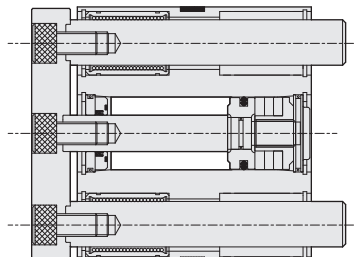


T series - Twin-guide cylinder

Operating specification and Ordering expression

CHELIC PNEUMATIC

Internal structure



Specification

Item	Bore size (mm)	Ø10	Ø16	Ø20	Ø25	Ø32	Ø40	Ø50	Ø63
Operation		Double acting							
Fluid		Air							
Pressure range	kgf/cm ² (kpa)	1.5 ~ 7 (150 ~ 700)							
Max. service pressure	kgf/cm ² (kpa)	9.5 (950)							
Operating ambient temperature range	°C	0 ~ 60							
Range of service speed	mm / sec	50 ~ 500						50 ~ 350	
Lubrication		Lubrication free							
Port size		M5 x 0.8			Rc 1/8			Rc 1/4	
Sensor device		With magnet							

TB(U)
Twin-Guide
Cylinder

TB(U)2
Twin-Guide
Cylinder

TSB(U)
Twin-Guide
Cylinder

TXB(U)
Twin-Guide
Cylinder

TMB(U)
Twin-Guide
Cylinder

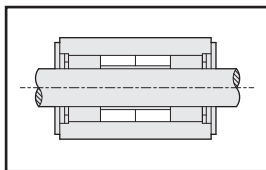
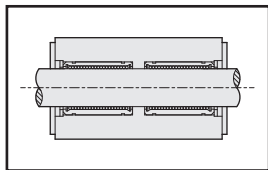
GCB(U)
Twin-Guide
Cylinder

GHB(U)
Twin-Guide
Cylinder

TCR
Triple-Guide
Cylinder

TCF
Triple-Guide
Cylinder

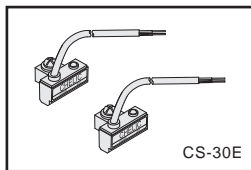
Guide type



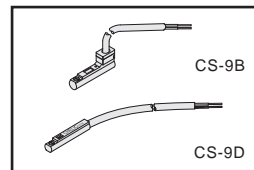
● Linear bearing guide (-U)

● Bush guide (-B)

Sensor switch (Option)



● Sensor switch type CS-30E



● Sensor switch type CS-9D(B)

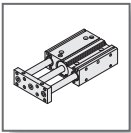
Standard strokes

Unit : mm

Bore size	Stroke
Ø10	25、50、75、100
Ø16	25、50、75、100、125、150、175、200
Ø20	25、50、75、100、125、150、175、200
Ø25	25、50、75、100、125、150、175、200
Ø32	30、50、75、100、125、150、175、200、250
Ø40	30、50、75、100、125、150、175、200、250
Ø50	30、50、75、100、125、150
Ø63	30、50、75、100、125、150

How to select

- **Force** : Select different load required. (Please refer theoretical force table).
Due to trust areas are different, the pushing and pulling will also be different.
- **Guide type** : ▶ Selection based on the load and its direction. (Please refer to P.3-9.3 load table).
 - ▶ Linear guide bearing, guide rod is made of hard chrome shaft (SUJ2), suitable for fast moving lower load.
 - ▶ Bush guide bearing, guide rod is made of hard chrome shaft (S45C), suitable for slow moving heavy load.
- **Mounting type** : There are vertical, lift, top, bottom and slide mounting type, etc (Please refer to P.3-9.4).
- **Stroke adjustable** : ▶ (TA-) Adjustable stroke cylinder ; extension adjustable 0~40mm.
▶ (TR-) Adjustable stroke cylinder ; retraction adjustable 0~10mm
- **Sensor switch** : Two types
 - ▶ CS30E for Ø32 ~ Ø63
 - ▶ CS9D(B) for Ø10 ~ Ø63



T series - Twin-guide cylinder

Theoretical force and Ordering expression

CHELIC PNEUMATIC

⦿ Theoretical force



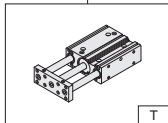
Bore size (mm)	Piston rod dia (mm)	Action	Piston area (cm ²)	Air pressure (kgf/cm ²)						
				1	2	3	4	5	6	7
10	6	Push	0.79	—	1.6	2.4	3.2	4	4.7	5.5
		Pull	0.32	—	0.6	1	1.3	1.6	1.9	2.2
16	8	Push	2.01	—	4	6	8	10.1	12.1	14
		Pull	1.51	—	3	4.5	6	7.6	9.1	10.6
20	10	Push	3.14	—	6	9	12	15	18	21
		Pull	2.35	—	4.7	7.1	9.4	11.8	14.1	16.5
25	12	Push	4.90	—	9	14	19	24	29	34
		Pull	3.77	—	7.5	11.3	15.1	18.9	22.6	26.3
32	16	Push	8.04	—	16	24	32	40	48	55
		Pull	6.03	—	12.1	18.1	24.2	30.2	36.2	42.2
40	16	Push	12.56	12	25	37	50	62	75	87
		Pull	10.55	10	21	31	42	52	63	73
50	20	Push	19.63	19	39	58	78	98	117	137
		Pull	16.49	16	32	49	65	82	98	115
63	20	Push	31.17	31	62	93	124	155	187	218
		Pull	28.03	28	56	84	112	140	168	196

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

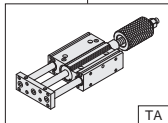
⦿ How to order

T **B** **L** **32** × **100** - **SE** **2**

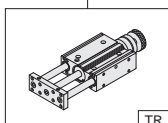
Model Guide type Two types of guide rod Bore size Stroke Sensor switch



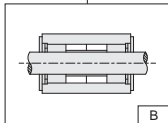
T :
Twin-guide cylinder



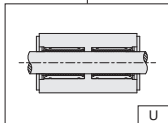
TA :
Adjustable stroke



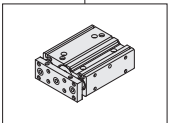
TR :
Retraction adjustable stroke



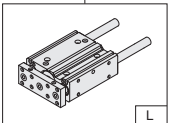
B :
Bush guide



U :
Linear bearing guide



Note :
Standard type

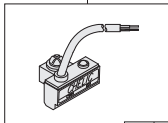


L :
Extension guide rod type
(Front and end are mounted with guide)

