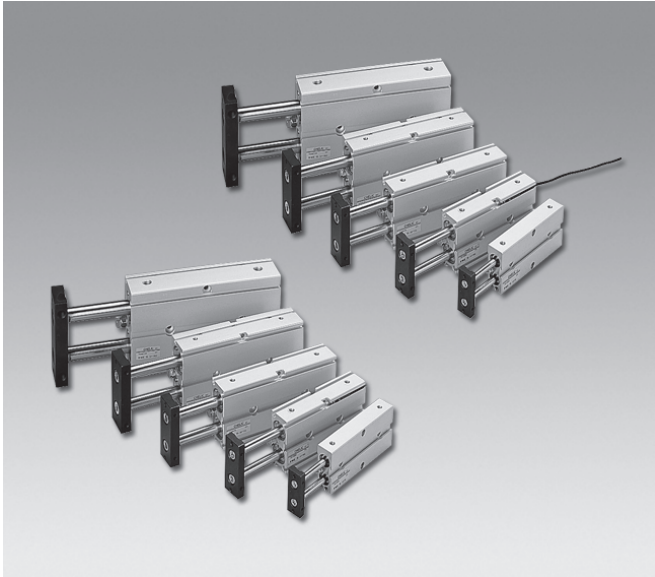


Actuator Unit – TD series

Dual rod cylinder

CHELIC



TD series
Provide CAD external dimension.

TD

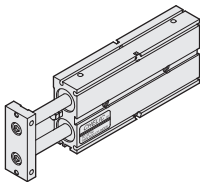
TDX

TDXU

STU

STM

STX



TD series ----- **Dual rod cylinder** ----- **Ø6 ~ Ø40** ----- **P.6-10.2**

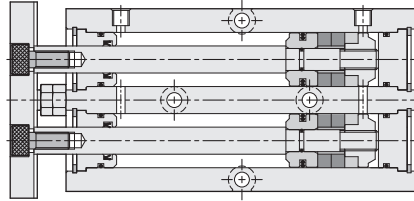
Dual rod cylinder, double force, the rods made of hard chrome shaft with finished surface, and the anodized cylinder body with hard surface, complete with magnet and imported O-Ring.

TD series Dual Rod Cylinder

Product features

CHELIC

Internal structure



Theoretical force

Unit: kgf

Bore size (mm)	Piston rod dia (mm)	Piston action	Piston area (cm ²)	Air pressure (kgf/cm ²)						
				1	2	3	4	5	6	7
6	4	Push	0.5	—	1.0	1.5	2.0	2.5	3.0	3.5
		Pull	0.3	—	0.6	0.9	1.2	1.5	1.8	2.1
10	6	Push	1.5	—	3.1	4.7	6.2	7.8	9.3	10.9
		Pull	1.0	—	2.0	3.0	4.0	5.0	6.0	7.0
16	8	Push	4.0	4.0	8.0	12.0	16.0	20.1	24.1	28.1
		Pull	3.0	3.0	6.0	9.0	12.0	15.0	18.0	21.0
20	10	Push	6.2	6.2	12.5	18.8	25.1	31.4	37.6	43.9
		Pull	4.7	4.7	9.4	14.1	18.8	23.5	28.2	32.9
25	12	Push	9.8	9.8	19.6	29.4	39.2	49.1	58.8	68.5
		Pull	7.5	7.5	15.1	22.6	30.2	37.7	45.3	52.8
32	16	Push	16.0	16.0	32.1	48.2	64.3	80.4	96.4	112.5
		Pull	12.0	12.1	24.1	36.2	48.2	60.3	72.4	84.4
40	20	Push	25.1	25.1	50.3	76.5	100.5	125.7	150.8	175.9
		Pull	18.8	18.8	37.7	56.5	75.4	94.2	131.1	131.9

Note: Above are theoretical data - please take into consideration the frictional resistance and the mechanical efficiency of valve should be added calculation before using. (About 70%~80%)

Specification

Item	Bore size (mm)	Ø6	Ø10	Ø16	Ø20	Ø25	Ø32	Ø40
Action		Double acting						
Fluid		Air						
Pressure range	kgf/cm ² (kPa)	1 ~ 8.5 (100 ~ 850)						
Max. operating pressure	kgf/cm ² (kPa)	9 (900)						
Ambient and fluid temperature	°C	0 ~ 60						
Piston speed	mm/s	50 ~ 700						
Stroke adjusting range		-5 ~ 0						
Port size		M3×0.5p	M5×0.8p				PT 1/8	
Sensing device		With magnet						

