

**MODEL**

**3/4V**



**ORBINOX**

VALVE SOLUTIONS IN MORE THAN 70 COUNTRIES

## **INSTALLATION, OPERATION & MAINTENANCE MANUAL**

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### **3/4 Way Valve**



**SPAIN, UK, GERMANY, FRANCE, CANADA, USA, BRAZIL, CHILE, PERU, INDIA, CHINA**

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# INSTALLATION, OPERATION & MAINTENANCE MANUAL

## 3/4 Way Valve

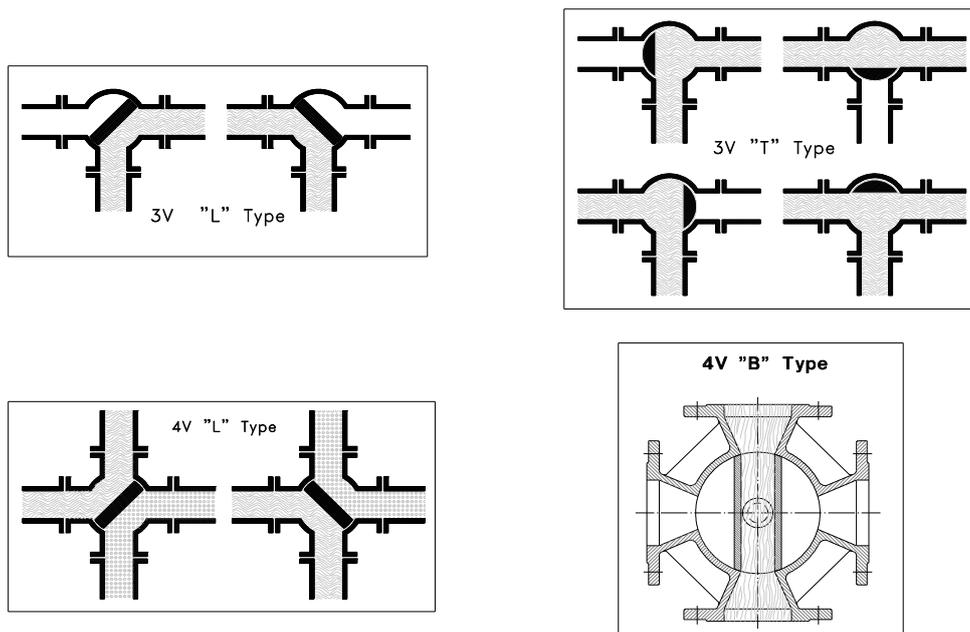
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## 0. INTRODUCTION

The 3V and 4V models are diverter valves designed to handle solid-loaded fluids. The valve is mainly for use with pulp stock in the Pulp and Paper industry.

There are four types: 3V "L" type, 3V "T" type, 4V "L" type and 4V "B" type.



**For EU Directives and other Certificates, please see the document:  
Directives & Certificates Compliance - Knife Gate Valves - IOM**

## 1. HANDLING

When handling an ORBINOX valve please pay attention to the following points:



- Do NOT attach lifting gear to the valve actuators or gate guards. They are not designed to bear the weight, and could easily be damaged.
- Do NOT lift the valve by the valve bore.  
This can cause damage to the seating surfaces and seals.

Ideally when using lifting gear to move an ORBINOX valve, it should be supported by two or more eyebolts screwed into the tapped fixing holes in the valve body.

### SAFETY WARNING:

- Check that the lifting gear is rated to carry the weight of the valve.
- Make sure the eyebolts have the same thread as the boltholes and that they are well secured.

During installation it is recommended to lift the valve via soft straps. These can be to the upper part of the valve body.

## 2. INSTALLATION

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In order to avoid personal injury or damage to property when handling and installing the valve, it is important to observe the following warnings:

- It is the User's responsibility to verify compatibility of valve parts materials with the internal fluid
- Qualified and trained personnel must carry out the handling and maintenance of the valve
- Use suitable Individual Protection Equipment (IPE) (gloves, safety footwear...)
- Disconnect all lines affecting the valve and put up a notice notifying that work is being carried out on the valve
- Isolate the valve completely from the process
- Release process pressure
- Drain the fluid from the valve

Before installation, inspect the valve body and components for any damage that may have occurred during shipping or storage. Make sure the internal cavities within the valve body are clean. Inspect the pipeline and mating flanges, making sure the pipe is free of foreign material and that the flanges are clean.

