25	6	38	58	18
ø16	6	42	5.5	4	20	32		32	14	33	18	30	5.5	4	40	52	18	8	25	6	38	58	18
ø20	8	54	6.6	5	25	40		36	17	42	19	40	6.6	5	50	66	19	8	32	6	46	66	20
ø25	8	54	6.6	5	25	40		40	17	42	23	40	6.6	5	50	66	23	8	32	6	46	66	24

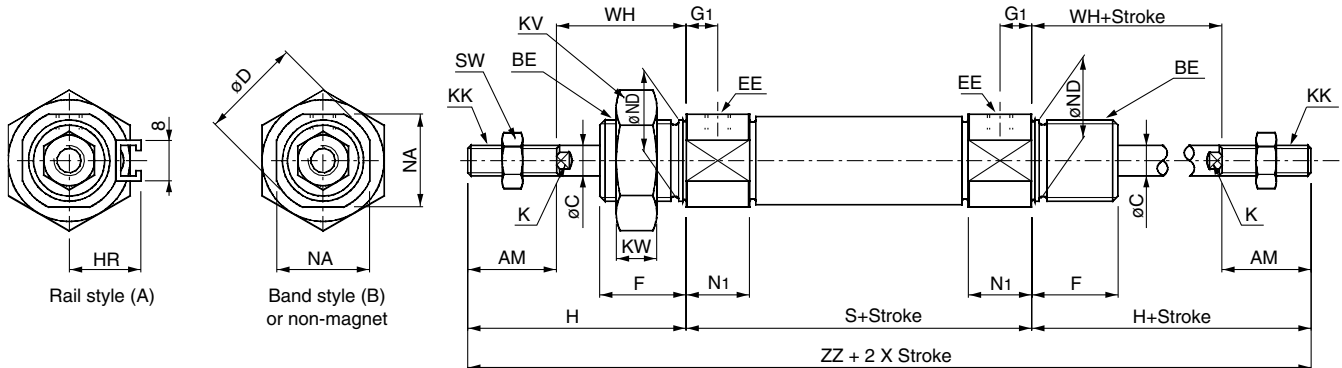
# ISO Cylinder/Standard, Non-rotating Rod: Double Acting **Series C85**

## Dimensions

Double acting: Double rod

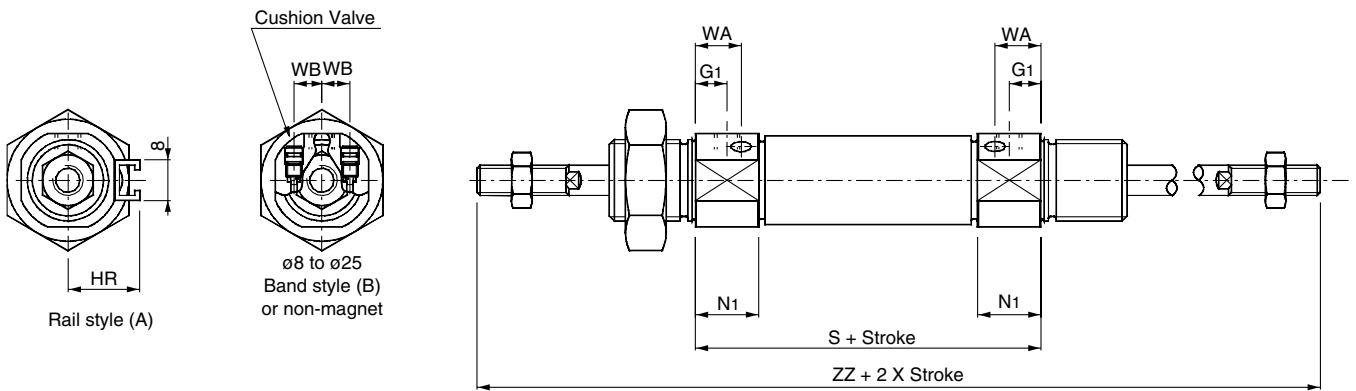
Rubber bumper/C□85WE

Without magnet, Built-in magnet

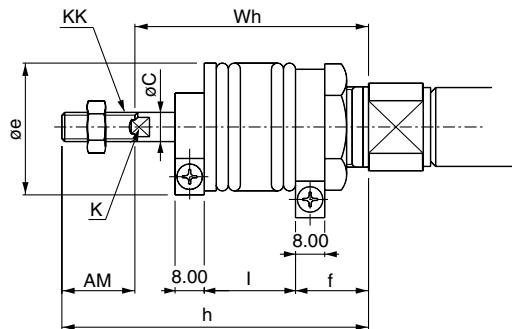


Air cushion/C□85WE

Without magnet, Built-in magnet



With rod boot



Unit: (mm)

Bore	AM	BE	øC	øD	EE	F	G1	WA	WB	H	HR	K	KK	KV	KW	N1	NA	øND(h8)	S	SW	WH	ZZ
ø8	12	M12 X 1.25	4	16.7	M5	12	7	—	—	28	10	—	M4	19	6	11.5	15	12	48(54)	7	16	104(110)
ø10	12	M12 X 1.25	4	16.7	M5	12	7(5.5)	10.5	4.5	28	10.5	—	M4	19	6	11.5(13.5)	15	12	48(53)	7	16	104(109)
ø12	16	M16 X 1.5	6	19.7	M5	17	8(5.5)	9.5	5.5	38	14	5	M6	24	8	12.5(12.5)	18	16	52(54)	10	22	128(130)
ø16	16	M16 X 1.5	6	19.7	M5	17	8(5.5)	9.5	5.5	38	14	5	M6	24	8	12.5(12.5)	18	16	52(54)	10	22	128(143)
ø20	20	M22 X 1.5	8	28	G1/8	20	8	13	8.5	44	17	6	M8	32	11	15(17)	24	22	62	13	24	150
ø25	20	M22 X 1.5	10	33.5	G1/8	22	8	13	10.5	50	20	8	M10 X 1.25	32	11	15(17)	30	22	65	17	28	165

( ) : In case of air cushion. { } : In case of built in magnet

With rod boot

Bore	Item Stroke	AM	øC	øe	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	35	20	6	M8	71	84	96	109	134	159	—
25		22	10	35	20	8	M10 X 1.25	74	87	99	112	137	162	187

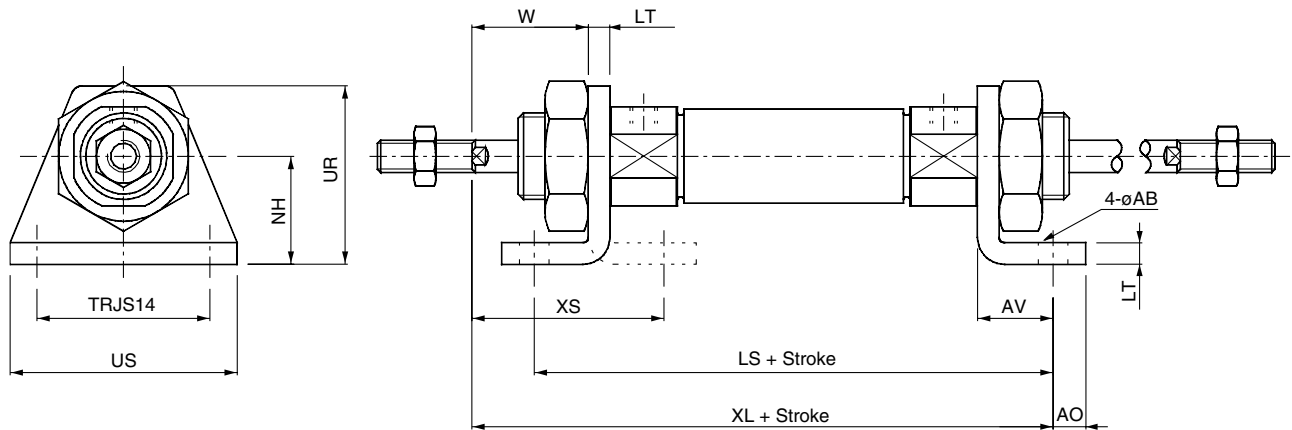
Bore	Item Stroke	l							Wh						
		1 to 50	50 to 100	101 to 150	151 to 200	201 to 300	301 to 400	401 to 500	1 to 50	51 to 100	101 to 150	151 to 200	201 to 300	301 to 400	401 to 500
20		12.5	25	37.5	50	75	100	—	51	64	76	89	114	139	—
25		12.5	25	37.5	50	75	100	125	52	65	77	90	115	140	165

# Series C85

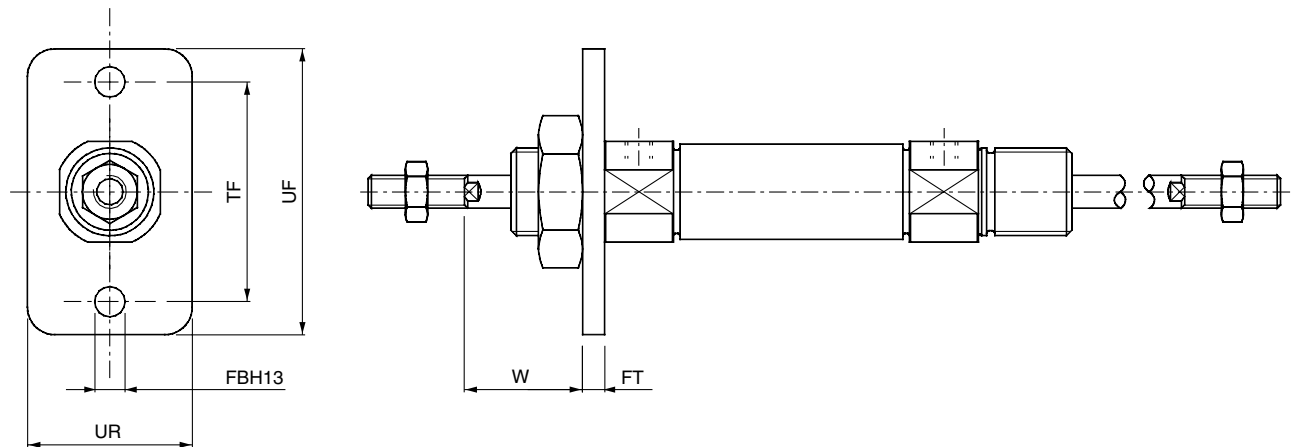
## Dimensions with Mounting Brackets

Double acting: Double rod

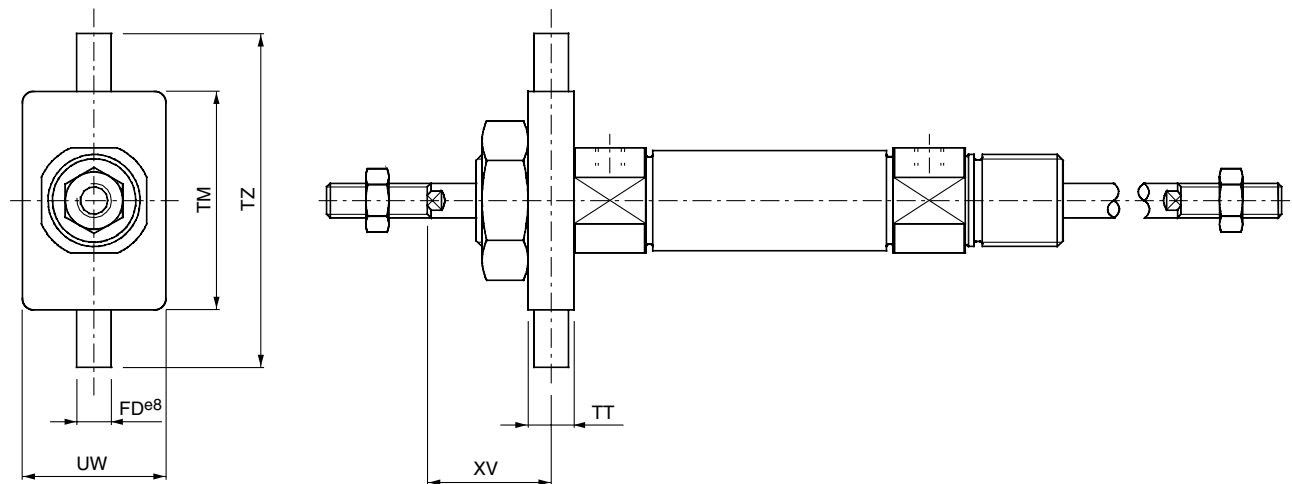
Front foot, Front and rear foot: C85L10<sup>A</sup><sub>B</sub>, C85L16<sup>A</sup><sub>B</sub>, C85L25<sup>A</sup><sub>B</sub>



Flange: C85F10, C85F16, C85F25



Trunnion: C85T10, C85T16, C85T25



Unit: (mm)

Bore	Front foot, Front and rear foot											Flange						Trunnion						
	AO	US	øAB	LT	NH	LS	XL	TR JS14	XS	AV	UR	W	UR	FBH13	FT	TF	UF	W	TT	UW	TD ø8	TM	TZ	XV
ø8	5	35	4.5	3.2	16	70(76)	75(81)	25	23.8	11	26	12.8	22	4.5	3.2	30	40	12.8	6	20	4	26	38	13
ø10	5	35	4.5	3.2	16	70(75)	75(80)	25	23.8	11	26	12.8	22	4.5	3.2	30	40	12.8	6	20	4	26	38	13
ø12	6	42	5.5	4	20	80(82)	88(90)	32	32	14	33	18	30	5.5	4	40	52	18	8	25	6	38	58	18
ø16	6	42	5.5	4	20	80(82)	88(90)	32	32	14	33	18	30	5.5	4	40	52	18	8	25	6	38	58	18
ø20	8	54	6.6	5	25	96	103	40	36	17	42	19	40	6.6	5	50	66	19	8	32	6	46	66	20
ø25	8	54	6.6	5	25	99	110	40	40	17	42	23	40	6.6	5	50	66	23	8	32	6	46	66	24

( ) : In case of air cushion. { } : In case of auto switch.



