

Multiple Choices with Special Ball Valves



Further to the standard range, Danfoss is offering many special valves. We can offer ball valves with customized building lengths as well as other connection types e.g. copper

ends, detachable ends or press fittings. Furthermore you have the choice of various operating options as well as full bore valves.



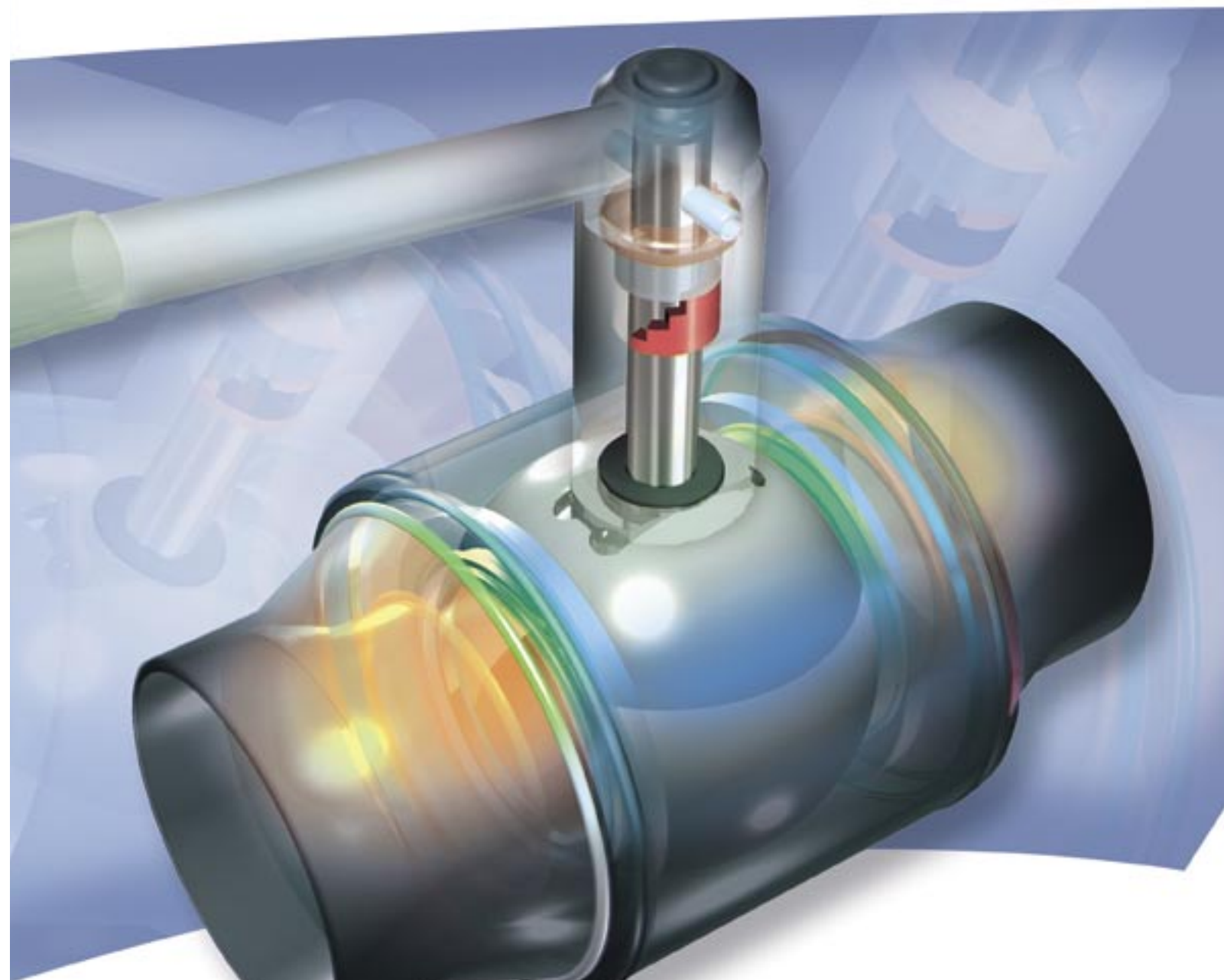
*Customer: Aalborg Municipality, Denmark
Ball Valves: DN 20 - 500 with worm gear and electric actuator*



*Customer: Budapest District Heating (FŐTAV), Hungary
Ball valves: DN200 - DN400 with worm gear and electric actuator*

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Ball Valves for Heating and District Heating

Quality in Every Ball Valve

The Danfoss objective is to offer a complete product range of valves and controls for district heating and this includes ball valves. Danfoss produces high performance ball valves for district heating plants, distribution and transmission networks, pump and substations.

