

## J. Hydraulic Cylinder

Standard Cylinder Size : GB/T 15622-1995



### ■ Features

1. Various mounting types.
2. According to GB/T 15622-1995, the specifications are in below:

Operating Pressure	Model
3.5MPa	Low Pressure Hydraulic Cylinder
7MPa	Low Pressure Hydraulic Cylinder
14MPa	Medium Pressure Hydraulic Cylinder
21MPa	High Pressure Hydraulic Cylinder

### Note :

- (1) 21MPa~70MPa is " Super Heavy Duty Type".
- (2) 1000Lbs/in<sup>2</sup> (psi) =7 MPa
- (3) GB/T : 7MPa=70 kgf/cm<sup>2</sup>

### 3. Determining Conditions:

- (1) Cylinder Bore
- (2) Stroke
- (3) Operating pressure
- (4) Mounting Type

(A) After loading, the speed is over standard level.

You have to use the hydraulic cylinder with cushion.  
Or the speed is over more, you have to install a reducing pressure valve.

(B) The hydraulic oil would depends on the and the type of seal material.

4. All components are compliant to GB/T standards.

They are compatible, interchangeable, long endurance, and easy for maintenance.

5. The oil-seals are made of quality material that is wear-resistance, friction-free, and for high pressure uses.

6. The Location-sensor Hydraulic Cylinder provides with ability to detect the position of the piston.

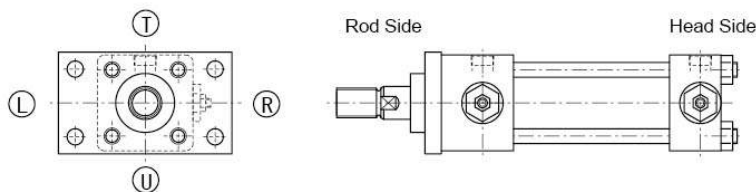
## J. Hydraulic Cylinder

### ■ Cylinder Type

SJ70	1	LA	32	B	100	B	T	L	R	I	★1	10
Series Number	Seal Material	Mounting Type	Cylinder Bore	Rod Type	Stroke	Location of Cushion	Port Position	Cushion Valve Position	Air Vent Position	Options		Design Number
SJ70: 7MPa	No code (Standard)  Nitrile Rubber  1. Hydrogenated Nitrile Rubber  2. Fluorine Rubber	SD	32			No code No Cushion		No code (Standard)	No code (Standard)	No code: Without any accessories. I: Type Joint. Y: Type Joint N: Lock Nut  J: With dust cover (The nylon cover is operated under 80°C.) K: With dust cover (The neoprene cover is operated under 130°C.) A: With dust cover (The conex cover is operated under 300°C.)		10
		LA	40									
		LB	50									
		FA	63			B: Both Sides	T Up	L Up	R Up			
		FB	80	B Standard Type	Don't exceed the allowable max stroke	R: Rod Side						
		FY	100	C Heavy Duty Type		H: Head Side						
SJ140: 14MPa		FZ	125									
		CA	150				L Left	T Left (Standard)	T Left			
		CB	180				U Under	U Under	L Under			
		TA	200				R Right	R Right	U Right (Standard)			
TC	220											

#### Notes:

- The seal materials are usually NBR Rubber.
- The FA, FB mounting type have the max operating pressure under 7MPa. Other mounting types operate under 14 MPa. For High pressure operation conditions, please contact our representatives.
- There is no cushion for Ø32 type cylinder.
- Please note the signs for direction on oil port, cushion valve, and air vent. These positions are shown in the figure below.
- Different options (I) available for specific requirements.
- When operating conditions are hazardous, please use dust cover. The operating temperatures represent the highest temperature.
- The standard cylinder is connected by rods. For non-standard type or other heavy duty operation conditions, please contact our sales representative.



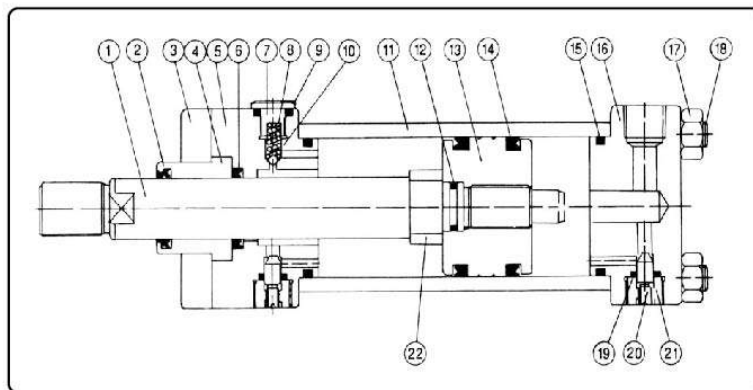
The symbol Of Hydraulic Cylinder Oil Port Position

## J. Hydraulic Cylinder

### ■ Mounting

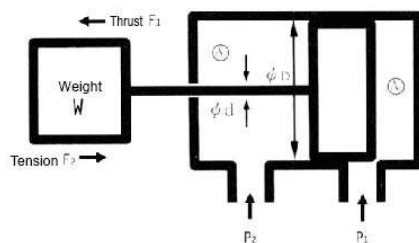
Symbol	Name	Illustration of Mounting Type	Symbol	Name	Illustration of Mounting Type
SD	Basic Type		FA	Rod Rectangular Flange	
LA	Foot Mounting Side Lugs		FB	Head Rectangular Flange	
LB	Foot Mounting Side End Angles		TA	Rod Trunnion	
CA	Cap Detachable Eye		TC	Intermediate Trunnion	
CB	Cap Detachable Clevis				

### ■ Hydraulic Cylinder Parts List



- |                   |                        |
|-------------------|------------------------|
| 1. Piston Rod     | 12. O Ring             |
| 2. Dust Wiper     | 13. Piston             |
| 3. Platen         | 14. Piston Seal        |
| 4. Copper Bushing | 15. O Ring             |
| 5. Front Cap      | 16. Back Cap           |
| 6. Rod Seal       | 17. Hex Socket Screws  |
| 7. Screw Stop Pin | 18. Rod                |
| 8. Spring         | 19. O Ring             |
| 9. O Ring         | 20. Cushion Pin        |
| 10. Ball Bearing  | 21. Cushion Pin Cap    |
| 11. Cylinder Tube | 22. Cushion Pin Sleeve |

### ■ Hydraulic Calculation



$$\text{Thrust } F_1 = A_1 P_1 \beta$$

$$\text{Tension } F_2 = A_2 P_2 \beta$$

$$A_1: \text{Active Area For Without Cylinder Rod Cavity } A_1 = \pi D^2 / 4 = 0.785 D^2 \text{ cm}^2$$

$$A_2: \text{Active Area For Cylinder Rod Cavity } A_2 = \pi (D^2 - d^2) / 4 = 0.785 (D^2 - d^2) \text{ cm}^2$$

D: Cylinder Bore

d: Piston Rod Diameter

P1: Oil Pressure For Without Cylinder Rod Cavity MPa

P2: Oil Pressure For Without Cylinder Rod Cavity MPa

$\beta$ : Burden Rate

Note

1. The actual pressure of hydraulic cylinder is lower than theoretical.
2. Burden rate  $\beta$  : 80% is on low inertia and 60% is on high inertia.