


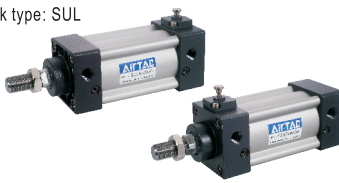




Standard cylinder——SU Series

Profile type

Product series

Series name	Mounting type							Acting type	Bore size	Collocation of sensor switch					
	Basic	LB	FA	FB	CA	CB	TC			CS1-B	DS1-B	CS1-F	DS1-F	CS1-U	DS1-U
Double acting type: SU 	●	●	●	●	●	●	●	Double acting	32 40 50 63 80 100	●	●	●	●	●	●
Double rod type: SUD 	●	●	●	●	●	●	●			●	●	●	●	●	●
Adjustable stroke type: SUJ 	●	●	●	●	●	●	●			●	●	●	●	●	●
With lock type: SUL 	●	●	●	●	●	●	●	Double acting	40 50 63 80 100	●	●	●	●	●	●
	●	●	●	●	●	●	●			●	●	●	●	●	●
	●	●	●	●	●	●	●			●	●	●	●	●	●
Page	202									403					
	206			217											

SU

Installation and application

- When load changes in the work, the cylinder with abundant output capacity shall be selected.
- Relative cylinder with high temperature resistance or corrosion resistance shall be chosen under the condition of high temperature or corrosion.
- Necessary protection measure shall be taken in the environment with higher humidity, much dust or water drops, oil dust and welding dregs.
- Dirty substances in the pipe must be eliminated before cylinder is connected with pipeline to prevent the entrance of particles into the cylinder.
- The medium used by cylinder shall be filtered to 40 μm or below.
- Anti-freezing measure shall be adopted under low temperature environment to prevent moisture freezing.
- The cylinder shall be carried out test run without load before application. Prior to run, buffer shall be turned to the minimum and gradually released to avoid the damage on cylinder caused by excessive impact.
- The cylinder shall avoid the influence of side load in operation to maintain the normal work of cylinder and extend the service life.
- If the cylinder is dismantled and stored for a long time, please conduct anti-rust treatment to the surface. Anti-dust caps shall be added in air inlet and outlet ports.

Criteria for selection: Cylinder thrust

Unit: Newton(N)

Bore size (mm)	Rod size (mm)	Acting type	Pressure area (mm ²)	Operating pressure(MPa)								
				0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
32	12	Double acting Push side	804	80.4	160.8	241.2	321.6	402.0	482.4	562.8	643.2	723.6
		Double acting Pull side	690	69.0	138.0	207.0	276.0	345.0	414.0	483.0	552.0	621.0
40	16	Double acting Push side	1256	125.6	251.2	376.8	502.4	628.0	753.6	879.2	1004.8	1130.4
		Double acting Pull side	1055	105.5	211.0	316.5	422.0	527.5	633.0	738.5	844.0	949.5
50	20	Double acting Push side	1963	196.3	392.6	588.9	785.2	981.5	1177.8	1374.1	1570.4	1766.7
		Double acting Pull side	1649	164.9	329.8	494.7	659.6	824.5	989.4	1154.3	1319.2	1484.1
63	20	Double acting Push side	3117	311.7	623.4	935.1	1246.8	1558.5	1870.2	2181.9	2493.6	2805.3
		Double acting Pull side	2803	280.3	560.6	840.9	1121.2	1401.5	1681.8	1962.1	2242.4	2522.7
80	25	Double acting Push side	5026	502.6	1005.2	1507.8	2010.4	2513.0	3015.6	3518.2	4020.8	4523.4
		Double acting Pull side	4536	453.6	907.2	1360.8	1814.4	2268.0	2721.6	3175.2	3628.8	4082.4
100	25	Double acting Push side	7853	785.3	1570.6	2355.9	3141.2	3926.5	4711.8	5497.1	6282.4	7067.7
		Double acting Pull side	7362	736.2	1472.4	2208.6	2944.8	3681.0	4417.2	5153.4	5889.6	6625.8



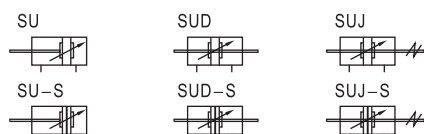
Standard cylinder(Profile)



SU Series



Symbol



Product feature

1. Standard cylinder manufactured by our enterprise.
2. The seal of piston adopts heterogeneous two way seal structure. It's dimension is tight and it has the function of oil reservation.
3. It is no tie rod cylinder. The cylinder barrel is "Mickey Mouse" shape ,and have good corrosion.
4. Compared with ISO15552 standard cylinder, SU series cylinder with the same bore size is shorter.
5. The buffer adjustment of cylinder is smooth and steady.
6. Mounting accessories are the same as SC series.
7. The seal material with high temperature resistance is adopted to guarantee the normal operation of cylinder at 150°C.

