

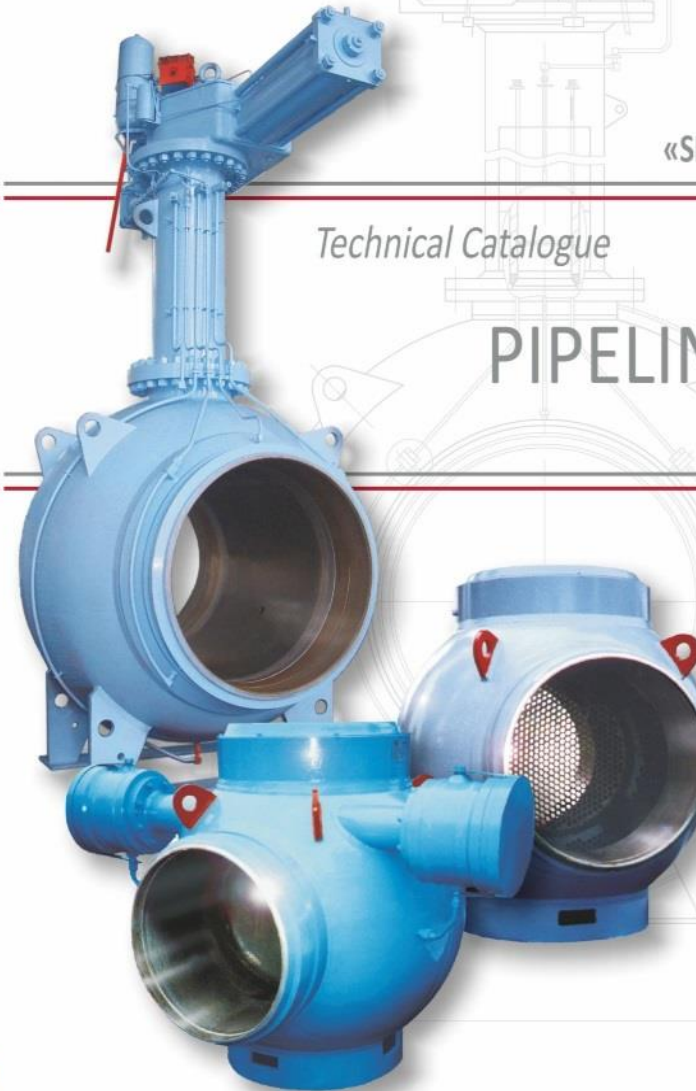


PIPELINE VALVES

«SMNPO - Engineering» JSC

Technical Catalogue

PIPELINE VALVES



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“SMNPO - Engineering” JSC, founded in 1896, is now one of the largest machine-building companies in Europe manufacturing equipment for oil, gas and chemical industries.

Unique types of chemical facilities, centrifuges, pumps and valves for gas pipelines, oil – refining equipment and gas-filling stations, drill collars and complex gas treatment plants is far from being a complete list of products manufactured at the company.

Products diversity owes to company's well-developed technical and process basis available. Company includes specialized production areas equipped with the most advanced equipment and modern control facilities. Company has a testing facility which complies with the strictest requirements to performance of acceptance testing of products manufactured.

The concept of quality plays a key role in development process of all manufactured equipment. The high consideration given by management to quality and its control has been one of the main factors to determining the success of our company. All our manufacturing activities are covered by a quality assurance program, which has been audited and qualified in accordance with ISO 9001.

All implementation of Q.A. program has been approved and is regularly audited by the international certification company “Bureau Veritas Quality International”.

Since 1986 “SMNPO - Engineering” JSC has occupied firm position in CIS countries market as the main manufacturer of pipeline valves for gas industry.

The valves manufactured by the company are based on high technology stamped and welded design with

wear-resistant elastomeric seals which provide reliable valve tightness.

The product is distinguished by high quality, ease and convenience for service. “SMNPO - Engineering” JSC has been granted from the American Petroleum Institute the authority to use the API 6D monogram on ball and check valves, Certificates of Gosstandard (Russia) Conformity.

Traditional Customers of pipeline valves are the largest oil and gas companies: JSC “Gazprom”, JSC “Surgutneftegaz”, JSC “Rosneft”, NJSC “Neftegaz of Ukraine”, SC “Uztransgaz”, SC “Turkmengaz”, NC “Kazmunaygas”, JSC “Beltransgaz”, “ZEROMAX GmbH”, etc.

By now the whole range of valves with pressure of 80, 100 and 160 Bar required for gas mains and compressor stations construction has been mastered.

The product range incorporates:

- Ball valves DN 50 - 1400;
- Check valves DN 50 - 1000;
- Convex strainers DN 200 - 1000.

“SMNPO - Engineering” JSC also produces other types of valves, namely:

- with flanged end connection completed with counter flanges, fasteners and sealing parts;
- for aggressive natural gas containing hydrogen sulfide;
- with electric actuators of different Companies upon Customer's request;
- with valve emergency shut off automatic device.



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Ball Valves DN 50...150 PN 80, 100

Designed for operation as shut-off devices in pipelines transporting non-aggressive natural gas and other non-aggressive media at the temperature ranged -60°C to $+80^{\circ}\text{C}$. Tightness class A per GOST 9544.

Seat seals are made of elastomeric and composite materials. Welded end connection (flanged is possible).

Climatic version is for areas with temperate and cold climate (-60°C thru $+45^{\circ}\text{C}$).

Ball valves are available with a variety of operator options: manual, pneumatic and pneumatic-and-hydraulic.

Over-ground and underground installation.

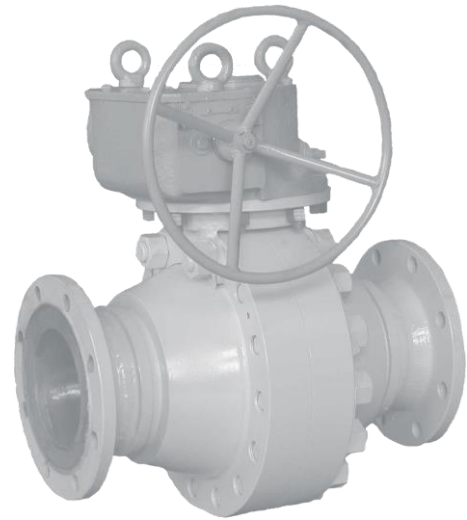
Manually operated ball valves can be installed in any position, and pneumatically and pneumatically and hydraulically operated ball valves are installed in horizontal pipelines with actuator facing upward.

The average service life before overhaul is no more than 40 years.

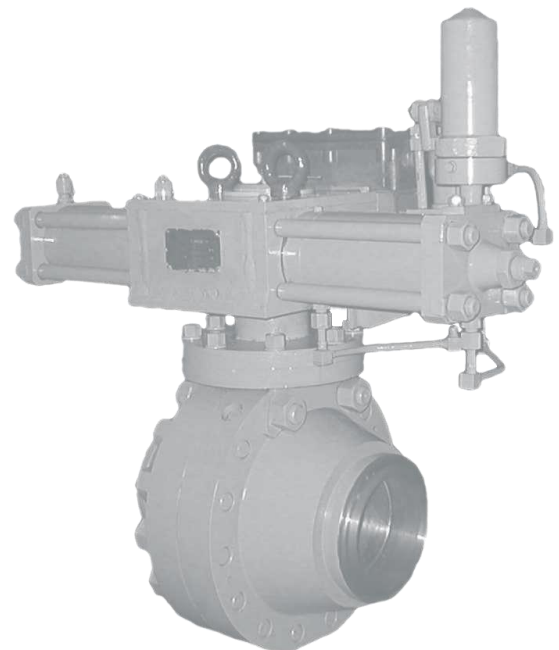
The Company reserves the right to make design changes to improve it, while minor changes may not be shown in the Catalog.

Design Features:

- Valve is a stamped two-piece, split body; the design enables to reduce gas escaping into the environment.
- Closure member is sealed with a high wear/erosion resistant elastomeric material.
- Both seats are tightened to the ball ensuring a high leakproof closure member.
- "Trunnion mounted ball" with self-lubricating bearings made of metal-fluoroplastic that makes easy valves control.
- Pneumatically actuated ball valves are furnished with manual overrides.
- Ball valves with pneumatic-and-hydraulic actuator are furnished with hand pump.
- Liquid damper is used in pneumatic actuator.
- Ball valves control units have integral terminal boxes, limit switches, and they do not require additional piping.
- Control voltage is 24V, 110V and 220V.
- Ball valves can be furnished with electric actuators.
- Ball valves for underground installation have corrosion-resistant polymer coating.



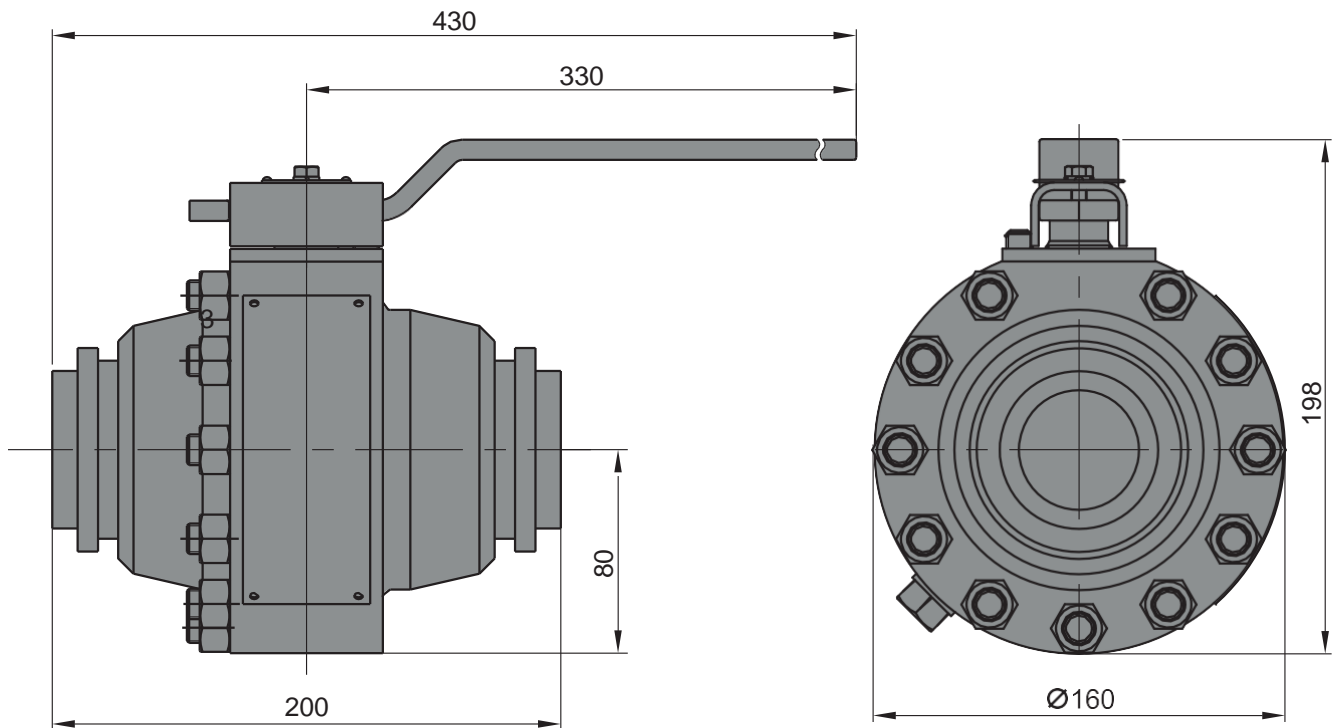
DN 150 PN 100



DN 150 PN 100



DN 50 PN 100

**Product designation****Figure designation**

Diameter Nominal, DN, mm
 Pressure Nominal, PN, MPa
 Actuator type
 Connection

KSh-50-100-R-NU-UKhL1-Pr

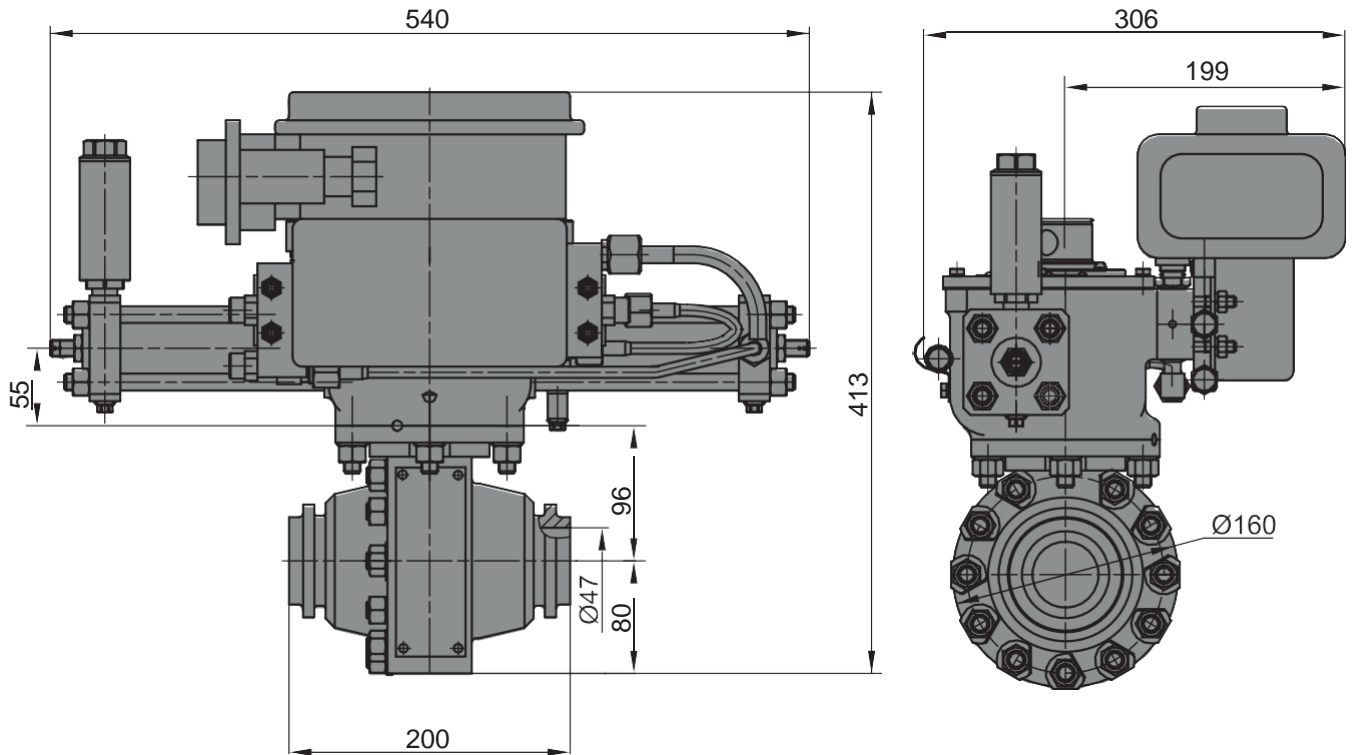
A.1.2750.202.301.00

50
 10.0
 manual
 welded end (WE)*

Material of main parts

Body	steel 10Г2, zinc chromating 15 μ
Ball	steel 10Г2, HCP 25 μ
Stem	steel 38 XA, HCP 21 μ
Seat (cover)	steel 10Г2, zinc chromating 9 μ

* Pipe is beveled to the pipe specified by a Customer.

**Product designation****Figure designation**

Diameter Nominal, DN, mm
 Pressure Nominal, PN, MPa
 Actuator type
 Manual override type
 Control unit
 Actuator operating medium

Pressure range of operating medium
 at max. pressure differential, MPa
 Control unit voltage
 Connection

KSh-50-100-PP-NU-UKhL1-Pr**A.1.2750.202.302.00**

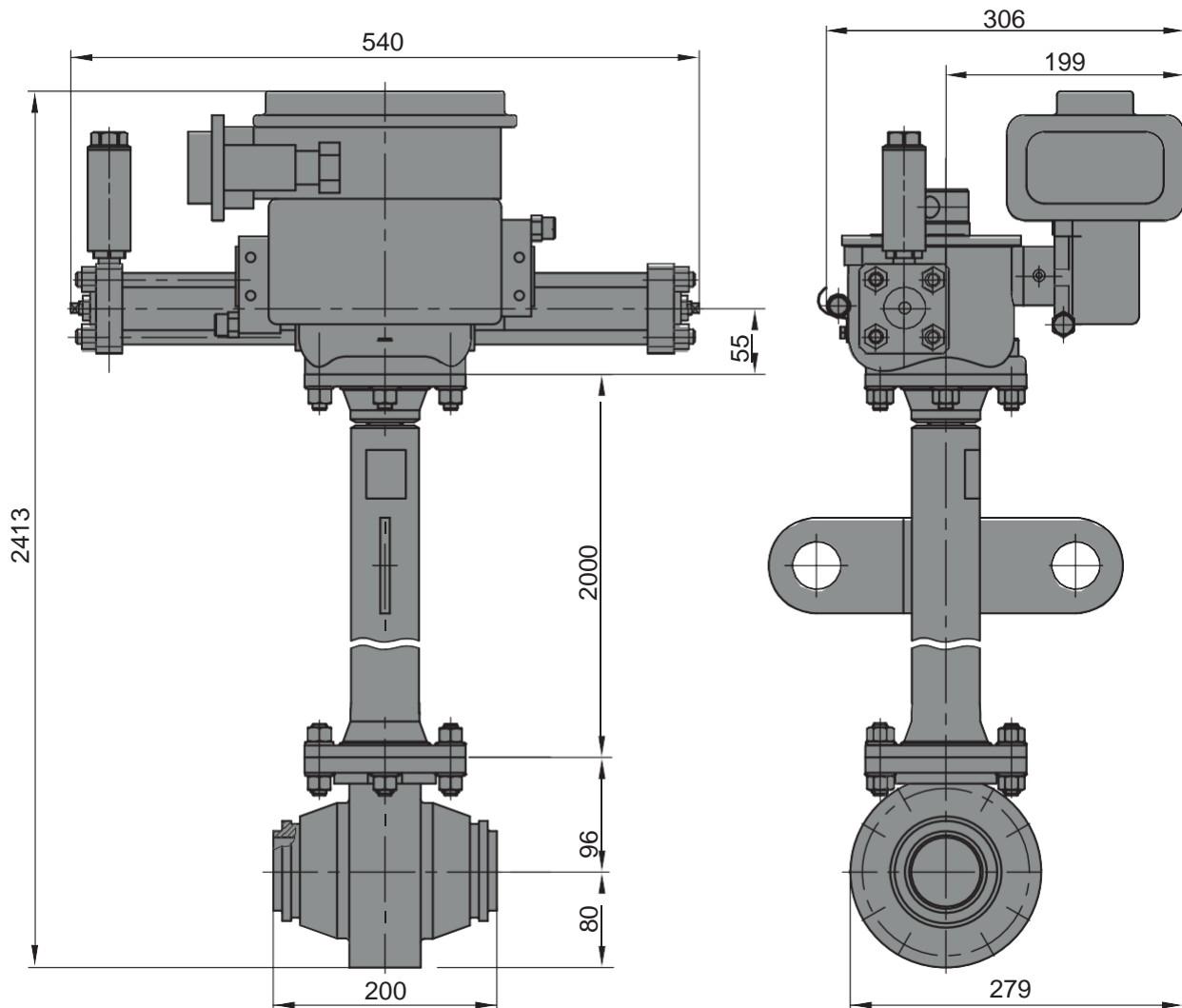
50
 10.0
 pneumatic
 handle
 electro-pneumatic with built-in limit switches
 dry clean non-aggressive gaseous, meet
 requirements of the unit, separate source
 supply
 2.5...10.0
 24, 110, 220 V/DC
 welded end (WE)*

Material of main parts

Body	steel 10Г2, zinc chromating 15 μ
Ball	steel 10Г2, HCP 25 μ
Stem	steel 38 XA, HCP 21 μ
Seat	steel 10Г2, zinc chromating 9 μ

* Pipe is beveled to the pipe specified by a Customer.

