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 desgined 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

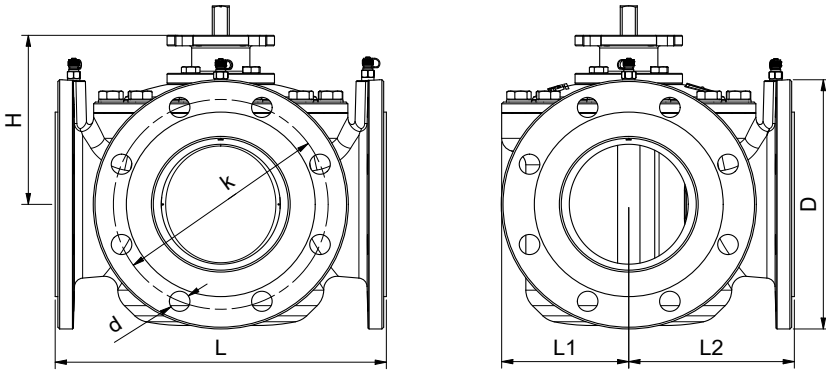
- Sizes from DN65 to DN800
- Delivered with 3.1 certificate as an option. Other certificates on request.
- Pressure test acc. to EN12266
- Differential pressure range from 0.02 bar to 25 bar

OMEGA Compact

OMEGA Compact, flanged

Technical Data

Valve housing: EN-GJS-400-18LT
Rotating slide: EN-GJS-400-18LT
Fasteners: Stainless steel
Pressure class std.: PN16 (DN65 - DN300)
PN10 (DN350 - DN800)
On request: PN25 (DN65 - DN125)
Temperature: -20°C to 100°C
Optional up to 250°C
Flow range: Kvs 135 to Kvs 9050
Needles for DP measurement: Max diameter, ø3.2 mm
Length, 25 - 40 mm
Leakage rate
DN65-DN350: Class IV acc. to EN1349
DN400-DN800: Max. 0.2 % of Kvs
Flange compliance: EN 1092-2, ANSI Class 150
JIS B 2210 5K, JIS B 2210 10K
Actuator connection: Flange acc. to ISO 5211
Surface treatment: Anticorrosive synthetic resin
80 µm – 120 µm
On request: 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 [m³/h] Mix/**Divert**
DN65	260	75	130	145	25	135/**175**
DN80	280	80	140	150	27	155/**207**
DN100	300	110	150	168	40	255/**335**
DN125	340	135	170	188	55	405/**535**
DN150	370	145	185	195	63	575/**779**
DN200	450	190	225	246	106	1025/**1325**
DN250	520	210	260	283	145	1650/**2150**
DN300	600	235	300	315	195	2300/**3477**
DN350	680	260	340	347	265	3100/**4025**
DN400	760	300	380	392	335	4075/**5250**
DN450	810	330	405	402	410	4675/**6050**
DN500	885	360	443	435	535	5250/**6750**
DN550	885	360	443	435	535	5250/**6750**
DN600	980	410	490	480	795	5750/**7450**
DN650	1050	460	538	500	995	6950/**8050**
DN700	1050	490	540	529	995	6950/**8050**
DN800	1210	550	595	660	1550	7250/**9050**

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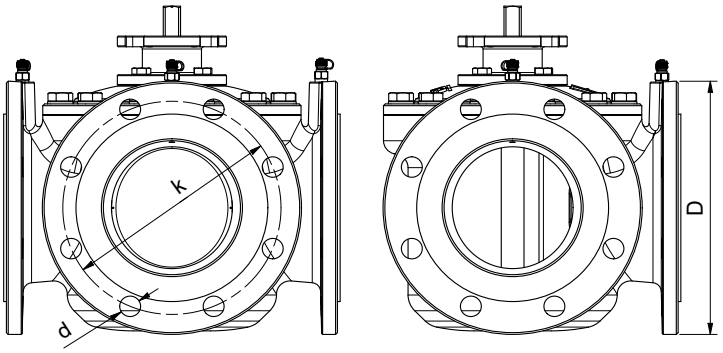
Special flanges

