





Series C85: ø8, ø10, ø12,

Extended Service Life

Automated assembly guarantees 100% repeatable mounting accuracy. With abrasion resistant seals and replaceable nose seal, C85 cylinders offer exceptional service life.

Corrosion Resistance

All parts are corrosion resistant. End covers and clevis are specially anodised while barrel is stainless steel. Piston rod is stainless steel up to ø16. ø20 to ø40 is C45 hard chromed.

ISO Standard 6432

is compliant with auto switch type.

C85: ø8, ø10, ø12, ø16





ø16, ø20, ø25,

Easy-accurate Mounting

Simple space-saving design with high dimensional accuracy makes these cylinders very easy to use.

Large spanner flats on the rod and head covers greatly simplify their installation and positioning.

High Speed Actuation

Low friction and the standard elastomer cushion seals allow piston speeds up to 1500 mm/s. Either rubber bumper or air cushions are available.

C85: ø20, ø25

Replaceable Rod Seal

Rod seal can be quickly replaced, greatly extending the cylinder life. (C85 ø20, 25).

Minimized Side Clearance

The close tolelance of the piston rod in the front end bush allows greater side loading.

Series Variations

variety of mounting options. Basic integrated clevis (N) Rod boot Bore ø8 to ø16 and Only bores ø20, ø25 mm (Only ø20, ø25) all non-rotating Double end (E) -XB6 -XB7 -XB9 piston rod are -XC4 Auto switch Series Action Variations Front nose High Low Low Bore size (mm) already Heavy temp. temp. speed Front nose Stainless steel Rail Band duty NCM 10 12 16 20 25 R2 8 in line port (Y) R mounting mounting scraper Rubber NCA cushion Air Dcushion Non -X Double rotating acting, Direct Single rod 20mount Bottom side mounting Data Direct mount Front side mounting C85 Rubber Double cushion acting, Air Double rod cushion Rubber Single cushion acting, Spring Non return rotating Rubber Single cushion acting, Spring Non extended rotating Stainless steel piston rod and rod end nut

Strong, Corrosion-proof Barrel

The risk of breakage or deformation due to external impacts is reduced by the use of harder, heavy walled stainless steel tube.

Mounting Flexibility

Different head covers allow a great

Stainless steel piston rod, rod end nut and mounting nut

6-11-3

CJP CJ2 CM₂ CG1

CJ1

Stroke Selection

The relation between the cylinder size and the maximum stroke depending on the mounting style

Assuming that the force that is generated by the cylinder itself acts as a buckling force on the piston rod or on the piston rod and the cylinder tube, the table below indicates in centimeters the maximum stroke that can be used, which was obtained through calculation. Therefore, it is possible to find the maximum stroke that can be used with each cylinder size according to the relationship between the level of the operating pressure and the type of cylinder mounting, regardless of the load factor.



Reference: Even under a light load, if the piston rod has been stopped by an external stopper at the extending side of the cylinder, the maximum force generated by the cylinder will act upon the cylinder itself.