Standard stroke

Unit: mm

Bore size	Stroke	Adjusting range
Ø6	10, 20, 30, 40, 50	0
Ø10	10, 20, 25, 30, 40, 50, 75, 100	-5 ~ 0
Ø16	10, 20, 25, 30, 40, 50, 75, 100, 125, 150, 175, 200, 250	
Ø20	10, 20, 25, 30, 40, 50, 75, 100, 125, 150, 175, 200, 250	
Ø25	10, 20, 25, 30, 40, 50, 75, 100, 125, 150, 175, 200, 250	
Ø32	10, 20, 25, 30, 40, 50, 75, 100, 125, 150, 175, 200, 250	
Ø40	10, 20, 30, 40, 50, 75, 100, 125, 150	

Code of order

TD
Model

10 ×
Bore size

6 - Ø 6 mm
10 - Ø 10 mm
16 - Ø 16 mm
20 - Ø 20 mm
25 - Ø 25 mm
32 - Ø 32 mm
40 - Ø 40 mm

50 -
Stroke

Ø6 - 10 ~ 50 mm
Ø10 - 10 ~ 100 mm
Ø16 - 10 ~ 250 mm
Ø20 - 10 ~ 250 mm
Ø25 - 10 ~ 250 mm
Ø32 - 10 ~ 250 mm
Ø40 - 10 ~ 150 mm

SD 2
Sensor switch

CS-30E SE 2

SE: Sensor switch mark (CS-30E)
2: Quantity of sensor switch
1 = 1 PCS
2 = 2 PCS

CS-9D SD 2

None: Without sensor switch
SD: Sensor switch mark (CS-9D)
SB: Sensor switch mark (CS-9B)
2: Quantity of sensor switch
1 = 1 PCS
2 = 2 PCS

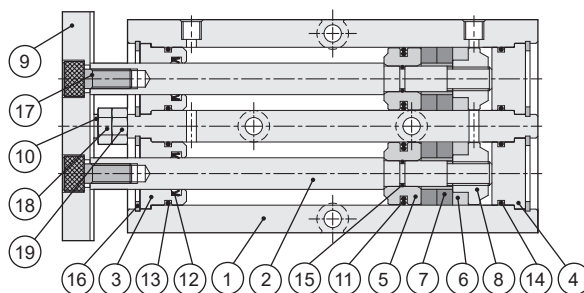
※ Ø6, Ø40 are not suitable

TD series Dual Rod Cylinder

Product features

CHELIC

Internal structure



Components and material list

No.	Item	Material	No.	Item	Material
01	Body	Aluminum alloy	11	Piston packing	NBR
02	Rod	Carbon steel	12	Shaft packing	NBR
03	Front cover	Aluminum alloy	13	Front cover O-Ring	NBR
04	Rear cover	Aluminum alloy	14	Rear cover O-ring	NBR
05	Piston	Copper	15	Piston O-Ring	NBR
06	Wear ring	Teflon	16	Clip	Spring steel
07	Magnet	Rare earth metals/ Plastic magnet	17	Slider screw	Alloy steel
08	Wear ring base	Copper	18	Adjustment bolt	Alloy steel
09	Slider	Iron/ Aluminum alloy	19	Nut	Carbon steel
10	Stopper	Rubber/ Bearing steel			

Note: TD Ø6, Ø10, Ø16, Ø20 Plate Material is Iron, TD Ø25, Ø32, Ø40 Plate Material is Aluminum alloy.

Packing and O-ring part list

Unit: mm

Item	Piston packing	Shaft packing	Rear cover O-ring	Front cover O-ring	Piston O-ring
Quantity	2	2	2	2	2
Bore size					
Ø6	MYA-3 (4 PCS)	EM0407	5 × 1.0	5 × 1.0	—
Ø10	DYP-10 (4 PCS)	EM0609	8 × 1.0	8 × 1.0	2.9 × 1.0
Ø16	PSD-16	EM0811	13.2 × 1.5	13.2 × 1.5	8 × 1.0
Ø20	COP-20	EM1014	17.5 × 1.5	17.5 × 1.5	10 × 1.0
Ø25	COP-25	EM1214	20.8 × 2.0	20.8 × 2.0	12 × 1.0
Ø32	COP-32	EM1620	28.5 × 2.0	28.5 × 2.0	16 × 1.5
Ø40	COP-40	EM2025	36 × 2.0	36 × 2.0	20 × 1.5