Ordering code

Model can be changed Ordering code. Example:

Production type: SUJ

Bore size: 100mm

Stroke: 500mm

Adjustable stroke: 75mm

Magnet: With magnet

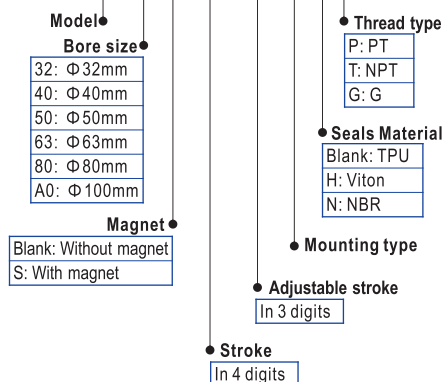
Mounting type: CB

Seals material: NBR

Thread type: NPT

Model: SUJ-100 × 500-75-S-N-CB-T

Ordering code: SUJ A0 S 0500 075 CB N T



Specification

Bore size(mm)	32	40	50	63	80	100
Acting type	Double acting					
Fluid	Air(to be filtered by 40 μ m filter element)					
Mounting type	SU	Basic FA FB CA CB LB TC TCM1				
type	SUD, SUJ	Basic FA LB TC TCM1				
Operating pressure	0.1~1.0MPa(15~145psi)(1.0~10.0bar)					
Proof pressure	1.5MPa(215psi)(15bar)					
Temperature °C	-20~80					
Speed range mm/s	30~800					
Stroke tolerance	0~250 ^{+1.0} ₀		251~1000 ^{+1.4} ₀		1001~1500 ^{+1.8} ₀	
Cushion type	Variable cushion					
Adjustable cushion stroke mm	21			28		29
Port size ①	1/8"	1/4"	3/8"		1/2"	

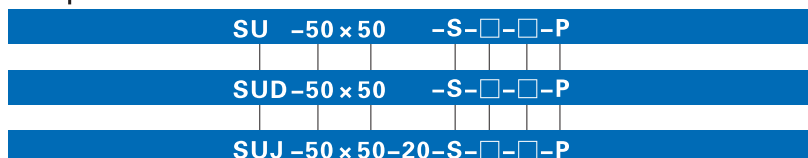
① PT thread, NPT thread and G thread are available.
Add) Refer to P403-426 for detail of sensor switch.

Stroke

Bore size (mm)	Standard stroke (mm)												Max. std stroke	Max. stroke									
32	25	50	75	80	100	125	150	160	175	200	250	300	350	400	450	500	1000	1800					
40	25	50	75	80	100	125	150	160	175	200	250	300	350	400	450	500	600	700	800	1200	1800		
50	25	50	75	80	100	125	150	160	175	200	250	300	350	400	450	500	600	700	800	900	1000	1200	1800
63	25	50	75	80	100	125	150	160	175	200	250	300	350	400	450	500	600	700	800	900	1000	1500	1800
80	25	50	75	80	100	125	150	160	175	200	250	300	350	400	450	500	600	700	800	900	1000	1500	1800
100	25	50	75	80	100	125	150	160	175	200	250	300	350	400	450	500	600	700	800	900	1000	1500	1800

Note) Consult us for non-standard stroke.

Explain of model



Model
 SU: Double acting type
 SUD: Double rod type
 SUJ: Adjustable stroke type

Bore size
 32 40 50 63 80 100

Stroke
 Refer to stroke table for details

Adjustable stroke
 10: 10mm
 20: 20mm
 30: 30mm
 40: 40mm
 50: 50mm
 75: 75mm
 100: 100mm

Magnet
 Blank: Without magnet
 S: With magnet

Thread type
 P: PT
 T: NPT
 G: G

Seals Material
 Blank: TPU
 H: Viton
 N: NBR

Mounting type

Mounting type	Available series	Memo
Blank	SU	
LB	SUD SUJ	
FA		
FB		
CA	SU	
CB		
TC	SU, SUD SUJ	Be used with TCM1

① Please refer to page 217-220 for accessory parts.



