# Frese OMEGA Compact

## DN65-DN800

### Installation, Operation & Maintenance instruction

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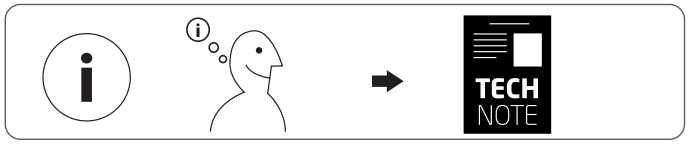



### Intro

This document describes installation, commmissioning, operation, maintenance and troubleshooting aspects of the Frese OMEGA Compact valves. For any questions or special request you can always find the relevant contact person on: www.frese.eu/marine

### Installation

FIG 1

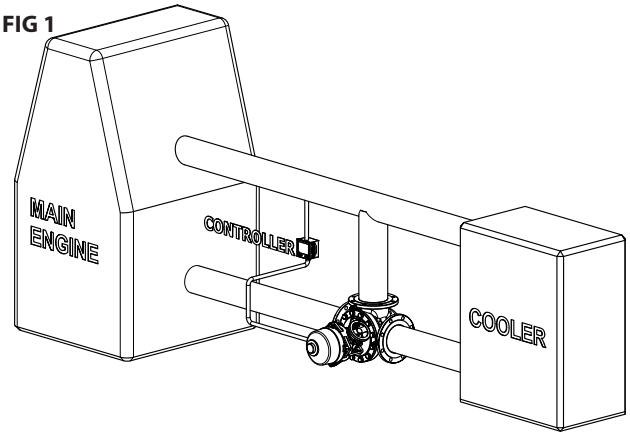



**FIG 1 - Installation:**

Frese OMEGA Compact can be mounted in either the supply or the return line. Installation of strainers and isolation ball valves are recommended.

The temperature in and about the actuator should not be below 0°C.

### Please note

The manufacturer is not liable for any damage resulting from use other than in the designated application. Such risk lies entirely with the user. Observance of the mounting instructions is considered as part of the valve designated use.

FIG 2

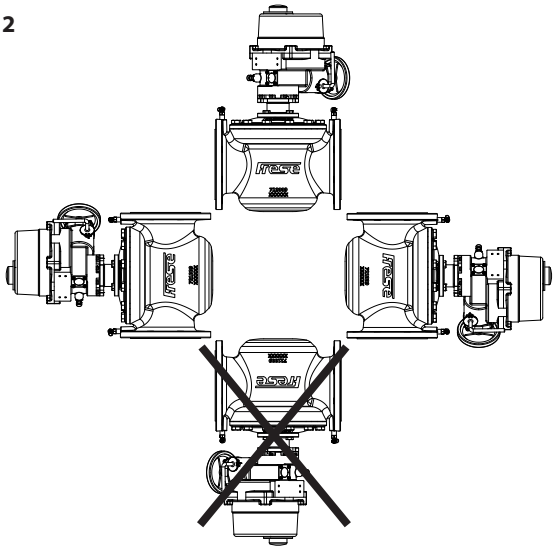


**FIG 2 - Frese OMEGA Compact installation positions.**

FIG 3

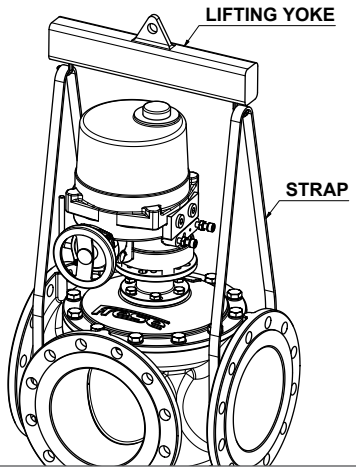



**FIG 3 - Lifting instructions:**

Attention to personal safety is important. Before installation, impurities should be removed from the sealing surface and pipeline. Remove protecting covers from the valve ends.

It is not recommended to insert a crane hook into the flange holes. The valve must be lifted with a lifting yoke using suitable lifting straps around the flange necks.