# ISO Cylinder/Standard, Non-rotating Rod: Single Acting Spring Return/Extend

## Series C85

ø8, ø10, ø12, ø16, ø20, ø25

### How to Order

Single acting  
Spring return/extend

C D 85 K N 16 50 S B

Magnet

—	None
D	Built-in magnet

Style

—	Standard
K	Non-rotating rod (only rubber bumper)

Mounting

Symbol	Mounting
N	Basic integrated clevis
E	Double end
F	Boss cut
Y*	Boss cut - End port

\* Except for: air cushion,  
single acting (T) style.

Bore size-Stroke

Bore size (mm)	Standard stroke (mm)*	Max. stroke (mm)
ø8	10, 25, 50	50
ø10		
ø12		
ø16	10, 25, 50, 100, 150	150
ø20		
ø25		

\* Other strokes available on request.

Auto switch  
mounting

A	Rail style
B	Band style

Auto switches and  
bands are shown on  
p.3-35 Please order  
auto switches and bands  
separately.

Other options

—	None
XA0-30 <sup>1)</sup>	Change of Rod end shape
XC6A	Stainless steel piston rod and piston rod nut
XC6B	Stainless steel piston rod, piston rod nut and mounting nut

Note 1) ø8 to ø16: only possible XA0/1/10/11  
ø20 to ø25 (except Non-rotating type): XA0  
to XA30 possible  
ø20 to ø25 (Non-rotating type):  
XA0/1/6/10/11/13/14/17/19/21

Single acting function

S	Spring return
T	Spring extend

### Mounting Bracket Parts No.

Bore (mm)	8	10	12	16	20	25
Bracket						
Foot (1 pc.)	C85L10A		C85L6A			C85L25A
Foot (2 pcs. with mounting nut 1 pc.)	C85L10B		C85L16B			C85L25B
Flange	C85F10		C85F16			C85F25
Trunnion	C85T10		C85T16			C85T25
Clevis	C85C10		C85C16			C85C25
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

Note) Please order mounting brackets separately.

### Replacement Parts

#### For Standard Cylinders

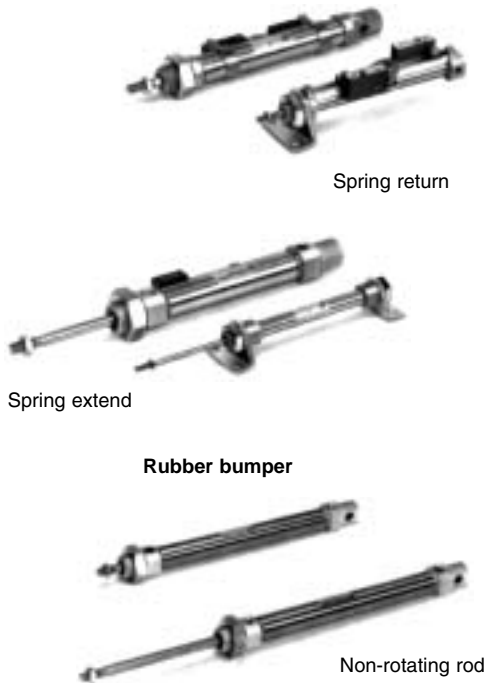
Bore (mm)	Kit No.	Note
20	C85-20PS	Every set includes: 1 rod seal 1 packing retaining washer 1 retaining ring
25	C85-25PS	

#### For Non-rotating Cylinders ("K")

Bore (mm)	Kit No.	Note
20	C85K-20PS	Every set includes: 1 rod seal 1 packing retaining washer 1 retaining ring
25	C85K-25PS	



# ISO Cylinder/Standard, Non-rotating Rod: Single Acting Spring Return/Extend **Series C85**



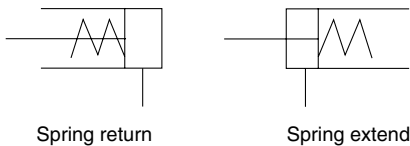
## Specifications

Bore size (mm)	<b>8</b>	<b>10</b>	<b>12</b>	<b>16</b>	<b>20</b>	<b>25</b>
Piston rod dia. (mm)	4	4	6	6	8	10
Piston rod thread	M4	M4	M6	M6	M8	M10 X 1.25
Ports	M5	M5	M5	M5	G1/8	G1/8
Action	Single acting/Single rod, Spring return, Spring extend					
Fluid	Air					
Proof pressure	1.5MPa					
Max. operating pressure	1.0MPa					
Min. operating pressure	Spring return	0.22MPa	0.18MPa	0.13MPa	0.18MPa	
	Spring extended				0.23MPa	
Ambient and fluid temperature	-20 to 80°C (Built-in magnet style: -10 to 60°C)					
Cushion	Rubber bumper (Standard)					
Lubrication	Not required. If necessary, turbine oil no.1 ISOVG32 is recommended					
Piston speed	50 to 1500mm/s					
Allowable kinetic energy	0.02J	0.03J	0.04J	0.09J	0.27J	0.4J
Non-rotating accuracy*	±1° 30'	±1° 30'	±1°	±1°	±0° 42'	±0° 42'
Stroke tolerance	0/+1				0/+1.4	

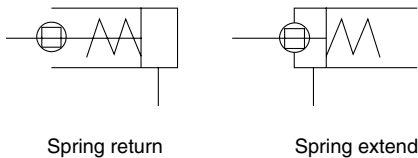
\* Applicable to non-rotating models only.

## Symbol

### Standard



### Non-rotating rod



## Spring Retracting Force (Standard, Non-rotating rod)

### Spring Return

Unit: N

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

### Spring Extend

Unit: N

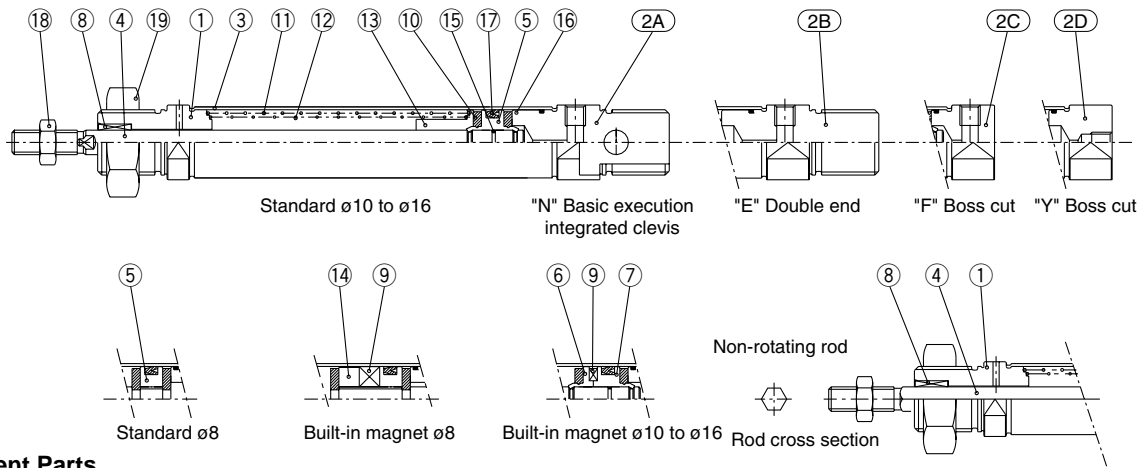
Bore (mm)	Standard stroke (mm)	Spring force									
		10		25		50		100		150	
		Retracted	Extended	Retracted	Extended	Retracted	Extended	Retracted	Extended	Retracted	Extended
<b>8</b>	10, 25, 50	5.30	3.92	5.30	3.14	5.30	2.65	—	—	—	—
<b>10</b>		5.98	4.81	5.98	4.02	5.98	3.53	—	—	—	—
<b>12</b>	10, 25, 50,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

# Series C85

## Construction

### Single acting: Single rod

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

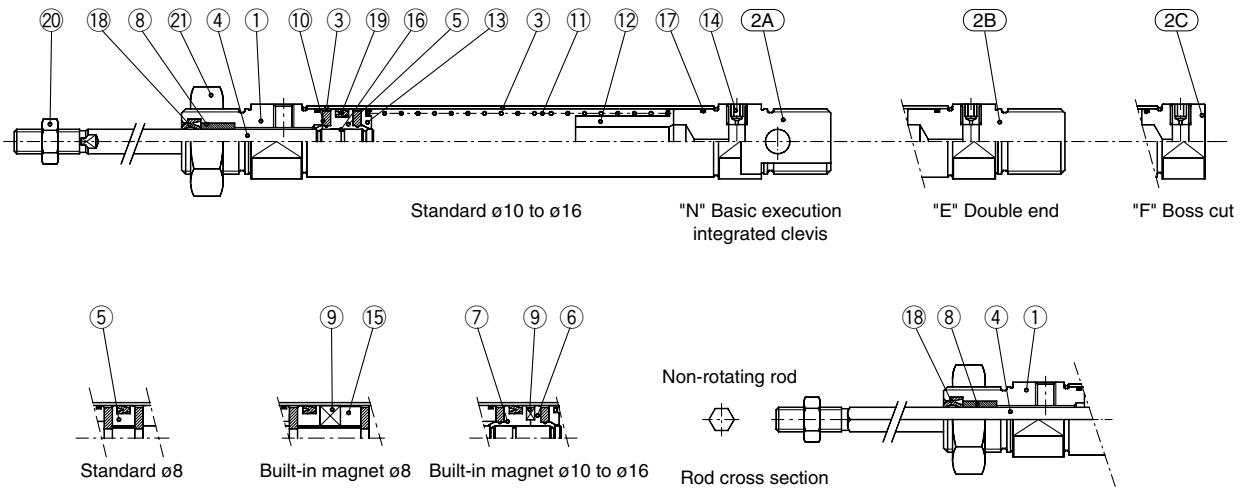


### Component Parts

No.	Description	Material	Quantity	Remarks
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 style only)
⑦	Piston B	Brass	1	(Switch style only)
⑧	Bushing	Sintered bronze	1	

No.	Description	Material	Quantity	Remarks
⑨	Magnet		1	(Switch style 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	
⑯	Tube gasket	NBR	1	
⑰	Piston seal	NBR	1	
⑱	Rod end nut	Carbon steel	1	Nickel plated
⑲	Mounting nut	Carbon steel	1	Nickel plated

### Spring extend/C□85□8 to 16-□T (Disassembly is not possible)



### Component Parts

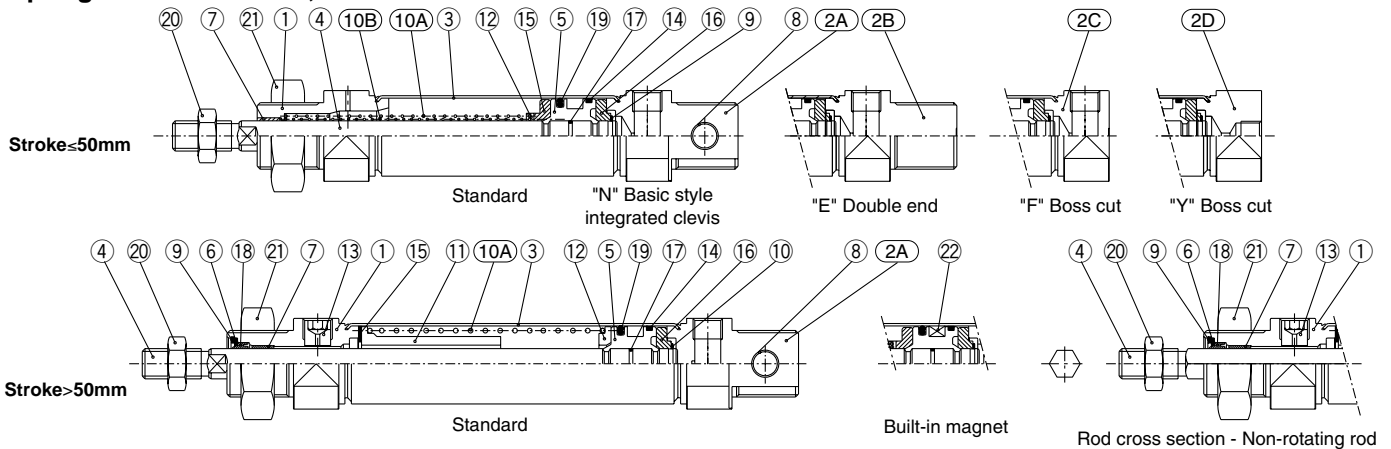
No.	Description	Material	Quantity	Remarks
①	Rod cover	Aluminum alloy	1	White anodized
②A	Head cover N	Aluminum alloy	1	White anodized
②B	Head cover E	Aluminum alloy	1	White anodized
②C	Head cover F	Aluminum alloy	1	White anodized
③	Cylinder tube	Stainless steel	1	
④	Piston rod	Stainless steel	1	
⑤	Piston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

No.	Description	Material	Quantity	Remarks
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 style
⑰	Tube gasket	NBR	1	
⑱	Rod seal	NBR	1	
⑲	Piston seal	NBR	1	
⑳	Rod end nut	Carbon steel	1	Nickel plated
㉑	Mounting nut	Carbon steel	1	Nickel plated