Weight

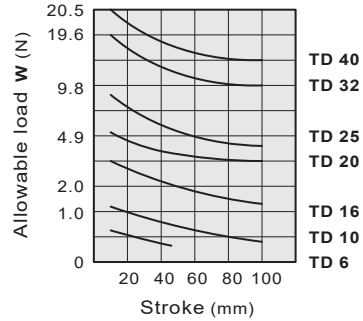
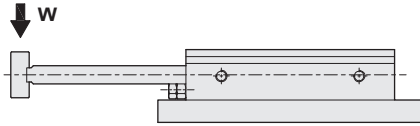
Bore size (mm)	Weight (Kg)										
	Stroke (mm)										
	10	20	30	40	50	75	100	125	150	175	200
Ø6	0.1	0.1	0.1	0.1	0.1	—	—	—	—	—	—
Ø10	0.10	0.11	0.13	0.14	0.15	0.19	0.22	—	—	—	—
Ø16	0.31	0.34	0.36	0.39	0.42	0.49	0.56	0.62	0.69	0.76	0.83
Ø20	0.46	0.49	0.53	0.56	0.60	0.69	0.78	0.87	0.96	1.04	1.13
Ø25	0.77	0.82	0.87	0.92	0.97	1.09	1.15	1.34	1.46	1.61	1.76
Ø32	1.51	1.56	1.68	1.78	1.87	2.08	2.32	2.55	2.77	3.00	3.25
Ø40	2	2.2	2.4	2.7	2.9	3.1	3.4	3.6	3.8	—	—

TD series Dual Rod Cylinder

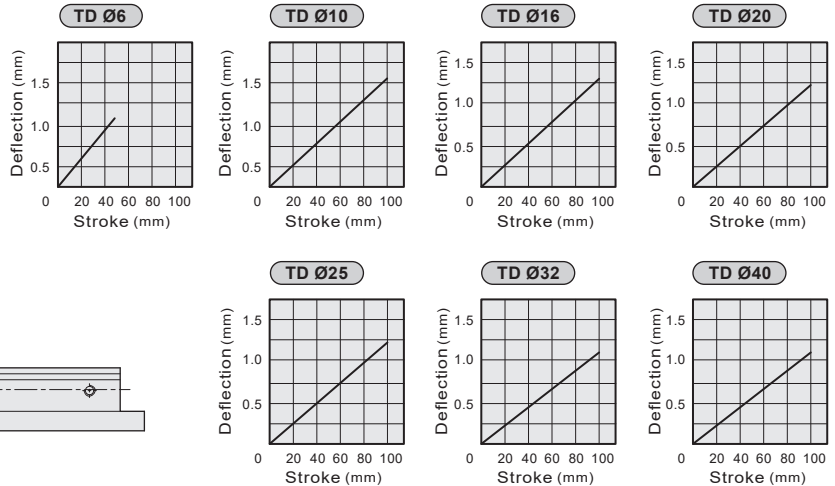
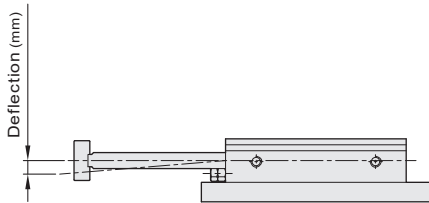
Installation

CHELIC

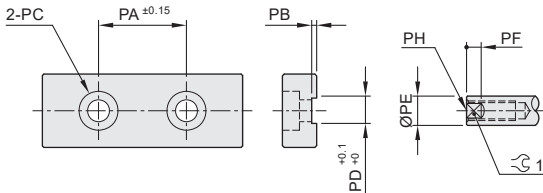
Allowable load



Allowable deflection



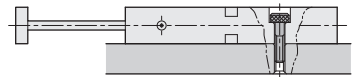
Dimension for end rod



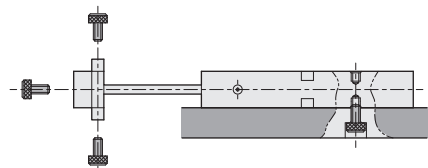
Bore size	Mark	PA	PB	PC	PD	PE	PF	PH
Ø6	13	1	Thru-hole Ø2.8, Hole Ø5 dp 2.7	3.5	4	2	3.5	M2.5×0.4 dp 5
Ø10	18	1	Thru-hole Ø4.5, Hole Ø8 dp 4.3	5.2	6	3	5.2	M4×0.7 dp 10
Ø16	24.2	1	Thru-hole Ø5.5, Hole Ø9 dp 5.5	6.2	8	3	6.2	M5×0.8 dp 12
Ø20	28.2	1	Thru-hole Ø6.5, Hole Ø11 dp 6.8	8.2	10	3	8.2	M6×1.0 dp 15
Ø25	34.2	1	Thru-hole Ø8.5, Hole Ø14 dp 8.5	10.2	12	3	10.2	M8×1.25 dp 15
Ø32	44	1	Thru-hole Ø8.5, Hole Ø17 dp 11	14	16	3	14	M10×1.5 dp 20
Ø40	55	2.5	Thru-hole Ø10.5, Hole Ø17 dp 11	18	20	4	18	M10×1.5 dp 15