For any type of application - in any size

Danfoss ball valves are specially designed for district heating systems and other hot water systems, in which the water has been treated in order to avoid corrosion. Having a fully welded body, the valves meet the main requirements for valves used in hot water systems and offer a high degree of security.

The range is divided in two broad groups:

- Ball valves for district heating plants and substations
- Ball valves for underground installation

In addition, Danfoss offers a wide range of accessory equipment for ball valves. Danfoss

ball valves are offered with a broad choice of connection types and different operation possibilities to match all types of district heating applications.

Quality standards and tests

With our ball valves you get 100% final inspection. Each valve is tested for tightness and at high pressure according to DIN & ISO norms (EN 12266 part 1 & 2 and ISO 5208, respectively).

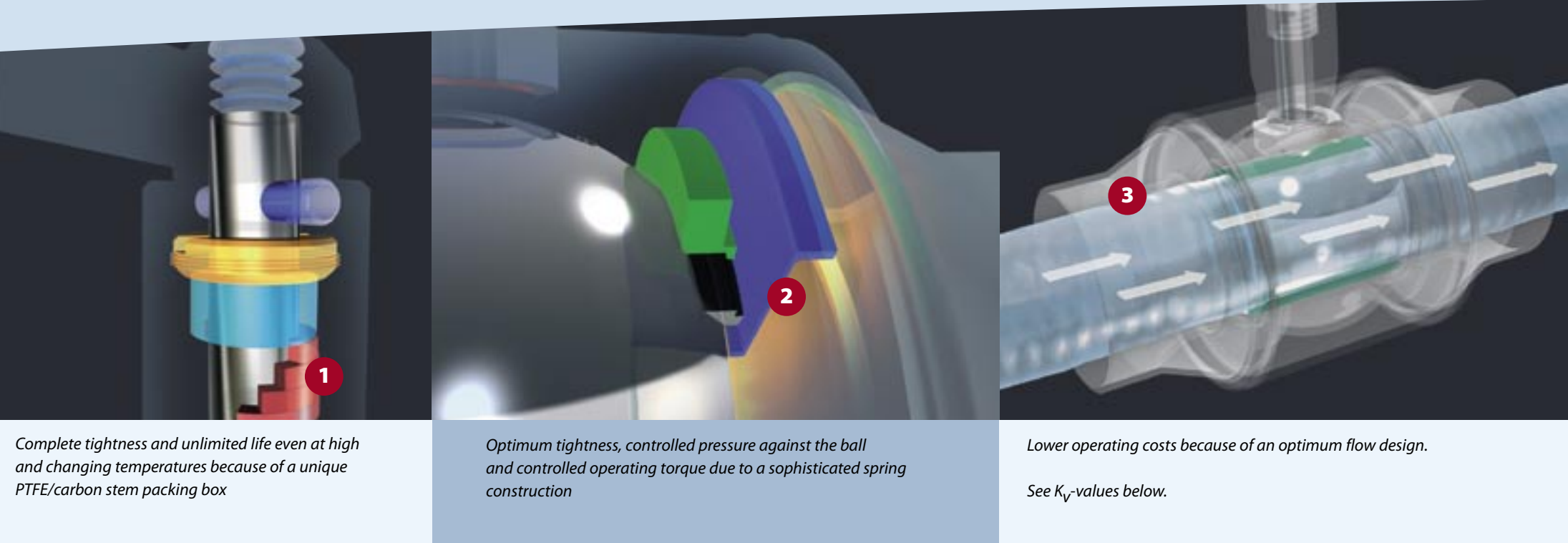
Dimensions and functionality etc. are tested according to EN 12266 part 1 & 2.