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:

DN:
65
80
100
125
150
200
....
800

Surface treatment:
Standard = **0**
C5 coating = 1

Temperature:
-20 to +100°C = **S**
-20 to +250°C = H

Common port:
Left = **L**
Right = R
Middle = M

58 - A150 - EG0SS - LY

Flange:
EN = **E**
ANSI = A
JIS 5K = J
JIS 10K = K

Material:
EN-GJS-400-18-LT = **G**

Vibration secured:
Standard = **S**
Nordlock = V

Actuator:
Mounted = **Y**
Not mounted = N

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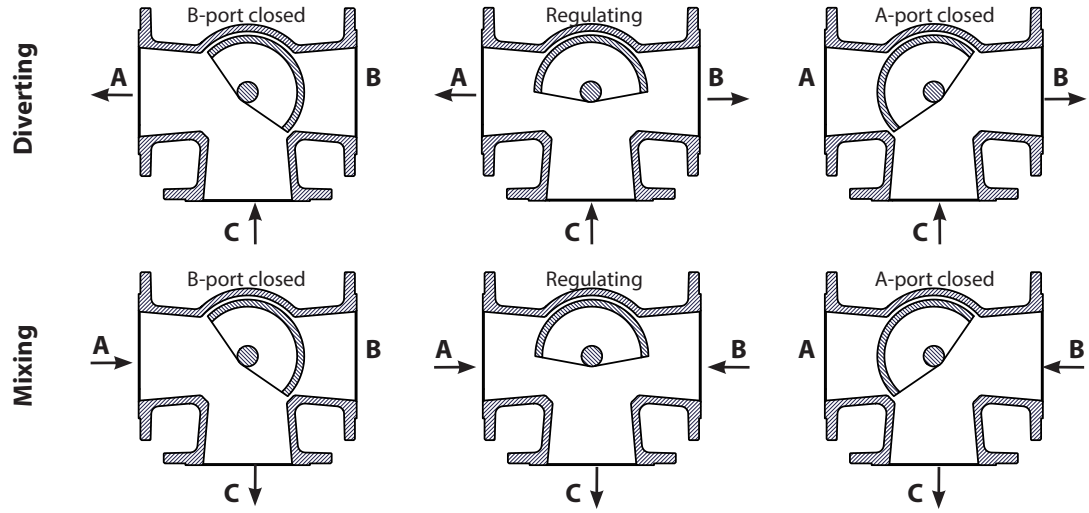
Function

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

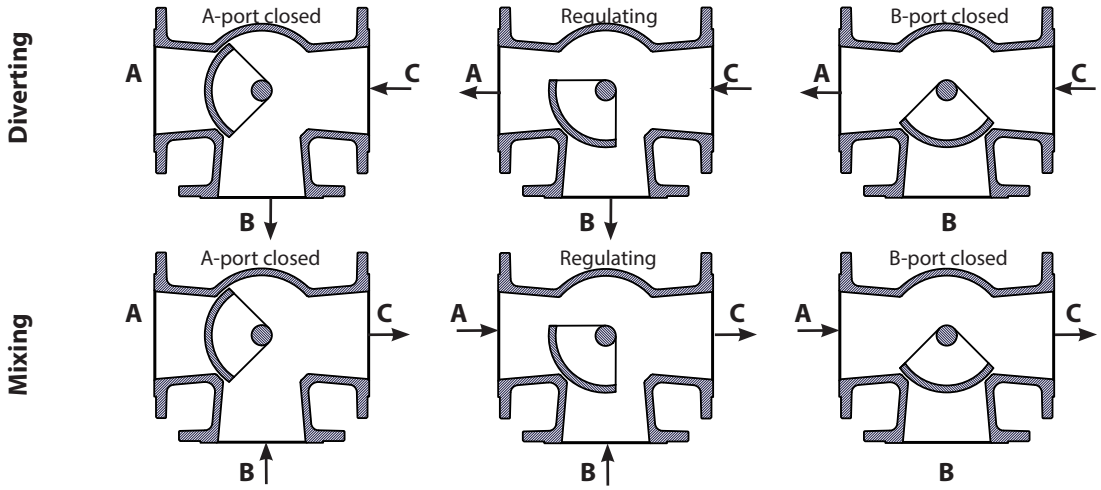
The quarter turn actuator moves the slide between port A and B. When the slide is closing port A, connection B-C is fully open and connection A-C is fully closed. When slide is closing port B, connection B-C is fully closed and connection A-C is fully open. When the slide is between port A and B, the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

