

# OMEGA Compact

## Application

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

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.

The valve is designed with energy efficiency in focus where the near- zero leakage rate together with high KV values will provide market leading energy efficiency in any application.

The compact design allows you to fit the valves in narrow spaces and withstands high vibrations.

The valves are equipped with electric or pneumatic actuators with handwheels for manual operation in case of power failure.

Available in sizes from DN65 to DN800 with flange connections according to EN 1092-2, ANSI Class 150, JIS B 2210 5K or JIS B 2210 10K.



## Benefits

### Design

- 10-45% lower weight than other existing 3-way valves on the market
- Simple design and easy to maintain
- Flexible design, common port C, which can be easily changed on site
- Low leakage rate due to mounted O-ring on slide and small tolerance between the slide and the body
- Simple design with a very reliable control

### Installation

- Flexible choice of port placement
- Can be easily installed where space is limited
- Can be installed in all directions

## Features

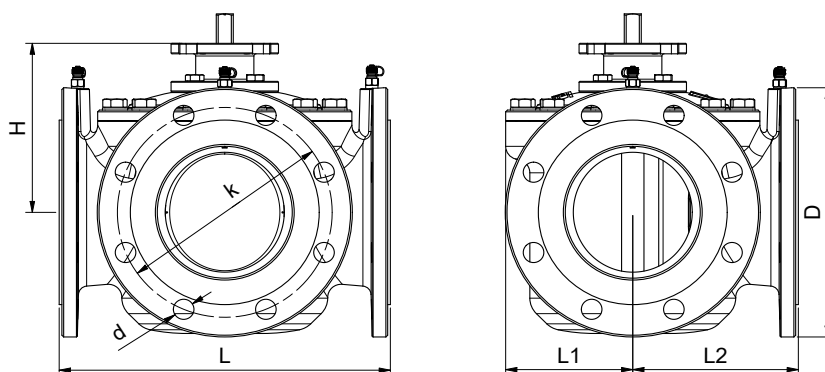
- Sizes from DN65 to DN800
- Delivered with 3.1 certificate as an option. Other certificates on request.
- Pressure test acc. to EN12266
- Differential pressure range from 0.02 bar to 25 bar

# OMEGA Compact

## OMEGA Compact, flanged

### Technical Data

|                                    |                                                            |
|------------------------------------|------------------------------------------------------------|
| <b>Valve housing:</b>              | EN-GJS-400-18LT                                            |
| <b>Rotating slide:</b>             | EN-GJS-400-18LT                                            |
| <b>Fasteners:</b>                  | Stainless steel                                            |
| <b>Pressure class std.:</b>        | PN16 (DN65 - DN300)<br>PN10 (DN350 - DN800)                |
| <b>On request:</b>                 | PN25 (DN65 - DN125)                                        |
| <b>Temperature:</b>                | -20°C to 100°C<br>Optional up to 250°C                     |
| <b>Flow range:</b>                 | Kvs 135 to Kvs 9050                                        |
| <b>Needles for DP measurement:</b> | Max diameter, $\varnothing 3.2$ mm<br>Length, 25 - 40 mm   |
| <b>Leakage rate</b>                |                                                            |
| <b>DN65-DN350:</b>                 | Class IV acc. to EN1349                                    |
| <b>DN400-DN800:</b>                | Max. 0.2 % of Kvs                                          |
| <b>Flange compliance:</b>          | EN 1092-2, ANSI Class 150<br>JIS B 2210 5K, JIS B 2210 10K |
| <b>Actuator connection:</b>        | Flange acc. to ISO 5211                                    |
| <b>Surface treatment:</b>          | Anticorrosive synthetic resin<br>80 $\mu$ m – 120 $\mu$ m  |
| <b>On request:</b>                 | Other surface treatments                                   |



**PLEASE NOTE!**

The pipe system shall be properly ventilated to avoid risk of air pockets.

