



Space-saving pneumatic cylinders

10S-1/1R SeriesAA2

10S-6 SeriesAA64

10S-6G SeriesAA126

10S-6 (ϕ 125 to ϕ 160) ...AA164

10S-6C SeriesAA174

10S-6RE SeriesAA190

10S-6REC SeriesAA216

10F-1 SeriesAA230

10G-3 Series.....AA238

RL2 (magnet type) Series...AA246

Compact, lightweight, space saving air cylinder

- A variety of models for a wide range of application.
- A series of non-rotating types. (Double acting type and double rod type)
- Disassembly type convenient for maintenance.
- Female threaded rod end types and male threaded rod end are available.
- Non-lubrication type



Cylinder specifications

Series variations	Double acting single rod	Double acting double rod	Single acting type (SR type/SH type)
Cylinder bore (mm)	φ12·φ16·φ20·φ25·φ32·φ40 φ50·φ63·φ80·φ100·φ125	φ12·φ16·φ20·φ25·φ32·φ40 φ50·φ63·φ80·φ100·φ125	φ12·φ16·φ20·φ25 φ32·φ40·φ50
Working fluid	Air		
Lubrication	Unnecessary (but possible)		
Working pressure range	φ 12 · φ 16 : 0.07 to 1 MPa φ 20 to φ 125 : 0.05 to 1 MPa		φ 12 · φ 16 : 0.2 to 1 MPa φ 20 · φ 25 : 0.18 to 1 MPa φ 32 to φ 50 : 0.12 to 1 MPa
Proof test pressure	1.5 MPa		
Working temperature range	−10 to +70°C (no freezing)		
Structure of cushioning	φ 12 and φ 16: None φ 20 to φ 125: With cushion pad		φ12 and φ16: None SR type, φ20 to φ125: With cushioning pad on cap side SH type, φ20 to φ50: Both ends cushioned
Tolerance for thread	JIS 6H/6g		
Tolerance of stroke	+1.0 0 mm		
Note) Mounting style	SD (basic style), ST (tapped on both sides), LA, LB, FA, FB, CA and CB	SD (basic style), ST (tapped on both sides), LA, LB and FA	SD (basic style), ST (tapped on both sides), LA, LB, FA, FB, CA and CB
Rod end threads	Female thread and male thread		
Accessory	Bracket CB (φ 40 to φ 125)		
Rod end attachment	Rod eye, rod eye with spherical bearing, rod clevis with pin and floating joint		

Specifications / non-rotating rod

Series variations	Double acting single rod	Double acting double rod
Cylinder bore (mm)	φ20·φ25·φ32·φ40·φ50·φ63·φ80·φ100	
Working fluid	Air	
Lubrication	Unnecessary (but possible)	
Working pressure range	0.1 to 1 MPa	
Proof test pressure	1.5 MPa	
Working temperature range	-10 to +70°C (no freezing)	
Structure of cushioning	With cushion pad	
Allowable rotating angle	φ20 · φ25 : ±1.5° φ32 to φ63 : ±1° φ80 · φ100 : ±0.8°	
Allowable torque	φ20 · φ25 : 0.49N · m φ50 · φ63 : 3.33N · m	φ32 · φ40 : 0.98N · m φ80 · φ100 : 9.61N · m
Tolerance for thread	JIS 6H/6g	
Tolerance of stroke	+1.0 0 mm	
Note) Mounting style	SD (basic style), ST (tapped on both sides), LA, LB, FA, FB, CA and CB	SD (basic style), ST (tapped on both sides), LA, LB and FA
Rod end threads	Female thread and male thread	
Accessory	Bracket CB (φ40 to φ100)	
Rod end attachment	Rod Eye and rod clevis with pin	

(Notes)

- SD (basic) style cylinders are not tapped, and not available to fit them mounting accessory. When requiring only the cylinder body for cylinder with mounting accessory place an order for ST (tapped on both sides).
- Mounting accessory can be fitted to standard double acting type cylinders having bores of φ40 to φ125 and non-rotating double acting type cylinders having bores of φ40 to φ100. (Double rod cylinders of mounting style FB, CA and CB are not available.) Single acting cylinders are available only with bores of φ40 and φ50.
- All rod end attachments are for male thread specifications. The rod eye and rod clevis with pin are applicable to φ12 to φ125, the rod eye with spherical bearing is applicable to φ20 to φ100, and the floating joint is applicable to φ20 to φ125.

Product lineup

Unit: mm

Series Variations		φ12	φ16	φ20	φ25	φ32	φ40	φ50	φ63	φ80	φ100	φ125
Standard	Double acting single rod 10S-1	●	●	●	●	●	●	●	●	●	●	●
	Double acting double rod 10S-1D	●	●	●	●	●	●	●	●	●	●	●
	Single acting spring return 10S-1SR	●	●	●	●	●	●	●	●	●	●	●
	Single acting spring-extended 10S-1SH	●	●	●	●	●	●	●	●	●	●	●
Non-rotating	Double acting single rod 10S-1G			●	●	●	●	●	●	●	●	●
	Double acting double rod 10S-1GD			●	●	●	●	●	●	●	●	●

Single acting spring return type spring force

Unit: N

Bore (mm)	Load	Cylinder stroke (mm)									
		5	10	15	20	25	30	35	40	45	50
φ12	Initial load	9.8	7.8	8.8	7.8	—	—	—	—	—	—
	End load	11.8		14.7		—	—	—	—	—	—
φ16	Initial load	14.7	10.8	12.7	11.8	—	—	—	—	—	—
	End load	17.7				—	—	—	—	—	—
φ20	Initial load	18.6	15.7	17.7	16.7	15.7	14.7	—	—	—	—
	End load	21.6					—	—	—	—	—
φ25	Initial load	23.5	19.6	24.5	22.6	20.6	19.6	—	—	—	—
	End load	28.4		29.4				—	—	—	—
φ32	Initial load	33.3	28.4	35.3	33.3	31.4	29.4	—	—	—	—
	End load	39.2		41.2				—	—	—	—
φ40	Initial load	43.1	38.2	48.1	46.1	44.1	43.1	41.2	40.2	38.2	37.3
	End load	48.1		53.0							
φ50	Initial load	—	56.9	65.7	63.7	60.8	58.8	55.9	53.9	51.0	49.0
	End load	—	73.5								

Single acting spring-extended type spring force

Unit: N

Bore (mm)	Load	Cylinder stroke (mm)		
		5	10	20
φ12	Initial load	2.9	2.9	—
	End load	9.8	9.8	—
φ16	Initial load	4.9	4.9	—
	End load	13.7	13.7	—
φ20	Initial load	5.9	6.9	—
	End load	26.5	27.5	—
φ25	Initial load	5.9	6.9	—
	End load	26.5	27.5	—
φ32	Initial load	22.6	22.6	—
	End load	42.2	41.2	—
φ40	Initial load	22.6	22.6	—
	End load	42.2	41.2	—
φ50	Initial load	—	23.5	23.5
	End load	—	82.4	82.4

● How to order

● Standard/non-rotating

Standard

10S-1 : Double acting single rod
 10S-1D : Double acting double rod
 10S-1SR : Single acting spring return
 10S-1SH : Single acting spring-extended

Non-rotating

10S-1G : Double acting single rod
 10S-1GD : Double acting double rod

Mounting style

(Notes) ● Since cylinders with the mounting style SD (basic style) do not have tapped holes, mounting accessories are not available to fit to the cylinders.

When requiring only the cylinder body for the cylinder type with mounting accessory, place an order for ST (tapped on both sides). However, LA or LB accessories cannot be fitted to ST (tapped on both sides) style cylinders having the following strokes. Place an order for LA or LB style.

Bore	Stroke
φ63	10
φ80	10, 15, 20, 25
φ100	10, 15
φ125	10, 15, 20, 25, 30

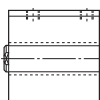
● For the mounting styles LA, LB, FA, FB, CA and CB, the cylinder bore is φ40 to φ125.

● When purchasing ST style cylinder body (tapped on both sides) of mounting style FA, change the dimension WF to the following value.

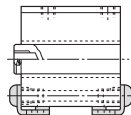
Female thread	φ40 to φ63	13.5
	φ80 to φ125	21.5
Male thread	φ40 to φ63	15
	φ80 to φ125	21.5

Mounting style

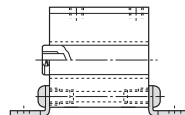
[SD] Basic style



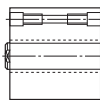
[LA] Side lugs



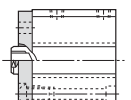
[LB] End angles



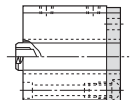
[ST] Basic style/tapped on both sides



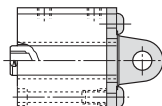
[FA] Rod rectangular flange



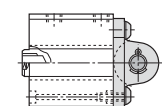
[FB] Cap rectangular flange



[CA] Cap eye



[CB] Cap clevis



[T] Rod eye (T-end)
 [S] Rod eye with spherical bearing (S-end)
 [Y] Rod clevis (Y-end)
 [F] Floating joint (F-end)

Note) Rod end attachments are for male thread type.

Blank) Female thread type
 [T] Male thread type

Cylinder stroke (mm)

Cylinder bore (mm)

φ12, φ16, φ20, φ25, φ32, φ40, φ50,
 φ63, φ80, φ100, φ125

★ Notice

In the following case, the cylinder will be fabricated as a semi-standard style.

- Rod end modification
 (Dimensional symbol: WF, A or KK)

When an order for the ◎-marked SD style (basic style) cylinder body is placed, the body will come with mounting bolts. See Note 2.

Standard stroke range

	Series variations	Cylinder bore	Stroke																	With cushion pad	Male thread
		5	10	15	20	25	30	35	40	45	50	60	70	75	80	90	100				
Standard	Double acting single rod	φ12	○	○																	
		φ16	○	○	○	○	○	○	○	○		○								○	
		φ20	○	○	○	○	○	○	○	○	○	○							□	○	
		φ25	○	○	○	○	○	○	○	○	○	○							□	○	
		φ32	○	○	○	○	○	○	○	○	○	○			○	○	○	○	□	○	
		φ40	○	○											○	○	○	○	□	○	
		φ50	—	○	○									○	○	○	○	○	□	○	
		φ63	—												○	○	○	○	□	○	
		φ80	—	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	□	○	
		φ100	—													○	○	○	□	○	
	φ125	—													○	○	○	□	○		
	Double acting double rod	φ12	○	○	○			—	—	—	—	—	—	—	—	—	—	—	—	○	
		φ16	○	○	○	○		—	—	—	—	—	—	—	—	—	—	—	—	○	
		φ20	○	○	○	○	○		—	—	—	—	—	—	—	—	—	—	—	○	
		φ25	○	○	○	○	○		—	—	—	—	—	—	—	—	—	—	—	○	
		φ32	○	○	○	○	○		○	○	○	—	—	—	—	—	—	—	□	○	
		φ40	○	○						○	○	○	—	—	—	—	—	—	□	○	
		φ50	—	○	○					○	○	○	—	—	—	—	—	—	□	○	
		φ63	—	○	○	○	○	○	○	○	○	○	—	—	—	—	—	—	□	○	
		φ80	—	○	○	○	○	○	○	○	○	○	—	—	—	—	—	—	□	○	
		φ100	—	○	○	○	○	○	○	○	○	○	—	—	—	—	—	—	□	○	
	φ125	—	○	○	○	○	○	○	○	○	○	—	—	—	—	—	—	□	○		
	Single acting style (sprint return)	φ12	○	○	○	○	—	—	—	—	—	—	—	—	—	—	—	—	—	○	
		φ16	○	○	○	○	—	—	—	—	—	—	—	—	—	—	—	—	—	○	
		φ20	○	○	○	○	○	—	—	—	—	—	—	—	—	—	—	—	—	○	
φ25		○	○	○	○	○	○	—	—	—	—	—	—	—	—	—	—	—	○		
φ32		○	○	○	○	○	○	—	—	—	—	—	—	—	—	—	—	—	○		
Single acting style (spring-extended)	φ40	○	○	○	○	○	○	○	○	○	○	—	—	—	—	—	—	—	○		
	φ50	—	○	○	○	○	○	○	○	○	○	—	—	—	—	—	—	—	○		
	φ12	○	○																○		
	φ16	○	○																○		
	φ20	○	○																○		
Non-rotating	Double acting single rod	φ25	○	○	○	○	○	○	○	○	○	○	—	—	—	—	—	—	□	○	
		φ32	○	○	○	○	○	○	○	○	○	○	○	—	—	—	—	—	□	○	
		φ40	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	□	○	
		φ50	—	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	□	○	
		φ63	—		○	○	○	○	○	○	○	○	○	○	○	○	○	○	□	○	
		φ80	—		○	○	○	○	○	○	○	○	○	○	○	○	○	○	□	○	
		φ100	—	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	□	○	
	Double acting double rod	φ20	○	○					—	—	—	—	—	—	—	—	—	—	—	□	○
		φ25	○	○	○	○	○	○	—	—	—	—	—	—	—	—	—	—	—	□	○
		φ32	○	○	○	○	○	○	○	○	○	○	—	—	—	—	—	—	—	□	○
		φ40	○	○	○	○	○	○	○	○	○	○	—	—	—	—	—	—	—	□	○
		φ50	—	○	○	○	○	○	○	○	○	○	—	—	—	—	—	—	—	□	○
		φ63	—		○	○	○	○	○	○	○	○	—	—	—	—	—	—	—	□	○
		φ80	—		○	○	○	○	○	○	○	○	—	—	—	—	—	—	—	□	○
		φ100	—	○	○	○	○	○	○	○	○	○	—	—	—	—	—	—	—	□	○

Notes) 1. For strokes other than the above standard strokes (◎ and ○), consult us.

2. When an order for the ◎-marked SD style (basic style) cylinder body is placed, the body will come with mounting bolts. For any ○-marked SD style (basic style) cylinder, separately place an order for mounting bolts referring to the mounting bolt kit list.

Also in the following cases, separately place an order for mounting bolts. (Cylinders with special rod ends, fractional stroke cylinders, non-rotating double rod type cylinders, cylinders with special port diameter or special body, and other special cylinders)

The mounting bolt size is restricted. If mounting bolt cannot be fitted, use an ST style (tapped on both sides) cylinder.

3. Do not use the cylinder in an unevenly loaded state.

When using a cylinder having a stroke other than the ◎-marked ones or using rocking mounting accessory, consult us.

Specifications for order made cylinders

Dual stroke (double rod)



•Cylinder bore mm (Standard (round rod): φ12 to φ125
Standard (round rod)+non-rotating (hex. rod): φ20 to φ100

Dual stroke (single rod)



•Cylinder bore mm (Standard (round rod): φ12 to φ125
Non-rotating (hex. rod): φ20 to φ100

Adjustable stroke (Advanced stroke)



•Cylinder bore mm (Standard (round rod): φ12 to φ125
Non-rotating (hex. rod): φ20 to φ100

Stroke adjusting range: 0 to 10 mm

Weight table/Double acting standard/non-rotating

Unit: g

Bore (mm)	Basic weight (SD style · ST style)				Additional weight								
	Standard		Non-rotating		Additional weight per mm of stroke			Mounting accessory weight					Rod end male thread weight
	Double acting single rod	Double acting double rod	Double acting single rod	Double acting double rod	Standard	Non-rotating		LA style	LB style	FA · FB style	CA style	CB type	
						Double acting single rod	Double acting double rod						
φ12	25	45	—	—	1.5	—	—	—	—	—	—	—	2
φ16	35	70	—	—	2	—	—	—	—	—	—	—	2
φ20	80	135	120	175	2.5	2.5	3.4	—	—	—	—	—	8
φ25	110	180	175	245	2.5	2.5	3.7	—	—	—	—	—	8
φ32	145	280	205	340	4.8	4.5	5.6	—	—	—	—	—	16.5
φ40	275	505	340	570	5.3	5	6.5	110	100	275	205	165	16.5
φ50	415	830	490	905	7.8	7.8	9.6	160	150	415	275	275	60
φ63	500	1185	655	1340	13.5	13.5	11.5	260	240	560	375	395	60
φ80	1260	1755	1445	1940	14.5	14.5	17.8	520	500	1515	890	920	125
φ100	2030	2565	2290	2825	17	17	21.1	590	580	1950	1090	1275	125
φ125	3460	4440	—	—	26	—	—	1200	1190	2995	1890	2045	290

Weight table/Single acting spring return

Unit: g

Bore (mm)	Basic weight (SD style · ST style)									
	5	10	15	20	25	30	35	40	45	50
φ12	32.6	40.1	47.7	55.2	—	—	—	—	—	—
φ16	45.5	55.5	66	76	—	—	—	—	—	—
φ20	85.6	100.6	113.7	126.2	139.3	151.8	—	—	—	—
φ25	118.5	131	144.5	157	170.5	183	—	—	—	—
φ32	160.5	184.5	210	234	259.5	283.5	—	—	—	—
φ40	289.8	316.3	346.1	372.6	402.4	428.9	458.7	485.2	515	541.5
φ50	—	472.1	515.2	554.2	597.3	636.3	679.4	718.4	761.5	800.5

Note) • For additional weights other than the basic weights, see the above table.

Weight table/Single
acting spring-extended

Unit: g

Bore (mm)	Basic weight (SD style · ST style)		
	5	10	20
φ12	32.5	40	—
φ16	45.1	55.2	—
φ20	87.7	100.4	—
φ25	117.7	130.4	—
φ32	154.6	178.6	—
φ40	282.1	309.1	—
φ50	—	454.8	534.6

Note) • For additional weights other than the basic weights, see the above table.

Calculation formula Cylinder weight (g)=Basic weight+(Cylinder stroke (mm)×Additional weight per mm of stroke)+Mounting accessory weight+Rod end male thread weight

Calculation example 10S-1, Double acting single rod standard, Cylinder bore φ63, Stroke 50 mm, LB style, Female thread type. (500+13.5×50+240=1415g)

10S-1/TAS1 Bore is available. CAD/DATA

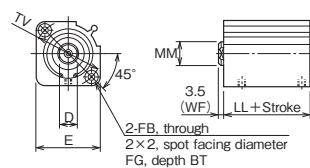


SD

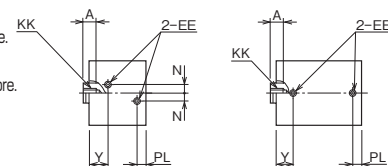
Standard/double acting single rod

10S-1 SD Bore N Standard Stroke

- Bore $\phi 12$ to $\phi 32$



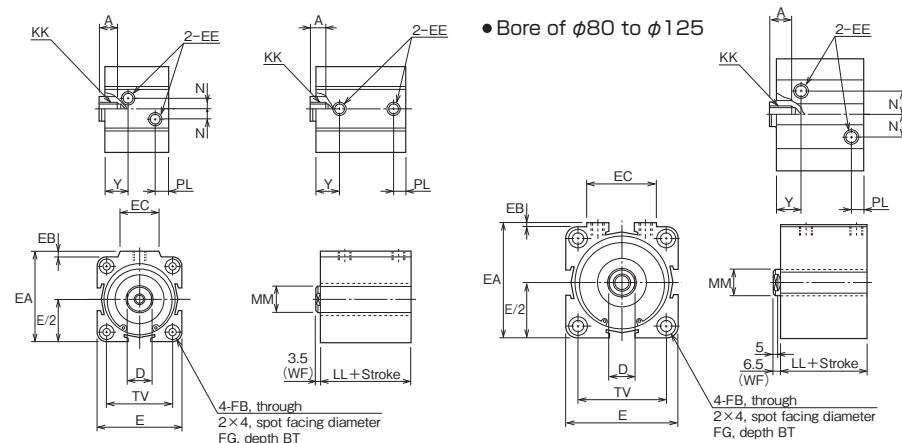
- Ports position of stroke 5mm
- Ports position of stroke 10mm or more



- Bore $\phi 12$ to $\phi 40$:
Port positions of stroke 5mm differ from those of stroke 10mm and more.
- Bore $\phi 50$ and $\phi 63$:
Port positions of stroke 10mm differ from those of stroke 15mm and more.

- Bore $\phi 40$ to $\phi 63$

Bore $\phi 40$ and stroke 5mm: Bore $\phi 40$ and stroke 10mm or more:
Bore $\phi 50$ and $\phi 63$, and stroke 10mm: Bore $\phi 50$ and $\phi 63$, and stroke 15mm or more:



- Bore of $\phi 80$ to $\phi 125$

Dimensional table

• The parenthesized values of Y apply in the case where the stroke is 5.

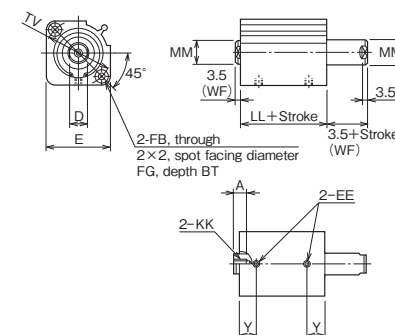
Symbol Bore	A	BT	D	E	EA	EB	EC	EE	FB	FG	KK	LL	MM	N	PL	TV	Y
$\phi 12$	6	3.5	5	□25	—	—	—	M5×0.8	$\phi 3.4$	$\phi 6.5$	M3×0.5	17	$\phi 6$	2	5	$\phi 22$	10 (8.5)
$\phi 16$	6	3.5	5	□29	—	—	—	M5×0.8	$\phi 3.4$	$\phi 6.5$	M3×0.5	17	$\phi 6$	2	5	$\phi 28$	10 (8.5)
$\phi 20$	7	5.5	8	□37	—	—	—	M5×0.8	$\phi 5.5$	$\phi 9.5$	M5×0.8	20	$\phi 10$	4.5	6	$\phi 36$	11
$\phi 25$	7	5.5	8	□40	—	—	—	M5×0.8	$\phi 5.5$	$\phi 9.5$	M5×0.8	21	$\phi 10$	4.5	6	$\phi 40$	12
$\phi 32$	12	5.5	14	□45	—	—	—	M5×0.8	$\phi 5.5$	$\phi 9.5$	M8×1.25	25	$\phi 16$	5	6	$\phi 48$	13
$\phi 40$	12	5.5	14	53	57	4	28	Rc1/8	$\phi 5.5$	$\phi 9.5$	M8×1.25	30	$\phi 16$	5	8.5	□40	16.5
$\phi 50$	15	6.5	18	64	68	4	30	Rc1/8	$\phi 6.6$	$\phi 11$	M10×1.5	32	$\phi 20$	6	9	□50	18
$\phi 63$	15	8.6	18	77	84	7	35	Rc1/4	$\phi 9$	$\phi 14$	M10×1.5	36	$\phi 20$	6	11	□60	19
$\phi 80$	20	16.5	22	100	101.5	1.5	62	Rc1/4	$\phi 11$	$\phi 17.5$	M16×2	46.5	$\phi 25$	21	11	□77	21.5
$\phi 100$	20	18	22	117	117	—	—	Rc1/4	$\phi 11$	$\phi 17.5$	M16×2	53	$\phi 25$	29	13	□94	25
$\phi 125$	25	19.5	29	144	144	—	—	Rc3/8	$\phi 14$	$\phi 20$	M20×2.5	59.5	$\phi 32$	37	16	□116	28

SD

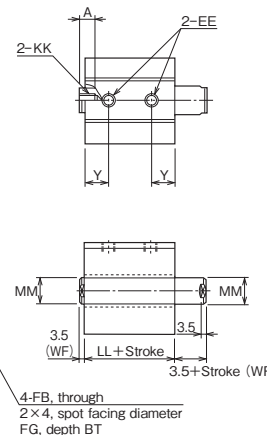
Standard/double acting double rod

10S-1D SD Bore N Standard Stroke

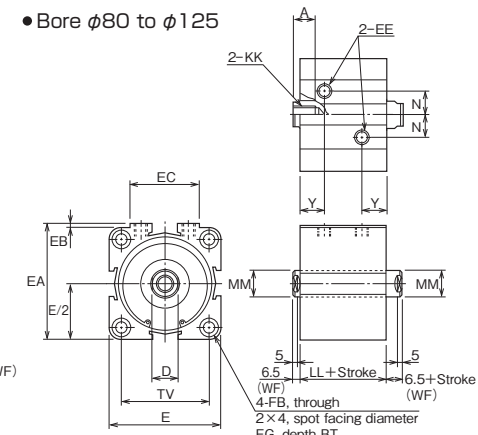
- Bore $\phi 12$ to $\phi 32$



- Bore $\phi 40$ to $\phi 63$



- Bore $\phi 80$ to $\phi 125$



Dimensional table

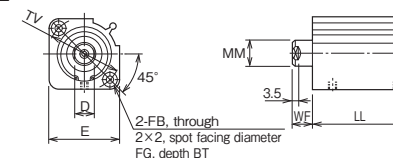
Symbol Bore	A	BT	D	E	EA	EB	EC	EE	FB	FG	KK	LL	MM	N	TV	Y
$\phi 12$	6	3.5	5	□25	—	—	—	M5×0.8	$\phi 3.4$	$\phi 6.5$	M3×0.5	27	$\phi 6$	—	$\phi 22$	10
$\phi 16$	6	3.5	5	□29	—	—	—	M5×0.8	$\phi 3.4$	$\phi 6.5$	M3×0.5	27	$\phi 6$	—	$\phi 28$	10
$\phi 20$	7	5.5	8	□37	—	—	—	M5×0.8	$\phi 5.5$	$\phi 9.5$	M5×0.8	30	$\phi 10$	—	$\phi 36$	11
$\phi 25$	7	5.5	8	□40	—	—	—	M5×0.8	$\phi 5.5$	$\phi 9.5$	M5×0.8	31	$\phi 10$	—	$\phi 40$	12
$\phi 32$	12	5.5	14	□45	—	—	—	M5×0.8	$\phi 5.5$	$\phi 9.5$	M8×1.25	35	$\phi 16$	—	$\phi 48$	13
$\phi 40$	12	5.5	14	53	57	4	28	Rc1/8	$\phi 5.5$	$\phi 9.5$	M8×1.25	45	$\phi 16$	—	□40	16.5
$\phi 50$	15	6.5	18	64	68	4	30	Rc1/8	$\phi 6.6$	$\phi 11$	M10×1.5	47	$\phi 20$	—	□50	18
$\phi 63$	15	8.6	18	77	84	7	35	Rc1/4	$\phi 9$	$\phi 14$	M10×1.5	51	$\phi 20$	—	□60	19
$\phi 80$	20	16.5	22	100	101.5	1.5	62	Rc1/4	$\phi 11$	$\phi 17.5$	M16×2	61.5	$\phi 25$	21	□77	21.5
$\phi 100$	20	18	22	117	117	—	—	Rc1/4	$\phi 11$	$\phi 17.5$	M16×2	68	$\phi 25$	29	□94	25
$\phi 125$	25	19.5	29	144	144	—	—	Rc3/8	$\phi 14$	$\phi 20$	M20×2.5	74.5	$\phi 32$	37	□116	28

SD

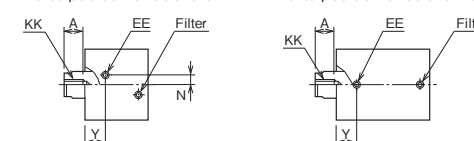
Single acting spring-extended

10S-1SH SD Bore N Standard Stroke

- Bore $\phi 12$ to $\phi 32$



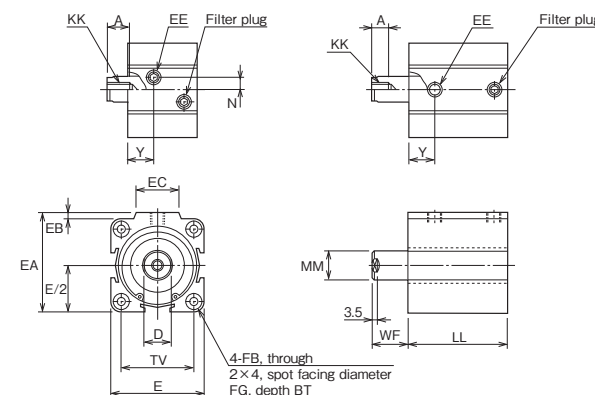
- Ports position of stroke 5mm
- Ports position of stroke 10mm



- Bore $\phi 40$ to $\phi 50$

Bore $\phi 40$ and stroke 5mm:
Bore $\phi 50$ and stroke 10mm:

Bore $\phi 40$ and stroke 10mm:
Bore $\phi 50$ and stroke 15mm:



- Bore $\phi 12$ to $\phi 40$: Port positions of stroke 5mm differ from those of stroke 10mm.
- Bore $\phi 50$: Port positions of stroke 10mm differ from those of stroke 20mm.

Dimensional table

Symbol Stroke Bore	A	BT	D	E	EA	EB	EC	EE	FB	FG	KK	LL			MM	N	TV	WF			Y
												5	10	20				5	10	20	
φ 12	6	3.5	5	□25	—	—	—	M5×0.8	φ3.4	φ6.5	M3×0.5	22	27	—	φ6	2	φ22	8.5	13.5	—	10(8.5)
φ 16	6	3.5	5	□29	—	—	—	M5×0.8	φ3.4	φ6.5	M3×0.5	22	27	—	φ6	2	φ28	8.5	13.5	—	10(8.5)
φ 20	7	5.5	8	□37	—	—	—	M5×0.8	φ5.5	φ9.5	M5×0.8	25	30	—	φ10	4.5	φ36	8.5	13.5	—	11
φ 25	7	5.5	8	□40	—	—	—	M5×0.8	φ5.5	φ9.5	M5×0.8	26	31	—	φ10	4.5	φ40	8.5	13.5	—	12
φ 32	12	5.5	14	□45	—	—	—	M5×0.8	φ5.5	φ9.5	M8×1.25	30	35	—	φ16	5	φ48	8.5	13.5	—	13
φ 40	12	5.5	14	53	57	4	28	Rc1/8	φ5.5	φ9.5	M8×1.25	35	40	—	φ16	5	□40	8.5	13.5	—	16.5
φ 50	15	6.5	18	64	68	4	30	Rc1/8	φ6.6	φ11	M10×1.5	—	42	52	φ20	6	□50	—	13.5	23.5	18

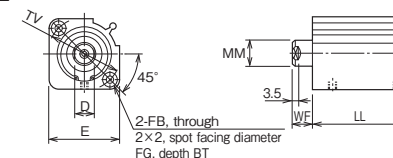
- The parenthesized values of Y apply in the case where the stroke is 5.

SD

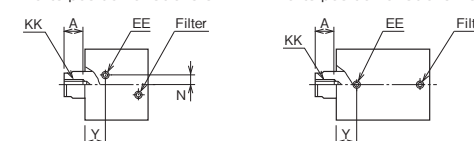
Single acting spring-extended

10S-1SH SD Bore N Standard Stroke

- Bore $\phi 12$ to $\phi 32$



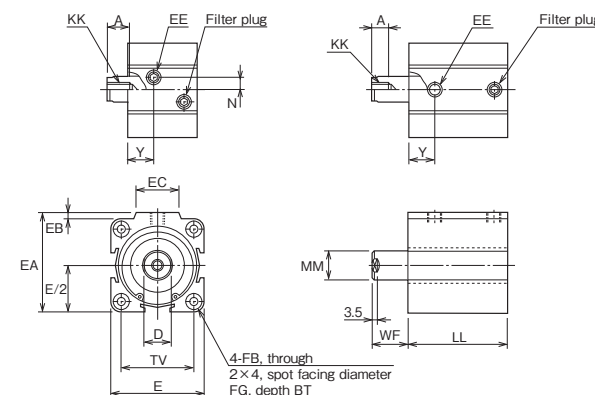
- Ports position of stroke 5mm
- Ports position of stroke 10mm



- Bore $\phi 40$ to $\phi 50$

Bore $\phi 40$ and stroke 5mm:
Bore $\phi 50$ and stroke 10mm:

Bore $\phi 40$ and stroke 10mm:
Bore $\phi 50$ and stroke 15mm:



- Bore $\phi 12$ to $\phi 40$: Port positions of stroke 5mm differ from those of stroke 10mm.
- Bore $\phi 50$: Port positions of stroke 10mm differ from those of stroke 20mm.

Dimensional table

Symbol Stroke Bore	A	BT	D	E	EA	EB	EC	EE	FB	FG	KK	LL			MM	N	TV	WF			Y
												5	10	20				5	10	20	
φ 12	6	3.5	5	□25	—	—	—	M5×0.8	φ3.4	φ6.5	M3×0.5	22	27	—	φ6	2	φ22	8.5	13.5	—	10(8.5)
φ 16	6	3.5	5	□29	—	—	—	M5×0.8	φ3.4	φ6.5	M3×0.5	22	27	—	φ6	2	φ28	8.5	13.5	—	10(8.5)
φ 20	7	5.5	8	□37	—	—	—	M5×0.8	φ5.5	φ9.5	M5×0.8	25	30	—	φ10	4.5	φ36	8.5	13.5	—	11
φ 25	7	5.5	8	□40	—	—	—	M5×0.8	φ5.5	φ9.5	M5×0.8	26	31	—	φ10	4.5	φ40	8.5	13.5	—	12
φ 32	12	5.5	14	□45	—	—	—	M5×0.8	φ5.5	φ9.5	M8×1.25	30	35	—	φ16	5	φ48	8.5	13.5	—	13
φ 40	12	5.5	14	53	57	4	28	Rc1/8	φ5.5	φ9.5	M8×1.25	35	40	—	φ16	5	□40	8.5	13.5	—	16.5
φ 50	15	6.5	18	64	68	4	30	Rc1/8	φ6.6	φ11	M10×1.5	—	42	52	φ20	6	□50	—	13.5	23.5	18

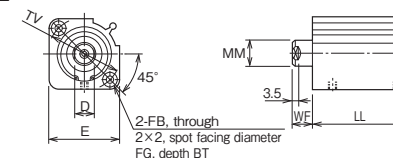
- The parenthesized values of Y apply in the case where the stroke is 5.

SD

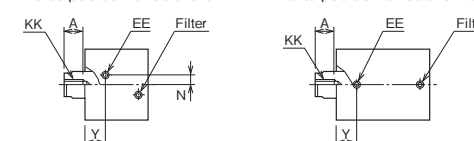
Single acting spring-extended

10S-1SH SD Bore N Standard Stroke

- Bore $\phi 12$ to $\phi 32$



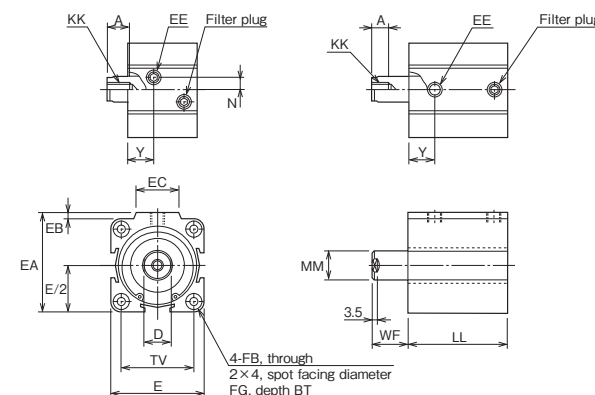
- Ports position of stroke 5mm
- Ports position of stroke 10mm



- Bore $\phi 40$ to $\phi 50$

Bore $\phi 40$ and stroke 5mm:
Bore $\phi 50$ and stroke 10mm:

Bore $\phi 40$ and stroke 10mm:
Bore $\phi 50$ and stroke 15mm:



- Bore $\phi 12$ to $\phi 40$: Port positions of stroke 5mm differ from those of stroke 10mm.
- Bore $\phi 50$: Port positions of stroke 10mm differ from those of stroke 20mm.

Dimensional table

Symbol Stroke Bore	A	BT	D	E	EA	EB	EC	EE	FB	FG	KK	LL			MM	N	TV	WF			Y
												5	10	20				5	10	20	
φ 12	6	3.5	5	□25	—	—	—	M5×0.8	φ3.4	φ6.5	M3×0.5	22	27	—	φ6	2	φ22	8.5	13.5	—	10(8.5)
φ 16	6	3.5	5	□29	—	—	—	M5×0.8	φ3.4	φ6.5	M3×0.5	22	27	—	φ6	2	φ28	8.5	13.5	—	10(8.5)
φ 20	7	5.5	8	□37	—	—	—	M5×0.8	φ5.5	φ9.5	M5×0.8	25	30	—	φ10	4.5	φ36	8.5	13.5	—	11
φ 25	7	5.5	8	□40	—	—	—	M5×0.8	φ5.5	φ9.5	M5×0.8	26	31	—	φ10	4.5	φ40	8.5	13.5	—	12
φ 32	12	5.5	14	□45	—	—	—	M5×0.8	φ5.5	φ9.5	M8×1.25	30	35	—	φ16	5	φ48	8.5	13.5	—	13
φ 40	12	5.5	14	53	57	4	28	Rc1/8	φ5.5	φ9.5	M8×1.25	35	40	—	φ16	5	□40	8.5	13.5	—	16.5
φ 50	15	6.5	18	64	68	4	30	Rc1/8	φ6.6	φ11	M10×1.5	—	42	52	φ20	6	□50	—	13.5	23.5	18

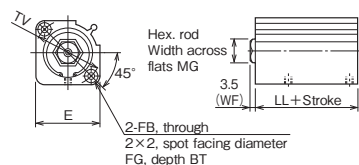
- The parenthesized values of Y apply in the case where the stroke is 5.

10S-1/TAS1 Bore CAD/DATA is available. 

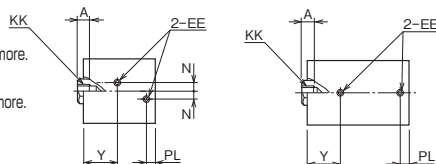
SD

Non-rotating/double acting single rod
10S-1G SD Bore N Standard Stroke

- Bore $\phi 20$ to $\phi 32$



- Ports position of stroke 5mm
- Ports position of stroke 10mm or more

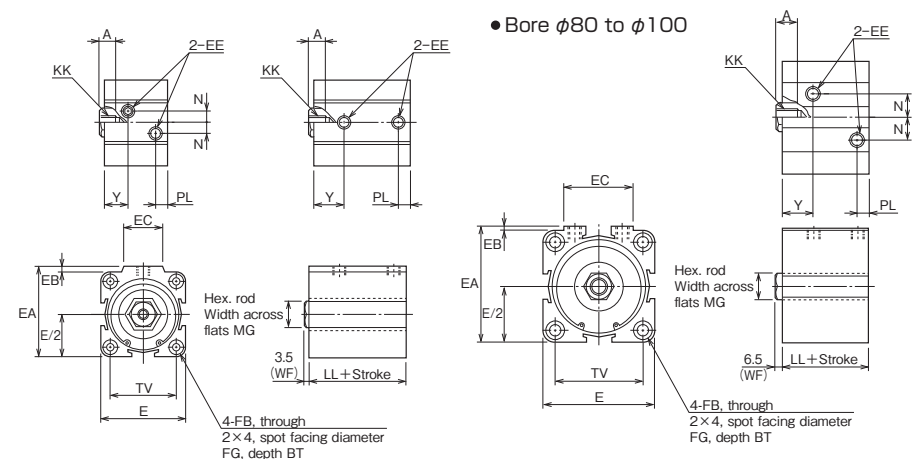


- Bore $\phi 12$ to $\phi 40$:
Port positions of stroke 5mm differ from those of stroke 10mm and more.
- Bore $\phi 50$:
Port positions of stroke 10mm differ from those of stroke 15mm and more.

- Bore $\phi 40$ to $\phi 63$

Bore $\phi 40$ and stroke 5mm:
Bore $\phi 50$ or $\phi 63$, and stroke 10mm:

Bore $\phi 40$ and stroke 10mm or more:
Bore $\phi 50$ or $\phi 63$, and stroke 15mm or more:



- Bore $\phi 80$ to $\phi 100$

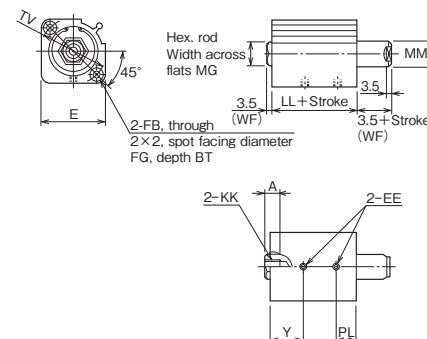
Dimensional table

Symbol Bore	A	BT	E	EA	EB	EC	EE	FB	FG	KK	LL	MG	N	PL	TV	Y
$\phi 20$	7	5.5	$\square 37$	—	—	—	M5×0.8	$\phi 5.5$	$\phi 9.5$	M5×0.8	30	9	4.5	6	$\phi 36$	21
$\phi 25$	7	5.5	$\square 40$	—	—	—	M5×0.8	$\phi 5.5$	$\phi 9.5$	M5×0.8	31	9	4.5	6	$\phi 40$	22
$\phi 32$	12	5.5	$\square 45$	—	—	—	M5×0.8	$\phi 5.5$	$\phi 9.5$	M8×1.25	35	14	5	6	$\phi 48$	23
$\phi 40$	12	5.5	53	57	4	28	Rc1/8	$\phi 5.5$	$\phi 9.5$	M8×1.25	35	14	5	8.5	$\square 40$	21.5
$\phi 50$	15	6.5	64	68	4	30	Rc1/8	$\phi 6.6$	$\phi 11$	M10×1.5	37	19	6	9	$\square 50$	23
$\phi 63$	15	8.6	77	84	7	35	Rc1/4	$\phi 9$	$\phi 14$	M10×1.5	41	19	6	11	$\square 60$	24
$\phi 80$	20	16.5	100	101.5	1.5	62	Rc1/4	$\phi 11$	$\phi 17.5$	M16×2	51.5	23	21	11	$\square 77$	26.5
$\phi 100$	20	18	117	117	—	—	Rc1/4	$\phi 11$	$\phi 17.5$	M16×2	58	23	29	13	$\square 94$	30

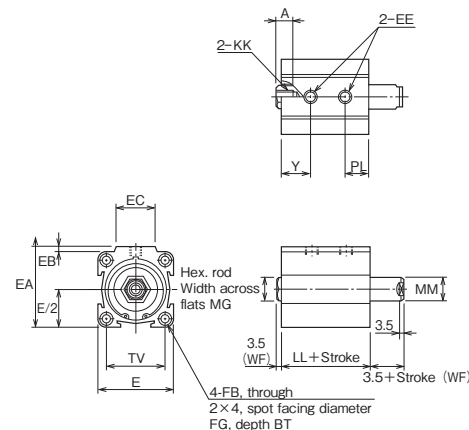
SD

Non-rotating/double acting double rod
10S-1GD SD Bore N Standard Stroke

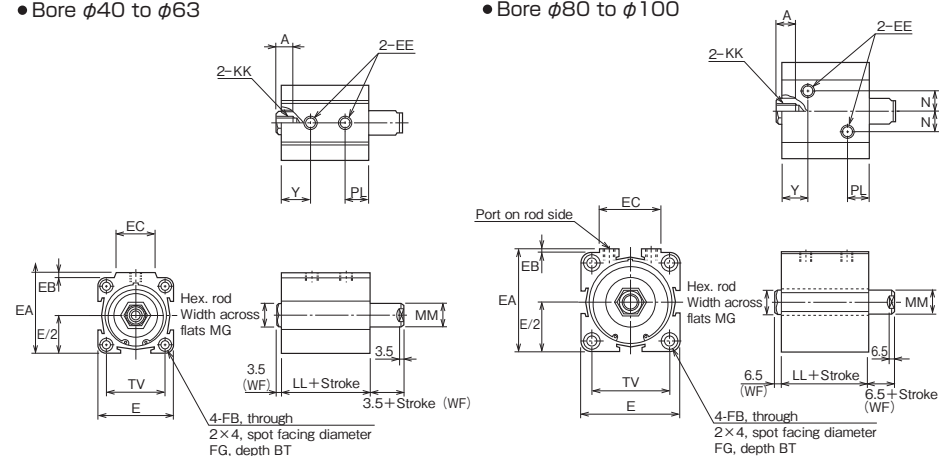
- Bore $\phi 20$ to $\phi 32$



- Bore $\phi 40$ to $\phi 63$



- Bore $\phi 80$ to $\phi 100$



Dimensional table

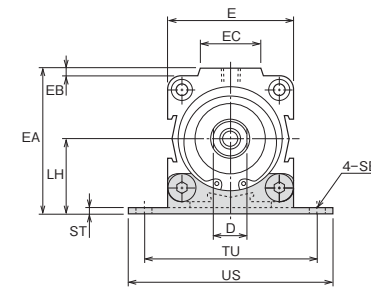
Symbol Bore	A	BT	E	EA	EB	EC	EE	FB	FG	KK	LL	MG	MM	N	PL	TV	Y
$\phi 20$	7	5.5	$\square 37$	—	—	—	M5×0.8	$\phi 5.5$	$\phi 9.5$	M5×0.8	40	9	10	—	11	$\phi 36$	21
$\phi 25$	7	5.5	$\square 40$	—	—	—	M5×0.8	$\phi 5.5$	$\phi 9.5$	M5×0.8	41	9	10	—	12	$\phi 40$	22
$\phi 32$	12	5.5	$\square 45$	—	—	—	M5×0.8	$\phi 5.5$	$\phi 9.5$	M8×1.25	45	14	16	—	13	$\phi 48$	23
$\phi 40$	12	5.5	53	57	4	28	Rc1/8	$\phi 5.5$	$\phi 9.5$	M8×1.25	50	14	16	—	16.5	$\square 40$	21.5
$\phi 50$	15	6.5	64	68	4	30	Rc1/8	$\phi 6.6$	$\phi 11$	M10×1.5	52	19	20	—	18	$\square 50$	23
$\phi 63$	15	8.6	77	84	7	35	Rc1/4	$\phi 9$	$\phi 14$	M10×1.5	56	19	20	—	19	$\square 60$	24
$\phi 80$	20	16.5	100	101.5	1.5	62	Rc1/4	$\phi 11$	$\phi 17.5$	M16×2	66.5	23	25	21	21.5	$\square 77$	26.5
$\phi 100$	20	18	117	117	—	—	Rc1/4	$\phi 11$	$\phi 17.5$	M16×2	73	23	25	29	25	$\square 94$	30

10S-1/TAS1 Bore is available. 

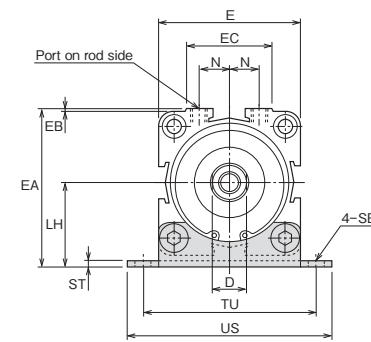
LA

10S-1 LA Bore N Standard Stroke

- Bore $\phi 40 \cdot \phi 50 \cdot \phi 63$



- Bore $\phi 80 \cdot \phi 100 \cdot \phi 125$

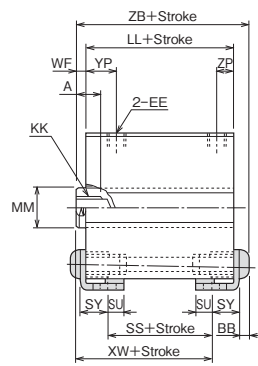
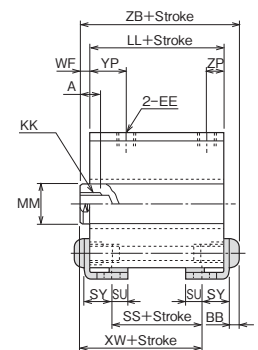


- For the dimensions not shown in this figure, see the figure of the standard non-rotating type cylinder.

Dimensional table

Symbol Bore	A	BB	D	E	EA	EB	EC	EE	KK	LH	LL		MM	N
											Standard	Non-rotating		
$\phi 40$	12	4	14	53	63	4	28	Rc1/8	M8×1.25	32.5	30	35	$\phi 16$	—
$\phi 50$	15	5	18	64	74	4	30	Rc1/8	M10×1.5	38	32	37	$\phi 20$	—
$\phi 63$	15	6	18	77	90	7	35	Rc1/4	M10×1.5	44.5	36	41	$\phi 20$	—
$\phi 80$	20	7	22	100	110	1.5	62	Rc1/4	M16×2	58.5	46.5	51.5	$\phi 25$	21
$\phi 100$	20	7	22	117	125.5	—	—	Rc1/4	M16×2	67	53	58	$\phi 25$	29
$\phi 125$	25	8.5	29	144	154	—	—	Rc3/8	M20×2.5	82	59.5	—	$\phi 32$	37

Symbol Bore	SB	SS		ST	SU	SY	TU	US	WF	XW		YP	ZB		ZP
		Standard	Non-rotating							Standard	Non-rotating		Standard	Non-rotating	
$\phi 40$	$\phi 6.6$	11.4	16.4	3.2	6.5	12.5	73	87	3.5	24.5	29.5	16.5	41	46	8.5
$\phi 50$	$\phi 9$	10.4	15.4	3.2	8	14	87	103	3.5	25	30	18	44	49	9
$\phi 63$	$\phi 11$	11.4	16.4	3.2	9.5	15.5	109	127	3.5	27.5	32.5	19	49	54	11
$\phi 80$	$\phi 14$	13.5	18.5	4.5	11	21	123	145	6.5	36.5	41.5	21.5	64.5	69.5	11
$\phi 100$	$\phi 14$	20	25	4.5	11	21	137	159	6.5	43	48	25	71	76	13
$\phi 125$	$\phi 18$	21.5	—	6	14	25	172	200	6.5	47	—	28	80.5	—	16

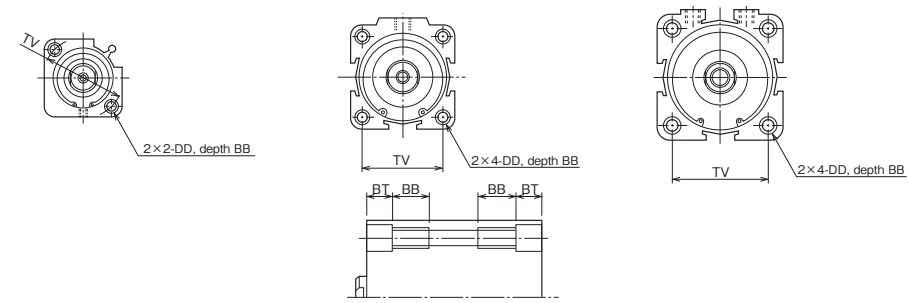


10S-1/TAS1 Bore is available. 

ST

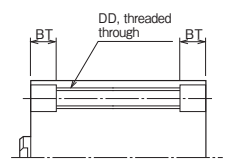
10S-1 ST Bore N Standard Stroke

- Bore $\phi 12$ to $\phi 32$
- Bore $\phi 40$ to $\phi 63$
- Bore $\phi 80$ to $\phi 125$



Note) For the strokes shown in the following table, tapped through holes are made.

Bore	$\phi 12$	$\phi 16$	$\phi 20$	$\phi 25$	$\phi 32$	$\phi 40$
Stroke	5	5	5, 10, 15	5, 10, 15	5, 10	5
Bore	$\phi 50$	$\phi 63$	$\phi 80$	$\phi 100$	$\phi 125$	
Stroke	10	10, 15	10, 15, 20, 25, 30	10, 15, 20, 25	10, 15, 20, 25, 30, 35	



- For the dimensions not shown in this figure, see the figure of the SD (basic style) standard non-rotating type cylinder.
- Do not install ST cylinder (tapped on both sides) with through-bolts. Doing so may damage the cylinder.
- All seating surfaces of mounting holes in ST cylinders (tapped on both sides) are tapped. Therefore, mounting accessory can be freely fitted to the body. However, the mounting accessory shown in 1) and 2) should be fitted carefully.

1) LA and LB accessories

The accessories are inapplicable to the following strokes.

Bore	$\phi 63$	$\phi 80$	$\phi 100$	$\phi 125$
Stroke	10	10, 15, 20, 25	10, 15	10, 15, 20, 25, 30

2) FA accessory

To fit the FA accessory, dimension WF must be increased. Check the size when placing an order for the accessory.

Dimensional table

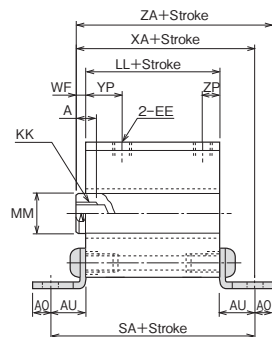
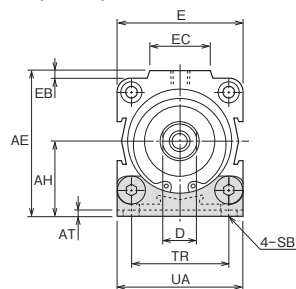
Symbol Bore	TV	DD	BB	BT	FG
$\phi 12$	$\phi 22$	M4×0.7	8	3.5	$\phi 6.5$
$\phi 16$	$\phi 28$	M4×0.7	8	3.5	$\phi 6.5$
$\phi 20$	$\phi 36$	M6×1	12	5.5	$\phi 9.5$
$\phi 25$	$\phi 40$	M6×1	12	5.5	$\phi 9.5$
$\phi 32$	$\phi 48$	M6×1	12	5.5	$\phi 9.5$
$\phi 40$	$\square 40$	M6×1	12	5.5	$\phi 9.5$
$\phi 50$	$\square 50$	M8×1.25	16	6.5	$\phi 11$
$\phi 63$	$\square 60$	M10×1.5	20	8.6	$\phi 14$
$\phi 80$	$\square 77$	M12×1.75	24	16.5	$\phi 17.5$
$\phi 100$	$\square 94$	M12×1.75	24	18	$\phi 17.5$
$\phi 125$	$\square 116$	M16×2	32	19.5	$\phi 20$

10S-1/TAS1 Bore N Standard Stroke CAD/DATA is available. 

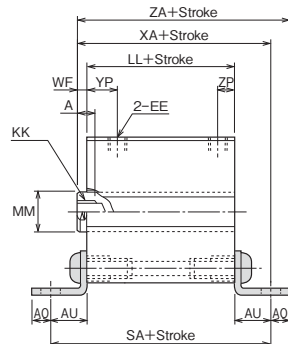
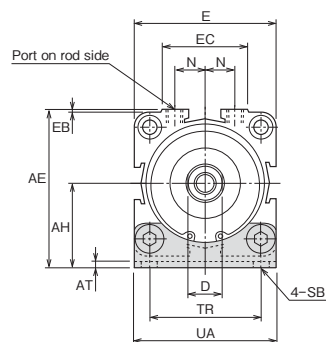
LB

10S-1 LB Bore N Standard Stroke

• Bore $\phi 40 \cdot \phi 50 \cdot \phi 63$



• Bore $\phi 80 \cdot \phi 100 \cdot \phi 125$



• For the dimensions not shown in this figure, see the figure of the standard non-rotating type cylinder.

Dimensional table

Symbol Bore	A	AE	AH	AO	AT	AU	D	E	EB	EC	EE	KK	LL	
													Standard	Non-rotating
$\phi 40$	12	63	32.5	7	3.2	15	14	53	4	28	Rc1/8	M8×1.25	30	35
$\phi 50$	15	74	38	9	3.2	18	18	64	4	30	Rc1/8	M10×1.5	32	37
$\phi 63$	15	90	44.5	11	3.2	20	18	77	7	35	Rc1/4	M10×1.5	36	41
$\phi 80$	20	110	58.5	14	4.5	25	22	100	1.5	62	Rc1/4	M16×2	46.5	51.5
$\phi 100$	20	125.5	67	14	4.5	25	22	117	—	—	Rc1/4	M16×2	53	58
$\phi 125$	25	154	82	18	6	31	29	144	—	—	Rc3/8	M20×2.5	59.5	—

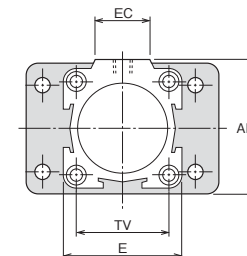
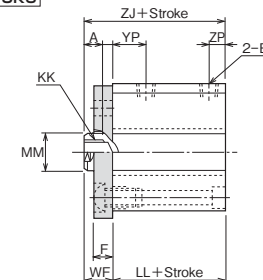
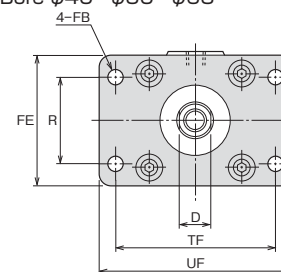
Symbol Bore	MM	N	SA		SB	TR	UA	WF	XA		YP	ZA		ZP
			Standard	Non-rotating					Standard	Non-rotating		Standard	Non-rotating	
$\phi 40$	$\phi 16$	—	60	65	$\phi 6.6$	40	53	3.5	48.5	53.5	16.5	55.5	60.5	8.5
$\phi 50$	$\phi 20$	—	68	73	$\phi 9$	50	64	3.5	53.5	58.5	18	62.5	67.5	9
$\phi 63$	$\phi 20$	—	76	81	$\phi 11$	60	77	3.5	59.5	64.5	19	70.5	75.5	11
$\phi 80$	$\phi 25$	21	96.5	101.5	$\phi 14$	77	100	6.5	78	83	21.5	92	97	11
$\phi 100$	$\phi 25$	29	103	108	$\phi 14$	94	117	6.5	84.5	89.5	25	98.5	103.5	13
$\phi 125$	$\phi 32$	37	121.5	—	$\phi 18$	116	144	6.5	97	—	28	115	—	16

10S-1/TAS1 Bore N Standard Stroke CAD/DATA is available. 

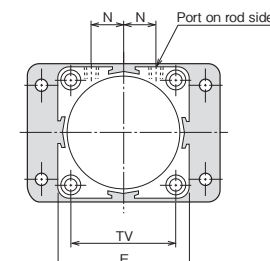
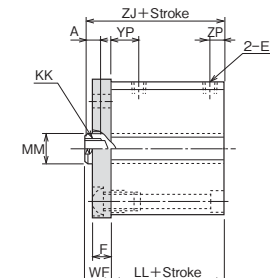
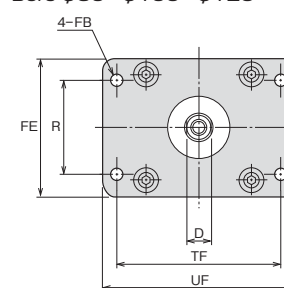
FA

10S-1 FA Bore N Standard Stroke

• Bore $\phi 40 \cdot \phi 50 \cdot \phi 63$



• Bore $\phi 80 \cdot \phi 100 \cdot \phi 125$



• For the dimensions not shown in this figure, see the figure of the standard non-rotating type cylinder.
• The mounting accessory cannot be fitted on the cap side because only the accessory fitting area is tapped. Do not use the cylinder without the mounting accessory.

Dimensional table

Symbol Bore	A	AE	D	E	EC	EE	F	FB	FE	KK
$\phi 40$	12	58.5	14	53	28	Rc1/8	10	$\phi 7$	56	M8×1.25
$\phi 50$	15	71	18	64	30	Rc1/8	10	$\phi 9$	70	M10×1.5
$\phi 63$	15	87.5	18	77	35	Rc1/4	10	$\phi 9$	84	M10×1.5
$\phi 80$	20	—	22	100	—	Rc1/4	16	$\phi 12$	105	M16×2
$\phi 100$	20	—	22	117	—	Rc1/4	16	$\phi 12$	121	M16×2
$\phi 125$	25	—	29	144	—	Rc3/8	16	$\phi 14$	150	M20×2.5

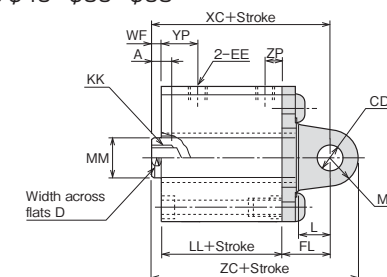
Symbol Bore	LL		MM	N	R	TF	TV	UF	WF	YP	ZJ		ZP
	Standard	Non-rotating									Standard	Non-rotating	
$\phi 40$	30	35	$\phi 16$	—	36	70	40	84	13.5	16.5	43.5	48.5	8.5
$\phi 50$	32	37	$\phi 20$	—	47	86	50	104	13.5	18	45.5	50.5	9
$\phi 63$	36	41	$\phi 20$	—	56	98	60	116	13.5	19	49.5	54.5	11
$\phi 80$	46.5	51.5	$\phi 25$	21	70	126	77	150	21.5	21.5	68	73	11
$\phi 100$	53	58	$\phi 25$	29	84	143	94	165	21.5	25	74.5	79.5	13
$\phi 125$	59.5	—	$\phi 32$	37	116	174	116	202	21.5	28	81	—	16

10S-1/TAS1 Bore is available. 

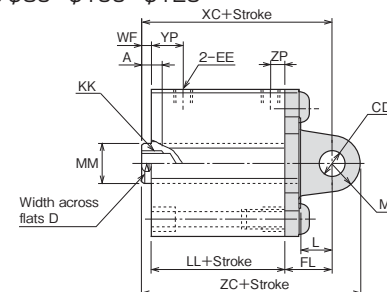
CA

10S-1 CA Bore N Standard Stroke

- Bore $\phi 40 \cdot \phi 50 \cdot \phi 63$



- Bore $\phi 80 \cdot \phi 100 \cdot \phi 125$



- For the dimensions not shown in this figure, see the figure of the standard non-rotating type cylinder.
- The mounting accessory cannot be fitted on the cap side because only the accessory fitting area is tapped. Do not use the cylinder without the mounting accessory.
- A combination of male threaded rod end and rod end attachment is recommended.

Dimensional table

Symbol Bore	A	CD	D	E	EA	EB	EC	EE	EW	FL	KK
$\phi 40$	12	$\phi 14H9^{+0.043}_0$	14	53	57	4	28	Rc1/8	$20^{+0.084}_0$	24	M8×1.25
$\phi 50$	15	$\phi 14H9^{+0.043}_0$	18	64	68	4	30	Rc1/8	$20^{+0.084}_0$	24	M10×1.5
$\phi 63$	15	$\phi 14H9^{+0.043}_0$	18	77	84	7	35	Rc1/4	$20^{+0.084}_0$	24	M10×1.5
$\phi 80$	20	$\phi 20H9^{+0.062}_0$	22	100	101.5	1.5	62	Rc1/4	$32^{+0.100}_0$	32	M16×2
$\phi 100$	20	$\phi 20H9^{+0.054}_0$	22	117	117	—	—	Rc1/4	$32^{+0.100}_0$	32	M16×2
$\phi 125$	25	$\phi 20H9^{+0.043}_0$	29	144	144	—	—	Rc3/8	$32^{+0.100}_0$	35	M20×2.5

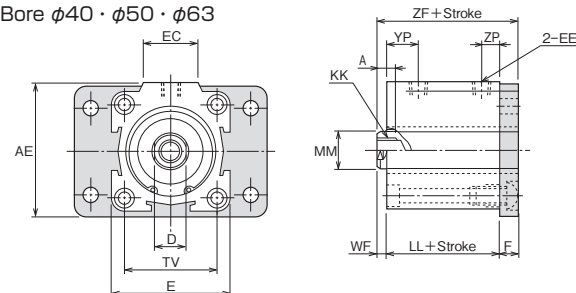
Symbol Bore	L	LL		MM	MR	N	WF	YP	ZC		ZP	XC	
		Standard	Non-rotating						Standard	Non-rotating		Standard	Non-rotating
$\phi 40$	16	30	35	$\phi 16$	R14	—	3.5	16.5	71.5	76.5	8.5	57.5	62.5
$\phi 50$	16	32	37	$\phi 20$	R14	—	3.5	18	73.5	78.5	9	59.5	64.5
$\phi 63$	16	36	41	$\phi 20$	R14	—	3.5	19	77.5	82.5	11	63.5	68.5
$\phi 80$	21	46.5	51.5	$\phi 25$	R19	21	6.5	21.5	104	109	11	85	90
$\phi 100$	21	53	58	$\phi 25$	R19	29	6.5	25	110.5	115.5	13	91.5	96.5
$\phi 125$	21	59.5	—	$\phi 32$	R19	37	6.5	28	120	—	16	101	—

10S-1/TAS1 Bore is available. 

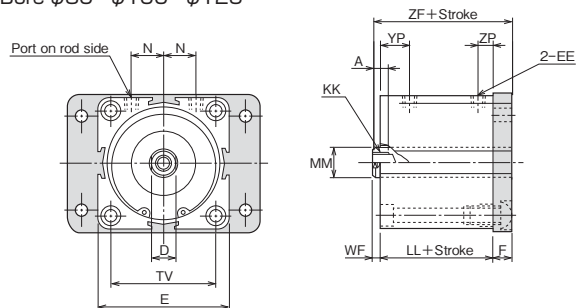
FB

10S-1 FB Bore N Standard Stroke

- Bore $\phi 40 \cdot \phi 50 \cdot \phi 63$



- Bore $\phi 80 \cdot \phi 100 \cdot \phi 125$



- For the dimensions not shown in this figure, see the figure of the standard non-rotating type cylinder.
- The mounting accessory cannot be fitted on the rod side because only the accessory fitting area is tapped. Do not use the cylinder without the mounting accessory.

Dimensional table

Symbol Bore	A	AE	D	E	EC	EE	F	FB	FE	KK
$\phi 40$	12	58.5	14	53	28	Rc1/8	10	$\phi 7$	56	M8×1.25
$\phi 50$	15	71	18	64	30	Rc1/8	10	$\phi 9$	70	M10×1.5
$\phi 63$	15	87.5	18	77	35	Rc1/4	10	$\phi 9$	84	M10×1.5
$\phi 80$	20	—	22	100	—	Rc1/4	16	$\phi 12$	105	M16×2
$\phi 100$	20	—	22	117	—	Rc1/4	16	$\phi 12$	121	M16×2
$\phi 125$	25	—	29	144	—	Rc3/8	16	$\phi 14$	150	M20×2.5

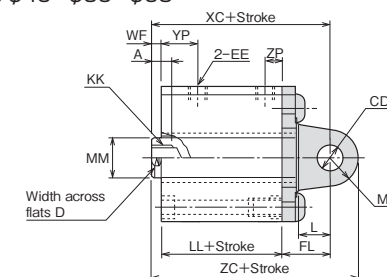
Symbol Bore	LL		MM	N	R	TF	TV	UF	WF	YP	ZF		ZP
	Standard	Non-rotating									Standard	Non-rotating	
$\phi 40$	30	35	$\phi 16$	—	36	70	40	84	3.5	16.5	43.5	48.5	8.5
$\phi 50$	32	37	$\phi 20$	—	47	86	50	104	3.5	18	45.5	50.5	9
$\phi 63$	36	41	$\phi 20$	—	56	98	60	116	3.5	19	49.5	54.5	11
$\phi 80$	46.5	51.5	$\phi 25$	21	70	126	77	150	6.5	21.5	69	74	11
$\phi 100$	53	58	$\phi 25$	29	84	143	94	165	6.5	25	75.5	80.5	13
$\phi 125$	59.5	—	$\phi 32$	37	116	174	116	202	6.5	28	82	—	16

10S-1/TAS1 Bore is available. 

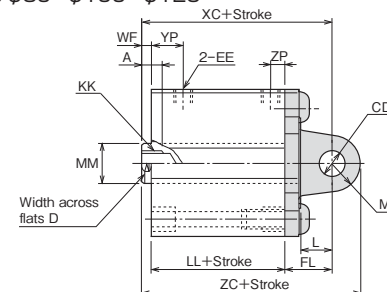
CA

10S-1 CA Bore N Standard Stroke

- Bore $\phi 40 \cdot \phi 50 \cdot \phi 63$



- Bore $\phi 80 \cdot \phi 100 \cdot \phi 125$



- For the dimensions not shown in this figure, see the figure of the standard non-rotating type cylinder.
- The mounting accessory cannot be fitted on the cap side because only the accessory fitting area is tapped. Do not use the cylinder without the mounting accessory.
- A combination of male threaded rod end and rod end attachment is recommended.

Dimensional table

Symbol Bore	A	CD	D	E	EA	EB	EC	EE	EW	FL	KK
$\phi 40$	12	$\phi 14H9^{+0.043}_0$	14	53	57	4	28	Rc1/8	$20^{+0.084}_0$	24	M8×1.25
$\phi 50$	15	$\phi 14H9^{+0.043}_0$	18	64	68	4	30	Rc1/8	$20^{+0.084}_0$	24	M10×1.5
$\phi 63$	15	$\phi 14H9^{+0.043}_0$	18	77	84	7	35	Rc1/4	$20^{+0.084}_0$	24	M10×1.5
$\phi 80$	20	$\phi 20H9^{+0.062}_0$	22	100	101.5	1.5	62	Rc1/4	$32^{+0.100}_0$	32	M16×2
$\phi 100$	20	$\phi 20H9^{+0.054}_0$	22	117	117	—	—	Rc1/4	$32^{+0.100}_0$	32	M16×2
$\phi 125$	25	$\phi 20H9^{+0.043}_0$	29	144	144	—	—	Rc3/8	$32^{+0.100}_0$	35	M20×2.5

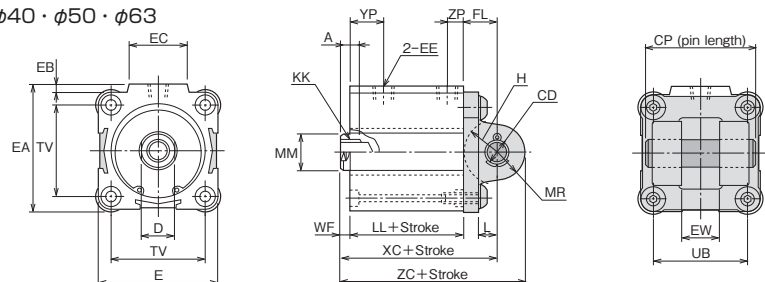
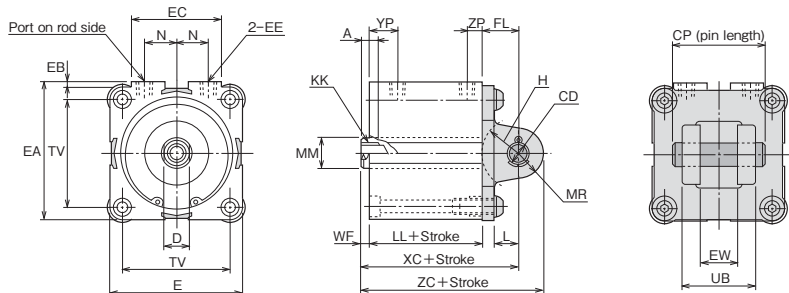
Symbol Bore	L	LL		MM	MR	N	WF	YP	ZC		ZP	XC	
		Standard	Non-rotating						Standard	Non-rotating		Standard	Non-rotating
$\phi 40$	16	30	35	$\phi 16$	R14	—	3.5	16.5	71.5	76.5	8.5	57.5	62.5
$\phi 50$	16	32	37	$\phi 20$	R14	—	3.5	18	73.5	78.5	9	59.5	64.5
$\phi 63$	16	36	41	$\phi 20$	R14	—	3.5	19	77.5	82.5	11	63.5	68.5
$\phi 80$	21	46.5	51.5	$\phi 25$	R19	21	6.5	21.5	104	109	11	85	90
$\phi 100$	21	53	58	$\phi 25$	R19	29	6.5	25	110.5	115.5	13	91.5	96.5
$\phi 125$	21	59.5	—	$\phi 32$	R19	37	6.5	28	120	—	16	101	—

10S-1/TAS1 Bore is available. CAD/DATA



CB

10S-1 CB Bore N Standard Stroke

• Bore $\phi 40 \cdot \phi 50 \cdot \phi 63$ • Bore $\phi 80 \cdot \phi 100 \cdot \phi 125$ 

- For the dimensions not shown in this figure, see the figure of the standard non-rotating type cylinder.
- The mounting accessory cannot be fitted on the rod side because only the accessory fitting area is tapped. Do not use the cylinder without the mounting accessory.
- A combination of male threaded rod end and rod end attachment is recommended.

Dimensional table

Symbol Bore	A	CD	CP	D	E	EA	EB	EC	EE	EW	FL	H	KK
$\phi 40$	12	$\phi 14 \begin{smallmatrix} +0.09 \\ -0.08 \end{smallmatrix}$	52	14	53	57	4	28	Rc1/8	$20 \begin{smallmatrix} +0.7 \\ +0.5 \end{smallmatrix}$	24	R18	M8 $\times$ 1.25
$\phi 50$	15	$\phi 14 \begin{smallmatrix} +0.09 \\ -0.08 \end{smallmatrix}$	63	18	64	68	4	30	Rc1/8	$20 \begin{smallmatrix} +0.7 \\ +0.5 \end{smallmatrix}$	24	R21	M10 $\times$ 1.5
$\phi 63$	15	$\phi 14 \begin{smallmatrix} +0.09 \\ -0.08 \end{smallmatrix}$	66	18	77	84	7	35	Rc1/4	$20 \begin{smallmatrix} +0.7 \\ +0.5 \end{smallmatrix}$	24	R22	M10 $\times$ 1.5
$\phi 80$	20	$\phi 20 \begin{smallmatrix} +0.09 \\ -0.08 \end{smallmatrix}$	78	22	100	101.5	1.5	62	Rc1/4	$32 \begin{smallmatrix} +0.7 \\ +0.5 \end{smallmatrix}$	32	R30	M16 $\times$ 2
$\phi 100$	20	$\phi 20 \begin{smallmatrix} +0.09 \\ -0.08 \end{smallmatrix}$	78	22	117	117	—	—	Rc1/4	$32 \begin{smallmatrix} +0.7 \\ +0.5 \end{smallmatrix}$	32	R30	M16 $\times$ 2
$\phi 125$	25	$\phi 20 \begin{smallmatrix} +0.09 \\ -0.08 \end{smallmatrix}$	78	29	144	114	—	—	Rc3/8	$32 \begin{smallmatrix} +0.7 \\ +0.5 \end{smallmatrix}$	35	R32	M20 $\times$ 2.5

Symbol Bore	L	LL		MM	MR	N	TV	UB	WF	XC		YP	ZC		ZP
		Standard	Non-rotating							Standard	Non-rotating		Standard	Non-rotating	
$\phi 40$	15	30	35	$\phi 16$	R14	—	40	38	3.5	57.5	62.5	16.5	71.5	76.5	8.5
$\phi 50$	15	32	37	$\phi 20$	R14	—	50	49	3.5	59.5	64.5	18	73.5	78.5	9
$\phi 63$	15	36	41	$\phi 20$	R14	—	60	52	3.5	63.5	68.5	19	77.5	82.5	11
$\phi 80$	20	46.5	51.5	$\phi 25$	R19	21	77	64	6.5	85	90	21.5	104	109	11
$\phi 100$	20	53	58	$\phi 25$	R19	29	94	64	6.5	91.5	96.5	25	110.5	115.5	13
$\phi 125$	20	59.5	—	$\phi 32$	R19	37	116	64	6.5	101	—	28	120	—	16

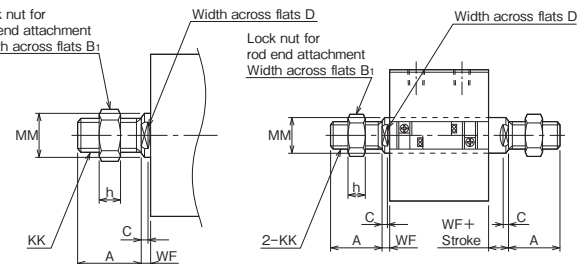
Rod end male thread

• In the case of FA style

Standard

(Bore $\phi 12$ to $\phi 125$)

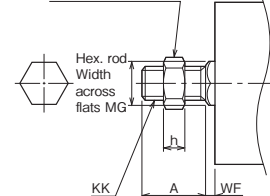
• Double acting type

Lock nut for rod end attachment
Width across flats B₁

• Double rod type

Lock nut for rod end attachment
Width across flats B₁

Non-rotating

(Bore $\phi 20$ to $\phi 100$)Lock nut for rod end attachment
Width across flats B₁

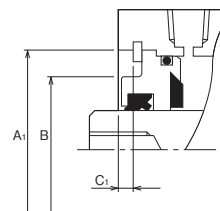
- When FA style is used, dimension WF is longer. Check the size when placing an order for the mounting accessory.

Dimensional table

Symbol Bore	Lock nut part number	A	B ₁	C	D	h	KK	MG	MM	WF	
										SD · ST style	FA style
$\phi 12$	LNA-05Z-A	10 (8.5)	8	3.5	5	3.2	M5 $\times$ 0.8	—	$\phi 6$	3.5	—
$\phi 16$	LNA-05Z-A	10 (8.5)	8	3.5	5	3.2	M5 $\times$ 0.8	—	$\phi 6$	3.5	—
$\phi 20$	LNA-08Z-A	16 (13.5)	13	3.5	8	5	M8 $\times$ 1.25	9	$\phi 10$	5	—
$\phi 25$	LNA-08Z-A	16 (13.5)	13	3.5	8	5	M8 $\times$ 1.25	9	$\phi 10$	5	—
$\phi 32$	LNA-12Z-A	24 (21.5)	19	3.5	14	7	M12 $\times$ 1.25	14	$\phi 16$	5	—
$\phi 40$	LNA-12Z-A	24 (21.5)	19	3.5	14	7	M12 $\times$ 1.25	14	$\phi 16$	5	15
$\phi 50$	LNA-16Z-A	32 (29)	22	3.5	18	10	M16 $\times$ 1.5	19	$\phi 20$	5	15
$\phi 63$	LNA-16Z-A	32 (29)	22	3.5	18	10	M16 $\times$ 1.5	19	$\phi 20$	5	15
$\phi 80$	LNA-20Z-A	40 (37)	27	5	22	12	M20 $\times$ 1.5	23	$\phi 25$	6.5	21.5
$\phi 100$	LNA-20Z-A	40 (37)	27	5	22	12	M20 $\times$ 1.5	23	$\phi 25$	6.5	21.5
$\phi 125$	LNA-27Z-A	54 (50)	36	5	29	16	M27 $\times$ 2	—	$\phi 32$	6.5	21.5

* The parenthesized values of dimension A are the lengths of threaded portions.

Cross section of body and bush



Dimensional table

Symbol Bore	A ₁	B		C ₁
		Standard	Non-rotating	
$\phi 12$	$\phi 13H8$	—	—	$1.5 \begin{smallmatrix} 0 \\ -0.1 \end{smallmatrix}$
$\phi 16$	$\phi 17H8$	—	—	$1.5 \begin{smallmatrix} 0 \\ -0.1 \end{smallmatrix}$
$\phi 20$	$\phi 22H8$	$\phi 13$	—	$1.9 \begin{smallmatrix} 0 \\ -0.1 \end{smallmatrix}$
$\phi 25$	$\phi 26H8$	$\phi 16$	—	$1.7 \begin{smallmatrix} 0 \\ -0.1 \end{smallmatrix}$
$\phi 32$	$\phi 34H8$	$\phi 22.5$	—	$2 \begin{smallmatrix} 0 \\ -0.1 \end{smallmatrix}$
$\phi 40$	$\phi 42H8$	$\phi 29.5$	$\phi 30$	$3.5 \begin{smallmatrix} 0 \\ -0.1 \end{smallmatrix}$
$\phi 50$	$\phi 52H8$	$\phi 36$	$\phi 37.5$	$4 \begin{smallmatrix} 0 \\ -0.1 \end{smallmatrix}$
$\phi 63$	$\phi 65H8$	$\phi 36$	$\phi 40.5$	$5 \begin{smallmatrix} 0 \\ -0.1 \end{smallmatrix}$
$\phi 80$	$\phi 82H8$	$\phi 50$	$\phi 50$	$4.5 \begin{smallmatrix} 0 \\ -0.1 \end{smallmatrix}$
$\phi 100$	$\phi 102H8$	$\phi 55$	$\phi 55$	$5.8 \begin{smallmatrix} 0 \\ -0.1 \end{smallmatrix}$
$\phi 125$	$\phi 130H8$	$\phi 60$	—	$7 \begin{smallmatrix} 0 \\ -0.1 \end{smallmatrix}$

Unit: mm

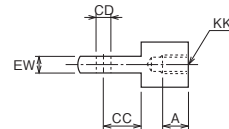
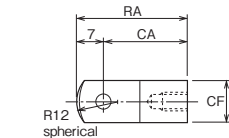
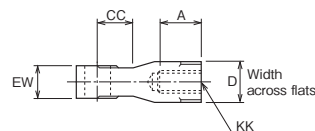
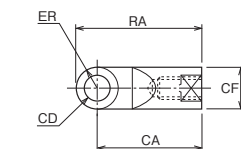
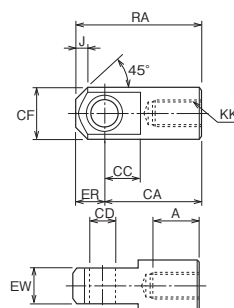
Unit: mm

10S-1/TAS1 Bore is available. CAD/DATA

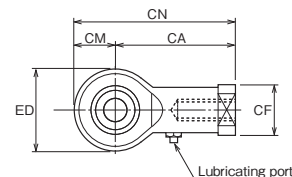
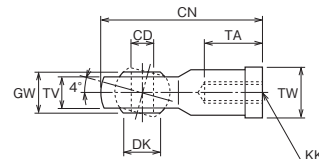


Rod end attachment

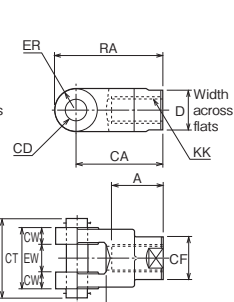
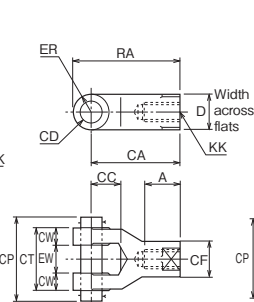
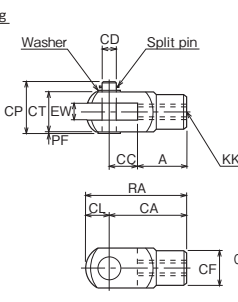
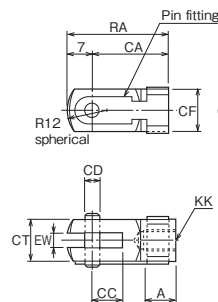
Rod eye (T-end)

• $\phi 12 \cdot \phi 16$ • $\phi 32$ to $\phi 100$ • $\phi 125$ 

Rod eye with spherical bearing (S-end)

• $\phi 20$ to $\phi 100$ 

Rod clevis (Y-end) with pin

• $\phi 12 \cdot \phi 16$ • $\phi 20 \cdot \phi 25$ • $\phi 32$ to $\phi 100$ • $\phi 125$ 

Dimensional table

Symbol Bore	Part number	A	CA	CC	CD	CF	D	ER	EW	J	KK	RA
$\phi 12$	RTA-05-A	8	25	14	$\phi 5.1$	$\square 12$	—	—	6.4	—	M5×0.8	32
$\phi 16$	RTA-05-A	8	25	14	$\phi 5.1$	$\square 12$	—	—	6.4	—	M5×0.8	32
$\phi 32$	RTA-12-A	25	60	20	$\phi 14H9$	$\phi 24$	24	R12	$20_{-0.1}^0$	—	M12×1.25	72
$\phi 40$	RTA-12-A	25	60	20	$\phi 14H9$	$\phi 24$	24	R12	$20_{-0.1}^0$	—	M12×1.25	72
$\phi 50$	RTA-16-A	33	60	20	$\phi 14H9$	$\phi 28$	27	R14	$20_{-0.1}^0$	—	M16×1.5	74
$\phi 63$	RTA-16-A	33	60	20	$\phi 14H9$	$\phi 28$	27	R14	$20_{-0.1}^0$	—	M16×1.5	74
$\phi 80$	RTA-20-A	41	85	30	$\phi 20H9$	$\phi 36$	36	R19	$32_{-0.1}^0$	—	M20×1.5	104
$\phi 100$	RTA-20-A	41	85	30	$\phi 20H9$	$\phi 36$	36	R19	$32_{-0.1}^0$	—	M20×1.5	104
$\phi 125$	RTA-27-A	56	100	32	$\phi 20H9$	$\phi 49$	—	20	$32_{-0.1}^0$	13	M27×2	120

Dimensional table

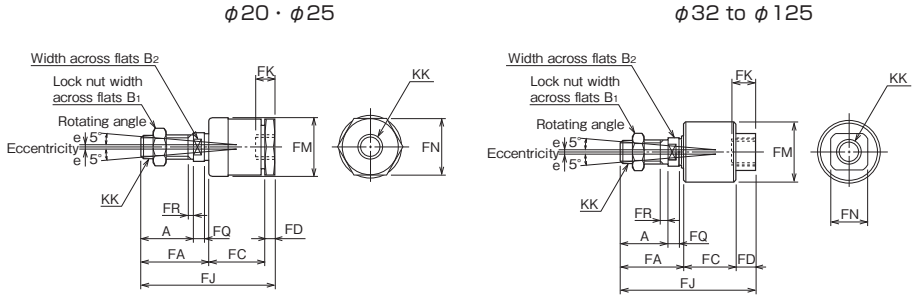
Symbol Bore	Part number	CA	CD	CF	CM	CN	DK	ED	GW	KK	TA	TV	TW
$\phi 20$	RSA-08-A	36	$\phi 8H9$	$\phi 16$	11	47	$\phi 10.4$	22	$12_{-0.1}^0$	M8×1.25	17	9 ± 0.1	14
$\phi 25$	RSA-08-A	36	$\phi 8H9$	$\phi 16$	11	47	$\phi 10.4$	22	$12_{-0.1}^0$	M8×1.25	17	9 ± 0.1	14
$\phi 32$	RSA-12-A	50	$\phi 12H9$	$\phi 22$	15	65	$\phi 15.4$	30	$16_{-0.1}^0$	M12×1.25	24	12 ± 0.1	19
$\phi 40$	RSA-12-A	50	$\phi 12H9$	$\phi 22$	15	65	$\phi 15.4$	30	$16_{-0.1}^0$	M12×1.25	24	12 ± 0.1	19
$\phi 50$	RSA-16-A	64	$\phi 16H9$	$\phi 27$	19	83	$\phi 19.4$	38	$21_{-0.1}^0$	M16×1.5	33	15 ± 0.1	22
$\phi 63$	RSA-16-A	64	$\phi 16H9$	$\phi 27$	19	83	$\phi 19.4$	38	$21_{-0.1}^0$	M16×1.5	33	15 ± 0.1	22
$\phi 80$	RSA-20-A	77	$\phi 20H9$	$\phi 34$	23	100	$\phi 24.4$	46	$25_{-0.1}^0$	M20×1.5	40	18 ± 0.1	30
$\phi 100$	RSA-20-A	77	$\phi 20H9$	$\phi 34$	23	100	$\phi 24.4$	46	$25_{-0.1}^0$	M20×1.5	40	18 ± 0.1	30

Dimensional table

Symbol Bore	Part number	A	CA	CC	CD	CF	CL	CP	CT	CW	D	ER	EW	KK	PF	RA
$\phi 12$	RYA-05-A	11	21	10	$\phi 5.1$	$\phi 12$	—	—	$\square 12$	—	—	—	6.5	M5×0.8	—	28
$\phi 16$	RYA-05-A	11	21	10	$\phi 5.1$	$\phi 12$	—	—	$\square 12$	—	—	—	6.5	M5×0.8	—	28
$\phi 20$	RYA-08-A	16	32	16	$\phi 8_{-0.05}^{+0.05}$	$\phi 14$	10	24.5	$\square 16$	—	—	—	$8_{-0.05}^{+0.05}$	M8×1.25	2	42
$\phi 25$	RYA-08-A	16	32	16	$\phi 8_{-0.05}^{+0.05}$	$\phi 14$	10	24.5	$\square 16$	—	—	—	$8_{-0.05}^{+0.05}$	M8×1.25	2	42
$\phi 32$	RYA-12-1-A	25	60	20	$\phi 14_{-0.05}^{+0.05}$	$\phi 24$	—	58	44	12	24	R12	$20_{-0.05}^{+0.05}$	M12×1.25	—	72
$\phi 40$	RYA-12-1-A	25	60	20	$\phi 14_{-0.05}^{+0.05}$	$\phi 24$	—	58	44	12	24	R12	$20_{-0.05}^{+0.05}$	M12×1.25	—	71
$\phi 50$	RYA-16-A	33	60	18	$\phi 14_{-0.05}^{+0.05}$	$\phi 28$	—	58	44	12	27	R14	$20_{-0.05}^{+0.05}$	M16×1.5	—	74
$\phi 63$	RYA-16-A	33	60	18	$\phi 14_{-0.05}^{+0.05}$	$\phi 28$	—	58	44	12	27	R14	$20_{-0.05}^{+0.05}$	M16×1.5	—	74
$\phi 80$	RYA-20-A	41	85	28	$\phi 20_{-0.05}^{+0.05}$	$\phi 36$	—	78	64	16	36	R19	$32_{-0.05}^{+0.05}$	M20×1.5	—	104
$\phi 100$	RYA-20-A	41	85	28	$\phi 20_{-0.05}^{+0.05}$	$\phi 36$	—	78	64	16	36	R19	$32_{-0.05}^{+0.05}$	M20×1.5	—	104
$\phi 125$	RYA-27-A	56	100	35	$\phi 20_{-0.05}^{+0.05}$	$\phi 40$	—	78	64	16	40	R20	$32_{-0.05}^{+0.05}$	M27×2	—	120

10S-1/TAS1  CAD/DATA is available. 

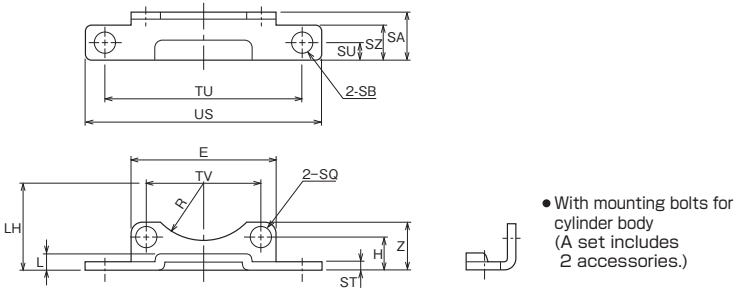
Floating joint (F-end)



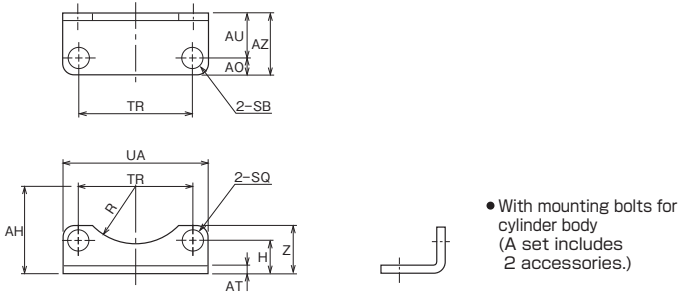
- The length of the screwed portion of the floating joint into the socket must not be more than the thread diameter. (Return the joint one or two turns after it gets into contact with the socket bottom, and fix it with the lock nut.) Excessive screwing can cause operation failure.
- Do not use the floating joint together with the CA or CB accessory.

Mounting accessory

LA (Side lugs)



LB (End angles)



Dimensional table

Symbol Bore	Part number	A	B ₁	B ₂	e	FA	FC	FD	FJ	FK	FM	FN	FQ	FR	KK
φ20	RFS-08T	22.5	13	8	0.5	28	22.5	3.5	54	9	φ20	19	4.5	2.5	M8×1.25
φ25		22.5	13	8	0.5	28	22.5	3.5	54	9	φ20	19	4.5	2.5	M8×1.25
φ32	RFS-12T	24	19	13	1	33	25.5	11	69.5	13.5	φ32	□19	7	3.5	M12×1.25
φ40		24	19	13	1	33	25.5	11	69.5	13.5	φ32	□19	7	3.5	M12×1.25
φ50	RFS-16T	32	22	17	1.5	43	33	13	89	16	φ40	□24	8	4	M16×1.5
φ63		32	22	17	1.5	43	33	13	89	16	φ40	□24	8	4	M16×1.5
φ80	RFS-20T080	40	27	22	2	53	42	15	110	22	φ50	□30	9	5	M20×1.5
φ100	RFS-20T100	40	27	24	2.5	56	49	18	123	24	φ64	□36	12	6	M20×1.5
φ125	RFS-27T	54	36	32	2.5	74	62	21	157	30	φ76	□46	14	7	M27×2

Dimensional table

Symbol Bore	Part number	E	H	L	LH	R	SA	SB	SQ	ST	SU	SZ	TU	TV	US	Z
φ40	MAS1-MA040	53	12.5	6	32.5	R21	19	φ6.6	φ6.6	3.2	6.5	13	73	40	87	19.5
φ50	MAS1-MA050	64	13	6	38	R26	22	φ9	φ9	3.2	8	16	87	50	103	20
φ63	MAS1-MA063	77	14.5	6	44.5	R27	25	φ11	φ11	3.2	9.5	19	109	60	127	23.5
φ80	MAS1-MA080	100	20	8.5	58.5	R33	32	φ14	φ14	4.5	11	22	123	77	145	31
φ100	MAS1-MA100	117	20	8.5	67	—	32	φ14	φ14	4.5	11	22	137	94	159	31
φ125	MAS1-MA125	144	24	10	82	—	39	φ18	φ18	6	14	28	172	116	200	38

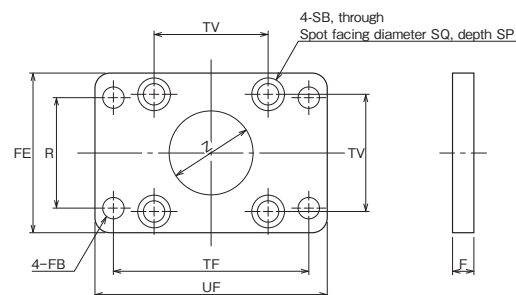
Dimensional table

Symbol Bore	Part number	AH	AO	AT	AU	AZ	H	R	SB	SQ	TR	UA	Z
φ40	MAS1-LB040	32.5	7	3.2	15	22	12.5	R21	φ6.6	φ6.6	40	53	19
φ50	MAS1-LB050	38	9	3.2	18	27	13	R26	φ9	φ9	50	64	20
φ63	MAS1-LB063	44.5	11	3.2	20	31	14.5	R27	φ11	φ11	60	77	23.5
φ80	MAS1-LB080	58.5	14	4.5	25	39	20	R33	φ14	φ14	77	100	31
φ100	MAS1-LB100	67	14	4.5	25	39	20	—	φ14	φ14	94	117	31
φ125	MAS1-LB125	82	18	6	31	49	24	—	φ18	φ18	116	144	38

Unit: mm

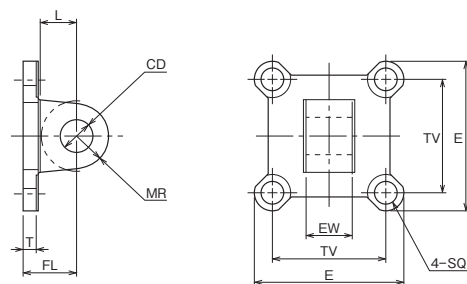
Unit: mm

FA (Rod rectangular flange), FB (Cap rectangular flange)



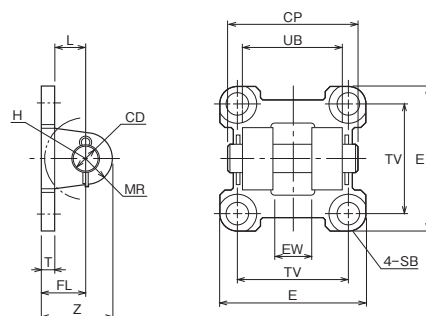
• With mounting bolts
for cylinder body

CA (Cap eye)



• With mounting bolts
for cylinder body

CB (Cap clevis with pin)



• With mounting bolts
for cylinder body

Dimensional table

Symbol Bore	Part number	F	FB	FE	R	SB	SP	SQ	TF	TV	UF	Z
φ 40	MAS1-FA040	10	φ7	56	36	φ6.6	4.5	11	70	40	84	φ30
φ 50	MAS1-FA050	10	φ9	70	47	φ9	5.5	15	86	50	104	φ37
φ 63	MAS1-FA063	10	φ9	84	56	φ11	6.5	19	98	60	116	φ41
φ 80	MAS1-FA080	16	φ12	105	70	φ14	7.5	22	126	77	150	φ51
φ 100	MAS1-FA100	16	φ12	121	84	φ14	7.5	22	143	94	165	φ56
φ 125	MAS1-FA125	16	φ14	150	116	φ18	9	29	174	116	202	φ61

Dimensional table

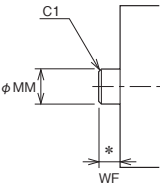
Symbol Bore	Part number	CD	E	EW	FL	L	MR	SQ	T	TV
φ 40	MAS1-CA040	φ14H9 ^{+0.043} ₀	53	20 ⁰ _{-0.084}	24	16	R14	φ6.6	6.5	40
φ 50	MAS1-CA050	φ14H9 ^{+0.043} ₀	64	20 ⁰ _{-0.084}	24	16	R14	φ9	6.5	50
φ 63	MAS1-CA063	φ14H9 ^{+0.043} ₀	77	20 ⁰ _{-0.084}	24	16	R14	φ11	6.5	60
φ 80	MAS1-CA080	φ20H9 ^{+0.062} ₀	100	32 ⁰ _{-0.100}	32	21	R19	φ14	9.5	77
φ 100	MAS1-CA100	φ20H9 ^{+0.054} ₀	117	32 ⁰ _{-0.100}	32	21	R19	φ14	9.5	94
φ 125	MAS1-CA125	φ20H9 ^{+0.043} ₀	144	32 ⁰ _{-0.100}	35	21	R19	φ18	12.5	116

Dimensional table

Symbol Bore	Part number	CD	CP	E	EW	FL	H	L	MR	SB	T	TV	UB	Z
φ 40	MAS1-CB040	φ14 ^{H 9} _{T 8}	52	53	20 ^{+0.7} _{+0.5}	24	R18	15	R14	φ6.6	7.5	40	38	38
φ 50	MAS1-CB050	φ14 ^{H 9} _{T 8}	63	64	20 ^{+0.7} _{+0.5}	24	R21	15	R14	φ9	7.5	50	49	38
φ 63	MAS1-CB063	φ14 ^{H 9} _{T 8}	66	77	20 ^{+0.7} _{+0.5}	24	R22	15	R14	φ11	7.5	60	52	38
φ 80	MAS1-CB080	φ20 ^{H 9} _{T 8}	78	100	32 ^{+0.7} _{+0.5}	32	R30	20	R19	φ14	10.5	77	64	51
φ 100	MAS1-CB100	φ20 ^{H 9} _{T 8}	78	117	32 ^{+0.7} _{+0.5}	32	R30	20	R19	φ14	10.5	94	64	51
φ 125	MAS1-CB125	φ20 ^{H 9} _{T 8}	78	144	32 ^{+0.7} _{+0.5}	35	R32	20	R19	φ18	13.5	116	64	54

Special rod end shape type (standard (round rod)/non-rotating (hex. rod))

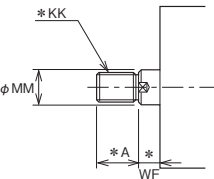
A10



Dimensional table

Symbol	Bore	φ12	φ16	φ20	φ25	φ32	φ40	φ50	φ63	φ80	φ100	φ125
MM		6	6	10	10	16	16	20	20	25	25	32
WF		8	8	8	10	10	10	10	10	14	14	14

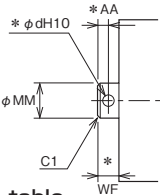
A15



Dimensional table

Symbol	Bore	φ12	φ16	φ20	φ25	φ32	φ40	φ50	φ63	φ80	φ100	φ125
A		10	10	16	16	24	24	32	32	40	40	54
KK		M5×0.8	M8×1.25	M12×1.25	M16×1.5	M20×1.5	M27×2					
MM		6	6	10	10	16	16	20	20	25	25	32
WF		8	8	8	10	10	10	10	10	14	14	14

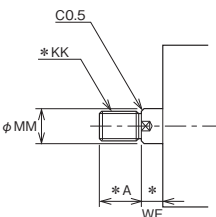
A20



Dimensional table

Symbol	Bore	φ12	φ16	φ20	φ25	φ32	φ40	φ50	φ63	φ80	φ100	φ125
AA		3.5	3.5	6	6	8	8	12	12	14	14	18
d		3	3	5	5	8	8	10	10	12	12	14
MM		6	6	10	10	16	16	20	20	25	25	32
WF		9	9	15	15	24	24	30	30	36	36	45

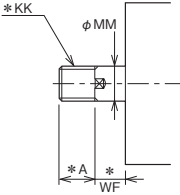
A14



Dimensional table

Symbol	Bore	φ12	φ16	φ20	φ25	φ32	φ40	φ50	φ63	φ80	φ100	φ125
A		10	10	16	16	24	24	32	32	40	40	54
KK		M5×0.8	M8×1.25	M12×1.25	M16×1.5	M20×1.5	M27×2					
MM		6	6	10	10	16	16	20	20	25	25	32
WF		8	8	8	10	10	10	10	10	14	14	14

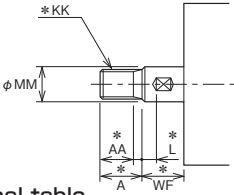
A16



Dimensional table

Symbol	Bore	φ12	φ16	φ20	φ25	φ32	φ40	φ50	φ63
A		10	10	16	16	24	24	32	32
KK		M6×1	M10×1.25	M16×1.5	M20×1.5				
MM		6	6	10	10	16	16	20	20
WF		8	8	8	10	10	10	10	10

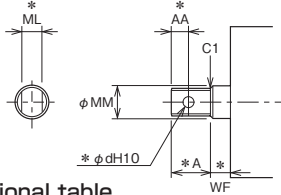
A28



Dimensional table

Symbol	Bore	φ12	φ16	φ20	φ25	φ32	φ40	φ50	φ63	φ80	φ100	φ125
A		10	10	16	16	24	24	32	32	40	40	54
AA		8.5	8.5	13.5	13.5	21.5	21.5	29	29	37	37	50
KK		M5×0.8	M8×1.25	M12×1.25	M16×1.5	M20×1.5	M27×2					
L		6	6	6	6	8	8	10	10	10	10	10
MM		6	6	10	10	16	16	20	20	25	25	32
WF		14	14	14	16	18	18	20	20	24	24	24

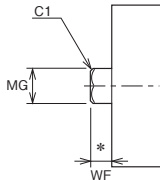
A30



Dimensional table

Symbol	Bore	φ12	φ16	φ20	φ25	φ32	φ40	φ50	φ63	φ80	φ100	φ125
A		9	9	15	15	24	24	30	30	36	36	45
AA		3.5	3.5	6	6	8	8	12	12	14	14	18
d		3	3	5	5	8	8	10	10	12	12	14
ML		3.5	3.5	6	6	10	10	12	12	14	14	20
MM		6	6	10	10	16	16	20	20	25	25	32
WF		5	5	5	5	5	5	5	5	5	5	5

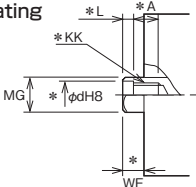
G10/non-rotating



Dimensional table

Symbol	Bore	φ20	φ25	φ32	φ40	φ50	φ63	φ80	φ100
MG		9	9	14	14	19	19	23	23
WF		8	10	10	10	10	10	14	14

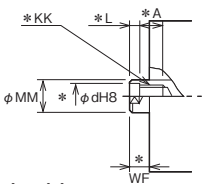
G37/non-rotating



Dimensional table

Symbol	Bore	φ20	φ25	φ32	φ40	φ50	φ63	φ80	φ100
A		7	7	12	12	15	15	20	20
d		6	6	10	10	12	12	18	18
KK		M5×0.8	M8×1.25	M10×1.5	M16×2				
L		5	5	7	7	10	10	10	10
MG		9	9	14	14	19	19	23	23
WF		8	10	10	10	10	10	14	14

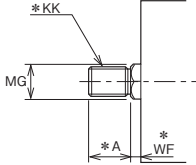
A37



Dimensional table

Symbol	Bore	φ20	φ25	φ32	φ40	φ50	φ63	φ80	φ100	φ125
A		7	7	12	12	15	15	20	20	25
d		6	6	10	10	12	12	18	18	24
KK		M5×0.8	M8×1.25	M10×1.5	M16×2	M20×2.5				
L		5	5	7	7	10	10	10	10	10
MM		10	10	16	16	20	20	25	25	32
WF		8	10	10	10	10	10	14	14	14

G15/non-rotating



Dimensional table

Symbol	Bore	φ20	φ25	φ32	φ40	φ50	φ63	φ80	φ100
A		16	16	24	24	32	32	40	40
KK		M8×1.25	M12×1.25	M16×1.5	M20×1.5				
MG		9	9	14	14	19	19	23	23
WF		5	5	5	5	5	5	6.5	6.5

- For the detailed specifications, dimensions and delivery leadtime of cylinders with special rod ends, consult us.
- If you require to change the *-marked dimensions, consult us.

