



**TEMPER**

SINCE 1993

BALL  
VALVES



CE EHP  EN 488 

## TABLE OF CONTENTS:

Company profile, about the product, technical characteristics etc.	....1
STANDARD BORE Ball valve 262 WELDED CONNECTION (BRANCHING VALVE)	....3
FULL BORE Ball valve 272 WELDED CONNECTION (HOT TAPPING VALVE)	....4
STANDARD BORE Ball valve 280 FEMALE THREADS CONNECTION	....5
STANDARD BORE Ball valve 281 FEMALE THREADS / WELDED CONNECTION	....6
STANDARD BORE Ball valve 282 WELDED CONNECTION	....7
STANDARD BORE Ball valve 282 WELDED CONNECTION (equipped with ISO flange for actuator)	....8
STANDARD BORE Ball valve 283 FLANGED CONNECTION	....9
STANDARD BORE Ball valve 283 FLANGED CONNECTION (equipped with ISO flange for actuator)	....10
STANDARD BORE Ball valve 284 FLANGED CONNECTION PN25	....11
STANDARD BORE Ball valve 284 FLANGED CONNECTION PN25 (equipped with ISO flange for actuator)	....12
STANDARD BORE Ball valve 285 CHOKE-NIPPLE CONNECTION	....13
STANDARD BORE Ball valve (short length) 286 FLANGED CONNECTION	....14
STANDARD BORE Ball valve 289 FLANGED / WELDED CONNECTION	....15
FULL BORE Ball valve 290 FEMALE THREADS CONNECTION	....16
FULL BORE Ball valve 292 WELDED CONNECTION	....17
FULL BORE Ball valve 292 WELDED CONNECTION (equipped with ISO flange for actuator)	....18
FULL BORE Ball valve 293 FLANGED CONNECTION	....19
FULL BORE Ball valve 293 FLANGED CONNECTION (equipped with ISO flange for actuator)	....20
FULL BORE Ball valve 294 FLANGED CONNECTION PN25	....21
FULL BORE Ball valve 294 FLANGED CONNECTION PN25 (equipped with ISO flange for actuator)	....22
STANDARD BORE / FULL BORE Ball valve 482/492 WELDED CONNECTION (for underground installation)	....23
FULL BORE Ball valve 492 S-serie WELDED CONNECTION (for pre-insulation)	....24
FULL BORE Ball valve 492 SL-serie WELDED CONNECTION (for pre-insulation)	....25
STANDARD BORE / FULL BORE Ball valve 582/592 WELDED CONNECTION (for underground installation)	....26
STANDARD BORE / FULL BORE Ball valve 582/592 WELDED CONNECTION (with extended stem and FITTINGS FOR POLYETHYLENE for underground installation)	....27
BALANCING Ball valve 682/692 WELDED CONNECTION	....28
BALANCING Ball valve 683/693 FLANGED CONNECTION	....29
Operation manual, installation manual, security measures, maintenance	....35
Connecting dimensions of ISO flange and selection of gearboxes for TEMPER ball valves	....36
Manual installation of gearbox on TEMPER ball valve	....37
Certificates	....38

## COMPANY PROFILE

"Temper" LLC is a Russian manufacturer of steel ball valves of brand TEMPER.

The manufacture of ball valves is based on the technology of production of ball valves manufactured since 1993 by the Estonian company OÜ Temper - European manufacturer of pipe fittings for industrial use.

Temper's production plant is located in the city of Kurgan, Siberia where the factory has land surface area of about three hectares. The interior production area is 3500 m<sup>2</sup>. The machinery consists of more than 50 units of different equipment. The number of employees is more than 130 people. Production takes place in two shifts.

The production process is organized on advanced, high-tech equipment with numerical control.

Raw materials (pipes and metal-roll products) are purchased from the Ural metallurgical enterprises.

Manufacturing of main parts, welding of the body, painting and other production steps are carried out in an automated way.

Temper has organized a multilevel Quality control system covering the whole production cycle. Temper has a production capacity of more than 300 000 pieces of ball valves per year.

In 2013 Temper started active marketing of its products to the Russian market by opening its own sales office in St. Petersburg. During 2014 Temper formed an effective dealer network covering all regions of Russia, from Kaliningrad to Vladivostok. The launch of the products to European market started in 2016.

## ABOUT THE PRODUCT

TEMPER ball valves are manufactured in accordance with PED 2014/68/EU.

## TECHNICAL CHARACTERISTICS

TEMPER ball valves are designed for application in district heating and natural gas transportation pipelines as well as for heat supply industry and many other various operating systems.

## OPERATING CONDITIONS

- Working medium: DH water, natural gas, petroleum products, combustible and lubricating materials as well as other fluids free from abrasive contaminants.
- Working mediums for stainless steel valves must be non-aggressive towards valve materials.
- Diameter range: 15 mm to 600 mm
- Working pressure: 1.6 MPa to 4.0 MPa
- Temperature of working medium: -60°C to +200°C
- Ambient temperature -60°C to +60°C
- Connection types: Female threads, Welded, Flanged and their combinations, fully welded construction.
- Versions for regulation, insulation and underground installation of the valve.

## CONTROLS

Temper ball valves may be operated with handle, gearbox, pneumatic or electric actuator directly or remotely.

Ball valves of DN 125 - 600 are equipped with ISO flange for actuator. Valves over DN 250 (full bore) or DN 300 (standard bore) are equipped with an actuator by default.

## ADVANTAGES

- High quality seamless steel.
- Serial valves for cold climatic performance.
- Powder painted for additional corrosion protection.
- Long service life verified by multiple tests and operational experience.
- Extended valve stem for easy insulation of the valve.
- No maintenance, suspenders or lubrication required.
- Maximum tightness class throughout the range of operating temperatures.
- Ball valves of above DN 125 –600 are equipped with ISO flange for actuator.

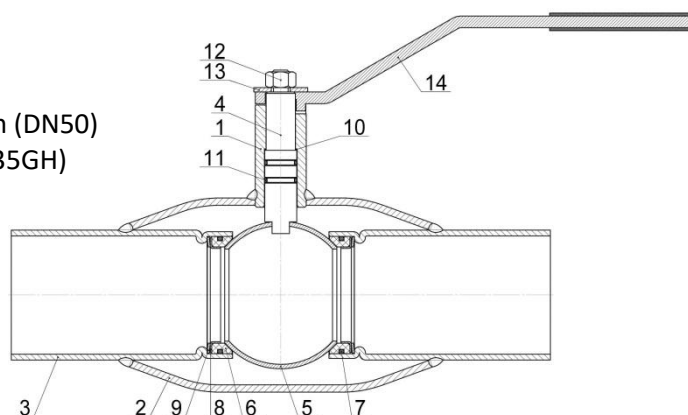
Configurations	Connection types		Materials	Nominal diameters
	Standard bore	Full bore		
2 – Main type (basic stem) 3 – Gas valves 4 – Extended stem 5 – Extended stem with hard insulation of Protegol 6 – Balancing ball valve	80 – Female threads 81 – Female threads / Welded 82 – Welded 83 – Flanged 84 – Flanged Pn25 85 – Choke-nipple 86 – Flanged (short length) 87 – Flanged PN25 (short length) 88 – Flanged PN25 / Welded 89 – Flanged / Welded	90 – Female threads 91 – Female threads / Welded 92 – Welded 93 – Flanged 94 – Flanged PN25 98 – Flanged PN25 / Welded 99 – Flanged / Welded	20 – Carbon steel/P235GH, group 1.1 45 – Alloy 66 – Stainless steel	<b>DN15 – DN600</b>

### CONFIGURATIONS OF TEMPER BALL VALVES

2 8220 050



**Nominal diameter:** DN, mm (DN50)  
**Material** (Carbon steel /P235GH)  
**Connection type**  
 (welded, standard bore)  
**Configuration**



### MATERIAL OF KEY COMPONENTS

No	Component	20/P235GH	45 (Alloy)	66 (Stainless steel)
1	Neck	1.1151/ P235GH	(9MnSi5/13Mn6)(9MnSi5/13Mn6)	1.4541
2	Body	1.1151/P235GH	(9MnSi5/13Mn6)	1.4541
3	Welding ends	1.1151/P235GH	1.4021	1.4541
4	Stem	1.4021	1.4301	1.4541
5	Ball	1.4301	PTFE+C	1.4541
6	Seat	PTFE+C	FVMQ	PTFE+C
7	Round profile O-ring	FVMQ	1.4301	FVMQ
8	L – Supporting ring	1.4301	66Mn4	1.4541
9	Plate spring	66Mn4	PTFE+C	1.4541
10	O-Ring	PTFE+C	FVMQ	PTFE+C
11	Neck assembly seal	FVMQ	Steel	FVMQ
12	Nut	Steel	Steel	Steel
13	Spacer	Steel	Steel	Steel
14	Handle	Steel	Steel	Steel

### FLOW RATE VALUES OF TEMPER BALL VALVE, KV, M<sup>3</sup>/H

#### Standard bore ball valves

DN 15	DN 20	DN 25	DN 32	DN 40	DN 50	DN 65	DN 80	DN 100	DN 125	DN 150	DN 200	DN 250	DN 300	DN 350/400	DN 500	DN 600
8	14	25	41	68	107	183	317	471	832	1150	1760	3200	4610	13350	18780	32150

#### Fullboreballvalves

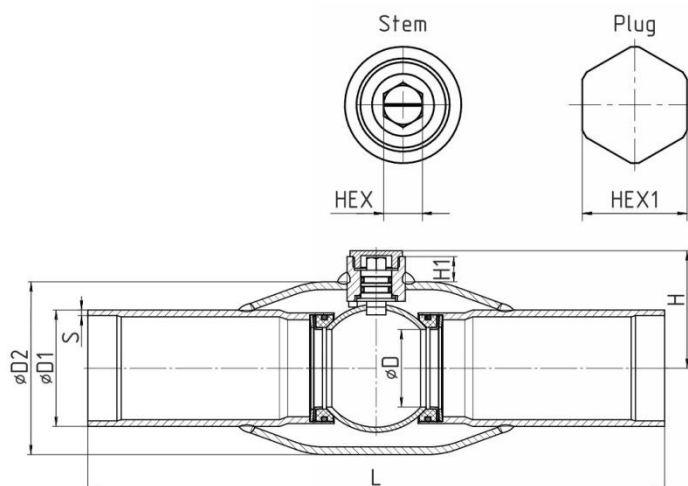
DN 10	DN 15	DN 20	DN 25	DN 32	DN 40	DN 50	DN 65	DN 80	DN 100	DN 125	DN 150	DN 200	DN 250	DN 300	DN 400	DN 500
8	14	25	41	68	107	183	317	471	832	1150	1760	3200	4610	13350	18780	32150

STANDARD BORE

BALL VALVE

**262**

WELDED CONNECTION(BRANCHING VALVE)



**Working medium**

District heating networks, petroleum products, combustible and lubricating materials, other fluids free from abrasive contaminants.

Natural gas, liquefied petroleum gas, gaseous media, non aggressive towards valve materials.

**Technical characteristics**

Max. temperature (T) °C.: +200

Min. temperature (T) °C.: -60

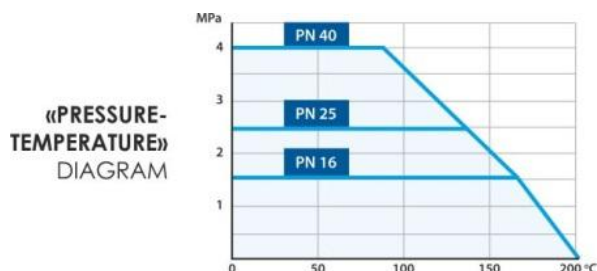
Body materials:

1.1151(P235GH)/9MnSi5(13Mn6) / 1,4541

Valve gate tightness rating: Class "A"

Warranty period: 3 years or 10 000 cycles\*

Service life: At least 25 years\*



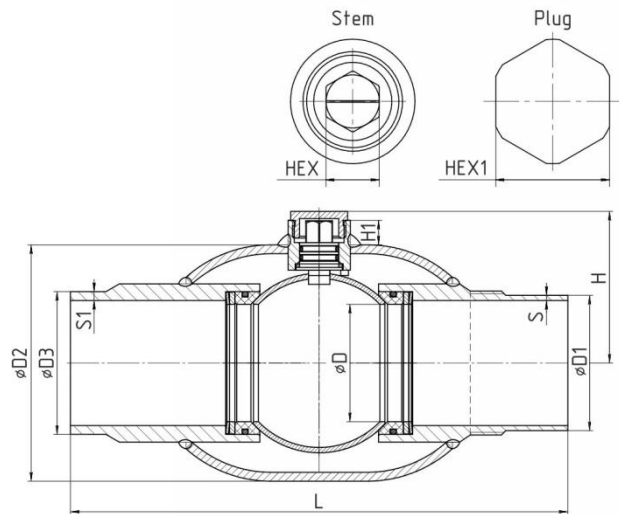
DN	PN	PRODUCT NUMBER	L	H	H1	D	D1	D2	S	HEX	HEX1
25	40	26220025	232	41	14	18	33,7	48	2,6	9	22
32	40	26220032	260	44,5	13	24	42,4	57	2,6	9	22
40	40	26220040	260	51	10	30	48,3	76	2,6	10	27
50	40	26220050	300	60,5	13	40	60,3	89	2,9	10	27
65	25	26220065	300	67	10	48	76,1	108	2,9	10	27
80	25	26220080	300	85,5	14	66	88,9	133	3,2	15	32
100	25	26220100	325	94,5	10	78	114,3	159	3,6	15	32
125	25	26220125	325	122,5	22,5	100	139,7	180	4,0	19	41
150	25	26220150	350	140	23	125	168,3	219	4,5	19	41

\* Subject to the rules of operation.

FULL BORE  
BALL VALVE

**272**

WELDED CONNECTION(HOT TAPPING VALVE)



**Working medium**

District heating networks, petroleum products, combustible and lubricating materials, other fluids free from abrasive contaminants.

Natural gas, liquefied petroleum gas, gaseous media, non aggressive towards valve materials.

**Technical characteristics**

Max. temperature (T) °C.: +200

Min. temperature (T) °C.: -60

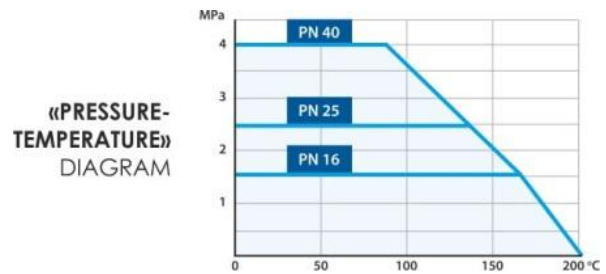
Body materials:

1.1151(P235GH)/9MnSi5(13Mn6) / 1,4541

Valve gate tightness rating: Class "A"

Warranty period: 3 years or 10 000 cycles\*

Service life: At least 25 years\*



DN	PN	PRODUCT NUMBER	L	H	H1	D	D1	D2	D3	S	S1	HEX	HEX1
25	40	27220025	209	44,5	13	26	33,7	57	36,5	2,6	4,25	9	22
32	40	27220032	207	51	10	32	42,4	76	46,2	2,6	4,5	10	27
40	40	27220040	228	60,5	13	40	48,3	89	52,1	2,6	4,5	10	27
50	40	27220050	262	67	10	50	60,3	108	64,5	2,9	5	10	27
65	25	27220065	280	85	14	66	76,1	133	80,3	2,9	5	15	32
80	25	27220080	312	95	10	78	88,9	159	94,5	3,2	6	15	32
100	25	27220100	352	122,5	25,5	100	114,3	180	122,1	3,6	7,5	19	41
125	25	27220125	365	139,5	23	125	139,7	219	151,7	5,6	10	19	41
150	25	27220150	365	139,5	23	125	168,3	219	151,7	4,5	10	19	41

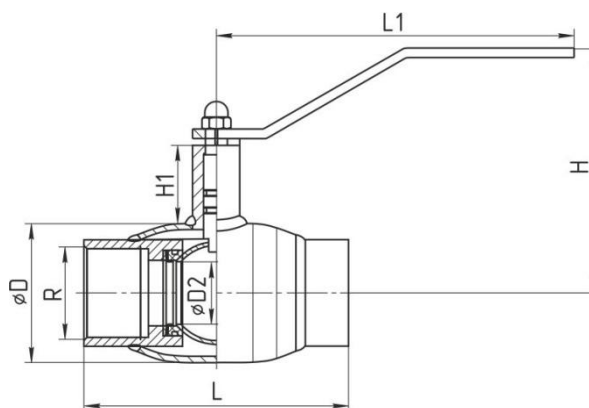
\* Subject to the rules of operation.

STANDARD BORE

BALL VALVE

**280**

FEMALE THREADS CONNECTION



**Working medium**

District heating networks, petroleum products, combustible and lubricating materials, other fluids free from abrasive contaminants.

Natural gas, liquefied petroleum gas, gaseous media, non aggressive towards valve materials.