Ball Valve DN 50 PN 100 with Pneumatic Actuator for Underground Installation



Product designation

Figure designation

Diameter Nominal, DN, mm
Pressure Nominal, PN, MPa
Actuator type
Control unit
Actuator operating medium

Pressure range of operating medium
at max. pressure differential, MPa
Control unit voltage
Connection

Body
Ball
Stem
Seat

KSh-50-100-PP-PU-UKhL1-Pr

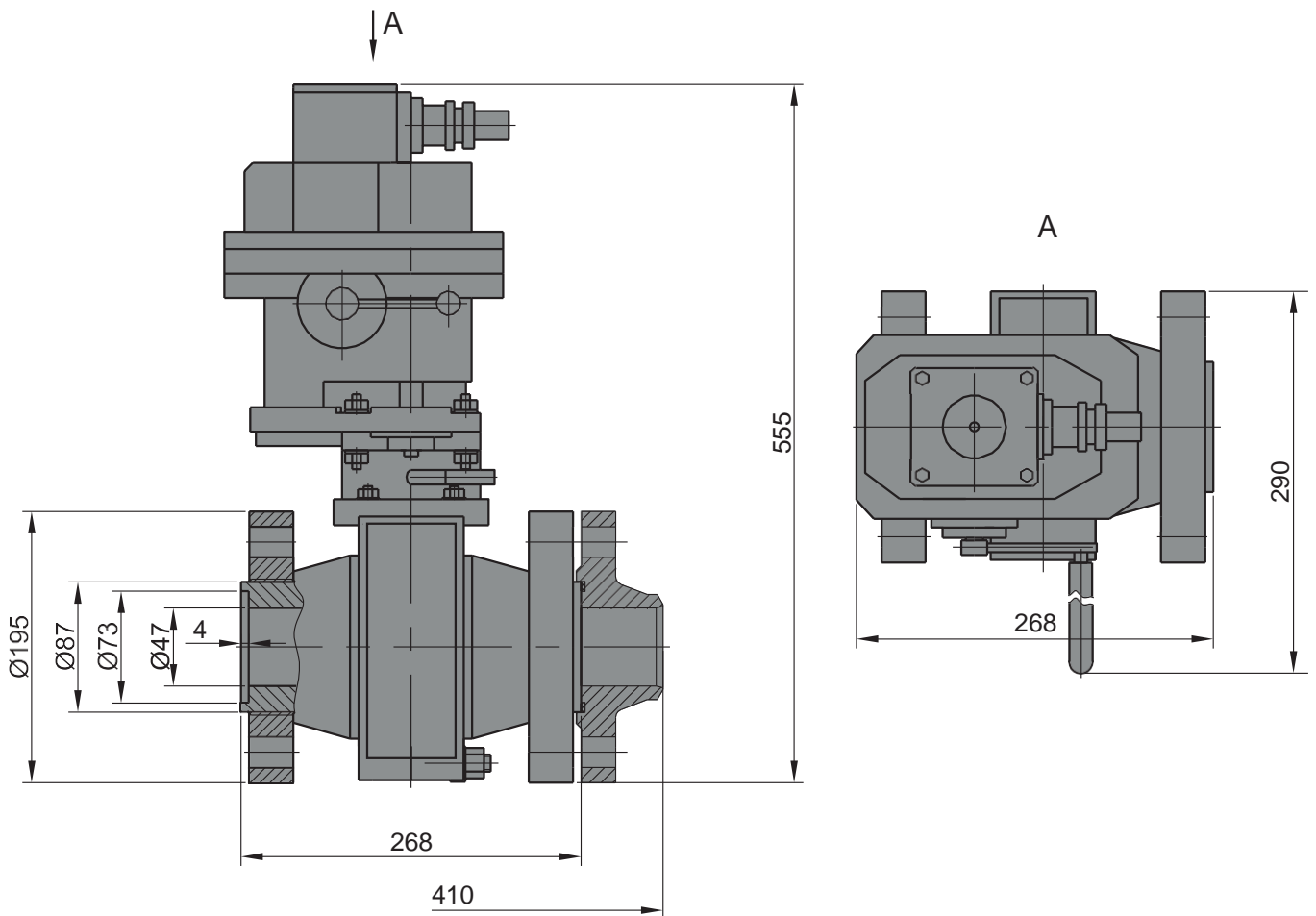
1.2750.202.360.00

50
10.0
pneumatic
electro-pneumatic with internal end switches
dry clean non-aggressive gaseous, meet
requirements of the unit, separate source
supply
2.5...10.0
24, 110, 220 V/DC
welded end (WE)*

Material of main parts

steel 10Г2, zinc chromating 15 μ
steel 10Г2, HCP 25 μ
steel 38 XA, HCP 21 μ
steel 10Г2, zinc chromating 9 μ

* Pipe is beveled to the pipe specified by a Customer.

**Product designation****KSh-50-100-EP-NU-UKhL1-F-F****Figure designation****1.2750.230.306.00-07**

Diameter Nominal, DN, mm

50

Pressure Nominal, PN, MPa

10.0

Actuator type

electric

Power Voltage

380 V AC

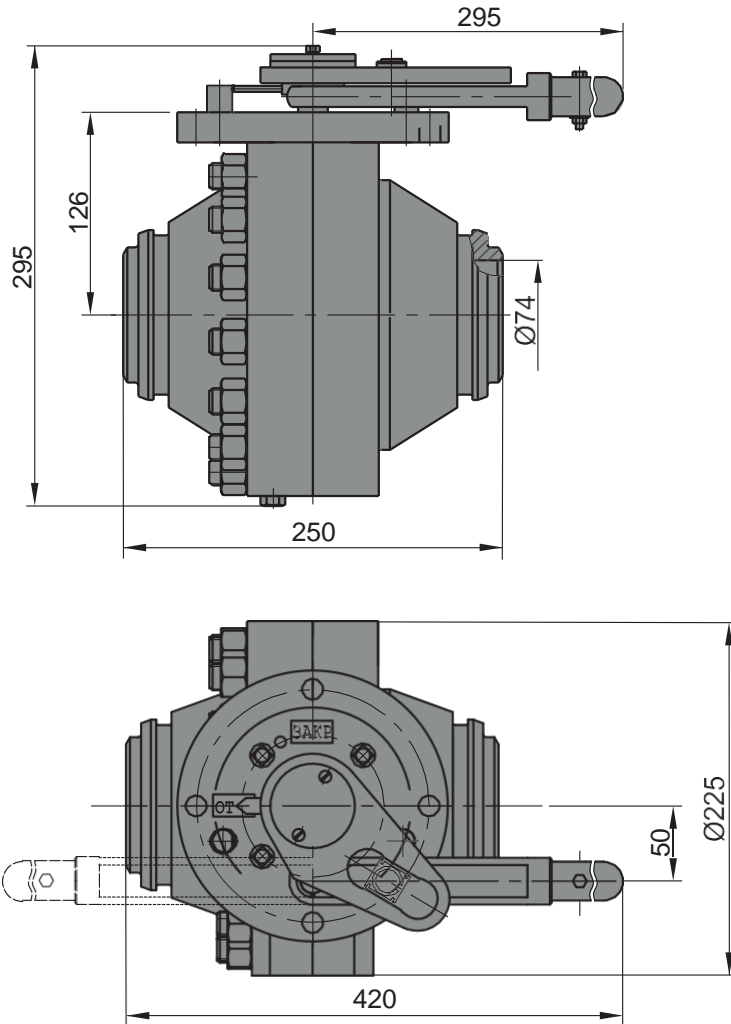
Connection

Flanged end, with counter flanges, fasteners and sealing parts (WE)*

Material of main parts

Body	steel 08X18H10T
Ball	steel 20X13
Stem	steel 20X13
Seat	steel 10Г2
Flange	steel 10Г2

* Pipe is beveled to the pipe specified by a Customer

**Product designation****KSh-80-100-R-NU-UKhL1-Pr****Figure designation****1.2750.201.301.00**

Diameter Nominal, DN, mm

80

Pressure Nominal, PN, MPa

10.0

Actuator type

manual

Connection

welded end (WE)*

Material of main parts

Body

steel 09Г2С

Ball

steel 10Г2, HCP 21 μ

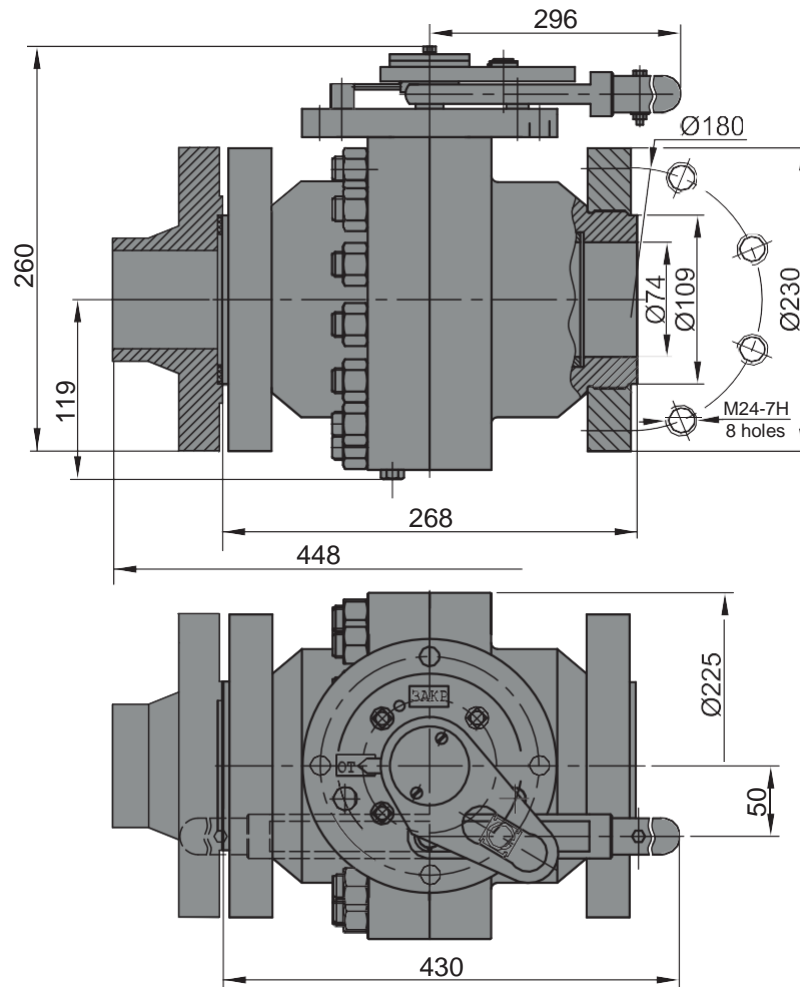
Stem

steel 40X, HCP 21 μ

Seat

steel 10Г2, zinc chromating 9 μ

* Pipe is beveled to the pipe specified by a Customer.

**Product designation****KSh-80-100-R-NU-UKhL1-F-F****Figure designation****1.2750.237.301.00-01**

Diameter Nominal, DN, mm

80

Pressure Nominal, PN, MPa

10.0

Actuator type

manual

Connection

Flanged end, with counter flanges, fasteners and sealing parts (WE)*

Material of main parts

Body

steel 10Г2, zinc chromating 24 μ

Ball

steel 10Г2, HCP 21 μ

Stem

steel 40X, HCP 21 μ

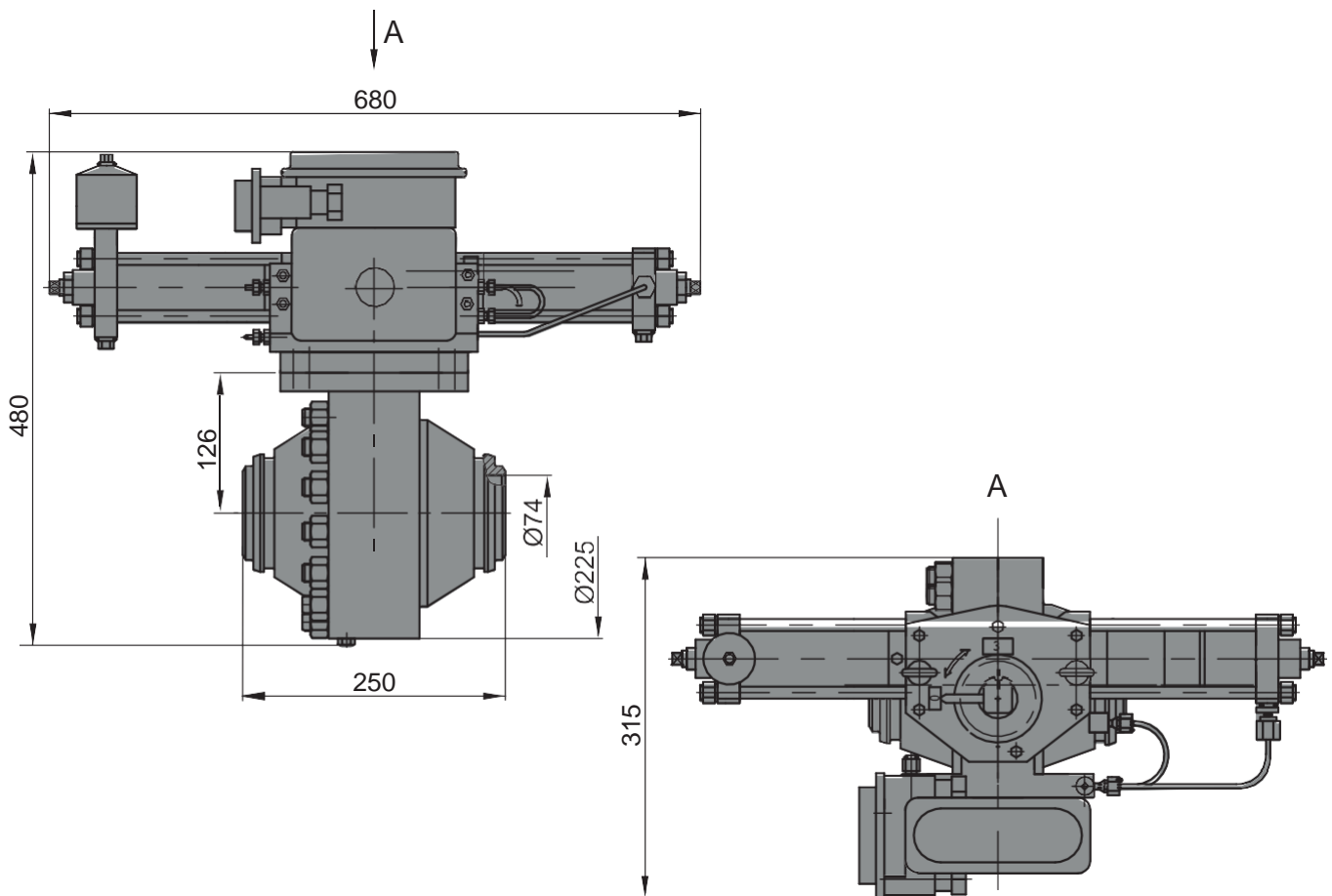
Counter flange

steel 10Г2

Seat

steel 10Г2, zinc chromating 9 μ

* Pipe is beveled to the pipe specified by a Customer.

**Product designation****Figure designation**

Diameter Nominal, DN, mm
 Pressure Nominal, PN, MPa
 Actuator type
 Control unit
 Actuator operating medium

Pressure range of operating medium
 at max. pressure differential, MPa
 Control unit voltage
 Connection

KSh-80-100-PP-NU-UKhL1-Pr**1.2750.201.304.00-01**

80
 10.0
 pneumatic
 electro-pneumatic with built-in limit switches
 non-aggressive gaseous,
 separate source supply

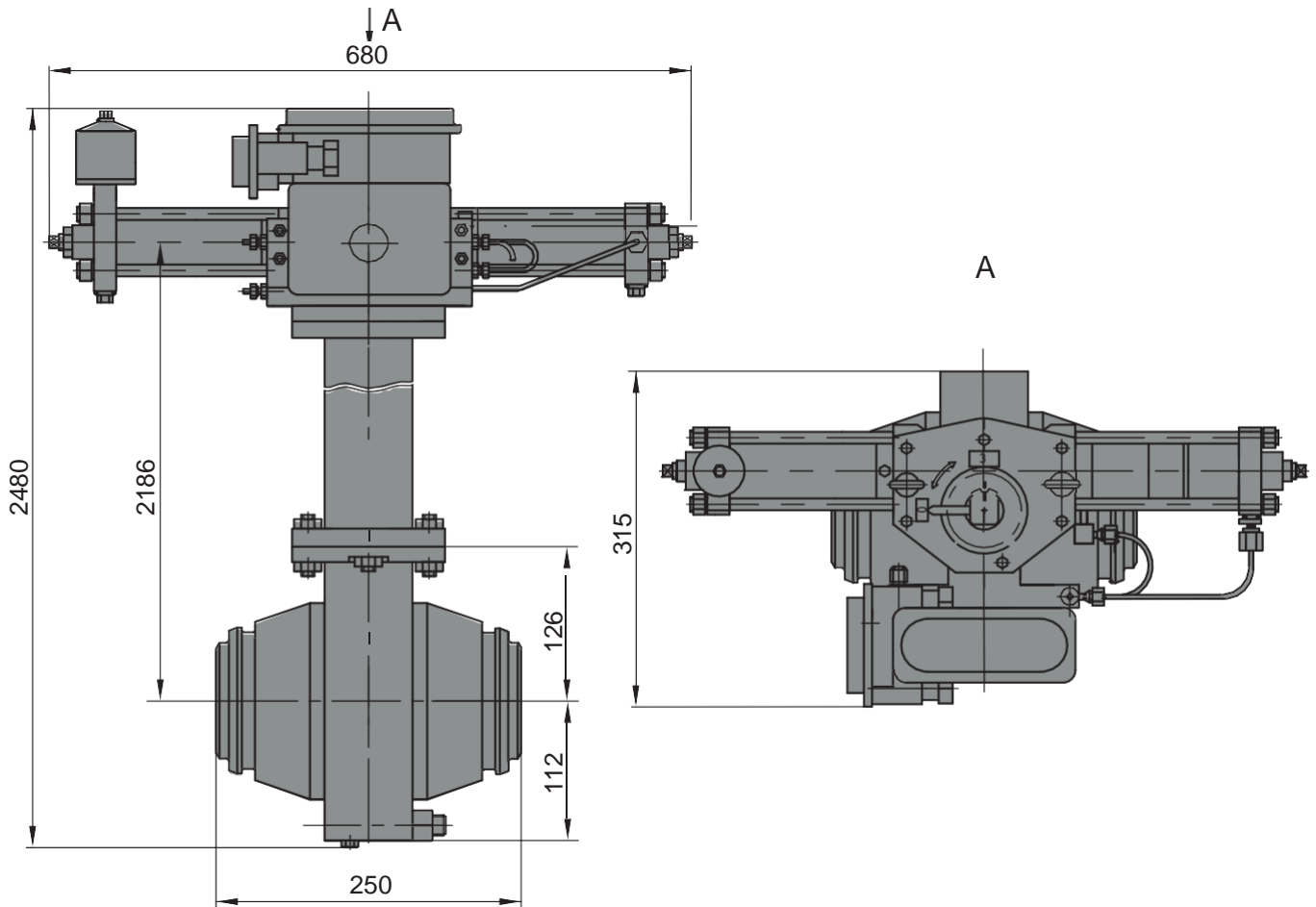
2.5... 10.0
 24, 110, 220 V/DC
 welded end*

Material of main parts

Body	steel 09Г2С
Ball	steel 10Г2, HCP 21 μ
Stem	steel 40X, HCP 21 μ
Seat	steel 10Г2, zinc chromating 9 μ

* Pipe is beveled to the pipe specified by a Customer.

Ball Valve DN 80 PN 100 with Pneumatic Actuator for Underground Installation



Product designation

Figure designation

Diameter Nominal, DN, mm
Pressure Nominal, PN, MPa
Actuator type
Control unit
Actuator operating medium

Pressure range of operating medium
at max. pressure differential, MPa
Control unit voltage
Connection

KSh-80-100-PP-PU-UKhL1-Pr

1.2750.201.360.00-01

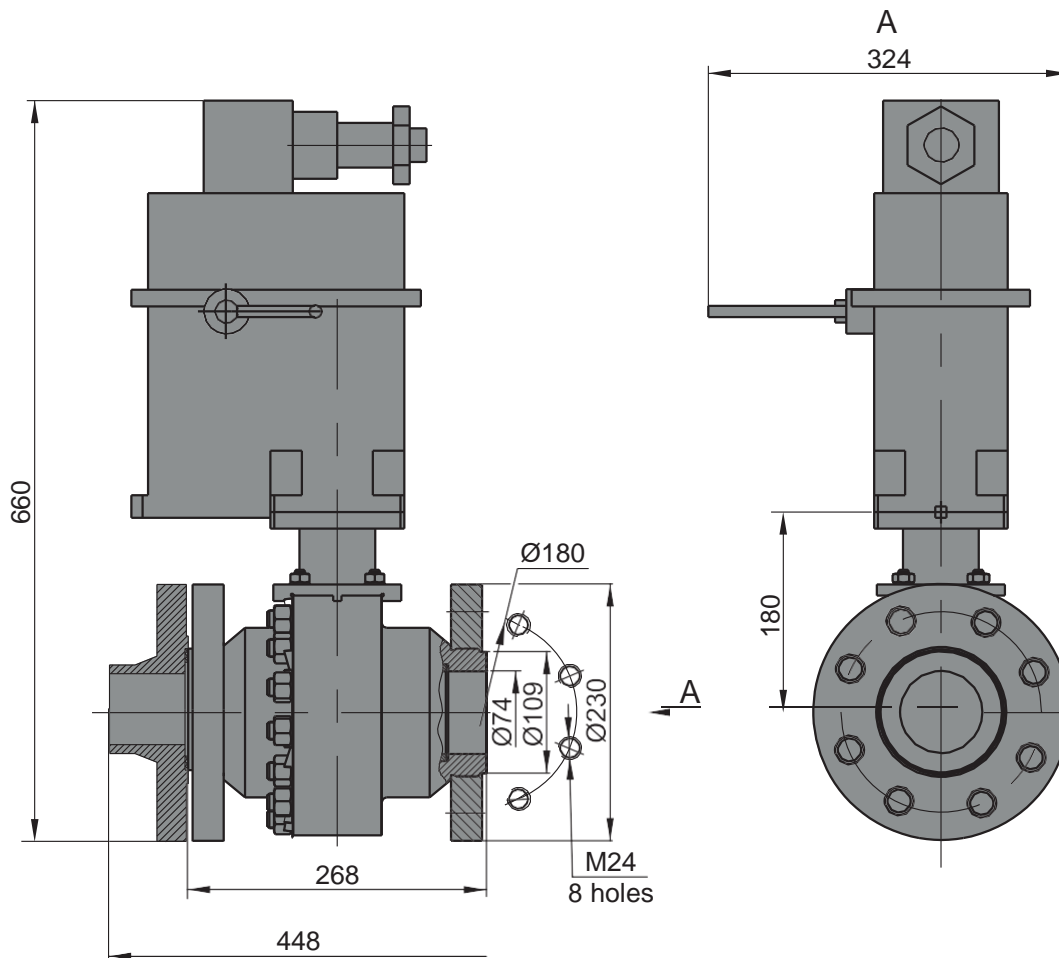
80
10.0
pneumatic
electro-pneumatic with built-in limit switches
non-aggressive gaseous,
separate source supply

2.5...10.0
24, 110, 220 V/DC
welded end (WE)*

Material of main parts

Body	steel 09Г2С
Ball	steel 10Г2, HCP 21 μ
Stem	steel 40X, HCP 21 μ
Seat	steel 10Г2, zinc chromating 9 μ

* Pipe is beveled to the pipe specified by a Customer.