Special care should be taken to maintain the correct distance between the flanges and to ensure that they are parallel to the valve body. Incorrect alignment of the valve can cause deformations, which can lead to difficulties in operation.

Once the valve is installed, test that the flanges have been fastened correctly and that all electrical and/or pneumatic connections have been properly made.

Where electric accessories are mounted on the valve (i.e. solenoid valves, electro-pneumatic positioners, etc.), the valve must be earthed correctly before being put into operation.

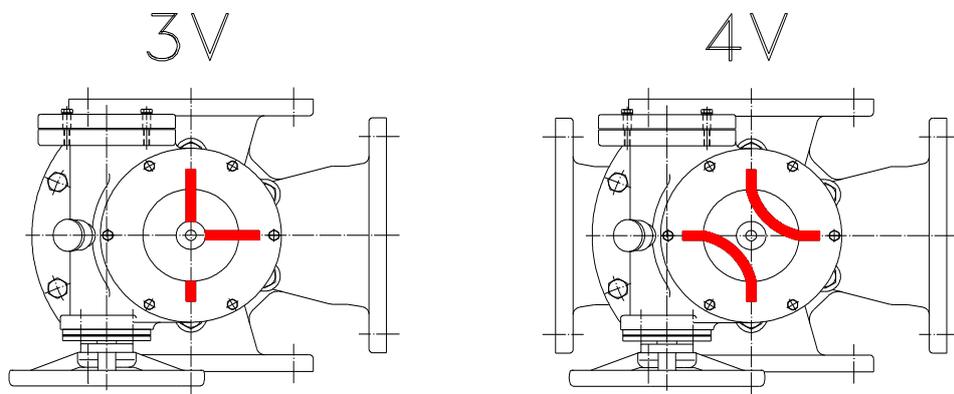
First, operate the valve with no flow in the pipeline. Then test operation and valve seal with flow. It should be noted that the packing material might settle in shipping/storage, which can cause minor leakage. This can be remedied by tightening the gland during installation. Once performance has been tested, the valve can be put into operation.

### 3. ACTUATORS

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#### 3.1. HANDWHEEL W/ BEVEL GEAR:

To select the desired flow path through the valve, turn the handwheel. An indicator (11) on the valve cover displays the position of the valve. To open the valve turn the handwheel (11) anticlockwise. To close turn the handwheel clockwise.

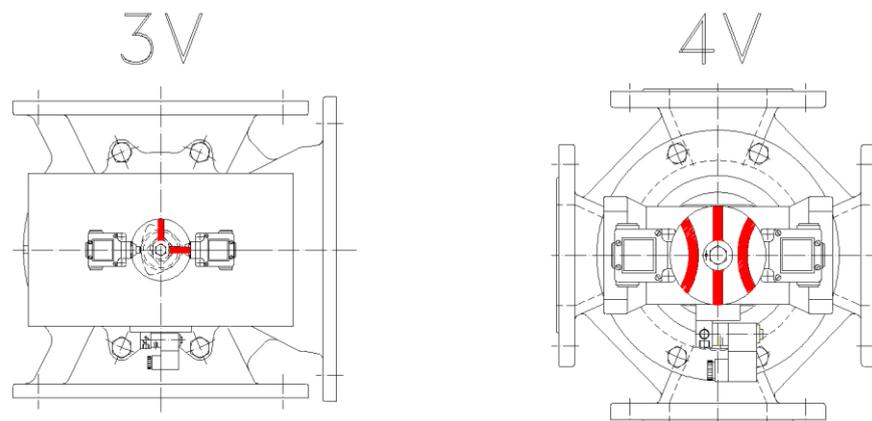


#### 3.2.- PNEUMATIC DOUBLE ACTING

To select the desired flow path through the valve, operate the actuator. An indicator (11) on the valve cover displays the position of the valve.