**Technical characteristics**

Max. temperature (T) °C.: +200

Min. temperature (T) °C.: -60

Body materials:

1.1151(P235GH)/9MnSi5(13Mn6) / 1,4541

Valve gate tightness rating: Class "A"

Warranty period: 3 years or 10 000 cycles\*

Service life: At least 25 years\*

«PRESSURE-TEMPERATURE» DIAGRAM



DN	PN	PRODUCT NUMBER	L	L1	H	H1	D	R	D2
15	40	28020015	135	148	132	49	38	1/2	10
20	40	28020020	135	148	135	50	42	3/4	15
25	40	28020025	135	148	138	50	48	1	20
32	40	28020032	135	148	142	50	57	1 1/4	25
40	40	28020040	155	235	145	44	76	1 1/2	32
50	40	28020050	170	235	154	46	89	2	40
65	25	28020065	190	235	162	42	108	2 1/2	50
80	25	28020080	200	283	200	66	133	3	65
100	25	28020100	240	283	209	63	159	4	80

\* Subject to the rules of operation.

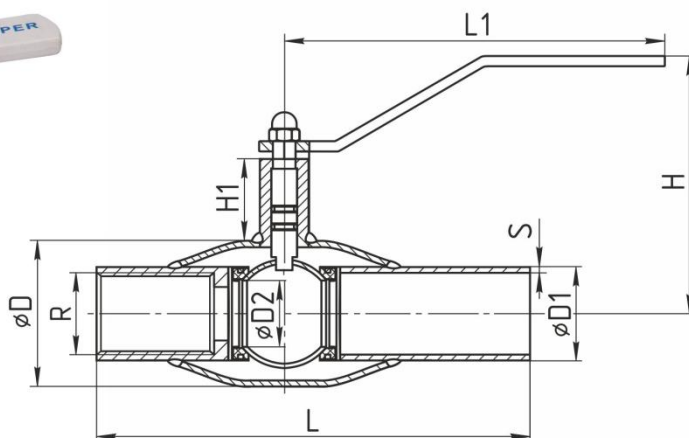


STANDARD BORE

BALL VALVE

**281**

FEMALE THREADS/ WELDED CONNECTION



**Working medium**

District heating networks, petroleum products, combustible and lubricating materials, other fluids free from abrasive contaminants.

Natural gas, liquefied petroleum gas, gaseous media, non aggressive towards valve materials.

**Technical characteristics**

Max. temperature (T) °C.: +200

Min. temperature (T) °C.: -60

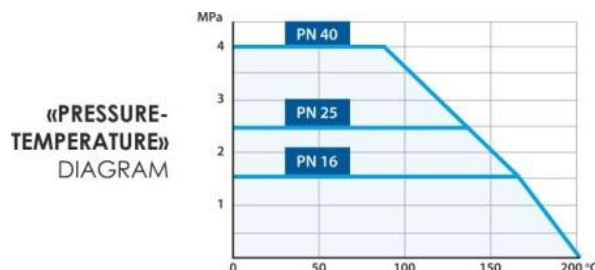
Body materials:

1.1151(P235GH)/9MnSi5(13Mn6) / 1,4541

Valve gate tightness rating: Class "A"

Warranty period: 3 years or 10 000 cycles\*

Service life: At least 25 years\*



DN	PN	PRODUCT NUMBER	L	L1	H	H1	D	D1	D2	S	R
15	40	28120015	183	148	132	49	38	21,3	10	2,0	1/2
20	40	28120020	183	148	135	50	42	26,9	15	2,3	3/4
25	40	28120025	183	148	138	50	48	33,7	20	2,6	1
32	40	28120032	198	148	142	50	57	42,4	25	2,6	1 1/4
40	40	28120040	208	235	145	44	76	48,3	32	2,6	1 1/2
50	40	28120050	235	235	154	46	89	60,3	40	2,9	2
65	25	28120065	245	235	159	42	108	76,1	50	2,9	2 1/2
80	25	28120080	250	283	200	66	133	88,9	65	3,2	3
100	25	28120100	283	283	209	63	159	114,3	80	3,6	4

\* Subject to the rules of operation.

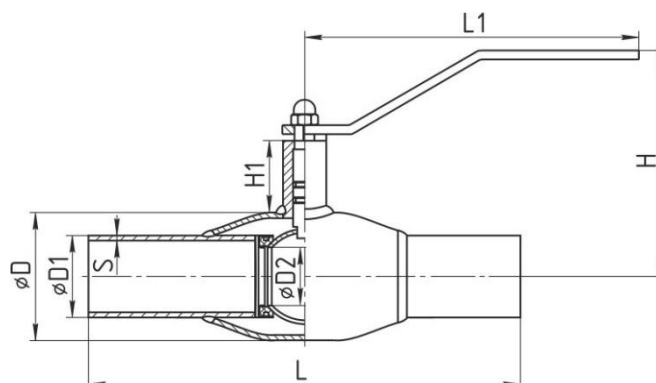


STANDARD BORE

BALL VALVE

**282**

WELDED CONNECTION\*



### Working medium

District heating networks, petroleum products, combustible and lubricating materials, other fluids free from abrasive contaminants.

Natural gas, liquefied petroleum gas, gaseous media, non aggressive towards valve materials.

### Technical characteristics

Max. temperature (T) °C.: +200

Min. temperature (T) °C.: -60

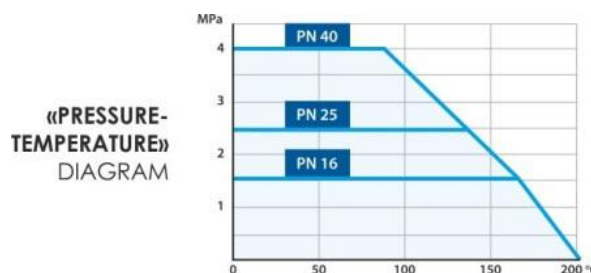
Body materials:

1.1151(P235GH)/9MnSi5(13Mn6) / 1,4541

Valve gate tightness rating: Class "A"

Warranty period: 3 years or 10 000 cycles\*\*

Service life: At least 25 years\*\*



DN	PN	PRODUCT NUMBER	L	L1	H	H1	D	D1	D2	S
15	40	28220015	230	148	132	49	38	21,3	10	2,0
20	40	28220020	230	148	135	50	42	26,9	15	2,3
25	40	28220025	230	148	138	50	48	33,7	20	2,6
32	40	28220032	260	148	142	50	57	42,4	25	2,6
40	40	28220040	260	235	145	44	76	48,3	32	2,6
50	40	28220050	300	235	154	46	89	60,3	40	2,9
65	25	28220065	300	235	159	42	108	76,1	50	2,9
80	25	28220080	300	283	200	66	133	88,9	65	3,2
100	25	28220100	325	283	209	63	159	114,3	80	3,6

\* It is also possible to manufacture Temper ball valves of the following connection type: FLANGED PN 25 / WELDED - 288 type.

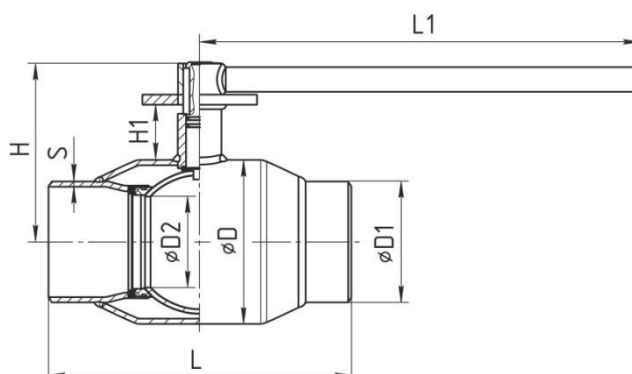
\*\* Subject to the rules of operation.

STANDARD BORE

BALL VALVE

**282** (equipped with ISO flange for actuator)

WELDED CONNECTION\*



**Working medium**

District heating networks, petroleum products, combustible and lubricating materials, other fluids free from abrasive contaminants.

Natural gas, liquefied petroleum gas, gaseous media, non aggressive towards valve materials.

**Technical characteristics**

Max. temperature (T) °C.: +200

Min. temperature (T) °C.: -60

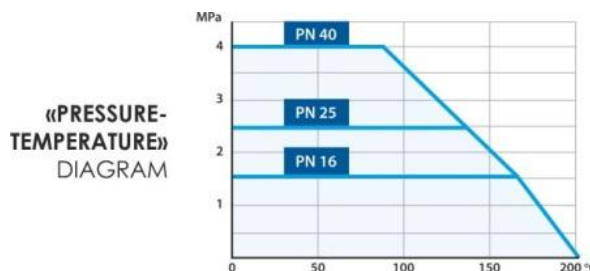
Body materials:

1.1151(P235GH)/9MnSi5(13Mn6) / 1,4541

Valve gate tightness rating: Class "A"

Warranty period: 3 years or 10 000 cycles\*\*

Service life: At least 25 years\*\*



DN	PN	PRODUCT NUMBER	L	L1	H	H1	D	D1	D2	S
125	25	28220125	325	525	195	51	180	139,7	100	4,0
150	25	28220150	350	525	210	58	219	168,3	125	4,5
200	25	28220200	400	625	225	55	273	219,1	150	4,5
250	25	28220250	530	625	270	51	351	273,0	200	5,0
300***	16	28220300	730	-	329	98	426	323,9	250	5,6
350***	16	28220350	760	-	464	98	530	355,6	300	5,6
400***	16	28220400	860	-	373	98	530	406,4	300	7,1
500***	16	28220500	970	-	435	98	630	508	390	7,1
600***	16	28220600	1145	-	105	655	820	610	500	8

\* It is also possible to manufacture Temper ball valves of the following connection type: FLANGED PN 25 / WELDED - 288 type.

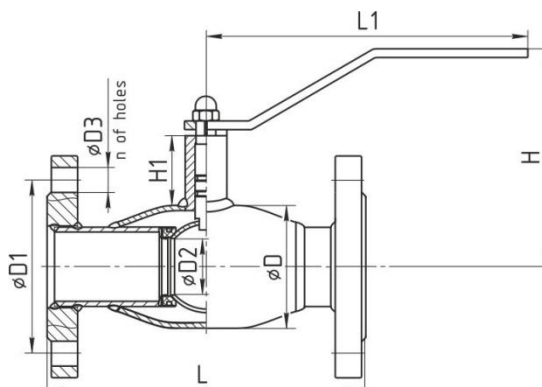
\*\* Subject to the rules of operation.

\*\*\* Construction height is given with a gearbox.

STANDARD BORE  
BALL VALVE

**283**

FLANGED CONNECTION\*



**Working medium**

District heating networks, petroleum products, combustible and lubricating materials, other fluids free from abrasive contaminants.

Natural gas, liquefied petroleum gas, gaseous media, non aggressive towards valve materials.

**Technical characteristics**

Max. temperature (T) °C.: +200

Min. temperature (T) °C.: -60

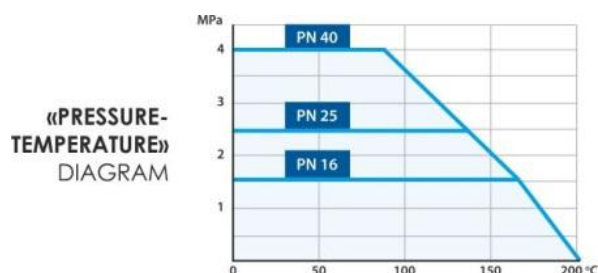
Body materials:

1.1151(P235GH)/9MnSi5(13Mn6) / 1,4541

Valve gate tightness rating: Class "A"

Warranty period: 3 years or 10 000 cycles\*\*

Service life: At least 25 years\*\*



DN	PN	PRODUCT NUMBER	L	L1	H	H1	D	D1	D2	D3	n of holes
15	40	28320015	130	148	132	49	38	65	10	14	4
20	40	28320020	150	148	135	50	42	75	15	14	4
25	40	28320025	160	148	138	50	48	85	20	14	4
32	40	28320032	180	148	142	50	57	100	25	18	4
40	40	28320040	200	235	145	44	76	110	32	18	4
50	40	28320050	230	235	154	46	89	125	40	18	4
65	16	28320065	270	235	159	42	108	145	50	18	8
80	16	28320080	280	283	200	66	133	160	65	18	8
100	16	28320100	300	283	209	63	159	180	80	18	8

\* It is also possible to manufacture Temper ball valves of the following connection type: FLANGED PN 25 / WELDED - 288 type.

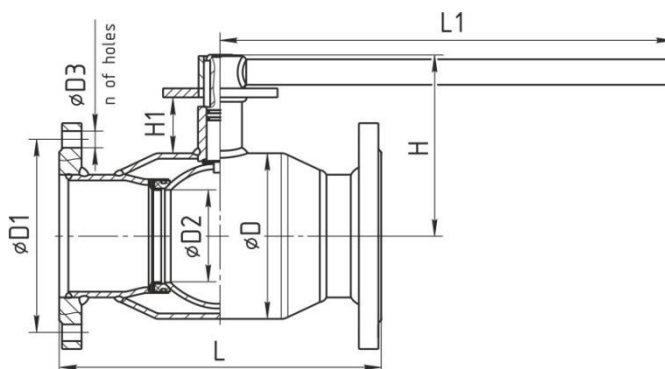
\*\* Subject to the rules of operation.

STANDARD BORE

BALL VALVE

**283** (equipped with ISO flange for actuator)

FLANGED CONNECTION\*



**Working medium**

District heating networks, petroleum products, combustible and lubricating materials, other fluids free from abrasive contaminants.

Natural gas, liquefied petroleum gas, gaseous media, non aggressive towards valve materials.

**Technical characteristics**

Max. temperature (T) °C.: +200

Min. temperature (T) °C.: -60

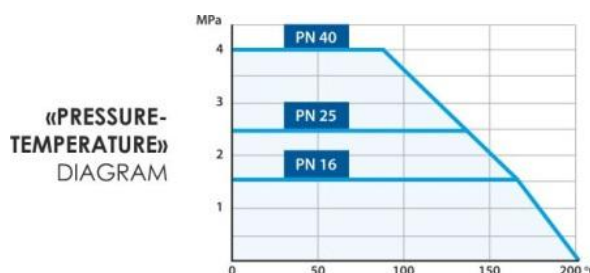
Body materials:

1.1151(P235GH)/9MnSi5(13Mn6) / 1,4541

Valve gate tightness rating: Class "A"

Warranty period: 3 years or 10 000 cycles\*\*

Service life: At least 25 years\*\*



DN	PN	PRODUCT NUMBER	L	L1	H	H1	D	D1	D2	D3	n of holes
125	16	28320125	325	525	195	51	180	210	100	18	8
150	16	28320150	350	525	210	58	219	240	125	22	8
200	16	28320200	400	625	225	55	273	295	150	22	12
250	16	28320250	500	625	270	51	351	355	200	26	12
300***	16	28320300	750	-	329	98	426	410	250	26	12
350***	16	28320350	750	-	464	98	530	470	300	26	16
400***	16	28320400	880	-	373	98	530	525	300	30	16
500***	16	28320500	990	-	435	98	630	650	390	33	20
600***	16	28320600	1165	-	105	655	820	770	500	36	20

\* It is also possible to manufacture Temper ball valves of the following connection type: FLANGED PN 25 / WELDED - 288 type.

\*\* Subject to the rules of operation.

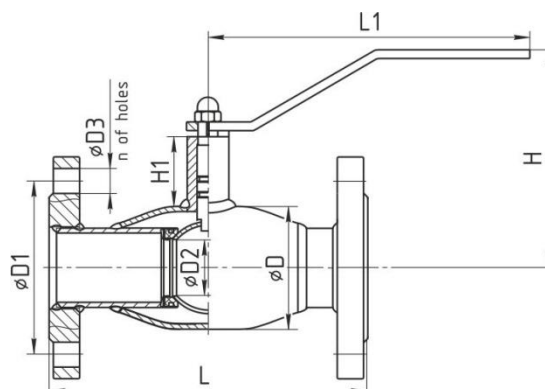
\*\*\* Construction height is given with a gearbox.

STANDARD BORE

BALL VALVE

**284**

FLANGED CONNECTION\* PN25



**Working medium**

District heating networks, petroleum products, combustible and lubricating materials, other fluids free from abrasive contaminants.

Natural gas, liquefied petroleum gas, gaseous media, non aggressive towards valve materials.

**Technical characteristics**

Max. temperature (T) °C.: +200

Min. temperature (T) °C.: -60

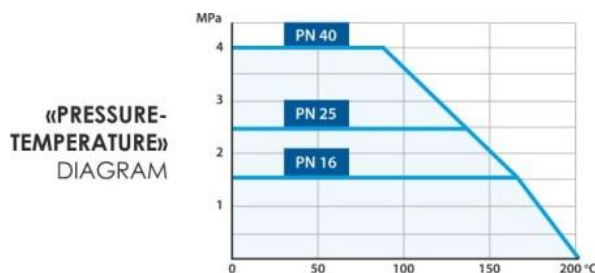
Body materials:

1.1151(P235GH)/9MnSi5(13Mn6) / 1,4541

Valve gate tightness rating: Class "A"

Warranty period: 3 years or 10 000 cycles\*\*

Service life: At least 25 years\*\*



DN	PN	PRODUCT NUMBER	L	L1	H	H1	D	D1	D2	D3	n of holes
65	25	28420065	270	235	159	42	108	145	50	18	4
80	25	28420080	280	283	200	66	133	160	65	18	8
100	25	28420100	300	283	209	63	159	190	80	22	8

\* It is also possible to manufacture Temper ball valves of the following connection type: FLANGED PN 25 / WELDED - 288 type.