10 - Ø10 mm
16 - Ø16 mm
20 - Ø20 mm
25 - Ø25 mm
32 - Ø32 mm
40 - Ø40 mm
50 - Ø50 mm
63 - Ø63 mm

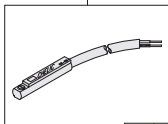
Ø10 25 - 100 mm
Ø16 25 - 200 mm
Ø20 25 - 200 mm
Ø25 25 - 200 mm
Ø32 30 - 250 mm
Ø40 30 - 250 mm
Ø50 30 - 150 mm
Ø63 30 - 150 mm

Please refer to P.3-9.1



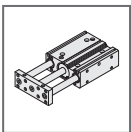
CS-30E **SE** **2**

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



CS-9D **SD** **2**

SD : Sensor switch code (CS-9D)
SB : Sensor switch code (CS-9B)
2 : Number of sensor switch
1 = 1 PCS
2 = 2 PCS



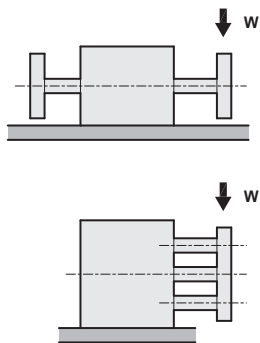
T series - Twin-guide cylinder

Operating expression

CHELIC PNEUMATIC

Allowable horizontal load

Unit : kg

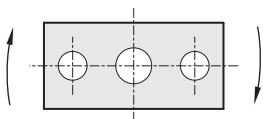


Bore size (mm)	Model	Stroke (mm)							
		25	30	50	75	100	125	150	
Ø10	TB - 10	1.5	-	1.2	0.9	0.8	-	-	
	TU - 10	1.7	-	1.9	1.5	1.3	-	-	
Ø16	TB - 16	2.6	-	1.9	1.5	1.3	2.7	2.4	
	TU - 16	2.8	-	3.3	2.8	2.3	2	1.7	
Ø20	TB - 20	4.8	-	3.4	5.7	4.9	4.2	3.7	
	TU - 20	4.9	-	6.5	5.3	4.4	3	2.6	
Ø25	TB - 25	7	-	4.7	7.7	6.5	5.6	4.9	
	TU - 25	7.1	-	7.2	5.9	5.1	4.2	3.6	
Ø32	TB - 32	-	20	18	17.9	15.6	13.8	12.4	
	TU - 32	-	16	12	19	15.9	12.3	10.6	
Ø40	TB - 40	-	20	18	17.9	15.6	13.8	12.4	
	TU - 40	-	16	12	19	15.9	12.3	10.6	
Ø50	TB - 50	-	33	28.6	29.2	25.7	23	20.8	
	TU - 50	-	17	12.9	21.5	18.1	13.9	12.1	
Ø63	TB - 63	-	33	28.6	29.2	25.7	23	20.8	
	TU - 63	-	17	12.9	21.5	18.1	13.9	12.1	

Note : Extension guide for above stroke 75mm.

Max. rotating torque

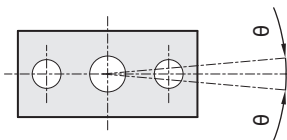
Unit : N•m



Bore size (mm)	Model	Stroke (mm)							
		25	30	50	75	100	125	150	
Ø10	TB - 10	0.28	-	0.22	0.45	0.37	-	-	
	TU - 10	0.4	-	0.27	0.5	0.42	-	-	
Ø16	TB - 16	0.5	-	0.36	0.65	0.55	0.4	0.35	
	TU - 16	0.7	-	0.44	0.82	0.7	0.62	0.58	
Ø20	TB - 20	1.02	-	0.78	1.95	1.69	1.49	1.28	
	TU - 20	1.28	-	0.95	2.23	1.91	1.68	1.47	
Ø25	TB - 25	1.7	-	1.31	2.96	2.57	2.26	2.02	
	TU - 25	1.35	-	1.03	2.42	2.07	1.82	1.6	
Ø32	TB - 32	-	6.46	5.28	5.74	5	4.46	4.01	
	TU - 32	-	3.44	2.8	6	5.2	4.6	4.12	
Ø40	TB - 40	-	7.1	6.42	5.8	6.3	5.5	4.9	
	TU - 40	-	3.87	3.5	3.1	6.7	5.8	5.1	
Ø50	TB - 50	-	13.6	11.4	11.9	10.5	9.4	8.5	
	TU - 50	-	5.8	4.8	9.3	8.2	7.3	6.6	
Ø63	TB - 63	-	15	12.5	13.1	11.6	10.4	9.4	
	TU - 63	-	6.4	5.3	10.3	9.1	8.1	7.3	

Note : Extension guide for above stroke 75mm.

No rotary precision

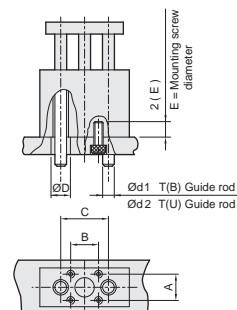


Bore size (mm)	No rotary precision θ
Ø10	±0.18
Ø16	
Ø20	
Ø25	±0.17
Ø32	
Ø40	±0.16
Ø50	
Ø63	±0.15

Lift mounting type condition

Unit : (mm)

Bore size	A	B	C	D	d1	d2	Hexagonal socket screw
Ø10	14	25	42	14	10	8	M4 x 0.7P x 12L
Ø16	16	30	46	14	10	8	M5 x 0.8P x 15L
Ø20	20	40	60	16	12	10	M5 x 0.8P x 15L
Ø25	24	44	66	20	16	12	M6 x 1.0P x 20L
Ø32	32	52	80	24	20	16	M6 x 1.0P x 20L
Ø40	36	68	90	24	20	16	M8 x 1.25P x 20L
Ø50	40	84	110	29	25	20	M10 x 1.5P x 20L
Ø63	46	100	120	29	25	20	M10 x 1.5P x 20L