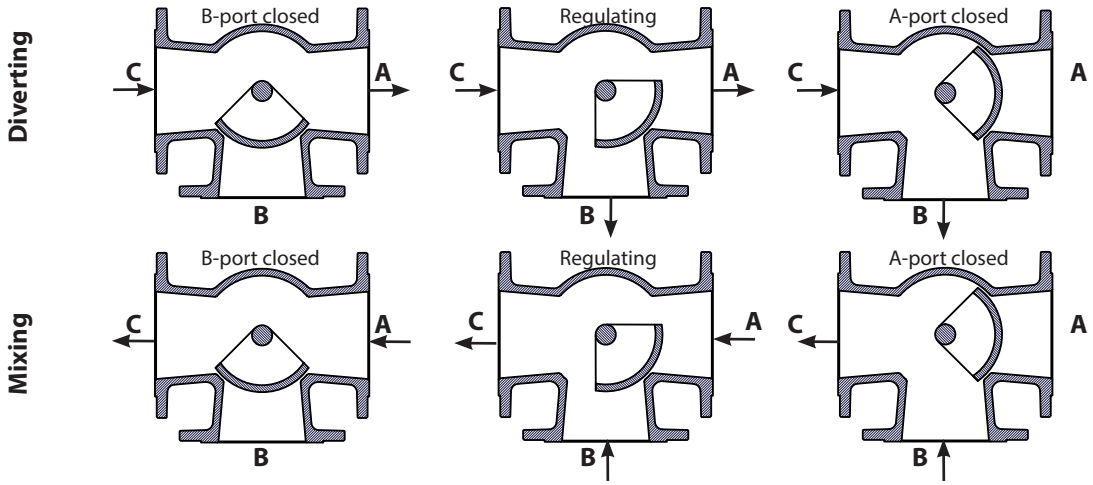
Flow directions C-middle



Flow directions C-right



Flow directions C-left



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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