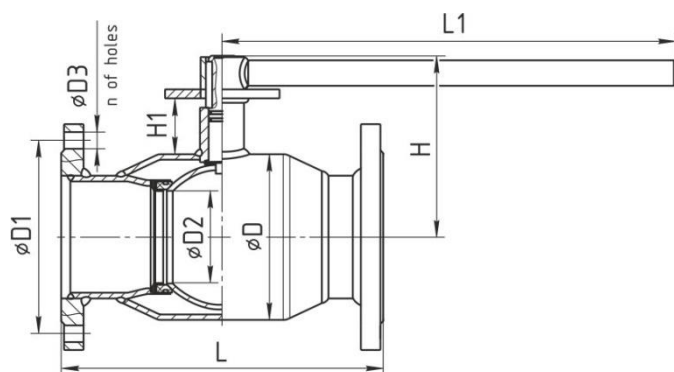
\*\* Subject to the rules of operation.

STANDARD BORE

BALL VALVE

**284** (equipped with ISO flange for actuator)

FLANGED CONNECTION\* PN25



**Working medium**

District heating networks, petroleum products, combustible and lubricating materials, other fluids free from abrasive contaminants.

Natural gas, liquefied petroleum gas, gaseous media, non aggressive towards valve materials.

**Technical characteristics**

Max. temperature (T) °C.: +200

Min. temperature (T) °C.: -60

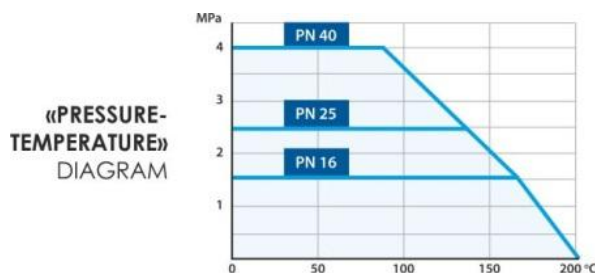
Body materials:

1.1151(P235GH)/9MnSi5(13Mn6) / 1,4541

Valve gate tightness rating: Class "A"

Warranty period: 3 years or 10 000 cycles\*\*

Service life: At least 25 years\*\*



DN	PN	PRODUCT NUMBER	L	L1	H	H1	D	D1	D2	D3	n of holes
125	25	28420125	350	525	195	51	180	220	100	26	8
150	25	28420150	380	525	210	58	219	250	125	26	8
200	25	28420200	450	625	225	55	273	310	150	26	12
250	25	28420250	530	625	270	51	351	370	200	30	12
300***	25	28420300	750	-	414	101	426	430	250	30	16
350***	25	28420350	750	-	464	100	530	490	300	33	16
400***	25	28420400	880	-	464	100	530	550	300	36	16
500***	25	28420500	990	-	561	103	630	660	390	36	20
600***	25	28420600	1165	-	105	655	820	770	500	39	20

\* It is also possible to manufacture Temper ball valves of the following connection type: FLANGED PN 25 / WELDED - 288 type.

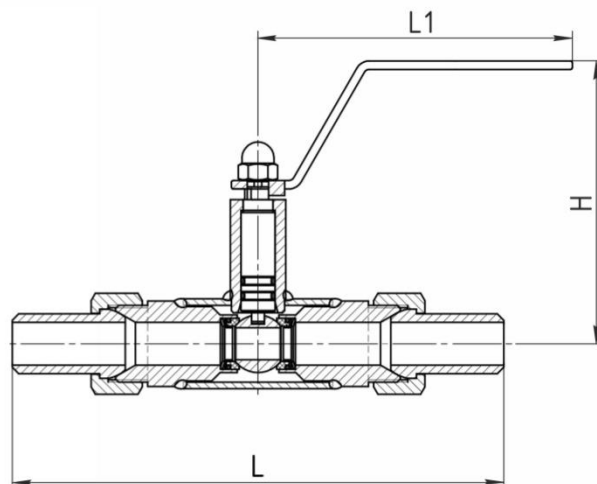
\*\* Subject to the rules of operation.

\*\*\* Construction height is given with a gearbox.

STANDARD BORE  
BALL VALVE

**285**

CHOKE-NIPPLE CONNECTION



**Working medium**

District heating networks, petroleum products, combustible and lubricating materials, other fluids free from abrasive contaminants.

Natural gas, liquefied petroleum gas, gaseous media, non aggressive towards valve materials.

**Technical characteristics**

Max. temperature (T) °C.: +200

Min. temperature (T) °C.: -60

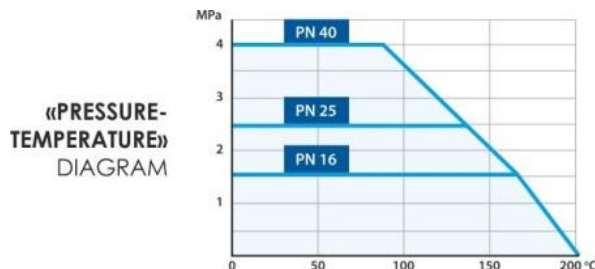
Body materials:

1.1151(P235GH)/9MnSi5(13Mn6) / 1,4541

Valve gate tightness rating: Class "A"

Warranty period: 3 years or 10 000 cycles\*

Service life: At least 25 years\*



DN	PN	PRODUCT NUMBER	L	L1	H
15	40	28520015	220	148	132
20	40	28520020	230	148	135
25	40	28520025	250	148	138
32	40	28520032	260	148	142
40	40	28520040	320	235	145
50	40	28520050	350	235	154

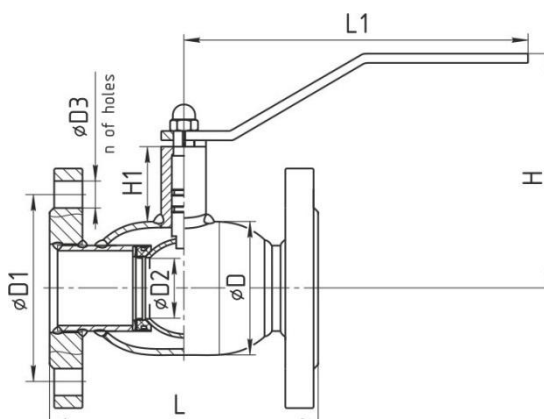
\* Subject to the rules of operation.



STANDARD BORE  
BALL VALVE (SHORT LENGTH)

**286**

FLANGED CONNECTION\*



**Working medium**

District heating networks, petroleum products, combustible and lubricating materials, other fluids free from abrasive contaminants.

Natural gas, liquefied petroleum gas, gaseous media, non aggressive towards valve materials.

**Technical characteristics**

Max. temperature (T) °C.: +200

Min. temperature (T) °C.: -60

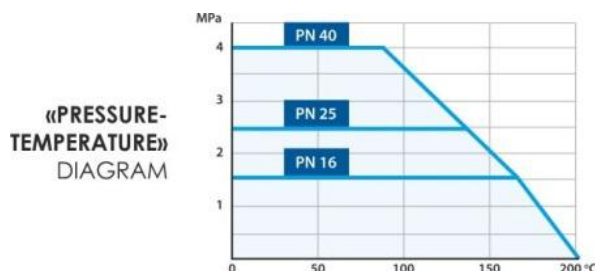
Body materials:

1.1151(P235GH)/9MnSi5(13Mn6) / 1,4541

Valve gate tightness rating: Class "A"

Warranty period: 3 years or 10 000 cycles\*\*

Service life: At least 25 years\*\*



DN	PN	PRODUCT NUMBER	L	L1	H	H1	D	D1	D2	D3	n of holes
40	40	28620040	165	235	145	44	76	110	32	18	4
50	40	28620050	180	235	154	46	89	125	40	18	4
65	16	28620065	200	235	159	42	108	145	50	18	4
80	16	28620080	210	283	200	66	133	160	65	18	4
100	16	28620100	230	283	209	63	159	180	80	18	8
125	16	28620125	254	525	195	51	180	210	100	18	8
150	16	28620150	280	525	210	58	219	240	125	22	8

\* It is also possible to manufacture Temper ball valves of the following connection type: FLANGED PN 25 (SHORT LENGTH) - 287 type.

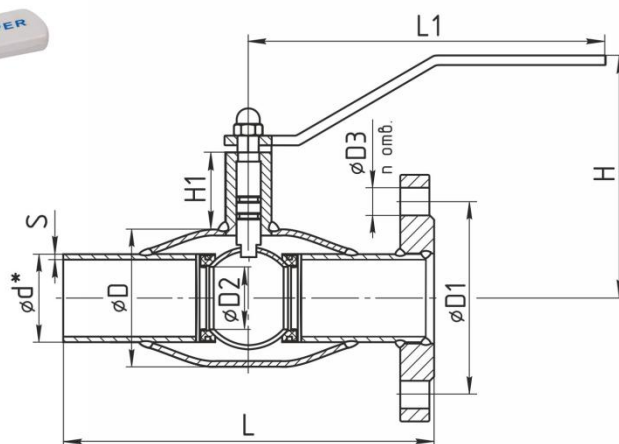
\*\* Subject to the rules of operation.

STANDARD BORE

BALL VALVE

289

FLANGED / WELDED CONNECTION\*



**Working medium**

District heating networks, petroleum products, combustible and lubricating materials, other fluids free from abrasive contaminants.

Natural gas, liquefied petroleum gas, gaseous media, non aggressive towards valve materials.

**Technical characteristics**

Max. temperature (T) °C.: +200

Min. temperature (T) °C.: -60

Body materials:

1.1151(P235GH)/9MnSi5(13Mn6) / 1,4541

Valve gate tightness rating: Class "A"

Warranty period: 3 years or 10 000 cycles\*\*

Service life: At least 25 years\*\*

«PRESSURE-TEMPERATURE» DIAGRAM



DN	PN	PRODUCT NUMBER	L	L1	H	H1	S	d*	D	D1	D2	D3	n of holes
15	40	28920015	180	148	132	49	2,0	2,0	38	65	10	14	4
20	40	28920020	190	148	135	50	2,3	2,3	42	75	15	14	4
25	40	28920025	195	148	138	50	2,6	2,6	48	85	20	14	4
32	40	28920032	220	148	142	50	2,6	2,6	57	100	25	18	4
40	40	28920040	230	235	145	44	2,6	2,6	76	110	32	18	4
50	40	28920050	265	235	154	46	2,9	2,9	89	125	40	18	4
65	16	28920065	285	235	159	42	2,9	2,9	108	145	50	18	8
80	16	28920080	290	283	200	66	3,2	3,2	133	160	65	18	8
100	16	28920100	313	283	209	63	3,6	3,6	159	180	80	18	8

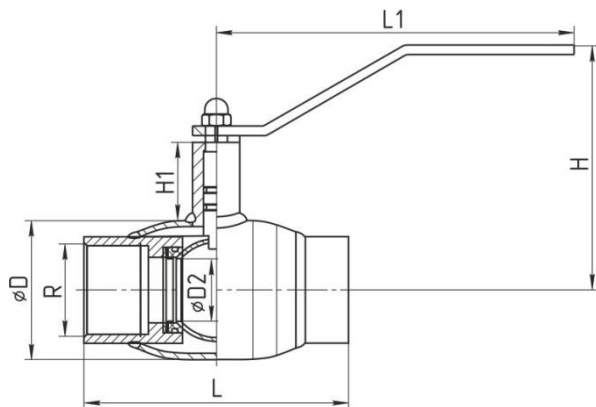
\* It is also possible to manufacture Temper ball valves of the following connection type: FLANGED PN 25 / WELDED - 288 type.

\*\* Subject to the rules of operation.

FULL BORE  
BALL VALVE

**290**

FEMALE THREADS CONNECTION\*



**Working medium**

District heating networks, petroleum products, combustibles and lubricating materials, other fluids free from abrasive contaminants.

Natural gas, liquefied petroleum gas, gaseous media, non aggressive towards valve materials.

**Technical characteristics**

Max. temperature (T) °C.: +200

Min. temperature (T) °C.: -60

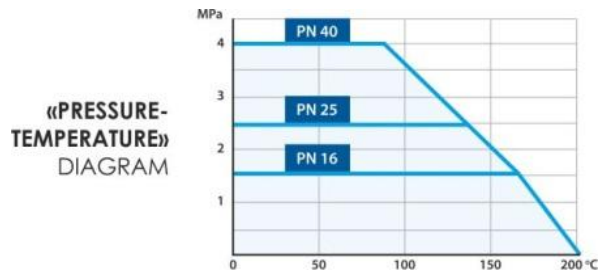
Body materials:

1.1151(P235GH)/9MnSi5(13Mn6) / 1,4541

Valve gate tightness rating: Class "A"

Warranty period: 3 years or 10 000 cycles\*\*

Service life: At least 25 years\*\*



DN	PN	PRODUCT NUMBER	L	L1	H	H1	D	R	D2
15	40	29020015	135	148	135	50	42	1/2	15
20	40	29020020	135	148	138	50	48	3/4	20
25	40	29020025	135	148	142	50	57	1	25
32	40	29020032	155	235	145	44	76	1 1/4	32
40	40	29020040	170	235	154	46	89	1 1/2	40
50	40	29020050	190	235	159	42	108	2	50
65	25	29020065	200	283	200	66	133	2 1/2	65
80	25	29020080	240	283	209	63	159	3	80

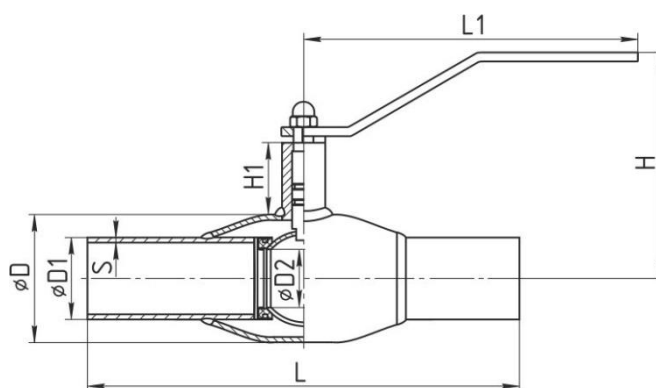
\* It is also possible to manufacture Temper ball valves of the following connection type: FEMALE THREADS / WELDED - 291 type.

\*\* Subject to the rules of operation.

FULL BORE  
BALL VALVE

**292**

WELDED CONNECTION\*



### Working medium

District heating networks, petroleum products, combustible and lubricating materials, other fluids free from abrasive contaminants.

Natural gas, liquefied petroleum gas, gaseous media, non aggressive towards valve materials.

### Technical characteristics

Max. temperature (T) °C.: +200

Min. temperature (T) °C.: -60

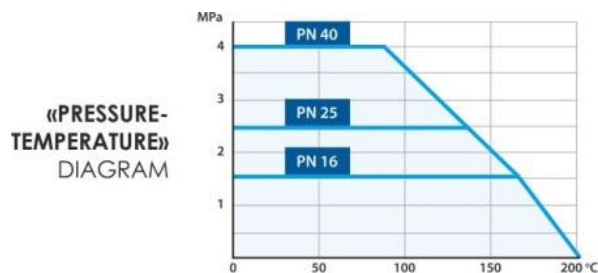
Body materials:

1.1151(P235GH)/9MnSi5(13Mn6) / 1,4541

Valve gate tightness rating: Class "A"

Warranty period: 3 years or 10 000 cycles\*\*

Service life: At least 25 years\*\*



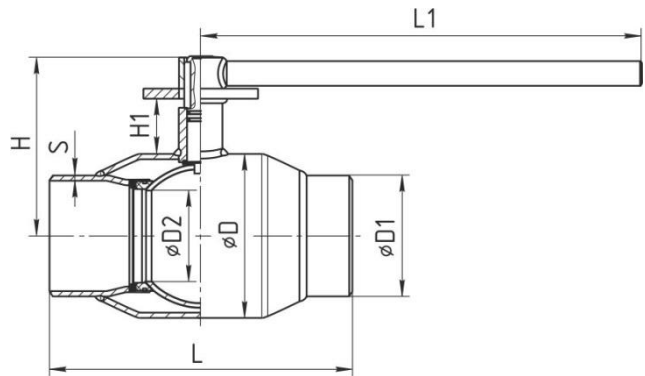
DN	PN	PRODUCT NUMBER	L	L1	H	H1	D	D1	D2	S
15	40	29220015	230	148	135	50	42	21,3	15	3
20	40	29220020	230	148	138	50	48	26,9	20	3,5
25	40	29220025	260	148	142	50	57	33,7	25	3,5
32	40	29220032	260	235	145	44	76	42,4	32	4
40	40	29220040	300	235	154	46	89	48,3	40	4
50	40	29220050	300	235	159	42	108	60,3	50	4
65	25	29220065	300	283	200	66	133	76,1	65	4
80	25	29220080	325	283	209	63	159	88,9	80	5

\* It is also possible to manufacture Temper ball valves of the following connection types: FEMALE THREADS / WELDED - 291 type, FLANGED PN 25 / WELDED - 298 type and FLANGED / WELDED - 299 type.

\*\* Subject to the rules of operation.

FULL BORE  
BALL VALVE

**292** (equipped with ISO flange for actuator)  
WELDED CONNECTION\*



**Working medium**

District heating networks, petroleum products, combustibles and lubricating materials, other fluids free from abrasive contaminants.

Natural gas, liquefied petroleum gas, gaseous media, non aggressive towards valve materials.