TB(U)
Twin-Guide
Cylinder

TB(U)2
Twin-Guide
Cylinder

TSB(U)
Twin-Guide
Cylinder

TXB(U)
Twin-Guide
Cylinder

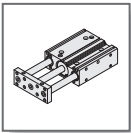
TMB(U)
Twin-Guide
Cylinder

GCB(U)
Twin-Guide
Cylinder

GHB(U)
Twin-Guide
Cylinder

TCR
Triple-Guide
Cylinder

TCF
Triple-Guide
Cylinder

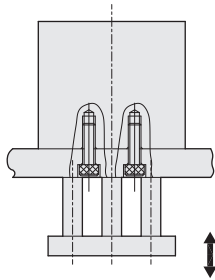


T series - Twin-guide cylinder

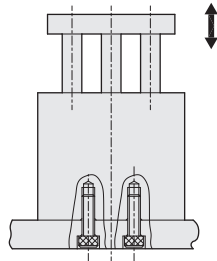
Mounting type and Application

CHELIC PNEUMATIC

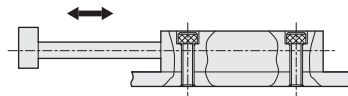
Mounting type



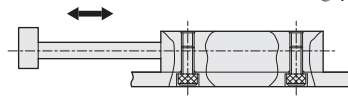
● Vertical mounting type



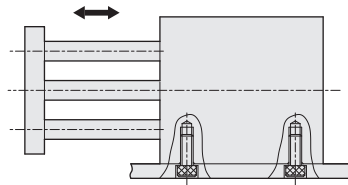
● Lift mounting type



● Top mounting type



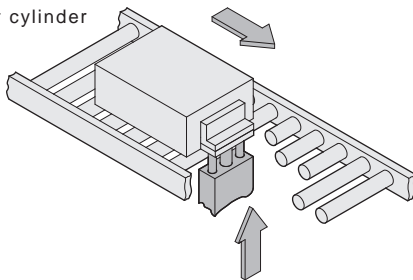
● Bottom mounting type



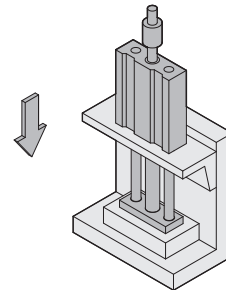
● Side mounting type

Multi purpose

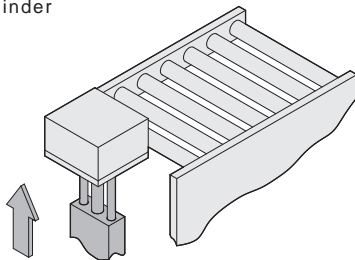
● Stopper cylinder



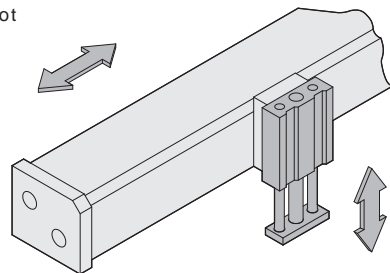
● Press



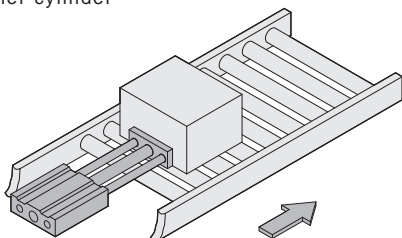
● Lift cylinder



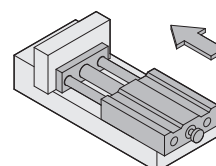
● Robot

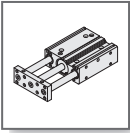


● Pusher cylinder



● Clamp cylinder



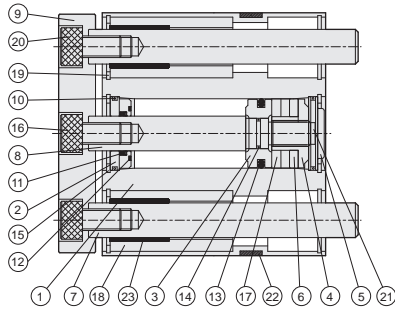


T series - Twin-guide cylinder

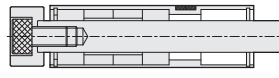
Components and Material list

CHELIC PNEUMATIC

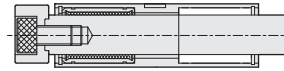
Internal structure



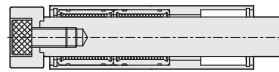
● **TB (Bush) below stroke 50mm.**
(Standard guide)



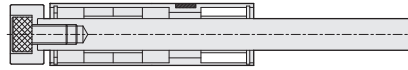
● **TB (Bush) above stroke 75mm.** (Extension guide)



● **TU (Bearing) below stroke 50mm.** (Standard guide)



● **TU (Bush) above stroke 75mm.** (Extension guide)



● **TB(U)L Double rod** (Front and end are mounted with guide)

Components and Material list

No.	Item	Material	No.	Item	Material
01	Body	Aluminum alloy	14	Piston O-ring	NBR
02	Front cover	Aluminum alloy	15	Snap ring	Spring steel
03	Piston	Copper	16	Rod-fix bolt	Alloy steel
04	Wear ring base	Copper	17	Magnet	Plastic
05	End cover	Aluminum alloy	18	Drymet	Copper
06	Wear ring	Teflon	19	Holder snap ring	Alloy steel
07	Rod	Medium carbon steel	20	Plate screw	Alloy steel
08	Rod	Medium carbon steel	21	Rubber linear	NBR
09	Plate	Aluminum alloy	22	Magnet	Plastic
10	Front cover O-ring	NBR	23	Drymet	Teflon
11	Rod packing	NBR	24	Linear bearing	Bearing steel
12	Cushion O-ring	NBR	25	Rod	Bearing steel
13	Piston packing	NBR			

TB(U)
Twin-Guide
Cylinder

TB(U)2
Twin-Guide
Cylinder

TSB(U)
Twin-Guide
Cylinder

TXB(U)
Twin-Guide
Cylinder

TMB(U)
Twin-Guide
Cylinder

GCB(U)
Twin-Guide
Cylinder

GHB(U)
Twin-Guide
Cylinder

TCR
Triple-Guide
Cylinder

TCF
Triple-Guide
Cylinder

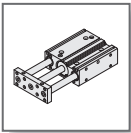
Note : The material of front cover for TB(U) Ø10 is iron; the material of front cover for TB(U) Ø16~Ø63 is Aluminum alloy.