Danfoss A/S is certified according to ISO 9001 / 14001 and fulfill CE-PED

All valves can be supplied with an EN 10204 3.1B inspection certificate

Ball valve specifications

- ON/OFF valves
- Reduced bore
- Nominal diameter DN15 - DN600
- Temperature 0-180° C
- Nominal Pressure PN 16 / 25 / 40



Complete tightness and unlimited life even at high and changing temperatures because of a unique PTFE/carbon stem packing box

Optimum tightness, controlled pressure against the ball and controlled operating torque due to a sophisticated spring construction

Lower operating costs because of an optimum flow design. See K_V -values below.



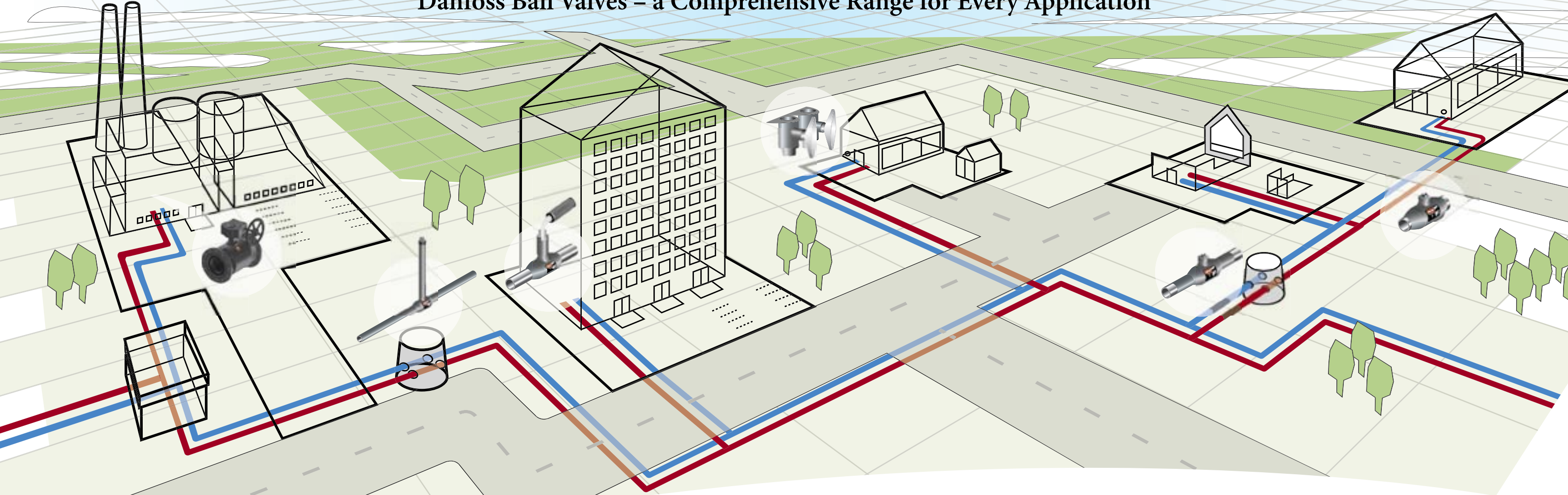
K_V VALUES

DN	K_V [m ³ /h]	DN	K_V [m ³ /h]
15	12	125	1,025
20	14	150	1,490
25	26	200	2,300
32	41	250	4,600
40	68	300	7,000
50	112	350	7,700
65	200	400	9,000
80	380	450	19,800
100	620	500	18,000
		600	16,000

MATERIAL SPECIFICATION

Welded or threaded ends	st. 37.0
Flanged ends	C 22.8
Body	St. 37.0
Outer stem	St. 37.0
Inner stem	Stainless steel
Ball	Stainless steel
Seat rings	Carbon reinforced PTFE
Seals	PTFE/Graphite

Danfoss Ball Valves – a Comprehensive Range for Every Application



STANDARD RANGE

The standard range DN15 - DN600 is used in various applications within district heating systems i.e. in power plants, pump stations, boiler houses, substations as well as in small units, buildings and one family houses. The standard range is covering ball valves with welded, flanged and threaded connection possibilities.

