Pneumatic components

Safety Precautions

Be sure to read this section before use.
Refer to Intro Page 73 for general information of the cylinder, and to Intro Page 80 for general information of the cylinder switch.

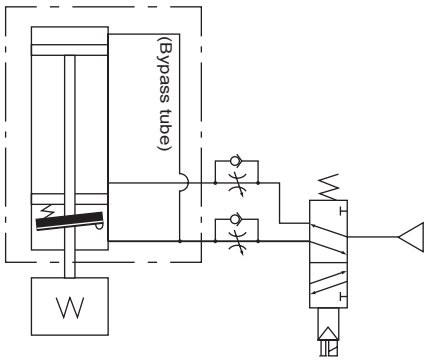
Product-specific cautions: Lightweight clamp cylinder with position locking UCAC-N32/N40

Design/selection

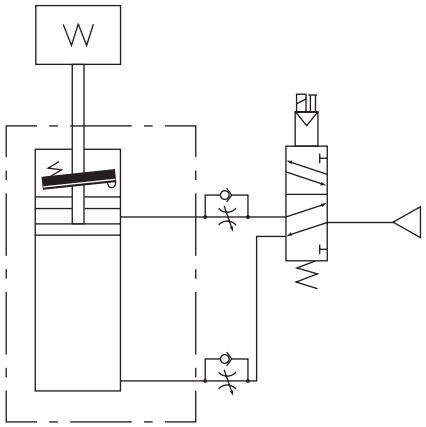
⚠ CAUTION

■ Basic circuit
To control the advance and retract speeds individually, a speed controller must be installed.

● Forward locking F type



● Backward locking B type



Using the emergency stop will move the cylinder backward in a forward locking type and forward in a backward locking type, returning it to the original position. (When there is no residual pressure, the cylinder stops at that point.)

Mounting, installation and adjustment

⚠ CAUTION

■ Flush the connected pipes sufficiently when mounting to prevent foreign materials or cutting chips from entering the cylinder.

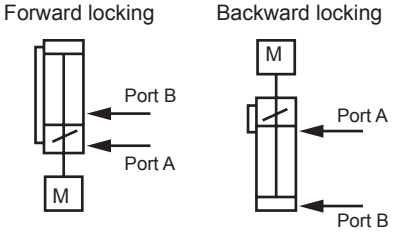
■ Protect the piston rod sliding surface from scratches and dents.
It will cause damage to the packing, etc., and may lead to air leakage.

Use/maintenance

⚠ WARNING

■ For safety purposes, prevent the load from falling under its own weight during maintenance. Do not apply torque to the rod when locked because the locking force may decrease, creating a dangerous condition.
Also, use this product in mechanisms in which the rod does not rotate.

■ Make sure to supply pressure to port B , and before unlocking, check that load is not applied to the lock mechanism.
If pressure is supplied to port A when both ports A and B are exhausted and the piston is locked, the lock may not be released or the piston rod may pop out even if the lock is released. This can be extremely hazardous.



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

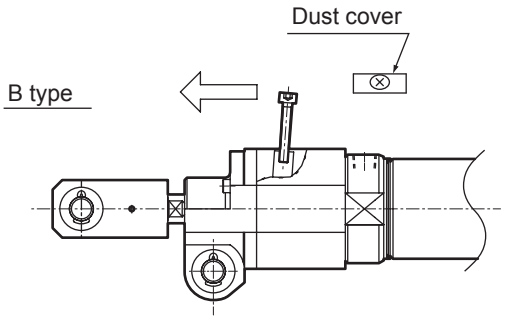
■ If a back pressure is applied while locked, the lock may be released. Use a discrete solenoid valve for brake release, or use an individual exhaust manifold.

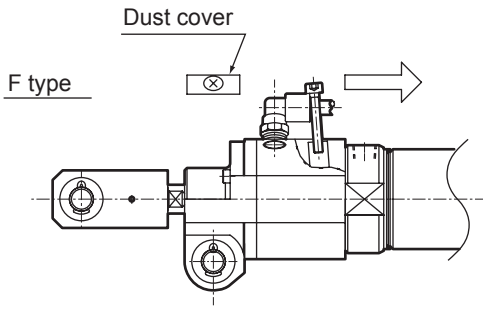
■ Do not use with the by-pass tube disconnected as lock response could be delayed.

■ Note that due to the structure, a 1 mm deviation may occur when stopped with the lock.

■ How to unlock manually

1. Remove the dust cover A.
2. Screw the hexagon socket bolt (length: 40 or more recommended) fully into the screw hole M4 of the lock metal.
3. Push the hexagon socket bolt in the direction of the arrow to free the rod.





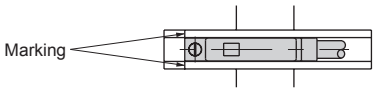
■ Do not disassemble the unit, as doing so may be dangerous.

1. Common (with T-switch)

⚠ CAUTION

■ When moving the switch stroke-direction

- The 1-color LED switch can be fine-tuned by ±3 mm from the default. If the adjusting range exceeds ±3 mm, or when fine-tuning the 2-color LED switch, move the band position.
- Loosen the switch fixing screw, shift the switch along the rail, then tighten at the specified position.
  When using T2, T3, T0, or T5, use a flathead screwdriver (clockwork screwdriver, precision screwdriver, etc.) with a grip diameter of 5 to 6 mm, a 2.4 mm or smaller tip, and a thickness of 0.3 mm or less to tighten the screws with a tightening torque of 0.1 to 0.2 N·m.
  When using T1, T*C, T2J, T2Y, T3Y, or T8, tighten the screw with a tightening torque of 0.5 to 0.7 N·m.
- The switch bracket rail has a marking 4 mm from the rail end. Use as a guide to the mounting position when replacing the switch. Switch rail markings are set to the default switch max. sensitivity position. The max. sensitivity position will change when the switch is changed or when the band is moved. Adjust the position accordingly in this case.

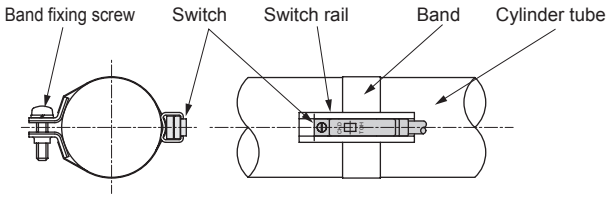


■ When moving the switch position to the circumferential direction

- Loosen the band fixing screw, shift the switch rail in the circumferential direction, then tighten at the specified position. Tightening torque is 0.6 to 0.8 N·m.

■ When the band position shifts

- Loosen the band fixing screw, shift the switch rail and band along the cylinder tube, and tighten at the specified position. Tightening torque is 0.6 to 0.8 N·m.



■ Switch mounting and travel method for tie rod mounting (A/C)

Mounting method

(1) Pass the plain and spring washers through the slotted hexagon head bolt, and fit it onto the holder.
(2) Fit the bracket onto the cylinder tie rod and tighten the hexagon socket head cap screw. Tightening torque is 0.5 to 0.7 N·m.
(3) Lastly, tighten the hexagon socket set screw. Tightening torque is 1.7 to 2.0 N·m.

Travel method

(1) Fine adjustment
Loosen the slotted hex socket bolt, move only the switch body, and fix at the required position. Tightening torque is 0.5 to 0.7 N·m.
(2) Rough adjustment
Completely loosen the slotted bolt and set screws, and move the entire mounting bracket to the required position. Tighten the slotted bolt. Tightening torque is 0.5 to 0.7 N·m.
Then tighten the set screw. Tightening torque is 1.7 to 2.0 N·m.