# ISO Cylinder/Standard, Non-rotating Rod: Single Acting Spring Return/Extend **Series C85**

## Construction

### Single acting: Single rod Spring return/C□85□20, 25-□S



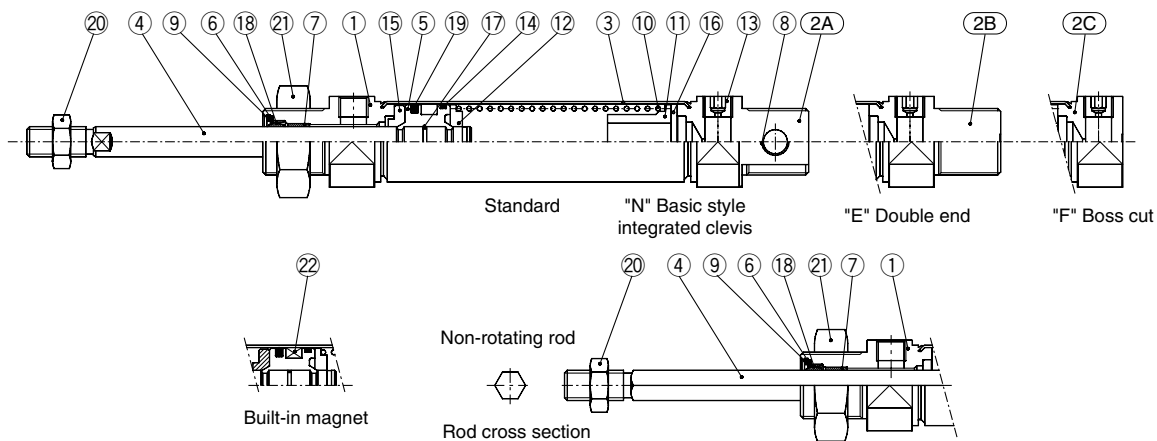
### Component Parts

No.	Description	Material	Quantity	Remarks
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	Carbon steel*	1	Hard chrome plated
⑤	Piston	Aluminum alloy	1	Chromated
⑥	Plain washer	Carbon steel	1	Nickel plated
⑦	Bushing	Sintered bronze	1	
⑧	Bushing	Sintered bronze	1	
⑨	Retaining ring	Carbon steel	1	Nickel plated
⑩A	Return spring A	Piano wire	1	Zinc chromated

\* Stainless steel (Non-rotating rod)

No.	Description	Material	Quantity	Remarks
⑩B	Return spring B	Piano wire	1	Zinc chromated
⑪	Spring guide	Aluminum alloy	1	
⑫	Spring holder	Aluminum alloy	1	
⑬	Set screw	Carbon steel	1	
⑭	Wear ring	Phenolic resin	1	
⑮	Bumper A	Urethane	1	
⑯	Bumper B	Urethane	1	
⑰	Piston gasket	NBR	1	
⑱	Rod seal	NBR	1	
⑲	Piston seal	NBR	1	
⑳	Rod end nut	Carbon steel	1	Nickel plated
㉑	Mounting nut	Carbon steel	1	Nickel plated
㉒	Magnet		1	(Switch style only)

### Spring extend/C□85□20, 25-□T



### Component Parts

No.	Description	Material	Quantity	Remarks
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	Carbon steel*	1	Hard chrome plated
⑤	Piston	Aluminum alloy	1	Chromated
⑥	Plain washer	Carbon steel	1	Nickel plated
⑦	Bushing	Sintered bronze	1	
⑧	Bushing	Sintered bronze	1	
⑨	Retaining ring	Carbon steel	1	Nickel plated
⑩	Return spring	Piano wire	1	Zinc chromate

\* Stainless steel (Non-rotating rod)

No.	Description	Material	Quantity	Remarks
⑪	Spring guide	Aluminum alloy	1	
⑫	Spring guide	Aluminum alloy	1	
⑬	Set screw	Carbon steel	1	
⑭	Wear ring	Phenolic resin	1	
⑮	Bumper A	Urethane	1	
⑯	Bumper B	Urethane	1	
⑰	Piston gasket	NBR	1	
⑱	Rod seal	NBR	1	
⑲	Piston seal	NBR	1	
⑳	Rod end nut	Carbon steel	1	Nickel plated
㉑	Mounting nut	Carbon steel	1	Nickel plated
㉒	Magnet		1	(Switch style only)

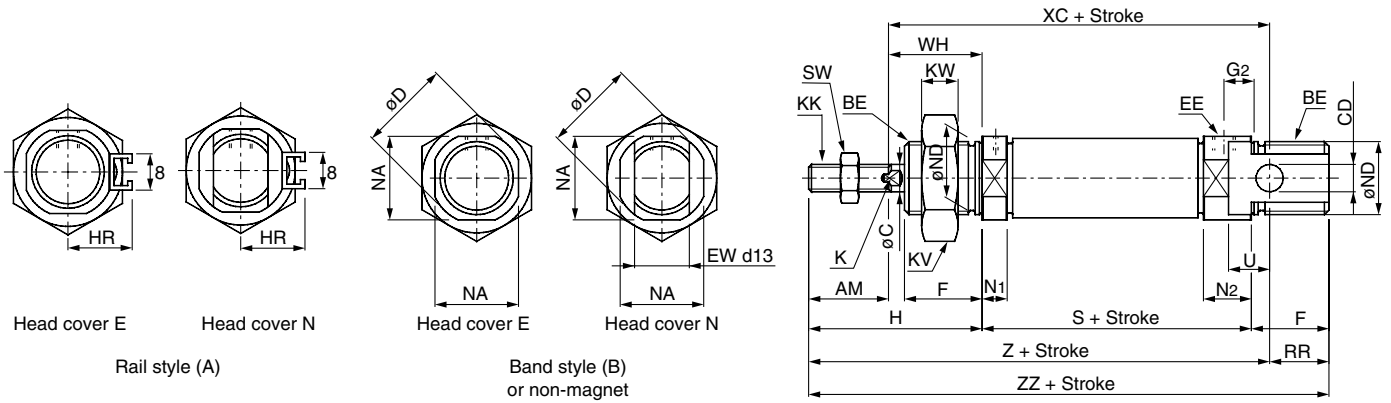
# Series C85

## Dimensions

Single acting: Spring return

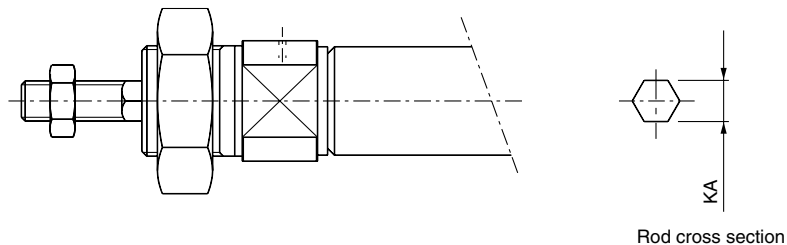
C□85<sup>N</sup><sub>E</sub> Bore — Stroke S — □

Without magnet, Built-in magnet



C□85KN, C□85KE

Non-rotating rod



Unit: (mm)

Bore	AM	BE	øC	CD	øD	EE	EW	F	G2	H	HR	K	KA	KK	KV	KW	N1	N2	NA	øND(h8)	RR	SW	U	WH
ø8	12	M12 X 1.25	4	4 <sup>+0.030</sup> <sub>0</sub>	16.7	M5	8	12	5	28	10	—	4.2	M4	19	6	5.5	9.5	15	12	10	7	6	16
ø10	12	M12 X 1.25	4	4 <sup>+0.030</sup> <sub>0</sub>	16.7	M5	8	12	5	28	10.5	—	4.2	M4	19	6	5.5	9.5	15	12	10	7	6	16
ø12	16	M16 X 1.5	6	6 <sup>+0.030</sup> <sub>0</sub>	19.7	M5	12	17	6	38	14	5	6.2	M6	24	8	5.5	10.5	18	16	14	10	9	22
ø16	16	M16 X 1.5	6	6 <sup>+0.030</sup> <sub>0</sub>	19.7	M5	12	17	6	38	14	5	6.2	M6	24	8	5.5	10.5	18	16	13	10	9	22
ø20	20	M22 X 1.5	8	8 <sup>+0.036</sup> <sub>-0.006</sub>	27.9	G1/8	16	20	8	44	17	6	8.2	M8	32	11	15	15	24	22	11	13	12	24
ø25	22	M22 X 1.5	10	8 <sup>+0.036</sup> <sub>-0.006</sub>	33.4	G1/8	16	22	8	50	20	8	10.2	M10 X 1.25	32	11	15	15	30	22	11	17	12	28

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	1 to 50
ø8	46(52){56(62)}	—	—	64(70){74(80)}	—	—	76(82){86(92)}	—	—	86(92){96(102)}	—	—
ø10	46(50){56(60)}	—	—	64(68){74(78)}	—	—	76(80){86(90)}	—	—	86(90){96(100)}	—	—
ø12	50(53.5){60(63.5)}	—	—	75(78.5){85(88.5)}	—	—	91(94.5){101(104.5)}	—	—	105(108.5){115(118.5)}	—	—
ø16	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)}
ø20	62{87}	112	137	95{120}	145	170	115{140}	165	190	126{151}	176	201
ø25	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

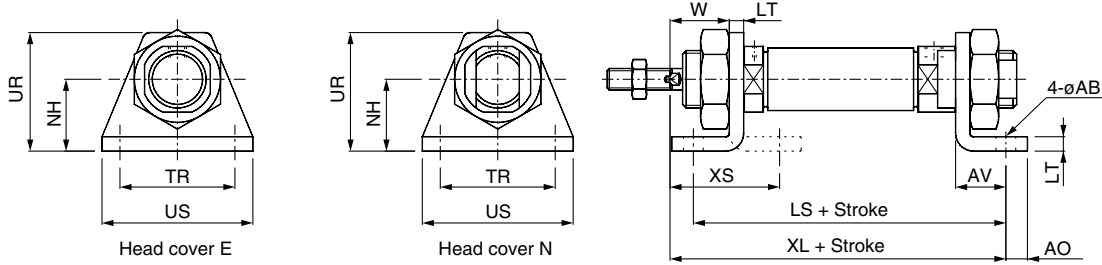
( ): In case of auto switch style. { }: In case of non-rotating rod.

# ISO Cylinder/Standard, Non-rotating Rod: Single Acting Spring Return/Extend **Series C85**

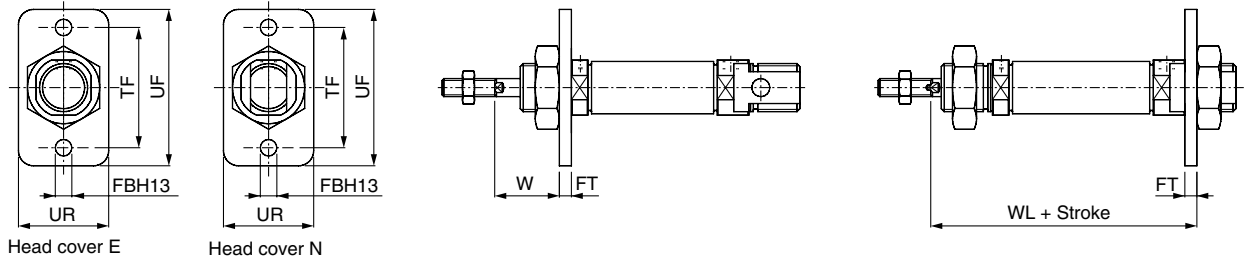
## Dimensions with Mounting Brackets

### Single acting: Spring return

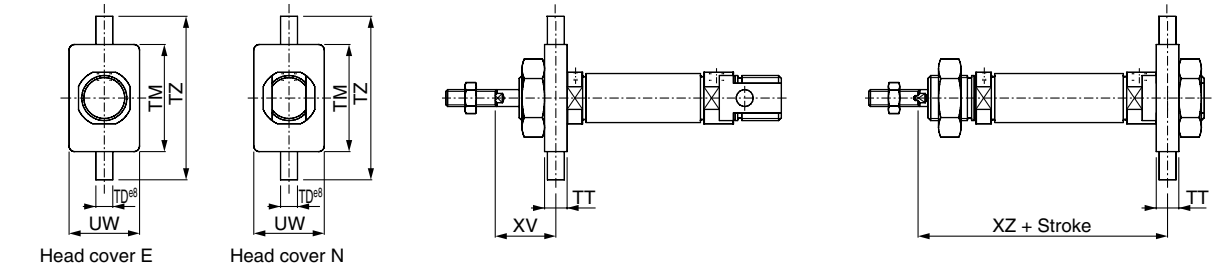
Front foot, Front and rear foot: **C85L10<sup>A</sup><sub>B</sub>, C85L16<sup>A</sup><sub>B</sub>, C85L25<sup>A</sup><sub>B</sub>**



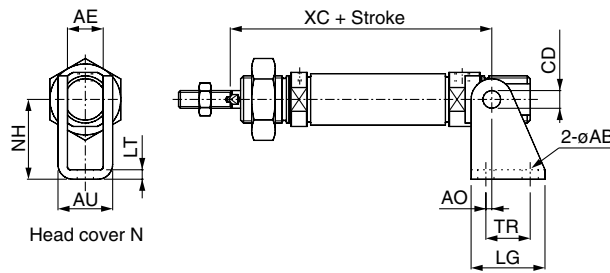
Front flange, Rear flange: **C85F10, C85F16, C85F25**



Front trunnion, Rear trunnion: **C85T10, C85T16, C85T25**



Clevis: **C85C10, C85C16, C85C25**



Unit: (mm)