See page 6 and 7 for more detailed information.



UNDERGROUND VALVES

Underground valves for pre-insulation DN20 - DN600 are installed in pre-insulated pipe systems, transporting hot water from production to end consumer. The underground valves are supplied without insulation, with stem extension and long butt weld ends.

See page 8, 9 and 10 for more detailed information.



SPECIAL VALVES

Special valves can be used in various applications where our customers have a special wish for connection possibilities, building length, operating options etc. Furthermore Danfoss offers full bore ball valves DN15 - DN400.

See page 12.



TWIN VALVES

Twin valves DN15 - DN50 are used in buildings and one family houses. The twin valves are mounted on an adjustable wall bracket. The standard range is covering twin valves with welded and threaded connection possibilities.

See page 8, 9 and 10 for more detailed information.



BRANCHING VALVES

Branching valves DN15 - DN200 are installed in connection with pre-insulated pipe systems, where the end customer can not be connected at once. They are often used by expansion of a district heating system in new areas of a city. With the branching valves you are prepared to connect the new customers whenever they are ready.

See page 8, 9 and 10 for more detailed information.











HOT TAP VALVES

Hot tap valves DN15 - DN100 used to connect new customers to the existing district heating system without cutting off the heat supply to other customers. With the hot tap system from Danfoss you can connect new customers where and whenever you want.

See page 8, 9 and 10 for more detailed information.



A Complete Program of High Performance Ball Valves

Standard Range



DN	PN	Max. temperature	Connection type	Length	Height*	Weight	Handle	T-handle	L-handle	Hexagon	Worm Gear	Electric actuator
												
	bar	°C		mm	mm	Kg						
Welded Valves, JIP WW, PN 25/40												
	15	40	180	Welded	230	120	1.0		●	●	●	●
	20	40	180	Welded	230	120	1.0		●	●	●	●
	25	40	180	Welded	230	125	1.2		●	●	●	●
	32	40	180	Welded	260	130	1.5			●	●	●
	40	40	180	Welded	260	130	2.3			●	●	●
	50	40	180	Welded	300	137	2.8			●	●	●
	65	25	180	Welded	260	185	5.5			●	●	●
	80	25	180	Welded	270	210	7.0			●	●	●
	100	25	180	Welded	290	220	12.2			●	●	●
	125	25	180	Welded	315	215	19.0	●			●	●
	150	25	180	Welded	340	240	29.0	●			●	●
	200	25	180	Welded	390	260	44.0	●			●	●
	250	25	180	Welded	530	445	132.0				●	●
	300	25	180	Welded	660	495	227.0				●	●
	350	25	180	Welded	760	495	234.0				●	●
	400	25	180	Welded	820	570	395.0				●	●
	450	25	180	Welded	1220	670	860.0				●	●
	500	25	180	Welded	1220	670	870.0				●	●
	600	25	180	Welded	1500	670	916.0				●	●







● = on request

Flanged Valves, JIP FF, PN25/40

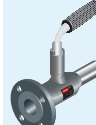

	15	40	180	Flange	130	120	2.2		●	●	●	●
	20	40	180	Flange	150	120	2.9		●	●	●	●
	25	40	180	Flange	160	125	3.5		●	●	●	●
	32	40	180	Flange	180	140	4.8			●	●	●
	40	40	180	Flange	200	150	6.5			●	●	●
	50	40	180	Flange	230	160	8.7			●	●	●
	65	25	180	Flange	290	185	14.0			●	●	●
	80	25	180	Flange	310	210	17.0			●	●	●
	100	25	180	Flange	350	220	24.0			●	●	●
	125	25	180	Flange	400	215	35.0	●			●	●
	150	25	180	Flange	480	240	52.0	●			●	●
	200	25	180	Flange	600	260	82.0	●			●	●
	250	25	180	Flange	730	445	180.0				●	●
	300	25	180	Flange	850	495	291.0				●	●
	350	25	180	Flange	980	495	328.0				●	●
	400	25	180	Flange	1100	570	518.0				●	●
	450	25	180	Flange	1400	670	1019.0				●	●
	500	25	180	Flange	1400	670	1049.0				●	●