Mounting type

- Top mounting type



- Bottom mounting type



Mounting housing from three directions

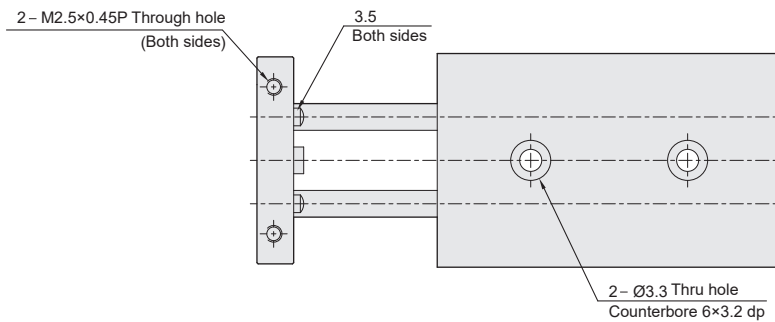
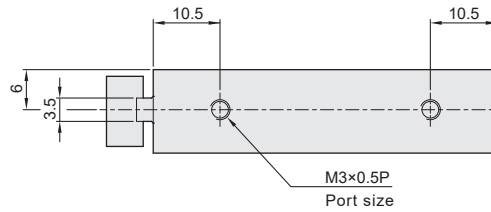
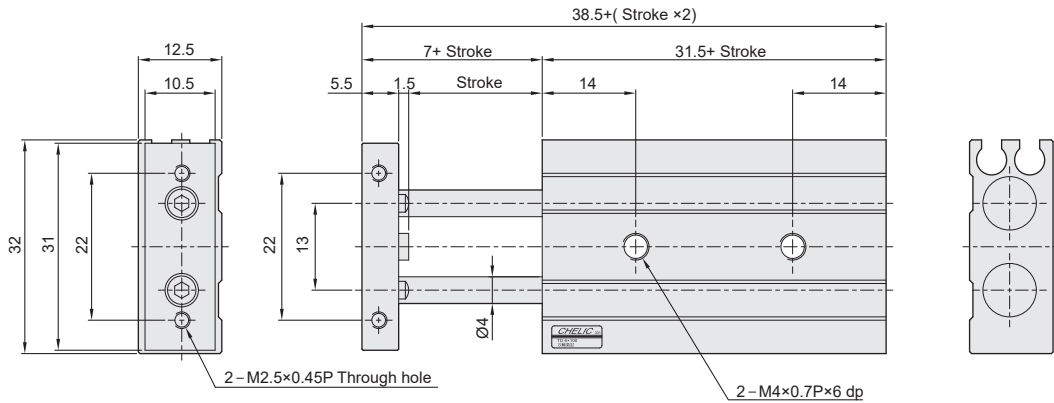
TD series Dual Rod Cylinder