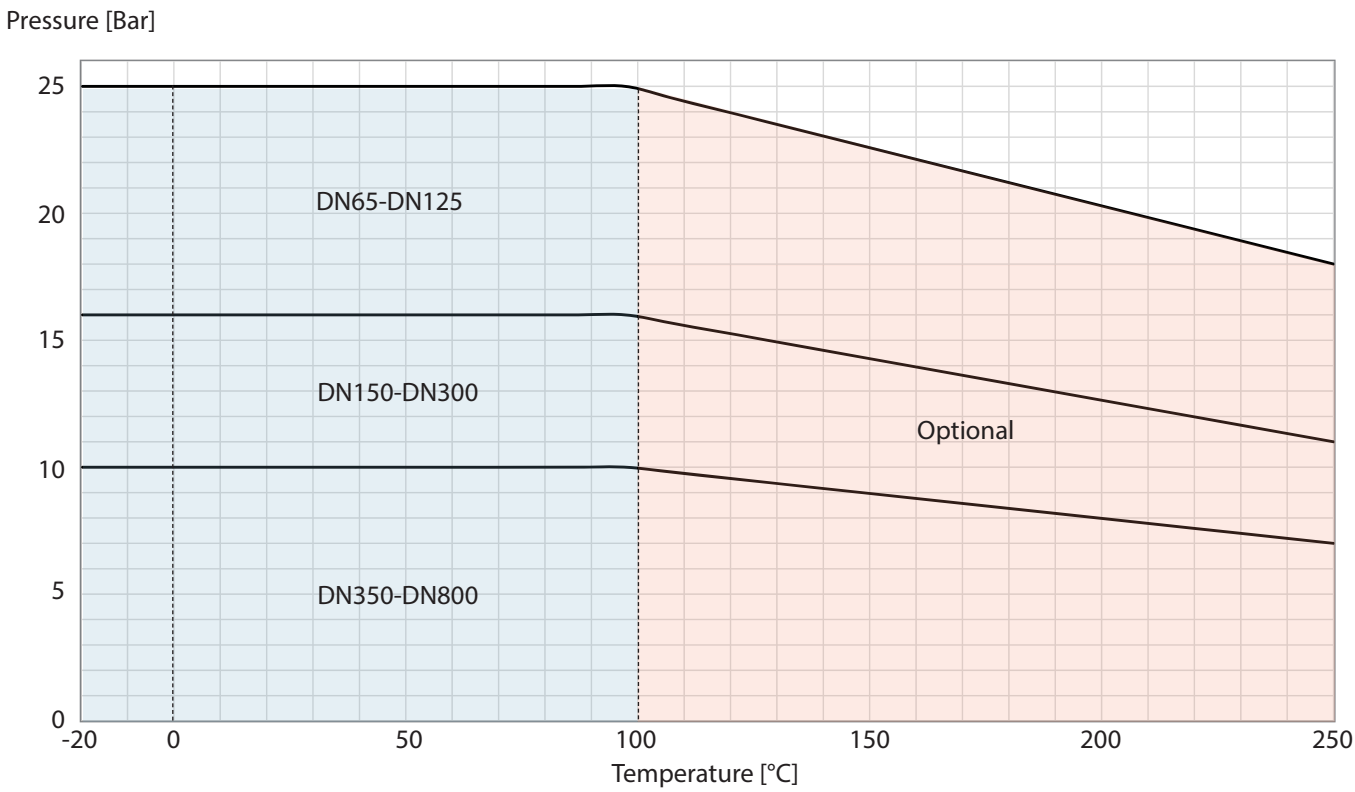
Slide position for valve type C-middle (Arrows pointing in direction of closed ports)

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



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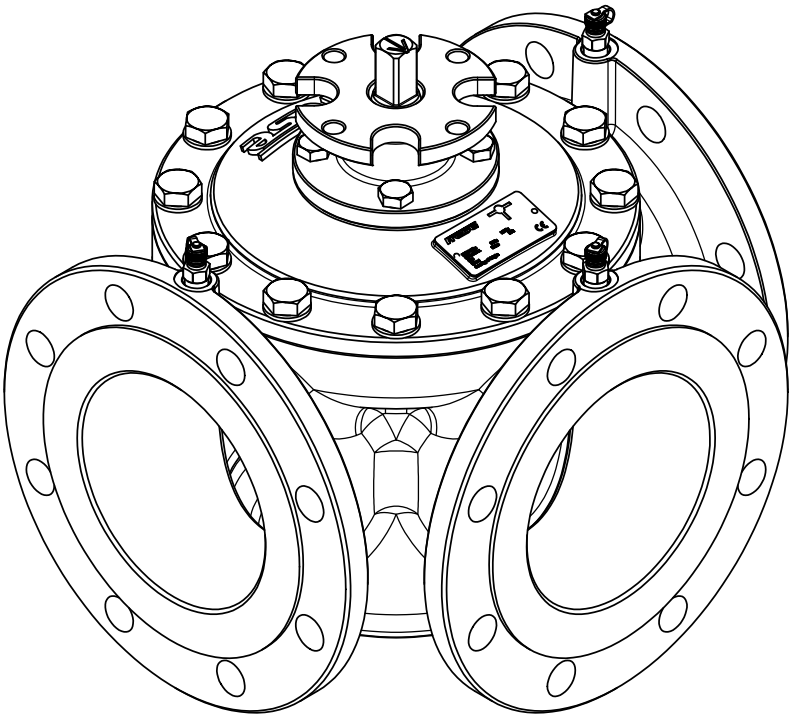

Specification Text

- 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

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