

**VEXVE** / VEXVE  
ARMATURY  
GROUP

# District Cooling Solutions



Total district cooling solutions,  
expertise & know-how combined  
with top quality and superior  
customer service.



# Introduction

Vexve is the world's leading manufacturer of high quality valves specifically developed for the most demanding district heating and cooling applications. Vexve's solutions are designed to deliver the highest possible energy efficiency and cost-effectiveness throughout the entire heating and cooling network – from district heating power stations and centralised cooling plants, to pumping stations and individual buildings.

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Vexve is a Finnish-based, privately owned business delivering products and services whose aim is to save energy and improve the environment. The company has been in operation for more than 50 years and delivers today its products and services worldwide from Helsinki to Beijing, and from Milan to Doha and Moscow.

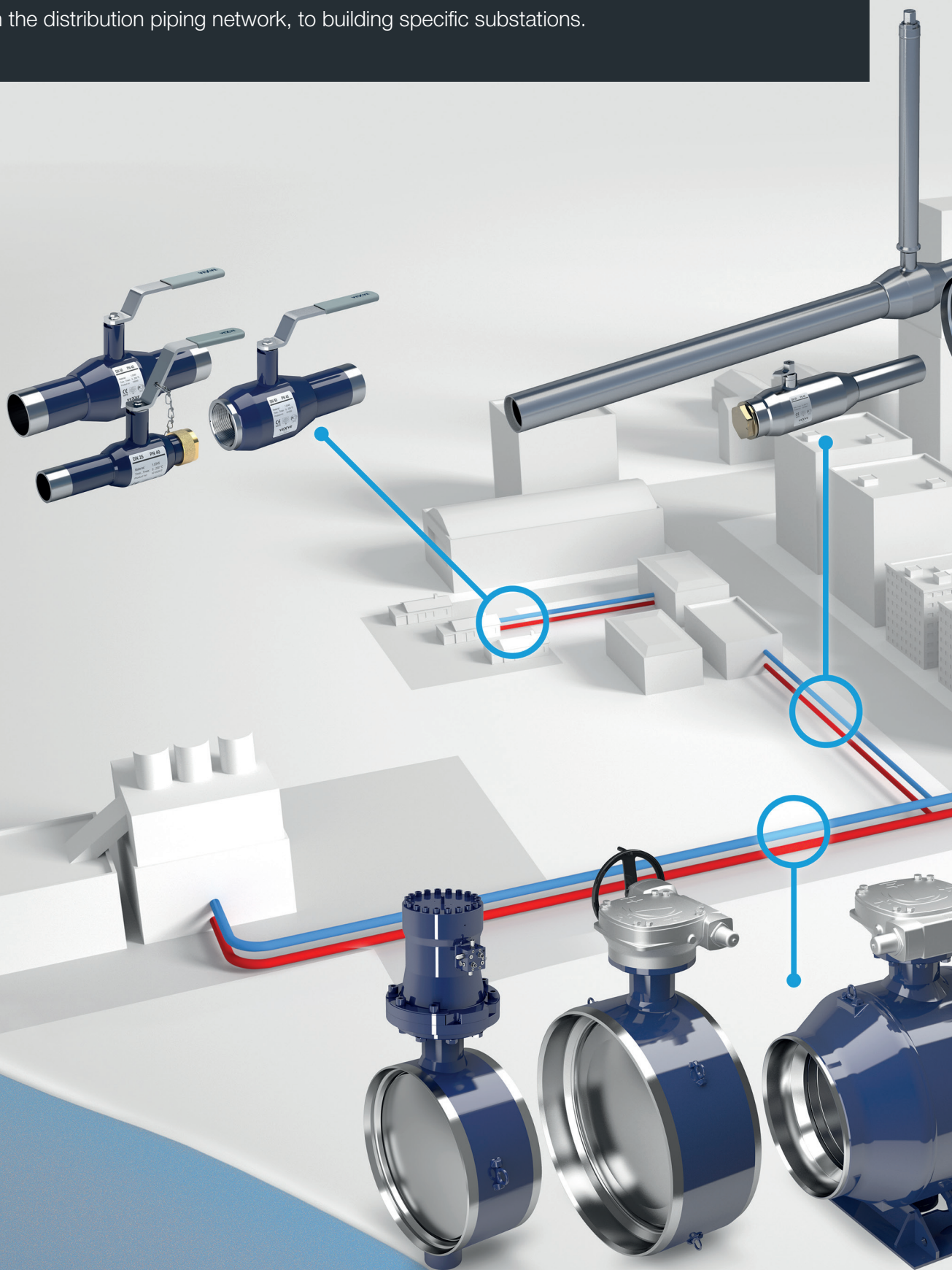
The Vexve's product range for district heating and cooling applications covers everything from ball and butterfly valves to actuators and customised, special solutions such as expansion spindles. Furthermore, Vexve's valves are utilised in heating and cooling (HVAC/R) as well as Oil & Gas applications. Vexve is known for high quality, fast deliveries, and superior customer service as well as for the company's specialised expertise in district heating and cooling.

Vexve's highly advanced, automated production methods along with constant quality monitoring and development form the base of Vexve's quality products. To further ensure the highest quality, only the best raw materials and components are utilised in the manufacturing of valves. Vexve's operations are ISO 9001 & ISO 3834-2, ISO 14001, and PED certified and the valves manufactured by Vexve meet all the quality criteria and standards including EN 488, PED, and GOST.