**Product designation****KSh-80-100-EP-NU-UKhL1-F-F****Figure designation****1.2750.236.306.00-01**

Diameter Nominal, DN, mm

80

Pressure Nominal, PN, MPa

10.0

Actuator type

electric

Voltage

380 V, 3 ph, 50 Hz

Connection

Flanged end, with counter flanges, fasteners and sealing parts (WE)*

Material of main parts

Body

steel 10Г2, zinc chromating 24 μ

Ball

steel 10Г2, HCP 21 μ

Stem

steel 38XA, HCP 21 μ

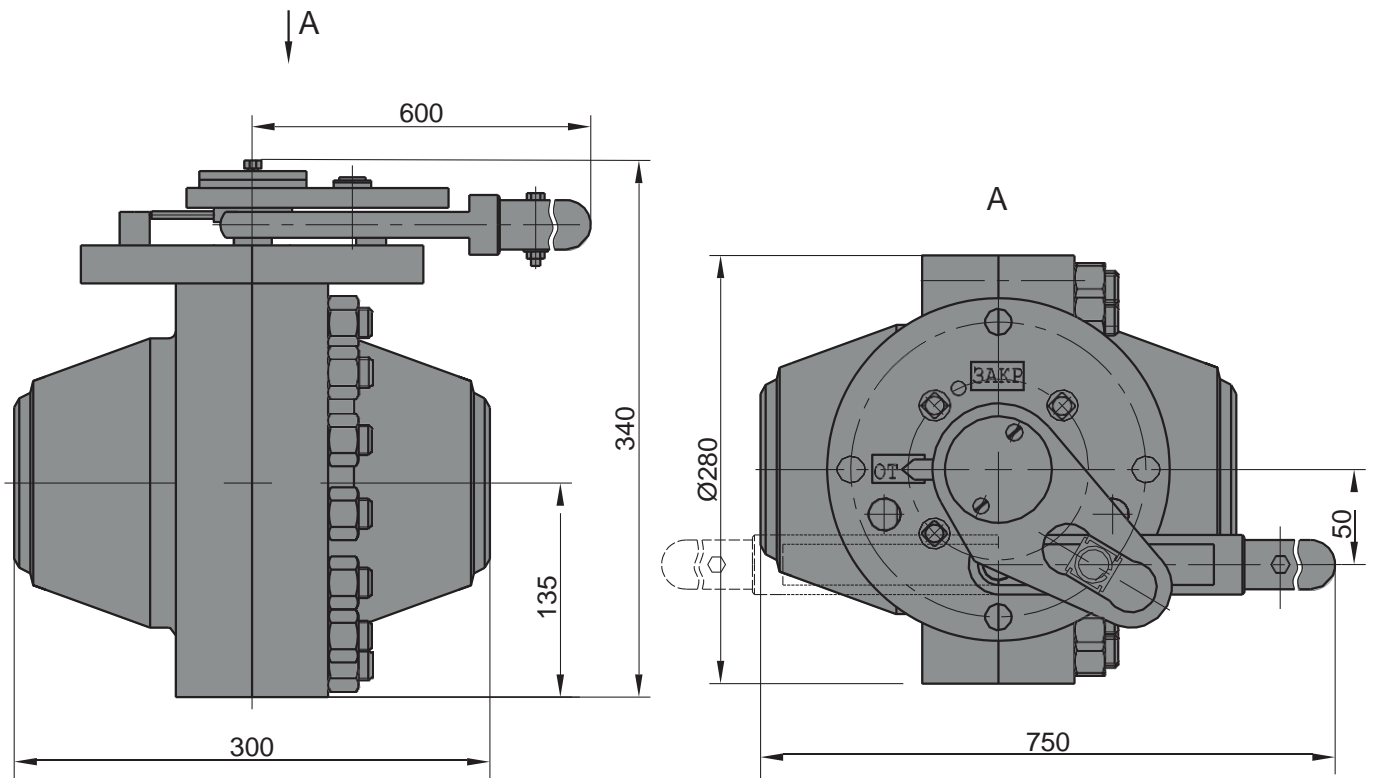
Flange

steel 10Г2

Seat

steel 10Г2, zinc chromating 9 μ

* Pipe is beveled to the pipe specified by a Customer.

**Product designation****Figure designation**

Diameter Nominal, DN, mm
 Pressure Nominal, PN, MPa
 Actuator type
 Connection

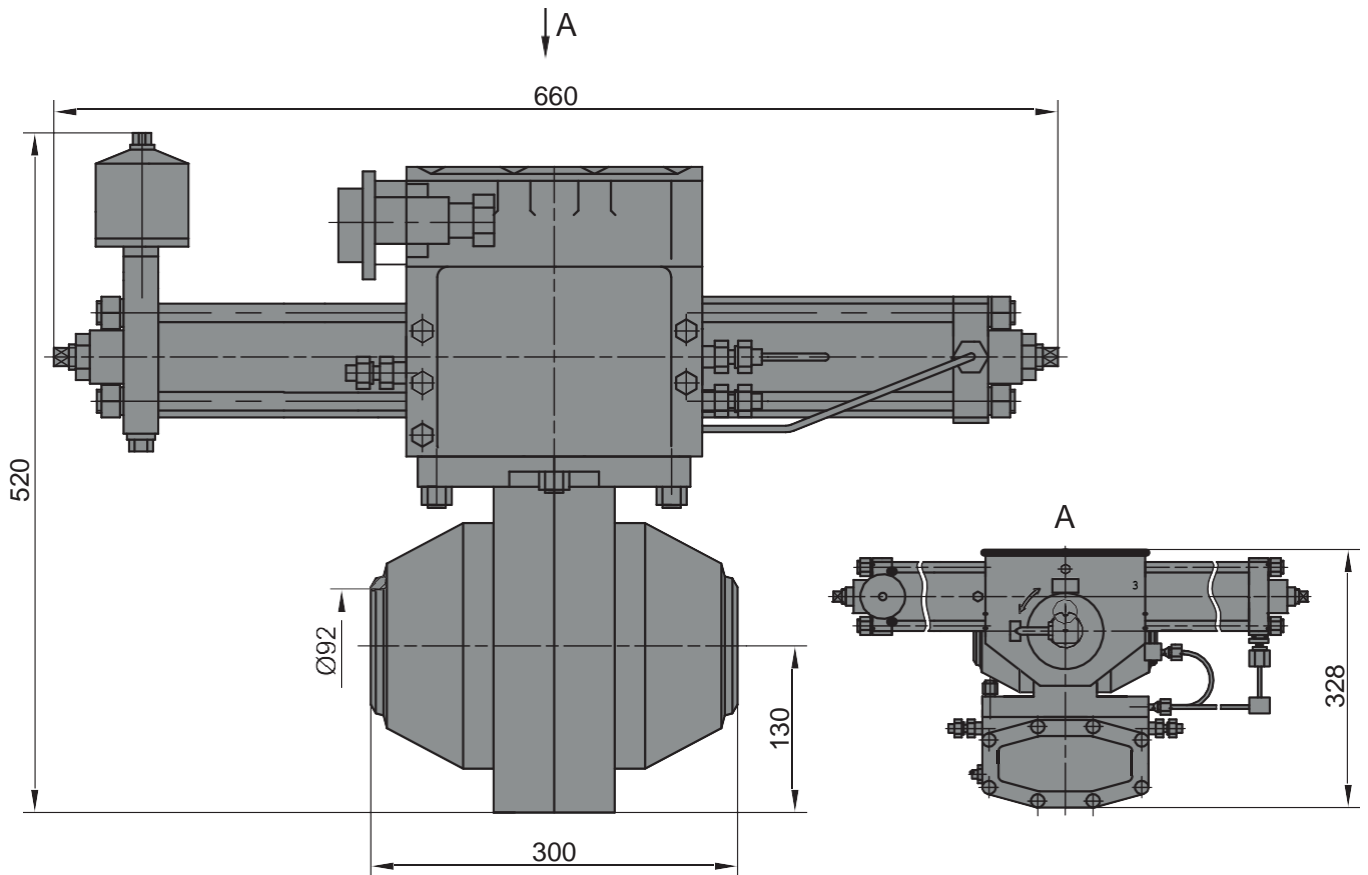
KSh-100-100-R-NU-UKhL1-Pr**1.2750.151.160.00**

100
 10.0
 manual
 welded end (WE)*

Material of main parts

Body	steel 09Г2С
Ball	steel 10Г2, HCP 21 μ
Stem	steel 40X, HCP 21 μ
Seat	steel 10Г2, zinc chromating 9 μ

* Pipe is beveled to the pipe specified by a Customer.

**Product designation**

KSh-80-100-PP-NU-UKhL1-Pr

Figure designation

1.2750.151.102.00-06

Diameter Nominal, DN, mm

100

Pressure Nominal, PN, MPa

10.0

Actuator type

pneumatic

Control unit

electro-pneumatic with built-in limit switches

Actuator operating medium

non-aggressive gaseous,
separate source supplyPressure range of operating medium
at max. pressure differential, MPa

2.5...10.0

Control unit voltage

24, 110, 220 V/DC

Connection

welded end*

Material of main parts

Body

steel 09Г2С

Ball

steel 10Г2, HCP 21 μ

Stem

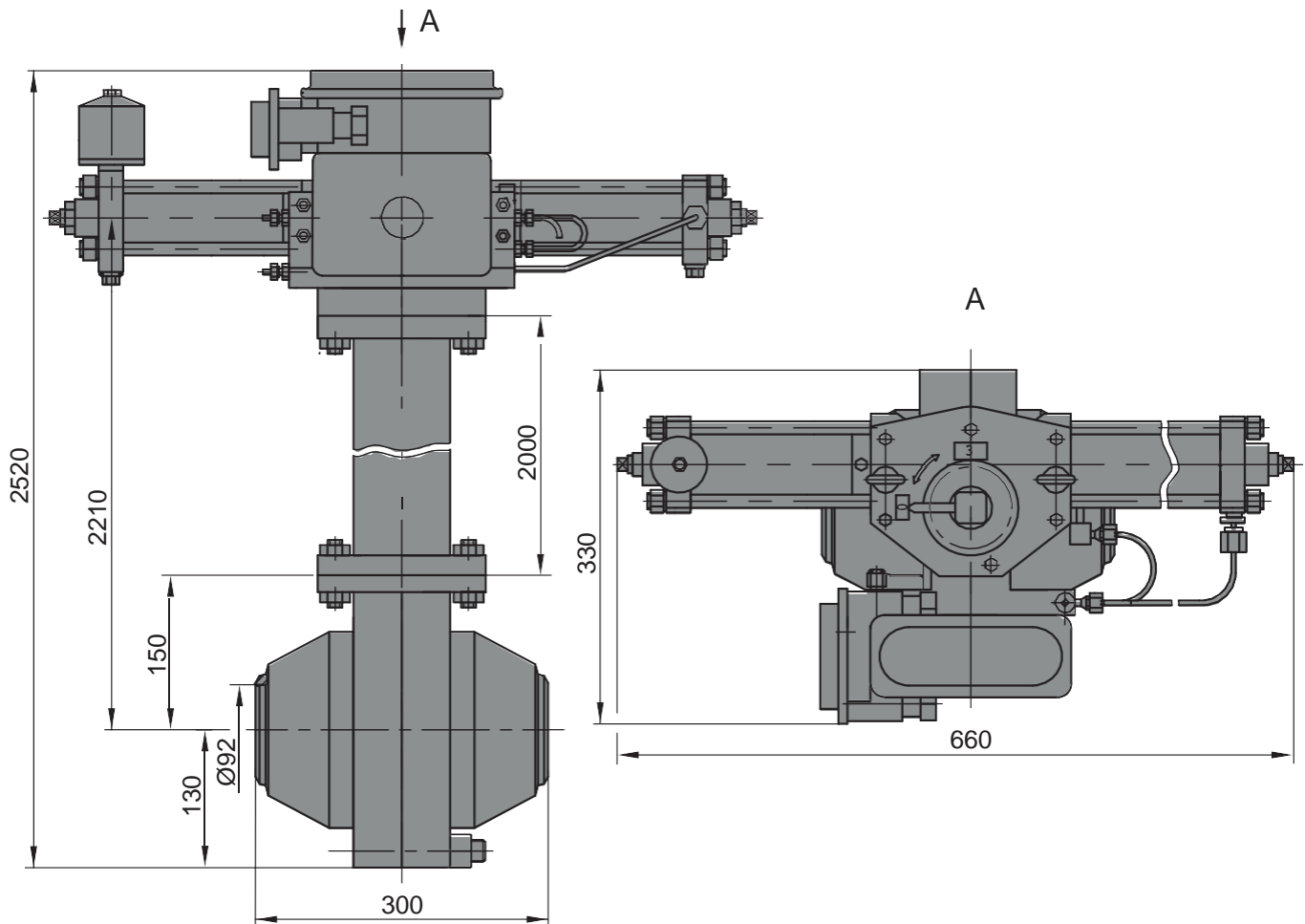
steel 40X, HCP 21 μ

Seat

steel 10Г2, zinc chromating 9 μ

* Pipe is beveled to the pipe specified by a Customer.

Ball Valve DN 100 PN 100 with Pneumatic Actuator for Underground Installation



Product designation

Figure designation

Diameter Nominal, DN, mm

Pressure Nominal, PN, MPa

Actuator type

Control unit

Actuator operating medium

Pressure range of operating medium
at max. pressure differential, MPa

Control unit voltage

Connection

KSh-100-100-PP-PU-UKhL1-Pr

1.2750.209.360.00

100

10.0

pneumatic

electro-pneumatic with built-in limit switches

non-aggressive gaseous,
separate source supply

2.5...10.0

24, 110, 220 V/DC

welded end*

Material of main parts

Body

steel 09Г2С

Ball

steel10Г2, HCP 21 μ

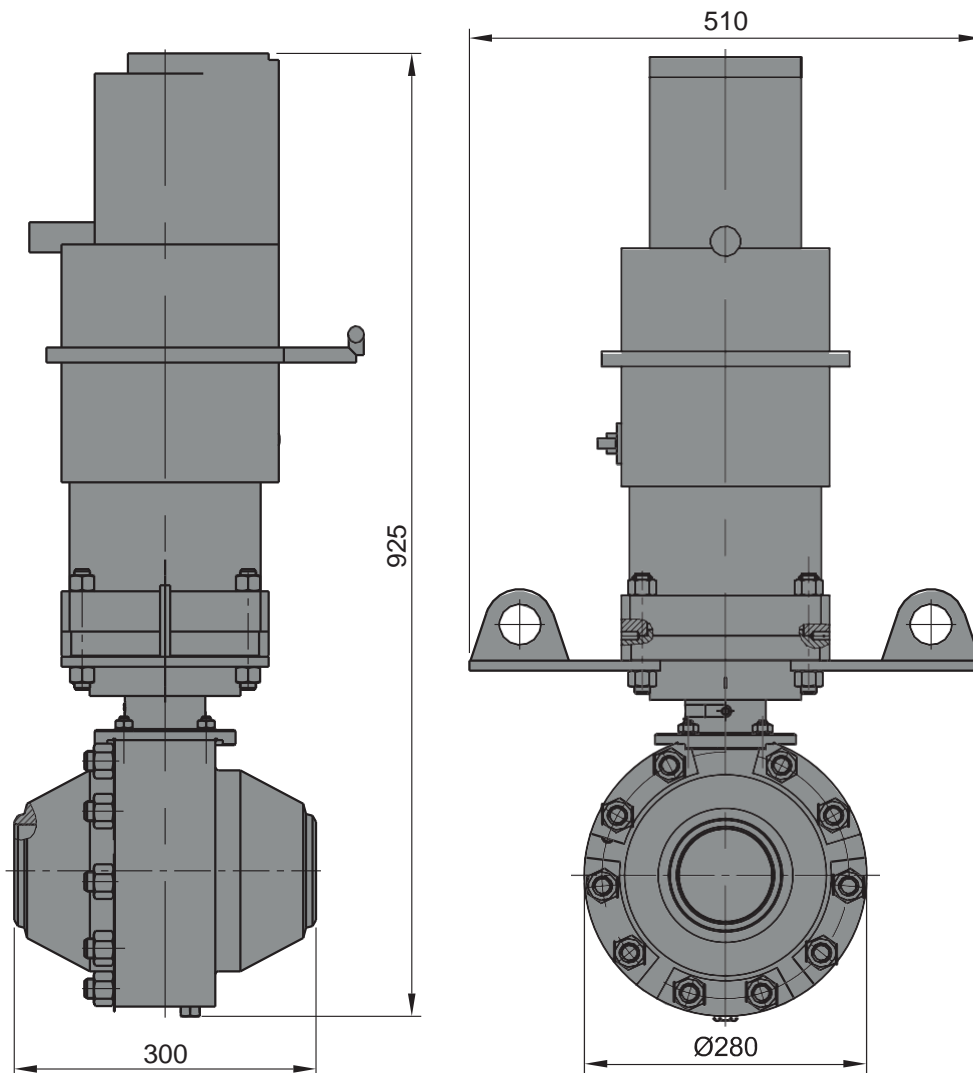
Stem

steel 40X, HCP 21 μ

Seat

steel 10Г2, zinc chromating 9 μ

* Pipe is beveled to the pipe specified by a Customer.

**Product designation****Figure designation**

Diameter Nominal, DN, mm

Pressure Nominal, PN, MPa

Actuator type

Voltage

Connection

Weight, max, kg

KSh-100-100-EP-NU-UKhL1-Pr**1.2750.341.306.00**

100

10.0

electric

380 V, 3 ph, N=250 W

welded end (WE)*

130

Material of main parts

Body

steel 09Г2С

Ball

steel 10Г2, HCP 21 μ

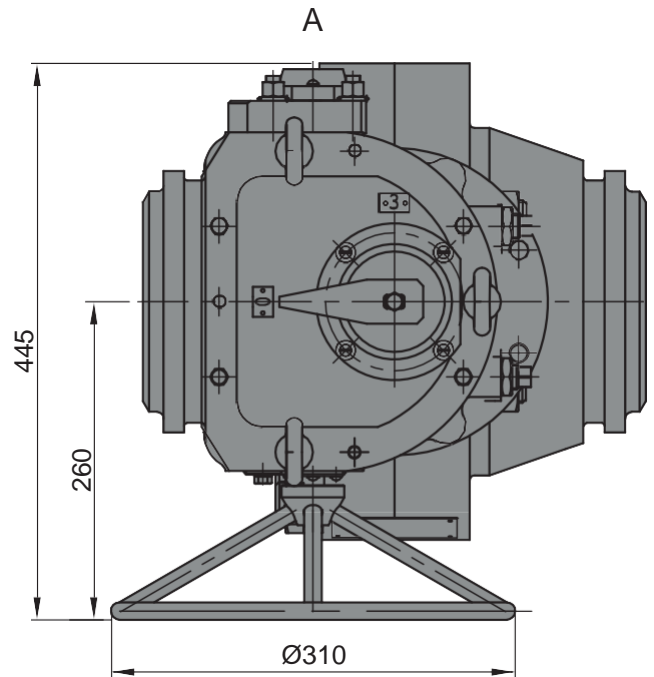
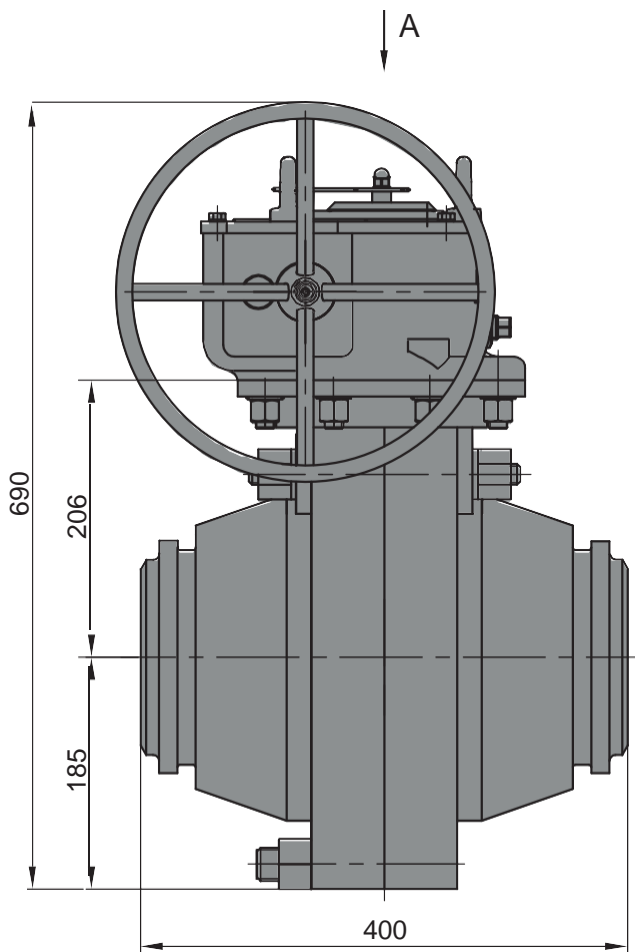
Stem

steel 38ХА, HCP 21 μ

Seat

steel 10Г2, zinc chromating 9 μ

* Pipe is beveled to the pipe specified by a Customer.

