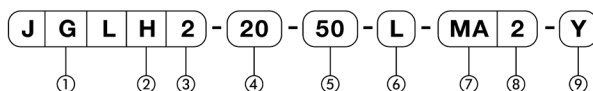


# J□L Series

Air cylinder/With fall prevention device

∅20, ∅25, ∅32, ∅40

## Ordering Instructions



### ① Magnet

G : Cylinder with switch available (with built-in magnet)

### ② Lock Position

H : Rod side lock

R : Head side lock

### ③ Action

2 : Double-acting, single rod

### ④ Bore (mm)

20 : ∅20

25 : ∅25

32 : ∅32

40 : ∅40

### ⑤ Stroke (mm)

Refer to Standard Stroke Table

### ⑥ Mounting

N : Standard type

L : Axial foot

A : Mounting plate

C : Eye

T : Center trunnion

### ⑦ Sensor switch type

No symbol	No switch	
MA	MA-1 (AC110V, DC24V)	M type Reed switch
MB	MD-1 (DC24V)	
MC	MD-3 (DC5, 6V)	
MD	MR (AC, DC5 ~ 110V)	
ME	MA-2L (AC110V)	
MF	MA-2H (AC220V)	M type Proximity switch
MG	MT-3 (DC5 ~ 30V)	
MH	MT-3U (DC5 ~ 30V)	
MJ	MT-2 (DC24V)	
MK	MT-2U (DC24V)	

### ⑧ Number of switches

No symbol : No switch

2 : With 2 units

1 : With 1 unit

### ⑨ Accessories

No symbol : Rod end nut

Y : With rod end clevis

I : With rod end eye

(note) Y : Provided with pin

## Model No. of Packing

Bore (mm)	Packing
∅20	JL20-PS
∅25	JL25-PS
∅32	JL32-PS
∅40	JL40-PS

## Model No. of Sensor Switch Mounting Bracket

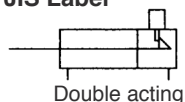
Bore (mm)	M type serson switch
∅20	J20-MJ
∅25	J25-MJ
∅32	J32-MJ
∅40	J40-MJ

## Model No. of Mounting Bracket

Bore(mm)	∅20	∅25	∅32	∅40
Axial foot mounting bracket	J20-L	J25-L	J32-L	J40-L
Flange mounting bracket	J20-A	J25-A	J32-A	J40-A
Eye mounting bracket	—	—	J32-C	J40-C
Trunnion mounting bracket	J20-T	J25-T	J32-T	J40-T

The built-in magnet is provided by default. Cylinders of J Series provide a locking device (so-called fall prevention device). When a starting point or an end point of the stroke is reached, air supply will be terminated and the locking device will thus be activated. This device helps prevent cylinder from falling and related hazards from occurring.

### JIS Label



Value shown in this catalog is shown in SI unit. However, value within this output table is in generic unit. Use the following formula to convert to SI unit :

$$\text{Pressure } Y \text{ (MPa)} = X \text{ (kgf/cm}^2\text{)} \times 9.80665 \times 10^{-2}$$

$$\text{Force } Y \text{ (N)} = X \text{ (kgf)} \times 9.80665$$

## Specifications

Action	Unit	Double-acting
Fluid		Non-lubricated air/Lubricated air
Pressure range	MPa(kgf/cm <sup>2</sup> )	0.15~0.7(1.5~7.1)
Temperature range	°C	5~60
Piston speed range	mm/s	50~500
Cushion		Built-in damper
Piston stroke allowance	mm	+1.0 0
Mounting		Standard, Axial foot, Mounting plate, Eye, Center trunnion
Lock position		Back end, Rod end
Piston travel when locked	mm	∅20, ∅25 : 2 ∅32, ∅40 : 3
Manual unlock		With unlock screw

## Standard stroke

(Unit : mm)

Bore	Standard stroke	Max. stroke
∅20	15, 25, 50, 75, 100, 125, 150	500
∅25	25, 50, 75, 100, 125, 150	
∅32	25, 50, 75, 100, 125, 150, 200, 250, 300	
∅40	50, 75, 100, 125, 150, 200, 250, 300	