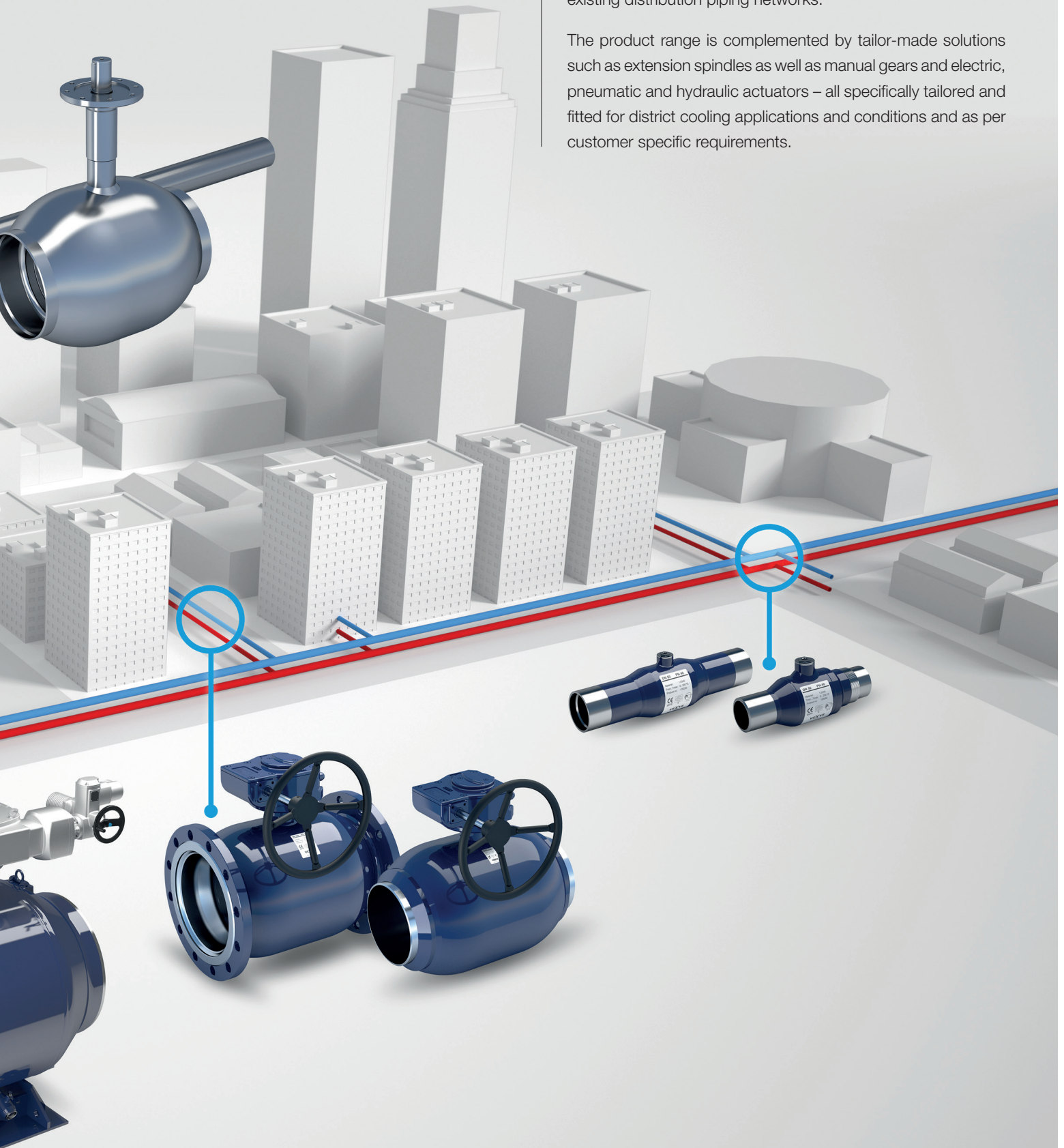
# Solutions

Vexve's special expertise covers the entire district cooling system from centralised cooling plant, through the distribution piping network, to building specific substations.



The solutions for heating and cooling applications includes a complete range of ball- and butterfly-type shut-off valves and butterfly-type control valves. Vexve's valve portfolio further includes long stem ball valves designed for underground installation and hot tapping and branching valves for expanding existing distribution piping networks.

The product range is complemented by tailor-made solutions such as extension spindles as well as manual gears and electric, pneumatic and hydraulic actuators – all specifically tailored and fitted for district cooling applications and conditions and as per customer specific requirements.



# Products and Services

The product range covers all types of valves needed in the operation and construction of district heating and cooling systems from shut-off valves to control valves, balancing valves and special purpose valves such as hot tapping and air release valves.

Vexve equips valves with manual gears or either electric, pneumatic or hydraulic actuators as per customer specific requirements.



# Shut-off Valves

## Ball Valves

### Solutions for

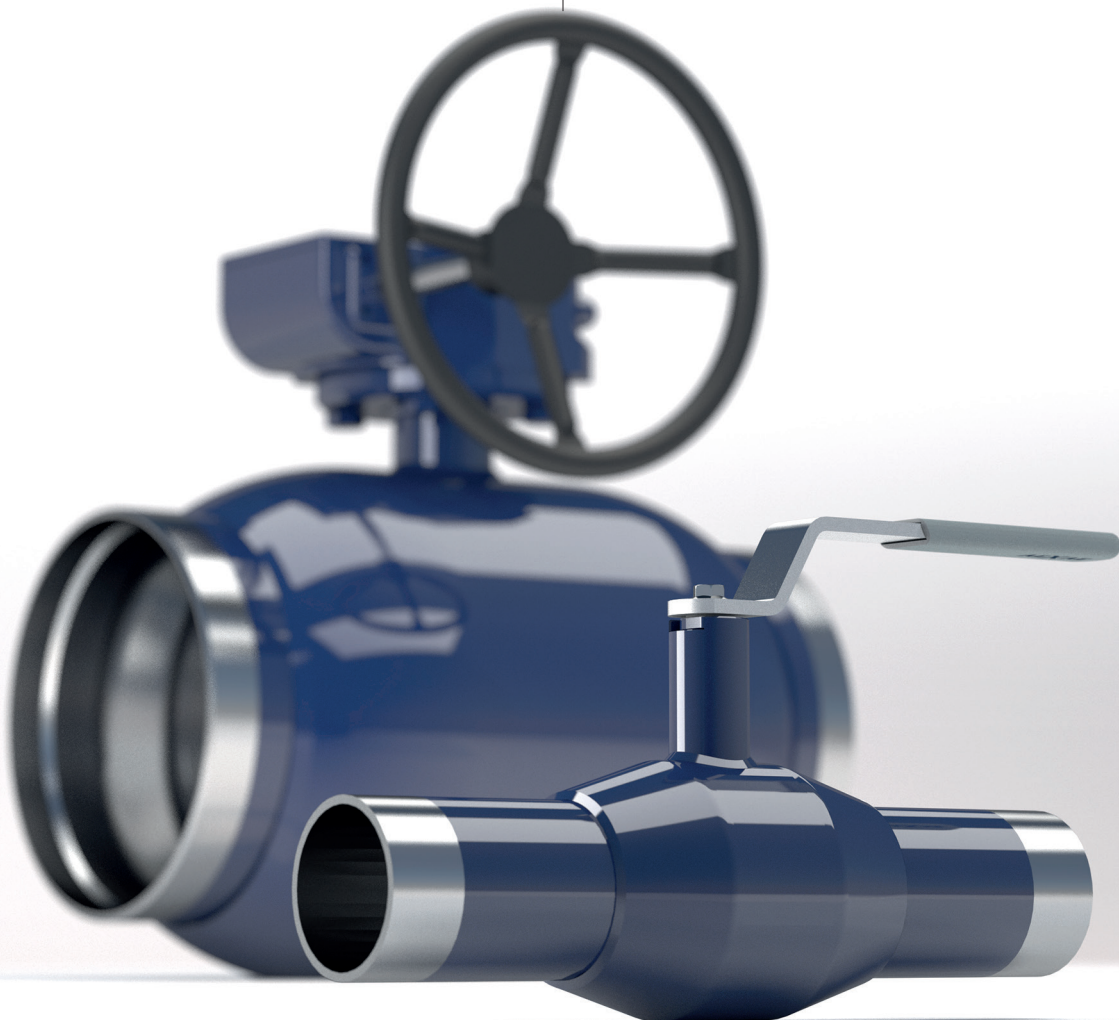
- opening and closing district heating and cooling lines (shut-off)
- service

