





Twin-rod cylinder——TN, TR Series

Product series

Series name		Acting type	Bore size	Collocation of sensor switch	
				CS1-J	DS1-J
 <p>TN Series</p>		Double acting	10		
			16		
			20		
			25		
			32		
 <p>TR Series</p>		Double acting	6		
			10		
			16		
			20		
			25		
			32		
Page	286	288		397	

Installation and application

- When load changes in the work, the cylinder with abundant output capacity shall be selected.
- Relative cylinder with high temperature resistance or corrosion resistance shall be chosen under the condition of high temperature or corrosion;
- Necessary protection measure shall be taken in the environment with higher humidity, much dust or water drops, oil dust and welding dregs.
- Dirty substances in the pipe must be eliminated before cylinder is connected with pipeline to prevent the entrance of particles into the cylinder;
- The medium used by cylinder shall be filtered to 40 μ m or below.
- As both the front cover and piston are short, too large stroke can not be selected.
- Anti-freezing measure shall be adopted under low temperature environment to prevent moisture freezing.
- The cylinder shall avoid radial load in operation to maintain the normal and extend service life.
- If the cylinder is dismantled and stored for a long time, please conduct anti-rust treatment to the surface. Anti-dust cap shall be inserted into the inlet and outlet ports. As the precision of the manufacture and guide is high, Please do not dismantle the fixed block or cylinder cover.

Criteria for selection: Cylinder thrust

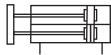
Unit: Newton(N)

Bore size (mm)	Rod size (mm)	Acting type		Pressure area (mm ²)	Operating pressure(MPa)						
					0.1	0.2	0.3	0.4	0.5	0.6	0.7
6	4	Double acting	Push side	56.5	5.7	113.	17.0	22.6	28.3	33.9	39.6
			Pull side	31.4	3.1	6.3	9.4	12.6	15.7	18.8	22.0
10	6	Double acting	Push side	157.1	15.7	31.4	47.1	62.8	78.6	94.3	110.0
			Pull side	100.5	10.1	20.1	30.2	40.2	50.3	60.3	70.4
16	8	Double acting	Push side	402.1	40.2	80.4	120.6	160.8	201.1	241.3	281.5
			Pull side	301.6	30.2	60.3	90.5	120.6	150.8	181.0	211.1
20	10	Double acting	Push side	628.3	62.8	125.7	188.5	251.3	314.2	377.0	439.8
			Pull side	471.2	47.1	94.2	141.4	188.5	235.6	282.7	329.8
25	12	Double acting	Push side	981.7	98.2	196.4	294.5	392.7	490.9	589.0	687.2
			Pull side	755.6	75.6	151.1	226.7	302.2	377.8	453.4	528.9
32	16	Double acting	Push side	1608.5	160.9	321.7	482.6	643.4	804.3	965.1	1126.0
			Pull side	1206.4	120.6	241.3	361.9	482.6	603.2	723.8	844.5





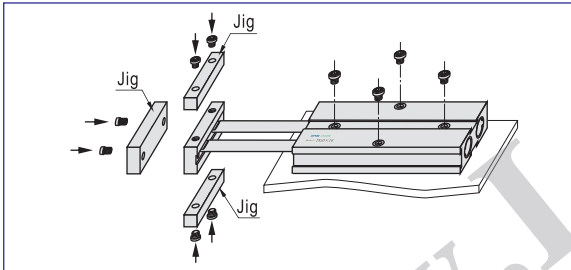
Symbol



Product feature

1. Enterprises standard is implemented.
2. Embedded installation and fixation mode saves the installation space.
3. It is good resistance to bending and twisting moments.
4. Mounting holes on three sides facilitates multi-position mounting.
5. Bumper in front of the barrel can adjust the stroke of cylinder and relieve impact.
6. Standard configuration of this series has magnet and the type without magnet is not available.

How to mount



Specification

Bore size(mm)	10	16	20	25	32
Acting type	Double acting				
Fluid	Air(to be filtered by 40 μ m filter element)				
Operating pressure	0.1~1.0MPa(14~145psi)				
Proof pressure	1.5MPa(215psi)				
Temperature °C	-20~70				
Speed range mm/s	30~500				
Adjustable stroke mm	-10~0				
Stroke tolerance	+1.0 0				
Cushion type	Bumper				
Non-rotating tolerance ①	± 0.4°		± 0.3°		
Port size ②	M5 × 0.8				1/8"

① Retract position.

② PT thread, NPT thread and G thread are available. Add) Refer to P397~420 for detail of sensor switch.

Stroke

Bore size (mm)	Standard stroke (mm)															Max. stroke
10	10	20	30	40	50	60	70	80	90	100						100
16	10	20	30	40	50	60	70	80	90	100	125	150	175	200		200
20	10	20	30	40	50	60	70	80	90	100	125	150	175	200		200
25	10	20	30	40	50	60	70	80	90	100	125	150	175	200		200
32	10	20	30	40	50	60	70	80	90	100	125	150	175	200		200

Note) 1. Please contact the company for other special strokes.

2. The dimensions of non-std stroke cylinder has the same dimensions as the next longer stroke std. stroke cylinder. e.g. 23mm stroke cylinder has the same dimensions of 25 std. stroke cylinder.

Ordering code

TN 20 × 50 S □		
Model	Thread type ②	
TN: Twin-rod cylinder(Double acting type)	Blank: PT	
	T: NPT	
	G: G	
Bore size		
10 16 20 25 32		
Stroke	Magnet ①	
Refer to stroke table for details	S: With magnet	

① TN Series are all with magnet.

② When the thread is standard, the code is blank.

Inner structure and material of major parts

NO.	Item	Material	NO.	Item	Material
1	Piston rod B	Φ 32 S45C	12	Body	Aluminum alloy
		Other SUS304	13	Bumper	TPU
2	Screw	Carbon steel	14	Magnet holder	Φ 10 SUS303
3	Bumper	POM		Other	Aluminum alloy
4	Adjustable nut	Carbon steel	15	Piston seal	NBR
5	Piston rod A	S45C	16	Wear ring	Wear resistant material
6	Fixing plate	Free cutting steel	17	Piston	Φ 10 SUS303
7	Screw	Carbon steel		Other	Aluminum alloy
8	C clip	Spring steel	18	Seal ring	NBR
9	Wiper seal	NBR	19	Bumper	TPU
10	Front cover	Aluminum alloy	20	Back cover	Aluminum alloy
11	O-ring	NBR	21	Magnet	Sintered metal(Neodymium-iron-boron)

