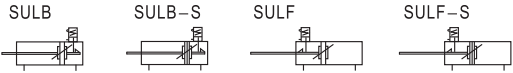


Standard cylinder(Profile)
SUL Series(Lockable type)



Symbol

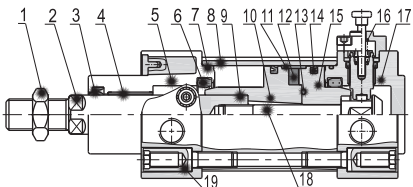


Product feature

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

Inner structure and material of major parts

SULB-S



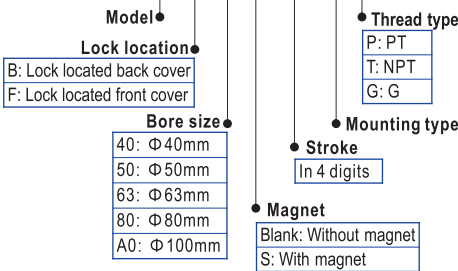
NO.	Item	Material
1	Rod nut	Carbon steel
2	Piston rod	Carbon steel with 20 μ m chrome plated
3	Front cover packing	NBR
4	Bushing	Wear resistant material
5	Front cover	Aluminum alloy
6	Cushing O-ring	NBR
7	O-ring	NBR
8	Barrel	Aluminum alloy
9	Piston rod O-ring	NBR
10	Magnet holder	Aluminum alloy
11	Wear 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 μ m 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
Port size ①	1/4"		3/8"		1/2"

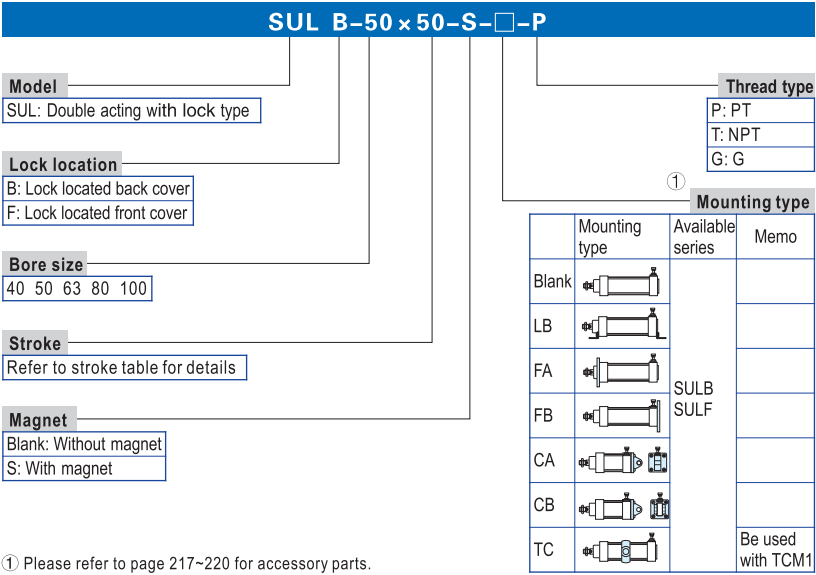
① PT thread, NPT thread and G thread are available.
Add) Refer to P403~426 for detail of sensor switch.

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.

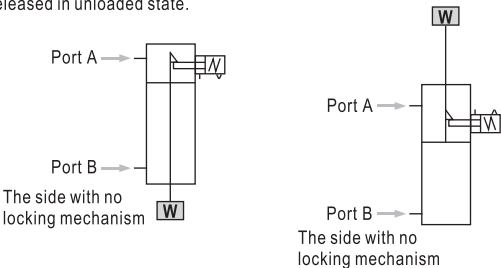


Standard cylinder(Profile)
SUL Series(With lock type)



The Operation Manual and Maintenance

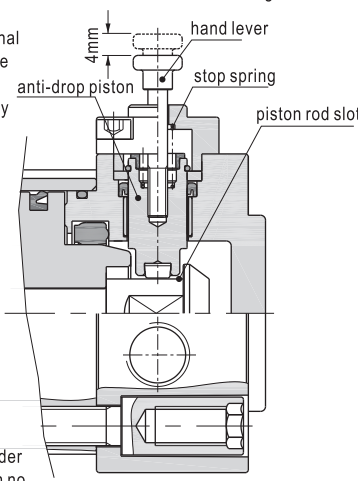
1. In locked state, if pressure is supplied to the port A when both ports are under no force, either the lock's not being released or being released abruptly may cause the flying out of the piston rod. Before the lock being released, please make sure pressure is supplied to the port B and the locking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