Packing and O-Ring list

Unit : mm

Bore size	Item	Piston packing	Rod O-Ring	Cushion O-Ring	Rod packing	Front & end cover O-Ring
	Number	1	1	1	1	2
Ø10	DYP - 10 (2 PCS)	Ø2.9 x Ø1	—	—	EM - 0609	Ø 8 x Ø1.5
Ø16	PSD - 16	Ø6.3 x Ø0.8	—	—	EM - 0811	Ø15.5 x Ø1.45
Ø20	COP - 20	Ø8 x Ø1	Ø11.8 x Ø2.4	—	EM - 1014	Ø17.5 x Ø1.5
Ø25	COP - 25	Ø10 x Ø1	Ø13.8 x Ø2.4	—	EM - 1214	Ø24.5 x Ø2
Ø32	COP - 32	Ø13.5 x Ø1.5	Ø20.8 x Ø2.4	—	EM - 1020	Ø30 x Ø2
Ø40	COP - 40	Ø13.5 x Ø1.5	Ø20.8 x Ø2.4	—	EM - 1620	Ø38.5 x Ø2
Ø50	COP - 50	Ø17.5 x Ø1.5	RP - 50	—	EM - 2025	Ø48 x Ø2
Ø63	COP - 63	Ø17.5 x Ø1.5	RP - 50	—	EM - 2025	Ø59.5 x Ø2.5

Note : Piston packing and rod packing all adopt imports. (Mitsubishi, Sakagami and same grade)



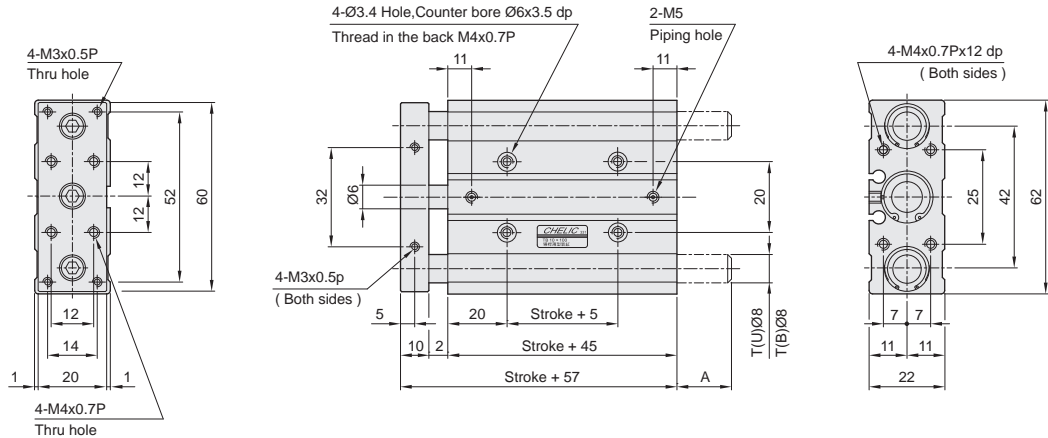
TB(U) series - Twin-guide cylinder

External dimension

CHELIC PNEUMATIC

● TB(U) Ø10 x

TB(U) 10 MST

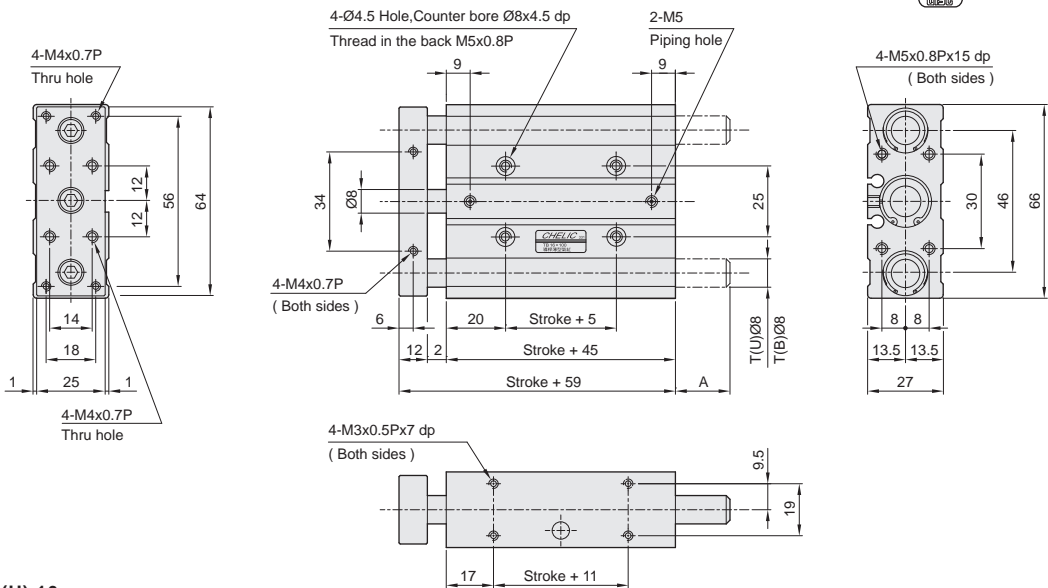


● TB(U) 10

Stroke (mm)	25	50	75	100
Code	0	0	10.4	10.4
A	0	0	10.4	10.4

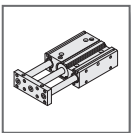
● TB(U) Ø16 x

TB(U) 16 MST



● TB(U) 16

Stroke (mm)	25	50	75	100	125	150	175	200
Code	0	0	11.5	11.5	11.5	11.5	11.5	11.5
A	0	0	11.5	11.5	11.5	11.5	11.5	11.5