**Technical characteristics**

Max. temperature (T) °C.: +200

Min. temperature (T) °C.: -60

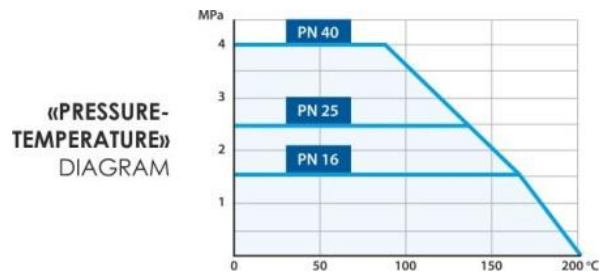
Body materials:

1.1151(P235GH)/9MnSi5(13Mn6) / 1,4541

Valve gate tightness rating: Class "A"

Warranty period: 3 years or 10 000 cycles\*\*

Service life: At least 25 years\*\*



DN	PN	PRODUCT NUMBER	L	L1	H	H1	D	D1	D2	S
100	25	29220100	325	525	195	51	180	114,3	100	4
125	25	29220125	360	525	210	51	180	139,7	125	4
150	25	29220150	400	525	225	58	219	168,3	150	5
200	25	29220200	530	625	270	55	273	219,1	200	5
250***	16	29220250	730	-	329	98	426	273	250	5
300***	16	29220300	730	-	373	98	530	323,9	300	5,6
350***	16	29220350	970	-	435	98	630	355,6	350	6,3
400***	16	29220400	970	-	435	98	630	406,4	390	7,1
500***	16	29220500	1145	-	655	105	820	508	500	8
600***	16	29220600	1145	-	770	115	1020	610	600	8

\* It is also possible to manufacture Temper ball valves of the following connection types: FEMALE THREADS / WELDED - 291 type, FLANGED PN 25 / WELDED - 298 type and FLANGED / WELDED - 299 type.

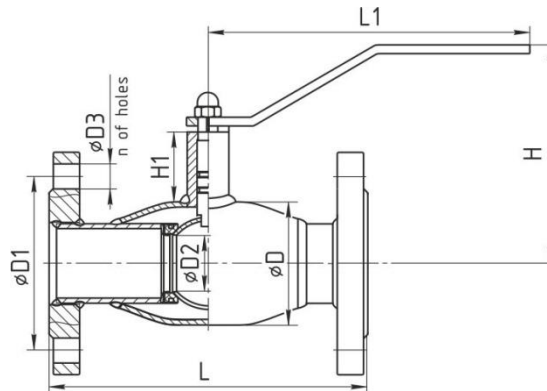
\*\* Subject to the rules of operation.

\*\*\* Construction height and weight are given with gear.

FULL BORE  
BALL VALVE

**293**

FLANGED CONNECTION\*



**Working medium**

District heating networks, petroleum products, combustibles and lubricating materials, other fluids free from abrasive contaminants.

Natural gas, liquefied petroleum gas, gaseous media, non aggressive towards valve materials.

**Technical characteristics**

Max. temperature (T) °C.: +200

Min. temperature (T) °C.: -60

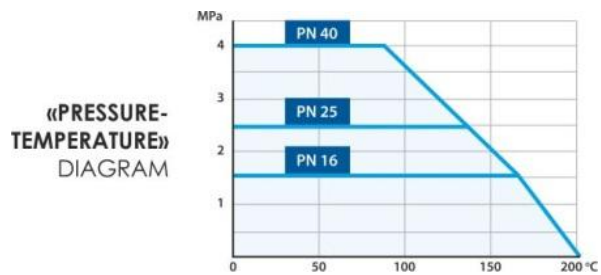
Body materials:

1.1151(P235GH)/9MnSi5(13Mn6) / 1,4541

Valve gate tightness rating: Class "A"

Warranty period: 3 years or 10 000 cycles\*\*

Service life: At least 25 years\*\*



DN	PN	PRODUCT NUMBER	L	L1	H	H1	D	D1	D2	D3	n of holes
15	40	29320015	130	148	132	49	38	65	15	14	4
20	40	29320020	150	148	135	50	42	75	20	14	4
25	40	29320025	160	148	138	50	48	85	25	14	4
32	40	29320032	180	148	142	50	57	100	32	18	4
40	40	29320040	200	235	145	44	76	110	40	18	4
50	40	29320050	250	235	154	46	89	125	50	18	4
65	16	29320065	270	235	159	42	108	145	65	18	4
80	16	29320080	290	283	200	66	133	160	80	18	8

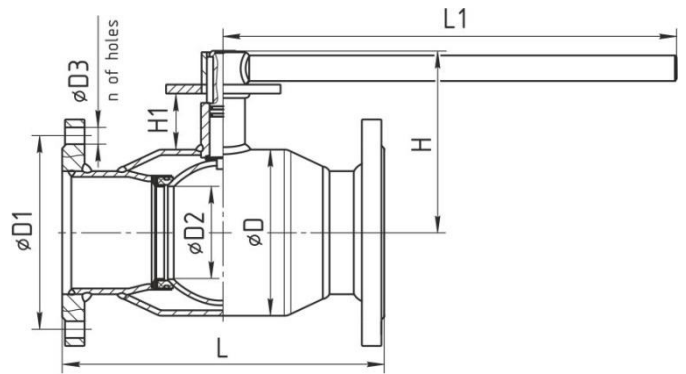
\* It is also possible to manufacture Temper ball valves of the following connection type: FLANGED / WELDED - 299 type.

\*\* Subject to the rules of operation.

FULL BORE  
BALL VALVE

**293**(equipped with ISO flange for actuator)

FLANGED CONNECTION\*



**Working medium**

District heating networks, petroleum products, combustible and lubricating materials, other fluids free from abrasive contaminants.

Natural gas, liquefied petroleum gas, gaseous media, non aggressive towards valve materials.

**Technical characteristics**

Max. temperature (T) °C.: +200

Min. temperature (T) °C.: -60

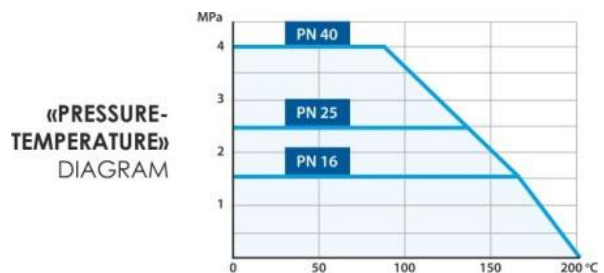
Body materials:

1.1151(P235GH)/9MnSi5(13Mn6) / 1,4541

Valve gate tightness rating: Class "A"

Warranty period: 3 years or 10 000 cycles\*\*

Service life: At least 25 years\*\*



DN	PN	PRODUCT NUMBER	L	L1	H	H1	D	D1	D2	D3	n of holes
100	16	29320100	350	525	195	51	180	180	100	18	8
125	16	29320125	380	525	210	51	180	210	125	22	8
150	16	29320150	410	525	225	58	219	240	150	22	12
200	16	29320200	530	625	270	55	273	295	200	26	12
250***	16	29320250	750	-	329	98	426	355	250	26	12
300***	16	29320300	750	-	373	98	530	410	300	26	12
350***	16	29320350	990	-	435	98	630	470	350	26	16
400***	16	29320400	990	-	435	98	630	525	390	30	16
500***	16	29320500	1165	-	655	105	820	650	500	33	20
600***	16	29320600	1165	-	770	115	1020	770	600	36	20

\* It is also possible to manufacture Temper ball valves of the following connection type: FLANGED / WELDED - 299 type.

\*\* Subject to the rules of operation.

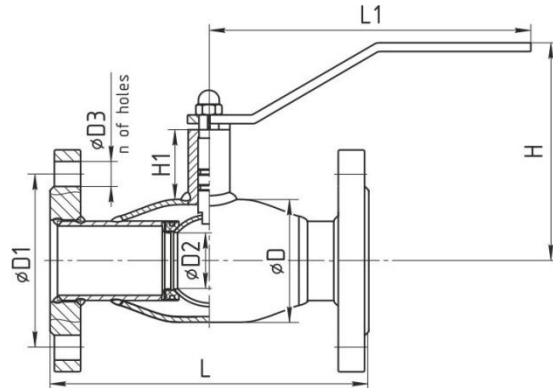
\*\*\* Construction height is given with a gearbox.



FULL BORE  
BALL VALVE

**294**

FLANGED CONNECTION PN25\*



**Working medium**

District heating networks, petroleum products, combustible and lubricating materials, other fluids free from abrasive contaminants.

Natural gas, liquefied petroleum gas, gaseous media, non aggressive towards valve materials.

**Technical characteristics**

Max. temperature (T) °C.: +200

Min. temperature (T) °C.: -60

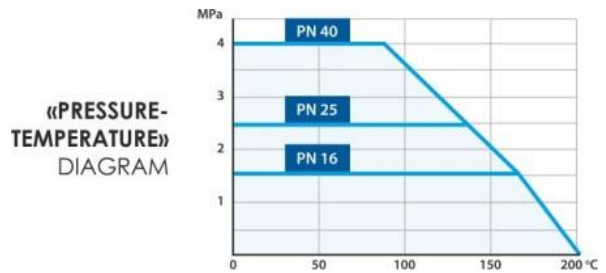
Body materials:

1.1151(P235GH)/9MnSi5(13Mn6) / 1,4541

Valve gate tightness rating: Class "A"

Warranty period: 3 years or 10 000 cycles\*\*

Service life: At least 25 years\*\*



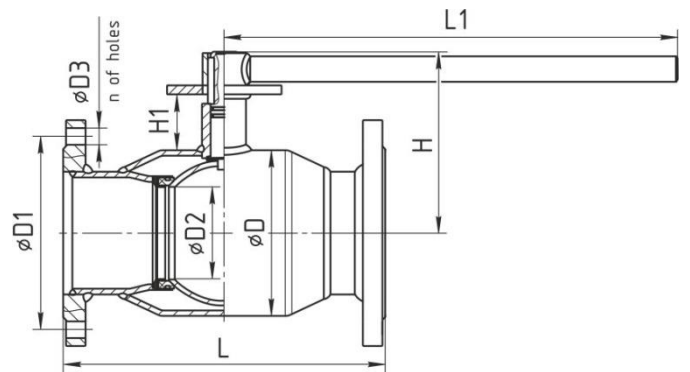
DN	PN	PRODUCT NUMBER	L	L1	H	H1	D	D1	D2	D3	n of holes
65	25	29420065	270	235	159	42	108	145	65	18	4
80	25	29420080	290	283	200	66	133	160	80	18	8

\* It is also possible to manufacture Temper ball valves of the following connection type: FLANGED PN 25 / WELDED - 298 type.

\*\* Subject to the rules of operation.

FULL BORE  
BALL VALVE

**294**(equipped with ISO flange for actuator)  
FLANGED CONNECTION PN25\*

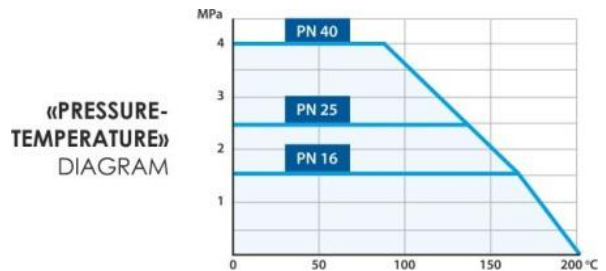


**Working medium**

District heating networks, petroleum products, combustible and lubricating materials, other fluids free from abrasive contaminants.  
Natural gas, liquefied petroleum gas, gaseous media, non aggressive towards valve materials.

**Technical characteristics**

Max. temperature (T) °C.: +200  
Min. temperature (T) °C.: -60  
Body materials:  
1.1151(P235GH)/9MnSi5(13Mn6) / 1,4541  
Valve gate tightness rating: Class "A"  
Warranty period: 3 years or 10 000 cycles\*\*  
Service life: At least 25 years\*\*



DN	PN	PRODUCT NUMBER	L	L1	H	H1	D	D1	D2	D3	n of holes
100	25	29420100	350	525	195	51	180	190	100	22	8
125	25	29420125	380	525	195	51	180	220	125	26	8
150	25	29420150	410	525	210	58	219	250	150	26	8
200	25	29420200	530	625	225	55	273	310	200	26	12
250***	25	29420250	750	-	414	101	426	370	250	30	12
300***	25	29420300	750	-	464	100	530	430	300	30	16
350***	25	29420350	990	-	560	103	630	490	350	33	16
400***	25	29420400	990	-	560	103	630	550	390	36	16
500***	25	29420500	1165	-	655	105	820	660	500	36	20
600***	25	29420600	1165	-	770	115	1020	770	600	39	20

\* It is also possible to manufacture Temper ball valves of the following connection type: FLANGED PN 25 / WELDED - 298 type.  
\*\* Subject to the rules of operation.  
\*\*\* Construction height is given with a gearbox.

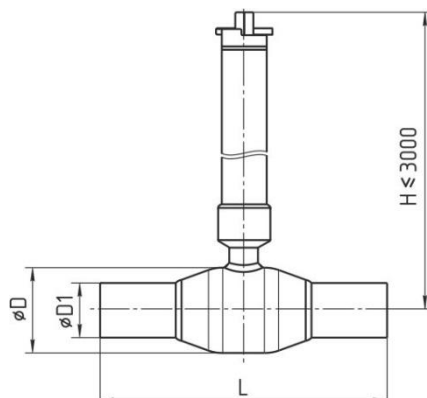
STANDARD BORE / FULL BORE

BALL VALVE

**482/492** with extended stem for underground installation

WELDED

CONNECTION



**Working medium**

District heating networks, petroleum products, combustibles and lubricating materials, other fluids free from abrasive contaminants.

Natural gas, liquefied petroleum gas, gaseous media, non aggressive towards valve materials.

**Technical characteristics**

Max. temperature (T) °C.: +200

Min. temperature (T) °C.: -60

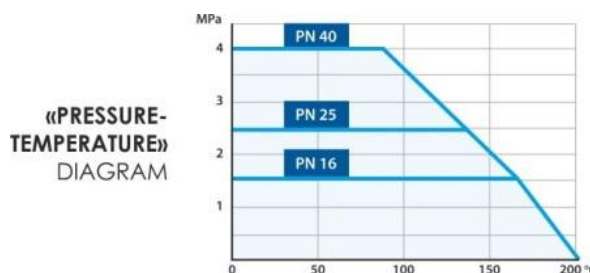
Body materials:

1.1151(P235GH)/9MnSi5(13Mn6) / 1,4541

Valve gate tightness rating: Class "A"

Warranty period: 3 years or 10 000 cycles\*\*

Service life: At least 25 years\*\*



**STANDARD BORE**

DN	PN	PRODUCT NUMBER	L	D	D1	H
25	40	48220025	230	48	32	on request
32	40	48220032	260	57	38	on request
40	40	48220040	260	76	48	on request
50	40	48220050	300	89	57	on request
65	25	48220065	360	108	76	on request
80	25	48220080	370	133	89	on request
100	25	48220100	390	159	108	on request
125	25	48220125	330	180	133	on request
150	25	48220150	360	219	159	on request
200	25	48220200	430	273	219	on request
250	25	48220250	510	351	273	on request
300**	16	48220300	730	426	323,9	on request
350**	16	48220350	860	530	355,6	on request
400**	16	48220400	860	530	406,4	on request
500**	16	48220500	970	630	530	on request
600**	16	48220600	1145	820	610	on request

**FULL BORE**

DN	PN	PRODUCT NUMBER	L	D	D1	H
25	40	49220025	230	57	32	on request
32	40	49220032	260	76	38	on request
40	40	49220040	260	89	48	on request
50	40	49220050	300	108	57	on request
65	25	49220065	360	133	76	on request
80	25	49220080	370	159	89	on request
100	25	49220100	330	180	108	on request
125	25	49220125	360	180	133	on request
150	25	49220150	390	219	159	on request
200	25	49220200	510	273	219	on request
250**	16	49220250	730	426	273	on request
300**	16	49220300	730	530	323,9	on request
350**	16	49220350	970	630	355,6	on request
400**	16	49220400	970	630	406,4	on request
500**	16	49220500	1145	820	508	on request
600**	16	49220600	1145	1020	610	on request

\*Subject to the rules of operation.

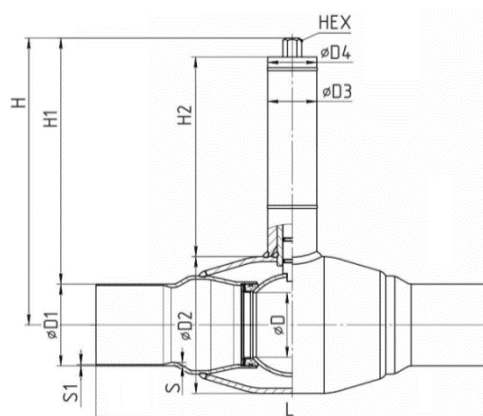
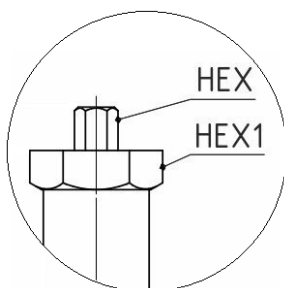
\*\* These valves are supplied with gearboxes.

STANDARD BORE  
LONG STEM BALL VALVE

DN125 – DN400

**482S**

WELDED CONNECTION



**Working medium**

District heating networks, petroleum products, combustible and lubricating materials, other fluids free from abrasive contaminants.