Bore	Front foot, Front and rear foot														Front flange, Rear flange										
	AO	US	øAB	LT	NH	LS			XL			TR JS14	XS	AV	UR	W	UR	FBH13	FT	TF	UF	W	WL		
						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
ø8	5	35	4.5	3.2	16	68(74) {78(84)}	—	—	73(79) {83(89)}	—	—	25	23.8	11	26	12.8	22	4.5	3.2	30	40	12.8	65.2(71.2) {75.2(81.2)}	—	—
ø10	5	35	4.5	3.2	16	68(72) {78(82)}	—	—	73(77) {83(87)}	—	—	25	23.8	11	26	12.8	22	4.5	3.2	30	40	12.8	65.2(69.2) {75.2(79.2)}	—	—
ø12	6	42	5.5	4	20	78(81.5) {88(91.5)}	—	—	86(89.5) {96(99.5)}	—	—	32	32	14	33	18	30	5.5	4	40	52	18	76(79.5) {86(89.5)}	—	—
ø16	6	42	5.5	4	20	84(87.5) {94(97.5)}	99.5(103) {120(123.5)}	115(118.5) {146(149.5)}	92(95.5) {102(105.5)}	107.5(111) {128(131.5)}	123(126.5) {154(157.5)}	32	32	14	33	18	30	5.5	4	40	52	18	82(85.5) {92(95.5)}	97.5(101) {118(121.5)}	113(116.5) {144(147.5)}
ø20	8	54	6.6	5	25	96(121)	146	171	103(128)	153	178	40	36	17	42	19	40	6.6	5	50	66	19	91(116)	141	166
ø25	8	54	6.6	5	25	96(122.5)	147.5	172.5	110(133.5)	158.5	183.5	40	40	17	42	23	40	6.6	5	50	66	23	98(121.5)	146.5	171.5

Bore	Front trunnion, Rear trunnion								Clevis												
	TT	UW	TD ø8	TM	TZ	XV	ZX			CD	AE	øAB	AO	AU	TR	LG	NH	LT	XC		
							1 to 50	51 to 100	101 to 150										1 to 50	51 to 100	101 to 150
ø8	6	20	4	26	38	13	65(71) {75(81)}	—	—	4 <sup>+0.030</sup> <sub>0</sub>	8.1	4.5	1.5	13.1	12.5	20	24	2.5	64(70) {74(80)}	—	—
ø10	6	20	4	26	38	13	65(69) {75(79)}	—	—	4 <sup>+0.030</sup> <sub>0</sub>	8.1	4.5	1.5	13.1	12.5	20	24	2.5	64(68) {74(78)}	—	—
ø12	8	25	6	38	58	18	76(79.5) {86(89.5)}	—	—	6 <sup>+0.030</sup> <sub>0</sub>	12.1	5.5	2	18.5	15	25	27	3.2	75(78.5) {85(88.5)}	—	—
ø16	8	25	6	38	58	18	82(85.5) {92(95.5)}	97.5(101) {118(121.5)}	113(116.5) {144(147.5)}	6 <sup>+0.030</sup> <sub>0</sub>	12.1	5.5	2	18.5	15	25	27	3.2	82(88.5) {92(95.5)}	97.5(101) {118(121.5)}	113(116.5) {144(147.5)}
ø20	8	32	6	46	66	20	90(115)	140	165	8 <sup>+0.036</sup> <sub>0</sub>	16.1	6.6	4	24.1	20	32	30	4	95(120)	145	170
ø25	8	32	6	46	66	24	97(120.5)	145.5	170.5	8 <sup>+0.036</sup> <sub>0</sub>	16.1	6.6	4	24.1	20	32	30	4	104(127.5)	152.5	177.5

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

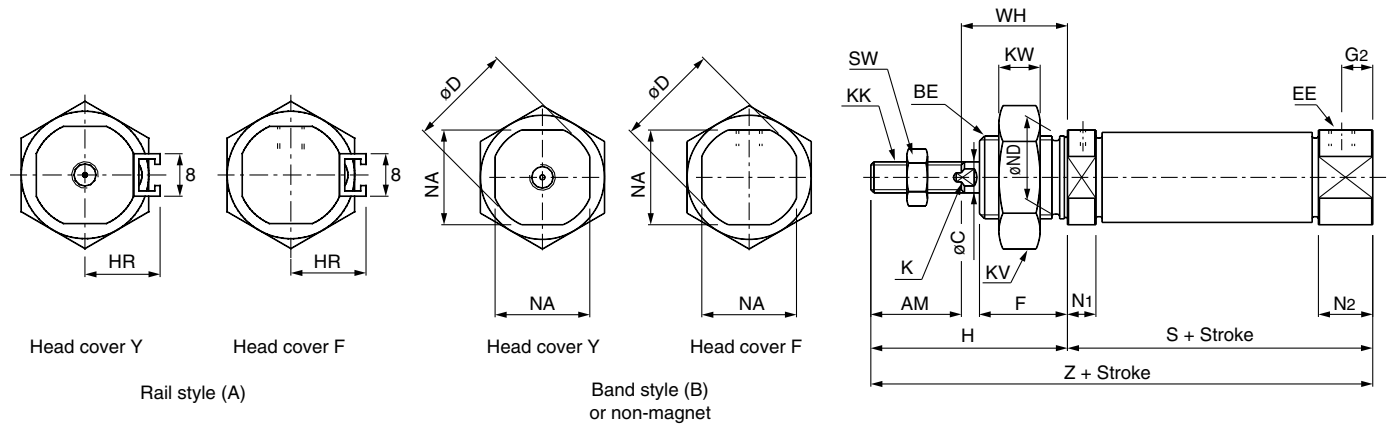
# Series C85

## Dimensions

Single acting: Spring return

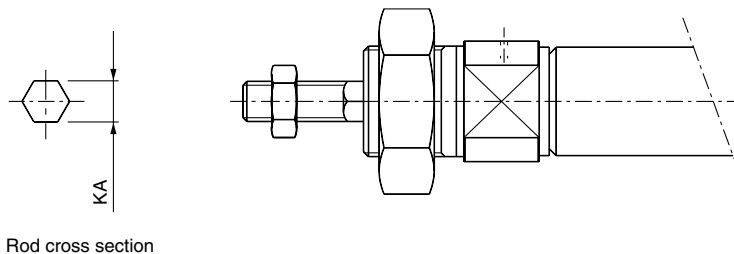
C□85<sup>F</sup> Bore — Stroke S — □

Without magnet, Built-in magnet



C□85KF, C□85KY

Non-rotating rod



Rod cross section

Unit: (mm)

Bore	AM	BE	øC	øD	EE	F	G2	H	HR	K	KA	KK	KV	KW	N1	N2	NA	øND(h8)	SW	WH
ø8	12	M12 X 1.25	4	16.7	M5	12	5	28	10	—	4.2	M4	19	6	5.5	9.5	15	12	7	16
ø10	12	M12 X 1.25	4	16.7	M5	12	5	28	10.5	—	4.2	M4	19	6	5.5	9.5	15	12	7	16
ø12	16	M16 X 1.5	6	19.7	M5	17	6	38	14	5	6.2	M6	24	8	5.5	10.5	18	16	10	22
ø16	16	M16 X 1.5	6	19.7	M5	17	6	38	14	5	6.2	M6	24	8	5.5	10.5	18	16	10	22
ø20	20	M22 X 1.5	8	27.9	G1/8	20	8	44	17	6	8.2	M8	32	10	15	15	24	22	13	24
ø25	22	M22 X 1.5	10	33.4	G1/8	22	8	50	20	8	10.2	M10 X 1.25	32	10	15	15	30	22	17	28

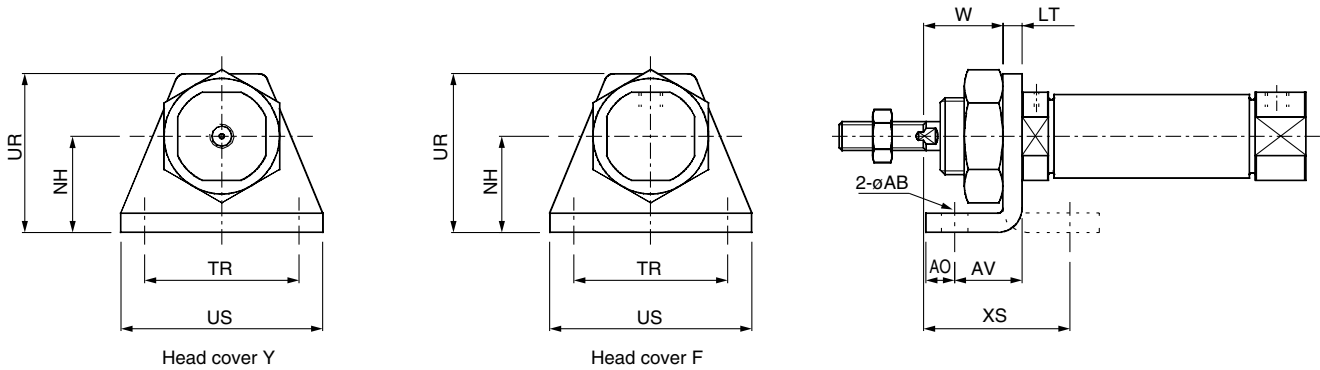
Bore	S			Z		
	1 to 50	51 to 100	101 to 150	1 to 50	51 to 100	101 to 150
ø8	46(52){56(62)}	—	—	74(80){84(90)}	—	—
ø10	46(50){56(60)}	—	—	74(78){84(88)}	—	—
ø12	50(53.5){60(63.5)}	—	—	88(91.5){98(101.5)}	—	—
ø16	50(53.5){60(63.5)}	65.5(69){86(89.5)}	81(84.5){112(115.5)}	88(91.5){98(101.5)}	103.5(107){124(127.5)}	119(122.5){150(153.5)}
ø20	62{87}	112	137	106{131}	156	181
ø25	65{88.5}	113.5	138.5	115{138.5}	163.5	188.5

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

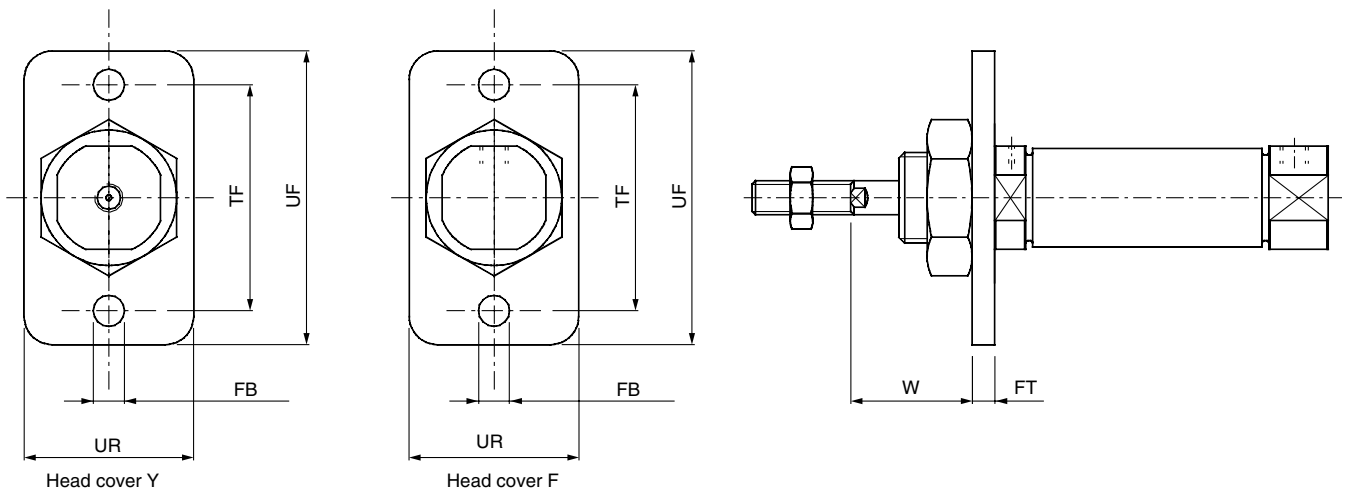
**Dimensions with Mounting Brackets**

Single acting: Spring return

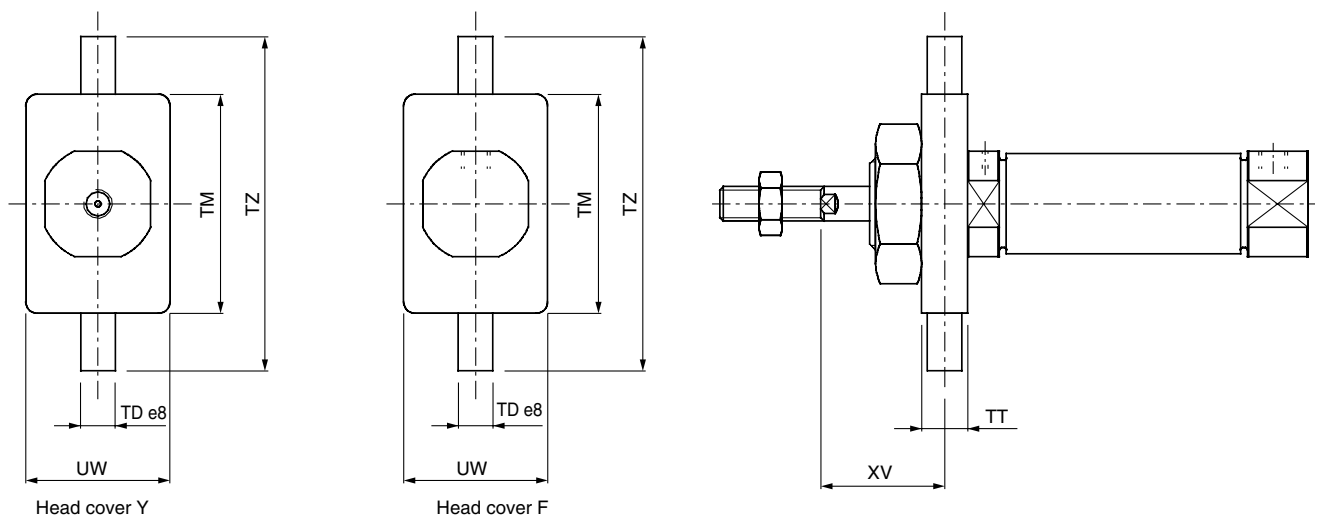
Front foot: C85L10A, C85L16A, C85L25A



Front flange: C85F10, C85F16, C85F25



Front trunnion: C85T10, C85T16, C85T25



Unit: (mm)