Flanged Valves, JIP FF, PN16



	65	16	180	Flange	270	185	14.0			●	●	●
	80	16	180	Flange	280	210	17.0			●	●	●
	100	16	180	Flange	300	220	24.0			●	●	●
	125	16	180	Flange	325	215	35.0	●			●	●
	150	16	180	Flange	350	240	52.0	●			●	●
	200	16	180	Flange	400	260	82.0	●			●	●
	250	16	180	Flange	650	445	180.0				●	●
	300	16	180	Flange	750	495	291.0				●	●
	350	16	180	Flange	850	495	328.0				●	●
	400	16	180	Flange	1100	570	518.0				●	●
	450	16	180	Flange	1395	670	1019.0				●	●
	500	16	180	Flange	1400	670	1049.0				●	●

DN	PN	Max. temperature	Connection type	Length	Height*	Weight	Handle	T-handle	L-handle	Hexagon	Worm Gear	Electric actuator
												
	bar	°C		mm	mm	Kg						


Flanged / Welded Valves, JIP FW, PN25/40

	15	40	180	Flange/Welded	180	120	1.7		●	●	●	●
	20	40	180	Flange/Welded	190	120	2.0		●	●	●	●
	25	40	180	Flange/Welded	195	128	2.4		●	●	●	●
	32	40	180	Flange/Welded	220	140	3.4			●	●	●
	40	40	180	Flange/Welded	230	150	4.3			●	●	●
	50	40	180	Flange/Welded	265	160	5.9			●	●	●
	65	25	180	Flange/Welded	275	185	10.1			●	●	●
	80	25	180	Flange/Welded	290	210	12.1			●	●	●
	100	25	180	Flange/Welded	355	220	18.7			●	●	●
	125	25	180	Flange/Welded	385	215	26.0	●			●	●
	150	25	180	Flange/Welded	415	240	42.0	●			●	●
	200	25	180	Flange/Welded	470	260	65.0	●			●	●
	250	25	180	Flange/Welded	620	445	156.0				●	●
	300	25	180	Flange/Welded	750	495	207.0				●	●
	350	25	180	Flange/Welded	860	495	281.0				●	●
	400	25	180	Flange/Welded	930	570	457.0				●	●
	450	25	180	Flange/Welded	1330	670	945.0				●	●
	500	25	180	Flange/Welded	1345	670	960.0				●	●


Flanged / Welded Valves, JIP FW, PN16

	65	16	180	Flange/Welded	265	185	10.1			●	●	●
	80	16	180	Flange/Welded	275	210	12.1			●	●	●
	100	16	180	Flange/Welded	295	220	18.7			●	●	●
	125	16	180	Flange/Welded	320	215	26.0	●			●	●
	150	16	180	Flange/Welded	345	240	42.0	●			●	●
	200	16	180	Flange/Welded	395	260	65.0	●			●	●
	250	16	180	Flange/Welded	590	445	156.0				●	●
	300	16	180	Flange/Welded	705	495	207.0				●	●
	350	16	180	Flange/Welded	805	495	281.0				●	●
	400	16	180	Flange/Welded	960	570	457.0				●	●
	450	16	180	Flange/Welded	1310	670	945.0				●	●
	500	16	180	Flange/Welded	1310	670	960.0				●	●

Internal Thread/ Welded, JIP IW, PN40

	15	40	180	Internal Thread/Welded	160	97/120	0.9		●	●	●	●
	20	40	180	Internal Thread/Welded	160	97/120	0.9		●	●	●	●
	25	40	180	Internal Thread/Welded	165	104/125	1.0		●	●	●	●
	32	40	180	Internal Thread/Welded	183	110/130	1.4			●	●	●
	40	40	180	Internal Thread/Welded	190	132/150	2.3			●	●	●
	50	40	180	Internal Thread/Welded	225	138/160	3.3			●	●	●

