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FABRICATED SLIDE VALVES

OPERATING & MAINTENANCE INSTRUCTIONS

FOR

FABRICATED SLIDE VALVES

BULK HANDLING SPECIALISTS

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OPERATING & MAINTENANCE INSTRUCTIONS
RACK & PINION FABRICATED SLIDE VALVES - MOTORISED HEAVY DUTY

Description

Fabricated Slide Valves are used in the bulk handling field to isolate the flow of powder, pellets or granules between two sections of a process. Primarily designed for use in gravity feed applications because there is no dust or air tight seal across the slide plate, a fabricated slide valve could be used with a differential pressure without damage, though it is possible that excessive dust and air leakage could occur across the slide plate and/or into the rear chamber through the gland, possibly causing environmental dust issues and problems with the efficiency of the valve actuation.

The Rotolok Slide Valve body is generally fabricated from steel channel sections. The slide plate is generally 10mm thick and runs on flanged rollers machined from either Nylon, Mild Steel or Stainless Steel. Nylon rollers run directly onto machined roller pins, steel rollers are fitted with oil impregnated phosphor bronze plain bush bearings.

Construction

Body:	Fabricated Mild Steel or Stainless Steel.
Slide Plate and Supports:	Mild Steel or Stainless Steel
Gland Packing:	Felt.
Limit Switches:	Mechanical roller.

Actuation

The slide is operated by means of a geared motor which is keyed to a shaft, which in turn has two taperlock sprockets keyed to it. In addition, another shaft is mounted parallel to the first, on which there are also two taperlock sprockets. The two pairs of sprockets are linked by roller chain. The chain and sprocket arrangement transmits the rotary motion to horizontal movement by fixing the chains to the base of the slide plate.
Limit switches are fitted and positioned to indicate open/closed conditions.

The slide plate passes through an integral gland type seal with felt packing as standard, other packing materials can be fitted such as for food quality or high temperature applications. This is not a dust tight seal, but is designed to minimise dust escapement.

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Installation & Operation

The valve is normally supplied ready for bolting directly to mating flanges, which need to be flat and true to avoid distortion of the valve body. Any mating flange distortions must be accommodated with suitable gaskets to avoid dust contamination to the environment and flange bolts not over tightened, inducing unwanted stress.

Once securely and safely installed, ensuring nothing can inadvertently be put into the cavity, the upper cover plate should be removed so that the movement of the slide plate can be observed to ensure it is running freely. Replace the cover plate and operate the valve, without product being handled, for no less than sixty operations to 'run in' the gland seal. Isolate the power supply, remove the cover plates and re-tighten the gland follower if required. Refit the cover plates and the valve is now ready for use.

It is important to ensure that the valve internals and the cavity underneath the cover plates are free from product and any tramp materials before first operation and any subsequent reset or maintenance.

The chain and sprockets pushes and pulls the slide plate across the valve opening, and through the gland seal, to block off or open the body inlet. Product then falls under gravity through the inlet and valve body.

Maintenance

Ensure the valve is completely empty of product prior to carrying out any maintenance. Isolate the valve electrically prior to carrying out any maintenance.

The maintenance requirements are minimal on a fabricated slide valve as the only moving internal part is the slide plate. Depending on the valve usage, product handled, actuation time and frequency the preventative maintenance schedule should be determined by on-site conditions and experience.

As a minimum it is recommended that the slide plate support rollers are checked at three month intervals for general wear and to make sure they are rotating freely. The rear chamber in the body should be checked at least once a month and cleaned out, if necessary, to prevent dust and product buildup. Chain tensioning is achieved by moving the hanger bearings (mounted on studs)) to the desired tension. Occasional lubrication of the chain is recommended. At the same time it is advisable to check and retighten the gland follower.

The gland packing can be replaced if required by removing the cover plates, removing the gland follower nuts and sliding the follower along the slide plate. Remove the old gland packing and replace with new seal material ensuring the ends are cut at an angle and overlap and the joint is on the underside of the plate. Refit the gland follower and cover plate.

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Recommended Spares

When spare parts are required, always quote the valve serial number.

Gland Packing
Support Rollers
Roller Pins
Roller Bearings (if fitted)

Handling

Lift valves from under the base of the unit. If fork trucks are used to move the valves, take care to prevent damage to the underneath parts. Improper handling can cause distortion, misalignment and breakage, particularly on flange corners.

Safety

In addition to standard safety regulations, the operator and maintenance personnel should be instructed to observe the following safety rules with fabricated slide valves.

1. Ensure the valve is isolated before removing any guards or performing any maintenance.

2. Ensure adequate guarding of all exposed moving parts.

3. Isolate the valve electrically prior to any maintenance.

4. Do not put body parts or tools inside the valve while in operation.

5. Ensure a continuous and suitable electrical earth connection is fitted to the threaded stud provided and tested for grounding.

Ignoring the safety rules could result in serious injury.

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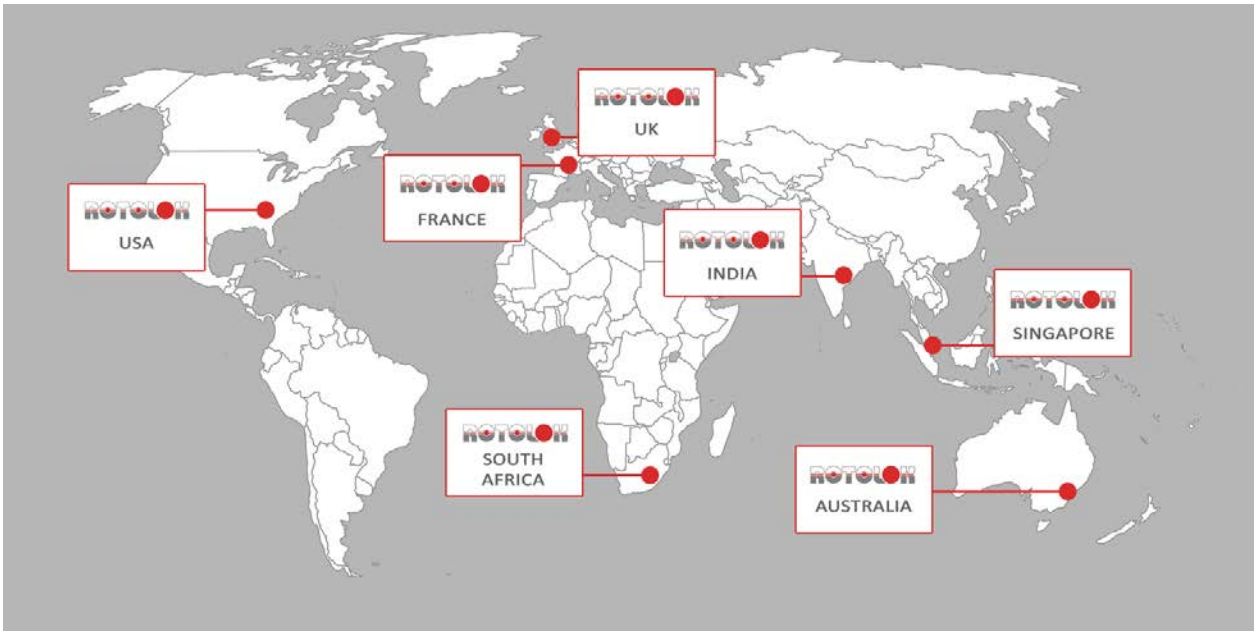

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