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ANDANTEX

KLEANLOK

OPERATING & MAINTENANCE

INSTRUCTIONS FOR

KLEANLOK

BULK HANDLING SPECIALISTS

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KLEANLOK
OPERATING & MAINTENANCE INSTRUCTIONS

Important Note

ONLY QUALIFIED AND/OR APPROVAL PERSONNEL SHOULD UNDERTAKE THE INSTALLATION, START UP, PUTTING INTO SERVICE AND PERIODIC MAINTENANCE OF THE VALVE AND SAFETY ASPECTS CANNOT BE OVEREMPHASISED.

THE STANDARD ROTOLOK ROTARY VALVE SAFETY LEAFLET HIGHLIGHTS THE MAJOR PRECAUTIONARY STEPS THAT SHOULD BE STRICTLY FOLLOWED.

Health and Safety at Work

In the interest of health and safety at work, it is essential that before installation such matters as application, mounting position, support and other similar matters should be thoroughly investigated.

Check List before Running

a) Observe fully all Kleanlok valve and gearmotor operating instructions provided and SAFETY LEAFLETS

b) Ensure that the inlets and outlets are protected by the feed and discharge ducting / trunking or Other handling equipment so that it is not possible for operators or maintenance personnel to Get hands/fingers or any part of their body close to the point where the rotor is moving.

c) If attention to the rotor for inspection, cleaning or other purpose is necessary, the supply to The gear motor drive must be isolated and "locked out" to prevent accidental motor start up.

General Instructions

The Rotolok Valve is of all metric construction with fasteners of metric threads.

The body is of robust proportions and of Stainless Steel grade 316 (other grades on request).

The end covers are of similar metal and are spigot located into the valve body to ensure concentricity.

Rotors

Are fully fabricated precision machined with again the choice of material construction and are offered in fixed open scalloped type as standard with 8 vanes. The large radius scallop at the base is generally self cleaning as used in the food industry.

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Bearings

Sealed for life ball type rigged outboard in raised boss in end covers and positioned against a shoulder

Shaft Seals

Rubber lip seals enclosed in end covers and retained by a circlip. Tell-tale port in the housing to indicate when the seals need replacing

Drive

The valve is normally flange mounted to an extended tube and inline with rotor and driven through a suitable coupling. Variable speed options are also available.

Other drives can be sidewall mounted and rotor driven via chain and sprockets. Shaft mounted worm type units can also be accommodated.

All units are tested prior to dispatch and are ready for installation. It is important that should the valve be held in store then it should be a clean dry atmosphere with inlets sealed to prevent the ingress of dust, dirt, etc.

Installation

The wiring of the electric motor to power the valve should follow the instructions laid down in accordance with the information supplied in or on the conduit box. However do not perform any work on the valve whilst power is connected.

It is important that the valve mating flanges are perfectly flat and level, as any distortions or stresses imposed on the valve could, because of the close tolerances within the body (0.10 to 0.15mm, 0.004/0.006") jam the rotor; these tolerances will vary dependent on the system operating temperature.

On bolting up the valve ensure that the rotor is free to rotate.

It is not customary for Rotolok to supply gaskets but we will do so at special request.

Check chain tension and adjust as necessary. Most gearboxes are dispatched dry. Therefore every unit should be checked and filled with the appropriate grade of oil as per gearbox details.

Before running the valve the approach equipment, e.g. hopper, ducting, screw feeder, etc, should be thoroughly cleansed and checked to be free of foreign matter as serious damage can be done to the valve internals. Weld spatter, weld rod ends, bolts, wood, etc., are regular problems.

Start Up

With valve inlets and outlets fully protected to ensure safety power should be now supplied to the drive motor and the motor jogged to ensure clockwise rotation when looking at the drive gearmotor output shaft.

With chain tension having previously been checked and adjusted the guard cover must now be reinstalled (if this type).
Remember never run the valve with chain cover removed.

If air purge facilities are provided to the seals a supply of clean dry air 1-2 psi above the valve internal pressure should be applied.

Valve is now ready for production.

General Maintenance

ALWAYS ISOLATE THE POWER BEFORE COMMENCING WORK ON THE VALVE.

Maintenance apart from planned overhaul should be adequately covered by regular and frequent attention to reduction gear lubrication and lubrication of the motor drive chain and chain sprockets (if chain driven).

It is recommended that the complete Rotary Valve is dismantled for cleaning, inspection and overhaul as necessary at regular intervals.

The interval between such routine overhauls will vary between the product being handled and total operating time. To a large degree the rate of wear for a particular application would be assessed by practical experience.

If leakage or continual overheating occurs, the lip seals should be completely renewed.

Motor Drive Sprockets and Chain

If installed, with the power off remove the chain cover and inspect the rotor and rotor shaft sprockets, examine the sprocket teeth for signs of wear and renew if necessary.

When replacing the sprockets and drive chain, ensure that the sprockets are correctly aligned and that the chain tension is correct.

With one straight length of chain reasonably taut, it should be possible to manually flex the trailing length a total 12-15mm (1/2" - 5/8").

Adjustment, to vary the distance between sprocket centers and therefore the chain tension, is provided for in the motor mounting arrangement where nuts can be adjusted on studs and in effect jacking in/out gearmotor.

Special Remarks

It is vitally important that rotor/body/end covers do not rub or come into contact, as shortly during running pick up will occur causing screeching and eventually lead to valve seizure.

On all other types of rotors, special setting-up procedures must be adopted to ensure that rotor clearances are maintained and held.

