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ANDANTEX

BUCKET DIVERTER VALVE

OPERATING & MAINTENANCE

INSTRUCTIONS FOR

BUCKET DIVERTER VALVE

BULK HANDLING SPECIALISTS

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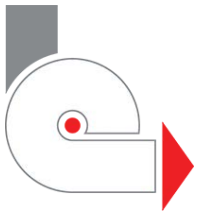


OPERATING & MAINTENANCE INSTRUCTIONS

FOR

BUCKET DIVERTER VALVE

Description

Gravity feed Bucket Diverter Valves are used in the bulk handling field to re-route powder, pellets or granules from one discharge point to another.

The Bucket Diverter consists of a fabricated body with an open ended bucket chute swiveling about a main spindle. The valve is equipped with one or two inspection doors and the bucket can be removed for cleaning.

An air cylinder, complete with solenoid valve and piping, actuates the valve. Switches are fitted and positioned to indicate two positions.

The valve is designed to lock in the position in the event of air or electrical failure.

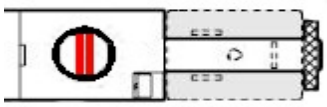
Construction

Body:	Stainless Steel.
Bucket:	Mild Steel or Stainless Steel
Actuation:	Air Cylinder with five port two way double solenoid valve and a fail-safe locking mechanism which uses a single solenoid valve.
Limit Switches:	Reed Type or Mechanical roller Alternatives to suit application.

Actuation *(Options)*

(Fail In Position)
The Bucket Diverter Valve is incorporates a fail in position on air and electrical failure, this means the valve position will be locked.
The valve is fitted a double solenoid valve with nylon piping feeding a double acting cylinder. All internal piping from the solenoid to the cylinder is supplied, the client needs to bring the air supply only to the single solenoid valve (*shown as **A** below)*.
The solenoid valve includes a manual override for testing and commissioning purposes.

The solenoid override must be set in the auto position for remote operation.



The air cylinder needs a supply of clean, dry air at 80 psi.

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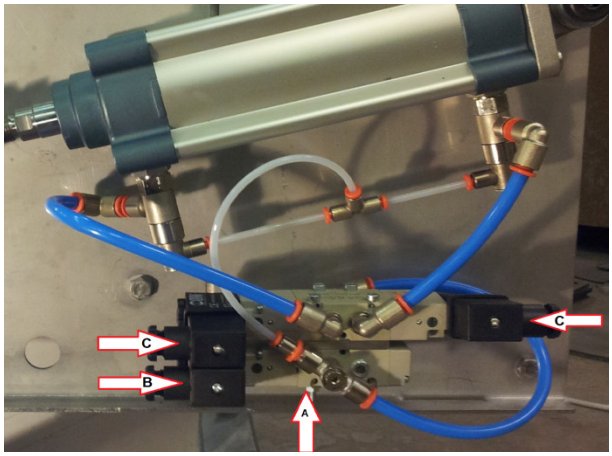
When wiring the Bucket Diverter for operation the following should be followed:



Single solenoid Coil **B** should continuously energized.

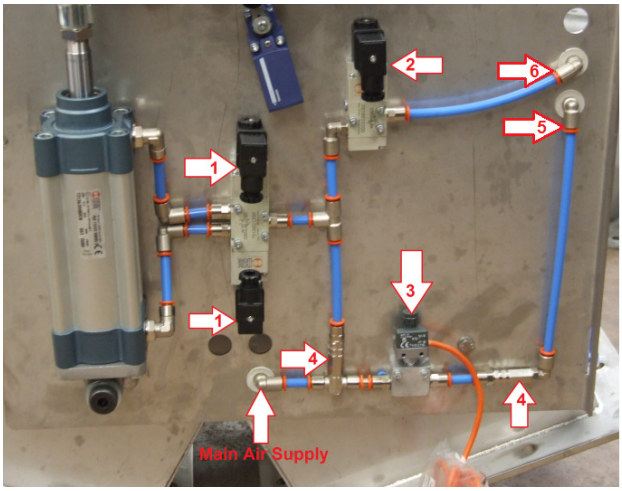
Double solenoid coils **C** should be wired to control the operation of the cylinder.

(Air Fail)
The Bucket Diverter Valve incorporates an air failure system, this means the bucket will move to a desired position on air failure.

When connecting the bucket valve the following should be followed:

The main air supply is connected on the back of the layout shown via an 8mm push connector.

Double solenoid coils '**No 1**' should be wired to control the operation of the cylinder.



Single solenoid Coil '**No 2**' should be controlled by '**No 3**' Pressure Switch.

Pressure Switch '**No 3**' should be set to operate at 30psi which should signal the operation of signal solenoid '**No 2**' and the desired finish position of the bucket using either double solenoid coil '**No 1**'.

Non Return Valves '**No 4**' to restrict the loss of air.

Air supply to air reservoir '**No 5**' and return supply from reservoir '**No 6**'.

The notes above concerning the operating pressure and manual override is typical.

Operation

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

The operating lever is moved from side to side, by air cylinder, which moves the internal bucket chute to either valve outlet port; product falls under gravity from the

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inlet to the open outlet ports.