### Available

- in sizes from DN 10 to DN 800
- with welded connections (recommended) according to EN (DIN) and GOST
- available also with flanged and threaded connections
- with full bore and reduced bore design
- with manual lever, manual gear, electric or hydraulic actuator
- tyhjennysventtiilillä ja asennusjalustalla (supistettuaukkoinen, kokoluokat  $\geq$ DN 700 ja täysaukkoinen, kokoluokat  $\geq$ DN 600)

### Characteristics

- fully welded construction
- light weight
- easy to insulate
- space saving design
- easy to install
- easy to operate
- maintenance-free
- long service life
- total bi-directional tightness = EN 12266-1 rate A in both directions
- high Kv-value (minimum pressure loss, minimized pumping costs)
- high-strength materials capable to withstand variable water qualities
- stainless steel or stainless steel plated ball
- trunnion mounted (sizes  $\geq$  DN 600)
- spring loaded PTFE ball seals
- blow-out safe stem construction
- stem sealing with double o-rings
- designed and certified according to EN 488



# Shut-off Valves

## Long stem ball valves

### Solution for

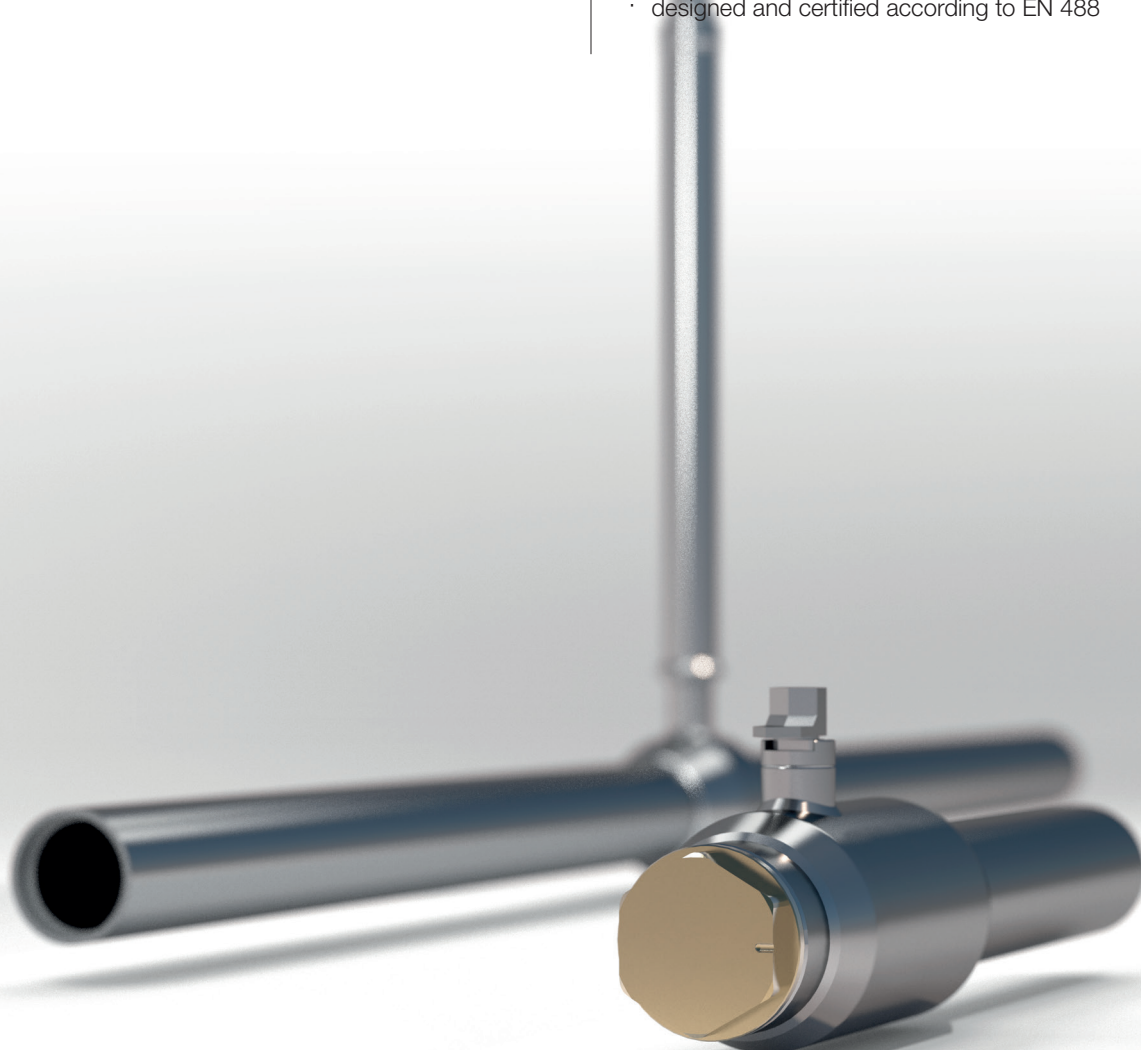
- opening and closing district heating and cooling lines (shut-off)
- underground installation

### Available

- in sizes from DN 25 to DN 800
- with welded connections
- with reduced bore design
- in different standard stem heights (350 mm, 750 mm, 1000 mm and 1250 mm) – also customised stem heights
- with different length extension pipes
- with manual gear, electric or hydraulic actuator
- unpainted
- with separate air release (service) valves

### Characteristics

- fully welded construction
- light weight
- easy to insulate
- space saving design
- easy to install
- easy to operate
- maintenance-free
- long service life
- total bi-directional tightness = EN 12266-1 rate A in both directions
- high Kv-value (minimum pressure loss, minimized pumping costs)
- high-strength materials capable to withstand variable water qualities
- stainless steel or stainless steel plated ball
- trunnion mounted (sizes  $\geq$  DN 600)
- spring loaded PTFE ball seals
- blow-out safe stem construction
- stem sealing with double o-rings
- designed and certified according to EN 488





# Shut-off and Control Valves

## Butterfly valves

### Solution for

- opening and closing district heating and cooling lines (shut-off)
- shut-off and control

### Available

- in sizes from DN 300 to DN 800 full bore and DN 900 to DN1400 reduced bore
- in pressure class PN 25 (body)
- in trim classes  $\Delta p = 16$  bar and  $\Delta p = 25$  bar
- with tightness class Rate A or B according to EN 12266-1
- with welded connections (recommended) according to EN (DIN) and GOST
- available also with flanged connections
- with manual gear, electric or hydraulic actuator

### Characteristics

- fully welded construction
- metal seated, stainless steel disc
- light weight
- space saving design
- easy to install
- easy to insulate
- easy to operate
- maintenance-free
- long and reliable service life
- bi-directionally tight shut-off
- triple offset geometry
- high Kv-value (minimized pressure loss, minimum pumping costs)
- non-jamming seat
- seat designed to adjust to large temperature changes
- designed according to EN 488



# Branching valves

## Hot tapping and branching valves

### Solution for

- connecting new branches to existing piping network (under pressure) without the interruption of heating/cooling supply and without draining the network ("hot" tapping)
- preparing piping system for future expansion (branching valves) - typically installed in connection with pre-insulated piping systems