## Accessories

	Name	Standard type	Axial foot	Mounting plate	Eye	Center trunnion
Standard	Standard nut	○	○	○	—	—
	Rod end nut	○	○	○	○	○
Optional	With rod end clevis	○	○	○	○	○
	With rod end eye	○	○	○	○	○

## Maximum load weight

(Unit : kg)

Bore (mm)	Maximum
∅20	22
∅25	34
∅32	56
∅40	88

## Model with switch

### M type reed switch

#### Lead with wire



Model No.	Rated voltage (V)	Rated current (mA)	Pilot lamp (Lights up at ON)	Application
MA-1	AC110	5~45	○	Relay PLC
	DC24	5~45		
MD-1	DC24	25~65	○	Relay
MD-3	DC5, 6	Max.50 (Inductive load) Max.300 (Resistive load)	○	IC circuit
MR	AC 5~110 DC	Max.50 (Inductive load) Max.300 (Resistive load)	No indicator	Relay PLC
MA-2L	AC110	5~150	○	Relay
MA-2H	AC220	5~150	○	Relay

### M type proximity switch

#### Lead with wire



Model No.	Rated voltage (V)	Rated current range (mA)	Pilot lamp (Lights up at CN)	Application
MT-2 MT-2U	DC24 (DC10~30)	5~100	○	Relay PLC
MT-3 MT-3U	DC5~30	5~200	○	Relay PLC IC circuit

#### Minimum stroke with M type switch (Unit: mm)

Bore	Number of switches		
	With 2 units (on the same surface)	With 2 units (on the different surfaces)	With 1 unit
Ø20	50	15	5
Ø25			
Ø32			
Ø40			

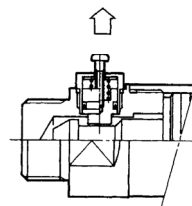
(Note) The MA-2L is the same as the MA-1 except that MA-2L is also equipped with protective circuit SS-2L.

The MA-2H is the same as the MA-1 except that MA-2H is also equipped with protective circuit SS-2H.

## Manual Unlock

When unlocking, first insert the screw to the hole on the top of locking cover. Fasten the locking piston, then pull the screw upward to complete unlocking. The piston will automatically lock up after resetting.

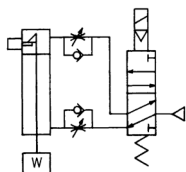
The above-mentioned screw (M3X12) comes with the cylinder set. However, during regular operation, please take out the screw to avoid problems.



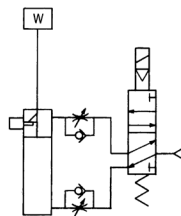
## ⚠ Operational Prevention Measure

### Pneumatic circuit recommended

Fall prevention device  
set at the rod end



Fall prevention device  
set at the head center

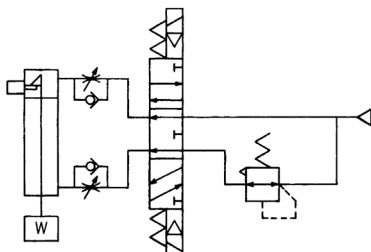


### Precautions with regard to control circuit selection

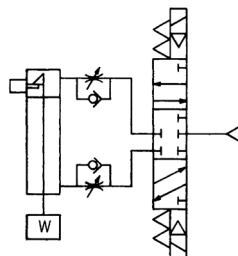
Do not operate the control circuit of a pneumatic cylinder as the graph shown below. If a three-position solenoid is used, it cannot be locked. Because there is residual pressure at the port of locking device. In addition, air leakage from the solenoid will enter into a pneumatic cylinder, locking will be removed as time goes by.

This circuit may not be used.

Connect ABR port, P port closed type.



All ports closed type.



Before operation, check whether air for the control circuit is prioritized to supply ports without locking devices. (Please refer to the above circuit recommended).