Internal Thread, JIP II, PN40

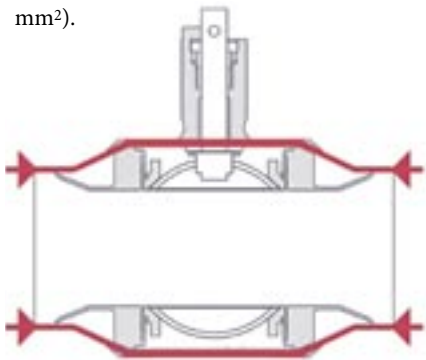
	15	40	180	Internal Thread	90	120	0.6		●	●	●	●
	20	40	180	Internal Thread	90	120	0.8		●	●	●	●
	25	40	180	Internal Thread	100	125	0.9		●	●	●	●
	32	40	180	Internal Thread	105	130	1.2			●	●	●
	40	40	180	Internal Thread	120	150	2.2			●	●	●
	50	40	180	Internal Thread	150	160	3.3			●	●	●

* From DN 250 and up, the height is including a worm gear

Underground Ball Valves

The ball valves are always easily opened and closed

Underground ball valves are specially designed for cold installation ($\sigma \leq 300 \text{ N/mm}^2$).



By means of our special construction the axial forces occurring in the pipe system are led through the outer part of the valve housing. Thus the forces do not affect vital

parts. This way neither the torque, needed to operate the valve, nor the tightness is affected. Furthermore the ball valves are constructed with a special break loose system, which reduces the break loose torque significantly.

Thereby the ball valve is easily operated in case of an emergency. The underground ball valves are tested for tightness and easy operation under high compressive axial forces (according to EN 488:2000, Annex B at the Fernwärme-forschungsinstitut in Hannover E.V.)

MATERIAL SPECIFICATION - UNDERGROUND BALL VALVES

Welded ends	St. 37.0
Body	St. 37.0
Outer stem	Stainless steel
Inner stem	Stainless steel
Ball	Stainless steel
Seat rings	Carbon reinforced PTFE
Seals	PTFE/Graphite



Unique selection of material secures long life time
Underground ball valves are supplied with a stainless steel stem suitable for insulation of the valve. This ensures that all steel above the end cap is corrosion free. The selection of material means that our customers do not have to worry about corrosion of the stem which could lead to a leakage.

