

# NAVAL

## Trunnion mounted ball valves for demanding district energy needs



Our valve technology experts  
are at your service when you are  
choosing the right valve solutions  
for your needs!





# Vexve - Inspired by your flow

Vexve is the world's leading supplier of valve solutions for heating and cooling needs in cities and industry. From the widest range of valves in the district energy industry, you can choose the right product for your mission-critical applications. Our valve and control products together with hydraulic control solutions are used in district energy networks, power plants, and heating and cooling systems of all sizes of buildings.

Our goal is always to be one step ahead of our customers' needs and exceed their expectations every day by serving them well. We are constantly developing new, smart, and energy-efficient valve solutions and services that are based on a strong understanding of our customers' needs and desire to deliver high-quality products. Together we create innovative and efficient energy infrastructures that support the sustainable development of a low carbon future.

Vexve is part of Vexve Armatury Group, which is the leading European provider of valve solutions for the energy sector. New trunnion mounted valves are designed and manufactured in co-operation within Vexve Armatury Group Oy.

## Our extensive sales and distribution network covers more than 30 countries





## Complete range of trunnion mounted ball valves

The new trunnion mounted valves are designed for above-ground and underground installations to operate reliably even in the most demanding conditions. The range includes full bore and reduced bore valves in DN sizes 150–900 with welded or flanged ends up to pressure class PN40. Valves can be operated with various actuator types. Our valves are specifically designed for the district heating and cooling applications needs.



## High-performance

The design of the new trunnion mounted ball valves ensures lower operating torque which means that the valves are easy and light to operate. With Vexve's trunnion mounted ball valves, you can minimize your pressure losses and achieve savings by reducing your pumping costs. The valves are optimized to be used in the highest district heating and cooling pressures.



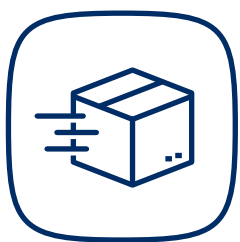
## Maintenance-free

Vexve's valves are manufactured from high-quality materials which ensures the durability of the valves. The valves are designed to last the entire life cycle of the pipeline. They are equipped with an integrated drain valve which allows draining of the valve body to check the tightness of the valve, even when the pipeline is pressurized.



## Reliable and safe

Vexve's trunnion mounted ball valves have a leakage rate A and bi-directional tightness. The valves have several quality certificates and are tested in accordance with the district energy sector's requirements. Blow-out safe stem construction ensures the safe operation of the valve.



## Fast deliveries

We optimize and measure our supply chain efficiency through delivery reliability, delivery capability, and customer satisfaction. Our highly automated production, efficient order-to-delivery process and high stock levels ensure fast deliveries globally throughout the year. We are constantly developing our facilities to make production even more efficient.







# High-performance trunnion mounted ball valves

## Trunnion mounted design

In the trunnion mounted ball valve design, the sealing rings are floating and the ball is fixed. The ball and the stem are attached to each other on both sides of the ball, which provides more support, especially as the ball size increases. When the pressure increases, the sealing rings are pressed against the ball. The spring is used to create a pre-pressure on the seal, which is used to achieve total tightness of the valve.

## Double block and bleed functionality

The double block and bleed functionality allows draining of the valve body to check the tightness of the valve, even when the pipeline is pressurized. The draining of the valve body is possible to do in both valve positions — open or closed.