Dimensions

CHELIC

TD Ø6 ×

 TD 6 × ST



TD

TDX

TDXU

STU

STM

STX

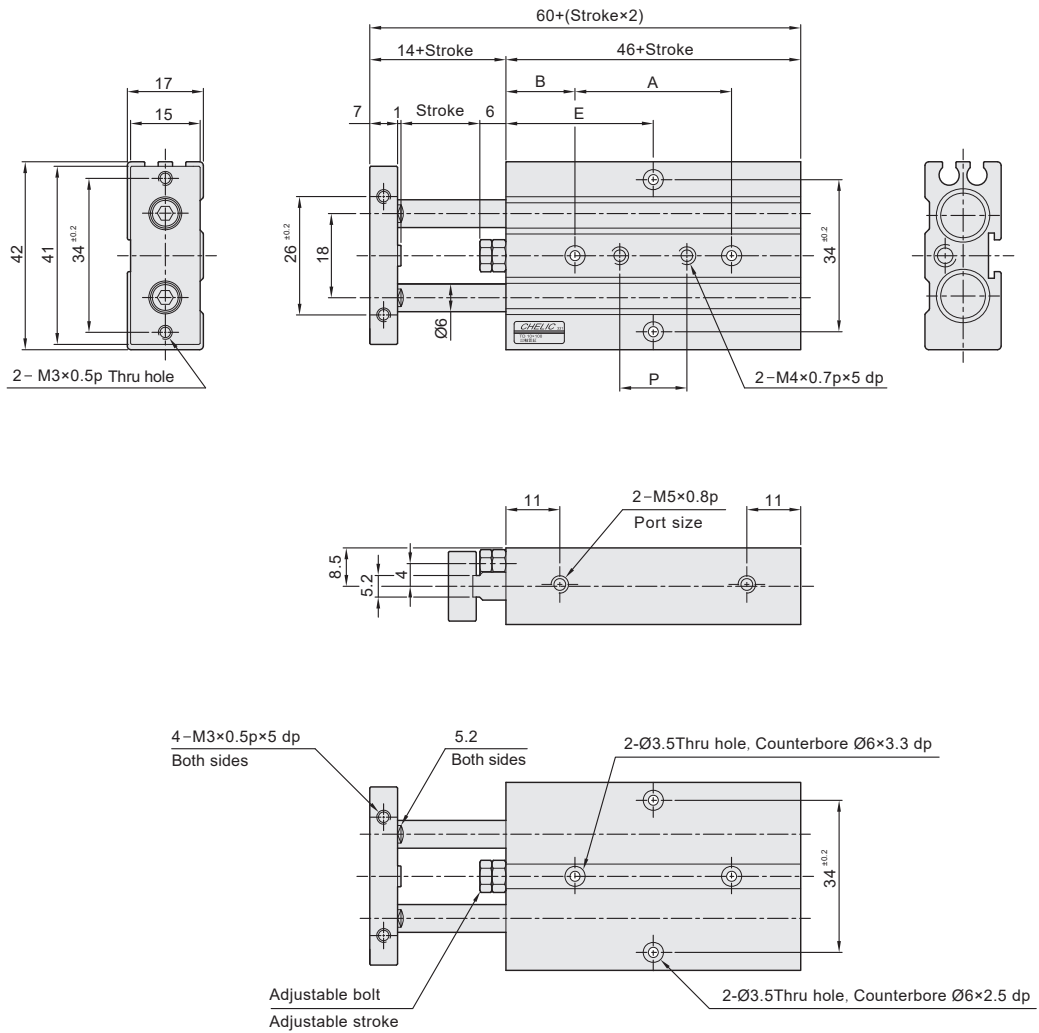
TD series Dual Rod Cylinder

Dimensions

CHELIC

TD Ø10 ×

 TD 10 × ST



Dimension

Unit: mm

Stroke Mark	10	20	25	30	40	50	75	100
A	20	30	35	40	50	60	85	110
B	18	18	18	18	18	18	18	18
E	28	33	35.5	38	43	48	60.5	73
P	-	-	15	20	30	40	65	90