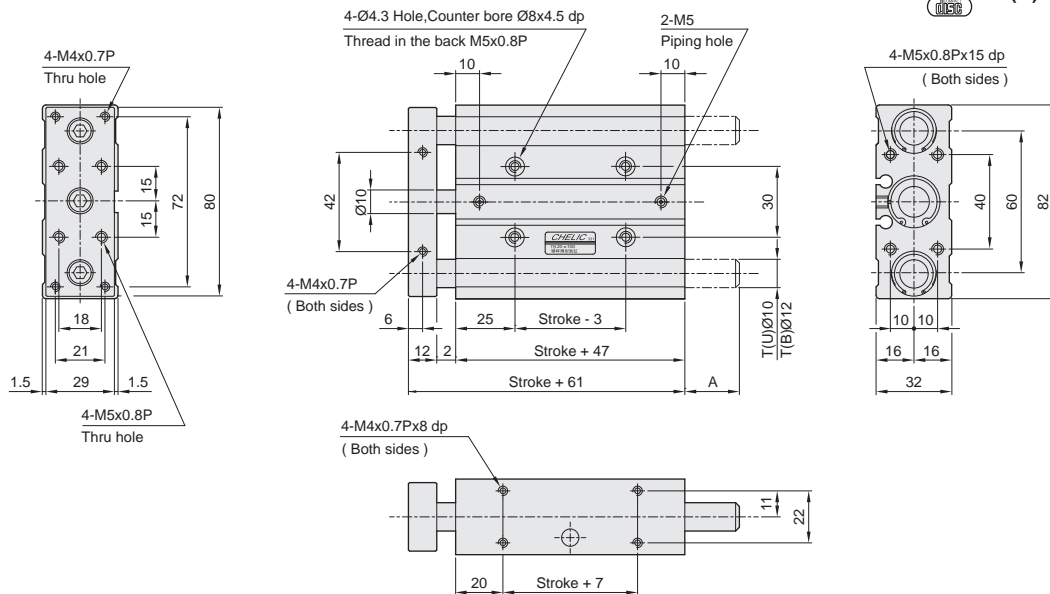
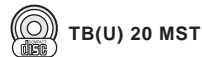


TB(U) series - Twin-guide cylinder

External dimension

CHELIC PNEUMATIC

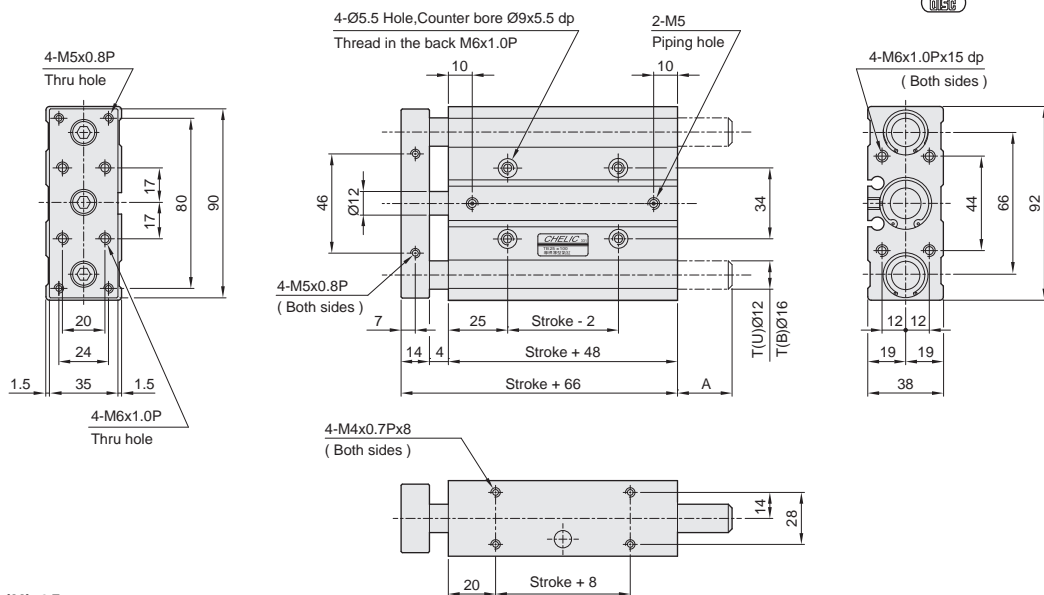
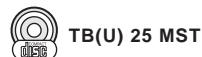
● TB(U) Ø20 x



● TB(U) 20

Stroke (mm)	25	50	75	100	125	150	175	200
Code								
A	0	0	14.9	14.9	14.9	14.9	14.9	14.9

● TB(U) Ø25 x



● TB(U) 25

Stroke (mm)	25	50	75	100	125	150	175	200
Code								
A	0	0	11	11	11	11	11	11

TB(U)
Twin-Guide
Cylinder

TB(U)2
Twin-Guide
Cylinder

TSB(U)
Twin-Guide
Cylinder

TXB(U)
Twin-Guide
Cylinder

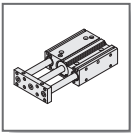
TMB(U)
Twin-Guide
Cylinder

GCB(U)
Twin-Guide
Cylinder

GHB(U)
Twin-Guide
Cylinder

TCR
Triple-Guide
Cylinder

TCF
Triple-Guide
Cylinder

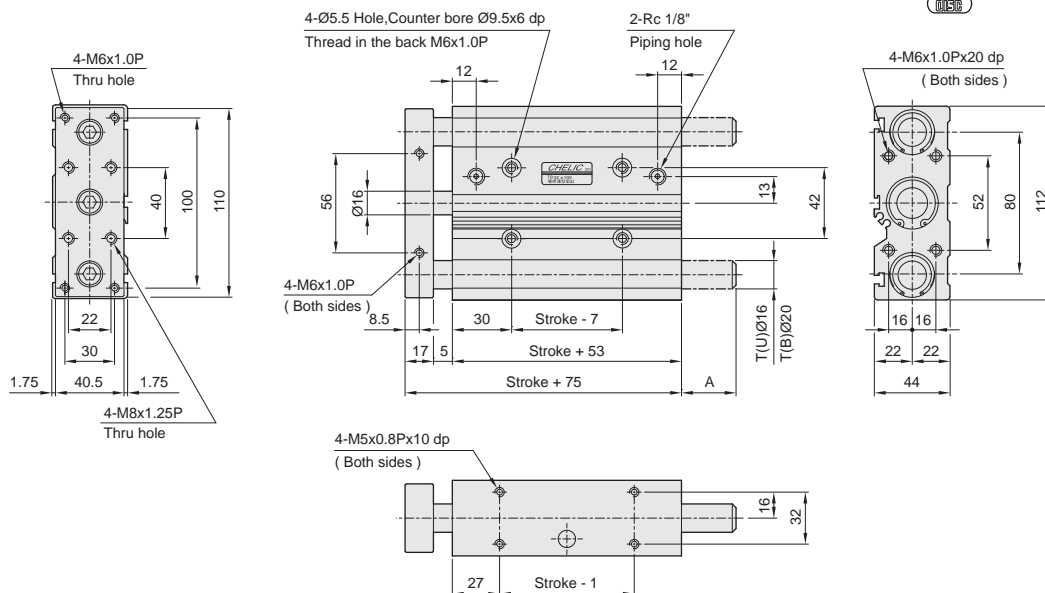
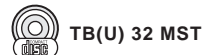