Maintenance

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

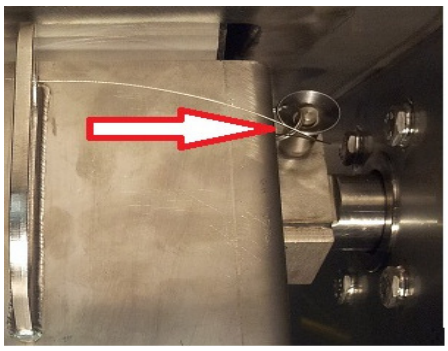
The valve is basically maintenance free as the only moving internal parts are the shafts and bucket assembly The bearings oscillate under a minimal load compared to their rated capacity. Depending on the valve usage, product handled, actuation time and frequency will obviously affect the preventative maintenance schedule. As a minimum it is recommended that the valve internals should be checked at twelve months for general wear.

Valves fitted with an easy release mechanism. It is not necessary to remove the valve from the system as the valve has two inspection doors and all maintenance can be carried out with the valve in position.

The bucket removal is achieved by initially removing both inspection doors and the drive guard located on the side of the valve exposing the drive assembly.

Remove the clevis pin from the clevis and cylinder assembly allowing the cylinder to drop away. The cylinder stroke position will not change as it is locked.

With the inspection doors removed the bucket can then be disconnected by removing the two ball locking pins, one on either as indicated. Using the handle provided take the weight before depressing the centre plunger of the lock pin and simultaneously pulling the pin out, when both pins are released the bucket can be removed. This is accomplished by slightly dropping the bucket, tilting the top towards the opening, and carefully remove. The pins are wired together and will be withdrawn with the bucket.



Standard arrangement: When any cleaning or maintenance that requires the bucket to be removed, the bucket valve must be removed from the system.
The actuator assembly can be removed in one piece after disconnecting the operating lever; slacken the grub screws on the bearings then both assemblies can be removed complete with the lip seal housings.
Remove the inlet transition and the inspection door which then exposes the bucket and the fixings retaining the drive/tail shaft; once these are removed the bucket will pass through the inspection door.

At this point any cleaning or maintenance can be carried out.

Lubrication: The valve is basically maintenance free as the only part requiring any lubrication is the bearing which mounted externally, one on either of the valve and allows the the bucket to move. Check the bearing movement is smooth at twelve monthly intervals and use a general purpose grease *(see data sheets supplied).*

Check the cylinder movement is smooth at twelve monthly intervals, more frequently if the atmosphere is dusty or at an elevated temperature.

Recommended Spares

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

Handling

Lift the valve using the lifting points provided or use lifting straps, do not lift from the shafts as damage will be caused. If fork trucks are used to move the valve, take care to prevent damage to the underneath parts. Improper handling can cause distortion, misalignment and break vulnerable parts.

Safety

In addition to standard safety regulations, the operator and maintenance personnel should be instructed to observe the following safety rules with pneumatically actuated bucket diverter valves.

1. Ensure the valve cannot be operated remotely before removing any guards.
2. Ensure adequate guarding of all exposed moving parts.
3. Isolate the valve electrically and pneumatically prior to any maintenance.
4. Do not put body parts or tools inside the valve while in operation.

Ignoring the safety rules could result in serious injury.

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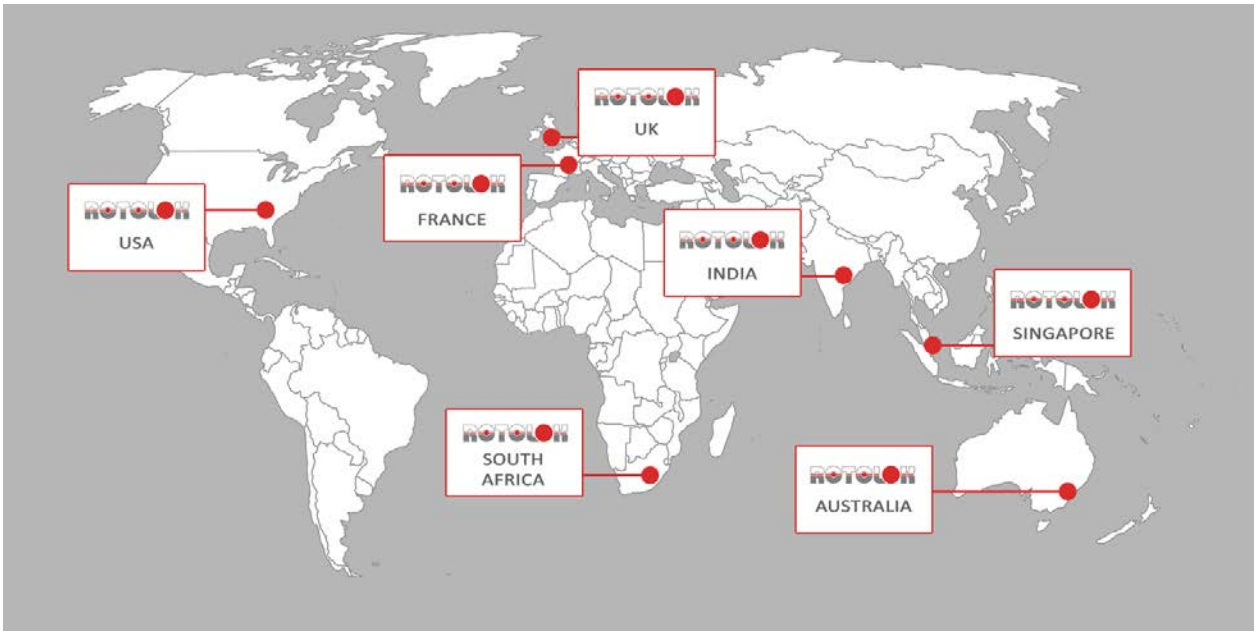

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