To Use This Product Safely

Be sure to read this before use. For general cylinder information, see Intro 41, and for cylinder switches, see P. 1512.

Individual Precautions: Compact Cylinder with Fall Prevention USSD Series

Design / Selection

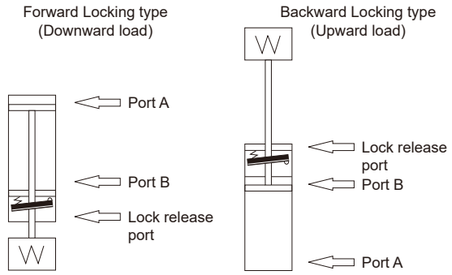
Warning

■ This cylinder is equipped with a fall prevention (holding of cylinder stationary state) mechanism. If used for emergency stop or urgent stop (stopping from cylinder operating state), the service life will be significantly reduced.

■ If back pressure is applied during locking, the lock may disengage. Therefore, use a standalone valve or an individual exhaust type manifold.

■ As holding force will decrease and it is dangerous, do not apply rotational force (torque) to the rod when the lock is activated. Also, use with a mechanism that prevents rod rotation.

■ When releasing the lock, always supply pressure to port B for forward direction lock type and port A for reverse direction lock type, ensuring no load is on the lock mechanism before releasing the lock. If pressure is supplied to port A for Forward Locking type or port B for Backward Locking type while both ports A and B are exhausted and the piston is locked, the lock may not release, or even if released, the Piston rod may extend suddenly, which is very dangerous.



■ Do not use multiple synchronized cylinders with position locking. If a synchronization error occurs, excessive moment load or load concentration may occur on the cylinder that locked first, potentially causing lock release failure, reduced lifespan, or damage.

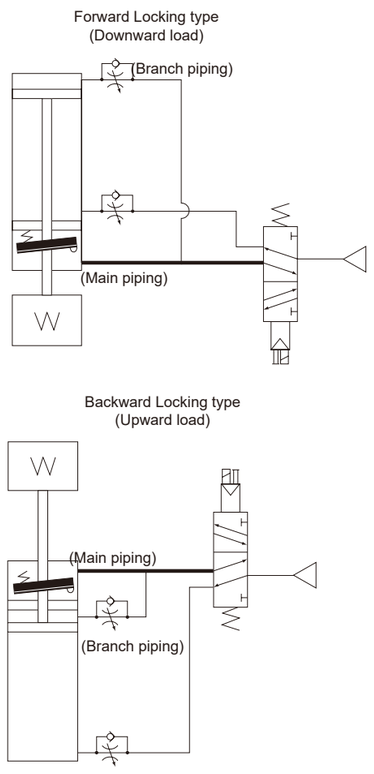
CAUTION

■ Basic Circuit Diagram

Configure the air piping for this cylinder as shown below. Piping to the fall prevention unit alone or piping different from the figure below may cause problems such as response delay.

1. Be sure to branch the piping after the valve as shown below, and pipe to the fall prevention unit (lock release port as main piping) and cylinder unit (cylinder port as branch piping).

2. If cylinder operation is faster than lock release, the lock may not release or the Piston rod may extend suddenly, so design the piping so that lock release is faster than cylinder operation.



If emergency stop or urgent stop is performed with the air piping shown above, the Forward Locking type will continue to retract and the Backward Locking type will continue to extend, returning to the origin position. (If residual pressure is gone, it will stop at that position.)

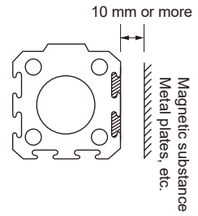
Warning

■ Applying rotational force (torque) to the Piston Rod will reduce holding force, so do not use in a way that applies rotational force.