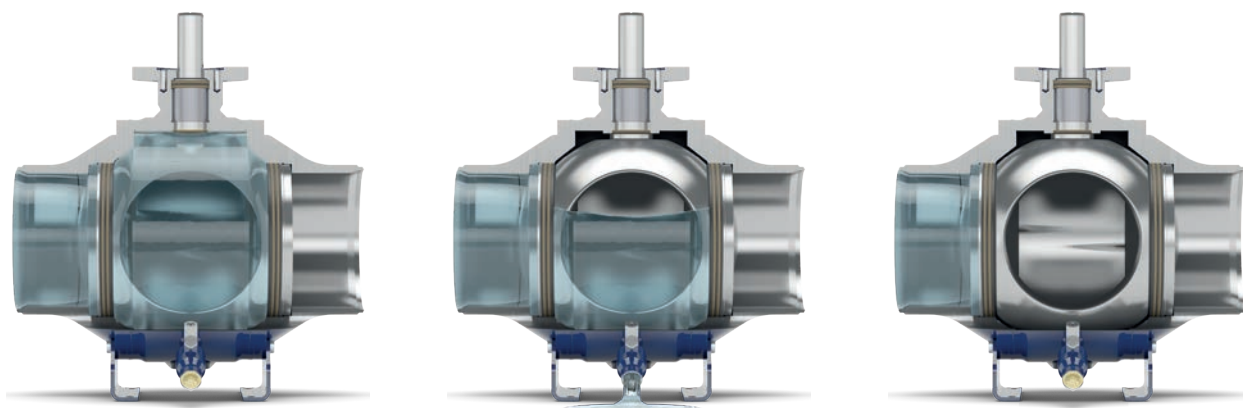
Checking the tightness of the valve with double block and bleed functionality can be done as follows\*. The medium flows through the valve when the valve is in the open position. The seals ensure that the valve is tight. Testing the tightness of the valve can be done by closing the valve and draining the accumulated medium from the ball cavity. After the ball cavity is empty, you can check that the valve is tight by noticing that the flow from the draining valve stops.

## Fully welded construction and high-quality materials

The fully welded construction of the trunnion mounted ball valves increases district heating lines' lifetime as it eliminates the risk of leakage and air ingress. The valve stem is sealed with double O-rings, which guarantees that the stem construction is tight and the valve is maintenance-free. The trunnion mounted ball valves are suitable for many different applications and withstand varying water quality. The face-to-face lengths of the valves are standardized, which guarantees space-saving installation of the valves. Valves can be installed in any position and have four lifting lugs, which makes the moving and turning of the valve easier even in the locations where the space is limited.

## Spring-loaded ball seats

The valve range has spring-loaded ball seats that guarantee total tightness for the valves in high and low pressures. The trunnion mounted ball valves can be pressurized from both flow directions and are designed to withstand changing pressures. Thanks to the spring-loaded ball seats, the valve tolerates thermal expansion and axial loads.



\*Double block and bleed functionality



## Technical characteristics

- available in DN sizes 150–900
- available in PN 16/25/40
- temperature range: 0 °C – +200 °C
- top flange ISO 5211
- solid ball
- blow-out safe stem construction
- full bore or reduced bore construction
- welded connections according to EN (DIN) and GOST standards
- flanged connections according to EN 1092
- with manual gear, electric, hydraulic or pneumatic actuator
- integrated drain valve and mounting bracket





Each of our valves is  
tested before delivery  
to the customer!



# Superior quality

Automated and modern production, precise quality control and our extensively certified operations ensure that our valve solutions meet the strictest quality criteria.

Our valves, certified in accordance with the Pressure Equipment Directive (PED), have been production tested in accordance with the EN 12266-1 standard with various media, pressures and test times.

Our valves are designed to fulfill the strict requirements of EN 488 and EHP003 standards set for district heating.

## General standards and certificates

- **ISO 9001**  
Quality management system
- **ISO 14001**  
Environmental management system
- **ISO 26000**  
Social responsibility
- **ISO 3834-2**  
Welding quality specifications
- **ISO 5817 Class B**  
Welding Quality Assurance
- **ISO 9606-1 (287) and ISO 14732 (1418)**  
Requirements for welders
- **ISO 9712 and ISO 17637**  
Assurance of weldings and other visual quality
- **EN 19**  
Marking of valves
- **PED (2014/68/EU, Module H)**  
Pressure Equipment Directive
- **EHP003 and EN 488**  
Underground district heating valves

## Other quality assurance

- **EN 10204**  
Quality assurance of purchasing materials

These standards guarantee to our customers that the valves they use are specifically suited for demanding underground conditions and will operate reliably over the whole lifetime of the network.

As a responsible company, we also operate in accordance with the social responsibility standard ISO 26000 and our business is certified with quality management system certificate ISO 9001: 2015 and environmental management system certificate ISO 14001: 2015.