It is essential for the good maintenance of the cylinder, that the air should be well dried, filtered and lubricated.

It is recommended to actuate the cylinder 3-4 times before start up, once it has been installed in the pipeline.



## 4. MAINTENANCE

### For EU Directives and other Certificates, please see the document: Directives & Certificates Compliance - Knife Gate Valves - IOM

The valve must not undergo any modifications without a previous agreement with ORBINOX. ORBINOX shall not be liable for any damages that may arise due to the use of non original parts or components



To avoid personal injury or damage to property from the release of process fluid:

- Those in charge of handling and maintenance of the valve must be qualified and trained in valve operations.
- Use appropriate personal protection equipment (gloves, safety shoes, etc).
- Shut off all operating lines to the valve and place a warning sign.
- Isolate the valve completely from the process.
- Release process pressure.
- Drain the process fluid from the valve.

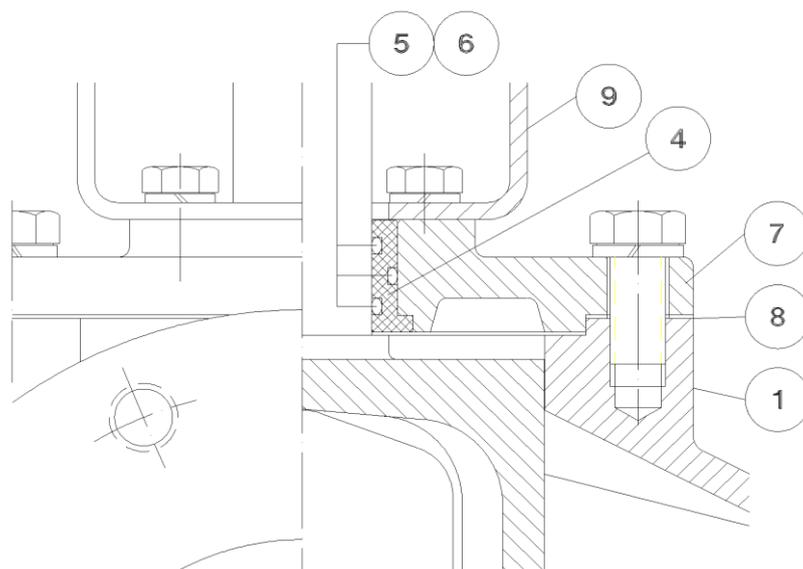
The only maintenance required is to change of the O-rings (5,6) on the main bearing (4).

The life of these elements will depend on the working conditions of the valve such as: pressure, temperature, abrasion, chemical action, number of operations, etc.

The life of the actuators (Handwheel w/ Bevel gear and Pneumatic double-acting), will be extended by changing the O-rings, but is also influenced by the working conditions and number of operations.

#### 4.1. - Replacement of the O-rings (5,6):

1. Remove the actuator and loosen the support (9).
2. Loosen the cover (7) and extract the bearing (4).
3. Examine seals (5,6) for wear and if necessary and replace them.
4. Change the gasket (8) between cover (7) and body (1) and reassemble to valve.



**4.2. - Lubrication:**

Handwheel w/ Bevel gear operated valves have grease nipples on the body (1). Twice a year, lubricate with a calcium-based grease with the following characteristics: high water resistance, low ash content, and excellent adherence.

