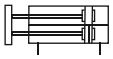
Twin-rod cylinder

TR Series

Symbol



Product feature

1. JIS standard is implemented.
2. The non-rotating precision is high and deflection of the end of piston rod is low, which is suitable for precise guide.
3. It adopts lengthening type sliding supporting guide. No additional lubricant is needed and it has good performance of guide.
4. Mounting holes on three sides facilitates multi-position mounting.
5. It is good resistance to bending and twisting moments.
6. Except for the axial, each side of the cylinder has installation orifices to provide several installation and fixation ways for the customers.
7. There are two groups of air intake and outlet at two sides of the cylinder for the actual selection.
8. Bumper in front of the barrel can adjust the stroke of cylinder and relieve impact.
9. Standard configuration of this series has magnet and the type without magnet is not available.

Specification

Bore size(mm)	6	10	16	20	25	32
Acting type	Double acting					
Fluid	Air(to be filtered by 40μm filter element)					
Operating pressure	0.15~1.0MPa(22~145psi)					
Proof pressure	1.5MPa(215psi)					
Temperature ℃	-20~70					
Speed range mm/s	30~500					
Adjustable stroke mm	-5~0					
Stroke tolerance	≤100 $^{+1.0}_{0}$			>100 $^{+1.5}_{0}$		
Cushion type	Bumper					
Non-rotating tolerance [Note1]	±0.2°	±0.15°			±0.1°	
Port size [Note2]	M5×0.8				1/8"	

[Note1] Retract position.
[Note2]PT thread, G thread and NPT thread are available.
Add) Refer to P313 for detail of sensor switch.

Stroke

Bore size (mm)	Standard stroke (mm)	Max.std stroke
6	10 20 30 40 50	50
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] When the stroke less then or equal to 100mm, The dimensions of non-std stroke cylinder has the same dimensions as the next longer stroke std. stroke cylinder. e.g. 35mm stroke cylinder has the same dimensions of 40 std. stroke cylinder.

Ordering code

TR 20×50 S □

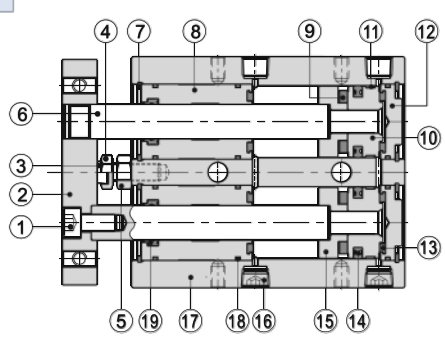
① ② ③ ④ ⑤

①Model	②Bore size	③Stroke	④Magnet [Note1]	⑤Thread type [Note 2]
TR: Twin-rod cylinder (Double acting type)	6 10 16 20 25 32	Refer to stroke table for details	S: With magnet	Blank: PT G: G T: NPT

[Note1] TR Series are all with magnet. [Note2] When the thread is standard, the code is blank.