Bore	Front foot						Front flange						Front trunnion									
	AO	US	øAB	LT	NH	TR JS14	XS	AV	UR	W	UR	FBH13	FT	TF	UF	W	TT	UW	TD e8	TM	TZ	XV
ø8	5	35	4.5	3.2	16	25	23.8	11	26	12.8	22	4.5	3.2	30	40	12.8	6	20	4	26	38	13
ø10	5	35	4.5	3.2	16	25	23.8	11	26	12.8	22	4.5	3.2	30	40	12.8	6	20	4	26	38	13
ø12	6	42	5.5	4	20	32	32	14	33	18	30	5.5	4	40	52	18	8	25	6	38	58	18
ø16	6	42	5.5	4	20	32	32	14	33	18	30	5.5	4	40	52	18	8	25	6	38	58	18
ø20	8	54	6.6	5	25	40	36	17	42	19	40	6.6	5	50	66	19	8	32	6	46	66	20
ø25	8	54	6.6	5	25	40	40	17	42	23	40	6.6	5	50	66	23	8	32	6	46	66	24

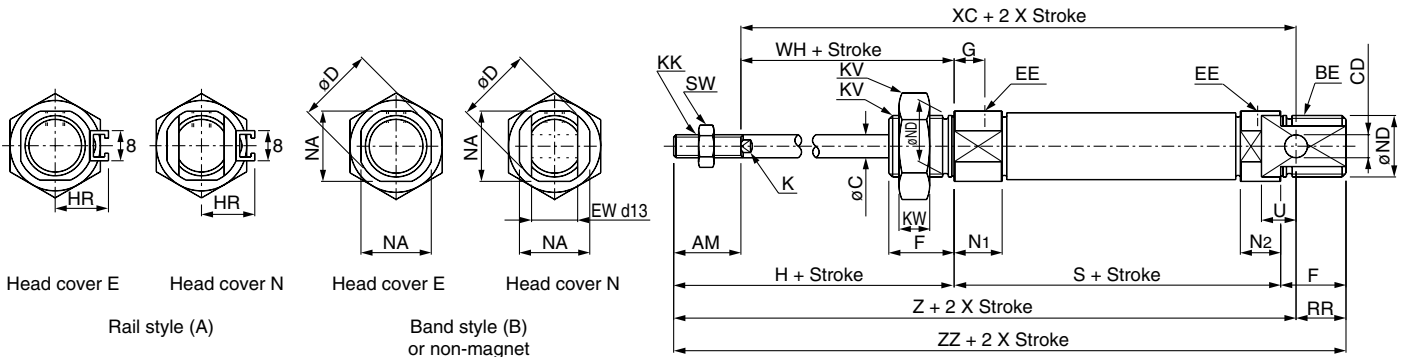
# Series C85

## Dimensions

Single acting: Spring extend

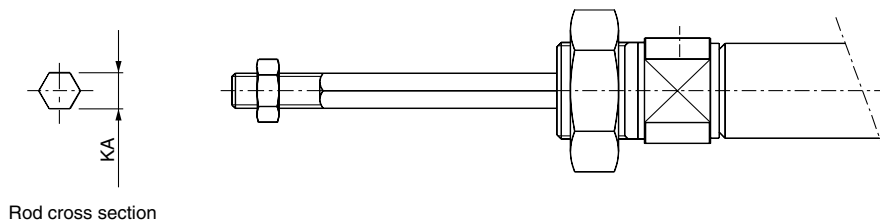
C□85<sup>N</sup><sub>E</sub> Bore — Stroke T — □

Without magnet, Built-in magnet



C□85KN, E

Non-rotating rod



Rod cross section

Unit: (mm)

Bore	AM	BE	øC	CD	øD	EE	EW	F	G	H	HR	K	KA	KK	KV	KW	N1	N2	NA	øND(h8)	RR	SW	U	WH
ø8	12	M12 X 1.25	4	4 <sup>+0.030</sup> <sub>0</sub>	16.7	M5	8	12	7	28	10	—	4.2	M4	19	6	11.5	9.5	15	12	10	7	6	16
ø10	12	M12 X 1.25	4	4 <sup>+0.030</sup> <sub>0</sub>	16.7	M5	8	12	7	28	10.5	—	4.2	M4	19	6	11.5	9.5	15	12	10	7	6	16
ø12	16	M16 X 1.5	6	6 <sup>+0.030</sup> <sub>0</sub>	19.7	M5	12	17	8	38	14	5	6.2	M6	24	8	12.5	10.5	18	16	14	10	9	22
ø16	16	M16 X 1.5	6	6 <sup>+0.030</sup> <sub>0</sub>	19.7	M5	12	17	8	38	14	5	6.2	M6	24	8	12.5	10.5	18	16	13	10	9	22
ø20	20	M22 X 1.5	8	8 <sup>+0.036</sup> <sub>-0.006</sub>	27.9	G1/8	16	20	8	44	17	6	8.2	M8	32	10	15	15	24	22	11	13	12	24
ø25	22	M22 X 1.5	10	8 <sup>+0.036</sup> <sub>-0.006</sub>	33.4	G1/8	16	22	8	50	20	8	10.2	M10 X 1.25	32	10	15	15	30	22	11	17	12	28

Bore	S			Z			XC			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
ø8	64.5(70.5)	—	—	94.5(100.5)	—	—	82.5(88.5)	—	—	104.5(110.5)	—	—
ø10	64.5(68.5)	—	—	94.5(98.5)	—	—	82.5(86.5)	—	—	104.5(108.5)	—	—
ø12	70(73.5)	—	—	111(114.5)	—	—	95(98.5)	—	—	125(128.5)	—	—
ø16	75(78.5)	101(104.5)	127(130.5)	117(120.5)	143(146.5)	169(172.5)	101(104.5)	127(130.5)	153(156.5)	130(133.5)	156(159.5)	182(185.5)
ø20	87	112	137	140	165	190	120	145	170	151	176	201
ø25	88.5	113.5	138.5	149.5	174.5	199.5	127.5	152.5	177.5	160.5	185.5	210.5

( ) : In case of auto switch style.



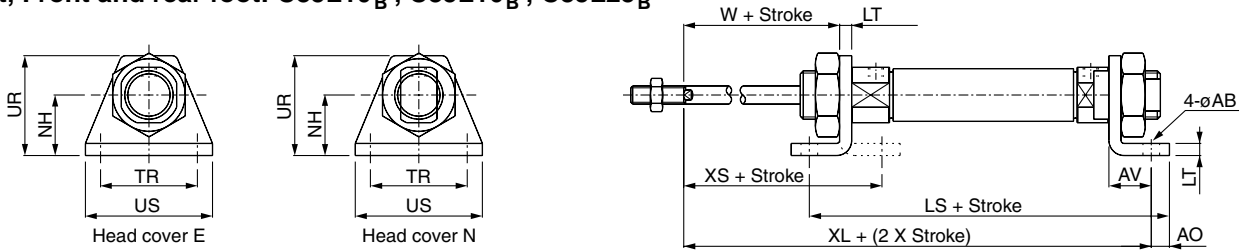
# ISO Cylinder/Standard, Non-rotating Rod: Single Acting Spring Return/Extend **Series C85**

## Dimensions with Mounting Brackets

Single acting: Spring extend

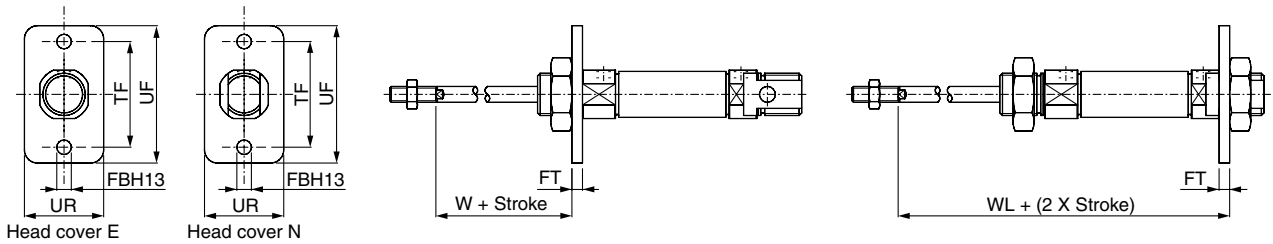
C□85N, C□85E

Front foot, Front and rear foot: C85L10<sup>A</sup><sub>B</sub>, C85L16<sup>A</sup><sub>B</sub>, C85L25<sup>A</sup><sub>B</sub>



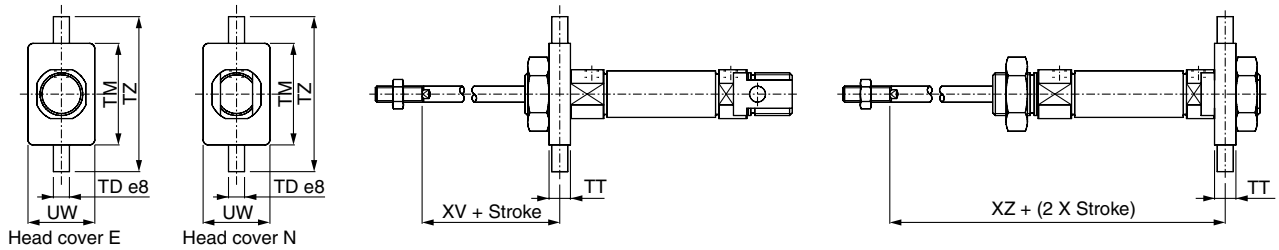
C□85N, C□85E

Front flange, Rear flange: C85F10, C85F16, C85F25



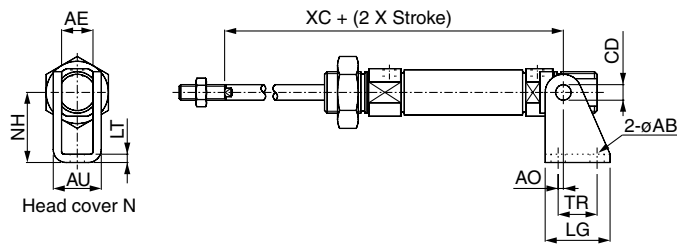
C□85N, C□85E

Front trunnion, Rear trunnion: C85T10, C85T16, C85T25



C□85N

Clevis: C85C10, C85C16, C85C25



Unit: (mm)

Bore	Front foot, Front and rear foot															Front flange, Rear flange									
	AO	US	øAB	LT	NH	LS			XL			TR JS14	XS	AV	UR	W	UR	FBH13	FT	TF	UF	W	WL		
						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
ø8	5	35	4.5	3.2	16	86.5(92.5)	—	—	91.5(97.5)	—	—	25	23.8	11	26	12.8	22	4.5	3.2	30	40	12.8	83.7(89.7)	—	—
ø10	5	35	4.5	3.2	16	86.5(90.5)	—	—	91.5(95.5)	—	—	25	23.8	11	26	12.8	22	4.5	3.2	30	40	12.8	83.7(87.7)	—	—
ø12	6	42	5.5	4	20	98(101.5)	—	—	106(109.5)	—	—	32	32	14	33	18	30	5.5	4	40	52	18	96(99.5)	—	—
ø16	6	42	5.5	4	20	103(106.5)	129(132.5)	155(158.5)	111(114.5)	137(140.5)	163(166.5)	32	32	14	33	18	30	5.5	4	40	52	18	101(104.5)	127(130.5)	153(156.5)
ø20	8	54	6.6	5	25	121	146	171	128	153	178	40	36	17	42	19	40	6.6	5	50	66	19	116	141	166
ø25	8	54	6.6	5	25	122.5	147.5	172.5	133.5	158.5	183.5	40	40	17	42	23	40	6.6	5	50	66	23	121.5	146.5	171.5

Bore	Front trunnion, Rear trunnion							Clevis													
	TT	UW	TD e8	TM	TZ	XV	ZX			CD	AE	øAB	AO	AU	TR	LG	NH	LT	XC		
							1 to 50	51 to 100	101 to 150										1 to 50	51 to 100	101 to 150
ø8	6	20	4	26	38	13	83.5(89.5)	—	—	4 <sup>+0.030</sup> <sub>0</sub>	8.1	4.5	1.5	13.1	12.5	20	24	2.5	82.5(88.5)	—	—
ø10	6	20	4	26	38	13	83.5(87.5)	—	—	4 <sup>+0.030</sup> <sub>0</sub>	8.1	4.5	1.5	13.1	12.5	20	24	2.5	82.5(86.5)	—	—
ø12	8	25	6	38	58	18	96(99.5)	—	—	6 <sup>+0.030</sup> <sub>0</sub>	12.1	5.5	2	18.5	15	25	27	3.2	95(98.5)	—	—
ø16	8	25	6	38	58	18	101(104.5)	127(130.5)	153(156.5)	6 <sup>+0.030</sup> <sub>0</sub>	12.1	5.5	2	18.5	15	25	27	3.2	101(104.5)	127(130.5)	153(156.5)
ø20	8	32	6	46	66	20	115	140	165	8 <sup>+0.036</sup> <sub>0</sub>	16.1	6.6	4	24.1	20	32	30	4	120	145	170
ø25	8	32	6	46	66	24	120.5	145.5	170.5	8 <sup>+0.036</sup> <sub>0</sub>	16.1	6.6	4	24.1	20	32	30	4	127.5	152.5	177.5

( ) : In case of auto switch style.