Compact, lightweight, space saving air cylinder with sensor

- Switch Set Cylinders having piston with built-in magnet.
- Non-rotating types are available.
- Separable type convenient for maintenance.
- Female and male threaded rod ends are available.
- For $\phi 12$ to $\phi 32$, stainless steel (hard chrome plated) piston rods are used.



Cylinder specifications

Series variations	Double acting single rod	Double acting double rod	Single acting spring return type (SR type)
Type	Switch Set		
Cylinder bore (mm)	$\phi 12 \cdot \phi 16 \cdot \phi 20 \cdot \phi 25 \cdot \phi 32 \cdot \phi 40$ $\phi 50 \cdot \phi 63 \cdot \phi 80 \cdot \phi 100 \cdot \phi 125$		$\phi 12 \cdot \phi 16 \cdot \phi 20 \cdot \phi 25$ $\phi 32 \cdot \phi 40 \cdot \phi 50$
Working fluid	Air		
Lubrication	Unnecessary (but possible)		
Working pressure range	$\phi 12 \cdot \phi 16 : 0.07 \text{ to } 1 \text{ MPa}$ $\phi 20 \text{ to } \phi 125 : 0.05 \text{ to } 1 \text{ MPa}$		$\phi 12 \cdot \phi 16 : 0.2 \text{ to } 1 \text{ MPa}$ $\phi 20 \cdot \phi 25 : 0.18 \text{ to } 1 \text{ MPa}$ $\phi 32 \text{ to } \phi 50 : 0.12 \text{ to } 1 \text{ MPa}$
Proof test pressure	1.5 MPa		
Working temperature range	-10 to +70°C (no freezing)		
Structure of cushioning	$\phi 12$ and $\phi 16$: None $\phi 20$ to $\phi 125$: With cushion pad		$\phi 12$ and $\phi 16$: None $\phi 20$ to $\phi 125$: With cushioning pad on cap side
Tolerance for thread	JIS 6H/6g		
Tolerance of stroke	+1.0 0 mm		
Note) Mounting style	SD (basic style) or ST (tapped on both sides) LA · LB · FA · FB · CA · CB	SD (basic style) or ST (tapped on both sides) LA · LB · FA	SD (basic style) or ST (tapped on both sides) LA · LB · FA · FB · CA · CB
Rod end threads	Female thread and male thread		

Specifications / non-rotating rod

Series variations	Double acting single rod	Double acting double rod
Type	Switch Set	
Cylinder bore (mm)	$\phi 20 \cdot \phi 25 \cdot \phi 32 \cdot \phi 40 \cdot \phi 50 \cdot \phi 63 \cdot \phi 80 \cdot \phi 100$	
Working fluid	Air	
Lubrication	Unnecessary (but possible)	
Working pressure range	0.1 to 1 MPa	
Proof test pressure	1.5 MPa	
Working temperature range	-10 to +70°C (no freezing)	
Structure of cushioning	With cushion pad	
Allowable rotating angle	$\phi 20 \cdot \phi 25: \pm 1.5^\circ \quad \phi 32 \text{ to } \phi 63: \pm 1^\circ \quad \phi 80 \cdot \phi 100: \pm 0.8^\circ$	
Allowable torque	$\phi 20 \cdot \phi 25: 0.49 \text{ N} \cdot \text{m} \quad \phi 32 \cdot \phi 40: 0.98 \text{ N} \cdot \text{m}$ $\phi 50 \cdot \phi 63: 3.33 \text{ N} \cdot \text{m} \quad \phi 80 \cdot \phi 100: 9.61 \text{ N} \cdot \text{m}$	
Tolerance for thread	JIS 6H/6g	
Tolerance of stroke	$\begin{array}{c} +1.0 \\ 0 \end{array} \text{ mm}$	
Note) Mounting style	SD (basic style) or ST (tapped on both sides) LA · LB · FA · FB · CA · CB	SD (basic style) or ST (tapped on both sides) LA · LB · FA
Rod end threads	Female thread and male thread	

(Notes)

- SD (basic) style cylinders are not tapped, and mounting accessories cannot be fitted to them. When requiring only the cylinder with mounting accessories, place an order for ST (tapped on both sides).
- Mounting accessories can be fitted to standard double acting type cylinders having bores of $\phi 40$ to $\phi 125$ and non-rotating double acting type cylinders having bores of $\phi 40$ to $\phi 100$. (Double rod cylinders of mounting styles FB, CA and CB are not available.) Single acting cylinders are available only with bores of $\phi 40$ and $\phi 50$.
- All rod end attachments are for male thread type. The rod eye and rod clevis with pin are applicable to $\phi 20$ to $\phi 140$ mm rod eye with spherical bearing. The floating pin is applicable to $\phi 20$ to $\phi 100$, and the floating joint is applicable to $\phi 20$ to $\phi 125$.
- When the sensor is installed at the intermediate position, the cylinder max. speed must be less than 300 mm/s for reasons of the response speed of the load relay.

Product lineup

Unit: mm

[illegible]

Single acting spring return type spring force

Unit: N

Bore (mm)	Load	Cylinder stroke (mm)									
		5	10	15	20	25	30	35	40	45	50
$\phi 12$	Initial load	9.8	7.8	8.8	7.8	—	—	—	—	—	—
	End load	11.8		14.7		—	—	—	—	—	—
$\phi 16$	Initial load	14.7	10.8	12.7	11.8	—	—	—	—	—	—
	End load	17.7				—	—	—	—	—	—
$\phi 20$	Initial load	18.6	15.7	17.7	16.7	15.7	14.7	—	—	—	—
	End load	21.6						—	—	—	—
$\phi 25$	Initial load	23.5	19.6	24.5	22.6	20.6	19.6	—	—	—	—
	End load	28.4		29.4				—	—	—	—
$\phi 32$	Initial load	33.3	28.4	35.3	33.3	31.4	29.4	—	—	—	—
	End load	39.2		41.2				—	—	—	—
$\phi 40$	Initial load	43.1	38.2	48.1	46.1	44.1	43.1	41.2	40.2	38.2	37.3
	End load	48.1		53.0							
$\phi 50$	Initial load	—	56.9	65.7	63.7	60.8	58.8	58.8	53.9	51.0	49.0
	End load	—	73.5								

● How to order

● Standard/non-rotating 10S-1R

Standard	
10S-1R	: Double acting single rod
10S-1RD	: Double acting double rod
10S-1RSR	: Single acting spring return
Non-rotating	
10S-1RG	: Double acting single rod
10S-1RGD	: Double acting double rod

Notes) ● Since cylinders with the mounting style SD (basic style) do not have tapped holes, mounting accessories cannot be fitted to the cylinders.
When requiring only the cylinder with mounting accessories, place an order for ST (tapped on both sides).
However, LA or LB accessories cannot be fitted to ST (tapped on both sides) style cylinders having the following strokes. Place an order for LA or LB style cylinder.

Bore	Stroke
φ80	10, 15
φ125	10, 15, 20

- For the mounting styles LA, LB, FA, FB, CA and CB, the cylinder bore is φ40 to φ125.
- When purchasing ST style cylinder (tapped on both sides) of mounting style FA, change the dimension WF to the following value.

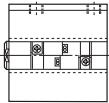
Female thread	φ40 to φ63	13.5
	φ80 to φ125	21.5
Male thread	φ40 to φ63	15
	φ80 to φ125	21.5

★ Notice

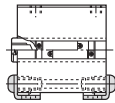
- In the following case, the cylinder will be fabricated as a semi-standard type.
 - Rod end modification (Dimensional symbol: WF, A or KK)

Mounting style

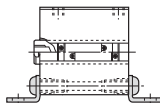
[SD] Basic style



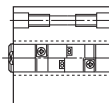
[LA] Side lugs



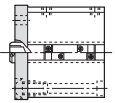
[LB] End angles



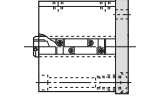
[ST] Basic style/tapped on both sides



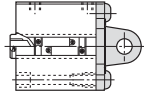
[FA] Rod rectangular flange



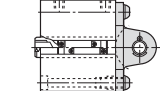
[FB] Cap rectangular flange



[CA] Cap eye



[CB] Cap clevis



- [T] Rod eye (T-end)
 - [S] Rod eye with spherical bearing (S-end)
 - [Y] Rod clevis (Y-end)
 - [F] Floating joint (F-end)
- Note) Rod end attachments are for male thread type.

Number of sensors

Sensor symbol

Note) Select the applicable sensor symbol from the sensor list.

- Notes on ordering Switch Set
- The sensors are shipped together, but not assembled.

- [] Female thread
- [T] Male thread

Cylinder stroke (mm)

Cylinder bore (mm)

With cushion pad

Sensor list

Type	Sensor symbol	Load voltage range	Load current range	Max. switching capacity	Protective circuit	Indicating lamp	Wiring method	Cable length	Applicable load
Reed sensor	A ZR2	DC:5 to 50V AC:5 to 120V	DC:3 to 40mA AC:3 to 20mA	DC:1.5W AC:2VA	None	LED (lights in red when sensing)	0.2 mm ² , 2-core, external diameter φ3, upper wiring	1.5 m	Small relay programmable controller
	E ZR25							5 m	
	C ZR3							1.5 m	
	G ZR35	5 m							
	B ZR2N	DC: 50 V or less AC: 120 V or less	DC: 40 mA or less AC: 20 mA or less			None	0.3 mm ² , 2-core, external diameter φ3, upper wiring	1.5 m	
	D ZR3N	1.5 m							
Solid state sensor	H ZS201	DC: 30 V or less	200 mA or less (NPN open collector output)	Supply voltage (DC): 5 to 10 V	Provided	LED (lights in red when sensing)	0.2 mm ² , 3-core, external diameter φ3, upper wiring	1.5 m	Small relay programmable controller
	J ZS205							5 m	
	M ZS301							1.5 m	
	N ZS305							5 m	
	K ZS211	DC: 30 V or less	200 mA or less (NPN open collector output)	Supply voltage (DC): 10 to 30 V	Provided	LED (lights in green when sensing)	0.2 mm ² , 3-core, external diameter φ3, upper wiring	1.5 m	
	L ZS215							5 m	
	P ZS311							1.5 m	
	Q ZS315							5 m	
	W KS211M	DC:10 to 30V	6 to 70mA	—	Provided	LED (lights in red when sensing)	0.3 mm ² , 2-core, external diameter φ3.4, upper wiring	1.5 m	
	Y KS215M							5 m	

- Notes) ● When any induction load (relay or the like) is used for a sensor without a protective circuit, fit a protective circuit (SK-100) to the load without fail.
● For handling of the sensors, read the sensor specifications at the end of this catalog.
● When sensors are connected in series, it is recommended to use AND Unit (AU Series). For the details, see AND Unit at the end of this catalog.
● ZR2* and ZS2* types are designed for cylinder bores of φ12 to φ32, and ZR3*, ZS3* and KS types for φ40 to φ125.

● ZR and ZS type sensor

● KS type sensor



Standard stroke range

When an order for the ◎-marked SD style (basic style) cylinder is placed, the mounting bolts are shipped together, but not assembled. See Note 2.

	Series variations	Cylinder bore	Stroke																	With cushion pad	Male thread	
			5	10	15	20	25	30	35	40	45	50	60	70	75	80	90	100				
Standard	Double acting single rod	φ12	⊙	⊙	⊙	⊙	⊙	○	—	—	—	—	—	—	—	—	—	—	—	—	□	○
		φ16	⊙	⊙	⊙	⊙	⊙	○	○	—	—	—	—	—	—	—	—	—	—	—	□	○
		φ20	⊙	⊙	⊙	⊙	⊙	○	○	○	○	—	—	—	—	—	—	—	—	—	□	○
		φ25	⊙	⊙	⊙	⊙	⊙	○	○	○	○	⊙	—	—	—	—	—	—	—	—	□	○
		φ32	⊙	⊙	⊙	⊙	⊙	○	○	○	○	○	○	○	○	○	○	○	○	○	□	○
		φ40	⊙	⊙	⊙	⊙	⊙	○	○	○	○	○	○	○	○	○	○	○	○	○	□	○
		φ50	—	⊙	⊙	⊙	⊙	○	○	○	○	○	○	○	○	○	○	○	○	○	□	○
		φ63	—	⊙	⊙	⊙	⊙	○	○	○	○	○	○	○	○	○	○	○	○	○	□	○
		φ80	—	⊙	⊙	⊙	⊙	○	○	○	○	○	○	○	○	○	○	○	○	○	□	○
		φ100	—	⊙	⊙	⊙	⊙	○	○	○	○	○	○	○	○	○	○	○	○	○	□	○
		φ125	—	⊙	⊙	⊙	⊙	○	○	○	○	○	○	○	○	○	○	○	○	○	□	○
		Double acting double rod	φ12	⊙	⊙	⊙	⊙	⊙	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	φ16		⊙	⊙	⊙	⊙	⊙	—	—	—	—	—	—	—	—	—	—	—	—	—	—	○
	φ20		⊙	⊙	⊙	⊙	⊙	○	—	—	—	—	—	—	—	—	—	—	—	—	□	○
	φ25		⊙	⊙	⊙	⊙	⊙	○	—	—	—	—	—	—	—	—	—	—	—	—	□	○
	φ32		⊙	⊙	⊙	⊙	⊙	○	○	⊙	⊙	—	—	—	—	—	—	—	—	—	□	○
	φ40		⊙	⊙	⊙	⊙	⊙	○	○	○	○	⊙	—	—	—	—	—	—	—	—	□	○
	φ50		—	⊙	⊙	⊙	⊙	○	○	○	○	○	—	—	—	—	—	—	—	—	□	○
	φ63		—	⊙	⊙	⊙	⊙	○	○	○	○	○	—	—	—	—	—	—	—	—	□	○
	φ80		—	⊙	⊙	⊙	⊙	○	○	○	○	○	—	—	—	—	—	—	—	—	□	○
	φ100		—	⊙	⊙	⊙	⊙	○	○	○	○	○	—	—	—	—	—	—	—	—	□	○
	φ125		—	⊙	⊙	⊙	⊙	○	○	○	○	○	—	—	—	—	—	—	—	—	□	○
	Single acting type (spring return)		φ12	⊙	⊙	○	○	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
		φ16	⊙	⊙	○	○	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	○
		φ20	⊙	⊙	○	○	○	○	—	—	—	—	—	—	—	—	—	—	—	—	—	○
		φ25	⊙	⊙	○	○	○	○	—	—	—	—	—	—	—	—	—	—	—	—	—	○
φ32		⊙	⊙	○	○	○	○	—	—	—	—	—	—	—	—	—	—	—	—	—	○	
φ40		⊙	⊙	○	○	○	○	○	○	○	—	—	—	—	—	—	—	—	—	—	○	
Non-rotating	Double acting single rod	φ50	—	⊙	⊙	⊙	⊙	○	○	○	○	—	—	—	—	—	—	—	—	—	—	○
		φ20	⊙	⊙	⊙	⊙	⊙	○	○	○	—	—	—	—	—	—	—	—	—	—	□	○
		φ25	⊙	⊙	⊙	⊙	⊙	○	○	○	—	—	—	—	—	—	—	—	—	—	□	○
		φ32	⊙	⊙	⊙	⊙	⊙	○	○	○	○	○	○	○	○	○	○	—	—	—	□	○
		φ40	⊙	⊙	⊙	⊙	⊙	○	○	○	○	○	○	○	○	○	○	○	○	—	□	○
		φ50	—	⊙	⊙	⊙	⊙	○	○	○	○	○	○	○	○	○	○	○	○	○	□	○
		φ63	—	⊙	⊙	⊙	⊙	○	○	○	○	○	○	○	○	○	○	○	○	○	□	○
		φ80	—	⊙	⊙	⊙	⊙	○	○	○	○	○	○	○	○	○	○	○	○	○	□	○
	Double acting double rod	φ100	—	⊙	⊙	⊙	⊙	○	○	○	○	○	○	○	○	○	○	○	○	○	□	○
		φ20	⊙	⊙	⊙	⊙	⊙	○	—	—	—	—	—	—	—	—	—	—	—	—	□	○
		φ25	⊙	⊙	⊙	⊙	⊙	○	○	—	—	—	—	—	—	—	—	—	—	—	□	○
		φ32	⊙	⊙	⊙	⊙	⊙	○	○	○	○	—	—	—	—	—	—	—	—	—	□	○
		φ40	⊙	⊙	⊙	⊙	⊙	○	○	○	○	○	—	—	—	—	—	—	—	—	□	○
		φ50	—	⊙	⊙	⊙	⊙	○	○	○	○	○	○	—	—	—	—	—	—	—	□	○
		φ63	—	⊙	⊙	⊙	⊙	○	○	○	○	○	○	—	—	—	—	—	—	—	□	○
		φ80	—	⊙	⊙	⊙	⊙	○	○	○	○	○	○	○	—	—	—	—	—	—	□	○

Notes) 1. For strokes other than the above standard strokes (◎ and ○), consult us.
2. When an order for the ◎-marked SD style (basic style) cylinder is placed, the mounting bolts are shipped together, but not assembled.
For any ○-marked SD style (basic style) cylinder, separately place an order for mounting bolts referring to the mounting bolt kit model number.
Also in the following cases, separately place an order for mounting bolts. (Cylinders with special rod end, special stroke not listed in the table, non-rotating double rod cylinders, cylinders with special shape of port and special body, and other special cylinders)
The mounting bolt size is restricted. If mounting bolts cannot be fitted, use ST style (tapped on both sides) cylinder.
3. Do not use the cylinder in an unevenly loaded state.
When using a cylinder having a stroke other than the ◎-marked ones or using rocking mounting accessories, consult us without fail.

Weight table/Double acting standard/non-rotating

Unit: g

Bore (mm)	Basic weight (SD style • ST style)				Additional weight								
	Standard		Non-rotating		Additional weight per mm of stroke			Mounting accessory weight					Rod end male thread weight
	Double acting single rod	Double acting double rod	Double acting single rod	Double acting double rod	Standard	Non-rotating		LA style	LB style	FA • FB style	CA style	CB style	
						Double acting single rod	Double acting double rod						
φ12	40	60	—	—	1.5	—	—	—	—	—	—	—	2
φ16	60	95	—	—	2	—	—	—	—	—	—	—	2
φ20	115	170	155	210	2.5	2.5	3.4	—	—	—	—	—	8
φ25	155	225	220	290	2.5	2.5	3.7	—	—	—	—	—	8
φ32	225	360	285	420	4.8	4.5	5.6	—	—	—	—	—	16.5
φ40	395	625	460	690	5.3	5	6.5	110	100	275	205	165	16.5
φ50	615	1030	690	1105	7.8	7.8	9.6	160	150	415	275	275	60
φ63	835	1520	990	1675	13.5	13.5	11.5	260	240	560	375	395	60
φ80	1655	2150	1715	2210	14.5	14.5	17.8	520	500	1515	890	920	125
φ100	2395	2930	2665	3200	17	17	21.1	590	580	1950	1090	1275	125
φ125	4025	5005	—	—	26	—	—	1200	1190	2995	1890	2045	290

Weight table/Single acting spring return

Unit: g

Bore (mm)	Basic weight (SD style · ST style)									
	5	10	15	20	25	30	35	40	45	50
φ12	47.6	55.1	62.7	70.2	—	—	—	—	—	—
φ16	70.5	80.5	91	101	—	—	—	—	—	—
φ20	123.1	135.6	148.7	161.2	174.3	186.8	—	—	—	—
φ25	163.5	176	189.5	202	215.5	228	—	—	—	—
φ32	240.5	264.5	290	314	339.5	363.5	—	—	—	—
φ40	409.8	436.3	466.1	492.6	522.4	548.9	578.7	605.2	635	661.5
φ50	—	672.1	715.2	754.2	797.3	836.3	879.4	918.4	961.5	1000.5

Note) • For additional weights other than the basic weights, see the above table.

Sensor additional weight table

Unit: g

Bore (mm)	ZR2 * and ZS2 * type		ZR3 * and ZS3 * type		KS type	
	Cord length 1.5 m	Cord length 5 m	Cord length 1.5 m	Cord length 5 m	Cord length 1.5 m	Cord length 5 m
φ12 to φ40	21	62	—	—	—	—
φ50 to φ125	—	—	23	64	30	70

Calculation formula Cylinder weight (g)=Basic weight+(Cylinder stroke (mm) × Additional weight per mm of stroke)+(Sensor additional weight × Sensor quantity)+Mounting accessory weight+ Rod end male thread weight

Calculation example 10S-1R, Double acting single rod standard, Cylinder bore φ40, Stroke 50 mm, 2 pcs of ZR3 (Cord length 1.5 m), LB style, Male thread type.
395+(5.3×50)+(23×2)+100+16.5=822.5g

10S-1/TAS1 Bore CAD/DATA
is available.

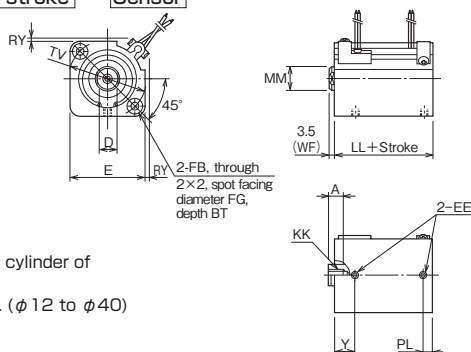


SD

Standard/double acting single rod

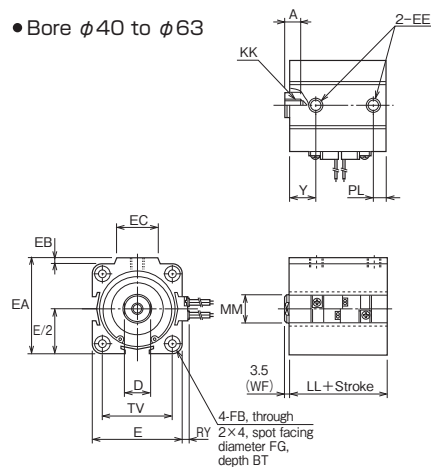
10S-1R SD Bore N Standard stroke - Sensor

- Bore $\phi 12$ to $\phi 32$

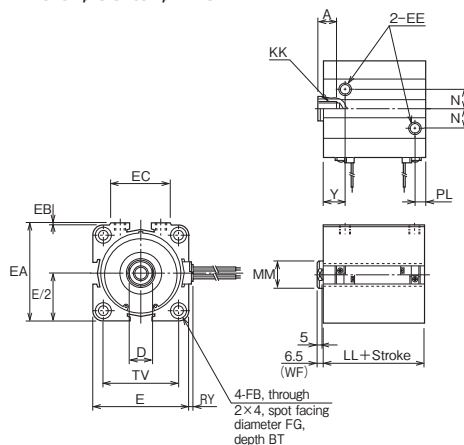


- This drawing shows the outline of a cylinder of stroke 10 or more (with 2 sensors).
- When stroke 5, one sensor is fitted. ($\phi 12$ to $\phi 40$)

- Bore $\phi 40$ to $\phi 63$



- Bore $\phi 80$ to $\phi 125$



Dimensional table

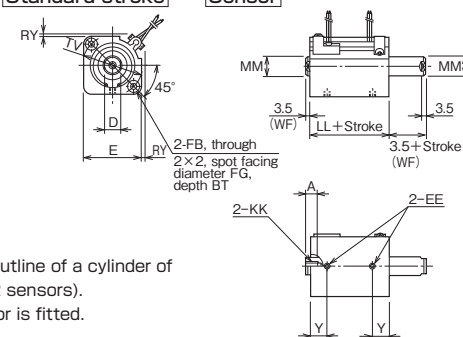
Symbol Bore	A	BT	D	E	EA	EB	EC	EE	FB	FG	KK	LL	MM	N	PL	RY	TV	Y
$\phi 12$	6	3.5	5	□25	—	—	—	M5×0.8	$\phi 3.4$	$\phi 6.5$	M3×0.5	27	$\phi 6$	—	5	5.5	$\phi 22$	10
$\phi 16$	6	3.5	5	□29	—	—	—	M5×0.8	$\phi 3.4$	$\phi 6.5$	M3×0.5	27	$\phi 6$	—	5	5	$\phi 28$	10
$\phi 20$	7	5.5	8	□37	—	—	—	M5×0.8	$\phi 5.5$	$\phi 9.5$	M5×0.8	30	$\phi 10$	—	6	4	$\phi 36$	11
$\phi 25$	7	5.5	8	□40	—	—	—	M5×0.8	$\phi 5.5$	$\phi 9.5$	M5×0.8	31	$\phi 10$	—	6	3.5	$\phi 40$	12
$\phi 32$	12	5.5	14	□45	—	—	—	M5×0.8	$\phi 5.5$	$\phi 9.5$	M8×1.25	35	$\phi 16$	—	6	3.5	$\phi 48$	13
$\phi 40$	12	5.5	14	53	57	4	28	Rc1/8	$\phi 5.5$	$\phi 9.5$	M8×1.25	40	$\phi 16$	—	8.5	6.5	□40	16.5
$\phi 50$	15	6.5	18	64	68	4	30	Rc1/8	$\phi 6.6$	$\phi 11$	M10×1.5	42	$\phi 20$	—	9	6.5	□50	18
$\phi 63$	15	8.6	18	77	84	7	35	Rc1/4	$\phi 9$	$\phi 14$	M10×1.5	46	$\phi 20$	—	11	6.5	□60	19
$\phi 80$	20	16.5	22	100	101.5	1.5	62	Rc1/4	$\phi 11$	$\phi 17.5$	M16×2	56.5	$\phi 25$	21	11	4.5	□77	21.5
$\phi 100$	20	18	22	117	117	—	—	Rc1/4	$\phi 11$	$\phi 17.5$	M16×2	63	$\phi 25$	29	13	6	□94	25
$\phi 125$	25	19.5	29	144	144	—	—	Rc3/8	$\phi 14$	$\phi 20$	M20×2.5	69.5	$\phi 32$	37	16	6	□116	28

SD

Standard/double acting double rod

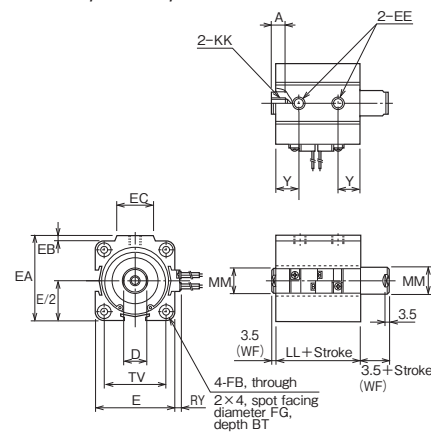
10S-1RD SD Bore N Standard stroke - Sensor

- Bore $\phi 12$ to $\phi 32$

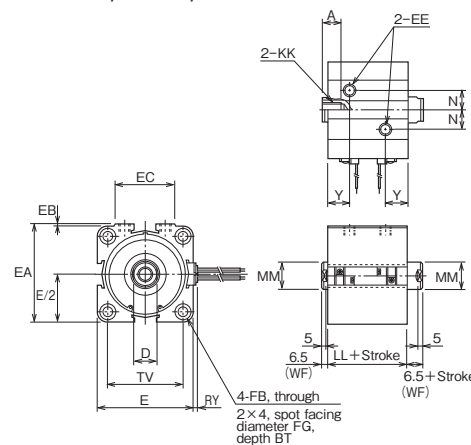


- This drawing shows the outline of a cylinder of stroke 10 or more (with 2 sensors).
- When stroke 5, one sensor is fitted.

- Bore $\phi 40$ to $\phi 63$



- Bore $\phi 80$ to $\phi 125$



Dimensional table

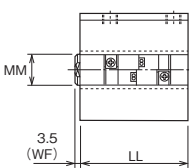
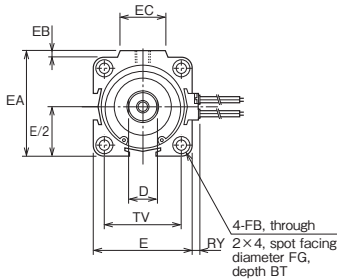
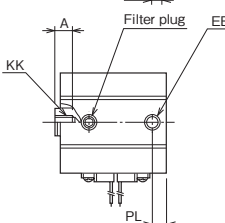
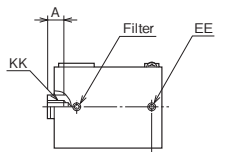
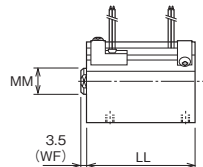
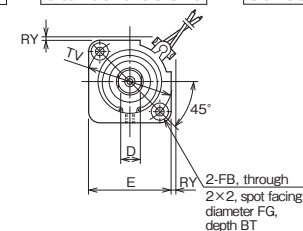
Symbol Bore	A	BT	D	E	EA	EB	EC	EE	FB	FG	KK	LL	MM	N	RY	TV	WF	Y
$\phi 12$	6	3.5	5	□25	—	—	—	M5×0.8	$\phi 3.4$	$\phi 6.5$	M3×0.5	37	$\phi 6$	—	5.5	$\phi 22$	3.5	10
$\phi 16$	6	3.5	5	□29	—	—	—	M5×0.8	$\phi 3.4$	$\phi 6.5$	M3×0.5	37	$\phi 6$	—	5	$\phi 28$	3.5	10
$\phi 20$	7	5.5	8	□37	—	—	—	M5×0.8	$\phi 5.5$	$\phi 9.5$	M5×0.8	40	$\phi 10$	—	4	$\phi 36$	3.5	11
$\phi 25$	7	5.5	8	□40	—	—	—	M5×0.8	$\phi 5.5$	$\phi 9.5$	M5×0.8	41	$\phi 10$	—	3.5	$\phi 40$	3.5	12
$\phi 32$	12	5.5	14	□45	—	—	—	M5×0.8	$\phi 5.5$	$\phi 9.5$	M8×1.25	45	$\phi 16$	—	3.5	$\phi 48$	3.5	13
$\phi 40$	12	5.5	14	53	57	4	28	Rc1/8	$\phi 5.5$	$\phi 9.5$	M8×1.25	55	$\phi 16$	—	6.5	□40	3.5	16.5
$\phi 50$	15	6.5	18	64	68	4	30	Rc1/8	$\phi 6.6$	$\phi 11$	M10×1.5	57	$\phi 20$	—	6.5	□50	3.5	18
$\phi 63$	15	8.6	18	77	84	7	35	Rc1/4	$\phi 9$	$\phi 14$	M10×1.5	61	$\phi 20$	—	6.5	□60	3.5	19
$\phi 80$	20	16.5	22	100	101.5	1.5	62	Rc1/4	$\phi 11$	$\phi 17.5$	M16×2	71.5	$\phi 25$	21	4.5	□77	6.5	21.5
$\phi 100$	20	18	22	117	117	—	—	Rc1/4	$\phi 11$	$\phi 17.5$	M16×2	78	$\phi 25$	29	6	□94	6.5	25
$\phi 125$	25	19.5	29	144	144	—	—	Rc3/8	$\phi 14$	$\phi 20$	M20×2.5	84.5	$\phi 32$	37	6	□116	6.5	28

SD

Single acting spring return

10S-1RSR SD Bore N Standard stroke - Sensor

• Bore ϕ 12 to ϕ 32



- This drawing shows the outline of a cylinder of stroke 10 or more (with 2 sensors).
- When stroke 5, one sensor is fitted. (ϕ 12 to ϕ 40)

Dimensional table

Symbol Stroke Bore	A	BT	D	E	EA	EB	EC	EE	FB	FG	KK	LL										MM	PL	RY	TV
												5	10	15	20	25	30	35	40	45	50				
ϕ 12	6	3.5	5	$\square$ 25	—	—	—	M5×0.8	ϕ 3.4	ϕ 6.5	M3×0.5	32	37	47	52	—	—	—	—	—	—	ϕ 6	5	5.5	ϕ 22
ϕ 16	6	3.5	5	$\square$ 29	—	—	—	M5×0.8	ϕ 3.4	ϕ 6.5	M3×0.5	32	37	47	52	—	—	—	—	—	—	ϕ 6	5	5	ϕ 28
ϕ 20	7	5.5	8	$\square$ 37	—	—	—	M5×0.8	ϕ 5.5	ϕ 9.5	M5×0.8	35	40	50	55	60	65	—	—	—	—	ϕ 10	6	4	ϕ 36
ϕ 25	7	5.5	8	$\square$ 40	—	—	—	M5×0.8	ϕ 5.5	ϕ 9.5	M5×0.8	36	41	56	61	66	71	—	—	—	—	ϕ 10	6	3.5	ϕ 40
ϕ 32	12	5.5	14	$\square$ 45	—	—	—	M5×0.8	ϕ 5.5	ϕ 9.5	M8×1.25	40	45	60	65	70	75	—	—	—	—	ϕ 16	6	3.5	ϕ 48
ϕ 40	12	5.5	14	53	57	4	28	Rc1/8	ϕ 5.5	ϕ 9.5	M8×1.25	45	50	65	70	75	80	85	90	95	100	ϕ 20	8.5	6.5	$\square$ 40
ϕ 50	15	6.5	18	64	68	4	30	Rc1/8	ϕ 6.6	ϕ 11	M10×1.5	—	52	57	62	77	82	87	92	97	102	ϕ 20	9	6.5	$\square$ 50

10S-1/TAS1 Bore is available. CAD/DATA is available.

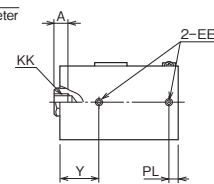
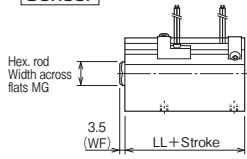
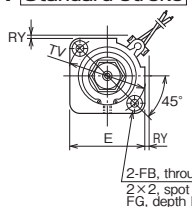


SD

Non-rotating/double acting single rod

10S-1RG SD Bore N Standard stroke - Sensor

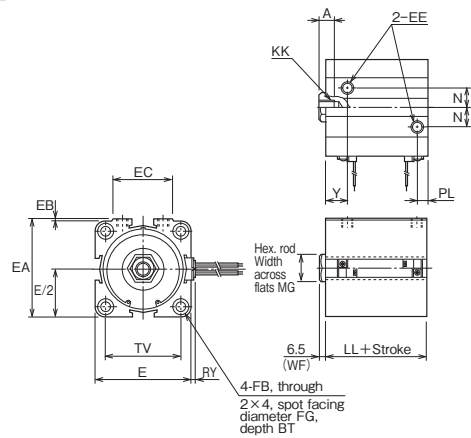
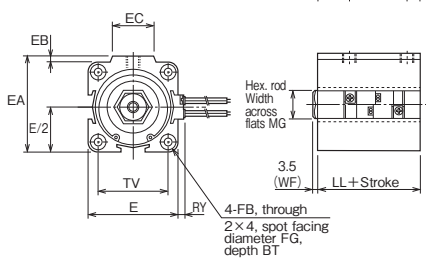
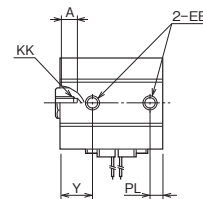
• Bore ϕ 20 to ϕ 32



- This drawing shows the outline of a cylinder of stroke 10 or more (with 2 sensors).
- When stroke 5, one sensor is fitted. (ϕ 12 to ϕ 40)

• Bore ϕ 40 to ϕ 63

• Bore ϕ 80 to ϕ 100



Dimensional table

Symbol Bore	A	BT	E	EA	EB	EC	EE	FB	FG	KK	LL	MG	N	PL	RY	TV	Y
ϕ 20	7	5.5	$\square$ 37	—	—	—	M5×0.8	ϕ 5.5	ϕ 9.5	M5×0.8	40	9	—	6	4	ϕ 36	21
ϕ 25	7	5.5	$\square$ 40	—	—	—	M5×0.8	ϕ 5.5	ϕ 9.5	M5×0.8	41	9	—	6	3.5	ϕ 40	22
ϕ 32	12	5.5	$\square$ 45	—	—	—	M5×0.8	ϕ 5.5	ϕ 9.5	M8×1.25	45	14	—	6	3.5	ϕ 48	23
ϕ 40	12	5.5	53	57	4	28	Rc1/8	ϕ 5.5	ϕ 9.5	M8×1.25	45	14	—	8.5	6.5	$\square$ 40	21.5
ϕ 50	15	6.5	64	68	4	30	Rc1/8	ϕ 6.6	ϕ 11	M10×1.5	47	19	—	9	6.5	$\square$ 50	23
ϕ 63	15	8.6	77	84	7	35	Rc1/4	ϕ 9	ϕ 14	M10×1.5	51	19	—	11	6.5	$\square$ 60	24
ϕ 80	20	16.5	100	101.5	1.5	62	Rc1/4	ϕ 11	ϕ 17.5	M16×2	61.5	23	21	11	4.5	$\square$ 77	26.5
ϕ 100	20	18	117	117	—	—	Rc1/4	ϕ 11	ϕ 17.5	M16×2	68	23	29	13	6	$\square$ 94	30

10S-1/TAS1 Bore is available. CAD/DATA is available.

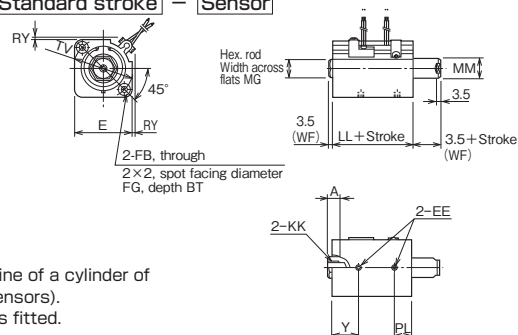


SD

Non-rotating/double acting double rod

10S-1RGD SD Bore N Standard stroke - Sensor

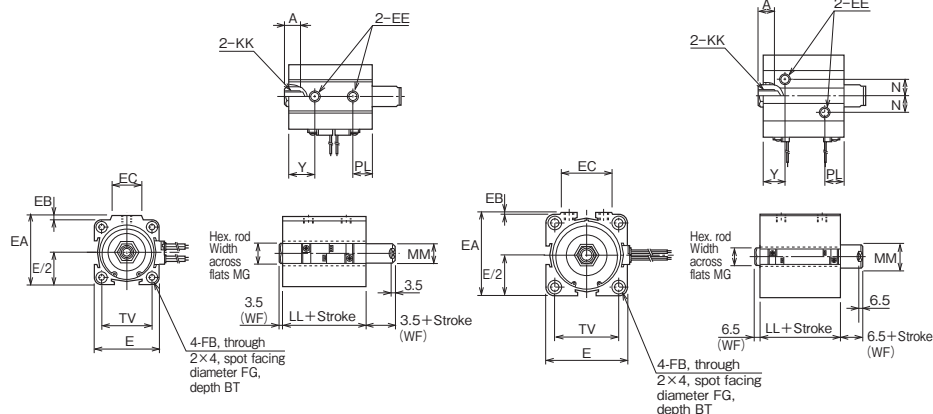
- Bore $\phi 20$ to $\phi 32$



- This drawing shows the outline of a cylinder of stroke 10 or more (with 2 sensors).
- When stroke 5, one sensor is fitted.

- Bore $\phi 40$ to $\phi 63$

- Bore $\phi 80$ to $\phi 100$



- This drawing shows the outline of a cylinder of stroke 10 or more (with 2 sensors).
- When stroke 5, one sensor is fitted. (Only $\phi 40$)

Dimensional table

Symbol Bore	A	BT	E	EA	EB	EC	EE	FB	FG	KK	LL	MG	MM	N	PL	RY	TV	Y
$\phi 20$	7	5.5	□37	—	—	—	M5×0.8	$\phi 5.5$	$\phi 9.5$	M5×0.8	50	9	10	—	11	4	$\phi 36$	21
$\phi 25$	7	5.5	□40	—	—	—	M5×0.8	$\phi 5.5$	$\phi 9.5$	M5×0.8	51	9	10	—	12	3.5	$\phi 40$	22
$\phi 32$	12	5.5	□45	—	—	—	M5×0.8	$\phi 5.5$	$\phi 9.5$	M8×1.25	55	14	16	—	13	3.5	$\phi 48$	23
$\phi 40$	12	5.5	53	57	4	28	Rc1/8	$\phi 5.5$	$\phi 9.5$	M8×1.25	60	14	16	—	16.5	6.5	□40	21.5
$\phi 50$	15	6.5	64	68	4	30	Rc1/8	$\phi 6.6$	$\phi 11$	M10×1.5	62	19	20	—	18	6.5	□50	23
$\phi 63$	15	8.6	77	84	7	35	Rc1/4	$\phi 9$	$\phi 14$	M10×1.5	66	19	20	—	19	6.5	□60	24
$\phi 80$	20	16.5	100	101.5	1.5	62	Rc1/4	$\phi 11$	$\phi 17.5$	M16×2	76.5	23	25	21	21.5	4.5	□77	26.5
$\phi 100$	20	18	117	117	—	—	Rc1/4	$\phi 11$	$\phi 17.5$	M16×2	83	23	25	29	25	6	□94	30

10S-1/TAS1 Bore is available. 

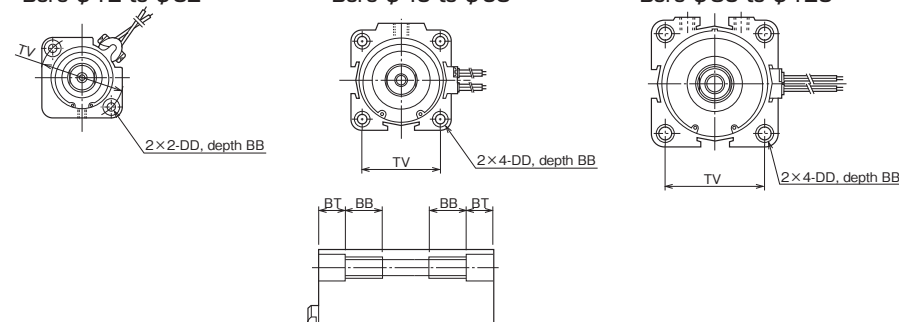
ST

10S-1R ST Bore N Standard stroke

- Bore $\phi 12$ to $\phi 32$

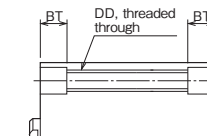
- Bore $\phi 40$ to $\phi 63$

- Bore $\phi 80$ to $\phi 125$



Note) For the strokes shown in the following table, tapped through holes are made.

Bore	$\phi 20$	$\phi 25$	$\phi 80$	$\phi 100$	$\phi 125$
Stroke	5	5	10, 15, 20	10, 15	10, 15, 20, 25



- For the dimensions not shown in this figure, see the figure of the SD (basic style) standard non-rotating type cylinder.
- Do not install ST cylinder (tapped on both sides) with through-bolts. Doing so may damage the cylinder.
- All seating surfaces of mounting holes in ST cylinders (tapped on both sides) are tapped.

Therefore, mounting accessories can be freely fitted to the body. However, the mounting accessories shown in 1) and 2) should be fitted carefully.

1) Mounting accessories LA and LB

The mounting accessories are inapplicable to the following strokes.

Bore	$\phi 80$	$\phi 125$
Stroke	10, 15	10, 15, 20

2) Mounting accessory FA

To fit the mounting accessory FA, the dimension WF must be extended. Check the dimension when placing an order for the mounting accessory.

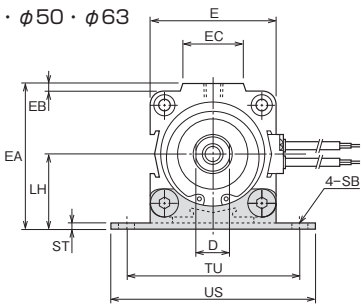
Dimensional table

Symbol Bore	TV	DD	BB	BT	FG
$\phi 12$	$\phi 22$	M4×0.7	8	3.5	$\phi 6.5$
$\phi 16$	$\phi 28$	M4×0.7	8	3.5	$\phi 6.5$
$\phi 20$	$\phi 36$	M6×1	12	5.5	$\phi 9.5$
$\phi 25$	$\phi 40$	M6×1	12	5.5	$\phi 9.5$
$\phi 32$	$\phi 48$	M6×1	12	5.5	$\phi 9.5$
$\phi 40$	□40	M6×1	12	5.5	$\phi 9.5$
$\phi 50$	□50	M8×1.25	16	6.5	$\phi 11$
$\phi 63$	□60	M10×1.5	20	8.6	$\phi 14$
$\phi 80$	□77	M12×1.75	24	16.5	$\phi 17.5$
$\phi 100$	□94	M12×1.75	24	18	$\phi 17.5$
$\phi 125$	□116	M16×2	32	19.5	$\phi 20$

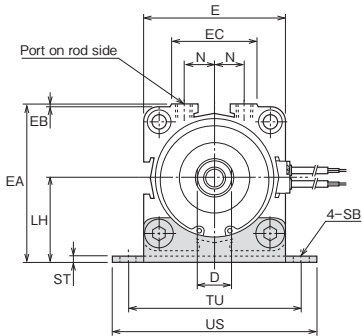
LA

10S-1R LA Bore N Standard stroke - Sensor

• Bore $\phi 40 \cdot \phi 50 \cdot \phi 63$



• Bore $\phi 80 \cdot \phi 100 \cdot \phi 125$



• For the dimensions not shown in this figure, refer to the figure of the standard non-rotating type cylinder.

Dimensional table

Symbol Bore	A	BB	D	E	EA	EB	EC	EE	KK	LH	LL		MM	N
											Standard	Non-rotating		
$\phi 40$	12	4	14	53	63	4	28	Rc1/8	M8×1.25	32.5	40	45	$\phi 16$	—
$\phi 50$	15	5	18	64	74	4	30	Rc1/8	M10×1.5	38	42	47	$\phi 20$	—
$\phi 63$	15	6	18	77	90	7	35	Rc1/4	M10×1.5	44.5	46	51	$\phi 20$	—
$\phi 80$	20	7	22	100	110	1.5	62	Rc1/4	M16×2	58.5	56.5	61.5	$\phi 25$	21
$\phi 100$	20	7	22	117	125.5	—	—	Rc1/4	M16×2	67	63	68	$\phi 25$	29
$\phi 125$	25	8.5	29	144	154	—	—	Rc3/8	M20×2.5	82	69.5	—	$\phi 32$	37

Symbol Bore	SB	SS		ST	SU	SY	TU	US	WF	XW		YP	ZB		ZP
		Standard	Non-rotating							Standard	Non-rotating		Standard	Non-rotating	
$\phi 40$	$\phi 6.6$	21.4	26.4	3.2	6.5	12.5	73	87	3.5	34.5	39.5	16.5	51	56	8.5
$\phi 50$	$\phi 9$	20.4	25.4	3.2	8	14	87	103	3.5	35	40	18	54	59	9
$\phi 63$	$\phi 11$	21.4	26.4	3.2	9.5	15.5	109	127	3.5	37.5	42.5	19	59	64	11
$\phi 80$	$\phi 14$	23.5	28.5	4.5	11	21	123	145	6.5	46.5	51.5	21.5	74.5	79.5	11
$\phi 100$	$\phi 14$	30	35	4.5	11	21	137	159	6.5	53	58	25	81	86	13
$\phi 125$	$\phi 18$	31.5	—	6	14	25	172	200	6.5	57	—	28	90.5	—	16

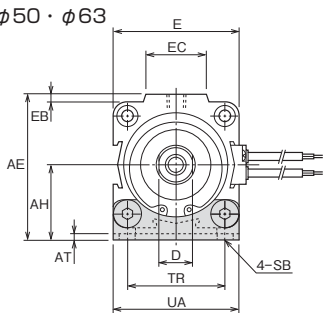
CAD/DATA
10S-1/TAS1 Bore is available.



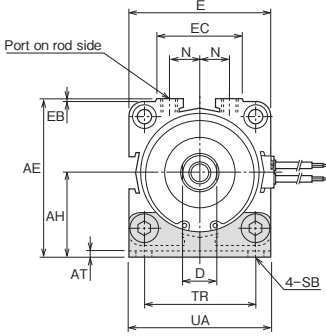
LB

10S-1R LB Bore N Standard stroke - Sensor

• Bore $\phi 40 \cdot \phi 50 \cdot \phi 63$



• Bore $\phi 80 \cdot \phi 100 \cdot \phi 125$



• For the dimensions not shown in this figure, refer to the figure of the standard non-rotating type cylinder.

Dimensional table

Symbol Bore	A	AE	AH	AO	AT	AU	D	E	EB	EC	EE	KK	LL	
													Standard	Non-rotating
$\phi 40$	12	63	32.5	7	3.2	15	14	53	4	28	Rc1/8	M8×1.25	40	45
$\phi 50$	15	74	38	9	3.2	18	18	64	4	30	Rc1/8	M10×1.5	42	47
$\phi 63$	15	90	44.5	11	3.2	20	18	77	7	35	Rc1/4	M10×1.5	46	51
$\phi 80$	20	110	58.5	14	4.5	25	22	100	1.5	62	Rc1/4	M16×2	56.5	61.5
$\phi 100$	20	125.5	67	14	4.5	25	22	117	—	—	Rc1/4	M16×2	63	68
$\phi 125$	25	154	82	18	6	31	29	144	—	—	Rc3/8	M20×2.5	69.5	—

Symbol Bore	MM	N	SA		SB	TR	UA	WF	XA		YP	ZA		ZP
			Standard	Non-rotating					Standard	Non-rotating		Standard	Non-rotating	
$\phi 40$	$\phi 16$	—	70	75	$\phi 6.6$	40	53	3.5	58.5	63.5	16.5	65.5	70.5	8.5
$\phi 50$	$\phi 20$	—	78	83	$\phi 9$	50	64	3.5	63.5	68.5	18	72.5	77.5	9
$\phi 63$	$\phi 20$	—	86	91	$\phi 11$	60	77	3.5	69.5	74.5	19	80.5	85.5	11
$\phi 80$	$\phi 25$	21	106.5	111.5	$\phi 14$	77	100	6.5	88	93	21.5	102	107	11
$\phi 100$	$\phi 25$	29	113	118	$\phi 14$	94	117	6.5	94.5	99.5	25	108.5	113.5	13
$\phi 125$	$\phi 32$	37	131.5	—	$\phi 18$	116	144	6.5	107	—	28	125	—	16

CAD/DATA
10S-1/TAS1 Bore is available.

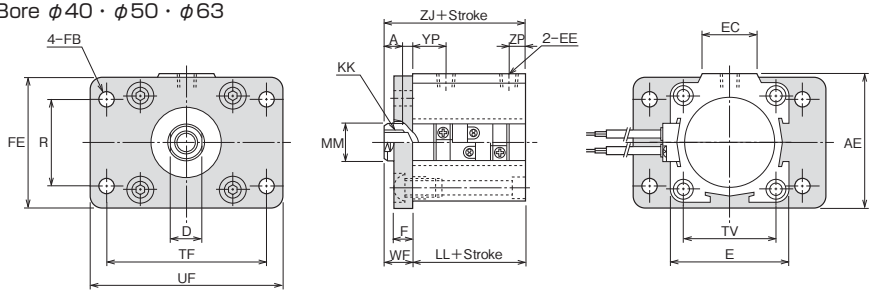


10S-1/TAS1 Bore CAD/DATA is available. 

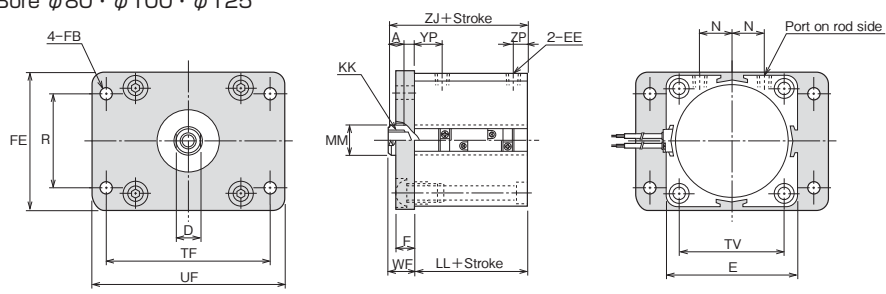
FA

10S-1R FA Bore N Standard stroke — Sensor

- Bore $\phi 40 \cdot \phi 50 \cdot \phi 63$



- Bore $\phi 80 \cdot \phi 100 \cdot \phi 125$



- For the dimensions not shown in this figure, refer to the figure of the standard non-rotating type cylinder.
- The mounting accessories cannot be fitted on the cap side because only the accessory fitting area is tapped. Do not use the cylinder without the mounting accessories.

Dimensional table

Symbol Bore	A	AE	D	E	EC	EE	F	FB	FE	KK
$\phi 40$	12	58.5	14	53	28	Rc1/8	10	$\phi 7$	56	M8×1.25
$\phi 50$	15	71	18	64	30	Rc1/8	10	$\phi 9$	70	M10×1.5
$\phi 63$	15	87.5	18	77	35	Rc1/4	10	$\phi 9$	84	M10×1.5
$\phi 80$	20	—	22	100	—	Rc1/4	16	$\phi 12$	105	M16×2
$\phi 100$	20	—	22	117	—	Rc1/4	16	$\phi 12$	121	M16×2
$\phi 125$	25	—	29	144	—	Rc3/8	16	$\phi 14$	150	M20×2.5

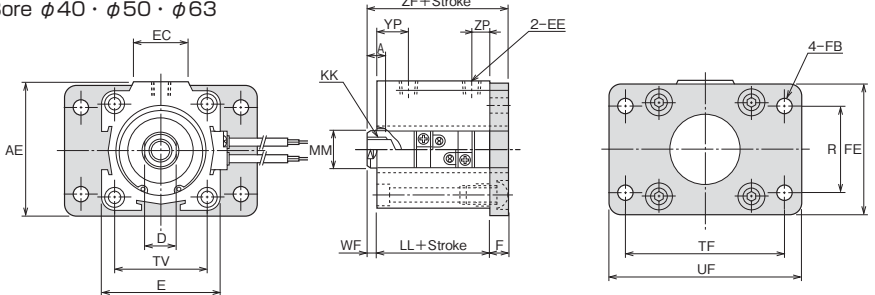
Symbol Bore	LL		MM	N	R	TF	TV	UF	WF	YP	ZJ		ZP
	Standard	Non-rotating									Standard	Non-rotating	
$\phi 40$	40	45	$\phi 16$	—	36	70	40	84	13.5	16.5	53.5	58.5	8.5
$\phi 50$	42	47	$\phi 20$	—	47	86	50	104	13.5	18	55.5	60.5	9
$\phi 63$	46	51	$\phi 20$	—	56	98	60	116	13.5	19	59.5	64.5	11
$\phi 80$	56.5	61.5	$\phi 25$	21	70	126	77	150	21.5	21.5	78	83	11
$\phi 100$	63	68	$\phi 25$	29	84	143	94	165	21.5	25	84.5	89.5	13
$\phi 125$	69.5	—	$\phi 32$	37	116	174	116	202	21.5	28	91	—	16

10S-1/TAS1 Bore CAD/DATA is available. 

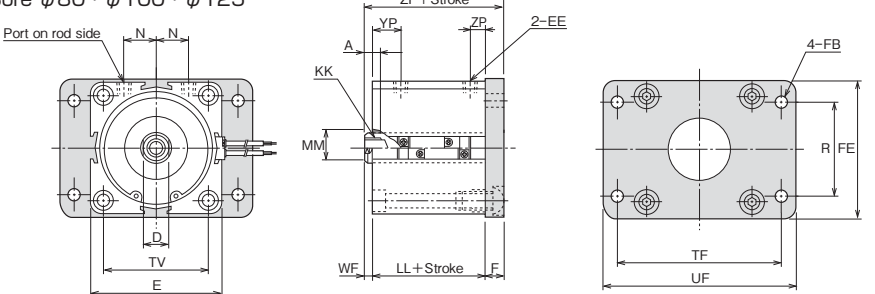
FB

10S-1R FB Bore N Standard stroke — Sensor

- Bore $\phi 40 \cdot \phi 50 \cdot \phi 63$



- Bore $\phi 80 \cdot \phi 100 \cdot \phi 125$



- For the dimensions not shown in this figure, refer to the figure of the standard non-rotating type cylinder.
- The mounting accessories cannot be fitted on the rod side because only the accessory fitting area is tapped. Do not use the cylinder without the mounting accessories.

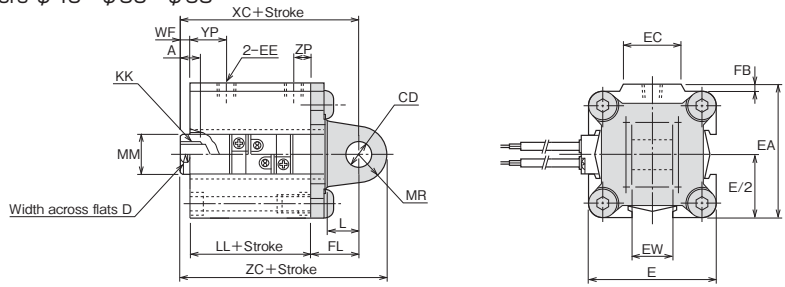
Dimensional table

Symbol Bore	A	AE	D	E	EC	EE	F	FB	FE	KK
$\phi 40$	12	58.5	14	53	28	Rc1/8	10	$\phi 7$	56	M8×1.25
$\phi 50$	15	71	18	64	30	Rc1/8	10	$\phi 9$	70	M10×1.5
$\phi 63$	15	87.5	18	77	35	Rc1/4	10	$\phi 9$	84	M10×1.5
$\phi 80$	20	—	22	100	—	Rc1/4	16	$\phi 12$	105	M16×2
$\phi 100$	20	—	22	117	—	Rc1/4	16	$\phi 12$	121	M16×2
$\phi 125$	25	—	29	144	—	Rc3/8	16	$\phi 14$	150	M20×2.5

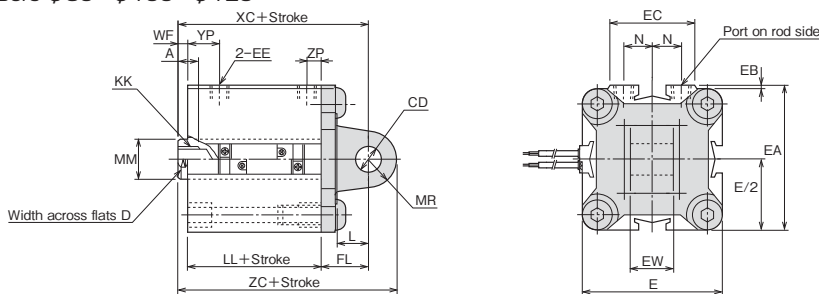
Symbol Bore	LL		MM	N	R	TF	TV	UF	WF	YP	ZF		ZP
	Standard	Non-rotating									Standard	Non-rotating	
$\phi 40$	40	45	$\phi 16$	—	36	70	40	84	3.5	16.5	53.5	58.5	8.5
$\phi 50$	42	47	$\phi 20$	—	47	86	50	104	3.5	18	55.5	60.5	9
$\phi 63$	46	51	$\phi 20$	—	56	98	60	116	3.5	19	59.5	64.5	11
$\phi 80$	56.5	61.5	$\phi 25$	21	70	126	77	150	6.5	21.5	79	84	11
$\phi 100$	63	68	$\phi 25$	29	84	143	94	165	6.5	25	85.5	90.5	13
$\phi 125$	69.5	—	$\phi 32$	37	116	174	116	202	6.5	28	92	—	16

CA
10S-1R CA Bore N Standard stroke - Sensor

• Bore $\phi 40 \cdot \phi 50 \cdot \phi 63$



• Bore $\phi 80 \cdot \phi 100 \cdot \phi 125$



- For the dimensions not shown in this figure, refer to the figure of the standard non-rotating type cylinder.
- The mounting accessories cannot be fitted on the rod side because only the accessory fitting area is tapped. Do not use the cylinder without the mounting accessories.
- A combination of male threaded rod end and rod end attachment is recommended.

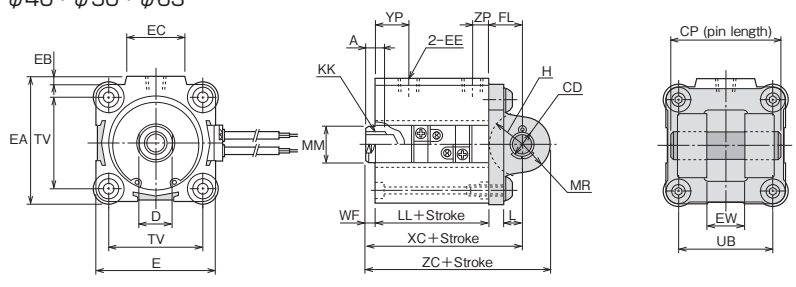
Dimensional table

Symbol Bore	A	CD	D	E	EA	EB	EC	EE	EW	FL	KK
$\phi 40$	12	$\phi 14H_9^{+0.043}_0$	14	53	57	4	28	Rc1/8	$20_{-0.084}^0$	24	M8 $\times$ 1.25
$\phi 50$	15	$\phi 14H_9^{+0.043}_0$	18	64	68	4	30	Rc1/8	$20_{-0.084}^0$	24	M10 $\times$ 1.5
$\phi 63$	15	$\phi 14H_9^{+0.043}_0$	18	77	84	7	35	Rc1/4	$20_{-0.084}^0$	24	M10 $\times$ 1.5
$\phi 80$	20	$\phi 20H_9^{+0.062}_0$	22	100	101.5	1.5	62	Rc1/4	$32_{-0.100}^0$	32	M16 $\times$ 2
$\phi 100$	20	$\phi 20H_9^{+0.054}_0$	22	117	117	—	—	Rc1/4	$32_{-0.100}^0$	32	M16 $\times$ 2
$\phi 125$	25	$\phi 20H_9^{+0.043}_0$	29	144	144	—	—	Rc3/8	$32_{-0.100}^0$	35	M20 $\times$ 2.5

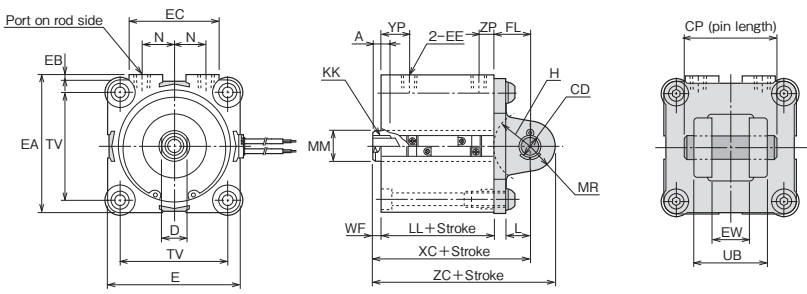
Symbol Bore	L	LL		MM	MR	N	WF	XC		YP	ZC		ZP
		Standard	Non-rotating					Standard	Non-rotating		Standard	Non-rotating	
$\phi 40$	16	40	45	$\phi 16$	R14	—	3.5	67.5	72.5	16.5	81.5	86.5	8.5
$\phi 50$	16	42	47	$\phi 20$	R14	—	3.5	69.5	74.5	18	83.5	88.5	9
$\phi 63$	16	46	51	$\phi 20$	R14	—	3.5	73.5	78.5	19	87.5	92.5	11
$\phi 80$	21	56.5	61.5	$\phi 25$	R19	21	6.5	95	100	21.5	114	119	11
$\phi 100$	21	63	68	$\phi 25$	R19	29	6.5	101.5	106.5	25	120.5	125.5	13
$\phi 125$	21	69.5	—	$\phi 32$	R19	37	6.5	111	—	28	130	—	16

CB
10S-1R CB Bore N Standard stroke - Sensor

• Bore $\phi 40 \cdot \phi 50 \cdot \phi 63$



• Bore $\phi 80 \cdot \phi 100 \cdot \phi 125$



- For the dimensions not shown in this figure, refer to the figure of the standard non-rotating type cylinder.
- The mounting accessories cannot be fitted on the rod side because only the accessory fitting area is tapped. Do not use the cylinder without the mounting accessories.
- A combination of male threaded rod end and rod end attachment is recommended.

Dimensional table

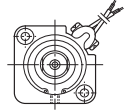
Symbol Bore	A	CD	CP	D	E	EA	EB	EC	EE	EW	FL	H	KK
$\phi 40$	12	$\phi 14 \frac{H_9}{T_8}$	52	14	53	57	4	28	Rc1/8	$20_{+0.5}^{+0.7}$	24	R18	M8 $\times$ 1.25
$\phi 50$	15	$\phi 14 \frac{H_9}{T_8}$	63	18	64	68	4	30	Rc1/8	$20_{+0.5}^{+0.7}$	24	R21	M10 $\times$ 1.5
$\phi 63$	15	$\phi 14 \frac{H_9}{T_8}$	66	18	77	84	7	35	Rc1/4	$20_{+0.5}^{+0.7}$	24	R22	M10 $\times$ 1.5
$\phi 80$	20	$\phi 20 \frac{H_9}{T_8}$	78	22	100	101.5	1.5	62	Rc1/4	$32_{+0.5}^{+0.7}$	32	R30	M16 $\times$ 2
$\phi 100$	20	$\phi 20 \frac{H_9}{T_8}$	78	22	117	117	—	—	Rc1/4	$32_{+0.5}^{+0.7}$	32	R30	M16 $\times$ 2
$\phi 125$	25	$\phi 20 \frac{H_9}{T_8}$	78	29	144	114	—	—	Rc3/8	$32_{+0.5}^{+0.7}$	35	R32	M20 $\times$ 2.5

Symbol Bore	L	LL		MM	MR	N	TV	UB	WF	XC		YP	ZC		ZP
		Standard	Non-rotating							Standard	Non-rotating		Standard	Non-rotating	
$\phi 40$	15	40	45	$\phi 16$	R14	—	40	38	3.5	67.5	72.5	16.5	81.5	86.5	8.5
$\phi 50$	15	42	47	$\phi 20$	R14	—	50	49	3.5	69.5	74.5	18	83.5	88.5	9
$\phi 63$	15	46	51	$\phi 20$	R14	—	60	52	3.5	73.5	78.5	19	87.5	92.5	11
$\phi 80$	20	56.5	61.5	$\phi 25$	R19	21	77	64	6.5	95	100	21.5	114	119	11
$\phi 100$	20	63	68	$\phi 25$	R19	29	94	64	6.5	101.5	106.5	25	120.5	125.5	13
$\phi 125$	20	69.5	—	$\phi 32$	R19	37	116	64	6.5	111	—	28	130	—	16

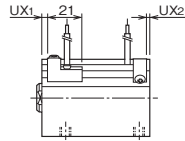
Switch Set

10S-1R Mounting style Bore N Stroke Sensor symbol Sensor quantity

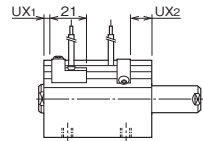
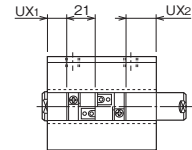
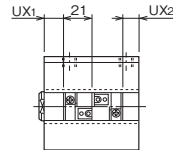
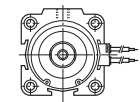
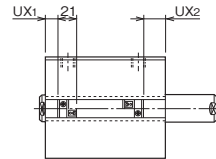
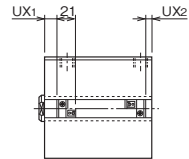
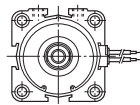
• ZR and ZS type sensor

• Bore $\phi 12$ to $\phi 32$ 

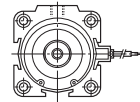
• Double acting single rod



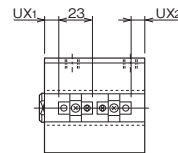
• Double acting double rod

• Bore $\phi 40$ to $\phi 63$ • Bore $\phi 80$ to $\phi 125$ 

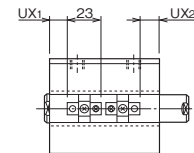
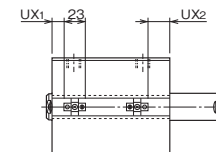
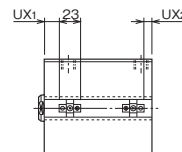
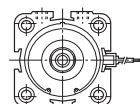
• KS type sensor

• Bore $\phi 40 \cdot \phi 50 \cdot \phi 63$ 

• Double acting single rod



• Double acting double rod

• Bore $\phi 80 \cdot \phi 100 \cdot \phi 125$ 

Dimensional table

Bore	UX ₁									UX ₂								
	Reed sensor			Solid state sensor						Reed sensor			Solid state sensor					
				ZS type			KS type						ZS type			KS type		
	Standard	Double rod	Non-rotating	Standard	Double rod	Non-rotating	Standard	Double rod	Non-rotating	Standard	Double rod	Non-rotating	Standard	Double rod	Non-rotating	Standard	Double rod	Non-rotating
φ12	5	5	—	5	5	—	—	—	—	1	10	—	1	10	—	—	—	—
φ16	7	7	—	7	7	—	—	—	—	1	10	—	1	10	—	—	—	—
φ20	8	8	18	9	9	19	—	—	—	1	11	1	1	11	1	—	—	—
φ25	8	8	18	8	8	18	—	—	—	3	12	3	2	12	2	—	—	—
φ32	9	9	19	10	10	20	—	—	—	3	12	3	3	14	3	—	—	—
φ40	15	15	20	15	15	20	15	15	20	5	19	5	3	17	3	5	19	5
φ50	18	18	23	17	17	22	17	17	22	7	20	7	3	16	3	5	20	5
φ63	17	17	22	16	16	21	18	18	23	8	23	8	8	23	8	8	23	8
φ80	16	16	21	17	17	22	20	20	25	14	28	14	14	28	14	17	32	17
φ100	23	23	28	25	25	30	25	25	30	15	31	15	15	31	15	19	33	19
φ125	22	22	—	23	23	—	26	26	—	20	34	—	20	34	—	24	40	—

Note) Dimension UX indicates the optimum sensor fitting position for detection of stroke end.

Operating range and hysteresis

Bore	Reed sensor		Solid state sensor			
	ZR2 and ZS3 type		ZS2 and ZS3 type		KS type	
	Operating range	Hysteresis	Operating range	Hysteresis	Operating range	Hysteresis
$\phi 12$	5 to 13					
$\phi 16$	4 to 12					
$\phi 20$			4 to 12		—	
$\phi 25$	5 to 13					
$\phi 32$						
$\phi 40$		2 or less	2 to 10	1 or less	10 to 18	1 or less
$\phi 50$	7 to 15		4 to 12			
$\phi 63$			5 to 13			
$\phi 80$			6 to 14		14 to 20	
$\phi 100$	10 to 18		8 to 16			
$\phi 125$	12 to 18		9 to 17		17 to 24	

Note) ZR2 and ZS2 types are designed for cylinder bores of $\phi 12$ to $\phi 32$, and ZR3 and ZS3 types for $\phi 40$ to $\phi 125$.

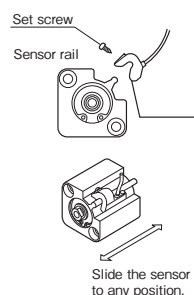
Sensor mountable minimum stroke

Bore	With 1 sensor			With 2 sensors		
	ZR type	KS type	KS type	ZR type	KS type	KS type
$\phi 12$	5	5	10	10	10	20
$\phi 16$	5	5	10	10	10	20
$\phi 20$	5	5	10	10	10	20
$\phi 25$	5	5	10	10	10	20
$\phi 32$	5	5	10	10	10	20
$\phi 40$	5	5	10	10	10	20
$\phi 50$	5	5	10	10	10	20
$\phi 63$	5	5	10	10	10	20
$\phi 80$	5	5	10	10	10	20
$\phi 100$	5	5	10	10	10	20
$\phi 125$	5	5	15	10	10	25

Setting method of sensor detecting position

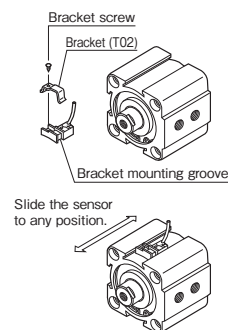
ZR2 type and ZS2 type

Tightening torque: Approx. 0.2 N · m



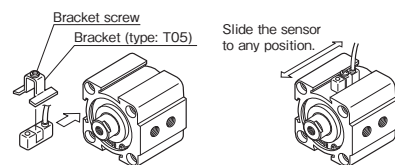
ZR3 type and ZS3 type

Tightening torque: Approx. 0.4 N · m



KS type

Tightening torque: Approx. 0.4 N · m



1. To detect the cylinder stroke end, set the sensor cable toward the center of the cylinder.
2. Slide the sensor to any detecting position. To detect the cylinder stroke end, fit the sensor at the position indicated by UX.

Unit: mm

Rod end male thread

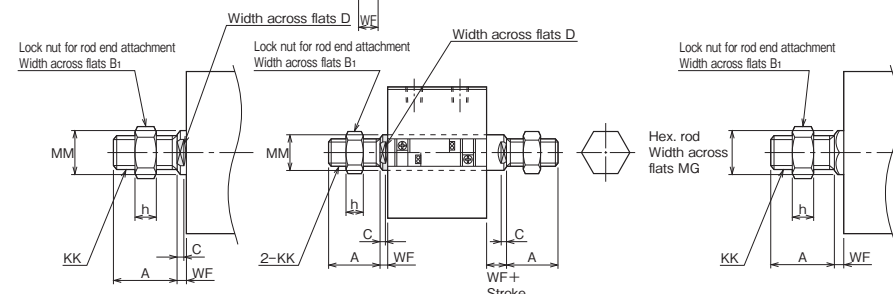
• In the case of FA style

Standard(Bore $\phi 12$ to $\phi 125$)

• Double acting single rod

Non-rotating(Bore $\phi 20$ to $\phi 100$)

• Double acting double rod



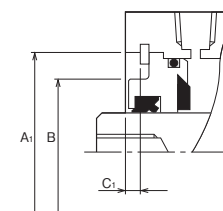
• When FA style is used, the dimension WF is longer. Check the dimension when placing an order for the mounting accessory.

Dimensional table

Symbol Bore	Lock nut part number	A	B ₁	C	D	h	KK	MG	MM	WF	
										SD · ST style	FA style
$\phi 12$	LNA-05Z-A	10 (8.5)	8	3.5	5	3.2	M5×0.8	—	$\phi 6$	3.5	—
$\phi 16$	LNA-08Z-A	10 (8.5)	8	3.5	5	3.2	M5×0.8	—	$\phi 6$	3.5	—
$\phi 20$	LNA-12Z-A	16 (13.5)	13	3.5	8	5	M8×1.25	9	$\phi 10$	5	—
$\phi 25$	LNA-16Z-A	16 (13.5)	13	3.5	8	5	M8×1.25	9	$\phi 10$	5	—
$\phi 32$	LNA-20Z-A	24 (21.5)	19	3.5	14	7	M12×1.25	14	$\phi 16$	5	—
$\phi 40$	LNA-27Z-A	24 (21.5)	19	3.5	14	7	M12×1.25	14	$\phi 16$	5	15
$\phi 50$	LNA-36Z-A	32 (29)	22	3.5	18	10	M16×1.5	19	$\phi 20$	5	15
$\phi 63$	LNA-45Z-A	32 (29)	22	3.5	18	10	M16×1.5	19	$\phi 20$	5	15
$\phi 80$	LNA-63Z-A	40 (37)	27	5	22	12	M20×1.5	23	$\phi 25$	6.5	21.5
$\phi 100$	LNA-80Z-A	40 (37)	27	5	22	12	M20×1.5	23	$\phi 25$	6.5	21.5
$\phi 125$	LNA-100Z-A	54 (50)	36	5	29	16	M27×2	—	$\phi 32$	6.5	21.5

* The parenthesized values of dimension A are the lengths of threaded portions.

Cross section of body and bush

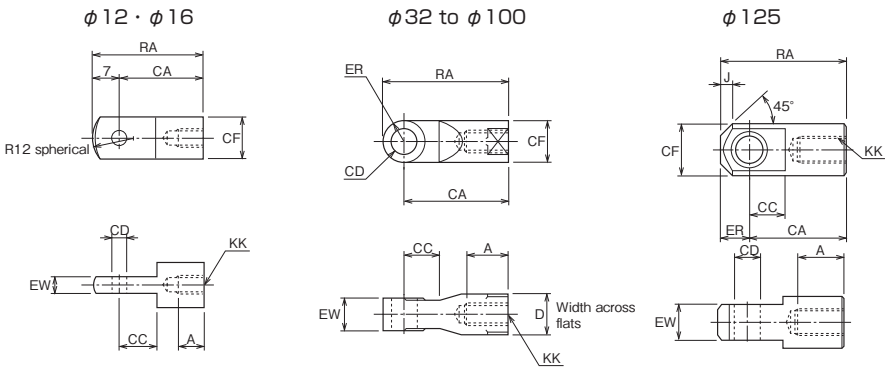


Dimensional table

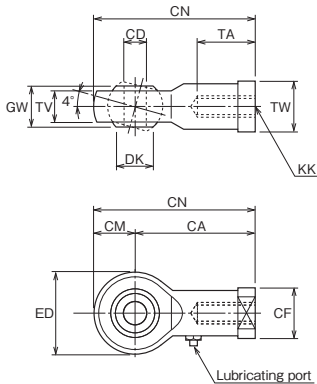
Symbol Bore	A ₁	B		C ₁
		Standard	Non-rotating	
$\phi 12$	$\phi 13H8$	—	—	1.5 ⁰ _{-0.1}
$\phi 16$	$\phi 17H8$	—	—	1.5 ⁰ _{-0.1}
$\phi 20$	$\phi 22H8$	$\phi 13$	—	1.9 ⁰ _{-0.1}
$\phi 25$	$\phi 26H8$	$\phi 16$	—	1.7 ⁰ _{-0.1}
$\phi 32$	$\phi 34H8$	$\phi 22.5$	—	2 ⁰ _{-0.1}
$\phi 40$	$\phi 42H8$	$\phi 29.5$	$\phi 30$	3.5 ⁰ _{-0.1}
$\phi 50$	$\phi 52H8$	$\phi 36$	$\phi 37.5$	4 ⁰ _{-0.1}
$\phi 63$	$\phi 65H8$	$\phi 36$	$\phi 40.5$	5 ⁰ _{-0.1}
$\phi 80$	$\phi 82H8$	$\phi 50$	$\phi 50$	4.5 ⁰ _{-0.1}
$\phi 100$	$\phi 102H8$	$\phi 55$	$\phi 55$	5.8 ⁰ _{-0.1}
$\phi 125$	$\phi 130H8$	$\phi 60$	—	7 ⁰ _{-0.1}

CAD/DATA
10S-1/TAS1  is available. 

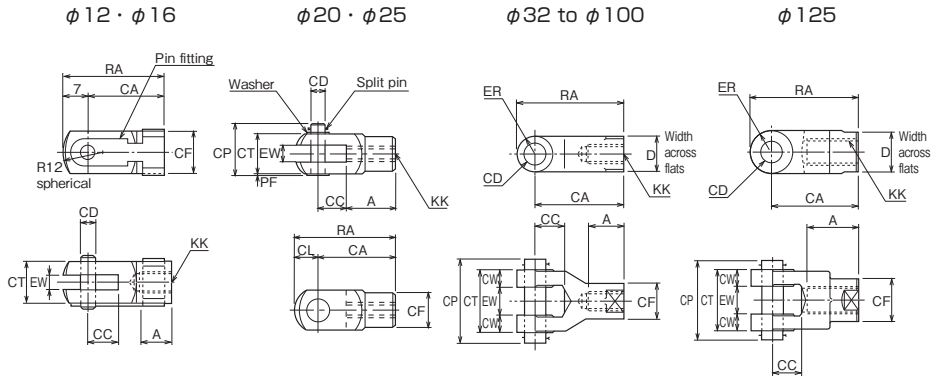
Rod end attachment
Rod eye (T-end)



Rod eye with spherical bearing (S-end) φ20 to φ100



Rod clevis (Y-end) with pin



Dimensional table

Symbol Bore	Part number	A	CA	CC	CD	CF	D	ER	EW	J	KK	RA
φ 12	RTA-05-A	8	25	14	φ5.1		—	—	6.4	—	M5×0.8	32
φ 16	RTA-05-A	8	25	14	φ5.1		—	—	6.4	—	M5×0.8	32
φ 32	RTA-12-A	25	60	20	φ14H9	φ24	24	R12	20 ⁰ _{-0.1}	—	M12×1.25	72
φ 40	RTA-12-A	25	60	20	φ14H9	φ24	24	R12	20 ⁰ _{-0.1}	—	M12×1.25	72
φ 50	RTA-16-A	33	60	20	φ14H9	φ28	27	R14	20 ⁰ _{-0.1}	—	M16×1.5	74
φ 63	RTA-16-A	33	60	20	φ14H9	φ28	27	R14	20 ⁰ _{-0.1}	—	M16×1.5	74
φ 80	RTA-20-A	41	85	30	φ20H9	φ36	36	R19	32 ⁰ _{-0.1}	—	M20×1.5	104
φ 100	RTA-20-A	41	85	30	φ20H9	φ36	36	R19	32 ⁰ _{-0.1}	—	M20×1.5	104
φ 125	RTA-27-A	56	100	32	φ20H9	φ49	—	20	32 ⁰ _{-0.1}	13	M27×2	120

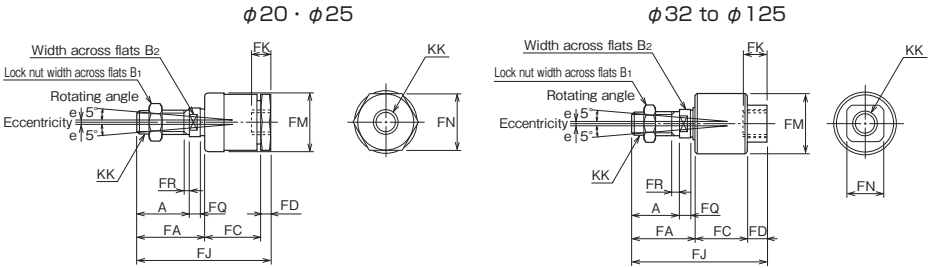
Dimensional table

Symbol Bore	Part number	CA	CD	CF	CM	CN	DK	ED	GW	KK	TA	TV	TW
φ 20	RSA-08-A	36	φ8H9	φ16	11	47	φ10.4	22	12 ⁰ _{-0.1}	M8×1.25	17	9±0.1	14
φ 25	RSA-08-A	36	φ8H9	φ16	11	47	φ10.4	22	12 ⁰ _{-0.1}	M8×1.25	17	9±0.1	14
φ 32	RSA-12-A	50	φ12H9	φ22	15	65	φ15.4	30	16 ⁰ _{-0.1}	M12×1.25	24	12±0.1	19
φ 40	RSA-12-A	50	φ12H9	φ22	15	65	φ15.4	30	16 ⁰ _{-0.1}	M12×1.25	24	12±0.1	19
φ 50	RSA-16-A	64	φ16H9	φ27	19	83	φ19.4	38	21 ⁰ _{-0.1}	M16×1.5	33	15±0.1	22
φ 63	RSA-16-A	64	φ16H9	φ27	19	83	φ19.4	38	21 ⁰ _{-0.1}	M16×1.5	33	15±0.1	22
φ 80	RSA-20-A	77	φ20H9	φ34	23	100	φ24.4	46	25 ⁰ _{-0.1}	M20×1.5	40	18±0.1	30
φ 100	RSA-20-A	77	φ20H9	φ34	23	100	φ24.4	46	25 ⁰ _{-0.1}	M20×1.5	40	18±0.1	30

Dimensional table

Symbol Bore	Part number	A	CA	CC	CD	CF	CL	CP	CT	CW	D	ER	EW	KK	PF	RA
φ 12	RYA-05-A	11	21	10	φ5.1	φ12	—	—		—	—	—	6.5	M5×0.8	—	28
φ 16	RYA-05-A	11	21	10	φ5.1	φ12	—	—		—	—	—	6.5	M5×0.8	—	28
φ 20	RYA-08-A	16	32	16	φ8 ^{H 8} _{T 7}	φ14	10	24.5		—	—	—	8 ^{+0.4} _{+0.1}	M8×1.25	2	42
φ 25	RYA-08-A	16	32	16	φ8 ^{H 8} _{T 7}	φ14	10	24.5		—	—	—	8 ^{+0.4} _{+0.1}	M8×1.25	2	42
φ 32	RYA-12-1-A	25	60	20	φ14 ^{H 9} _{T 8}	φ24	—	58	44	12	24	R12	20 ^{+1.5} _{+0.5}	M12×1.25	—	72
φ 40	RYA-12-1-A	25	60	20	φ14 ^{H 9} _{T 8}	φ24	—	58	44	12	24	R12	20 ^{+1.5} _{+0.5}	M12×1.25	—	71
φ 50	RYA-16-A	33	60	18	φ14 ^{H 9} _{T 8}	φ28	—	58	44	12	27	R14	20 ^{+1.5} _{+0.5}	M16×1.5	—	74
φ 63	RYA-16-A	33	60	18	φ14 ^{H 9} _{T 8}	φ28	—	58	44	12	27	R14	20 ^{+1.5} _{+0.5}	M16×1.5	—	74
φ 80	RYA-20-A	41	85	28	φ20 ^{H 9} _{T 8}	φ36	—	78	64	16	36	R19	32 ^{+1.5} _{+0.5}	M20×1.5	—	104
φ 100	RYA-20-A	41	85	28	φ20 ^{H 9} _{T 8}	φ36	—	78	64	16	36	R19	32 ^{+1.5} _{+0.5}	M20×1.5	—	104
φ 125	RYA-27-A	56	100	35	φ20 ^{H 9} _{T 8}	φ40	—	78	64	16	40	R20	32 ^{+1.5} _{+0.5}	M27×2	—	120

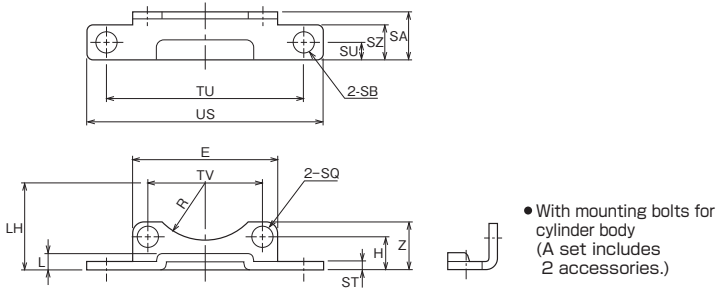
Floating joint (F-end)



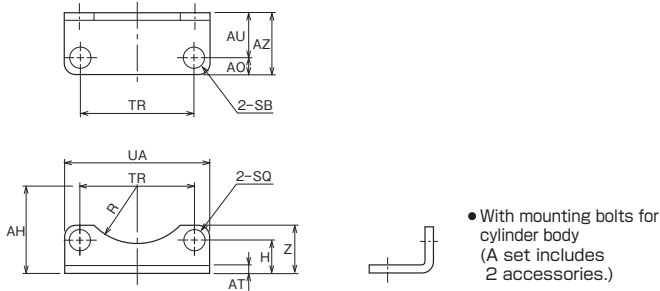
- The insertion of the floating joint into the socket shall not equal or exceed the dimension of screw diameter.
(Return the joint one or two turns after it gets into contact with the socket bottom, and fix it with a lock nut.)
Excessive insertion can cause operation failure.
- DO NOT use together with CA and CB accessories.

Mounting Accessories

LA (Side lugs)



LB (End angles)



Dimensional table

Symbol Bore	Part number	A	B ₁	B ₂	e	FA	FC	FD	FJ	FK	FM	FN	FQ	FR	KK
φ20	RFS-08T	22.5	13	8	0.5	28	22.5	3.5	54	9	φ20	19	4.5	2.5	M8×1.25
φ25		22.5	13	8	0.5	28	22.5	3.5	54	9	φ20	19	4.5	2.5	M8×1.25
φ32	RFS-12T	24	19	13	1	33	25.5	11	69.5	13.5	φ32	□19	7	3.5	M12×1.25
φ40		24	19	13	1	33	25.5	11	69.5	13.5	φ32	□19	7	3.5	M12×1.25
φ50	RFS-16T	32	22	17	1.5	43	33	13	89	16	φ40	□24	8	4	M16×1.5
φ63		32	22	17	1.5	43	33	13	89	16	φ40	□24	8	4	M16×1.5
φ80	RFS-20T080	40	27	22	2	53	42	15	110	22	φ50	□30	9	5	M20×1.5
φ100	RFS-20T100	40	27	24	2.5	56	49	18	123	24	φ64	□36	12	6	M20×1.5
φ125	RFS-27T	54	36	32	2.5	74	62	21	157	30	φ76	□46	14	7	M27×2

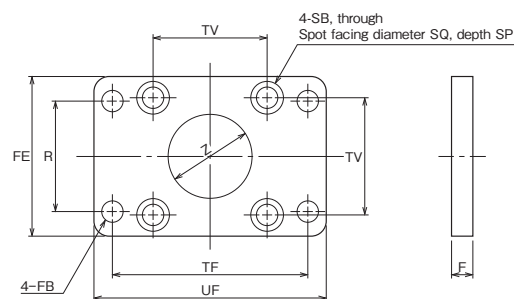
Dimensional table

Symbol Bore	Part number	E	H	L	LH	R	SA	SB	SQ	ST	SU	SZ	TU	TV	US	Z
φ40	MAS1-MA040	53	12.5	6	32.5	R21	19	φ6.6	φ6.6	3.2	6.5	13	73	40	87	19.5
φ50	MAS1-MA050	64	13	6	38	R26	22	φ9	φ9	3.2	8	16	87	50	103	20
φ63	MAS1-MA063	77	14.5	6	44.5	R27	25	φ11	φ11	3.2	9.5	19	109	60	127	23.5
φ80	MAS1-MA080	100	20	8.5	58.5	R33	32	φ14	φ14	4.5	11	22	123	77	145	31
φ100	MAS1-MA100	117	20	8.5	67	—	32	φ14	φ14	4.5	11	22	137	94	159	31
φ125	MAS1-MA125	144	24	10	82	—	39	φ18	φ18	6	14	28	172	116	200	38

Dimensional table

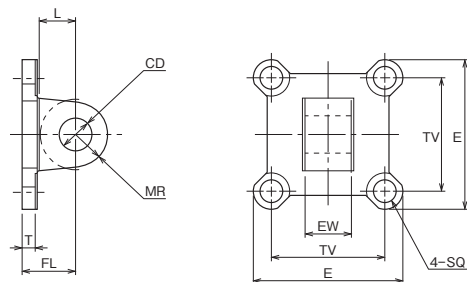
Symbol Bore	Part number	AH	AO	AT	AU	AZ	H	R	SB	SQ	TR	UA	Z
φ40	MAS1-LB040	32.5	7	3.2	15	22	12.5	R21	φ6.6	φ6.6	40	53	19
φ50	MAS1-LB050	38	9	3.2	18	27	13	R26	φ9	φ9	50	64	20
φ63	MAS1-LB063	44.5	11	3.2	20	31	14.5	R27	φ11	φ11	60	77	23.5
φ80	MAS1-LB080	58.5	14	4.5	25	39	20	R33	φ14	φ14	77	100	31
φ100	MAS1-LB100	67	14	4.5	25	39	20	—	φ14	φ14	94	117	31
φ125	MAS1-LB125	82	18	6	31	49	24	—	φ18	φ18	116	144	38

FA (Rod rectangular flange) · FB (Cap rectangular flange)



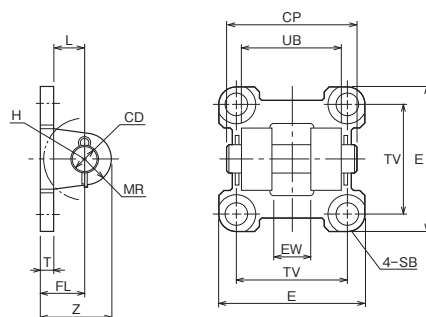
• With mounting bolts for cylinder body

CA (Cap eye)



• With mounting bolts for cylinder body

CB (Cap clevis with pin)



• With mounting bolts for cylinder body

Dimensional table

Symbol Bore	Part number	F	FB	FE	R	SB	SP	SQ	TF	TV	UF	Z
φ 40	MAS1-FA040	10	φ7	56	36	φ6.6	4.5	11	70	40	84	φ30
φ 50	MAS1-FA050	10	φ9	70	47	φ9	5.5	15	86	50	104	φ37
φ 63	MAS1-FA063	10	φ9	84	56	φ11	6.5	19	98	60	116	φ41
φ 80	MAS1-FA080	16	φ12	105	70	φ14	7.5	22	126	77	150	φ51
φ 100	MAS1-FA100	16	φ12	121	84	φ14	7.5	22	143	94	165	φ56
φ 125	MAS1-FA125	16	φ14	150	116	φ18	9	29	174	116	202	φ61

Dimensional table

Symbol Bore	Part number	CD	E	EW	FL	L	MR	SQ	T	TV
φ 40	MAS1-CA040	φ14H9 ^{+0.043} ₀	53	20 ⁰ _{-0.084}	24	16	R14	φ6.6	6.5	40
φ 50	MAS1-CA050	φ14H9 ^{+0.043} ₀	64	20 ⁰ _{-0.084}	24	16	R14	φ9	6.5	50
φ 63	MAS1-CA063	φ14H9 ^{+0.043} ₀	77	20 ⁰ _{-0.084}	24	16	R14	φ11	6.5	60
φ 80	MAS1-CA080	φ20H9 ^{+0.062} ₀	100	32 ⁰ _{-0.100}	32	21	R19	φ14	9.5	77
φ 100	MAS1-CA100	φ20H9 ^{+0.054} ₀	117	32 ⁰ _{-0.100}	32	21	R19	φ14	9.5	94
φ 125	MAS1-CA125	φ20H9 ^{+0.043} ₀	144	32 ⁰ _{-0.100}	35	21	R19	φ18	12.5	116

Dimensional table

Symbol Bore	Part number	CD	CP	E	EW	FL	H	L	MR	SB	T	TV	UB	Z
φ 40	MAS1-CB040	φ14 ^{H 9} _{T 8}	52	53	20 ^{+0.7} _{+0.5}	24	R18	15	R14	φ6.6	7.5	40	38	38
φ 50	MAS1-CB050	φ14 ^{H 9} _{T 8}	63	64	20 ^{+0.7} _{+0.5}	24	R21	15	R14	φ9	7.5	50	49	38
φ 63	MAS1-CB063	φ14 ^{H 9} _{T 8}	66	77	20 ^{+0.7} _{+0.5}	24	R22	15	R14	φ11	7.5	60	52	38
φ 80	MAS1-CB080	φ20 ^{H 9} _{T 8}	78	100	32 ^{+0.7} _{+0.5}	32	R30	20	R19	φ14	10.5	77	64	51
φ 100	MAS1-CB100	φ20 ^{H 9} _{T 8}	78	117	32 ^{+0.7} _{+0.5}	32	R30	20	R19	φ14	10.5	94	64	51
φ 125	MAS1-CB125	φ20 ^{H 9} _{T 8}	78	144	32 ^{+0.7} _{+0.5}	35	R32	20	R19	φ18	13.5	116	64	54

Special rod end shape type (standard (round rod)/non-rotating (hex. rod))

A10

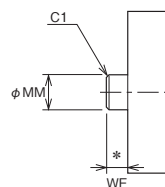


Table of basic dimensions

Symbol	Bore	φ12	φ16	φ20	φ25	φ32	φ40	φ50	φ63	φ80	φ100	φ125
MM		6	6	10	10	16	16	20	20	25	25	32
WF		8	8	8	10	10	10	10	10	14	14	14

A14

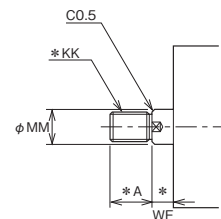


Table of basic dimensions

Symbol	Bore	φ12	φ16	φ20	φ25	φ32	φ40	φ50	φ63	φ80	φ100	φ125
A		10	10	16	16	24	24	32	32	40	40	54
KK		M5×0.8	M8×1.25	M12×1.25	M16×1.5	M20×1.5	M27×2					
MM		6	6	10	10	16	16	20	20	25	25	32
WF		8	8	8	10	10	10	10	10	14	14	14

A15

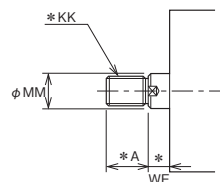


Table of basic dimensions

Symbol	Bore	φ12	φ16	φ20	φ25	φ32	φ40	φ50	φ63	φ80	φ100	φ125
A		10	10	16	16	24	24	32	32	40	40	54
KK		M5×0.8	M8×1.25	M12×1.25	M16×1.5	M20×1.5	M27×2					
MM		6	6	10	10	16	16	20	20	25	25	32
WF		8	8	8	10	10	10	10	10	14	14	14

A16

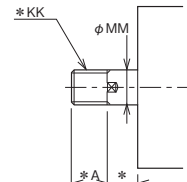


Table of basic dimensions

Symbol	Bore	φ12	φ16	φ20	φ25	φ32	φ40	φ50	φ63
A		10	10	16	16	24	24	32	32
KK		M6×1	M10×1.25	M16×1.5	M20×1.5				
MM		6	6	10	10	16	16	20	20
WF		8	8	8	10	10	10	10	10

A20

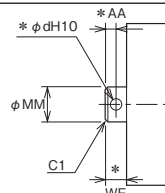


Table of basic dimensions

Symbol	Bore	φ12	φ16	φ20	φ25	φ32	φ40	φ50	φ63	φ80	φ100	φ125
AA		3.5	3.5	6	6	8	8	12	12	14	14	18
d		3	3	5	5	8	8	10	10	12	12	14
MM		6	6	10	10	16	16	20	20	25	25	32
WF		9	9	15	15	24	24	30	30	36	36	45

A28

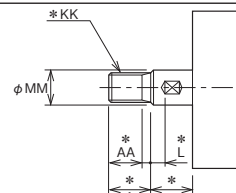


Table of basic dimensions

Symbol	Bore	φ12	φ16	φ20	φ25	φ32	φ40	φ50	φ63	φ80	φ100	φ125
A		10	10	16	16	24	24	32	32	40	40	54
AA		8.5	8.5	13.5	13.5	21.5	21.5	29	29	37	37	50
KK		M5×0.8	M8×1.25	M12×1.25	M16×1.5	M20×1.5	M27×2					
L		6	6	6	6	8	8	10	10	10	10	10
MM		6	6	10	10	16	16	20	20	25	25	32
WF		14	14	14	16	18	18	20	20	24	24	24

A30

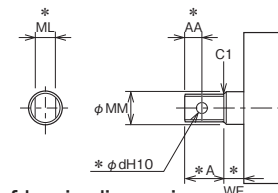


Table of basic dimensions

Symbol	Bore	φ12	φ16	φ20	φ25	φ32	φ40	φ50	φ63	φ80	φ100	φ125
A		9	9	15	15	24	24	30	30	36	36	45
AA		3.5	3.5	6	6	8	8	12	12	14	14	18
d		3	3	5	5	8	8	10	10	12	12	14
ML		3.5	3.5	6	6	10	10	12	12	14	14	20
MM		6	6	10	10	16	16	20	20	25	25	32
WF		5	5	5	5	5	5	5	5	5	5	5

A37

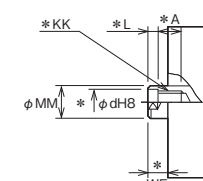


Table of basic dimensions

Symbol	Bore	φ20	φ25	φ32	φ40	φ50	φ63	φ80	φ100	φ125
A		7	7	12	12	15	15	20	20	25
d		6	6	10	10	12	12	18	18	24
KK		M5×0.8	M8×1.25	M10×1.5	M16×2	M20×2.5				
L		5	5	7	7	10	10	10	10	10
MM		10	10	16	16	20	20	25	25	32
WF		8	10	10	10	10	10	14	14	14

G10/non-rotating

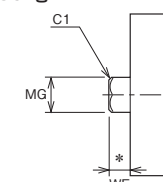


Table of basic dimensions

Symbol	Bore	φ20	φ25	φ32	φ40	φ50	φ63	φ80	φ100
MG		9	9	14	14	19	19	23	23
WF		8	10	10	10	10	10	14	14

G15/non-rotating

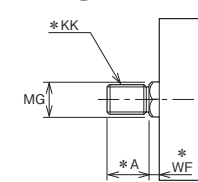


Table of basic dimensions

Symbol	Bore	φ20	φ25	φ32	φ40	φ50	φ63	φ80	φ100
A		16	16	24	24	32	32	40	40
KK		M8×1.25	M12×1.25	M16×1.5	M20×1.5				
MG		9	9	14	14	19	19	23	23
WF		5	5	5	5	5	5	6.5	6.5

G37/non-rotating

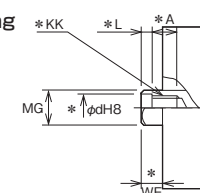


Table of basic dimensions

Symbol	Bore	φ20	φ25	φ32	φ40	φ50	φ63	φ80	φ100
A		7	7	12	12	15	15	20	20
d		6	6	10	10	12	12	18	18
KK		M5×0.8	M8×1.25	M10×1.5	M16×2				
L		5	5	7	7	10	10	10	10
MG		9	9	14	14	19	19	23	23
WF		8	10	10	10	10	10	14	14

- For the detailed specifications, dimensions and leadtime of cylinders with special rod ends, consult us.
- If you require to change the *-marked dimensions, separately consult us.