### Operating pressure

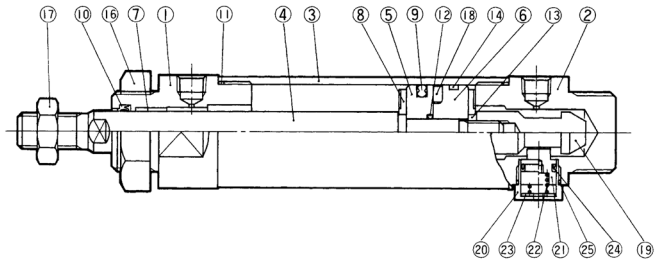
Please operate at the port with a locking device under pneumatic pressure over 0.15MPa{1.5kgf/cm<sup>2</sup>}. If the pneumatic pressure falls below above-mentioned pressure, it will not be unlocked.

### Unlocking

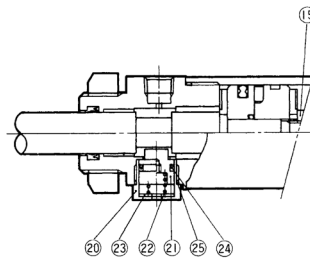
When unlocking is needed, first check that air supply is provided to the port of the non-locking side to avoid loading on the locking device. If unlocking is conducted simultaneously with air discharge to the port of the non-locking side, excessive force may cause damages to locking devices or sudden movement.

## Construction

### Back end locking



### Axial locking



### Parts List

No.	Name	No.	Name	No.	Name
1	Front cover	10	Rod packing	19	Locking bush
2	End cover	11	O-ring for cover	20	Locking cover
3	Outer tube	12	End cover gasket	21	Locking piston
4	Piston rod	13	Return spring	22	Locking spring
5	Piston A	14	Wear ring	23	Locking gasket
6	Piston B	15	U-shaped nut	24	Locking packing
7	Bearing	16	Standard nut	25	Locking gasket
8	Damper	17	Rod end nut		
9	Piston packing	18	Magnet		

### Packing list

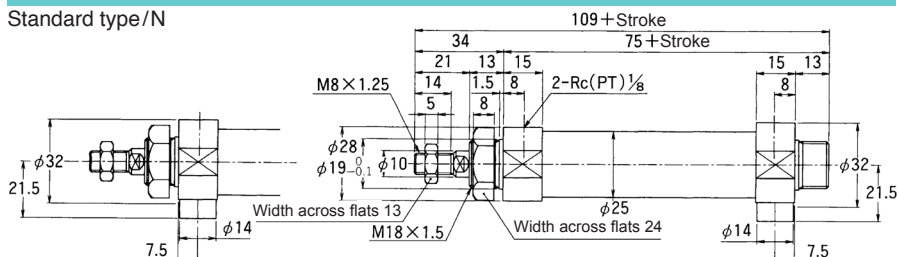
Bore (mm)	9. Piston packing		10. Rod packing		11. O-ring for cover		24. Locking packing		25. Locking gasket	
	Model No.	Amount	Model No.	Amount	Model No.	Amount	Model No.	Amount	Model No.	Amount
Ø20	PSD-20	1	PDU-10Z	1	SO-015-21	2	MYN-7	1	SO-010-28	1
Ø25	PSD-25	1	PDU-12Z	1	SO-015-25	2	MYN-7	1	SO-010-28	1
Ø32	PSD-32	1	PDU-14Z	1	SO-015-29	2	MYN-9	1	SO-010-29A	1
Ø40	PSD-40	1	PDU-16Z	1	SO-015-20	2	MYN-9	1	SO-010-29A	1

(Note) Packing repair and assembly kits are also available for purchase.