Ν	Nount	ting	style		ressure	M	aximum accordi	stroke	that ca uckling	n be us strengt	ed h
Мош	ntina l	bra	cket	symbol	ating pr			C8	5		
mou	diagra	am	onor	Nominal ((MPa)	8	10	12	16	20	25
Foot: L	Rod si flange	ide e: F	Head side flange: G		0.3	24	18	36	26	38	48
W	Ŵ	7	Ŵ	L F	0.5	18	14	27	19	29	36
					0.7	14	11	22	16	23	30
	""	سر ۲			0.3	9	6	15	10	15	20
			-	G	0.5	6	4	10	6	10	14
₽		Ц	TU) Tunninininininininininininininininininin		0.7	4	3	8	4	8	11
Clevi C, D	s:) t	Ro trun	od side nion: U		0.3	22	17	35	24	36	46
		(C D	0.5	16	12	26	18	27	34
					0.7	13	10	21	14	22	28
Ĩ			Ĩ		0.3	(40)*	(40)*	(40)*	(40)*	80	(100)*
Head s	ead side Center		U	0.5	38	30	(40)*	(40)*	61	77	
trunnior	n:U 1 S	trunnion: O			0.7	32	25	(40)*	35	51	64
					0.3	22	17	35	24	37	47
件				т	0.5	16	12	26	18	27	35
	<i>m</i>		胞		0.7	13	10	21	14	22	28
Foot: L	Rod s flange	side e: F	Head side flange: G		0.3	(40)*	(40)*	(40)*	(40)*	(100)*	(100)*
W	W	7	W	L F	0.5	(40)*	(40)*	(40)*	(40)*	89	(100)*
		7			0.7	(40)*	36	(40)*	(40)*	74	93
		f	Ę,		0.3	33	26	(40)*	37	54	69
				G	0.5	25	19	39	27	41	52
		<u>//</u>			0.7	20	15	32	22	33	43
Foot: L	Rod s flange	side e: F	Head side flange: G		0.3	(40)*	(40)*	(40)*	(40)*	(100)*	(100)*
			W	L F	0.5	(40)*	(40)*	(40)*	(40)*	(100)*	(100)*
		шш			0.7	(40)*	(40)*	(40)*	(40)*	(100)*	(100)*
		۳	H		0.3	(40)*	38	(40)*	(40)*	79	(100)*
	肖			G	0.5	37	29	(40)*	(40)*	60	76
ال لك ا		"			0.7	30	23	(40)*	34	50	63

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.



Series C85: ø8, ø10, ø12, ø16

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Series C85: Ø20, Ø25

SMC



D-

-X

CJ1

CJP

CJ2

CM₂

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

Series C85 ø8, ø10, ø12, ø16, ø20, ø25



Mounting Bracket Part No.								
Mounting bra	Bore size (mm) acket	8	10	12	16	20	25	
Foot (1 pc.)		C85I	_10A	C85L16A		C85I	C85L25A	
Mounting	Foot (2 pcs. with mounting nut 1 pc.)	C85L10B		C85L16B		C85L25B		
bracket	Flange	C85F10		C85F16		C85	C85F25	
	Trunnion	C85T10		C85T16		C85T25		
	Clevis	C85C10		C85C16		C85C25		
	Single knuckle joint	KJ	4D	KJ	6D	KJ8D	KJ10D	
Accessory	Double knuckle joint	GKN	/14-8	GKM	6-10	GKM8-16	GKM10-20	
Accessory	Floating joint	JA10-4-070		JA15-6-100		JA20 -8-125	JA30 -10-125	

Replacement Parts For Standard Cylinders

25

Bore size (mm)	Part no.	Note
20	C85-20PS	Every set includes: n°1 rod seal
25	C85-25PS	n°1 seal retaining washer n°1 retaining ring
For Non-rotatir	ng Cylinders ("I	(")
Bore size (mm)	Part no.	Note
20	C85K-20PS	Every set includes: n°1 rod seal
		n°1 seal retaining washer

n°1 retaining ring



ISO Cylinder: Standard/Non-rotating Type Double Acting, Single/Double Rod Series C85



Specific	atio	ns							
Bore s	size (n	וm)	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 M5 x 0.8 G 1/8 G 1/8					
Action				Double acting, Single/Double rod					
Fluid					A	dir			
Proof press	sure				1.5	MPa			
Max. opera	ating p	ressure			1.0	MPa			
Min. opera	ting Sp	oring return	0.1 MPa	0.08	MPa	0.05 MPa	0.05	MPa	
pressure	Sp	ring extended			0.08 MPa		C		
Ambient ar temperatur	nd fluic re	fluid –20 to 80°C (Built-in magnet: –10 to 60°C)						C	
Cushion			Rubber cush	nion, Air cush	ion (Except ø	8) (Non-rota	ting: Rubber I	bumper only)	С
Lubrication			Not req	Not required. Use turbine oil Class 1 ISO VG32, if lubricated.					
Dedlesst	Nylc tarpa	on aulin	_				Max. ambient temperature 60°C		С
Rod Doot	Heat	t resistant		_	_		mbient	Μ	
Distan ana	ad								М
Piston spe	eu				50 10 15	00 mm/s			
Allowable kinetic	F	Rubber	0.02 J	0.03 J	0.04 J	0.09 J	0.27J	0.4 J	C
energy	A c	Air cushion	_	0.17 J	0.19 J	0.4 J	0.66 J	0.97 J	C
Non-rotatir	ng acci	uracy	±1° 30'	±1° 30'	±1°	±1°	±0° 42'	±0° 42'	C
Stroke tolerance (mm)			0/+1 0/+1.4				1.4		
* Maximum	ambie	ent temper	ature of rod	boots only.					С