Compact design pneumatic cylinders applying the dimensions specified by JIS B 8368-4 (only basic style)

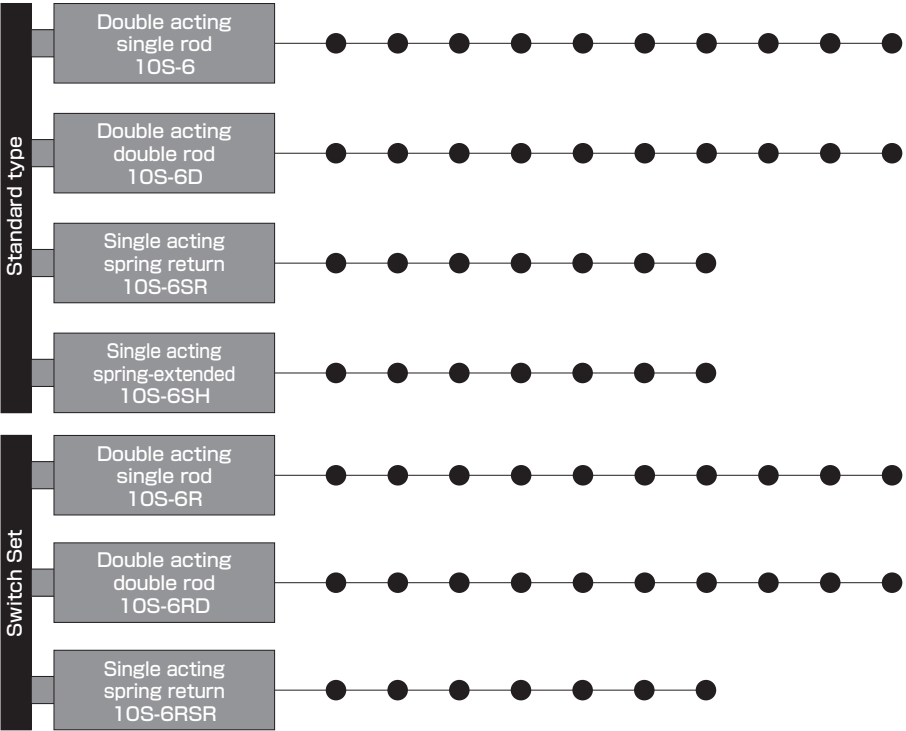
- The use of a magnetic proximity sensor embedded in the cylinder body reduces the cylinder body, saving space.
- Separable type convenient for maintenance
- Two types of rod end, female thread and male thread, are available.
- A variety of accessories including mounting accessories and rod end attachments makes the cylinder applicable to a wide range of purposes.
- Custom made cylinders with special shape of rod end, of dual stroke type, and with adjustable stroke can be supplied.



Product Lineup

Series Variations	φ12	φ16	φ20	φ25	φ32	φ40	φ50	φ63	φ80	φ100
-------------------	-----	-----	-----	-----	-----	-----	-----	-----	-----	------

Unit: mm



Cylinder Specifications/standard type

Series variations	Double acting single rod	Double acting double rod	Single acting (spring return)	Single acting (spring-extended)
Series	10S-6	10S-6D	10S-6SR	10S-6SH
Cylinder bore (mm)	φ 12 ・ φ 16 ・ φ 20 ・ φ 25 ・ φ 32 ・ φ 40 ・ φ 50 ・ φ 63 ・ φ 80 ・ φ 100		φ 12 ・ φ 16 ・ φ 20 ・ φ 25 ・ φ 32 ・ φ 40 ・ φ 50	
Working fluid	Air			
Lubrication	Unnecessary			
Working pressure range	φ 12 to φ 32 : 0.1 to 1 MPa φ 40 to φ 100: 0.05 to 1 MPa		φ 12 ・ φ 16 : 0.2 to 1 MPa φ 20 ・ φ 25 : 0.18 to 1 MPa φ 32 to φ 50: 0.12 to 1 MPa	
Working speed range	φ 12 to φ 40 : 30 to 500mm/s φ 50 to φ 100: 30 to 300mm/s		φ 12 to φ 40: 100 to 500mm/s φ 50 : 100 to 300mm/s	
Proof test pressure	1.5 MPa			
Working temperature range	－10 to +70℃ (No freezing)			
Structure of cushioning	With cushion pads on both ends (φ 12 and φ 16: None)		Note 1) With cushion pads (φ 12 and φ 16: None)	
Tolerance for thread	JIS 6H/6g			
Tolerance of stroke	+1.0 0 mm			
Note 2) Mounting style	SD (basic style), ST (tapped on both sides), LA, LB, FA, (FB), (CA), (CB)		SD (basic style), ST (tapped on both sides), LA, LB, FA, FB, CA, CB	
Rod end threads	Female thread, male thread			
Accessory	Bracket for CB (bore φ32 to φ100)	—	Bracket for CB (bore φ 32 to φ 50)	

- Note 1) ● The spring return type cylinders do not have a cushion pad on the rod side. The spring-extended type cylinders with bores of 20, 25 and 32 mm do not have a cushion pad on the cap side.
- Note 2) ● SD style (basic style) cylinders are not tapped, so mounting accessories cannot be mounted to them. When requiring only the cylinder body with mounting accessories, place an order for ST style (tapped on both sides).
- The mounting accessories are applicable to double acting and double rod cylinders with bores from 32 to 100 mm and to single acting cylinders with bores from 32 to 50 mm.
 - Double rod type cylinders with the parenthesized mounting styles are not available.
 - To cylinders with bores of 12 and 16 mm, only SD style is applicable.

Cylinder Specifications: Switch Set

Series variations	Double acting single rod	Double acting double rod	Single acting (spring return)
Series	10S-6R	10S-6RD	10S-6RSR
Cylinder bore (mm)	φ 12 · φ 16 · φ 20 · φ 25 · φ 32 · φ 40 · φ 50 · φ 63 · φ 80 · φ 100		φ 12 · φ 16 · φ 20 · φ 25 · φ 32 · φ 40 · φ 50
Working fluid	Air		
Lubrication	Unnecessary		
Working pressure range	φ 12 to φ 32 : 0.1 to 1 MPa φ 40 to φ 100: 0.05 to 1 MPa		φ 12 · φ 16 : 0.2 to 1 MPa φ 20 · φ 25 : 0.18 to 1 MPa φ 32 to φ 50: 0.12 to 1 MPa
Working speed range	φ 12 to φ 40 : 30 to 500mm/s φ 50 to φ 100: 30 to 300mm/s		φ 12 to φ 40: 100 to 500mm/s φ 50 : 100 to 300mm/s
Proof test pressure	1.5 MPa		
Working temperature range	0 to +60°C (No freezing)		
Structure of cushioning	With cushion pads on both ends (φ 12 and φ 16: None)		Note 1) With cushion pads (φ 12 and φ 16: None)
Tolerance for thread	JIS 6H/6g		
Tolerance of stroke	+1.0 0 mm		
Note 2) Mounting style	SD (basic style), ST (tapped on both sides), LA, LB, FA, (FB), (CA), (CB)		SD (basic style), ST (tapped on both sides), LA, LB, FA, FB, CA, CB
Rod end threads	Female thread, male thread		
Accessory	Bracket for CB (bore φ32 to φ100)	—	Bracket for CB (bore φ 32 to φ 50)

- Note 1) ● The spring return type cylinders do not have a cushion pad on the rod side. The spring-extended type cylinders with bores of 20, 25 and 32 mm do not have a cushion pad on the cap side.
- Note 2) ● SD style (basic style) cylinders are not tapped, so mounting accessories cannot be mounted to them. When requiring only the cylinder body with mounting accessories, place an order for ST style (tapped on both sides).
- The mounting accessories are applicable to double acting and double rod cylinders with bores from 32 to 100 mm and to single acting cylinders with bores from 32 to 50 mm.
 - Double rod type cylinders with the parenthesized mounting styles are not available.
 - To cylinders with bores of 12 and 16 mm, only SD style is applicable.

Table of Spring Force of Single Acting Cylinders: Spring return Unit: N

Bore (mm)	Load	Cylinder stroke (mm)									
		5	10	15	20	25	30	35	40	45	50
φ 12	Initial load	8.1	6.5	10.2	6.4	—	—	—	—	—	—
	End load	9.8		11.4		—	—	—	—	—	—
φ 16	Initial load	11.1	9.0	10.3	9.3	—	—	—	—	—	—
	End load	13.1		13.2		—	—	—	—	—	—
φ 20	Initial load	18.3	15.6	17.9	16.8	15.7	14.5	—	—	—	—
	End load	21.2		21.4				—	—	—	—
φ 25	Initial load	24.0	19.9	24.9	22.9	20.0	18.9	—	—	—	—
	End load	28.4		30.7				—	—	—	—
φ 32	Initial load	33.7	28.5	34.7	33.0	31.3	29.3	—	—	—	—
	End load	39.4		39.2				—	—	—	—
φ 40	Initial load	44.1	34.7	44.7	45.6	43.5	41.4	39.3	37.2	35.1	33.0
	End load	47.5		54.5							
φ 50	Initial load	—	48.0	41.9	35.8	50.5	48.5	46.5	44.5	42.5	40.4
	End load	—	60.0			60.6					

Table of Spring Force of Single Acting Cylinders: Spring-extended Unit: N

Bore (mm)	Load	Cylinder stroke (mm)		
		5	10	20
φ 12	Initial load	2.9		2.9
	End load	9.8		9.8
φ 16	Initial load	6.2		5.2
	End load	13.0		13.2
φ 20	Initial load	5.9		6.9
	End load	26.5		27.5
φ 25	Initial load	5.9		6.9
	End load	26.5		27.5
φ 32	Initial load	22.6		22.6
	End load	42.2		41.2
φ 40	Initial load	22.6		22.6
	End load	42.2		41.2
φ 50	Initial load	—		23.5
	End load	—		84.2

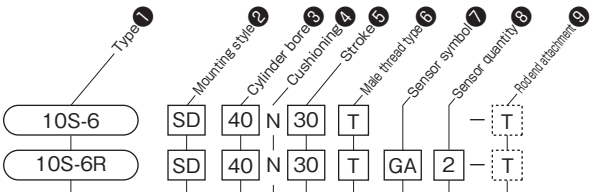
Standard Stroke Range

Series variations	Type	Bore	Cylinder stroke (mm)																	Male thread type
			5	10	15	20	25	30	35	40	45	50	60	70	75	80	90	100		
Double acting single rod	Standard type 10S-6 Switch Set 10S-6R	φ 12	○	○	○	○	○	○	—	—	—	—	—	—	—	—	—	—	○	
		φ 16	○	○	○	○	○	○	—	—	—	—	—	—	—	—	—	—	○	
		φ 20	○	○	○	○	○	○	○	○	○	○	○	○	—	—	—	—	○	
		φ 25	○	○	○	○	○	○	○	○	○	○	○	○	—	—	—	—	○	
		φ 32	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
		φ 40	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
		φ 50	—	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
		φ 63	—	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
		φ 80	—	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
		φ 100	—	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
Double acting double rod	Standard type 10S-6D Switch Set 10S-6RD	φ 12	○	○	○	○	○	—	—	—	—	—	—	—	—	—	—	—	○	
		φ 16	○	○	○	○	○	—	—	—	—	—	—	—	—	—	—	—	○	
		φ 20	○	○	○	○	○	○	—	—	—	—	—	—	—	—	—	—	○	
		φ 25	○	○	○	○	○	○	—	—	—	—	—	—	—	—	—	—	○	
		φ 32	○	○	○	○	○	○	○	○	○	○	—	—	—	—	—	—	○	
		φ 40	○	○	○	○	○	○	○	○	○	○	○	—	—	—	—	—	○	
		φ 50	—	○	○	○	○	○	○	○	○	○	○	—	—	—	—	—	○	
		φ 63	—	○	○	○	○	○	○	○	○	○	○	—	—	—	—	—	○	
		φ 80	—	○	○	○	○	○	○	○	○	○	○	○	—	—	—	—	○	
		φ 100	—	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
Single acting spring return	Standard type 10S-6SR Switch Set 10S-6RSR	φ 12	○	○	○	○	—	—	—	—	—	—	—	—	—	—	—	—	○	
		φ 16	○	○	○	○	—	—	—	—	—	—	—	—	—	—	—	—	○	
		φ 20	○	○	○	○	○	○	—	—	—	—	—	—	—	—	—	—	○	
		φ 25	○	○	○	○	○	○	—	—	—	—	—	—	—	—	—	—	○	
		φ 32	○	○	○	○	○	○	—	—	—	—	—	—	—	—	—	—	○	
		φ 40	○	○	○	○	○	○	○	○	○	○	○	—	—	—	—	—	○	
		φ 50	—	○	○	○	○	○	○	○	○	○	○	—	—	—	—	—	○	
Single acting spring-extended	Standard type 10S-6SH	φ 12	○	○	—	—	—	—	—	—	—	—	—	—	—	—	—	—	○	
		φ 16	○	○	—	—	—	—	—	—	—	—	—	—	—	—	—	—	○	
		φ 20	○	○	—	—	—	—	—	—	—	—	—	—	—	—	—	—	○	
		φ 25	○	○	—	—	—	—	—	—	—	—	—	—	—	—	—	—	○	
		φ 32	○	○	—	—	—	—	—	—	—	—	—	—	—	—	—	—	○	
		φ 40	○	○	—	—	—	—	—	—	—	—	—	—	—	—	—	—	○	
		φ 50	—	○	—	○	—	—	—	—	—	—	—	—	—	—	○			

- Notes) 1. Single acting cylinders are available only with the standard strokes.
2. For fractional strokes in the standard stroke range of any double acting cylinder, consult us.
* For the leadtime, consult us.
3. For strokes more than the standard, consult us.
4. Do not use the cylinder in an unevenly loaded state. Particularly, when rotating mounting accessories are used, consult us without fail.

How to order

- Standard type
- Switch Set



Standard type

10S-6	Double acting single rod
10S-6D	Double acting double rod
10S-6SR	Single acting spring return
10S-6SH	Single acting spring-extended

Switch Set

10S-6R	Double acting single rod
10S-6RD	Double acting double rod
10S-6RSR	Single acting spring return

Without mounting accessory	SD (basic style)
	ST (Basic style/tapped on both sides)
	LA (Side lugs)
For mounting accessory mounting	LB (End angle)
	FA (Rod flange)
	FB (Cap flange)
	CA (Cap eye)
	CB (Cap clevis) with pin

Notes) For the mounting styles ST, LA, LB, FA, FB, CA and CB, the cylinder bore is 32 to 100 mm.

- SD style (basic style) cylinders are not tapped, so mounting accessories cannot be mounted to them. When requiring only the cylinder body with mounting accessories, place an order for ST style (tapped on both sides).

When purchasing ST style cylinder body (tapped on both sides) of mounting style FA, change dimension WF to the following value.

Female thread	φ 32	15
	φ 40	17
	φ 50 · φ 63	18
	φ 80	26
Male thread	φ 100	28
	φ 32	13
	φ 40 to φ 63	15
	φ 80 · φ 100	24

- Notes)
- No sensor can be mounted to the standard type.
 - Standard type 32 mm bore, 5 mm stroke cylinders and 80 mm bore, 10 mm stroke cylinders of LA style are not available.
 - If mounting bolts are necessary, place an order for the bolts specified in the mounting bolt list.

T	Rod eye (T-end)
S	Rod eye with spherical bearing (S-end)
Y	Rod clevis (Y-end)
F	Floating joint (F-end)

Notes)

- The rod end attachments are designed for male thread types. Do not use the floating joint together with CA or CB.
- 12- and 16-mm bore cylinders with S-end and those with F-end are not available.

Sensor quantity (1 or 2)

Sensor symbol

Note) Select applicable sensors out of the Sensor List.

- Notes on ordering sensors
- When no sensor is required, specify 010 for the sensor symbol 7 and the sensor quantity 8.
 - In the case of Switch Set, sensors are not mounted on cylinders at delivery.

Female thread type (No entry for standard type)
Male thread type

Cylinder stroke (mm)

10S-6, 10S-6D	φ 12, φ 16, φ 20, φ 25, φ 32, φ 40, φ 50, φ 63, φ 80, φ 100
10S-6SR, 10S-6SH	φ 12, φ 16, φ 20, φ 25, φ 32, φ 40, φ 50
10S-6RSR	

Sensor List

Type	Sensor symbol	Load voltage range	Load current range	Protective circuit	Indicating lamp	Wiring method	Cord length	Classification		
Reed sensor	 PD12L1	24 V DC 110 V AC	DC: 2.5 to 40mA AC: 2.5 to 20mA	None	None	0.2 mm ² , 2-core, outer dia. φ 2.6 mm, rear wiring	1 m	General purpose		
	 PD12L3		0.2 mm ² , 2-core, outer dia. φ 2.6 mm, rear wiring			3 m				
	 PD11L1		DC: 5 to 40mA AC: 5 to 20mA		LED (Lights when sensing)	0.2 mm ² , 2-core, outer dia. φ 2.6 mm, rear wiring	1 m			
	 PD11L3		DC: 2.5 to 40mA AC: 2.5 to 20mA			0.2 mm ² , 2-core, outer dia. φ 2.6 mm, rear wiring	3 m			
	 PD32L1		DC: 2.5 to 40mA AC: 2.5 to 20mA		None	0.2 mm ² , 2-core, outer dia. φ 2.6 mm, upper wiring	1 m			
	 PD32L3		0.2 mm ² , 2-core, outer dia. φ 2.6 mm, upper wiring			3 m				
	 PD31L1		DC: 5 to 40mA AC: 5 to 20mA		LED (Lights when sensing)	0.2 mm ² , 2-core, outer dia. φ 2.6 mm, upper wiring	1 m			
	 PD31L3		0.2 mm ² , 2-core, outer dia. φ 2.6 mm, upper wiring			3 m				
Solid state sensor	 PD14L1	DC10 to 28V	5 to 20mA	Provided	LED (Lights when sensing)	0.2 mm ² , 2-core, outer dia. φ 2.6 mm, rear wiring	1 m	General purpose		
	 PD14L3	28 V DC or less	0.1 to 40mA	Provided	LED (Lights when sensing)	0.15 mm ² , 3-core, outer dia. φ 2.6 mm, rear wiring	3 m			
	 PD13L1						1 m			
	 PD13L3	DC10 to 28V	5 to 20mA	Provided	LED (Lights when sensing)	0.2 mm ² , 2-core, outer dia. φ 2.6 mm, upper wiring	3 m			
	 PE34L1						1 m			
	 PE34L3						3 m			
	 PE33L1						28 V DC or less		0.1 to 40mA	Provided
	 PE33L3	3 m								
		 ZD136C-T	DC: 10 to 28V	5 to 50mA	Provided	LED (2-LED type in red/green)	0.5 mm ² , 2-core, outer dia. φ 6 mm, rear wiring		5 m	Strong magnetic field resistance

Notes)

- For the sensors without a protective circuit, be sure to provide a protective circuit (SK-100) with the load when using any induction load (relay, etc.).
- For handling of sensors, be sure to see the sensor specifications at the end of this catalog.
- We recommend AND Unit (AU series) for multiple sensors connected in series.
- For details, refer to AND Unit at the end of this catalog.
- ZD136C-T can be mounted to cylinders with bores of 32, 40, 50, 63, 80 and 100 mm. It cannot be mounted to cylinders with bores of 12 to 25 mm.
- For ZE type sensors, see the sensor specifications at the end of this catalog.

- General purpose type PD/PE type sensor
- ZD type sensor For strong magnetic field resistance



Mounting Style

SD (Basic style)	LA (Side lugs) φ 32 to φ 100	FB (Cap flange) φ 32 to φ 100
ST (Basic style/tapped on both sides) φ 32 to φ 100	LB (End angle) φ 32 to φ 100	CA (Cap eye) φ 32 to φ 100
FA (Rod flange) φ 32 to φ 100	CB (Cap clevis) φ 32 to φ 100	

Weight Table

Double acting single rod/double rod/standard type and Switch Set (standard) Unit: g

Bore (mm)	Basic weight (SD/ST)				Additional weight		Male threaded rod end
	Standard type		Switch Set		Additional weight per mm of stroke		
	Double acting single rod	Double acting double rod	Double acting single rod	Double acting double rod	Double acting single rod	Double acting double rod	
ϕ 12	22	30	28.6	36.6	1.3	1.6	2
ϕ 16	30	42	40	52	1.7	2.1	2
ϕ 20	58	76	86	106	2.5	3.1	10
ϕ 25	78	104	116	142	3.2	4.1	20
ϕ 32	100	169	151	220	4.1	5.7	43
ϕ 40	176	229	248	301	4.9	6.4	43
ϕ 50	276	362	385	471	7.4	9.8	74
ϕ 63	437	550	593	706	8.6	11.1	74
ϕ 80	875	1151	1122	1398	13.8	17.6	162
ϕ 100	1154	1973	1845	2333	18.9	24.4	291

●For the double rod type, double the weight of the relevant male threaded rod end.

Single acting spring return/standard type and Switch Set Unit: g

Bore (mm)	Basic weight (SD/ST)																				Male threaded rod end
	Standard type										Switch Set										
	5	10	15	20	25	30	35	40	45	50	5	10	15	20	25	30	35	40	45	50	
φ 12	28.5	35	49	55.5	—	—	—	—	—	—	35.1	41.6	55.6	62.1	—	—	—	—	—	—	2
φ 16	39	47.5	66	74.5	—	—	—	—	—	—	49	57.5	76	84.5	—	—	—	—	—	—	2
φ 20	73	85	112	125	137	149	—	—	—	—	101	113	141	153	165	177	—	—	—	—	10
φ 25	101	117	156	172	186	204	—	—	—	—	139	155	194	218	226	242	—	—	—	—	20
φ 32	135	156	214	234	255	275	—	—	—	—	186	207	265	285	306	362	—	—	—	—	43
φ 40	221	245	343	367	391	415	440	464	488	512	293	317	415	439	463	487	512	536	560	584	43
φ 50	—	369	512	549	585	622	658	695	731	768	—	479	621	658	694	731	768	804	841	877	74

●For the double rod type, double the weight of the relevant male threaded rod end.

Single acting spring-extended/standard type Unit: g

Bore (mm)	Basic weight (SD/ST)			Male threaded rod end
	Standard type			
	5	10	20	
φ 12	29	35.5	—	2
φ 16	39	47.5	—	2
φ 20	77	88	—	10
φ 25	107	121	—	20
φ 32	139	154	—	43
φ 40	225	243	—	43
φ 50	—	386	443	74

Additional Weight Table Unit: g

Bore (mm)	Mounting accessory additional weight					Rod end attachment additional weight			
	LA	LB	FA FB	CA	CB	Rod eye (T-end)	Rod eye with spherical bearing (S-end)	Rod clevis (Y-end) with pin	Floating joint (F-end)
φ 20	—	—	—	—	—	—	55	—	60
φ 25	—	—	—	—	—	—	100	—	60
φ 32	96	84	210	145	165	160	—	270	110
φ 40	110	100	275	205	220	160	—	270	110
φ 50	160	150	415	275	380	210	—	340	380
φ 63	260	240	560	375	505	210	—	340	380
φ 80	520	500	1515	890	1100	620	—	870	
φ 100	590	580	1950	1090	1360	1240	—	1470	

Sensor Additional Weight Unit: g

Bore (mm)	Sensor additional weight	
	PD/PF type	ZD136C-T
φ 12	1: 15 3: 35	254
φ 16		
φ 20		
φ 25		
φ 32		
φ 40		
φ 50		
φ 63		
φ 80		
φ 100		

● "1" and "3" shown in the sensor additional weight column are cord lengths. (1: 1m 3: 3 m)
For additional weights other than the basic weights, see the above table.

Calculation formula	Cylinder weight (g)=basic weight +(cylinder stroke (mm) ×additional weight per mm of stroke) + mounting accessory weight +male threaded rod end +(sensor additional weight ×sensor quantity)
Calculation example	Double acting type/single rod, cylinder bore 40 mm, stroke 50 mm, LB, male thread type, 2 pcs of PD12L1 248+ (4.9×50) +100+43+ (15×2) =666 (g)

CAD/DATA
10S-6/TAS6[Bore]A, B is available.

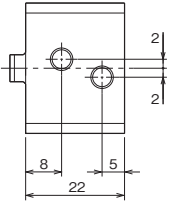


SD

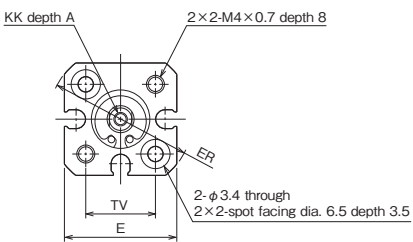
Double acting single rod/standard type and Switch Set/basic style

10S-6 SD [Bore] N [Standard stroke]
10S-6R SD [Bore] N [Standard stroke] - [Sensor symbol] [Sensor quantity]

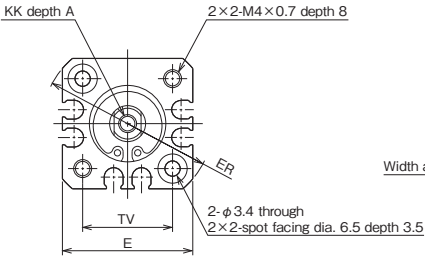
- Bore $\phi 12 \cdot \phi 16$



10S-6 Stroke 5



$\phi 12$



$\phi 16$

Dimensional Table

Symbol Bore	A	D	E	ER	KK	LL		MM	TV
						10S-6	10S-6R		
$\phi 12$	6	5	$\square 25$	$\phi 32$	M3×0.5	17	22	$\phi 6$	$\square 15.5$
$\phi 16$	8	6	$\square 29$	$\phi 38$	M4×0.7	17	22	$\phi 8$	$\square 20$

CAD/DATA
10S-6/TAS6[Bore]A, B is available.

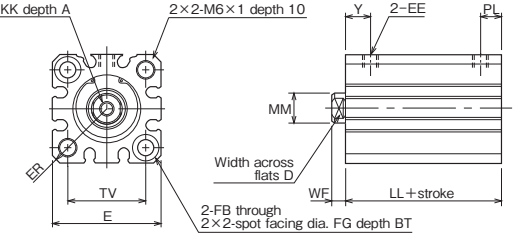


SD

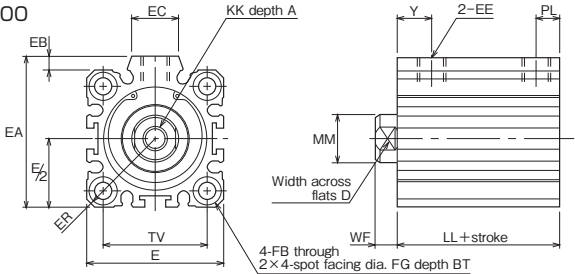
Double acting single rod/standard type and Switch Set/basic style

10S-6 SD [Bore] N [Standard stroke]
10S-6R SD [Bore] N [Standard stroke] - [Sensor symbol] [Sensor quantity]

- Bore $\phi 20 \cdot \phi 25$



- Bore $\phi 32$ to $\phi 100$



Dimensional Table

Symbol Bore	A	BT	D	E	EA	EB	EC	EE	ER	FB	FG	KK
$\phi 20$	7	5.4	8	$\square 36$	—	—	—	M5×0.8	R23.5	$\phi 5.5$	$\phi 9$	M5×0.8
$\phi 25$	12	5.4	10	$\square 40$	—	—	—	M5×0.8	R26	$\phi 5.5$	$\phi 9$	M6×1
$\phi 32$	13	5.4	14	$\square 45$	49.5	4.5	15	Rc1/8	R30	$\phi 5.5$	$\phi 9$	M8×1.25
$\phi 40$	13	5.4	14	$\square 52$	57	5	17.5	Rc1/8	R34.5	$\phi 5.5$	$\phi 9$	M8×1.25
$\phi 50$	15	8	17	$\square 64$	71	7	19	Rc1/4	R42.5	$\phi 6.6$	$\phi 11$	M10×1.5
$\phi 63$	15	10.5	17	$\square 77$	84	7	19	Rc1/4	R51	$\phi 9$	$\phi 14$	M10×1.5
$\phi 80$	21	13.5	22	$\square 98$	104	6	25	Rc3/8	R65	$\phi 11$	$\phi 17.5$	M16×2
$\phi 100$	27	13.5	27	$\square 117$	123.5	6.5	25	Rc3/8	R78	$\phi 11$	$\phi 17.5$	M20×2.5

Symbol Bore Stroke	LL		MM	PL			TV	WF	Y		
	10S-6	10S-6R		10S-6		10S-6R			10S-6		10S-6R
				5	10 or more				5	10 or more	
φ 20	21.5	31.5	φ 10	6	7	7	□25.5	4.5	9	10	10
φ 25	22.5	32.5	φ 12	6	7	7	□28	5	9	10	10
φ 32	23	33	φ 16	6	8	8	□34	7	10	11	11
φ 40	29.5	39.5	φ 16	10	11.5	11.5	□40	7	10	11.5	11.5
φ 50	30.5	40.5	φ 20	—	12	12	□50	8	—	12	12
φ 63	36	46	φ 20	—	14.5	14.5	□60	8	—	14.5	14.5
φ 80	43.5	53.5	φ 25	—	16.5	16.5	□77	10	—	16.5	16.5
φ 100	53	63	φ 30	—	21	21	□94	12	—	21	21

10S-6/TAS6[Bore]C, D CAD/DATA is available.

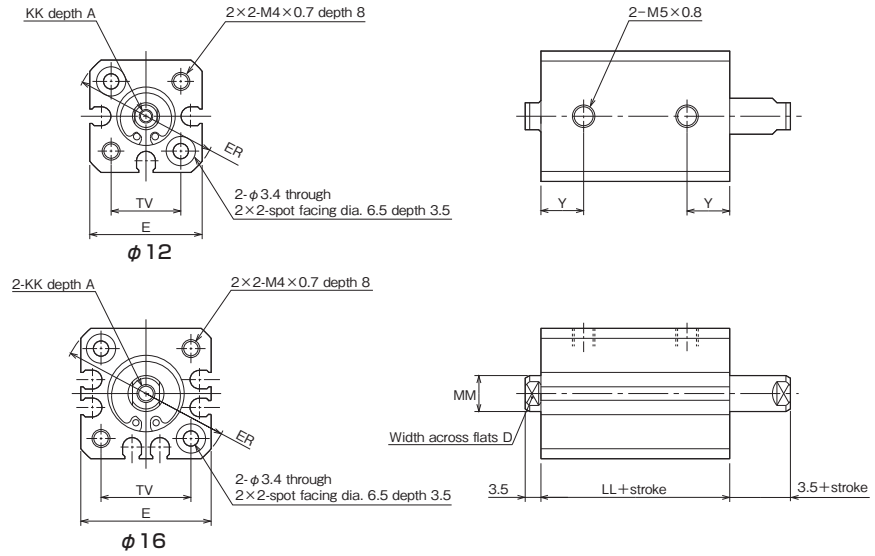


SD

Double acting single rod/standard type and Switch Set/basic style

10S-6D SD[Bore]N[Standard stroke]
10S-6RD SD[Bore]N[Standard stroke] - [Sensor symbol] [Sensor quantity]

• Bore $\phi 12 \cdot \phi 16$



Dimensional Table

Symbol Bore	Stroke	A	D	E	ER	KK	LL		MM	TV	Y		
											10S-6D		10S-6RD
							10S-6D	10S-6RD			5	10 or more	
$\phi 12$		6	5	$\square 25$	$\phi 32$	M3×0.5	23	28	$\phi 6$	$\square 15.5$	8	9.5	9.5
$\phi 16$		8	6	$\square 29$	$\phi 38$	M4×0.7	23	28	$\phi 8$	$\square 20$	8	9.5	9.5

10S-6/TAS6[Bore]C, D CAD/DATA is available.

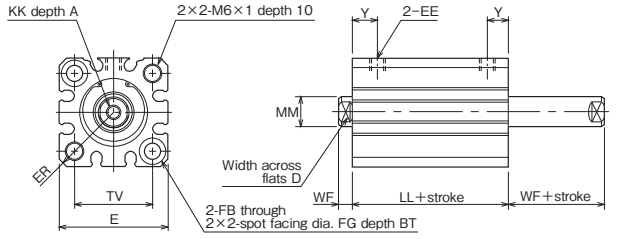


SD

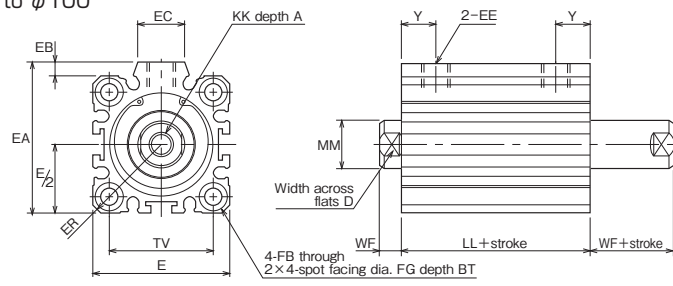
Double acting double rod/standard type and Switch Set/basic style

10S-6D SD[Bore]N[Standard stroke]
10S-6RD SD[Bore]N[Standard stroke] - [Sensor symbol] [Sensor quantity]

• Bore $\phi 20 \cdot \phi 25$



• Bore $\phi 32$ to $\phi 100$



Dimensional Table

Symbol Bore	A	BT	D	E	EA	EB	EC	EE	ER
$\phi 20$	7	5.4	8	$\square 36$	—	—	—	M5×0.8	R23.5
$\phi 25$	12	5.4	10	$\square 40$	—	—	—	M5×0.8	R26
$\phi 32$	13	5.4	14	$\square 45$	49.5	4.5	15	Rc1/8	R30
$\phi 40$	13	5.4	14	$\square 52$	57	5	17.5	Rc1/8	R34.5
$\phi 50$	15	8	17	$\square 64$	71	7	19	Rc1/4	R42.5
$\phi 63$	15	10.5	17	$\square 77$	84	7	19	Rc1/4	R51
$\phi 80$	21	13.5	22	$\square 98$	104	6	25	Rc3/8	R65
$\phi 100$	27	13.5	27	$\square 117$	123.5	6.5	25	Rc3/8	R78

Symbol Bore	FB	FG	KK	LL		MM	TV	WF	Y
				10S-6D	10S-6RD				
$\phi 20$	$\phi 5.5$	$\phi 9$	M5×0.8	26.5	36.5	$\phi 10$	$\square 25.5$	4.5	10
$\phi 25$	$\phi 5.5$	$\phi 9$	M6×1	27.5	37.5	$\phi 12$	$\square 28$	5	10
$\phi 32$	$\phi 5.5$	$\phi 9$	M8×1.25	33	43	$\phi 16$	$\square 34$	7	11
$\phi 40$	$\phi 5.5$	$\phi 9$	M8×1.25	34.5	44.5	$\phi 16$	$\square 40$	7	11.5
$\phi 50$	$\phi 6.6$	$\phi 11$	M10×1.5	35.5	45.5	$\phi 20$	$\square 50$	8	12
$\phi 63$	$\phi 9$	$\phi 14$	M10×1.5	41	51	$\phi 20$	$\square 60$	8	14.5
$\phi 80$	$\phi 11$	$\phi 17.5$	M16×2	53.5	63.5	$\phi 25$	$\square 77$	10	16.5
$\phi 100$	$\phi 11$	$\phi 17.5$	M20×2.5	63	73	$\phi 30$	$\square 94$	12	21

SD

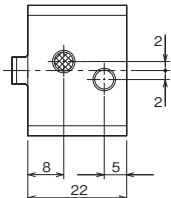
Single acting spring return/standard type and Switch Set/basic style

10S-6SR SD Bore N Standard stroke

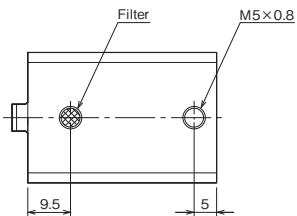
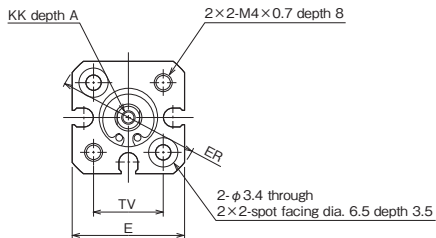
10S-6RSR SD Bore N Standard stroke – Sensor symbol Sensor quantity

● Bore $\phi 12 \cdot \phi 16$

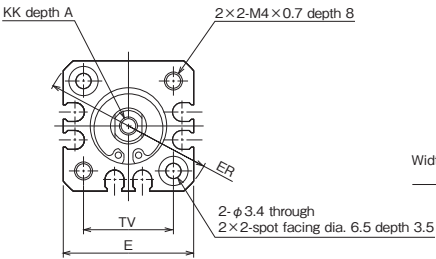
10S-6/TAS6 Bore E, F CAD/DATA is available.



10S-6SR Stroke 5



10S-6SR Stroke 10 to 20
10S-6RSR



$\phi 16$

Dimensional Table

Symbol Bore Stroke	A	D	E	ER	KK	LL				MM	TV
						10S-6SR		10S-6RSR			
						10	15, 20	5, 10	15, 20		
$\phi 12$	6	5	$\square 25$	$\phi 32$	M3×0.5	17	22	22	27	$\phi 6$	$\square 15.5$
$\phi 16$	8	6	$\square 29$	$\phi 38$	M4×0.7	17	22	22	27	$\phi 8$	$\square 20$

SD

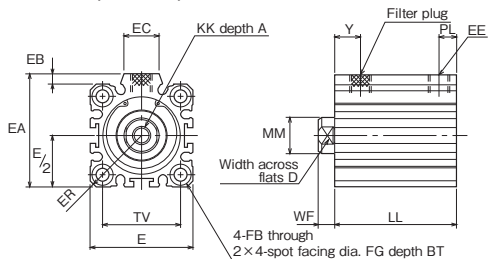
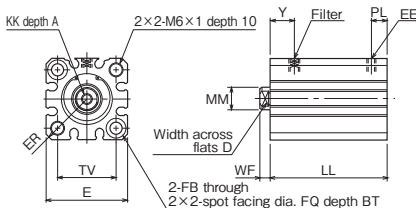
Single acting spring return/standard type and Switch Set/basic style

10S-6SR SD Bore N Standard stroke

10S-6RSR SD Bore N Standard stroke – Sensor symbol Sensor quantity

● Bore $\phi 20 \cdot \phi 25$

● Bore $\phi 32$ to $\phi 50$



Dimensional Table

Symbol	A	BT	D	E	EA	EB	EC	EE	ER	FB	FG	KK
Bore												
$\phi 20$	7	5.4	8	$\square 36$	—	—	—	M5×0.8	R23.5	$\phi 5.5$	$\phi 9$	M5×0.8
$\phi 25$	12	5.4	10	$\square 40$	—	—	—	M5×0.8	R26	$\phi 5.5$	$\phi 9$	M6×1
$\phi 32$	13	5.4	14	$\square 45$	49.5	4.5	15	Rc1/8	R30	$\phi 5.5$	$\phi 9$	M8×1.25
$\phi 40$	13	5.4	14	$\square 52$	57	5	17.5	Rc1/8	R34.5	$\phi 5.5$	$\phi 9$	M8×1.25
$\phi 50$	15	8	17	$\square 64$	71	7	19	Rc1/4	R42.5	$\phi 6.6$	$\phi 11$	M10×1.5

Symbol Bore Stroke	LL																			
	10S-6SR										10S-6RSR									
	5	10	15	20	25	30	35	40	45	50	5	10	15	20	25	30	35	40	45	50
$\phi 20$	26.5	31.5	41.5	46.5	51.5	56.5	—	—	—	—	36.5	41.5	51.5	56.5	61.5	66.5	—	—	—	—
$\phi 25$	27.5	32.5	42.5	47.5	52.5	57.5	—	—	—	—	37.5	42.5	52.5	57.5	62.5	67.5	—	—	—	—
$\phi 32$	28	33	48	53	58	63	—	—	—	—	38	43	58	63	68	73	—	—	—	—
$\phi 40$	34.5	39.5	54.5	59.5	64.5	69.5	74.5	79.5	84.5	89.5	44.5	49.5	64.5	69.5	74.5	79.5	84.5	89.5	94.5	99.5
$\phi 50$	—	40.5	45.5	50.5	65.5	70.5	75.5	80.5	85.5	90.5	—	50.5	55.5	60.5	75.5	80.5	85.5	90.5	95.5	100.5

Symbol Bore Stroke	MM	PL			TV	WF	Y		
		10S-6SR		10S-6RSR			10S-6SR		10S-6RSR
		5	10 or more				5	10 or more	
$\phi 20$	$\phi 10$	6	7	7	$\square 25.5$	4.5	9	10	10
$\phi 25$	$\phi 12$	6	7	7	$\square 28$	5	9	10	10
$\phi 32$	$\phi 16$	6	8	8	$\square 34$	7	10	11	11
$\phi 40$	$\phi 16$	10	11.5	11.5	$\square 40$	7	10	11.5	11.5
$\phi 50$	$\phi 20$	—	12	12	$\square 50$	8	—	12	12

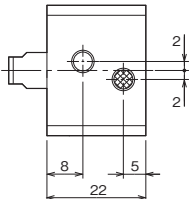
SD

Single acting spring-extended/standard type/basic style

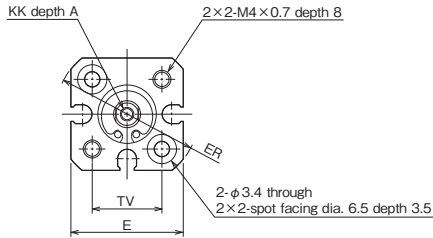
10S-6SH SD Bore N Standard stroke

- Bore $\phi 12 \cdot \phi 16$

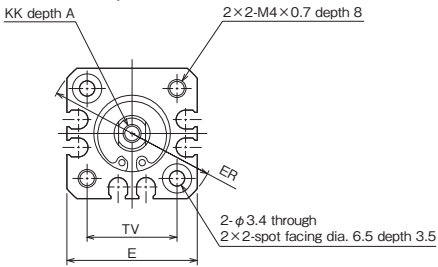
CAD/DATA
10S-6/TAS6 Bore G is available.



Stroke 5



Stroke 10



$\phi 16$

Dimensional Table

Symbol Bore	A	D	E	ER	KK	MM	TV
$\phi 12$	6	5	$\square 25$	$\phi 32$	M3×0.5	$\phi 6$	$\square 15.5$
$\phi 16$	8	6	$\square 29$	$\phi 38$	M4×0.7	$\phi 8$	$\square 20$

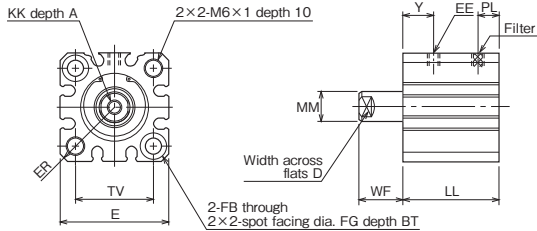
SD

Single acting spring-extended/standard type/basic style

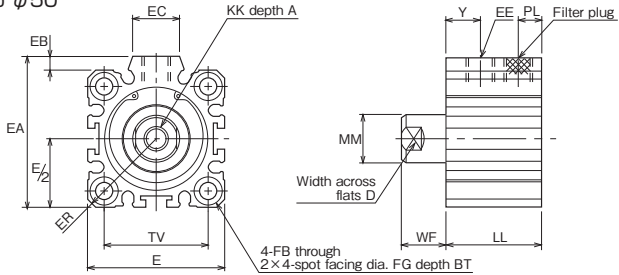
10S-6SH SD Bore N Standard stroke

- Bore $\phi 20 \cdot \phi 25$

CAD/DATA
10S-6/TAS6 Bore G is available.



- Bore $\phi 32$ to $\phi 50$



Dimensional Table

Symbol Bore	A	BT	D	E	EA	EB	EC	EE	ER	FB	FG	KK
$\phi 20$	7	5.4	8	$\square 36$	—	—	—	M5×0.8	R23.5	$\phi 5.5$	$\phi 9$	M5×0.8
$\phi 25$	12	5.4	10	$\square 40$	—	—	—	M5×0.8	R26	$\phi 5.5$	$\phi 9$	M6×1
$\phi 32$	13	5.4	14	$\square 45$	49.5	4.5	15	Rc1/8	R30	$\phi 5.5$	$\phi 9$	M8×1.25
$\phi 40$	13	5.4	14	$\square 52$	57	5	17.5	Rc1/8	R34.5	$\phi 5.5$	$\phi 9$	M8×1.25
$\phi 50$	15	8	17	$\square 64$	71	7	19	Rc1/4	R42.5	$\phi 6.6$	$\phi 11$	M10×1.5

Symbol Stroke	LL			MM	PL		TV	WF			Y	
Bore	5	10	20		5	10 or more		5	10	20	5	10 or more
$\phi 20$	26.5	31.5	—	$\phi 10$	6	7	$\square 25.5$	9.5	14.5	—	9	10
$\phi 25$	27.5	32.5	—	$\phi 12$	6	7	$\square 28$	10	15	—	9	10
$\phi 32$	28	33	—	$\phi 16$	6	8	$\square 34$	12	17	—	10	11
$\phi 40$	34.5	39.5	—	$\phi 16$	10	11.5	$\square 40$	12	17	—	10	11.5
$\phi 50$	—	40.5	50.5	$\phi 20$	—	12	$\square 50$	—	18	28	—	12

ST

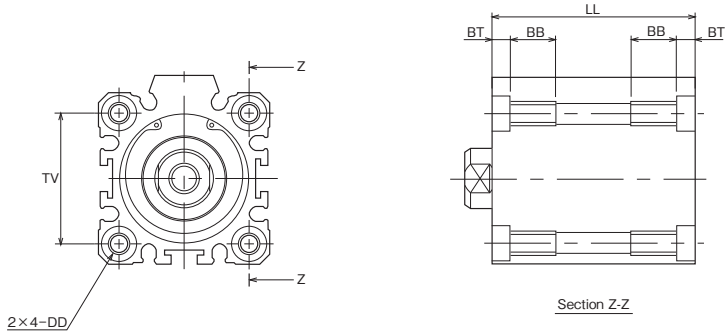
Basic style/tapped on both sides

10S-6* * ST Bore N Standard stroke

10S-6R* * ST Bore N Standard stroke – Sensor symbol Sensor quantity

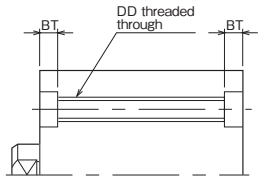
●Bore φ32 to φ100

CAD/DATA
10S-6/TAS6 Bore A, B is available.



Note) When dimension LL is less than the value shown in the following table, a tapped through hole is made in place of the holes BB as shown below.

Symbol Bore	φ 32	φ 40	φ 50	φ 63	φ 80	φ 100
LL	38	39.5	45.5	61	73.5	73



- For dimensions not shown in this figure, refer to SD (basic style).
- The bores of the single acting cylinders are up to 50 mm. For dimensions not shown in this figure, refer to SD (basic style).

Dimensional Table

Symbol Bore	BB Note)	BT	DD	TV
φ 32	12	5.4	M6×1	□34
φ 40	12	5.4	M6×1	□40
φ 50	14	8	M8×1.25	□50
φ 63	18	10.5	M10×1.5	□60
φ 80	22	13.5	M12×1.75	□77
φ 100	22	13.5	M12×1.75	□94

CAD/DATA
10S-6/TAS6 Bore A, B is available.



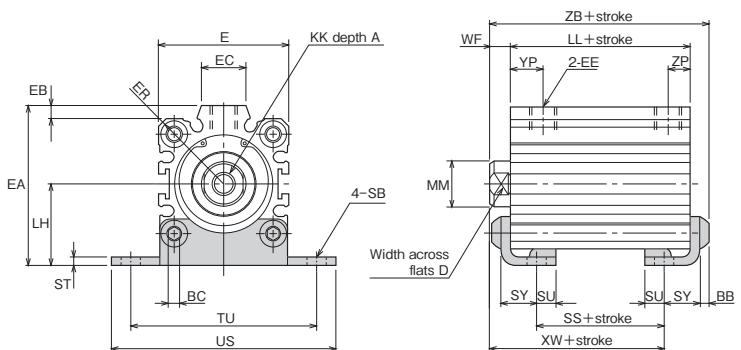
LA

Double acting single rod/standard type and Switch Set/side lugs

10S-6 LA Bore N Standard stroke

10S-6R LA Bore N Standard stroke – Sensor symbol Sensor quantity

●Bore φ32 to φ100



Note) ● 10S-6LA32N5 and 10S-6LA80N10 are not available.
(The mounting accessories will interfere if the stroke is less than 10 mm in the case of 32-mm bore cylinder or less than 15 mm in the case of 80-mm bore cylinder.)

Dimensional Table

Symbol Bore	A	BB	BC	D	E	EA	EB	EC	EE	ER	KK	LH	LL		MM	SB
													10S-6	10S-6R		
φ 32	13	4	4	14	45	55.5	4.5	15	Rc1/8	R30	M8×1.25	28.5	23	33	φ 16	φ 6.6
φ 40	13	4	4	14	52	63.5	5	17.5	Rc1/8	R34.5	M8×1.25	32.5	29.5	39.5	φ 16	φ 6.6
φ 50	15	5	5	17	64	77	7	19	Rc1/4	R42.5	M10×1.5	38	30.5	40.5	φ 20	φ 9
φ 63	15	6	6	17	77	90	7	19	Rc1/4	R51	M10×1.5	44.5	36	46	φ 20	φ 11
φ 80	21	7	8	22	98	113.5	6	25	Rc3/8	R65	M16×2	58.5	43.5	53.5	φ 25	φ 14
φ 100	27	7	8	27	117	132	6.5	25	Rc3/8	R78	M20×2.5	67	53	63	φ 30	φ 14

Symbol Stroke Bore	SS		ST	SU	SY	TU	US	WF	XW		YP			ZB		ZP		
											10S-6					10S-6R		
	10S-6	10S-6R							10S-6	10 or more	10S-6R	10S-6	10S-6R	5	10 or more	10S-6R		
φ 32	4.4	14.4	3.2	6.5	12.5	65	78	7	20.7	30.7	—	11	11	37.2	47.2	—	8	8
φ 40	10.9	20.9	3.2	6.5	12.5	73	87	7	27.2	37.2	10	11.5	11.5	43.7	53.7	10	11.5	11.5
φ 50	8.9	18.9	3.2	8	14	87	103	8	27.7	37.7	—	12	12	46.7	56.7	—	12	12
φ 63	11.4	21.4	3.2	9.5	15.5	109	127	8	31.7	41.7	—	14.5	14.5	53.2	63.2	—	14.5	14.5
φ 80	10.5	20.5	4.5	11	21	123	145	10	37	47	—	16.5	16.5	65	75	—	16.5	16.5
φ 100	20	30	4.5	11	21	137	159	12	48.5	58.5	—	21	21	76.5	86.5	—	21	21

CAD/DATA
10S-6/TAS6[Bore]A, B is available.

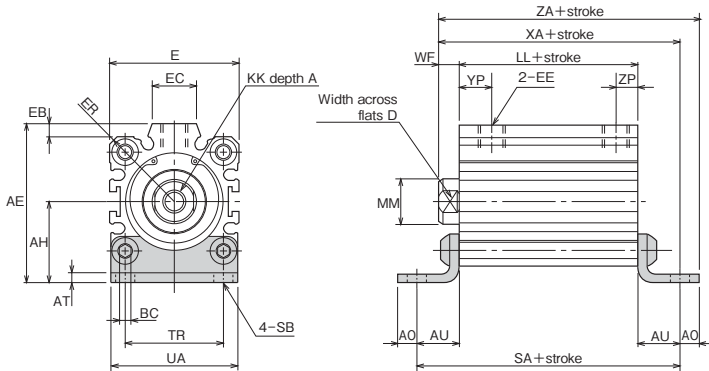


LB

Double acting single rod/standard type and Switch Set/end angle

10S-6 LB[Bore]N[Standard stroke]
10S-6R LB[Bore]N[Standard stroke] - [Sensor symbol] [Sensor quantity]

●Bore ϕ 32 to ϕ 100



Dimensional Table

Symbol Bore	A	AE	AH	AO	AT	AU	BC	D	E	EB	EC	EE	ER	KK	LL	
															10S-6	10S-6R
φ 32	13	55.5	28.5	7	3.2	15	4	14	45	4.5	15	Rc1/8	R30	M8×1.25	23	33
φ 40	13	63.5	32.5	7	3.2	15	4	14	52	5	17.5	Rc1/8	R34.5	M8×1.25	29.5	39.5
φ 50	15	77	38	9	3.2	18	5	17	64	7	19	Rc1/4	R42.5	M10×1.5	30.5	40.5
φ 63	15	90	44.5	11	3.2	20	6	17	77	7	19	Rc1/4	R51	M10×1.5	36	46
φ 80	21	113.5	58.5	14	4.5	25	8	22	98	6	25	Rc3/8	R65	M16×2	43.5	53.5
φ 100	27	132	67	14	4.5	25	8	27	117	6.5	25	Rc3/8	R78	M20×2.5	53	63

Symbol Bore	Stroke MM	SA		SB	TR	UA	WF	XA		YP			ZA		ZP		
		10S-6	10S-6R					10S-6	10S-6R	5	10 or more	10S-6R	10S-6	10S-6R	5	10 or more	10S-6R
φ 32	φ 16	53	63	φ 6.6	34	45	7	45	55	10	11	11	52	62	6	8	8
φ 40	φ 16	59.5	69.5	φ 6.6	40	53	7	51.5	61.5	10	11.5	11.5	58.5	68.5	10	11.5	11.5
φ 50	φ 20	66.5	76.5	φ 9	50	64	8	56.5	66.5	—	12	12	65.5	75.5	—	12	12
φ 63	φ 20	76	86	φ 11	60	77	8	64	74	—	14.5	14.5	75	85	—	14.5	14.5
φ 80	φ 25	93.5	103.5	φ 14	77	100	10	78.5	88.5	—	16.5	16.5	92.5	102.5	—	16.5	16.5
φ 100	φ 30	103	113	φ 14	94	117	12	90	100	—	21	21	104	114	—	21	21

CAD/DATA
10S-6/TAS6[Bore]A, B is available.

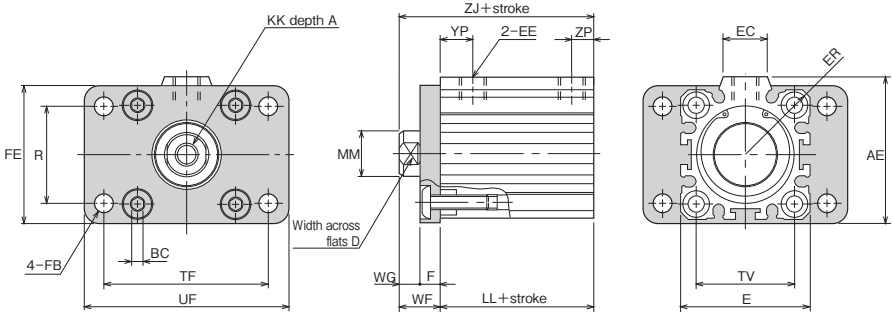


FA

Double acting single rod/standard type and Switch Set/rod flange

10S-6 FA[Bore]N[Standard stroke]
10S-6R FA[Bore]N[Standard stroke] - [Sensor symbol] [Sensor quantity]

●Bore ϕ 32 to ϕ 100



Note) ●A flange cannot be fitted on the cap side because a tapped hole is not made on the side.

Dimensional Table

Symbol Bore	A	AE	BC	D	E	EC	EE	ER	F	FB	FE	KK	LL	
													10S-6	10S-6R
φ 32	13	51	4	14	□45	15	Rc1/8	R30	8	φ 7	48	M8×1.25	23	33
φ 40	13	59	4	14	□52	17.5	Rc1/8	R34.5	10	φ 7	56	M8×1.25	29.5	39.5
φ 50	15	74	5	17	□64	19	Rc1/4	R42.5	10	φ 9	70	M10×1.5	30.5	40.5
φ 63	15	87.5	6	17	□77	19	Rc1/4	R51	10	φ 9	84	M10×1.5	36	46
φ 80	21	107.5	8	22	□98	25	Rc3/8	R65	16	φ 12	105	M16×2	43.5	53.5
φ 100	27	125.5	8	27	□117	25	Rc3/8	R78	16	φ 12	121	M20×2.5	53	63

Symbol Bore	Stroke	MM	R	TV	TF	UF	WF	WG	YP			ZJ		ZP		
									10S-6		10S-6R	10S-6	10S-6R	10S-6		10S-6R
									5	10 or more				5	10 or more	
φ 32	φ 16	33	□34	58	72	15	7	10	11	11	38	48	6	8	8	
φ 40	φ 16	36	□40	70	84	17	7	10	11.5	11.5	46.5	56.5	10	11.5	11.5	
φ 50	φ 20	47	□50	86	104	18	8	—	12	12	48.5	58.5	—	12	12	
φ 63	φ 20	56	□60	98	116	18	8	—	14.5	14.5	54	64	—	14.5	14.5	
φ 80	φ 25	70	□77	126	150	26	10	—	16.5	16.5	69.5	79.5	—	16.5	16.5	
φ 100	φ 30	84	□94	143	165	28	12	—	21	21	81	91	—	21	21	

CAD/DATA
10S-6/TAS6 [Bore] A, B is available.

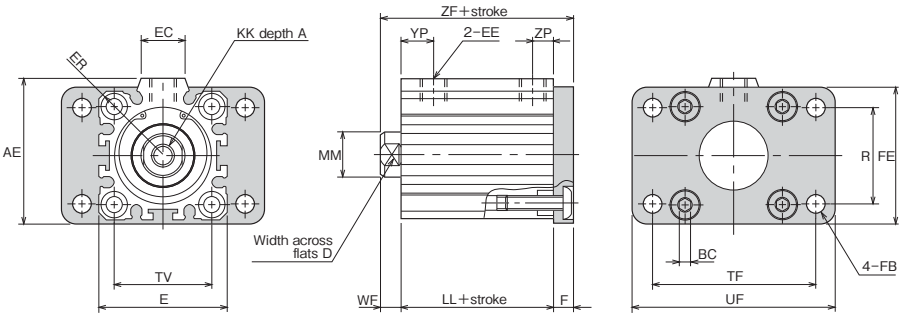


FB

Double acting single rod/standard type and Switch Set/cap flange

10S-6 FB [Bore] N [Standard stroke]
10S-6R FB [Bore] N [Standard stroke] - [Sensor symbol] [Sensor quantity]

● Bore $\phi 32$ to $\phi 100$



Note) ● A flange cannot be fitted on the rod side because a tapped hole is not made on the side.

Dimensional Table

Symbol Bore	A	AE	BC	D	E	EC	EE	ER	F	FB	FE	KK	LL	
													10S-6	10S-6R
$\phi 32$	13	51	4	14	$\square 45$	15	Rc1/8	R30	8	$\phi 7$	48	M8×1.25	23	33
$\phi 40$	13	59	4	14	$\square 52$	17.5	Rc1/8	R34.5	10	$\phi 7$	56	M8×1.25	29.5	39.5
$\phi 50$	15	74	5	17	$\square 64$	19	Rc1/4	R42.5	10	$\phi 9$	70	M10×1.5	30.5	40.5
$\phi 63$	15	87.5	6	17	$\square 77$	19	Rc1/4	R51	10	$\phi 9$	84	M10×1.5	36	46
$\phi 80$	21	107.5	8	22	$\square 98$	25	Rc3/8	R65	16	$\phi 12$	105	M16×2	43.5	53.5
$\phi 100$	27	125.5	8	27	$\square 117$	25	Rc3/8	R78	16	$\phi 12$	121	M20×2.5	53	63

Symbol Bore	Stroke	MM	R	TV	TF	UF	WF	YP			ZF		ZP		
								10S-6		10S-6R	10S-6		10S-6		10S-6R
								5	10 or more		5	10 or more	5	10 or more	
$\phi 32$		$\phi 16$	33	$\square 34$	58	72	7	10	11	11	38	48	6	8	8
$\phi 40$		$\phi 16$	36	$\square 40$	70	84	7	10	11.5	11.5	46.5	56.5	10	11.5	11.5
$\phi 50$		$\phi 20$	47	$\square 50$	86	104	8	—	12	12	48.5	58.5	—	12	12
$\phi 63$		$\phi 20$	56	$\square 60$	98	116	8	—	14.5	14.5	54	64	—	14.5	14.5
$\phi 80$		$\phi 25$	70	$\square 77$	126	150	10	—	16.5	16.5	69.5	79.5	—	16.5	16.5
$\phi 100$		$\phi 30$	84	$\square 94$	143	165	12	—	21	21	81	91	—	21	21

CAD/DATA
10S-6/TAS6 [Bore] A, B is available.

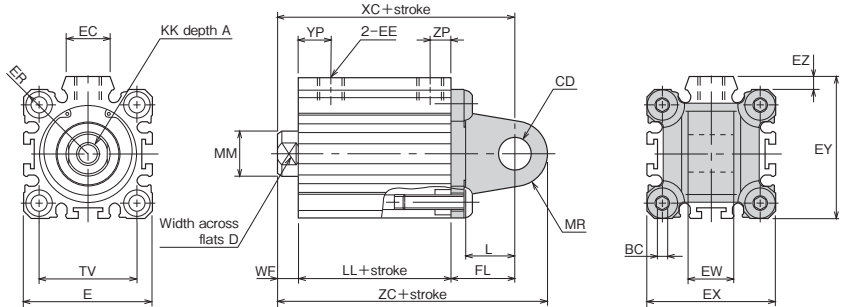


CA

Double acting single rod/standard type and Switch Set/cap eye

10S-6 CA [Bore] N [Standard stroke]
10S-6R CA [Bore] N [Standard stroke] - [Sensor symbol] [Sensor quantity]

● Bore $\phi 32$ to $\phi 100$



Dimensional Table

Symbol Bore	A	BC	CD	D	E	EC	EE	ER	EX	EY	EZ	EW	FL	KK
φ 32	13	4	φ 12H9	14	□ 45	15	Rc1/8	R30	□ 45	49.5	4.5	16 ⁰ _{-0.070}	24	M8×1.25
φ 40	13	4	φ 14H9	14	□ 52	17.5	Rc1/8	R34.5	□ 53	57.5	4.5	20 ⁰ _{-0.084}	24	M8×1.25
φ 50	15	5	φ 14H9	17	□ 64	19	Rc1/4	R42.5	□ 64	71	7	20 ⁰ _{-0.084}	24	M10×1.5
φ 63	15	6	φ 14H9	17	□ 77	19	Rc1/4	R51	□ 77	84	7	20 ⁰ _{-0.084}	24	M10×1.5
φ 80	21	8	φ 20H9	22	□ 98	25	Rc3/8	R65	□ 100	105	5	32 ⁰ _{-0.100}	32	M16×2
φ 100	27	8	φ 20H9	27	□ 117	25	Rc3/8	R78	□ 117	123.5	6.5	32 ⁰ _{-0.100}	32	M20×2.5

Symbol Stroke	L	LL		MM	MR	TV	WF	XC		YP			ZC		ZP		
		10S-6	10S-6R					10S-6	10S-6R	10S-6		10S-6R	10S-6	10S-6R	10S-6		10S-6R
										5	10 or more				5	10 or more	
φ 32	16.5	23	33	φ 16	R12	□ 34	7	54	64	10	11	11	66	76	6	8	8
φ 40	16	29.5	39.5	φ 16	R14	□ 40	7	60.5	70.5	10	11.5	11.5	74.5	84.5	10	11.5	11.5
φ 50	16	30.5	40.5	φ 20	R14	□ 50	8	62.5	72.5	—	12	12	76.5	86.5	—	12	12
φ 63	16	36	46	φ 20	R14	□ 60	8	68	78	—	14.5	14.5	82	92	—	14.5	14.5
φ 80	21	43.5	53.5	φ 25	R19	□ 77	10	85.5	95.5	—	16.5	16.5	104.5	114.5	—	16.5	16.5
φ 100	21	53	63	φ 30	R19	□ 94	12	97	107	—	21	21	116	126	—	21	21

CAD/DATA
10S-6/TAS6[Bore]A, B is available.

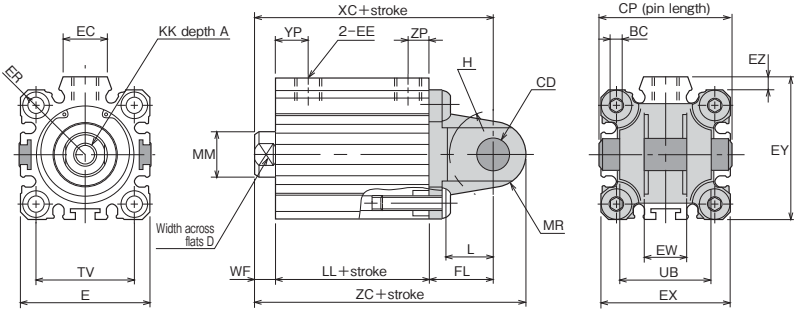


CB

Double acting single rod/standard type and Switch Set/cap clevis

10S-6 CB[Bore]N[Standard stroke]
10S-6R CB[Bore]N[Standard stroke] - [Sensor symbol] [Sensor quantity]

●Bore $\phi 32$ to $\phi 100$



Dimensional Table

Symbol Bore	A	BC	CD	CP	D	E	EC	EE	ER	EX	EY	EZ	EW	FL	H	KK
φ 32	13	4	φ 12H/8	45	14	□45	15	Rc1/8	R30	□45	49.5	4.5	16 ^{+0.7} _{-0.5}	24	R16.5	M8×1.25
φ 40	13	4	φ 14H/8	52	14	□52	17.5	Rc1/8	R34.5	□53	57.5	4.5	20 ^{+0.7} _{-0.5}	24	R18	M8×1.25
φ 50	15	5	φ 14H/8	63	17	□64	19	Rc1/4	R42.5	□64	71	7	20 ^{+0.7} _{-0.5}	24	R21	M10×1.5
φ 63	15	6	φ 14H/8	66	17	□77	19	Rc1/4	R51	□77	84	7	20 ^{+0.7} _{-0.5}	24	R22	M10×1.5
φ 80	21	8	φ 20H/8	78	22	□98	25	Rc3/8	R65	□100	105	5	32 ^{+0.7} _{-0.5}	32	R30	M16×2
φ 100	27	8	φ 20H/8	78	27	□117	25	Rc3/8	R78	□117	123.5	6.5	32 ^{+0.7} _{-0.5}	32	R30	M20×2.5

Symbol Stroke Bore	L	LL		MM	MR	TV	UB	WF	XC		YP			ZC		ZP		
		10S-6	10S-6R						10S-6	10S-6R	10S-6		10S-6R	10S-6	10S-6R	10S-6		10S-6R
											5	10 or more				5	10 or more	
φ 32	16.5	23	33	φ 16	R12	□34	31	7	54	64	10	11	11	66	76	6	8	8
φ 40	16	29.5	39.5	φ 16	R14	□40	38	7	60.5	70.5	10	11.5	11.5	74.5	84.5	10	11.5	11.5
φ 50	16	30.5	40.5	φ 20	R14	□50	49	8	62.5	72.5	—	12	12	76.5	86.5	—	12	12
φ 63	16	36	46	φ 20	R14	□60	52	8	68	78	—	14.5	14.5	82	92	—	14.5	14.5
φ 80	21	43.5	53.5	φ 25	R19	□77	64	10	85.5	95.5	—	16.5	16.5	104.5	114.5	—	16.5	16.5
φ 100	21	53	63	φ 30	R19	□94	64	12	97	107	—	21	21	116	126	—	21	21

CAD/DATA
10S-6/TAS6[Bore]A, B is available.

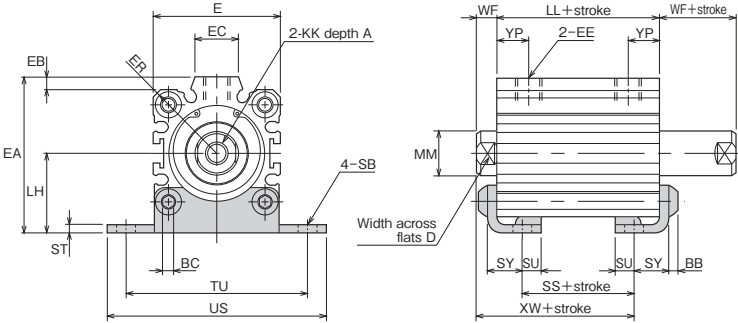


LA

Double acting double rod/standard type and Switch Set/side lugs

10S-6D LA[Bore]N[Standard stroke]
10S-6RD LA[Bore]N[Standard stroke] - [Sensor symbol] [Sensor quantity]

●Bore $\phi 32$ to $\phi 100$



Dimensional Table

Symbol Bore	A	BB	BC	D	E	EA	EB	EC	EE	ER	KK	LH
φ 32	13	4	4	14	45	55.5	4.5	15	Rc1/8	R30	M8×1.25	28.5
φ 40	13	4	4	14	52	63.5	5	17.5	Rc1/8	R34.5	M8×1.25	32.5
φ 50	15	5	5	17	64	77	7	19	Rc1/4	R42.5	M10×1.5	38
φ 63	15	6	6	17	77	90	7	19	Rc1/4	R51	M10×1.5	44.5
φ 80	21	7	8	22	98	113.5	6	25	Rc3/8	R65	M16×2	58.5
φ 100	27	7	8	27	117	132	6.5	25	Rc3/8	R78	M20×2.5	67

Symbol Bore	LL		MM	SB	SS		ST	SU	SY	TU	US	WF	XW		YP
	10S-6D	10S-6RD			10S-6D	10S-6RD							10S-6D	10S-6RD	
φ 32	33	43	φ 16	φ 6.6	14.4	24.4	3.2	6.5	12.5	65	78	7	30.7	40.7	11
φ 40	34.5	44.5	φ 16	φ 6.6	15.9	25.9	3.2	6.5	12.5	73	87	7	32.2	42.2	11.5
φ 50	35.5	45.5	φ 20	φ 9	13.9	23.9	3.2	8	14	87	103	8	32.7	42.7	12
φ 63	41	51	φ 20	φ 11	16.4	26.4	3.2	9.5	15.5	109	127	8	36.7	46.7	14.5
φ 80	53.5	63.5	φ 25	φ 14	20.5	30.5	4.5	11	21	123	145	10	47	57	16.5
φ 100	63	73	φ 30	φ 14	30	40	4.5	11	21	137	159	12	58.5	68.5	21

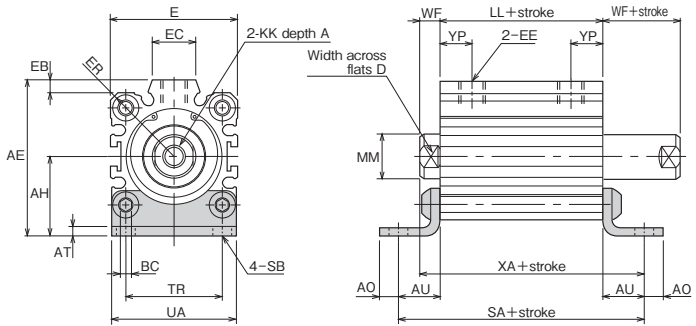
LB

Double acting double rod/standard type and Switch Set/side lugs

- 10S-6D LB Bore N Standard stroke
- 10S-6RD LB Bore N Standard stroke – Sensor symbol Sensor quantity

●Bore φ32 to φ100

CAD/DATA
10S-6/TAS6 Bore C, D is available.



Dimensional Table

Symbol Bore	A	AE	AH	AO	AT	AU	BC	D	E	EB	EC	EE
φ 32	13	55.5	28.5	7	3.2	15	4	14	45	4.5	15	Rc1/8
φ 40	13	63.5	32.5	7	3.2	15	4	14	52	5	17.5	Rc1/8
φ 50	15	77	38	9	3.2	18	5	17	64	7	19	Rc1/4
φ 63	15	90	44.5	11	3.2	20	6	17	77	7	19	Rc1/4
φ 80	21	113.5	58.5	14	4.5	25	8	22	98	6	25	Rc3/8
φ 100	27	132	67	14	4.5	25	8	27	117	6.5	25	Rc3/8

Symbol Bore	ER	KK	LL		MM	SA		SB	TR	UA	WF	XA		YP
			10S-6D	10S-6RD		10S-6D	10S-6RD					10S-6D	10S-6RD	
φ 32	R30	M8×1.25	33	43	φ 16	63	73	φ 6.6	34	45	7	55	65	11
φ 40	R34.5	M8×1.25	34.5	44.5	φ 16	64.5	74.5	φ 6.6	40	53	7	56.5	66.5	11.5
φ 50	R42.5	M10×1.5	35.5	45.5	φ 20	71.5	81.5	φ 9	50	64	8	61.5	71.5	12
φ 63	R51	M10×1.5	41	51	φ 20	81	91	φ 11	60	77	8	69	79	14.5
φ 80	R65	M16×2	53.5	63.5	φ 25	103.5	113.5	φ 14	77	100	10	88.5	98.5	16.5
φ 100	R78	M20×2.5	63	73	φ 30	113	123	φ 14	94	117	12	100	110	21

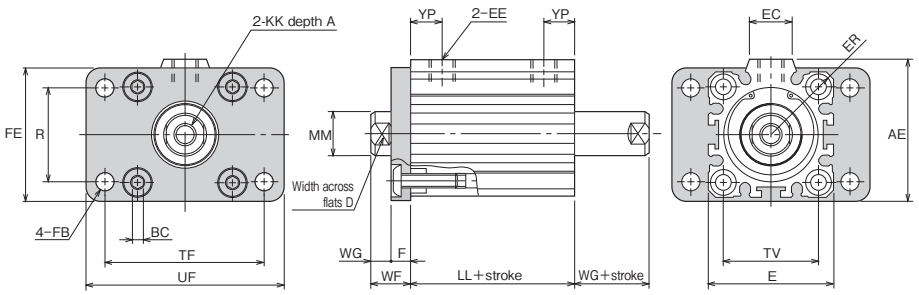
FA

Double acting double rod/standard type and Switch Set/rod flange

- 10S-6D FA Bore N Standard stroke
- 10S-6RD FA Bore N Standard stroke – Sensor symbol Sensor quantity

●Bore φ32 to φ100

CAD/DATA
10S-6/TAS6 Bore C, D is available.



Dimensional Table

Symbol Bore	A	AE	BC	D	E	EC	EE	ER	F	FB	FE
φ 32	13	51	4	14	□45	15	Rc1/8	R30	8	φ 7	48
φ 40	13	59	4	14	□52	17.5	Rc1/8	R34.5	10	φ 7	56
φ 50	15	74	5	17	□64	19	Rc1/4	R42.5	10	φ 9	70
φ 63	15	87.5	6	17	□77	19	Rc1/4	R51	10	φ 9	84
φ 80	21	107.5	8	22	□98	25	Rc3/8	R65	16	φ 12	105
φ 100	27	125.5	8	27	□117	25	Rc3/8	R78	16	φ 12	121

Symbol Bore	KK	LL		MM	R	TV	TF	UF	WF	WG	YP
		10S-6D	10S-6RD								
φ 32	M8×1.25	33	43	φ 16	33	□34	58	72	15	7	11
φ 40	M8×1.25	34.5	44.5	φ 16	36	□40	70	84	17	7	11.5
φ 50	M10×1.5	35.5	45.5	φ 20	47	□50	86	104	18	8	12
φ 63	M10×1.5	41	51	φ 20	56	□60	98	116	18	8	14.5
φ 80	M16×2	53.5	63.5	φ 25	70	□77	126	150	26	10	16.5
φ 100	M20×2.5	63	73	φ 30	84	□94	143	165	28	12	21



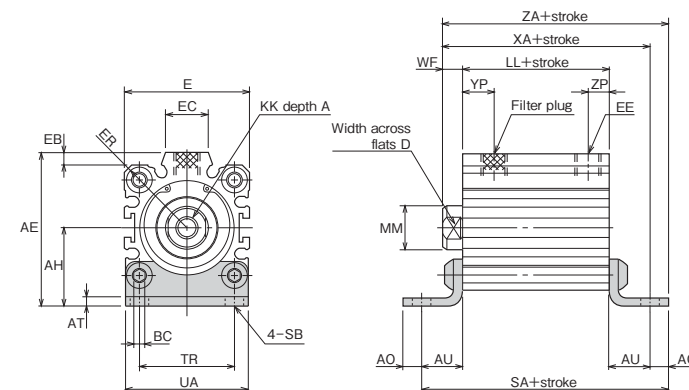
LB

Single acting spring return/standard type and Switch Set/end angle

10S-6SR LB [Bore] N [Standard stroke]

10S-6RSR LB [Bore] N [Standard stroke] – [Sensor symbol] [Sensor quantity]

● Bore $\phi 32$ to $\phi 50$



Dimensional Table

Symbol	A	AE	AH	AO	AT	AU	BC	D	E	EB	EC	EE	ER	KK
Bore														
$\phi 32$	13	55.5	28.5	7	3.2	15	4	14	45	4.5	15	Rc1/8	R30	M8 $\times$ 1.25
$\phi 40$	13	63.5	32.5	7	3.2	15	4	14	52	5	17.5	Rc1/8	R34.5	M8 $\times$ 1.25
$\phi 50$	15	77	38	9	3.2	18	5	17	64	7	19	Rc1/4	R42.5	M10 $\times$ 1.5

Symbol	LL				MM	SA				SB	TR	UA	WF
Stroke	10S-6SR	10S-6RSR	10S-6SR	10S-6RSR		10S-6SR	10S-6RSR	10S-6SR	10S-6RSR				
Bore	5 to 10 Note 1)	15 to 30 Note 2)	5 to 10 Note 1)	15 to 30 Note 2)		5 to 10 Note 1)	15 to 30 Note 2)	5 to 10 Note 1)	15 to 30 Note 2)				
$\phi 32$	23	33	33	43	$\phi 16$	53	63	63	73	$\phi 6.6$	34	45	7
$\phi 40$	29.5	39.5	39.5	49.5	$\phi 16$	59.5	69.5	69.5	79.5	$\phi 6.6$	40	53	7
$\phi 50$	30.5	40.5	40.5	50.5	$\phi 20$	66.5	76.5	76.5	86.5	$\phi 9$	50	64	8

Symbol	XA				YP		ZA				ZP	
Stroke	10S-6SR	10S-6RSR	10S-6SR	10S-6RSR	10S-6SR	10S-6RSR	10S-6SR	10S-6RSR	10S-6SR	10S-6RSR	10S-6SR	10S-6RSR
Bore	5 to 10 Note 1)	15 to 30 Note 2)	5 to 10 Note 1)	15 to 30 Note 2)	5	10 or more	5 to 10 Note 1)	15 to 30 Note 2)	5 to 10 Note 1)	15 to 30 Note 2)	5	10 or more
$\phi 32$	45	55	55	65	10	11	52	62	62	72	6	8
$\phi 40$	51.5	61.5	61.5	71.5	10	11.5	58.5	68.5	68.5	78.5	10	11.5
$\phi 50$	56.5	66.5	66.5	76.5	—	12	65.5	75.5	75.5	85.5	—	12

Note 1) 10 to 20 for $\phi 50$

Note 2) 15 to 50 for $\phi 40$, and 25 to 50 for $\phi 50$



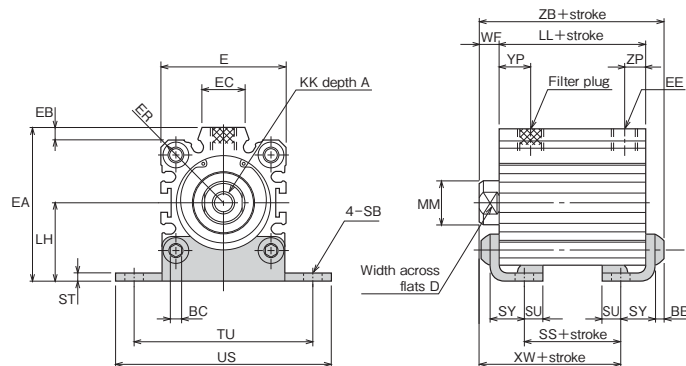
LA

Single acting spring return/standard type and Switch Set/end angle

10S-6SR LA [Bore] N [Standard stroke]

10S-6RSR LA [Bore] N [Standard stroke] – [Sensor symbol] [Sensor quantity]

● Bore $\phi 32$ to $\phi 50$



Note) ● 10S-6SR LA32N5 is not available. (The mounting accessories will interfere if the stroke is less than 10 mm.)

Dimensional Table

Symbol	A	BT	BC	D	E	EA	EB	EC	EE	ER	KK	LH	LL	
Stroke													10S-6SR	10S-6RSR
Bore													5 to 10 Note 1)	15 to 30 Note 2)
$\phi 32$	13	4	4	14	45	55.5	4.5	15	Rc1/8	R30	M8 $\times$ 1.25	28.5	23	33
$\phi 40$	13	4	4	14	52	63.5	5	17.5	Rc1/8	R34.5	M8 $\times$ 1.25	32.5	29.5	39.5
$\phi 50$	15	5	5	17	64	77	7	19	Rc1/4	R42.5	M10 $\times$ 1.5	38	30.5	40.5

Symbol	MM	SB	SS				ST	SU	SY	TU	US	WF
Stroke			10S-6SR	10S-6RSR	10S-6SR	10S-6RSR						
Bore			5 to 10 Note 1)	15 to 30 Note 2)	5 to 10 Note 1)	15 to 30 Note 2)						
$\phi 32$	$\phi 16$	$\phi 6.6$	—	14.4	14.4	24.4	3.2	6.5	12.5	65	78	7
$\phi 40$	$\phi 16$	$\phi 6.6$	10.9	20.9	20.9	30.9	3.2	6.5	12.5	73	87	7
$\phi 50$	$\phi 20$	$\phi 9$	8.9	18.9	18.9	28.9	3.2	8	14	87	103	8

Symbol	XW				YP		ZB				ZP	
Stroke	10S-6SR	10S-6RSR	10S-6SR	10S-6RSR	10S-6SR	10S-6RSR	10S-6SR	10S-6RSR	10S-6SR	10S-6RSR	10S-6SR	10S-6RSR
Bore	5 to 10 Note 1)	15 to 30 Note 2)	5 to 10 Note 1)	15 to 30 Note 2)	5	10 or more	5 to 10 Note 1)	15 to 30 Note 2)	5 to 10 Note 1)	15 to 30 Note 2)	5	10 or more
$\phi 32$	20.7	30.7	30.7	40.7	—	11	37.2	47.2	47.2	57.2	—	8
$\phi 40$	27.2	37.2	37.2	47.2	10	11.5	43.7	53.7	53.7	63.7	10	11.5
$\phi 50$	27.7	37.7	37.7	47.7	—	12	46.7	56.7	56.7	66.7	—	12

Note 1) 10 to 20 for $\phi 50$

Note 2) 15 to 50 for $\phi 40$, and 25 to 50 for $\phi 50$

CAD/DATA
10S-6/TAS6[Bore]E, F is available.



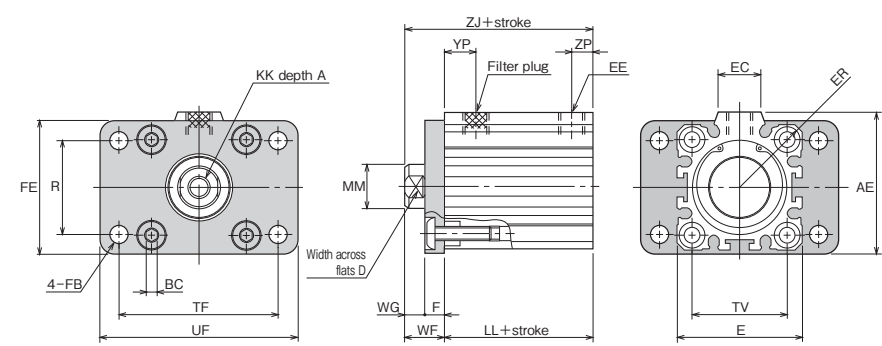
FA

Single acting spring return/standard type and Switch Set/rod flange

10S-6SR FA[Bore]N[Standard stroke]

10S-6RSR FA[Bore]N[Standard stroke] - [Sensor symbol] [Sensor quantity]

- Bore $\phi 32$ to $\phi 50$



Note) ●A flange cannot be fitted on the cap side because a tapped hole is not made on the side.

Dimensional Table

Symbol Stroke Bore	A	AE	BC	D	E	EC	EE	ER	F	FB	FE	KK	LL			
													10S-6SR		10S-6RSR	
													5 to 10 Note 1)	15 to 30 Note 2)	5 to 10 Note 1)	15 to 30 Note 2)
$\phi 32$	13	51	4	14	$\square 45$	15	Rc1/8	R30	8	$\phi 7$	48	M8×1.25	23	33	33	43
$\phi 40$	13	59	4	14	$\square 52$	17.5	Rc1/8	R34.5	10	$\phi 7$	56	M8×1.25	29.5	39.5	39.5	49.5
$\phi 50$	15	74	5	17	$\square 64$	19	Rc1/4	R42.5	10	$\phi 9$	70	M10×1.5	30.5	40.5	40.5	50.5

Symbol Stroke Bore	MM	R	TV	TF	UF	WF	WG	YP		ZJ				ZP	
								10S-6SR	10S-6RSR	10S-6SR		10S-6RSR		10S-6SR	
								5	10 or more	5 to 10 Note 1)	15 to 30 Note 2)	5 to 10 Note 1)	15 to 30 Note 2)	5	10 or more
$\phi 32$	$\phi 16$	33	$\square 34$	58	72	15	7	10	11	11	38	48	48	58	6
$\phi 40$	$\phi 16$	36	$\square 40$	70	84	17	7	10	11.5	11.5	46.5	56.5	56.5	66.5	10
$\phi 50$	$\phi 20$	47	$\square 50$	86	104	18	8	—	12	12	48.5	58.5	58.5	68.5	—

Note 1) 10 to 20 for $\phi 50$
Note 2) 15 to 50 for $\phi 40$, and 25 to 50 for $\phi 50$

CAD/DATA
10S-6/TAS6[Bore]E, F is available.



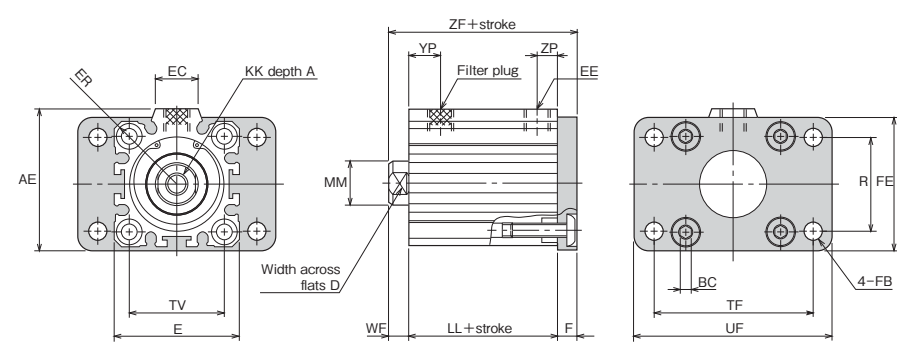
FB

Single acting spring return/standard type and Switch Set/cap flange

10S-6SR FB[Bore]N[Standard stroke]

10S-6RSR FB[Bore]N[Standard stroke] - [Sensor symbol] [Sensor quantity]

- Bore $\phi 32$ to $\phi 50$



Note) ●A flange cannot be fitted on the rod side because a tapped hole is not made on the side.

Dimensional Table

Symbol Stroke Bore	A	AE	BC	D	E	EC	EE	ER	F	FB	FE	KK	LL			
													10S-6SR		10S-6RSR	
													5 to 10 Note 1)	15 to 30 Note 2)	5 to 10 Note 1)	15 to 30 Note 2)
$\phi 32$	13	51	4	14	$\square 45$	15	Rc1/8	R30	8	$\phi 7$	48	M8×1.25	23	33	33	43
$\phi 40$	13	59	4	14	$\square 52$	17.5	Rc1/8	R34.5	10	$\phi 7$	56	M8×1.25	29.5	39.5	39.5	49.5
$\phi 50$	15	74	5	17	$\square 64$	19	Rc1/4	R42.5	10	$\phi 9$	70	M10×1.5	30.5	40.5	40.5	50.5

Symbol Stroke Bore	MM	R	TV	TF	UF	WF	YP	ZF	ZP
							10S-6SR	10S-6RSR	10S-6SR
							5	10 or more	10S-6RSR
$\phi 32$	$\phi 16$	33	$\square 34$	58	72	7	10	11	11
$\phi 40$	$\phi 16$	36	$\square 40$	70	84	7	10	11.5	11.5
$\phi 50$	$\phi 20$	47	$\square 50$	86	104	8	—	12	12

Note 1) 10 to 20 for $\phi 50$
Note 2) 15 to 50 for $\phi 40$, and 25 to 50 for $\phi 50$

CAD/DATA
10S-6/TAS6[Bore]E, F is available.



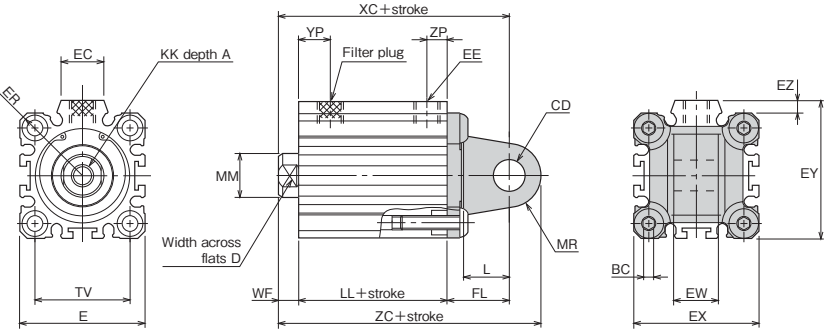
CA

Single acting spring return/standard type and Switch Set/cap eye

10S-6SR CA[Bore]N[Standard stroke]

10S-6RSR CA[Bore]N[Standard stroke] – [Sensor symbol] [Sensor quantity]

● Bore $\phi 32$ to $\phi 50$



Dimensional Table

Symbol	A	BC	CD	D	E	EC	EE	ER	EX	EY	EZ	EW	FL	KK
Bore														
$\phi 32$	13	4	$\phi 12H9$	14	$\square 45$	15	Rc1/8	R30	$\square 45$	49.5	4.5	$16_{-0.070}^0$	24	M8 $\times$ 1.25
$\phi 40$	13	4	$\phi 14H9$	14	$\square 52$	17.5	Rc1/8	R34.5	$\square 53$	57.5	4.5	$20_{-0.084}^0$	24	M8 $\times$ 1.25
$\phi 50$	15	5	$\phi 14H9$	17	$\square 64$	19	Rc1/4	R42.5	$\square 64$	71	7	$20_{-0.084}^0$	24	M10 $\times$ 1.5

Symbol Stroke Bore	L	LL				MM	MR	TV	WF
		10S-6SR		10S-6RSR					
		5 to 10 Note 1)	15 to 30 Note 2)	5 to 10 Note 1)	15 to 30 Note 2)				
ϕ 32	16.5	23	33	33	43	ϕ 16	R12	□34	7
ϕ 40	16	29.5	39.5	39.5	49.5	ϕ 16	R14	□40	7
ϕ 50	16	30.5	40.5	40.5	50.5	ϕ 20	R14	□50	8

Symbol Stroke	XC				YP			ZC				ZP		
	10S-6SR		10S-6RSR		10S-6SR		10S-6RSR	10S-6SR		10S-6RSR		10S-6SR		10S-6RSR
Bore	5 to 10 Note 1)	15 to 30 Note 2)	5 to 10 Note 1)	15 to 30 Note 2)	5	10 or more	10S-6RSR	5 to 10 Note 1)	15 to 30 Note 2)	5 to 10 Note 1)	15 to 30 Note 2)	5	10 or more	10S-6RSR
φ 32	54	64	64	74	10	11	11	66	76	76	86	6	8	8
φ 40	60.5	70.5	70.5	80.5	10	11.5	11.5	74.5	84.5	84.5	94.5	10	11.5	11.5
φ 50	62.5	72.5	72.5	82.5	—	12	12	76.5	86.5	86.5	96.5	—	12	12

Note 1) 10 to 20 for $\phi 50$

Note 2) 15 to 50 for $\phi 40$, and 25 to 50 for $\phi 50$

CAD/DATA
10S-6/TAS6[Bore]E, F is available.