### Product Programme - specifications

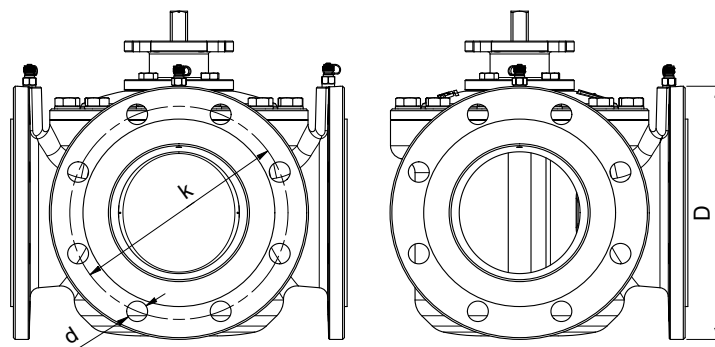
| Dim.  | L [mm] | L1 [mm] | L2 [mm] | H [mm] | Weight [kg] | Kvs [m <sup>3</sup> /h]<br>Mix/ <b>Divert</b> |
|-------|--------|---------|---------|--------|-------------|-----------------------------------------------|
| DN65  | 260    | 75      | 130     | 145    | 25          | 135/ <b>175</b>                               |
| DN80  | 280    | 80      | 140     | 150    | 27          | 155/ <b>207</b>                               |
| DN100 | 300    | 110     | 150     | 168    | 40          | 255/ <b>335</b>                               |
| DN125 | 340    | 135     | 170     | 188    | 55          | 405/ <b>535</b>                               |
| DN150 | 370    | 145     | 185     | 195    | 63          | 575/ <b>807</b>                               |
| DN200 | 450    | 190     | 225     | 246    | 106         | 1025/ <b>1325</b>                             |
| DN250 | 520    | 210     | 260     | 283    | 145         | 1650/ <b>2150</b>                             |
| DN300 | 600    | 235     | 300     | 315    | 195         | 2300/ <b>3477</b>                             |
| DN350 | 680    | 260     | 340     | 347    | 265         | 3100/ <b>4025</b>                             |
| DN400 | 760    | 300     | 380     | 392    | 335         | 4075/ <b>5250</b>                             |
| DN450 | 810    | 330     | 405     | 402    | 410         | 4675/ <b>6050</b>                             |
| DN500 | 885    | 360     | 443     | 435    | 535         | 5250/ <b>6750</b>                             |
| DN550 | 885    | 360     | 443     | 435    | 535         | 5250/ <b>6750</b>                             |
| DN600 | 980    | 410     | 490     | 480    | 795         | 5750/ <b>7450</b>                             |
| DN650 | 1050   | 460     | 538     | 500    | 995         | 6950/ <b>8050</b>                             |
| DN700 | 1050   | 490     | 540     | 529    | 995         | 6950/ <b>8050</b>                             |
| DN800 | 1210   | 550     | 595     | 660    | 1275        | 7250/ <b>9050</b>                             |

## OMEGA Compact

### Special flanges

ANSI and JIS flange standards can be delivered on request according to table below.