**Product designation****Figure designation**

Diameter Nominal, DN, mm
 Pressure Nominal, PN, MPa
 Actuator type
 Connection

KSh-150-100-RP-NU-UKhL1-Pr

1.2750.152.101.00-06

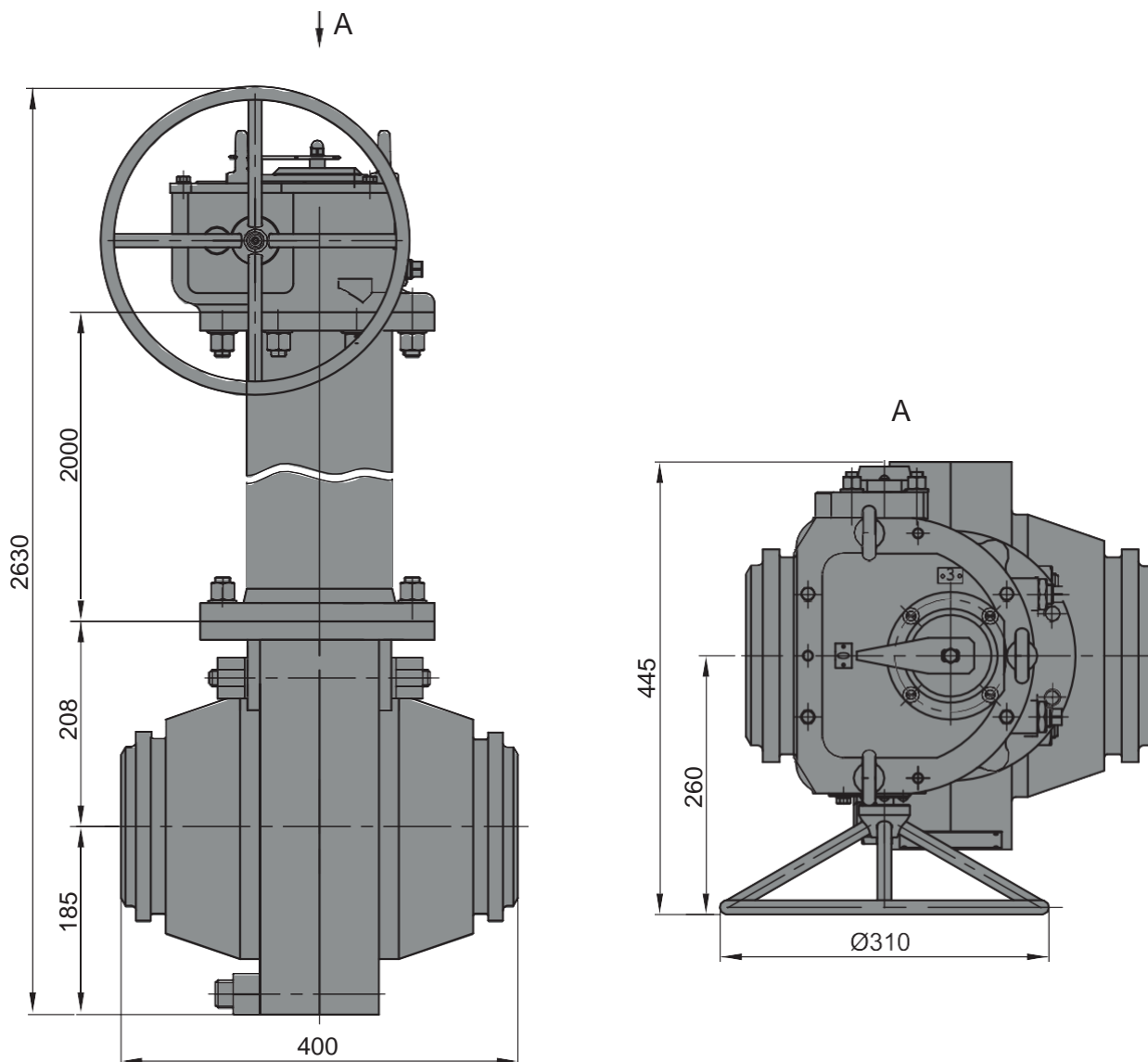
150
 10.0
 manual mechanical
 welded end (WE)*

Material of main parts

Body	steel 09Г2С
Ball	steel10Г2, HCP 21 μ
Stem	steel 40X, HCP 21 μ
Seat	steel 10Г2, zinc chromating 9 μ

* Pipe is beveled to the pipe specified by a Customer.

Ball Valve DN 150 PN 100 with Manual Actuator for Underground Installation



Product designation

Figure designation

Diameter Nominal, DN, mm
Pressure Nominal, PN, MPa
Actuator type
Connection

KSh-150-100-RP-PU-UKhL1-Pr

1.2750.158.101.00-02

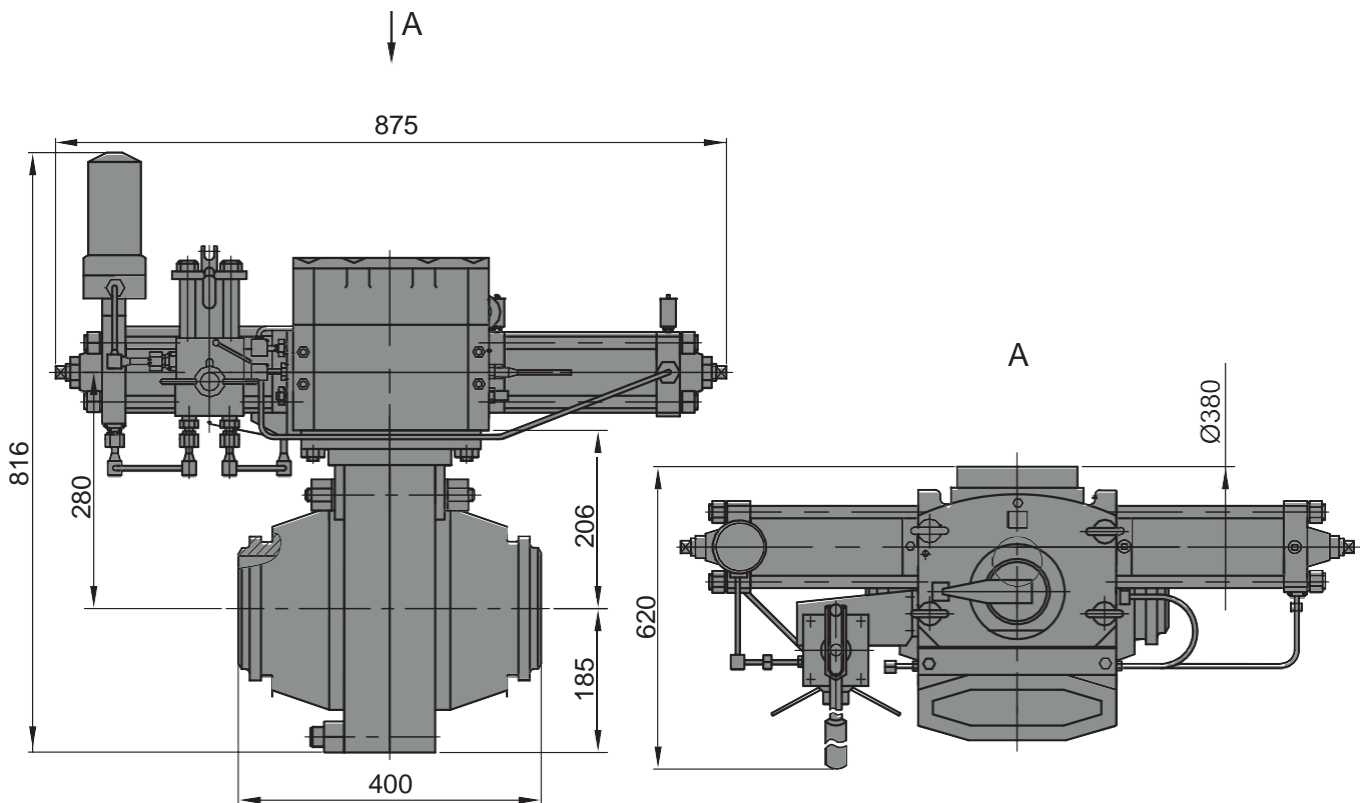
150
10.0
manual mechanical
welded end (WE)*

Material of main parts

Body	steel 09Г2С
Ball	steel 10Г2, HCP 21 μ
Stem	steel 40X, HCP 21 μ
Seat	steel 10Г2, zinc chromating 9 μ

* Pipe is beveled to the pipe specified by a Customer.

Ball Valve DN 150 PN 100 with Pneumatic-and-Hydraulic Actuator



Product designation

Figure designation

Diameter Nominal, DN, mm
Pressure Nominal, PN, MPa
Actuator type

Control unit

Actuator operating medium

Pressure range of operating medium
at max. pressure differential, MPa

Control unit voltage

Connection

KSh-150-100-PGP-NU-UKhL1-Pr

1.2750.152.104.00-06

150

10.0

pneumatic-and-hydraulic
with manual override - hydraulic pump

electro-pneumatic with built-in limit switches

non-aggressive gaseous,
separate source supply

2.5...10.0

24, 110, 220 V/DC

welded end (WE)*

Material of main parts

Body

steel 09Г2С

Ball

steel10Г2, HCP 21 μ

Stem

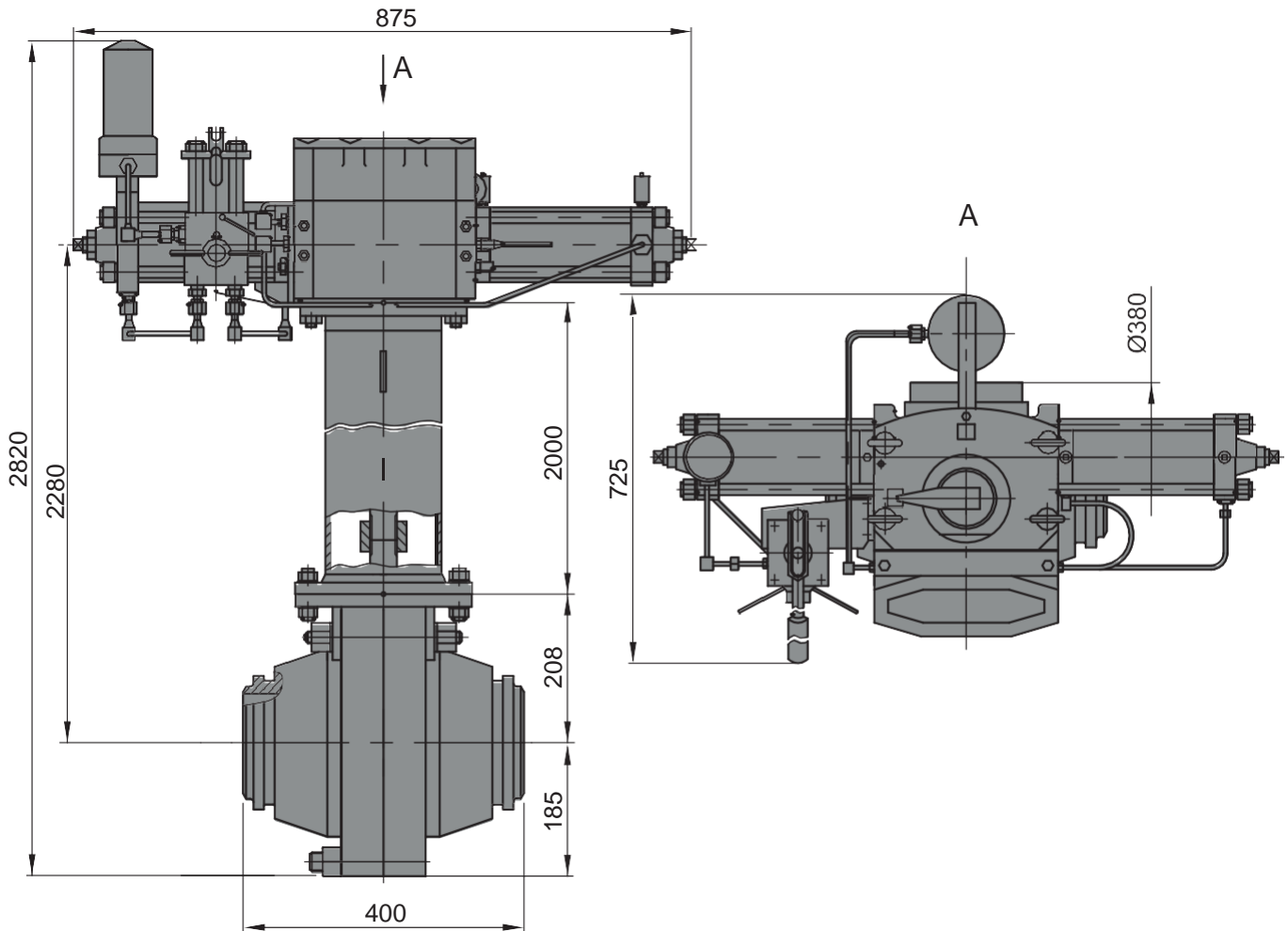
steel 40X, HCP 21 μ

Seat

steel 10Г2, zinc chromating 9 μ

* Pipe is beveled to the pipe specified by a Customer.

Ball Valve DN 150 PN 100 with Pneumatic-and-Hydraulic Actuator for Underground Installation



Product designation

Figure designation

Diameter Nominal, DN, mm
Pressure Nominal, PN, MPa
Actuator type

Control unit

Actuator operating medium

Pressure range of operating medium
at max. pressure differential, MPa

Control unit voltage

Connection

KSh-150-100-PGP-PU-UKhL1-Pr

1.2750.152.160.00-06

150

10.0

pneumatic-and-hydraulic

with manual override – hydraulic pump

electro-pneumatic with built-in limit switches

non-aggressive gaseous,
separate source supply

2.5...10.0

24, 110, 220 V/DC

welded end (WE)*

Material of main parts

Body

Ball

Stem

Seat

steel 09Г2С

steel10Г2, HCP 21 μ

steel 40X, HCP 21 μ

steel 10Г2, zinc chromating 9 μ

* Pipe is beveled to the pipe specified by a Customer.

Ball Valves

DN 200 – 1400 PN 80, 100

Designed for operation as shut-off devices in pipelines transporting non-aggressive natural gas and other non-aggressive media at the temperature ranged -60°C to $+80^{\circ}\text{C}$. Tightness class A per GOST 9544.

Seat seals are made of elastomeric and composite materials. Welded end connection (flanged is possible).

Climatic version is for areas with temperate and cold climate (-60°C thru $+45^{\circ}\text{C}$).

Ball valves are available with a variety of operator options: manual, pneumatic and pneumatic-and-hydraulic.

Over-ground and underground installation.

Ball valves can be completed with emergency shut off automatic device (for DN 400 - 1400).

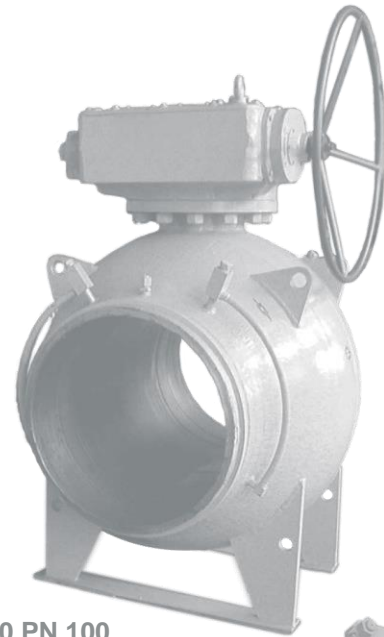
Manually operated ball valves can be installed in any position, and pneumatically and pneumatically and hydraulically operated ball valves are installed in horizontal pipelines with actuator facing upward. Vertical axial deviation shall be 10° max.

The average service life before overhaul is no more than 40 years.

The Company reserves the right to make design changes to improve it, while minor changes may not be shown in the Catalog.

Design Features:

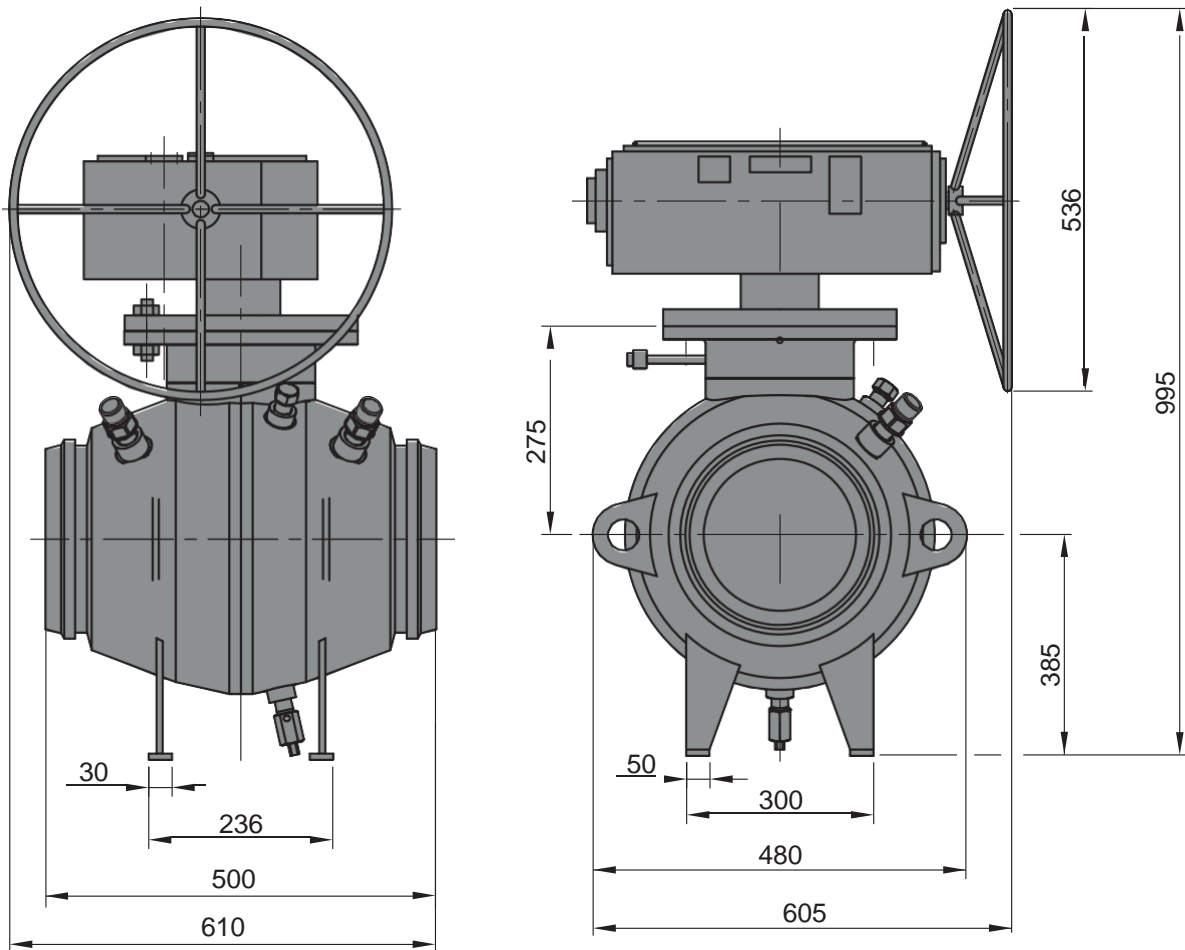
- Valve is a stamped two-piece, split body; the design enables to reduce gas escaping into the environment.
- Closure member is sealed with a high wear/erosion resistant elastomeric material.
- Both seats are tightened to the ball ensuring high leakproof closure member.
- "Trunnion mounted ball" with self-lubricating bearings made of metal-fluoroplastic that makes easy valves control.
- Pneumatically and hydraulically actuated ball valves are furnished with manual overrides (hydraulic pumps).
- "No tank" actuator design greatly reduces hydraulic liquid volume in the actuator hydraulic system.
- Pneumatic-and-hydraulic actuators are filled with hydraulic liquid.
- Ball valve control units have integrated terminal boxes, and limit switches; and they do not require additional piping.
- Control voltage is 24V, 110V and 220V.
- Ball valves can be furnished with electric actuators.
- Ball valves for underground service have corrosion-resistant polymer coating.