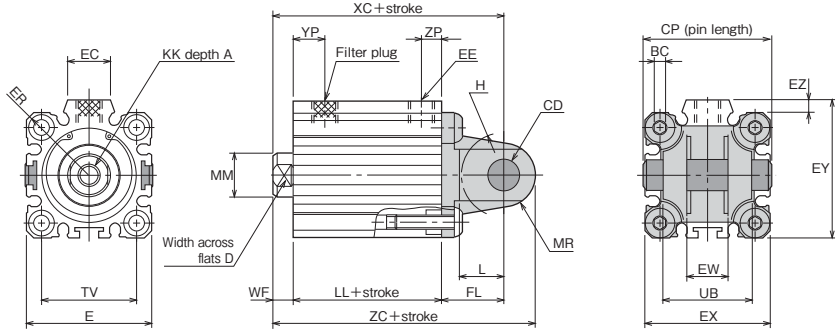
CB

Single acting spring return/standard type and Switch Set/cap clevis

10S-6SR CB[Bore]N[Standard stroke]

10S-6RSR CB[Bore]N[Standard stroke] – [Sensor symbol] [Sensor quantity]

● Bore $\phi 32$ to $\phi 50$



Dimensional Table

Symbol	A	BC	CD	CP	D	E	EC	EE	ER	EX	EY	EZ	EW	FL	H	KK
Bore																
$\phi 32$	13	4	$\phi 12H9/f8$	45	14	$\square 45$	15	Rc1/8	R30	$\square 45$	49.5	4.5	$16_{+0.5}^{+0.7}$	24	R16.5	M8 $\times$ 1.25
$\phi 40$	13	4	$\phi 14H9/f8$	52	14	$\square 52$	17.5	Rc1/8	R34.5	$\square 53$	57.5	4.5	$20_{+0.5}^{+0.7}$	24	R18	M8 $\times$ 1.25
$\phi 50$	15	5	$\phi 14H9/f8$	63	17	$\square 64$	19	Rc1/4	R42.5	$\square 64$	71	7	$20_{+0.5}^{+0.7}$	24	R21	M10 $\times$ 1.5

Symbol Stroke Bore	L	LL				MM	MR	TV	UB	WF
		10S-6SR		10S-6RSR						
		5 to 10 Note 1)	15 to 30 Note 2)	5 to 10 Note 1)	15 to 30 Note 2)					
$\phi 32$	16.5	23	33	33	43	$\phi 16$	R12	$\square 34$	31	7
$\phi 40$	16	29.5	39.5	39.5	49.5	$\phi 16$	R14	$\square 40$	38	7
$\phi 50$	16	30.5	40.5	40.5	50.5	$\phi 20$	R14	$\square 50$	49	8

Symbol BoreStroke	XC				YP			ZC				ZP		
	10S-6SR		10S-6RSR		10S-6SR		10S-6RSR	10S-6SR		10S-6RSR		10S-6SR		10S-6RSR
Bore	5 to 10 Note 1)	15 to 30 Note 2)	5 to 10 Note 1)	15 to 30 Note 2)	5	10 or more	10S-6RSR	5 to 10 Note 1)	15 to 30 Note 2)	5 to 10 Note 1)	15 to 30 Note 2)	5	10 or more	10S-6RSR
φ 32	54	64	64	74	10	11	11	66	76	76	86	6	8	8
φ 40	60.5	70.5	70.5	80.5	10	11.5	11.5	74.5	84.5	84.5	94.4	8	11.5	11.5
φ 50	62.5	72.5	72.5	82.5	—	12	12	76.5	86.5	86.5	96.5	—	12	12

Note 1) 10 to 20 for $\phi 50$

Note 2) 15 to 50 for $\phi 40$, and 25 to 50 for $\phi 50$

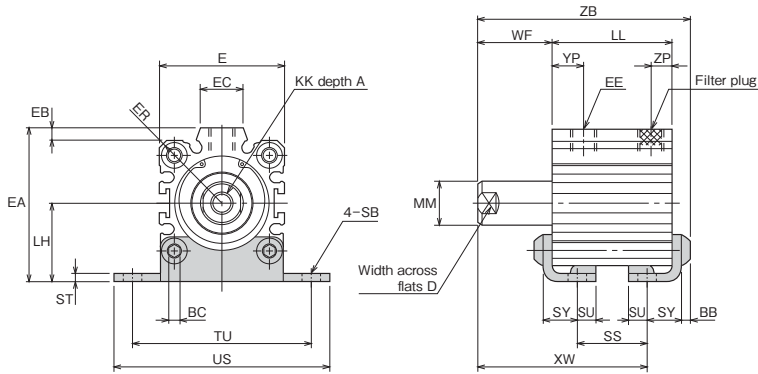
CAD/DATA
10S-6/TAS6 Bore G is available. 

LA

Single acting spring-extended/standard type/side lugs

10S-6SH LA Bore N Standard stroke

- Bore $\phi 32$ to $\phi 50$



Note) ● 10S-6SH LA32N5 is not available. (The mounting accessories will interfere if the stroke is less than 10 mm.)

Dimensional Table

Symbol Stroke Bore	A	BB	BC	D	E	EA	EB	EC	EE	ER	KK	LH	LL			MM	SB
	5	10	20										5	10	20		
φ 32	13	4	4	14	45	55.5	4.5	15	Rc1/8	R30	M8×1.25	28.5	—	33	—	φ 16	φ 6.6
φ 40	13	4	4	14	52	63.5	5	17.5	Rc1/8	R34.5	M8×1.25	32.5	34.5	39.5	—	φ 16	φ 6.6
φ 50	15	5	5	17	64	77	7	19	Rc1/4	R42.5	M10×1.5	38	—	40.5	50.5	φ 20	φ 9

Symbol Stroke Bore	SS			ST	SU	SY	TU	US	WF			XW			YP		ZB			ZP	
	5	10	20						5	10	20	5	10	20	5	10 or more	5	10	20	5	10 or more
φ 32	—	14.4	—	3.2	6.5	12.5	65	78	—	17	—	—	40.7	—	—	11	—	57.2	—	—	8
φ 40	15.9	20.9	—	3.2	6.5	12.5	73	87	12	17	—	37.2	47.2	—	10	11.5	53.7	63.7	—	10	11.5
φ 50	—	18.9	28.9	3.2	8	14	87	103	—	18	28	—	47.7	67.7	—	12	—	66.7	86.7	—	12

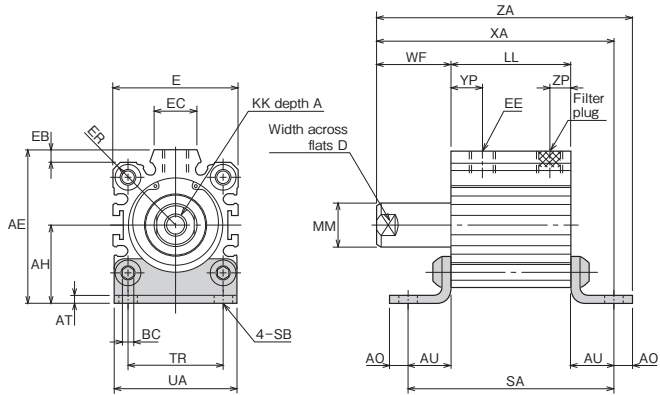
CAD/DATA
10S-6/TAS6 Bore G is available. 

LB

Single acting spring-extended/standard type/end angle

10S-6SH LB Bore N Standard stroke

- Bore $\phi 32$ to $\phi 50$



Dimensional Table

Symbol Stroke Bore	A	AE	AH	AO	AT	AU	BC	D	E	EB	EC	EE	ER	KK	LL		
	5	10	20												5	10	20
ϕ 32	13	55.5	28.5	7	3.2	15	4	14	45	4.5	15	Rc1/8	R30	M8×1.25	28	33	—
ϕ 40	13	63.5	32.5	7	3.2	15	4	14	52	5	17.5	Rc1/8	R34.5	M8×1.25	34.5	39.5	—
ϕ 50	15	77	38	9	3.2	18	5	17	64	7	19	Rc1/4	R42.5	M10×1.5	—	40.5	50.5

Symbol Stroke Bore	MM	SA			SB	TR	UA	WF			XA			YP		ZA			ZP	
		5	10	20				5	10	20	5	10	20	5	10 or more	5	10	20	5	10 or more
ϕ 32	ϕ 16	58	63	—	ϕ 6.6	34	45	12	17	—	55	65	—	10	11	62	72	—	6	8
ϕ 40	ϕ 16	64.5	69.5	—	ϕ 6.6	40	53	12	17	—	61.5	71.5	—	10	11.5	68.5	78.5	—	10	11.5
ϕ 50	ϕ 20	—	76.5	86.5	ϕ 9	50	64	—	18	28	—	76.5	96.5	—	12	—	85.5	105.5	—	12

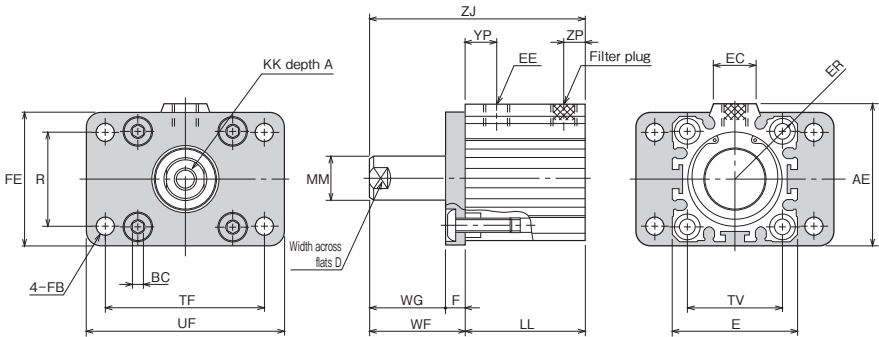
10S-6/TAS6 Bore G CAD/DATA is available. 

FA

Single acting spring-extended/standard type/rod flange

10S-6SH FA Bore N Standard stroke

- Bore $\phi 32$ to $\phi 50$



Note) ● A flange cannot be fitted on the cap side because a tapped hole is not made on the side.

Dimensional Table

Symbol Stroke Bore	A	AE	BC	D	E	EC	EE	ER	F	FB	FE	KK	LL		
													5	10	20
$\phi 32$	13	51	4	14	$\square 45$	15	Rc1/8	R30	8	$\phi 7$	48	M8×1.25	28	33	—
$\phi 40$	13	59	4	14	$\square 52$	17.5	Rc1/8	R34.5	10	$\phi 7$	56	M8×1.25	34.5	39.5	—
$\phi 50$	15	74	5	17	$\square 64$	19	Rc1/4	R42.5	10	$\phi 9$	70	M10×1.5	—	40.5	50.5

Symbol Stroke Bore	MM	R	TV	TF	UF	WF			WG			YP		ZJ			ZP	
						5	10	20	5	10	20	5	10 or more	5	10	20	5	10 or more
$\phi 32$	$\phi 16$	33	$\square 34$	58	72	20	25	—	12	17	—	10	11	48	58	—	6	8
$\phi 40$	$\phi 16$	36	$\square 40$	70	84	22	27	—	12	17	—	10	11.5	56.5	66.5	—	10	11.5
$\phi 50$	$\phi 20$	47	$\square 50$	86	104	—	28	38	—	18	28	—	12	—	68.5	88.5	—	12

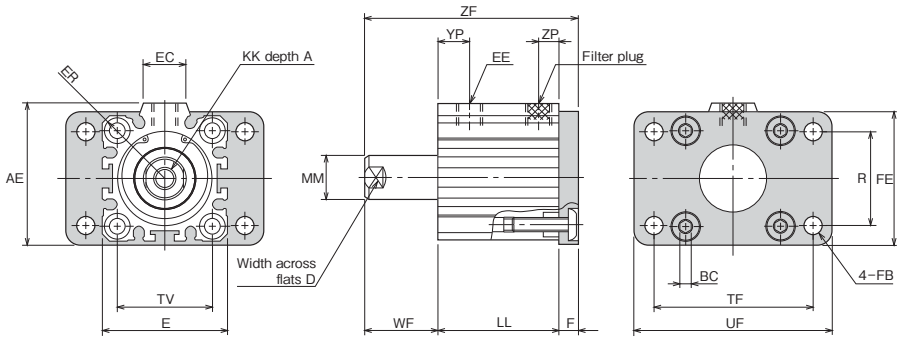
10S-6/TAS6 Bore G CAD/DATA is available. 

FB

Single acting spring-extended/standard type/cap flange

10S-6SH FB Bore N Standard stroke

- Bore $\phi 32$ to $\phi 50$



Note) ● A flange cannot be fitted on the rod side because a tapped hole is not made on the side.

Dimensional Table

Symbol Stroke Bore	A	AE	BC	D	E	EC	EE	ER	F	FB	FE	KK	LL		
													5	10	20
$\phi 32$	13	51	4	14	$\square 45$	15	Rc1/8	R30	8	$\phi 7$	48	M8×1.25	28	33	—
$\phi 40$	13	59	4	14	$\square 52$	17.5	Rc1/8	R34.5	10	$\phi 7$	56	M8×1.25	34.5	39.5	—
$\phi 50$	15	74	5	17	$\square 64$	19	Rc1/4	R42.5	10	$\phi 9$	70	M10×1.5	—	40.5	50.5

Symbol Stroke Bore	MM	R	TV	TF	UF	WF			YP		ZF			ZP	
						5	10	20	5	10 or more	5	10	20	5	10 or more
$\phi 32$	$\phi 16$	33	$\square 34$	58	72	12	17	—	10	11	48	58	—	6	8
$\phi 40$	$\phi 16$	36	$\square 40$	70	84	12	17	—	10	11.5	56.5	66.5	—	10	11.5
$\phi 50$	$\phi 20$	47	$\square 50$	86	104	—	18	28	—	12	—	68.5	88.5	—	12

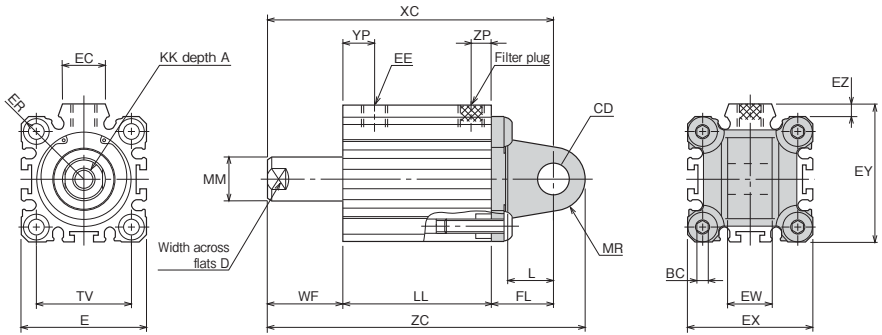
CAD/DATA
10S-6/TAS6 □Bore □G is available. 

CA

Single acting spring-extended/standard type/cap eye

10S-6SH CA □Bore □N □Standard stroke

- Bore $\phi 32$ to $\phi 50$



Dimensional Table

Symbol Bore	A	BC	CD	D	E	EC	EE	ER	EX	EY	EZ	EW	FL	KK	L
$\phi 32$	13	4	$\phi 12H9$	14	$\square 45$	15	Rc1/8	R30	$\square 45$	49.5	4.5	$16^{+0}_{-0.070}$	24	M8 $\times$ 1.25	16.5
$\phi 40$	13	4	$\phi 14H9$	14	$\square 52$	17.5	Rc1/8	R34.5	$\square 53$	57.5	4.5	$20^{+0}_{-0.084}$	24	M8 $\times$ 1.25	16
$\phi 50$	15	5	$\phi 14H9$	17	$\square 64$	19	Rc1/4	R42.5	$\square 64$	71	7	$20^{+0}_{-0.084}$	24	M10 $\times$ 1.5	16

Symbol Stroke	LL			MM	MR	TV	WF			XC			YP		ZC			ZP	
Bore	5	10	20				5	10	20	5	10	20	5	10 or more	5	10	20	5	10 or more
$\phi 32$	28	33	—	$\phi 16$	R12	$\square 34$	12	17	—	64	74	—	10	11	76	86	—	6	8
$\phi 40$	34.5	39.5	—	$\phi 16$	R14	$\square 40$	12	17	—	70.5	80.5	—	10	11.5	84.5	94.5	—	10	11.5
$\phi 50$	—	40.5	50.5	$\phi 20$	R14	$\square 50$	—	18	28	—	82.5	102.5	—	12	—	96.5	116.5	—	12

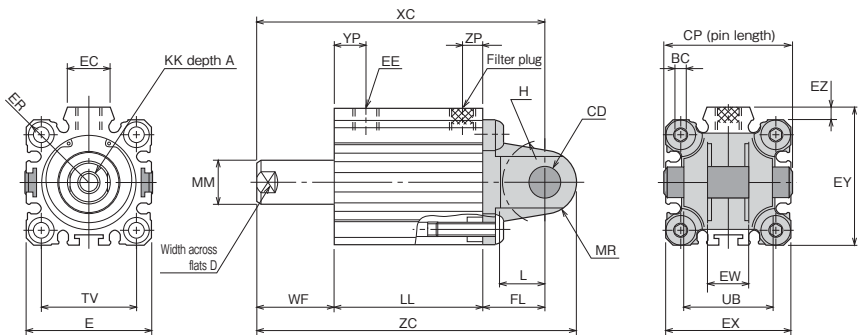
CAD/DATA
10S-6/TAS6 □Bore □G is available. 

CB

Single acting spring-extended/standard type/cap clevis

10S-6SH CB □Bore □N □Standard stroke

- Bore $\phi 32$ to $\phi 50$



Dimensional Table

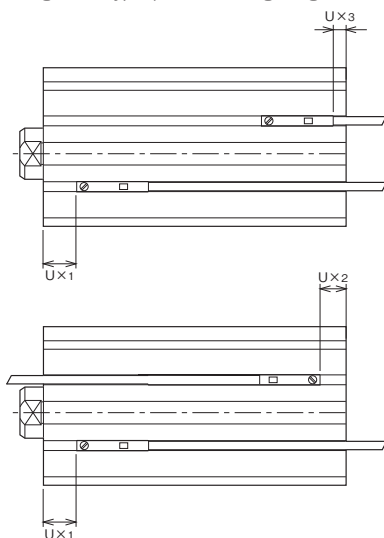
Symbol Bore	A	BC	CD	CP	D	E	EC	EE	ER	EX	EY	EZ	EW	FL	H	KK	L
$\phi 32$	13	4	$\phi 12H9/f8$	45	14	$\square 45$	15	Rc1/8	R30	$\square 45$	49.5	4.5	$16^{+0.7}_{+0.5}$	24	R16.5	M8 $\times$ 1.25	16.5
$\phi 40$	13	4	$\phi 14H9/f8$	52	14	$\square 52$	17.5	Rc1/8	R34.5	$\square 53$	57.5	4.5	$20^{+0.7}_{+0.5}$	24	R18	M8 $\times$ 1.25	16
$\phi 50$	15	5	$\phi 14H9/f8$	63	17	$\square 64$	19	Rc1/4	R42.5	$\square 64$	71	7	$20^{+0.7}_{+0.5}$	24	R21	M10 $\times$ 1.5	16

Symbol Stroke	LL			MM	MR	TV	UB	WF			XC			YP		ZC			ZP	
Bore	5	10	20					5	10	20	5	10	20	5	10 or more	5	10	20	5	10 or more
$\phi 32$	28	33	—	$\phi 16$	R12	$\square 34$	31	12	17	—	64	74	—	10	11	76	86	—	6	8
$\phi 40$	34.5	39.5	—	$\phi 16$	R14	$\square 40$	38	12	17	—	70.5	80.5	—	10	11.5	84.5	94.5	—	10	11.5
$\phi 50$	—	40.5	50.5	$\phi 20$	R14	$\square 50$	49	—	18	28	—	82.5	102.5	—	12	—	96.5	116.5	—	12

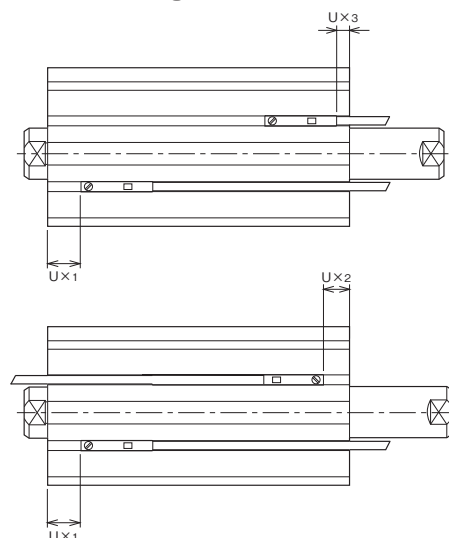
Switch Set

PD/PE type sensor

- Single rod type (double acting/single acting)



- Double acting double rod



Operating Range and Hysteresis

Bore	PD type (reed sensor)		PD type (solid state sensor)		PE type (solid state sensor)	
	Operating range	Hysteresis	Operating range	Hysteresis	Operating range	Hysteresis
φ 12 (Note)	5.5 to 9	1.5 or less	1.5 to 4	1.0 or less	2.5 to 4	1.0 or less
φ 16 (Note)	7 to 10.5		2 to 4.5		3 to 5	
φ 20	10 to 13	2.0 or less	4 to 6.5	1.5 or less	4.5 to 7	1.5 or less
φ 25	10.5 to 14.5		3.5 to 7		4.5 to 7	
φ 32	9 to 13	1.5 or less	3.5 to 6	1.0 or less	4 to 7	1.5 or less
φ 40	9.5 to 13		3.5 to 6		4 to 6	
φ 50	10.5 to 14.5	2.0 or less	3 to 7.5	1.0 or less	4 to 8	1.0 or less
φ 63	11.5 to 15.5		4 to 7.5		4.5 to 8	
φ 80	10 to 16	2.5 or less	4.5 to 8	1.5 or less	6 to 8.5	1.5 or less
φ 100	12 to 17		4.5 to 8		5.5 to 8.5	

(Note) ● When a reed sensor is mounted on the cap side of a double acting single rod or single acting spring return cylinder, the operating range in which the sensor does not protrude from the body is half of the above range.

Sensor Mountable Minimum Stroke (PD/PE type)

Bore	Mounting of 2 sensors	With 1 sensor
	Mounting in 2 grooves	
φ 12 · φ 16	5	5
φ 20 to φ 100	10 (Note)	10

(Note) ● It is possible to mount 2 sensors at a stroke of 5 mm. However, note that an overlap may occur.

Setting method of sensor detecting position

1. Turn the sensor fixing screw to bring it into contact with the nut.
(The sensor fixing screw has left-hand threads. Turn it counterclockwise as shown in Fig. 1.)
2. Insert the sensor in the sensor mounting groove in the cylinder body from the cap or rod side, and slide it.
3. Secure the sensor at the optimum setting position.
(Turn the sensor fixing screw clockwise as shown in Fig. 2, and the sensor fixing screw will be in contact with the sensor mounting groove in the cylinder body to secure the sensor.)
The tightening torque must be 0.1 to 0.2 N·m.
4. If the sensor has an indicating lamp, the lamp will light up when the sensor is turned on.

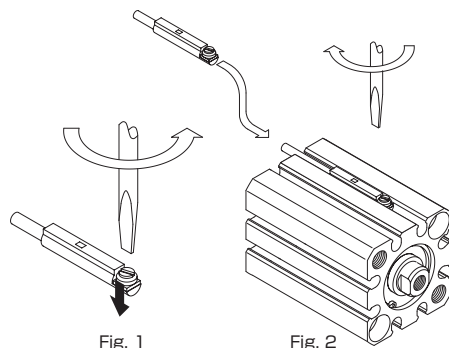


Fig. 1

Fig. 2

■ Dimensional Table (PD type/reed sensor)

- Double acting single rod

Bore	φ 12	φ 16	φ 20	φ 25	φ 32	φ 40	φ 50	φ 63	φ 80	φ 100
Symbol										
UX1	0	0	3.7	3.3	4.8	9.3	9	11.5	14.5	17.5
UX2	0	0	1.8	3.2	2.2	4.2	5.5	8.5	13	19.5
UX3	-1.5	-1.5	4.3	5.7	4.7	6.7	8	11	15.5	22

- Double acting double rod

Bore	φ 12	φ 16	φ 20	φ 25	φ 32	φ 40	φ 50	φ 63	φ 80	φ 100
Symbol										
UX1	0	0	3.7	3.3	4.8	9.3	9	11.5	14.5	17.5
UX2	2.5	2.5	6.8	8.2	12.2	9.2	10.5	13.5	23	29.5
UX3	4.5	4.5	9.3	10.5	14.7	11.7	13	16	25.5	32

- Single acting (spring return)

Bore Stroke Symbol	φ 12		φ 16		φ 20		φ 25		φ 32		φ 40		φ 50	
	5 to 10	15 to 20	5 to 10	15 to 20	5 to 10	15 to 30	5 to 10	15 to 30	5 to 10	15 to 30	5 to 10	15 to 50	10 to 20	25 to 50
UX1	0	4.5	0	4.5	3.7	8.7	3.3	8.3	4.8	9.8	9.3	19.3	9	19
UX2	0	0	0	0	1.8	1.8	3.2	3.2	2.2	2.2	4.2	4.2	5.5	5.5
UX3	-1.5	-1.5	-1.5	-1.5	4.3	4.3	5.7	5.7	4.7	4.7	6.7	6.7	8	8

■ Dimensional Table (PD type/solid state sensor)

- Double acting single rod

Bore	φ 12	φ 16	φ 20	φ 25	φ 32	φ 40	φ 50	φ 63	φ 80	φ 100
Symbol										
UX1	6	6	9.7	9.3	10.8	15.3	15	17.5	20.5	23.5
UX2	3	3	7.8	9.2	8.2	10.2	11.5	14.5	19	25.5
UX3	-7.5	-7.5	-1.7	-0.3	-1.3	0.7	2	5	9.5	16

- Double acting double rod

Bore	φ 12	φ 16	φ 20	φ 25	φ 32	φ 40	φ 50	φ 63	φ 80	φ 100
Symbol										
UX1	6	6	9.7	9.3	10.8	15.3	15	17.5	20.5	23.5
UX2	9	9	12.8	14.2	18.2	15.2	16.5	19.5	29	35.5
UX3	-1.5	-1.5	3.3	4.7	8.7	5.7	7	10	19.5	26

- Single acting (spring return)

Bore Stroke Symbol	φ 12		φ 16		φ 20		φ 25		φ 32		φ 40		φ 50	
	5 to 10	15 to 20	5 to 10	15 to 20	5 to 10	15 to 30	5 to 10	15 to 30	5 to 10	15 to 30	5 to 10	15 to 50	10 to 20	25 to 50
UX1	6	11	6	11	9.7	14.7	9.3	14.3	10.8	15.8	15.3	25.3	15	25
UX2	3	3	3	3	7.8	7.8	9.2	9.2	8.2	8.2	10.2	10.2	11.5	11.5
UX3	-7.5	-7.5	-7.5	-7.5	-1.7	-1.7	-0.3	-0.3	-1.3	-1.3	0.7	0.7	2	2

■ Dimensional Table (PE type/solid state sensor)

- Double acting single rod

Bore	φ 12	φ 16	φ 20	φ 25	φ 32	φ 40	φ 50	φ 63	φ 80	φ 100
Symbol										
UX1	5	5	8.7	8.3	9.8	14.3	14	16.5	19.5	22.5
UX2	2	2	6.8	8.2	7.2	9.2	10.5	13.5	18	24.5
UX3	-5	-5	0.8	2.2	1.2	3.2	4.5	7.5	12	18.5

- Double acting double rod

Bore	φ 12	φ 16	φ 20	φ 25	φ 32	φ 40	φ 50	φ 63	φ 80	φ 100
Symbol										
UX1	5	5	8.7	8.3	9.8	14.3	14	16.5	19.5	22.5
UX2	8	8	11.8	13.2	17.2	14.2	15.5	18.5	28	34.5
UX3	1	1	5.8	7.2	11.2	8.2	9.5	12.5	22	28.5

- Single acting (spring return)

Bore Stroke Symbol	φ 12		φ 16		φ 20		φ 25		φ 32		φ 40		φ 50	
	5 to 10	15 to 20	5 to 10	15 to 20	5 to 10	15 to 30	5 to 10	15 to 30	5 to 10	15 to 30	5 to 10	15 to 50	10 to 20	25 to 50
UX1	5	10	5	10	8.7	13.7	8.3	13.3	9.8	14.8	14.3	24.3	14	24
UX2	2	2	2	2	6.8	6.8	8.2	8.2	7.2	7.2	9.2	9.2	10.5	10.5
UX3	−5	−5	−5	−5	0.8	0.8	2.2	2.2	1.2	1.2	3.2	3.2	4.5	4.5

■ Dimensional Table (ZD type/strong magnetic field resistance)

● Double acting single rod

Bore Symbol	φ 32	φ 40	φ 50	φ 63	φ 80	φ 100
UX1	10.8	15.3	15	17.5	20.5	23.5
UX2	8.2	10.2	11.5	14.5	19	25.5
UX3	—	—	—	—1.5	3	9.5

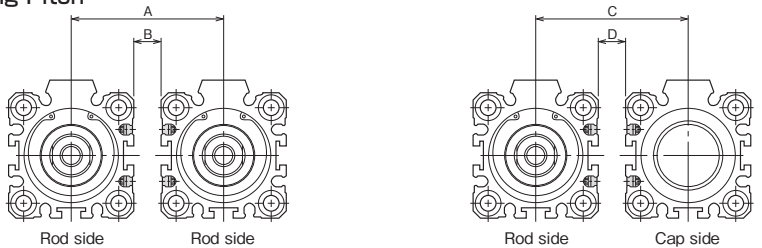
● Double acting double rod

Bore Symbol	φ 32	φ 40	φ 50	φ 63	φ 80	φ 100
UX1	10.8	15.3	15	17.5	20.5	23.5
UX2	18.2	15.2	16.5	19.5	29	35.5
UX3	2.2	—0.8	0.5	3.5	13	19.5

● Single acting (spring return)

Bore Stroke Symbol	φ 32	φ 40	φ 50
	5 to 10	15 to 30	5 to 10
UX1	10.8	15.8	15.3
UX2	8.2	8.2	10.2

Mounting Pitch



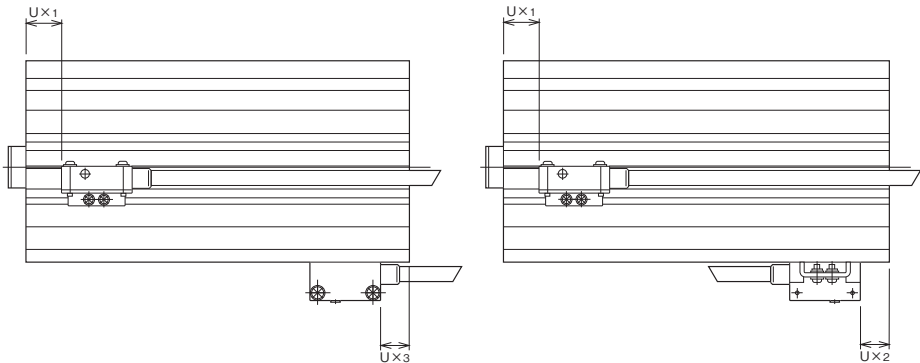
Dimensional Table

Bore	Solid state sensor type				Reed sensor type			
	A	B	C	D	A	B	C	D
φ20	36	0	41	5	36	0	42	6
φ25	40		45		40		46	
φ32	45		50		51		53	
φ40	52		57		58		60	
φ50	64		69		70		74	
φ63	77	6	82	10	83		87	10
φ80	98		103		104		108	
φ100	117		122		123		132	

Switch Set

ZD type sensor

- Bore φ32 to φ100



Operating Range and Hysteresis

Bore	ZD type (solid state sensor)	
	Operating range	Hysteresis
φ 32	2.5 to 6 (1.5 to 4)	1 or less
φ 40	3 to 6.5 (2 to 4.5)	
φ 50	3.5 to 7 (2 to 4.5)	
φ 63	4 to 7.5 (3 to 5.5)	
φ 80	4.5 to 8 (3 to 6)	
φ 100	4.5 to 8 (3 to 6)	

Note) Parenthesized are the optimum adjustment ranges (the green lamp is on).

Sensor Mountable Minimum Stroke (ZD type)

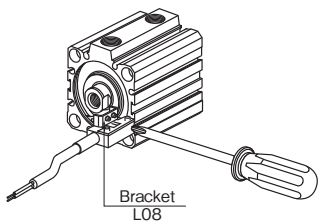
Bore	Mounting of 2 sensors Mounting on 2 faces	Mounting of 1 sensor
	φ 32 to φ 100	10

Note) ● The above table shows the values in the case where part of the cord that cannot be folded is out of the cylinder body for reasons of the cord bending radius. For the minimum stroke in such a state that the cord is not out of the cylinder body, see the following table.

Bore	Cord protruding direction	
	Cap cover side	Rod cover side
φ 32	55	55
φ 40	55	50
φ 50	55	50
φ 63	50	50
φ 80	45	45
φ 100	40	40

Setting method of sensor detecting position

- Loosen the sensor fixing screw.
- Insert the sensor in the sensor mounting groove in the cylinder body from the cap or rod side, and slide it.
- Secure the sensor at the optimum setting position, and tighten the sensor fixing screw. The tightening torque must be 0.1 to 0.2 N·m.
- If the sensor has an indicating lamp, the lamp will light up when the sensor is turned on.

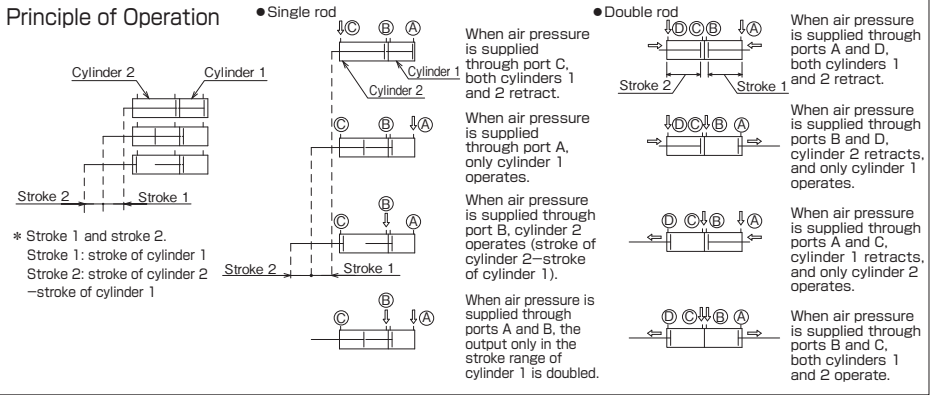


Custom Made Specifications

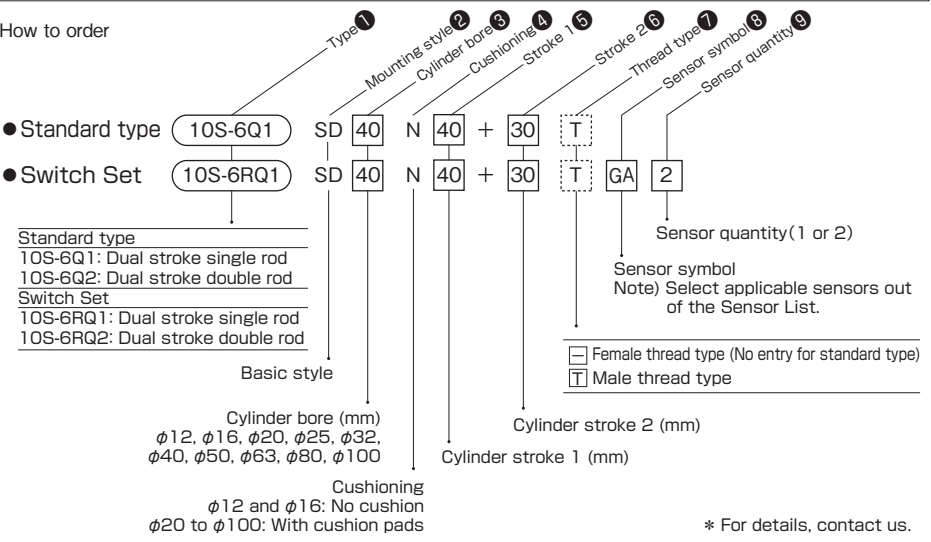
Specifications for Dual Stroke Cylinders

Series variations	Single rod		Double rod	
	Standard type	Switch Set	Standard type	Switch Set
Series	10S-6Q1	10S-6RQ1	10S-6Q2	10S-6RQ2
Cylinder bore (mm)	φ 12 · φ 16 · φ 20 · φ 25 · φ 32 · φ 40 · φ 50 · φ 63 · φ 80 · φ 100			
Working fluid	Air			
Lubrication	Unnecessary			
Working pressure range	φ12 to φ50: 0.1 to 0.7 MPa φ63 to φ100: 0.05 to 0.7 MPa			
Working speed range	φ12 to φ40: 30 to 500 mm/s φ50 to φ100: 30 to 300 mm/s			
Proof test pressure	1.05 MPa			
Working temperature range	+5 to +60°C			
Structure of cushioning	φ12 and φ16: None φ20 to φ100: With cushion pads on both ends			
Tolerance for thread	JIS 6H/6g			
Rod end threads	Female thread, male thread			
Mounting style	Basic style (SD)			

Principle of Operation



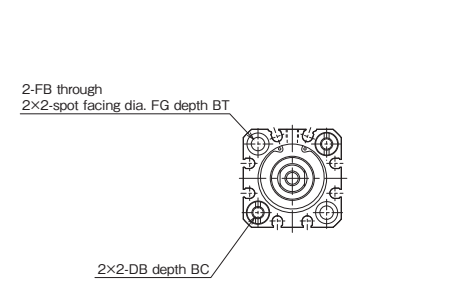
How to order



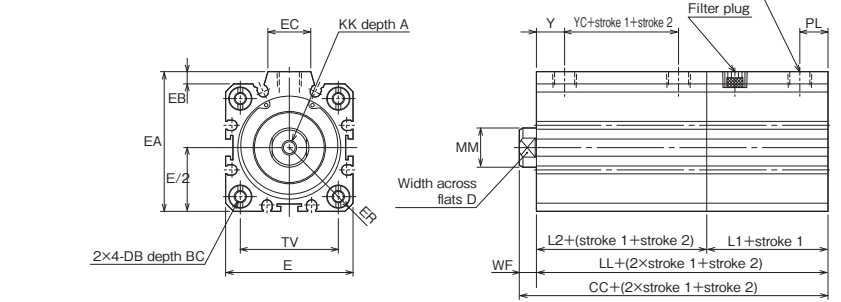
Dual stroke/single rod

10S-6Q1 SD Bore N Stroke 1 + Stroke 2

● Bore φ12 to φ25



● Bore φ32 to φ100



Dimensional Table

Symbol	A	BC	BT	CC		D	DB	E	EA	EB	EC	EE	ER	FB	FG	KK
				10S-6	10S-6R											
Bore																
φ12	6	7	3.5	43.5	53.5	5	M3×0.5	□25	—	—	—	M5×0.8	R16	φ3.4	φ6.5	M3×0.5
φ16	8	7	3.5	43.5	53.5	6	M3×0.5	□29	—	—	—	M5×0.8	R19	φ3.4	φ6.5	M4×0.7
φ20	7	10	5.4	57.5	77.5	8	M5×0.8	□36	—	—	—	M5×0.8	R23.5	φ5.5	φ9	M5×0.8
φ25	12	10	5.4	60	80	10	M5×0.8	□40	—	—	—	M5×0.8	R26	φ5.5	φ9	M6×1
φ32	13	10	—	63	83	14	M5×0.8	□45	49.5	4.5	15	Rc1/8	R30	—	—	M8×1.25
φ40	13	10	—	76	96	14	M5×0.8	□52	57	5	17.5	Rc1/8	R34.5	—	—	M8×1.25
φ50	15	14	—	79	99	17	M6×1	□64	71	7	19	Rc1/4	R42.5	—	—	M10×1.5
φ63	15	14	—	90	110	17	M8×1.25	□77	84	7	19	Rc1/4	R51	—	—	M10×1.5
φ80	21	15	—	107	127	22	M10×1.5	□98	104	6	25	Rc3/8	R65	—	—	M16×2
φ100	27	15	—	128	148	27	M10×1.5	□117	123.5	6.5	25	Rc3/8	R78	—	—	M20×2.5

Symbol	LL		L 1		L 2		MM	TV	WF	Y	YC		PL (10S-6)		PL
	10S-6	10S-6R	10S-6	10S-6R	10S-6	10S-6R					10S-6	10S-6R	St1=5	St1=10 or more	
Bore															
φ12	40	50	17	22	23	28	φ6	□15.5	3.5	9.5	4	9	5	5	5
φ16	40	50	17	22	23	28	φ8	□20	3.5	9.5	4	9	5	5	5
φ20	53	73	21.5	31.5	31.5	41.5	φ10	□25.5	4.5	10	11.5	21.5	6	7	7
φ25	55	75	22.5	32.5	32.5	42.5	φ12	□28	5	10	12.5	22.5	6	7	7
φ32	56	76	23	33	33	43	φ16	□34	7	11	11	22	6	8	8
φ40	69	89	29.5	39.5	39.5	49.5	φ16	□40	7	11.5	16.5	26.5	10	11.5	11.5
φ50	71	91	30.5	40.5	40.5	50.5	φ20	□50	8	12	16.5	26.5	—	12	12
φ63	82	102	36	46	46	56	φ20	□60	8	14.5	17	27	—	14.5	14.5
φ80	97	117	43.5	53.5	53.5	63.5	φ25	□77	10	16.5	20.5	30.5	—	16.5	16.5
φ100	116	136	53	63	63	73	φ30	□94	12	21	21	31	—	21	21

* For details, contact us.

Dual stroke/double rod

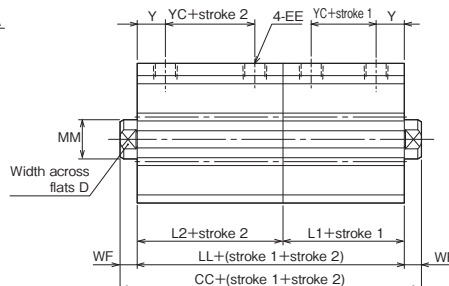
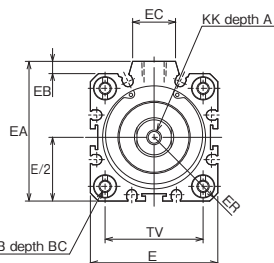
10S-6Q2 SD Bore N Stroke 1 + Stroke 2

- Bore $\phi 12$ to $\phi 25$

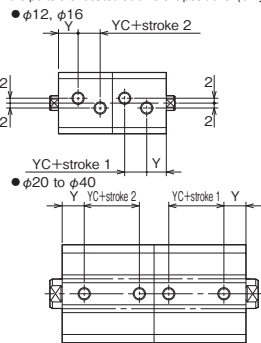


2×2-DB depth BC

- Bore $\phi 32$ to $\phi 100$



[NOTE]
When the stroke 1 or stroke 2 is 5 (bore of $\phi 12$ to $\phi 40$),
the ports are located at different positions. (Only 10S-6Q2)



Dimensional Table

Symbol Bore	A	BC	BT	CC		D	DB	E	EA	EB	EC	EE	ER	FB	FG	KK
				10S-6	10S-6R											
$\phi 12$	6	7	3.5	41	51	5	M3×0.5	□25	—	—	—	M5×0.8	R16	$\phi 3.4$	$\phi 6.5$	M3×0.5
$\phi 16$	8	7	3.5	41	51	6	M3×0.5	□29	—	—	—	M5×0.8	R19	$\phi 3.4$	$\phi 6.5$	M4×0.7
$\phi 20$	7	10	5.4	52	72	8	M5×0.8	□36	—	—	—	M5×0.8	R23.5	$\phi 5.5$	$\phi 9$	M5×0.8
$\phi 25$	12	10	5.4	55	75	10	M5×0.8	□40	—	—	—	M5×0.8	R26	$\phi 5.5$	$\phi 9$	M6×1
$\phi 32$	13	10	—	60	80	14	M5×0.8	□45	49.5	4.5	15	Rc1/8	R30	—	—	M8×1.25
$\phi 40$	13	10	—	73	93	14	M5×0.8	□52	57	5	17.5	Rc1/8	R34.5	—	—	M8×1.25
$\phi 50$	15	14	—	77	97	17	M6×1	□64	71	7	19	Rc1/4	R42.5	—	—	M10×1.5
$\phi 63$	15	14	—	88	108	17	M8×1.25	□77	84	7	19	Rc1/4	R51	—	—	M10×1.5
$\phi 80$	21	15	—	107	127	22	M10×1.5	□98	104	6	25	Rc3/8	R65	—	—	M16×2
$\phi 100$	27	15	—	130	150	27	M10×1.5	□117	123.5	6.5	25	Rc3/8	R78	—	—	M20×2.5

Symbol Bore	LL		L1		L2		MM	TV	WF	Y (10S-6)		Y	YC (10S-6)		YC
	10S-6	10S-6R	10S-6	10S-6R	10S-6	10S-6R				St=5	St=10 or more		St=5	St=10 or more	
$\phi 12$	34	44	17	22	17	22	$\phi 6$	□15.5	3.5	8	9.5	9.5	4	2.5	7.5
$\phi 16$	34	44	17	22	17	22	$\phi 8$	□20	3.5	8	9.5	9.5	4	2.5	7.5
$\phi 20$	43	63	21.5	31.5	21.5	31.5	$\phi 10$	□25.5	4.5	9	10	10	6.5	4.5	14.5
$\phi 25$	45	65	22.5	32.5	22.5	32.5	$\phi 12$	□28	5	9	10	10	7.5	5.5	15.5
$\phi 32$	46	66	23	33	23	33	$\phi 16$	□34	7	10	11	11	7	4	14
$\phi 40$	59	79	29.5	39.5	29.5	39.5	$\phi 16$	□40	7	10	11.5	11.5	9.5	6.5	16.5
$\phi 50$	61	81	30.5	40.5	30.5	40.5	$\phi 20$	□50	8	—	12	12	—	6.5	16.5
$\phi 63$	72	92	36	46	36	46	$\phi 20$	□60	8	—	14.5	14.5	—	7	17
$\phi 80$	87	107	43.5	53.5	43.5	53.5	$\phi 25$	□77	10	—	16.5	16.5	—	10.5	20.5
$\phi 100$	106	126	53	63	53	63	$\phi 30$	□94	12	—	21	21	—	11	21

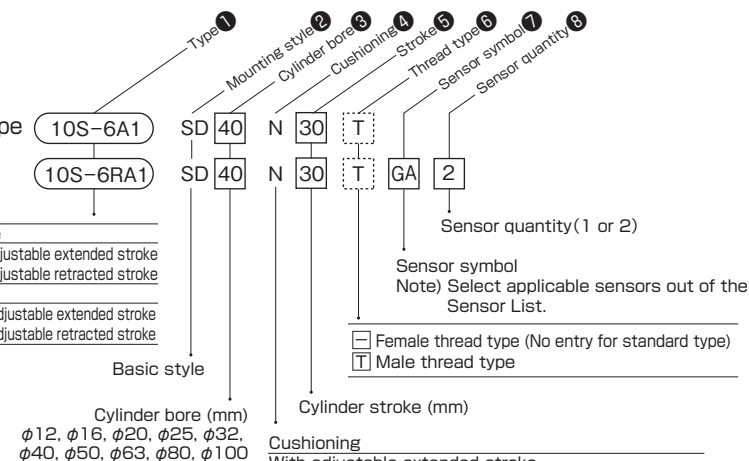
Specifications for Cylinders with Adjustable Stroke

Series variations	With adjustable extended stroke		With adjustable retracted stroke	
	Standard type	Switch Set	Standard type	Switch Set
Series	10S-6A1	10S-6RA1	10S-6A2	10S-6RA2
Cylinder bore (mm)	φ 12 · φ 16 · φ 20 · φ 25 · φ 32 · φ 40 · φ 50 · φ 63 · φ 80 · φ 100			
Working fluid	Air			
Lubrication	Unnecessary			
Working pressure range	φ12 to φ50: 0.1 to 0.7 MPa		φ63 to φ100: 0.05 to 0.7 MPa	
Working speed range	φ12 to φ40: 30 to 500 mm/s		φ50 to φ100: 30 to 300 mm/s	
Proof test pressure	1.05 MPa			
Working temperature range	+5 to +60°C			
Structure of cushioning	φ12·φ16: Rod advancing end: With cushion pad Retracting end: None φ20 to φ100: With cushion pads on both ends		φ12·φ16: None φ20 to φ100: Rod advancing end: With cushion pad Retracting end: None	
Stroke adjusting method	Stopper adjustment		Adjuster bolt adjustment	
Stroke adjusting range	0 to 10mm			
Tolerance for thread	JIS 6H/6g			
Rod end threads	Female thread, male thread			
Mounting style	Basic style (SD)			

How to order

- Standard type 10S-6A1
- Switch Set 10S-6RA1

Standard type
10S-6A1: With adjustable extended stroke
10S-6A2: With adjustable retracted stroke
Switch Set
10S-6RA1: With adjustable extended stroke
10S-6RA2: With adjustable retracted stroke

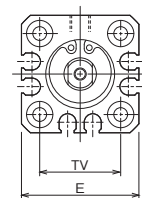


* For details, contact us.

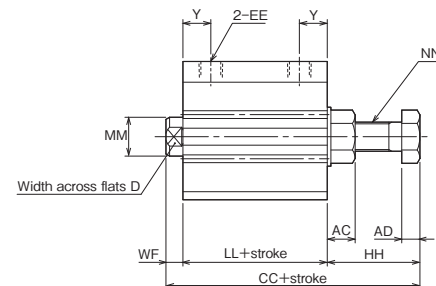
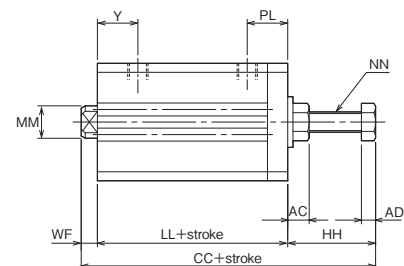
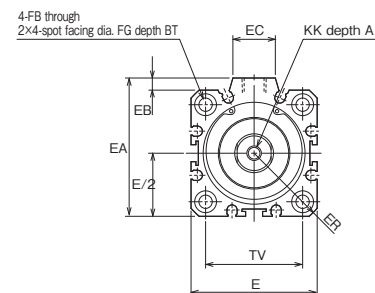
With adjustable retracted stroke

10S-6A2 SD Bore N Stroke

• Bore $\phi 12$, $\phi 16$



• Bore $\phi 20$ to $\phi 100$



Dimensional Table

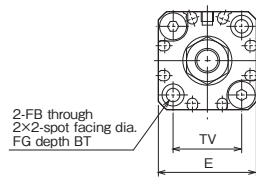
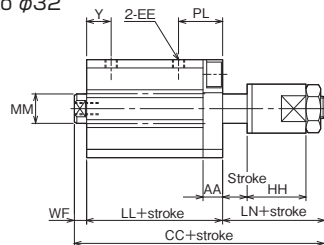
Symbol Bore	A	AC	AD	BT	CC		D	E	EA	EB	EC	EE	ER	FB
					10S-6	10S-6R								
$\phi 12$	6	5.3	3.5	3.5	46	51	5	$\square 25$	—	—	—	M5×0.8	R16	$\phi 3.4$
$\phi 16$	8	5.3	3.5	3.5	46	51	6	$\square 29$	—	—	—	M5×0.8	R19	$\phi 3.4$
$\phi 20$	7	7.3	5.5	5.4	65.6	75.6	8	$\square 36$	—	—	—	M5×0.8	R23.5	$\phi 5.5$
$\phi 25$	12	7.3	5.5	5.4	67.5	77.5	10	$\square 40$	—	—	—	M5×0.8	R26	$\phi 5.5$
$\phi 32$	13	7.3	5.5	5.4	68.5	78.5	14	$\square 45$	49.5	4.5	15	Rc1/8	R30	$\phi 5.5$
$\phi 40$	13	11.5	8	5.4	84.7	94.7	14	$\square 52$	57	5	17.5	Rc1/8	R34.5	$\phi 5.5$
$\phi 50$	15	11.5	8	8	87	97	17	$\square 64$	71	7	19	Rc1/4	R42.5	$\phi 6.6$
$\phi 63$	15	13	10	10.5	97.5	107.5	17	$\square 77$	84	7	19	Rc1/4	R51	$\phi 9$
$\phi 80$	21	18.5	13	13.5	115.5	125.5	22	$\square 98$	104	6	25	Rc3/8	R65	$\phi 11$
$\phi 100$	27	21.5	15	13.5	135.5	145.5	27	$\square 117$	123.5	6.5	25	Rc3/8	R78	$\phi 11$

Symbol Bore	FG	HH	KK	LL		MM	NN	TV	WF	Y	PL
				10S-6	10S-6R						
$\phi 12$	$\phi 6.5$	20.5	M3×0.5	22	27	$\phi 6$	M5×0.8	$\square 15.5$	3.5	9.5	10
$\phi 16$	$\phi 6.5$	20.5	M4×0.7	22	27	$\phi 8$	M5×0.8	$\square 20$	3.5	9.5	10
$\phi 20$	$\phi 9$	29.6	M5×0.8	31.5	41.5	$\phi 10$	M8×1.25	$\square 25.5$	4.5	10	—
$\phi 25$	$\phi 9$	30	M6×1	32.5	42.5	$\phi 12$	M8×1.25	$\square 28$	5	10	—
$\phi 32$	$\phi 9$	28.5	M8×1.25	33	43	$\phi 16$	M8×1.25	$\square 34$	7	11	—
$\phi 40$	$\phi 9$	38.2	M8×1.25	39.5	49.5	$\phi 16$	M12×1.5	$\square 40$	7	11.5	—
$\phi 50$	$\phi 11$	38.5	M10×1.5	40.5	50.5	$\phi 20$	M12×1.5	$\square 50$	8	12	—
$\phi 63$	$\phi 14$	43.5	M10×1.5	46	56	$\phi 20$	M16×1.5	$\square 60$	8	14.5	—
$\phi 80$	$\phi 17.5$	52	M16×2	53.5	63.5	$\phi 25$	M20×1.5	$\square 77$	10	16.5	—
$\phi 100$	$\phi 17.5$	60.5	M20×2.5	63	73	$\phi 30$	M24×2	$\square 94$	12	21	—

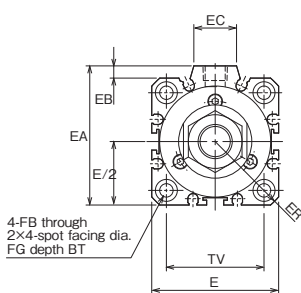
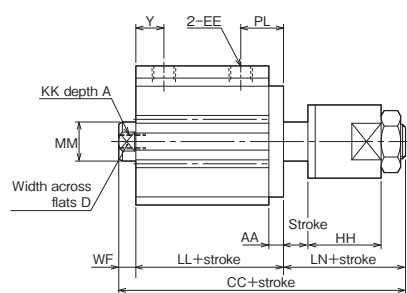
With adjustable extended stroke

10S-6A1 SD Bore N Stroke

• Bore $\phi 12$ to $\phi 32$



• Bore $\phi 40$ to $\phi 100$



Note) Stroke adjusting range: 0 to 10 mm

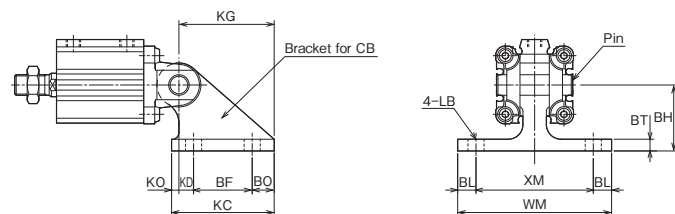
Dimensional Table

Symbol Bore	A	AA	BT	CC		D	E	EA	EB	EC	EE	ER	FB	FG	HH	KK
				10S-6	10S-6R											
$\phi 12$	6	5	3.5	61.5	66.5	5	$\square 25$	—	—	—	M5×0.8	R16	$\phi 3.4$	$\phi 6.5$	21	M3×0.5
$\phi 16$	8	5	3.5	61.5	66.5	6	$\square 29$	—	—	—	M5×0.8	R19	$\phi 3.4$	$\phi 6.5$	22	M4×0.7
$\phi 20$	7	8	5.4	70	80	8	$\square 36$	—	—	—	M5×0.8	R23.5	$\phi 5.5$	$\phi 9$	24	M5×0.8
$\phi 25$	12	8	5.4	72.5	82.5	10	$\square 40$	—	—	—	M5×0.8	R26	$\phi 5.5$	$\phi 9$	24	M6×1
$\phi 32$	13	8	5.4	88	98	14	$\square 45$	49.5	4.5	15	Rc1/8	R30	$\phi 5.5$	$\phi 9$	30	M8×1.25
$\phi 40$	13	6	5.4	87.5	97.5	14	$\square 52$	57	5	17.5	Rc1/8	R34.5	$\phi 5.5$	$\phi 9$	30	M8×1.25
$\phi 50$	15	6	8	93.5	103.5	17	$\square 64$	71	7	19	Rc1/4	R42.5	$\phi 6.6$	$\phi 11$	31	M10×1.5
$\phi 63$	15	6	10.5	99	109	17	$\square 77$	84	7	19	Rc1/4	R51	$\phi 9$	$\phi 14$	31	M10×1.5
$\phi 80$	21	10	13.5	128.5	138.5	22	$\square 98$	104	6	25	Rc3/8	R65	$\phi 11$	$\phi 17.5$	40	M16×2
$\phi 100$	27	10	13.5	143	153	27	$\square 117$	123.5	6.5	25	Rc3/8	R78	$\phi 11$	$\phi 17.5$	40	M20×2.5

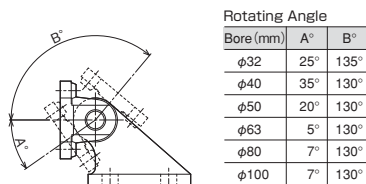
Symbol Bore	LL		LN	MM	TV	WF	Y	PL
	10S-6	10S-6R						
$\phi 12$	32	37	26	$\phi 6$	$\square 15.5$	3.5	9.5	14.5
$\phi 16$	32	37	27	$\phi 8$	$\square 20$	3.5	9.5	14.5
$\phi 20$	34.5	44.5	31	$\phi 10$	$\square 25.5$	4.5	10	18
$\phi 25$	35.5	45.5	32	$\phi 12$	$\square 28$	5	10	18
$\phi 32$	41	51	40	$\phi 16$	$\square 34$	7	11	19
$\phi 40$	40.5	50.5	40	$\phi 16$	$\square 40$	7	11.5	17.5
$\phi 50$	41.5	51.5	44	$\phi 20$	$\square 50$	8	12	18
$\phi 63$	47	57	44	$\phi 20$	$\square 60$	8	14.5	20.5
$\phi 80$	63.5	73.5	55	$\phi 25$	$\square 77$	10	16.5	26.5
$\phi 100$	73	83	58	$\phi 30$	$\square 94$	12	21	31

CB bracket

- Bore $\phi 32$ to $\phi 100$



For the cylinder body, refer to CB.



Dimensional Table

[illegible]

Allowable Kinetic Energy

TOS-6 Series is provided with a cushion pad (urethane rubber) at the stroke end to absorb a shock. The pad absorbs the impact sound caused by the operation of the cylinder to enable high-frequency and high-speed operation.

The kinetic energy of the load can be determined by the following formula.

$$E_x = \frac{1}{2}mv^2 \text{ (J)}$$

E_x : kinetic energy (J)

m: weight of load (kg)

v : piston speed (m/s)

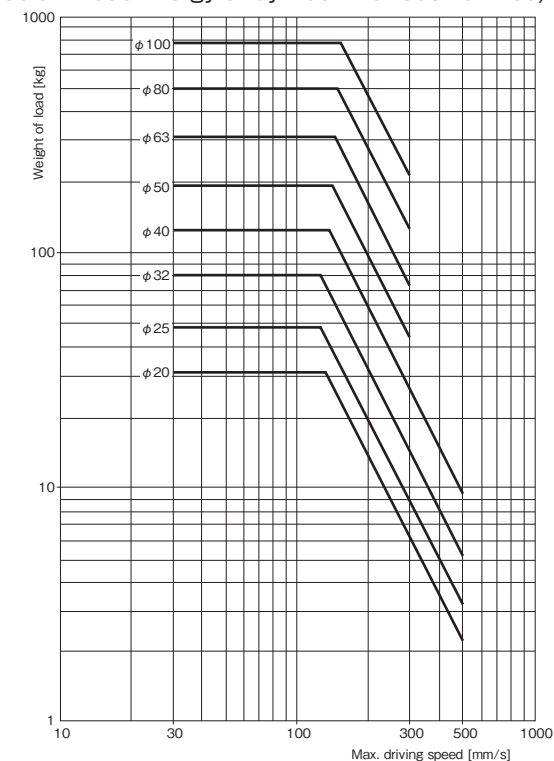
Unit: J	
Bore (mm)	Allowable kinetic energy
φ 12	0.02
φ 16	0.04
φ 20	0.27
φ 25	0.40
φ 32	0.65
φ 40	1.20
φ 50	2.00
φ 63	3.40
φ 80	5.90
φ 100	9.90

Note) 12- and 16-mm bore cylinders do not have a cushion pad.

- How to read the chart

According to the chart, the max. speed must be 200 mm/s or less from the viewpoint of the cushion pad capacity when a load weighing 100 kg is operated by 10S-6 Series cylinder with a bore of 50 mm.

(Reference Table of Allowable Kinetic Energy of Cylinder with Cushion Pad)



Special Rod End Shapes
A10

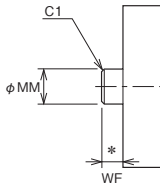


Table of Basic Dimensions

Symbol	Bore	φ 12	φ 16	φ 20	φ 25	φ 32	φ 40	φ 50	φ 63	φ 80	φ 100
MM		6	8	10	12	16	16	20	20	25	30
WF		8	8	8	10	10	10	10	10	14	14

A15

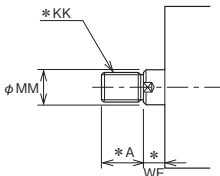


Table of Basic Dimensions

Symbol	Bore	φ 12	φ 16	φ 20	φ 25	φ 32	φ 40	φ 50	φ 63	φ 80	φ 100
A		10	12	16	20	28	28	36	36	44	52
KK		M5×0.8	M6×1	M8×1.25	M10×1.25	M14×1.5	M18×1.5	M18×1.5	M22×1.5	M26×1.5	
MM		6	8	10	12	16	16	20	20	25	30
WF		8	8	8	10	10	10	10	10	14	14

A20

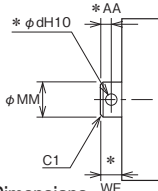


Table of Basic Dimensions

Symbol	Bore	φ 12	φ 16	φ 20	φ 25	φ 32	φ 40	φ 50	φ 63	φ 80	φ 100
AA		3.5	5	6	7	8	8	12	12	14	18
d		3	4	5	6	8	8	10	10	12	14
MM		6	8	10	12	16	16	20	20	25	30
WF		9	12	15	18	24	24	30	30	36	45

A14

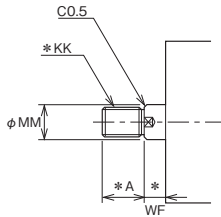


Table of Basic Dimensions

Symbol	Bore	φ 12	φ 16	φ 20	φ 25	φ 32	φ 40	φ 50	φ 63	φ 80	φ 100
A		10	12	16	20	28	28	36	36	44	52
KK		M5×0.8	M6×1	M8×1.25	M10×1.25	M14×1.5	M18×1.5	M18×1.5	M22×1.5	M26×1.5	
MM		6	8	10	12	16	16	20	20	25	30
WF		8	8	8	10	10	10	10	10	14	14

A16

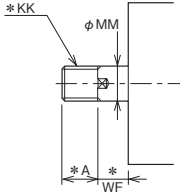


Table of Basic Dimensions

Symbol	Bore	φ 12	φ 16	φ 20	φ 25	φ 32	φ 40	φ 50	φ 63
A		10	12	16	20	28	28	36	36
KK		M6×1	M8×1.25	M10×1.25	M12×1.5	M16×1.5	M16×1.5	M20×1.5	M20×1.5
MM		6	8	10	12	16	16	20	20
WF		8	8	8	10	10	10	10	10

A28

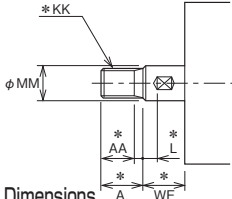


Table of Basic Dimensions

Symbol	Bore	φ 12	φ 16	φ 20	φ 25	φ 32	φ 40	φ 50	φ 63	φ 80	φ 100
A		10.5	12	14	17.5	23.5	23.5	28.5	28.5	35.5	35.5
AA		9	10	12	15	20.5	20.5	25.5	25.5	32.5	32.5
KK		M5×0.8	M6×1	M8×1.25	M10×1.25	M14×1.5	M18×1.5	M18×1.5	M22×1.5	M26×1.5	
L		6	6	6	6	8	8	10	10	10	10
MM		6	8	10	12	16	16	20	20	25	30
WF		14	14	14	16	18	18	20	20	24	24

A30

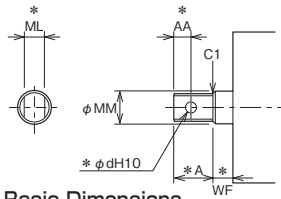


Table of Basic Dimensions

Symbol	Bore	φ 12	φ 16	φ 20	φ 25	φ 32	φ 40	φ 50	φ 63	φ 80	φ 100
A		9	12	15	18	24	24	30	30	36	45
AA		3.5	5	6	7	8	8	12	12	14	18
d		3	4	5	6	8	8	10	10	12	14
ML		3.5	4	6	8	10	10	12	12	14	18
MM		6	8	10	12	16	16	20	20	25	30
WF		5	5	5	5	5	5	5	5	5	5

A37

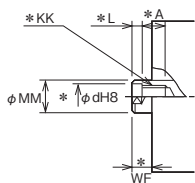


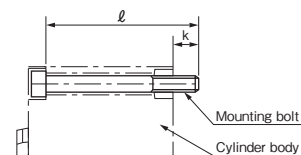
Table of Basic Dimensions

Symbol	Bore	φ 20	φ 25	φ 32	φ 40	φ 50	φ 63	φ 80	φ 100
A		7	12	13	13	15	15	21	27
d		6	8	10	10	12	12	18	20
KK		M5×0.8	M6×1	M8×1.25	M8×1.25	M10×1.5	M10×1.5	M16×2	M20×2.5
L		5	5	7	7	10	10	10	10
MM		10	12	16	16	20	20	25	30
WF		8	10	10	10	10	10	14	14

- For the detailed specifications, dimensions and leadtime of cylinders with special rod ends, contact us.
- If you want to change the *-marked dimensions, consult us.

Dimensional Drawing

Unit: mm



Mounting bolt: Hex. socket head cap screw (black oxide coating)

Model Number

When placing an order, specify the model number shown below.

CBT 5 - 80 S

Mounting bolt type

②Quantity

① Bolt size

Bolt length (ℓ)

Explanation of symbols

1	Bolt size				2	Quantity	
	3	M3	8	M8		S	2 pcs.
	5	M5	10	M10		D	4 pcs.
	6	M6					

List of Mounting Bolts: Standard type/standard

Series variations	Bore	k	Stroke (mm)						
			5	10	15	20	25	30	35
Double acting single rod 10S-6	φ 12	6.5	CBT3-25S	CBT3-30S	CBT3-35S	CBT3-40S	CBT3-45S	CBT3-50S	—
	φ 16	6.5	CBT3-25S	CBT3-30S	CBT3-35S	CBT3-40S	CBT3-45S	CBT3-50S	—
	φ 20	13.9	CBT5-35S	CBT5-40S	CBT5-45S	CBT5-50S	CBT5-55S	CBT5-60S	CBT5-65S
	φ 25	12.9	CBT5-35S	CBT5-40S	CBT5-45S	CBT5-50S	CBT5-55S	CBT5-60S	CBT5-65S
	φ 32	12.4	CBT5-35D	CBT5-40D	CBT5-45D	CBT5-50D	CBT5-55D	CBT5-60D	CBT5-65D
	φ 40	10.9	CBT5-40D	CBT5-45D	CBT5-50D	CBT5-55D	CBT5-60D	CBT5-65D	CBT5-70D
	φ 50	12.5	—	CBT6-45D	CBT6-50D	CBT6-55D	CBT6-60D	CBT6-65D	CBT6-70D
	φ 63	14.5	—	CBT8-50D	CBT8-55D	CBT8-60D	CBT8-65D	CBT8-70D	CBT8-75D
	φ 80	15	—	CBT10-55D	CBT10-60D	CBT10-65D	CBT10-70D	CBT10-75D	CBT10-80D
Double acting double rod 10S-6D	φ 100	15.5	—	CBT10-65D	CBT10-70D	CBT10-75D	CBT10-80D	CBT10-85D	CBT10-90D
	φ 12	6.5	CBT3-30S	CBT3-35S	CBT3-40S	CBT3-45S	CBT3-50S	—	—
	φ 16	6.5	CBT3-30S	CBT3-35S	CBT3-40S	CBT3-45S	CBT3-50S	—	—
	φ 20	13.9	CBT5-40S	CBT5-45S	CBT5-50S	CBT5-55S	CBT5-60S	CBT5-65S	—
	φ 25	12.9	CBT5-40S	CBT5-45S	CBT5-50S	CBT5-55S	CBT5-60S	CBT5-65S	—
	φ 32	12.4	CBT5-45D	CBT5-50D	CBT5-55D	CBT5-60D	CBT5-65D	CBT5-70D	CBT5-75D
	φ 40	10.9	CBT5-45D	CBT5-50D	CBT5-55D	CBT5-60D	CBT5-65D	CBT5-70D	CBT5-75D
	φ 50	12.5	—	CBT6-50D	CBT6-55D	CBT6-60D	CBT6-65D	CBT6-70D	CBT6-75D
	φ 63	14.5	—	CBT8-55D	CBT8-60D	CBT8-65D	CBT8-70D	CBT8-75D	CBT8-80D
Single acting spring return 10S-6SR	φ 80	15	—	CBT10-65D	CBT10-70D	CBT10-75D	CBT10-80D	CBT10-85D	CBT10-90D
	φ 100	15.5	—	CBT10-75D	CBT10-80D	CBT10-85D	CBT10-90D	CBT10-95D	CBT10-100D
	φ 12	6.5	CBT3-25S	CBT3-35S	CBT3-40S	CBT3-45S	—	—	—
	φ 16	6.5	CBT3-25S	CBT3-35S	CBT3-40S	CBT3-45S	—	—	—
	φ 20	13.9	CBT5-35S	CBT5-40S	CBT5-50S	CBT5-55S	CBT5-60S	CBT5-65S	—
	φ 25	12.9	CBT5-35S	CBT5-40S	CBT5-50S	CBT5-55S	CBT5-60S	CBT5-65S	—
	φ 32	12.4	CBT5-35D	CBT5-40D	CBT5-50D	CBT5-60D	CBT5-65D	CBT5-70D	CBT5-75D
	φ 40	10.9	CBT5-40D	CBT5-45D	CBT5-60D	CBT5-65D	CBT5-70D	CBT5-75D	CBT5-80D
	φ 50	12.5	—	CBT6-45D	CBT6-50D	CBT6-55D	CBT6-70D	CBT6-75D	CBT6-80D
Single acting spring-extended 10S-6SH	φ 12	6.5	CBT3-25S	CBT3-30S	—	—	—	—	—
	φ 16	6.5	CBT3-25S	CBT3-30S	—	—	—	—	—
	φ 20	13.9	CBT5-35S	CBT5-40S	—	—	—	—	—
	φ 25	12.9	CBT5-35S	CBT5-40S	—	—	—	—	—
	φ 32	12.4	CBT5-35D	CBT5-40D	—	—	—	—	—
	φ 40	10.9	CBT5-40D	CBT5-45D	—	—	—	—	—
	φ 50	12.5	—	CBT6-45D	—	CBT-55D	—	—	—

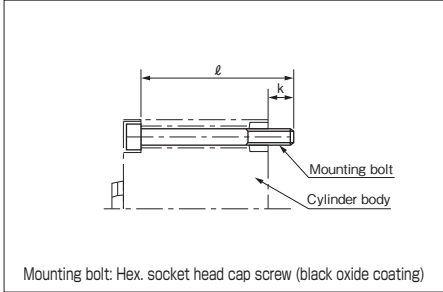
[illegible]

Dimensional Drawing

Unit: mm

Model Number

When placing an order, specify the model number shown below.



CBT 5 - 80 S

Mounting bolt type

② Quantity

① Bolt size

Bolt length (ℓ)

Explanation of symbols

①	Bolt size				②	Quantity	
	3	M3	8	M8		S	2 pcs.
	5	M5	10	M10		D	4 pcs.
	6	M6					

List of Mounting Bolts: Switch Set/standard

Series variations	Bore	k	Stroke (mm)						
			5	10	15	20	25	30	35
Double acting single rod 10S-6R	φ 12	6.5	CBT3-30S	CBT3-35S	CBT3-40S	CBT3-45S	CBT3-50S	CBT3-55S	—
	φ 16	6.5	CBT3-30S	CBT3-35S	CBT3-40S	CBT3-45S	CBT3-50S	CBT3-55S	—
	φ 20	13.9	CBT5-45S	CBT5-50S	CBT5-55S	CBT5-60S	CBT5-65S	CBT5-70S	CBT5-75S
	φ 25	12.9	CBT5-45S	CBT5-50S	CBT5-55S	CBT5-60S	CBT5-65S	CBT5-70S	CBT5-75S
	φ 32	12.4	CBT5-45D	CBT5-50D	CBT5-55D	CBT5-60D	CBT5-65D	CBT5-70D	CBT5-75D
	φ 40	10.9	CBT5-50D	CBT5-55D	CBT5-60D	CBT5-65D	CBT5-70D	CBT5-75D	CBT5-80D
	φ 50	12.5	—	CBT6-55D	CBT6-60D	CBT6-65D	CBT6-70D	CBT6-75D	CBT6-80D
	φ 63	14.5	—	CBT8-60D	CBT8-65D	CBT8-70D	CBT8-75D	CBT8-80D	CBT8-85D
	φ 80	15	—	CBT10-65D	CBT10-70D	CBT10-75D	CBT10-80D	CBT10-85D	CBT10-90D
	φ 100	15.5	—	CBT10-75D	CBT10-80D	CBT10-85D	CBT10-90D	CBT10-95D	CBT10-100D
Double acting double rod 10S-6RD	φ 12	6.5	CBT3-35S	CBT3-40S	CBT3-45S	CBT3-50S	CBT3-55S	—	—
	φ 16	6.5	CBT3-35S	CBT3-40S	CBT3-45S	CBT3-50S	CBT3-55S	—	—
	φ 20	13.9	CBT5-50S	CBT5-55S	CBT5-60S	CBT5-65S	CBT5-70S	CBT5-75S	—
	φ 25	12.9	CBT5-50S	CBT5-55S	CBT5-60S	CBT5-65S	CBT5-70S	CBT5-75S	—
	φ 32	12.4	CBT5-55D	CBT5-60D	CBT5-65D	CBT5-70D	CBT5-75D	CBT5-80D	CBT5-85D
	φ 40	10.9	CBT5-55D	CBT5-60D	CBT5-65D	CBT5-70D	CBT5-75D	CBT5-80D	CBT5-85D
	φ 50	12.5	—	CBT6-60D	CBT6-65D	CBT6-70D	CBT6-75D	CBT6-80D	CBT6-85D
	φ 63	14.5	—	CBT8-65D	CBT8-70D	CBT8-75D	CBT8-80D	CBT8-85D	CBT8-90D
	φ 80	15	—	CBT10-75D	CBT10-80D	CBT10-85D	CBT10-90D	CBT10-95D	CBT10-100D
	φ 100	15.5	—	CBT10-85D	CBT10-90D	CBT10-95D	CBT10-100D	CBT10-105D	CBT10-110D
Single acting spring return 10S-6RSR	φ 12	6.5	CBT3-30S	CBT3-35S	CBT3-45S	CBT3-50S	—	—	—
	φ 16	6.5	CBT3-30S	CBT3-35S	CBT3-45S	CBT3-50S	—	—	—
	φ 20	13.9	CBT5-45S	CBT5-50S	CBT5-60S	CBT5-65S	CBT5-70S	CBT5-75S	—
	φ 25	12.9	CBT5-45S	CBT5-50S	CBT5-60S	CBT5-65S	CBT5-70S	CBT5-75S	—
	φ 32	12.4	CBT5-45D	CBT5-50D	CBT5-65D	CBT5-70D	CBT5-75D	CBT5-80D	CBT5-85D
	φ 40	10.9	CBT5-50D	CBT5-55D	CBT5-70D	CBT5-75D	CBT5-80D	CBT5-85D	CBT5-90D
	φ 50	12.5	—	CBT6-55D	CBT6-60D	CBT6-65D	CBT6-80D	CBT6-85D	CBT6-90D

Stroke (mm)								
40	45	50	60	70	75	80	90	100
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
CBT5-80S	CBT5-85S	CBT5-90S	CBT5-100S	CBT5-110S	—	—	—	—
CBT5-80S	CBT5-85S	CBT5-90S	CBT5-100S	CBT5-110S	—	—	—	—
CBT5-80D	CBT5-85D	CBT5-90D	CBT5-100D	CBT5-110D	CBT5-115D	CBT5-120D	CBT5-130D	CBT5-140D
CBT5-85D	CBT5-90D	CBT5-95D	CBT5-105D	CBT5-115D	CBT5-120D	CBT5-125D	CBT5-135D	CBT5-145D
CBT6-85D	CBT6-90D	CBT6-95D	CBT6-105D	CBT6-115D	CBT6-120D	CBT6-125D	CBT6-135D	CBT6-145D
CBT8-90D	CBT8-95D	CBT8-100D	CBT8-110D	CBT8-120D	CBT8-125D	CBT8-130D	CBT8-140D	CBT8-150D
CBT10-95D	CBT10-100D	CBT10-105D	CBT10-115D	CBT10-125D	CBT10-130D	CBT10-135D	CBT10-145D	CBT10-155D
CBT10-105D	CBT10-110D	CBT10-115D	CBT10-125D	CBT10-135D	CBT10-140D	CBT10-145D	CBT10-155D	CBT10-165D
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
CBT5-90D	CBT5-95D	CBT5-100D	—	—	—	—	—	—
CBT5-90D	CBT5-95D	CBT5-100D	—	—	—	—	—	—
CBT6-90D	CBT6-95D	CBT6-100D	—	—	—	—	—	—
CBT8-95D	CBT8-100D	CBT8-105D	—	—	—	—	—	—
CBT10-105D	CBT10-110D	CBT10-115D	—	—	—	—	—	—
CBT10-115D	CBT10-120D	CBT10-125D	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
CBT5-90D	—	—	—	—	—	—	—	—
CBT5-95D	CBT5-100D	CBT5-105D	—	—	—	—	—	—
CBT6-95D	CBT6-100D	CBT6-105D	—	—	—	—	—	—

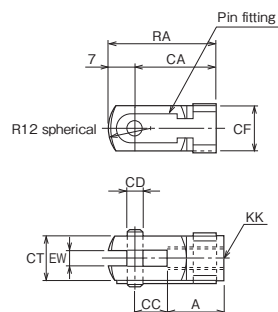
CAD/DATA
10S-6/TAS6 [Bore] K is available.



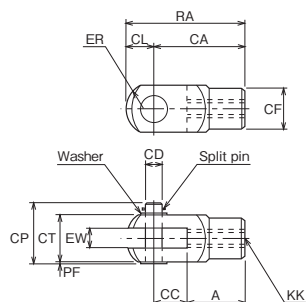
Rod end attachment

Rod clevis (Y-end) with pin

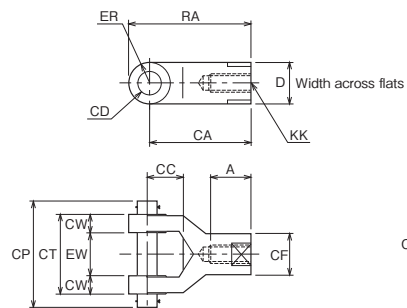
• Bore $\phi 12$



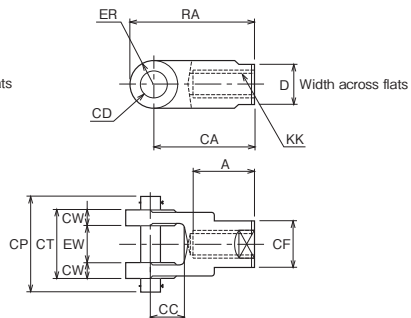
• Bore $\phi 16$ to $\phi 25$



• Bore $\phi 32$ to $\phi 80$



• Bore $\phi 100$

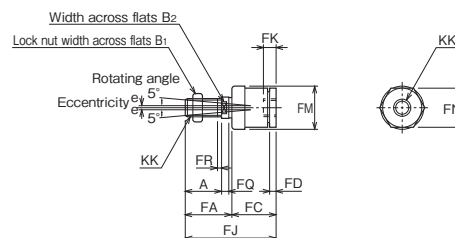


Dimensional Table

Symbol	Part number	A	CA	CC	CD	CF	CL	CP	CT	CW	D	ER	EW	KK	PF	PL	RA
Bore																	
$\phi 12$	RYA-05-A	11	21	10	$\phi 5.1$	$\phi 12$	—	—	12	—	—	—	6.5	M5×0.8	—	—	28
$\phi 16$	RYA-06-A	12	24	12	$\phi 6H8/7$	$\phi 10$	—	—	12	—	—	—	6	M6×1	1.5	18.5	31
$\phi 20$	RYA-08-A	16	32	16	$\phi 8H8/7$	$\phi 14$	10	24.5	16	—	—	—	$8^{+0.40}_{+0.15}$	M8×1.25	2	—	42
$\phi 25$	RYA-10-A	20	40	20	$\phi 10H8/7$	$\phi 18$	12	30	20	—	—	—	$10^{+0.40}_{+0.15}$	M10×1.25	2.5	—	52
$\phi 32$	RYA-14-A	25	60	20	$\phi 14H9/8$	$\phi 24$	—	58	44	12	24	R12	$20^{+1.5}_{+0.5}$	M14×1.5	—	—	72
$\phi 40$	RYA-14-A	25	60	20	$\phi 14H9/8$	$\phi 24$	—	58	44	12	24	R12	$20^{+1.5}_{+0.5}$	M14×1.5	—	—	72
$\phi 50$	RYA-18-1-A	33	60	18	$\phi 14H9/8$	$\phi 28$	—	58	44	12	27	R14	$20^{+1.5}_{+0.5}$	M18×1.5	—	—	74
$\phi 63$	RYA-18-1-A	33	60	18	$\phi 14H9/8$	$\phi 28$	—	58	44	12	27	R14	$20^{+1.5}_{+0.5}$	M18×1.5	—	—	74
$\phi 80$	RYA-22-1-A	41	85	28	$\phi 20H9/8$	$\phi 36$	—	78	64	16	36	R19	$32^{+1.5}_{+0.5}$	M22×1.5	—	—	104
$\phi 100$	RYA-26-A	56	100	32	$\phi 20H9$	$\phi 49$	—	78	64	16	40	R20	$32^{+1.5}_{+0.5}$	M26×1.5	—	—	120

Floating joint(F-end)

• Bore $\phi 20 \cdot \phi 25$

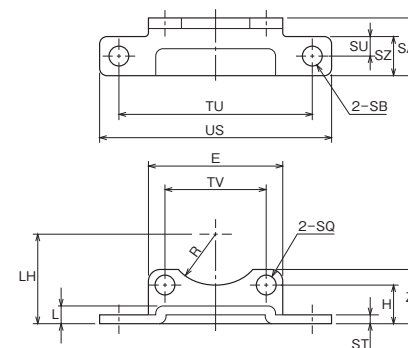


- The insertion of the floating joint (F-end) into the socket shall not equal or exceed the dimension of screw diameter. (Return the joint one or two turns after it gets into contact with the socket bottom, and fix it with a lock nut.) Excessive insertion can cause operation failure.
- DO NOT use together with CA and CB accessories.

Dimensional Table

Symbol	Part number	A	B ₁	B ₂	e	FA	FC	FD	FJ	FK	FM	FN	FQ	FR	KK
Bore															
$\phi 20$	RFS-08T	22.5	13	8	0.5	28	22.5	3.5	54	9	$\phi 20$	19	4.5	2.5	M8×1.25
$\phi 25$	RFS-10T	24.5	17	10	1	31	28	4	63	11	$\phi 25$	24	4.5	2.5	M10×1.25

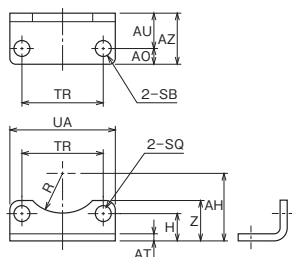
Mounting accessory LA(side lugs)



Dimensional Table

Symbol	Part number	E	H	L	LH	R	SA	SB	SQ	ST	SU	SZ	TU	TV	US	Z
Bore																
$\phi 32$	MAS6-LA032	45	11.5	6	28.5	R17	19	$\phi 6.6$	$\phi 6.6$	3.2	6.5	13	65	34	78	17
$\phi 40$	MAS6-LA040	53	12.5	6	32.5	R21	19	$\phi 6.6$	$\phi 6.6$	3.2	6.5	13	73	40	87	19.5
$\phi 50$	MAS6-LA050	64	13	6	38	R26	22	$\phi 9$	$\phi 9$	3.2	8	16	87	50	103	20
$\phi 63$	MAS6-LA063	77	14.5	6	44.5	R27	25	$\phi 11$	$\phi 11$	3.2	9.5	19	109	60	127	23.5
$\phi 80$	MAS6-LA080	100	20	8.5	58.5	R33	32	$\phi 14$	$\phi 14$	4.5	11	22	123	77	145	31
$\phi 100$	MAS6-LA100	117	20	8.5	67	—	32	$\phi 14$	$\phi 14$	4.5	11	22	137	94	159	31

Mounting accessory LB(end angle)

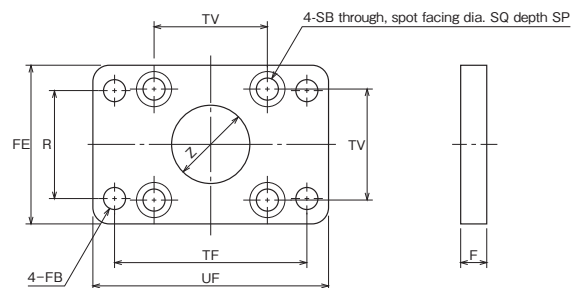


- With cylinder body mounting bolts (A set includes 2 accessories)

Dimensional Table

Symbol Bore	Part number	AH	AO	AT	AU	AZ	H	R	SB	SQ	TR	UA	Z
φ 32	MAS6-LB032	28.5	7	3.2	15	22	11.5	R17	φ 6.6	φ 6.6	34	45	17
φ 40	MAS6-LB040	32.5	7	3.2	15	22	12.5	R21	φ 6.6	φ 6.6	40	53	19
φ 50	MAS6-LB050	38	9	3.2	18	27	13	R26	φ 9	φ 9	50	64	20
φ 63	MAS6-LB063	44.5	11	3.2	20	31	14.5	R27	φ 11	φ 11	60	77	23.5
φ 80	MAS6-LB080	58.5	14	4.5	25	39	20	R33	φ 14	φ 14	77	100	31
φ 100	MAS6-LB100	67	14	4.5	25	39	20	—	φ 14	φ 14	94	117	31

Mounting accessory FA(rod flange)/FB(cap flange)

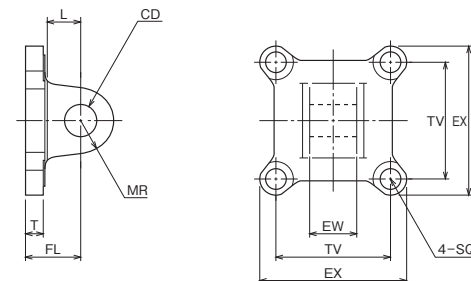


- With cylinder body mounting bolts

Dimensional Table

Symbol Bore	Part number	F	FB	FE	R	SB	SP	SQ	TF	TV	UF	Z
φ 32	MAS6-FA032	8	φ 7	48	33	φ 6.6	4.5	11	58	34	72	φ 24
φ 40	MAS6-FA040	10	φ 7	56	36	φ 6.6	4.5	11	70	40	84	φ 30
φ 50	MAS6-FA050	10	φ 9	70	47	φ 9	5.5	15	86	50	104	φ 37
φ 63	MAS6-FA063	10	φ 9	84	56	φ 11	6.5	19	98	60	116	φ 41
φ 80	MAS6-FA080	16	φ 12	105	70	φ 14	7.5	22	126	77	150	φ 51
φ 100	MAS6-FA100	16	φ 12	121	84	φ 14	7.5	22	143	94	165	φ 56

Mounting accessory CA(cap eye)

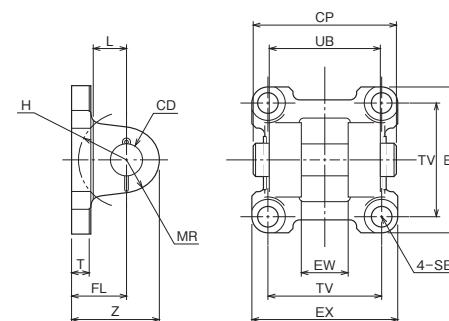


- With cylinder body mounting bolts

Dimensional Table

Symbol Bore	Part number	CD	EW	EX	FL	L	MR	SQ	T	TV
φ 32	MAS6-CA032	φ 12H9 ^{+0.043} ₀	16 ⁰ _{-0.084}	45	24	16.5	R12	φ 6.6	6	34
φ 40	MAS6-CA040	φ 14H9 ^{+0.043} ₀	20 ⁰ _{-0.084}	53	24	16	R14	φ 6.6	6.5	40
φ 50	MAS6-CA050	φ 14H9 ^{+0.043} ₀	20 ⁰ _{-0.084}	64	24	16	R14	φ 9	6.5	50
φ 63	MAS6-CA063	φ 14H9 ^{+0.043} ₀	20 ⁰ _{-0.084}	77	24	16	R14	φ 11	6.5	60
φ 80	MAS6-CA080	φ 20H9 ^{+0.052} ₀	32 ⁰ _{-0.100}	100	32	21	R19	φ 14	9.5	77
φ 100	MAS6-CA100	φ 20H9 ^{+0.052} ₀	32 ⁰ _{-0.100}	117	32	21	R19	φ 14	9.5	94

Mounting accessory CB(cap clevis)



- With cylinder body mounting bolts

Dimensional Table

Symbol Bore	Part number	CD	CP	EW	EX	FL	H	L	MR	SB	T	TV	UB	Z
φ 32	MAS6-CB032	φ 12H9/f8	46	16 ^{+0.7} _{+0.5}	45	24	R17	16.5	R12	φ 6.6	6	34	31	36
φ 40	MAS6-CB040	φ 14H9/f8	52	20 ^{+0.7} _{+0.5}	53	24	R18	15	R14	φ 6.6	7.5	40	38	38
φ 50	MAS6-CB050	φ 14H9/f8	63	20 ^{+0.7} _{+0.5}	64	24	R21	15	R14	φ 9	7.5	50	49	38
φ 63	MAS6-CB063	φ 14H9/f8	66	20 ^{+0.7} _{+0.5}	77	24	R22	15	R14	φ 11	7.5	60	52	38
φ 80	MAS6-CB080	φ 20H9/f8	78	32 ^{+0.7} _{+0.5}	100	32	R30	20	R19	φ 14	10.5	77	64	51
φ 100	MAS6-CB100	φ 20H9/f8	78	32 ^{+0.7} _{+0.5}	117	32	R30	20	R19	φ 14	10.5	94	64	51

Product Lineup

Unit: mm

Series Variations		Type	φ20	φ25	φ32	φ40	φ50	φ63	φ80	φ100
Non-rotating	Double acting single rod	Standard type 10S-6G	●	●	●	●	●	●	●	●
		Switch Set 10S-6RG	●	●	●	●	●	●	●	●
	Double acting double rod	Standard type 10S-6GD	●	●	●	●	●	●	●	●
		Switch Set 10S-6RGD	●	●	●	●	●	●	●	●

Weight Table

Double acting single rod/double rod/standard type and Switch Set

Unit: g

Bore (mm)	Basic weight (SD · ST)				Additional weight		
	Standard type		Switch Set		Additional weight per mm of stroke		Male threaded rod end
	Double acting single rod	Double acting double rod	Double acting single rod	Double acting double rod	Double acting single rod	Double acting double rod	
φ20	81	101	109	129	2.3	2.9	8
φ25	107	132	145	170	2.8	3.7	8
φ32	176	239	226	289	3.8	5.4	16.5
φ40	198	245	273	320	4.6	6.1	16.5
φ50	340	415	460	535	7.2	9.7	60
φ63	511	613	673	775	8.5	11.0	60
φ80	1122	1385	1351	1614	13.4	17.2	125
φ100	1804	2193	2095	2484	16.8	22.4	125

● For the double rod type, double the weight of the relevant male threaded rod end.

Additional Weight Table

Unit: g

Bore (mm)	Mounting accessory additional weight					Rod end attachment additional weight				Sensor additional weight	
	LA	LB	FA FB	CA	CB	Rod eye (T-end)	Rod eye with spherical bearing (S-end)	Rod clevis (Y-end) with pin	Floating joint (F-end)	PD/PF type	ZD136C-T
φ20	—	—	—	—	—	—	50	55	60	1: 15 3: 35	— 254
φ25	—	—	—	—	—	—	50	55	60		
φ32	96	84	210	145	165	160	110	270	110		
φ40	110	100	275	205	220	160	110	270	110		
φ50	160	150	415	275	380	210	200	340	380		
φ63	260	240	560	375	505	210	200	340	380		
φ80	520	500	1515	890	1100	620	360	870	750		
φ100	590	580	1950	1090	1360	620	360	870	1330		

● "1" and "3" shown in the sensor additional weight column are cord lengths. (1: 1m 3: 3m)

For additional weights other than the basic weights, see the above table.

Calculation formula Cylinder weight (g) = basic weight + (cylinder stroke (mm) × additional weight per mm of stroke) + mounting accessory weight + male threaded rod end + (sensor additional weight × sensor quantity)

Calculation example Double acting type/single rod, cylinder bore 40 mm, stroke 50 mm, LB, male thread type, 2 pcs of PD12L1
273 + (4.6 × 50) + 100 + 16.5 + (15 × 2) = 649.5(g)

Compact design pneumatic cylinder with Non-rotating rod

- The use of a magnetic proximity sensor embedded in the cylinder body reduces the cylinder body, the dead space.
- Separable type convenient for maintenance
- Two types of rod end, female thread and male thread, are available.
- A variety of accessories including mounting accessories and rod end attachments makes the cylinder applicable to a wide range of purposes.
- Custom made cylinders of single acting type and dual stroke type with adjustable stroke can be supplied.



Cylinder Specifications: Non-rotating type

Series variations	Double acting single rod		Double acting double rod	
	Standard type	Switch Set	Standard type	Switch Set
Series	10S-6G	10S-6RG	10S-6GD	10S-6RGD
Cylinder bore (mm)	φ20 · φ25 · φ32 · φ40 · φ50 · φ63 · φ80 · φ100			
Working fluid	Air			
Lubrication	Unnecessary			
Working pressure range	φ20 to φ32: 0.1 to 1 MPa φ40 to φ100: 0.05 to 1 MPa			
Working speed range	φ20 to φ40: 50 to 500 mm/s φ50 to φ100: 50 to 300 mm/s			
Proof test pressure	1.5 MPa			
Working temperature range	Standard type: -10 to +70°C (No freezing) Switch Set: 0 to +60°C (No freezing)			
Structure of cushioning	With cushion pads on both ends			
Allowable rotating angle	φ20 · φ25: ±1.5°, φ32 · φ40: ±1° φ50 · φ63: ±0.8°, φ80 · φ100: ±0.5°			
Allowable torque	φ20 · φ25: 0.5N · m φ32 · φ40: 1.0N · m φ50 · φ63: 3.4N · m φ80 · φ100: 10N · m			
Tolerance for thread	JIS 6H/6g			
Tolerance of stroke	+1.0 0 mm			
Note 1) Mounting style	SD (basic style) · ST (tapped on both sides) · LA · LB · FA · FB · CA · CB			
Rod end threads	Female thread, male thread			
Accessory	Bracket for CB (φ32 to φ100) —			

Note 1)

- SD style (basic style) cylinders are not tapped, so mounting accessories cannot be mounted to them. When requiring only the cylinder body with mounting accessories, place an order for ST style (tapped on both sides).
- Cylinders with mounting accessories have bores of 32 to 100.
- Double rod cylinders of mounting styles CA, CB and FB are not available.

Standard Stroke Range: Non-rotating type

Series variations	Type	Bore	Cylinder stroke (mm)																	Male thread type
			5	10	15	20	25	30	35	40	45	50	60	70	75	80	90	100		
Double acting single rod	Standard type	φ20・φ25	○	○	○	○	○	○	○	○	○	○	○	○	○	—	—	—	—	○
	10S-6G	φ32・φ40	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	Switch Set 10S-6RG	φ50 to φ100	—	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Double acting double rod	Standard type	φ20・φ25	○	○	○	○	○	○	—	—	—	—	—	—	—	—	—	—	—	○
	10S-6GD	φ32・φ40	○	○	○	○	○	○	○	○	○	○	—	—	—	—	—	—	—	○
	Switch Set 10S-6RGD	φ50 to φ100	—	○	○	○	○	○	○	○	○	○	○	—	—	—	—	—	—	○

- Notes) 1. For fractional strokes in the standard stroke range of any double acting cylinder, consult us.
* For the leadtime, consult us.
2. For strokes more than the standard, consult us.
3. Do not use the cylinder in an unevenly loaded state. Particularly, when rotating mounting accessories are used, be sure to consult us.

How to order

Standard type

10S-6G

Switch Set

10S-6RG

Standard type

10S-6G Double acting single rod, non-rotating
10S-6GD Double acting double rod, non-rotating

Switch Set

10S-6RG Double acting single rod, non-rotating
10S-6RGD Double acting double rod, non-rotating

Without mounting accessory SD (Basic style)

ST (Basic style/tapped on both sides)

LA (Side lugs)

LB (End angle)

For mounting accessory mounting FA (Rod flange)

FB (Cap flange)

CA (Cap eye)

CB (Cap clevis) with pin

Notes) For the mounting styles ST, LA, LB, FA, FB, CA and CB, the bore is 32 to 100 mm.

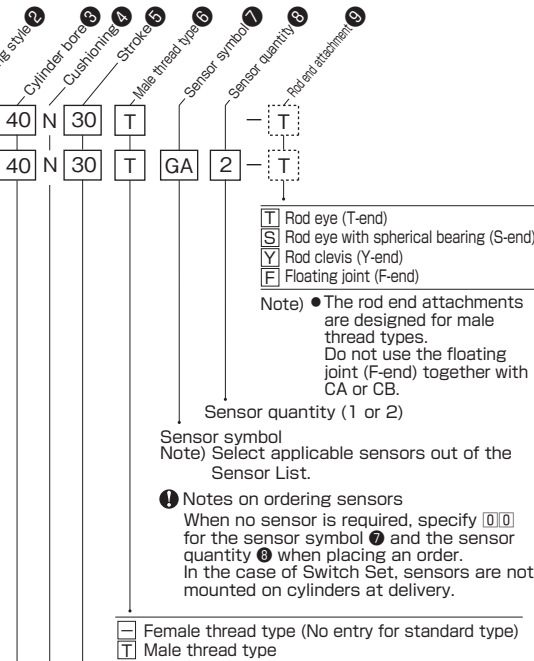
- SD style (basic style) cylinders are not tapped, so mounting accessories cannot be mounted to them. When requiring only the cylinder body with mounting accessories, place an order for ST style (tapped on both sides).

When purchasing ST style cylinder body (tapped on both sides) of mounting style FA, change dimension WF to the following value.

Female thread	φ32 to φ63	13.5
	φ80 · φ100	21.5
Male thread	φ32 to φ63	15
	φ80 · φ100	21.5

Notes) No sensor can be mounted to the standard type.

- If mounting bolts are necessary, place an order for the bolts specified in the mounting bolt list.



10S-6G, 10S-6RG	φ20, φ25, φ32, φ40,
10S-6GD, 10S-6RGD	φ50, φ63, φ80, φ100

For the mounting accessories, see 10S-6 Series.