Air Purged Seals

To prevent dust laden air from penetrating the lip seal area thereby breaking down both seals and rotor shaft, air purging can be a distinct advantage. This is especially true on abrasive products and on pneumatic conveying applications.

To satisfy this requirement a phosphor bronze, nylon or PTFE lantern ring is used and replaces one lip seal. The end cover is drilled and tapped to accommodate a 1/8 BSP connection to which an air supply of 1-2 psi above pneumatic conveying line pressure is applied. This allows air to bleed inwardly into the valve thereby eliminating contamination.

Rotor Removal

ROTOR REMOVAL (OTHER THAN QUICK RELEASE) WITH POWER OFF

To remove the rotor from the body the following procedure should be adopted.

a) Working on the non-drive end, undo the setscrews holding the cover to the body. With two of these setscrews insert in jacking holes and jack off the end cover. The rotor will come out.

b) The rotor can then be checked, repaired or replaced.

Quick Release Rotor System

To remove Rotor:

a) Working on the non-drive end cover, undo the thumbnuts (Hexagon screws in UK and Europe) hold the cover to the body. The rotor will draw out of the body as the end cover is withdrawn.

To refit Rotor:

b) Slide the rotor into the valve body with the slot of the rotor shaft inline with the peg of the drive shaft. Ease the shaft through the drive side seals and rotate the rotor slightly until it engages with the peg.

   Refit the end cover retaining screws and tighten as necessary.

Problem Awareness

DISCONNECT ALL POWER BEFORE UNDERTAKING ANY WORK ON THE VALVE OR DRIVE.

Motor Problems

1) If a motor fails to run check to see if the mains power supply is available and sufficient for the motor specified on the nameplate.

   Check the wiring connectors, overloads, etc, and reset or replace as necessary.

2) Motor fails to run, may be burnt out and will need rewinding or renewing.

3) Motor failure could be caused by no oil in gearbox, if so gear/or gearbox may need replacing.

4) Valve rotor may have seized and if so the valve will need stripping and cleaning.

5) Motor may be using greater amperage than nameplate. Disconnect chain drive and run geared motor to assess whether the additional loading is from the gearbox. If from the valve, The rotor clearance or product needs investigating. If the gearbox is suspect refer to Rotolok.

6) Motor or Drive noise, check oil in gearbox and lubrication on chain.

   Check chain alignment and chain clearance within guard.
   If the noise is from gearbox refer to Rotolok.

Airlock Problems

1) If noise is from valve, check clearances and centralise or clean valve internals.

2) Valve direction must be clockwise.

3) Valve screeching due to type of product being handled which although environmentally troublesome is not detrimental to valve function.

4) Leaking seals due to ingress of contaminate or product causing dust escapement, take out the existing seals clean housing thoroughly and fit replacement seals

Operational Problems

Throughput not being maintained: check valve speed, valve clearances and adjust and renew as required. If problem continues check rotor pockets are being emptied and the rotor is clean.

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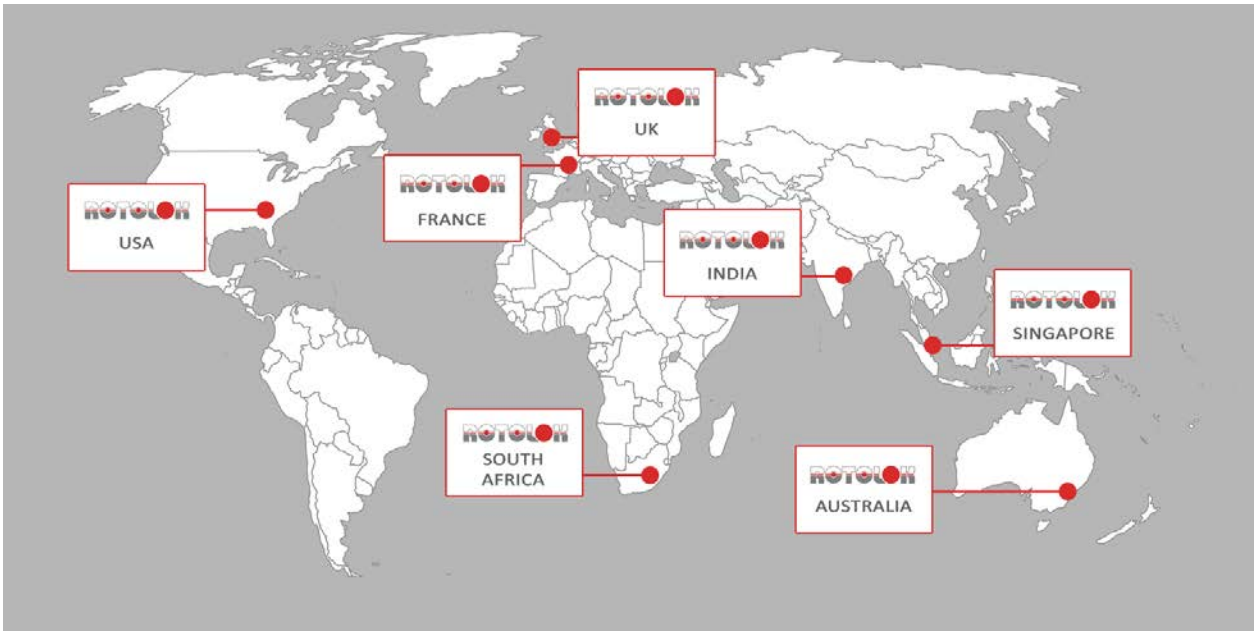

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