FIG 4

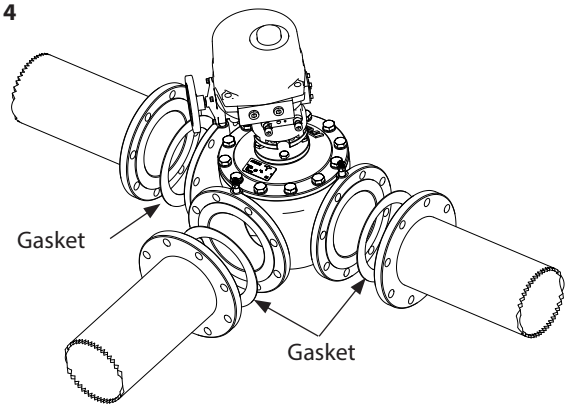



**FIG 4 - Valve flange mounting:**

Place the valve carefully between the pipe flanges. Place 2 bolts in the bottom holes of each flange and insert the gaskets as shown. Then fasten the bolts and nuts. The valve is unaffected by the angle of installation in the piping system. If P/T Plugs are installed, they are recommended to be above the horizontal line, to avoid foreign objects/dirt being trapped near the measuring points inside the valve.

### Commissioning

Before mounting the actuator make sure that:

- The slide in the housing is rotatable, by rotatting the square on the top of the cover.
- The slide is in the correct position. See the instruction for the actuator.

The arrow on the upper surface of the slide square shows the closing surface of the slide.

### Operation and valve authority

The OMEGA Compact is a solid 3-way rotary control valve that provides reliable flow regulation for both diverting and mixing applications in marine, industrial processes and district heating.

Recommended control valve authority: 0.3 - 0.5

The OMEGA Compact valves are designed for use in Lubricating Oil Cooling, Cooling Water Systems or other systems with large water or lubricating oil flow.

## Function

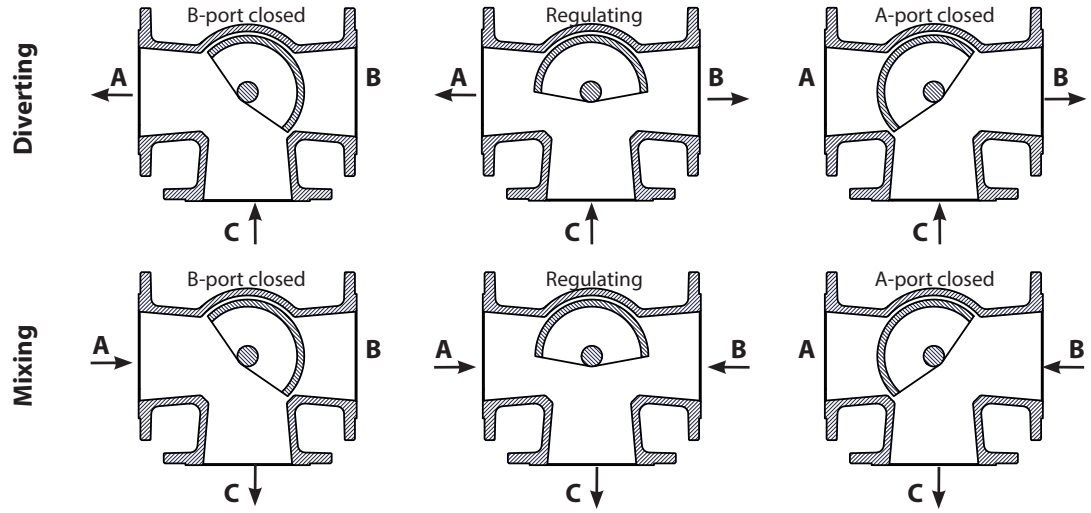
The spindle of the strongly constructed slide is connected solidly with the actuator.

The quarter turn actuator moves the slide between port A and B. When the slide is closing port A, connection B-C is fully open and connection A-C is fully closed. When slide is closing port B, connection B-C is fully closed and connection A-C is fully open.

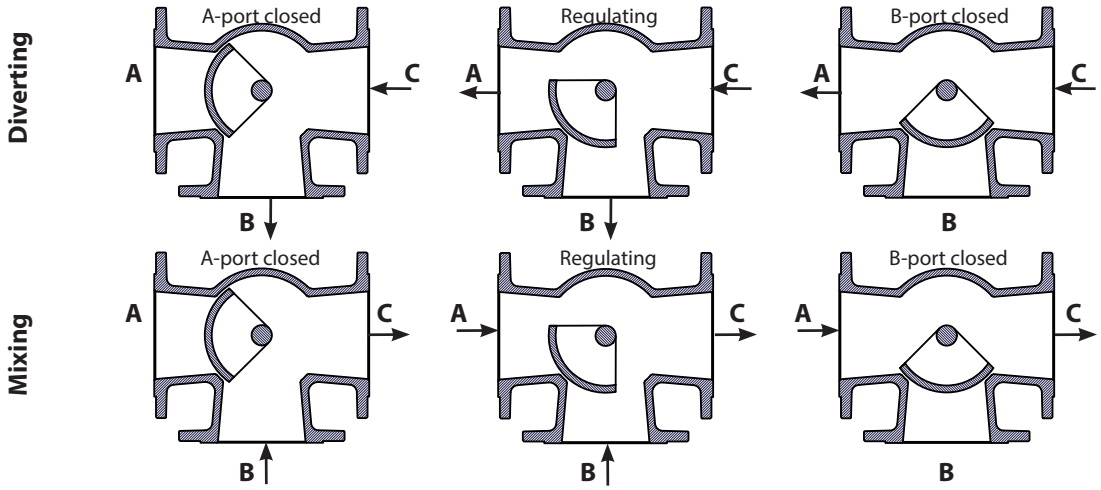
When the slide is between port A and B, the position of the slide determines the volume flow rates of A-C or B-C.