DN 700 PN 100



DN 1400 PN 100

**Product designation****Figure designation**

Diameter Nominal, DN, mm
 Pressure Nominal, PN, MPa
 Actuator type
 Connection
 Weight, max, kg

KSh-200-100-RP-NU-UKhL-Pr**A.1.2750.150.101.00-06**

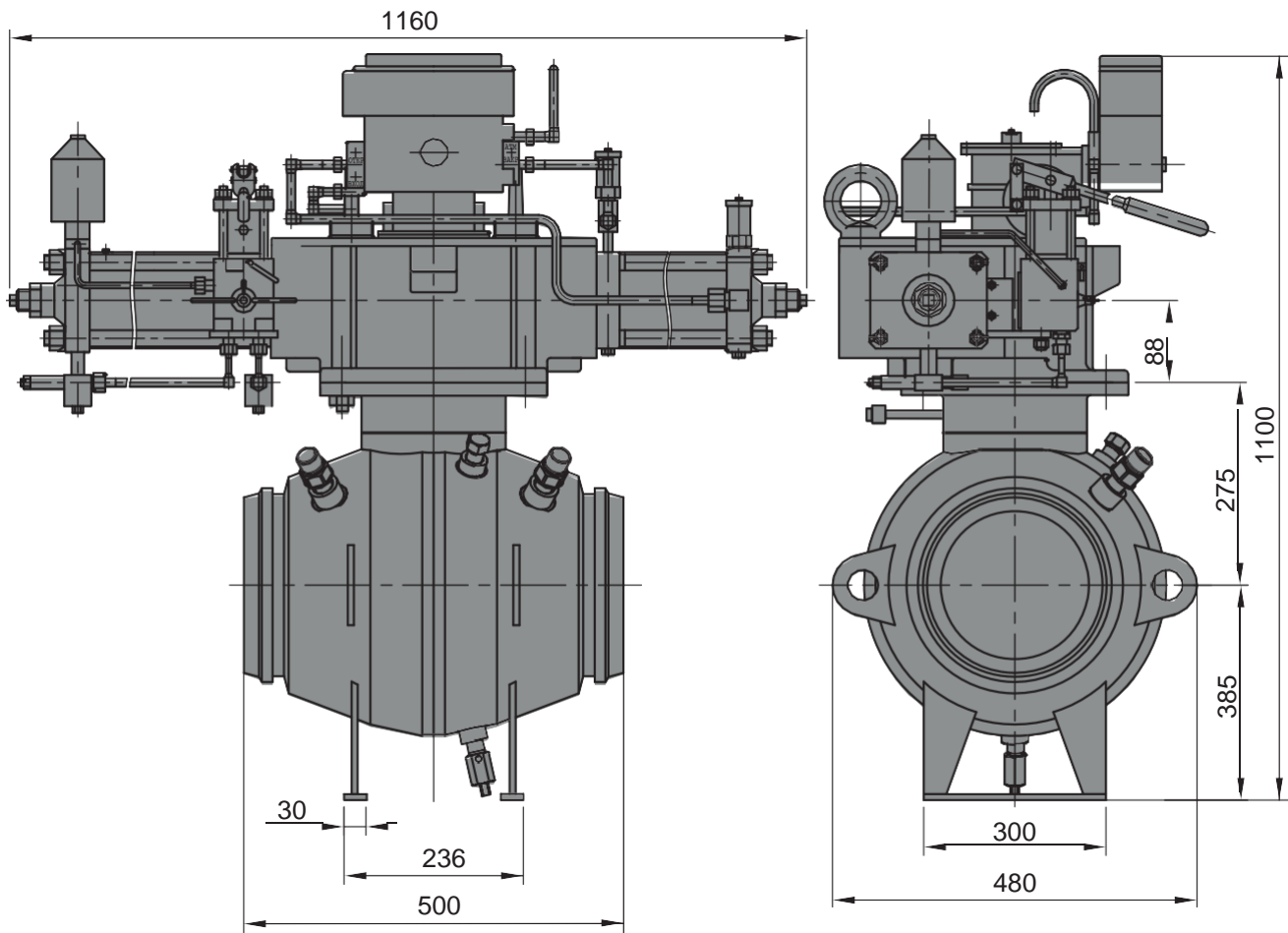
200
 10.0
 manual mechanical
 welded end (WE)*
 300

Material of main parts

Body	steel 09Г2С
Ball	steel 20ГЛ, HCP 30 μ
Stem	steel 38 XA, HCP 21 μ
Seat (cover)	steel 10Г2, zinc chromating 9 μ

* Pipe is beveled to the pipe specified by a Customer.

Ball Valve DN 200 PN 100 with Pneumatic-and-Hydraulic Actuator



Product designation

Figure designation

Diameter Nominal, DN, mm
Pressure Nominal, PN, MPa
Actuator type

Control unit

Actuator operating medium

Pressure range of operating medium
at max. pressure differential, MPa

Control unit voltage

Connection

Weight, max, kg

KSh-200-100-PGP-NU-UKhL1-Pr

A.1.2750.150.104.00-06

200

10.0

pneumatic-and-hydraulic with manual
override – hydraulic pump
electro-pneumatic with built-in limit switches
non-aggressive gaseous,
separate source supply

2.5...10.0

24, 110, 220 V/DC

welded end (WE)*

390

Material of main parts

Body

steel 09Г2С

Ball

steel 20ГЛ, HCP 30 μ

Stem

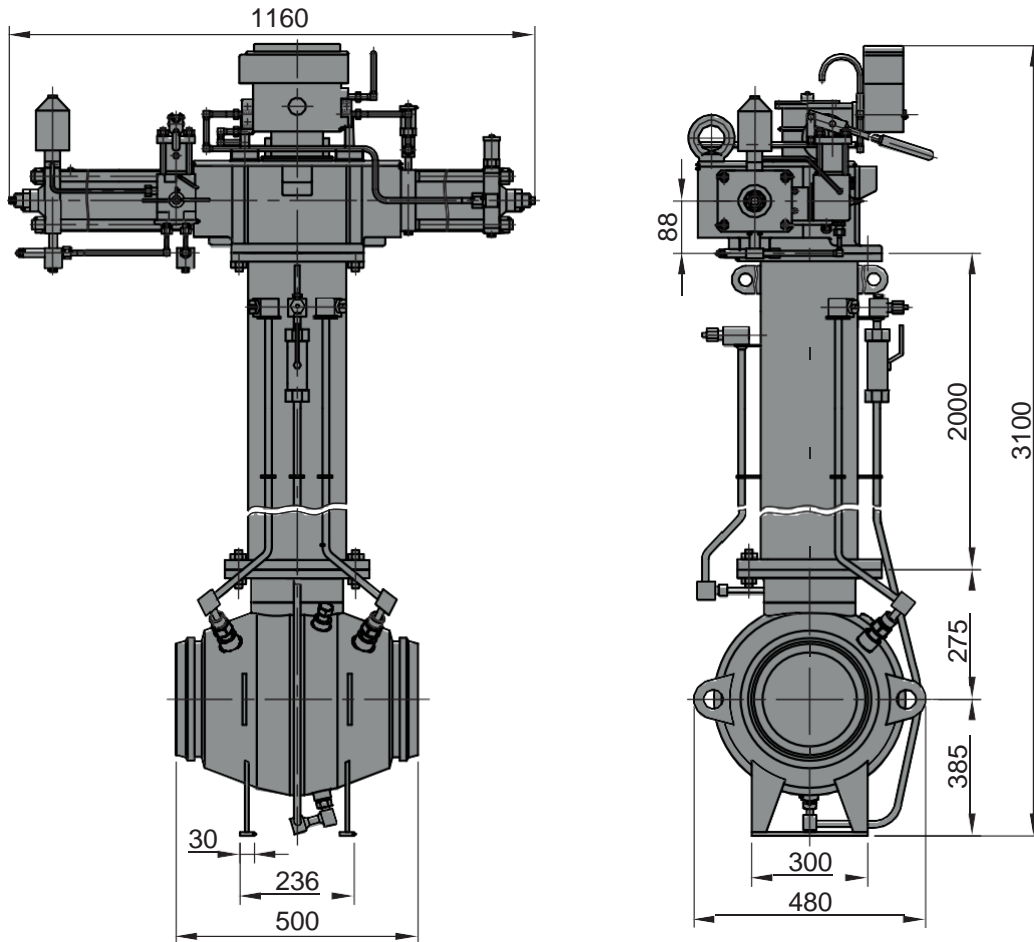
steel 38ХА, HCP 21 μ

Seat

steel 10Г2, zinc chromating 9 μ

* Pipe is beveled to the pipe specified by a Customer.

Ball Valve DN 200 PN 100 with Pneumatic-and-Hydraulic Actuator for Underground Installation



Product designation

Figure designation

Diameter Nominal, DN, mm
Pressure Nominal, PN, MPa
Actuator type

Control unit
Actuator operating medium

Pressure range of operating medium
at max. pressure differential, MPa
Control unit voltage
Connection
Weight, max, kg

KSh-200-100-PGP-PU-UKhL1-Pr

A.1.2750.150.160.00

200
10.0
pneumatic-and-hydraulic with manual
override – hydraulic pump
electro-pneumatic with built-in limit switches
non-aggressive gaseous,
separate source supply

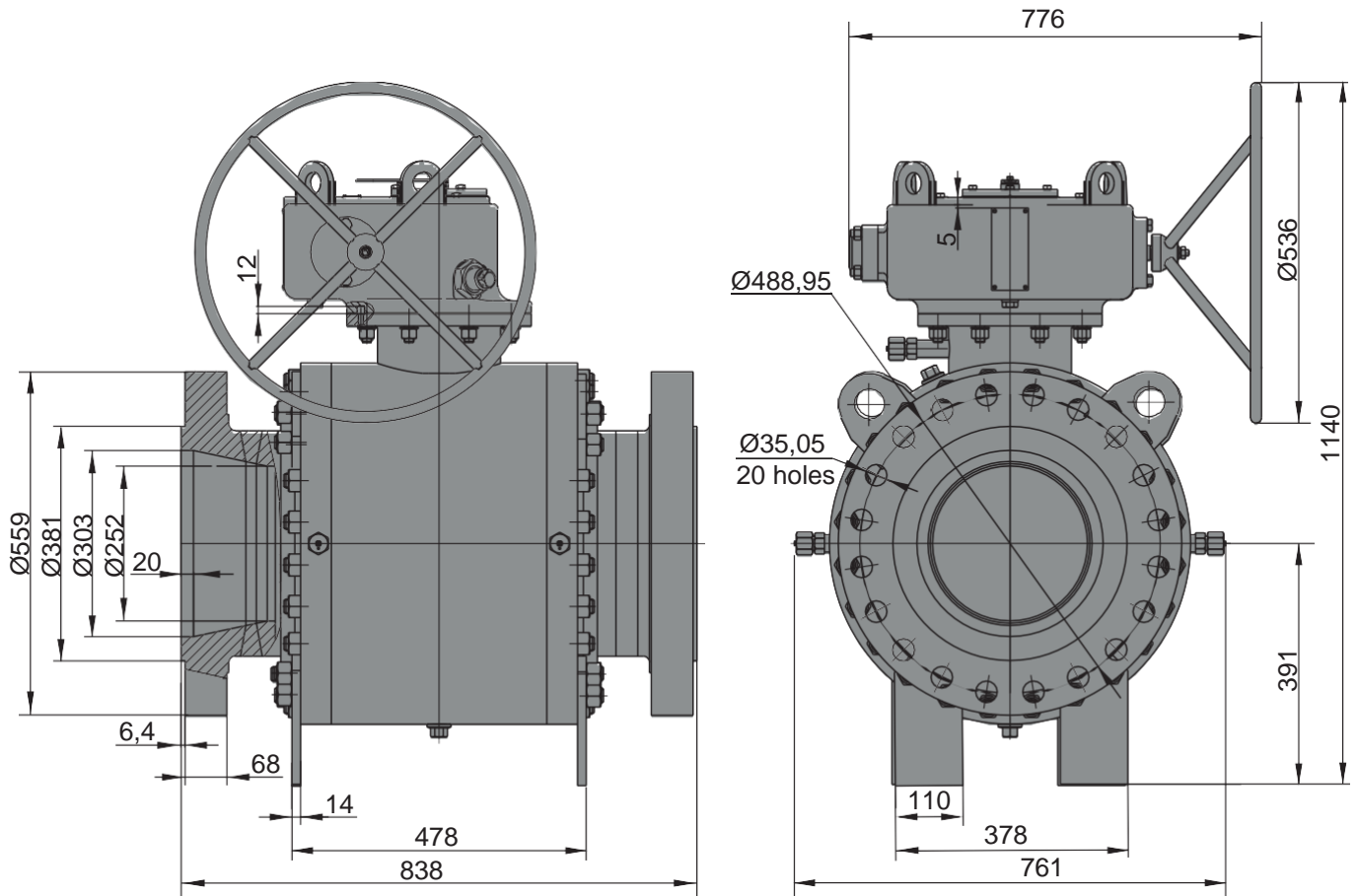
2.5...10.0
24, 110, 220 V/DC
welded end (WE)*
615

Material of main parts

Body	steel 09Г2С
Ball	steel 20ГЛ, HCP 30 μ
Stem	steel 45ХГМА, HCP 21 μ
Seat	steel 10Г2, zinc chromating 9 μ

* Pipe is beveled to the pipe specified by a Customer.

Ball Valve DN 300 x DN 250 PN 100 with Manual Actuator per API-6D



Product designation

Figure designation

Diameter Nominal, DN, mm
 Pressure Nominal, PN, MPa
 Ambient temperature, °C
 Working medium temperature, °C
 Actuator type
 Connection
 Weight, max, kg

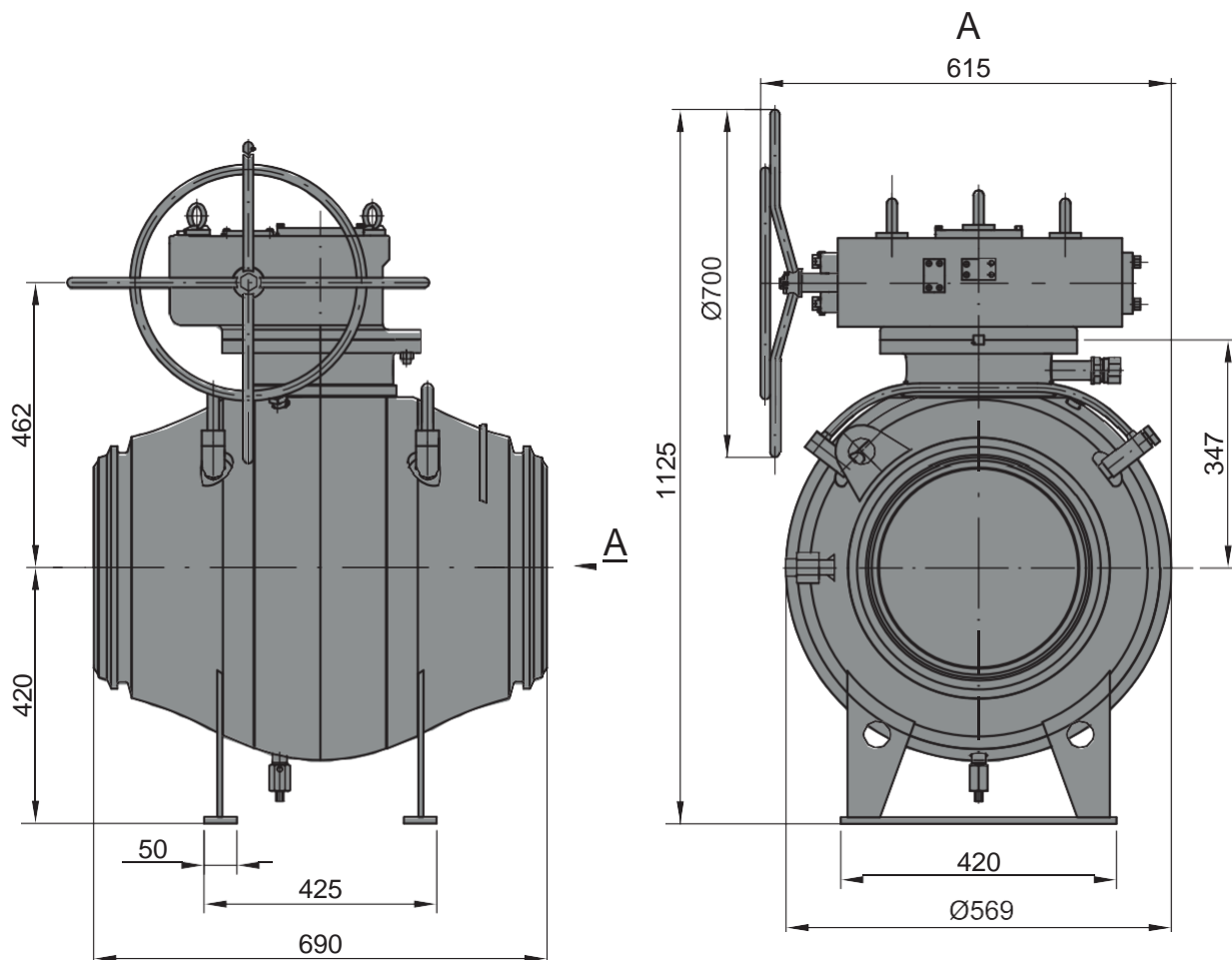
KSh-300x250-100-RP-NU-U1-F

M.1.2750.477.201.00

300x250
 10.0
 from -29 to +48
 from -29 to +80
 manual mechanical
 flanged
 1130

Material of main parts

Body	steel ASTM A350LF2, zinc chromating 24 μ
Ball	steel ASTM A350LF2, HCP 21 μ
Stem	steel 4140 ASME SA-29M, HCP 21 μ
Seat	steel ASTM A350LF2, zinc chromating 9 μ
Seal	polyurethane PPU-1 TU RB 700069297.008-2000

**Product designation****Figure designation**

Diameter Nominal, DN, mm
 Pressure Nominal, PN, MPa
 Actuator type
 Connection
 Weight, max, kg

KSh-300-100-RP-NU-UKhL1-Pr**1.2750.284.101.00**

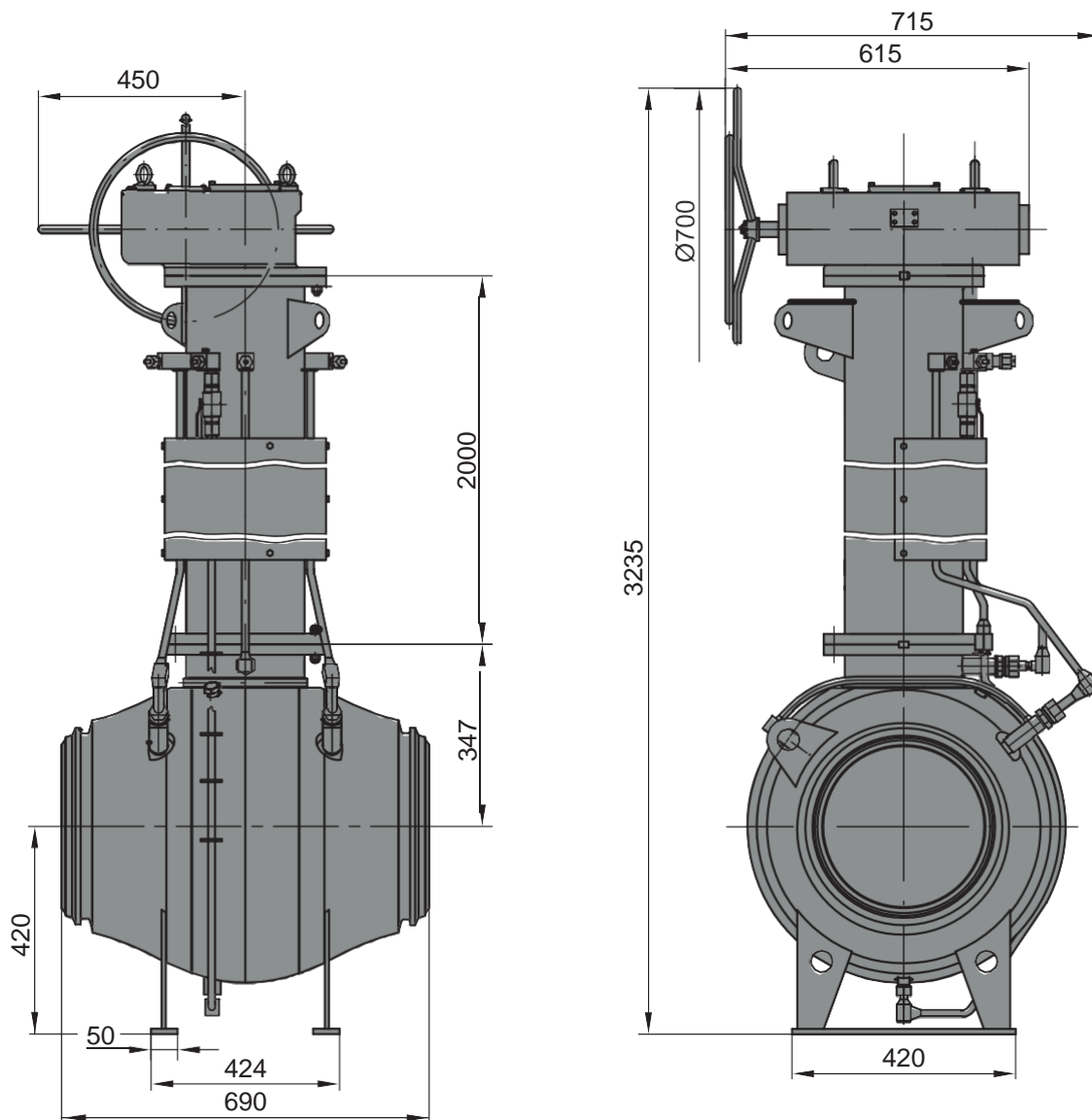
300
 10.0
 manual mechanical
 welded end*
 527

Material of main parts

Body	steel 09Г2С, zinc chromating 24 μ
Ball	steel 20ГЛ, HCP 21 μ
Stem	steel 38 XA, HCP 21 μ
Seat	steel 09Г2С, zinc chromating 9 μ

* Pipe is beveled to the pipe specified by a Customer.