Please contact Frese Marine Sales organisation

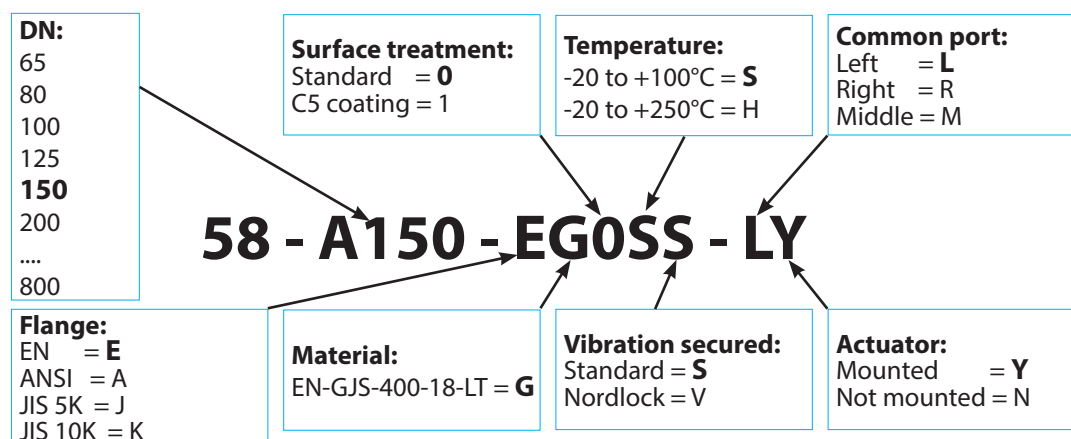


### Specification of flange standards

| Dim.  | EN 1092-2 |             |                 | ANSI Class 150 |             |                 | JIS B 2210 5K |             |                 | JIS B 2210 10K |             |                 |
|-------|-----------|-------------|-----------------|----------------|-------------|-----------------|---------------|-------------|-----------------|----------------|-------------|-----------------|
|       | D [mm]    | k dia. [mm] | d [mm] x number | D [mm]         | k dia. [mm] | d [mm] x number | D [mm]        | k dia. [mm] | d [mm] x number | D [mm]         | k dia. [mm] | d [mm] x number |
| DN65  | 185       | 145         | 19 x 4          | 180            | 140         | 19 x 4          | 155           | 130         | 15 x 4          | 175            | 140         | 19 x 4          |
| DN80  | 200       | 160         | 19 x 8          | 190            | 152         | 19 x 4          | 180           | 145         | 19 x 4          | 185            | 150         | 19 x 8          |
| DN100 | 220       | 180         | 19 x 8          | 230            | 190.9       | 19 x 8          | 200           | 165         | 19 x 8          | 210            | 175         | 19 x 8          |
| DN125 | 250       | 210         | 19 x 8          | 255            | 216         | 22 x 8          | 235           | 200         | 19 x 8          | 250            | 210         | 23 x 8          |
| DN150 | 285       | 240         | 23 x 8          | 280            | 241         | 22 x 8          | 265           | 230         | 19 x 8          | 280            | 240         | 23 x 8          |
| DN200 | 340       | 295         | 23 x 12         | 343            | 299         | 23 x 8          | 320           | 280         | 23 x 8          | 320            | 290         | 23 x 12         |
| DN250 | 400       | 355         | 28 x 12         | 407            | 362         | 26 x 12         | 385           | 345         | 23 x 12         | 400            | 355         | 25 x 12         |
| DN300 | 455       | 410         | 28 x 12         | 483            | 432         | 26 x 12         | 430           | 390         | 23 x 12         | 445            | 400         | 25 x 16         |
| DN350 | 505       | 460         | 23 x 16         | 534            | 477         | 29 x 12         | 480           | 435         | 25 x 12         | 490            | 445         | 25 x 16         |
| DN400 | 565       | 515         | 28 x 16         | 597            | 540         | 29 x 16         | 540           | 495         | 25 x 16         | 560            | 510         | 27 x 16         |
| DN450 | 615       | 565         | 28 x 20         | 635            | 578         | 32 x 16         | 605           | 555         | 25 x 16         | 620            | 565         | 27 x 20         |
| DN500 | 670       | 620         | 28 x 20         | 699            | 635         | 32 x 20         | 655           | 605         | 25 x 20         | 675            | 620         | 27 x 20         |
| DN550 | 720       | NA          | 28 x 20         | NA             | NA          | NA              | 720           | 665         | 27 x 20         | 745            | 680         | 33 x 20         |
| DN600 | 780       | 725         | 31 x 20         | 813            | 750         | 35 x 20         | 770           | 715         | 25 x 20         | 795            | 730         | 33 x 24         |
| DN650 | 840       | NA          | 31 x 20         | NA             | NA          | NA              | 825           | 770         | 27 x 24         | 845            | 780         | 33 x 24         |
| DN700 | 895       | 840         | 31 x 24         | NA             | NA          | NA              | 875           | 820         | 27 x 24         | 905            | 840         | 33 x 24         |
| DN800 | 1015      | 950         | 34 x 24         | NA             | NA          | NA              | 995           | 930         | 33 x 24         | 1020           | 950         | 33 x 28         |

### Part numbers

OMEGA Compact part numbers are generated from the following specifications:



# OMEGA Compact

## Function

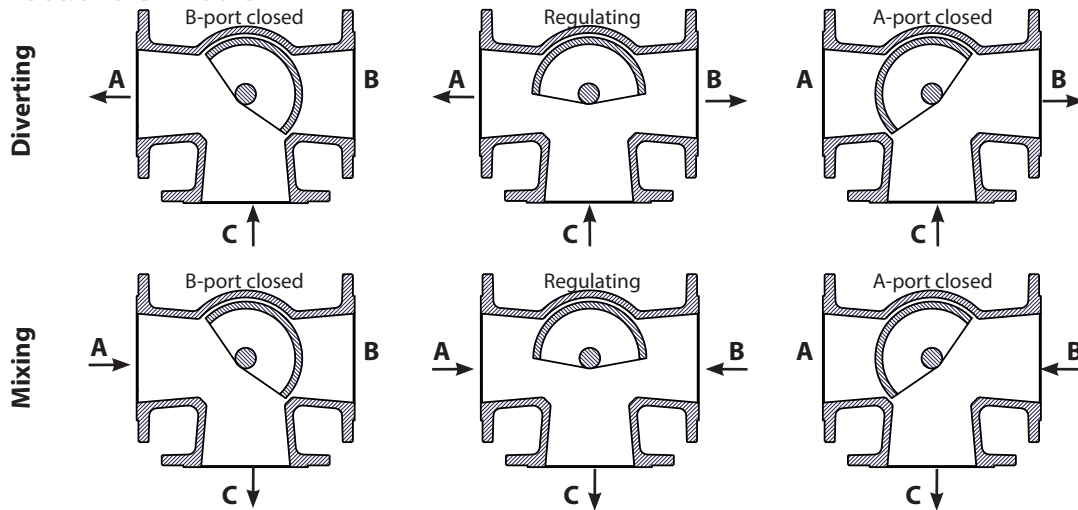
The spindle of the strongly constructed slide is connected solidly with the actuator.

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

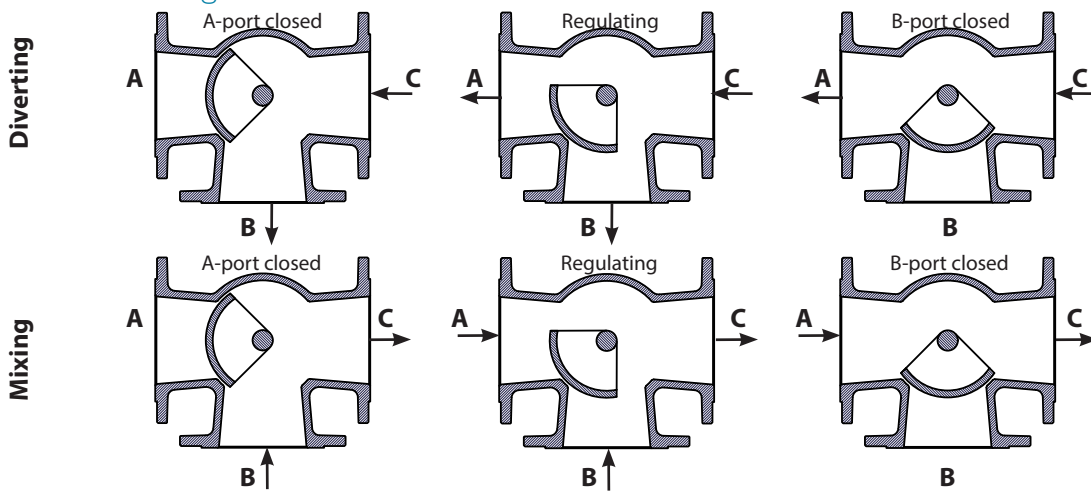
open. When the slide is between port A and B, the position of the slide determines the volume flow rates of A-C or B-C.

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.