Sensor List

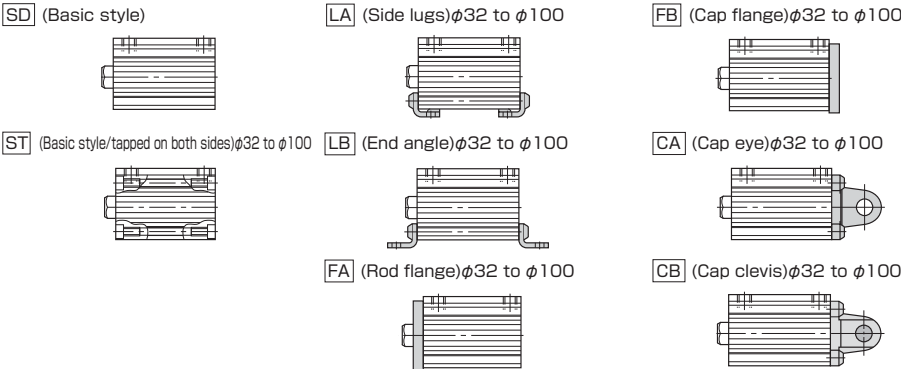
Type	Sensor symbol	Load voltage range	Load current range	Protective circuit	Indicating lamp	Wiring method	Cord length	Classification
Reed sensor	 PD12L1	24 V DC 110 V AC	DC: 2.5 to 40mA AC: 2.5 to 20mA	None	None	0.2 mm ² , 2-core, outer dia. φ2.6 mm, rear wiring	1 m	General purpose
	 PD12L3						3 m	
	 PD11L1		DC: 5 to 40mA AC: 5 to 20mA		LED (Lights when sensing)	0.2 mm ² , 2-core, outer dia. φ2.6 mm, rear wiring	1 m	
	 PD11L3						3 m	
	 PD32L1		DC: 2.5 to 40mA AC: 2.5 to 20mA		None	0.2 mm ² , 2-core, outer dia. φ2.6 mm, upper wiring	1 m	
	 PD32L3						3 m	
	 PD31L1		DC: 5 to 40mA AC: 5 to 20mA		LED (Lights when sensing)	0.2 mm ² , 2-core, outer dia. φ2.6 mm, upper wiring	1 m	
	 PD31L3						3 m	
Solid state sensor	 PD14L1	DC10 to 28V	5 to 20mA	Provided	LED (Lights when sensing)	0.2 mm ² , 2-core, outer dia. φ2.6 mm, rear wiring	1 m	General purpose
	 PD14L3						3 m	
	 PD13L1	28 V DC or less	0.1 to 40mA	Provided	LED (Lights when sensing)	0.15 mm ² , 3-core, outer dia. φ2.6 mm, rear wiring	1 m	
	 PD13L3						3 m	
	 PE34L1	DC10 to 28V	5 to 20mA	Provided	LED (Lights when sensing)	0.2 mm ² , 2-core, outer dia. φ2.6 mm, upper wiring	1 m	
	 PE34L3						3 m	
	 PE33L1	28 V DC or less	0.1 to 40mA	Provided	LED (Lights when sensing)	0.15 mm ² , 3-core, outer dia. φ2.6 mm, upper wiring	1 m	
	 PE33L3						3 m	
		 ZD136C-T	DC: 10 to 28V	5 to 50mA	Provided	LED (2-LED type in red/green)	0.5 mm ² , 2-core, outer dia. φ6 mm, rear wiring	

- Notes)
- For the sensors without a protective circuit, be sure to provide a protective circuit (SK-100) with the load when using any induction load (relay, etc.).
 - For handling of sensors, be sure to see the sensor specifications at the end of this catalog.
 - We recommend AND Unit (AU series) for multiple sensors connected in series.
 - For details, refer to AND Unit at the end of this catalog.
 - ZD136C-T can be mounted to cylinders with bores of 32, 40, 50, 63, 80 and 100 mm. It cannot be mounted to cylinders with bores of 20 and 25 mm.
 - For ZE type sensors, see the sensor specifications at the end of this catalog.

General purpose type
PD/PE type sensor

For strong magnetic field resistance
ZD type sensor

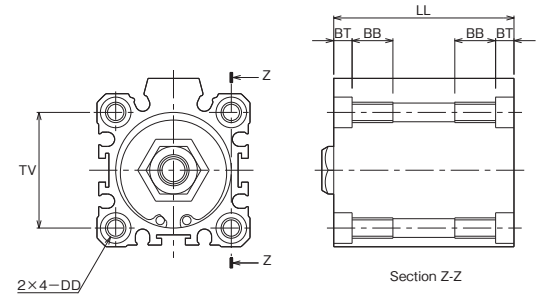
Mounting Style



ST

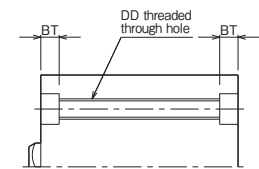
ST type (basic style/tapped on both sides)

10S-6G ST Bore N Standard stroke
 10S-6RG ST Bore N Standard stroke - Sensor symbol Sensor quantity
 10S-6GD ST Bore N Standard stroke
 10S-6RGD ST Bore N Standard stroke - Sensor symbol Sensor quantity



Note) When dimension LL is less than the value shown in the following table, tapped through holes are made.

Symbol	LL
Bore	
φ 32	—
φ 40	—
φ 50	—
φ 63	57
φ 80	71
φ 100	71



Dimensional Table

Symbol	BB Note)	BT	DD	TV
Bore				
φ 32	12	5.4	M6×1	□34
φ 40	12	5.4	M6×1	□40
φ 50	14	8	M8×1.25	□50
φ 63	18	10.5	M10×1.5	□60
φ 80	22	13.5	M12×1.75	□77
φ 100	22	13.5	M12×1.75	□94

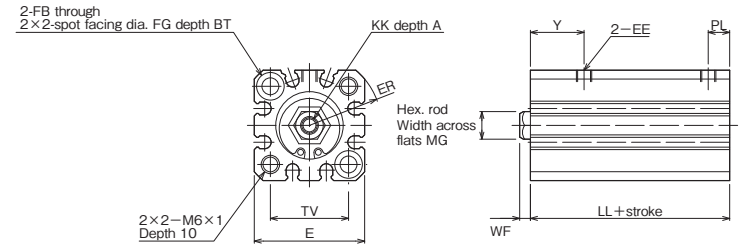
● For dimensions not shown in this figure, refer to SD (basic style).

SD

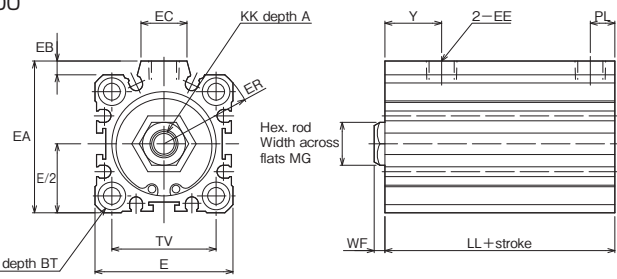
Double acting non-rotating single rod/standard type and Switch Set/basic style

10S-6G SD Bore N Standard stroke
 10S-6RG SD Bore N Standard stroke - Sensor symbol Sensor quantity

● Bore φ20 · φ25



● Bore φ32 to φ100



Dimensional Table

Symbol	A	BT	E	EA	EB	EC	EE	ER	FB	FG	KK
Bore											
φ 20	7	5.4	□36	—	—	—	M5×0.8	R23.5	φ 5.5	φ 9	M5×0.8
φ 25	7	5.4	□40	—	—	—	M5×0.8	R26	φ 5.5	φ 9	M5×0.8
φ 32	12	5.4	□45	49.5	4.5	15	Rc1/8	R30	φ 5.5	φ 9	M8×1.25
φ 40	12	5.4	□52	57	5	17.5	Rc1/8	R34.5	φ 5.5	φ 9	M8×1.25
φ 50	15	8	□64	71	7	19	Rc1/4	R42.5	φ 6.6	φ 11	M10×1.5
φ 63	15	10.5	□77	84	7	19	Rc1/4	R51	φ 9	φ 14	M10×1.5
φ 80	20	13.5	□98	104	6	25	Rc3/8	R65	φ 11	φ 17.5	M16×2
φ 100	20	13.5	□177	123.5	6.5	25	Rc3/8	R78	φ 11	φ 17.5	M16×2

Symbol Stroke Bore	LL		MG	PL			TV	WF	Y
				10S-6G		10S-6RG			
	10S-6G	10S-6RG		5	10 or more				
φ 20	30	40	9	6	7	7	□25.5	3.5	17.5
φ 25	31	41	9	6	7	7	□28	3.5	18.5
φ 32	35	45	14	8		8	□34	3.5	18.5
φ 40	35	45	14	11.5		11.5	□40	3.5	15.5
φ 50	37	47	19	12		12	□50	3.5	19
φ 63	41	51	19	14.5		14.5	□60	3.5	19.5
φ 80	51.5	61.5	23	16.5		16.5	□77	6.5	23
φ 100	58	68	23	21		21	□94	6.5	25

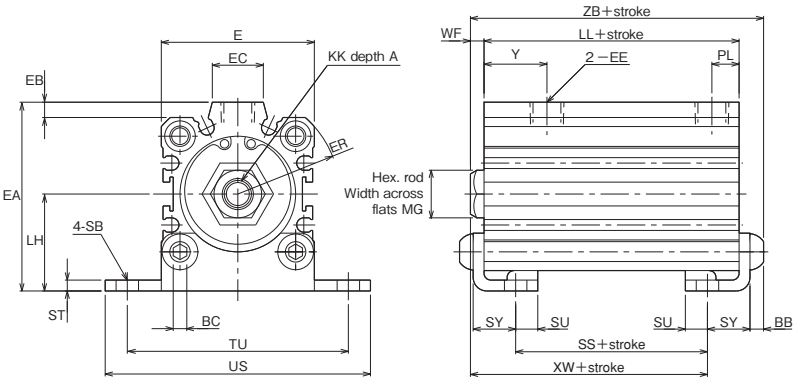
● For the dimensions of the mounting accessories, see 10S-6 Series.

LA

Double acting non-rotating single rod/standard type and Switch Set/side lugs

10S-6G LA Bore N Standard stroke
10S-6RG LA Bore N Standard stroke – Sensor symbol Sensor quantity

●Bore ϕ 32 to ϕ 100



Dimensional Table

Symbol Bore	A	BB	BC	E	EA	EB	EC	EE	ER	KK	LH	LL		MG
												10S-6G	10S-6RG	
ϕ 32	12	4	4	45	55.5	4.5	15	Rc1/8	R30	M8×1.25	28.5	35	45	14
ϕ 40	12	4	4	52	63.5	5	17.5	Rc1/8	R34.5	M8×1.25	32.5	35	45	14
ϕ 50	15	5	5	64	77	7	19	Rc1/4	R42.5	M10×1.5	38	37	47	19
ϕ 63	15	6	6	77	90	7	19	Rc1/4	R51	M10×1.5	44.5	41	51	19
ϕ 80	20	7	8	98	113.5	6	25	Rc3/8	R65	M16×2	58.5	51.5	61.5	23
ϕ 100	20	7	8	117	132	6.5	25	Rc3/8	R78	M16×2	67	58	68	23

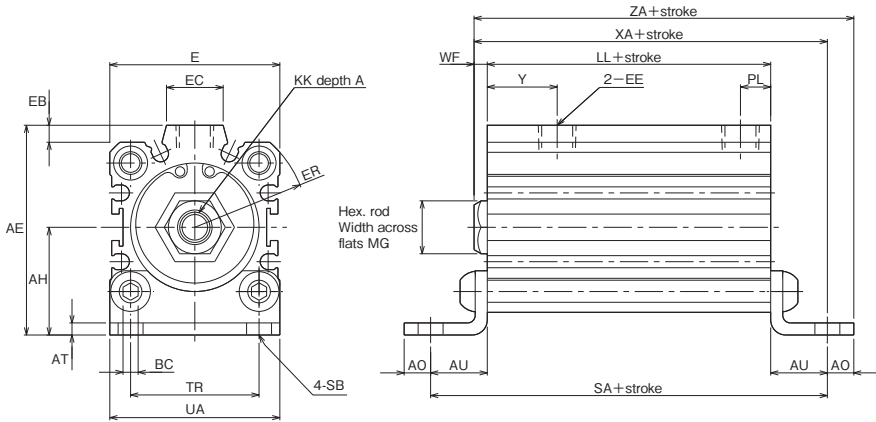
Symbol Bore	PL	SB	SS		ST	SU	SY	TU	US	WF	XW		Y	ZB	
			10S-6G	10S-6RG							10S-6G	10S-6RG		10S-6G	10S-6RG
ϕ 32	8	ϕ 6.6	16.4	26.4	3.2	6.5	12.5	65	78	3.5	29.2	39.2	18.5	45.7	55.7
ϕ 40	11.5	ϕ 6.6	16.4	26.4	3.2	6.5	12.5	73	87	3.5	29.2	39.2	15.5	45.7	55.7
ϕ 50	12	ϕ 9	15.4	25.4	3.2	8	14	87	103	3.5	29.7	39.7	19	48.7	58.7
ϕ 63	14.5	ϕ 11	16.4	26.4	3.2	9.5	15.5	109	127	3.5	32.2	42.2	19.5	53.7	63.7
ϕ 80	16.5	ϕ 14	18.5	28.5	4.5	11	21	123	145	6.5	41.5	51.5	23	69.5	79.5
ϕ 100	21	ϕ 14	25	35	4.5	11	21	137	159	6.5	48	58	25	76	86

LB

Double acting non-rotating single rod/standard type and Switch Set/end angle

10S-6G LB Bore N Standard stroke
10S-6RG LB Bore N Standard stroke – Sensor symbol Sensor quantity

●Bore ϕ 32 to ϕ 100



Dimensional Table

Symbol Bore	A	AE	AH	AO	AT	AU	BC	E	EB	EC	EE	ER	KK	LL	
														10S-6G	10S-6RG
ϕ 32	12	55.5	28.5	7	3.2	15	4	45	4.5	15	Rc1/8	R30	M8×1.25	35	45
ϕ 40	12	63.5	32.5	7	3.2	15	4	52	5	17.5	Rc1/8	R34.5	M8×1.25	35	45
ϕ 50	15	77	38	9	3.2	18	5	64	7	19	Rc1/4	R42.5	M10×1.5	37	47
ϕ 63	15	90	44.5	11	3.2	20	6	77	7	19	Rc1/4	R51	M10×1.5	41	51
ϕ 80	20	113.5	58.5	14	4.5	25	8	98	6	25	Rc3/8	R65	M16×2	51.5	61.5
ϕ 100	20	132	67	14	4.5	25	8	117	6.5	25	Rc3/8	R78	M16×2	58	68

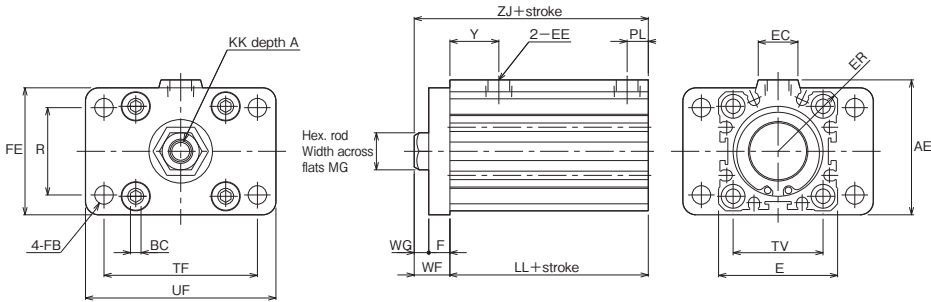
Symbol Bore	MG	PL	SA		SB	TR	UA	WF	XA		Y	ZA	
			10S-6G	10S-6RG					10S-6G	10S-6RG		10S-6G	10S-6RG
ϕ 32	14	8	65	75	ϕ 6.6	34	45	3.5	53.5	63.5	18.5	60.5	70.5
ϕ 40	14	11.5	65	75	ϕ 6.6	40	53	3.5	53.5	63.5	15.5	60.5	70.5
ϕ 50	19	12	73	83	ϕ 9	50	64	3.5	58.5	68.5	19	67.5	77.5
ϕ 63	19	14.5	81	91	ϕ 11	60	77	3.5	64.5	74.5	19.5	75.5	85.5
ϕ 80	23	16.5	101.5	111.5	ϕ 14	77	100	6.5	83	93	23	97	107
ϕ 100	23	21	108	118	ϕ 14	94	117	6.5	89.5	99.5	25	103.5	113.5

FA

Double acting non-rotating single rod/standard type and Switch Set/rod flange

10S-6G FA Bore N Standard stroke
10S-6RG FA Bore N Standard stroke – Sensor symbol Sensor quantity

- Bore φ32 to φ100



Note) A flange cannot be fitted on the cap side because a tapped hole is not made on the side.

Dimensional Table

Symbol Bore	A	AE	BC	E	EC	EE	ER	F	FB	FE	KK
φ 32	12	51	4	□45	15	Rc1/8	R30	8	φ 7	48	M8×1.25
φ 40	12	59	4	□52	17.5	Rc1/8	R34.5	10	φ 7	56	M8×1.25
φ 50	15	74	5	□64	19	Rc1/4	R42.5	10	φ 9	70	M10×1.5
φ 63	15	87.5	6	□77	19	Rc1/4	R51	10	φ 9	84	M10×1.5
φ 80	20	107.5	8	□98	25	Rc3/8	R65	16	φ 12	105	M16×2
φ 100	20	125.5	8	□117	25	Rc3/8	R78	16	φ 12	121	M16×2

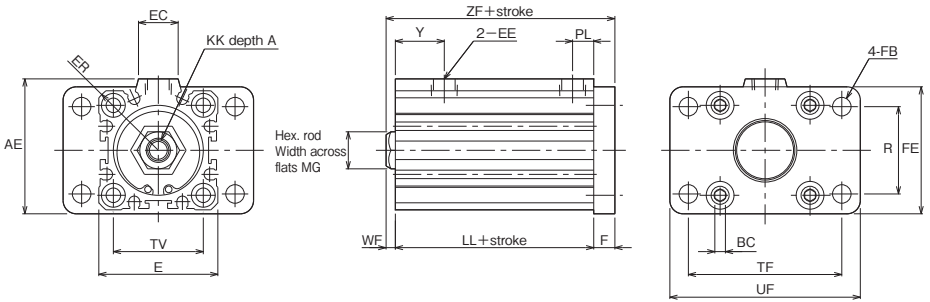
Symbol Bore	LL		MG	PL	R	TV	TF	UF	WF	WG	Y	ZJ	
	10S-6G	10S-6RG										10S-6G	10S-6RG
φ 32	35	45	14	8	33	□34	58	72	13.5	5.5	18.5	48.5	58.5
φ 40	35	45	14	11.5	36	□40	70	84	13.5	3.5	15.5	48.5	58.5
φ 50	37	47	19	12	47	□50	86	104	13.5	3.5	19	50.5	60.5
φ 63	41	51	19	14.5	56	□60	98	116	13.5	3.5	19.5	54.5	64.5
φ 80	51.5	61.5	23	16.5	70	□77	126	150	21.5	5.5	23	73	83
φ 100	58	68	23	21	84	□94	143	165	21.5	5.5	25	79.5	89.5

FB

Double acting non-rotating single rod/standard type and Switch Set/cap flange

10S-6G FB Bore N Standard stroke
10S-6RG FB Bore N Standard stroke – Sensor symbol Sensor quantity

- Bore φ32 to φ100



Note) A flange cannot be fitted on the rod side because a tapped hole is not made on the side.

Dimensional Table

Symbol Bore	A	AE	BC	E	EC	EE	ER	F	FB	FE	KK
φ 32	12	51	4	□45	15	Rc1/8	R30	8	φ 7	48	M8×1.25
φ 40	12	59	4	□52	17.5	Rc1/8	R34.5	10	φ 7	56	M8×1.25
φ 50	15	74	5	□64	19	Rc1/4	R42.5	10	φ 9	70	M10×1.5
φ 63	15	87.5	6	□77	19	Rc1/4	R51	10	φ 9	84	M10×1.5
φ 80	20	107.5	8	□98	25	Rc3/8	R65	16	φ 12	105	M16×2
φ 100	20	125.5	8	□117	25	Rc3/8	R78	16	φ 12	121	M16×2

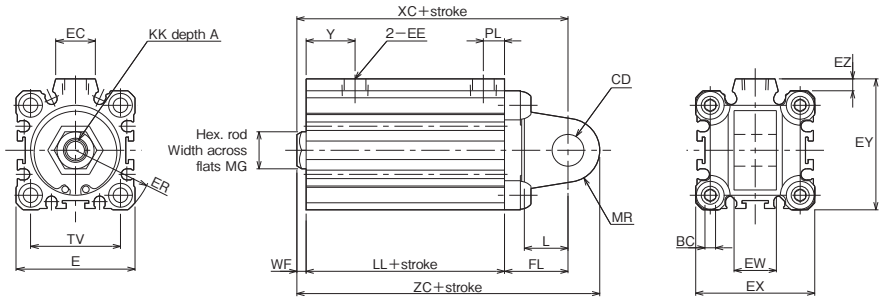
Symbol Bore	LL		MG	PL	R	TV	TF	UF	WF	Y	ZF	
	10S-6G	10S-6RG									10S-6G	10S-6RG
φ 32	35	45	14	8	33	□34	58	72	13.5	18.5	46.5	56.5
φ 40	35	45	14	11.5	36	□40	70	84	13.5	15.5	48.5	58.5
φ 50	37	47	19	12	47	□50	86	104	13.5	19	50.5	60.5
φ 63	41	51	19	14.5	56	□60	98	116	13.5	19.5	54.5	64.5
φ 80	51.5	61.5	23	16.5	70	□77	126	150	21.5	23	74	84
φ 100	58	68	23	21	84	□94	143	165	21.5	25	80.5	90.5

CA

Double acting non-rotating single rod/standard type and Switch Set/cap eye

10S-6G CA Bore N Standard stroke
10S-6RG CA Bore N Standard stroke – Sensor symbol Sensor quantity

- Bore φ32 to φ100



Dimensional Table

Symbol Bore	A	BC	CD	E	EC	EE	ER	EX	EY	EZ	EW	FL	KK
φ 32	12	4	φ 12H9	□45	15	Rc1/8	R30	□45	49.5	4.5	16 ⁰ _{-0.070}	24	M8×1.25
φ 40	12	4	φ 14H9	□52	17.5	Rc1/8	R34.5	□53	57.5	4.5	20 ⁰ _{-0.084}	24	M8×1.25
φ 50	15	5	φ 14H9	□64	19	Rc1/4	R42.5	□64	71	7	20 ⁰ _{-0.084}	24	M10×1.5
φ 63	15	6	φ 14H9	□77	19	Rc1/4	R51	□77	84	7	20 ⁰ _{-0.084}	24	M10×1.5
φ 80	20	8	φ 20H9	□98	25	Rc3/8	R65	□100	105	5	32 ⁰ _{-0.100}	32	M16×2
φ 100	20	8	φ 20H9	□117	25	Rc3/8	R78	□117	123.5	6.5	32 ⁰ _{-0.100}	32	M16×2

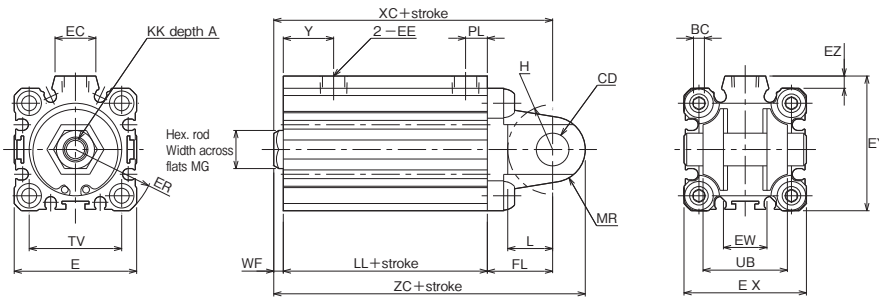
Symbol Bore	L	LL		MG	MR	PL	TV	WF	XC		Y	ZC	
		10S-6G	10S-6RG						10S-6G	10S-6RG		10S-6G	10S-6RG
φ 32	16.5	35	45	14	R12	8	□34	3.5	62.5	72.5	18.5	74.5	84.5
φ 40	16	35	45	14	R14	11.5	□40	3.5	62.5	72.5	15.5	76.5	86.5
φ 50	16	37	47	19	R14	12	□50	3.5	64.5	74.5	19	78.5	88.5
φ 63	16	41	51	19	R14	14.5	□60	3.5	68.5	78.5	19.5	82.5	92.5
φ 80	21	51.5	61.5	23	R19	16.5	□77	6.5	90	100	23	109	119
φ 100	21	58	68	23	R19	21	□94	6.5	96.5	106.5	25	115.5	125.5

CB

Double acting non-rotating single rod/standard type and Switch Set/cap clevis

10S-6G CB Bore N Standard stroke
10S-6RG CB Bore N Standard stroke – Sensor symbol Sensor quantity

- Bore φ32 to φ100



Dimensional Table

Symbol Bore	A	BC	CD	E	EC	EE	ER	EX	EY	EZ	EW	FL	H
φ 32	12	4	φ 12H9/f8	□45	15	Rc1/8	R30	□45	49.5	4.5	16 ^{+0.7 +0.5}	24	R16.5
φ 40	12	4	φ 14H9/f8	□52	17.5	Rc1/8	R34.5	□53	57.5	4.5	20 ^{+0.7 +0.5}	24	R18
φ 50	15	5	φ 14H9/f8	□64	19	Rc1/4	R42.5	□64	71	7	20 ^{+0.7 +0.5}	24	R21
φ 63	15	6	φ 14H9/f8	□77	19	Rc1/4	R51	□77	84	7	20 ^{+0.7 +0.5}	24	R22
φ 80	20	8	φ 20H9/f8	□98	25	Rc3/8	R65	□100	105	5	32 ^{+0.7 +0.5}	32	R30
φ 100	20	8	φ 20H9/f8	□117	25	Rc3/8	R78	□117	123.5	6.5	32 ^{+0.7 +0.5}	32	R30

Symbol Bore	KK	L	LL		MG	MR	PL	TV	UB	WF	XC		Y	ZC	
			10S-6G	10S-6RG							10S-6G	10S-6RG		10S-6G	10S-6RG
φ 32	M8×1.25	16.5	35	45	14	R12	8	□34	31	3.5	62.5	72.5	18.5	74.5	84.5
φ 40	M8×1.25	16	35	45	14	R14	11.5	□40	38	3.5	62.5	72.5	15.5	76.5	86.5
φ 50	M10×1.5	16	37	47	19	R14	12	□50	49	3.5	64.5	74.5	19	78.5	88.5
φ 63	M10×1.5	16	41	51	19	R14	14.5	□60	52	3.5	68.5	78.5	19.5	82.5	92.5
φ 80	M16×2	21	51.5	61.5	23	R19	16.5	□77	64	6.5	90	100	23	109	119
φ 100	M16×2	21	58	68	23	R19	21	□94	64	6.5	96.5	106.5	25	115.5	125.5

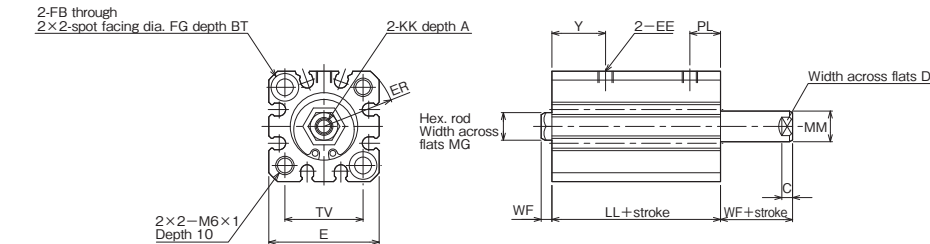
SD

Double acting non-rotating double rod/standard type and Switch Set/basic style

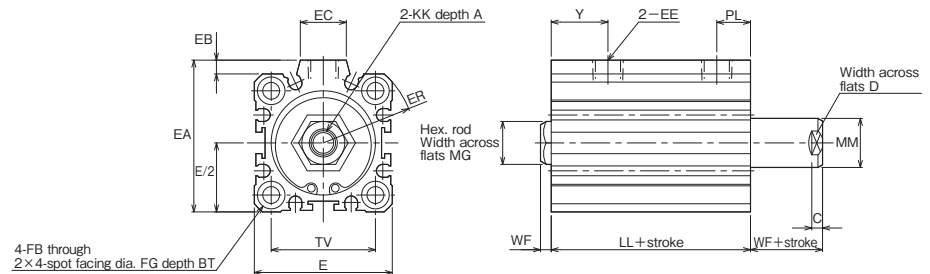
10S-6GD SD Bore N Standard stroke

10S-6RGD SD Bore N Standard stroke – Sensor symbol Sensor quantity

● Bore $\phi 20 \cdot \phi 25$



● Bore $\phi 32$ to $\phi 100$



Dimensional Table

Symbol Bore	A	BT	C	D	E	EA	EB	EC	EE	ER	FB	FG	KK
$\phi 20$	7	5.4	3.5	8	□36	—	—	—	M5×0.8	R23.5	$\phi 5.5$	$\phi 9$	M5×0.8
$\phi 25$	7	5.4	3.5	10	□40	—	—	—	M5×0.8	R26	$\phi 5.5$	$\phi 9$	M5×0.8
$\phi 32$	12	5.4	3.5	14	□45	49.5	4.5	15	Rc1/8	R30	$\phi 5.5$	$\phi 9$	M8×1.25
$\phi 40$	12	5.4	3.5	14	□52	57	5	17.5	Rc1/8	R34.5	$\phi 5.5$	$\phi 9$	M8×1.25
$\phi 50$	15	8	3.5	18	□64	71	7	19	Rc1/4	R42.5	$\phi 6.6$	$\phi 11$	M10×1.5
$\phi 63$	15	10.5	3.5	18	□77	84	7	19	Rc1/4	R51	$\phi 9$	$\phi 14$	M10×1.5
$\phi 80$	20	13.5	5	22	□98	104	6	25	Rc3/8	R65	$\phi 11$	$\phi 17.5$	M16×2
$\phi 100$	20	13.5	5	27	□117	123.5	6.5	25	Rc3/8	R78	$\phi 11$	$\phi 17.5$	M16×2

Symbol Series Bore	LL		MG	MM	PL	TV	WF	Y
	10S-6G	10S-6RG						
$\phi 20$	35	45	9	$\phi 10$	10	□25.5	3.5	17.5
$\phi 25$	36	46	9	$\phi 12$	10	□28	3.5	18.5
$\phi 32$	45	55	14	$\phi 16$	11	□34	3.5	18.5
$\phi 40$	40	50	14	$\phi 16$	11.5	□40	3.5	15.5
$\phi 50$	42	52	19	$\phi 20$	12	□50	3.5	19
$\phi 63$	46	56	19	$\phi 20$	14.5	□60	3.5	19.5
$\phi 80$	61.5	71.5	23	$\phi 25$	16.5	□77	6.5	23
$\phi 100$	68	78	23	$\phi 30$	21	□94	6.5	25

● For the dimensions of the mounting accessories, see 10S-6 Series.

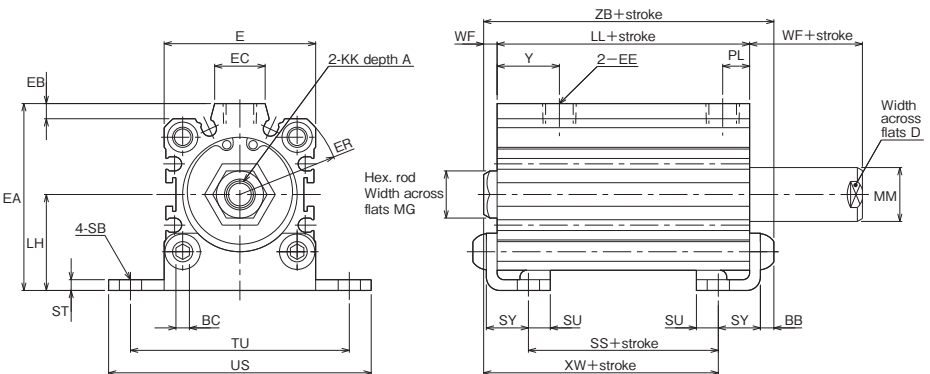
LA

Double acting non-rotating double rod/standard type and Switch Set/side lugs

10S-6GD LA Bore N Standard stroke

10S-6RGD LA Bore N Standard stroke – Sensor symbol Sensor quantity

● Bore $\phi 32$ to $\phi 100$



Dimensional Table

Symbol Bore	A	BB	BC	D	E	EA	EB	EC	EE	ER	KK	LH	LL		MG
													10S-6GD	10S-6RGD	
$\phi 32$	12	4	4	14	45	55.5	4.5	15	Rc1/8	R30	M8×1.25	28.5	45	55	14
$\phi 40$	12	4	4	14	52	63.5	5	17.5	Rc1/8	R34.5	M8×1.25	32.5	40	50	14
$\phi 50$	15	5	5	18	64	77	7	19	Rc1/4	R42.5	M10×1.5	38	42	52	19
$\phi 63$	15	6	6	18	77	90	7	19	Rc1/4	R51	M10×1.5	44.5	46	56	19
$\phi 80$	20	7	8	22	98	113.5	6	25	Rc3/8	R65	M16×2	58.5	61.5	71.5	23
$\phi 100$	20	7	8	27	117	132	6.5	25	Rc3/8	R78	M16×2	67	68	78	23

Symbol Bore	MM	PL	SB	SS		ST	SU	SY	TU	US	WF	XW		Y	ZB	
				10S-6GD	10S-6RGD							10S-6GD	10S-6RGD		10S-6GD	10S-6RGD
$\phi 32$	$\phi 16$	11	$\phi 6.6$	26.4	36.4	3.2	6.5	12.5	65	78	3.5	39.2	49.2	18.5	55.7	65.7
$\phi 40$	$\phi 16$	11.5	$\phi 6.6$	21.4	31.4	3.2	6.5	12.5	73	87	3.5	34.2	44.2	15.5	50.7	60.7
$\phi 50$	$\phi 20$	12	$\phi 9$	20.4	30.4	3.2	8	14	87	103	3.5	34.7	44.7	19	53.7	63.7
$\phi 63$	$\phi 20$	14.5	$\phi 11$	21.4	31.4	3.2	9.5	15.5	109	127	3.5	37.2	47.2	19.5	58.7	68.7
$\phi 80$	$\phi 25$	16.5	$\phi 14$	28.5	38.5	4.5	11	21	123	145	6.5	51.5	61.5	23	89.5	99.5
$\phi 100$	$\phi 30$	21	$\phi 14$	35	45	4.5	11	21	137	159	6.5	58	63	25	91	101

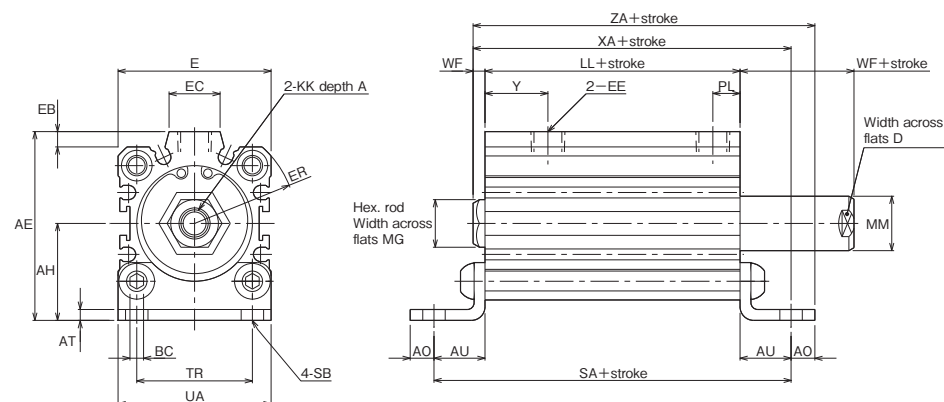
LB

Double acting non-rotating double rod/standard type and Switch Set/end angle

10S-6GD LB Bore N Standard stroke

10S-6RGD LB Bore N Standard stroke – Sensor symbol Sensor quantity

- Bore $\phi 32$ to $\phi 100$



Dimensional Table

Symbol Bore	A	AE	AH	AO	AT	AU	BC	D	E	EB	EC	EE	ER	KK
φ 32	12	55.5	28.5	7	3.2	15	4	14	45	4.5	15	Rc1/8	R30	M8×1.25
φ 40	12	63.5	32.5	7	3.2	15	4	14	52	5	17.5	Rc1/8	R34.5	M8×1.25
φ 50	15	77	38	9	3.2	18	5	18	64	7	19	Rc1/4	R42.5	M10×1.5
φ 63	15	90	44.5	11	3.2	20	6	18	77	7	19	Rc1/4	R51	M10×1.5
φ 80	20	113.5	58.5	14	4.5	25	8	22	98	6	25	Rc3/8	R65	M16×2
φ 100	20	132	67	14	4.5	25	8	27	117	6.5	25	Rc3/8	R78	M16×2

Symbol Bore	LL		MG	MM	PL	SA		SB	TR	UA	WF	XA		Y	ZA	
	10S-6GD	10S-6RGD				10S-6GD	10S-6RGD					10S-6GD	10S-6RGD			
φ 32	45	55	14	φ 16	8	75	85	φ 6.6	34	45	3.5	63.5	73.5	18.5	70.5	80.5
φ 40	40	50	14	φ 16	11.5	70	80	φ 6.6	40	53	3.5	58.5	68.5	15.5	65.5	75.5
φ 50	42	52	19	φ 20	12	78	88	φ 9	50	64	3.5	63.5	73.5	19	72.5	82.5
φ 63	46	56	19	φ 20	14.5	86	96	φ 11	60	77	3.5	69.5	79.5	19.5	80.5	90.5
φ 80	61.5	71.5	23	φ 25	16.5	111.5	121.5	φ 14	77	100	6.5	93	103	23	107	117
φ 100	68	78	23	φ 30	21	118	123	φ 14	94	117	6.5	99.5	109.5	25	113.5	123.5

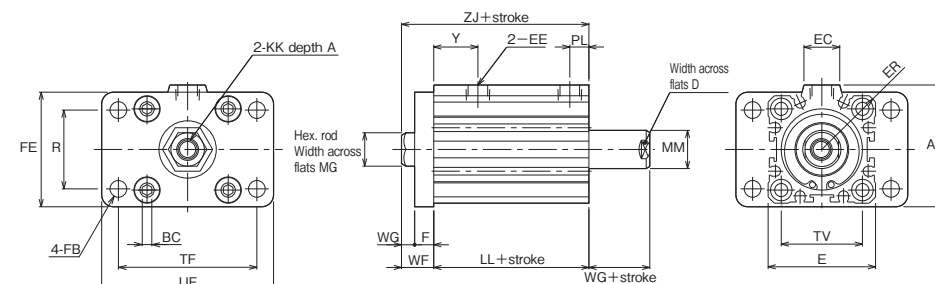
FA

Double acting non-rotating double rod/standard type and Switch Set/rod flange

10S-6GD FA N

10S-6RGD FA Bore N Standard stroke – Sensor symbol Sensor quantity

- Bore $\phi 32$ to $\phi 100$



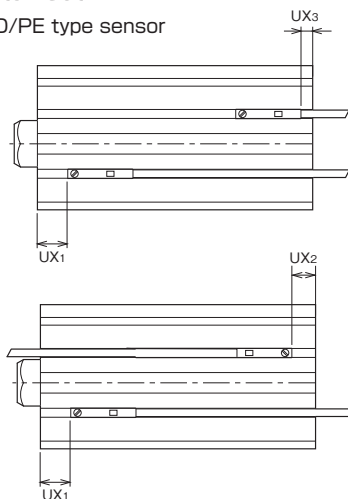
Dimensional Table

Symbol Bore	A	AE	BC	D	E	EC	EE	ER	F	FB	FE	KK
φ 32	12	51	4	14	□45	15	Rc1/8	R30	8	φ 7	48	M8×1.25
φ 40	12	59	4	14	□52	17.5	Rc1/8	R34.5	10	φ 7	56	M8×1.25
φ 50	15	74	5	18	□64	19	Rc1/4	R42.5	10	φ 9	70	M10×1.5
φ 63	15	87.5	6	18	□77	19	Rc1/4	R51	10	φ 9	84	M10×1.5
φ 80	20	107.5	8	22	□98	25	Rc3/8	R65	16	φ 12	105	M16×2
φ 100	20	125.5	8	27	□117	25	Rc3/8	R78	16	φ 12	121	M16×2

Bore	Symbol	LL		MG	MM	PL	R	TV	TF	UF	WF	WG	Y	ZJ	
	10S-6GD	10S-6RGD	10S-6GD											10S-6RGD	
φ 32		45	55	14	φ 16	8	33	□34	58	72	13.5	5.5	18.5	58.5	68.5
φ 40		40	50	14	φ 16	11.5	36	□40	70	84	13.5	3.5	15.5	53.5	63.5
φ 50		42	52	19	φ 20	12	47	□50	86	104	13.5	3.5	19	55.5	65.5
φ 63		46	56	19	φ 20	14.5	56	□60	98	116	13.5	3.5	19.5	59.5	69.5
φ 80		61.5	71.5	23	φ 25	16.5	70	□77	126	150	21.5	5.5	23	83	93
φ 100		68	78	23	φ 30	21	84	□94	143	165	21.5	5.5	25	89.5	99.5

Switch Set

●PD/PE type sensor



■Dimensional Table (PD type/reed sensor) Double acting single rod

Bore	φ20	φ25	φ32	φ40	φ50	φ63	φ80	φ100
Symbol								
UX1	12.2	11.8	20.5	16.2	17.7	18.7	27.5	28
UX2	1.8	3.2	0	2.8	3.3	6.3	8	14
UX3	3.8	5.2	0.5	4.8	5.3	8.3	10	16

Double acting double rod

Bore	φ20	φ25	φ32	φ40	φ50	φ63	φ80	φ100
Symbol								
UX1	12.2	11.8	20.5	16.2	17.7	18.7	27.5	28
UX2	6.8	8.2	8.5	7.8	8.3	11.3	18	24
UX3	8.8	10.2	10.5	9.8	10.3	13.3	20	26

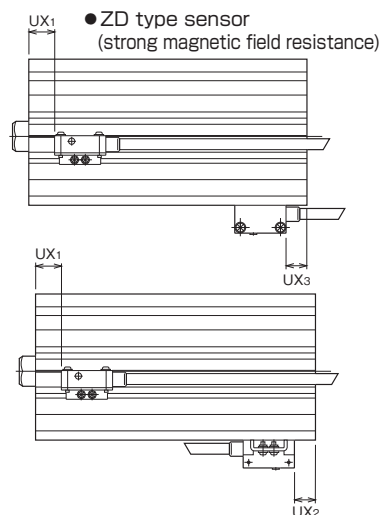
■Dimensional Table (PD type/solid state sensor) Double acting single rod

Bore	φ20	φ25	φ32	φ40	φ50	φ63	φ80	φ100
Symbol								
UX1	18.2	17.8	26.5	22.2	23.7	24.7	33.5	34
UX2	7.8	9.2	4.5	8.8	9.3	12.3	14	20
UX3	-2.2	-0.8	-5.5	-1.2	-0.7	2.3	4	10

Double acting double rod

Bore	φ20	φ25	φ32	φ40	φ50	φ63	φ80	φ100
Symbol								
UX1	18.2	17.8	26.5	22.2	23.7	24.7	33.5	34
UX2	12.8	14.2	14.5	13.8	14.3	17.3	24	30
UX3	2.8	4.2	4.5	3.8	4.3	7.3	14	20

●ZD type sensor (strong magnetic field resistance)



■Dimensional Table (PE type/solid state sensor) Double acting single rod

Bore	φ20	φ25	φ32	φ40	φ50	φ63	φ80	φ100
Symbol								
UX1	17.2	16.8	25.5	21.2	22.7	23.7	32.5	33
UX2	6.8	8.2	3.5	7.8	8.3	11.3	13	19
UX3	7.8	9.2	4.5	8.8	9.3	12.3	14	20

Double acting double rod

Bore	φ20	φ25	φ32	φ40	φ50	φ63	φ80	φ100
Symbol								
UX1	17.2	16.8	25.5	21.2	22.7	23.7	32.5	33
UX2	11.8	13.2	13.5	12.8	13.3	16.3	23	29
UX3	12.8	14.2	14.5	13.8	14.3	17.3	24	30

■Dimensional Table (ZD type/solid state sensor/strong magnetic field resistant) Double acting single rod

Bore	φ32	φ40	φ50	φ63	φ80	φ100
Symbol						
UX1	26.5	22.2	23.7	24.7	33.5	34
UX2	4.5	8.8	9.3	12.3	14	20
UX3	-	-	-	-3.7	-2	4

Double acting double rod

Bore	φ32	φ40	φ50	φ63	φ80	φ100
Symbol						
UX1	26.5	22.2	23.7	24.7	33.5	34
UX2	14.5	13.8	14.3	17.3	24	30
UX3	-1.5	-2.2	-1.7	1.3	8	14

Operating Range and Hysteresis

Bore	PD type (reed sensor)		PD/PE type (solid state sensor)	
	Operating range	Hysteresis	Operating range	Hysteresis
φ20	10 to 13	2 or less	3.5 to 7	1 or less
φ25	10.5 to 14.5		3.5 to 7	
φ32	8.5 to 10.5		3.5 to 7	
φ40	9.5 to 12.5		3.5 to 7.5	
φ50	12 to 15	1 or less	4.5 to 7.5	0.5 or less
φ63	12 to 16		5 to 7.5	
φ80	13 to 16		5.5 to 8.5	
φ100	13 to 16		5.5 to 8.5	

Sensor Mountable Minimum Stroke (PD/PE type)

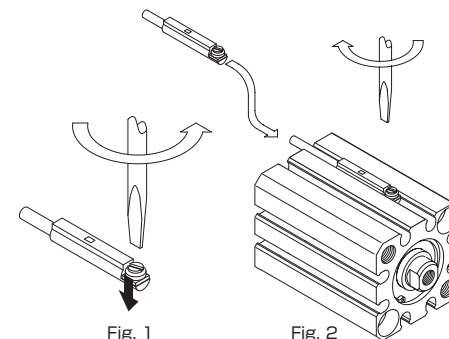
Bore	Mounting of 2 sensors		Mounting of 1 sensor
	Mounting in 2 grooves		
φ 20 to φ 100	10	Note)	10

Note) It is possible to mount 2 sensors at a stroke of 5 mm. However, note that an overlap may occur.

Setting method of sensor detecting position

●PD/PE type sensor

- Turn the sensor fixing screw to bring it into contact with the nut.
(The sensor fixing screw has left-hand threads. Turn it counterclockwise as shown in Fig. 1.)
- Insert the sensor in the sensor mounting groove in the cylinder body from the cap or rod side, and slide it.
- Secure the sensor at the optimum setting position.
(Turn the sensor fixing screw clockwise as shown in Fig. 2, and the sensor fixing screw will be in contact with the sensor mounting groove in the cylinder body to secure the sensor.)
The tightening torque must be 0.1 to 0.2 N·m.
- If the sensor has an indicating lamp, the lamp will light up when the sensor is turned on.



Operating Range and Hysteresis (strong magnetic field resistant sensor)

Bore	ZD type (solid state sensor)	
	Operating range	Hysteresis
φ32	3.5 to 5.5 (1.5 to 2.5)	0.5 or less
φ40	3.5 to 6 (1.5 to 3.5)	
φ50	3.5 to 6 (2 to 4)	
φ63	3.5 to 6.5 (2.5 to 4.5)	
φ80	4.5 to 6.5 (2.5 to 4.5)	
φ100	4.5 to 6.5 (2.5 to 4.5)	

Note) Parenthesized are the optimum adjustment ranges (the green lamp is on).

Sensor Mountable Minimum Stroke (ZD type)

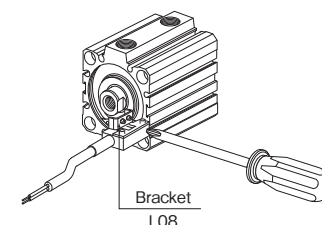
Bore	Mounting of 2 sensors	Mounting of 1 sensor
	Mounting in 2 grooves	
φ32 to φ100	10 Note)	5

Note) The value shown in the above table applies in the case where part of the cord that cannot be folded is out of the cylinder body for reasons of the cord bending radius. For the minimum stroke in such a state that the cord is not out of the cylinder body, see the following table.

Bore	Cord protruding direction	
	Cap cover side	Rod cover side
φ32	55	50
φ40	55	45
φ50	55	45
φ63	50	45
φ80	45	40
φ100	40	35

●ZD type sensor (strong magnetic field resistance)

- Loosen the sensor fixing screw.
- Insert the sensor in the sensor mounting groove in the cylinder body from the cap or rod side, and slide it.
- Secure the sensor at the optimum setting position, and tighten the sensor fixing screw. The tightening torque must be 0.1 to 0.2 N·m.
- If the sensor has an indicating lamp, the lamp will light up when the sensor is turned on.



Custom Made Specifications

Specifications for Single Acting Type Cylinders

Series variations	Single acting type (spring return)		Single acting type (spring-extended)
	Type	Standard type	Standard type
Series		10S-6GSR	10S-6RGSR
Cylinder bore (mm)		φ20・φ25・φ32・φ40・φ50	
Working fluid		Air	
Lubrication		Unnecessary (To lubricate, use additive-free turbine oil Class 1 equivalent to ISO VG32.)	
Working pressure range		φ20, φ25: 0.18 to 1.0 MPa	φ32 to φ50: 0.12 to 1.0 MPa
Working speed range		φ20 to φ40: 100 to 500 mm/s	φ50: 100 to 300 mm/s
Proof test pressure		1.5 MPa	
Working temperature range		Standard type: -10 to +70℃(No freezing) Switch Set: 0 to +60℃(No freezing)	
Structure of cushioning ^{Note 1)}		With cushion pads	
Allowable rotating angle		φ20・φ25: ±1.5°	φ32・φ40: ±1° φ50: ±0.8°
Allowable torque ^{Note 2)}		φ20・φ25: 0.5N・m	φ32・φ40: 1.0N・m φ50: 3.4N・m
Tolerance for thread		JIS 6H/6g	
Tolerance of stroke		^{+1.0} ₀ mm	
Mounting style ^{Note 3)}		SD, ST, LA, LB, FA, FB, CA, CB	
Rod end threads		Female thread, male thread	
Accessory		Bracket for CB(φ32 to φ50)	
Rod end attachments		Rod eye (T-end), rod eye with spherical bearing (S-end), rod clevis (Y-end), floating joint (F-end)	

Note 1) The rod side of the spring return type and the cap side of the spring-extended type are not provided with cushion pads.
Note 2) The allowable torque is applicable only when the cylinder is installed. When using the cylinder, do not apply a rotating torque to the piston rod.
Note 3) To cylinders with bores of 20 and 25 mm, only SD style is applicable.

Table of Strokes of Custom Made Cylinders

Unit: mm

Series	Bore	Stroke(mm)									
		5	10	15	20	25	30	35	40	45	50
10S-6GSR 10S-6RGSR	φ20	●	●	●	●	●	●	—	—	—	—
	φ25	●	●	●	●	●	●	—	—	—	—
	φ32	●	●	●	●	●	●	—	—	—	—
	φ40	●	●	●	●	●	●	●	●	●	●
	φ50	—	●	●	●	●	●	●	●	●	●
10S-6GSH	φ20	●	●	—	—	—	—	—	—	—	—
	φ25	●	●	—	—	—	—	—	—	—	—
	φ32	●	●	—	—	—	—	—	—	—	—
	φ40	●	●	—	—	—	—	—	—	—	—
	φ50	—	●	—	●	—	—	—	—	—	—

How to order

Single acting type cylinders

● Standard type 10S-6GSR

● Switch Set 10S-6RGSR

Standard type
10S-6GSR: Single acting spring return
10S-6GSR: Single acting spring-extended
Switch Set
10S-6RGSR: Single acting spring return

Mounting style
SD, ST, LA, LB, FA, FB, CA, CB
Note) To cylinders with bores of 20 and 25 mm, only SD is applicable.

Cylinder bore (mm)
φ20, φ25, φ32, φ40, φ50

With cushion pads

Cylinder stroke (mm)

● For details, contact us.

① Type ② Mounting style ③ Cylinder bore ④ Cushioning ⑤ Stroke ⑥ Thread type ⑦ Sensor symbol ⑧ Sensor quantity ⑨ Rod end attachment

SD 40 N 30 T GA 2 T

T Rod eye (T-end)
S Rod eye with spherical bearing (S-end)
Y Rod clevis (Y-end)
F Floating joint (F-end)
The rod end attachments are designed only for the male thread type.

Sensor quantity (1 or 2)

Sensor symbol
Note) Select applicable sensors out of the Sensor List.

Female thread type (No entry for standard type)
Male thread type

Sensor List

Type	Sensor symbol	Load voltage range	Load current range	Protective circuit	Indicating lamp	Wiring method	Cord length	Classification
Reed sensor	GA PD12L1	24 V DC 110 V AC	DC: 2.5 to 40mA AC: 2.5 to 20mA	None	None	0.2 mm ² , 2-core, outer dia. φ2.6 mm, rear wiring	1 m	General purpose
	GB PD12L3						3 m	
	GC PD11L1		DC: 5 to 40mA AC: 5 to 20mA		LED (Lights when sensing)	0.2 mm ² , 2-core, outer dia. φ2.6 mm, rear wiring	1 m	
	GD PD11L3						3 m	
	GE PD32L1		DC: 2.5 to 40mA AC: 2.5 to 20mA		None	0.2 mm ² , 2-core, outer dia. φ2.6 mm, upper wiring	1 m	
	GF PD32L3						3 m	
	GG PD31L1		DC: 5 to 40mA AC: 5 to 20mA		LED (Lights when sensing)	0.2 mm ² , 2-core, outer dia. φ2.6 mm, upper wiring	1 m	
	GH PD31L3						3 m	
Solid state sensor	GJ PD14L1	DC10 to 28V	5 to 20mA	Provided	LED (Lights when sensing)	0.2 mm ² , 2-core, outer dia. φ2.6 mm, rear wiring	1 m	General purpose
	GK PD14L3						3 m	
	GL PD13L1	28 V DC or less	0.1 to 40mA	Provided	LED (Lights when sensing)	0.15 mm ² , 3-core, outer dia. φ2.6 mm, rear wiring	1 m	
	GM PD13L3						3 m	
	GN PE34L1	DC10 to 28V	5 to 20mA	Provided	LED (Lights when sensing)	0.2 mm ² , 2-core, outer dia. φ2.6 mm, upper wiring	1 m	
	GP PE34L3						3 m	
	GR PE33L1	28 V DC or less	0.1 to 40mA	Provided	LED (Lights when sensing)	0.15 mm ² , 3-core, outer dia. φ2.6 mm, upper wiring	1 m	
	GS PE33L3						3 m	
	NK ZD136C-T	DC: 10 to 28V	5 to 50mA	Provided	LED (2-LED type in red/green)	0.5 mm ² , 2-core, outer dia. φ6 mm, rear wiring	5 m	

Notes) ●For the sensors without a protective circuit, be sure to provide a protective circuit (SK-100) with the load when using any induction load (relay, etc.).
●For handling of sensors, be sure to see the sensor specifications at the end of this catalog.
●We recommend AND Unit (AU series) for multiple sensors connected in series.
For details, refer to AND Unit at the end of this catalog.
●ZD136C-T can be mounted to cylinders with bores of 32, 40 and 50 mm. It cannot be mounted to cylinders with bores of 20 and 25 mm.
●For ZE type sensors, see the sensor specifications at the end of this catalog.

10S-6G

Compact Design Pneumatic Cylinder
Custom Made Specifications: Single Acting/Spring Return Unit: mm

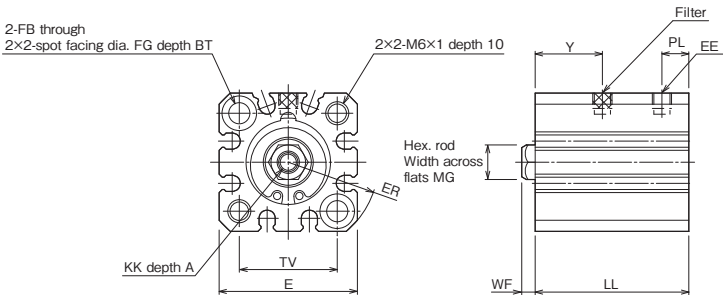
Custom Made Specifications

Single acting/spring return

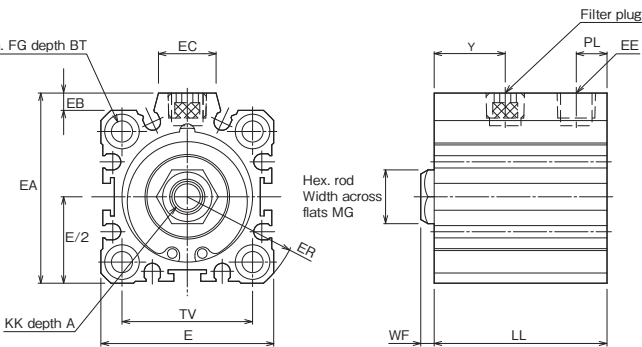
Standard type10S-6GSR SD BoreN Standard stroke

Switch Set10S-6RGSR SD BoreN Standard stroke – Sensor symbol Sensor quantity

●φ20, φ25



●φ32 to φ50



Dimensional Table

Symbol Stroke Bore	A	BT	E	EA	EB	EC	EE	ER	FB	FG	KK	LL									
												10S-6GSR									
												5	10	15	20	25	30	35	40	45	50
φ20	7	5.4	□36	—	—	—	M5×0.8	R23.5	φ5.5	φ9	M5×0.8	35	40	50	55	60	65	—	—	—	—
φ25	7	5.4	□40	—	—	—	M5×0.8	R26	φ5.5	φ9	M5×0.8	36	41	51	56	61	66	—	—	—	—
φ32	12	5.4	□45	49.5	4.5	15	Rc1/8	R30	φ5.5	φ9	M8×1.25	40	45	60	65	70	75	—	—	—	—
φ40	12	5.4	□52	57	5	17.5	Rc1/8	R34.5	φ5.5	φ9	M8×1.25	40	45	60	65	70	75	80	85	90	95
φ50	15	8	□64	71	7	19	Rc1/4	R42.5	φ6.6	φ11	M10×1.5	—	47	52	57	72	77	82	87	92	97

Symbol Stroke Bore	LL										MG	TV	WF	Y	PL			
	10S-6RGSR														10S-6GSR			10S-6 RGSR
	5	10	15	20	25	30	35	40	45	50					5	10		
φ20	45	50	60	65	70	75	—	—	—	—	9	□25.5	3.5	17.5	6	7	7	
φ25	46	51	61	66	71	76	—	—	—	—	9	□28	3.5	18.5	6	7	7	
φ32	50	55	70	75	80	85	—	—	—	—	14	□34	3.5	18.5	8	8	8	
φ40	50	55	70	75	80	85	90	95	100	105	14	□40	3.5	15.5	11.5	11.5	11.5	
φ50	—	57	62	67	82	87	92	97	102	107	19	□50	3.5	19	12	12	12	

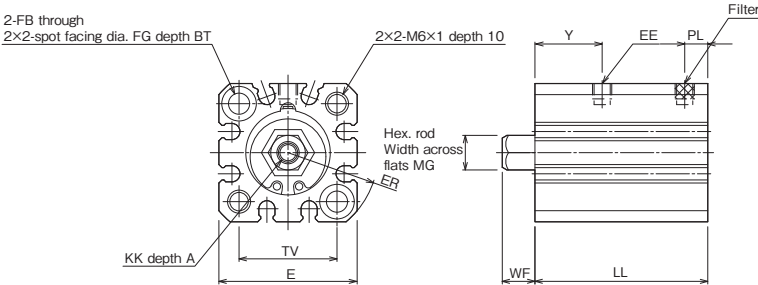
Compact Design Pneumatic Cylinder
Custom Made Specifications: Single Acting/Spring-Extended Unit: mm

10S-6G

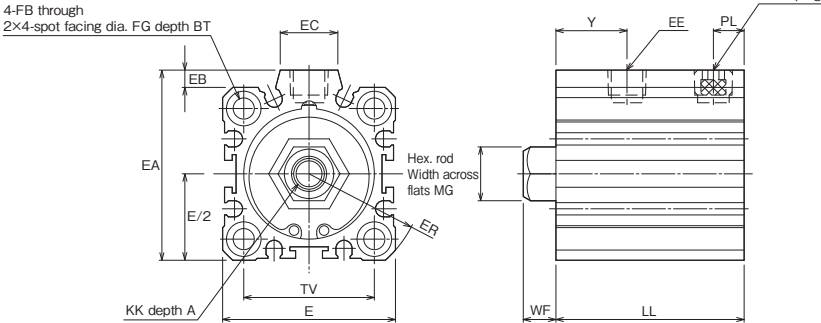
Single acting/spring-extended

Standard type10S-6GSH SD BoreN Standard stroke

●φ20, φ25



●φ32 to φ50



Dimensional Table

Symbol Stroke Bore	A	BT	E	EA	EB	EC	EE	ER	FB	FG	KK	LL			MG	TV	WF		
												5	10	20			5	10	20
												5	10	20			5	10	20
φ20	7	5.4	□36	—	—	—	M5×0.8	R23.5	φ5.5	φ9	M5×0.8	45	50	—	9	□25.5	8.5	13.5	—
φ25	7	5.4	□40	—	—	—	M5×0.8	R26	φ5.5	φ9	M5×0.8	46	51	—	9	□28	8.5	13.5	—
φ32	12	5.4	□45	49.5	4.5	15	Rc1/8	R30	φ5.5	φ9	M8×1.25	55	60	—	14	□34	8.5	13.5	—
φ40	12	5.4	□52	57	5	17.5	Rc1/8	R34.5	φ5.5	φ9	M8×1.25	50	55	—	14	□40	8.5	13.5	—
φ50	15	8	□64	71	7	19	Rc1/4	R42.5	φ6.6	φ11	M10×1.5	—	57	67	19	□50	—	13.5	23.5

Symbol Stroke Bore	Y	PL		
		5	10	20
		5	10	20
φ20	17.5	6	7	—
φ25	18.5	6	7	—
φ32	18.5	8	—	—
φ40	15.5	11.5	—	—
φ50	19	—	12	—

Custom Made Specifications

Specifications for Cylinders with Adjustable Stroke

Series variations	With adjustable extended stroke		With adjustable retracted stroke	
Type	Standard type	Switch Set	Standard type	Switch Set
Series	10S-6GA1	10S-6RGA1	10S-6GA2	10S-6RGA2
Cylinder bore (mm)	φ 20 · φ 25 · φ 32 · φ 40 · φ 50 · φ 63 · φ 80 · φ 100			
Working fluid	Air			
Lubrication	Unnecessary (To lubricate, use additive-free turbine oil Class 1 equivalent to ISO VG32.)			
Working pressure range	φ20 to φ50: 0.1 to 0.7 MPa		φ63 to φ100: 0.05 to 0.7 MPa	
Working speed range	φ20 to φ40: 50 to 500 mm/s		φ50 to φ100: 50 to 300 mm/s	
Proof test pressure	1.05 MPa			
Working temperature range	+5 to +60°C			
Structure of cushioning	With cushion pads on both ends		Rod advancing end: With Cushion pad Retracting end: None	
Allowable rotating angle Note 1)	φ 20 · φ 25: ±1.5° φ 32 · φ 40: ±1°		φ 50 · φ 63: ±0.8° φ 80 · φ 100: ±0.5°	
Allowable torque Note 2)	φ 20 · φ 25: 0.5N · m φ 32 · φ 40: 1.0N · m		φ 50 · φ 63: 3.4N · m φ 80 · φ 100: 10N · m	
Tolerance for thread	JIS 6H/6g			
Stroke adjusting method	Stopper adjustment		Adjuster bolt adjustment	
Stroke adjusting range	0 to 10mm			
Tolerance of stroke	$\begin{smallmatrix} +1.0 \\ 0 \end{smallmatrix}$ mm			
Mounting style	SD			
Rod end threads	Female thread, male thread			

Note 1) The allowable rotating angles at the piston rod retracting end are shown above.
Note 2) The allowable torque is applicable only when the cylinder is installed. When using the cylinder, do not apply a rotating torque to the piston rod.

How to order

Cylinders with adjustable stroke

● Standard type

10S-6GA1

With adjustable extended stroke
10S-6GA1 : Standard type
10S-6GRA1: Switch Set

● Switch Set

10S-6RGA1

With adjustable retracted stroke
10S-6GA2 : Standard type
10S-6GRA2: Switch Set

Type 1

Mounting style 2

Cylinder bore 3

Cushioning 4

Stroke 5

Thread type 6

Sensor symbol 7

Sensor quantity 8

SD (basic style)

Cylinder bore (mm)
φ20, φ25, φ32, φ40,
φ50, φ63, φ80, φ100

Cylinder stroke

Sensor quantity (1 or 2)

Sensor symbol
Note) Select applicable sensors
out of the Sensor List.

Female thread type (No entry for standard type)

Male thread type

With adjustable extended stroke: With cushion pads
With adjustable retracted stroke: Cushion pad provided only on rod side

* For details, contact us.

Sensor List

Type	Sensor symbol	Load voltage range	Load current range	Protective circuit	Indicating lamp	Wiring method	Cord length	Classification
Reed sensor	GA PD12L1	24 V DC 110 V AC	DC: 2.5 to 40mA AC: 2.5 to 20mA	None	None	0.2 mm ² , 2-core, outer dia. φ2.6 mm, rear wiring	1 m	General purpose
	GB PD12L3						3 m	
	GC PD11L1		DC: 5 to 40mA AC: 5 to 20mA		LED (Lights when sensing)	0.2 mm ² , 2-core, outer dia. φ2.6 mm, rear wiring	1 m	
	GD PD11L3						3 m	
	GE PD32L1		DC: 2.5 to 40mA AC: 2.5 to 20mA		None	0.2 mm ² , 2-core, outer dia. φ2.6 mm, upper wiring	1 m	
	GF PD32L3						3 m	
	GG PD31L1		DC: 5 to 40mA AC: 5 to 20mA		LED (Lights when sensing)	0.2 mm ² , 2-core, outer dia. φ2.6 mm, upper wiring	1 m	
	GH PD31L3						3 m	
Solid state sensor	GJ PD14L1	DC10 to 28V	5 to 20mA	Provided	LED (Lights when sensing)	0.2 mm ² , 2-core, outer dia. φ2.6 mm, rear wiring	1 m	General purpose
	GK PD14L3						3 m	
	GL PD13L1	28 V DC or less	0.1 to 40mA	Provided	LED (Lights when sensing)	0.15 mm ² , 3-core, outer dia. φ2.6 mm, rear wiring	1 m	
	GM PD13L3						3 m	
	GN PE34L1	DC10 to 28V	5 to 20mA	Provided	LED (Lights when sensing)	0.2 mm ² , 2-core, outer dia. φ2.6 mm, upper wiring	1 m	
	GP PE34L3						3 m	
	GR PE33L1	28 V DC or less	0.1 to 40mA	Provided	LED (Lights when sensing)	0.15 mm ² , 3-core, outer dia. φ2.6 mm, upper wiring	1 m	
	GS PE33L3						3 m	
	NK ZD136C-T	DC10 to 28V	5 to 50mA	Provided	LED (2-LED type in red/green)	0.5 mm ² , 2-core, outer dia. φ6 mm, rear wiring	5 m	Strong magnetic field resistance

Notes) ● For the sensors without a protective circuit, be sure to provide a protective circuit (SK-100) with the load when using any induction load (relay, etc.).
● For handling of sensors, be sure to see the sensor specifications at the end of this catalog.
● We recommend AND Unit (AU series) for multiple sensors connected in series.
For details, refer to AND Unit at the end of this catalog.
● ZD136C-T can be mounted to cylinders with bores of 32, 40, 50, 63, 80 and 100 mm. It cannot be mounted to cylinders with bores of 20 and 25 mm.
● For ZE type sensors, see the sensor specifications at the end of this catalog.

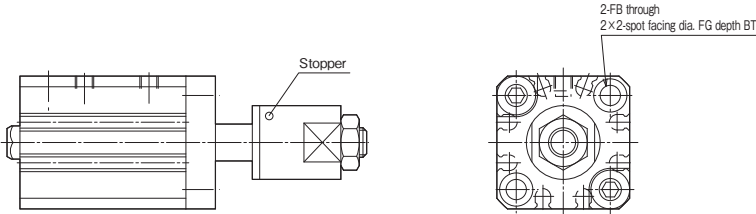
Custom Made Specifications

With adjustable stroke/adjustable extended stroke

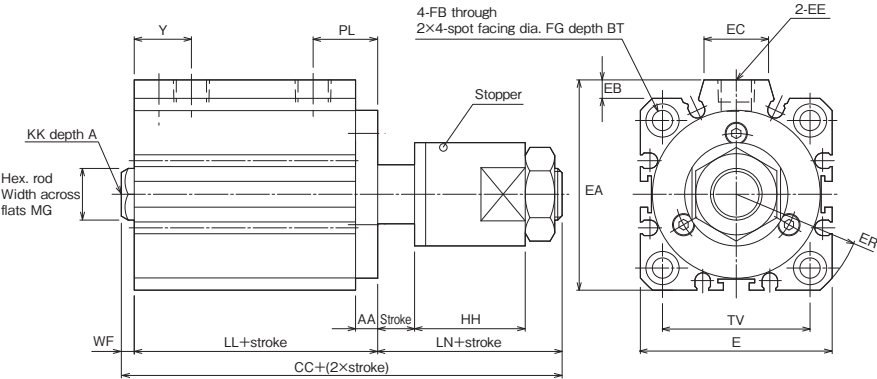
Standard type10S-6GA1SD BoreNStroke

Switch Set10S-6RGA1SD BoreNStroke – Sensor symbolSensor quantity

●φ20 to φ32



●φ40 to φ100



Dimensional Table

Symbol Bore	A	AA	BT	CC		E	EA	EB	EC	EE	ER	FB	FG	HH	KK	LL	
				10S-6GA1	10S-6RGA1											10S-6GA1	10S-6RGA1
φ20	7	8	5.4	77.5	87.5	□36	—	—	—	M5×0.8	R23.5	φ5.5	φ9	24	M5×0.8	43	53
φ25	7	8	5.4	79.5	89.5	□40	—	—	—	M5×0.8	R26	φ5.5	φ9	24	M5×0.8	44	54
φ32	12	8	5.4	96.5	106.5	□45	49.5	4.5	15	Rc1/8	R30	φ5.5	φ9	30	M8×1.25	53	63
φ40	12	6	5.4	89.5	99.5	□52	57	5	17.5	Rc1/8	R34.5	φ5.5	φ9	30	M8×1.25	46	56
φ50	15	6	8	95.5	105.5	□64	71	7	19	Rc1/4	R42.5	φ6.6	φ11	31	M10×1.5	48	58
φ63	15	6	10.5	99.5	109.5	□77	84	7	19	Rc1/4	R51	φ9	φ14	31	M10×1.5	52	62
φ80	20	10	13.5	133	143	□98	104	6	25	Rc3/8	R65	φ11	φ17.5	40	M16×2	71.5	81.5
φ100	20	10	13.5	142.5	152.5	□117	123.5	6.5	25	Rc3/8	R78	φ11	φ17.5	40	M16×2	78	88

Symbol Bore	LN	MG	TV	WF	Y	PL
φ20	31	9	□25.5	3.5	17.5	18
φ25	32	9	□28	3.5	18.5	18
φ32	40	14	□34	3.5	18.5	19
φ40	40	14	□40	3.5	15.5	17.5
φ50	44	19	□50	3.5	19	18
φ63	44	19	□60	3.5	19.5	20.5
φ80	55	23	□77	6.5	23	26.5
φ100	58	23	□94	6.5	25	31

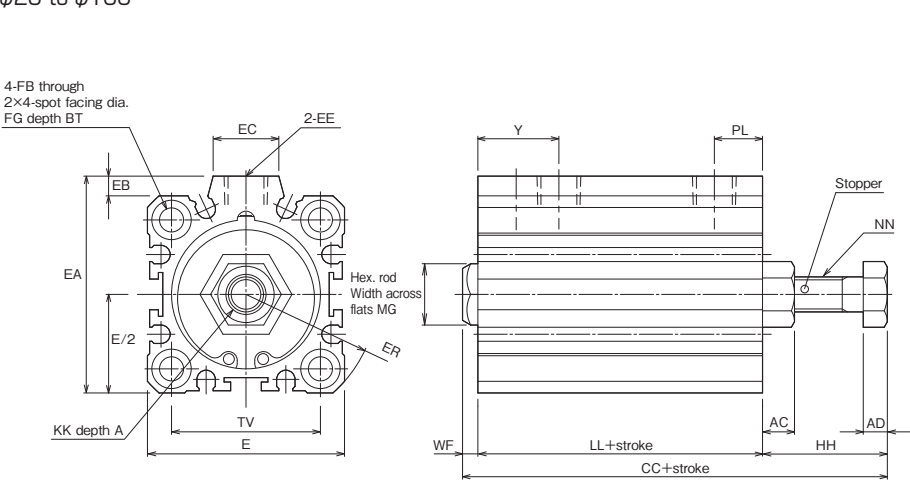
* For details, contact us.

With adjustable stroke/adjustable retracted stroke

Standard type10S-6GA2SD BoreNStroke

Switch Set10S-6RGA2SD BoreNStroke – Sensor symbolSensor quantity

●φ20 to φ100



* For details, contact us.

Dimensional Table

Symbol Bore	A	AA	AD	BT	CC		E	EA	EB	EC	EE	ER	FB	FG	HH	KK	LL	
					10S-6GA2	10S-6RGA2											10S-6GA2	10S-6RGA2
φ20	7	7.3	5.5	5.4	73.1	83.1	□36	—	—	—	M5×0.8	R23.5	φ5.5	φ9	29.6	M5×0.8	40	50
φ25	7	7.3	5.5	5.4	74.5	84.5	□40	—	—	—	M5×0.8	R26	φ5.5	φ9	30	M5×0.8	41	51
φ32	12	7.3	5.5	5.4	77	87	□45	49.5	4.5	15	Rc1/8	R30	φ5.5	φ9	28.5	M8×1.25	45	55
φ40	12	11.5	8	5.4	86.7	91.7	□52	57	5	17.5	Rc1/8	R34.5	φ5.5	φ9	38.2	M8×1.25	45	50
φ50	15	11.5	8	8	89	94	□64	71	7	19	Rc1/4	R42.5	φ6.6	φ11	38.5	M10×1.5	47	52
φ63	15	13	10	10.5	98	103	□77	84	7	19	Rc1/4	R51	φ9	φ14	43.5	M10×1.5	51	56
φ80	20	18.5	13	13.5	120	130	□98	104	6	25	Rc3/8	R65	φ11	φ17.5	52	M16×2	61.5	71.5
φ100	20	21.5	15	13.5	135	145	□117	123.5	6.5	25	Rc3/8	R78	φ11	φ17.5	60.5	M16×2	68	78

Symbol Bore	MG	NN	TV	WF	Y	PL
φ20	9	M8×1.25	□25.5	3.5	17.5	18
φ25	9	M8×1.25	□28	3.5	18.5	18
φ32	14	M8×1.25	□34	3.5	18.5	19
φ40	14	M12×1.5	□40	3.5	15.5	17.5
φ50	19	M12×1.5	□50	3.5	19	18
φ63	19	M16×1.5	□60	3.5	19.5	20.5
φ80	23	M20×1.5	□77	6.5	23	26.5
φ100	23	M24×2	□94	6.5	25	31

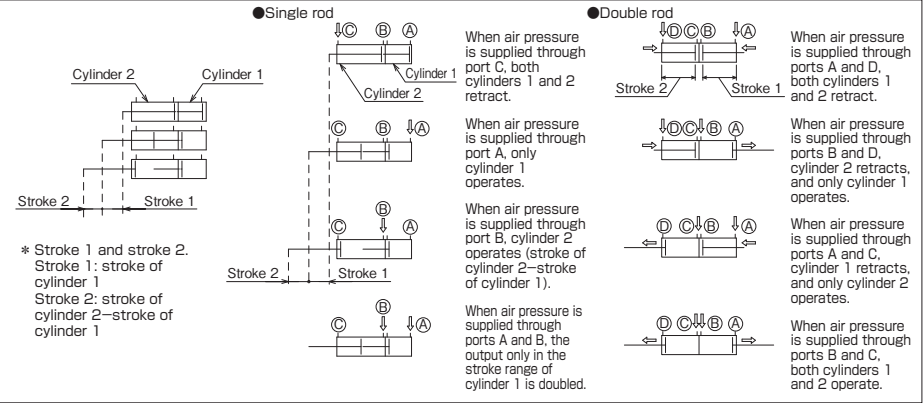
Custom Made Specifications

Specifications for Dual Stroke Cylinders

Series variations	Single rod		Double rod	
Type	Standard type	Switch Set	Standard type	Switch Set
Series	10S-6GQ1	10S-6RGQ1	10S-6GQ2	10S-6RGQ2
Cylinder bore (mm)	φ 20 · φ 25 · φ 32 · φ 40 · φ 50 · φ 63 · φ 80 · φ 100			
Working fluid	Air			
Lubrication	Unnecessary (To lubricate, use additive-free turbine oil Class 1 equivalent to ISO VG32.)			
Working pressure range	φ20 to φ50: 0.1 to 0.7 MPa		φ63 to φ100: 0.05 to 0.7 MPa	
Working speed range	φ20 to φ40: 50 to 500 mm/s		φ50 to φ100: 50 to 300 mm/s	
Proof test pressure	1.05 MPa			
Working temperature range	+5 to +60°C			
Structure of cushioning	With cushion pads on both ends			
Allowable rotating angle Note 1)	φ 20 · φ 25: ±1.5°		φ 32 · φ 40: ±1°	φ 50 · φ 63: ±0.8° φ 80 · φ 100: ±0.5°
Allowable torque Note 2)	φ 20 · φ 25: 0.5N · m		φ 32 · φ 40: 1.0N · m	φ 50 · φ 63: 3.4N · m φ 80 · φ 100: 10N · m
Tolerance for thread	JIS 6H/6g			
Tolerance of stroke	$\begin{smallmatrix} +1.0 \\ 0 \end{smallmatrix}$ mm			
Mounting style	SD			
Rod end threads	Female thread, male thread			

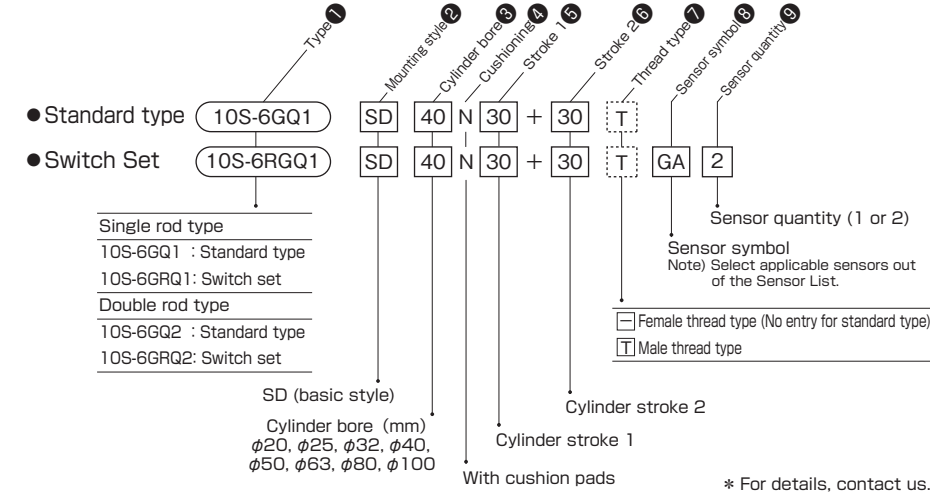
Note 1) The allowable rotating angles at the piston rod retracting end are shown above.
Note 2) The allowable torque is applicable only when the cylinder is installed. When using the cylinder, do not apply a rotating torque to the piston rod.

Principle of Operation



How to order

Dual stroke cylinders



Sensor List

Type	Sensor symbol	Load voltage range	Load current range	Protective circuit	Indicating lamp	Wiring method	Cord length	Classification
Reed sensor	 PD12L1	24 V DC 110 V AC	DC: 2.5 to 40mA AC: 2.5 to 20mA	None	None	0.2 mm ² , 2-core, outer dia. φ2.6 mm, rear wiring	1 m	General purpose
	 PD12L3					3 m		
	 PD11L1		DC: 5 to 40mA AC: 5 to 20mA		LED (Lights when sensing)	0.2 mm ² , 2-core, outer dia. φ2.6 mm, rear wiring	1 m	
	 PD11L3					3 m		
	 PD32L1		DC: 2.5 to 40mA AC: 2.5 to 20mA		None	0.2 mm ² , 2-core, outer dia. φ2.6 mm, upper wiring	1 m	
	 PD32L3					3 m		
	 PD31L1		DC: 5 to 40mA AC: 5 to 20mA		LED (Lights when sensing)	0.2 mm ² , 2-core, outer dia. φ2.6 mm, upper wiring	1 m	
	 PD31L3					3 m		
Solid state sensor	 PD14L1	DC10 to 28V	5 to 20mA	Provided	LED (Lights when sensing)	0.2 mm ² , 2-core, outer dia. φ2.6 mm, rear wiring	1 m	General purpose
	 PD14L3					3 m		
	 PD13L1	28 V DC or less	0.1 to 40mA	Provided	LED (Lights when sensing)	0.15 mm ² , 3-core, outer dia. φ2.6 mm, rear wiring	1 m	
	 PD13L3					3 m		
	 PE34L1	DC10 to 28V	5 to 20mA	Provided	LED (Lights when sensing)	0.2 mm ² , 2-core, outer dia. φ2.6 mm, upper wiring	1 m	
	 PE34L3					3 m		
	 PE33L1	28 V DC or less	0.1 to 40mA	Provided	LED (Lights when sensing)	0.15 mm ² , 3-core, outer dia. φ2.6 mm, upper wiring	1 m	
	 PE33L3					3 m		
	 ZD136C-T	DC: 10 to 28V	5 to 50mA	Provided	LED (2-LED type in red/green)	0.5 mm ² , 2-core, outer dia. φ6 mm, rear wiring	5 m	Strong magnetic field resistance

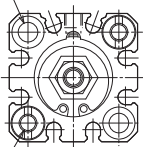
Notes) ● For the sensors without a protective circuit, be sure to provide a protective circuit (SK-100) with the load when using any induction load (relay, etc.).
● For handling of sensors, be sure to see the sensor specifications at the end of this catalog.
● We recommend AND Unit (AU series) for multiple sensors connected in series.
For details, refer to AND Unit at the end of this catalog.
● ZD136C-T can be mounted to cylinders with bores of 32, 40, 50, 63, 80 and 100 mm. It cannot be mounted to cylinders with bores of 20 and 25 mm.
● For ZE type sensors, see the sensor specifications at the end of this catalog.

Custom Made Specifications

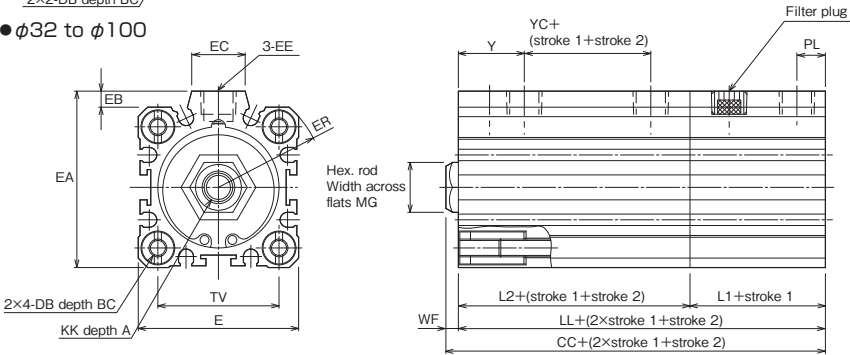
Dual stroke/single rod

Standard type 10S-6GQ1 SD Bore N Stroke1 + Stroke2
Switch Set 10S-6RGQ1 SD Bore N Stroke1 + Stroke2 - Sensor symbol Sensor quantity

• φ20, φ25
2-FB through
2×2-spot facing dia.
FG depth BT



• φ32 to φ100



Dimensional Table

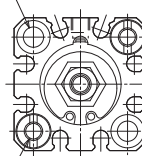
Symbol Bore	A	BC	BT	CC		DB	E	EA	EB	EC	EE	ER	FB	FG	KK
				10S-6GQ1	10S-6RGQ1										
φ 20	7	10	5.4	65	85	M5×0.8	□36	—	—	—	M5×0.8	R23.5	φ 5.5	φ 9	M5×0.8
φ 25	7	10	5.4	67	87	M5×0.8	□40	—	—	—	M5×0.8	R26	φ 5.5	φ 9	M5×0.8
φ 32	12	10	—	71.5	91.5	M5×0.8	□45	49.5	4.5	15	Rc1/8	R30	—	—	M8×1.25
φ 40	12	10	—	78	98	M5×0.8	□52	57	5	17.5	Rc1/8	R34.5	—	—	M8×1.25
φ 50	15	14	—	81	101	M6×1	□64	71	7	19	Rc1/4	R42.5	—	—	M10×1.5
φ 63	15	14	—	90.5	110.5	M8×1.25	□77	84	7	19	Rc1/4	R51	—	—	M10×1.5
φ 80	20	15	—	111.5	131.5	M10×1.5	□98	104	6	25	Rc3/8	R65	—	—	M16×2
φ 100	20	15	—	127.5	147.5	M10×1.5	□117	123.5	6.5	25	Rc3/8	R78	—	—	M16×2

Symbol Bore	LL		L1		L2		MG	TV	WF	Y	YC		PL	
	10S-6GQ1	10S-6RGQ1	10S-6GQ1	10S-6RGQ1	10S-6GQ1	10S-6RGQ1					10S-6GQ1	10S-6RGQ1	10S-6GQ1 (Stroke 1=5)	10S-6GQ1 (Stroke 1=other than 5)
φ 20	61.5	81.5	21.5	31.5	40	50	9	□25.5	3.5	17.5	12.5	22.5	6	7
φ 25	63.5	83.5	22.5	32.5	41	51	9	□28	3.5	18.5	12.5	22.5	6	7
φ 32	68	88	23	33	45	55	14	□34	3.5	18.5	15.5	25.5	6	8
φ 40	74.5	94.5	29.5	39.5	45	55	14	□40	3.5	15.5	18	23	10	11.5
φ 50	77.5	97.5	30.5	40.5	47	57	19	□50	3.5	19	16	21		12
φ 63	87	107	36	46	51	61	19	□60	3.5	19.5	17	22		14.5
φ 80	105	125	43.5	53.5	61.5	71.5	23	□77	6.5	23	22	32		16.5
φ 100	121	141	53	63	68	78	23	□94	6.5	25	22	32		21

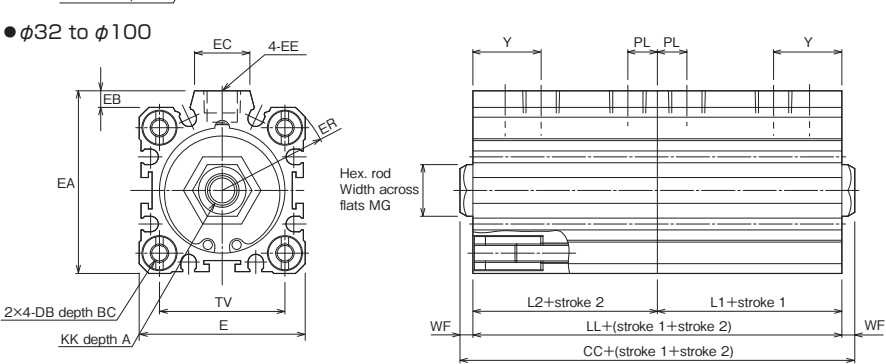
Dual stroke/double rod

Standard type 10S-6GQ2 SD Bore N Stroke1 + Stroke2
Switch Set 10S-6RGQ2 SD Bore N Stroke1 + Stroke2 - Sensor symbol Sensor quantity

• φ20, φ25
2-FB through
2×2-spot facing dia.
FG depth BT



• φ32 to φ100



Dimensional Table

Symbol Bore	A	BC	BT	CC		DB	E	EA	EB	EC	EE	ER	FB	FG	KK
				10S-6GQ2	10S-6RGQ2										
φ 20	7	10	5.4	67	87	M5×0.8	□36	—	—	—	M5×0.8	R23.5	φ 5.5	φ 9	M5×0.8
φ 25	7	10	5.4	69	89	M5×0.8	□40	—	—	—	M5×0.8	R26	φ 5.5	φ 9	M5×0.8
φ 32	12	10	—	77	97	M5×0.8	□45	49.5	4.5	15	Rc1/8	R30	—	—	M8×1.25
φ 40	12	10	—	77	97	M5×0.8	□52	57	5	17.5	Rc1/8	R34.5	—	—	M8×1.25
φ 50	15	14	—	81	101	M6×1	□64	71	7	19	Rc1/4	R42.5	—	—	M10×1.5
φ 63	15	14	—	89	109	M8×1.25	□77	84	7	19	Rc1/4	R51	—	—	M10×1.5
φ 80	20	15	—	116	136	M10×1.5	□98	104	6	25	Rc3/8	R65	—	—	M16×2
φ 100	20	15	—	129	149	M10×1.5	□117	123.5	6.5	25	Rc3/8	R78	—	—	M16×2

Symbol Bore	LL		L1		L2		MG	TV	WF	Y	YC		PL	
	10S-6GQ2	10S-6RGQ2	10S-6GQ2	10S-6RGQ2	10S-6GQ2	10S-6RGQ2					10S-6GQ2	10S-6RGQ2	10S-6GQ2 (Stroke 1=5)	10S-6GQ2 (Stroke 1=other than 5)
φ 20	60	80	30	40	30	40	9	□25.5	3.5	17.5	12.5	22.5	6	7
φ 25	62	82	31	41	31	41	9	□28	3.5	18.5	12.5	22.5	6	7
φ 32	70	90	35	45	35	45	14	□34	3.5	18.5	15.5	25.5	6	8
φ 40	70	90	35	45	35	45	14	□40	3.5	15.5	18	23	10	11.5
φ 50	74	94	37	47	37	47	19	□50	3.5	19	16	21		12
φ 63	82	102	41	51	41	51	19	□60	3.5	19.5	17	22		14.5
φ 80	103	123	51.5	61.5	51.5	61.5	23	□77	6.5	23	22	32		16.5
φ 100	116	136	58	68	58	68	23	□94	6.5	25	22	32		21

Dimensional Table

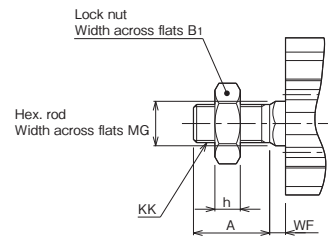
Symbol Bore	Lock nut part number	A	B ₁	C	D	h	KK	MG	MM	WF	
										Other than FA style	FA style
φ 20	LNA-08Z-A	16 (13.5)	13	3.5	8	5	M8×1.25	9	φ 10	5	—
φ 25		16 (13.5)	13	3.5	10	5	M8×1.25	9	φ 12	5	—
φ 32	LNA-12Z-A	24 (21.5)	19	3.5	14	7	M12×1.25	14	φ 16	5	15
φ 40		24 (21.5)	19	3.5	14	7	M12×1.25	14	φ 16	5	15
φ 50	LNA-16Z-A	32 (29)	22	3.5	18	10	M16×1.5	19	φ 20	5	15
φ 63		32 (29)	22	3.5	18	10	M16×1.5	19	φ 20	5	15
φ 80	LNA-20Z-A	40 (37)	27	5	22	12	M20×1.5	23	φ 25	6.5	21.5
φ 100		40 (37)	27	5	27	12	M20×1.5	23	φ 30	6.5	21.5

* The parenthesized values of dimension A are the lengths of threaded portions.

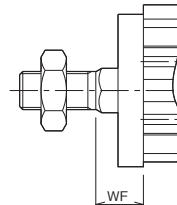
Unit: mm

Male threaded rod end

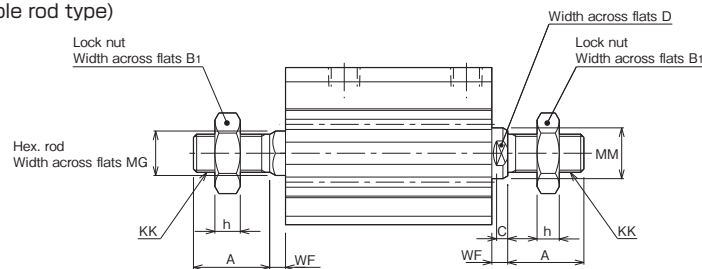
● Other than FA style



● FA style



● Round rod
(Double rod type)

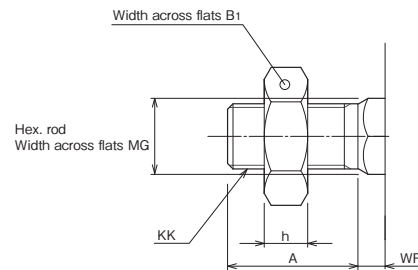


Note) Both rods of double acting type double rod cylinders are male thread type. (The rod ends on both sides have lock nuts.)
In the case of FA style, dimension WF is longer. When ordering this type, pay attention to the size.

Order Made Specifications

(Single acting, dual stroke, with adjustable stroke)

For details, contact us.



Dimensional Table of Male Thread Type Rods of Order Made Cylinders

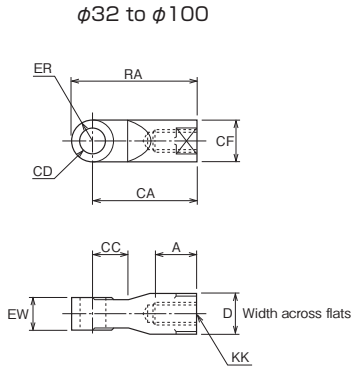
Symbol Stroke Bore	A	B ₁	h	KK	MG	WF			
						Other than 10S-6SH	10S-6SH		
							5st	10st	20st
φ 20	16 (13.5)	13	5	M8×1.25	9	5	10	15	—
φ 25	16 (13.5)	13	5	M8×1.25	9	5	10	15	—
φ 32	24 (21.5)	19	7	M12×1.25	14	5	10	15	—
φ 40	24 (21.5)	19	7	M12×1.25	14	5	10	15	—
φ 50	32 (29)	22	10	M16×1.5	19	5	—	15	25
φ 63	32 (29)	22	10	M16×1.5	19	5	—	—	—
φ 80	40 (37)	27	12	M20×1.5	23	6.5	—	—	—
φ 100	40 (37)	27	12	M20×1.5	23	6.5	—	—	—

* The parenthesized values of dimension A are the lengths of threaded portions.

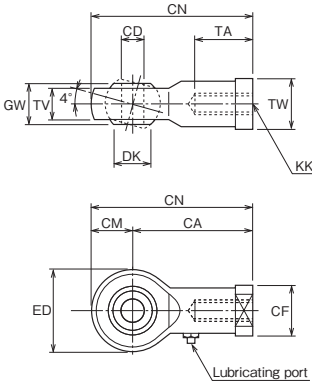
Single acting cylinders with bores of 20 to 50 mm can be produced.

For details, contact us.

Rod end attachment
Rod eye (T-end)



Rod eye with spherical bearing
(S-end) $\phi 20$ to $\phi 100$



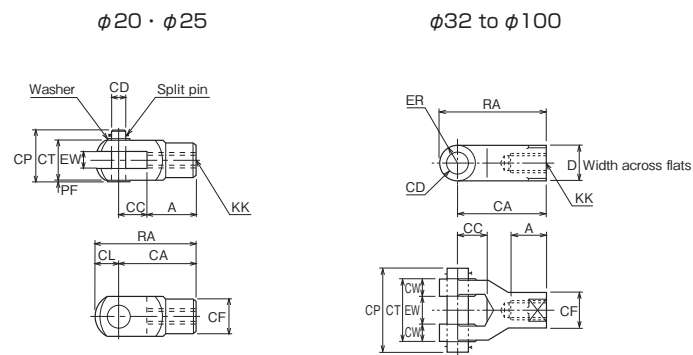
Dimensional Table: Rod eye (T-end)

Symbol Bore	Part number	A	CA	CC	CD	CF	D	ER	EW	J	KK	RA
$\phi 32$	RTA-12-A	25	60	20	$\phi 14H9$	$\phi 24$	24	R12	$20^{0}_{-0.1}$	—	M12×1.25	72
$\phi 40$		25	60	20	$\phi 14H9$	$\phi 24$	24	R12	$20^{0}_{-0.1}$	—	M12×1.25	72
$\phi 50$	RTA-16-A	33	60	20	$\phi 14H9$	$\phi 28$	27	R14	$20^{0}_{-0.1}$	—	M16×1.5	74
$\phi 63$		33	60	20	$\phi 14H9$	$\phi 28$	27	R14	$20^{0}_{-0.1}$	—	M16×1.5	74
$\phi 80$	RTA-20-A	41	85	30	$\phi 20H9$	$\phi 36$	36	R19	$32^{0}_{-0.1}$	—	M20×1.5	104
$\phi 100$		41	85	30	$\phi 20H9$	$\phi 36$	36	R19	$32^{0}_{-0.1}$	—	M20×1.5	104

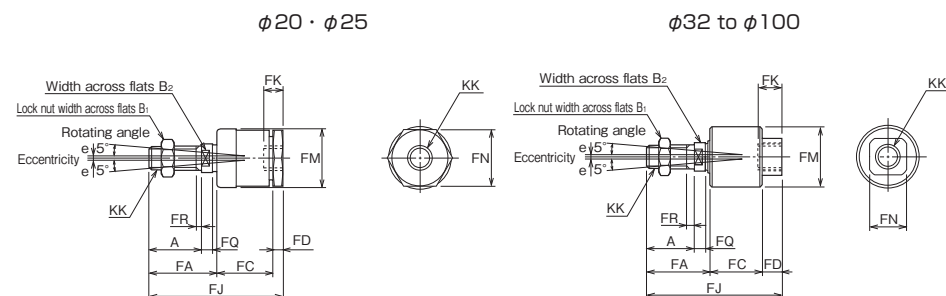
Dimensional Table: Rod eye with spherical bearing (S-end)

Symbol Bore	Part number	CA	CD	CF	CM	CN	DK	ED	GW	KK	TA	TV	TW
$\phi 20$	RSA-08-A	36	$\phi 8H9$	$\phi 16$	11	47	$\phi 10.4$	22	$12^{0}_{-0.1}$	M8×1.25	17	9 ± 0.1	14
$\phi 25$		36	$\phi 8H9$	$\phi 16$	11	47	$\phi 10.4$	22	$12^{0}_{-0.1}$	M8×1.25	17	9 ± 0.1	14
$\phi 32$	RSA-12-A	50	$\phi 12H9$	$\phi 22$	15	65	$\phi 15.4$	30	$16^{0}_{-0.1}$	M12×1.25	24	12 ± 0.1	19
$\phi 40$		50	$\phi 12H9$	$\phi 22$	15	65	$\phi 15.4$	30	$16^{0}_{-0.1}$	M12×1.25	24	12 ± 0.1	19
$\phi 50$	RSA-16-A	64	$\phi 16H9$	$\phi 27$	19	83	$\phi 19.4$	38	$21^{0}_{-0.1}$	M16×1.5	33	15 ± 0.1	22
$\phi 63$		64	$\phi 16H9$	$\phi 27$	19	83	$\phi 19.4$	38	$21^{0}_{-0.1}$	M16×1.5	33	15 ± 0.1	22
$\phi 80$	RSA-20-A	77	$\phi 20H9$	$\phi 34$	23	100	$\phi 24.4$	46	$25^{0}_{-0.1}$	M20×1.5	40	18 ± 0.1	30
$\phi 100$		77	$\phi 20H9$	$\phi 34$	23	100	$\phi 24.4$	46	$25^{0}_{-0.1}$	M20×1.5	40	18 ± 0.1	30

Rod clevis (Y-end) with pin



Floating joint (F-end)



- The insertion of the floating joint into the socket shall not equal or exceed the dimension of screw diameter.
(Return the joint one or two turns after it gets into contact with the socket bottom, and fix it with a lock nut.)
Excessive insertion can cause operation failure.
- DO NOT use together with CA and CB accessories.