Ball Valve DN 300 PN 100 with Manual Actuator for Underground Installation



Product designation

Figure designation

Diameter Nominal, DN, mm
Pressure Nominal, PN, MPa
Actuator type
Connection
Weight, max, kg

KSh-300-100-RP-PU-UKhL1-Pr

A.1.2750.276.101.00

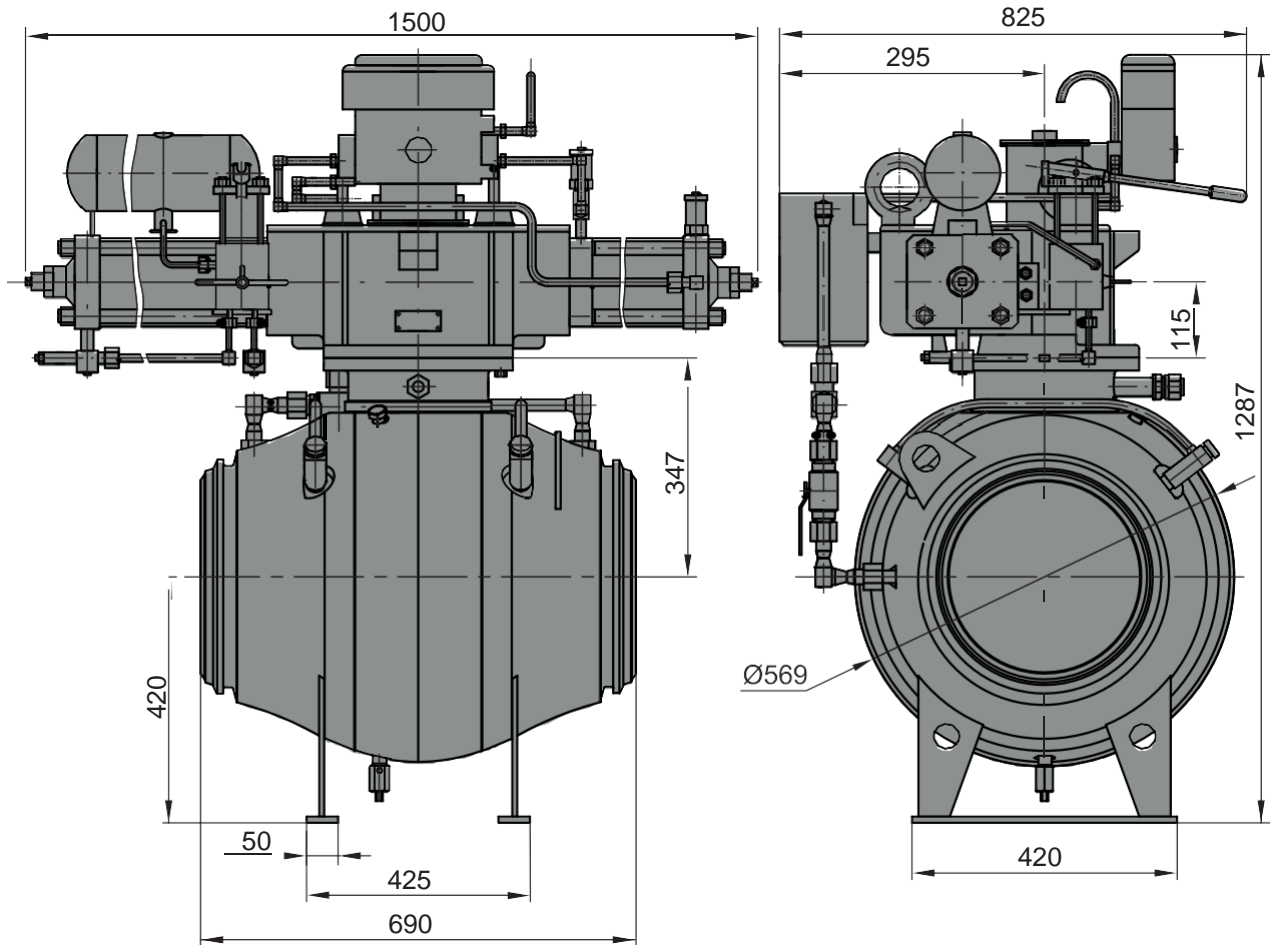
300
10.0
manual mechanical
welded end*
787

Material of main parts

Body	steel 09Г2С, zinc chromating 24 μ
Ball	steel 20ГЛ, HCP 21 μ
Stem	steel 38 XA, HCP 21 μ
Seat	steel 09Г2С, zinc chromating 9 μ

* Pipe is beveled to the pipe specified by a Customer.

Ball Valve DN 300 PN 100 with Pneumatic-and-Hydraulic Actuator



Product designation

Figure designation

Diameter Nominal, DN, mm
Pressure Nominal, PN, MPa
Actuator type

Control unit

Actuator operating medium
Pressure range of operating medium
at max. pressure differential, MPa
Control unit voltage
Connection
Weight, max, kg

KSh-300-100-PGP-NU-UKhL1-Pr

1.2750.284.104.00

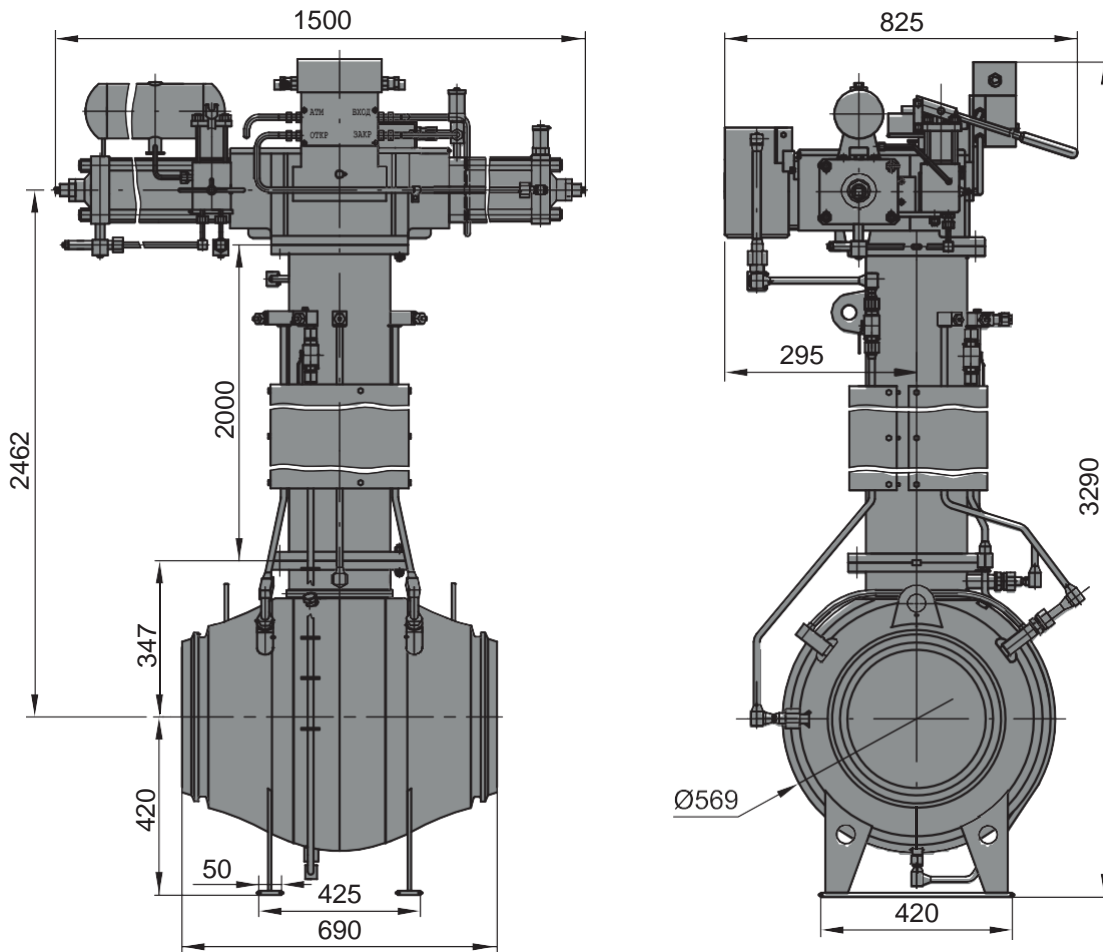
300
10.0
pneumatic-and-hydraulic
with manual override – hydraulic pump
electro-pneumatic with unit of limit switches
supply from pipeline
2.5...10.0
24, 110, 220 V/DC
welded end (WE)*
600

Material of main parts

Body	steel 09Г2С zinc chromating 24 μ
Ball	steel 20ГЛ, HCP 21 μ
Stem	steel 38ХА, HCP 21 μ
Seat	steel 09Г2С, zinc chromating 9 μ

*Pipe is beveled to the pipe specified by a Customer.

Ball Valve DN 300 PN 100 with Pneumatic-and-Hydraulic Actuator for Underground Installation



Product designation

Figure designation

Diameter Nominal, DN, mm
Pressure Nominal, PN, MPa
Actuator type

Control unit

Actuator operating medium

Pressure range of operating medium
at max. pressure differential, MPa

Control unit voltage

Connection

Weight, max, kg

KSh-300-100-PGP-PU-UKhL1-Pr

A.1.2750.194.160.00

300

10.0

pneumatic-and-hydraulic
with manual override – hydraulic pump
electro-pneumatic with unit of limit switches
supply from pipeline

2.5...10.0

24, 110, 220 V/DC

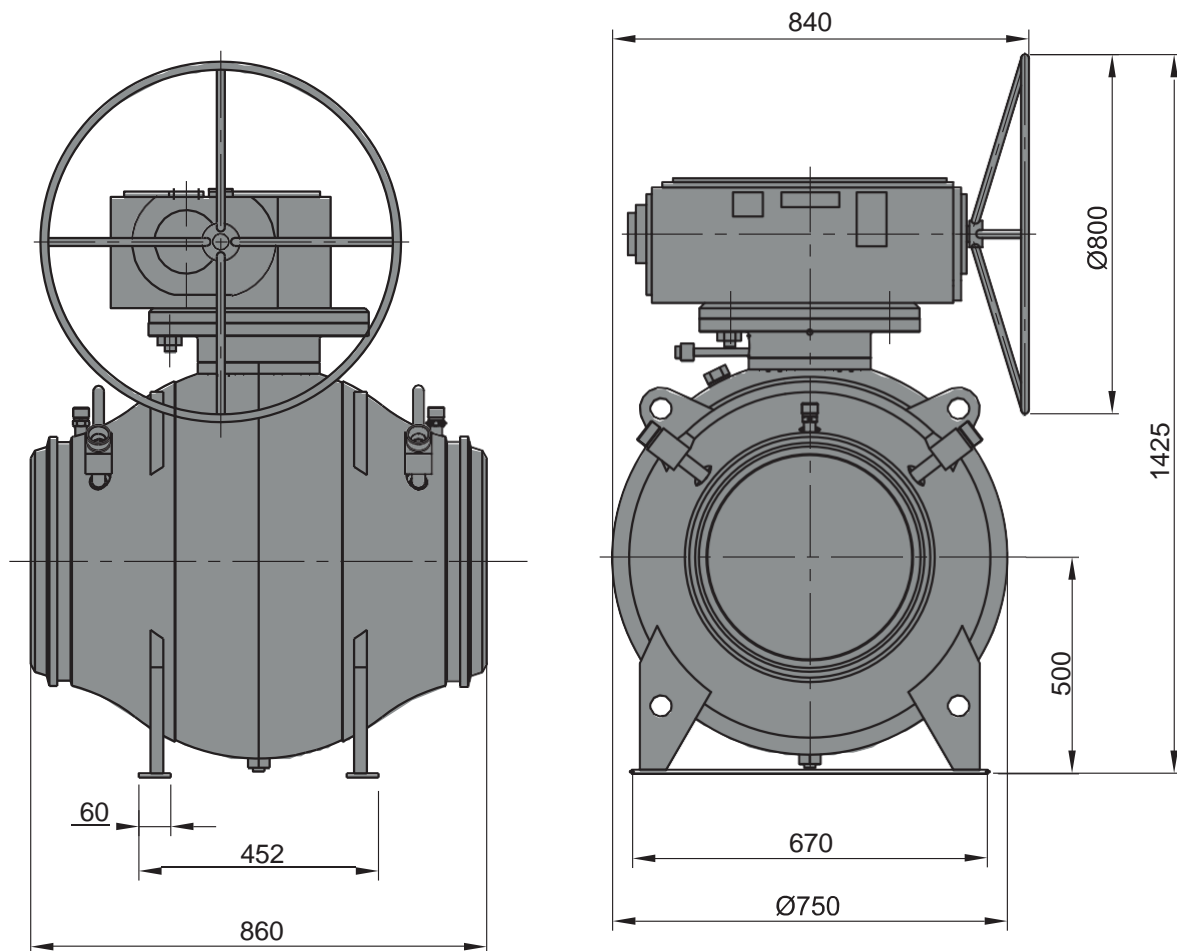
welded end (WE)*

920

Material of main parts

Body	steel 09Г2С zinc chromating 24 μ
Ball	steel 20ГЛ, HCP 21 μ
Stem	steel 38ХА, HCP 21 μ
Seat	steel 09Г2С, zinc chromating 9 μ

* Pipe is beveled to the pipe specified by a Customer.

**Product designation****Figure designation**

Diameter Nominal, DN, mm
 Pressure Nominal, PN, MPa
 Actuator type
 Connection
 Weight, max, kg

KSh-400-100-RP-NU-UKhL1-Pr**1.2750.285.101.00**

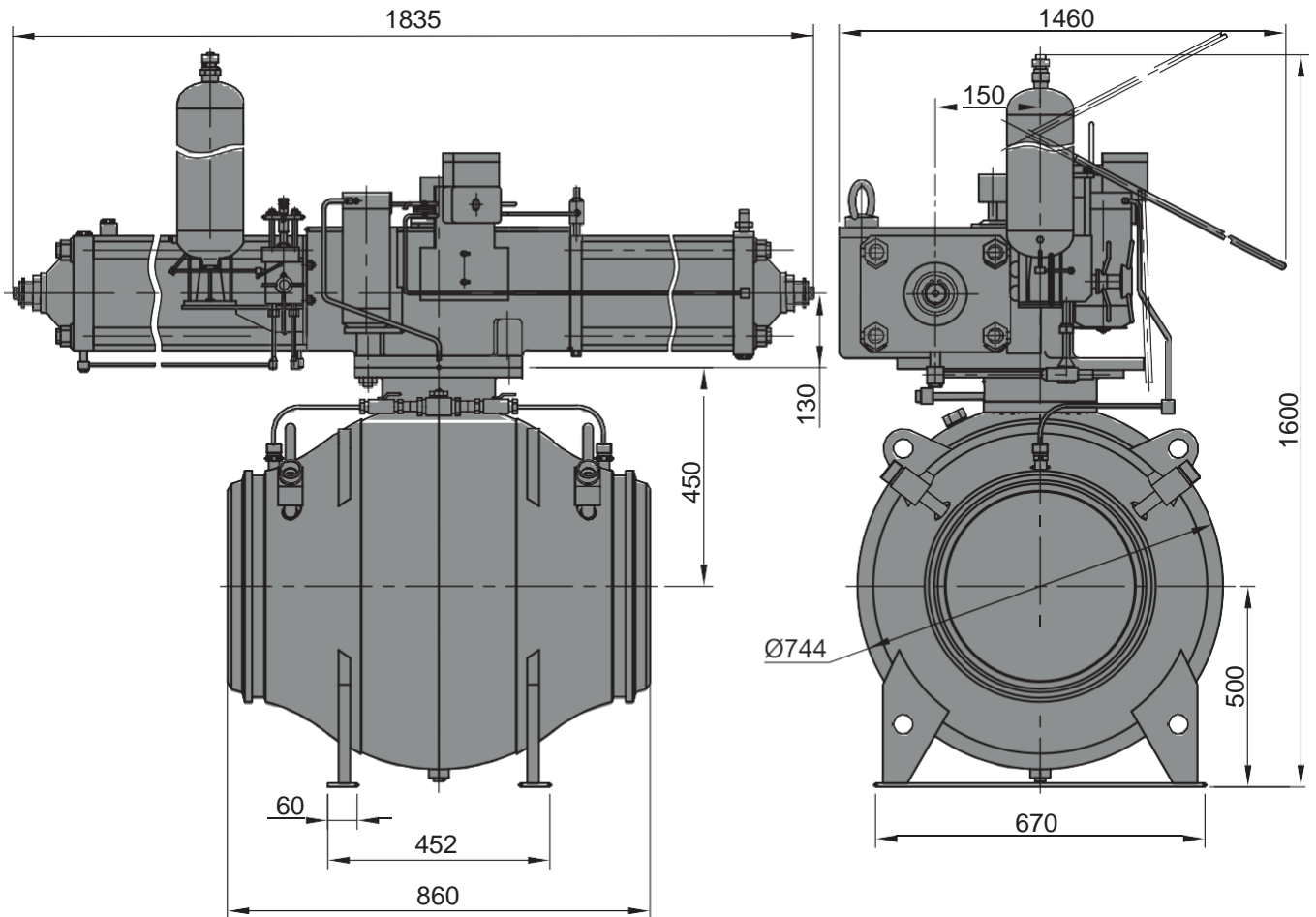
400
 10.0
 manual mechanical
 welded end*
 1101

Material of main parts

Body	steel 09Г2С, zinc chromating 24 μ
Ball	steel 20ГЛ, HCP 30 μ
Stem	steel 38 XA, HCP 21 μ
Seat	steel 09Г2С, zinc chromating 9 μ

* Pipe is beveled to the pipe specified by a Customer.