Standard cylinder(Profile)

SU Series

Inner structure and material of major parts

SU

NO.	Item	Material
1	Rod nut	Carbon steel
2	Piston rod	Carbon steel with 20 μ m chrome plated
3	Front cover packing	TPU
4	Bushing	Wear resistant material
5	Front cover	Aluminum alloy
6	Cushing O-ring	NBR
7	Cushion gasket	TPU
8	Barrel	Aluminum alloy
9	Piston	Aluminum alloy
10	Piston rod O-ring	NBR
11	Piston seal	NBR
12	Magnet	Plastic
13	Wear ring	Wear resistant material
14	Bolt	Carbon steel
15	Back cover	Aluminum alloy
16	Tie-rod nut	Carbon steel

Dimensions

SU

Bore size\Item	A	B	C	D	E	F	G	H	I	J	K
32	140	47	93	28	32	15	27.5	22	17	6	M10×1.25
40	142	49	93	32	34	15	27.5	24	17	7	M12×1.25
50	150	57	93	38	42	15	27.5	32	23	8	M16×1.5
63	153	57	96	38	42	15	27.5	32	23	8	M16×1.5
80	182	75	107	47	54	21	33	40	26	10	M20×1.5
100	188	75	113	47	54	21	33	40	26	10	M20×1.5

Bore size\Item	L	M	N	O	P	Q	R	S	T	V	W
32	M6×1.0	9.5	14	1/8"	5.5	6	6.5	45	33	12	10
40	M6×1.0	9.5	15	1/4"	6	5	8.5	50	37	16	14
50	M6×1.0	9.5	17	1/4"	8.5	2.5	10	62	47	20	17
63	M8×1.25	9.5	15	3/8"	9.5	4	8.5	75	56	20	17
80	M10×1.5	11.5	19.5	3/8"	10	4.5	14	94	70	25	22
100	M10×1.5	11.5	16.5	1/2"	11	6.5	14	112	84	25	22

Remark: The dimensions of magnet type cylinder are the same as non-magnet type cylinder.



SUD

SUJ

Bore size\Item	A1	A2	B	C	E	Z	J	K
32	187	182	47	93	32	27	6	M10X1.25
40	191	185	49	93	34	28	7	M12X1.25
50	207	194	57	93	42	29	8	M16X1.5
63	210	197	57	96	42	29	8	M16X1.5
80	257	238.5	75	107	54	35.5	10	M20X1.5
100	263	244.5	75	113	54	35.5	10	M20X1.5

Remark:

- The dimensions of magnet type cylinder are the same as non-magnet type cylinder.
- The unmarked dimension is the same as SU standard type.

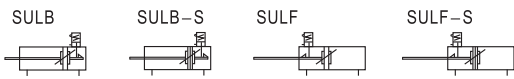
Standard cylinder(Profile)



SUL Series(Lockable type)



Symbol



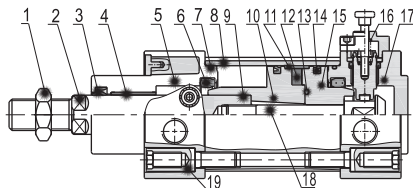
Product feature

1. Lockable cylinders can be divided into two types: front cover lock type and back cover lock type.
2. Unlock method: automatic and manual.