Natural gas, liquefied petroleum gas, gaseous media, non aggressive towards valve materials.

**Technical characteristics**

Max. temperature (T) °C.: +200

Min. temperature (T) °C.: -60

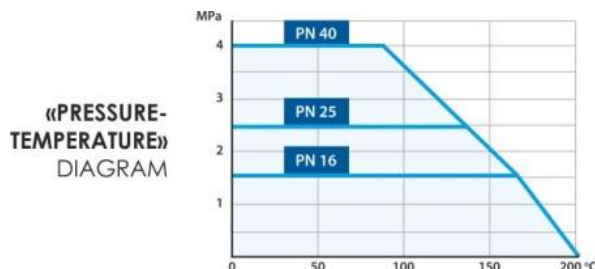
Body materials:

1.1151(P235GH)/9MnSi5(13Mn6) / 1,4541

Valve gate tightness rating: Class "A"

Warranty period: 3 years or 10 000 cycles\*\*

Service life: At least 25 years\*\*



DN	PN	PRODUCT NUMBER	D	D1	D2	D3	D4	H	H1	H2	L	S	S1	HEX	HEX1
25	40	48220025 S	20	33,7	48	33,7	36	395	378	350	230	3	2,6	19	-
32	40	48220032 S	25	42,4	57	33,7	36	400	379	350	260	3	2,6	19	-
40	40	48220040 S	32	48,3	76	33,7	36	410	385	350	260	3,5	2,6	19	-
50	40	48220050 S	40	60,3	89	33,7	36	415	385	350	300	3,5	2,9	19	-
65	25	48220065 S	50	76,1	108	42,4	36	425	387	350	300	3,5	2,9	19	-
80	25	48220080 S	65	88,9	133	42,4	36	440	395	350	300	4	3,2	19	-
100	25	48220100 S	80	114,3	159	60,3	60	450	395	350	325	4	3,6	27	-
125	25	48220125 S	100	139,7	180	60,3	60	460	390	350	325	5	4,0	27	-
150	25	48220150 S	125	168,3	219	60,3	60	480	395	350	350	6	4,5	27	-
200	25	48220200 S	150	219,1	273	76,1	-	513	405	350	400	8	4,5	50	90
250**	16	48220250 S	200	273	351	88,9	-	554	420	350	530	10	5,0	50	90
300**	16	48220300 S	250	323,9	426	88,9	-	595	435	350	730	10	5,6	50	90
350**	16	48220350 S	300	355,6	530	139,7	-	647	470	350	760	10	5,6	50	90
400**	16	48220400 S	300	406	530	139,7	-	647	445	350	860	10	6,3	50	90
500**	16	48220500 S	390	508	630	139,7	-	697	445	350	970	10	7	50	90
600**	16	48220600 S	500	610	820	139,7	-	795	490	350	1145	12	8	50	90

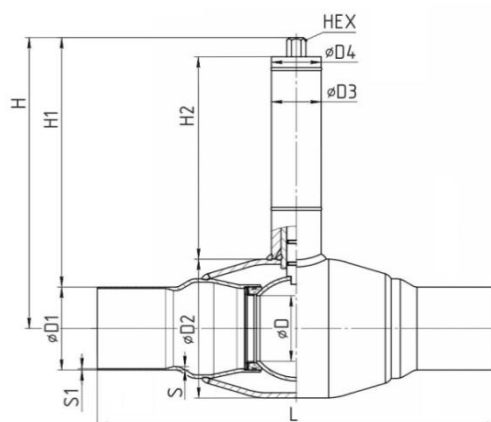
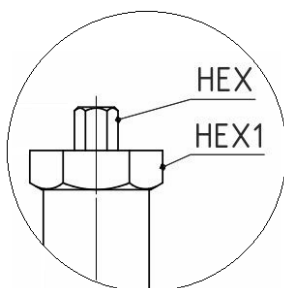
\* Subject to the rules of operation.\*\* These valves are supplied ready for globe gearboxes.

STANDARD BORE  
LONG STEM BALL VALVE

DN125 – DN400

**482SL**

WELDED CONNECTION



**Working medium**

District heating networks, petroleum products, combustible and lubricating materials, other fluids free from abrasive contaminants.

Natural gas, liquefied petroleum gas, gaseous media, non aggressive towards valve materials.

**Technical characteristics**

Max. temperature (T) °C.: +200

Min. temperature (T) °C.: -60

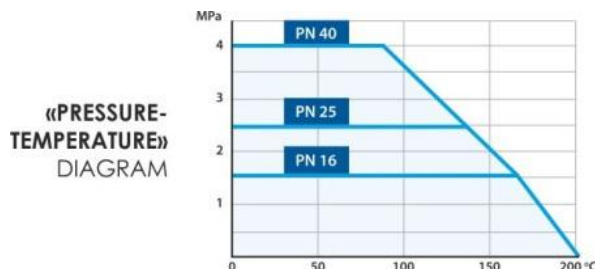
Body materials:

1.1151(P235GH)/9MnSi5(13Mn6) / 1,4541

Valve gate tightness rating: Class "A"

Warranty period: 3 years or 10 000 cycles\*\*

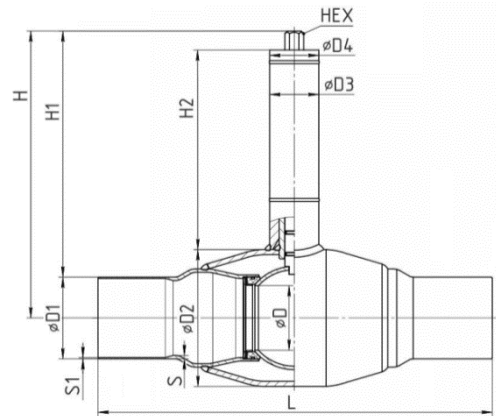
Service life: At least 25 years\*\*



DN	PN	PRODUCT NUMBER	D	D1	D2	D3	D4	H	H1	H2	L	S	S1	HEX	HEX1
25	40	48220025 SL	20	33,7	48	33,7	36	395	378	350	1500	3	2,6	19	-
32	40	48220032 SL	25	42,4	57	33,7	36	400	379	350	1500	3	2,6	19	-
40	40	48220040 SL	32	48,3	76	33,7	36	410	385	350	1500	3,5	2,6	19	-
50	40	48220050 SL	40	60,3	89	33,7	36	415	385	350	1500	3,5	2,9	19	-
65	25	48220065 SL	50	76,1	108	42,4	36	425	387	350	1500	3,5	2,9	19	-
80	25	48220080 SL	65	88,9	133	42,4	36	440	395	350	1500	4	3,2	19	-
100	25	48220100 SL	80	114,3	159	60,3	60	450	395	350	1500	4	3,6	27	-
125	25	48220125 SL	100	139,7	180	60,3	60	460	390	350	1500	5	4,0	27	-
150	25	48220150 SL	125	168,3	219	60,3	60	480	395	350	1500	6	4,5	27	-
200	25	48220200 SL	150	219,1	273	76,1	-	513	405	350	2000	8	4,5	50	90
250**	16	48220250 SL	200	273	351	88,9	-	554	420	350	2000	10	5,0	50	90
300**	16	48220300 SL	250	323,9	426	88,9	-	595	435	350	2400	10	5,6	50	90
350**	16	48220350 SL	300	355,6	530	139,7	-	647	470	350	2400	10	5,6	50	90
400**	16	48220400 SL	300	406	530	139,7	-	647	445	350	2400	10	6,3	50	90
500**	16	48220500 SL	390	508	630	139,7	-	697	445	350	2400	10	7	50	90
600**	16	48220600 SL	500	610	820	139,7	-	795	490	350	2400	12	8	50	90

\* Subject to the rules of operation.

FULL BORE  
 LONG STEM BALL VALVE  
**492S**  
 WELDED CONNECTION



**Working medium**

District heating networks, petroleum products, combustible and lubricating materials, other fluids free from abrasive contaminants.

Natural gas, liquefied petroleum gas, gaseous media, non aggressive towards valve materials.

**Technical characteristics**

Max. temperature (T) °C.: +200

Min. temperature (T) °C.: -60

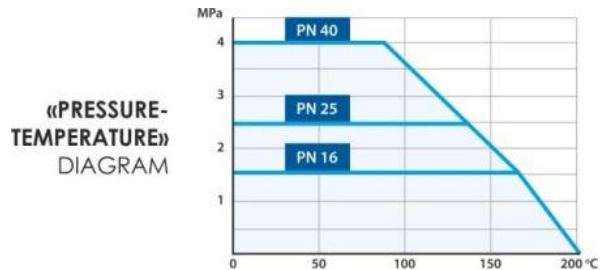
Body materials:

1.1151(P235GH)/9MnSi5(13Mn6) / 1,4541

Valve gate tightness rating: Class "A"

Warranty period: 3 years or 10 000 cycles\*\*

Service life: At least 25 years\*\*

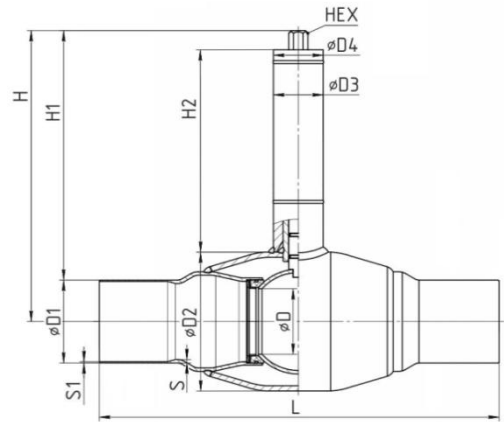


DN	PN	PRODUCT NUMBER	D	D1	D2	D3	D4	H	H1	H2	L	S	S1	HEX	End of neck
25	40	49220025 S	24	33,7	57	33,7	36	395	378	350	260	3	2,6	19	D4
32	40	49220032 S	30	42,4	76	33,7	36	400	379	350	260	3,5	2,6	19	D4
40	40	49220040 S	40	48,3	89	33,7	36	410	385	350	300	3,5	2,6	19	D4
50	40	49220050 S	45	60,3	108	42,4	36	415	385	350	300	3,5	2,9	19	D4
65	25	49220065 S	63	76,1	133	42,4	36	425	387	350	300	4	2,9	19	D4
80	25	49220080 S	75	88,9	159	60,3	60	445	400	350	325	5	3,2	27	D4
100	25	49220100 S	100	114,3	180	60,3	60	460	403	350	325	5	3,6	27	D4
125	25	49220125 S	125	139,7	219	60,3	60	480	411	350	350	6	4	27	D4
150	25	49220150 S	148	168,3	273	76,1	-	513	433	350	400	6	4,5	50	D4
200	25	49220200 S	200	219,1	351	88,9	-	554	444	350	530	8	5	50	ISO 5211
250**	16	49220250 S	240	273	426	88,9	-	604	468	350	550	10	5	ISO 5211	
300**	16	49220300 S	300	323,9	530	139,7	-	636	474	350	686	10	5,6	ISO 5211	
350**	16	49220350 S	350	355,6	610	139,7	-	687	509	350	762	10	5,6	ISO 5211	
400**	16	49220400 S	390	406	610	139,7	-	687	509	350	762	10	6,3	ISO 5211	
500**	16	49220500 S	500	508	820	139,7	-	885	631	350	1145	10	7	ISO 5211	
600**	16	49220600 S	600	610	1020	139,7	-	985	680	350	1145	12	8	ISO 5211	

\* Subject to the rules of operation. \*\* These valves are supplied ready for globe gearboxes.



FULL BORE  
LONG STEM BALL VALVE  
**492SL**  
WELDED CONNECTION



**Working medium**

District heating networks, petroleum products, combustible and lubricating materials, other fluids free from abrasive contaminants.

Natural gas, liquefied petroleum gas, gaseous media, non aggressive towards valve materials.

**Technical characteristics**

Max. temperature (T) °C.: +200

Min. temperature (T) °C.: -60

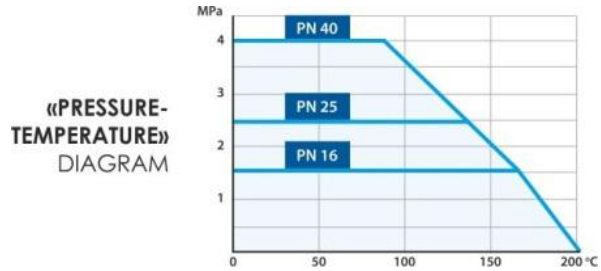
Body materials:

1.1151(P235GH)/9MnSi5(13Mn6) / 1,4541

Valve gate tightness rating: Class "A"

Warranty period: 3 years or 10 000 cycles\*\*

Service life: At least 25 years\*\*



DN	PN	PRODUCT NUMBER	D	D1	D2	D3	D4	H	H1	H2	L	S	S1	HEX	End of neck
25	40	49220025 SL	24	33,7	57	33,7	36	395	378	350	1500	3	2,6	19	D4
32	40	49220032 SL	30	42,4	76	33,7	36	400	379	350	1500	3,5	2,6	19	D4
40	40	49220040 SL	40	48,3	89	33,7	36	410	385	350	1500	3,5	2,6	19	D4
50	40	49220050 SL	45	60,3	108	42,4	36	415	385	350	1500	3,5	2,9	19	D4
65	25	49220065 SL	63	76,1	133	42,4	36	425	387	350	1500	4	2,9	19	D4
80	25	49220080 SL	75	88,9	159	60,3	60	445	400	350	1500	5	3,2	27	D4
100	25	49220100 SL	100	114,3	180	60,3	60	460	403	350	1500	5	3,6	27	D4
125	25	49220125 SL	125	139,7	219	60,3	60	480	411	350	1500	6	4	27	D4
150	25	49220150 SL	148	168,3	273	76,1	-	513	433	350	1500	6	4,5	50	D4
200	25	49220200 SL	200	219,1	351	88,9	-	554	444	350	2000	8	5	50	ISO 5211
250**	16	49220250 SL	240	273	426	88,9	-	604	468	350	2000	10	5	ISO 5211	
300**	16	49220300 SL	300	323,9	530	139,7	-	636	474	350	2400	10	5,6	ISO 5211	
350**	16	49220350 SL	350	355,6	610	139,7	-	687	509	350	2400	10	5,6	ISO 5211	
400**	16	49220400 SL	390	408	610	139,7	-	687	509	350	2400	10	6,3	ISO 5211	
500**	16	49220500 SL	500	508	820	139,7	-	885	631	350	2400	10	7	ISO 5211	
600**	16	49220600 SL	600	610	1020	139,7	-	985	680	350	2400	12	8	ISO 5211	

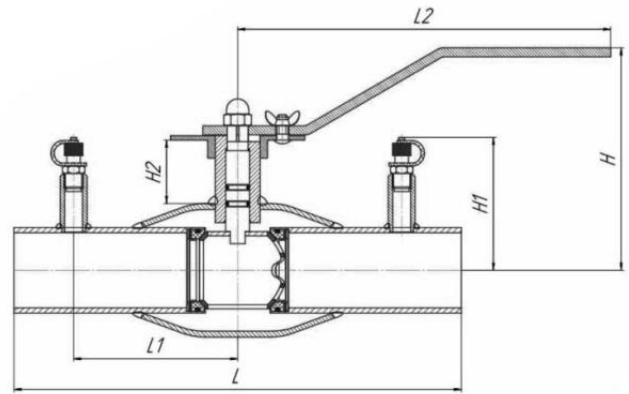
\* Subject to the rules of operation.\*\* These valves are supplied ready for globe gearboxes.



**BALANCING BALL VALVE**

**682/692**

**WELDED CONNECTION\***



Temper balancing ball valves are designed for regulation (balancing) of the working fluid flow in heating, cold supply and ventilation systems. The ball has a special orifice and the valve is equipped with a scale of values. Regulation is carried out by turning the handle with the pointer. The selected position of the handle is fixed with a bolt and a nut-butterfly.

**Two types of regulating ball valves:**

- 1) With measuring nipples (see the picture and the drawing on the page). All the measurements could be measured by a flow meter.
- 2) Without measuring nipples. Flow adjustment is made only by a handle with index.