Ball Valve DN 400 PN 100 with Pneumatic-and-Hydraulic Actuator



Product designation

Figure designation

Diameter Nominal, DN, mm
Pressure Nominal, PN, MPa
Actuator type

Control unit

Actuator operating medium
Pressure range of operating medium
at max. pressure differential, MPa
Control unit voltage
Connection
Weight, max, kg

KSh-400-160-PGP-NU-UKhL1-Pr

1.2750.285.104.00

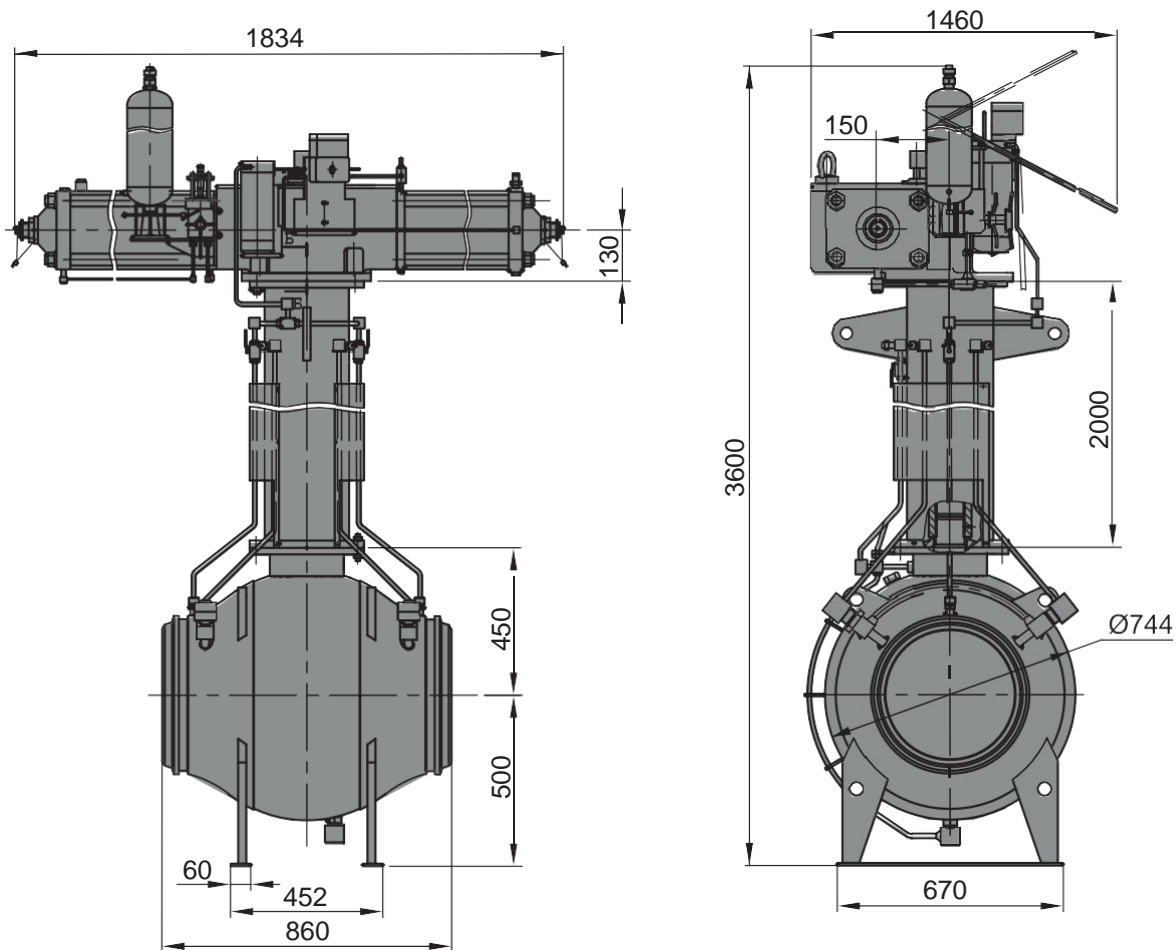
400
10.0
pneumatic-and-hydraulic
with manual override – hydraulic pump
electro-pneumatic with unit of limit switches
supply from pipeline
2.5...10.0
24, 110, 220 V/DC
welded end (WE)*
1250

Material of main parts

Body	steel 09Г2С, zinc chromating 24 μ
Ball	steel 20ГЛ, HCP 30 μ
Stem	steel 38ХА, HCP 21 μ
Seat	steel 09Г2С, zinc chromating 9 μ

* Pipe is beveled to the pipe specified by a Customer.

Ball Valve DN 400 PN 100 with Pneumatic-and-Hydraulic Actuator for Underground Installation



Product designation

Figure designation

Diameter Nominal, DN, mm
Pressure Nominal, PN, MPa
Actuator type

Control unit

Actuator operating medium
Pressure range of operating medium
at max. pressure differential, MPa
Control unit voltage
Connection
Weight, max, kg

KSh-400-160-PGP-PU-UKhL1-Pr

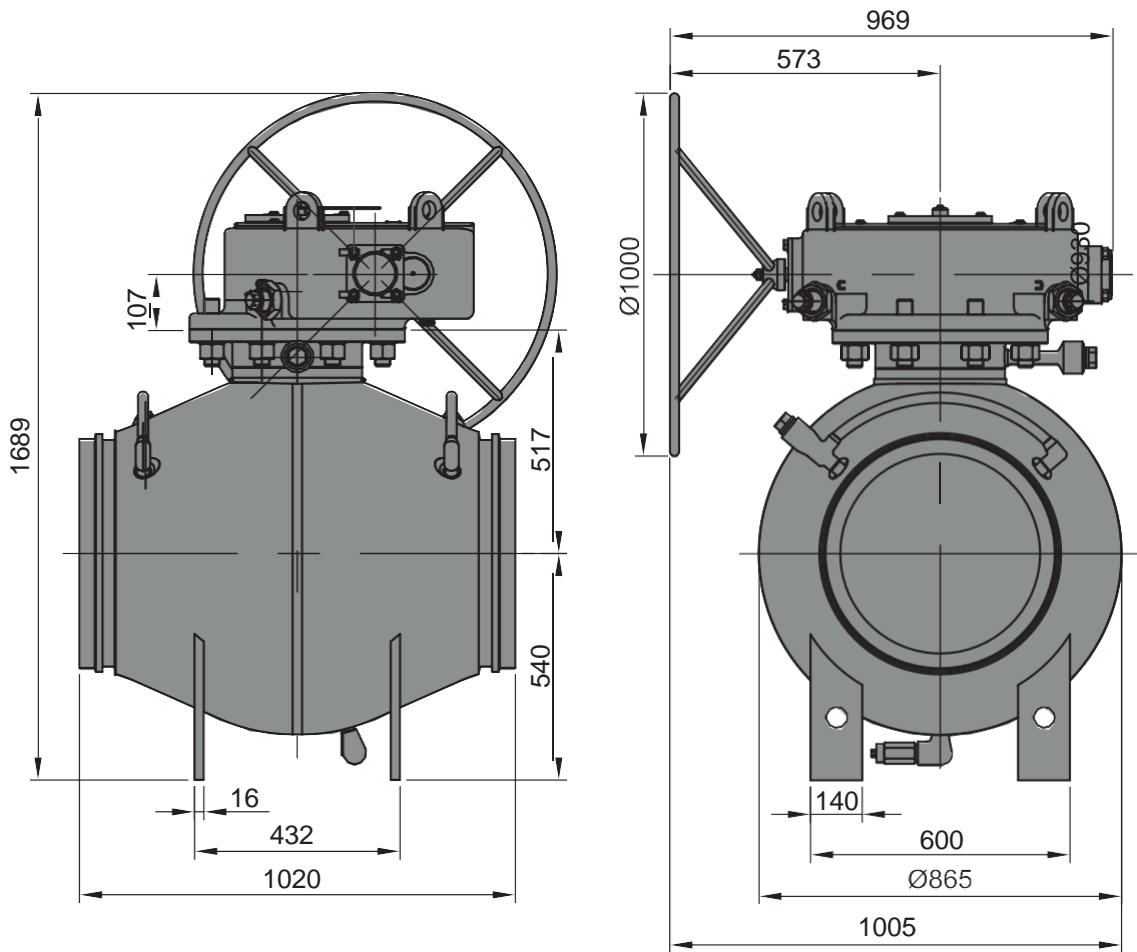
A.1.2750.161.104.00

400
10.0
pneumatic-and-hydraulic
with manual override – hydraulic pump
electro-pneumatic with unit of limit switches
supply from pipeline
2.5...10.0
24, 110, 220 V/DC
welded end (WE)*
1595

Material of main parts

Body	steel 09Г2С, zinc chromating 24 μ
Ball	steel 20ГЛ, HCP 30 μ
Stem	steel 38ХА, HCP 21 μ
Seat	steel 09Г2С, zinc chromating 9 μ

* Pipe is beveled to the pipe specified by a Customer.

**Product designation****Figure designation**

Diameter Nominal, DN, mm
 Pressure Nominal, PN, MPa
 Actuator type
 Connection
 Weight, max, kg

KSh-500-100-RP-NU-UKhL1-Pr**1.2750.315.101.00**

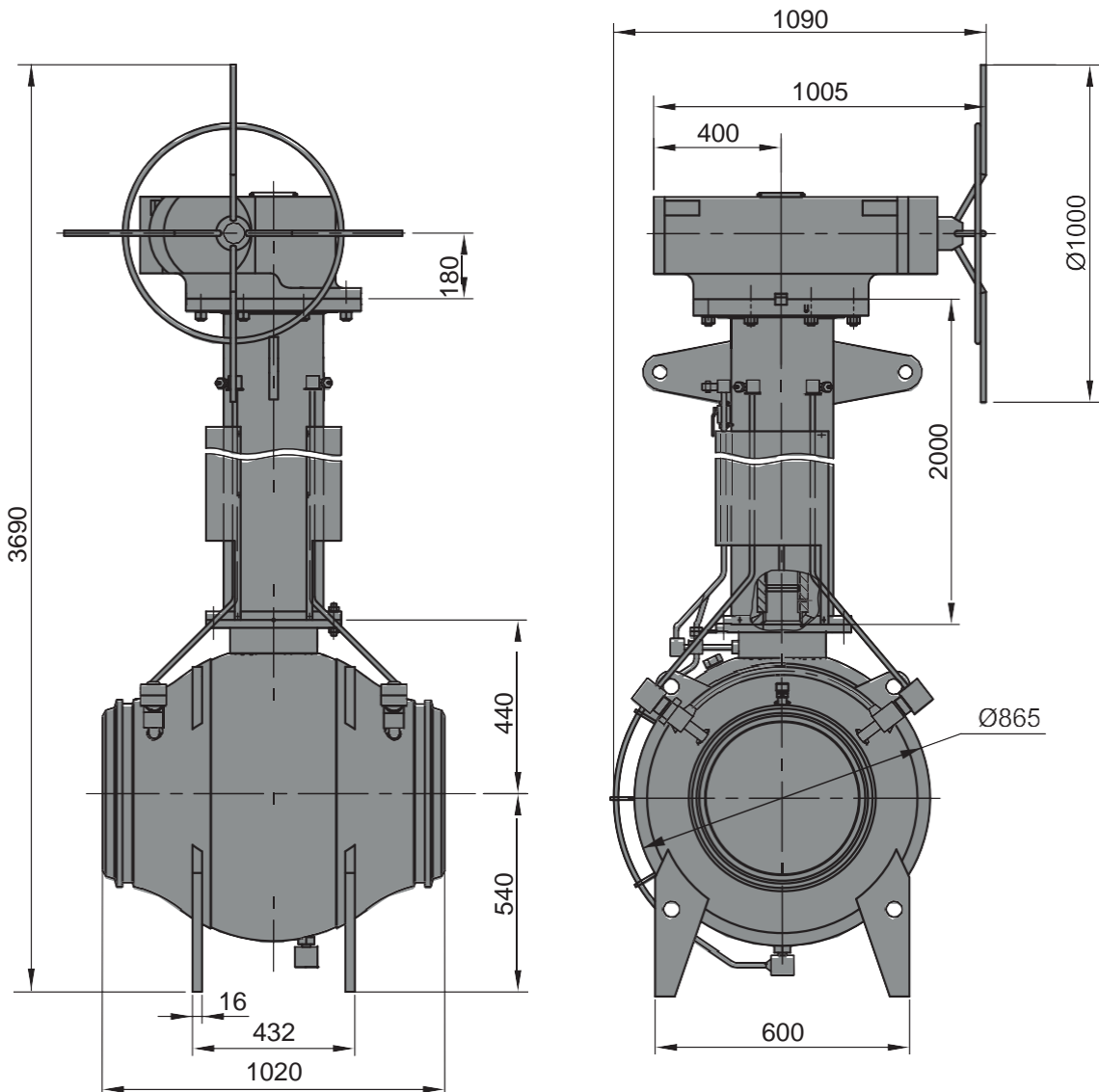
500
 10.0
 manual mechanical
 welded end (WE)*
 1834

Material of main parts

Body	steel 09Г2С
Ball	steel 20ГЛ, HCP 30 μ
Stem	steel 40X, HCP 21 μ
Seat (cover)	steel 09Г2С, zinc chromating 9 μ

* Pipe is beveled to the pipe specified by a Customer.

Ball Valve DN 500 PN 100 with Manual Actuator for Underground Installation



Product designation

Figure designation

Diameter Nominal, DN, mm
Pressure Nominal, PN, MPa
Actuator type
Connection
Weight, max, kg

KSh-500-100-RP-PU-UKhL1-Pr

1.2750.315.155.00

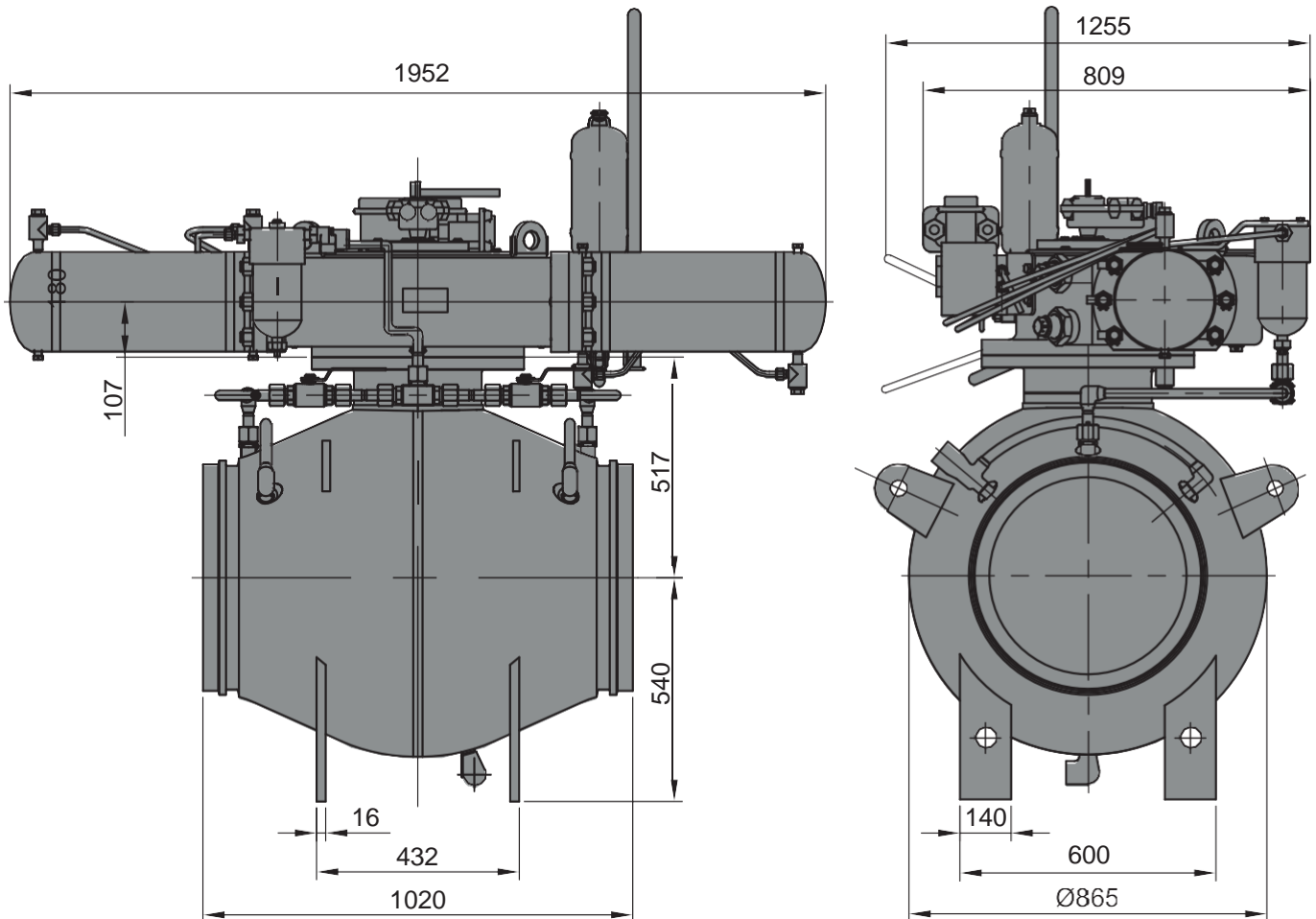
500
10.0
manual mechanical
welded end (WE)*
2430

Material of main parts

Body	steel 09Г2С, zinc chromating 24 μ
Ball	steel 20ГЛ, HCP 30 μ
Stem	steel 40X, HCP 21 μ
Seat (cover)	steel 09Г2С, zinc chromating 9 μ

* Pipe is beveled to the pipe specified by a Customer.

Ball Valve DN 500 PN 100 with Pneumatic-and-Hydraulic Actuator



Product designation

Figure designation

Diameter Nominal, DN, mm
Pressure Nominal, PN, MPa

Actuator type

Actuator operating medium

Pressure range of operating medium
at pressure differential on valve
closure member up to 2.0 MPa, MPa

Control unit voltage

Connection

Weight, max, kg

KSh-500-100-PGP-NU-UKhL1-Pr

1.2750.315.104.00

500

10.0

pneumatic-and-hydraulic
supply from pipeline

2.5...10.0

24, 110, 220 V/DC

welded end (WE)*

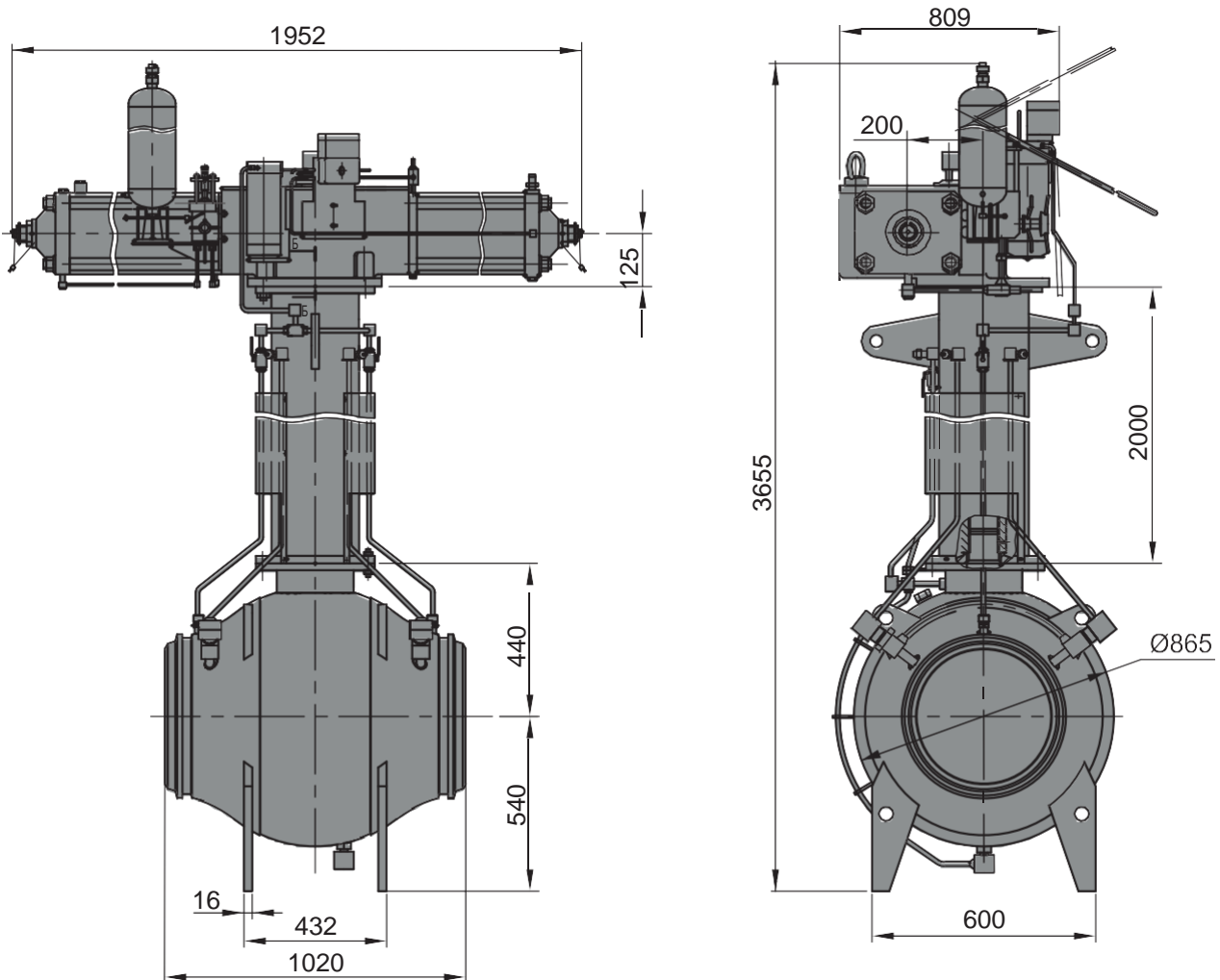
2078

Material of main parts

Body	steel 09Г2С
Ball	steel 20ГЛ, HCP 30 μ
Stem	steel 40X, HCP 21 μ
Seat	steel 09Г2С, zinc chromating 9 μ

* Pipe is beveled to the pipe specified by a Customer.

