Air Cylinder: Standard Type
Lube, Non-lube Type, Air-hydro Type

Series CS1

Lube, Non-lube: ø180, ø200, ø250, ø300
Air-hydro: ø125, ø140, ø160

How to Order

CS1 [L] [ ] [ ] [160] [ ] – [300] [ ] – [ ]

Mounting style

B	Basic style
L	Foot style
F	Rod side flange style
G	Head side flange style
C	Single clevis style
D	Double clevis style
T	Center trunnion style

Tubing material

Symbol	Bore size (mm)	Tubing material
Nil	ø125 to ø160	Aluminum tube
	ø180 to ø300	Steel tube
F	ø125 to ø160	Steel tube

Type

Nil	Lube
N	Non-lube
H	Air-hydro

Bore size

Lube, Non-lube		Air-hydro	
125	125 mm	125	125 mm
140	140 mm	140	140 mm
160	160 mm	160	160 mm
180	180 mm		
200	200 mm		
250	250 mm		
300	300 mm		

Cylinder stroke (mm)
(Refer to "Maximum Stroke" on page 413.)

Port thread type

Nil	Rc
TN	NPT
TF	G

Suffix for cylinder

Rod boot	J	Nylon tarpaulin
	K	Heat resistant tarpaulin
Cushion	N	Without cushion
	R	With cushion in rod side
	H	With cushion in head side
	Nil	With cushion in both sides (Air-hydro type has no cushion.)

∗ If specifying more than one symbol, indicate them in alphabetically
∗∗ Air-hydro type has no cushion. No symbol indicates no cushion.

Made to Order
(Refer to page 413 for details.)

Mounting Bracket Part No.

Bore size (mm)	125	140	160	180	200	250	300
Foot style∗	CS1-L12	CS1-L14	CS1-L16	CS1-L18	CS1-L20	CS1-L25	CS1-L30
Flange style	CS1-F12	CS1-F14	CS1-F16	CS1-F18	CS1-F20	CS1-F25	CS1-F30
Single clevis style	CS1-C12	CS1-C14	CS1-C16	CS1-C18	CS1-C20	CS1-C25	CS1-C30
Double clevis style∗∗	CS1-D12	CS1-D14	CS1-D16	CS1-D18	CS1-D20	CS1-D25	CS1-D30

∗ Order two foot brackets per cylinder.
∗∗ When ordering the double clevis, the clevis pin and the cotter pin (2 pcs.) are attached.

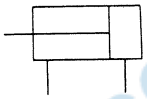
For "How to Order" with auto switch, refer to page 417.

Specifications

Type	Lube, Non-lube	Air-hydro
Bore size (mm)	ø125 to ø300	ø125, ø140, ø160
Fluid	Air	Turbine oil
Proof pressure	1.57 MPa Note)	
Maximum operating pressure	0.97 MPa	
Minimum operating pressure	0.05 MPa	0.06 MPa
Piston speed	50 to 500 mm/s	0.5 to 200 mm/s
Cushion	Interchangeable	None
Ambient and fluid temperature	0 to 70°C (No freezing), Air-hydro type: 5 to 60°C	
Stroke length tolerance (mm)	250 or less $^{st}_{0}^{+1.0}$, 251 to 1,000 $^{st}_{0}^{+1.4}$, 1,001 to 1,500 $^{st}_{0}^{+1.8}$ 1501 to 2000 $^{st}_{0}^{+2.2}$, 2001 to 2400 $^{st}_{0}^{+2.6}$	
Mounting	Basic style, Foot style, Rod side flange style, Head side flange style, Single clevis style, Double clevis style, Center trunnion style	

Note) Item corresponding to Class 2 Pressure Vessel Act is 1.46 MPa.

JIS Symbol
Double acting



Made to Order Specifications
(For details, refer to pages 1373 to 1498.)

Symbol	Specifications
—XA□	Change of rod end shape
—XB5	Oversized rod cylinder
—XB6	Heat-resistant cylinder (–10 to 150°C)
—XC3	Special port location
—XC4	With heavy duty scraper
—XC5	Heat resistant cylinder (110°C)
—XC6	Piston rod and rod end nut made of stainless steel
—XC8	Adjustable stroke cylinder/Adjustable extension type
—XC9	Adjustable stroke cylinder/Adjustable retraction type
—XC10	Dual stroke cylinder/Double rod type
—XC11	Dual stroke cylinder/Single rod type
—XC14	Change of trunnion bracket mounting position
—XC15	Change of tie-rod length
—XC22	Fluororubber seal
—XC26	Clevis pins with flat washer
—XC27	Double clevis pin and double knuckle pin made of stainless steel
—XC30	Rod side trunnion
—XC35	With coil scraper
—XC68	Hard chrome plated stainless steel rod

Accessory

Mounting		Basic style	Foot style	Rod side flange style	Head side flange style	Single clevis style	Double clevis style	Center trunnion style
Standard equipment	Clevis pin, Cotter pin	—	—	—	—	—	●	—
Option	Rod end nut	●	●	●	●	●	●	●
	Single knuckle joint	●	●	●	●	●	●	●
	Double knuckle joint (Clevis pin, Cotter pin)	●	●	●	●	●	●	●
	Rod boot	●	●	●	●	●	●	●

∗ In the case of using the rod end nut together with the single knuckle joint or double knuckle joint, refer to page 429.

Maximum Stroke

(mm)

Tubing material	Aluminum alloy	Carbon steel tube	
Mounting bracket / Bore size (mm)	Basic style, Head side flange style Single clevis style, Double clevis style Center trunnion style, Foot style Rod side flange style	Basic style Head side flange style Single clevis style Double clevis style Center trunnion style	Foot style Rod side flange style
125	1000 or less	1000 or less	1600 or less
140	1000 or less	1000 or less	1600 or less
160	1200 or less	1200 or less	1600 or less
180	—	1200 or less	2000 or less
200	—	1200 or less	2000 or less
250	—	1200 or less	2400 or less
300	—	1200 or less	2400 or less

Class 2 Pressure Vessel

In the case of exceeding the following strokes, the cylinder is subject to Class 2 Pressure Vessel Act.	
Bore size (mm)	Cylinder stroke (mm)
180	1,569
200	998
250	813
300	564

Rod Boot Material

Symbol	Material	Maximum ambient temperature
J	Nylon tarpaulin	70°C
K	Heat resistant tarpaulin	110°C ∗

∗ Maximum ambient temperature for the rod boot itself.