**5. STORAGE**

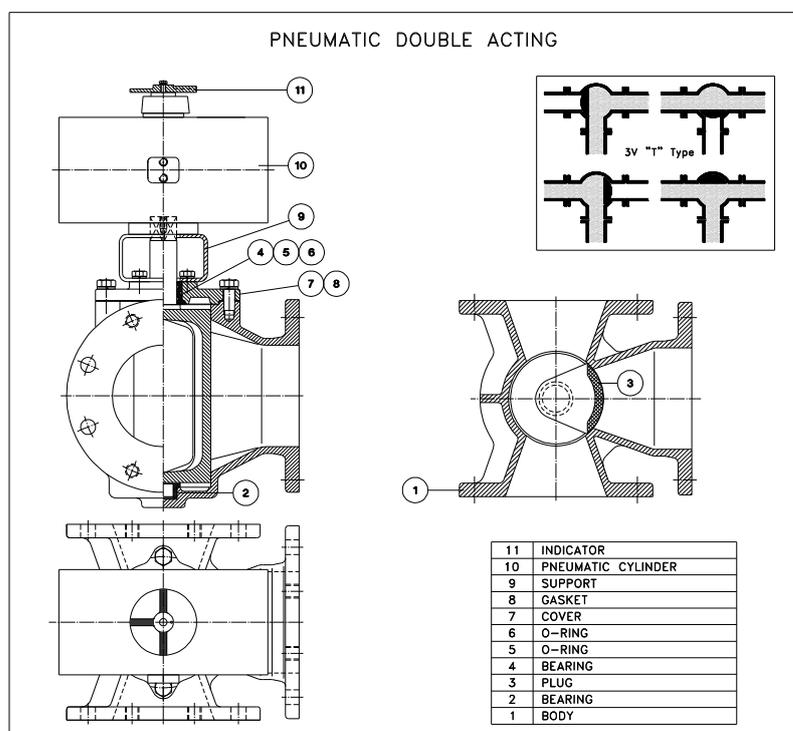
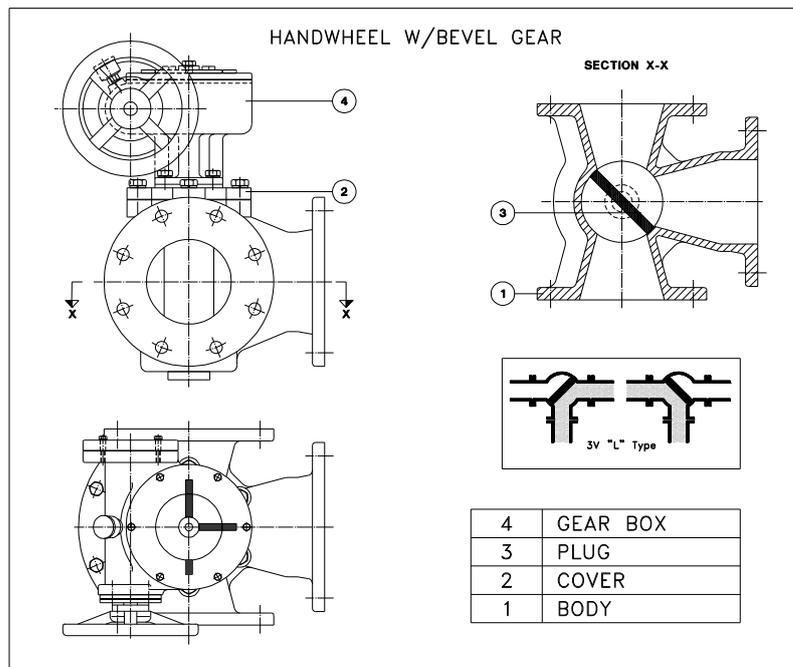
- For long storage periods keep the valves indoors in a safe and dry place and protect it from any impact and or vibrations
- Storing temperatures: -10°C to +40°C
- Valves must be stored in either full open or full closed position
- For any component installed in the valves, electric motors, solenoid valves, etc, please refer to their own instructions manuals

**6. ENVIRONMENTAL CONSIDERATIONS**

- The packaging is made from environmentally friendly materials. Dispose of the packaging through the available recycling channels
- The valve is designed and manufactured with materials that can be recycled by specialised recycling firms. Once the life of the product is expired, you have to consider a proper disposal of the product in order to prevent any negative impact on the environment and allows for the recycling of valuable commodities
- Please follow the local environmental rules in your country for proper disposal

**7. PARTS LIST & DRAWINGS**

**7.1. 3V**



**7. PARTS LIST & DRAWINGS**

**7.2. 4V**

