

Safety notice/pneumatic cylinder/caution for application

CHELIC PNEUMATIC

Please read the safety notice carefully before using and pay attention to the safety caution of this product

- Pay attention to the individual caution for various model series(read the cautions and safety notice in P9~10 for common cautions)

Caution for design, selection

Warning

- Make thorough understanding to the characteristic of the compressed air and the application of this product while designing circuit.
- Please use only the fluid stated on the catalog, don't use the fluid other than limited, in order to prevent damage of product and affect the operation safety.
- The air used is compressed air, please note that expandable and unstable pressure will fly out, burst out, or leak.
- Please used as per specification and within the specified conditions; use exceed the specification may cause hazard. Please used as per the specification stated on the catalog, exceeding the pressure beyond the specification, temperature and condition will cause poor action and affect the operation safety.
- Due to the mechanical design with the variation of wobbling movement of the cylinder, please pay attention of flying objects and possible crash hazard of your limbs, resulting in body injury and mechanical damage and so on; so, take precaution upon designing.
- The movable range of cylinder may contact our body and cause injury, should be protected by safety guard to prevent direct contact of body hazard.
- For larger mechanism or long stroke object, the selected cylinder must equip with buffer device and provide with deceleration circuit to reduce and sooth the rigid impact of the mechanism device.
- Take the emergency or transient cut off power source, or power failure, air source circuit pressure drop causing holding force drop, vertical movement slip and resulting in damage of mechanical device, and human safety into account upon designing, so, safety countermeasure should be taken in design.
- Take the driving mechanism and circuit control system combination into account upon design to avoid residue pressure in circuit. Failure to completely positioning and lateral pressurized and other factors may cause high speed fly out of the object. These situations are very possible to cause body injury, limbs crashed, and damage of mechanism, countermeasure of protective circuit is necessary.
- Emergency stop device for mechanism is essential. In case of malfunction, in addition to protective device, emergency stop device should be provided in order to prevent body injury and damage of equipment.
- Re-start after emergency stop should confirm safety position of all mechanism, avoid interference and impact due to error position, affect human body and damage the equipment; there should have safety precaution countermeasure for restarting after emergency stop upon design.

Pneumatic
cylinder

- While applying three positions intermediate stop control in cylinder, take the expansion property of air and low hydraulic operation, the precise intermediate position difficulty into account. For long period stop position, consider the displacement cause by air leak; Please contact the sale unit of us in case of special application.
- Requirement of peripheral environment:
 - (1) Avoid to be used in environment with chemical, inflammable, corrosive and sea water, high temperature;
 - (2) Avoid to be used in the place with heating and irradiative heat;
 - (3) Follow the requirement stated in the specification for ambient temperature;
 - (4) Prevent poor action cause by frozen while use in cold climate;
 - (5) Avoid the environment in outdoor with sun and dusty place, which cause unstable in quality;
 - (6) Avoid to be used in oily, inflammable and explosion proof place.

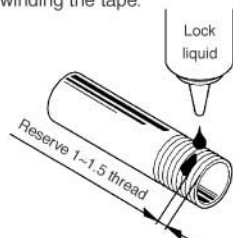
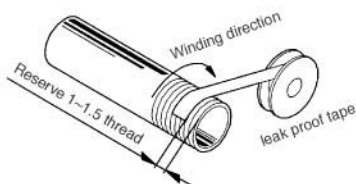
 **Caution**

- Prevent debris and dust from entering the cylinder while laying, which may cause failure and poor movement.
- The use of cylinder should follow the principle of not exceeding max. stroke, prevent the momentum force impact the front and rear cap of the piston.
- The in/outlet of the cylinder should be equipped with governor for controlling the traveling speed of the cylinder. It is preferable to control the cylinder by check out.
- The cylinder with long stroke should design with intermediate support, arbor and cylinder tube. If support on one side will cause static load deflection, in case of shock and loaded may tend to damage.
- Plural cylinder device't simultaneous moving structure, should be designed with guide rod to prevent interference and poor action.
- The axis of the cylinder should move consistence with load, no lateral load is allowed and will cause surface worn and damage of the arbor, and make the shaft seal packing damage resulting in leakage and poor action.
- At the portion of external guide rod or shaft end connection object, the shaft end connection must avoid connection interference, it is preferable to connect to floating coupling or angular adjustable device, prevent damage cause by imbalance action and single side rubbing.
- The inner wall of cylinder and arbor are precise machine, avoid scratch and knock to this portion, especially damage of the outer tube of the cylinder tube will lead to deformation of tube wall, this is the cause of malfunction and damage of cylinder.
- The cylinder is equipped with adjustment of buffer device, it should be adjusted according to the actual moving speed and max. load condition; the adjustment of the needle valve of the buffer device shouldn't be in full close, this will cause the damage of buffer packing.

Safety notice/pneumatic cylinder/caution for application

CHELIC PNEUMATIC

- Prevent debris and leak proof tape residue from entering the pipe while pipe laying and assembling the connector. Reserve 1~1.5 thread not wound with tape while winding the tape.



- If the connector is locked by using anoxic glue, avoid excessive amount and fluid glue from flowing in the body, which may cause jammed and poor movement.
- Caution for installation and application of sensor
 - (1) Confirm the specification and voltage value before usage;
 - (2) The fixation of tie band shouldn't be tilted and skew angled.
 - (3) When the sensor is connected to load with length of wire exceed 10m, equip one extra induction sensor nearby the sensor in order to prevent pulse and prevent contact fail to release.
 - (4) Please don't exceed the specified voltage and current.
 - (5) Add protective circuit when connected to induction load.
 - (6) If the lead wire of the solenoid switch is pulled by force, twisted, wobbled or put heavy object on top, serious condition will cause short and damage of mechanism.
 - (7) There is 0.5mm error between responses of solenoid switch.
- Please be careful and check all parts for securing before operation.

Pneumatic
cylinder

Caution for design, selection

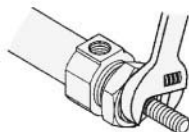
Warning

- Shut off the power switch and air source properly before service and maintenance, confirm that there is no residue pressure in the pipeline and start work after confirming the status is safe.
- The cylinder is coated with small amount of oil at initial using state; it will decrease after a period of usage, and should be added up with appropriate amount of oil according to actual application condition. Lubricant is essential in high speed moving, limit to use ISO-VG32 lubricant, feed by oil applicator, may cause poor action if stop oiled when it is required.

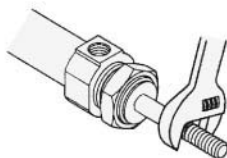
⚠ Safety notice/pneumatic cylinder/caution for application

CHELIC PNEUMATIC

- While removing the cylinder shaft end, it shall work at position with piston pushing in the cylinder (don't pull the cylinder shaft out to serve installing and removing turning), and apply the force evenly to tighten in balance, and push by hand to confirm there is no interference and then start to supply air.



○ Correct



✗ Incorrect

- Service and maintenance should be performed regularly as scheduled, and confirm the normal operation of the following:

Pneumatic
cylinder

- (1) Is the compressed air supplied stably?
- (2) Is the front filter and strainer normal?
- (3) Is the connection portion or piping loosened accompanied by moving of the object? Is the pipe connection portion normal?
- (4) Is the action condition of the cylinder normal? Is there any delay phenomenon and exhaust normal? Any strange noise?
- (5) Whether the piping system connected to the solenoid valve (governor) is normal? Terminal start and stop movement normal? Is the load system normal?
- (6) Is the lubricant feeding system normal? Is the oil amount adjusted properly?