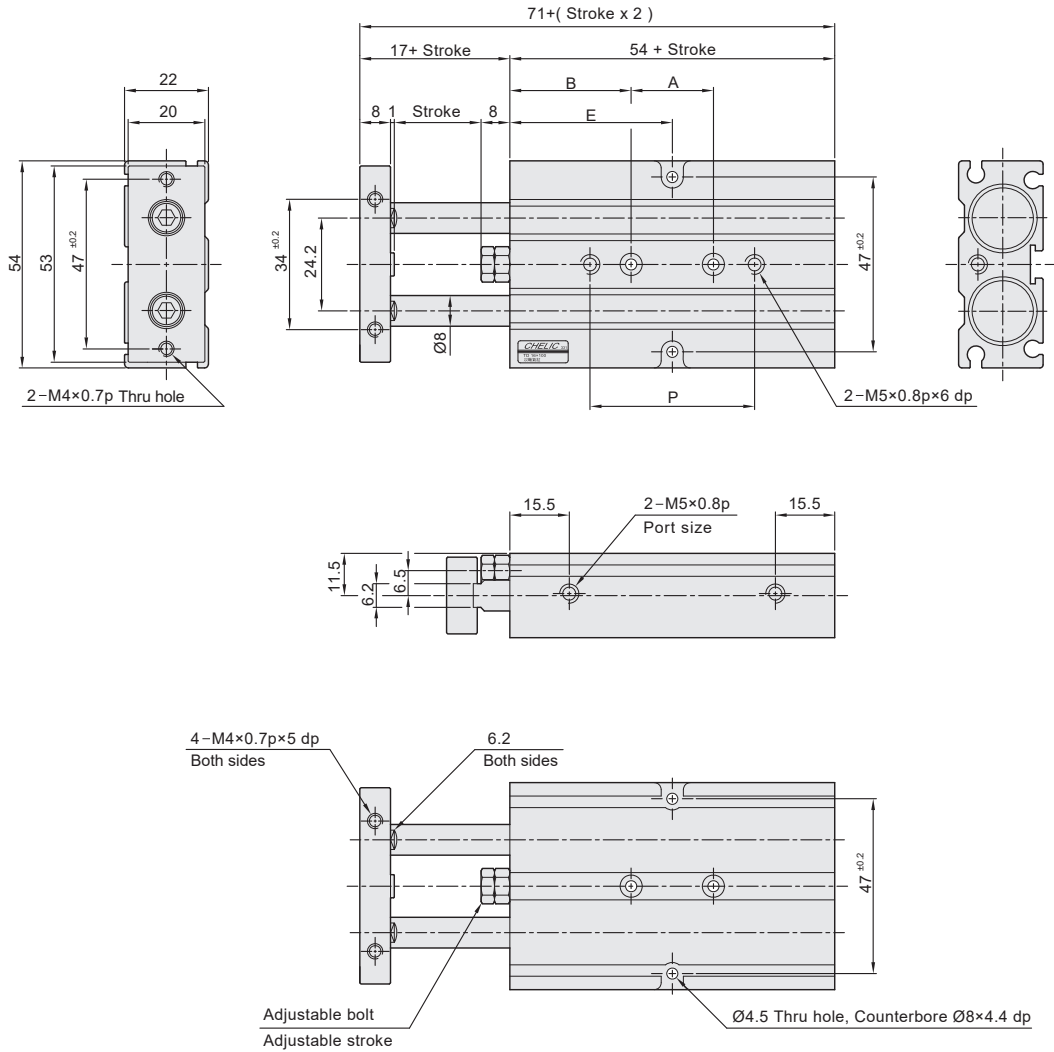
TD series Dual Rod Cylinder

Dimensions

CHELIC

TD Ø16 ×

 TD 16 × ST



TD

TDX

TDXU

STU

STM

STX

Dimension

Unit: mm

Stroke Mark	10	20	25	30	40	50	75	100	125	150	175	200	250
A	20	20	20	20	30	40	60	80	100	100	100	100	120
B	22	27	29.5	32	32	32	34.5	37	39.5	52	64.5	77	92
E	32	37	39.5	42	47	52	64.5	77	89.5	102	114.5	127	152
P	—	—	40	40	50	60	80	100	120	120	120	120	150