TB(U) series - Twin-guide cylinder

External dimension

CHELIC PNEUMATIC

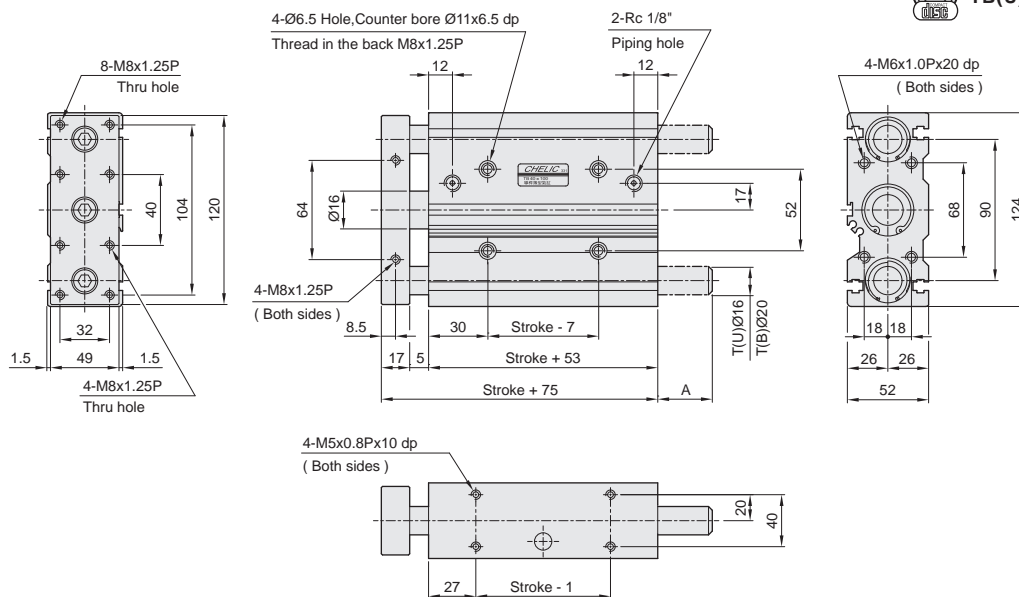
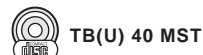
● TB(U) Ø32 x



● TB(U) 32

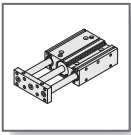
Stroke (mm)	30	50	75	100	125	150	175	200	250
Code	0	0	34	34	34	34	34	34	34
A	0	0	34	34	34	34	34	34	34

● TB(U) Ø40 x



● TB(U) 40

Stroke (mm)	30	50	75	100	125	150	175	200	250
Code	0	0	33	33	33	33	33	33	33
A	0	0	33	33	33	33	33	33	33