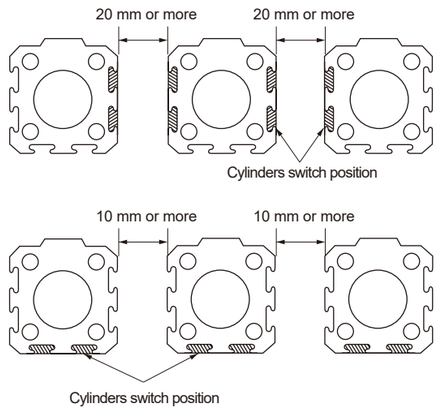
CAUTION

■ The main piping in the basic circuit diagram on the previous P. should be thicker and shorter than the branch piping.

■ If there is a magnetic material such as an iron plate near the cylinder switch, it may cause a malfunction. Therefore, maintain a distance of 10 mm or more from the cylinder surface.
(Common to all Bore Sizes)

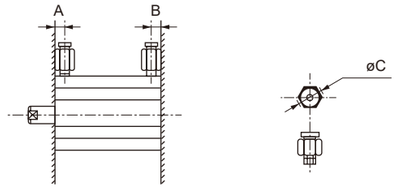


■ If cylinders are adjacent, it may cause cylinder switch malfunction. Therefore, maintain the following distance from the cylinder surface.
(Common to all Bore Sizes)



■ When using multiple cylinders in synchronization, always provide a separate guide. Using only the cylinder may impair synchronicity and cause the rod to twist, leading to malfunctions.

■ There are restrictions on usable piping fittings, so please refer to the following and use accordingly.



Item / Bore Size (mm)	Port Size	Port position dimension A	Port position dimension B	Usable fittings	Fitting O.D. øC	Unusable fittings
ø20	M5x0.8	10	5.5	SC3W-M5-4 SC3W-M5-6 GWS4-M5-S GWS4-M5 GWL4-M5 GWL6-M5	ø11 or less	GWS6-M5
ø25		12	6			
ø32	Rc1/8	12	8	SC3W-6-4/6/8 GWS4-6 GWS6-6 GWS8-6 GWL4-6 GWL6-6	ø15 or less	GWS10-6 GWL8-6 GWL10-6
ø40		15	8.5			
ø50	Rc1/4	15	10.5	SC3W-8-6/8/10 GWS4-8 GWS6-8 GWS10-8 GWL4 to 12-8	ø21 or less	GWS12-8
ø63		15.5	11			
ø80	Rc3/8	16	13	SC3W-10-6/8/10 GWS6-10 GWS8-10 GWS10-10 GWL6 to 12-10	ø21 or less	---
ø100		23	15			

CAUTION

■ After using in the unlocked state for a long time, if you try to lock it, a response delay in locking may occur. Do not leave the lock part pressurized; operate the lock part with each cylinder operation. (Please use the basic circuit diagram on P. 558)

■ If the cylinder is held with pressure applied to the lock mechanism, the lock may be released. Do not use 3-position closed-center and 3-position P·A·B connection solenoid valves.

■ Due to the structure, a drop of about 1 mm (Piston Rod movement) occurs during locking.

■ Operating units with excessive inertia, etc., will cause damage to the Cylinder Body and malfunction. Therefore, always use within the allowable absorbed energy range.

During Use

⚠ Warning

■ As holding force will decrease and it is dangerous, do not apply grease to the Piston Rod.

■ The brake unit is coated with the necessary amount of grease, so avoid applying more grease and do not wipe off the grease.

■ Never disassemble.

■ As it may cause a malfunctions, always use with the dust cover included, except during manual release operation.

■ When used in vertical mounting, etc., if there is no air pressure, holding force will be lost during manual release operation, and the rod may move (descend) due to the load's own weight, etc. Please be careful. In that case, for safety, perform the following preparations before manual release.

- Move the load to the lower end.
- Provide a stopper for the load
- Apply air pressure to the cylinder to balance the load.

For precautions during mounting, installation, adjustment, use, and maintenance, refer to "During Use" in this catalog and the CKD Components Product website (https://www.ckd.co.jp/kiki/en/) -> "Model No." -> Instruction Manual.

MEMO

With Brake / With Lock
ULK□
JSK2/ JSM2
JSG
JSC3, JSC4
USSD
UFCD
USC
Cylinders Switch
Ending