### Available

- in sizes from DN 20 to DN 100
- with welded connections (ends)
- with full bore and reduced bore design

### Characteristics

- low stem for easy insulation
- fully welded construction
- light weight
- space saving design
- easy to install
- easy to operate
- maintenance-free
- long service life
- total bi-directional tightness = EN 12266-1 rate A in both directions
- high-strength materials capable to withstand variable water qualities
- spring loaded PTFE ball seals
- blow-out safe stem construction



# Special equipment

## Hot tapping drilling device

### Solution

- connecting new branches to existing piping network (under pressure) without the interruption of heating/cooling supply and without draining the network ("hot" tapping)
- District heating systems
- District cooling systems
- Industry
- HVAC/R: heating and cooling systems as well as compressed air

### Available

- in sizes from DN 20 to DN 200
- with welded connections (ends)
- with full bore and reduced bore design



# District Heating and Cooling Valves

## Product Range

### Ball Valves

#### Shut-off valves

	DN	10	15	20	25	32	40	50	65	80	100	125	150	200	250	300	400	500	600	700	800	
<b>Ball valves, steel, reduced bore</b>																						
welded-welded		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
welded-threaded		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
threaded-threaded		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
flanged-flanged		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
welded-welded with gears and actuators		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
flanged-flanged with gears and actuators		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
welded-flanged		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
<b>Ball valves, steel, full bore</b>																						
welded-welded		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
flanged-flanged		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
welded-welded with gears and actuators		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
flanged-flanged with gears and actuators		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
<b>Long stem ball valves, steel, reduced bore</b>																						
welded-welded		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
air release valves		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
<b>long stem ball valves, steel, full bore</b>																						
welded-welded		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
<b>Branching valves</b>																						
branching valves		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
hot tapping ball valves		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■

**Note!** ■ also available with high stem ■ also available with PN25 flanges  
 ■ available with flanged connection

### Butterfly Valves

#### Shut-off valves

	DN	300	350	400	450	500	600	700	800	900	1000	1200	1400
<b>Butterfly valves, full bore</b>													
welded-welded		■	■	■	■	■	■	■	■	■	■	■	■
flanged-flanged		■	■	■	■	■	■	■	■	■	■	■	■
<b>Butterfly valves, reduced bore</b>													
welded-welded		■	■	■	■	■	■	■	■	■	■	■	■
flanged-flanged		■	■	■	■	■	■	■	■	■	■	■	■

**Note!**

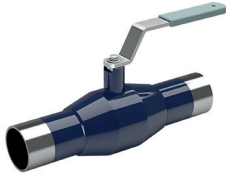
All welded-welded butterfly valves available with GOST ends.

All butterfly valves available in trim classes  $\Delta p = 16$  or 25 bar.

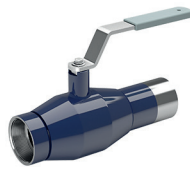
#### Control and Shut-off valves

	DN	300	350	400	450	500	600	700	800	900	1000	1200	1400
<b>Butterfly valves, full bore</b>													
welded-welded		■	■	■	■	■	■	■	■	■	■	■	■
flanged-flanged		■	■	■	■	■	■	■	■	■	■	■	■
<b>Butterfly valves, reduced bore</b>													
welded-welded		■	■	■	■	■	■	■	■	■	■	■	■
flanged-flanged		■	■	■	■	■	■	■	■	■	■	■	■

Shut-off valves



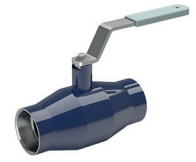
welded-welded



welded-threaded



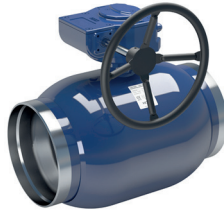
male threads and plug-welded



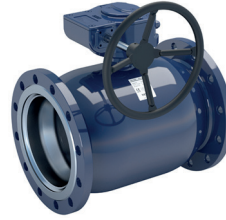
threaded-threaded



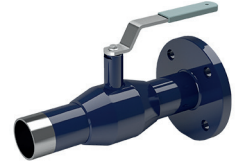
flanged-flanged



welded-welded with gear



flanged-flanged with gear

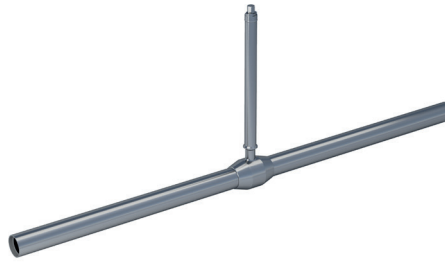


welded-flanged

Long stem ball valves,  
steel



welded-welded/S



welded-welded/SL



Air release valve

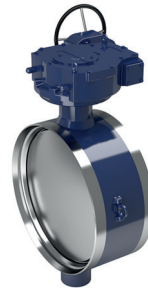
Butterfly valves



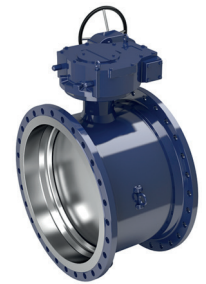
welded-welded, shut-off



flanged-flanged, shut-off



welded-welded, control

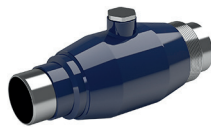


flanged-flanged, control

Branching valves



Branching valve



Hot tapping valve

Special products



Hot tapping drilling device



T-key

# Gears and actuators

## Manual gears

### Solution

- Progear, Rotork, Auma or equal
- for manual operation (opening/closing) of valves
- specifically designed for district heating and cooling applications.

### Available

- in a complete size range compatible with Vexve's valves
- in horizontal and vertical arrangement

### Characteristics - ProGear



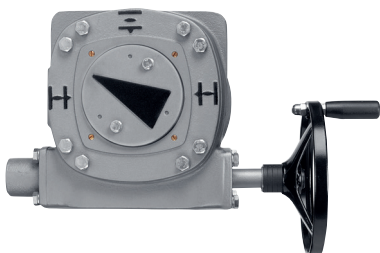
- Stainless Steel input shaft
- Stainless Steel fasteners
- Standardised according to DIN / ISO 5211
- 13 Models up to 70.000 Nm. output
- Axial needle bearings
- NBR 70 gasket material
- Sealed position-indicator
- Powder coated / polyurethane coated finish
- Carefully chosen ratios are increasing the MA-rates
- -5° to 95° stroke
- IP68 sealing
- -25 °C to +110 °C temperature range

### Characteristics - Rotork



- Torque range up to 32,000 Nm
- 15 sizes. Ratios from 34:1 to 729:1.
- Cast iron
- Axial needle bearings
- Rugged construction for all environments
- IP67
- Options:
  - Stainless steel input shaft. Ductile iron. IP68.
  - Various environments. Padlockable handwheels.
  - Limit switches. High and low temperatures. Underground installation.