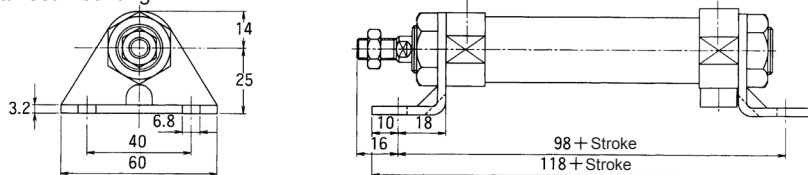
Double-acting  $\varnothing 20/JGL\Box 2-20$ 

(Unit: mm)

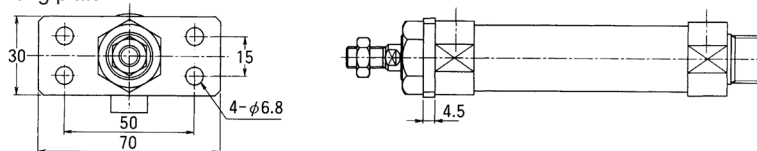
## Standard type/N



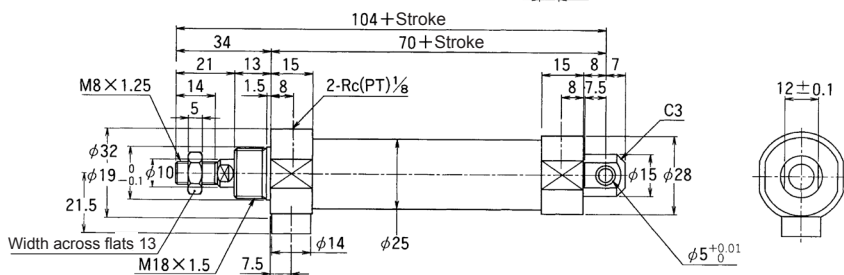
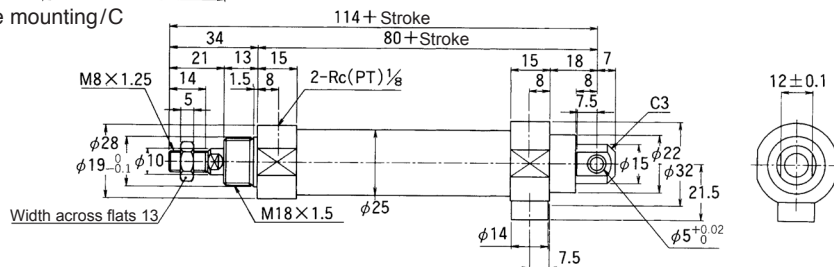
## Axial foot mounting/L



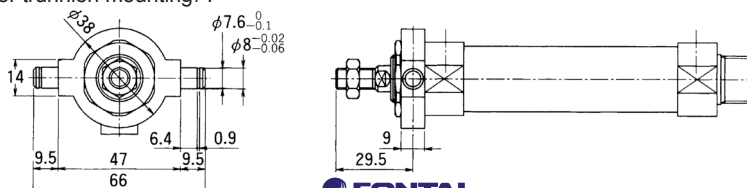
## Mounting plate/A



## Eye mounting/C



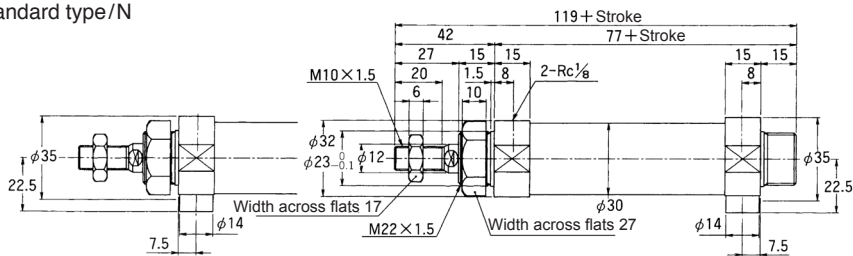
## Center trunnion mounting/T



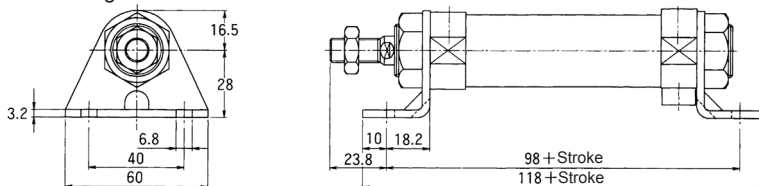
Double-acting  $\varnothing 25/JGL\Box 2-25$