Inner structure and material of major parts

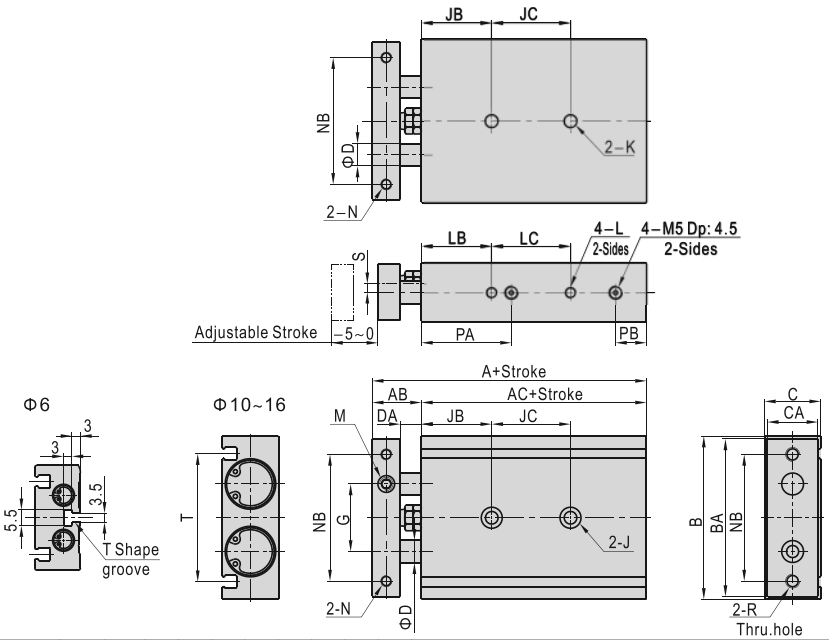
TR



NO.	Item		Material	NO.	Item		Material
1	Screw		Carbon steel	10	Piston	Φ6,10	SUS304
2	Fixing plate		Aluminum alloy			Other	Aluminum alloy
3	Bumper		POM	11	Wear ring		Nylon 6
4	Screw		Free cutting steel	12	Back cover		Aluminum alloy
5	Nut		Carbon steel	13	Bumper		TPU
6	Piston rod	Φ25,32	Carbon steel	14	Piston seal		NBR
		Other	SUS304	15	Magnet holder	Φ6,10	SUS304
7	C clip		Spring steel			Other	Aluminum alloy
8	Front cover		Aluminum alloy	16	Screw		Carbon steel
9	Magnet	Φ32	Plastic	17	Body		Aluminum alloy
		Other	Sintered metal (Neodymium-iron-boron)	18	Back cover O-ring		NBR
				19	Wiper seal		NBR

Dimensions

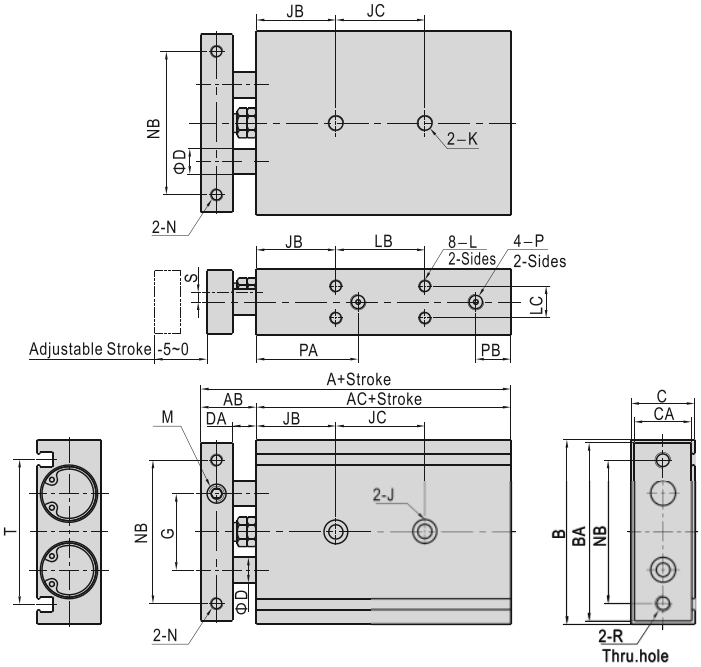
TR6~16



Bore size\Item / Stroke	A	AB	AC	B	BA	C	CA	D	DA	G	JC LC 10~25	JC LC 30~50	JC LC 60~80	JC LC 90~100	JC LC 125	JC LC 150	JC LC 175	JC LC 200	T
6	58.5	13.5	45	37	35	16	14	4	8	16	JC=10+Stroke/2 LC=13+Stroke		-	-	-	-	-	-	26
10	72	17	55	46	44	17	15	6	9	20	30	40	50	60	-	-	-	-	36.5
16	79	19	60	58	56	20	18	8	9	25	25	35	45	55	65	75	145	145	46.5