SUL

Inner structure and material of major parts

SULB-S



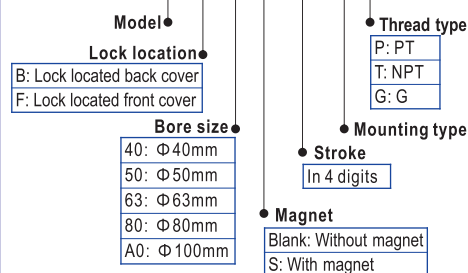
NO.	Item	Material
1	Rod nut	Carbon steel
2	Piston rod	Carbon steel with 20 μm chrome plated
3	Front cover packing	NBR
4	Bushing	Wear resistant material
5	Front cover	Aluminum alloy
6	Cushing O-ring	NBR
7	O-ring	NBR
8	Barrel	Aluminum alloy
9	Piston rod O-ring	NBR
10	Magnet holder	Aluminum alloy
11	Wear ring	Wear resistant material
12	Magnet	Plastic
13	O-ring	NBR
14	Piston seal	NBR
15	Piston	Aluminum alloy
16	Lock combination	
17	Back cover	Aluminum alloy
18	Bolt	Carbon steel
19	Tie-rod nut	Carbon steel

Ordering code

Model can to be changed Ordering code. Example:
 Production type: SUL
 Lock location: Lock located back cover
 Bore size: 100mm
 Stroke: 500mm
 Magnet: With magnet
 Mounting type: FA
 Thread type: NPT

Model: SUL B-100 × 500-S-FA-T

Ordering code: SUL B A0 S 0500 FA T



Specification

Bore size(mm)	40	50	63	80	100
Acting type	Double acting				
Fluid	Air(to be filtered by 40 μm filter element)				
Mounting type	Basic FA FB CA CB LB TC TCM1				
Operating pressure	0.1~1.0MPa(15~145psi)(1.0~10.0bar)				
Proof pressure	1.5MPa(215psi)(15bar)				
Temperature °C	-20~80				
Speed range mm/s	30~800				
Stroke tolerance	0~250 ^{+1.0} ₀ 251~1000 ^{+1.4} ₀ 1001~1500 ^{+1.8} ₀				
Cushion type	Variable cushion				
Adjustable cushion stroke (mm)	No lock end		24		32
	With lock end		13.5	15	18
Port size ①	1/4"		3/8"		1/2"

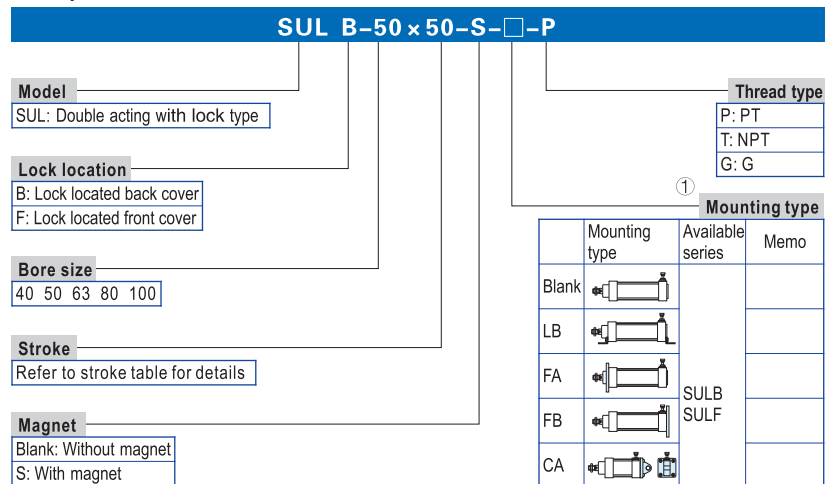
① PT thread, NPT thread and G thread are available.
 Add) Refer to P403-426 for detail of sensor switch.

Stroke

Bore size (mm)	Standard stroke (mm)	Max. std stroke	Max. stroke
40	25 50 75 80 100 125 150 160 175 200 250 300 350 400 450 500 600 700 800	1200	1800
50	25 50 75 80 100 125 150 160 175 200 250 300 350 400 450 500 600 700 800 900 1000	1200	1800
63	25 50 75 80 100 125 150 160 175 200 250 300 350 400 450 500 600 700 800 900 1000	1500	1800
80	25 50 75 80 100 125 150 160 175 200 250 300 350 400 450 500 600 700 800 900 1000	1500	1800
100	25 50 75 80 100 125 150 160 175 200 250 300 350 400 450 500 600 700 800 900 1000	1500	1800

Note) Consult us for non-standard stroke.

Explain of model



① Please refer to page 217-220 for accessory parts.