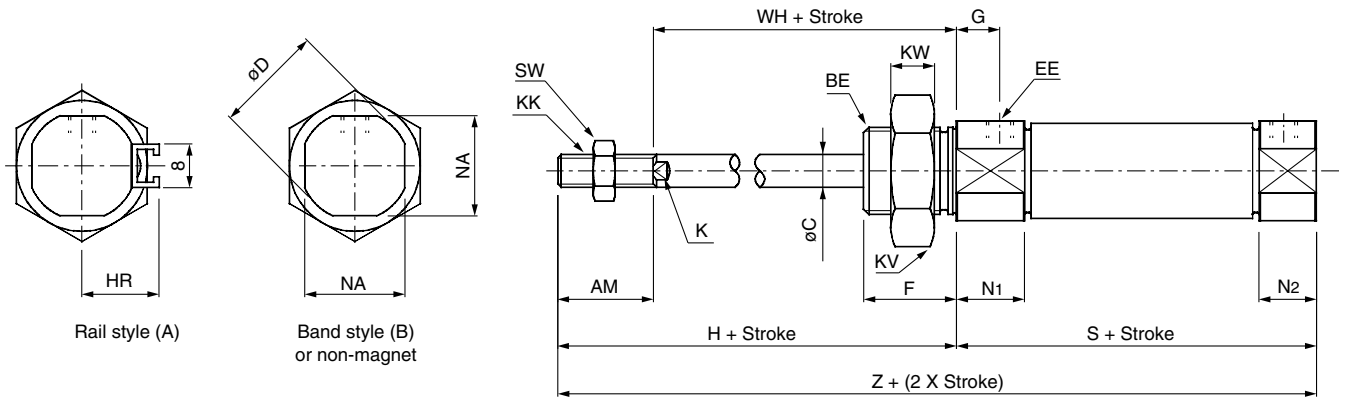
# Series C85

## Dimensions

Single acting: Spring extend

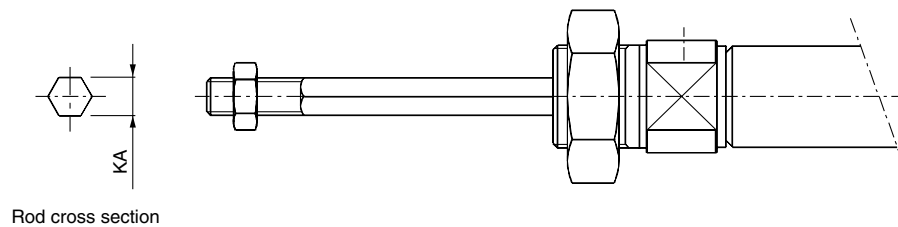
C□85F Bore Stroke T

Without magnet, Built-in magnet



C85KF, CD85KF

Non-rotating rod



Rod cross section

Unit: (mm)

Bore	AM	BE	øC	øD	EE	F	G	H	HR	K	KA	KK	KV	KW	N1	N2	NA	SW	WH
ø8	12	M12 X 1.25	4	16.7	M5	12	7	28	10	—	4.2	M4	19	6	11.5	9.5	15	7	16
ø10	12	M12 X 1.25	4	16.7	M5	12	7	28	10.5	—	4.2	M4	19	6	11.5	9.5	15	7	16
ø12	16	M16 X 1.5	6	19.7	M5	17	8	38	14	5	6.2	M6	24	8	12.5	10.5	18	10	22
ø16	16	M16 X 1.5	6	19.7	M5	17	8	38	14	5	6.2	M6	24	8	12.5	10.5	18	10	22
ø20	20	M22 X 1.5	8	27.9	G1/8	20	8	44	17	6	8.2	M8	32	10	15	15	24	13	24
ø25	20	M22 X 1.5	10	33.4	G1/8	22	8	50	20	8	10.2	M10 X 1.25	32	10	15	15	30	17	28

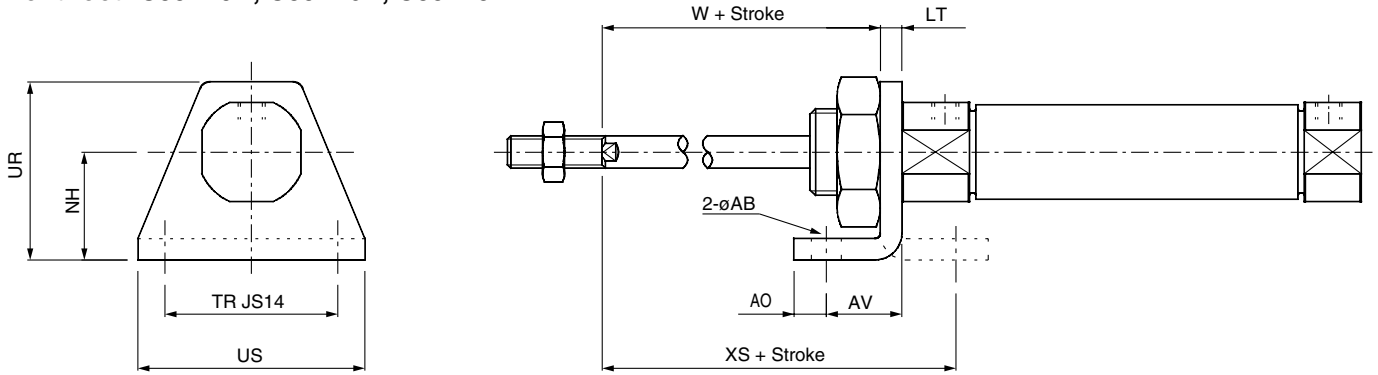
Bore	S			Z		
	1 to 50	51 to 100	101 to 150	1 to 50	51 to 100	101 to 150
ø8	64.5(70.5)	—	—	92.5(98.5)	—	—
ø10	64.5(68.5)	—	—	92.5(96.5)	—	—
ø12	70(73.5)	—	—	108(111.5)	—	—
ø16	69(72.5)	95(98.5)	121(124.5)	107(110.5)	133(136.5)	159(162.5)
ø20	87	112	137	131	156	181
ø25	88.5	113.5	138.5	138.5	163.5	188.5

( ) : In case of auto switch style.

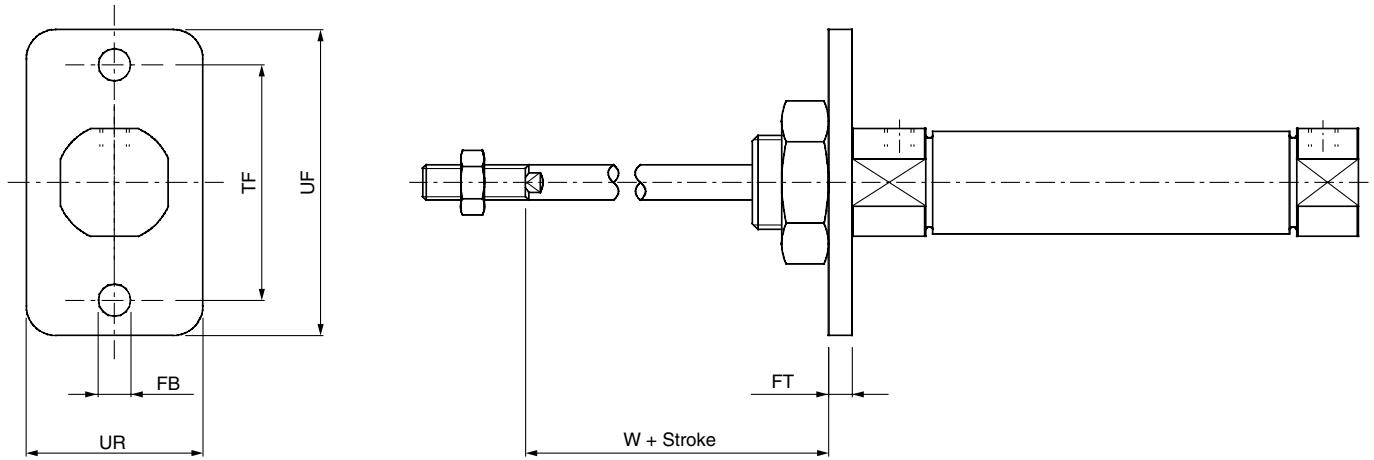
**Dimensions with Mounting Brackets**

Single acting: Spring extend

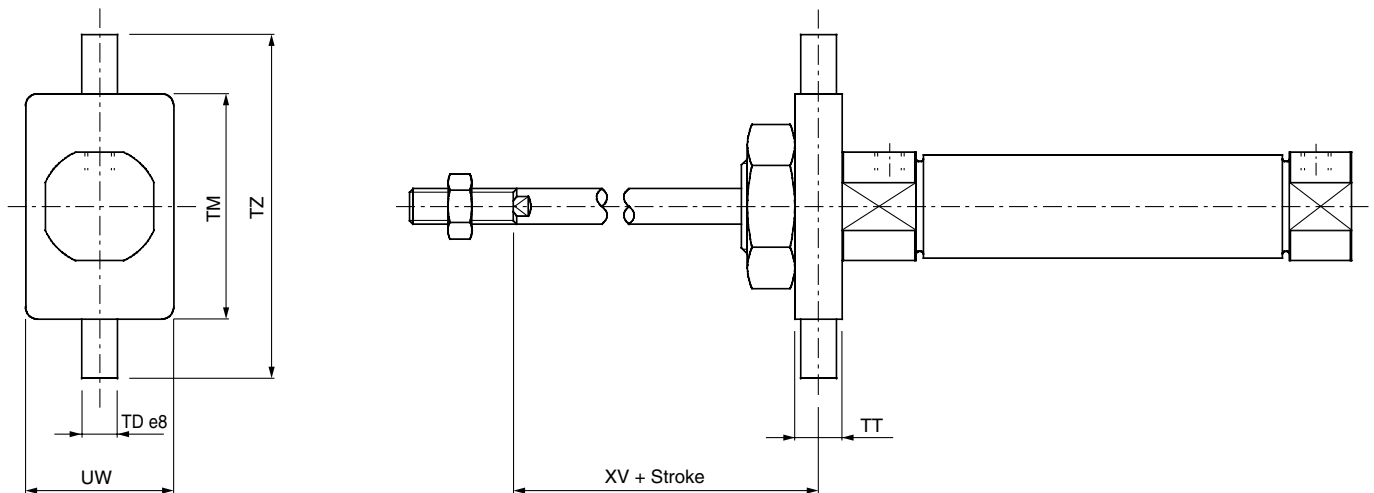
Front foot: C85L10A, C85L16A, C85L25A



Front flange: C85F10, C85F16, C85F25



Front trunnion: C85T10, C85T16, C85T25



Unit: (mm)

Bore	Front foot						Front flange						Front trunnion									
	AO	US	øAB	LT	NH	TR JS14	XS	AV	UR	W	UR	FBH13	FT	TF	UF	W	TT	UW	TD e8	TM	TZ	XV
ø8	5	35	4.5	3.2	16	25	23.8	11	26	12.8	22	4.5	3.2	30	40	12.8	6	20	4	26	38	13
ø10	5	35	4.5	3.2	16	25	23.8	11	26	12.8	22	4.5	3.2	30	40	12.8	6	20	4	26	38	13
ø12	6	42	5.5	4	20	32	32	14	33	18	30	5.5	4	40	52	18	8	25	6	38	58	18
ø16	6	42	5.5	4	20	32	32	14	33	18	30	5.5	4	40	52	18	8	25	6	38	58	18
ø20	8	54	6.6	5	25	40	36	17	42	19	40	6.6	5	50	66	19	8	32	6	46	66	20
ø25	8	54	6.6	5	25	40	40	17	42	23	40	6.6	5	50	66	23	8	32	6	46	66	24

# ISO Cylinder/Direct Mount: Double Acting

# Series C85R

ø8, ø10, ø12, ø16, ø20, ø25

## How to Order

**Double acting  
Single rod**

C **D** 85 R **A** **F** 16-40 **B**  

**Magnet**

—	None
<b>D</b>	Built-in magnet

**Style**

<b>A</b>	Bottom side mounting
<b>B*</b>	Front side mounting

\* Only ø20, ø25

**Mounting**

Symbol	Mounting
<b>F</b>	Boss cut
<b>Y</b>	Boss cut-end port

**Bore size-stroke**

Bore size (mm)	Standard stroke (mm)*	Max. stroke (mm)
ø8	10, 25, 40, 50, 80, 100	100
ø10		
ø12	10, 25, 40, 50, 80, 100	160
ø16	125, 160	
ø20	10, 25, 40, 50, 80, 100	160
ø25	125, 160	

\* Other strokes on request.

**Other options**

—	None
XA0-30 <sup>1)</sup>	Change of Rod end shape
XB6 <sup>2)</sup>	High Temperature
XB7 <sup>2) 3)</sup>	Low Temperature
XB9 <sup>3)</sup>	Low Speed
XC6A	Stainless steel piston rod and piston rod nut

Note 1) ø8 to ø16: only possible XA0/1/10/11  
ø20 to ø25: XA0 to XA30 possible  
ø20 to ø25 (Non-rotating type):  
XA0/1/6/10/11/13/14/17/19/21

Note 2) Without magnets

Note 3) Only ø20, ø25

**Auto switch mounting**

<b>B</b>	Band style
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Auto switches and bands are shown on p.3-35

### Mounting Brackets Parts No.

Bracket \ Bore (mm)	8	10	12	16	20	25
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

Bore (mm)	Kit No.	Note
20	C85-20PS	Every set includes: 1 rod seal
25	C85-25PS	1 packing retaining washer 1 retaining ring

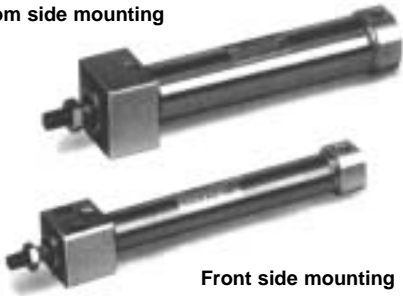
## Square rod cover makes direct contact mounting possible

Space saving

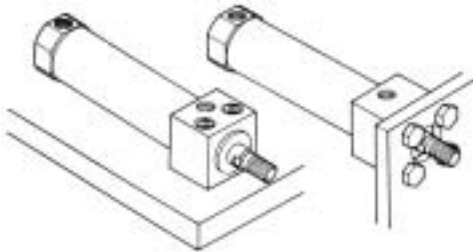
Mounting accuracy and rigidity made possible by means of faucet joint and direct mounting.