TB(U) series - Twin-guide cylinder

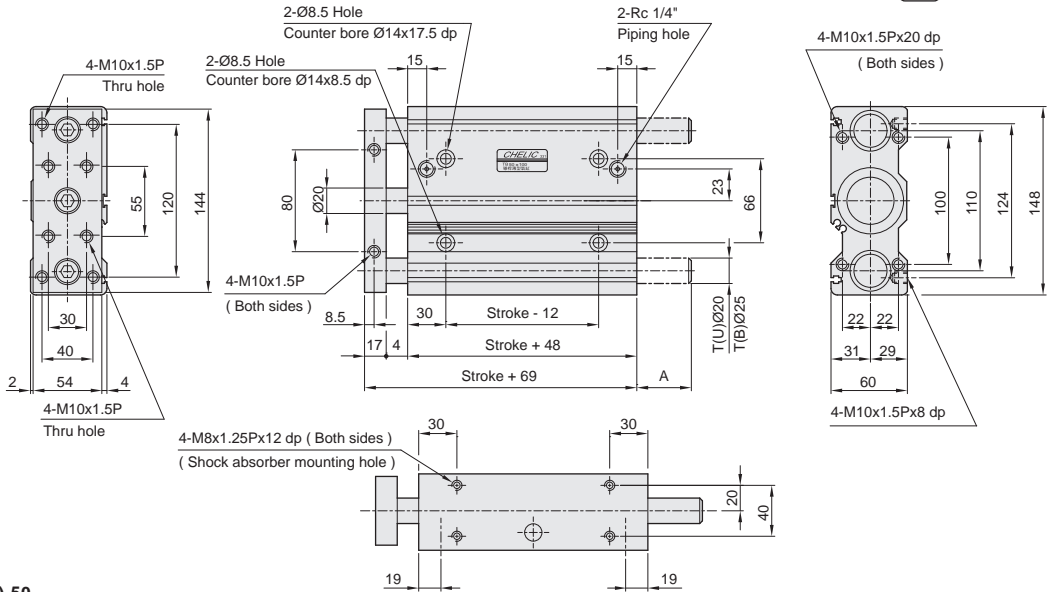
External dimension

CHELIC PNEUMATIC

● TB(U) Ø50 x



TB(U) 50 MST



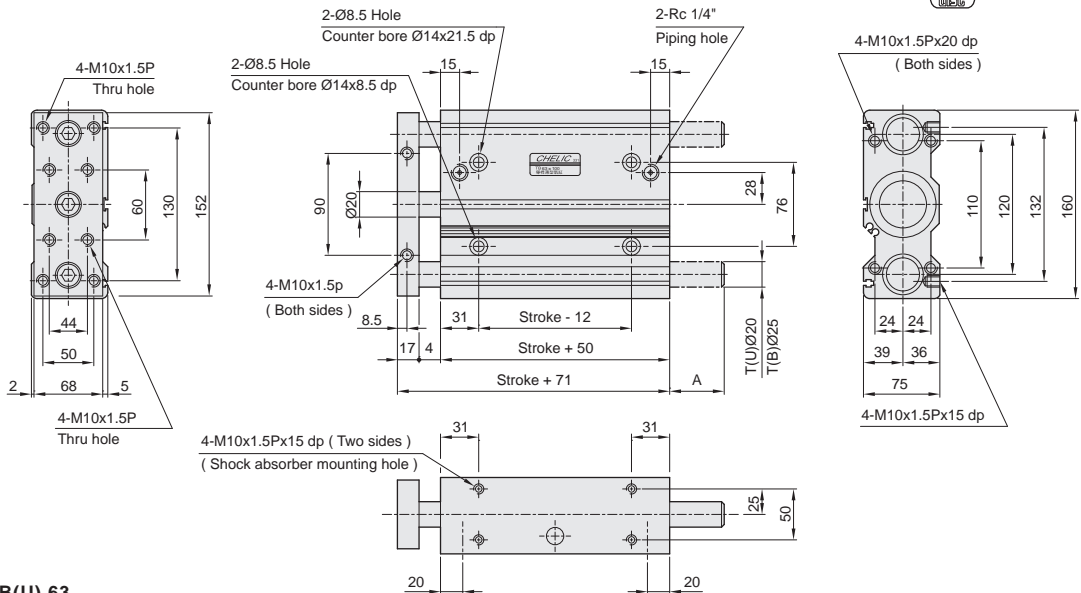
● TB(U) 50

Stroke (mm)	30	50	75	100	125	150
Code						
A	0	0	0	49	49	49

● TB(U) Ø63 x



TB(U) 63 MST



● TB(U) 63

Stroke (mm)	30	50	75	100	125	150
Code						
A	0	0	0	47	47	47

TB(U)
Twin-Guide
Cylinder

TB(U)2
Twin-Guide
Cylinder

TSB(U)
Twin-Guide
Cylinder

TXB(U)
Twin-Guide
Cylinder

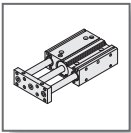
TMB(U)
Twin-Guide
Cylinder

GCB(U)
Twin-Guide
Cylinder

GHB(U)
Twin-Guide
Cylinder

TCR
Triple-Guide
Cylinder

TCF
Triple-Guide
Cylinder



T series - Twin-guide cylinder

External dimension - TA , TR series $\varnothing 20 \sim \varnothing 63$

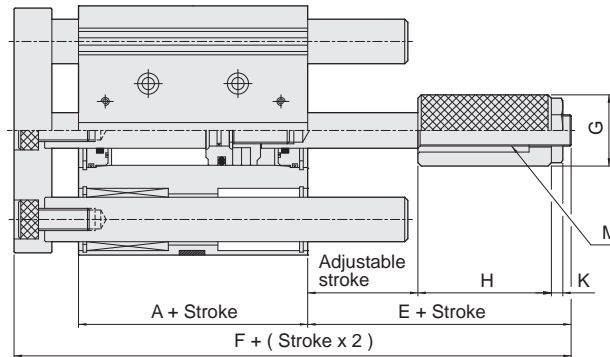
CHELIC PNEUMATIC

▣ TAB(U) $\varnothing 20 \sim \varnothing 63$



TAB MST

- Adjustable stroke



Unit : mm

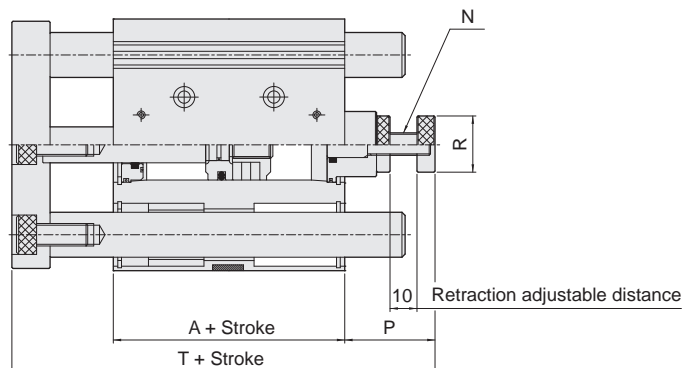
Bore size	A	E	F	G	H	K	M	Adjustable stroke
$\varnothing 20$	47	66.5	127.5	$\varnothing 20$	56	5	M8 x 1.25P	0 ~ 40
$\varnothing 25$	48	69	135	$\varnothing 25$	58	6.5	M10 x 1.25P	
$\varnothing 32$	53	73	148	$\varnothing 32$	58	8	M14 x 1.5P	
$\varnothing 40$	53	72.5	147.5	$\varnothing 32$	60	11	M14 x 1.5P	
$\varnothing 50$	48	77.5	146.5	$\varnothing 36$	62	15	M18 x 1.5P	
$\varnothing 63$	50	76.7	147.7	$\varnothing 36$	62	15	M18 x 1.5P	

▣ TRB(U) $\varnothing 20 \sim \varnothing 63$



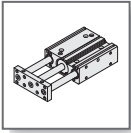
TRB MST

- Retraction adjustable stroke



Unit : mm

Bore size	A	N	P	R	T	Adjustable stroke
$\varnothing 20$	47	M8 x 1.25P	38.5	$\varnothing 15$	99.5	0 ~ 10
$\varnothing 25$	48	M8 x 1.25P	38	$\varnothing 15$	104	
$\varnothing 32$	53	M10 x 1.5P	43.2	$\varnothing 25$	118.2	
$\varnothing 40$	53	M10 x 1.5P	42.5	$\varnothing 25$	117.5	
$\varnothing 50$	48	M16 x 1.5P	51	$\varnothing 38$	120	
$\varnothing 63$	50	M16 x 1.5P	50	$\varnothing 38$	121	



T series - Twin-guide cylinder (With code - L)