### Characteristics - Auma



- Torques up to 675,000 Nm
- Reduction ratios from 39:1 to 3328:1
- Swing angles up to 100°
- Adjustable end stops (option)
- Output drive according to ISO standard
- High enclosure protection
- High quality corrosion protection
- Wide ambient temperature range

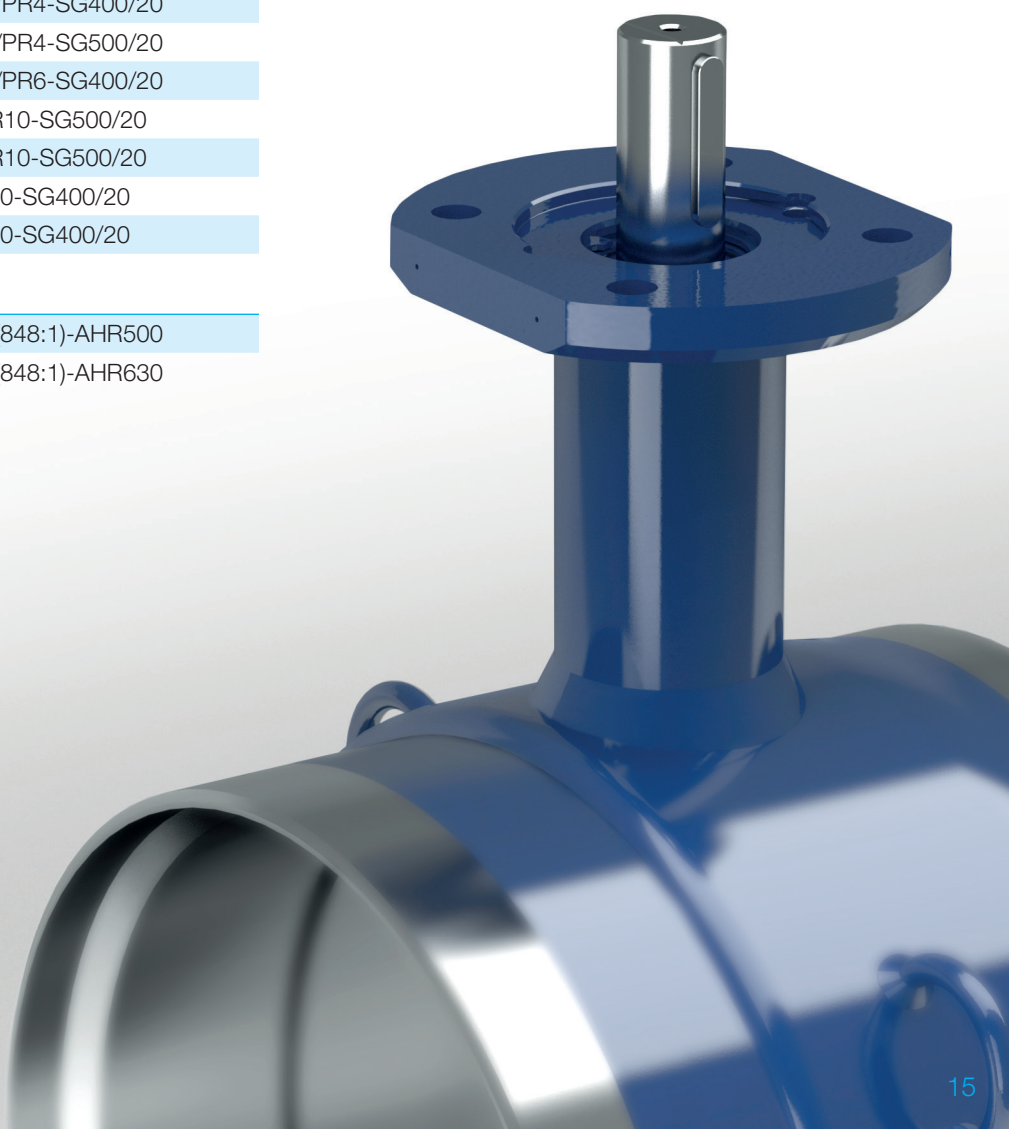
### Ball valves, reduced bore

Valve Size (DN)	Pro-Gear	Valve Size (DN)	Pro-Gear
200	Q-800S-W250/15	200	Q-2000S-W300/20
250	Q-2000S-W300/20	250	Q-4000S-W600/20
300	Q-4000S-W600/20	300	Q-4000S-W600/20
350	Q-4000S-W600/20	350	Q-6500S-W500/20
400	Q-6500S-W500/20	400	Q-12000S-W500/20
500	Q-12000S-W500/20	500	Q-12000S-W500/20
600	Q-12000S-W500/20	600	Q-24000S-W700/25
700	Q-24000S-W700/25	700	Q-32000S-W700/25
800	Q-32000S-W700/25	800	Q-50000S-W700/25

### Ball valves, full bore

### Butterfly valves

Valve Size (DN)	Rotork
300	AB1250N-SG400/20
350	AB1250N-SG400/20
400	AB1950N-SG500/25
450	AB1950N/PR4-SG400/20
500	AB1950N/PR4-SG400/20
600	AB3000N/PR4-SG500/20
700	AB6800N/PR6-SG400/20
750	A200N/PR10-SG500/20
800	A200N/PR10-SG500/20
900	A250/PR10-SG400/20
1000	A250/PR10-SG400/20
	<b>Auma</b>
1200	GS250.3-(848:1)-AHR500
1400	GS250.3-(848:1)-AHR630



# Gears and actuators

## Electric actuators

### Solution

- Auma or equal
- for automatic operation (opening/closing) of valves

### Characteristics (AUMA SA)

- Torque range from 10 Nm to 56,000 Nm
- Output speeds from 4 to 180 rpm
- Limit and torque sensing
- Available with 3-ph AC, 1-ph AC and DC motors
- Handwheel for manual operation
- High enclosure protection
- High quality corrosion protection
- Wide ambient temperature ranges

### Options

- Intermediate position switches
- Switches in tandem version
- Remote position transmitter
- Magnetic limit and torque transmitter
- Mechanical position indicator

### Interfaces

- Electrical connection via AUMA plug/socket connector (optionally terminals)
- Cable entries in different versions
- Output drive types according to ISO and DIN standards