Dimensional Table: Rod clevis (Y-end) with pin

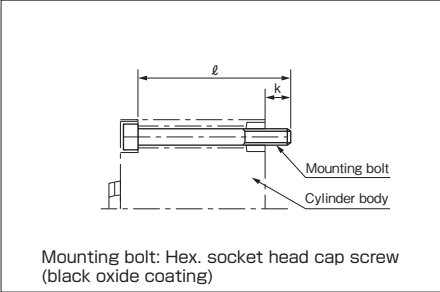
Symbol Bore	Part number	A	CA	CC	CD	CF	CL	CP	CT	CW	D	ER	EW	KK	PF	RA
φ 20	RYA-08-A	16	32	16	φ 8 $\frac{H 8}{f 7}$	φ 14	10	24.5	□ 16	—	—	—	8 $\frac{+0.4}{+0.1}$	M8×1.25	2	42
φ 25		16	32	16	φ 8 $\frac{H 8}{f 7}$	φ 14	10	24.5	□ 16	—	—	—	8 $\frac{+0.4}{+0.1}$	M8×1.25	2	42
φ 32	RYA-12-1-A	25	60	20	φ 14 $\frac{H 9}{f 8}$	φ 24	—	58	44	12	24	R12	20 $\frac{+1.5}{+0.5}$	M12×1.25	—	72
φ 40		25	60	20	φ 14 $\frac{H 9}{f 8}$	φ 24	—	58	44	12	24	R12	20 $\frac{+1.5}{+0.5}$	M12×1.25	—	71
φ 50	RYA-16-A	33	60	18	φ 14 $\frac{H 9}{f 8}$	φ 28	—	58	44	12	27	R14	20 $\frac{+1.5}{+0.5}$	M16×1.5	—	74
φ 63		33	60	18	φ 14 $\frac{H 9}{f 8}$	φ 28	—	58	44	12	27	R14	20 $\frac{+1.5}{+0.5}$	M16×1.5	—	74
φ 80	RYA-20-A	41	85	28	φ 20 $\frac{H 9}{f 8}$	φ 36	—	78	64	16	36	R19	32 $\frac{+1.5}{+0.5}$	M20×1.5	—	104
φ 100		41	85	28	φ 20 $\frac{H 9}{f 8}$	φ 36	—	78	64	16	36	R19	32 $\frac{+1.5}{+0.5}$	M20×1.5	—	104

Dimensional Table: Floating joint (F-end)

Symbol Bore	Part number	A	B ₁	B ₂	e	FA	FC	FD	FJ	FK	FM	FN	FQ	FR	KK
φ 20	RFS-08T	22.5	13	8	0.5	28	22.5	3.5	54	9	φ20	19	4.5	2.5	M8×1.25
φ 25		22.5	13	8	0.5	28	22.5	3.5	54	9	φ20	19	4.5	2.5	M8×1.25
φ 32	RFS-12T	24	19	13	1	33	25.5	11	69.5	13.5	φ32	□19	7	3.5	M12×1.25
φ 40		24	19	13	1	33	25.5	11	69.5	13.5	φ32	□19	7	3.5	M12×1.25
φ 50	RFS-16T	32	22	17	1.5	43	33	13	89	16	φ40	□24	8	4	M16×1.5
φ 63		32	22	17	1.5	43	33	13	89	16	φ40	□24	8	4	M16×1.5
φ 80	RFS-20T080	40	27	22	2	53	42	15	110	22	φ50	□30	9	5	M20×1.5
φ 100	RFS-20T100	40	27	24	2.5	56	49	18	123	24	φ64	□36	12	6	M20×1.5

Dimensional Drawing

Unit: mm



Model Number

When placing an order, specify the model number shown below.

CBT 5 - 80 D

Mounting bolt type

① Bolt size

② Quantity

Bolt length (ℓ)

Explanation of symbols

①	Bolt size				②	Quantity	
	3	M3	8	M8		S	2 pcs.
	5	M5	10	M10		D	4 pcs.
	6	M6	12	M12			

List of Mounting Bolt Types: Standard type/non-rotating

Series Variations	Bore	k	Stroke (mm)						
			5	10	15	20	25	30	35
Double acting single rod 10S-6G	φ20	10.4	CBT5-40S	CBT5-45S	CBT5-50S	CBT5-55S	CBT5-60S	CBT5-65S	CBT5-70S
	φ25	9.4	CBT5-40S	CBT5-45S	CBT5-50S	CBT5-55S	CBT5-60S	CBT5-65S	CBT5-70S
	φ32	10.4	CBT5-45D	CBT5-50D	CBT5-55D	CBT5-60D	CBT5-65D	CBT5-70D	CBT5-75D
	φ40	10.4	CBT5-45D	CBT5-50D	CBT5-55D	CBT5-60D	CBT5-65D	CBT5-70D	CBT5-75D
	φ50	11	—	CBT6-50D	CBT6-55D	CBT6-60D	CBT6-65D	CBT6-70D	CBT6-75D
	φ63	14.5	—	CBT8-55D	CBT8-60D	CBT8-65D	CBT8-70D	CBT8-75D	CBT8-80D
	φ80	12	—	CBT10-60D	CBT10-65D	CBT10-70D	CBT10-75D	CBT10-80D	CBT10-85D
	φ100	15.5	—	CBT10-70D	CBT10-75D	CBT10-80D	CBT10-85D	CBT10-90D	CBT10-95D
Double acting double rod 10S-6GD	φ20	10.4	CBT5-45S	CBT5-50S	CBT5-55S	CBT5-60S	CBT5-65S	CBT5-70S	—
	φ25	9.4	CBT5-45S	CBT5-50S	CBT5-55S	CBT5-60S	CBT5-65S	CBT5-70S	—
	φ32	10.4	CBT5-50D	CBT5-55D	CBT5-60D	CBT5-65D	CBT5-70D	CBT5-75D	CBT5-80D
	φ40	10.4	CBT5-50D	CBT5-55D	CBT5-60D	CBT5-65D	CBT5-70D	CBT5-75D	CBT5-80D
	φ50	11	—	CBT6-55D	CBT6-60D	CBT6-65D	CBT6-70D	CBT6-75D	CBT6-80D
	φ63	14.5	—	CBT8-60D	CBT8-65D	CBT8-70D	CBT8-75D	CBT8-80D	CBT8-85D
	φ80	12	—	CBT10-70D	CBT10-75D	CBT10-80D	CBT10-85D	CBT10-90D	CBT10-95D
	φ100	15.5	—	CBT10-80D	CBT10-85D	CBT10-90D	CBT10-95D	CBT10-100D	CBT10-105D

List of Mounting Bolt Types: Switch Set/non-rotating

Series Variations	Bore	k	Stroke (mm)						
			5	10	15	20	25	30	35
Double acting single rod 10S-6RG	φ20	10.4	CBT5-50S	CBT5-55S	CBT5-60S	CBT5-65S	CBT5-70S	CBT5-75S	CBT5-80S
	φ25	9.4	CBT5-50S	CBT5-55S	CBT5-60S	CBT5-65S	CBT5-70S	CBT5-75S	CBT5-80S
	φ32	10.4	CBT5-55D	CBT5-60D	CBT5-65D	CBT5-70D	CBT5-75D	CBT5-80D	CBT5-85D
	φ40	10.4	CBT5-55D	CBT5-60D	CBT5-65D	CBT5-70D	CBT5-75D	CBT5-80D	CBT5-85D
	φ50	11	—	CBT6-60D	CBT6-65D	CBT6-70D	CBT6-75D	CBT6-80D	CBT6-85D
	φ63	14.5	—	CBT8-65D	CBT8-70D	CBT8-75D	CBT8-80D	CBT8-85D	CBT8-90D
	φ80	12	—	CBT10-70D	CBT10-75D	CBT10-80D	CBT10-85D	CBT10-90D	CBT10-95D
	φ100	15.5	—	CBT10-80D	CBT10-85D	CBT10-90D	CBT10-95D	CBT10-100D	CBT10-105D
Double acting double rod 10S-6RGD	φ20	10.4	CBT5-55S	CBT5-60S	CBT5-65S	CBT5-70S	CBT5-75S	CBT5-80S	—
	φ25	9.4	CBT5-55S	CBT5-60S	CBT5-65S	CBT5-70S	CBT5-75S	CBT5-80S	—
	φ32	10.4	CBT5-60D	CBT5-65D	CBT5-70D	CBT5-75D	CBT5-80D	CBT5-85D	CBT5-90D
	φ40	10.4	CBT5-60D	CBT5-65D	CBT5-70D	CBT5-75D	CBT5-80D	CBT5-85D	CBT5-90D
	φ50	11	—	CBT6-65D	CBT6-70D	CBT6-75D	CBT6-80D	CBT6-85D	CBT6-90D
	φ63	14.5	—	CBT8-70D	CBT8-75D	CBT8-80D	CBT8-85D	CBT8-90D	CBT8-95D
	φ80	12	—	CBT10-80D	CBT10-85D	CBT10-90D	CBT10-95D	CBT10-100D	CBT10-105D
	φ100	15.5	—	CBT10-85D	CBT10-90D	CBT10-95D	CBT10-100D	CBT10-105D	CBT10-110D

Stroke (mm)									
40	45	50	60	70	75	80	90	100	
CBT5-75S	CBT5-80S	CBT5-85S	CBT5-95S	CBT5-105S	—	—	—	—	
CBT5-75S	CBT5-80S	CBT5-85S	CBT5-95S	CBT5-105S	—	—	—	—	
CBT5-80D	CBT5-85D	CBT5-90D	CBT5-100D	CBT5-110D	CBT5-115D	CBT5-120D	CBT5-130D	CBT5-140D	
CBT5-80D	CBT5-85D	CBT5-90D	CBT5-100D	CBT5-110D	CBT5-115D	CBT5-120D	CBT5-130D	CBT5-140D	
CBT6-80D	CBT6-85D	CBT6-90D	CBT6-100D	CBT6-110D	CBT6-115D	CBT6-120D	CBT6-130D	CBT6-140D	
CBT8-85D	CBT8-90D	CBT8-95D	CBT8-105D	CBT8-115D	CBT8-120D	CBT8-125D	CBT8-135D	CBT8-145D	
CBT10-90D	CBT10-95D	CBT10-100D	CBT10-110D	CBT10-120D	CBT10-125D	CBT10-130D	CBT10-140D	CBT10-150D	
CBT10-100D	CBT10-105D	CBT10-110D	CBT10-120D	CBT10-130D	CBT10-135D	CBT10-140D	CBT10-150D	CBT10-160D	
—	—	—							
—	—	—							
CBT5-85D	CBT5-90D	CBT5-95D							
CBT5-85D	CBT5-90D	CBT5-95D							
CBT6-85D	CBT6-90D	CBT6-95D							
CBT8-90D	CBT8-95D	CBT8-100D							
CBT10-100D	CBT10-105D	CBT10-110D							
CBT10-110D	CBT10-115D	CBT10-120D							

Stroke (mm)									
40	45	50	60	70	75	80	90	100	
CBT5-85S	CBT5-90S	CBT5-95S	CBT5-105S	CBT5-115S	—	—	—	—	
CBT5-85S	CBT5-90S	CBT5-95S	CBT5-105S	CBT5-115S	—	—	—	—	
CBT5-90D	CBT5-95D	CBT5-100D	CBT5-110D	CBT5-120D	CBT5-125D	CBT5-130D	CBT5-140D	CBT5-150D	
CBT5-90D	CBT5-95D	CBT5-100D	CBT5-110D	CBT5-120D	CBT5-125D	CBT5-130D	CBT5-140D	CBT5-150D	
CBT6-90D	CBT6-95D	CBT6-100D	CBT6-110D	CBT6-120D	CBT6-125D	CBT6-130D	CBT6-140D	CBT6-150D	
CBT8-95D	CBT8-100D	CBT8-105D	CBT8-115D	CBT8-125D	CBT8-130D	CBT8-135D	CBT8-145D	CBT8-155D	
CBT10-100D	CBT10-105D	CBT10-110D	CBT10-120D	CBT10-130D	CBT10-135D	CBT10-140D	CBT10-150D	CBT10-160D	
CBT10-110D	CBT10-115D	CBT10-120D	CBT10-130D	CBT10-140D	CBT10-145D	CBT10-150D	CBT10-160D	CBT10-170D	
—	—	—							
—	—	—							
CBT5-95D	CBT5-100D	CBT5-105D							
CBT5-95D	CBT5-100D	CBT5-105D							
CBT6-95D	CBT6-100D	CBT6-105D							
CBT8-100D	CBT8-105D	CBT8-110D							
CBT10-110D	CBT10-115D	CBT10-120D							
CBT10-115D	CBT10-120D	CBT10-125D							

Large-Bore ($\phi 125$, $\phi 140$, $\phi 160$) compact design pneumatic cylinder with new type sensor

- Provided with wear ring and applicable to long strokes.
- Selectable from two ways of mounting through holes and tapped holes in the body.
- Two types of rod end, female thread and male thread, are available.



Cylinder Specifications

Series variations	Double acting single rod	Double acting double rod
Type	Standard type, Switch Set	
Cylinder bore (mm)	$\phi 125$, $\phi 140$, $\phi 160$	
Working fluid	Air	
Mounting style	Basic style (through holes and tapped holes on both sides)	
Working pressure range	0.05 to 1 MPa	
Proof test pressure	1.5 MPa	
Working temperature range	Standard type: -10 to $+70^{\circ}\text{C}$ (No freezing) Switch Set: 0 to $+60^{\circ}\text{C}$ (No freezing)	
Working speed range	30 to 300 mm/s	
Structure of cushioning	Cushion pads on both ends (urethane rubber)	
Lubrication	Unnecessary	
Tolerance of stroke	$+1.4$ 0 mm	
Rod end threads	Female thread, male thread	

Standard Stroke and Stroke Limit

Unit: mm

Bore	Standard stroke													Stroke limit
	10	20	30	40	50	75	100	125	150	175	200	250	300	
$\phi 125$	○	○	○	○	○	○	○	○	○	○	○	○	○	300
$\phi 140$	○	○	○	○	○	○	○	○	○	○	○	○	○	300
$\phi 160$	○	○	○	○	○	○	○	○	○	○	○	○	○	300

Product Lineup

Unit: mm

Series Variations		Type	$\phi 125$	$\phi 140$	$\phi 160$
Standard	Double acting single rod	Standard type 10S-6	●	●	●
		Switch Set 10S-6R	●	●	●
	Double acting double rod	Standard type 10S-6D	●	●	●
		Switch Set 10S-6RD	●	●	●

Weight Table

Unit: g

Bore (mm)	Basic weight		Additional weight		
	Double acting single rod	Double acting double rod	Additional weight per mm of stroke		Male threaded rod end
			Double acting single rod	Double acting double rod	
$\phi 125$	5485	5480	24.9	32.4	470
$\phi 140$	6835	6830	29.1	36.6	470
$\phi 160$	9327	9357	36.8	46.7	720

Notes) ● For the double acting double rod type, double the value.
● Weight including lock nut (Single rod: 1 pc. Double rod: 2 pcs.)

Sensor Additional Weight

Unit: g

PD/PF type		AX/AZ type		
Cord length 1 m	Cord length 3 m	Cord length 1.5 m	Cord length 5 m	With connector
15	35	50	130	40

Calculation formula Cylinder weight (g)=basic weight+(cylinder stroke (mm)×additional weight per mm of stroke)+(sensor additional weight×sensor quantity)

Calculation example 10S-6R, bore $\phi 140$, cylinder stroke 100 mm, 2 pcs of PD12L1 (cord length 1 m)
 $6835+(100 \times 29.1)+(15 \times 2)=9775\text{g}$

How to order

Standard

● Standard type

10S-6

● Switch Set

10S-6R

Standard type

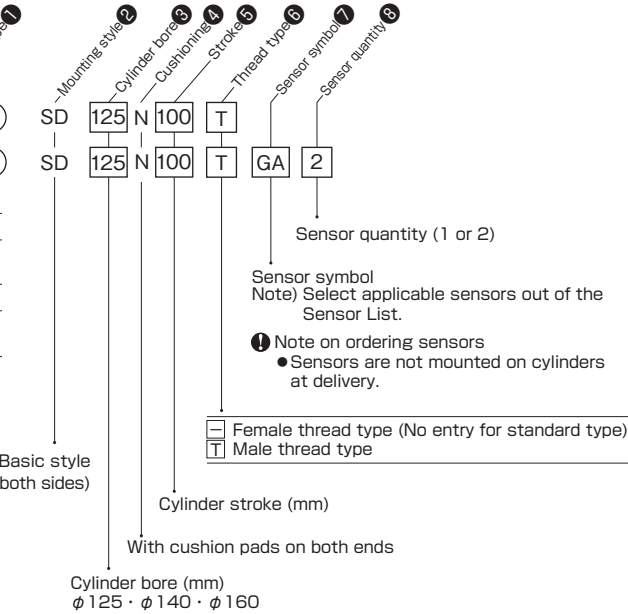
10S-6 : Double acting single rod

10S-6D : Double acting double rod

Switch Set

10S-6R : Double acting single rod

10S-6RD : Double acting double rod



Lock Nut Part Number

Bore	Part number
φ 125	LNA-30Z-1
φ 140	LNA-30Z-1
φ 160	LNA-36Z-2

Sensor List

Type	Sensor symbol	Load voltage range	Load current range	Max. switching capacity	Protective circuit	Indicating lamp	Wiring method	Cord length	Applicable load
Reed sensor	GA PD12L1	24 V DC 110 V AC	DC: 2.5 to 40 mA AC: 2.5 to 20 mA	—	None	None	0.2 mm ² , 2-core, outer dia. φ2.6 mm, rear wiring	1 m	Small relay, programmable controller
	GB PD12L3		DC: 5 to 40 mA AC: 5 to 20 mA			(Lights when sensing)		3 m	
	GC PD11L1							None	
	GD PD11L3		DC: 2.5 to 40 mA AC: 2.5 to 20 mA			None	0.2 mm ² , 2-core, outer dia. φ2.6 mm, upper wiring	3 m	
	GE PD32L1							None	
	GF PD32L3		DC: 5 to 40 mA AC: 5 to 20 mA			(Lights when sensing)	3 m		
	GG PD31L1						1 m		
	GH PD31L3						3 m		
	AF AX101CE	DC: 5 to 30 V AC: 5 to 120 V	DC: 5 to 40 mA AC: 5 to 20 mA	DC: 1.5 W AC: 2 VA	None	LED (Lights in red when sensing)	0.3 mm ² ,2-core, outer dia. φ4 mm, rear wiring	1.5 m	
	AG AX105CE				Provided			5 m	
	AH AX111CE							1.5 m	
	AJ AX115CE				5 m				
	AE AX125CE	DC: 30 V or less AC: 20 V or less	DC: 40 mA or less AC: 20 mA or less	2 VA	None	None	4-pin connector type, rear wiring	5 m	
	AK AX11ACE	DC: 5 to 120 V	5 to 20 mA					Provided	
	AL AX11BCE	DC: 5 to 30 V	5 to 40 mA	1.5 W	LED (Lights in red when sensing)	4-pin connector type, rear wiring	0.5 m		
	AP AZ101CE	DC: 5 to 30 V AC: 5 to 120 V	DC: 5 to 40 mA AC: 5 to 20 mA	DC: 1.5 W AC: 2 VA				None	
	AR AZ105CE				Provided	5 m			
	AS AZ111CE					1.5 m			
	AT AZ115CE				5 m				
	AN AZ125CE	DC: 30 V or less AC: 20 V or less	DC: 40 mA or less AC: 20 mA or less	2 VA	None	None	4-pin connector type, upper wiring	5 m	
	AU AZ11ACE	AC: 5 to 120 V	5 to 20 mA					Provided	
	AW AZ11BCE	DC: 5 to 30 V	5 to 40 mA	1.5 W	LED (Lights in red when not sensing)	0.3 mm ² , 2-core, outer dia. φ4 mm, upper wiring	5 m		
	AM AX135CE	DC: 90 to 240 V AC: 90 to 240 V	5 to 300 mA	B contact output				Provided	
	AY AZ135CE				5 m				
Solid state sensor	GJ PD14L1	DC10 to 28 V	5 to 20 mA	—	Provided	LED (Lights when sensing)	0.2 mm ² , 2-core, outer dia. φ2.6 mm, rear wiring	1 m	Small relay, programmable controller
	GK PD14L3					3 m			
	GL PD13L1	28 V DC or less	0.1 to 40 mA			LED (Lights when sensing)	0.15 mm ² , 3-core, outer dia. φ2.6 mm, rear wiring	1 m	
	GM PD13L3					3 m			
	GN PE34L1	DC10 to 28 V	5 to 20 mA			LED (Lights when sensing)	0.2 mm ² , 2-core, outer dia. φ2.6 mm, upper wiring	1 m	
	GP PE34L3					3 m			
	GR PE33L1	28 V DC or less	0.1 to 40 mA			LED (Lights when sensing)	0.15 mm ² , 3-core, outer dia. φ2.6 mm, upper wiring	1 m	
	GS PE33L3					3 m			
	BE AX201CE-1	DC: 5 to 30 V	5 to 40 mA			LED (Lights in red when sensing)	0.3 mm ² ,2-core, outer dia. φ4 mm, rear wiring	1.5 m	
	BF AX205CE-1					5 m			
	CE AX211CE-1					LED (2-LED type in red/green)	1.5 m		
	CF AX215CE-1					5 m			
	BM AZ201CE-1					LED (Lights in red when sensing)	0.3 mm ² , 2-core, outer dia. φ4 mm, upper wiring	1.5 m	
	BN AZ205CE-1					5 m			
	CM AZ211CE-1					LED (2-LED type in red/green)	1.5 m		
	CN AZ215CE-1					5 m			

- For the sensors without a protective circuit, be sure to provide a protective circuit (SK-100) with the load when using any induction load (relay, etc.).
- The output logic of AX and AZ135CE is B contact. When the piston is detected, the sensor contact turns off (the lamp turns on).
- For handling of sensors, be sure to see the sensor specifications at the end of this catalog.
- We recommend AND Unit (AU series) for multiple sensors connected in series. For details, refer to AND Unit at the end of this catalog.
- Sensors conforming to CE Marking are available.
- For ZE type sensors, see the sensor specifications at the end of this catalog.

● PD/PE type sensor

● AX type sensor

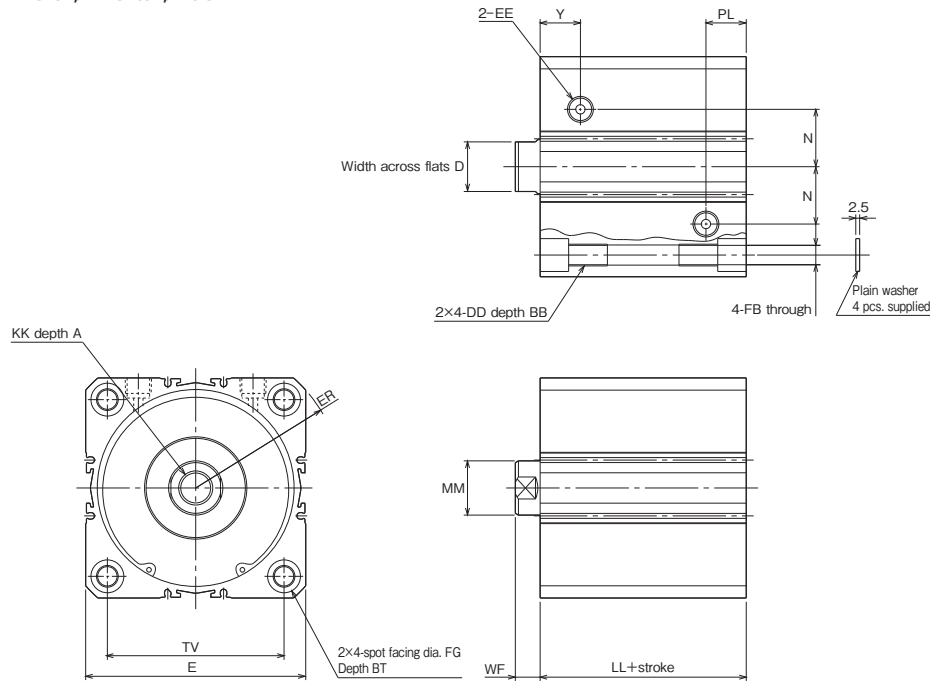


SD

Double acting single rod/standard type

10S-6(R) SD Bore N Stroke

● Bore ϕ 125 to ϕ 160



Dimensional Table

Symbol Bore	A	BB	BT	D	DD	E	EE	ER	FB
ϕ 125	30	25	18.4	32	M14×2	□142	Rc3/8	R95	ϕ 12.5
ϕ 140	30	25	18.4	32	M14×2	□158	Rc3/8	R105	ϕ 12.5
ϕ 160	33	28	21.2	36	M16×2	□178	Rc3/8	R119	ϕ 14.5

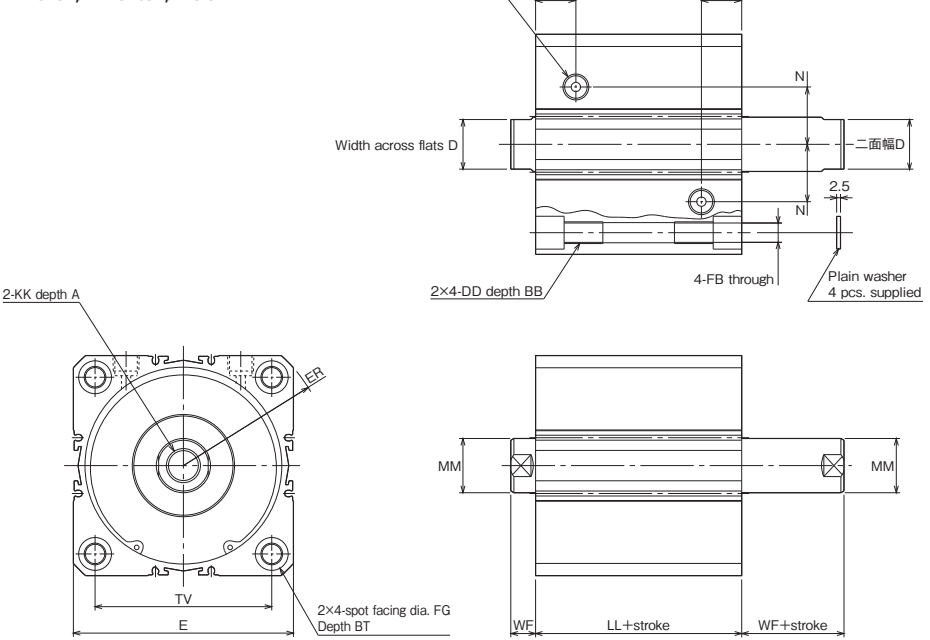
Symbol Bore	FG	KK	LL	MM	N	PL	TV	WF	Y
ϕ 125	ϕ 21.2	M22×2.5	83	ϕ 35	37	26	□114	16	26
ϕ 140	ϕ 21.2	M22×2.5	83	ϕ 35	40	26	□128	16	26
ϕ 160	ϕ 24.2	M24×3	91	ϕ 40	45	28.5	□144	17	28.5

SD

Double acting double rod/standard type

10S-6RD SD Bore N Stroke

● Bore ϕ 125 to ϕ 160



Dimensional Table

Symbol Bore	A Note 1)	BB	BT	D	DD	E	EE	ER	FB
ϕ 125	30 (22.5)	25	18.4	32	M14×2	□142	Rc3/8	R95	ϕ 12.5
ϕ 140	30 (22.5)	25	18.4	32	M14×2	□158	Rc3/8	R105	ϕ 12.5
ϕ 160	33 (26.5)	28	21.2	36	M16×2	□178	Rc3/8	R119	ϕ 14.5

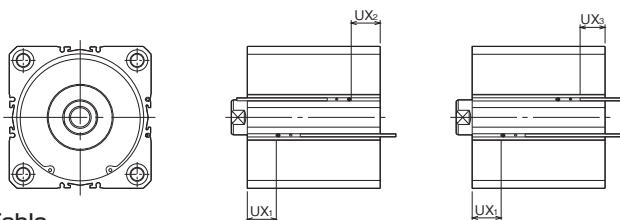
Symbol Bore	FG	KK	LL	MM	N	PL	TV	WF	Y
ϕ 125	ϕ 21.2	M22×2.5	83	ϕ 35	37	26	□114	16	26
ϕ 140	ϕ 21.2	M22×2.5	83	ϕ 35	40	26	□128	16	26
ϕ 160	ϕ 24.2	M24×3	91	ϕ 40	45	28.5	□144	17	28.5

Note 1) Parenthesized are the effective lengths on one side in the case of stroke of 10 mm.

Switch Set

10S-6R SD Bore N Stroke — Sensor symbol Sensor quantity

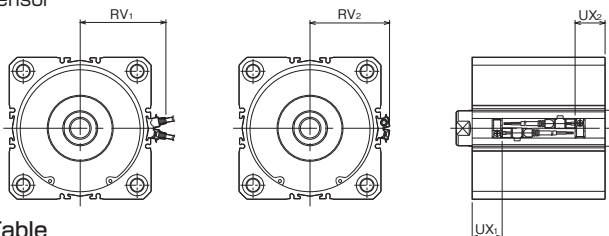
●PD/PE type sensor



Dimensional Table

Symbol	Optimum setting position (reed sensor)			Optimum setting position (solid state sensor)					
	PD type			PD type			PE type		
	UX ₁	UX ₂	UX ₃	UX ₁	UX ₂	UX ₃	UX ₁	UX ₂	UX ₃
$\phi 125$	35	30	24.5	33	28	26.5	32	27	29
$\phi 140$	35	30	24.5	33	28	26.5	32	27	29
$\phi 160$	41	32	26.5	39	30	28.5	38	29	31

●AX/AZ type sensor



Dimensional Table

Symbol	Optimum setting position		RV ₁	RV ₂
	UX ₁	UX ₂		
$\phi 125$	35	30	86.5	80
$\phi 140$	35	30	95	88.5
$\phi 160$	41	32	104.5	98

- The optimum setting positions of reed sensors and solid state sensors are the same.
- Those of the double rod type are the same.

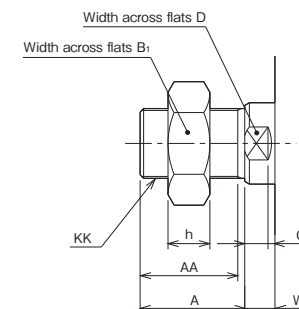
Operating Range and Hysteresis

Bore	PD type (reed sensor)		PD/PE type (solid state sensor)		AX/AZ type (reed sensor)		AX/AZ type (solid state sensor)	
	Operating range	Hysteresis	Operating range	Hysteresis	Operating range	Hysteresis	Operating range	Hysteresis
$\phi 125$								
$\phi 140$	12 to 18	2.5 or less	5 to 11	1.5 or less	8 to 15	1.5 or less	5 to 11	1 or less
$\phi 160$								

Sensor Mountable Minimum Stroke

Bore	PD/PF type		AX/AZ type	
	Mounting of 2 sensors (2 grooves)	Mounting of 1 sensor	Mounting of 2 sensors (1 groove)	Mounting of 1 sensor
$\phi 125$				
$\phi 140$	10	10	10	10
$\phi 160$				

Male threaded rod end



Dimensional Table

Symbol	Lock nut part number	A	AA	B ₁	C	D	h	KK	WF
Bore									
$\phi 125$	LNA-30Z-1	45	42	46	10	32	18	M30×1.5	13
$\phi 140$	LNA-30Z-1	45	42	46	10	32	18	M30×1.5	13
$\phi 160$	LNA-36Z-2	50	47	55	10	36	21	M36×1.5	14

Setting method of sensor detecting position

●PD/PE type sensor

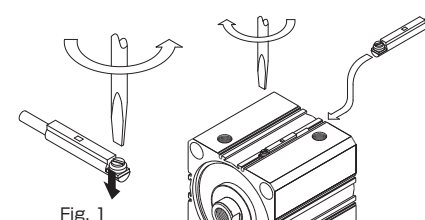
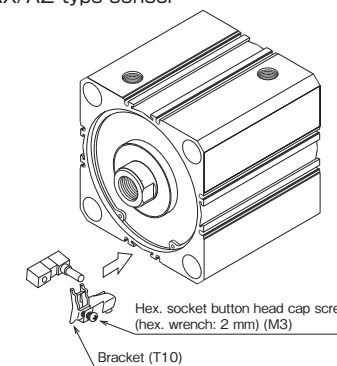


Fig. 2

●AX/AZ type sensor



Setting method of sensor detecting position

●PD/PE type sensor

1. Turn the sensor fixing screw to bring it into contact with the nut. (The sensor fixing screw has left-hand threads. Turn it counterclockwise as shown in Fig. 1.)
2. Insert the sensor in the sensor mounting groove in the cylinder body from the cap or rod side, and slide it.
3. Secure the sensor at the optimum setting position. (Turn the sensor fixing screw clockwise as shown in Fig. 2, and the sensor fixing screw will be in contact with the sensor mounting groove in the cylinder body to secure the sensor.) The tightening torque must be 0.1 to 0.2 N·m.
4. If the sensor has an indicating lamp, the lamp will light up when the sensor is turned on.

●AX/AZ type sensor

1. Loosen the bracket fixing screw (AX/AZ type).
2. Insert the sensor in the sensor mounting groove in the cylinder body from the cap or rod side, and slide it.
3. Secure the sensor at the optimum setting position, and tighten the sensor fixing screw or bracket fixing screw. The tightening torque must be approx. 0.4 N·m.
4. If the sensor has an indicating lamp, the lamp lights when the sensor is turned on.

Special Rod End Shapes

A10

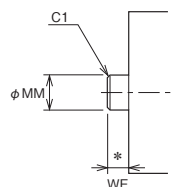


Table of Basic Dimensions

Symbol \ Bore	φ125	φ140	φ160
MM	35	35	40
WF	14	14	16

A14

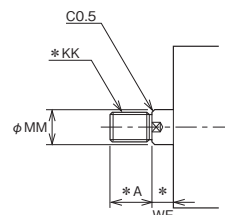


Table of Basic Dimensions

Symbol \ Bore	φ125	φ140	φ160
A	60	60	72
KK	M30×1.5	M30×1.5	M36×1.5
MM	35	35	40
WF	14	14	16

A15

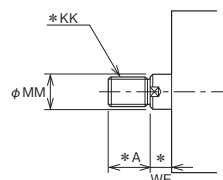


Table of Basic Dimensions

Symbol \ Bore	φ125	φ140	φ160
A	60	60	72
KK	M30×1.5	M30×1.5	M36×1.5
MM	35	35	40
WF	14	14	16

A20

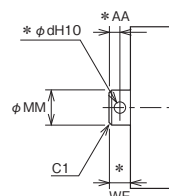


Table of Basic Dimensions

Symbol \ Bore	φ125	φ140	φ160
AA	20	20	24
d	16	16	18
MM	35	35	40
WF	50	50	55

A28

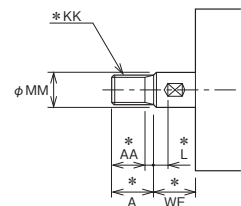


Table of Basic Dimensions

Symbol \ Bore	φ125	φ140	φ160
A	45	45	50
AA	42	42	47
KK	M30×1.5	M30×1.5	M36×1.5
L	10	10	10
MM	35	35	40
WF	24	24	26

A30

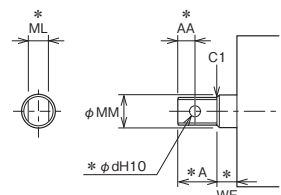


Table of Basic Dimensions

Symbol \ Bore	φ125	φ140	φ160
A	50	50	55
AA	20	20	24
d	16	16	18
ML	22	22	28
MM	35	35	40
WF	5	5	5

A37

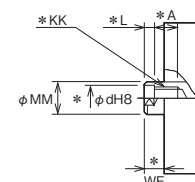


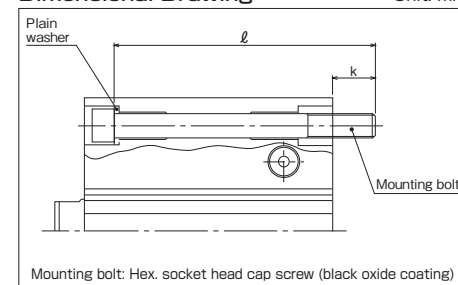
Table of Basic Dimensions

Bore Symbol	$\phi 125$	$\phi 140$	$\phi 160$
A	30	30	33
d	26	26	28
KK	M22 $\times$ 2.5	M22 $\times$ 2.5	M24 $\times$ 3
L	10	10	10
MM	35	35	40
WF	14	14	16

- For the detailed specifications, dimensions and leadtime of cylinders with special rod ends, contact us.
- If you want to change the *-marked dimensions, consult us.

Dimensional Drawing

Unit: mm



Model Number

When placing an order, specify the model number shown below.

CBT 12-100 D

Mounting bolt

Bolt size
12: M12
14: M14

Quantity
D: 4 pcs.

Bolt length (ℓ)

Note 1) When fitting the mounting bolts to the through holes, use the attached plain washers without fail.

Note 2) When the stroke is 125 mm or more,
use the tapped holes in the cylinder body.

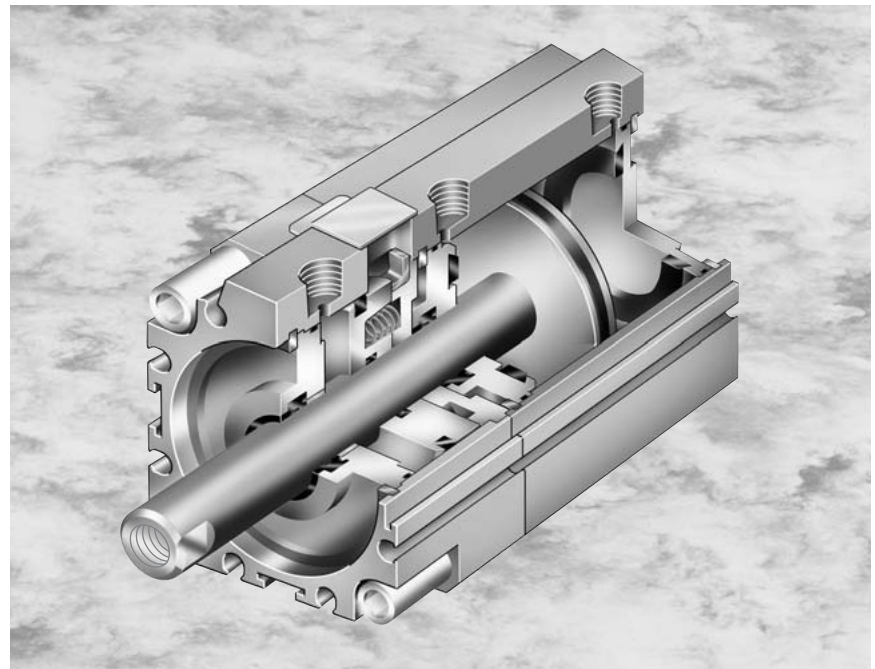
List of Mounting Bolts

Series	Cylinder bore	k	Stroke						
			10	20	30	40	50	75	100
10S-6(R)	φ125,φ140	22.9	CBT12-100D	CBT12-110D	CBT12-120D	CBT12-130D	CBT12-140D	CBT12-165D	CBT12-190D
10S-6(R) D	φ160	27.7	CBT14-110D	CBT14-120D	CBT14-130D	CBT14-140D	CBT14-150D	CBT14-175D	CBT14-200D

Compact Design Position-free One-way Locking Cylinder



10S-6C1
10S-6C2



Features

1 Locking at any position in stroke

The piston rod can be locked at any position, including the stroke end, in the stroke.

2 Locking in one direction

Since the piston rod can be moved freely in the direction opposite to the locking direction, work caught in the cylinder can be removed easily.

3 Diagonal plate type locking

The piston rod is retained by applying rotative force to the lock plate.

4 Easy unlocking

The rod can be easily unlocked with a slotted screwdriver.

5 Locking force equivalent to cylinder output at 0.5 MPa

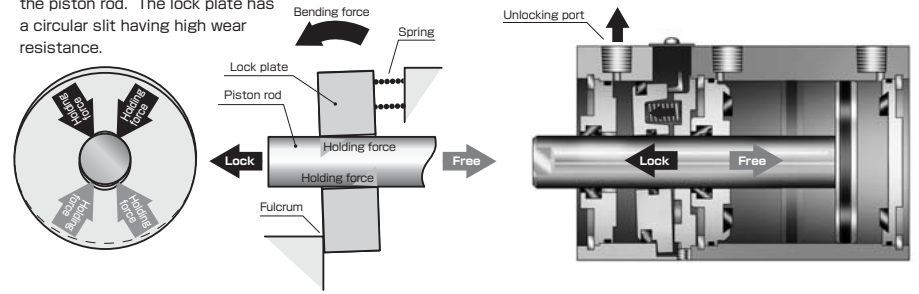
6 Less trouble and long life

A lock plate of a circular slit type excelling in wear resistance is used.

Principle of operation (10S-6C1, locking in rod advancing direction)

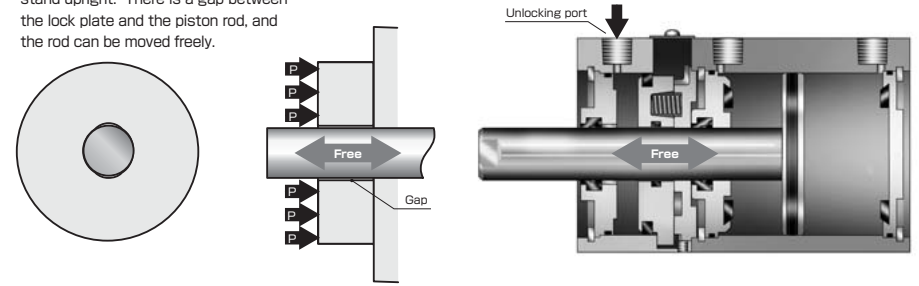
● Locking

When air is discharged from the unlocking port, the lock plate is tilted by the spring force to retain the piston rod. The lock plate has a circular slit having high wear resistance.

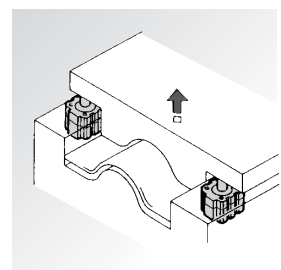


● Unlocking

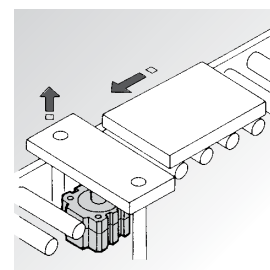
When compressed air is supplied through the unlocking port, the lock plate is pushed against the wall to stand upright. There is a gap between the lock plate and the piston rod, and the rod can be moved freely.



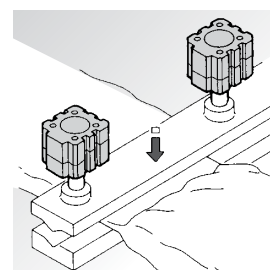
Application examples



● Safety mechanism for lifting die

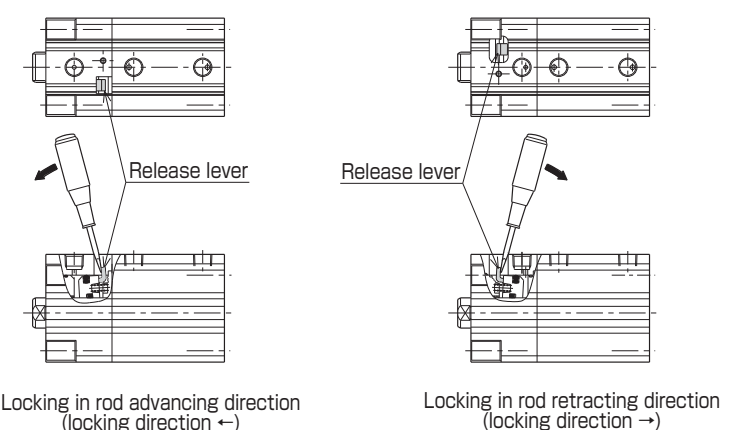


● Prevention of stopper dropping



● Pretension of press jig dropping

Explanatory Drawings of Manual Unlocking



CAUTION

If air pressure is not applied to the piston rod mounted vertically, the rod is released from the holding force when it is manually unlocked, and it may move (lower) by the weight of the load. In this case, manually release the lock after making the following preparations.

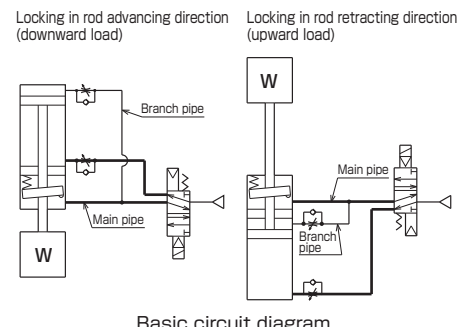
- Provide the load with a stopper.
- Apply air pressure to the cylinder to keep the balance between the cylinder and the load.
- Remove the load.

Manual Unlocking Procedures

Remove the cover, and fit a slotted screwdriver to the position shown in the figure, and lightly tilt the screwdriver in the arrow direction. The release lever will be lifted, the lock will be released, and the piston rod will be freed.

CAUTION

- (1) Connect the air piping of this cylinder as shown in the basic circuit diagram.

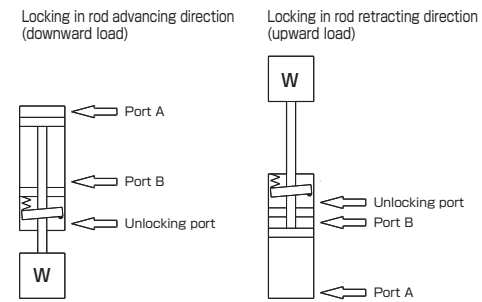


Basic circuit diagram

- (2) In the basic circuit diagram, the main pipe must be thicker and shorter than the branch pipe.
- (3) As shown in the basic circuit diagram, branch the piping after the valve, and connect the pipes to the lock unit (connect the main pipe to the unlocking port) and to the cylinder (connect the branch pipe to the cylinder port).
- (4) If the cylinder starts operating earlier than the lock is released, the lock may not be released, or, even if it is released, the piston rod may jump out and cause an accident. Design the piping so that the lock is released earlier than the cylinder starts operating.
- (5) If the piston rod is locked after the cylinder has been used for a long time in the unlocked state (left under pressure), the lock may delay in responding. Do not leave the lock under pressure. Operate the lock every time operating the cylinder.
- (6) For reasons of the structure, a drop of about 1 mm (movement of the piston rod) occurs when the rod is locked.
- (7) If air pressure is not applied to the piston rod mounted vertically, the rod is released from the holding force when it is manually unlocked, and it may move (lower) by the weight of the load. In this case, prepare for manually unlocking as stated below to ensure the safety.
 - Provide the load with a stopper.
 - Apply air pressure to the cylinder to keep the balance between the cylinder and the load.
 - Remove the load.

WARNING

- (1) The locking mechanism of this cylinder is designed to prevent dropping (keep the cylinder in a stopped state). If it is used for emergency stop and urgent stop (to stop the rod while the cylinder is operating), the life is considerably reduced.
- (2) Do not apply rotative force (torque) to the piston rod while it is locked. Doing so will reduce the holding force, thereby causing a hazardous situation.
Use the cylinder for a mechanism in which the piston rod is not turned.
- (3) If back pressure is applied to the lock in the locked state, the lock may be released. Use an individual solenoid valve or a solenoid valve of individual exhaust type.
- (4) To unlock, supply pressure to port B in the case of locking in the rod advancing direction or port A in the case of locking in the rod retracting direction, so that load will not be applied to the locking mechanism. Then, unlock the rod. If pressure is supplied to port A in the case of locking in the rod advancing direction or to port B in the case of locking in the rod retracting direction while air is being discharged from both ports A and B and the piston rod is locked, the lock may not be released, or, even if it is released, the piston rod may jump out and cause an accident.



- (5) Do not lubricate the locking mechanism.
Doing so can reduce the holding force.
- (6) Do not disassemble the locking mechanism.
Doing so can cause a hazardous situation.

Position-free one-way lock added to compact design pneumatic cylinder to eliminate trouble caused by dropping of rod when residual pressure is discharged.

- Locking at any position in stroke
- Locking in one direction
- Locking force equivalent to cylinder output at 0.5 MPa
- Less trouble and long life
- Easy unlocking



Cylinder Specifications

Series variation	Double acting single rod type with diagonal plate locking mechanism					
Series	10S-6C1 (locking in rod advancing direction)					
	10S-6C2 (locking in rod retracting direction)					
Cylinder bore (mm)	φ 20	φ 25	φ 32	φ 40	φ 50	φ 63
Working fluid	Air					
Lubrication	Not allowed					
Max. working pressure	1 MPa (Locking force equivalent to cylinder output at 0.5 MPa)					
Min. working pressure	0.25 MPa (under no load)					
Working speed range	50 to 500 mm/ s				50 to 300 mm/ s	
Proof test pressure	1.5 MPa					
Working temperature range	−10 to +60°C (No freezing) (Switch Set: 0 to +60°C)					
Structure of cushioning	Cushion pads on both ends					
Tolerance for thread	JIS 6g/6H					
Tolerance of stroke	+1.0 to 0 mm					
Mounting style	SD		ST (tapped on both sides) · LA · LB · FA · FB · CA · CB			
Rod end threads	Female thread, male thread					
Locking force (N)	150	235	386	603	943	1497
Locking direction	In rod advancing or retracting direction					
Locking position	Locking at any position in stroke					

Standard Stroke Range

Bore	Cylinder stroke (mm)																Male thread type
	5	10	15	20	25	30	35	40	45	50	60	70	75	80	90	100	
φ 20	○	○	○	○	○	○	○	○	○	○	○	○	—	—	—	—	○
φ 25	○	○	○	○	○	○	○	○	○	○	○	○	—	—	—	—	○
φ 32	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
φ 40	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
φ 50	—	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
φ 63	—	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

Product Lineup

Series Variations		φ 20	φ 25	φ 32	φ 40	φ 50	φ 63
Standard type	Double acting single rod Locking in rod advancing direction 10S-6C1	●	●	●	●	●	●
	Double acting single rod Locking in rod retracting direction 10S-6C2	●	●	●	●	●	●
Switch Set	Double acting single rod Locking in rod advancing direction 10S-6RC1	●	●	●	●	●	●
	Double acting single rod Locking in rod retracting direction 10S-6RC2	●	●	●	●	●	●

- Note 1) ● Bores 20 and 25 mm: Only SD (basic style)
Note 2) ● Basic style cylinders with bores from 32 to 63 mm: Basically ST (tapped on both sides) type

Weight Table

Double acting single rod/standard type/Switch Set

Bore (mm)	Basic weight (SD · ST)		Additional weight							Rod end attachment weight			
	Standard type	Switch Set	Additional weight per mm of stroke	LA style	LB style	FA style FB style	CA style	CB style	Male threaded rod end	Rod eye (S-end)	Rod eye (T-end)	Rod clevis (Y-end) with pin	Floating joint (F-end)
φ 20	154	182	2.5	—	—	—	—	—	10	55	—	—	60
φ 25	221	259	3.2	—	—	—	—	—	20	100	—	—	60
φ 32	318	369	4.1	96	84	210	145	165	43	—	160	270	110
φ 40	480	522	4.9	110	100	275	205	220	43	—	160	270	110
φ 50	814	923	7.4	160	150	415	275	380	74	—	210	340	380
φ 63	1315	1417	8.6	260	240	560	375	505	74	—	210	340	380

Sensor Additional Weight

Bore (mm)	Sensor additional weight	
	PD/PE type	ZD136C-T
φ 20	1 : 15 3 : 35	254
φ 25		
φ 32		
φ 40		
φ 50		
φ 63		

- “1” and “3” shown in the sensor additional weight column are cord lengths. (1: 1m 3: 3m)

Calculation formula	Cylinder weight (g)=basic weight +(cylinder stroke (mm) ×additional weight per mm of stroke) +mounting accessory weight +male threaded rod end +(sensor additional weight ×sensor quantity) +rod end attachment weight
Calculation example	10S-6RC1, LB style, bore φ32, cylinder stroke 50 mm, 2 pcs of PD12L1 (cord length 1 m), male thread type, rod clevis (Y-end) 369+ (50×4.1) +84+ (15×2) +43+220=951g

● How to order

- Standard type
- Switch Set

10S-6C1

10S-6RC2

ST

40

N

30

T

GA

2

-

T

1

2

3

4

5

6

7

8

9

ST

LA

LB

FA

FB

CA

CB

10S-6C1

10S-6C2

20

25

32

40

50

63

The item enclosed by broken line needs not to be entered, if unnecessary. ■ Semi-standard

Standard type

10S-6C1: Double acting single rod
Locking in rod advancing direction

10S-6C2: Double acting single rod
Locking in rod retracting direction

Switch Set

10S-6RC1: Double acting single rod
Locking in rod advancing direction

10S-6RC2: Double acting single rod
Locking in rod retracting direction

Without mounting accessory **[SD]** SD style (basic style) (φ20-φ25)

For mounting accessory mounting (φ32 to φ63)

[ST] ST style (basic style/tapped on both sides)
[LA] LA style (side lugs)
[LB] LB style (end angle)
[FA] FA style (rod flange)
[FB] FB style (cap flange)
[CA] CA style (cap eye)
[CB] CB style (cap clevis with pin)

Notes) The mounting styles ST, LA, LB, FA, FB, CA and CB are applicable to cylinder with bores of 32 to 63 mm. When requiring only the cylinder body with mounting accessories, place an order for ST style (tapped on both sides). When purchasing ST style cylinder body (tapped on both sides) of mounting style FA, change dimension WF to the following value.

Female thread φ32 15
 φ40 17
 φ50-φ63 18

Male thread φ32 13
 φ40 to φ63 15

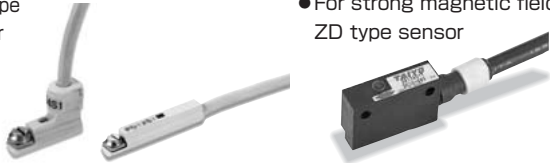
Notes) No sensor can be mounted to the standard type.

Sensor List

Type	Sensor symbol	Load voltage range	Load current range	Protective circuit	Indicating lamp	Wiring method	Cord length	Classification
Reed sensor	 PD12L1	24 V DC 110 V AC	DC: 2.5 to 40 mA AC: 2.5 to 20 mA	None	None	0.2 mm ² , 2-core, outer dia. φ 2.6 mm, rear wiring	1 m	General purpose
	 PD12L3					0.2 mm ² , 2-core, outer dia. φ 2.6 mm, rear wiring	3 m	
	 PD11L1		DC: 5 to 40 mA AC: 5 to 20 mA		(Lights when sensing)	0.2 mm ² , 2-core, outer dia. φ 2.6 mm, rear wiring	1 m	
	 PD11L3					0.2 mm ² , 2-core, outer dia. φ 2.6 mm, rear wiring	3 m	
	 PD32L1		DC: 2.5 to 40 mA AC: 2.5 to 20 mA		None	0.2 mm ² , 2-core, outer dia. φ 2.6 mm, upper wiring	1 m	
	 PD32L3					0.2 mm ² , 2-core, outer dia. φ 2.6 mm, upper wiring	3 m	
	 PD31L1		DC: 5 to 40 mA AC: 5 to 20 mA		(Lights when sensing)	0.2 mm ² , 2-core, outer dia. φ 2.6 mm, upper wiring	1 m	
	 PD31L3					0.2 mm ² , 2-core, outer dia. φ 2.6 mm, upper wiring	3 m	
Solid state sensor	 PD14L1	10 to 28 V DC	5 to 20 mA	Provided	LED (Lights when sensing)	0.2 mm ² , 2-core, outer dia. φ 2.6 mm, rear wiring	1 m	General purpose
	 PD14L3					0.2 mm ² , 2-core, outer dia. φ 2.6 mm, rear wiring	3 m	
	 PD13L1	28 V DC or less	0.1 to 40 mA		(Lights when sensing)	0.15 mm ² , 3-core, outer dia. φ 2.6 mm, rear wiring	1 m	
	 PD13L3					0.15 mm ² , 3-core, outer dia. φ 2.6 mm, rear wiring	3 m	
	 PE34L1	10 to 28 V DC	5 to 20 mA		(Lights when sensing)	0.2 mm ² , 2-core, outer dia. φ 2.6 mm, upper wiring	1 m	
	 PE34L3					0.2 mm ² , 2-core, outer dia. φ 2.6 mm, upper wiring	3 m	
	 PE33L1	28 V DC or less	0.1 to 40 mA		(Lights when sensing)	0.15 mm ² , 3-core, outer dia. φ 2.6 mm, upper wiring	1 m	
	 PE33L3					0.15 mm ² , 3-core, outer dia. φ 2.6 mm, upper wiring	3 m	
	 ZD136C-T	DC: 10 to 28 V	5 to 50 mA		LED (2-LED type in red/green)	0.5 mm ² , 2-core, outer dia. φ 6 mm, rear wiring	5 m	Strong magnetic field resistance

Notes) ● For the sensors without a protective circuit, be sure to provide a protective circuit (SK-100) with the load when using any induction load (relay, etc.).
● For handling of sensors, be sure to see the sensor specifications at the end of this catalog.
● We recommend AND Unit (AU series) for multiple sensors connected in series.
For details, refer to AND Unit at the end of this catalog.
● ZD136C-T can be mounted to cylinders with bores of 32, 40, 50 and 63 mm. It cannot be mounted to cylinders with bores of 20 and 25 mm.
● For ZE type sensors, see the sensor specifications at the end of this catalog.

- General purpose type
PD/PE type sensor
- For strong magnetic field resistance
ZD type sensor



Mounting Style

[SD] (Basic style) φ20-φ25

[LA] (Side lugs) φ32 to φ63

[FB] (Cap flange) φ32 to φ63

[ST] (Basic style/tapped on both sides) φ32 to φ63

[LB] (End angle) φ32 to φ63

[CA] (Cap eye) φ32 to φ63

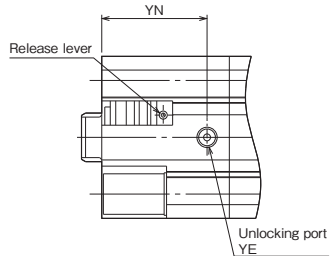
[FA] (Rod flange) φ32 to φ63

[CB] (Cap clevis) φ32 to φ63

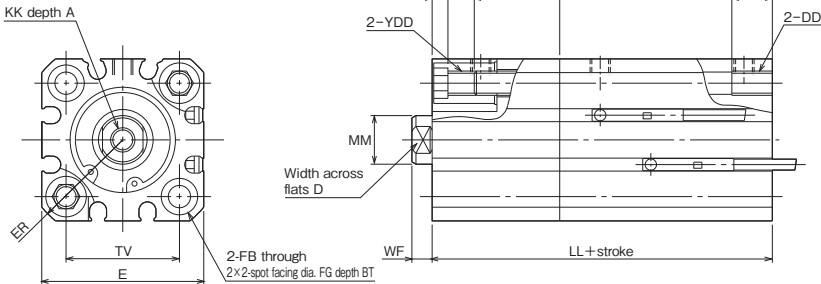
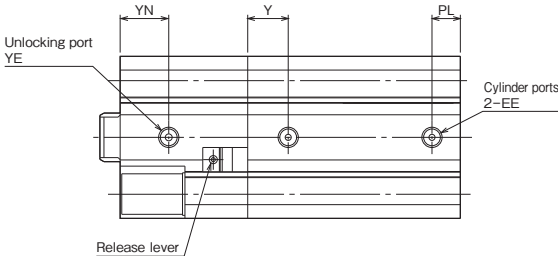
SD

Standard type/Locking in rod advancing direction	10S-6C1	SD	Bore	N	Stroke		
Standard type/Locking in rod retracting direction	10S-6C2	SD	Bore	N	Stroke		
Switch Set/Locking in rod advancing direction	10S-6RC1	SD	Bore	N	Stroke	Sensor type	Sensor quantity
Switch Set/Locking in rod retracting direction	10S-6RC2	SD	Bore	N	Stroke	Sensor type	Sensor quantity

●Locking in rod retracting direction



●Locking in rod advancing direction



Note) For the details of sensor mounting position, see 10S-6 Series.

Dimensional Table

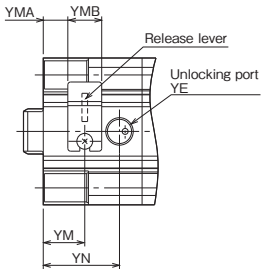
Symbol Bore	A	BB	BT	D	DD	E	EE	ER	FB	FG	HH		KK	LL		MM
											Standard type	Switch Set		Standard type	Switch Set	
φ 20	7	10	5.4	8	M6×1	□36	M5×0.8	R23.5	φ 5.5	φ 9	21.5	31.5	M5×0.8	48.5	58.5	φ 10
φ 25	12	10	5.4	10	M6×1	□40	M5×0.8	R26	φ 5.5	φ 9	22.5	32.5	M6×1	54	64	φ 12

Symbol Bore	PL (standard type)		PL	TV	WF	Y (standard type)		Y	YBB	YBT	YDD	YE	YL	YN	
	Stroke					Switch Set	Stroke							Switch Set	10S-6C1
	5	10 or more	5				10 or more								
φ 20	6	7	7	□25.5	4.5	9	10	10	6.1	3.9	M6×1	M5×0.8	27	10	22
φ 25	6	7	7	□28	5	9	10	10	6.1	3.9	M6×1	M5×0.8	31.5	12	26

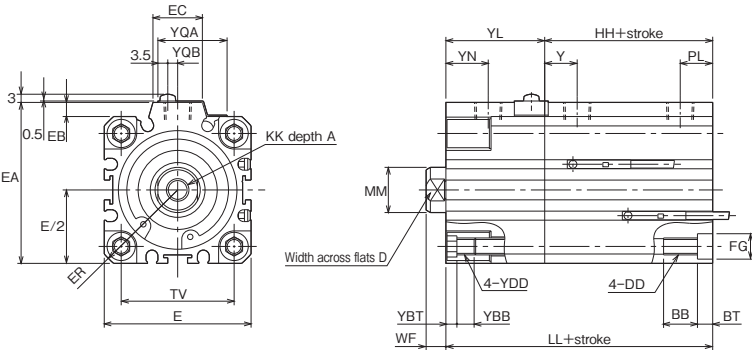
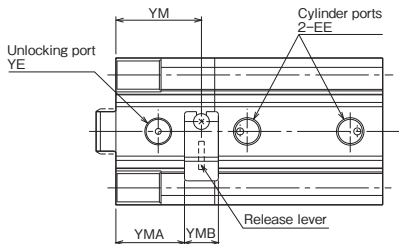
ST

Standard type/Locking in rod advancing direction	10S-6C1	ST	Bore	N	Stroke		
Standard type/Locking in rod retracting direction	10S-6C2	ST	Bore	N	Stroke		
Switch Set/Locking in rod advancing direction	10S-6RC1	ST	Bore	N	Stroke	Sensor type	Sensor quantity
Switch Set/Locking in rod retracting direction	10S-6RC2	ST	Bore	N	Stroke	Sensor type	Sensor quantity

●Locking in rod retracting direction



●Locking in rod advancing direction



Note) For the details of sensor mounting position, see 10S-6 Series.

Dimensional Table

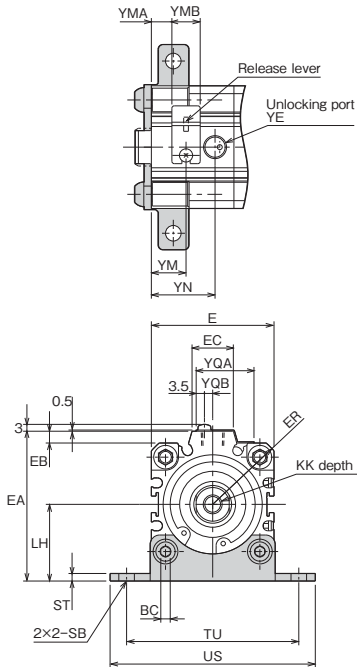
Symbol Bore	A	BB	BT	D	DD	E	EA	EB	EC	EE	ER	FG	HH		KK	LL		MM	PL (standard type)			PL
	Standard type	Switch Set	Standard type	Switch Set	Stroke	Switch Set	5	10 or more	Switch Set													
										5	10 or more	Switch Set										
φ 32	13	12	5.4	14	M6×1	□45	49.5	4.5	15	Rc1/8	R30	φ 9	23	33	M8×1.25	56.5	66.5	φ 16	6	8	8	
φ 40	13	12	5.4	14	M6×1	□52	57	5	17.5	Rc1/8	R34.5	φ 9	29.5	39.5	M8×1.25	64.5	74.5	φ 16	10	11.5	11.5	
φ 50	15	14	8	17	M8×1.25	□64	71	7	19	Rc1/4	R42.5	φ 11	30.5	40.5	M10×1.5	69.5	79.5	φ 20	—	12	12	
φ 63	15	18	10.5	17	M10×1.5	□77	84	7	19	Rc1/4	R51	φ 14	36	46	M10×1.5	80.5	90.5	φ 20	—	14.5	14.5	

Symbol Bore	TV	WF	Y (standard type)		Y	YBB	YBT	YDD	YE	YL	YM		YMA		YMB	YN		YQA	YQB
			Stroke	Switch Set							10S-6C1	10S-6C2	10S-6C1	10S-6C2		10S-6C1	10S-6C2		
					5										10 or more			Switch Set	
φ 32	□34	7	10	11	11	6.1	3.9	M6×1	Rc1/8	33.5	29.5	12.4	20.5	7.4	14	12	25.5	17.5	0
φ 40	□40	7	10	11.5	11.5	6.1	3.9	M6×1	Rc1/8	35	30.3	14.7	24.3	8.7	12	15	27	24.5	3.5
φ 50	□50	8	—	12	12	7.8	4.7	M8×1.25	Rc1/4	39	33	15.7	26	8.7	14	15	30	26.5	4.5
φ 63	□60	8	—	14.5	14.5	9.5	4	M10×1.5	Rc1/4	44.5	37	16.2	28.5	7.7	17	15.5	34	29.5	3.5

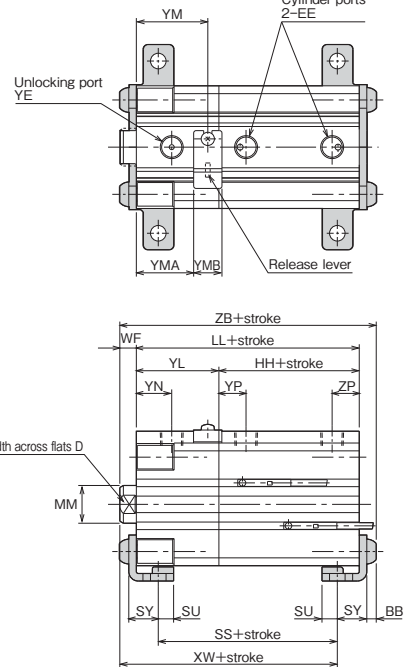
LA

Standard type/Locking in rod advancing direction	10S-6C1	LA	Bore	N	Stroke		
Standard type/Locking in rod retracting direction	10S-6C2	LA	Bore	N	Stroke		
Switch Set/Locking in rod advancing direction	10S-6RC1	LA	Bore	N	Stroke	Sensor type	Sensor quantity
Switch Set/Locking in rod retracting direction	10S-6RC2	LA	Bore	N	Stroke	Sensor type	Sensor quantity

●Locking in rod retracting direction



●Locking in rod advancing direction



Note) For the details of sensor mounting position, see 10S-6 Series.

Dimensional Table

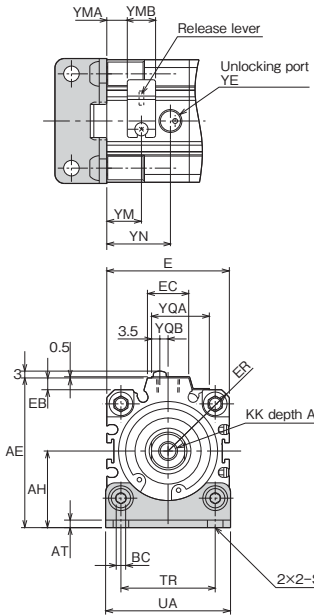
Symbol Bore	A	BB	BC	D	E	EA	EB	EC	EE	ER	HH		KK	LH	LL		MM	SB	SS		ST	SU	SY	TU
											Standard type	Switch Set			Standard type	Switch Set			Standard type	Switch Set				
φ 32	13	4	4	14	45	55.5	4.5	15	Rc1/8	R30	23	33	M8×1.25	28.5	56.5	66.5	φ 16	φ 6.6	37.9	47.9	3.2	6.5	12.5	65
φ 40	13	4	4	14	52	63.5	5	17.5	Rc1/8	R34.5	29.5	39.5	M8×1.25	32.5	64.5	74.5	φ 16	φ 6.6	45.9	55.9	3.2	6.5	12.5	73
φ 50	15	5	5	17	64	77	7	19	Rc1/4	R42.5	30.5	40.5	M10×1.5	38	69.5	79.5	φ 20	φ 9	47.9	57.9	3.2	8	14	87
φ 63	15	6	6	17	77	90	7	19	Rc1/4	R51	36	46	M10×1.5	44.5	80.5	90.5	φ 20	φ 11	55.9	65.9	3.2	9.5	15.5	109

Symbol Bore	US	WF	XW		YE	YL	YM				YMA	YMB	YN		YP (standard type)		YP	YQ		YQB	ZB		Standard type		ZP
			Standard type	Switch Set			10S-6C1	10S-6C2	10S-6C1	10S-6C2			10S-6C1	10S-6C2	Stroke	Switch Set		5	10 or more		Standard type	Switch Set	Stroke	Switch Set	
φ 32	78	7	54.2	64.2	Rc1/8	33.5	29.5	12.4	20.5	7.4	14	12	25.5	10	11	11	17.5	0	70.7	80.7	6	8	8		
φ 40	87	7	62.2	72.2	Rc1/8	35	30.3	14.7	24.3	8.7	12	15	27	10	11.5	11.5	24.5	3.5	78.7	88.7	10	11.5	11.5		
φ 50	103	8	66.7	76.7	Rc1/4	39	33	15.7	26	8.7	14	15	30	—	12	12	26.5	4.5	85.7	95.7	—	12	12		
φ 63	127	8	76.2	86.2	Rc1/4	44.5	37	16.2	28.5	7.7	17	15.5	34	—	14.5	14.5	29.5	3.5	97.7	107.7	—	14.5	14.5		

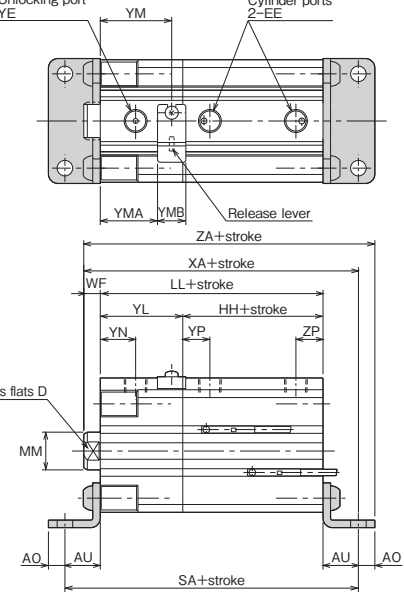
LB

Standard type/Locking in rod advancing direction	10S-6C1	LB	Bore	N	Stroke		
Standard type/Locking in rod retracting direction	10S-6C2	LB	Bore	N	Stroke		
Switch Set/Locking in rod advancing direction	10S-6RC1	LB	Bore	N	Stroke	Sensor type	Sensor quantity
Switch Set/Locking in rod retracting direction	10S-6RC2	LB	Bore	N	Stroke	Sensor type	Sensor quantity

●Locking in rod retracting direction



●Locking in rod advancing direction



Note) For the details of sensor mounting position, see 10S-6 Series.

Dimensional Table

Symbol Bore	A	AE	AH	AO	AT	AU	BC	D	E	EB	EC	EE	ER	HH		KK	LL		MM	SA		SB	TR
														Standard type	Switch Set		Standard type	Switch Set		Standard type	Switch Set		
φ 32	13	55.5	28.5	7	3.2	15	4	14	45	4.5	15	Rc1/8	R30	23	33	M8×1.25	56.5	66.5	φ 16	86.5	96.5	φ 6.6	34
φ 40	13	63.5	32.5	7	3.2	15	4	14	52	5	17.5	Rc1/8	R34.5	29.5	39.5	M8×1.25	64.5	74.5	φ 16	94.5	104.5	φ 6.6	40
φ 50	15	77	38	9	3.2	18	5	17	64	7	19	Rc1/4	R42.5	30.5	40.5	M10×1.5	69.5	79.5	φ 20	105.5	115.5	φ 9	50
φ 63	15	90	44.5	11	3.2	20	6	17	77	7	19	Rc1/4	R51	36	46	M10×1.5	80.5	90.5	φ 20	120.5	130.5	φ 11	60

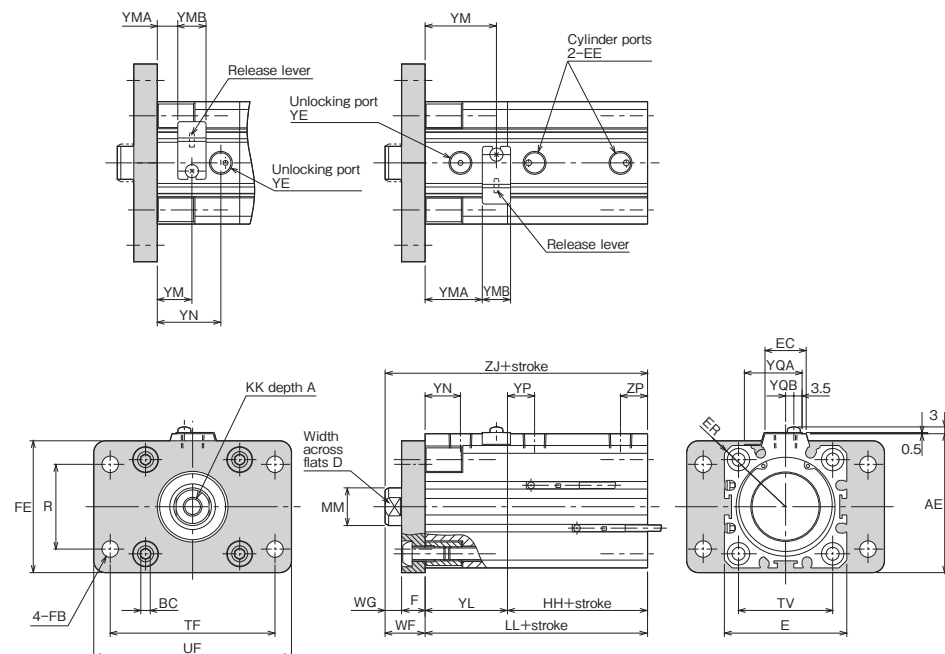
Symbol Bore	UA	WF	XA		YE	YL	YM				YMA	YN		YP (standard type)		YP	YQ		ZA	ZP (standard type)		ZP	
			Standard type	Switch Set			10S-6C1	10S-6C2	10S-6C1	10S-6C2		YMB	10S-6C1	10S-6C2	Stroke		Switch Set	YQA		YQB	Standard type		Switch Set
φ 32	45	7	78.5	88.5	Rc1/8	33.5	29.5	12.4	20.5	7.4	14	12	25.5	10	11	11	17.5	0	85.5	95.5	6	8	8
φ 40	53	7	86.5	96.5	Rc1/8	35	30.3	14.7	24.3	8.7	12	15	27	10	11.5	11.5	24.5	3.5	93.5	103.5	10	11.5	11.5
φ 50	64	8	95.5	105.5	Rc1/4	39	33	15.7	26	8.7	14	15	30	—	12	12	26.5	4.5	104.5	114.5	—	12	12
φ 63	77	8	108.5	118.5	Rc1/4	44.5	37	16.2	28.5	7.7	17	15.5	34	—	14.5	14.5	29.5	3.5	119.5	129.5	—	14.5	14.5

FA

Standard type/Locking in rod advancing direction	10S-6C1	FA	Bore	N	Stroke		
Standard type/Locking in rod retracting direction	10S-6C2	FA	Bore	N	Stroke		
Switch Set/Locking in rod advancing direction	10S-6RC1	FA	Bore	N	Stroke	- Sensor type	Sensor quantity
Switch Set/Locking in rod retracting direction	10S-6RC2	FA	Bore	N	Stroke	- Sensor type	Sensor quantity

- Locking in rod retracting direction

- Locking in rod advancing direction



Note) For the details of sensor mounting position, see 10S-6 Series.

Dimensional Table

Symbol Bore	A	AE	BC	D	E	EC	EE	ER	F	FB	FE	HH		KK	LL		MM	R	TF	TV	U
												Standard type	Switch Set		Standard type	Switch Set					
φ 32	13	51	4	14	☐ 45	15	Rc1/8	R30	8	φ 7	48	23	33	M8×1.25	56.5	66.5	φ 16	33	58	☐ 34	72
φ 40	13	59	4	14	☐ 52	17.5	Rc1/8	R34.5	10	φ 7	56	29.5	39.5	M8×1.25	64.5	74.5	φ 16	36	70	☐ 40	84
φ 50	15	74	5	17	☐ 64	19	Rc1/4	R42.5	10	φ 9	70	30.5	40.5	M10×1.5	69.5	79.5	φ 20	47	86	☐ 50	104
φ 63	15	87.5	6	17	☐ 77	19	Rc1/4	R51	10	φ 9	84	36	46	M10×1.5	80.5	90.5	φ 20	56	98	☐ 60	116

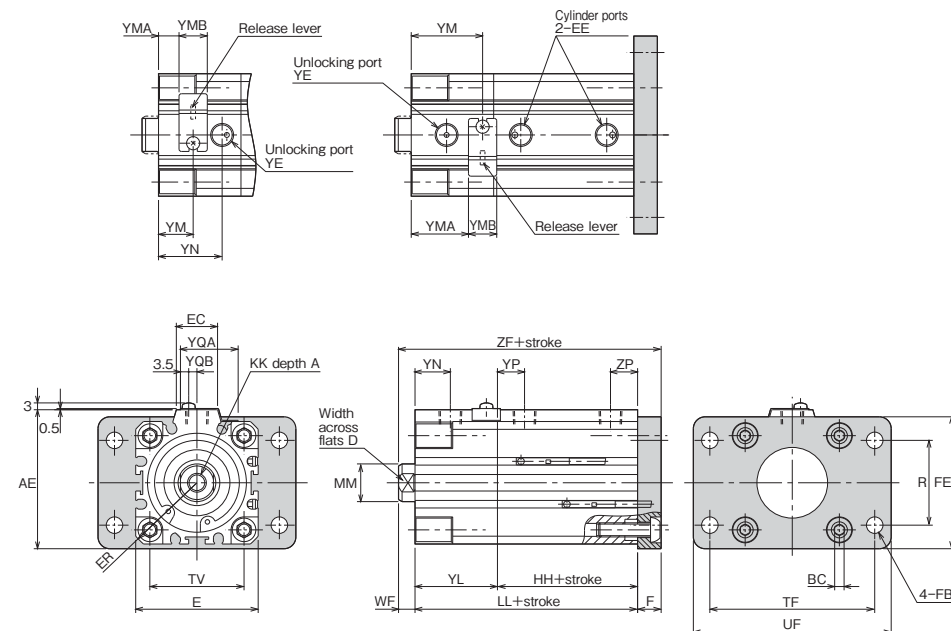
Symbol Bore	WF	WG	YE	YL	YM		YMA		YMB	YN		YP (standard type)		YP	YQA	YQB	ZJ		ZP (standard type)		ZP
					10S-6C1	10S-6C2	10S-6C1	10S-6C2		10S-6C1	10S-6C2	Stroke	Switch Set	Standard type			Switch Set	Stroke	Switch Set		
φ 32	15	7	Rc1/8	33.5	29.5	12.4	20.5	7.4	14	12	25.5	10	11	11	17.5	0	71.5	81.5	6	8	8
φ 40	17	7	Rc1/8	35	30.3	14.7	24.3	8.7	12	15	27	10	11.5	11.5	24.5	3.5	81.5	91.5	10	11.5	11.5
φ 50	18	8	Rc1/4	39	33	15.7	26	8.7	14	15	30	—	12	12	26.5	4.5	87.5	97.5	—	12	12
φ 63	18	8	Rc1/4	44.5	37	16.2	28.5	7.7	17	15.5	34	—	14.5	14.5	29.5	3.5	98.5	108.5	—	14.5	14.5

FB

Standard type/Locking in rod advancing direction	10S-6C1	FB	Bore	N	Stroke		
Standard type/Locking in rod retracting direction	10S-6C2	FB	Bore	N	Stroke		
Switch Set/Locking in rod advancing direction	10S-6RC1	FB	Bore	N	Stroke	- Sensor type	Sensor quantity
Switch Set/Locking in rod retracting direction	10S-6RC2	FB	Bore	N	Stroke	- Sensor type	Sensor quantity

- Locking in rod retracting direction

- Locking in rod advancing direction



Note) For the details of sensor mounting position, see 10S-6 Series.

Dimensional Table

Symbol Bore	A	AE	BC	D	E	EC	EE	ER	F	FB	FE	HH		KK	LL		MM	R	TF	TV	UF
												Standard type	Switch Set		Standard type	Switch Set					
φ 32	13	51	4	14	□45	15	Rc1/8	R30	8	φ 7	48	23	33	M8×1.25	56.5	66.5	φ 16	33	58	□34	72
φ 40	13	59	4	14	□52	17.5	Rc1/8	R34.5	10	φ 7	56	29.5	39.5	M8×1.25	64.5	74.5	φ 16	36	70	□40	84
φ 50	15	74	5	17	□64	19	Rc1/4	R42.5	10	φ 9	70	30.5	40.5	M10×1.5	69.5	79.5	φ 20	47	86	□50	104
φ 63	15	87.5	6	17	□77	19	Rc1/4	R51	10	φ 9	84	36	46	M10×1.5	80.5	90.5	φ 20	56	98	□60	116

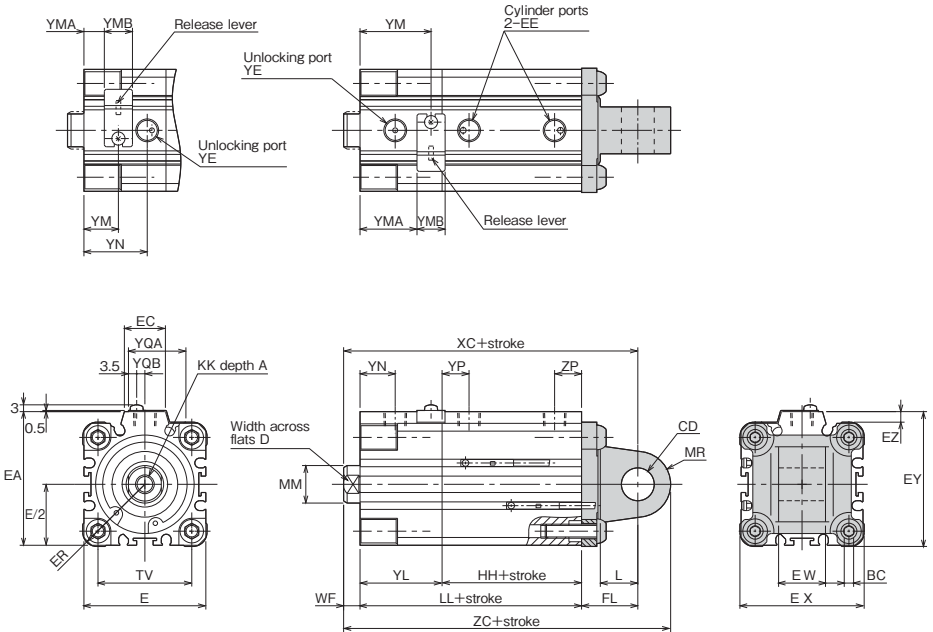
Symbol Bore	WF	YE	YL	YM				YMA				YMB	YN		YP (standard type)		YP		YQA	YQB	ZF		ZP (standard type)		ZP	
				10S-6C1	10S-6C2	10S-6C1	10S-6C2	10S-6C1	10S-6C2	Stroke	Switch Set		Standard type	Switch Set	Stroke	Switch Set										
ϕ 32	7	Rc1/8	33.5	29.5	12.4	20.5	7.4	14	12	25.5	10	11	11	17.5	0	71.5	81.5	6	8	8						
ϕ 40	7	Rc1/8	35	30.3	14.7	24.3	8.7	12	15	27	10	11.5	11.5	24.5	3.5	81.5	91.5	10	11.5	11.5						
ϕ 50	8	Rc1/4	39	33	15.7	26	8.7	14	15	30	—	12	12	26.5	4.5	87.5	97.5	—	12	12						
ϕ 63	8	Rc1/4	44.5	37	16.2	28.5	7.7	17	15.5	34	—	14.5	14.5	29.5	3.5	98.5	108.5	—	14.5	14.5						

CA

Standard type/Locking in rod advancing direction	10S-6C1	CA	Bore	N	Stroke		
Standard type/Locking in rod retracting direction	10S-6C2	CA	Bore	N	Stroke		
Switch Set/Locking in rod advancing direction	10S-6RC1	CA	Bore	N	Stroke	Sensor type	Sensor quantity
Switch Set/Locking in rod retracting direction	10S-6RC2	CA	Bore	N	Stroke	Sensor type	Sensor quantity

●Locking in rod retracting direction

●Locking in rod advancing direction



Note) For the details of sensor mounting position, see 10S-6 Series.

Dimensional Table

Symbol Bore	A	BC	CD	D	E	EA	EC	EE	ER	EX	EY	EZ	EW	FL	HH		KK	L	LL		MM	MR	TV
															Standard type	Switch Set			Standard type	Switch Set			
φ 32	13	4	φ 12H9	14	□ 45	49.5	15	Rc1/8	R30	□ 45	49.5	4.5	16 ^{+0.070 -0.004}	24	23	33	M8×1.25	16.5	56.5	66.5	φ 16	R12	□ 34
φ 40	13	4	φ 14H9	14	□ 52	57	17.5	Rc1/8	R34.5	□ 53	57.5	4.5	20 ^{+0.070 -0.004}	24	29.5	39.5	M8×1.25	16	64.5	74.5	φ 16	R14	□ 40
φ 50	15	5	φ 14H9	17	□ 64	71	19	Rc1/4	R42.5	□ 64	71	7	20 ^{+0.070 -0.004}	24	30.5	40.5	M10×1.5	16	69.5	79.5	φ 20	R14	□ 50
φ 63	15	6	φ 14H9	17	□ 77	84	19	Rc1/4	R51	□ 77	84	7	20 ^{+0.070 -0.004}	24	36	46	M10×1.5	16	80.5	90.5	φ 20	R14	□ 60

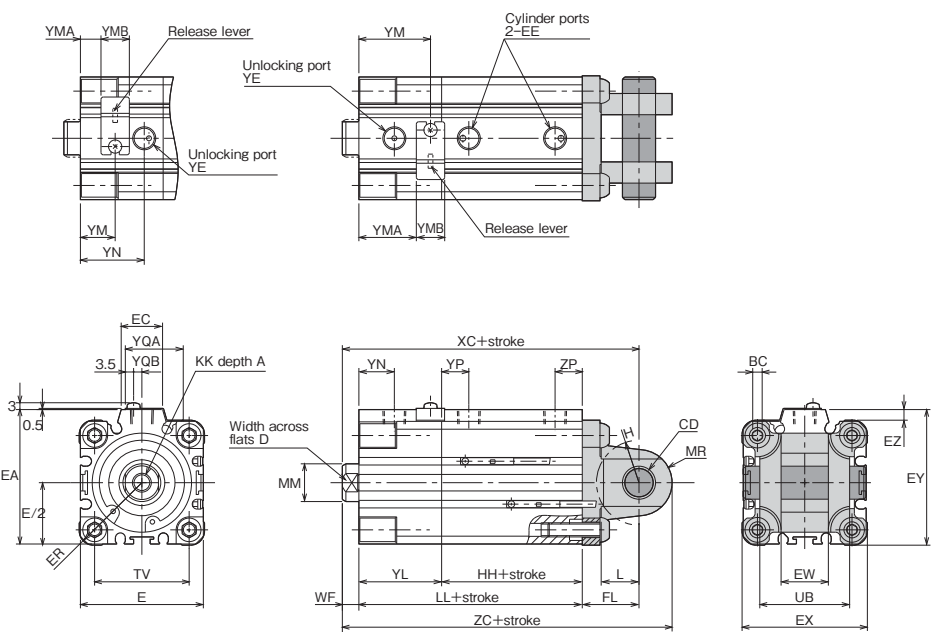
Symbol Bore	WF	XC		YE	YL	YM		YMA		YMB	YN		YP (standard type)		YP	YQ		YQA	YQB	ZC		ZP (standard type)		ZP
		Standard type	Switch Set			10S-6C1	10S-6C2	10S-6C1	10S-6C2		10S-6C1	10S-6C2	Stroke	Switch Set		Standard type	Switch Set			Stroke	Switch Set			
													5	10 or more							5	10 or more		
φ 32	7	87.5	97.5	Rc1/8	33.5	29.5	12.4	20.5	7.4	14	12	25.5	10	11	11	17.5	0	99.5	109.5	6	8	8		
φ 40	7	95.5	105.5	Rc1/8	35	30.3	14.7	24.3	8.7	12	15	27	10	11.5	11.5	24.5	3.5	109.5	119.5	10	11.5	11.5		
φ 50	8	101.5	111.5	Rc1/4	39	33	15.7	26	8.7	14	15	30	—	12	12	26.5	4.5	115.5	125.5	—	12	12		
φ 63	8	112.5	122.5	Rc1/4	44.5	37	16.2	28.5	7.7	17	15.5	34	—	14.5	14.5	29.5	3.5	126.5	136.5	—	14.5	14.5		

CB

Standard type/Locking in rod advancing direction	10S-6C1	CB	Bore	N	Stroke		
Standard type/Locking in rod retracting direction	10S-6C2	CB	Bore	N	Stroke		
Switch Set/Locking in rod advancing direction	10S-6RC1	CB	Bore	N	Stroke	Sensor type	Sensor quantity
Switch Set/Locking in rod retracting direction	10S-6RC2	CB	Bore	N	Stroke	Sensor type	Sensor quantity

●Locking in rod retracting direction

●Locking in rod advancing direction



Note) For the details of sensor mounting position, see 10S-6 Series.

Dimensional Table

Symbol Bore	A	BC	CD	D	E	EA	EC	EE	ER	EX	EY	EZ	EW	FL	H	HH		KK	L	LL		MM	MR	TV
																Standard type	Set			Standard type	Switch Set			
φ 32	13	4	φ 12H9/16	14	□45	49.5	15	Rc1/8	R30	□45	49.5	4.5	16 ^{+0.07 +0.5}	24	R16.5	23	33	M8×1.25	16.5	56.5	66.5	φ 16	R12	□34
φ 40	13	4	φ 14H9/16	14	□52	57	17.5	Rc1/8	R34.5	□53	57.5	4.5	20 ^{+0.07 +0.5}	24	R18	29.5	39.5	M8×1.25	16	64.5	74.5	φ 16	R14	□40
φ 50	15	5	φ 14H9/16	17	□64	71	19	Rc1/4	R42.5	□64	71	7	20 ^{+0.07 +0.5}	24	R21	30.5	40.5	M10×1.5	16	69.5	79.5	φ 20	R14	□50
φ 63	15	6	φ 14H9/16	17	□77	84	19	Rc1/4	R51	□77	84	7	20 ^{+0.07 +0.5}	24	R22	36	46	M10×1.5	16	80.5	90.5	φ 20	R14	□60

Symbol Bore	XC		YE	YL	YM		YMA		YMB	YN		YP (standard type)		YP	YQ		ZC		ZP (standard type)		ZP		
	UB	WF			Standard type	Switch Set	10S- 6C1	10S- 6C2		10S- 6C1	10S- 6C2	10S- 6C1	10S- 6C2		Stroke 5	10 or more	Switch Set	YQA	YQB	Standard type		Switch Set	Stroke 5
φ 32	31	7	87.5	97.5	Rc1/8	33.5	29.5	12.4	20.5	7.4	14	12	25.5	10	11	11	17.5	0	99.5	109.5	6	8	8
φ 40	38	7	95.5	105.5	Rc1/8	35	30.3	14.7	24.3	8.7	12	15	27	10	11.5	11.5	24.5	3.5	109.5	119.5	10	11.5	11.5
φ 50	49	8	101.5	111.5	Rc1/4	39	33	15.7	26	8.7	14	15	30	—	12	12	26.5	4.5	115.5	125.5	—	12	12
φ 63	52	8	112.5	122.5	Rc1/4	44.5	37	16.2	28.5	7.7	17	15.5	34	—	14.5	14.5	29.5	3.5	126.5	136.5	—	14.5	14.5

Compact design pneumatic cylinders for long strokes (up to 400mm)

- Provided with wear ring as standard part and applicable to long strokes
- New piston structure reduces the cylinder overall length.
- Two types of rod end, female thread and male thread, are available.
- A variety of accessories including mounting accessories and rod end attachments makes the cylinder applicable to a wide range of purposes.
- Order made cylinders of non-rotating type are available.



Cylinder Specifications

Series variation	Double acting single rod
Type	Standard type, Switch Set
Cylinder bore (mm)	φ 32 · φ 40 · φ 50 · φ 63 · φ 80 · φ 100
Working fluid	Air
Lubrication	Unnecessary
Working pressure range	φ 32: 0.1 to 1 MPa φ 40 to φ 100: 0.05 to 1 MPa
Working speed range	φ 32, φ 40: 30 to 500 mm/s φ 50 to φ 100: 30 to 300 mm/s
Working temperature range	1.5 MPa
Proof test pressure	Standard type: -10 to +70°C (No freezing) Switch Set: 0 to +60°C (No freezing)
Structure of cushioning	With cushion pads on both ends
Tolerance for thread	JIS 6H/6g
Tolerance of stroke	Stroke of 100 or less ^{+1.0} ₀ Stroke of 101 or more ^{+1.5} ₀
Mounting style	SD (basic style) · ST (tapped on both sides) · LA · LB · FA · FB · CA · CB · TA · TB
Rod end threads	Female thread, male thread
Accessories	Bracket for CB, bracket for TA/TB

Standard Stroke Range

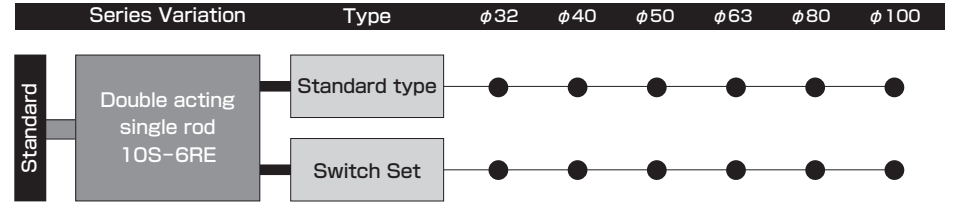
Cylinder bore	Stroke																				Male thread type
	5	10	15	20	25	30	35	40	45	50	60	70	75	80	90	100	125	150	200	250	300
φ32	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
φ40	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
φ50	—	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
φ63	—	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
φ80	—	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
φ100	—	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

Stroke Limit

Cylinder bore	Stroke limit
φ32·φ40·φ50	300
φ63·φ80·φ100	400

● If a stroke more than the above limit is required, consult us.

Product Lineup



Weight Table

Bore (mm)	Basic weight		Additional weight										
	SD·ST		Additional weight per mm of stroke	Mounting accessory							Rod end attachment		Male threaded rod end
				LA	LB	FA FB	CA	CB	TA	TB	Rod eye (T-end)	Rod clevis (Y-end) with pin	
φ32	180	202	4.1	96	84	210	145	165	310	280	160	270	43
φ40	275		4.9	110	100	275	205	220	740	690	160	270	43
φ50	454		7.4	160	150	415	275	380	950	880	210	340	74
φ63	657		8.6	260	240	560	375	505	1325	1255	210	340	74
φ80	1248		13.8	520	500	1515	890	1100	2250	2100	620	870	162
φ100	1988		18.9	590	580	1950	1090	1360	3140	2920	1240	1470	291

Sensor Additional Weight

Bore (mm)	Sensor additional weight	
	PD/PF type	ZD136C-T
φ32	A: 15 B: 35	254
φ40		
φ50		
φ63		
φ80		
φ100		

● "1" and "3" shown in the sensor additional weight column are cord lengths. (1: 1m 3: 3 m)

Calculation formula Cylinder weight (g)=basic weight+(cylinder stroke (mm)×additional weight per mm of stroke)
+ mounting accessory weight+male threaded rod end+(sensor additional weight×sensor quantity)

Calculation example Switch Set, cylinder bore 40 mm, stroke 100 mm, LB style, male thread type, 2 pcs of PD12L1
275+ (4.9×100) +100+43+ (15×2) =938 (g)

How to order

Standard

Without mounting accessory

For mounting accessory mounting

SD (Basic style)

ST (Basic style/tapped on both sides)

LA (Side lugs)

LB (End angle)

FA (Rod flange)

FB (Cap flange)

CA (Cap eye)

CB (Cap clevis) with pin

TA (Rod trunnion)

TB (Rod trunnion)

Model 10S-6RE

Mounting style 2 SD

Cylinder bore 40

Shape of cushion 3 N

Stroke 4 30

Male thread type 5 T

Sensor symbol 6 GC

Sensor quantity 7 2

Red end attachment 8 -

Bracket 9 T

Bracket 10 B

With bracket

Applicable mounting styles: CB, TA, TC

T Rod eye (T-end)

Y Rod clevis (Y-end)

Note) The rod end attachments are designed only for the male thread type.

Sensor quantity (1 or 2)

Sensor symbol

Note) Select applicable sensors out of the Sensor List.

Note on ordering sensors

Sensors are not mounted on cylinders at delivery.

Female thread type (No entry for standard type)

Male thread type

Cylinder bore (mm)

With cushion pads on both ends

Cylinder stroke (mm)

Mounting Style

SD (Basic style)

LA (Side lugs)

CA (Cap eye)

ST (Basic style/tapped on both sides)

LB (End angle)

CB (Cap clevis)

FA (Rod flange)

TA (Rod trunnion)

FB (Cap flange)

TB (Cap trunnion)

Sensor List

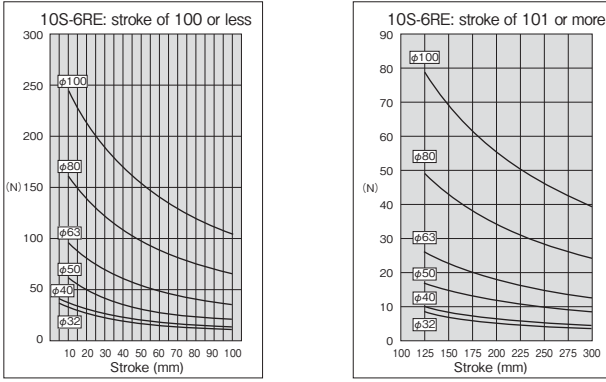
Type	Sensor symbol	Load voltage range	Load current range	Protective circuit	Indicating lamp	Wiring method	Cord length	Classification
Reed sensor	 PD12L1	24 V DC 110 V AC	DC:2.5 to 40 mA AC:2.5 to 20 mA	None	None	0.2 mm ² , 2-core, outer dia. φ2.6 mm, rear wiring	1 m	General purpose
	 PD12L3						3 m	
	 PD11L1		DC:5 to 40 mA AC:5 to 20 mA		LED (Lights when sensing)	0.2 mm ² , 2-core, outer dia. φ2.6 mm, rear wiring	1 m	
	 PD11L3						3 m	
	 PD32L1		DC:2.5 to 40 mA AC:2.5 to 20 mA		None	0.2 mm ² , 2-core, outer dia. φ2.6 mm, upper wiring	1 m	
	 PD32L3						3 m	
	 PD31L1		DC:5 to 40 mA AC:5 to 20 mA		LED (Lights when sensing)	0.2 mm ² , 2-core, outer dia. φ2.6 mm, upper wiring	1 m	
	 PD31L3						3 m	
Solid state sensor	 PD14L1	10 to 28 V DC	5 to 20 mA	Provided	LED (Lights when sensing)	0.2 mm ² , 2-core, outer dia. φ2.6 mm, rear wiring	1 m	General purpose
	 PD14L3						3 m	
	 PD13L1	28 V DC or less	0.1 to 40 mA	Provided	LED (Lights when sensing)	0.15 mm ² , 3-core, outer dia. φ2.6 mm, rear wiring	1 m	
	 PD13L3						3 m	
	 PE34L1	10 to 28 V DC	5 to 20 mA	Provided	LED (Lights when sensing)	0.2 mm ² , 2-core, outer dia. φ2.6 mm, upper wiring	1 m	
	 PE34L3						3 m	
	 PE33L1	28 V DC or less	0.1 to 40 mA	Provided	LED (Lights when sensing)	0.15 mm ² , 3-core, outer dia. φ2.6 mm, upper wiring	1 m	
	 PE33L3						3 m	
	 ZD136C-T	10 to 28 V DC	5 to 50 mA	Provided	LED (2-LED type in red/green)	0.5 mm ² , 2-core, outer dia. φ6 mm, upper wiring	5 m	

Notes) ● For the sensors without a protective circuit, be sure to provide a protective circuit (SK-100) with the load when using any induction load (relay, etc.).
● For handling of sensors, be sure to see the sensor specifications at the end of this catalog.
● We recommend AND Unit (AU series) for multiple sensors connected in series.
For details, refer to AND Unit at the end of this catalog.