(Unit: mm)

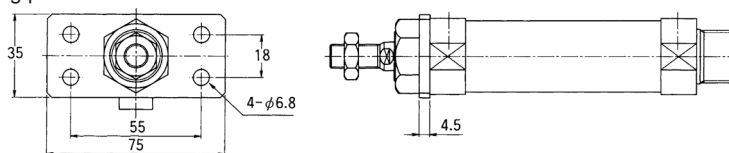
Standard type/N



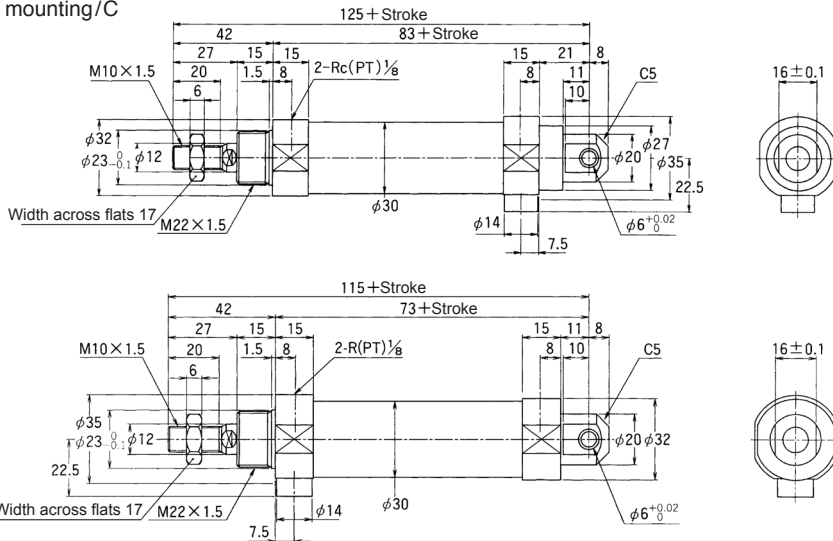
Axial foot mounting/L



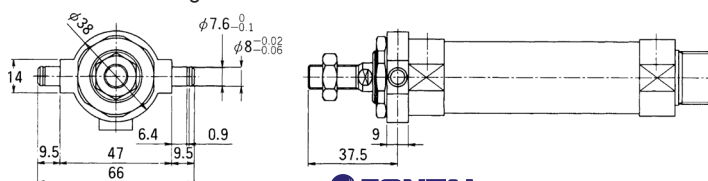
Mounting plate/A



Eye mounting/C



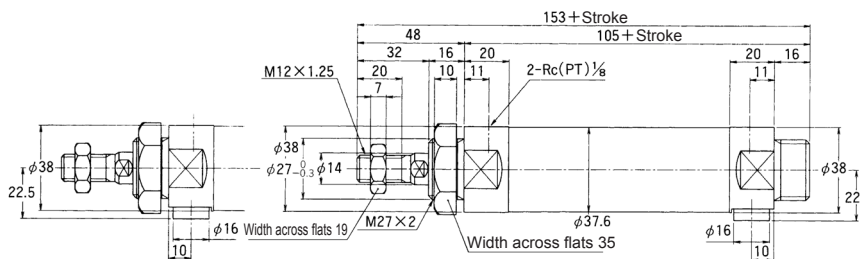
Center trunnion mounting/T



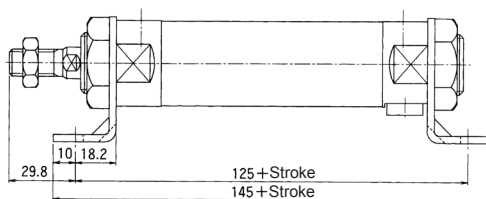
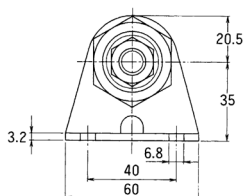
Double-acting Ø32/JGL□2-32