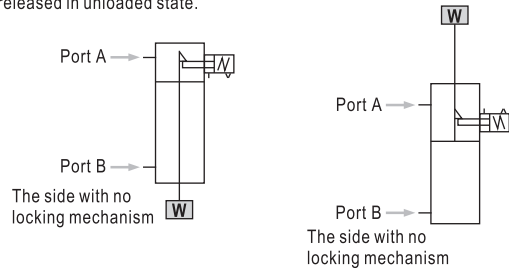
Standard cylinder(Profile)

SUL Series(With lock type)



The Operation Manual and Maintenance

1. In locked state, if pressure is supplied to the port A when both ports are under no force, either the lock's not being released or being released abruptly may cause the flying out of the piston rod. Before the lock being released, please make sure pressure is supplied to the port B and the locking mechanism is released in unloaded state.



2. If a quick exhaust valve is used to accelerate the descending speed, the cylinder body may move earlier than the lock pin, and the lock will not be released normally. Therefore, the lockable cylinder can not be used with a quick exhaust valve.

3. Please do not integrate with 3 port solenoid valve:
Please do not integrate with 3 port solenoid valve (especially with metal mid-sealing style). The lock will not work if there is pressure in the port on the lock mechanism side. In addition, even if the cylinder is locked temporarily, the air leaking out of the solenoid valve will enter the cylinder and the lock mechanism is released.

4. The lock may be released if locking mechanism side bears back pressure. Therefore, it is recommended to use an individual exhaust type manifold or individual valves.

5. Regarding an adjustable buffered cylinder, the piston may be restrained at the end of the stroke and cause damage to the lock mechanism if the needle of the cushion valve is over used. Therefore, the needle valve should be adjusted so that the piston may not be restrained.

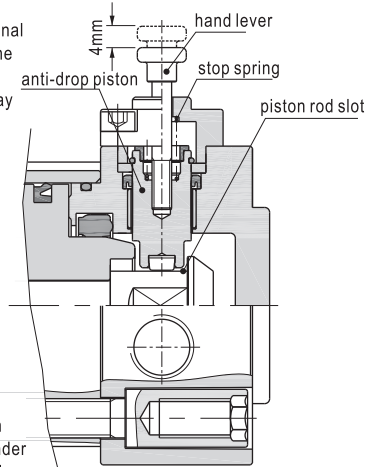
6. When manual operation to the lock mechanism is over, make sure the manual operation device is placed to the root position. In addition, it is dangerous to proceed the manual operation beyond adjustment time.

7. Release the lock before installation and adjustment of the cylinder:
Operations like installation under locked state may cause damage of locking part.

8. Do not use more than one cylinder:
One workpiece cannot be drove by 2 or more than 2 lockable cylinders because the other locks may not be released.

9. Please use speed control valve in exhaust throttle controlling state:
The lock may not be released in air suction and throttle controlling.

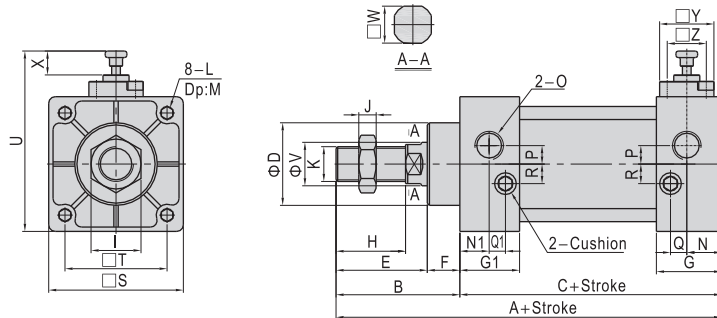
10. Make sure the stroke terminal of the cylinder is used on the locking mechanism side:
The locking mechanism may not work or released if the piston does not reach the stroke terminal.



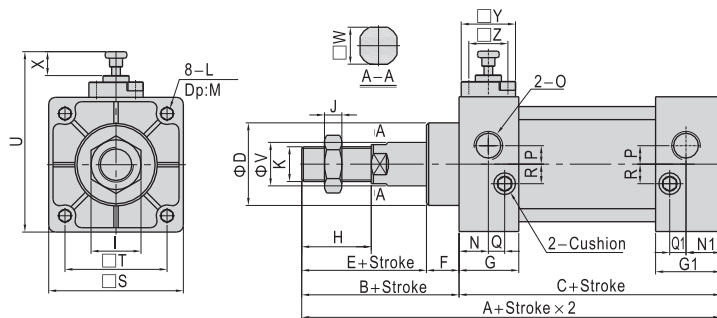
11. Ways to manually alter the unlocked state:
Screw the hand lever into the anti-drop piston and pull out the bolt of 4mm with a force more than 20N, the lock can be released after the movement of the anti-drop piston. The piston will be in locked state when the cylinder is installed horizontally with no load or forcing against the opposite port or the anti-drop piston replaced to the root position and enter into the piston rod slot with the function of stop spring.