● General purpose type
PD/PE type sensor

● For strong magnetic field resistance
ZD type sensor

Allowable Traverse Loading Charts



10S-6RE

Compact Design Pneumatic Cylinder (for Long Strokes)

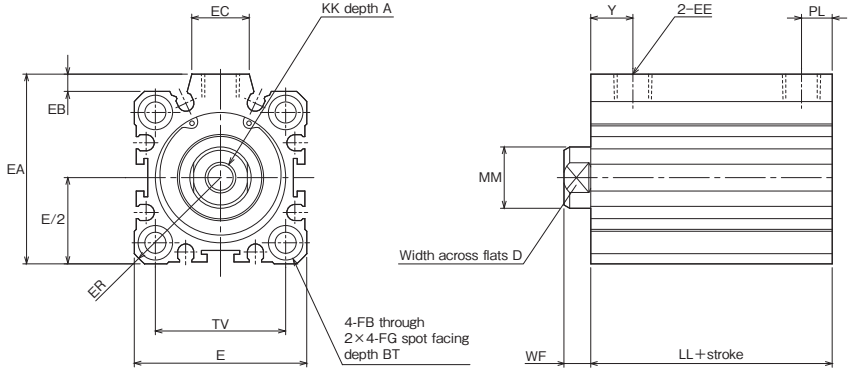
Unit: mm

10S-6RE/TAS6RE ☐ Bore ☐ CAD/DATA is available. ☐

SD

Double acting single rod/standard type/basic style

10S-6RE SD ☐ Bore ☐ N ☐ Stroke



Dimensional Table

Symbol Bore	A	BT	D	E	EA	EB	EC	EE	ER	FB	FG
φ 32	13	5.4	14	□45	49.5	4.5	15	Rc1/8	R30	φ 5.5	φ 9
φ 40	13	5.4	14	□52	57	5	17.5	Rc1/8	R34.5	φ 5.5	φ 9
φ 50	15	8	17	□64	71	7	19	Rc1/4	R42.5	φ 6.6	φ 11
φ 63	15	10.5	17	□77	84	7	19	Rc1/4	R51	φ 9	φ 14
φ 80	21	13.5	22	□98	104	6	25	Rc3/8	R65	φ 11	φ 17.5
φ 100	27	13.5	27	□117	123.5	6.5	25	Rc3/8	R78	φ 11	φ 17.5

Symbol Stroke	KK	LL		MM	PL		TV	WF	Y
		Stroke of 100 or less	Stroke of 101 or more		Stroke of 100 or less	Stroke of 101 or more			
φ 32	M8×1.25	38	43.5	φ 16	8	11	□34	7	11
φ 40	M8×1.25		44.5	φ 16		11.5	□40	7	11.5
φ 50	M10×1.5		45.5	φ 20		12	□50	8	12
φ 63	M10×1.5		51	φ 20		14.5	□60	8	14.5
φ 80	M16×2		58.5	φ 25		16.5	□77	10	16.5
φ 100	M20×2.5		68	φ 30		21	□94	12	21

Compact Design Pneumatic Cylinder (for Long Strokes)

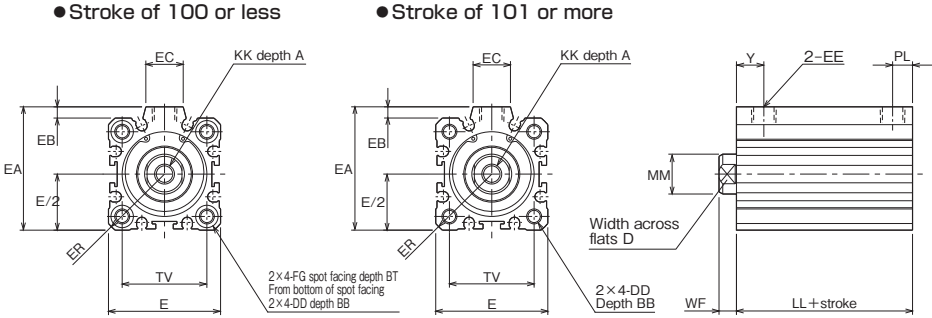
Unit: mm

10S-6RE/TAS6RE ☐ Bore ☐ CAD/DATA is available. ☐

ST

Double acting single rod/standard type/basic style (tapped on both sides)

10S-6RE ST ☐ Bore ☐ N ☐ Stroke



Dimensional Table

Symbol Bore	A	BB	BT	D	DD	E	EA	EB	EC	EE	ER
φ 32	13	12	5.4	14	M6×1	□45	49.5	4.5	15	Rc1/8	R30
φ 40	13	12	5.4	14	M6×1	□52	57	5	17.5	Rc1/8	R34.5
φ 50	15	14	8	17	M8×1.25	□64	71	7	19	Rc1/4	R42.5
φ 63	15	18	10.5	17	M10×1.5	□77	84	7	19	Rc1/4	R51
φ 80	21	22	13.5	22	M12×1.75	□98	104	6	25	Rc3/8	R65
φ 100	27	22	13.5	27	M12×1.75	□117	123.5	6.5	25	Rc3/8	R78

Symbol Stroke	FG	KK	LL		MM	PL		TV	WF	Y
			Stroke of 100 or less	Stroke of 101 or more		Stroke of 100 or less	Stroke of 101 or more			
φ 32	φ 9	M8×1.25	38	43.5	φ 16	8	11	□34	7	11
φ 40	φ 9	M8×1.25		44.5	φ 16		11.5	□40	7	11.5
φ 50	φ 11	M10×1.5		45.5	φ 20		12	□50	8	12
φ 63	φ 14	M10×1.5		51	φ 20		14.5	□60	8	14.5
φ 80	φ 17.5	M16×2		58.5	φ 25		16.5	□77	10	16.5
φ 100	φ 17.5	M20×2.5		68	φ 30		21	□94	12	21

10S-6RE

Compact Design Pneumatic Cylinder
(for Long Strokes)

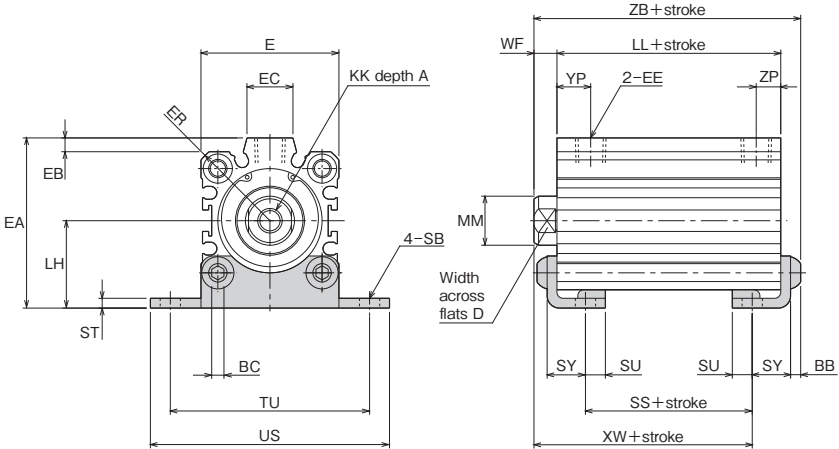
Unit: mm

10S-6RE/TAS6RE CAD/DATA is available.

LA

Double acting single rod/standard type/Side lugs

10S-6RE LA N



Dimensional Table

Symbol Stroke Bore	A	BB	BC	D	E	EA	EB	EC	EE	ER	KK	LH	LL		MM	SB
													Stroke of 100 or less	Stroke of 101 or more		
φ 32	13	4	4	14	45	55.5	4.5	15	Rc1/8	R30	M8×1.25	28.5	38	43.5	φ 16	φ 6.6
φ 40	13	4	4	14	52	63.5	5	17.5	Rc1/8	R34.5	M8×1.25	32.5	44.5		φ 16	φ 6.6
φ 50	15	5	5	17	64	77	7	19	Rc1/4	R42.5	M10×1.5	38	45.5		φ 20	φ 9
φ 63	15	6	6	17	77	90	7	19	Rc1/4	R51	M10×1.5	44.5	51		φ 20	φ 11
φ 80	21	7	8	22	98	113.5	6	25	Rc3/8	R65	M16×2	58.5	58.5		φ 25	φ 14
φ 100	27	7	8	27	117	132	6.5	25	Rc3/8	R78	M20×2.5	67	68		φ 30	φ 14

Symbol Stroke Bore	SS		ST	SU	SY	TU	US	WF	XW		YP	ZB		ZP	
	Stroke of 100 or less	Stroke of 101 or more							Stroke of 100 or less	Stroke of 101 or more		Stroke of 100 or less	Stroke of 101 or more	Stroke of 100 or less	Stroke of 101 or more
φ 32	19.4	24.9	3.2	6.5	12.5	65	78	7	35.7	41.2	11	52.2	57.7	8	11
φ 40	25.9		3.2	6.5	12.5	73	87	7	42.2		11.5	58.7		11.5	
φ 50	23.9		3.2	8	14	87	103	8	42.7		12	61.7		12	
φ 63	26.4		3.2	9.5	15.5	109	127	8	46.7		14.5	68.2		14.5	
φ 80	25.5		4.5	11	21	123	145	10	52		16.5	80		16.5	
φ 100	35		4.5	11	21	137	159	12	63.5		21	91.5		21	

Compact Design Pneumatic Cylinder
(for Long Strokes)

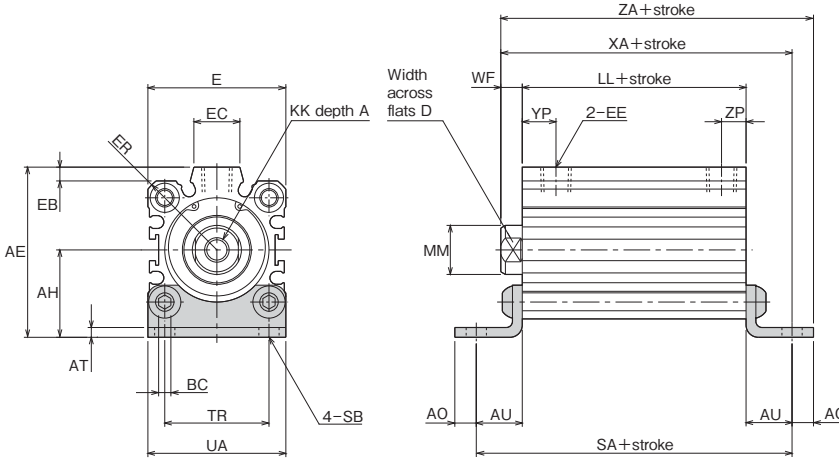
Unit: mm

10S-6RE/TAS6RE CAD/DATA is available.

LB

Double acting single rod/standard type/end angle

10S-6RE LB N



Dimensional Table

Symbol Stroke Bore	A	AE	AH	AO	AT	AU	BC	D	E	EB	EC	EE	ER	KK	LL		MM
															Stroke of 100 or less	Stroke of 101 or more	
φ 32	13	55.5	28.5	7	3.2	15	4	14	45	4.5	15	Rc1/8	R30	M8×1.25	38	43.5	φ 16
φ 40	13	63.5	32.5	7	3.2	15	4	14	52	5	17.5	Rc1/8	R34.5	M8×1.25	44.5		φ 16
φ 50	15	77	38	9	3.2	18	5	17	64	7	19	Rc1/4	R42.5	M10×1.5	45.5		φ 20
φ 63	15	90	44.5	11	3.2	20	6	17	77	7	19	Rc1/4	R51	M10×1.5	51		φ 20
φ 80	21	113.5	58.5	14	4.5	25	8	22	98	6	25	Rc3/8	R65	M16×2	58.5		φ 25
φ 100	27	132	67	14	4.5	25	8	27	117	6.5	25	Rc3/8	R78	M20×2.5	68		φ 30

Symbol Stroke Bore	SA		SB	TR	UA	WF	XA		YP	ZA		ZP	
	Stroke of 100 or less	Stroke of 101 or more					Stroke of 100 or less	Stroke of 101 or more		Stroke of 100 or less	Stroke of 101 or more	Stroke of 100 or less	Stroke of 101 or more
φ 32	68	73.5	φ 6.6	34	45	7	60	65.5	11	67	72.5	8	11
φ 40	74.5		φ 6.6	40	53	7	66.5		11.5	73.5		11.5	
φ 50	81.5		φ 9	50	64	8	71.5		12	80.5		12	
φ 63	91		φ 11	60	77	8	79		14.5	90		14.5	
φ 80	108.5		φ 14	77	100	10	93.5		16.5	107.5		16.5	
φ 100	118		φ 14	94	117	12	105		21	119		21	

10S-6RE

Compact Design Pneumatic Cylinder (for Long Strokes)

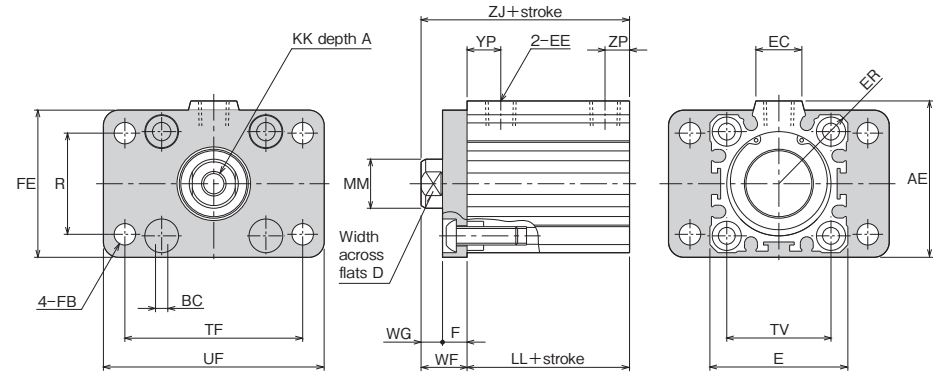
Unit: mm

10S-6RE/TAS6RE CAD/DATA is available. 

FA

Double acting single rod/standard type/flange on rod side

10S-6RE FA N



Note) ● A flange cannot be fitted on the cap side because a tapped hole is not made on the side.

Dimensional Table

Symbol Stroke Bore	A	AE	BC	D	E	EC	EE	ER	F	FB	FE	KK	LL	
													Stroke of 100 or less	Stroke of 101 or more
φ 32	13	51	4	14	□45	15	Rc1/8	R30	8	φ 7	48	M8×1.25	38	43.5
φ 40	13	59	4	14	□52	17.5	Rc1/8	R34.5	10	φ 7	56	M8×1.25	44.5	
φ 50	15	74	5	17	□64	19	Rc1/4	R42.5	10	φ 9	70	M10×1.5	45.5	
φ 63	15	87.5	6	17	□77	19	Rc1/4	R51	10	φ 9	84	M10×1.5	51	
φ 80	21	107.5	8	22	□98	25	Rc3/8	R65	16	φ 12	105	M16×2	58.5	
φ 100	27	125.5	8	27	□117	25	Rc3/8	R78	16	φ 12	121	M20×2.5	68	

Symbol Stroke Bore	MM	R	TV	TF	UF	WF	WG	YP	ZJ		ZP	
									Stroke of 100 or less	Stroke of 101 or more	Stroke of 100 or less	Stroke of 101 or more
φ 32	φ 16	33	□34	58	72	15	7	11	53	58.5	8	11
φ 40	φ 16	36	□40	70	84	17	7	11.5	61.5		11.5	
φ 50	φ 20	47	□50	86	104	18	8	12	63.5		12	
φ 63	φ 20	56	□60	98	116	18	8	14.5	69		14.5	
φ 80	φ 25	70	□77	126	150	26	10	16.5	84.5		16.5	
φ 100	φ 30	84	□94	143	165	28	12	21	96		21	

Compact Design Pneumatic Cylinder (for Long Strokes)

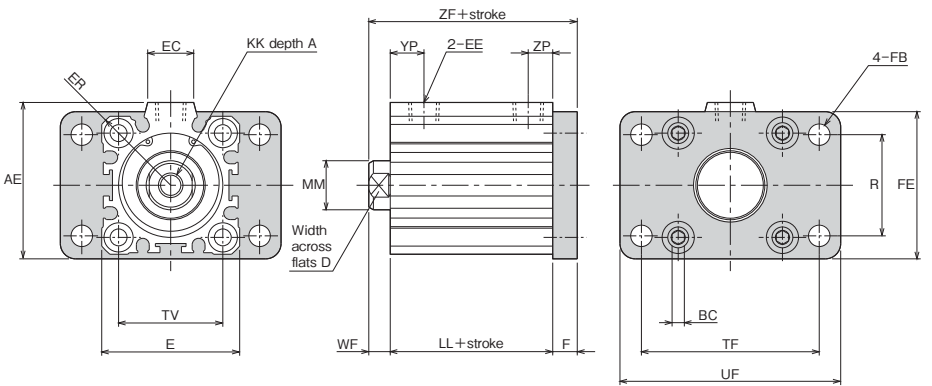
Unit: mm

10S-6RE/TAS6RE CAD/DATA is available. 

FB

Double acting single rod/standard type/flange on cap side

10S-6RE FB N



Note) ● A flange cannot be fitted on the rod side because a tapped hole is not made on the side.

Dimensional Table

Symbol Stroke Bore	A	AE	BC	D	E	EC	EE	ER	F	FB	FE	KK	LL	
													Stroke of 100 or less	Stroke of 101 or more
φ 32	13	51	4	14	□45	15	Rc1/8	R30	8	φ 7	48	M8×1.25	38	43.5
φ 40	13	59	4	14	□52	17.5	Rc1/8	R34.5	10	φ 7	56	M8×1.25	44.5	
φ 50	15	74	5	17	□64	19	Rc1/4	R42.5	10	φ 9	70	M10×1.5	45.5	
φ 63	15	87.5	6	17	□77	19	Rc1/4	R51	10	φ 9	84	M10×1.5	51	
φ 80	21	107.5	8	22	□98	25	Rc3/8	R65	16	φ 12	105	M16×2	58.5	
φ 100	27	125.5	8	27	□117	25	Rc3/8	R78	16	φ 12	121	M20×2.5	68	

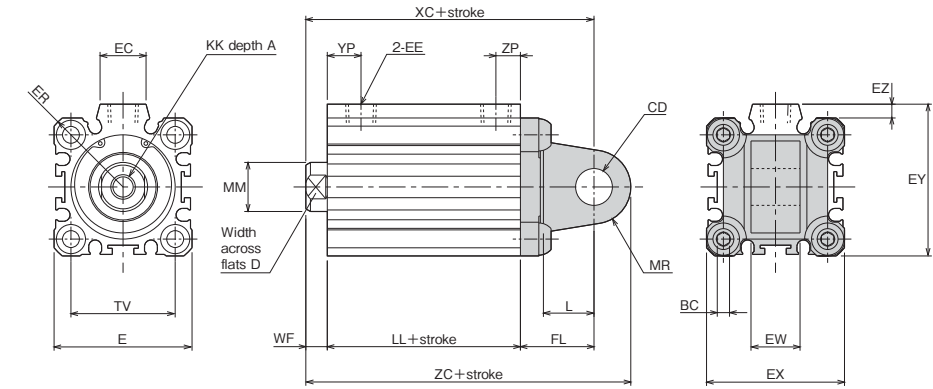
Symbol Stroke Bore	MM	R	TV	TF	UF	WF	YP	ZF		ZP	
								Stroke of 100 or less	Stroke of 101 or more	Stroke of 100 or less	Stroke of 101 or more
φ 32	φ 16	33	□34	58	72	7	11	53	58.5	8	11
φ 40	φ 16	36	□40	70	84	7	11.5	61.5		11.5	
φ 50	φ 20	47	□50	86	104	8	12	63.5		12	
φ 63	φ 20	56	□60	98	116	8	14.5	69		14.5	
φ 80	φ 25	70	□77	126	150	10	16.5	84.5		16.5	
φ 100	φ 30	84	□94	143	165	12	21	96		21	

CA

Double acting single rod/standard type/cap eye

10S-6RE CA Bore N Stroke

CAD/DATA is available. 



Dimensional Table

Symbol Stroke	A	BC	CD	D	E	EC	EE	ER	EX	EY	EZ	EW	FL	KK	L	LL	
Bore																Stroke of 100 or less	Stroke of 101 or more
φ 32	13	4	φ 12H9	14	□ 45	15	Rc1/8	R30	□ 45	49.5	4.5	16 ⁰ _{-0.070}	24	M8×1.25	16.5	38	43.5
φ 40	13	4	φ 14H9	14	□ 52	17.5	Rc1/8	R34.5	□ 53	57.5	4.5	20 ⁰ _{-0.084}	24	M8×1.25	16		44.5
φ 50	15	5	φ 14H9	17	□ 64	19	Rc1/4	R42.5	□ 64	71	7	20 ⁰ _{-0.084}	24	M10×1.5	16		45.5
φ 63	15	6	φ 14H9	17	□ 77	19	Rc1/4	R51	□ 77	84	7	20 ⁰ _{-0.084}	24	M10×1.5	16		51
φ 80	21	8	φ 20H9	22	□ 98	25	Rc3/8	R65	□ 100	105	5	32 ⁰ _{-0.100}	32	M16×2	21		58.5
φ 100	27	8	φ 20H9	27	□ 117	25	Rc3/8	R78	□ 117	123.5	6.5	32 ⁰ _{-0.100}	32	M20×2.5	21		68

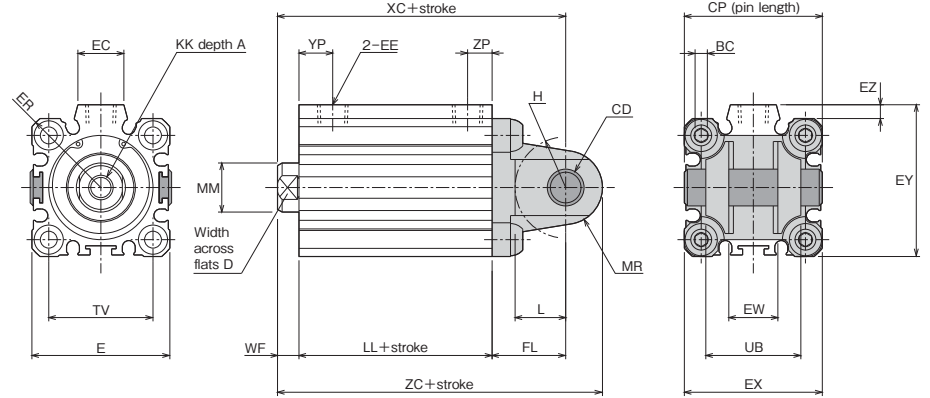
Symbol Stroke	MM	MR	TV	WF	XC		YP	ZC		ZP	
Bore					Stroke of 100 or less	Stroke of 101 or more		Stroke of 100 or less	Stroke of 101 or more	Stroke of 100 or less	Stroke of 101 or more
φ 32	φ 16	R12	□ 34	7	69	74.5	11	81	86.5	8	11
φ 40	φ 16	R14	□ 40	7		75.5	11.5		89.5		11.5
φ 50	φ 20	R14	□ 50	8		77.5	12		91.5		12
φ 63	φ 20	R14	□ 60	8		83	14.5		97		14.5
φ 80	φ 25	R19	□ 77	10		100.5	16.5		119.5		16.5
φ 100	φ 30	R19	□ 94	12		112	21		131		21

CB

Double acting single rod/standard type/cap clevis

10S-6RE CB Bore N Stroke

CAD/DATA is available. 



Dimensional Table

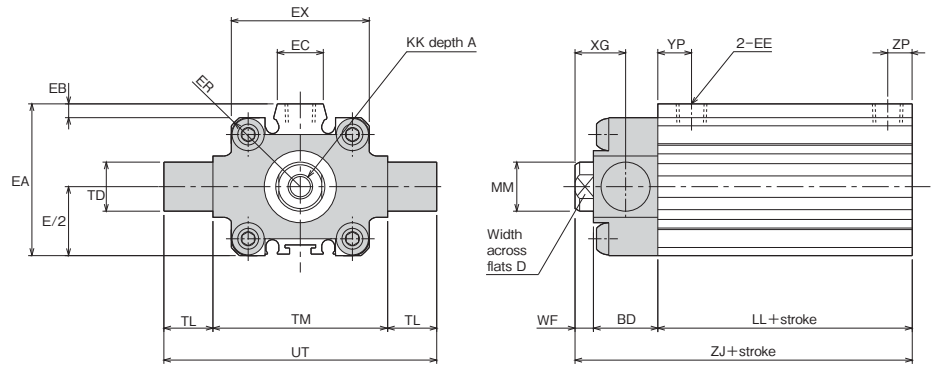
Symbol Stroke	A	BC	CD	CP	D	E	EC	EE	ER	EX	EY	EZ	EW	FL	H	KK	L
Bore																	
φ 32	13	4	φ 12H9/f8	45	14	□ 45	15	Rc1/8	R30	□ 45	49.5	4.5	16 ^{+0.7} _{+0.5}	24	R16.5	M8×1.25	16.5
φ 40	13	4	φ 14H9/f8	52	14	□ 52	17.5	Rc1/8	R34.5	□ 53	57.5	4.5	20 ^{+0.7} _{+0.5}	24	R18	M8×1.25	16
φ 50	15	5	φ 14H9/f8	63	17	□ 64	19	Rc1/4	R42.5	□ 64	71	7	20 ^{+0.7} _{+0.5}	24	R21	M10×1.5	16
φ 63	15	6	φ 14H9/f8	66	17	□ 77	19	Rc1/4	R51	□ 77	84	7	20 ^{+0.7} _{+0.5}	24	R22	M10×1.5	16
φ 80	21	8	φ 20H9/f8	78	22	□ 98	25	Rc3/8	R65	□ 100	105	5	32 ^{+0.7} _{+0.5}	32	R30	M16×2	21
φ 100	27	8	φ 20H9/f8	78	27	□ 117	25	Rc3/8	R78	□ 117	123.5	6.5	32 ^{+0.7} _{+0.5}	32	R30	M20×2.5	21

Symbol Stroke	LL		MM	MR	TV	UB	WF	XC		YP	ZC		ZP	
Bore	Stroke of 100 or less	Stroke of 101 or more						Stroke of 100 or less	Stroke of 101 or more		Stroke of 100 or less	Stroke of 101 or more	Stroke of 100 or less	Stroke of 101 or more
φ 32	38	43.5	φ 16	R12	□ 34	31	7	69	74.5	11	81	86.5	8	11
φ 40		44.5	φ 16	R14	□ 40	38	7		75.5	11.5		89.5		11.5
φ 50		45.5	φ 20	R14	□ 50	49	8		77.5	12		91.5		12
φ 63		51	φ 20	R14	□ 60	52	8		83	14.5		97		14.5
φ 80		58.5	φ 25	R19	□ 77	64	10		100.5	16.5		119.5		16.5
φ 100		68	φ 30	R19	□ 94	64	12		112	21		131		21

TA

Double acting single rod/standard type/rod trunnion

10S-6RE TA Bore N Stroke



Dimensional Table

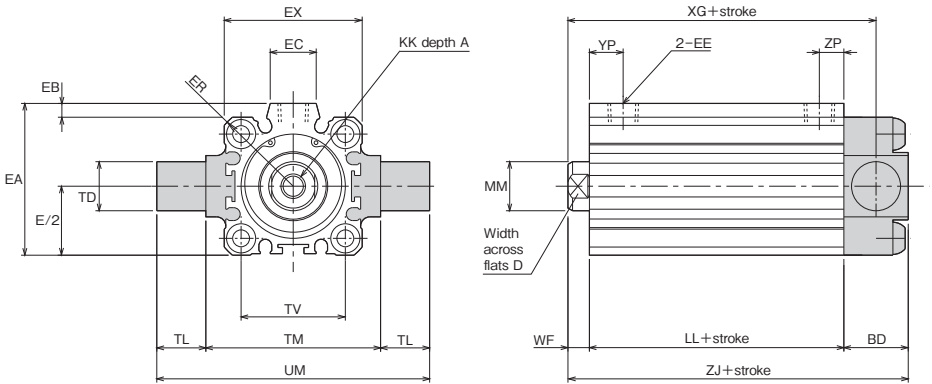
Symbol Stroke Bore	A	BD	D	E	EX	EA	EB	EC	EE	ER	KK	LL	
												Stroke of 100 or less	Stroke of 101 or more
φ 32	13	21	14	□45	45	55.5	4.5	15	Rc1/8	R30	M8×1.25	38	43.5
φ 40	13	31	14	□52	53	63.5	5	17.5	Rc1/8	R34.5	M8×1.25	44.5	
φ 50	15	31	17	□64	64	77	7	19	Rc1/4	R42.5	M10×1.5	45.5	
φ 63	15	31	17	□77	77	90	7	19	Rc1/4	R51	M10×1.5	51	
φ 80	21	37	22	□98	100	113.5	6	25	Rc3/8	R65	M16×2	58.5	
φ 100	27	37	27	□117	117	132	6.5	25	Rc3/8	R78	M20×2.5	68	

Symbol Stroke Bore	MM	TD	TL	TM	UT	WF	XG	YP	ZJ		ZP	
									Stroke of 100 or less	Stroke of 101 or more	Stroke of 100 or less	Stroke of 101 or more
φ 32	φ 16	φ 16e9	16	57	89	6	16.5	11	65	70.5	8	11
φ 40	φ 16	φ 25e9	25	69	119	6	21.5	11.5	81.5		11.5	
φ 50	φ 20	φ 25e9	25	80	130	7	22.5	12	83.5		12	
φ 63	φ 20	φ 25e9	25	95	145	7	22.5	14.5	89		14.5	
φ 80	φ 25	φ 25e9	25	107	157	13	31.5	16.5	108.5		16.5	
φ 100	φ 30	φ 25e9	25	123	173	15	33.5	21	120		21	

TB

Double acting single rod/standard type/cap trunnion

10S-6RE TB Bore N Stroke



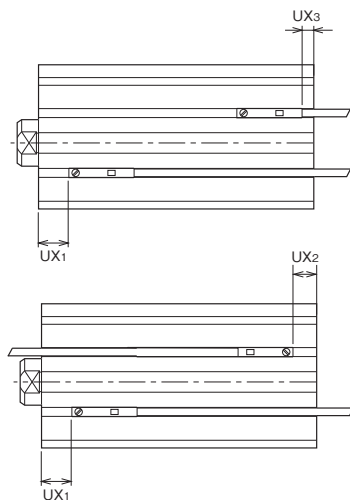
Dimensional Table

Symbol Stroke Bore	A	BD	D	E	EX	EA	EB	EC	EE	ER	KK	LL		MM	TD
												Stroke of 100 or less	Stroke of 101 or more		
φ 32	13	21	14	□45	45	55.5	4.5	15	Rc1/8	R30	M8×1.25	38	43.5	φ 16	φ 16e9
φ 40	13	31	14	□52	53	63.5	5	17.5	Rc1/8	R34.5	M8×1.25	44.5		φ 16	φ 25e9
φ 50	15	31	17	□64	64	77	7	19	Rc1/4	R42.5	M10×1.5	45.5		φ 20	φ 25e9
φ 63	15	31	17	□77	77	90	7	19	Rc1/4	R51	M10×1.5	51		φ 20	φ 25e9
φ 80	21	37	22	□98	100	113.5	6	25	Rc3/8	R65	M16×2	58.5		φ 25	φ 25e9
φ 100	27	37	27	□117	117	132	6.5	25	Rc3/8	R78	M20×2.5	68		φ 30	φ 25e9

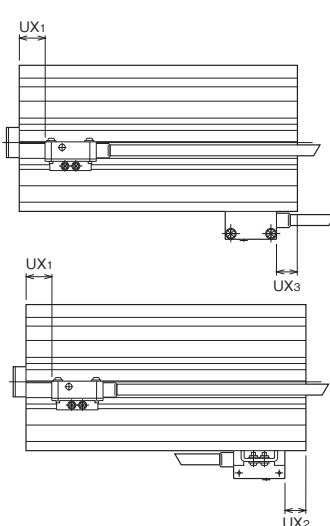
Symbol Stroke Bore	TL	TM	TV	UM	WF	XG		YP	ZJ		ZP	
						Stroke of 100 or less	Stroke of 101 or more		Stroke of 100 or less	Stroke of 101 or more	Stroke of 100 or less	Stroke of 101 or more
φ 32	16	57	□34	89	7	55.5	61	11	66	71.5	8	11
φ 40	25	69	□40	119	7	67		11.5	82.5		11.5	
φ 50	25	80	□50	130	8	69		12	84.5		12	
φ 63	25	95	□60	145	8	74.5		14.5	90		14.5	
φ 80	25	107	□77	157	10	87		16.5	105.5		16.5	
φ 100	25	123	□94	173	12	98.5		21	117		21	

Switch Set

●PD/PE type sensor



●ZD type sensor (strong magnetic field resistance)



Dimensional Table (PD type/reed sensor)

Bore	φ 32	φ 40	φ 50	φ 63	φ 80	φ 100
Symbol						
UX ₁	13.2	15.7	16.2	18.7	24.5	28
UX ₂	4.3 (0)	2.8	3.3	6.3	8	14
UX ₃	6.3 (0.8)	4.8	5.3	8.3	10	16

Note) The parenthesized values for φ32 are applicable to strokes of 100 or less.

Dimensional Table (PD type/solid state sensor)

Bore	φ 32	φ 40	φ 50	φ 63	φ 80	φ 100
Symbol						
UX ₁	19.2	21.7	22.2	24.7	30.5	34
UX ₂	10.3 (4.8)	8.8	9.3	12.3	14	20
UX ₃	0.3 (−5.2)	−1.2	−0.7	2.3	4	10

Note) The parenthesized values for φ32 are applicable to strokes of 100 or less.

Dimensional Table (PE type/solid state sensor)

Bore	φ 32	φ 40	φ 50	φ 63	φ 80	φ 100
Symbol						
UX ₁	18.2	20.7	21.2	23.7	29.5	33
UX ₂	9.3 (3.8)	7.8	8.3	11.3	13	19
UX ₃	10.3 (4.8)	8.8	9.3	12.3	14	20

Note) The parenthesized values for φ32 are applicable to strokes of 100 or less.

Dimensional Table (ZD type/solid state sensor/strong magnetic field resistant)

Bore	φ 32	φ 40	φ 50	φ 63	φ 80	φ 100
Symbol						
UX ₁	19.2	21.7	22.2	24.7	30.5	34
UX ₂	10.3 (4.8)	8.8	9.3	12.3	14	20
UX ₃	—	—	—	−3.7	−2	4

Note) The parenthesized values for φ32 are applicable to strokes of 100 or less.

Operating Range and Hysteresis

Bore	PD type (reed sensor)		PD/PE type (solid state sensor)	
	Operating range	Hysteresis	Operating range	Hysteresis
φ 32	8.5 to 10.5	1 or less	3.5 to 7	0.5 or less
φ 40	9.5 to 12.5		3.5 to 7.5	
φ 50	12 to 15		4.5 to 7.5	
φ 63	12 to 16		5 to 7.5	
φ 80	13 to 16		5.5 to 8.5	
φ 100	13 to 16		5.5 to 8.5	

Sensor Mountable Minimum Stroke (PD/PE type)

Bore	Mounting of 2 sensors	Mounting of 1 sensor
	Mounting in 2 grooves	Mounting in 1 sensor
φ 32 to φ 100	10 Note)	10

Note) It is possible to mount 2 sensors at a stroke of 5 mm.

However, note that an overlap may occur.

Setting method of sensor detecting position

●PD/PE type sensor

1. Turn the sensor fixing screw to bring it into contact with the nut.
(The sensor fixing screw has left-hand threads.
Turn it counterclockwise as shown in Fig. 1.)
2. Insert the sensor in the sensor mounting groove in the cylinder body from the cap or rod side, and slide it.
3. Secure the sensor at the optimum setting position.
(Turn the sensor fixing screw clockwise as shown in Fig. 2, and the sensor fixing screw will be in contact with the sensor mounting groove in the cylinder body to secure the sensor.)
The tightening torque must be 0.1 to 0.2 N·m.
4. If the sensor has an indicating lamp, the lamp will light up when the sensor is turned on.

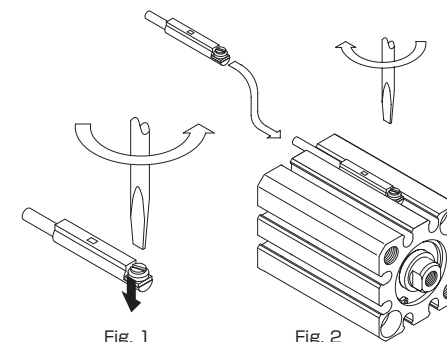


Fig. 1

Fig. 2

Operating Range and Hysteresis (strong magnetic field resistant sensor)

Bore	ZD type (solid state sensor)	
	Operating range	Hysteresis
φ 32	3.5 to 5.5 (1.5 to 2.5)	0.5 or less
φ 40	3.5 to 6 (1.5 to 3.5)	
φ 50	3.5 to 6 (2 to 4)	
φ 63	3.5 to 6.5 (2.5 to 4.5)	
φ 80	4.5 to 6.5 (2.5 to 4.5)	
φ 100	4.5 to 6.5 (2.5 to 4.5)	

Note) Parenthesized are the optimum adjustment ranges (the green lamp is on).

Sensor Mountable Minimum Stroke (ZD type)

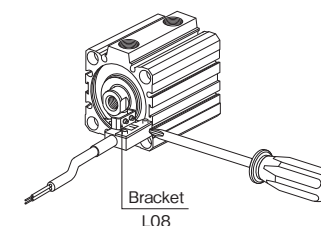
Bore	Mounting of 2 sensors	Mounting of 1 sensor
	Mounting in 2 grooves	Mounting in 1 sensor
φ 32 to φ 100	10 Note)	5

Note) The above table shows the values in the case where part of the cord that cannot be folded is out of the cylinder body for reasons of the cord bending radius. For the minimum stroke in such a state that the cord is not out of the cylinder body, see the following table.

Bore	Cord protruding direction	
	Cap cover side	Rod cover side
φ 32	55	50
φ 40	55	45
φ 50	55	45
φ 63	50	45
φ 80	45	40
φ 100	40	35

●ZD type sensor (strong magnetic field resistance)

1. Loosen the sensor fixing screw.
2. Insert the sensor in the sensor mounting groove in the cylinder body from the cap or rod side, and slide it.
3. Secure the sensor at the optimum setting position, and tighten the sensor fixing screw.
The tightening torque must be 0.1 to 0.2 N·m.
4. If the sensor has an indicating lamp, the lamp will light up when the sensor is turned on.



Bracket
L08

Order Made Specifications

Specifications for Non-rotating Type

Series Variation	Double acting single rod
Type	Standard type, Switch Set
Series	10S-6REG
Cylinder bore (mm)	φ32·φ40·φ50·φ63·φ80·φ100
Working fluid	Air
Lubrication	Unnecessary (But possible. To lubricate, use additive-free turbine oil Class 1 equivalent to ISO VG32.)
Working pressure range	φ32:0.1 to 1.0 MPa φ40 to φ100:0.05 to 1.0 MPa
Working speed range	φ32 to φ40:50 to 500 mm/s φ50 to φ100:500 to 300 mm/s
Proof test pressure	1.5 MPa
Working temperature range	Standard type: -10 to +70°C (No freezing) Switch Set: 0 to +60°C (No freezing)
Structure of cushioning	With cushion pads on both ends
Allowable rotating angle Note 1)	φ32·φ40:±1° φ50·φ63:±0.8° φ80·φ100:±0.5°
Allowable torque Note 2)	φ32·φ40:1.0 N·m φ50·φ63:3.4 N·m φ80·φ100:10 N·m
Tolerance for thread	JIS 6H/6g
Tolerance of stroke	+1.5 0 mm
Mounting style	SD, ST, LA, LB, FA, FB, CA, CB
Rod end threads	Female thread, male thread
Accessories	Bracket for CB
Rod end attachment	Rod eye (T-end), rod eye with spherical bearing (S-end), rod clevis (Y-end) with pin, floating joint (F-end)

Note 1) The allowable rotating angles at the piston rod retracting end are shown above.
Note 2) The allowable torque is applicable only when the cylinder is installed. When using the cylinder, do not apply a rotating torque to the piston rod.

How to order non-rotating type

● Standard type, Switch Set

10S-6REG SD 40 N 200 T GA 2 - T

1 Type
2 Mounting style
3 Cylinder bore
4 Cushioning
5 Stroke
6 Thread type
7 Sensor symbol
8 Sensor quantity
9 Rod end attachment

Mounting style
SD, ST, LA, LB, FA, FB, CA, CB

Cylinder bore (mm)
φ32, φ40, φ50,
φ63, φ80, φ100

With cushion pads on both ends

Cylinder stroke (mm)
φ32 to φ50:101 to 200
φ63 to φ100:101 to 300

Sensor quantity (1 or 2)

Sensor symbol
Note) Select applicable sensors out of the
Sensor List.

Female thread type (No entry for standard type)
Male thread type

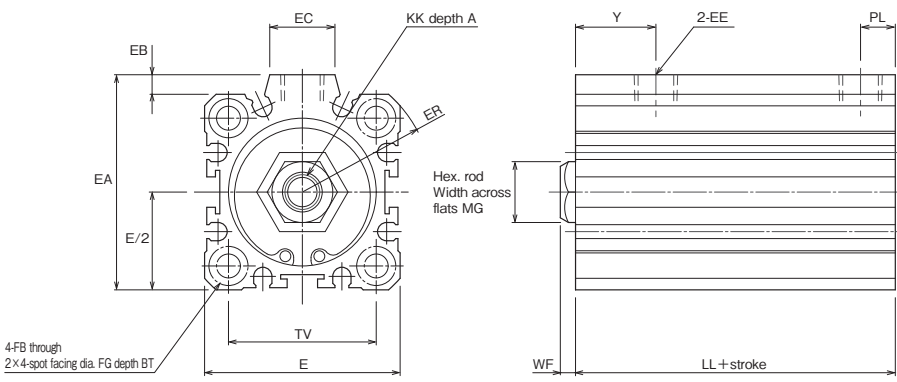
T Rod eye (T-end)
S Rod eye with spherical bearing (S-end)
Y Rod clevis (Y-end)
F Floating joint (F-end)

* For details, contact us.

Non-rotating (for long strokes)

Standard type/Switch Set 10S-6REG SD Bore N Stroke

- Bore φ32 to φ100



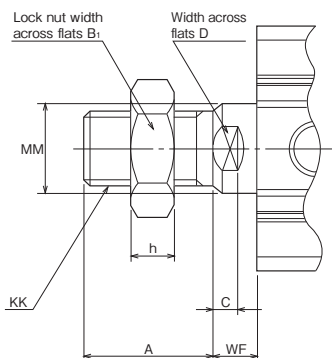
* For details, contact us.

Dimensional Table

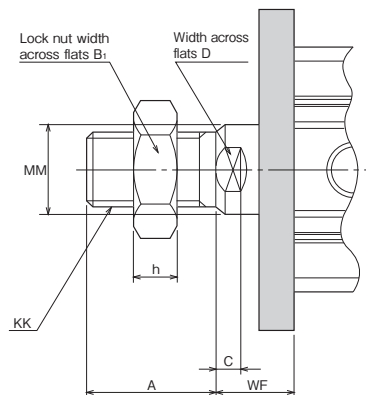
Symbol	A	BT	E	EA	EB	EC	EE	ER	FB	FG	KK	LL	MG	PL	TV	WF	Y
Bore																	
φ 32	12	5.4	□45	49.5	4.5	15	Rc1/8	R30	φ5.5	φ9	M8×1.25	50.5	14	11	□34	3.5	18.5
φ 40	12	5.4	□52	57	5	17.5	Rc1/8	R34.5	φ5.5	φ9	M8×1.25	45	14	11.5	□40	3.5	15.5
φ 50	15	8	□64	71	7	19	Rc1/4	R42.5	φ6.6	φ11	M10×1.5	47	19	12	□50	3.5	19
φ 63	15	10.5	□77	84	7	19	Rc1/4	R51	φ9	φ14	M10×1.5	51	19	14.5	□60	3.5	19.5
φ 80	20	13.5	□98	104	6	25	Rc3/8	R65	φ11	φ17.5	M16×2	61.5	23	16.5	□77	6.5	23
φ 100	20	13.5	□117	123.5	6.5	25	Rc3/8	R78	φ11	φ17.5	M16×2	68	23	21	□94	6.5	25

Male threaded rod end

● Other than FA style



● FA style



Note) In the case of FA style, dimension WF is longer. When ordering this type, pay attention to the size.

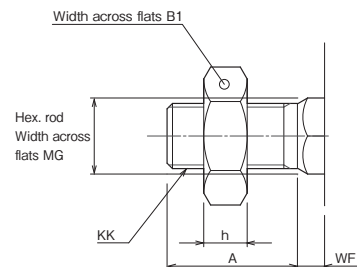
Dimensional Table

Symbol Bore	Lock nut part number	A	B ₁	C	D	h	KK	MM	WF	
									Other than FA style	FA style
φ 32	LNA-14Z-1-A	23.5 (20.5)	22	4.5	14	8	M14×1.5	φ 16	5	13
φ 40		23.5 (20.5)	22	4.5	14	8	M14×1.5	φ 16	5	15
φ 50	LNA-18Z-A	28.5 (25.5)	24	4	17	11	M18×1.5	φ 20	5	15
φ 63		28.5 (25.5)	24	4	17	11	M18×1.5	φ 20	5	15
φ 80	LNA-22Z-A	35.5 (32.5)	30	7	22	13	M22×1.5	φ 25	8	24
φ 100	LNA-26Z-1-A	35.5 (32.5)	41	7	27	16	M26×1.5	φ 30	8	24

* The parenthesized values of dimension A are the lengths of threaded portions.

Order Made Specifications (Non-rotating)

For details, contact us.



Dimensional Table of Male Thread Type Rods of Order Made Cylinders

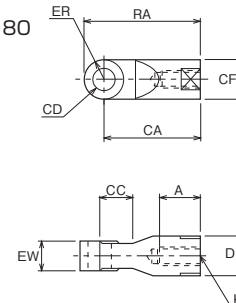
Symbol Bore	A	B ₁	h	KK	MG	WF	
						Other than FA style	FA style
φ 32	24 (21.5)	19	7	M12×1.25	14	5	15
φ 40	24 (21.5)	19	7	M12×1.25	14	5	15
φ 50	32 (29)	22	10	M16×1.5	19	5	15
φ 63	32 (29)	22	10	M16×1.5	19	5	15
φ 80	40 (37)	27	12	M20×1.5	23	6.5	21.5
φ 100	40 (37)	27	12	M20×1.5	23	6.5	21.5

* The parenthesized values of dimension A are the lengths of threaded portions.
For details, contact us.

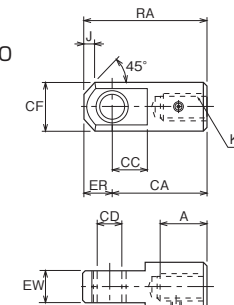
Rod end attachment

Rod eye (T-end)

● Bore φ 32 to φ 80



● Bore φ 100

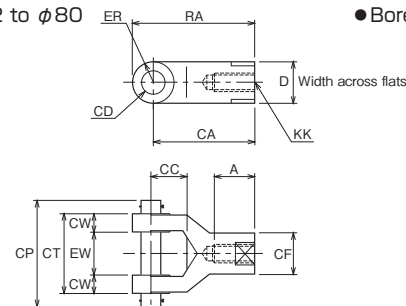


Dimensional Table

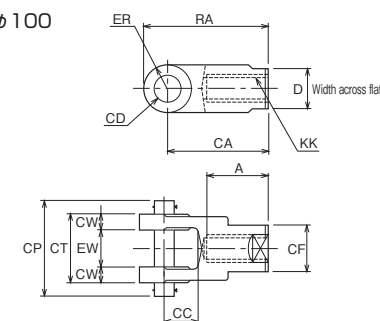
Symbol	Part number	A	CA	CC	CD	CF	D	ER	EW	J	KK	RA
Bore												
φ 32	RTA-14-A	25	60	20	φ 14H9	φ 24	24	R12	20 ⁰ _{-0.1}	—	M14×1.5	72
φ 40		25	60	20	φ 14H9	φ 24	24	R12	20 ⁰ _{-0.1}	—	M14×1.5	72
φ 50	RTA-18-1-A	33	60	20	φ 14H9	φ 28	27	R14	20 ⁰ _{-0.1}	—	M18×1.5	74
φ 63		33	60	20	φ 14H9	φ 28	27	R14	20 ⁰ _{-0.1}	—	M18×1.5	74
φ 80	RTA-22-1-A	41	85	30	φ 20H9	φ 36	36	R19	32 ⁰ _{-0.1}	—	M22×1.5	104
φ 100	RTA-26-A	56	100	32	φ 20H9	φ 49	—	20	32 ⁰ _{-0.1}	13	M26×1.5	120

Rod clevis (Y-end) with pin

● Bore φ 32 to φ 80



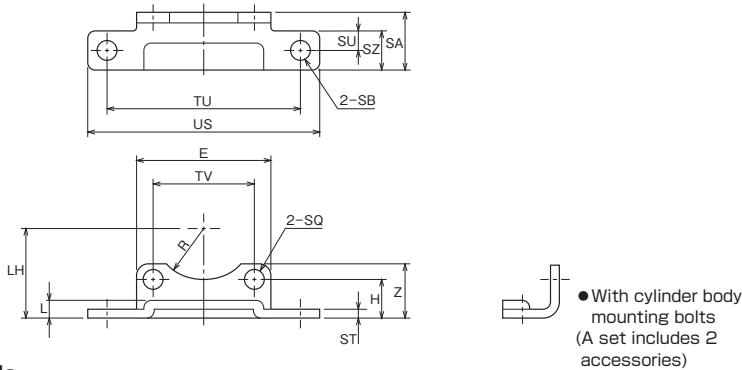
● Bore φ 100



Dimensional Table

Symbol	Part number	A	CA	CC	CD	CF	CL	CP	CT	CW	D	ER	EW	KK	PF	PL	RA
Bore																	
φ 32	RYA-14-A	25	60	20	φ 14H9/f8	φ 24	—	58	44	12	24	R12	20 ^{+1.5} _{+0.5}	M14×1.5	—	—	72
φ 40	RYA-14-A	25	60	20	φ 14H9/f8	φ 24	—	58	44	12	24	R12	20 ^{+1.5} _{+0.5}	M14×1.5	—	—	72
φ 50	RYA-18-1-A	33	60	18	φ 14H9/f8	φ 28	—	58	44	12	27	R14	20 ^{+1.5} _{+0.5}	M18×1.5	—	—	74
φ 63	RYA-18-1-A	33	60	18	φ 14H9/f8	φ 28	—	58	44	12	27	R14	20 ^{+1.5} _{+0.5}	M18×1.5	—	—	74
φ 80	RYA-22-1-A	41	85	28	φ 20H9/f8	φ 36	—	78	64	16	36	R19	32 ^{+1.5} _{+0.5}	M22×1.5	—	—	104
φ 100	RYA-26-A	56	100	32	φ 20H9	φ 49	—	78	64	16	40	R20	32 ^{+1.5} _{+0.5}	M26×1.5	—	—	120

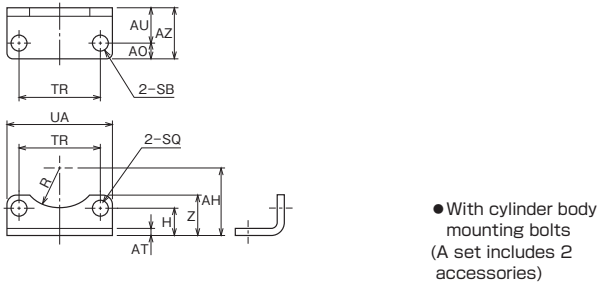
Mounting accessory LA (side lugs)



Dimensional Table

Symbol	Part number		E	H	L	LH	R	SA	SB	SQ	ST	SU	SZ	TU	TV	US	Z
	Stroke of 100 or less	Stroke of 101 or more															
φ 32	MAS6-LA032	MAS6RE-LA032	45	11.5	6	28.5	R17	19	φ 6.6	φ 6.6	3.2	6.5	13	65	34	78	17
φ 40	MAS6-LA040	MAS6RE-LA040	53	12.5	6	32.5	R21	19	φ 6.6	φ 6.6	3.2	6.5	13	73	40	87	19.5
φ 50	MAS6-LA050	MAS6RE-LA050	64	13	6	38	R26	22	φ 9	φ 9	3.2	8	16	87	50	103	20
φ 63	MAS6-LA063	MAS6RE-LA063	77	14.5	6	44.5	R27	25	φ 11	φ 11	3.2	9.5	19	109	60	127	23.5
φ 80	MAS6-LA080	MAS6RE-LA080	100	20	8.5	58.5	R33	32	φ 14	φ 14	4.5	11	22	123	77	145	31
φ 100	MAS6-LA100	MAS6RE-LA100	117	20	8.5	67	—	32	φ 14	φ 14	4.5	11	22	137	94	159	31

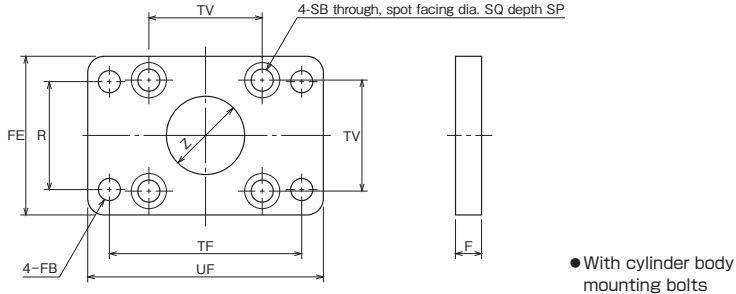
Mounting accessory LB (end angle)



Dimensional Table

Symbol	Part number		AH	AO	AT	AU	AZ	H	R	SB	SQ	TR	UA	Z
	Stroke of 100 or less	Stroke of 101 or more												
φ 32	MAS6-LB032	MAS6RE-LB032	28.5	7	3.2	15	22	11.5	R17	φ 6.6	φ 6.6	34	45	17
φ 40	MAS6-LB040	MAS6RE-LB040	32.5	7	3.2	15	22	12.5	R21	φ 6.6	φ 6.6	40	53	19
φ 50	MAS6-LB050	MAS6RE-LB050	38	9	3.2	18	27	13	R26	φ 9	φ 9	50	64	20
φ 63	MAS6-LB063	MAS6RE-LB063	44.5	11	3.2	20	31	14.5	R27	φ 11	φ 11	60	77	23.5
φ 80	MAS6-LB080	MAS6RE-LB080	58.5	14	4.5	25	39	20	R33	φ 14	φ 14	77	100	31
φ 100	MAS6-LB100	MAS6RE-LB100	67	14	4.5	25	39	20	—	φ 14	φ 14	94	117	31

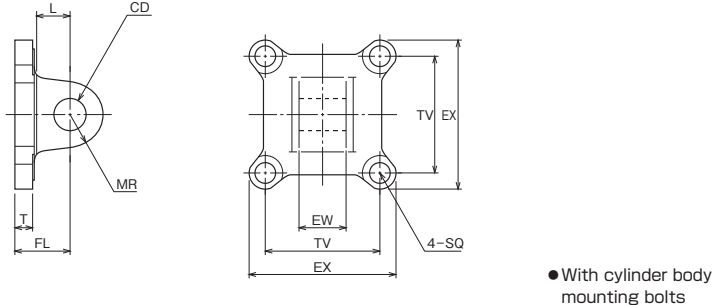
Mounting accessory FA (flange on rod side)/FB (flange on cap side)



Dimensional Table

Symbol	Part number		F	FB	FE	R	SB	SP	SQ	TF	TV	UF	Z
	Stroke of 100 or less	Stroke of 101 or more											
φ 32	MAS6-FA032	MAS6RE-FA032	8	φ 7	48	33	φ 6.6	4.5	11	58	34	72	φ 24
φ 40	MAS6-FA040	MAS6RE-FA040	10	φ 7	56	36	φ 6.6	4.5	11	70	40	84	φ 30
φ 50	MAS6-FA050	MAS6RE-FA050	10	φ 9	70	47	φ 9	5.5	15	86	50	104	φ 37
φ 63	MAS6-FA063	MAS6RE-FA063	10	φ 9	84	56	φ 11	6.5	19	98	60	116	φ 41
φ 80	MAS6-FA080	MAS6RE-FA080	16	φ 12	105	70	φ 14	7.5	22	126	77	150	φ 51
φ 100	MAS6-FA100	MAS6RE-FA100	16	φ 12	121	84	φ 14	7.5	22	143	94	165	φ 56

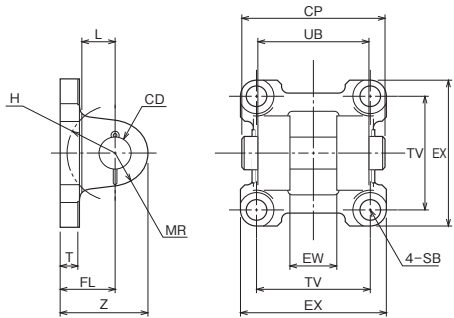
Mounting accessory CA (cap eye)



Dimensional Table

Symbol	Part number		CD	EW	EX	FL	L	MR	SQ	T	TV
	Stroke of 100 or less	Stroke of 101 or more									
φ 32	MAS6-CA032	MAS6RE-CA032	φ 12H ₉ ^{+0.043} ₀	16 _{-0.084} ⁰	45	24	16.5	R12	φ 6.6	6	34
φ 40	MAS6-CA040	MAS6RE-CA040	φ 14H ₉ ^{+0.043} ₀	20 _{-0.084} ⁰	53	24	16	R14	φ 6.6	6.5	40
φ 50	MAS6-CA050	MAS6RE-CA050	φ 14H ₉ ^{+0.043} ₀	20 _{-0.084} ⁰	64	24	16	R14	φ 9	6.5	50
φ 63	MAS6-CA063	MAS6RE-CA063	φ 14H ₉ ^{+0.043} ₀	20 _{-0.084} ⁰	77	24	16	R14	φ 11	6.5	60
φ 80	MAS6-CA080	MAS6RE-CA080	φ 20H ₉ ^{+0.052} ₀	32 _{-0.100} ⁰	100	32	21	R19	φ 14	9.5	77
φ 100	MAS6-CA100	MAS6RE-CA100	φ 20H ₉ ^{+0.052} ₀	32 _{-0.100} ⁰	117	32	21	R19	φ 14	9.5	94

Mounting accessory CB (cap clevis)

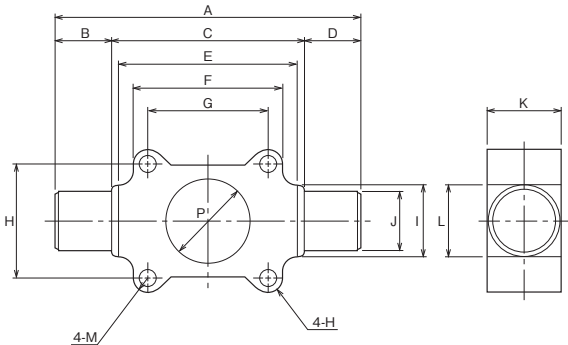


● With cylinder body mounting bolts

Dimensional Table

Symbol	Part number		CD	CP	EW	EX	FL	H	L	MR	SB	T	TV	UB	Z
	Stroke of 100 or less	Stroke of 101 or more													
Bore															
φ 32	MAS6-CB032	MAS6RE-CB032	φ 12H9/f8	46	16 ^{+0.7 +0.5}	45	24	R17	16.5	R12	φ 6.6	6	34	31	36
φ 40	MAS6-CB040	MAS6RE-CB040	φ 14H9/f8	52	20 ^{+0.7 +0.5}	53	24	R18	15	R14	φ 6.6	7.5	40	38	38
φ 50	MAS6-CB050	MAS6RE-CB050	φ 14H9/f8	63	20 ^{+0.7 +0.5}	64	24	R21	15	R14	φ 9	7.5	50	49	38
φ 63	MAS6-CB063	MAS6RE-CB063	φ 14H9/f8	66	20 ^{+0.7 +0.5}	77	24	R22	15	R14	φ 11	7.5	60	52	38
φ 80	MAS6-CB080	MAS6RE-CB080	φ 20H9/f8	78	32 ^{+0.7 +0.5}	100	32	R30	20	R19	φ 14	10.5	77	64	51
φ 100	MAS6-CB100	MAS6RE-CB100	φ 20H9/f8	78	32 ^{+0.7 +0.5}	117	32	R30	20	R19	φ 14	10.5	94	64	51

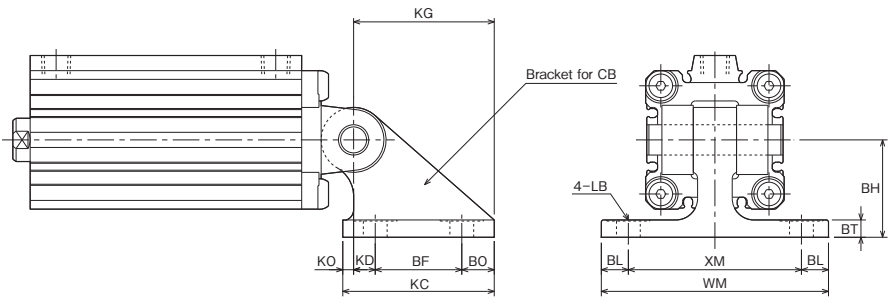
● TA and TB (trunnion)



Dimensional Table

Symbol	Part number		A	B	C	D	E	F	G	H	I	J	K	L	M	N	P
	Stroke of 100 or less	Stroke of 101 or more															
Bore																	
φ 32	MAS6-TA032	MAS6RE-TA032	89	16	57	16	53	45	34	34	φ 20	φ 16e9	21	20	R5.5	φ 6.6	φ 23.5
φ 40	MAS6-TA040	MAS6RE-TA040	119	25	69	25	65	53	40	40	φ 30	φ 25e9	31	30	R6.5	φ 6.6	φ 29.5
φ 50	MAS6-TA050	MAS6RE-TA050	130	25	80	25	76	64	50	50	φ 30	φ 25e9	31	30	R7	φ 9	φ 36.5
φ 63	MAS6-TA063	MAS6RE-TA063	145	25	95	25	91	77	60	60	φ 30	φ 25e9	31	30	R8.5	φ 11	φ 40
φ 80	MAS6-TA080	MAS6RE-TA080	157	25	107	25	105	100	77	77	φ 30	φ 25e9	37	36	R11.5	φ 14	φ 50.5
φ 100	MAS6-TA100	MAS6RE-TA100	173	25	123	25	121	117	94	94	φ 30	φ 25e9	37	36	R11.5	φ 14	φ 55.5

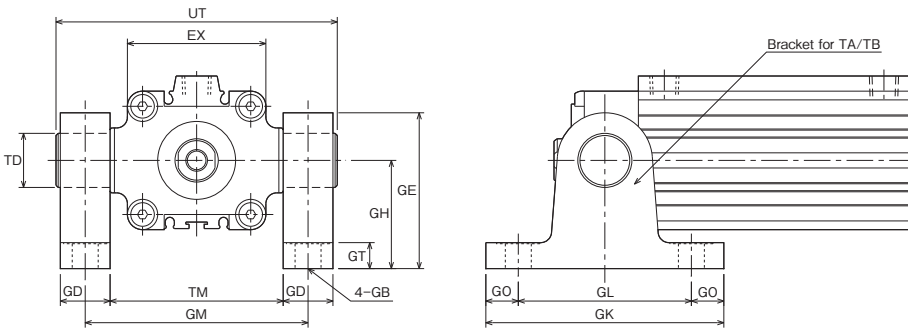
● Bracket for CB



Dimensional Table

Symbol	Part number	BF	BH	BL	BO	BT	KC	KD	KG	KO	LB	WM	XM
Bore													
φ 32	BCA-12-A	40	35	10	10	8	60	5	55	5	φ 9	85	65
φ 40	BCA-14-A	40	45	12.5	15	8	70	10	65	5	φ 11	105	80
φ 50													
φ 63													
φ 80	BCA-20-A	65	60	15	15	12	95	5	85	10	φ 14	135	105
φ 100													

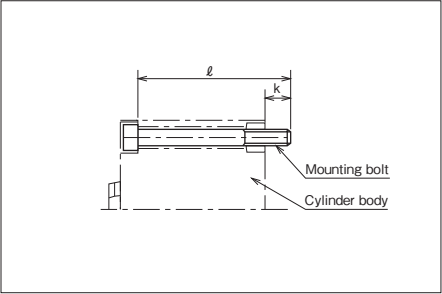
● Bracket for TA/TB



Dimensional Table

Symbol	Part number	EX	GB	GD	GE	GH	GK	GL	GM	GO	GT	TD	TM	UT
Bore														
φ 32	BTA-16-A	45	φ 9	15	56	40	90	60	72	10	12	φ 16 ^{H9 e9}	7	89
φ 40	BTA-25-A	53	φ 12	23	72	50	110	80	92	15	12	φ 25 ^{H9 e9}	69	119
φ 50		64	φ 12	23	72	50	110	80	103	15	12	φ 25 ^{H9 e9}	80	130
φ 63		77	φ 12	23	72	50	110	80	118	15	12	φ 25 ^{H9 e9}	95	145
φ 80	BTA-25-1-A	100	φ 14	23	92	70	120	85	130	17.5	14	φ 25 ^{H9 e9}	107	157
φ 100		117	φ 14	23	92	70	120	85	146	17.5	14	φ 25 ^{H9 e9}	123	173

Dimensional Drawing



Model Number When placing an order, specify the model number shown below.

CBT580D

Mounting bolt type

①Bolt size

②Quantity

Bolt length (ℓ)

Explanation of symbols

①	Bolt size				②	Quantity	
	5	M5	8	M8		D	4 pcs.
	6	M6	10	M10			

List of Mounting Bolt Types

Bore	k	Stroke							
		5	10	15	20	25	30	35	40
φ 32	12.4	CBT5-50D	CBT5-55D	CBT5-60D	CBT5-65D	CBT5-70D	CBT5-75D	CBT5-80D	CBT5-85D
φ 40	10.9	CBT5-55D	CBT5-60D	CBT5-65D	CBT5-70D	CBT5-75D	CBT5-80D	CBT5-85D	CBT5-90D
φ 50	12.5	—	CBT6-60D	CBT6-65D	CBT6-70D	CBT6-75D	CBT6-80D	CBT6-85D	CBT6-90D
φ 63	14.5	—	CBT8-65D	CBT8-70D	CBT8-75D	CBT8-80D	CBT8-85D	CBT8-90D	CBT8-95D
φ 80	15	—	CBT10-70D	CBT10-75D	CBT10-80D	CBT10-85D	CBT10-90D	CBT10-95D	CBT10-100D
φ 100	15.5	—	CBT10-80D	CBT10-85D	CBT10-90D	CBT10-95D	CBT10-100D	CBT10-105D	CBT10-110D

Bore	k	Stroke							
		45	50	60	70	75	80	90	100
φ 32	12.4	CBT5-90D	CBT5-95D	CBT5-105D	CBT5-115D	CBT5-120D	CBT5-125D	CBT5-135D	CBT5-145D
φ 40	10.9	CBT5-95D	CBT5-100D	CBT5-110D	CBT5-120D	CBT5-125D	CBT5-130D	CBT5-140D	CBT5-150D
φ 50	12.5	CBT6-95D	CBT6-100D	CBT6-110D	CBT6-120D	CBT6-125D	CBT6-130D	CBT6-140D	CBT6-150D
φ 63	14.5	CBT8-100D	CBT8-105D	CBT8-115D	CBT8-125D	CBT8-130D	CBT8-135D	CBT8-145D	CBT8-155D
φ 80	15	CBT10-105D	CBT10-100D	CBT10-120D	CBT10-130D	CBT10-135D	CBT10-140D	CBT10-150D	CBT10-160D
φ 100	15.5	CBT10-115D	CBT10-120D	CBT10-130D	CBT10-140D	CBT10-145D	CBT10-150D	CBT10-160D	CBT10-170D

Product Lineup

Unit: mm

Series Variations		Type	φ 32	φ 40	φ 50	φ 63
Standard	Double acting single rod Locking in rod advancing direction 10S-6REC1	Standard type	●	●	●	●
		Switch Set	●	●	●	●
	Double acting single rod Locking in rod retracting direction 10S-6REC2	Standard type	●	●	●	●
		Switch Set	●	●	●	●

Weight Table

Unit: g

Bore (mm)	Basic weight		Additional weight										
	ST		Additional weight per mm of stroke	Mounting accessory						Rod end attachment		Male threaded rod end	
				LA	LB	FA FB	CA	CB	TA	TB	Rod eye (T-end)		Rod clevis (Y-end) with pin
φ32	398	420	4.1	96	84	210	145	165	310	280	160	270	43
φ40	579		4.9	110	100	275	205	220	740	690	160	270	43
φ50	992		7.4	160	150	415	275	380	950	880	210	340	74
φ63	1535		8.6	260	240	560	375	505	1325	1255	210	340	74

Sensor Additional Weight

Unit: g

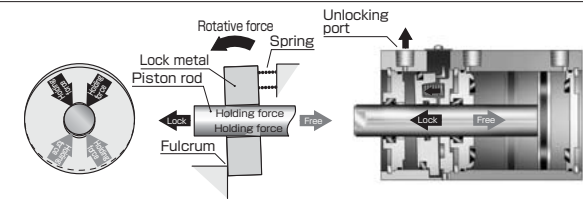
Bore (mm)	Sensor additional weight		Calculation formula	Cylinder weight (g)=basic weight+(cylinder stroke (mm) xadditional weight per mm of stroke)+mounting accessory weight +male threaded rod end+(sensor additional weightXsensor quantity)
	PD/PF type	ZD136C-T		
φ32	A:15 B:35	254	Calculation example	Switch Set, cylinder bore 40 mm, stroke 100 mm, LB style, male thread type, 2 pcs of PD12L1 579+(4.9X100)+100+43+(15X2)=1242 (g)
φ40				
φ50				
φ63				

● "1" and "3" shown in the sensor additional weight column are cord lengths. (1: 1 m 3: 3 m)

Principle of operation

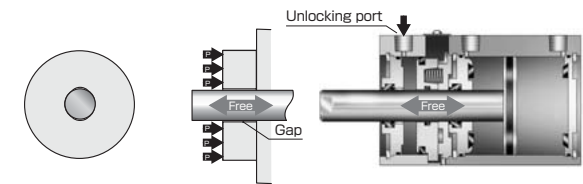
Locking

When air is discharged from the unlocking port, the lock plate is tilted by the spring force to retain the piston rod. The lock metal has a circular slit having high wear resistance.



Unlocking

When compressed air is supplied through the unlocking port, the lock metal is pushed against the wall to stand upright. There is a gap between the lock plate and the piston rod, and the rod can be moved freely.



Drop preventive function added to compact design pneumatic cylinders applicable to long strokes (up to 400mm)

- Locking at any position in stroke
- Locking in one direction
- Locking force equivalent to cylinder output at 0.5 MPa
- Less trouble and long life
- Easy unlocking



Cylinder Specifications

Series variation	Double acting single rod type with diagonal plate locking mechanism			
Series	10S-6REC1 (Locking in rod advancing direction)			
	10S-6REC2 (Locking in rod retracting direction)			
Cylinder bore (mm)	φ32	φ40	φ50	φ63
Working fluid	Air			
Lubrication	Not allowed			
Max. working pressure	1 MPa (Locking force equivalent to cylinder output at 0.5 MPa)			
Min. working pressure	0.25 MPa (under no load)			
Working speed range	50 to 500 mm/s		50 to 300 mm/s	
Proof test pressure	1.5 MPa			
Working temperature range	Standard type: -10 to +60°C (No freezing)			
	Switch Set: 0 to +60°C (No freezing)			
Structure of cushioning	With cushion pads on both ends			
Tolerance for thread	JIS 6H/6g			
Tolerance of stroke	Stroke of 100 or less ^{+1.0} ₀ mm		Stroke of 101 or more ^{+1.5} ₀ mm	
Mounting style	ST (tapped on both sides)·LA·LB·FA·FB·CA·CB·TA·TB			
Rod end threads	Female thread, male thread			
Accessories	Bracket for CB, bracket for TA/TB			
Locking force (N)	386	603	943	1497
Locking direction	In rod advancing or retracting direction			
Locking position	Locking at any position in stroke			

Standard Stroke Range

Unit: mm

Cylinder bore	Stroke																				Male thread type
	5	10	15	20	25	30	35	40	45	50	60	70	75	80	90	100	125	150	200	250	300
φ 32	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
φ 40	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
φ 50	—	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
φ 63	—	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

Stroke Limit

Unit: mm

Cylinder bore (mm)	Stroke limit
φ32·φ40·φ50	300
φ63	400

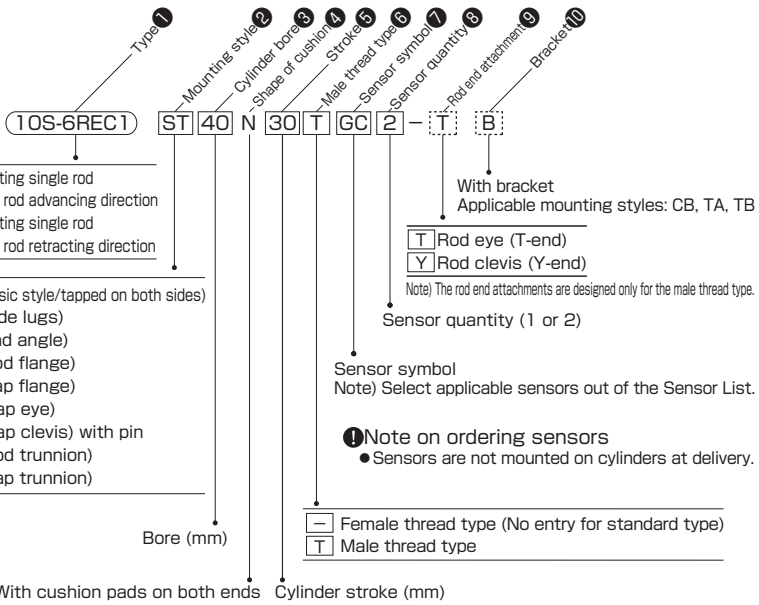
● If a stroke more than the above limit is required, consult us.

10S-6REC

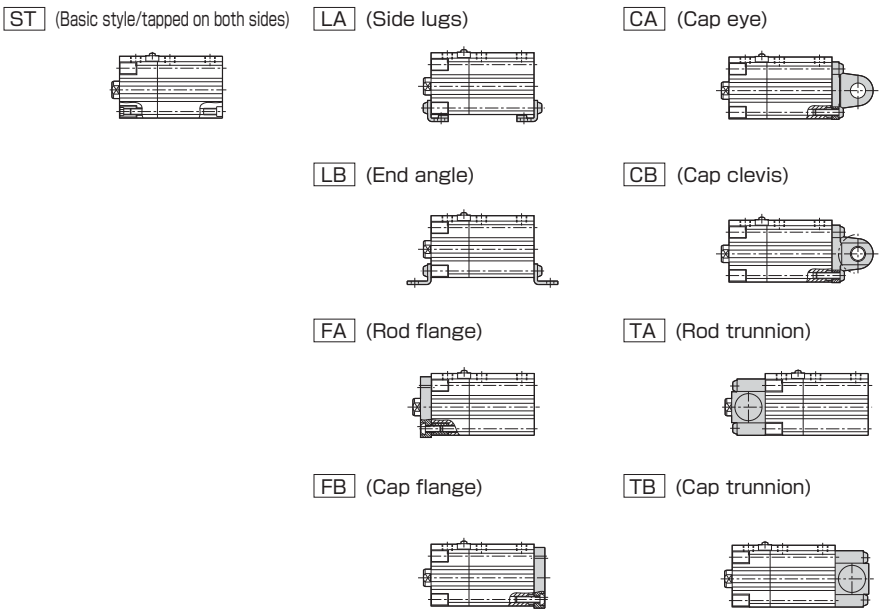
Position-free One-way Locking Cylinder (for Long Strokes)

How to order

Standard



Mounting style



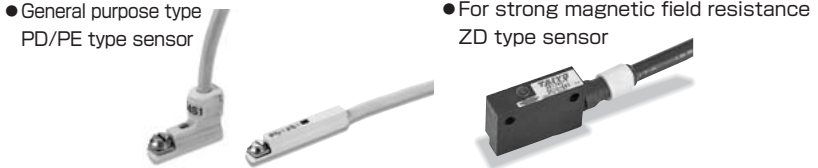
Position-free One-way Locking Cylinder (for Long Strokes)

10S-6REC

Sensor List

Type	Sensor symbol	Load voltage range	Load current range	Protective circuit	Indicating lamp	Wiring method	Cord length	Classification
Reed sensor	GA PD12L1	24 V DC 110 V AC	DC: 2.5 to 40 mA AC: 2.5 to 20 mA	None	None	0.2 mm ² , 2-core, outer dia. φ2.6 mm, rear wiring	1 m	General
	GB PD12L3						3 m	
	GC PD11L1		DC: 5 to 40 mA AC: 5 to 20 mA		LED (Lights when sensing)	0.2 mm ² , 2-core, outer dia. φ2.6 mm, rear wiring	1 m	
	GD PD11L3						3 m	
	GE PD32L1		DC: 2.5 to 40 mA AC: 2.5 to 20 mA		None	0.2 mm ² , 2-core, outer dia. φ2.6 mm, upper wiring	1 m	
	GF PD32L3						3 m	
	GG PD31L1		DC: 5 to 40 mA AC: 5 to 20 mA		LED (Lights when sensing)	0.2 mm ² , 2-core, outer dia. φ2.6 mm, upper wiring	1 m	
	GH PD31L3							
Solid state sensor	GJ PD14L1	10 to 28 V DC	5 to 20 mA	Provided	LED (Lights when sensing)	0.2 mm ² , 2-core, outer dia. φ2.6 mm, rear wiring	1 m	General
	GK PD14L3						3 m	
	GL PD13L1	28 V DC or less	0.1 to 40 mA	Provided	LED (Lights when sensing)	0.15 mm ² , 3-core, outer dia. φ2.6 mm, rear wiring	1 m	
	GM PD13L3						3 m	
	GN PE34L1	10 to 28 V DC	5 to 20 mA	Provided	LED (Lights when sensing)	0.2 mm ² , 2-core, outer dia. φ2.6 mm, upper wiring	1 m	
	GP PE34L3						3 m	
	GR PE33L1	28 V DC or less	0.1 to 40 mA	Provided	LED (Lights when sensing)	0.15 mm ² , 3-core, outer dia. φ2.6 mm, upper wiring	1 m	
	GS PE33L3						3 m	
	NK ZD136C-T	10 to 28 V DC	5 to 50 mA	Provided	LED (2-LED type in red/green)	0.5 mm ² , 2-core, outer dia. φ6 mm, upper wiring	5 m	

Notes) ●For the sensors without a protective circuit, be sure to provide a protective circuit (SK-100) with the load when using any induction load (relay, etc.).
●For handling of sensors, be sure to see the sensor specifications at the end of this catalog.
●We recommend AND Unit (AU series) for multiple sensors connected in series.
For details, refer to AND Unit at the end of this catalog.



Position-free One-way Locking Cylinder (for Long Strokes)

Unit: mm

Position-free One-way Locking Cylinder (for Long Strokes)

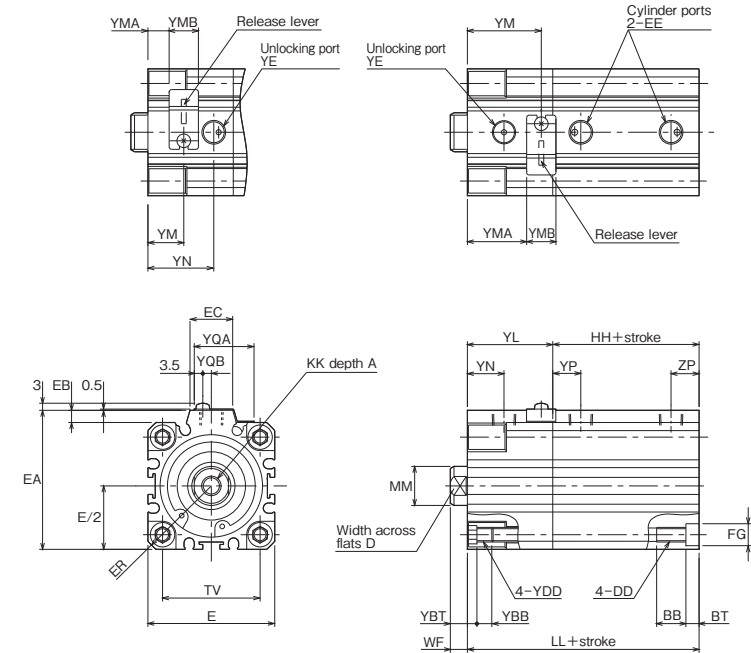


CAD/DATA
is available.

10S-6REC/TAS6REC Locking direction Bore

ST

Standard type/Locking in rock advancing direction	10S-6REC1	ST	Bore	N	Standard stroke			
Standard type/Locking in rod retracting direction	10S-6REC2	ST	Bore	N	Standard stroke			
Switch Set/Locking in rod advancing direction	10S-6REC1	ST	Bore	N	Standard stroke	-	Sensor symbol	Sensor quantity
Switch Set/Locking in rod retracting direction	10S-6REC2	ST	Bore	N	Standard stroke	-	Sensor symbol	Sensor quantity



Note) For the sensor mounting position and other details, see 10S-6RE Series.

Dimensional Table

Symbol Stroke Bore	A	BB	BT		D	DD	E	EA	EB	EC	EE	ER	FG	HH		KK	LL		MM
			5 to 100st	Stroke of 101 or more										5 to 100st	Stroke of 101 or more		5 to 100st	Stroke of 101 or more	
φ 32	13	12	5.4	0	14	M6×1	 45	49.5	4.5	15	Rc1/8	R30	φ 9	38	43.5	M8×1.25	71.5	77	φ 16
φ 40	13	12	5.4	0	14	M6×1	 52	57	5	17.5	Rc1/8	R34.5	φ 9	44.5		M8×1.25	79.5		φ 16
φ 50	15	14	8	0	17	M8×1.25	 64	71	7	19	Rc1/4	R42.5	φ 11	45.5		M10×1.5	84.5		φ 20
φ 63	15	18	10.5	0	17	M10×1.5	 77	84	7	19	Rc1/4	R51	φ 14	51		M10×1.5	95.5		φ 20

Symbol Stroke Bore	TV	WF	YBB	YBT	YDD	YE	YL	YM		YMA		YMB	YN		YP	YQA	YQB	ZP	
								10S-6 REC1	10S-6 REC2	10S-6 REC1	10S-6 REC2		10S-6 REC1	10S-6 REC2				5 to 100st	Stroke of 101 or more
φ 32	□34	7	6.1	3.9	M6×1	Rc1/8	33.5	29.5	12.4	20.5	7.4	14	12	25.5	11	17.5	0	8	11
φ 40	□40	7	6.1	3.9	M6×1	Rc1/8	35	30.3	14.7	24.3	8.7	12	15	27	11.5	24.5	3.5		11.5
φ 50	□50	8	7.8	4.7	M8×1.25	Rc1/4	39	33	15.7	26	8.7	14	15	30	12	26.5	4.5		12
φ 63	□60	8	9.5	4	M10×1.5	Rc1/4	44.5	37	16.2	28.5	7.7	17	15.5	34	14.5	29.5	3.5		14.5

10S-6REC

List of Part Numbers

Bore (mm)	Part number	
	Bracket for CB	Bracket for TA/TB
φ 32	BCA-12-A	BTA-16-A
φ 40	BCA-14-A	BTA-25-A
φ 50	BCA-14-A	BTA-25-A
φ 63	BCA-14-A	BTA-25-A

LA style mounting accessory

Bore (mm)	Part number	
	Stroke of 100 or less	Stroke of 101 or more
φ 32	MAS6REC-LA032	MAS6RE-LA032
φ 40	MAS6REC-LA040	MAS6RE-LA040
φ 50	MAS6REC-LA050	MAS6RE-LA050
φ 63	MAS6REC-LA063	MAS6RECL-LA063

FA style mounting accessory

Bore (mm)	Part number	
	Stroke of 100 or less	Stroke of 101 or more
φ 32	MAS6RE-FA032	MAS6RE-FA032
φ 40	MAS6REC-FA040	MAS6RE-FA040
φ 50	MAS6RE-FA050	MAS6RE-FA050
φ 63	MAS6RE-FA063	MAS6RE-FA063

CA style mounting accessory

Bore (mm)	Part number	
	Stroke of 100 or less	Stroke of 101 or more
φ 32	MAS6-CA032	MAS6RE-CA032
φ 40	MAS6-CA040	MAS6RE-CA040
φ 50	MAS6-CA050	MAS6RE-CA050
φ 63	MAS6-CA063	MAS6RE-CA063

TA style mounting accessory

Bore (mm)	Part number	
	Stroke of 100 or less	Stroke of 101 or more
φ 32	MAS6RE-TA032	MAS6RE-TA032
φ 40	MAS6RE-TA040	MAS6RE-TA040
φ 50	MAS6RE-TA050	MAS6RE-TA050
φ 63	MAS6REC-TA063	MAS6RE-TA063

●For the dimensional drawing, see 10S-6RE Series.

- Note that some mounting accessories use mounting bolts differing in size from those for 10S-6RE Series.

Rod end attachment type

Bore (mm)	Part number	
	Rod eye (T-end)	Rod clevis (Y-end)
φ 32	RTA-14-A	RYA-14-A
φ 40	RTA-14-A	RYA-14-A
φ 50	RTA-18-1-A	RYA-18-1-A
φ 63	RTA-18-1-A	RYA-18-1-A

LB style mounting accessory

Bore (mm)	Part number	
	Stroke of 100 or less	Stroke of 101 or more
φ 32	MAS6REC-LB032	MAS6RE-LB032
φ 40	MAS6REC-LB040	MAS6RE-LB040
φ 50	MAS6REC-LB050	MAS6RE-LB050
φ 63	MAS6REC-LB063	MAS6RECL-LB063

FB style mounting accessory

Bore (mm)	Part number	
	Stroke of 100 or less	Stroke of 101 or more
ϕ 32	MAS6-FA032	MAS6RE-FA032
ϕ 40	MAS6-FA040	MAS6RE-FA040
ϕ 50	MAS6-FA050	MAS6RE-FA050
ϕ 63	MAS6-FA063	MAS6RE-FA063

CB style mounting accessory

Bore (mm)	Part number	
	Stroke of 100 or less	Stroke of 101 or more
φ 32	MAS6-CB032	MAS6RE-CB032
φ 40	MAS6-CB040	MAS6RE-CB040
φ 50	MAS6-CB050	MAS6RE-CB050
φ 63	MAS6-CB063	MAS6RE-CB063

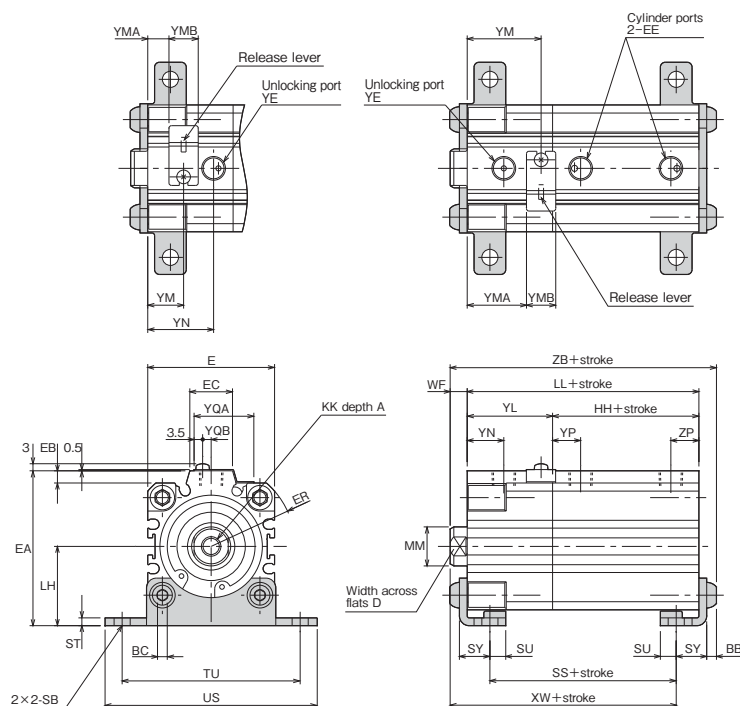
TB style mounting accessory

Bore (mm)	Part number	
	Stroke of 100 or less	Stroke of 101 or more
φ 32	MAS6-TA032	MAS6RE-TA032
φ 40	MAS6-TA040	MAS6RE-TA040
φ 50	MAS6-TA050	MAS6RE-TA050
φ 63	MAS6-TA063	MAS6RE-TA063

LA

10S-6REC/TAS6REC ☐ Locking direction ☐ Bore CAD/DATA is available. 

Standard type/Locking in rock advancing direction	10S-6REC1	LA	Bore	N	Standard stroke			
Standard type/Locking in rod retracting direction	10S-6REC2	LA	Bore	N	Standard stroke			
Switch Set/Locking in rod advancing direction	10S-6REC1	LA	Bore	N	Standard stroke	-	Sensor symbol	Sensor quantity
Switch Set/Locking in rod retracting direction	10S-6REC2	LA	Bore	N	Standard stroke	-	Sensor symbol	Sensor quantity



Note) For the sensor mounting position and other details, see 10S-6RE Series.

Dimensional Table

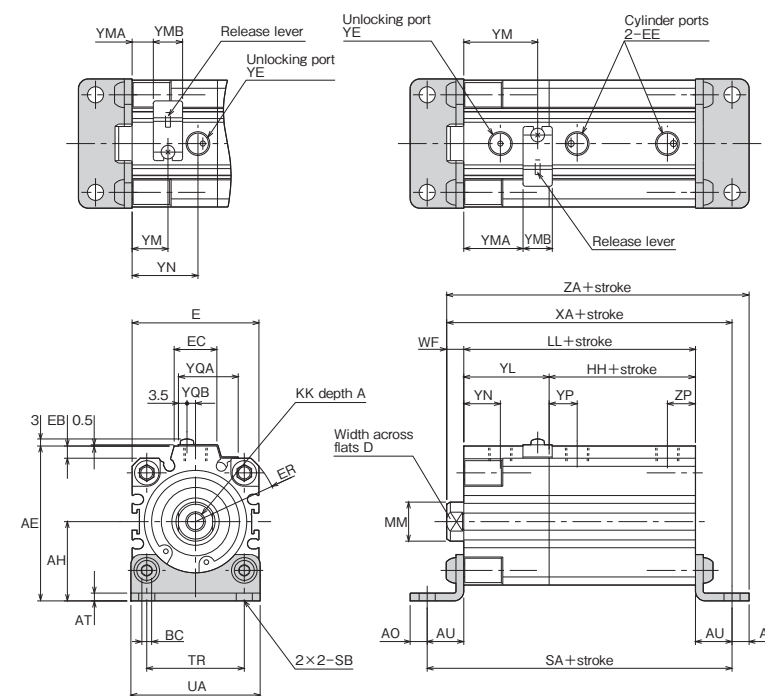
Symbol Stroke Bore	A	BB	BC	D	E	EA	EB	EC	EE	ER	HH		KK	LH	LL		MM	SB	SS		ST	SU	SY
											5 to 100s	Stroke of 101 or more			5 to 100s	Stroke of 101 or more			5 to 100s	Stroke of 101 or more			
φ 32	13	4	4	14	45	55.5	4.5	15	Rc1/8	R30	38	43.5	M8×1.25	28.5	71.5	77	φ 16	φ 6.6	52.9	58.4	3.2	6.5	12.5
φ 40	13	4	4	14	52	63.5	5	17.5	Rc1/8	R34.5	44.5		M8×1.25	32.5	79.5		φ 16	φ 6.6	60.9		3.2	6.5	12.5
φ 50	15	5	5	17	64	77	7	19	Rc1/4	R42.5	45.5		M10×1.5	38	84.5		φ 20	φ 9	62.9		3.2	8	14
φ 63	15	6	6	17	77	90	7	19	Rc1/4	R51	51		M10×1.5	44.5	95.5		φ 20	φ 11	70.9		3.2	9.5	15.5

Symbol Stroke Bore	TU	US	WF	XW		YE	YL	YM		YMA		YMB	YN		YP	YQA	YQB	ZB		ZP	
				5 to 100s	Stroke of 101 or more			10S-6 REC1	10S-6 REC2	10S-6 REC1	10S-6 REC2		10S-6 REC1	10S-6 REC2				5 to 100s	Stroke of 101 or more	5 to 100s	Stroke of 101 or more
φ 32	65	78	7	69.2	74.7	Rc1/8	33.5	29.5	12.4	20.5	7.4	14	12	25.5	11	17.5	0	85.7	91.2	8	11
φ 40	73	87	7	77.2		Rc1/8	35	30.3	14.7	24.3	8.7	12	15	27	11.5	24.5	3.5	93.7			11.5
φ 50	87	103	8	81.7		Rc1/4	39	33	15.7	26	8.7	14	15	30	12	26.5	4.5	100.7			12
φ 63	109	127	8	91.2		Rc1/4	44.5	37	16.2	28.5	7.7	17	15.5	34	14.5	29.5	3.5	112.7			14.5

LB

10S-6REC/TAS6REC CAD/DATA is available. 

Standard type/Locking in rock advancing direction	10S-6REC1	LB	Bore	N	Standard stroke			
Standard type/Locking in rod retracting direction	10S-6REC2	LB	Bore	N	Standard stroke			
Switch Set/Locking in rod advancing direction	10S-6REC1	LB	Bore	N	Standard stroke	-	Sensor symbol	Sensor quantity
Switch Set/Locking in rod retracting direction	10S-6REC2	LB	Bore	N	Standard stroke	-	Sensor symbol	Sensor quantity



Note) For the sensor mounting position and other details, see 1QS-6RE Series.

Dimensional Table

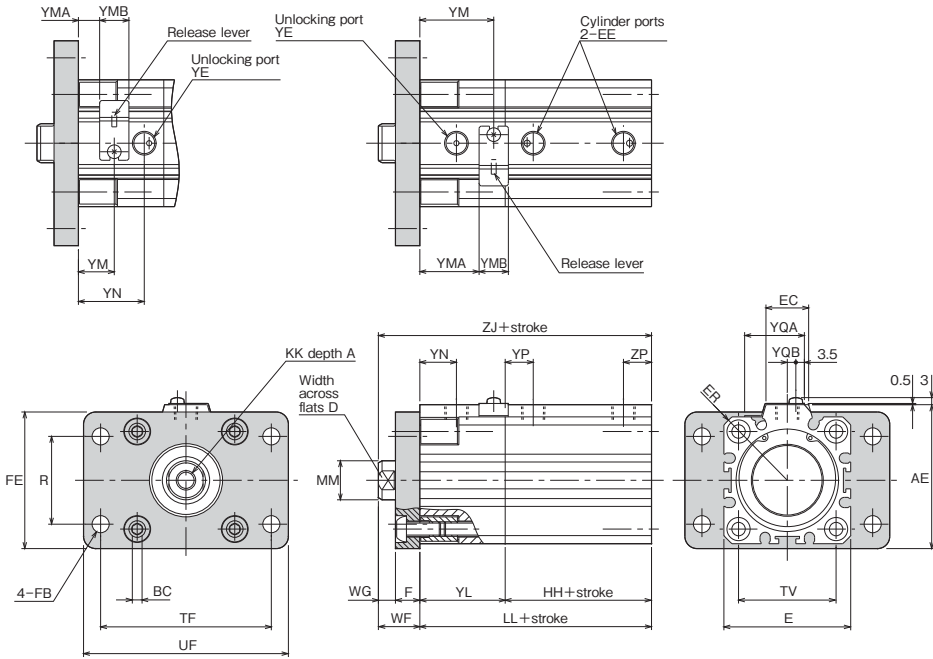
Symbol Stroke Bore	A	AE	AH	AO	AT	AU	BC	D	E	EB	EC	EE	ER	HH		KK	LL		MM	SA				
															5 to 10		Stroke of 101 or more			5 to 10	Stroke of 101 or more			
															101 or more					101 or more				
φ 32	13	55.5	28.5	7	3.2	15	4	14	4.5	4.5	15	Rc1/8	R30	38	43.5	M8×1.25	71.5	77	φ 16	101.5	107			
φ 40	13	63.5	32.5	7	3.2	15	4	14	5.2	5	17.5	Rc1/8	R34.5	44.5		M8×1.25	79.5		φ 16		109.5			
φ 50	15	77	38	9	3.2	18	5	17	6.4	7	19	Rc1/4	R42.5	45.5		M10×1.5	84.5		φ 20		120.5			
φ 63	15	90	44.5	11	3.2	20	6	17	7.7	7	19	Rc1/4	R51	51		M10×1.5	95.5		φ 20		135.5			

Symbol Stroke Bore	SB	TR	UA	WF	XA		YE	YL	YM		YMA		YMB	YN		YP	YQA	YQB	ZA		ZP	
					5 to 100st	Stroke of 101 or more			10S-6 REC1	10S-6 REC2	10S-6 REC1	10S-6 REC2		10S-6 REC1	10S-6 REC2				5 to 100st	Stroke of 101 or more	5 to 100st	Stroke of 101 or more
φ 32	φ 6.6	34	45	7	93.5	99	Rc1/8	33.5	29.5	12.4	20.5	7.4	14	12	25.5	11	17.5	0	100.5	106	8	11
φ 40	φ 6.6	40	53	7	101.5		Rc1/8	35	30.3	14.7	24.3	8.7	12	15	27	11.5	24.5	3.5	108.5			11.5
φ 50	φ 9	50	64	8	110.5		Rc1/4	39	33	15.7	26	8.7	14	15	30	12	26.5	4.5	119.5			12
φ 63	φ 11	60	77	8	123.5		Rc1/4	44.5	37	16.2	28.5	7.7	17	15.5	34	14.5	29.5	3.5	134.5			14.5

10S-6REC/TAS6REC Locking direction Bore CAD/DATA is available.

