



**LEAD INDUSTRIAL (CHANGZHOU) CO.,
LIMITED**

INSTALLATION OPERATION & MAINTENANCE INSTRUCTIONS

Application of Rotary Airlock Valve

LEAD INDUSTRIAL's Rotary Airlock Valves are used in pneumatic conveying systems, dust control equipment and as volumetric feed controls to maintain an even flow of material through processing systems.

The basic use of the rotary airlock Valves is as an airlock transition point sealing pressurized systems against loss of air or gas while maintaining a flow of material between components with different pressure Rotary Airlock Valves are also widely used as volumetric feeders for metering materials at precise flow rates from bins
hoppers or silos into conveying or processing systems.

Rotary Airlock Valves have wide application in industry wherever dry free flowing powders granules crystals or pellets are used Typical materials include cement
sugar minerals grains plastics dust fly ash flour gypsum lime coffee cereals
pharmaceuticals etc.

Contents

1. Introduction.....	1
2. Shipping and Receiving.....	1
3. Safety.....	2
4. Installation.....	3
5. Operation.....	3
5.1 Check before operation.....	3
5.2 Check when starting operation.....	3
6. Maintenance.....	4
6.1 Rotor and body.....	4
6.2 Start-up.....	4
6.3 Vibration.....	4
6.4 Bearing Lubrication.....	4
6.5 Reducer.....	4
6.6 Repainting.....	5
7. Troubleshooting.....	5

1. INTRODUCTION

Thank you for purchasing a **LEAD INDUSTRIAL(CHANGZHOU) CO., LIMITED** 's Rotary Airlock. Your new airlock is built to the highest industry standards. Great care has been taken to design and manufacture a high quality, low maintenance product that is economical to use and maintain. This manual is intended to assist in the installation, operation and maintenance of your airlock. The instructions in this manual are general in nature and apply to a variety of models. Each situation dictates the need for any special precautions and it is the user's responsibility to ensure that adequate safety measures are employed in installation, operation and maintenance. As always, follow good safety practices around all equipment.

2. SHIPPING AND RECEIVING

LEAD INDUSTRIAL(CHANGZHOU) CO., LIMITED's Rotary Airlocks are shipped completely assembled and ready for immediate installation. Upon arrival inspect all components for damage that may have occurred during shipping. Check the bill of lading or packing list to verify the proper equipment and quantities. Should any discrepancies arise contact the carrier immediately? All airlocks should be lifted by the mounting flange using appropriate lifting equipment (i.e. crane, forklift) using nylon strapping and or wooden blocks to prevent damage to the airlock. Never lift airlock by motor or shaft.



CAUTION!

- **Misuse or modification of this equipment may result in personal injury.**
- **Do not misuse or modify**

Safety First!

Read this before installing airlock.

The **LEAD INDUSTRIAL(CHANGZHOU) CO., LIMITED**'s Rotary Airlock like all commercial equipment must be used correctly and with common sense. All installations must include guards and other devices on both the infeed and discharge sides of the airlock that will prevent anyone from reaching into the rotor. Failure to provide these devices will endanger personnel. Before servicing or inspecting turn off and lock out power to the airlock. Refer to your facilities' "LOCK OUT - TAG OUT" procedure. Many systems employ sequencing that may allow an airlock to start without warning. It is imperative that all service and inspection be performed with the power turned off and locked out. Failure to do so may cause serious injury or death.

4. INSTALLATION

A visual inspection of your rotary airlock should be performed before it is removed from the truck. Scratches, dents or other damage should be noted on the freight's bill of lading and reported to the carrier as well as lead industrial. Damage during transportation is the responsibility of the carrier.

The shipping cover should be removed from the inlet of the rotary airlock to check for any accessories that were placed inside the airlock for shipment.

The inlet and outlet of the airlock should be attached to other components using silicone sealant as a gasket along with the properly sized fasteners. Component flanges must be flat and square.

The rotary airlock can be rigidly mounted to other components, but must not be twisted or forced out of shape, which will affect the performance. The rotary airlock also is not designed to support the weight of other components connected to it.

The chain guard should be removed for an inspection of the sprockets and chain. Sprockets should be properly secured and aligned. The chain should be checked for proper tightness. Replace the chain guard after inspection and before start-up.

The gear reducer should be checked for lubrication. See the manufacturer's manual, included in this manual, for proper lubrication.

5. OPERATION

5.1 Checks before starting operation

Before shipment, the construction and finishing of all units of equipment is visually controlled. They are tested in operation to observe the work of all parts and accessories involved in manufacturing and assembly.

However, there is the risk of some damage in transportation. For this reason, the unit should be inspected by the customer upon arrival and any irregularities should be reported to the manufacturer.