In the valve type C-Right or C-Left the slide is turning 90° between perpendicular ports A and B and in the valve type C-middle slide is turning 90° between parallel ports A and B.

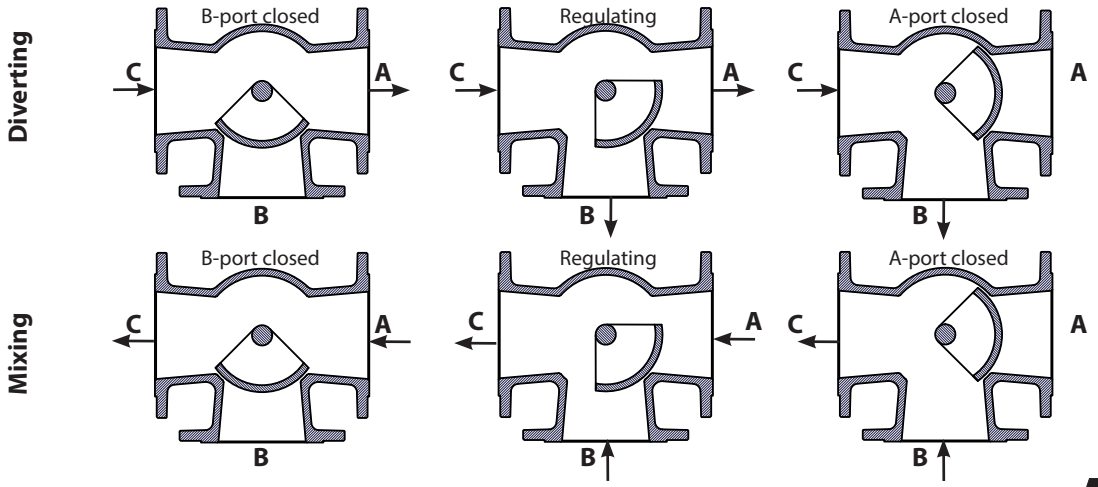
### Flow directions C-middle




### Flow directions C-right



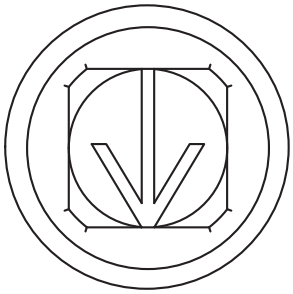

### Flow directions C-left



## Installation

**FIG 5**

Slide position for valve type **C-middle**
Arrows pointing in direction of closed ports



Slide position for valve type **C-right & C-left**
Arrow pointing in direction of closed port

**FIG 5 - Spindle marking:**
The valve ports are marked A, B and C. The slide position is marked on the top of the spindle. The slide is moving between port A and B. The valve can be installed vertically or horizontally. OMEGA Compact can be operated with electrical or pneumatic actuators. The handwheel on the actuators can be used to change the position of the slide in case of power failure.

## Maintenance

**FIG 6**

| | Item number Spare Part Kit | |
|---|---|---|
| Size | Single slide | Double slide |
| DN65 | 58-A065-1 | 58-A065-2 |
| DN80 | 58-A080-1 | 58-A080-2 |
| DN100 | 58-A100-1 | 58-A100-2 |
| DN125 | 58-A125-1 | 58-A125-2 |
| DN150 | 58-A150-1 | 58-A150-2 |
| DN200 | 58-A200-1 | 58-A200-2 |
| DN250 | 58-A250-1 | 58-A250-2 |
| DN300 | 58-A300-1 | 58-A300-2 |
| DN350 | 58-A350-1 | 58-A350-2 |
| DN400 | 58-A400-1 | 58-A400-2 |
| DN450 | 58-A450-1 | 58-A450-2 |
| DN500 | 58-A500-1 | 58-A500-2 |
| DN600 | 58-A600-1 | 58-A600-2 |
| DN650 | 58-A650-1 | 58-A650-2 |
| DN700 | 58-A700-1 | 58-A700-2 |
| DN800 | 58-A800-1 | 58-A800-2 |