### Available

- in a complete size range compatible with Vexve's valves





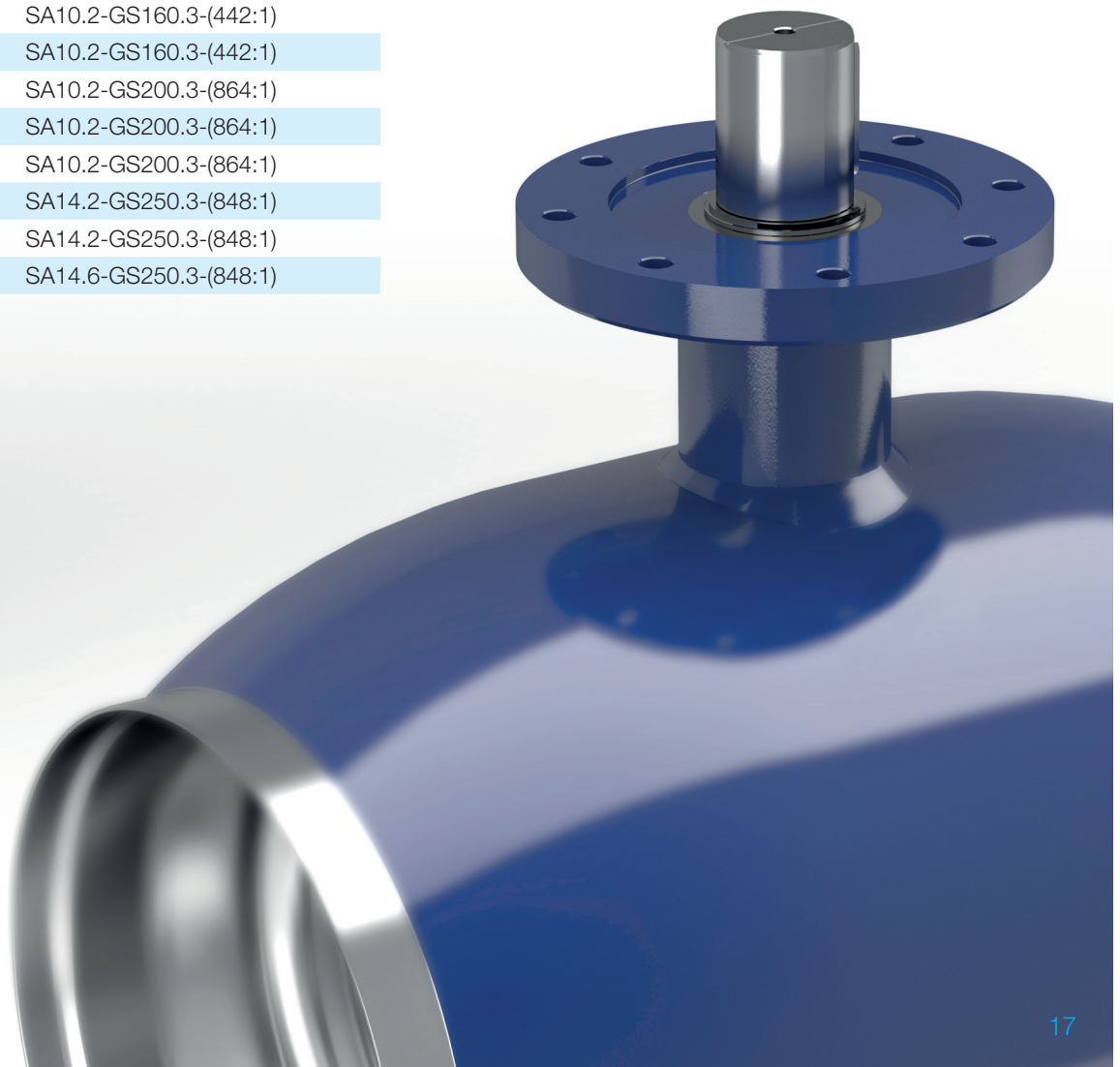
### Ball valves, reduced bore

Valve Size (DN)	Auma	Valve Size (DN)	Auma
200	SQ12.2	200	SA07.6-GS100.3-(208:1)
250	SA07.6-GS100.3-(208:1)	250	SA10.2-GS125.3-(208:1)
300	SA10.2-GS125.3-(208:1)	300	SA10.2-GS125.3-(208:1)
350	SA10.2-GS125.3-(208:1)	350	SA10.2-GS125.3-(208:1)
400	SA10.2-GS125.3-(208:1)	400	SA10.2-GS160.3-(442:1)
500	SA10.2-GS160.3-(442:1)	500	SA10.2-GS160.3-(442:1)
600	SA10.2-GS160.3-(442:1)	600	SA10.2-GS200.3-(864:1)
700	SA10.2-GS200.3-(864:1)	700	SA10.2-GS250.3-(848:1)
800	SA10.2-GS250.3-(848:1)	800	SA14.2-GS250.3-(442:1)

### Ball valves, full bore

### Butterfly valves

Valve Size (DN)	Auma
300	SA07.6-GS100.3-(208:1)
350	SA07.6-GS100.3-(208:1)
400	SA07.6-GS100.3-(208:1)
450	SA10.2-GS125.3-(208:1)
500	SA10.2-GS125.3-(208:1)
600	SA10.2-GS160.3-(442:1)
700	SA10.2-GS160.3-(442:1)
750	SA10.2-GS200.3-(864:1)
800	SA10.2-GS200.3-(864:1)
900	SA10.2-GS200.3-(864:1)
1000	SA14.2-GS250.3-(848:1)
1200	SA14.2-GS250.3-(848:1)
1400	SA14.6-GS250.3-(848:1)



# Gears and actuators

## Hydraulic actuators

### Solution

- Hydrox™
- for automatic operation (opening/closing) of valves
- specifically designed for district heating and district cooling and Vexve's valves
- for minimum maintenance and complete safety