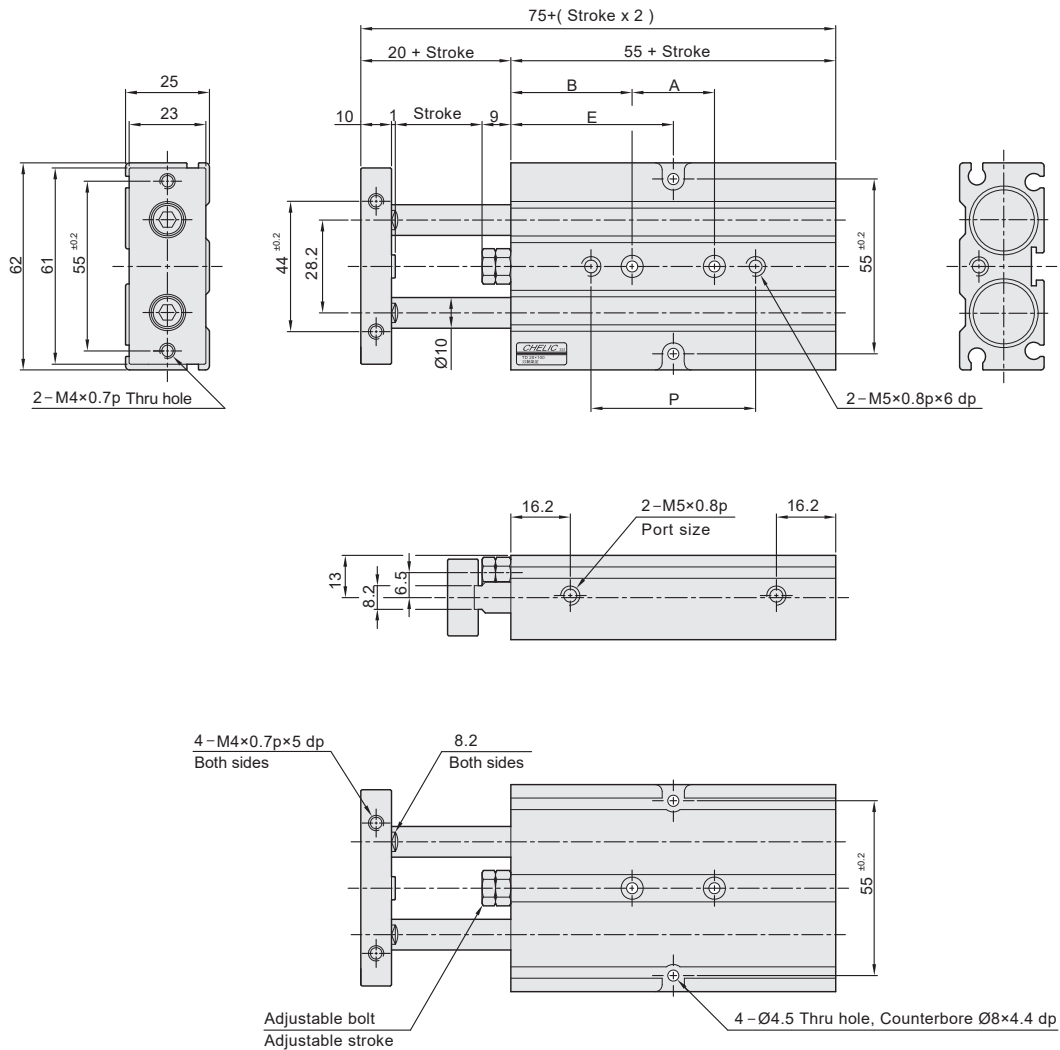
TD series Dual Rod Cylinder

Dimensions

CHELIC

TD Ø20 ×

 TD 20 × ST



Dimension

Unit: mm

Stroke Mark	10	20	25	30	40	50	75	100	125	150	175	200	250
A	20	20	20	20	30	40	60	80	100	100	100	100	120
B	22.5	27.5	30	32.5	32.5	32.5	35	37.5	40	52.5	65	77.5	92.5
E	32.5	37.5	40	42.5	47.5	52.5	65	77.5	90	102.5	115	127.5	152.5
P	-	-	40	40	50	60	80	100	120	120	120	120	150