**BALANCING BALL VALVE DIMENSIONS**



DN	PN	PRODUCT NUMBER	L	L1	L2	H	H1	H2
20	40	68220020	230	65	175	135	74	45
25	40	68220025	230	65	175	138	76	45
32	40	68220032	260	80	175	140	79	45
40	40	68220040	260	90	250	148	84	43
50	40	68220050	300	110	250	148	88	40
65	25	68220065	360	120	250	152	98	36
80	25	68220080	370	135	300	186	138	49
100	25	68220100	390	135	300	194	148	43
125*	25	68220125	330	115	-	-	158	51
150*	25	68220150	360	125	-	-	168	58

**RATE VALUES OF TEMPER BALANCING BALL VALVE, KV, M<sup>3</sup>/H**

The value of the valve scale	DN 15	DN 20	DN 25	DN 32	DN 40	DN 50	DN 65	DN 80	DN 100	DN 125	DN 150
1	-	-	-	0,42	0,57	1,30	2,45	3,38	6,55	8,75	14,30
2	0,16	0,16	0,50	0,79	1,50	2,76	4,82	7,45	12,62	18,50	26,14
3	0,40	0,40	1,20	1,50	2,65	4,45	8,10	12,95	20,20	31,10	45,14
4	0,82	0,82	1,90	2,23	4,10	6,80	11,80	19,20	28,76	45,80	66,47
5	1,19	1,19	2,80	3,50	5,85	9,78	16,25	27,62	42,92	65,84	98,30
6	1,90	1,90	4,60	5,20	8,50	14,20	26,10	39,10	61,20	98,60	145,20
7	3,10	3,10	6,50	7,12	12,41	20,10	33,72	54,20	91,10	143,20	243,00
8	4,30	4,30	9,10	9,88	17,20	26,70	46,15	76,12	134,20	206,10	341,10
9	5,72	5,72	12,20	13,20	22,30	34,40	61,40	106,70	214,25	289,80	458,20

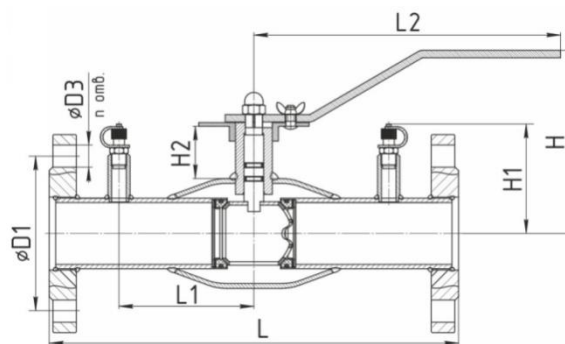
\* It is also possible to manufacture Temper regulating ball valves of the following connection types: FEMALE THREADS / WELDED - 281 type, FLANGED - 683/693 and 684/694 types, or combined - 681/691, 688/698 and 689/699 types.

\*\* These valves are supplied with gearboxes.

## BALANCING BALL VALVE

# 683/693

### FLANGED CONNECTION\*



Temper balancing ball valves are designed for regulation (balancing) of the working fluid flow in heating, cold supply and ventilation systems. The ball has a special orifice and the valve is equipped with a scale of values. Regulation is carried out by turning the handle with the pointer. The selected position of the handle is fixed with a bolt and a nut-butterfly.

### Two types of regulating ball valves:

- 1) With measuring nipples (see the picture and the drawing on the page). All the measurements could be measured by a flow meter.
- 2) Without measuring nipples. Flow adjustment is made only by a handle with index.

### BALANCING BALL VALVE DIMENSIONS



DN	PN	PRODUCT NUMBER	L	L1	L2	H	H1	H2	D1	D3	n of holes
20	40	68320020	150	50	175	135	74	45	65	14	4
25	40	68320025	160	50	175	138	76	45	75	14	4
32	40	68320032	180	55	175	140	79	45	85	14	4
40	40	68320040	200	65	250	148	84	43	100	18	4
50	40	68320050	230	70	250	148	88	40	110	18	4
65	25	68320065	270	85	250	152	98	36	125	18	4
80	25	68320080	280	95	300	186	138	49	145	18	8
100	25	68320100	300	105	300	194	148	43	160	18	8
125*	25	68320125	350	115	-	-	158	51	210	18	8
150*	25	68320150	380	125	-	-	168	58	240	22	8

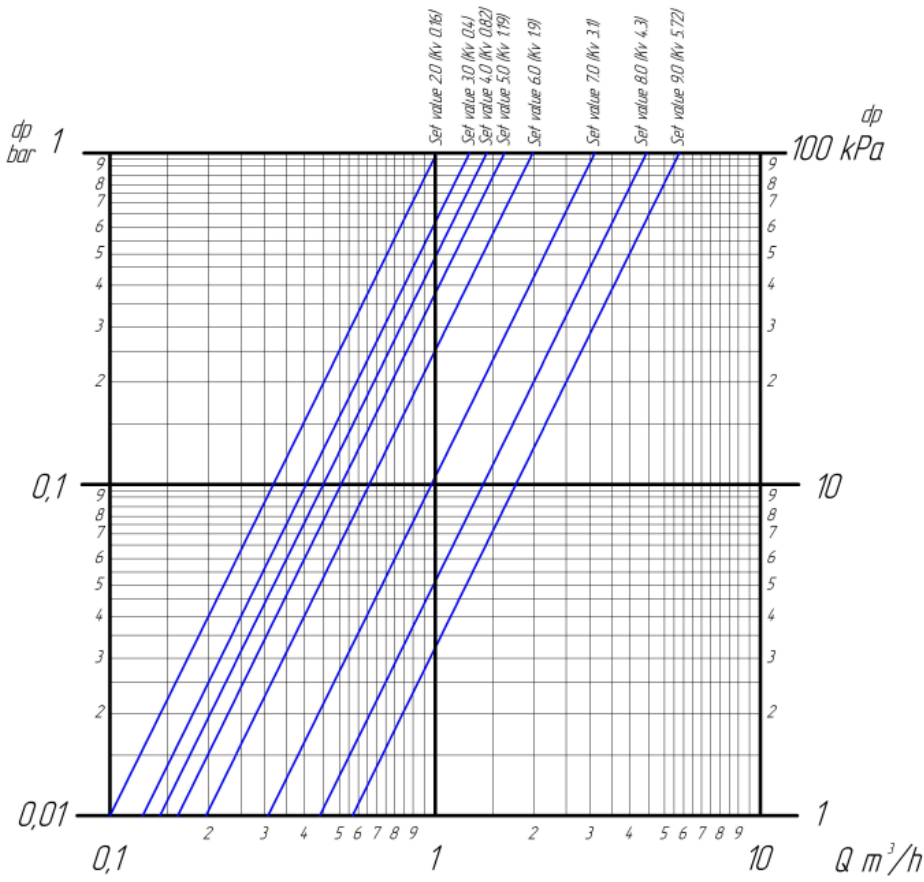
### RATE VALUES OF TEMPER BALANCING BALL VALVE, KV, M<sup>3</sup>/H

The value of the valve scale	DN 15	DN 20	DN 25	DN 32	DN 40	DN 50	DN 65	DN 80	DN 100	DN 125	DN 150
1	-	-	-	0,42	0,57	1,30	2,45	3,38	6,55	8,75	14,30
2	0,16	0,16	0,50	0,79	1,50	2,76	4,82	7,45	12,62	18,50	26,14
3	0,40	0,40	1,20	1,50	2,65	4,45	8,10	12,95	20,20	31,10	45,14
4	0,82	0,82	1,90	2,23	4,10	6,80	11,80	19,20	28,76	45,80	66,47
5	1,19	1,19	2,80	3,50	5,85	9,78	16,25	27,62	42,92	65,84	98,30
6	1,90	1,90	4,60	5,20	8,50	14,20	26,10	39,10	61,20	98,60	145,20
7	3,10	3,10	6,50	7,12	12,41	20,10	33,72	54,20	91,10	143,20	243,00
8	4,30	4,30	9,10	9,88	17,20	26,70	46,15	76,12	134,20	206,10	341,10
9	5,72	5,72	12,20	13,20	22,30	34,40	61,40	106,70	214,25	289,80	458,20

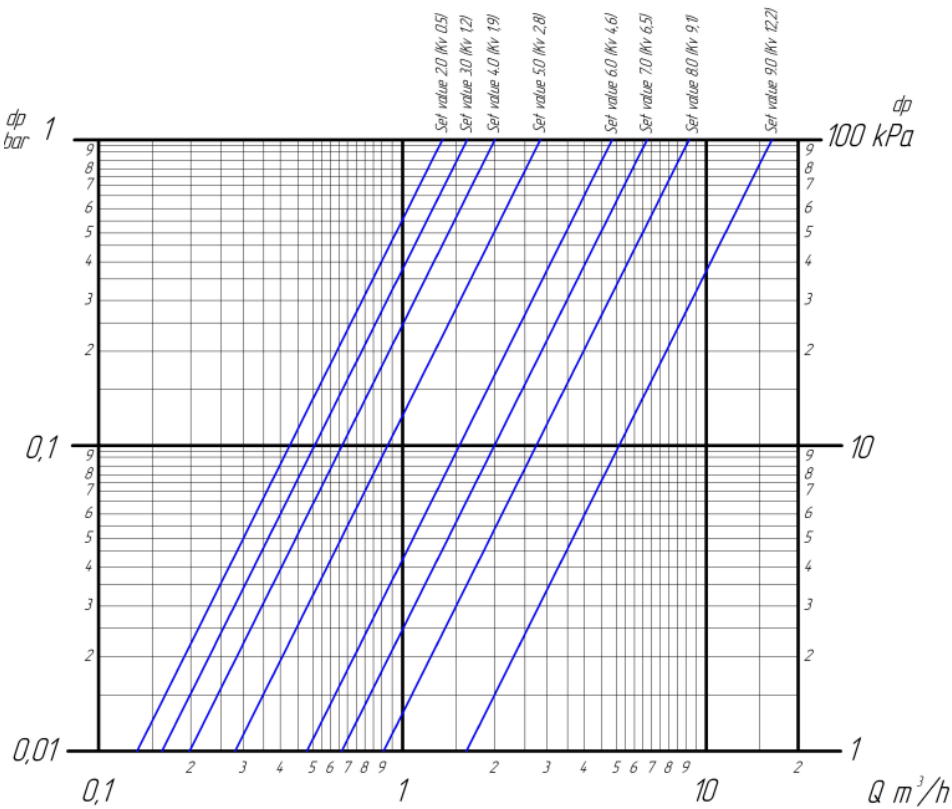
\* It is also possible to manufacture Temper regulating ball valves of the following connection types: FEMALE THREADS / WELDED - 281 type and 684/694 types, or combined - 681/691, 688/698 and 689/699 types.

\*\* These valves are supplied with gearboxes.