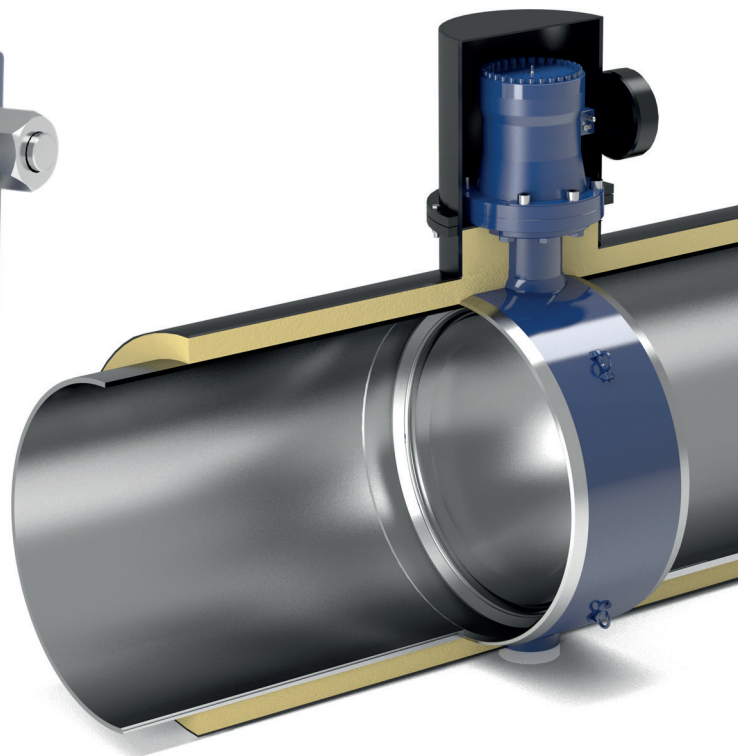
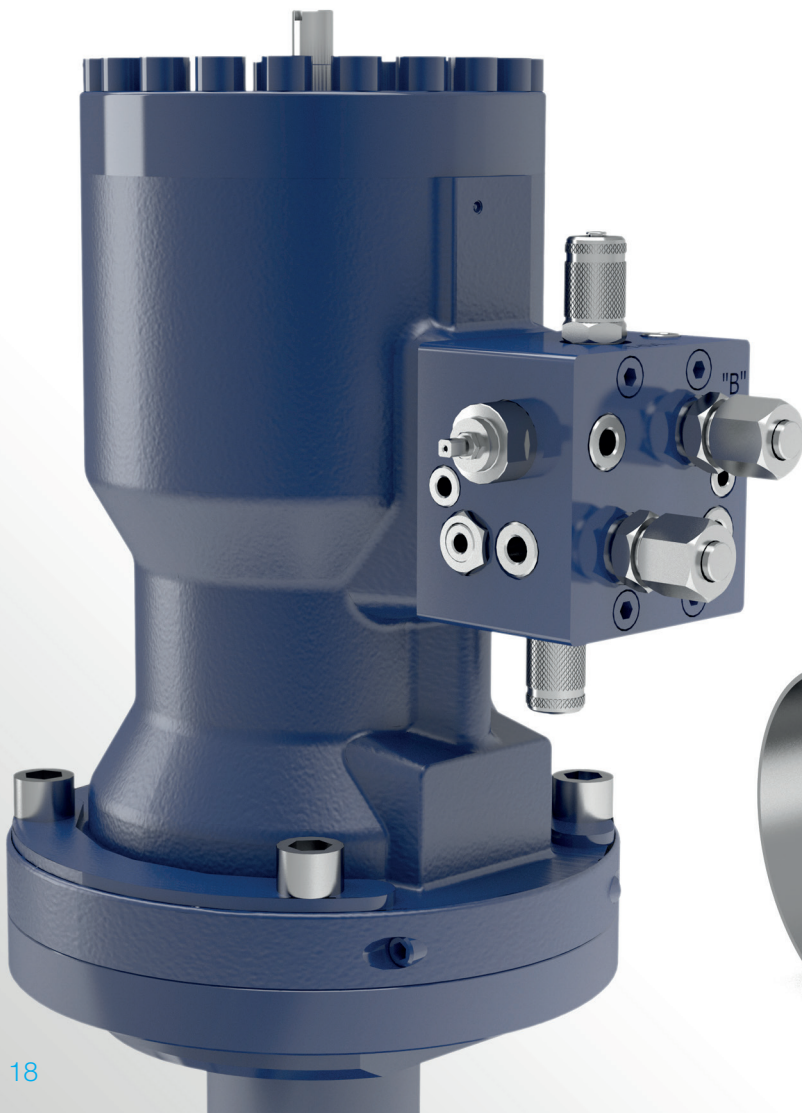
### Available

- in a complete size range compatible with Vexve's valves
- manually or remotely controlled  
(note! manual operation always included)

### Characteristics

- Completely safe for underground installation
- Hydraulically self-sustaining
- Position transmitter/indicator (low voltage)
- Designed especially for valve torque requirements – designed for full compatibility with Vexve's valves \*
- Actuator cover designed for protection from water, salt and dust
- Torques up to 64,000 Nm
- Recommended pressure range 30-200 bar
- Ambient temperature range -25°C to +85°C
- Rotating angle up to 91°
- Adjustable end stops
- Output flange acc. to ISO5211
- IP68

*\*) Possibility to increase torque when higher than usual torque is needed*



### Butterfly valves

### Ball valves Reduced Bore

### Ball valves Full Bore

Valve Size (DN)	Vexve	Valve Size (DN)	Vexve	Valve Size (DN)	Vexve
300	Hydrox2	40-100	Hydrox035	40-80	Hydrox035
350	Hydrox2	125	Hydrox2	100	Hydrox2
400	Hydrox4	150	Hydrox2	125	Hydrox2
450	Hydrox8	200	Hydrox2	150	Hydrox2
500	Hydrox8	250	Hydrox2	200	Hydrox2
600	Hydrox8	300	Hydrox4	250	Hydrox4
700	Hydrox16	350	Hydrox4	300	Hydrox4
750	Hydrox16	400	Hydrox8	350	Hydrox8
800	Hydrox16	500	Hydrox8	400	Hydrox8
900	Hydrox32	600	Hydrox8	500	Hydrox8
1000	Hydrox32	700	Hydrox16	600	Hydrox16
1200	Hydrox64	800	Hydrox32	700	Hydrox32
1400	Hydrox64			800	Hydrox64



For us quality and responsibility for our environment are key elements in all our operations

# Quality

Vexve's valves are manufactured with the highest quality standards.

All valves are ISO 9001:2015, ISO 14001:2015, ISO 3834-2 and Pressure Equipment Directive (PED, H- module) certified.



## Vexve follows its own Quality Plan which is based on and adheres to the following standards:

### General standards and certificates

- EN 488:2016 / EHP003
- ISO 9001:2015
- ISO 14001:2015
- ATEX
- PED (Module H)
- ISO 3834-2
- ISO 26000

### Design standards

- EN 13445
- EN 12627 and EN 253
- Blowout safe design
- EN 1092
- ISO 5211 and EN 12570

### Welding standards

- ISO 3834-2
- EN 13480
- ISO 9712
- ISO 17637
- ISO 5817 class B
- ISO 9606-1
- ISO 14732
- ISO 15614
- ISO 15607
- ISO 3452-1