(Unit: mm)

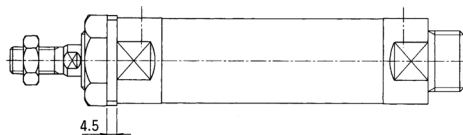
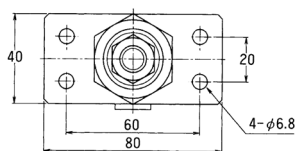
Standard type/N



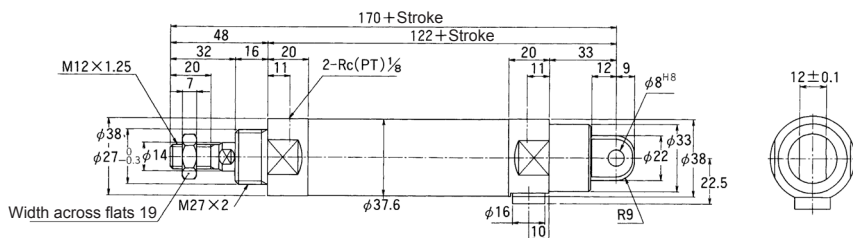
Axial foot mounting/L



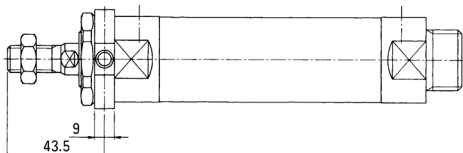
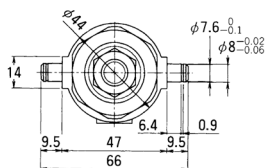
Mounting plate/A



Eye mounting/C



Center trunnion mounting/T





(Unit: mm)

[illegible]

Technical drawing of the 1000 Series Hydraulic Cylinder showing front and side views with dimensions.

**Front View Dimensions:**

- Top flange thickness: 3.2
- Top flange outer diameter: 55
- Top flange inner diameter: 40
- Top flange mounting hole diameter: 25
- Bottom flange thickness: 9
- Bottom flange outer diameter: 80

**Side View Dimensions:**

- Mounting bracket width: 14
- Mounting bracket height: 18.2
- Mounting bracket base width: 31.8
- Cylinder body diameter: 139 + Stroke
- Cylinder body diameter: 167 + Stroke

Technical drawing of a mechanical part showing front and side views.

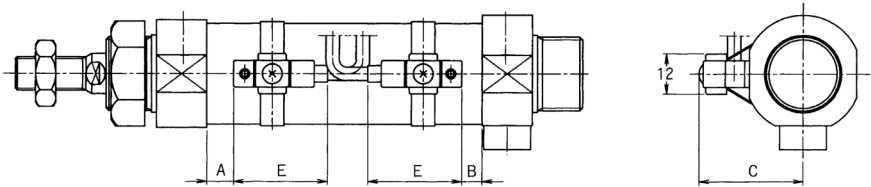
**Front View:** A square plate with a central hexagonal hole. The overall width is 100 and the height is 50. The distance from the center of the hexagonal hole to the center of each of the four corner holes is 80. The distance from the top edge of the plate to the top edge of the hexagonal hole is 30. The four corner holes are labeled  $4-\phi 9$ .

**Side View:** A cylindrical feature with a diameter of 4.5. The drawing shows a cross-section of the cylinder with a central hole.

[illegible]

Sensor switch mounting position/M type sensor switch

(Unit: mm)



Bore (mm)	M type reed switch		M type proximity switch		C
	A	B	A	B	
Ø20	8	6	11	10	29
Ø25	8	6	12	9	31
Ø32	16	15	19	19	34
Ø40	17	16	20	20	39

Switch	E
M type reed switch	28
M type proximity switch	26.5 (24)

(Note) value within bracket is of the MT-\*U type.