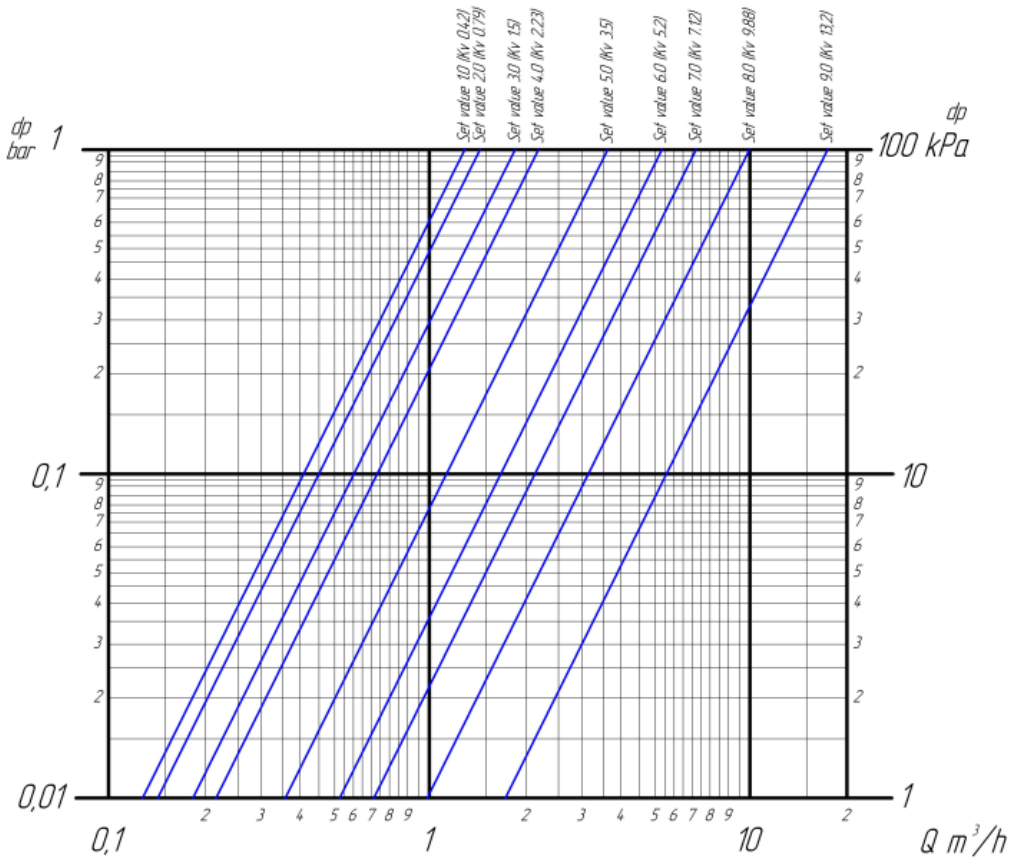
# DN15-DN20



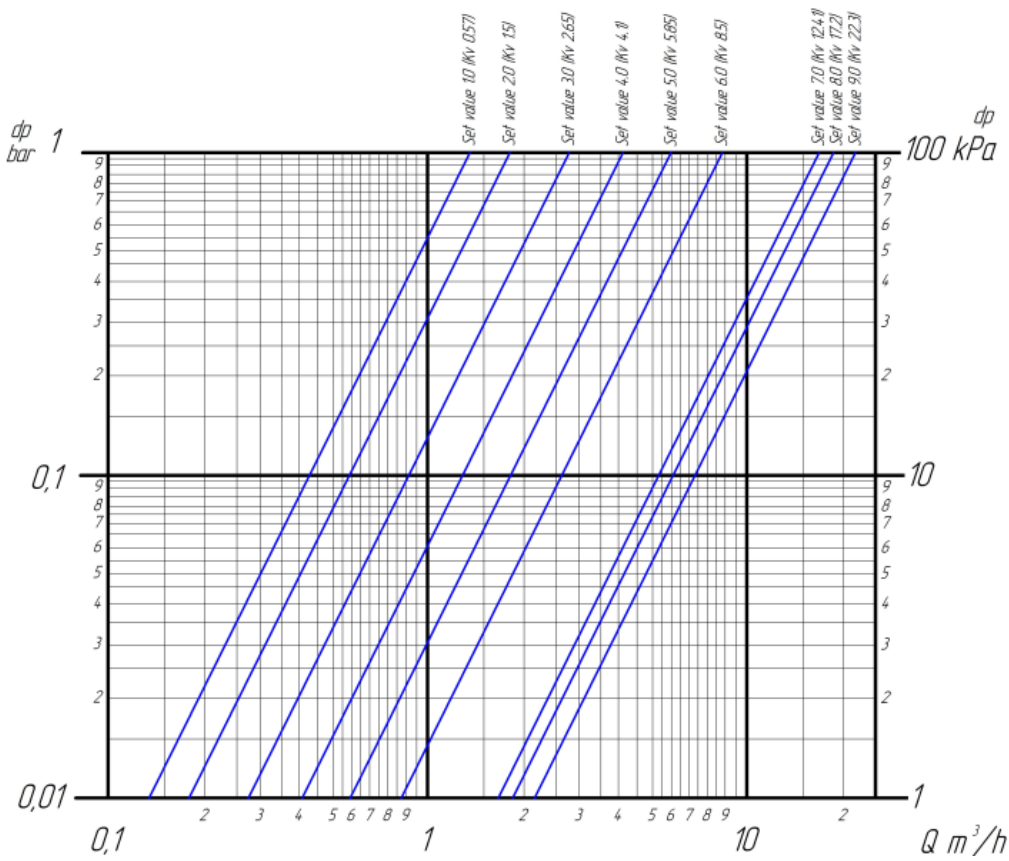
# DN25



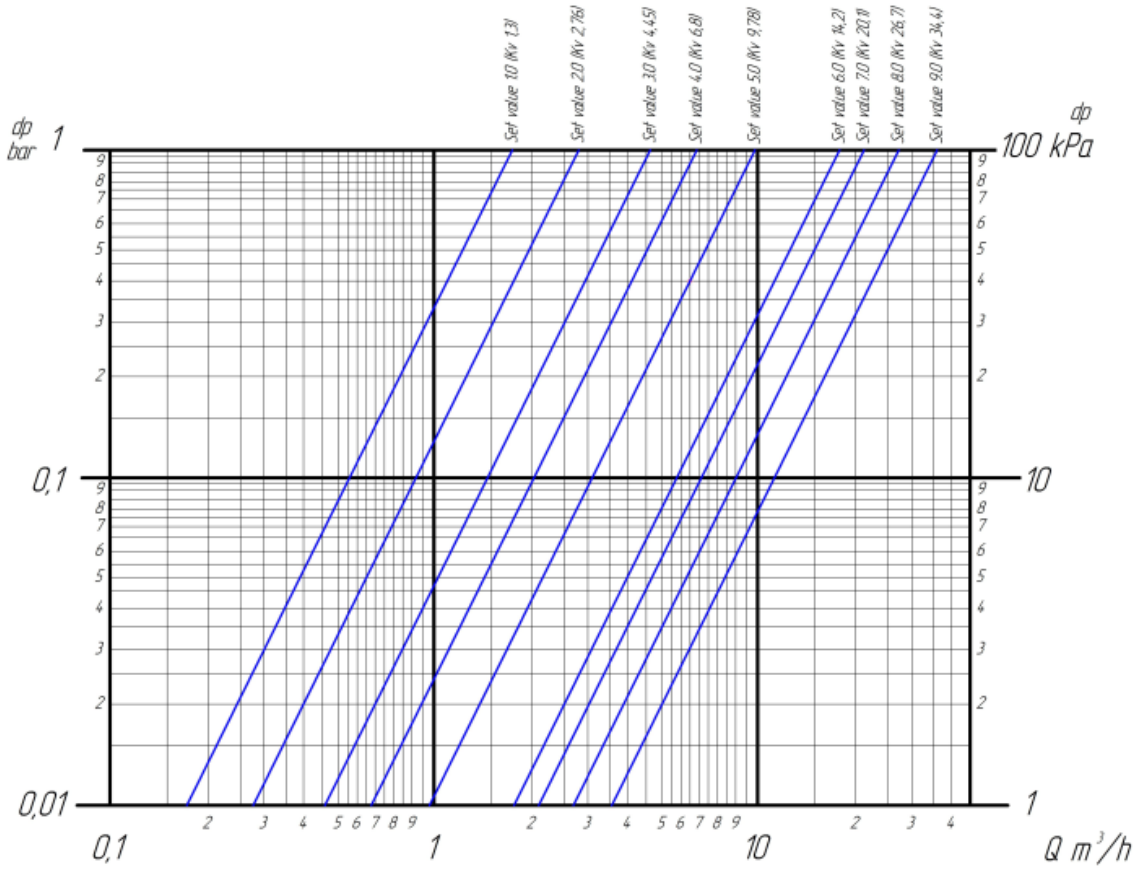
# DN32



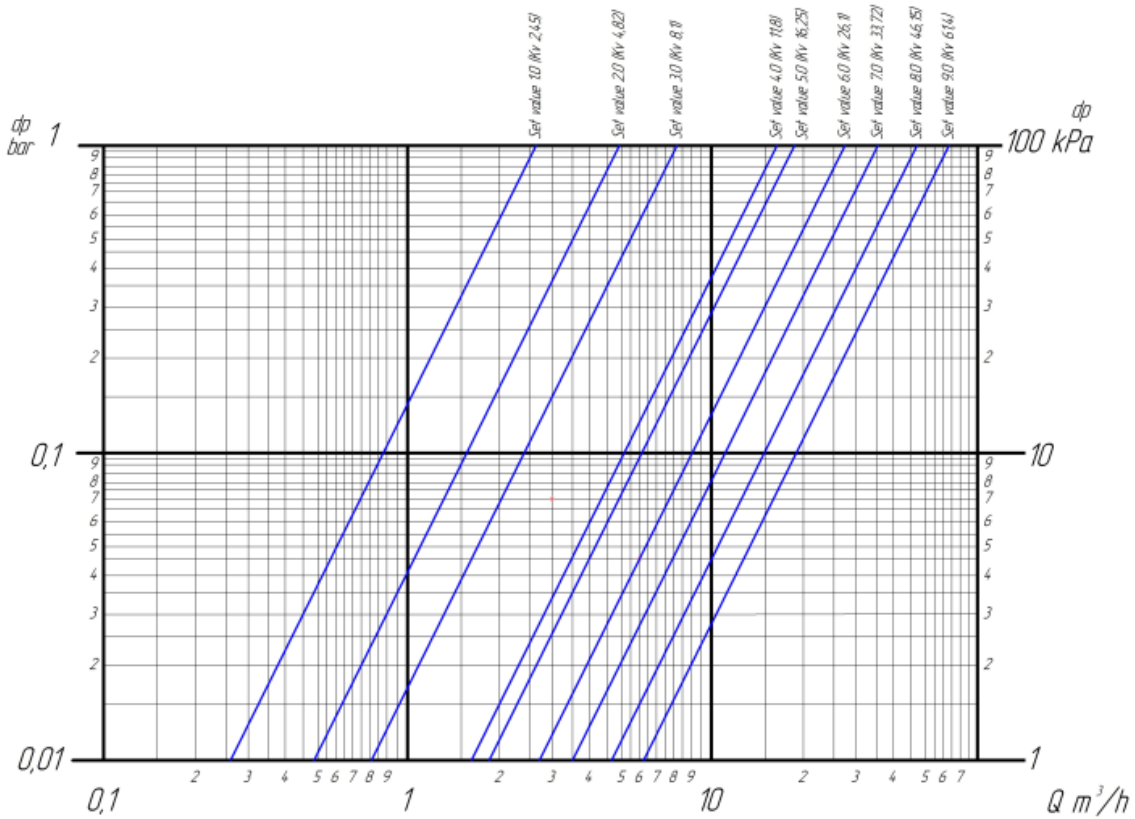
# DN40



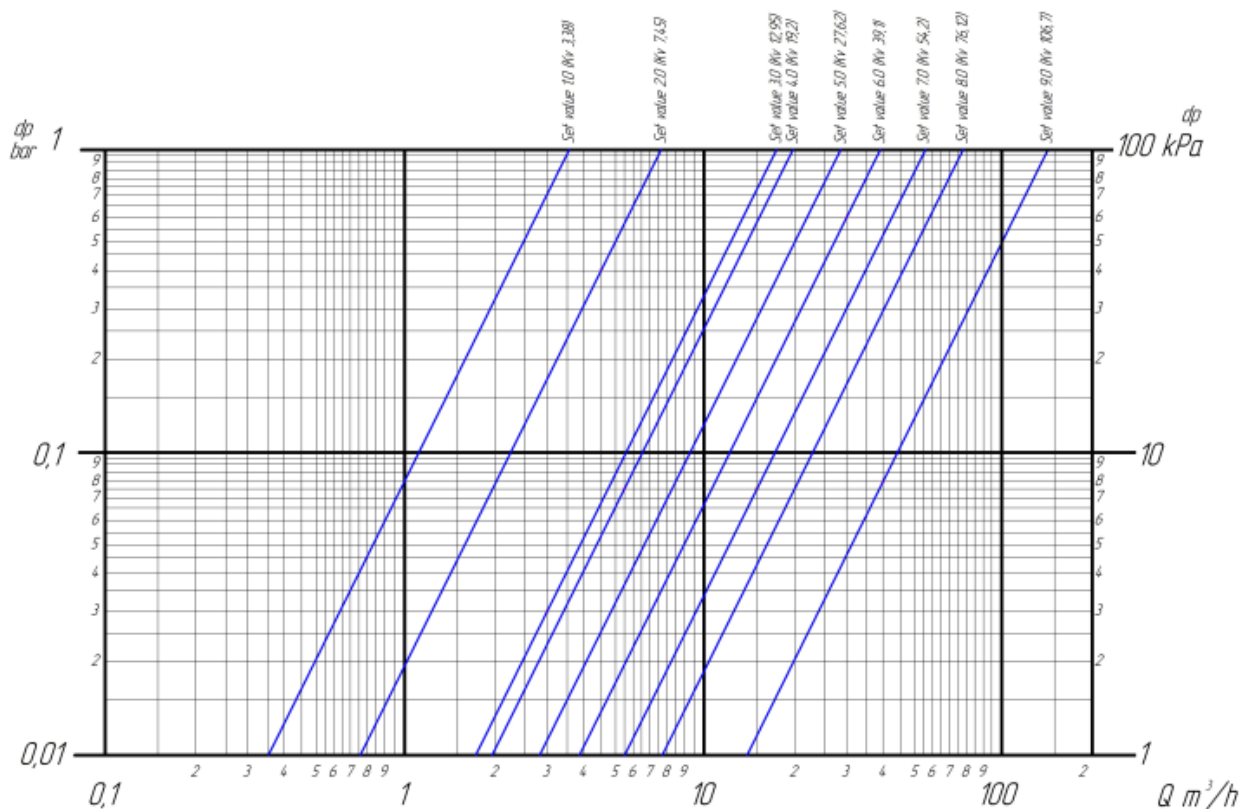
# DN50



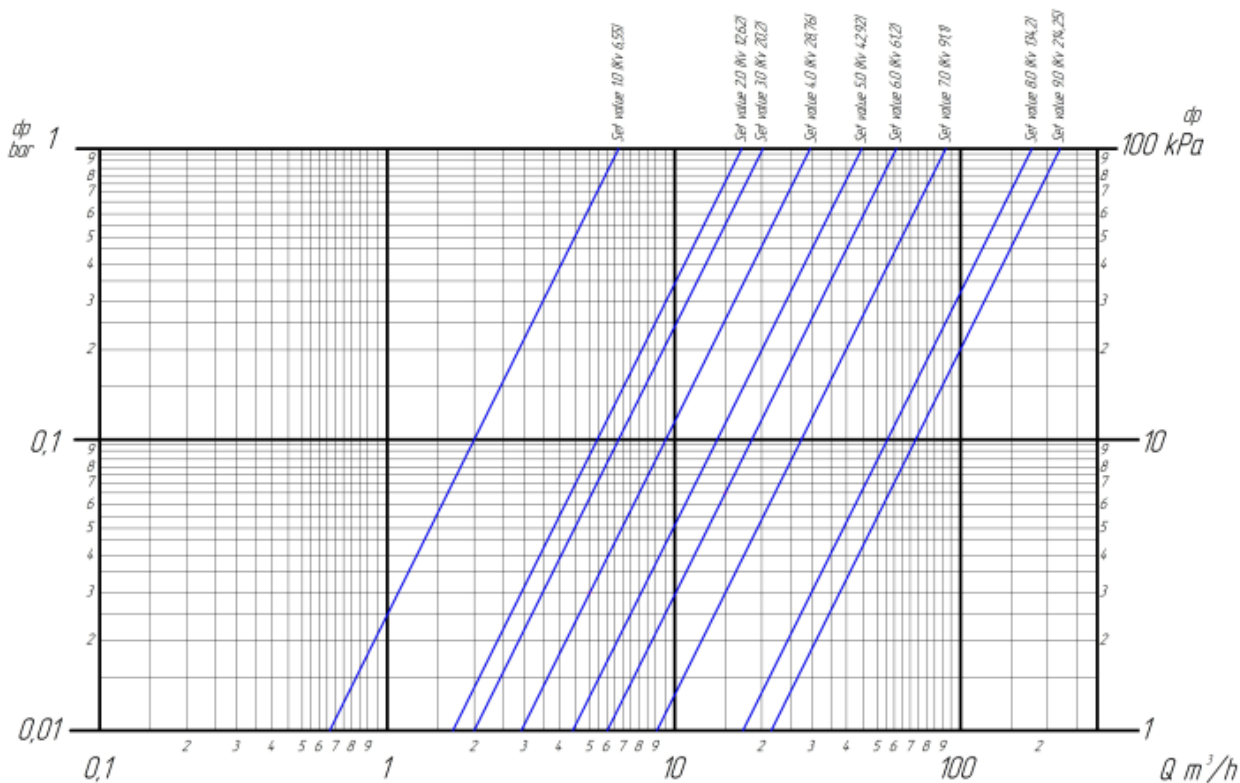
# DN65



# DN80

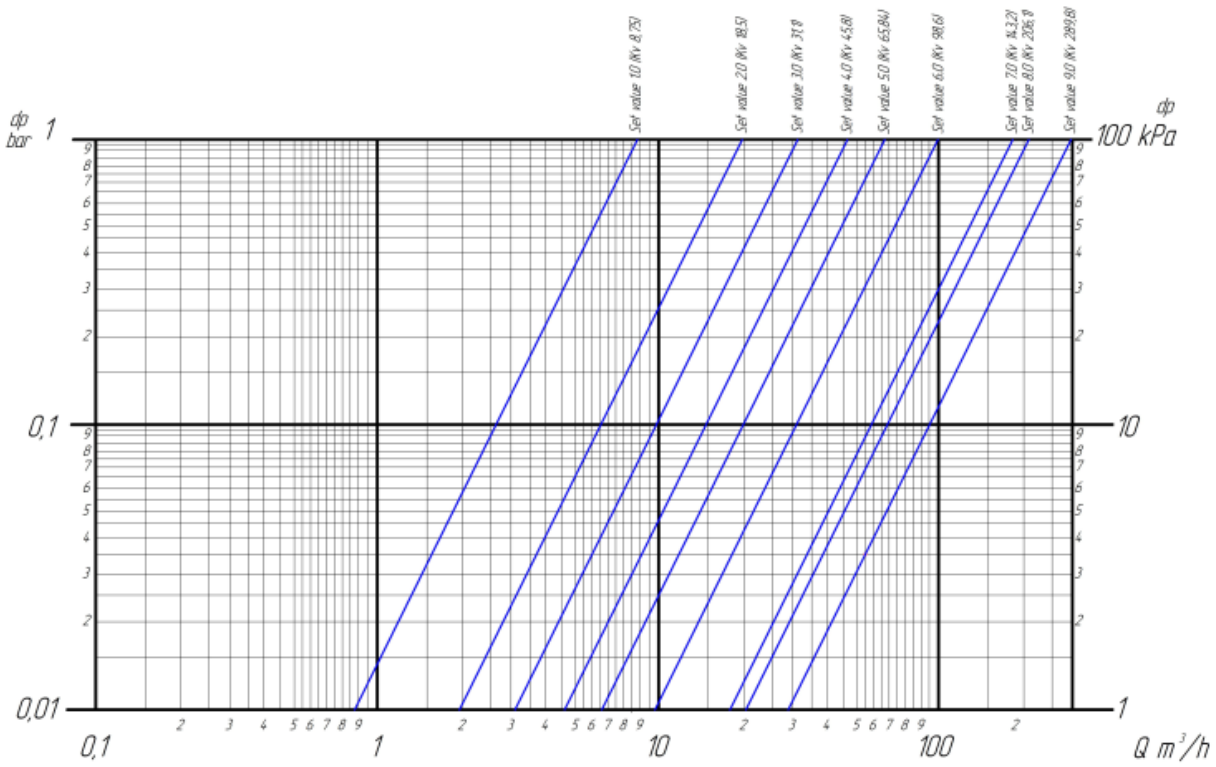


# DN100

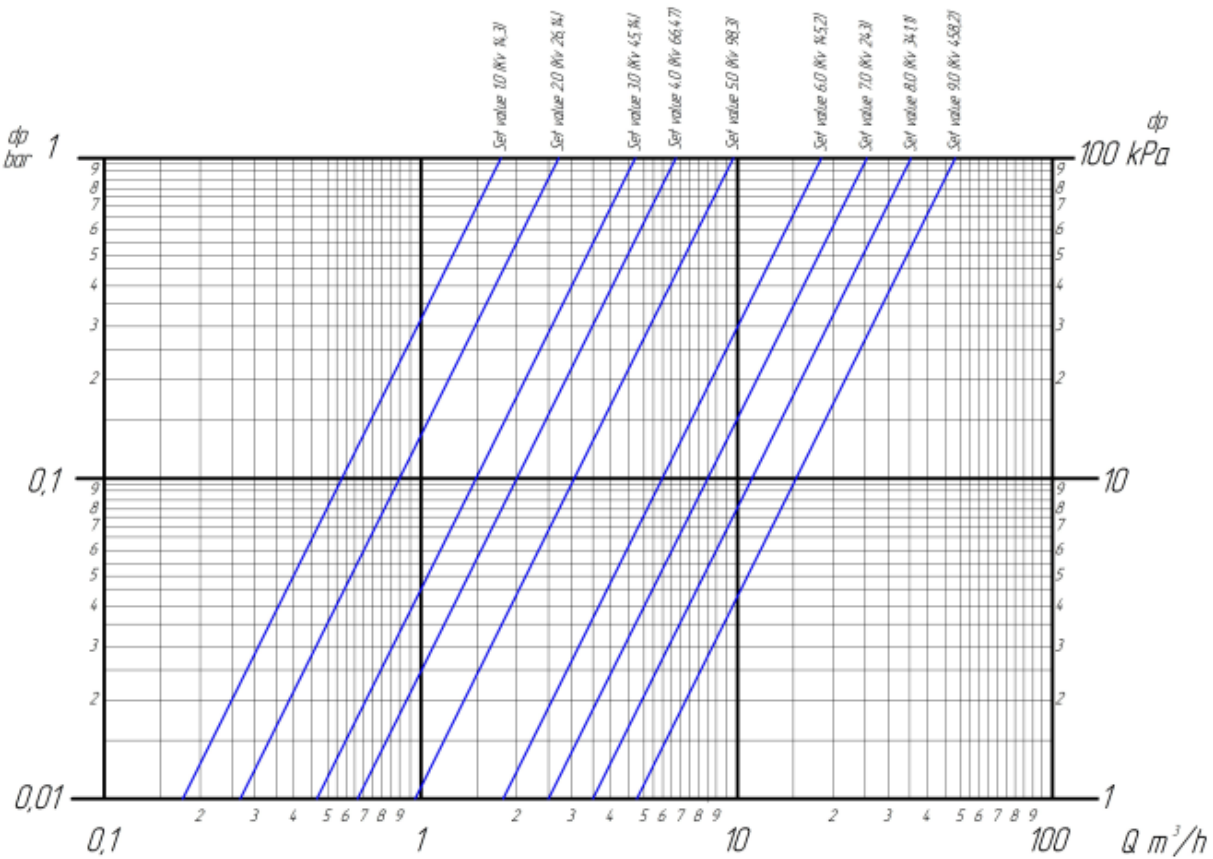




# DN125



# DN150





## **OPERATION MANUAL**

1. During the operation TEMPER ball valves must be fully opened until it stops, or completely closed.  
WARNING: It is prohibited to use TEMPER shut-off ball valves as control ball valves.
2. TEMPER shut-off ball valves are allowed to operate under conditions that do not exceed those specified in this data sheet. It is prohibited the use TEMPER ball valves for steam.
3. To avoid water hammer effect valve should be opened and closed smoothly without hitching.
4. It is prohibited to dismantle valves or tighten flanges while working medium is present and pipeline is pressurized.
5. It is prohibited to operate valve using any extensions of valve handle.
6. Do not mount the valve on working medium containing abrasive components.
7. Valves should not have loads of the pipeline such as bending, compression, tension, torsion, distortions, the uneven tightening fasteners. If necessary it shall be provided support or expansion joints relieving the load on the valve from the line.