FA

Standard type/Locking in rod advancing direction	10S-6REC1	FA	Bore	N	Standard stroke				
Standard type/Locking in rod retracting direction	10S-6REC2	FA	Bore	N	Standard stroke				
Switch Set/Locking in rod advancing direction	10S-6REC1	FA	Bore	N	Standard stroke	-	Sensor symbol	Sensor quantity	
Switch Set/Locking in rod retracting direction	10S-6REC2	FA	Bore	N	Standard stroke	-	Sensor symbol	Sensor quantity	



Note) For the sensor mounting position and other details, see 10S-6RE Series.

Dimensional Table

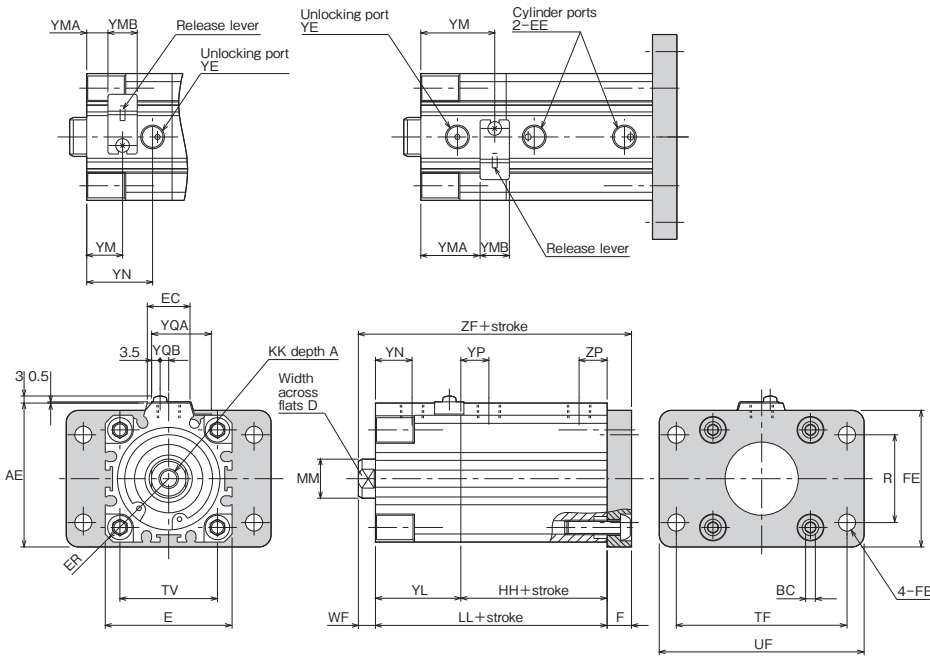
Symbol Stroke Bore	A	AE	BC	D	E	EC	EE	ER	F	FB	FE	HH		KK	LL		MM	R	TF	TV
												5 to 100st	Stroke of 101 or more		5 to 100st	Stroke of 101 or more				
φ 32	13	51	4	14	□45	15	Rc1/8	R30	8	φ 7	48	38	43.5	M8×1.25	71.5	77	φ 16	33	58	□34
φ 40	13	59	4	14	□52	17.5	Rc1/8	R34.5	10	φ 7	56		44.5	M8×1.25		79.5	φ 16	36	70	□40
φ 50	15	74	5	17	□64	19	Rc1/4	R42.5	10	φ 9	70		45.5	M10×1.5		84.5	φ 20	47	86	□50
φ 63	15	87.5	6	17	□77	19	Rc1/4	R51	10	φ 9	84		51	M10×1.5		95.5	φ 20	56	98	□60

Symbol Stroke Bore	UF	WF	WG	YE	YL	YM		YMA	YMB	YN		YP	YQA	YQB	ZJ		ZF		ZP
						10S-6 REC1	10S-6 REC2			10S-6 REC1	10S-6 REC2				5 to 100st	Stroke of 101 or more	5 to 100st	Stroke of 101 or more	
φ 32	72	15	7	Rc1/8	33.5	29.5	12.4	20.5	7.4	14	12	25.5	11	17.5	0	86.5	92	8	11
φ 40	84	17	7	Rc1/8	35	30.3	14.7	24.3	8.7	12	15	27	11.5	24.5	3.5		96.5		11.5
φ 50	104	18	8	Rc1/4	39	33	15.7	26	8.7	14	15	30	12	26.5	4.5		102.5		12
φ 63	116	18	8	Rc1/4	44.5	37	16.2	28.5	7.7	17	15.5	34	14.5	29.5	3.5		113.5		14.5

10S-6REC/TAS6REC Locking direction Bore CAD/DATA is available.

FB

Standard type/Locking in rod advancing direction	10S-6REC1	FB	Bore	N	Standard stroke				
Standard type/Locking in rod retracting direction	10S-6REC2	FB	Bore	N	Standard stroke				
Switch Set/Locking in rod advancing direction	10S-6REC1	FB	Bore	N	Standard stroke	-	Sensor symbol	Sensor quantity	
Switch Set/Locking in rod retracting direction	10S-6REC2	FB	Bore	N	Standard stroke	-	Sensor symbol	Sensor quantity	



Note) For the sensor mounting position and other details, see 10S-6RE Series.

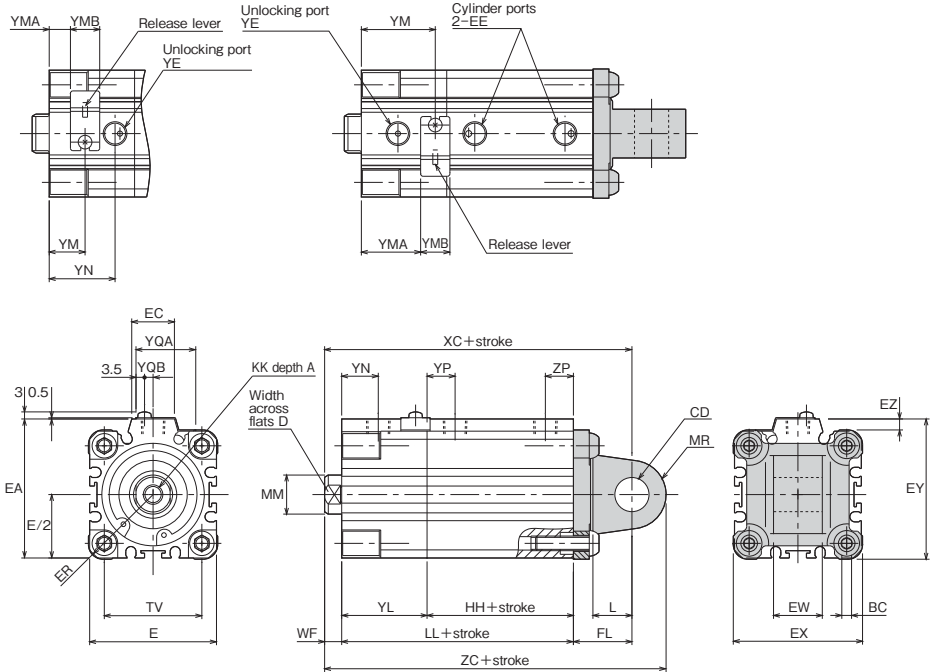
Dimensional Table

Symbol Stroke Bore	A	AE	BC	D	E	EC	EE	ER	F	FB	FE	HH		KK	LL		MM	R	TF
	5 to 100st		Stroke of 101 or more		5 to 100st		Stroke of 101 or more												
φ 32	13	51	4	14	□45	15	Rc1/8	R30	8	φ 7	48	38	43.5	M8×1.25	71.5	77	φ 16	33	58
φ 40	13	59	4	14	□52	17.5	Rc1/8	R34.5	10	φ 7	56	44.5		M8×1.25	79.5		φ 16	36	70
φ 50	15	74	5	17	□64	19	Rc1/4	R42.5	10	φ 9	70	45.5		M10×1.5	84.5		φ 20	47	86
φ 63	15	87.5	6	17	□77	19	Rc1/4	R51	10	φ 9	84	51		M10×1.5	95.5		φ 20	56	98

Symbol Stroke Bore	TV	UF	WF	YE	YL	YM		YMA		YMB	YN		YP	YQA	YQB	ZF		ZP	
	10S-6 REC1	10S-6 REC2	10S-6 REC1	10S-6 REC2	5 to 100st	Stroke of 101 or more	5 to 100st	Stroke of 101 or more											
φ 32	□34	72	7	Rc1/8	33.5	29.5	12.4	20.5	7.4	14	12	25.5	11	17.5	0	86.5	92	8	11
φ 40	□40	84	7	Rc1/8	35	30.3	14.7	24.3	8.7	12	15	27	11.5	24.5	3.5	96.5		11.5	
φ 50	□50	104	8	Rc1/4	39	33	15.7	26	8.7	14	15	30	12	26.5	4.5	102.5		12	
φ 63	□60	116	8	Rc1/4	44.5	37	16.2	28.5	7.7	17	15.5	34	14.5	29.5	3.5	113.5		14.5	

CA

Standard type/Locking in rod advancing direction	10S-6REC1	CA	Bore	N	Standard stroke				
Standard type/Locking in rod retracting direction	10S-6REC2	CA	Bore	N	Standard stroke				
Switch Set/Locking in rod advancing direction	10S-6REC1	CA	Bore	N	Standard stroke	-	Sensor symbol	Sensor quantity	
Switch Set/Locking in rod retracting direction	10S-6REC2	CA	Bore	N	Standard stroke	-	Sensor symbol	Sensor quantity	



Note) For the sensor mounting position and other details, see 10S-6RE Series.

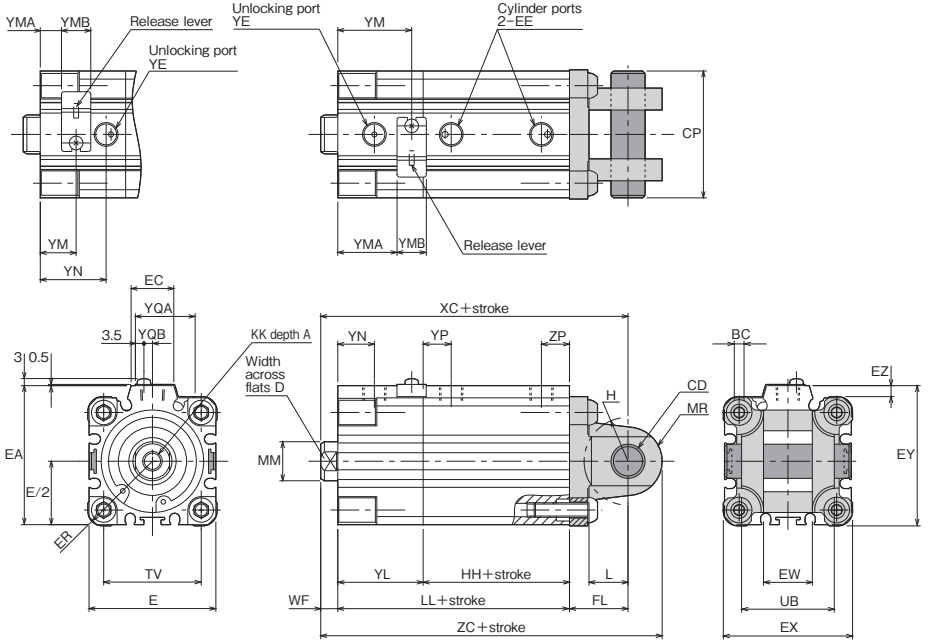
Dimensional Table

Symbol Stroke Bore	A	BC	CD	D	E	EA	EC	EE	ER	EX	EY	EZ	EW	FL	HH		KK	L	LL		MM
															5 to 100st	Stroke of 101 or more			5 to 100st	Stroke of 101 or more	
φ 32	13	4	φ 12H/8	14	□45	49.5	15	Rc1/8	R30	□45	49.5	4.5	16 ^{+0.070} _{-0.070}	24	38	43.5	M8×1.25	16.5	71.5	77	φ 16
φ 40	13	4	φ 14H/8	14	□52	57	17.5	Rc1/8	R34.5	□53	57.5	4.5	20 ^{+0.084} _{-0.084}	24	44.5		M8×1.25	16	79.5		φ 16
φ 50	15	5	φ 14H/8	17	□64	71	19	Rc1/4	R42.5	□64	71	7	20 ^{+0.084} _{-0.084}	24	45.5		M10×1.5	16	84.5		φ 20
φ 63	15	6	φ 14H/8	17	□77	84	19	Rc1/4	R51	□77	84	7	20 ^{+0.084} _{-0.084}	24	51		M10×1.5	16	95.5		φ 20

Symbol Stroke Bore	MR	TV	WF	XC		YE	YL	YM		YMA		YMB	YN		YP	YQA	YQB	ZC		ZP	
				5 to 100st	Stroke of 101 or more			10S-6 REC1	10S-6 REC2	10S-6 REC1	10S-6 REC2		10S-6 REC1	10S-6 REC2				5 to 100st	Stroke of 101 or more	5 to 100st	Stroke of 101 or more
φ 32	R12	□34	7	102.5	108	Rc1/8	33.5	29.5	12.4	20.5	7.4	14	12	25.5	11	17.5	0	114.5	120	8	11
φ 40	R14	□40	7	110.5		Rc1/8	35	30.3	14.7	24.3	8.7	12	15	27	11.5	24.5	3.5	124.5		11.5	
φ 50	R14	□50	8	116.5		Rc1/4	39	33	15.7	26	8.7	14	15	30	12	26.5	4.5	130.5		12	
φ 63	R14	□60	8	127.5		Rc1/4	44.5	37	16.2	28.5	7.7	17	15.5	34	14.5	29.5	3.5	141.5		14.5	

CB

Standard type/Locking in rod advancing direction	10S-6REC1	CB	Bore	N	Standard stroke				
Standard type/Locking in rod retracting direction	10S-6REC2	CB	Bore	N	Standard stroke				
Switch Set/Locking in rod advancing direction	10S-6REC1	CB	Bore	N	Standard stroke	-	Sensor symbol	Sensor quantity	
Switch Set/Locking in rod retracting direction	10S-6REC2	CB	Bore	N	Standard stroke	-	Sensor symbol	Sensor quantity	



Note) For the sensor mounting position and other details, see 10S-6RE Series.

Dimensional Table

Symbol Stroke Bore	A	BC	CD	CP	D	E	EA	EC	EE	ER	EX	EY	EZ	EW	FL	H	HH		KK	L	LL	
																	5 to 100s	Stroke of 101 or more			5 to 100s	Stroke of 101 or more
φ 32	13	4	φ 12H/8	45	14	□45	49.5	15	Rc1/8	R30	□45	49.5	4.5	16 ^{+0.010} _{-0.010}	24	R16.5	38	43.5	M8×1.25	16.5	71.5	77
φ 40	13	4	φ 14H/8	52	14	□52	57	17.5	Rc1/8	R34.5	□53	57.5	4.5	20 ^{+0.084} _{-0.084}	24	R18	44.5		M8×1.25	16		79.5
φ 50	15	5	φ 14H/8	63	17	□64	71	19	Rc1/4	R42.5	□64	71	7	20 ^{+0.084} _{-0.084}	24	R21	45.5		M10×1.5	16		84.5
φ 63	15	6	φ 14H/8	66	17	□77	84	19	Rc1/4	R51	□77	84	7	20 ^{+0.084} _{-0.084}	24	R22	51		M10×1.5	16		95.5

Symbol Stroke Bore	MM	MR	TV	UB	WF	XC		YE	YL	YM		YMA		YMB	YN		YP	YQA	YQB	ZC		ZP	
						5 to 100s	Stroke of 101 or more			10S-6 REC1	10S-6 REC2	10S-6 REC1	10S-6 REC2		10S-6 REC1	10S-6 REC2				5 to 100s	Stroke of 101 or more	5 to 100s	Stroke of 101 or more
φ 32	φ 16	R12	□34	31	7	102.5	108	Rc1/8	33.5	29.5	12.4	20.5	7.4	14	12	25.5	11	17.5	0	114.5	120	8	11
φ 40	φ 16	R14	□40	38	7	110.5		Rc1/8	35	30.3	14.7	24.3	8.7	12	15	27	11.5	24.5	3.5	124.5		11.5	
φ 50	φ 20	R14	□50	49	8	116.5		Rc1/4	39	33	15.7	26	8.7	14	15	30	12	26.5	4.5	130.5		12	
φ 63	φ 20	R14	□60	52	8	127.5		Rc1/4	44.5	37	16.2	28.5	7.7	17	15.5	34	14.5	29.5	3.5	141.5		14.5	

10S-6REC

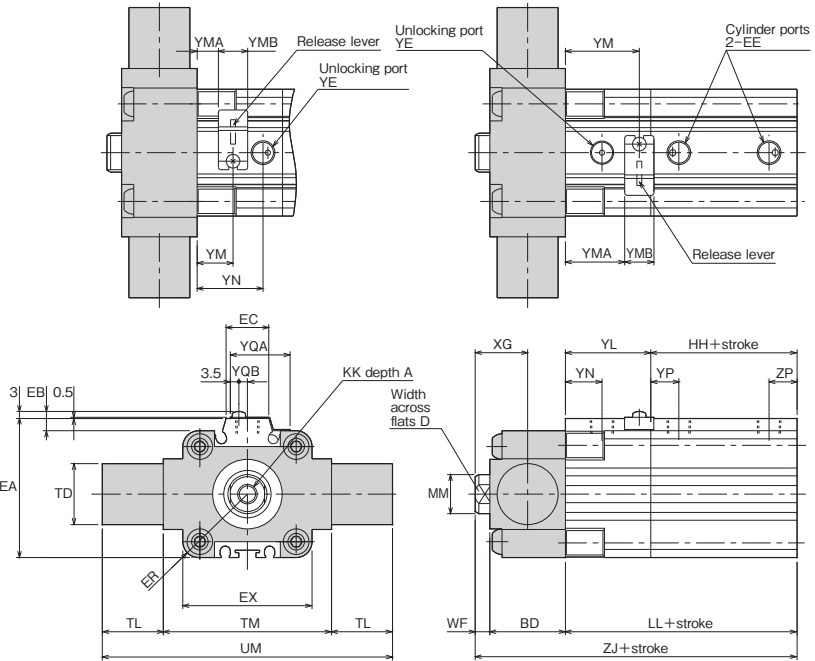
Position-free One-way Locking Cylinder (for Long Strokes)

Unit: mm

10S-6REC/TAS6REC Locking direction Bore CAD/DATA is available.

TA

Standard type/Locking in rod advancing direction	10S-6REC1	TA	Bore	N	Standard stroke				
Standard type/Locking in rod retracting direction	10S-6REC2	TA	Bore	N	Standard stroke				
Switch Set/Locking in rod advancing direction	10S-6REC1	TA	Bore	N	Standard stroke	-	Sensor symbol	Sensor quantity	
Switch Set/Locking in rod retracting direction	10S-6REC2	TA	Bore	N	Standard stroke	-	Sensor symbol	Sensor quantity	



Note) For the sensor mounting position and other details, see 10S-6RE Series.

Dimensional Table

Symbol Stroke Bore	A	BD	D	EA	EB	EC	EE	ER	EX	HH		KK	LL		MM	TD	TL	TM	UM
										5 to 100st	Stroke of 101 or more		5 to 100st	Stroke of 101 or more					
φ 32	13	21	14	49.5	4.5	15	Rc1/8	R30	45	38	43.5	M8×1.25	71.5	77	φ 16	φ 16e9	16	57	89
φ 40	13	31	14	57	5	17.5	Rc1/8	R34.5	53	44.5	M8×1.25	79.5	φ 16	φ 25e9	25	69	119		
φ 50	15	31	17	71	7	19	Rc1/4	R42.5	64	45.5	M10×1.5	84.5	φ 20	φ 25e9	25	80	130		
φ 63	15	31	17	84	7	19	Rc1/4	R51	77	51	M10×1.5	95.5	φ 20	φ 25e9	25	95	145		

Symbol Stroke Bore	WF	XG	YE	YL	YM		YMA		YMB	YN		YP	YQA	YQB	ZJ		ZP	
					10S-6 REC1	10S-6 REC2	10S-6 REC1	10S-6 REC2		10S-6 REC1	10S-6 REC2				5 to 100st	Stroke of 101 or more	5 to 100st	Stroke of 101 or more
φ 32	6	16.5	Rc1/8	33.5	29.5	12.4	20.5	7.4	14	12	25.5	11	17.5	0	98.5	104	8	11
φ 40	6	21.5	Rc1/8	35	30.3	14.7	24.3	8.7	12	15	27	11.5	24.5	3.5	116.5		11.5	
φ 50	7	22.5	Rc1/4	39	33	15.7	26	8.7	14	15	30	12	26.5	4.5	122.5		12	
φ 63	7	22.5	Rc1/4	44.5	37	16.2	28.5	7.7	17	15.5	34	14.5	29.5	3.5	133.5		14.5	

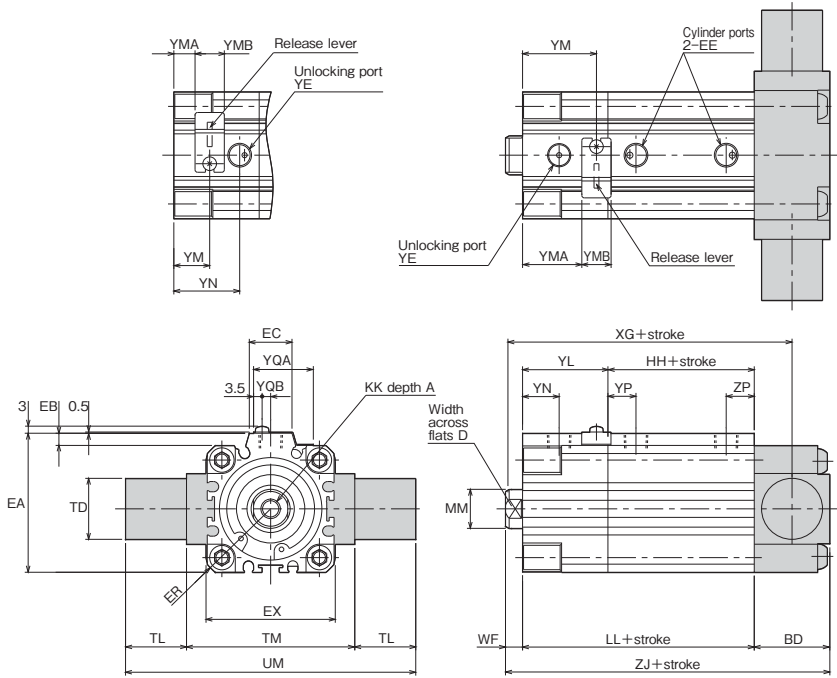
Position-free One-way Locking Cylinder (for Long Strokes)

Unit: mm

10S-6REC/TAS6REC Locking direction Bore CAD/DATA is available.

TB

Standard type/Locking in rod advancing direction	10S-6REC1	TB	Bore	N	Standard stroke				
Standard type/Locking in rod retracting direction	10S-6REC2	TB	Bore	N	Standard stroke				
Switch Set/Locking in rod advancing direction	10S-6REC1	TB	Bore	N	Standard stroke	-	Sensor symbol	Sensor quantity	
Switch Set/Locking in rod retracting direction	10S-6REC2	TB	Bore	N	Standard stroke	-	Sensor symbol	Sensor quantity	



Note) For the sensor mounting position and other details, see 10S-6RE Series.

Dimensional Table

Symbol Stroke Bore	A	BD	D	EA	EB	EC	EE	ER	EX	HH		KK	LL		MM	TD	TL	TM	UM	WF
										5 to 100st	Stroke of 101 or more		5 to 100st	Stroke of 101 or more						
φ 32	13	21	14	49.5	4.5	15	Rc1/8	R30	45	38	43.5	M8×1.25	71.5	77	φ 16	φ 16e9	16	57	89	7
φ 40	13	31	14	57	5	17.5	Rc1/8	R34.5	53		44.5	M8×1.25	79.5		φ 16	φ 25e9	25	69	119	7
φ 50	15	31	17	71	7	19	Rc1/4	R42.5	64		45.5	M10×1.5	84.5		φ 20	φ 25e9	25	80	130	8
φ 63	15	31	17	84	7	19	Rc1/4	R51	77		51	M10×1.5	95.5		φ 20	φ 25e9	25	95	145	8

Symbol Stroke Bore	XG		YE	YL	YM		YMA		YMB	YN		YP	YQA	YQB	ZJ		ZP	
	5 to 100st	Stroke of 101 or more			10S-6 REC1	10S-6 REC2	10S-6 REC1	10S-6 REC2		10S-6 REC1	10S-6 REC2				5 to 100st	Stroke of 101 or more	5 to 100st	Stroke of 101 or more
φ 32	89	94.5	Rc1/8	33.5	29.5	12.4	20.5	7.4	14	12	25.5	11	17.5	0	99.5	105	8	11
φ 40	102		Rc1/8	35	30.3	14.7	24.3	8.7	12	15	27	11.5	24.5	3.5	117.5		11.5	
φ 50	108		Rc1/4	39	33	15.7	26	8.7	14	15	30	12	26.5	4.5	123.5		12	
φ 63	119		Rc1/4	44.5	37	16.2	28.5	7.7	17	15.5	34	14.5	29.5	3.5	134.5		14.5	

Thin type flat cylinder is ideal for use at narrow space, because of small width body by oval piston

- Ellipsoidal shape of piston prevents rotation and enables space-saving design.
- Use of scraper is for high durability even in dusty environment.
- Two piping ports in cap cover is flexible for piping location.
- Sensors can be added, because of magnet built-in.
- Various mounting methods to meet various purposes of use (Rod/end have 10 tapped mounting holes in all.)



Cylinder specifications

Type	Standard type, Switch Set		
Series variations	Double acting type		
Cylinder bore (mm)	φ 25 or equivalent	φ 32 or equivalent	φ 50 or equivalent
Standard stroke (mm)	25 · 50 · 75 · 100		25 · 50 · 75 · 100 · 150 · 200
Working fluid	Air		
Lubrication	Unnecessary (But possible)		
Working pressure range	0.1 to 1 MPa		
Proof test pressure	1.5 MPa		
Working speed range	50 to 500mm/s		
Working temperature range	-10 to +60°C (no freezing)		
Structure of cushioning	With cushion pads at both ends		Both ends cushioned
Cushion stroke	—		12mm
Tolerance for thread	JIS 6g/6H		
Tolerance of stroke	$+1.0$ 0 mm		
Allowable rotation torque	1N · m	1.6N · m	4N · m
Backlash accuracy	±1.0°	±0.8°	±0.5°

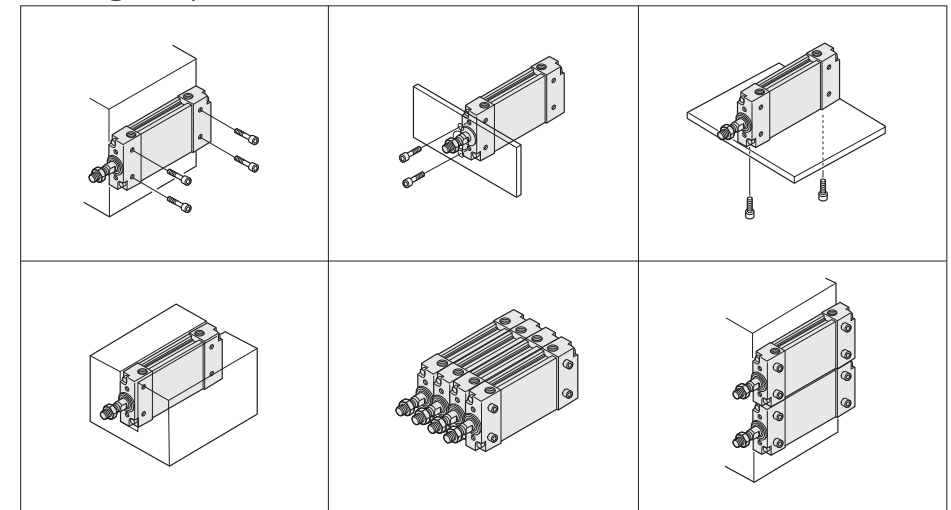
Product lineup

Unit: mm

Series Variations		Type	φ25	φ32	φ50
Standard	Double acting single rod 10F-1	Standard type	●	●	●
		Switch Set	●	●	●

Mounting examples

● A variety of mounting is available even without mounting bracket.



Weight table

Unit: g

Bore (mm)	Basic weight	Additional weight per mm of stroke	Sensor additional weight	
			KR type	
			Cord length 1.5m	Cord length 5m
φ 25 or equivalent	289	2.22	30	70
φ 32 or equivalent	458	3.44		
φ 50 or equivalent	1556	7.91		

Calculation formula

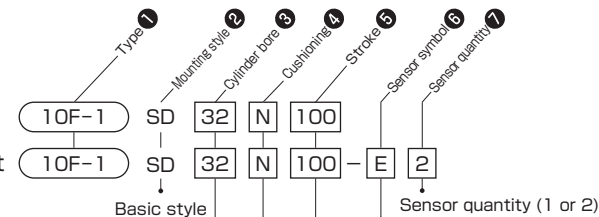
Cylinder weight (g)=Basic weight+(Cylinder stroke (mm)×Additional weight per mm of stroke)+(Sensor additional weight×Sensor quantity)

Calculation example

Double acting single rod, Cylinder bore φ32, Cylinder stroke 100 mm, 2 pcs of KR105 (cord length 1.5m).
 $458 + (3.44 \times 100) + (30 \times 2) = 862\text{g}$

How to order

- Standard type
- Switch Set



Basic style
Cylinder bore (mm)
φ25, φ32, φ50 (equivalent)

Sensor quantity (1 or 2)

Sensor symbol
Note) Select the applicable sensor from the following list.

- [N] With cushion pads at both ends (φ25, φ32 or equivalent)
- [B] Both ends cushioned (φ50 or equivalent)

- Notes on ordering Switch Set Cylinders**
- The cylinder will be supplied without the sensors mounted on the body.

Cylinder stroke (mm)

End lock nut part number

Bore	Part number
φ25	LNA-08B-A
φ32	LNA-12B-A
φ50	LNA-16B-A

Sensor list

Type	Sensor symbol	Load voltage range	Load current range	Max. switching capacity	Protective circuit	Indicating lamp	Wiring method	Cord length	Applicable load
Reed sensor	[E] KR101	DC: 50 V or less	DC: 40 mA or less	DC: 1.5W	None	LED (Lights in red when sensing)	0.3 mm ² , 2-core, external diameter φ3.4 mm Upper wiring	1.5m	Small relay programmable controller
	[F] KR105	AC: 120 V or less	AC: 20 mA or less	AC: 2VA				5m	

- Notes)
- When any induction load (relay or the like) is used for a sensor without a protective circuit, fit a protective circuit (SK-100) to the load without fail.
 - For handling of the sensors, see the sensor specifications at the end of this catalog.
 - When sensors are connected in series, it is recommended to use AND Unit (AU Series). For the details, see AND Unit at the end of this catalog.

- KR type sensor



Standard stroke range

Unit: mm

Bore \ Stroke	25	50	75	100	150	200	Stroke limit
φ25 or equivalent	○	○	○	○	—	—	100
φ32 or equivalent	○	○	○	○	—	—	100
φ50 or equivalent	○	○	○	○	○	○	200

For an intermediate stroke not listed above, consult us.

Sensor mountable minimum stroke

Unit: mm

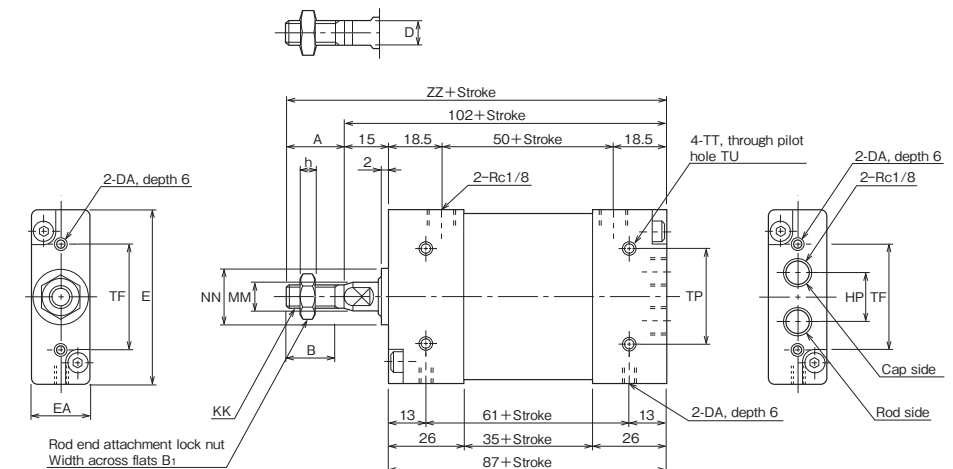
Bore \ Sensor quantity	Mounting of 1 sensor	Mounting of 2 sensors
φ25 or equivalent	10	25
φ32 or equivalent		
φ50 or equivalent		

Unit: mm

SD

φ25, φ32 or equivalent
10F-1 SD [Bore] N [Stroke]

10F-1/TAF1 [Bore] CAD/DATA is available.



Note) The direction of width across flats of piston rod end differs with the above drawings in some cases.

Dimensional table

Symbol	A	B	B ₁	D	DA	E	EA	HP	KK
Bore									
φ25 or equivalent	20	17	13	8	M5×0.8	60	20	15	M8×1.25
φ32 or equivalent	24	21	19	12	M6×1.0	70	25	20	M12×1.25

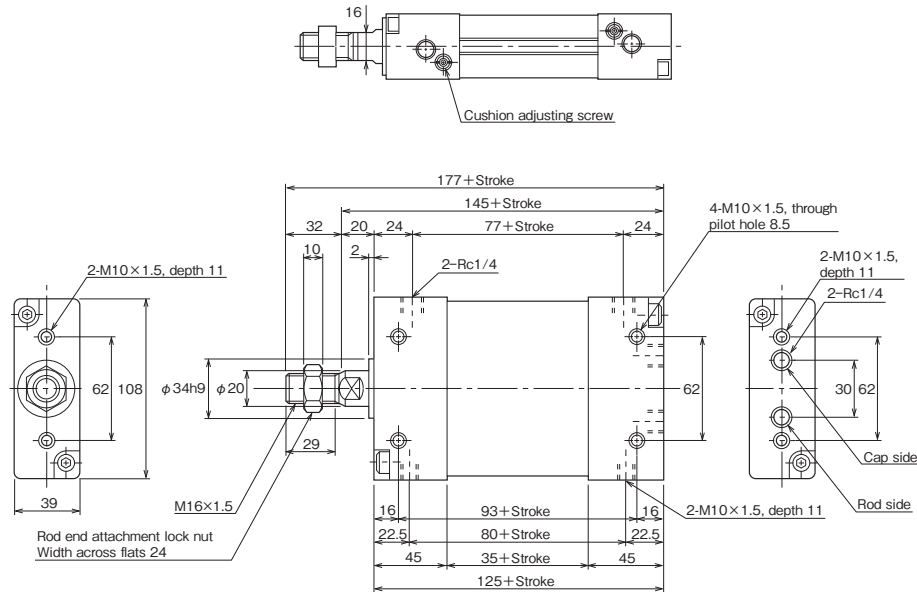
Symbol	MM	NN	TF	TP	TT	TU	ZZ	h
Bore								
φ25 or equivalent	φ10	φ19h9	36	33	M5×0.8	4.1	122	5
φ32 or equivalent	φ14	φ24h9	45	40	M6×1.0	5.0	126	7

10F-1/TAF1 Bore CAD/DATA
is available. 

SD

φ50 or equivalent

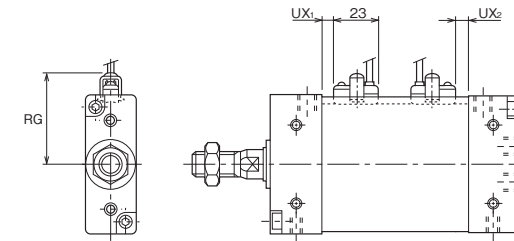
10F-1 SD 50 B Stroke



Note) The direction of width across flats of piston rod end differs with the above drawings in some cases.

Switch Set

10F-1 SD Bore N Stroke - Sensor symbol Sensor quantity



Dimensional table

Bore	RG	UX ₁	UX ₂
φ 25 or equivalent	42	6	6
φ 32 or equivalent	47	6	6
φ 50 or equivalent	65	6	6

Note) ● Dimension UX indicates the optimum sensor mounting position for detection of stroke end.

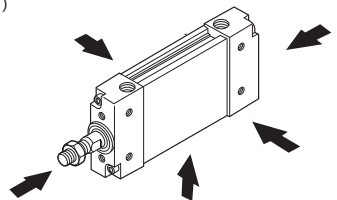
Operating range and hysteresis

Bore	Reed sensor	
	KR type	
	Operating range	Hysteresis
φ 25 or equivalent	8.5 to 10.5	2 or less
φ 32 or equivalent		
φ 50 or equivalent		

Precautions for use

- Since the cylinder cover has mounting holes in five directions, the cylinder can be mounted appropriately to the purpose of use. However, select an installation place with less vibration, and take care that undue force will not be applied to the cylinder. (Fig. 1)

(Fig. 1)

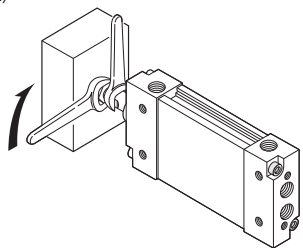


- When using any mounting hole in the cylinder, tighten the mounting bolt according to the torque shown in the following table.

Cylinder bore mm	Bolt size	Tightening torque (N·m)
φ 25 or equivalent	M5	2.2
φ 32 or equivalent	M6	3.7
φ 50 or equivalent	M10	18

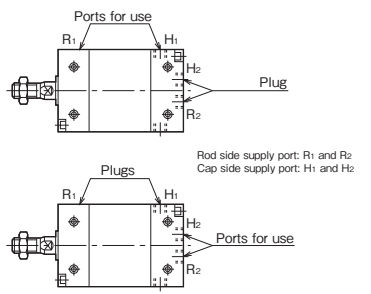
- When installing a load to the cylinder rod, secure it not to apply excessive torque to the rod. (Fig. 2)
- Keep the load to the piston rod applied in the axial direction while using the cylinder. Avoid applying a rotating torque to the rod. If a rotating torque is applied for unavoidable reasons of use, take care that the torque will not exceed the allowable rotating torque shown in the cylinder specification table.
- Align the loading direction and the rod, and check for alignment prior to use. It is desirable to mount the cylinder using a spherical bearing or a floating joint.

(Fig. 2)



Piping port position

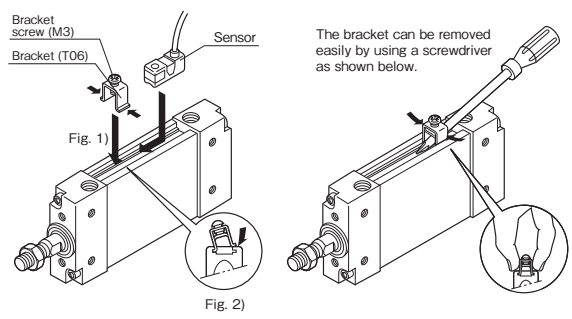
- The cylinder piping ports are shown in the following table. Connect a joint or a tube suitable to the port diameter securely using sealing tape. The cylinder has four ports in all, 2 ports on the cap side and 2 ports on the rod side.
- Use one of the two ports on each side, and plug the other port.
- To plug the unused ports, use the attached plugs (hexagon socket head taper screw plugs, one kind). If the sealing tape is wound excessively or sealing tape other than the specified one is used for plugging the ports, the plugs may not be set completely in the cover, and the cylinder cannot be mounted correctly.



Bore	Port diameter
φ 25 or equivalent	Rc 1/8
φ 32 or equivalent	Rc 1/8
φ 50 or equivalent	Rc 1/4

For the sensor connecting procedures, see the sensor specifications at the end of this catalog.

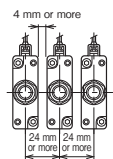
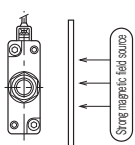
Setting method of sensor detecting position



1. Loosen the bracket screw (M3) for securing the sensor, and fit the bracket in the mounting groove. (Fig. 2)
2. Slide the sensor inward from the bracket end, and set the bracket on the center of the sensor. (Fig. 1)
3. Secure the sensor at the optimum position, and tighten the bracket screw. [Tightening torque: 0.4 N·m]
For the optimum setting position of the stroke end detecting sensor, see the cylinder dimensional drawing. Tighten the bracket screw to an appropriate tightening torque.
If the tightening torque is not appropriate, the sensor may be dislocated, or the sensor body may be damaged.
4. The lamp lights when the sensor is turned on.

Handling instructions

- Do not use the cylinder where metal cutting scraps or cutting oil may be spattered directly on the cylinder and sensor.
Note) Metal cutting scraps may break the cord, or cutting oil may enter the sensor and short-circuit the electric circuit, thereby causing sensor operation failure.
- In a place where there is a strong magnetic field around the cylinder, install an iron plate, etc. to provide a magnetic shield.
Note) The sensor may malfunction under the influence of the magnetic field.
- In case that multiple cylinders with bore φ 25 or equivalent are used in parallel position, please consult us. The sensors of any of the cylinders may detect the magnets of the adjacent cylinders and cause malfunction. When using some cylinders in parallel position, install them at a distance of 4 mm or more from one another.



Small-size compact design pneumatic cylinders with guide useful for space-saving design of equipment

- Small-size compact design pneumatic cylinders with guide having bores of 12 to 32 mm
- Selectable from 16 types of sensors according to the purpose of use
- Two sensor grooves are provided on each of front and rear sides of the cylinder body.
- Piping ports are on the front and side of the cylinder body. One of two piping directions can be selected.
- Since the cylinder body has through holes in the front, tapped holes in the bottom and two tapped holes differing in pitch width in the rear, it can be secured by various methods.



Cylinder Specifications

Model	10G-3
Type	Slide bearing/linear bush bearing
Cylinder bore (mm)	φ12·φ16·φ20·φ25·φ32
Working fluid	Air
Lubrication	Unnecessary
Working pressure range	0.1 to 1 MPa
Proof test pressure	1.5 MPa
Working speed range	50 to 500 mm/s
Working temperature range	+5 to +50°C
Structure of cushioning	With cushion pads (nitrile rubber) on both ends
Tolerance of stroke	φ12 to φ25: 0 to 1.5 mm, φ32: 0 to +2.0 mm
Piping connecting diameter	φ12·φ16: M5×0.8, φ20 to φ32: Rc1/8

Standard Stroke Range

Bore (mm)	Cylinder stroke (mm)											
	10	20	25	30	40	50	75	100	125	150	175	200
φ12	○	○	—	○	○	○	○	○	—	—	—	—
φ16	○	○	—	○	○	○	○	○	—	—	—	—
φ20	—	○	—	○	○	○	○	○	○	○	○	○
φ25	—	○	—	○	○	○	○	○	○	○	○	○
φ32	—	—	○	—	—	○	○	○	○	○	○	○

Product Lineup

Unit: mm

Series Variation		Type	φ12	φ16	φ20	φ25	φ32
Standard	Double acting type	Slide bearing 10G-3AM	●	●	●	●	●
		Linear bush bearing 10G-3AL	●	●	●	●	●

Theoretical Output Table

Unit: N

Bore mm		Pressure receiving area mm ²	Working pressure (MPa)					
			0.2	0.3	0.4	0.5	0.6	0.7
φ12	Extension side	113	22.6	33.9	45.2	56.5	67.8	79.1
	Retraction side	84	16.8	25.2	33.6	42	50.4	58.8
φ16	Extension side	201	40.2	60.3	80.4	100.5	120.6	140.7
	Retraction side	150	30	45	60	75	90	105
φ20	Extension side	314	62.8	94.2	125.6	157	188.4	219.8
	Retraction side	235	47	70.5	94	117.5	141	164.5
φ25	Extension side	490	98	147	196	245	294	343
	Retraction side	377	75.4	113.1	150.8	188.5	226.2	263.9
φ32	Extension side	804	160.8	241.2	321.6	402	482.4	562.8
	Retraction side	603	120.6	180.9	241.2	301.5	361.8	422.1

Weight Table

Unit: g

Type	Bore mm	Cylinder stroke (mm)												PD/PE sensor
		10	20	25	30	40	50	75	100	125	150	175	200	
Slide bearing	φ12	190	230	—	270	310	350	470	570	—	—	—	—	1:15 3:35
	φ16	270	330	—	380	440	490	660	800	—	—	—	—	
	φ20	—	540	—	630	710	800	1040	1250	1500	1710	1930	2140	
	φ25	—	780	—	900	1020	1140	1480	1780	2130	2420	2720	3010	
	φ32	—	—	1320	—	—	1750	2190	2620	3160	3590	4020	4450	
Linear bush bearing	φ12	180	220	—	260	320	350	450	540	—	—	—	—	
	φ16	270	320	—	370	470	520	650	780	—	—	—	—	
	φ20	—	550	—	630	800	880	1080	1280	1550	1750	1950	2150	
	φ25	—	790	—	900	1150	1260	1530	1800	2140	2410	2680	2950	
	φ32	—	—	1280	—	—	1670	2300	2690	3170	3550	3940	4330	

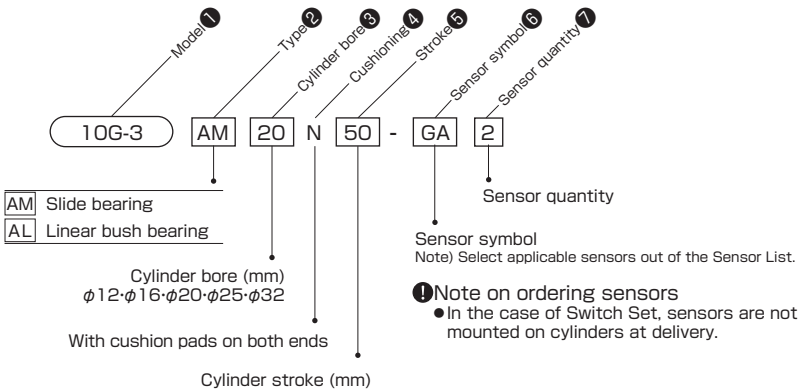
• "1" and "3" shown in the sensor additional weight column are cord lengths. (1: 1 m 3: 3 m)

Calculation formula Cylinder weight (g)=basic weight+(sensor weight×sensor quantity)

Calculation example 10G-3, slide bearing, bore φ20, cylinder stroke 50 mm, 2 pcs of PD11L1 (cord length 1 m)
800+ (15×2) =830g

● How to order

Standard



Standard Stroke Range

Bore mm	Cylinder stroke (mm)											
	10	20	25	30	40	50	75	100	125	150	175	200
φ12	○	○	—	○	○	○	○	○	—	—	—	—
φ16	○	○	—	○	○	○	○	○	—	—	—	—
φ20	—	○	—	○	○	○	○	○	○	○	○	○
φ25	—	○	—	○	○	○	○	○	○	○	○	○
φ32	—	—	○	—	—	○	○	○	○	○	○	○

Sensor List

Type	Sensor symbol	Load voltage range	Load current range	Protective circuit	Indicating lamp	Wiring method	Cord length	Applicable load
Reed sensor	 PD12L1	24 V DC 110 V AC	DC: 2.5 to 40 mA AC: 2.5 to 20 mA	None	None	0.2 mm ² , 2-core, outer dia. φ2.6 mm, rear wiring	1 m	Small relay, programmable controller
	 PD12L3					3 m		
	 PD11L1		DC: 5 to 40 mA AC: 5 to 20 mA		LED (Lights when sensing)	0.2 mm ² , 2-core, outer dia. φ2.6 mm, rear wiring	1 m	
	 PD11L3					3 m		
	 PD32L1		DC: 2.5 to 40 mA AC: 2.5 to 20 mA		None	0.2 mm ² , 2-core, outer dia. φ2.6 mm, upper wiring	1 m	
	 PD32L3					3 m		
	 PD31L1		DC: 5 to 40 mA AC: 5 to 20 mA		LED (Lights when sensing)	0.2 mm ² , 2-core, outer dia. φ2.6 mm, upper wiring	1 m	
	 PD31L3					3 m		
Solid state sensor	 PD14L1	10 to 28 V DC	5 to 20 mA	Provided	LED (Lights when sensing)	0.2 mm ² , 2-core, outer dia. φ2.6 mm, rear wiring	1 m	Small relay, programmable controller
	 PD14L3		3 m					
	 PD13L1	28 V DC or less	5 to 20 mA			0.15 mm ² , 3-core, outer dia. φ2.6 mm, rear wiring	1 m	
	 PD13L3						3 m	
	 PE34L1	10 to 28 V DC	0.1 to 40 mA			0.2 mm ² , 2-core, outer dia. φ2.6 mm, upper wiring	1 m	
	 PE34L3					3 m		
	 PE33L1	28 V DC or less	0.1 to 40 mA			0.15 mm ² , 3-core, outer dia. φ2.6 mm, upper wiring	1 m	
	 PE33L3						3 m	

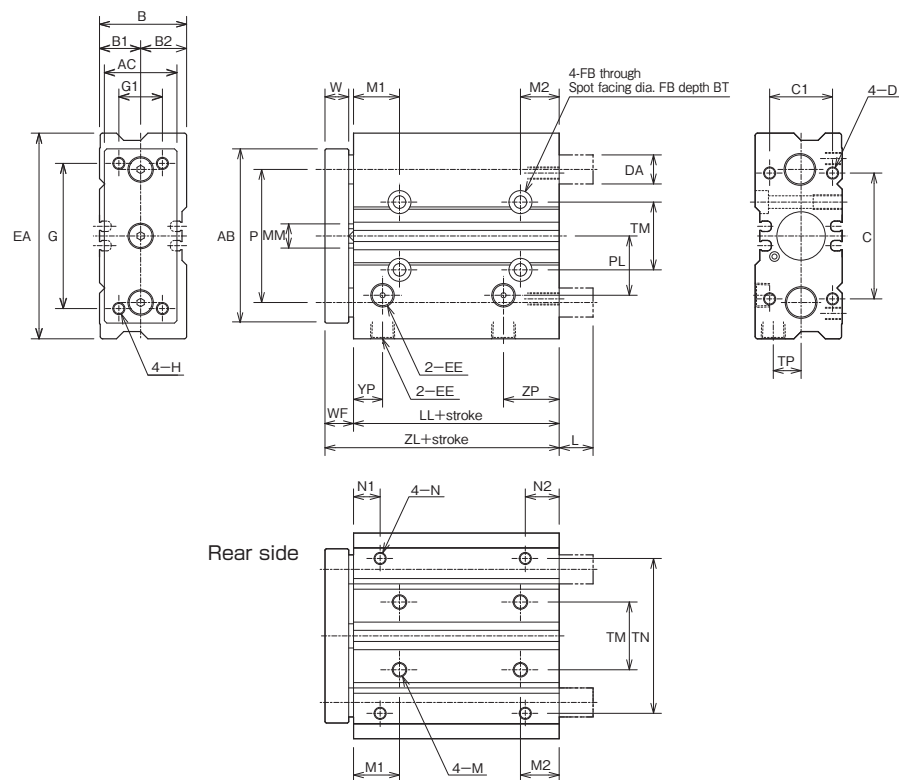
- Notes) ● For the sensors without a protective circuit, be sure to provide a protective circuit (SK-100) with the load when using any induction load (relay, etc.).
- For handling of sensors, be sure to see the sensor specifications at the end of this catalog.
- We recommend AND Unit (AU series) for multiple sensors connected in series.
- For details, refer to AND Unit at the end of this catalog.

● PD/PE type sensor

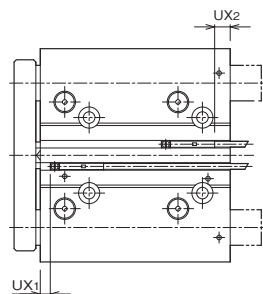


AM (Slide bearing)

AL (Linear bush bearing)



Switch Set



10G-3/TAG3 **Bore** CAD/DATA is available.



Dimensional Table

Symbol Bore	AB	AC	B	B1	B2	BT	C	C1	D	DA		EA	EE	FB	FG	G	G1	H
										Slide bearing	Linear bush bearing							
φ12	56	22	26	13	13	4.5	40	18	M4×0.7 Depth 9	8	6	58	M5×0.8	φ4.3	φ8	48	14	M4×0.7
φ16	62	25	30	15	15	4.5	42	22	M5×0.8 Depth 11	10	8	64	M5×0.8	φ4.3	φ8	52	16	M5×0.8
φ20	72	30	36	17	19	5.5	52	26	M5×0.8 Depth 13	12	10	85	Rc1/8	φ5.2	φ9.5	60	18	M5×0.8
φ25	86	38	42	21	21	5.5	62	32	M6×1 Depth 15	16	13	96	Rc1/8	φ5.2	φ9.5	70	26	M6×1.0
φ32	112	48	51	26	25	6.5	80	38	M8×1.25 Depth 18	20	16	116	Rc1/8	φ6.8	φ11	96	30	M8×1.25

Symbol Stroke	L																							
	Slide bearing												Linear bush bearing											
Bore	10	20	25	30	40	50	75	100	125	150	175	200	10	20	25	30	40	50	75	100	125	150	175	200
φ12	0	0	—	0	0	0	18	18	—	—	—	—	0	0	—	0	14	14	14	14	—	—	—	—
φ16	0	0	—	0	0	0	21	21	—	—	—	—	0	0	—	0	21	21	21	21	—	—	—	—
φ20	—	0	—	0	0	0	14	14	31	31	31	31	—	0	—	0	27	27	27	27	50	50	50	50
φ25	—	0	—	0	0	0	14	14	31	31	31	31	—	2	—	2	35	35	35	35	50	50	50	50
φ32	—	—	20	—	—	20	20	20	42	42	42	42	—	—	8	—	—	8	42	42	55	55	55	55

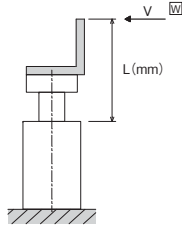
Symbol	LL	M	M1	M2	MM	N	N1	N2	P	PL	TM	TN	TP	W	WF	YP	ZL	ZP
Bore																		
φ12	29	M5×0.8 Depth 10	5	20	φ6	M4×0.7 Depth 7	12	12	41.5	19.5	23	50	8.5	8	10	11	39	15
φ16	31	M5×0.8 Depth 10	5	22	φ8	M5×0.8 Depth 7	11	13	46	23	24	54	10	10	12	11	43	17
φ20	35	M6×1 Depth 12	19	16	φ10	M5×0.8 Depth 7	11	14	55	24.5	28	64	11.5	10	12	12	47	23
φ25	35.5	M6×1 Depth 12	22	12.5	φ12	M6×1 Depth 9	12	13.5	65	24	34	76	13.5	10	12	11	47.5	23.5
φ32	33.5	M8×1.25 Depth 16	22	14.5	φ16	M8×1.25 Depth 11	12	16.5	80	31	42	100	16	12	14	11.5	47.5	25

Dimensional Table

Symbol Bore	Reed sensor		Solid state sensor			
	UX ₁	UX ₂	PD1 * L *		PE3 * L *	
			UX ₁	UX ₂	UX ₁	UX ₂
φ12	0	6	5	0	4	10
φ16	3	4	9	0	8	8
φ20	5	6	11	0	10	10
φ25	4.5	7	10.5	1	9.5	11
φ32	2.5	7	8.5	1	7.5	11

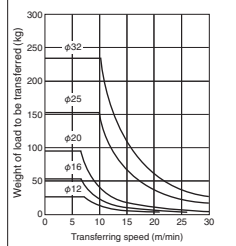
Note) Dimension UX indicates the optimum sensor mounting position for detection of stroke end.

Allowable capacity when used as stopper



- ① The "Allowable Stopper Capacity" chart shows the capacities of 10G-3AM with bores of 12 to 25 mm above a link bar of stroke of 30 mm and that with a bore of 32 mm above a link bar of stroke of 25 mm.
- ② When a plate is fitted to the link bar or when the cylinder is used with a stroke more than the above value, convert the capacity as stated in the following table.
- ③ To ascertain whether or not the cylinder can be lowered when it stops a load to be transferred, see the "Working Traverse Loading" chart.
- ④ The linear bush bearing type cylinders cannot be used as stoppers.

Allowable Stopper Capacity



Note) Capacity chart of 10G-3AM with bores of 12 to 25 mm above link bar of stroke of 30 mm and that with a bore of 32 mm above link bar of stroke of 25 mm

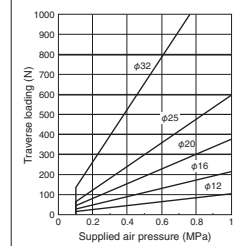
$$W(\text{kg}) = \text{Weight of load to be transferred} \times \frac{L}{k}$$

Conversion Coefficient Table (k: coefficient)

Cylinder bore (mm)	φ12	φ16	φ20	φ25	φ32
k	40	42	42	42	44

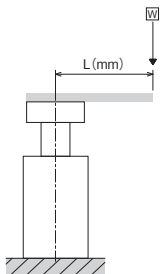
- Notes) ● The weight of load to be transferred is the value obtained from the "Allowable Stopper Capacity" chart shown left.
● Dimension L is the distance from the cylinder body upper surface to the plate front edge in the state where the cylinder has risen.

Working Traverse Loading



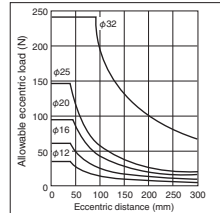
Note) The working traverse loading values are theoretical values. Select a type based on the value corresponding to 70% of the value shown in the above chart.

Allowable eccentric load when used as lifter

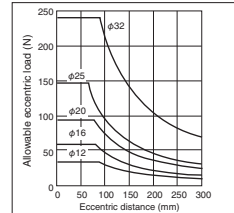


The following charts indicate dynamic allowable values of eccentricity of L (mm) from the guide rod center.
If the eccentric loading direction turns 90° from the direction shown left (Fig. 1), the allowable value is 50% of the value shown in the following chart.

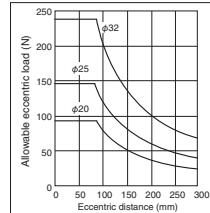
Allowable Eccentric Load Slide bearing (10G-3AM)



φ12, 16: 10 to 50st
φ20, 25: 20 to 50st
φ32: 25-50st

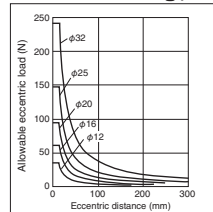


75st, 100st

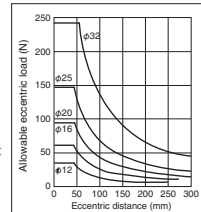


125 to 200st

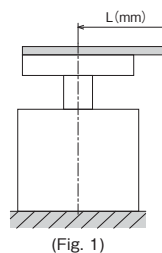
Linear bush bearing (10G-3AL)



φ12, 16: 10 to 30st
φ20, 25: 20-30st
φ30: 25, 50st

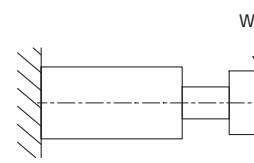


φ12, 16: 40 to 100st
φ20, 25: 40-200st
φ30: 75 to 200st



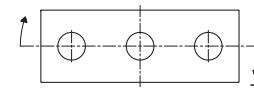
(Fig. 1)

Allowable traverse loading



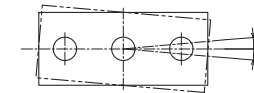
Dynamic allowable value to move the cylinder with traverse loading W (load perpendicular to the guide rod) applied to the guide rod end

Allowable rotating torque



Dynamic allowable torque value to move the cylinder with rotating torque T applied to the guide rod end

Non-rotation accuracy



Value indicating backlash owing to clearance between guide rod and bearing as deflection angle from piston rod

Unit: N

Bore mm	Type of bearing	Stroke (mm)												
		10	20	25	30	40	50	75	100	125	150	175	200	
φ12	Slide bearing	24	19	—	16	14	12	37	31	—	—	—	—	
	Linear bush bearing	20	15	—	12	33	29	19	16	—	—	—	—	
φ16	Slide bearing	40	33	—	28	24	21	55	46	—	—	—	—	
	Linear bush bearing	33	26	—	21	50	44	34	28	—	—	—	—	
φ20	Slide bearing	—	52	—	45	39	35	55	46	75	67	60	55	
	Linear bush bearing	—	41	—	34	77	69	54	45	51	43	38	34	
φ25	Slide bearing	—	69	—	60	52	47	73	62	100	89	80	73	
	Linear bush bearing	—	61	—	51	115	104	82	68	69	61	54	49	
φ32	Slide bearing	—	—	168	—	—	131	107	91	140	125	113	103	
	Linear bush bearing	—	—	90	—	—	64	162	135	109	96	86	77	

Unit: N·m

Bore mm	Type of bearing	Stroke (mm)											
		10	20	25	30	40	50	75	100	125	150	175	200
φ12	Slide bearing	0.5	0.4	—	0.33	0.28	0.25	0.77	0.65	—	—	—	—
	Linear bush bearing	0.41	0.31	—	0.25	0.69	0.59	0.4	0.32	—	—	—	—
φ16	Slide bearing	0.91	0.75	—	0.64	0.56	0.49	1.25	1.06	—	—	—	—
	Linear bush bearing	0.76	0.6	—	0.49	1.14	1.02	0.79	0.65	—	—	—	—
φ20	Slide bearing	—	1.43	—	1.23	1.08	0.96	1.51	1.27	2.06	1.84	1.65	1.5
	Linear bush bearing	—	1.12	—	0.93	2.12	1.9	1.5	1.24	1.42	1.17	1.04	0.94
φ25	Slide bearing	—	2.26	—	1.94	1.71	1.52	2.38	2	3.25	2.89	2.61	2.37
	Linear bush bearing	—	1.98	—	1.65	3.75	3.37	2.68	2.22	2.24	1.97	1.76	1.58
φ32	Slide bearing	—	—	6.71	—	—	5.24	4.3	3.64	5.6	5.01	4.52	4.12
	Linear bush bearing	—	—	3.61	—	—	2.55	6.48	5.41	4.36	3.84	3.43	3.1

Bore mm	Type of bearing	Non-rotation accuracy θ
φ12	Slide bearing	±0.12°
	Linear bush bearing	±0.06°
φ16	Slide bearing	±0.10°
	Linear bush bearing	±0.06°
φ20	Slide bearing	±0.09°
	Linear bush bearing	±0.05°
φ25	Slide bearing	±0.08°
	Linear bush bearing	±0.05°
φ32	Slide bearing	±0.06°
	Linear bush bearing	±0.04°

Space-saving non-lubrication type magnetic rod-less cylinders

- Large holding force
- Requiring about half the installation space of conventional cylinder
- Separable type convenient for maintenance
- Installation in any of vertical and horizontal directions
- Guided cylinders come in two types of guide structure, general purpose and high-accuracy types.
- No lubrication (Cylinders with stroke of 1,000 mm or more must be lubricated.)



Cylinder Specifications

Model		Standard type	With guide	
Type		Standard type	Standard type	Switch Set
Cylinder bore (mm)		φ10·φ16·φ20·φ25·φ32·φ40		
Working fluid		Air		
Lubrication		Unnecessary (Cylinders with strokes of 1000 mm or more must be lubricated.)		
Working pressure range	H	0.15 to 0.7 MPa	0.2 to 0.7 MPa	
	M	0.15 to 0.45 MPa	0.2 to 0.45 MPa	
Proof test pressure		1.03 MPa		
Working speed range		100 to 500 mm/s		
Working temperature range (Ambient/fluid temperature)		-10 to +70°C (No freezing)		
Structure of cushioning		φ10 to φ25 :With shock absorbing pad φ32·φ40 :With cushions on both ends	—	
Tolerance for thread		JIS 6H/6g		
Installing direction		Free		
Guide type		—	● General purpose type (slide bearing) ● High-accuracy type (linear bearing)	
Accessory		—	● With shock absorber	

Specifications for Cylinders with Shock Absorber

Item	Bore	φ10·φ16	φ20·φ25	φ32·φ40
Model number		A2M12N010	A2M16N012	A2M20N016SD
Stroke (mm)		10	12	16
Max. absorbed energy J		2.94	7.85	25.5
Max. equivalent weight		30 kg	50 kg	200 kg
Max. energy capacity per min		98.1	235	343

Stroke Range

Unit: mm

Bore	Stroke	Possible stroke range
φ10		50 to 500
φ16		50 to 1000
φ20		50 to 1500
φ25·φ32·φ40		50 to 1800

Magnetic holding force

Unit: N

Cylinder bore (mm)	φ10	φ16	φ20	φ25	φ32	φ40
H type	53.9	147	265	431	637	1030
M type	—	—	—	245	373	608

- Cylinders with bores of 10, 16 and 20 mm come only in H type.
- In the case of a Switch Set Cylinder, when the sensor is installed at the intermediate position, the cylinder max. speed must be less than 300 mm/s for reasons of the response speed of the load relay.
- (Note) Cylinders with stroke of 1000 mm or more must be lubricated.

- With absorbed energy adjusting mechanism

Product Lineup

Unit: mm

Series Variations		Type	φ10	φ16	φ20	φ25	φ32	φ40
Standard	General purpose type	Standard type	●	●	●	●	●	●
	General purpose type	Standard type	●	●	●	●	●	●
With guide	General purpose type	Switch Set	●	●	●	●	●	●
	High-accuracy type	Standard type	●	●	●	●	●	●
	High-accuracy type	Switch Set	●	●	●	●	●	●

Weight Table

Unit: kg

Bore (mm)	Standard type		With guide										
	Basic weight	Additional weight per mm of stroke	Basic weight			Additional weight per mm of stroke			Additional weight				
			Standard type	With sensor		Standard type	With sensor		Shock absorber	G/H type sensor		SR type sensor	
				G/H type	SR type		G/H type	SR type		Cord length 1.5 m	Cord length 5 m	Cord length 1.5 m	Cord length 5 m
φ10	0.11	0.00027	1.35	1.40	1.37	0.0015	0.0019	0.0016	0.04	0.028	0.087	0.105	0.263
φ16	0.25	0.00042	1.91	1.96	1.93	0.0022	0.0026	0.0023	0.04	0.028	0.087	0.105	0.263
φ20	0.50	0.00080	3.17	3.23	3.19	0.0040	0.0044	0.0041	0.10	0.028	0.087	0.105	0.263
φ25	1.30	0.0010	6.15	6.22	6.17	0.0059	0.0063	0.0060	0.10	0.028	0.087	0.105	0.263
φ32	2.10	0.0017	7.34	7.41	7.36	0.0066	0.0070	0.0067	0.19	0.028	0.087	0.105	0.263
φ40	3.40	0.0021	12.40	12.49	12.43	0.0098	0.0102	0.0099	0.19	0.028	0.087	0.105	0.263

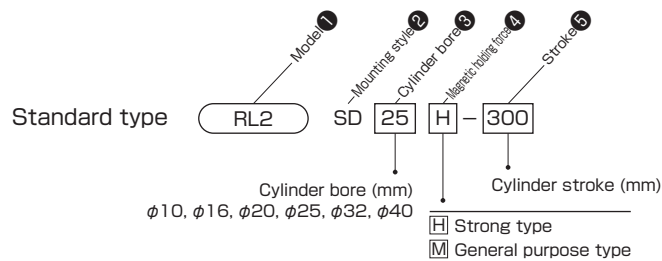
Note) ● The weight of guided cylinder with sensor shown in the above table does not include the weight of the sensor.

Calculation formula Cylinder weight (kg)=basic weight+(cylinder stroke (mm)×additional weight per mm of stroke)+(sensor additional weight×sensor quantity)+(shock absorber additional weight+shock absorber quantity)

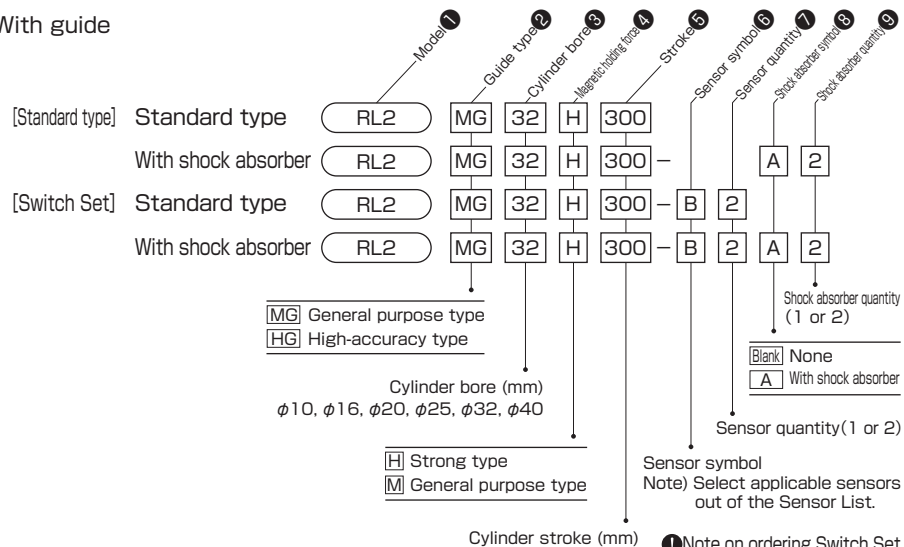
Calculation example RL2, guided, bore φ32, cylinder stroke 500 mm, 2 pcs of GS101 (cord length 1.5 m), 2 shock absorbers
 $7.41 + (0.0070 \times 500) + (0.028 \times 2) + (0.19 \times 2) = 11.346 \text{ kg}$

● How to order

● Standard



● With guide



● How to order when not requiring sensor

RL2 MG32H-300-00

00 : SR type sensor
99 : G* / H* type sensor

(However, a sensor mounting rail is provided.)

Note) The mounting rail and magnet assembly designed for SR type sensor and those designed for GR, GS, HR and HS type sensors are available.

Stroke Range

Bore	Stroke	Possible stroke range
$\phi 10$		50 to 500
$\phi 16$		50 to 1000
$\phi 20$		50 to 1500
$\phi 25 \cdot \phi 32 \cdot \phi 40$		50 to 2000

★ Delivery state

- The product will be delivered without shock absorber mounted.

★ Semi-standard range

- SR type sensors with improved waterproofness (with 5m long cord) can be fabricated.

Sensor List

Semi-standard

Type	Sensor symbol	Load voltage range	Load current range	Max. sensing capacity	Protective circuit	Indicating lamp	Wiring method	Cord length	Applicable load
Reed sensor	B GR101	DC: 5 to 50V AC: 5 to 120V	DC: 3 to 40 mA AC: 3 to 20 mA	DC: 1.5 W AC: 2 VA	None	LED (Lights in red when sensing)	0.3 mm ² , 2-core, outer dia. $\phi 3.4$ mm, rear wiring	1.5 m	Small relay, programmable controller
	C GR105						0.3 mm ² , 2-core, outer dia. $\phi 3.4$ mm, rear wiring	5 m	
	J HR101						0.3 mm ² , 2-core, outer dia. $\phi 3.4$ mm, upper wiring	1.5 m	
	K HR105						0.3 mm ² , 2-core, outer dia. $\phi 3.4$ mm, upper wiring	5 m	
	S SR405	AC: 80 to 220 V	300 mA	30 VA	Provided	Neon lamp (Lights when not sensing)	0.5 mm ² , 2-core, outer dia. $\phi 6$ mm, rear wiring	5 m	Small relay, programmable controller
Solid state sensor	M GS211	DC: 10 to 30 V	6 to 70 mA	—	Provided	LED (2-LED type in red/green)	0.3 mm ² , 2-core, outer dia. $\phi 3.4$ mm, rear wiring	1.5 m	Small relay, programmable controller
	N GS215						0.3 mm ² , 2-core, outer dia. $\phi 3.4$ mm, rear wiring	5 m	
	W HS211						0.3 mm ² , 2-core, outer dia. $\phi 3.4$ mm, upper wiring	1.5 m	
	Y HS215						0.3 mm ² , 2-core, outer dia. $\phi 3.4$ mm, upper wiring	5 m	

Notes) ● For the sensors without a protective circuit, be sure to provide a protective circuit (SK-100) with the load when using any induction load (relay, etc.).
 ● For handling of sensors, be sure to see the sensor specifications at the end of this catalog.
 ● We recommend AND Unit (AU series) for multiple sensors connected in series.
 For details, refer to AND Unit at the end of this catalog.

● G* / H* type sensor

● SR type sensor

● Rear wiring



● Upper wiring



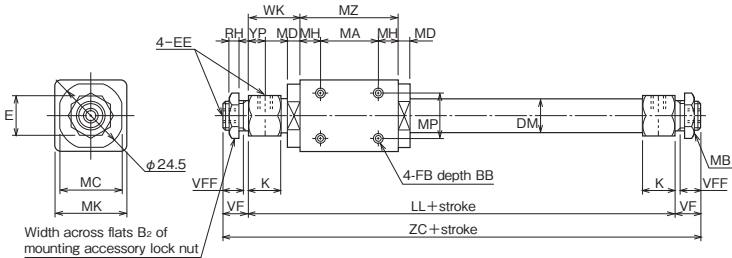
CAD/DATA
RL2/TRL2 is available.



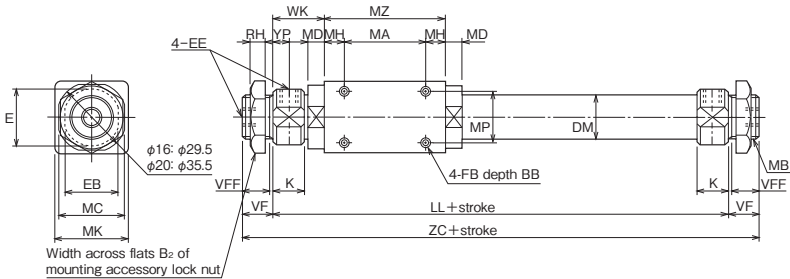
Standard type

RL2 SD- [Bore] - [Magnetic holding force] - [Stroke]

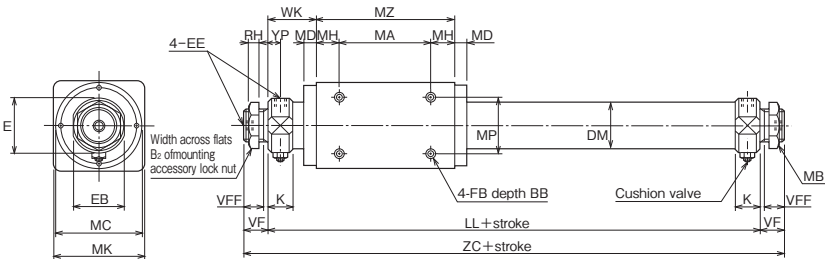
●Bore $\phi 10$



●Bore $\phi 16$ and $\phi 20$



●Bore $\phi 25$, $\phi 32$, and $\phi 40$



●25-mm bore cylinders are not provided with a cushion valve.

Dimensional Table

Symbol Bore	B ₂	BB	DM	E	EB	EE	FB	K	LL	MA
$\phi 10$	14	4.5	$\phi 12$	14	—	M5×0.8	M3×0.5	11	70	20
$\phi 16$	22	6	$\phi 18$	$\phi 21$	19	M5×0.8	M4×0.7	11	84	26
$\phi 20$	30	6	$\phi 23$	$\phi 28$	26	Rc1/8	M4×0.7	15	110	40
$\phi 25$	30	10	$\phi 28$	$\phi 33$	31	Rc1/8	M5×0.8	16	143	52
$\phi 32$	32	10	$\phi 36$	$\phi 40$	38	Rc1/8	M6×1	16	165	66
$\phi 40$	41	10	$\phi 44$	$\phi 48$	46	Rc1/4	M6×1	20	174	70

Symbol Bore	MB	MC	MD	MH	MK	MP	MZ	RH	VF	VFF	WK	YP	ZC
$\phi 10$	M10×1	22	4	7.5	□25	16	35	3	9	8	17.5	5.5	88
$\phi 16$	M16×1.5	27	7	9	□30	20	44	6	12	9.5	20	5.5	108
$\phi 20$	M22×1.5	33	8	10	□36	26	60	7	15	10.5	25	8	140
$\phi 25$	M22×1.5	$\phi 57$	8	12	□58	36	76	7	15	12	33.5	8	173
$\phi 32$	M24×2	$\phi 61$	8	17	□62	40	100	8	16	13	32.5	8	197
$\phi 40$	M30×2	$\phi 77$	10	15	□78	50	100	9	16	12	37	10	206

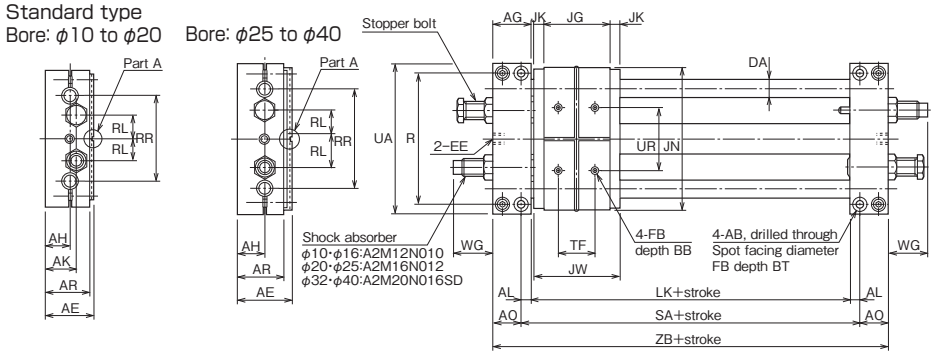
Note) Dimension VFF is the effective length of threaded portion.

CAD/DATA
RL2/TRL2 is available.

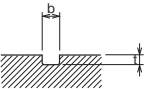


With guide

RL2 Guide structure Bore Magnetic holding force Stroke Shock absorber symbol Number of shock absorbers



Details of part A (dimensions of key groove)



Dimensional Table

Symbol	b	t
Bore		
φ10·φ16·φ20	3 ^{-0.004} _{-0.029}	1.8 ^{+0.1} ₀
φ25·φ32·φ40	4 ⁻⁰ _{-0.03}	2.5 ^{+0.1} ₀

Procedures for adjusting the stroke of cylinder with shock absorber

- Bore φ10 to φ25

 - Adjust the stroke with the stopper bolt. Take care that the slider does not get into direct contact with the shock absorber end face.
- Bore φ32 and φ40

 - Adjust the stroke by screwing the shock absorber. (The stroke can be adjusted on the shock absorber end face.)
- Above shown is the outline drawing of a cylinder with a shock absorber.
 - The basic style 32 and 40mm bore cylinders with a shock absorber are not provided with a stopper bolt.

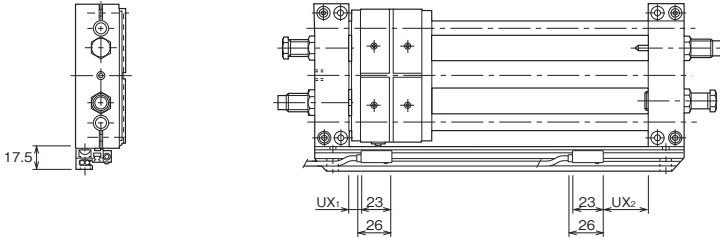
Dimensional Table

Symbol	AB	AE	AG	AH	AK	AL	AO	AR	BB	BT	DA	EE	FB
Bore													
φ10	φ4.5	34	28	18	21	7	21	32	8	4.5	φ10	M5×0.8	M4×0.7
φ16	φ5.5	39	30	20.5	24.5	7.5	22.5	36	10	5.5	φ12	M5×0.8	M5×0.8
φ20	φ6.6	45	35	23	29	9	26	42	10	6.6	φ16	Rc1/8	M5×0.8
φ25	φ9	58	44	29.5	—	11	33	54	12	8.7	φ20	Rc1/8	M6×1
φ32	φ9	63	44	32	—	11	33	54	16	8.7	φ20	Rc1/8	M8×1.25
φ40	φ9	78	44	39.5	—	11	33	66	16	8.7	φ25	Rc1/4	M8×1.25

Symbol	FG	JG	JK	JN	JW	LK	R	RL	RR	SA	TF	UA	UR	WG	ZB
Bore															
φ10	φ9	50	10	90	70	70	86	16	61	84	22	100	33	44.5	126
φ16	φ10	54	10	106	74	74	101	18.5	72	89	25	116	40	42.5	134
φ20	φ12.5	67	11	124	89	89	117	22	84	107	35	134	46	56	159
φ25	φ17	76	12	156	100	100	145	28	104	122	40	166	62	47	188
φ32	φ17	79.5	12	170	103.5	103.5	159	34	118	125.5	45	180	73	46	191.5
φ40	φ17	113.5	12	199	137.5	137.5	188	40	142	159.5	70	209	90	46	225.5

Switch Set

RL2 [Guide structure][Bore][Magnetic holding force][Stroke]—[Sensor symbol][Sensor quantity][Shock absorber symbol][Shock absorber quantity]



- Above shown is the outline drawing of a cylinder with a shock absorber and Switch Set (G*/H* type).
- The basic style 32 and 40mm bore cylinders with a shock absorber are not provided with a stopper bolt.

Dimensional Table

Bore	UX ₁			UX ₂		
	Reed sensor		Solid state sensor	Reed sensor		Solid state sensor
	GR/HR type	SR type	GS/HS type	GR/HR type	SR type	GS/HS type
φ10	11.5	9	9	35.5	21	38
φ16	12.5	12	10	38.5	24	41
φ20	19.5	18.5	17	46.5	30.5	49
φ25	22.5	24	20	54.5	36	57
φ32	25.5	25	23	55	37	57.5
φ40	40.5	42	38	74	54	76.5

Note) ● Dimension UX indicates the optimum sensor mounting position for detection of stroke end.

Operating Range and Hysteresis

Bore	Reed sensor		Solid state sensor	
	GR/HR type		GS/HS type	
	Operating range	Hysteresis	Operating range	Hysteresis
φ10	5 to 7	2 or less	8 to 12	1 or less
φ16				
φ20				
φ25				
φ32				
φ40				

Selection Materials

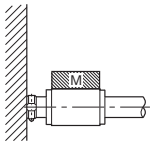
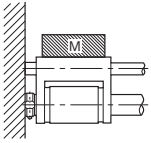
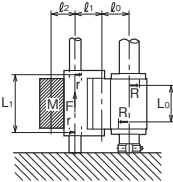
	Standard type		
	Direct connection of load	Connection with external load	
Mounting form			
Points of selection	● The thrust force is approx. 50% of the theoretical cylinder force. ● The speed is within the range shown in Chart [C]. ● The load rate is less than 60%.	● The thrust force is approx. 70% of the theoretical cylinder force. ● The speed is within the range shown in Chart [C]. ● The load rate is less than 60%.	● The thrust force varies depending on the resisting force (R) acting on the cylinder bearing part. ● The resisting force (R) is less than max.R shown in Table 1. ● The load rate is less than 60%. ● The speed is within the range shown in Chart [C].
Calculating method	Thrust force $F(N) = A \times P \times 0.5$ A: piston pressure receiving area (mm ²) $A = \frac{\pi}{4} D^2$ P: operating pressure (MPa) D: cylinder bore (mm)	Thrust force $F(N) = A \times P \times 0.7$ A: piston pressure receiving area (mm ²) $A = \frac{\pi}{4} D^2$ P: operating pressure (MPa) D: cylinder bore (mm)	1. The cylinder bearing part resisting force (R) is: $R = f \times L_0 \times 1/L_1$ ● The load force (f) in the case of horizontal movement is: $f = M \times \mu \times g$ ● The load force (f) in the case of vertical movement is: $f = M \times g + 2 \times \mu \times (L_1 + L_2) \times M \times g \times 1/L_1$ 2. The thrust force (F) is the intersection of the calculated resisting force (R) with the operating pressure (MPa) in Chart [A].
Example	Determine the thrust force when a standard type 32mm bore cylinder is used at an operating pressure of 0.5 MPa.	Determine the thrust force when a standard type 32mm bore cylinder is used at an operating pressure of 0.5 MPa.	Determine the thrust force which can be taken to the outside when a weight of 20 kg is moved vertically by driving at an operating pressure of 0.4 MPa by RL2SD40H1000 using two linear bearings for the guide. And, determine the cylinder load rate. (where, $\mu=0.05$, $L_0=45$, $L_1=40$, $L_2=70$ and $L_1=230$. $L_0=77$ according to Table 1.)
Solution	Thrust force $F(N) = A \times P \times 0.5$ $= 804 \times 0.5 \times 0.5 = 200N$	Thrust force $F(N) = A \times P \times 0.7$ $= 804 \times 0.5 \times 0.7 = 280N$	1. Determine the cylinder bearing part resisting force (R). The load force (f) is: $f = M \times g + 2 \times \mu \times (L_1 + L_2) \times M \times g \times 1/L_1$ $= 20 \times 9.8 + 2 \times 0.05 \times (40 + 70) \times 20 \times 9.8 \times 1/230 = 201N$ The resisting force (R) is: $R = f \times L_0 \times 1/L_1 = 201 \times 45 \times 1/77 = 117N$ Ascertain whether the resisting force (R) is less than max.R shown in Table 1 under the above conditions. 2. The thrust force (F) which can be taken to the outside when the operating pressure is 0.4 MPa is the intersection of the resisting force of 117 N with the operating pressure of 0.4 MPa in Chart [A]-6. $F=343N$ 3. Determine the load rate (β), and ascertain whether the rate is less than 60%. $\beta = f/F \times 100 = 201/343 \times 100 = 59\%$

Table 1

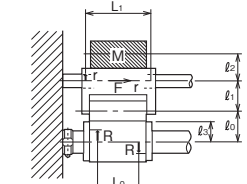
● Standard type Unit: mm

Bore	L ₀	ℓ ₃	max.R
φ10	24	12.5	11.8
φ16	34	15	39.2
φ20	49	18	58.8
φ25	59	29	108
φ32	82	31	167
φ40	77	39	245

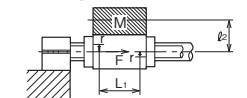
● With guide Unit: mm

Bore	L ₁	ℓ ₄	μ	max.r
φ10	45.5	16	0.1	44.1
φ16	42.5	18.5	0.1	68.6
φ20	52	22	0.1	118
φ25	57.5	28.5	0.1	177
φ32	57.5	31	0.1	177
φ40	91.5	38.5	0.1	216

● Standard type

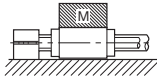
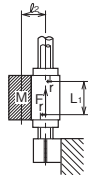


● With guide



M : weight (kg)
 F : thrust force (N)
 L₀ : distance from cylinder axis to cylinder transfer point (mm)
 ℓ₁ : distance from guide axis to cylinder transfer point (mm)
 ℓ₂ : distance from guide axis to center of gravity of weight (mm)
 ℓ₃ : distance from cylinder axis to load fitting surface (mm)
 ℓ₄ : distance from slider axis to load fitting surface (mm)
 μ : guide friction coefficient
 L₀ : distance between cylinder bearings (mm)
 L₁ : distance between guide bearings (mm)
 R : cylinder bearing part resisting force (N)
 r : guide bearing part resisting force (N)
 β : load rate
 f : load force

Theoretical cylinder force: calculated force acting on piston
 Weight : weight to be conveyed
 Thrust force: force which can be actually taken to the outside of cylinder
 Load force: force by load which the cylinder must actually convey
 Load rate: ratio of load force to thrust force

	With guide	
	Horizontal conveying	Vertical conveying
Mounting form		
Points of selection	● The load is within the range shown in Chart [B]. ● The speed is within the range shown in Chart [C].	● The thrust force is approx. 70% of the theoretical cylinder force. ● The guide bearing part resisting force (r) is less than the max.r shown in Table 1. ● The load rate is less than 60%. ● The speed is within the range shown in Chart [C].
Calculating method		Thrust force $F(N) = A \times P \times 0.7$ A: piston pressure receiving area (mm ²) $A = \frac{\pi}{4} D^2$ P: operating pressure (MPa) D: cylinder bore (mm) ● The load force (f) in the case of vertical movement is: $f = M \times g + 2 \times \mu \times L_2 \times M \times g \times 1/L_1$ 2. The guide bearing part resisting force (r) is: $r = L_2 \times M \times g \times 1/L_1 \times 1/2$
Example	Determine the maximum weight (kg) which can be conveyed horizontally by RL2MG32M1000. And, determine the maximum conveying speed (mm/s) in the above case.	Determine the thrust force generated when a weight of 10 kg is connected directly with RL2MG32H1000 and moved vertically at an operating pressure of 0.4 MPa. And, determine the cylinder load rate. (where, $L_2=50$, $\mu=0.1$ and $L_1=57.5$ according to Table 1.)
Solution	The weight which can be conveyed is 7.5 kg according to Chart [B]. The max. moving speed is 500 mm/s according to Chart [C].	1. Determine the thrust force (F). $F = A \times P \times 0.7$ $= 804 \times 0.4 \times 0.7 = 225N$ 2. Determine the guide bearing part resisting force (r). $r = L_2 \times M \times g \times 1/L_1 \times 1/2$ $= 50 \times 10 \times 9.8 \times 1/57.5 \times 1/2 = 42.6N$ Then, ascertain whether the resisting force (r) is less than max.r shown in Table 1. 3. Determine the load rate (β), and ascertain whether it is less than 60%. The load force (f) is: $f = M \times g + 2 \times \mu \times L_2 \times M \times g \times 1/L_1$ $= 10 \times 9.8 + 2 \times 0.1 \times 50 \times 10 \times 9.8 \times 1/57.5 = 115N$ $\beta = f/F \times 100$ $= 115/225 \times 100 = 51\%$

Selection Materials

Chart A-1
Dependence of Cylinder Thrust Force on Resisting Force
Bore $\phi 10$

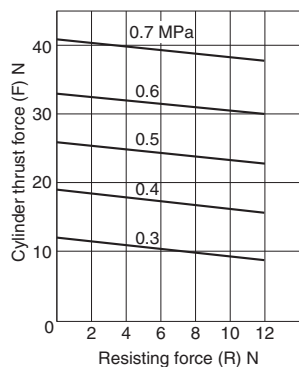


Chart A-2
Dependence of Cylinder Thrust Force on Resisting Force
Bore $\phi 16$

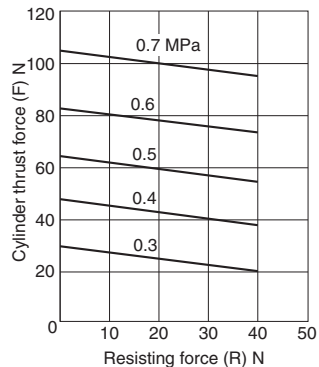


Chart A-3
Dependence of Cylinder Thrust Force on Resisting Force
Bore $\phi 20$

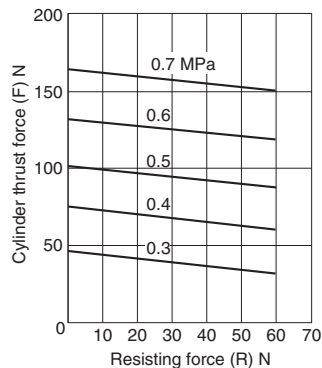


Chart A-4
Dependence of Cylinder Thrust Force on Resisting Force
Bore $\phi 25$

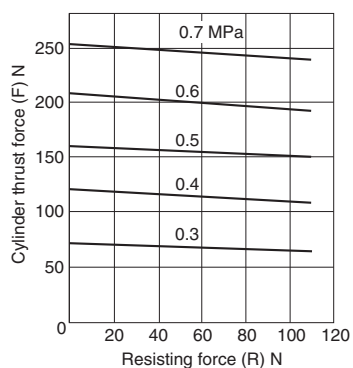


Chart A-5
Dependence of Cylinder Thrust Force on Resisting Force
Bore $\phi 32$

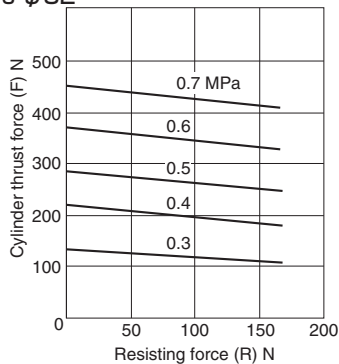


Chart A-6
Dependence of Cylinder Thrust Force on Resisting Force
Bore $\phi 40$

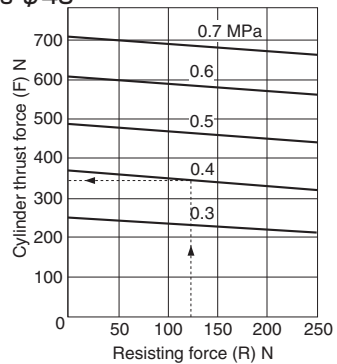


Chart B
Weight which can be Conveyed on Guide Type Cylinder

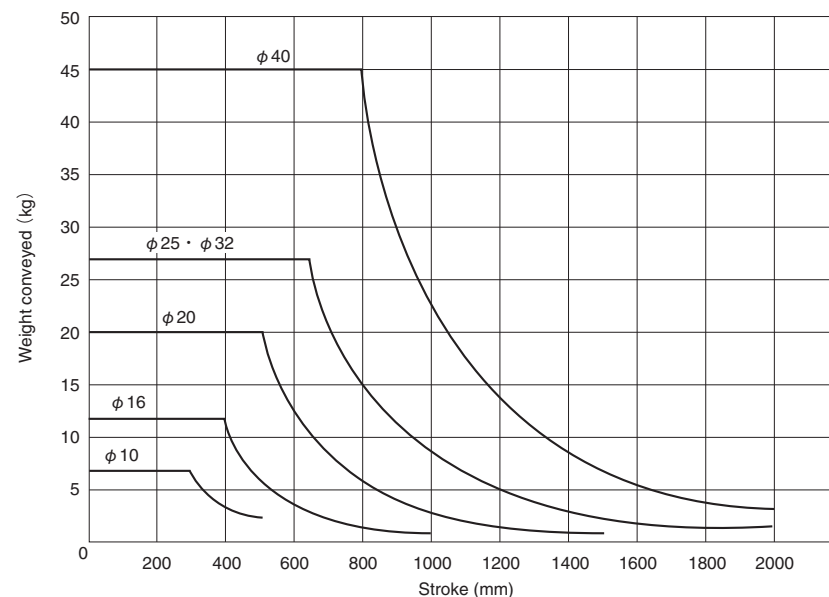
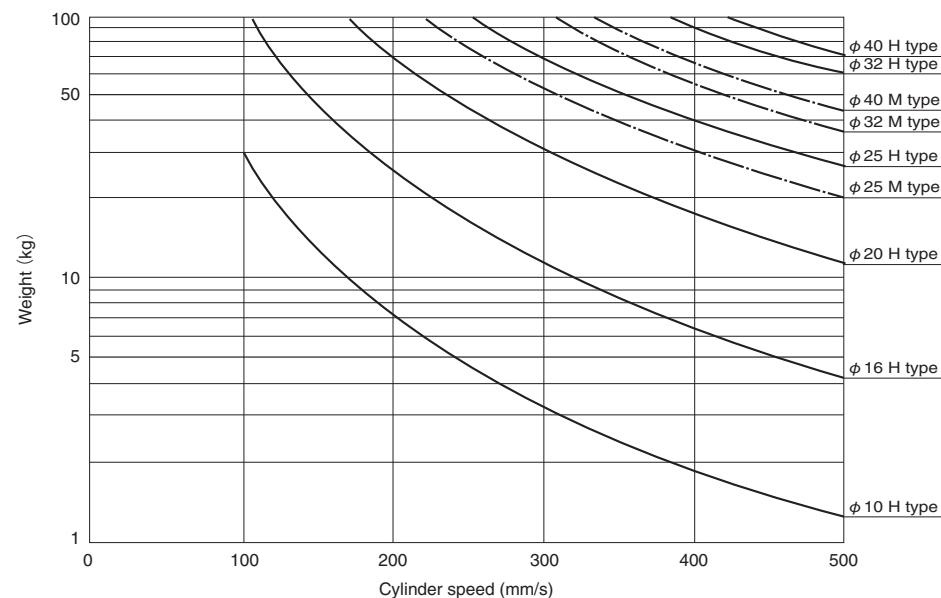


Chart C
Dependence of Speed at which Magnetic Force can be Maintained on Weight



Handling Instructions

Instructions for use

Carrying and installation

- When carrying and installing the cylinder, take care not to hit or scratch the cylinder tube or the guide rod.
- When the cylinder is used in the basic style, be sure to provide a guide on the outside because the slider will rotate.
When fitting a key and a load to the guided slider, do not hit strongly the key or load with a hammer. Doing so may cause operation failure.
- When the working speed is high, it is desirable to use a shock absorber.

Piping

- When piping, take utmost care that dust or foreign matter does not get into the piping.
- Install an air filter in the middle of the piping to prevent entry of dust, water and foreign matter into the cylinder.

Lubrication

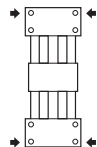
- For a guided cylinder, periodically lubricate the guide rod.

Cleaning

- When the guide and cylinder tube are considerably contaminated, clean them periodically.

DO NOT REMOVE.

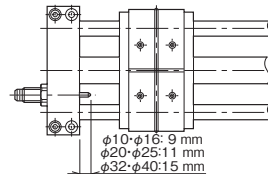
Never remove the bolts (4 places) painted in yellow. If they are removed, the guide rod will become loose, thereby causing operation failure.



Instructions for use/Cylinder with shock absorber

Checking the installation position

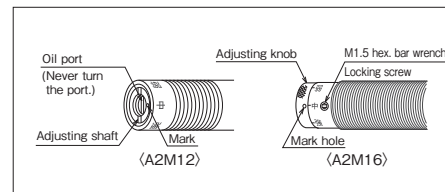
Make sure that the shock absorber is installed in position.



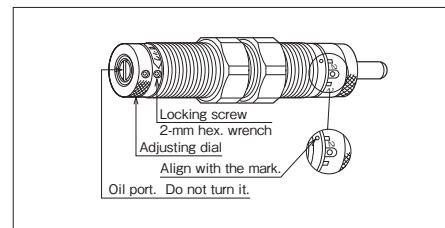
Adjusting the knob

Adjust the shock absorber adjusting knob to smoothly absorb energy.

- Bore φ10 and φ16 (shock absorber type: A2M12N010)
Bore φ20 and φ25 (shock absorber type: A2M16N012)
Turn the adjusting knob as shown in the following figure.
After adjusting, secure the knob with the lock nut.



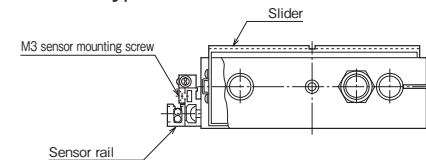
- Bore φ32 and φ40 (shock absorber type: A2M20N016SD)
Turn the adjusting dial as shown in the following figure.
After adjusting, tighten the locking screw.



If the piston rod bottoms when the load collides against the shock absorber, turn the adjusting dial to the higher weight. To stop in the middle of stroke, turn it to the smaller weight.

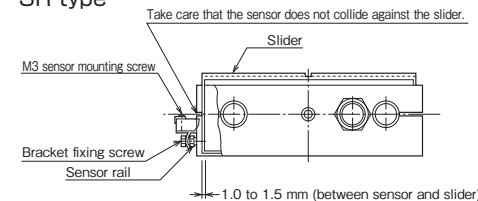
Setting method of sensor detecting position

G*/H* type



1. Loosen the sensor mounting screw, and move the sensor to detect 2 to 5 mm (about half the operating range is appropriate) before the position at which the sensor lamp turns on. Then, tighten the sensor mounting screw to secure the sensor. [Tightening torque: 0.2 N·m or less]
2. The lamp lights up when the sensor turns on.

SR type



1. Loosen the bracket fixing screw, and move the sensor to the desired position.
2. Tighten the bracket fixing screw to secure it so that the sensor will not collide against the slider. [Tightening torque: 0.6 N·m]
3. The lamp goes out when the sensor turns on.

Note) When the sensor is installed at the intermediate position, the cylinder max. speed must be less than 300 mm/s for reasons of the response speed of the load relay.