## Testing

- **EN12266-1, leakage rate A** (bubble tight)
- **P10**  
Valve body strength
- **P11**  
Valve body tightness
- **P12**  
Valve closing tightness

## Design standards

- **ISO EN 13445**  
Strength requirements for valves
- **EN 1983**  
Industrial valves: steel ball valves, structural specifications
- **EN 12627 and EN 253+A2**  
Industrial valves shapes of welding ends
- **EN 1092-1:2018**  
Flanges and flange connections
- **ISO EN 5211:2017**  
Actuator mounts
- **EN 12570**  
Industrial valves, operating parts sizing method
- **EN 12982 series 63**  
Standardized face-to-face lengths for welding ends
- **EN 558 series 12**  
Standardized face-to-face lengths for flanged ends



# Trunnion mounted ball valves, full bore

welding / welding, EN (DIN), DN 150-900, full bore

Body	DN 150-400 Steel, P355QH (1.0571) / P355NL1 (1.0566) DN 450-900 Steel, P355QH (1.0571) / P355NH (1.0565)
Ball	DN 150-900 Steel + stainless plating, ASTM A350 LF2 +Ni
Ball seal	DN 150-900 PTFE+C
Stem	DN 150-900 Stainless steel, X17CrNi16-2 (1.4057)
Stem seal	DN 150-900 FPM
Operation	DN 150-900 Valves are available with manual gear or with an electric or hydraulic actuator
Structural length	EN 12982 (63-series)
Equipment	DN 150-900 are equipped with lifting lugs, mounting stand, drain valve



## Operation conditions

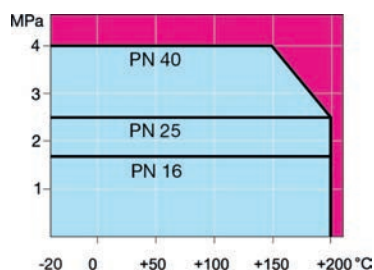
0 °C – +200 °C

Below 0 °C contact manufacturer

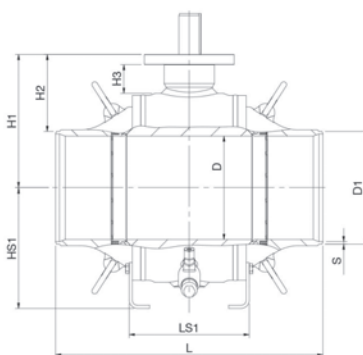
Lowest allowed ambient

temperature -20 °C

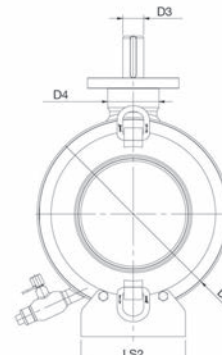
Leakage rate A (EN 12266-1)



DN 150-900



DN 150-900



Not for steam

DN	PN	Product no. Naval	D	D1	D2	D3	D4	H1	H2	H3	HS1	L	LS1	LS2	S	kg
150	25	234454/TR	150	168.3	315.0	40.0	98.0	234	150	57	200	457	229	160	4,5	125.0
200	25	234456/TR	200	219.1	368.0	40.0	98.0	260	150	56	235	521	234	200	5	165.0
250	25	23443705/TR	250	273.0	440.0	50.0	110.0	302	166	62	280	559	250	200	5	250.0
300	25	23447805/TR	300	323.9	510.0	50.0	110.0	337	175	62	314	635	290	200	5,6	370.0
350	25	23449605/TR	340	355.6	590.0	70.0	135.0	400	222	80	360	762	348	260	6,3	595.0
400	25	23447905/TR	385	406.4	640.0	70.0	135.0	425	221	80	390	838	362	260	7,1	725.0
450	25	23444205/TR	436	457.0	740.0	75.0	180.0	489	260	85	530	914	456	400	6,3	995.0
500	25	23446005/TR	487	508.0	822.0	90.0	200.0	537	283	88	580	997	472	420	6,3	1275.0
600	25	23448105/TR	589	610.0	980.0	98.0	200.0	616	311	88	660	1143	524	450	7,1	2075.0
700	25	23448205/TR	684	711.0	1125.0	98.0	220.0	722	366	111	700	1346	572	450	8	3145.0
800	25	23448305/TR	779	813.0	1290.0	120.0	270.0	833	426	138	840	1524	700	600	8,8	4785.0
900	25	23448405/TR	874	914.0	1440.0	120.0	270.0	908	451	138	900	1727	770	600	10	6185.0

Also available in PN 40. For more information contact our customer service.

Sizes DN 450-900 manufactured by ARMATURY Group a.s. - a member of Vexve Armatury Group.



## Notes

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# INSPIRED BY YOUR FLOW



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