OPERATING & MAINTENANCE INSTRUCTIONS
SINGLE / DOUBLE FLAP VALVES

HEALTH AND SAFETY NOTES

Important Note

ONLY QUALIFIED AND / OR APPROVED PERSONNEL SHOULD UNDERTAKE THE INSTALLATION, START UP, COMMISSIONING AND PERIODIC MAINTENANCE OF THE SINGLE / DOUBLE FLAP VALVE. SAFETY ASPECTS CANNOT BE OVEREMPHASIZED.

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.

Technical details relating to this equipment are shown in our relevant specification sheets, which are available on demand from our sales office. In the event that any further advice is required please do not hesitate to contact us.

Check List Before Running

Observe full all Single / Double Dump and gear motor operating instructions.

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 flaps are moving.

If attention to the Single / Double Flap Valve 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.

Indicates relevance to counterweight operation

Indicates relevance to motorised operation

Indicates relevance to pneumatic operation

Description

The valve unit consists of a flap plate, which is operated by pneumatics, motorised or counterweights. Each method of actuation is controlled, such that the flap plate is opened allowing material to pass through the chamber in batch form.
At no stage are both flaps (Double only) open together thereby ensuring a seal is maintained.
NB: The control or timing equipment required to operate the valve is supplied by the client, not Rotolok
The unit is suitable for pneumatic, motorised and counterweight operation as standard.

Counterweight levers are fixed to the drive shafts.

Pneumatic cylinders, complete with solenoid valve and piping, actuate the valve.

A geared motor operates a cam.

Construction

Body:	Cast iron or fabricated mild steel as standard.
Inlet and Flap Plate:	Mild Steel or Abro 400 abrasive resistant steel

Actuation:

	Counterweight levers
	VDMA Air cylinder with five port two way spring return solenoid valve
	IEC Electric geared motor

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Application

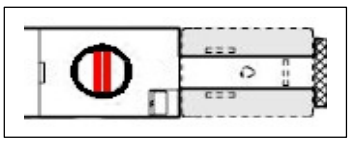
Suitable for cyclone dust filter applications where pressures or vacuums are in the order of 15-20"wg (540-720 mbar). Their use is particularly suitable on stringy, fibrous products or very abrasive applications where a rotary valve may falter.

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 pneumatic version is fitted with a single solenoid spring return valve with nylon piping feeding a double acting cylinder, front clevis/rear trunnion mounted type. All internal piping from the solenoid to the cylinder is supplied. The client needs to bring the air supply only to the solenoid valve. Limit switches are fitted as standard to indicate divert direction. The solenoid valve includes a manual override for testing and commissioning purposes.

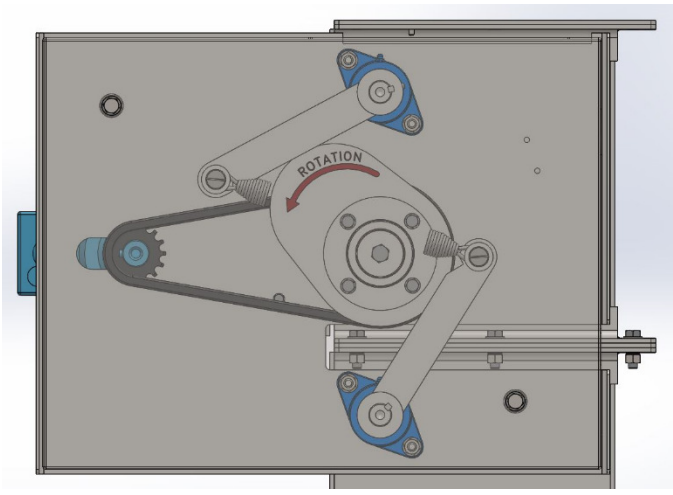
The solenoid override must be set in the auto position for remote operation.



The air cylinders need a supply of clean, dry air at 80 psi.

The motor should be wired up as per manufacturer's instructions supplied. Prior to start up, the gearbox should be checked and filled if necessary to the appropriate level with the specified oil in the manufacturer's instructions. Note that grade of oil is dependent on temperature and conditions of duty.

The geared motor should be wired to achieve an anti-clockwise movement, as shown in the drawing opposite.



On a manual, the operation can be controlled by adjusting the position of the counterweights or additional weights can be added.

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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, flap plate. The valve usage, product handled, actuation time and frequency will obviously affect the preventative maintenance schedule.
As a minimum it is recommended that the shaft seals should be checked as often as possible for signs of general wear. It is preferable, and usually easier, to remove the valve from the system; once removed, separate the inlet section, taking care not to damage any actuation components.

Remove the scroll pin through the pneumatic lever arm boss before taking the arm off the shaft.
Check flap plate and the bearings RHP (or equivalent) for wear mounted out board; also the cam with associated parts. On reassembly it is important that the screws are tightened adequately. Ensure the flap plates can be operated by twisting the shaft by hand before reconnecting the actuation.

Check the cylinder movement is smooth at twelve monthly intervals, more frequently if the atmosphere is dusty or at an elevated temperature. Check at six monthly intervals that the actuation arm strikes the limit switches to ensure that the switches are not being overloaded by over travel.

Check motor in line with manufacturer's instructions.

Recommended Spares

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

Flap Plate
Flanged Bearing
Cam Follower
Cam Follower Bearing
Spring
Spring Mounting Bush
Limit Switches

Handling

Lift valves using straps secured around the body casings of the unit. Avoid lifting from the shaft or actuation components. If fork trucks are used to move the valves, take care to prevent damage to the fabricated parts. Improper handling can cause distortion, misalignment and breakage, particularly on flanges.

Most valves will require the use of auxiliary lifting devices which must be operated in accordance with local health and safety regulations and site requirements.

Safety

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

1. Ensure the valve cannot be operated remotely before removing any guards or performing any maintenance.

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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