JIS Symbol Double acting, Single rod



Rubber cushion

Air cushion

Non-rotating

Double acting, Double rod



Rubber cushion

Non-rotating rod: Double acting, Single rod



Weight (Standard, Non-rotating rod)						
	Bore size (mm)	8	10	12		
Double action	Basic woight	45	40	06		

Double action Basic weight			45	49	96	109	183(203)	258(286)		
Double	uble rod Add'I weight for each 10 mm of stroke		3	3.2	6.2	7.2	11.8	18.4	NC	
Mounting bracket			C85L□A	20		4	40		95	
			C85L□B	55		105		210		D-
		C85F□	12		25		90		v	
		C85T□	C85T 20		50		75		-X	
			C85C□	20		40		85		20
ory	Single knuck	le joint	KJID	1	7	2	25	45	70	20
S Dout	Double knuc	kle joint	GKM□-□	1	0	2	20	50	100	Dat
Acc	Floating joint	:	JAD-D-D	1	0	2	20	50	70	

Calculation: (Example) C85N10-50, C85F10 Basic weight 49 (ϕ 10)g Additional weight 3.2/10 mm of strol Cylinder stroke 50 mm Mounting bracket 12g 49 + 3.2 x 50/10 = 65g 65 +12 = 77g -49 (ø10)g -3.2/10 mm of stroke

(g)

25

16

20

(): In the case of air cushion

Auto Switch Mounting, Minimum Possible Cylinder Stroke

Band Mounting Style

Bore	size:	ø8,	ø10), Ø1	12,	Ø١	6
						_	-

	No. of auto switches					
Auto switch	З р	CS.	2 p	1 nc		
model	Different sides	Same side	Different sides	Same side		
D-C7□			45	50	10	
D-C80	55	90	15	50	10	
D-C73C						
D-C80C	65	105	15	65	10	
D-H7C						
D-H7 □						
D-H7□W						
D-H7BAL	60	105	15	60	10	
D-H7NF						

Rail Mounting Style

(mm)

Bore size: ø8, ø10, ø12, ø16 (mm)								
	No. of auto	o switches						
Auto switch model	3 pcs.	2 pcs.	1 pc.					
D-A7□/A80	05	10	_					
D-A73C/A80C	35	10	5					
D-A7⊟H	45	10	-					
D-A80H	45	10	5					
D-A79W *	40	15	10					
D-F7 □	45	_	_					
D-J79	45	5	5					
D-F7⊡V		_	-					
D-J79C	30	5	5					
D-F7⊡W								
D-J79W								
D-F7BAL	55	15	10					
D-F79F								
D-F7□WV	10							
D-F7BAVL	40	15	10					

* "D-A79W" can not be mounted on bore size ø8, ø10, ø12 cylinder.

Band Mounting Style Bore size: ø20, ø25

Bore size: ø20, ø25 (n							
	No. of auto switches						
Auto switch	2 p	CS.	n p	1 pc.			
model	Different sides	Same side	Different sides	Same side	1		
D-C7□	45	50	$15 + 45(\frac{n-2}{2})$	50 A5(a 0)	10		
D-C80	15	50	(n = 2, 4)	50 + 45(n – 2)	10		
D-C73C							
D-C80C	15	65	$15 + 45(\frac{n-2}{2})$		10		
D-H7C			(n = 2, 4)	65 + 50(n – 2)			
D-H7 □							
D-H7□W			$15 + 45(\frac{n-2}{2})$	00 55(- 0)			
D-H7BAL	15	60	(n = 2, 4)	60 + 55(n – 2)	10		
D-H7NF							