Bore size\Item	J	JB	K	L	LB	M	N	NB	PA	PB	R	S
6	One side: Φ6.5Dp:3.5Thru.hole: Φ3.5	13	-	M3×0.5Dp:4.	10	M3×0.5	M3×0.5Thru.hole	28	24.5	6.5	M3×0.5	4.5
10	One side: Φ6.5Dp:3.5Thru.hole: Φ3.5	20	M4×0.7Dp:7	M3×0.5Dp:5	20	M5×0.8	M3×0.5Thru.hole	35	30	8	M4×0.7	3.5
16	One side: Φ8.0Dp:4.5Thru.hole: Φ4.5	30	M5×0.8Dp:8	M4×0.7Dp:5	30	M6×1.0	M4×0.7Thru.hole	45	38	8	M5×0.8	5

TR20~32

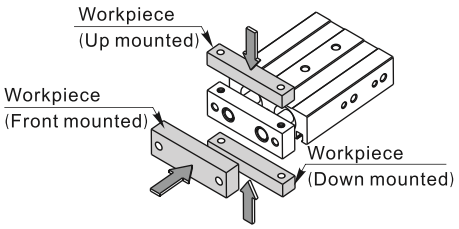


Bore size\Item / Stroke	A	AB	AC	B	BA	C	CA	D	DA	G	JB	JC LB 10~25	JC LB 30~50	JC LB 60~100	JC LB 125	JC LB 150	JC LB 175	JC LB 200	P	PA	PB
20	94	24	70	64	62	25	23	10	12	28	30	30	40	60	80	80	100	100	M5×0.8	46	9
25	96	24	72	80	78	30	28	12	12	35	30	30	40	60	80	80	100	100	1/8"	43	9
32	112	30	82	98	96	38	36	16	14	44	30	40	50	70	90	90	110	110	1/8"	53	10

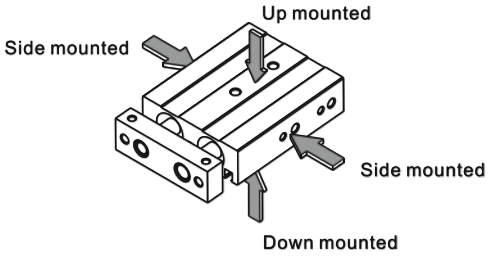
Bore size\Item	J	K	L	LC	M	N	NB	R	S	T
20	One side: Φ9.5Dp:5.5Thru.hole: Φ5.5	M6×1.0Dp:10	M4×0.7Dp:7	9.5	M8×1.25	M4×0.7Dp:6	50	M5×0.8	6.5	52
25	One side: Φ11Dp:6.5Thru.hole: Φ7	M8×1.25Dp:12	M5×0.8Dp:7	13	M8×1.25	M5×0.8Dp:7.5	60	M6×1.0	9	61
32	One side: Φ11Dp:6.5Thru.hole: Φ7	M8×1.25Dp:12	M5×0.8Dp:7	20	M10×1.5	M5×0.8Dp:8	75	M6×1.0	11.5	73

Installation and application

1、How to mount workpiece:



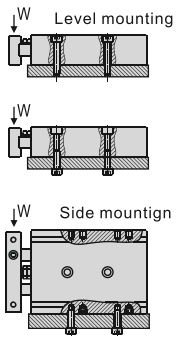
How to mount the workpiece

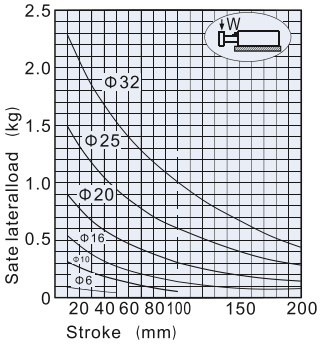


How to mount the cylinder

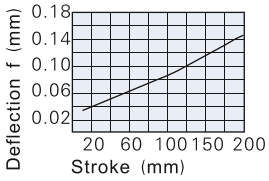
2、Max. weight of allowable side-load

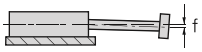
Mounting type





3、Safe deflection





The average value of deflection of rod end of the whole series basically stays in the line showed in the chart on the right.