**FIG - 6: Spare Part Kits:**
The instructions must be strictly followed when dismantling and assembling the valve.
It is recommended to replace the O-ring in the slide every 2 - 2.5 year to maintain the Class IV leakage rate. The gasket on the top of the housing must be changed when the cover is dismounted. It is recommanded to replace the orings in the cover adapter every 5th year. All the O-rings and gaskets are included in the spare parts kits.

## Maintenance procedures

**FIG 7**

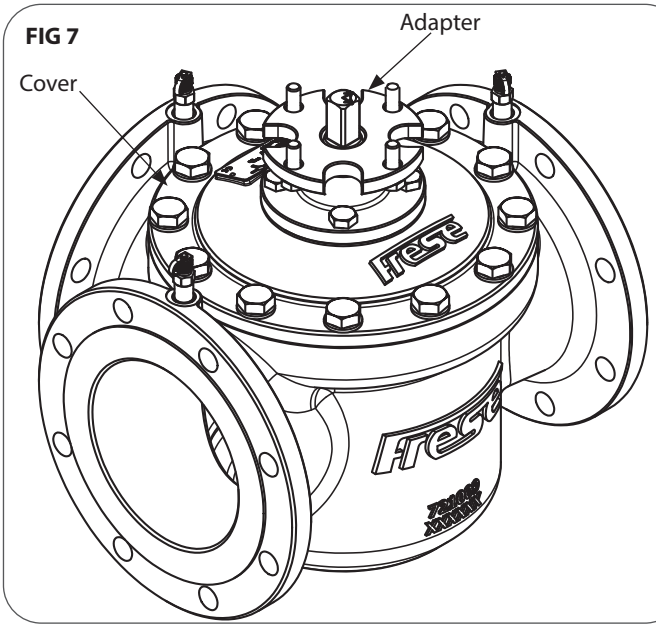



**FIG 7 - Replace O-ring in slide & adapter:**

To be able to replace the O-ring in the slide follow the steps:
- Loosen the bolts and remove the cover
- Dismount the slide
- Replace the O-ring/O-rings with the new from the Spare Part Kit
- Use lubricating oil for mounting of the O-ring in the slide groove
- Replace the slide in the housing
- Replace the gasket for the housing
- Replace the cover and fasten the bolts.

To be able to replace the O-ring in the adapter follow the steps:
- Remove the bolts for adapter
- Dismount the adapter
- Replace the o-rings in the adapter
- Replace the gasket on the cover
- Place the adapter on the cover
- Fasten the bolts

## Trouble shooting

**FIG 8**

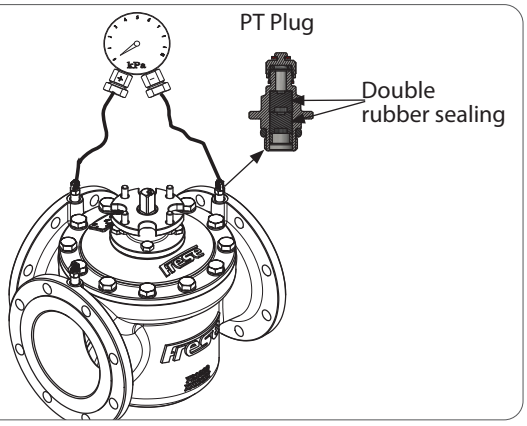



**FIG 8: Flow verification:**
To verify the flow across the valve, the P/T Plugs are to measure the differential pressure.
Frese can supply a handheld manometer, but any other manometer with a maximum diameter of ø3.2 mm and a length of 25 - 40 mm can be used.
The P/T plugs are self-sealing with double rubber sealings. This avoids the water from flowing out when measuring the differential pressure. A few drops are normal when the needle is pressed into the P/T plug.

## Water quality

The closed pipe system shall be properly ventilated to avoid risk of air pockets. The water must be free from dirt and debris. Glycolic mixtures up to 50% are applicable (both ethylene and propylene). Recommendation: Water treatment to VDI 2035

## Storage and non operational use

During transportation and storage the valve must be protected against water, heavy moisture and corrosive environment. Such as seaworthy packaging of valves prior to shipping.

The valve must be moved fully between the ports minmum 1 time per month if not in normal operation.