Dimensions

SULB



SULF



Bore size\Item	A	B	C	D	E	F	G	G1	H	I	J	K	L
40	144.5	49	95.5	32	34	15	30	27.5	24	17	7	M12×1.25	M6×1.0
50	152.5	57	95.5	38	42	15	30	27.5	32	23	8	M16×1.5	M6×1.0
63	157	57	100	38	42	15	31.5	27.5	32	23	8	M16×1.5	M8×1.25
80	188	75	113	47	54	21	39	33	40	26	10	M20×1.5	M10×1.5
100	194	75	119	47	54	21	39	33	40	26	10	M20×1.5	M10×1.5

Bore size\Item	M	N	N1	O	P	Q	Q1	R	S	T	U	V	W	X	Y	Z
40	9.5	16	13.5	1/4"	6	8.2	8.2	9	50	37	71	16	14	10	25	18
50	9.5	16	13.5	1/4"	8.5	7.5	7.5	9	62	47	83	20	17	10	25	18
63	9.5	16.5	13.5	3/8"	7	8.5	7.5	8.5	75	56	96	20	17	8	30	21
80	11.5	19	16.5	3/8"	10	13	9.5	14	94	70	116	25	22	8	33	24
100	11.5	19	16.5	1/2"	11	13	9.5	14	112	84	134	25	22	8	33	24

Remark: The dimensions of magnet type cylinder are the same as non-magnet type cylinder.



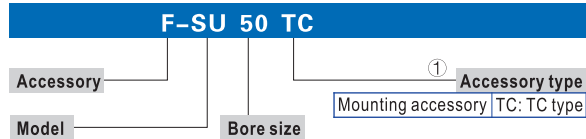
SUL

Standard cylinder(Profile)



Accessories

Ordering code



① The listed accessories are for SU cylinder. Accessories that are adaptable to other cylinders are not shown. Please refer to accessory list for selection and ordering information.

Accessory selection

Cylinder model	SU, SUL	SUD	SUJ
Accessories	Standard With magnet	Standard With magnet	Standard With magnet
Mounting accessory			
LB	●	●	●
FA	●	●	●
FB	●	×	×
CA	●	×	×
CB	●	×	×
TC	●	●	●
TCM1	●	●	●
Knuckle			
I	●	●	●
Y	●	●	●
U	●	●	●
① F	●	●	●
Sensor switch②			
CS1-B	×	●	×
DS1-B	×	●	×
CS1-F	×	●	×
DS1-F	×	●	×
CS1-U	×	●	×
DS1-U	×	●	×

① Please refer to P397-402 for knuckle detail.
② Please refer to P403-426 for detail of sensor switch.

Material of accessories

Accessories	Mounting accessories						Knuckle			
Bore size	LB	FA	FB	CA	CB	TC	TCM1	I	Y	U
32~100	□	●	●	◇	◇	◇	◇	□	□	□

●—Aluminum alloy, ◇—Cast steel, □—Carbon steel.

List for ordering code of accessories

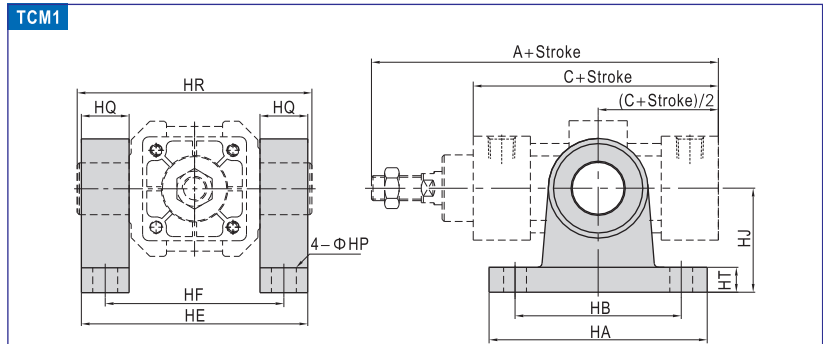
Accessories	Mounting accessory			
Bore size	LB	FA	FB	CA
32	F-SC32LB	F-SC32FA	F-SC32FB	F-SC32CA
40	F-SC40LB	F-SC40FA	F-SC40FB	F-SC40CA
50	F-SC50LB	F-SC50FA	F-SC50FB	F-SC50CA
63	F-SC63LB	F-SC63FA	F-SC63FB	F-SC63CA
80	F-SC80LB	F-SC80FA	F-SC80FB	F-SC80CA
100	F-SC100LB	F-SC100FA	F-SC100FB	F-SC100CA