Front face mounting style and base mounting available to suit your applications.

### Bottom side mounting



Front side mounting

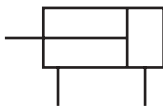


Bottom side mounting

Front side mounting

## Symbol

Double Acting/Single Rod



## Specifications

Bore size (mm)	8	10	12	16	20	25
Piston rod dia. (mm)	4	4	6	6	8	10
Piston rod thread	M4	M4	M6	M6	M8	M10 X 1.25
Ports	M5	M5	M5	M5	G1/8	G1/8
Action	Double acting/Single Rod					
Fluid	Air					
Proof pressure	1.5MPa					
Max operating pressure	1.0MPa					
Min operating pressure	0.1MPa	0.08MPa		0.05MPa		
Ambient and fluid temperature	-20 to 80°C (Built-in magnet style: -10 to 60°C)					
Cushion	Rubber bumper (Standard)					
Lubrication	Not required. If necessary, turbine oil no.1 ISOVG32 is recommended					
Piston speed	50 to 1500mm/s					
Allowable kinetic energy	0.02J	0.03J	0.04J	0.09J	0.27J	0.4J
Stroke tolerance	0/+1				0/+1.4	

## Weight

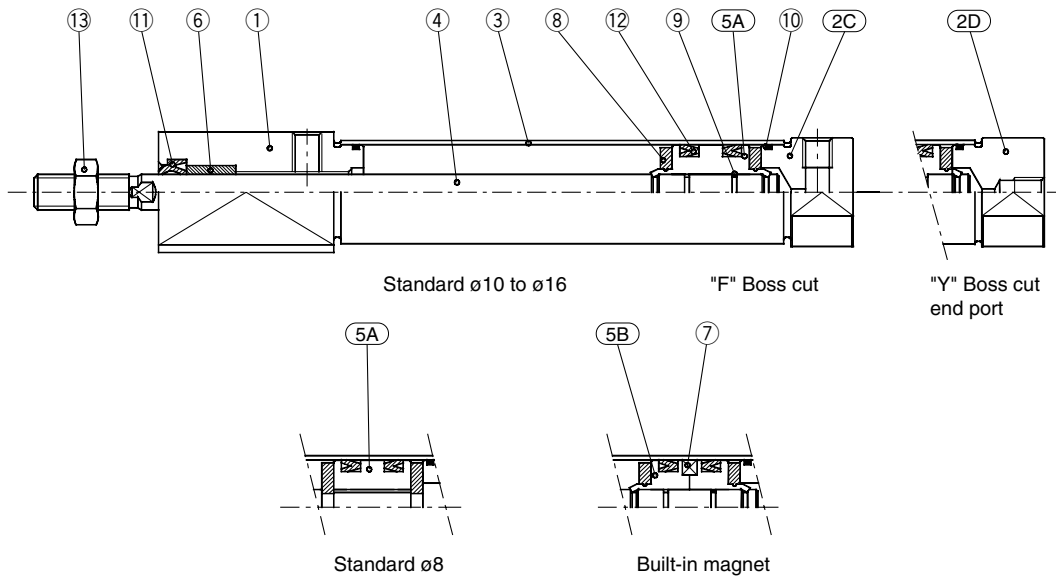
Bore size (mm)	8	10	12	16	20	25	
Basic weight	Bottom side mounting	43	46	84	95	167	253
	Front side mounting	—	—	—	—	163	230
Additional weight for each 10mm of stroke	2	2.2	4.1	5.1	7.8	12.2	

# Series C85

## Construction

Double acting: Single rod

C□85RA8 to 16 (Disassembly is not possible)

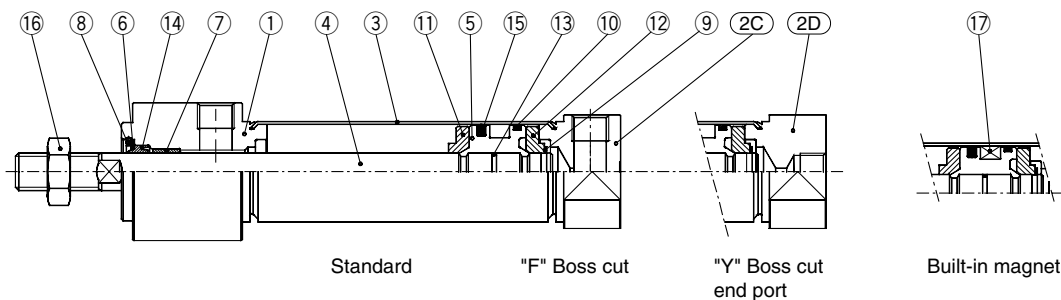


### Component Parts

No.	Description	Material	Quantity	Remarks
①	Rod cover	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	
⑤A	Piston "A"	Brass	1	
⑤B	Piston "B"	Brass	2	(Switch style piston)

No.	Description	Material	Quantity	Remarks
⑥	Bushing	Sintered bronze	1	
⑦	Magnet		1	(Switch style only)
⑧	Bumper	Urethane	2	
⑨	Piston gasket	NBR	1	(2 for switch style)
⑩	Tube gasket	NBR	2	
⑪	Rod seal	NBR	1	
⑫	Piston seal	NBR	2	

### C□85R<sup>A</sup><sub>B</sub>20, 25



### Component Parts

No.	Description	Material	Quantity	Remarks
①	Rod cover	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	Carbon steel	1	Hard chrome plated
⑤	Piston	Aluminum alloy	1	Chromated
⑥	Plain washer	Carbon steel	1	Nickel plated
⑦	Bushing	Sintered bronze	1	
⑧	Retaining ring	Carbon steel	1	Nickel plated

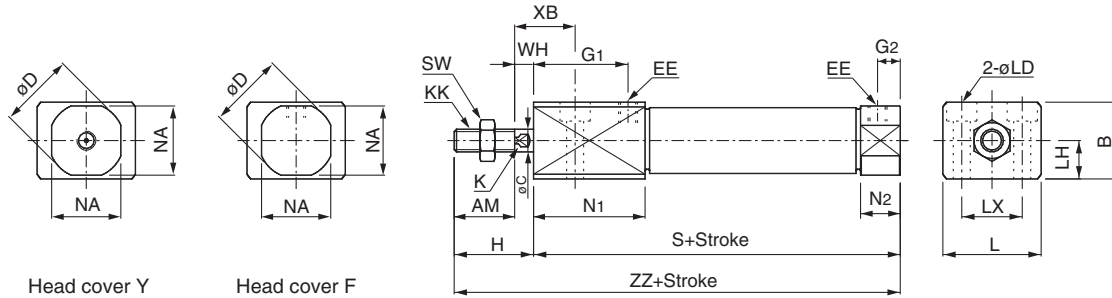
No.	Description	Material	Quantity	Remarks
⑨	Retaining ring	Carbon steel	1	
⑩	Wear ring	Phenolic resin	1	
⑪	Bumper A	Urethane	1	
⑫	Bumper B	Urethane	1	
⑬	Piston gasket	NBR	1	
⑭	Rod seal	NBR	1	
⑮	Piston seal	NBR	1	
⑯	Rod end nut	Carbon steel	1	Nickel plated
⑰	Magnet		1	(Switch style only)

## Dimensions

**Double acting: Single rod**

**Bottom side mounting/C□85RA<sub>F</sub> 8 to 16 — Stroke B**

**Without magnet, Built-in magnet (Band style)**

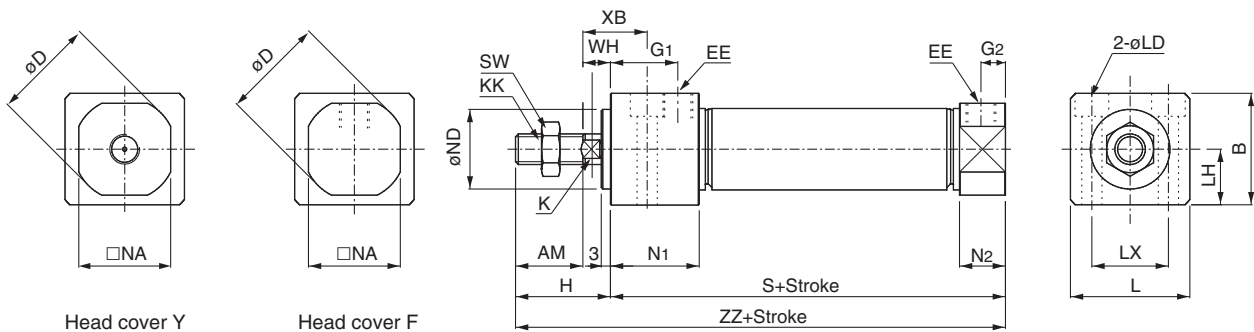


Unit: (mm)

Bore	AM	B	øC	øD	EE	G1	G2	H	K	KK	L	øLD	LH	LX	N1	N2	NA	S	SW	WH	XB	ZZ
ø8	12	16	4	16.7	M5	19	5	16	—	M4	23	ø3.5, ø6.5 Depth of counter bore 4	8	14	23.5	9.5	15	58	7	4	12	74
ø10	12	16	4	16.7	M5	19	5	16	—	M4	23	ø3.5, ø6.5 Depth of counter bore 4	8	14	23.5	9.5	15	58	7	4	12	74
ø12	16	20	6	19.7	M5	25	6	21	5	M6	26	ø4.5, ø8 Depth of counter bore 5	10	16	29.5	10.5	18	67	10	5	16	88
ø16	16	20	6	19.7	M5	25	6	21	5	M6	26	ø4.5, ø8 Depth of counter bore 5	10	16	29.5	10.5	18	67	10	5	16	88

**Bottom side mounting/C□85RA<sub>F</sub> 20/25 — Stroke B**

**Without magnet, Built-in magnet (Band style)**

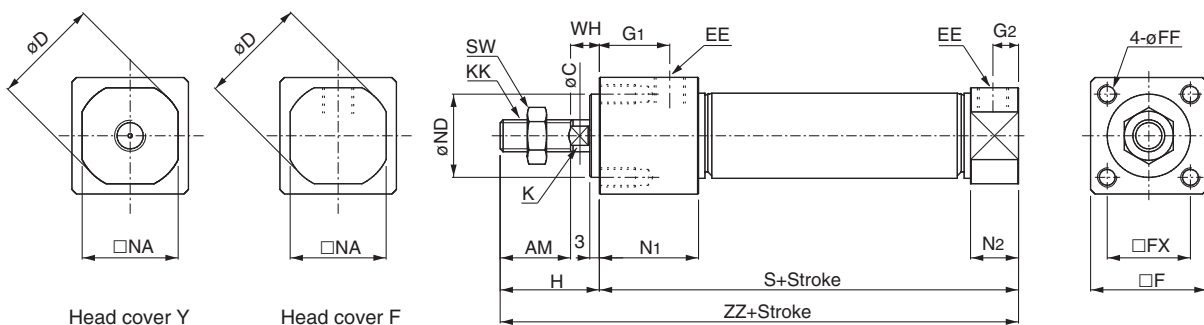


Unit: (mm)

Bore	AM	B	øC	øD	EE	G1	G2	H	K	KK	L	øLD	LH	LX	N1	N2	øNA	øND	S	SW	WH	XB	ZZ
ø20	20	30.3	8	28	G1/8	22	8	30	6	M8	33.5	ø5.5, ø9.5 Depth of counter bore 6.5	15	21	29	15	24	20 <sup>+0.033</sup>	76	13	10	22	106
ø25	22	36.6	10	33.5	G1/8	22	8	36	8	M10 X 1.25	39	ø6.6, ø11 Depth of counter bore 7.5	18	25	29	15	30	26 <sup>-0.033</sup>	79	17	14	22	115

**Front side mounting/C□85RA<sub>F</sub> 20/25 — Stroke B**

**Without magnet, Built-in magnet (Band style)**



Unit: (mm)

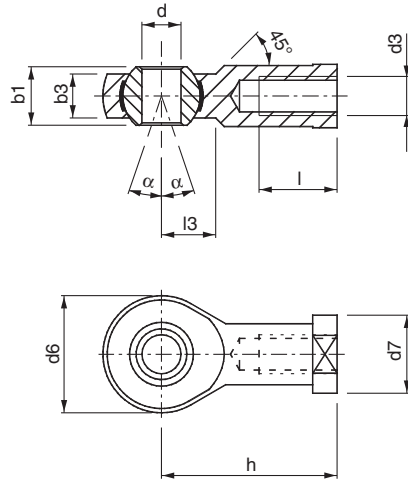
Bore	AM	øC	øD	EE	FF	øFX	G1	G2	H	K	KK	N1	N2	øNA	øND	S	SW	WH	ZZ
ø20	20	8	28	G1/8	M5 Depth 9	22	22	8	30	6	M8	29	15	24	20 <sup>+0.033</sup>	76	13	10	106
ø25	22	10	33.5	G1/8	M6 Depth 11	26	22	8	36	8	M10 X 1.25	29	15	30	26 <sup>-0.033</sup>	79	17	14	115