### Material standards

- EN 10204
- PED approved parts

### Testing

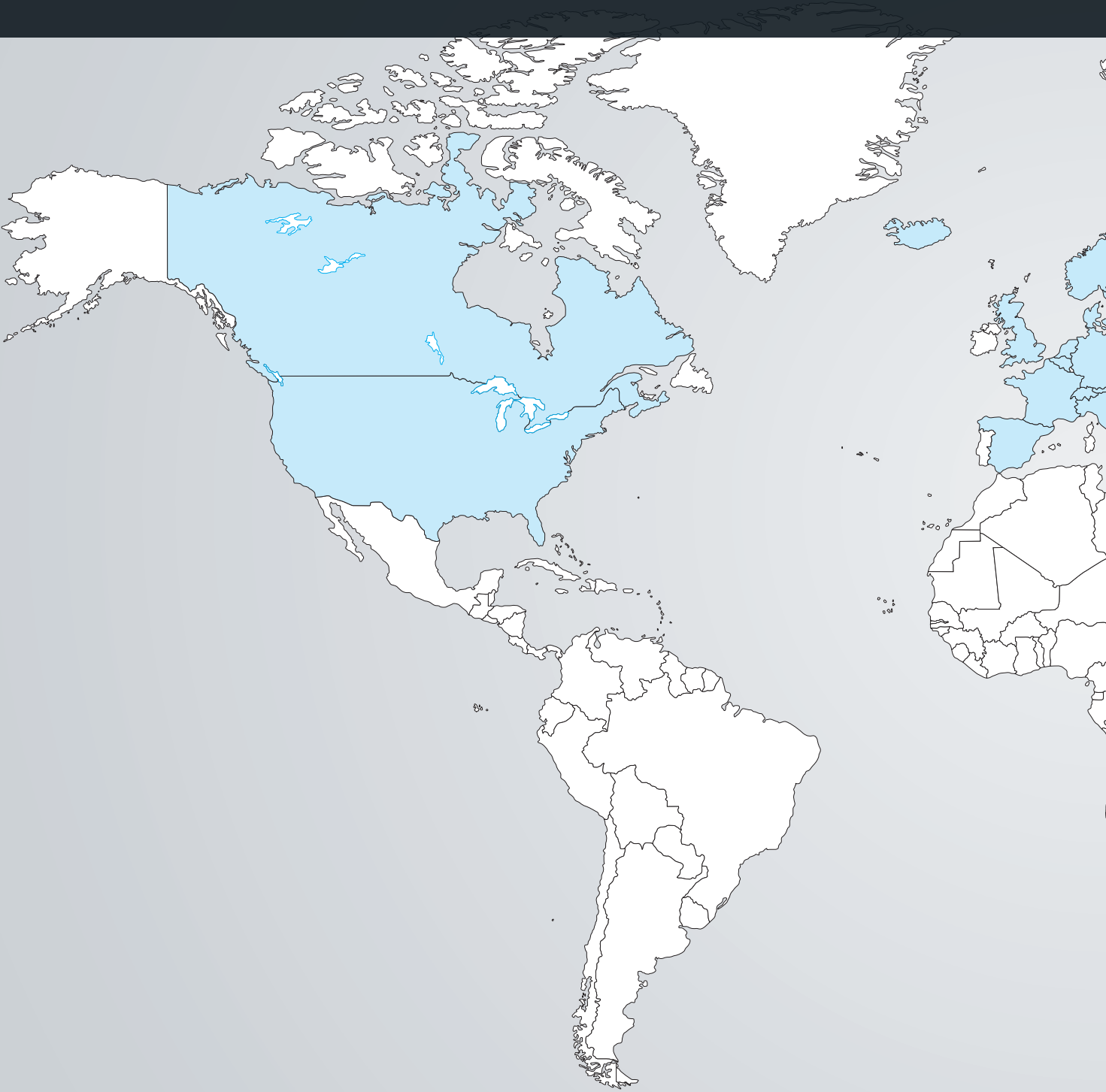
- EN 12266-1
- Rate A
- PED

All Vexve's valves are designed according to EN 488. The type test, as defined by the EN 488 standard, describes the forces in a piping system valves are potentially exposed to. Ball valves are tested, as defined in EN 488:2016, by a third party, with six different testing methods. Tests performed are leak- tightness tests of the shell, stem casing and seat, torque load measurement of unloaded valve, axial compressive force test, axial tensile force test and bending test.

Vexve is the first company, whose ball valves have been awarded the EHP003 certificate. Vexve's butterfly valves are designed according to EN 488. The structural integrity (strength) calculations are approved by SP. This proves the structural strength and durability of valves.

Valves certified with Pressure Equipment Directive are production tested with different mediums, pressures and testing times (based to valve size) according to EN 12266-1. All valves are manufacture with best suitable materials from PED approved suppliers. PED determines standards also for designing, welding and testing.

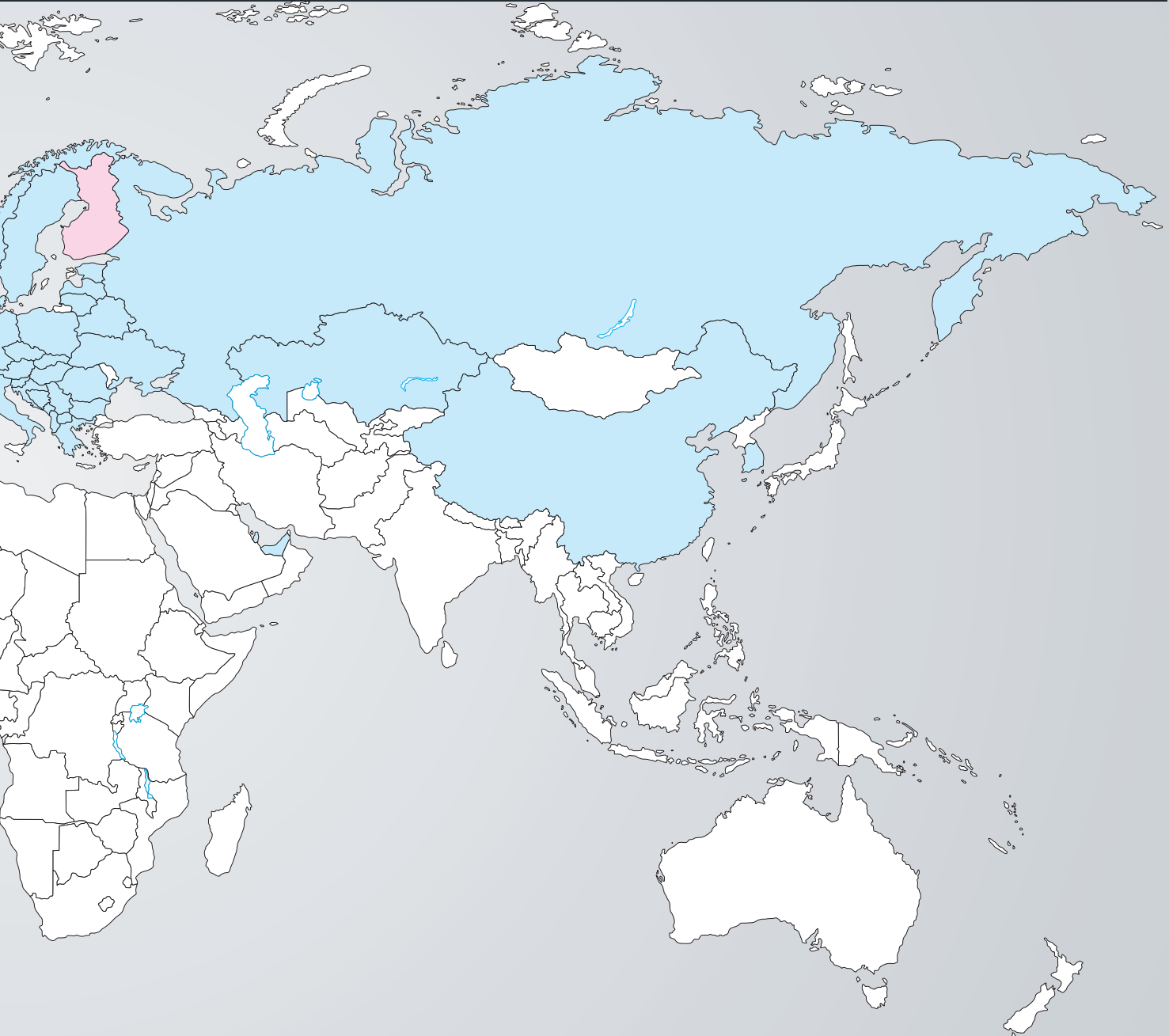
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Vexve's innovate, state-of-the-art valve solutions are utilized for the most demanding district heating and cooling applications all around the world. With the most complete range of products and solutions Vexve can always meet customer specific requirements. Everywhere. Always.



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