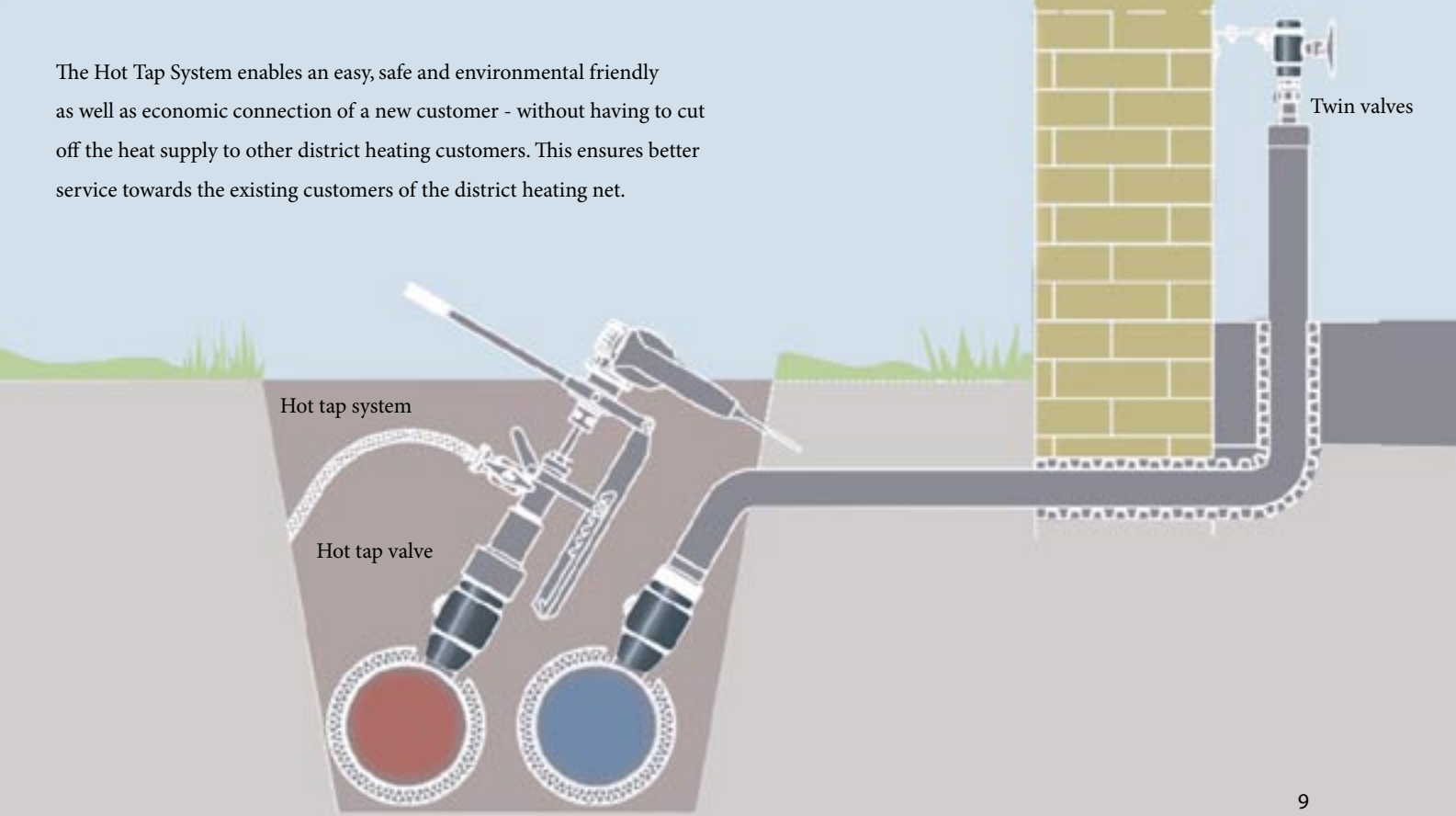


Your option - our strength
Underground ball valves are delivered in building lengths and with stem heights according to our customer's wish.
Underground ball valves fulfil all demands in EN 488.
Each and every ball valve is tested according to EN 12266 part 1 and 2 or ISO 5208 before dispatch from our factory.














The Hot Tap System is available in dimensions from DN 15 to DN 100.


The Hot Tap System enables an easy, safe and environmental friendly as well as economic connection of a new customer - without having to cut off the heat supply to other district heating customers. This ensures better service towards the existing customers of the district heating net.




Underground and Twin Valves

Underground and Twin Valves							T-handle	L-handle	Hexagon	Screw-drive	Allen key 10 mm	Allen key 14 mm	T-key	Mobile Gear	Worm and bevel Gear	Electric Actuator
DN	PN	Max. temperature °C	Connection type	Length mm	Height mm	Weight Kg										
Hot Tap Valve, JIP Hot Tap, PN 25/40																
	15	40	180	Welded	125	34	0.6	●	●	●	●					
	20	40	180	Welded	125	34	0.6	●	●	●	●					
	25	40	180	Welded	145	46	1.4	●	●	●	●					
	32	40	180	Welded	145	46	1.7		●	●	●					
	40	40	180	Welded	200	57	3.5		●	●	●	●				
	50	40	180	Welded	200	57	3.5		●	●	●	●				
	65	25	180	Welded	260	70	4.8		●	●		●				
	80	25	180	Welded	265	80	5.2		●	●		●				
	100	25	180	Welded	275	12	11.5		●	●		●				
Hot Tap Toolbox: DN 15-50 Basic Additional Toolbox: DN 65 - 100							● = on request									