# Series C85

## Dimensions

### Rod Accessories

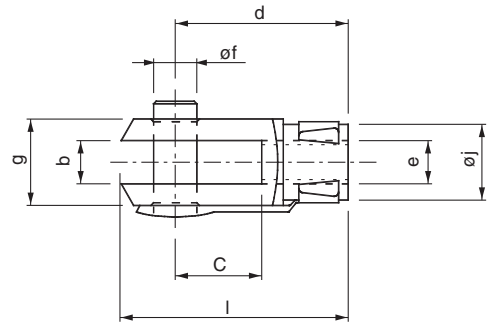
#### Single Knuckle Joint/DIN648-DIN24335



Unit: (mm)

Bore	Model	Thread d3	dh7	h	d6	b3	b1	l	d7	$\alpha^{\circ}$	l3
ø8	KJ4D	M4	5	27	18	6.0	8	10	11	7.5	10
ø10	KJ4D	M4	5	27	18	6.0	8	10	11	7.5	10
ø12	KJ6D	M6	6	30	20	6.75	9	12	13	6.5	10
ø16	KJ6D	M6	6	30	20	6.75	9	12	13	6.5	10
ø20	KJ8D	M8	8	36	24	9	12	16	16	13	12
ø25	KJ10D	M10 X 1.25	10	43	28	10.5	14	20	19	13	14

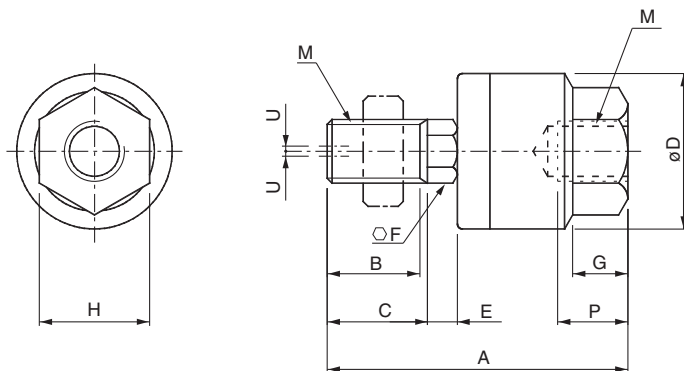
#### Double Knuckle Joint/ISO8140-DIN71752



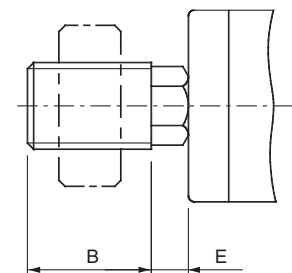
Unit: (mm)

Bore	Model	Thread e	b	d	f	g	c	j	l
ø8	GKM4-8	M4	4	16	4	8	8	6	21
ø10	GKM4-8	M4	4	16	4	8	8	6	21
ø12	GKM6-12	M6	6	24	6	10	12	8	31
ø16	GKM6-12	M6	6	24	6	10	12	8	31
ø20	GKM8-16	M8	8	32	8	12	16	10	42
ø25	GKM10-20	M10 X 1.25	10	40	10	18	20	12	52

### Floating Joint/Series JA



In case of dimension without C



Unit: (mm)

Bore	Model	M		A	B	C	D	E	F	G	H	Maximum screwed depth P	Allowable eccentricity U	Max. operating tension and compression power (KN)
		Nominal thread dia.	Pitch											
ø8, ø10	JA10-4-070	4	0.7	26	9	10	12	1.5	4	4	7	5.5	0.5	0.054
ø12, ø16	JA15-6-100	6	1	34.5	12.5	14	16	2	6	5	10	7	0.5	0.123
ø20	JA20-8-125	8	1.25	44	17.5	—	21	4.5	7	7	13	8	0.5	1.1
ø25	JA30-10-125	10	1.25	49.5	19.5	—	24	5	8	8	17	9	0.5	2.5



## Applicable Auto Switches

Style	Special function	Electrical entry	Indicator	Wiring (output)	Load voltage		Auto switch model**			Lead wire* (mm)				Applicable load					
					DC	AC	Band mounting	Rail mounting		0.5 (-)	3 (L)	5 (Z)	None (N)						
Solid state switch	—	Grommet	No	3 wire (NPN)	5V, 12V	—	M9N	F7NV	F79	●	●	○	—	IC					
				3 wire (PNP)			M9P	F7PV	F7P	●	●	○	—						
	Diagnostic indicator (2 colour)	Connector	Yes	No	2 wire	12V	—	M9B	F7BV	J79	●	●	○	—	Relay PLC				
					—			H7C	J79C	—	●	●	●	●					
					3 wire (NPN)	5V, 12V	—	M9NW	F7NWV	F79W	●	●	○	—					
					3 wire (PNP)			M9PW	—	F7PW	●	●	○	—					
Water resistant (2 colour)	Grommet	No	No	2 wire	12V	—	M9BW	F7BWV	J79W	●	●	○	—	—					
				—			H7BA	F7BAV	F7BA	—	●	○	—						
With diagnostic output (2 colour)	Grommet	Yes	Yes	4 wire (NPN)	5V, 12V	—	H7NF	—	F79F	●	●	○	—	IC					
Reed switch	—	Grommet	Yes	3 wire (NPN)	—	5V	—	A96	—	A76H	●	●	—	—	IC				
				—				—	200V	—	A72	A72H	●	●		—	—		
				Diagnostic indicator (2 colour)	Connector	No	No	2 wire	24V	—	12V	100V	A93	A73	A73H	●	●	●	Relay PLC
								5V, 12V			100V	A90	A80	A80H	●	●	—	—	
								12V			—	C73C	A73C	—	●	●	●	—	
								12V			24V	C80C	A80C	—	●	●	●	—	
—	Grommet	Yes	Yes	—	—	—	—	—	A79W	—	●	●	—	—					

\* Lead wire length 0.5m..... e.g.) C73C 5m.....Z e.g.) C73CZ  
 3m.....L C73CL None.....N C73CN

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

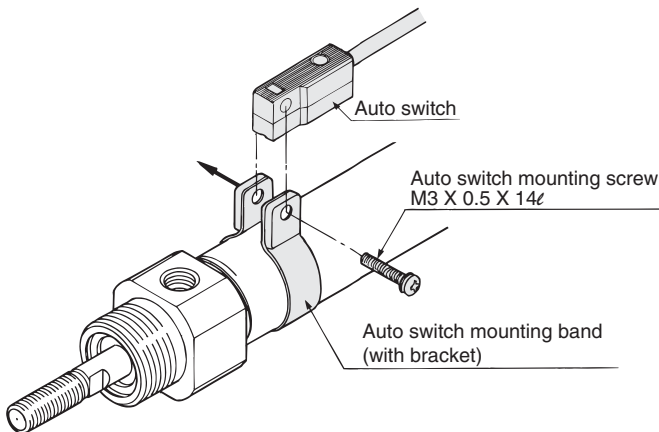
\*\* "D-A79W" type cannot be mounted on bore sizes ø8, ø10 and ø12.

\*\*\* D-A9□ type cannot be mounted on bore sizes ø8, ø10 and ø12.

\*\*\*\* Water resistant type auto switches can be mounted on the above models, but in such case SMC cannot guarantee water resistance. Consult with SMC regarding water resistant types with the above model numbers.

### Auto Switch Mounting Band Part No.

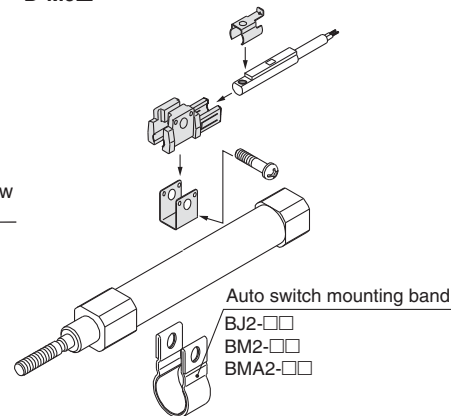
<Applicable auto switch>  
 D-C7□/C80, D-C73C/80C, D-H7□, D-H7C



Bore size (mm)	Order No.
8	BJ2-008
10	BJ2-010
12	BJ2-012
16	BJ2-016
20	BM2-020
25	BM2-025

### Auto Switch Mounting Band Part No.

<Applicable auto switch>  
 D-M9□



Bore size (mm)	Order No.
ø8~ø25	BJ3-1



# Made to Order Common Specifications



Quick Reference  
Guide

C55

C85

C76

CP95

C95

**-X  
(Made to Order)**

D-  
(Auto Switch)

Model Selection  
Procedures

# Made to Order Common Specifications -XA0 to -XA30: Change of Rod End Shape



## 1 Change of Rod End Shape

Series C85: Change of Rod End Shape -XA0 to XA30

C85 Standard model no. → Refer to chapter C85 — X A0

● Symbol of rod end shape

ø8 to ø16: only possible XA0/1/10/11

ø20 to ø25 (except Non-rotating type): XA0 to XA30 possible

ø20 to ø25 (Non-rotating type): XA0/1/6/10/11/13/14/17/19/21

- SMC will make appropriate arrangements if no dimensional, tolerance, or finish instructions are given in the diagram.
- Dimensions of rod diameter "D" marked "\*" is  $\begin{matrix} D \leq 25.2\text{mm} \\ D > 25.4\text{mm} \end{matrix}$ . Enter any special dimension you desire.

### Rod End Shape

Symbol: <b>A0</b> Give H, A-dimensions in case rod end shape is the same as standard shape and only H, A-dimensions are different from standard dimensions.				
Symbol: <b>A1</b> 	Symbol: <b>A2</b> 	Symbol: <b>A3</b> 	Symbol: <b>A4</b> 	Symbol: <b>A5</b> 
Symbol: <b>A6</b> 	Symbol: <b>A7</b> 	Symbol: <b>A8</b> 	Symbol: <b>A9</b> 	Symbol: <b>A10</b> 
Symbol: <b>A11</b> 	Symbol: <b>A12</b> 	Symbol: <b>A13</b> 	Symbol: <b>A14</b> 	Symbol: <b>A15</b> 
Symbol: <b>A16</b> 	Symbol: <b>A17</b> 	Symbol: <b>A18</b> 	Symbol: <b>A19</b> 	Symbol: <b>A20</b> 
Symbol: <b>A21</b> 	Symbol: <b>A22</b> 	Symbol: <b>A23</b> 	Symbol: <b>A24</b> 	Symbol: <b>A25</b> 
Symbol: <b>A26</b> 	Symbol: <b>A27</b> 	Symbol: <b>A28</b> 	Symbol: <b>A29</b> 	Symbol: <b>A30</b> 

# Series C85

## High Temperature

## XB6

C85 **Mounting** **Bore size** **Stroke** — XB6  
 N, E, F, Y 8, 10, 12, 16, 20, 25mm

Standard cylinder seals are replaced with special ones and other modifications are made in order to enable the cylinder to operate at a high ambient temperature (−10 to +150°C).

### Possible applications:

- Bore size 8 + 0 and 25mm
- Rubber bumper
- Without magnets (Auto switches cannot be used at high temperature.)
- Single rod - Double acting
- Double rod - Double acting (W)

## Dimensions unchanged

### Specifications

Style	Air cylinder
Applicable sizes	ø8, ø10, ø12, ø16, ø20, ø25mm
Action	Double acting
Ambient temperature range	−10 to 150°C
Cushion	Rubber bumper
Material	Seal: Fluorocarbon rubber Wear ring: Fluorocarbon resin
Grease	Fluoroplastics grease

## Low Temperature

## XB7

C85 **Mounting** **Bore size** **Stroke** — XB7  
 N, E, F, Y 20, 25mm

Standard cylinder seals are replaced with special ones and other modifications are made in order to enable the cylinder to operate at a low ambient temperature (−40 to +70°C).

### Possible applications:

- Bore size 20 and 25mm
- Rubber bumper
- Without magnets (Auto switches cannot be used at low temperature.)
- Single rod - Double acting
- Double rod - Double acting (W)

## Dimensions unchanged

### Specifications

Style	Air cylinder
Applicable sizes	ø20, ø25mm
Action	Double acting
Ambient temperature range	−40 to 70°C
Cushion	Rubber bumper
Material	Seal: Low nitrile rubber Wear ring: Fluorocarbon resin
Grease	Fluoroplastics grease

## Low Speed

**XB9**

**C85** **Mounting** **Bore size** **Stroke** — **XB9**  
 N, E, F, Y      20, 25mm

The cylinder does not generate any stick-slip phenomenon even at the rated low speed of 10 to 50mm/sec. All strokes smoothly drive at a constant speed.

**Possible applications:**

- Bore size 20 and 25mm
- Rubber bumper style only
- With or without magnets
- Single rod - Double acting

### Dimensions unchanged

#### Specifications

Style	Air cylinder
Applicable sizes	ø20, ø25mm
Action	Double acting
Piston speed	10 to 50mm/sec
Cushion	Rubber bumper

## Heavy-duty Scraper

**XC4**

**C85** **Mounting** **Bore size** **Stroke** — **XC4**  
 N, E, F, Y      20, 25mm

A heavy-duty scraper is used as wiper ring. Ideal for severe applications where the cylinder is exposed to dust, earth and sand. Applicable to casting machines, construction machines, industrial vehicles, etc..

**Possible applications:**

- Bore size 20 and 25mm
- Rubber bumper style only
- With or without magnets
- Single rod - Double acting
- Double rod - Double acting (W)

### Dimensions unchanged

#### Specifications

Style	Air cylinder
Applicable sizes	ø20, ø25mm
Max. operating pressure	1MPa
Min. operating pressure	0.08MPa
Cushion	Rubber bumper
Wiper ring	NBR (SCB)

### Construction