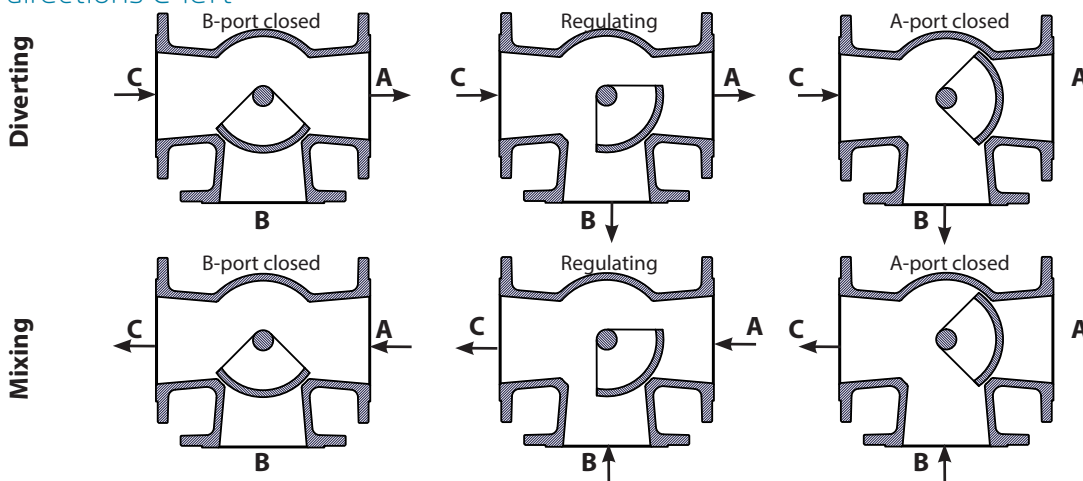
## Flow directions C-middle



## Flow directions C-right



## Flow directions C-left



## OMEGA Compact

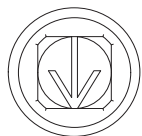
### Installation

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.

### Spindle marking



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



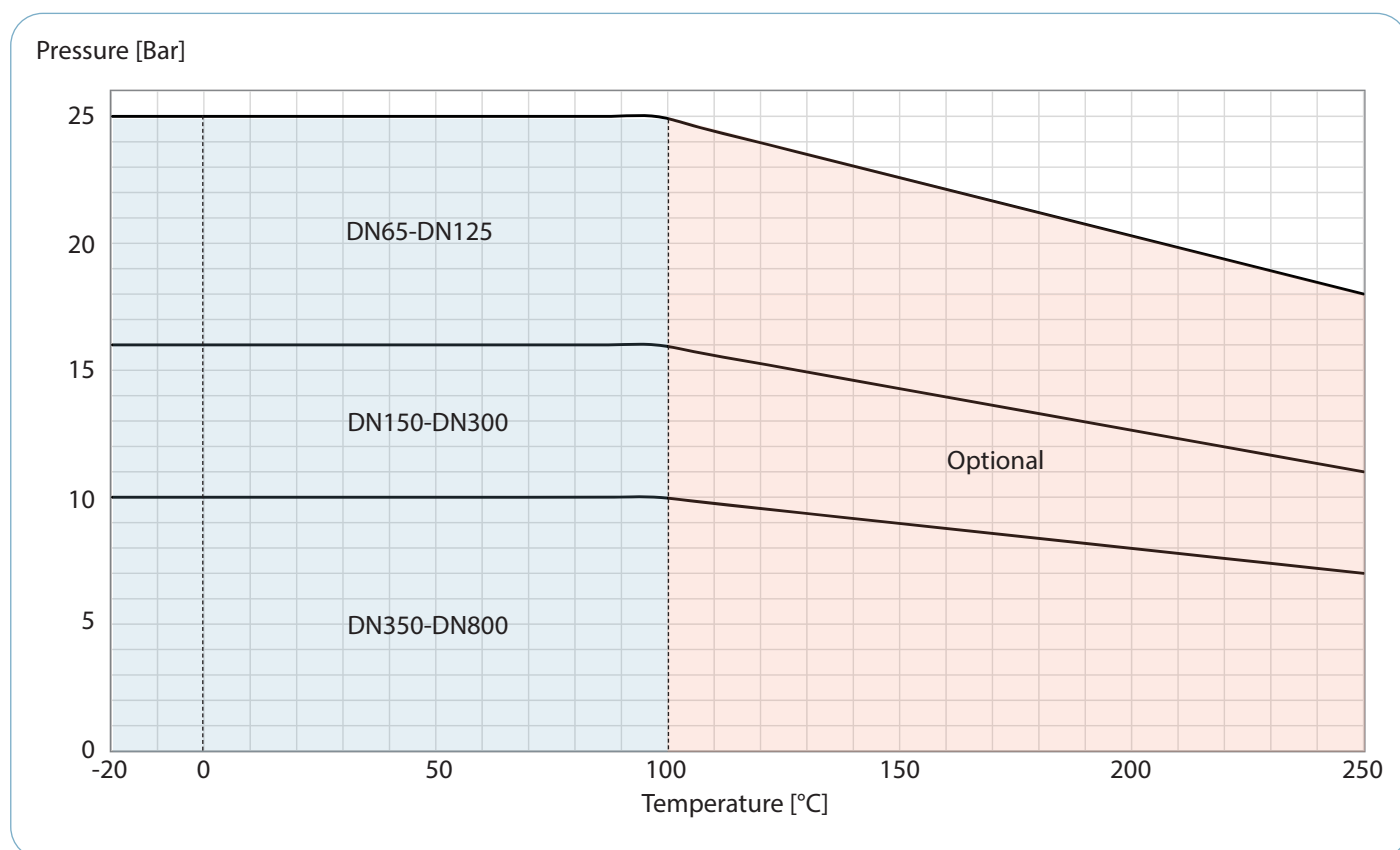
Slide position for valve type C-right & C-left (Arrow pointing in direction of closed port)