External dimension

T series Ø10 ~ Ø63 / TA , TR series Ø20 ~ Ø63

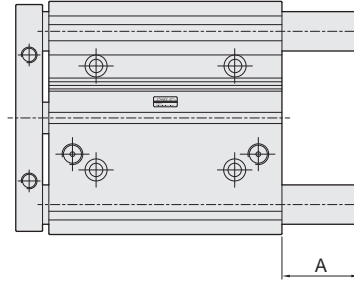
CHELIC PNEUMATIC

▶ TB(U)L Ø10 ~ Ø63



Unit : mm

Stroke										
Length A	25	30	50	75	100	125	150	175	200	250
Bore size										
Ø10	25	—	50	75	100	—	—	—	—	—
Ø16	25	—	50	75	100	125	150	175	200	—
Ø20	25	—	50	75	100	125	150	175	200	—
Ø25	25	—	50	75	100	125	150	175	200	—
Ø32	—	30	50	75	100	125	150	175	200	250
Ø40	—	30	50	75	100	125	150	175	200	250
Ø50	—	—	50	75	100	125	150	—	—	—
Ø63	—	—	50	75	100	125	150	—	—	—

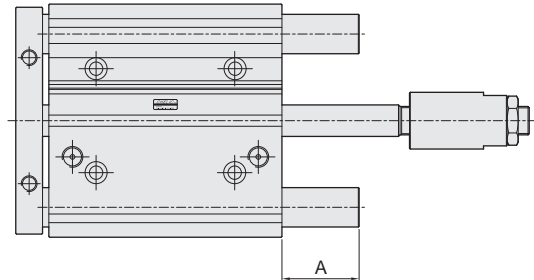


▶ TAB(U)L Ø20 ~ Ø63

● Adjustable stroke

Unit : mm

Stroke										
Length A	25	30	50	75	100	125	150	175	200	250
Bore size										
Ø20	25	—	50	75	100	125	150	175	200	—
Ø25	25	—	50	75	100	125	150	175	200	—
Ø32	—	30	50	75	100	125	150	175	200	250
Ø40	—	30	50	75	100	125	150	175	200	250
Ø50	—	—	50	75	100	125	150	—	—	—
Ø63	—	—	50	75	100	125	150	—	—	—



TB(U)
Twin-Guide
Cylinder

TB(U)2
Twin-Guide
Cylinder

TSB(U)
Twin-Guide
Cylinder

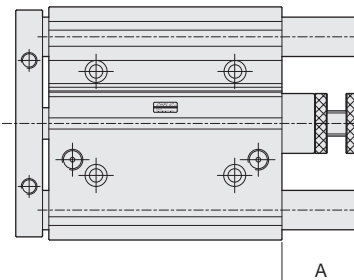
TXB(U)
Twin-Guide
Cylinder

▶ TRB(U)L Ø20 ~ Ø63

● Retraction adjustable stroke

Unit : mm

Stroke										
Length A	25	30	50	75	100	125	150	175	200	250
Bore size										
Ø20	25	—	50	75	100	125	150	175	200	—
Ø25	25	—	50	75	100	125	150	175	200	—
Ø32	—	30	50	75	100	125	150	175	200	250
Ø40	—	30	50	75	100	125	150	175	200	250
Ø50	—	—	50	75	100	125	150	—	—	—
Ø63	—	—	50	75	100	125	150	—	—	—



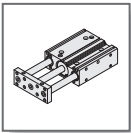
TMB(U)
Twin-Guide
Cylinder

GCB(U)
Twin-Guide
Cylinder

GHB(U)
Twin-Guide
Cylinder

TCR
Triple-Guide
Cylinder

TCF
Triple-Guide
Cylinder



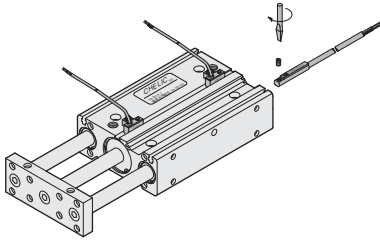
TB(U) series - Twin-guide cylinder

Sensor switch installation and Sensing setting

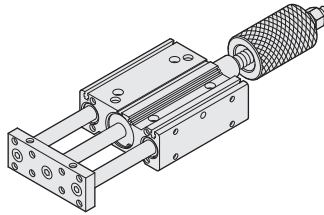
CHELIC PNEUMATIC

☛ Sensor switch mounting type

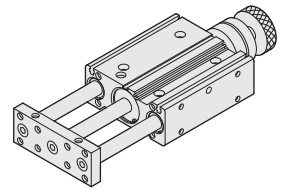
● TB(U) series



● TAB(U) series

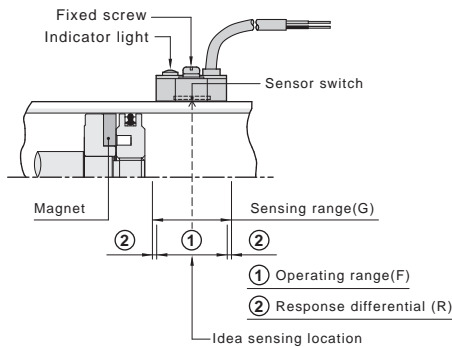


● TRB(U) series

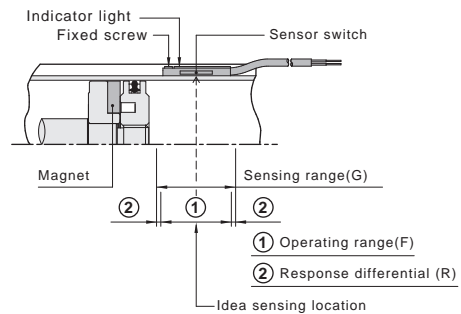


☛ Sensor switch setting and Operating range

● 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.

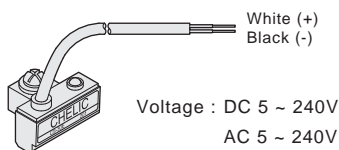
☛ Operating range

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)

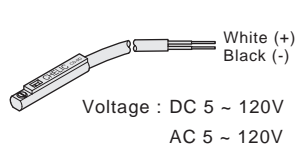
Unit : mm

Model	CS-30E		CS-9D(B)	
	Operating range (F)	Response differential (R)	Operating range (F)	Response differential (R)
Ø 10	—	—	10	1
Ø 16	—	—	7	1
Ø 20	—	—	8	1
Ø 25	—	—	12.5	1
Ø 32	11	1.2	13	1.2
Ø 40	13	1.2	13	1.2
Ø 50	12	1.4	10	1.3
Ø 63	13	1.4	13	1.4

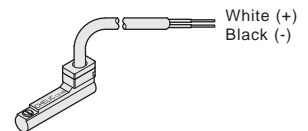
☛ Connection type



CS - 30E



CS - 9D



CS - 9B