We also recommend the following procedures before starting operations:

- 1) Be sure that protections and accessories (when applicable) are duly tightened and installed.
- 2) Check tightness of assembling bolts of modules, motor fixing, reducers etc.
- 3) Check bearing lubrication and right level of reducer.
- 4) Be sure that there are no bolts, nuts or foreign parts inside body valve.
- 5) Check rotation direction (in case of flexible sealing edge)
- 6) Check alignment of the motor, reducer, pulleys and belts when applicable.

5.2 Check when starting operation

After starting valve operation, the following procedure is recommended:

- 1) Check lubrication condition.
- 2) Make sure there is no noise or abnormal vibrations in rotating parts.
- 3) Check if there are any loose bolts or poorly tightened in the set.
- 4) Check general condition of seals between flanges.
- 6) Follow up temperature of bearings periodically: after the equipment reaches normal operating conditions, the temperature cannot exceed 80° C.
- 7) Check general wear of the set; particularly wear of sealing elements of the rotor.

6. MAINTENANCE

LEAD INDUSTRIAL airlocks require little maintenance in most applications. Periodic lubrication is required as outlined under "Installation". The severity of the application will dictate the time interval for relubrication and type of lubricant.

The airlock should be visually inspected for air leaks, obstructions and product flow daily or more frequently depending on product flow rate.

Bolt connections should be checked for integrity on a bimonthly basis. Also check the structural support for any signs of rust or fatigue and take appropriate steps to correct any problems.

6.1 Rotor and Body

The inlet mouthpiece must be tightly sealed. Any leaks should be fixed immediately.

External painting must be renewed whenever possible, or according to possibilities, to avoid part corrosion.

The Rotary valve must be continuously observed: make sure there is no dust build-up. If there is any dust, the blades must be cleaned carefully with:

- 1) Steam,
- 2) Water jet,
- 3) Compressed air
- 4) Metal brush.

Under no circumstances cleaning should be made by hitting on the valve body or rotor with heavy parts. Such procedure will cause deformations and leaks.

These deformations will favour build-up or agglomeration of materials, which will cause increased resistance besides reducing the volume of dust to be unloaded.

In case of wear of blades, of rotor, or of sealing elements, these should be replaced periodically.

6.2 Start-Up

Check the motor, reducer, fixing ring and bearings periodically.

6.3 Vibration

Check if there are excess vibrations on supports, as well as on starting-up parts, to prevent premature wear of the equipment.

6.4 Bearing lubrication

Bearings: Bearings are lubricated when assembled at factory; however they should be checked before putting into operation.

Bearings: Clean bearings, eliminating all dirt and impurities before lubricating them. This can be done by washing them with a clean petroleum solvent, and then drying them carefully with air or a clean cloth.

6.5 Reducer

Before being shipped, all reducers used in the equipment are submitted to a working test without load. Under normal transport and storage conditions, the lubrication used ensures protection during assembly.

When the equipment is assembled, provide for free access to reducer, particularly to the inspection plug and to the level of lubrication, as well as to the draining plug. The air flow to dissipate heat from the reducer must not be blocked by protection devices or others.

The couplings have been duly assembled at our factory according to guidance from the respective

manufacturers. Before start-up, it is the duty of the customer to check for misalignments during transport and assembly, and to secure these elements so there is no axial displacement, when in operation.

6.6 Repainting

Repainting internal and external parts of Rotary valve will increase its durability. Choose paintings that resist operation temperatures; for normal temperatures, use a good paint for machines. If there is excessive humidity, or if transporters are exposed to bad weather, bituminous paints are recommended.

The competent person or sector must be warned when there are corrosive gases

7. TROUBLESHOOTING

Symptom	Possible cause	Solution
Rotor does not rotate	No power to motor	Check breaker Check motor heaters Check motor starter
	Rotor is jammed	Inspect rotor and remove object
	Chain is broken or has come off	Remove guard and inspect drive
	Faulty motor or gear reducer	Remove chain and run motor with no load
Excessive noise	Bearings need grease	Grease bearing, replace if necessary
	Rotor has shifted	Inspect rotor and realign
	Drive chain is rubbing on guard	Reposition chain guard or sprockets and chain
Excessive air leakage through airlock	Worn rotor wiper	Inspect and replace

WARRANTY

LEAD INDUSTRIAL(CHANGZHOU) CO., LIMITED is guaranteed against defects in materials and workmanship if properly installed, maintained and operated under normal conditions, for a period of one year from date of shipment (with the exception of filters and flexible connections, which carry a ninety (90) day warranty, and motors which are guaranteed by their manufacturer). In the event of defects developing within that period under normal and proper use, seller will furnish, F.O.B. its plant, without charge, parts required to replace material found defective. Seller shall not be held liable for any further costs, expenses, indirect or consequential damages, and liability shall not exceed price of purchased equipment.