Rail Mounting Style

Bore size: ø20, ø25	e i j i e		(mm)
	No. of auto		
Auto switch model	2 pcs.	n pcs.	1 pc.
D-A7□/A80			
D-A7□H/A80H			
D-A73C/A80C		$10 \cdot 25(^{n-2})$	
D-F7 □	10	$10 + 35(\frac{-1}{2})$	5
D-F7⊡V		(11 = 2, 4)	
D-J79			
D-J79C			
D-A79W			
D-F7⊡W			
D-J79W		$15 \pm 35(\frac{n-2}{2})$	
D-F7BAL	15	(n = 2, 4)	10
D-F79F		(– 2, 4)	
D-F7□WV			
D-F7BAVL			

Construction

[First angle projection]



Construction

Double acting, Single rod $C\square85\square10$ to 16 Air cushion (Disassembly is not possible.)





Built-in magnet

Component Parts

No.	Description	Material	Qty.	Note
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 type piston)
6	Bush	Sintered bronze	1	
7	Cushion needle	Stainless steel	2	
8	Steel ball	Bearing steel	2	

No.	Description	Material	Qty.	Note
9	Cushion ring	Brass	2	
10	Magnet	Magnet	1	(Switch type only)
1	Mounting nut	Carbon steel	1	Nickel plating
12	Tube gasket	NBR	2	
(13)	Rod seal	NBR	1	
14	Piston seal	NBR	2	
(15)	Check seal	NBR	2	
16	Piston gasket and cushion ring gasket	NBR	3	(4 for switch type)
17	Needle seal	NBR	2	
(18)	Rod end nut	Carbon steel	1	Nickel plating

C 85 20/25 Air cushion





Component Parts

No.	Description	Material	Qty.	Note
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	Chromate
6	Plain washer	Stainless steel	1	
7	Bush	Sintered bronze	1	
8	Bush	Sintered bronze	1	
9	Retaining ring	Carbon steel	1	Nickel plating
10	Cushion ring	Brass	2	
1	Magnet	Magnet	1	(Switch type only)
12	Wear ring	Resin	1	

No.	Description	Material	Qty.	Note
13	Cushion needle	Alloy steel	2	Electroless nickle plating
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 needle seal	NBR	2	
20	Rod end nut	Carbon steel	1	Nickel plating
21)	Mounting nut	Carbon steel	1	Nickel plating
22	Self locking ring	Stainless steel	2	
23	Steel ball	Stainless steel	2	



Construction

[First angle projection]

CJ1

CJP

CJ2

CM2

CG1

MB

MB1

CP95

NCM

NCA

D-

-X

20-

Data

Double acting, Double rod $C\square85WE8$ to 16 Rubber cushion (Disassembly is not possible.)



Component Parts

No.	Description	Material	Qty.	Note
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 type piston)
6	Bush	Sintered bronze	2	
7	Magnet	Magnet	1	(Switch type only)
8	Spacer	Brass	1	

lo.	Description	Material	Qty.	Note	CA2
9	Bumper	Urethane	2		
0	Piston gasket	NBR	1	(2 for switch type)	CQ1
1	Tube gasket	NBR	2		031
2	Rod seal	NBR	2		076
13	Piston seal	NBR	2		070
4	Rod end nut	Carbon steel	2	Nickel plating	005
15	Mounting nut	Carbon steel	1	Nickel plating	605
					C95

C 85WE20/25 Rubber bumper



Built-in magnet

Component Parts

No.	Description	Material	Qty.	Note
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	Chromate
(5)	Plain washer	Stainless steel	2	
6	Bush	Sintered bronze	2	
7	Retaining ring	Carbon steel	2	Nickel plating
8	Bumper A	Urethane	1	

No.	Description	Material	Qty.	Note
9	Bumper B	Urethane	1	
10	Piston gasket	NBR	1	
1	Rod seal	NBR	2	
12	Piston seal	NBR	1	
13	Rod end nut	Carbon steel	2	Nickel plating
14	Mounting nut	Carbon steel	1	Nickel plating
(15)	Magnet	Magnet	1	(Switch type only)