### Ordering

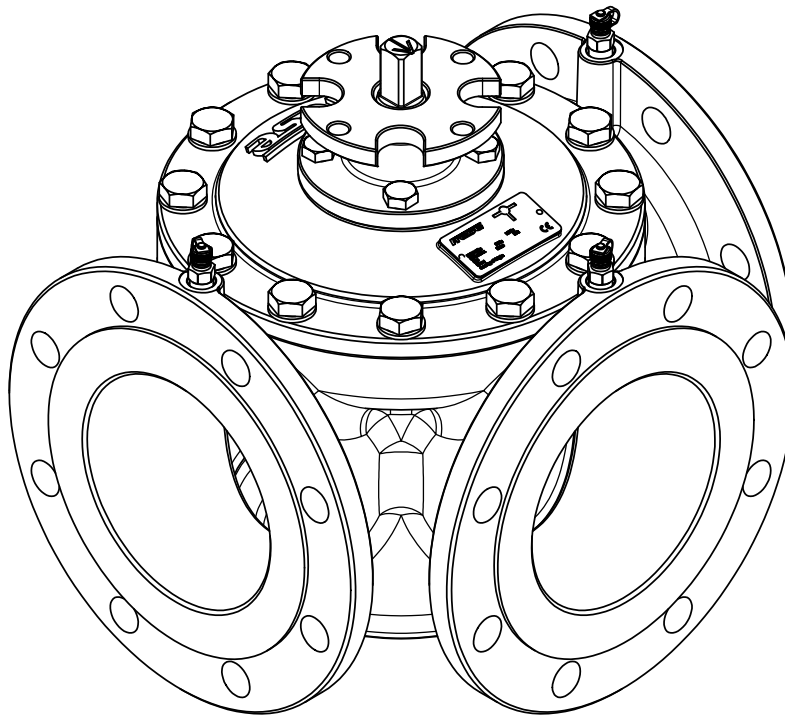
When ordering OMEGA Compact with actuators, the actuators will be mounted on the valve and calibrated from factory prior to shipment.

Please refer to the Frese Rotary Valve Actuator Programme for electrical and pneumatic actuators.

### Temperature/Pressure diagram, According to DIN 2401



## OMEGA Compact



### Specification Text

- The valve housing shall be EN-GJS-400-18LT
- The valve body and cover shall be EN-GJS-400-18LT
- The valve shall have flange connection according to EN 1092-2, ANSI Class 150, JIS B 2210 5K or JIS B 2210 10K
- The cover shall have an actuator flange connection according to ISO 5211
- The valve shall be capable of closing against the maximum operating pressure
- The valve shall have a maximum leakage rate Class IV (0.01%) acc. to EN1349 for DN65-DN350
- The valve shall have a maximum leakage rate of 0.2% of the Kvs value for DN400-DN800
- The valve shall be operated by handwheel on the actuator in case of power failure
- The soft sealing in the valve must be replaceable, without disassembling the cover or the valve
- The temperature control valve should be of rotary type with 90° rotation between ports

Frese A/S assumes no responsibility for errors, if any, in catalogues, brochures, and other printed matter. Frese A/S reserves the right to modify its products without prior notice, including already ordered products, if this does not alter existing specifications. All registered trademarks in this material are the property of Frese A/S. All rights reserved.

Frese A/S  
Tel: +45 58 56 00 00  
info@frese.dk