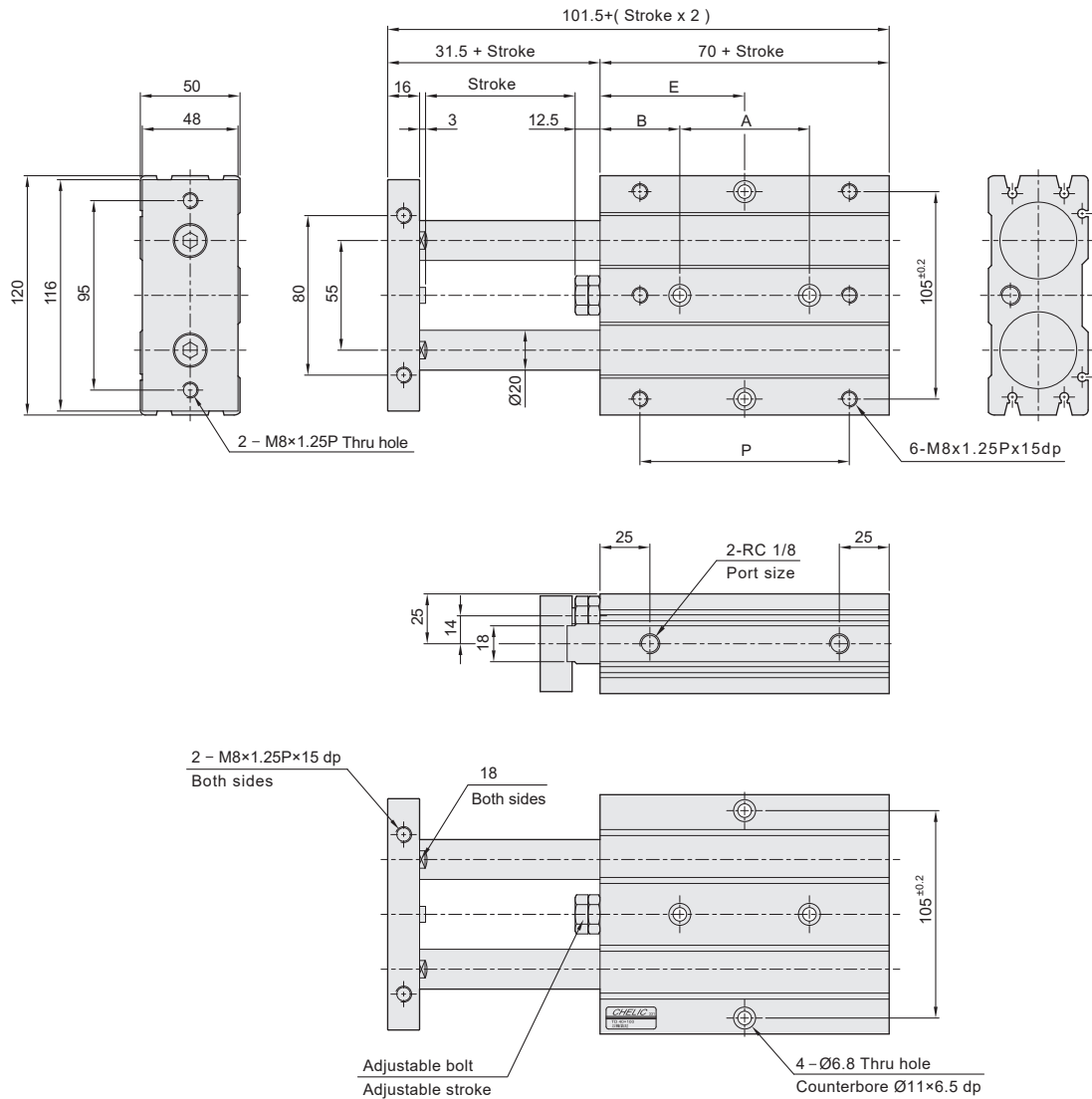
TD series Dual Rod Cylinder

Dimensions

CHELIC

TD Ø40 ×

 TD 40 × ST



TD

TDX

TDXU

STU

STM

STX

Dimension

Unit: mm

Stroke Mark	10	20	30	40	50	75	100	125	150
A	45	55	35	40	40	65	65	90	110
B	17.5	17.5	32.5	35	40	40	52.5	52.5	55
E	40	45	50	55	60	72.5	85	97.5	110
P	—	—	65	70	80	105	105	130	150

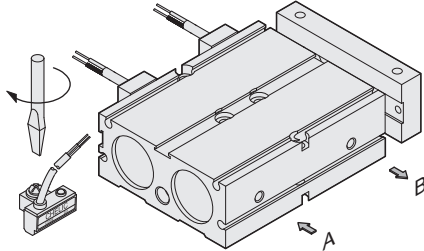
TD series Dual Rod Cylinder

Sensor Switch

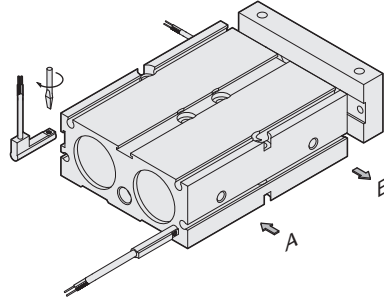
CHELIC

Sensor switch mounting type

● CS - 30E

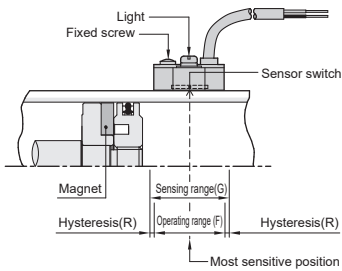


● CS - 9D(B)

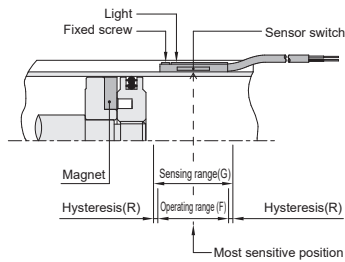


Sensor switch setting and operating range

● CS - 30E



● CS - 9D (B)



Sensing range

Sensor switch is fixed on the cylinder body. The magnetic piston head will activate the sensor switch when it enters the operating range. It has 0.5mm differential.

Operating range

When piston head moves the switch setting and adjustment will be based on the responding range generated by the magnetic field and the switch. (Please refer to the right table)

Unit: mm

Model	CS-30E		CS-9D(B)	
	Operating range (F)	Hysteresis(R)	Operating range (F)	Hysteresis(R)
Ø6	—	—	5	1
Ø10	10 (8)	1	8	1
Ø16	9 (5)	1.2	8	1.2
Ø20	13 (11)	1.2	11	1.2
Ø25	10.5 (9)	1.5	9	1.5
Ø32	10.5 (9)	1.5	9	1.5
Ø40	—	—	10	1.5

Note: 1. STU Ø10, Ø16 is the number of sensor switch CS-30S
2. () is the data detected sideways.

Sensor switch introduction