Accessories	Mounting accessory		
Bore size	CB	TC	TCM1
32	F-SC32CB	F-SU32TC	F-SI32TCM1
40	F-SC40CB	F-SU40TC	F-SC40TCM1
50	F-SC50CB	F-SU50TC	F-SC40TCM1
63	F-SC63CB	F-SU63TC	F-SC40TCM1
80	F-SC80CB	F-SU80TC	F-SC80TCM1
100	F-SC100CB	F-SU100TC	F-SC80TCM1

Accessories	Knuckle			
Bore size	I: I Knuckle	Y: Y Knuckle	F: F Knuckle	U: U Knuckle
32	F-M10125I	F-M10125Y	F-M10125F	F-M10125U
40	F-M12125I	F-M12125Y	F-M12125F	F-M12125U
50	F-M16150I	F-M16150Y	F-M16150F	F-M16150U
63	F-M16150I	F-M16150Y	F-M16150F	F-M16150U
80	F-M20150I	F-M20150Y	F-M20150F	F-M20150U
100	F-M20150I	F-M20150Y	F-M20150F	F-M20150U

Accessories	Sensor switch					
Bore size	CS1-B	DS1-B	CS1-F	DS1-F	CS1-U	DS1-U
32	CS1-B1	DS1-B1	CS1-F	DS1-F	CS1-U	DS1-U
40	CS1-B1	DS1-B1				
50	CS1-B1	DS1-B1				
63	CS1-B2	DS1-B2				
80	CS1-B3	DS1-B3				
100	CS1-B4	DS1-B4				

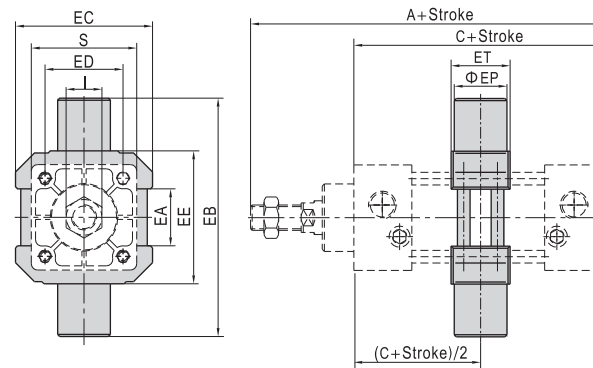
Dimensions



Bore size\Item	A	C	HA	HB	HE	HF	HP	HQ	HR	HT	HJ
32	140	93	80	60	72	62	9	12	74	11	40
40	142	93	103	80	109	86	11	23	113	12	50
50	150	93	103	80	122	99	11	23	126	12	50
63	153	96	103	80	134	111	11	23	138	12	50
80	182	107	110	85	160	137	13	23	164	12	70
100	188	113	110	85	178	155	13	23	182	12	70

Note) The installation position of the accessories can not be adjusted arbitrarily.

TC



Bore size\Item	A	C	EA	EB	EC	ED	EE	EP	ET	I	S
32	140	93	20	74	52	33	50	12	22	17	45
40	142	93	27	113	65	37	63	25	28	17	50
50	150	93	31	126	75	47	76	25	28	23	62
63	153	96	42	138	90	56	88	25	30	23	75
80	182	107	54	164	112	70	114	25	32	26	94
100	188	113	68	182	135	84	132	25	38	26	112

Note) The installation position of the accessories can not be adjusted arbitrarily.

The others accessories are the same as SC series's accessories, please refer to P217~220 for details.