## **INSTALLATION MANUAL**

1. When welding valve on horizontal pipeline the valve should be fully opened.
2. Prior to welding of the valve to pipeline and the pipeline should be cleaned from any dirt, sand, scale, etc.
3. It shall be prohibited fixing and / or seizure of the handles, steering wheels or gears of the electric and pneumatic actuators when lifting and / or transporting the ball valves with mechanical lifting devices.
4. TEMPER ball valves should be connected to pipeline with electric welding. Gas welding can be used for small DN sizes.
5. While welding it is advised to avoid overheating of the valve body. The body is considered to be overheated if the surface temperature of the body in the seat of the valve for welding exceeds 100 ° C. It is advised to cool the valve body during the welding time. Do not open or close the valve after welding until it is cooled!
6. It is forbidden to decrease the length of the ball valve weld end as this length is specifically designed to avoid overheating of the seal of the ball during welding period.
7. When installing TEMPER threaded valves it is necessary to inspect the surface of the thread valve and mating pipe. On the thread should not be nicks, dents and burrs that prevent screwing the valve. When screwing the valve it is forbidden to use a non-standard tools.
8. The sealing surfaces of the flanges must be inspected before mounting. They should not have dents, cavities, burrs, and other surface defects. Assembling flanges should be made by the calculated torque wrenches. Tightening of the bolt flange connections should be made "crosswise" in three stages: 50%, 80% and 100% of torque of the key.
9. It is forbidden to remove distortions of pipe flanges by tightening of the flanges of the valve.
10. Tolerance of pipeline and valve sealing faces alignment is no more than 0.2 mm.
11. The valve body and the stem must be separated from the external environment in order to avoid corrosion of the outer wall surface of the valve when installing ball valves in wet areas, outside buildings or underground utilities on (rod).
12. Do not modify the structure of TEMPER ball valves without consulting the manufacturer.

## **SECURITY MEASURES**

1. It is allowed to install the pipeline and service the valves only by qualified working staff.
2. It is prohibited to use shut of valves as regulating devices.
3. When installing valves for venting it is recommended to install the tube stubs.

## **MAINTENANCE**

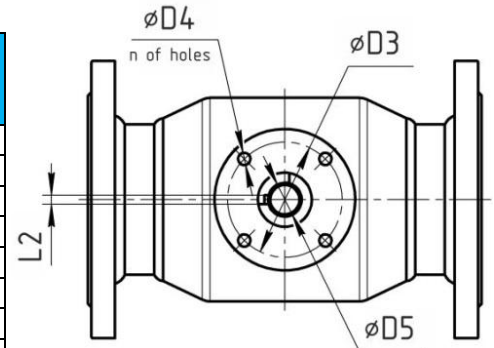
1. TEMPER ball valves are not required of special maintenance.
2. To prevent formation of deposits on ball surface (valve jamming)  
2-3 open-close cycles should be performed once a year.

## TORQUES, N\*M

	DN 15	DN 20	DN 25	DN 32	DN 40	DN 50	DN 65	DN 80	DN 100	DN 125	DN 150	DN 200	DN 250	DN 300	DN 350/400	DN 500	DN 600
Standard bore	10	20	22	25	32	35	50	90	130	170	210	420	1100	2400	5000	12000	20000
Full bore	20	22	25	32	35	50	90	130	170	210	420	1100	2400	5000	12000	20000	24000

## CONNECTING DIMENSIONS OF ISO FLANGE

DN	Designation ISO 5211	D3	D4	D5	n of holes	L2
125 standard bore, 100 full bore	F10	102	11	30	4	8
150 standard bore, 125 full bore	F10	102	11	30	4	8
200 standard bore, 150 full bore	F10	102	11	30	4	8
250 standard bore, 200 full bore	F12	125	13	35	4	10
300 standard bore, 250 full bore	F16	165	22	50	4	14
350/400 standard bore, 300 full bore	F16/F25	165/254	22/17	60	4/8	18
500 standard bore, 350/400 full bore	F30	298	22	90	8	25
600 stand. bore, 500/600 full bore	F30	298	22	90	8	25

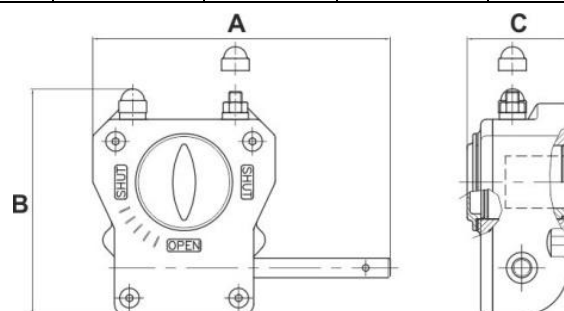


## SELECTION 1 OF GEARBOXES\* FOR TEMPER BALL VALVES

DN	Torque	Flange ISO 5211	Gearbox type -25 +110	Gearbox type -40 +110	Gearbox type -55 +110	Gearbox weight, kg	Dimensions (without handwheel), mm			Handwheel diameter, mm
							A	B	C	
125	200	F10	X-61	X-61 LT	Q-400 LLT	3	225	170,5	77	200
150	400	F10	X-61	X-61 LT	Q-800 LLT	3	225	170,5	77	200
200	600	F10	Q-800	Q-800 GGG 40	Q-800 LLT	7,9	380,5	187,5	90,5	200
250	1600	F12	Q-1500	Q-1500 GGG 40	Q-1500 LLT	14	292	206	97	400
300	4000	F16	Q-4000	Q-4000 GGG 40	Q-4000 LLT	33,7	441	326	128	500
350/400	5000	F16	Q-5000	Q-5000 GGG 40	Q-5000 LLT	45.2	441	326	128	400
500	12000	F30	Q-16000	Q-16000 GGG 40	Q-16000 LLT	62.5	586	540	135	500
600	20000	F30	Q-24000	Q-24000 GGG 40	Q-24000 LLT	169,9	697	693	186	700

## SELECTION 2 OF GEARBOXES\*\* FOR TEMPER BALL VALVES

DN	Torque	Flange ISO 5211	Gearbox type -40 +120	Gearbox weight, kg	Dimensions (without handwheel), mm			Handwheel diameter, mm
					A	B	C	
125-150-200	650	F7/F10	242-30S	4	172,5	131	54	200
250	1200	F10/F12	242-40S	6	226,5	163	67	400



Note: When placing an order on the ball valve with a gearbox, it is installed with a gearbox of temperature range from -40°C to +120°C by default. Lower temperature ranges (T = -55°C) are installed on request.



**Attention! The Company reserves the right to make design changes.**

\* Pro-Gear gearboxes (Pro-Gear GmbH, Germany)

\*\* Rotork gearboxes (Rotork PLC, UK) are used by default

## Manual installation of gearbox on TEMPER ball valve

1. Prior to installation of gearbox ensure that TEMPER valve stem head, flange faces, mounting holes and counterpart of gearbox are clean and free from burrs.
2. Set TEMPER ball valve in open position. In open position the indication mark on valve stem head or line between stem head dowels is positioned along the longitudinal axis.
3. Set the gearbox in "open" position - position indicator must be pointed towards the respective mark (OPEN).
4. Install coupling into gearbox. Apply small amount of oil or other lubricant on gearbox opening to facilitate engagement with coupling. In the course of installation avoid misalignment of coupling against the centerline of gearbox opening. Pre-tensioned installation of coupling in gearbox is allowed to reduce free play.
5. Set TEMPER ball valve stem in vertical position.
6. Apply small amount of oil or other lubricant on stem head to facilitate engagement.
7. Install gearbox on TEMPER ball valve matching the position indicator in "OPEN" state with longitudinal axis of valve.

In the course of installation avoid misalignment of gearbox against the plane of TEMPER ball valve connecting flange.

Avoid the dowel (if any) falling out of the stem slot. If necessary, apply grease below the dowel to prevent it from falling out in the course of gearbox engagement.

8. Fix the gearbox on the mating flange of TEMPER valve with bolts and flanges. For better gearbox engagement bolts should be tightened crosswise.

9. Fix the handwheel on the input shaft of gearbox using the steel spring pin (supplied with gearbox) with slot. In the event of critical overtorque (e.g. in case of jamming) the pin collapses preventing damage of gearbox DO NOT fix

handwheel with solid pins, bolts, etc.

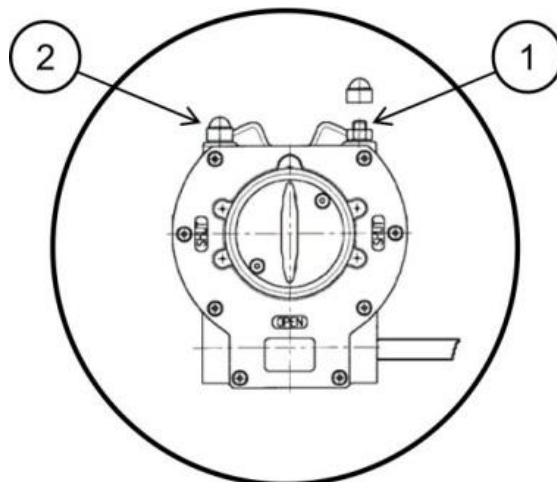
10. Adjustment of end limiting supports:

10.1 Remove protective cap from lock nut of end limiting support. Unscrew limiting supports 1 and 2.

10.2 Set TEMPER ball valve in "open" position and screw limiting support 1 till it contacts the gearbox square (until tight). Tighten the lock nut of limiting support without turning the support itself.

10.3 Set TEMPER ball valve in "closed" position and screw limiting support 2 till it contacts the gearbox square (until tight). Tighten the lock nut of limiting support without turning the support itself.

11. Perform test opening/closing of valve.



Gearbox in "CLOSED" position – position indicator axis perpendicular to valve axis (A)

Gearbox in "OPEN" position – indicator directed towards "OPEN" mark (B)



# Certificates

**TECHNICKÁ INŠPEKČIA, a.s.**  
**CEOC**  
INTERNATIONAL  
**SLOVENSKÁ REPUBLIKA**

**CERTIFICATE**  
**no. 4852/4/2019**

Technická inšpekcia, a. s., Trnavská cesta 56, 821 01 Bratislava, Slovakia  
notified body: 1354,

on the basis of results from assessment of full quality assurance system

**notifies, that**

**TEMPER LLC**  
**Shchersa str. 93-A, Kurgan city, 640007, RUSSIA**

implemented and applies system of full quality assurance (module H)

according to the European Directive 2014/68/EU on pressure equipment

Range of equipment:  
**Ball Valve, DN 25 - 700, PN 16 - 40, TS<sub>max</sub> = 200 °C, TS<sub>min</sub> = - 40 °C**  
**made of carbon steel**  
(subgroup 1.1, 1.2 acc. to the CR ISO 15608)  
(see Annex to the Certificate for details)

Audit Report no. 4852/4/2019

Manufacturer shall inform Technická inšpekcia, a. s. of any intended change of system of full quality assurance (module H).

Certificate is valid until 25<sup>th</sup> September 2022.

*The Certificate validity is conditioned with performing of surveillance by Technická inšpekcia, a.s. for minimum 1 periodic audit per 12 months. Performing of periodic audit is proved by Audit Report.*

Date of initial notification: 26<sup>th</sup> September 2016

Bratislava, on 26<sup>st</sup> September 2019

  
Ing. Dušan Perniš  
General Director

420109  
CST4-190





**TECHNICKÁ INŠPEKCIA, a.s.**  
**SLOVENSKÁ REPUBLIKA**



**CERTIFICATE**  
**no. 0297/4/2018**

**Technická inšpekcia, a. s. issues this Certificate according to the  
EN ISO/IEC 17020:2012,**

Name of equipment:	welded steel ball valves
Inspection range:	Type test acc. to the point 5.3 and A.2 of EN 488:2016
Type designation:	TEMPER ŠK – 2 82 20 150 TEMPER ŠK – 2 82 20 300
Range of approval:	DN 15 to DN 300 / PN 1.6 to PN 4
Drawing number:	DN-300.20.282 DIN
Manufacturer:	TEMPER LLC, Shchersa str. 93-A, Kurgan, 640011 RUSSIA
Applicant for certificate:	TEMPER LLC, Shchersa str. 93-A, Kurgan, 640011 RUSSIA
Basis for the Certificate:	Inspection Report no. 0297/4/2018

After evaluation of submitted documentation and test of the equipment in accordance with EN 488:2016, Technická inšpekcia, a. s. issues this

**certificate**

**The equipment fulfils requirements for type test and it is in accordance with EN 488:2016.**

**Manufacturer will inform Technická inšpekcia, a. s. about every modification that can affect conformity of the equipment.**

Certificate is valid until 2<sup>nd</sup> April 2023

Nitra, 3<sup>rd</sup> April 2018



  
Ing. Roman MIHÁLIK  
Director of Regional office Nitra

**341123**





ФЕДЕРАЛЬНОЕ АГЕНТСТВО  
ПО ТЕХНИЧЕСКОМУ РЕГУЛИРОВАНИЮ И МЕТРОЛОГИИ  
СИСТЕМА ДОБРОВОЛЬНОЙ СЕРТИФИКАЦИИ ГОСТ Р  
«EAC AUDIT»  
РЕГИСТРАЦИОННЫЙ НОМЕР РОСС RU.32028.04EAC1  
ОРГАН ПО СЕРТИФИКАЦИИ ООО «ГОРТЕСТ»  
РЕГИСТРАЦИОННЫЙ НОМЕР РОСС RU.32028  
ИНН 7717616798 ОГРН 1087746489060  
Юридический адрес: 109028, Россия, г. Москва, Серебряническая набережная, д. 27,  
этаж 4, пом. 1, ком. 17  
Телефон: 8 (800) 200-90-59, e-mail: sert@eacaudit.ru



№ 004021

# СЕРТИФИКАТ СООТВЕТСТВИЯ

Регистрационный номер № 04EAC1.CM.02184

Общество с ограниченной ответственностью «Темпер»

(наименование лица)

640011, Россия, область Курганская, город Курган, улица Щорса, 93а

(юридический адрес лица)

640011, Россия, область Курганская, город Курган, улица Щорса, 93а

(фактический адрес лица)

ИНН: 7841493237

ОГРН: 1137847482915

## НАСТОЯЩИЙ СЕРТИФИКАТ УДОСТОВЕРЯЕТ СООТВЕТСТВИЕ

системы менеджмента качества Общества с ограниченной ответственностью «Темпер» требованиям ГОСТ Р ИСО 9001-2015 (ISO 9001:2015) «Системы менеджмента качества. Требования» применительно к производству шаровых кранов.

Дата регистрации: 19.10.2020

Срок действия до: 18.10.2023

Руководитель органа  
по сертификации

  
(подпись)

В. И. Погодин

Председатель  
экспертной комиссии

М.П.



  
(подпись)

Е. Д. Курбатова

НАСТОЯЩИЙ СЕРТИФИКАТ ОБЯЗЫВАЕТ ОРГАНИЗАЦИЮ ПОДДЕРЖИВАТЬ СОСТОЯНИЕ ВЫПОЛНЯЕМЫХ РАБОТ В СООТВЕТСТВИИ С  
ВЫШЕУКАЗАННЫМИ СТАНДАРТАМИ, ЧТО БУДЕТ НАХОДИТЬСЯ ПОД КОНТРОЛЕМ ОРГАНА ПО СЕРТИФИКАЦИИ СИСТЕМЫ  
ДОБРОВОЛЬНОЙ СЕРТИФИКАЦИИ "EAC AUDIT" И ПОДТВЕРЖДАТЬСЯ ПРИ ПРОХОЖДЕНИИ ЕЖЕГОДНОГО ИНСПЕКЦИОННОГО КОНТРОЛЯ

# EUROHEAT & POWER

**CERTIFICATE NUMBER 09/01**

<b>PRODUCT</b>	Temper steel ball valves, for pre-insulated district heating and cooling valve assemblies. DN 10 - 300 mm.
<b>LICENSEE</b>	TEMPER LLC
<b>PRODUCTION PLANT</b>	TEMPER LLC Schersa str. 93A, Kurgan 940007 Russia



**EUROHEAT  
& POWER**

GUIDELINES: EHP/003  
CERTIFICATE: 09/01

**VALID UNTIL 17/08/2024**

**This certificate is granted in accordance with the Euroheat & Power Certification Guidelines for Quality Assessment of District Heating Steel Valves [003] and EN 488:2015**

**Name, Signature**

Peter Pribula

**Date, Place**

17.08.2018, Bratislava



The production complies with the EN 488:2015 and EHP Certification Guidelines [003].

The licensee may use the Euroheat & Power Certification Board quality mark.

The certificate is valid only for the production plant mentioned in the certificate.

The valve types covered are contained in the Annex to this certificate.

The certificate is valid for 6 years subject to periodic surveillance.

Refer to the Euroheat & Power Certification Guidelines [003] for full requirements and conditions

c  
e  
r  
t  
i  
f  
i  
c  
a  
t  
e



**MANUFACTURER :**

Temper Rus LLC

I



**TEMPER**

SINCE 1993

BALL  
VALVES