Branching Valves, JIP WW & IW Branching, JIP Hot Tap, PN 25/40

	15	40	180	Welded, Welded/Internal Thread	230	34	0.6				●					
	20	40	180	Welded, Welded/Internal Thread	230	34	0.6				●					
	25	40	180	Welded, Welded/Internal Thread	230	36	0.8				●					
	32	40	180	Welded, Welded/Internal Thread	260	46	1.3				●					
	40	40	180	Welded, Welded/Internal Thread	260	51	1.8				●					
	50	40	180	Welded, Welded/Internal Thread	300	57	2.6				●					
	65	25	180	Welded, Welded/Internal Thread	260	70	5.0					●				
	80	25	180	Welded, Welded/Internal Thread	270	80	6.0					●				
	100	25	180	Welded, Welded/Internal Thread	290	92	12.0					●				
	125	25	180	Welded, Welded/Internal Thread	315	140	18.0					●				
	150	25	180	Welded, Welded/Internal Thread	340	160	27.0					●				
	200	25	180	Welded, Welded/Internal Thread	390	188	42.0					●				


Valves for House Insertions, JIP WW, IW & II Twin Valves, PN 40

	15	40	180	Welded, Welded/Internal Thread, Internal Thread/Internal Thread	-	70/100/65	2.2	●	●	●						
	20	40	180	Welded, Welded/Internal Thread, Internal Thread/Internal Thread	-	70/100/65	2.2	●	●	●						
	25	40	180	Welded, Welded/Internal Thread, Internal Thread/Internal Thread	-	75/105/70	2.3	●	●	●						
	32	40	180	Welded, Welded/Internal Thread, Internal Thread/Internal Thread	-	110/75	3.5		●	●						
	40	40	180	Welded, Welded/Internal Thread, Internal Thread/Internal Thread	-	135/100	5.1		●	●						
	50	40	180	Welded, Welded/Internal Thread, Internal Thread/Internal Thread	-	140/105	7.3		●	●						

Ball Valves with Stem Extension, JIP WW Underground Valves, PN 25

	15	25	180	Welded/Welded	1500	475	5.0				Key 19			●	●	●
	20	25	180	Welded/Welded	1500	475	5.0				Key 19			●	●	●
	25	25	180	Welded/Welded	1500	480	6.0				Key 19			●	●	●
	32	25	180	Welded/Welded	1500	485	7.0				Key 19			●	●	●
	40	25	180	Welded/Welded	1500	495	8.0				Key 19			●	●	●
	50	25	180	Welded/Welded	1500	500	10.0				Key 19			●	●	●
	65	25	180	Welded/Welded	1500	505	13.0				Key 19			●	●	●
	80	25	180	Welded/Welded	1500	515	16.0				Key 19			●	●	●
	100	25	180	Welded/Welded	1500	525	20.0				Key 27		●	●	●	●
	125	25	180	Welded/Welded	1500	545	31.0				Key 27		●	●	●	●
	150	25	180	Welded/Welded	1500	565	35.0				Key 27		●	●	●	●
	200	25	180	Welded/Welded	1500	585	60.0				Key 27		●	●	●	●
	250	25	180	Welded/Welded	1500	625	130.0				Key 36		●	●	●	●
	300	25	180	Welded/Welded	1500	665	225.0				Key 50		●	●	●	●
	350	25	180	Welded/Welded	1500	665	250.0				Key 50		●	●	●	●
	400	25	180	Welded/Welded	1500	650/760	454.0				Key 27		●	●	●	●
	450	25	180	Welded/Welded	1500	750/865	860.0				Key 27		●	●	●	●
	500	25	180	Welded/Welded	1500	750/861	860.0				Key 27		●	●	●	●
	600	25	180	Welded/Welded	1500	750/865	916.0				Key 27		●	●	●	●
● = Used in combination with a worm and bevel gear																

Service Valves, JIP Service Valves, PN 25

	20	25	180	Welded/Tail Piece	500	55	2.0				Key 19					
	25	25	180	Welded/Tail Piece	500	60	1.8				Key 19					
	32	25	180	Welded/Tail Piece	500	65	2.2				Key 19					
	40	25	180	Welded/Tail Piece	500	100	3.1				Key 27					
	50	25	180	Welded/Tail Piece	500	105	4.7				Key 27					
	65	25	180	Welded/Tail Piece	500	115	6.4				Key 19					
	80	25	180	Welded/Tail Piece	500	125	8.7				Key 19					
	100	25	180	Welded/Tail Piece	500	140	14.5				Key 19					

Operating Options



Operating Options for Underground Valves