Ball Valve DN 500 PN 100 with Pneumatic-and-Hydraulic Actuator for Underground Installation



Product designation

Figure designation

Diameter Nominal, DN, mm
Pressure Nominal, PN, MPa
Actuator type

Control unit

Actuator operating medium

Pressure range of operating medium
at pressure differential on valve
closure member up to 2.0 MPa, MPa

Control unit voltage

Connection

Weight, max, kg

KSh-500-100-PGP-PU-UKhL1-Pr

1.2750.315.160.00

500

10.0

pneumatic-and-hydraulic

with manual override – hydraulic pump

electro-pneumatic with unit of limit switches

supply from pipeline

2.5...10.0

24, 110, 220 V/DC

welded end (WE)*

2680

Material of main parts

Body

Ball

Stem

Seat

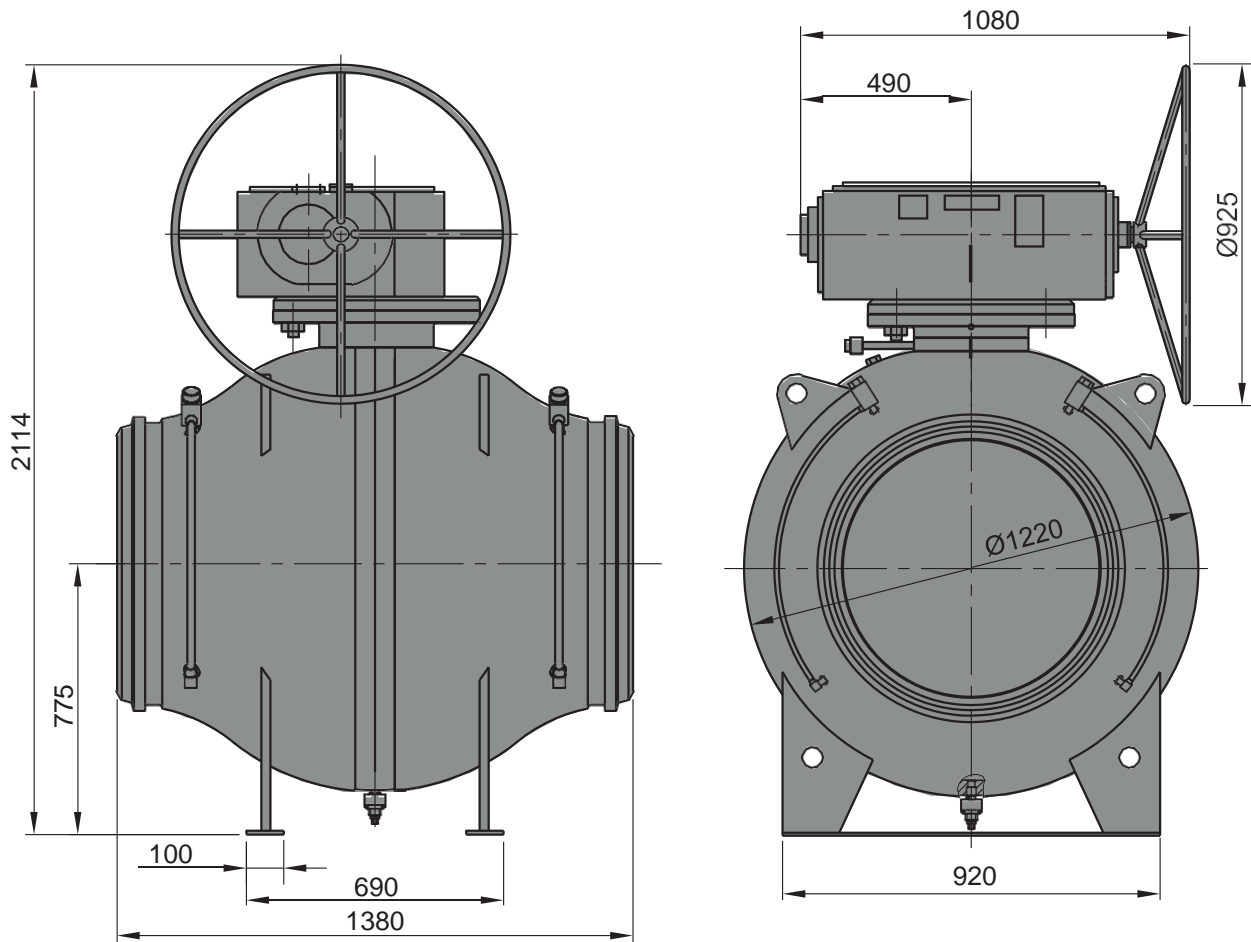
steel 09Г2С, zinc chromating 24 μ

steel 20ГЛ, HCP 30 μ

steel 40X, HCP 21 μ

steel 09Г2С, zinc chromating 9 μ

* Pipe is beveled to the pipe specified by a Customer.

**Product designation****Figure designation**

Diameter Nominal, DN, mm
 Pressure Nominal, PN, MPa
 Actuator type
 Connection
 Weight, max, kg

KSh-700-100-RP-NU-UKhL1-Pr**1.2750.148.101.00-08**

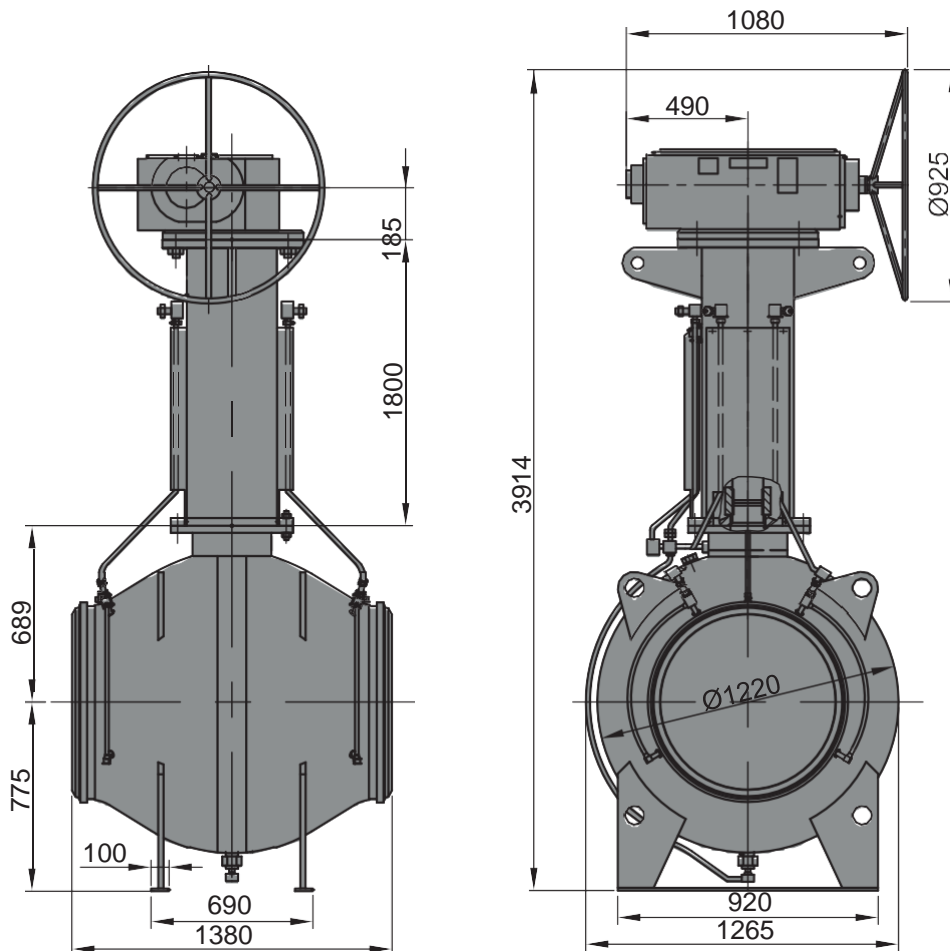
700
 10.0
 manual mechanical
 welded end (WE)*
 3955

Material of main parts

Body	steel 09Г2С
Ball	steel 20ГЛ, HCP 30 μ
Stem	steel 40X, HCP 21 μ
Seat (cover)	steel 09Г2С, zinc chromating 9 μ

* Pipe is beveled to the pipe specified by a Customer.

Ball Valve DN 700 PN 100 with Manual Actuator for Underground Installation



Product designation

Figure designation

Diameter Nominal, DN, mm
Pressure Nominal, PN, MPa
Actuator type
Connection
Weight, max, kg

KSh-700-100-RP-PU-UKhL1-Pr

1.2750.155.101.00-02

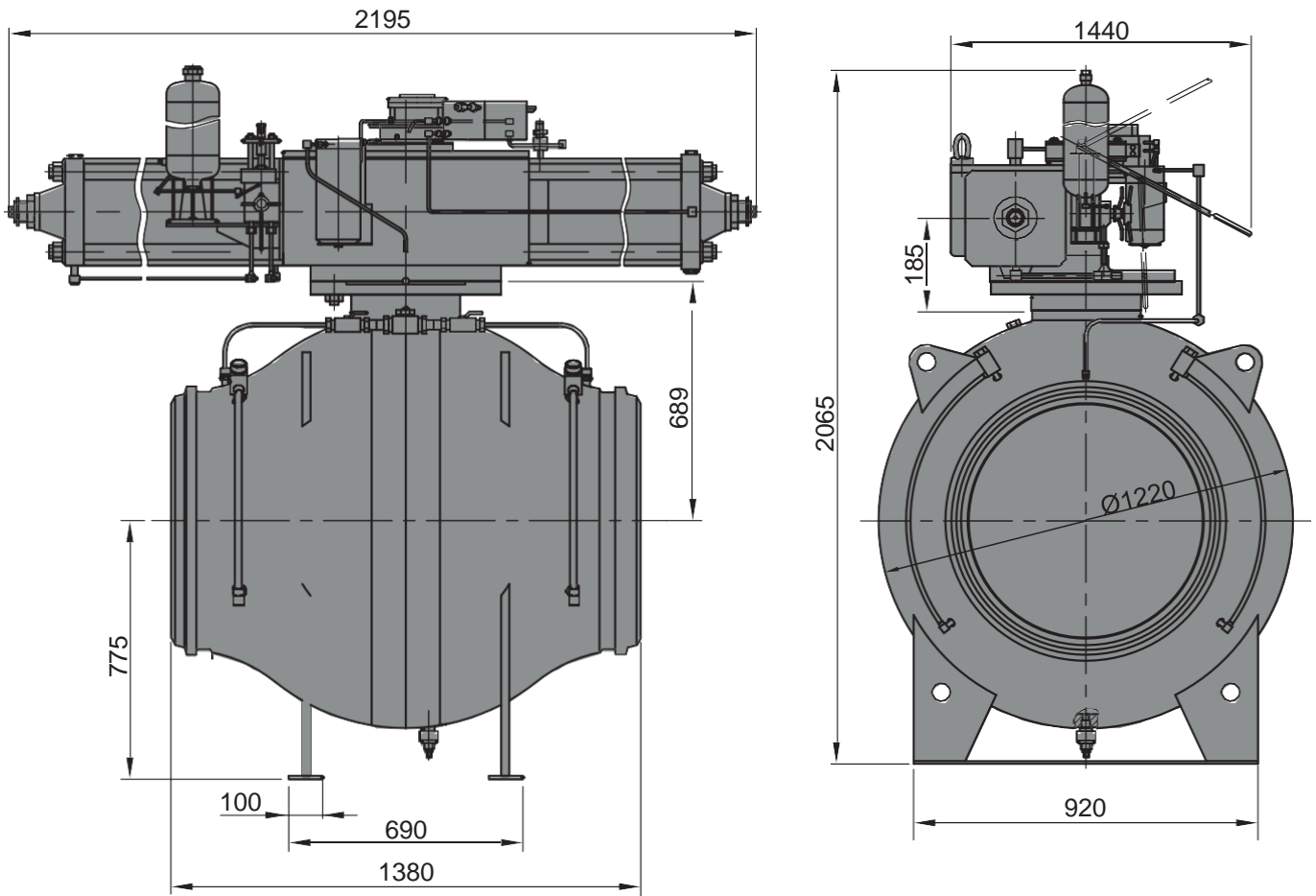
700
10.0
manual mechanical
welded end (WE)*
4780

Material of main parts

Body	steel 09Г2С
Ball	steel 20ГЛ, HCP 30 μ
Stem	steel 40X, HCP 21 μ
Seat (cover)	steel 09Г2С, zinc chromating 9 μ

* Pipe is beveled to the pipe specified by a Customer.

Ball Valve DN 700 PN 100 with Pneumatic-and-Hydraulic Actuator



Product designation

Figure designation

Diameter Nominal, DN, mm
Pressure Nominal, PN, MPa
Actuator type

Control unit

Actuator operating medium

Min. control pressure at pressure differential
at valve closure member up to 2.0 MPa, MPa

Control unit voltage

Connection

Weight, max, kg

KSh-700-100-PGP-NU-UKhL1-Pr

1.2750.148.104.00-06

700

10.0

pneumatic-and-hydraulic

with manual override – hydraulic pump

electro-pneumatic with unit of limit switches

supply from pipeline

2.5

24, 110, 220 V/DC

welded end (WE)*

4205

Material of main parts

Body

steel 09Г2С, zinc chromating 24 μ

Ball

steel 20ГЛ, HCP 30 μ

Stem

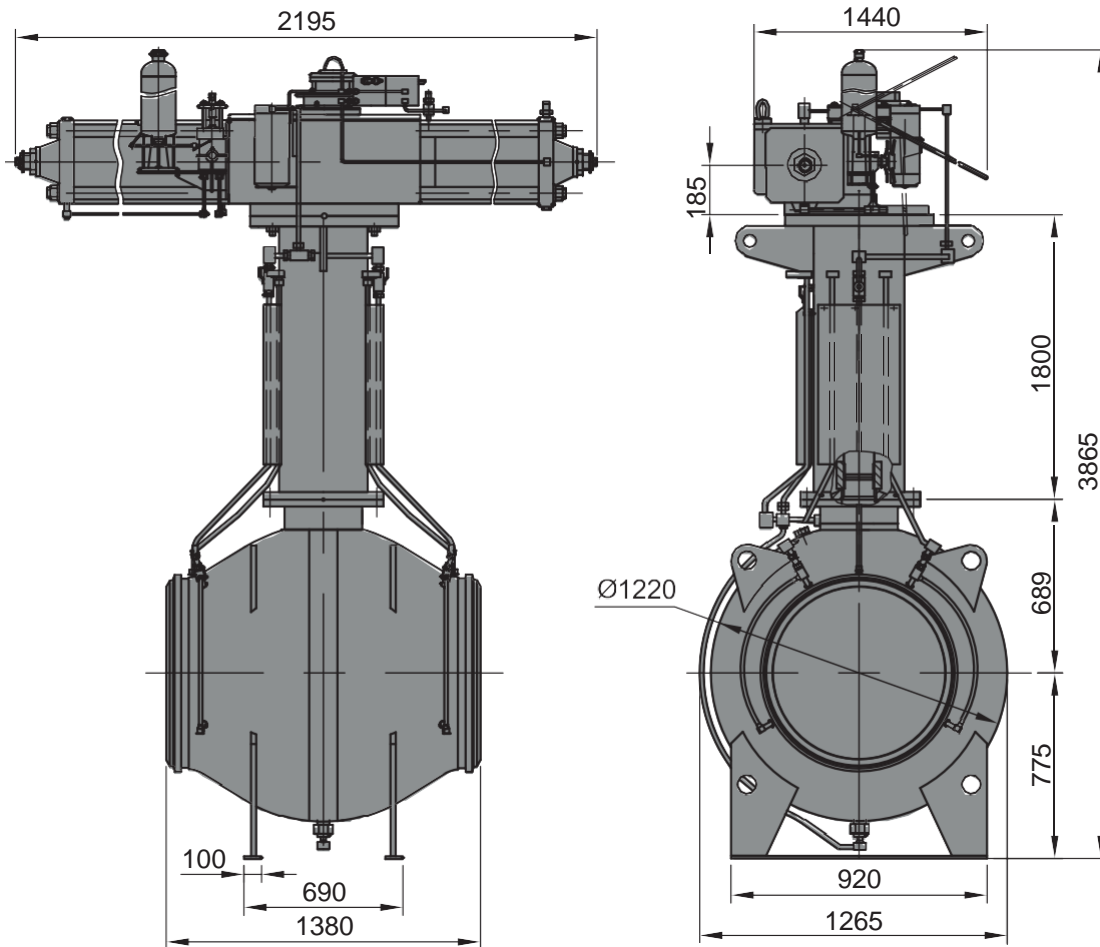
steel 40X, HCP 21 μ

Seat

steel 09Г2С, zinc chromating 9 μ

* Pipe is beveled to the pipe specified by a Customer.

Ball Valve DN 700 PN 100 with Pneumatic-and-Hydraulic Actuator for Underground Installation



Product designation

Figure designation

Diameter Nominal, DN, mm
Pressure Nominal, PN, MPa
Actuator type

Control unit

Actuator operating medium

Min. control pressure at pressure differential
at valve closure member up to 2.0 MPa, MPa

Control unit voltage

Connection

Weight, max, kg

KSh-700-100-PGP-PU-UKhL1-Pr

1.2750.156.104.00-02

700

10.0

pneumatic-and-hydraulic
with manual override – hydraulic pump
electro-pneumatic with unit of limit switches
supply from pipeline

2.5

24, 110, 220 V/DC

welded end (WE)*

5040

Material of main parts

Body

steel 09Г2С, zinc chromating 24 μ

Ball

steel 20ГЛ, HCP 30 μ

Stem

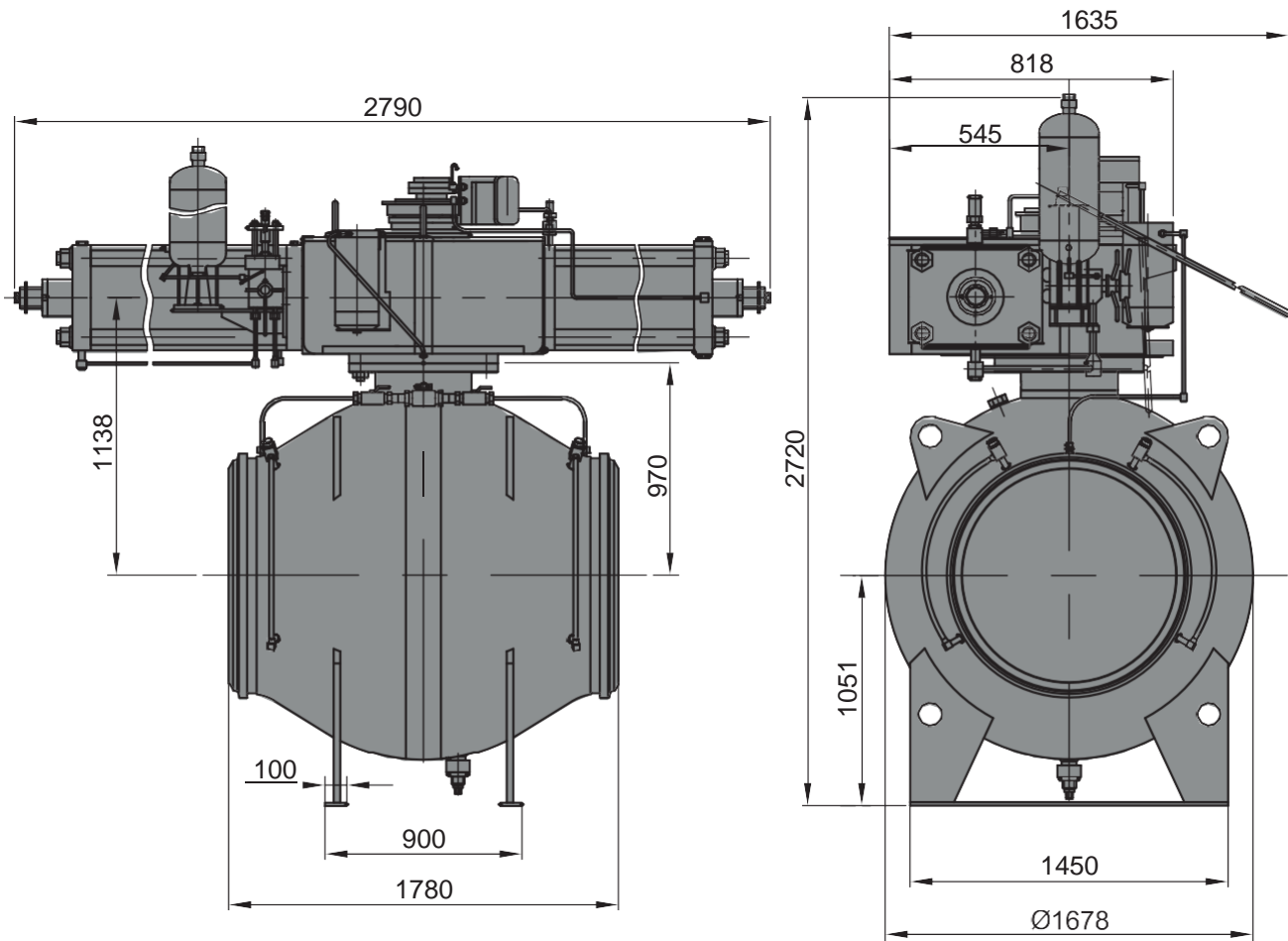
steel 40X, HCP 21 μ

Seat

steel 09Г2С, zinc chromating 9 μ

* Pipe is beveled to the pipe specified by a Customer.

Ball Valve DN 1000 PN 100 with Pneumatic-and-Hydraulic Actuator



Product designation

Figure designation

Diameter Nominal, DN, mm
Pressure Nominal, PN, MPa
Actuator type

Control unit

Control unit voltage

Actuator operating medium

Min. control pressure at pressure differential
at valve closure member up to 2.0 MPa, MPa

Connection

Weight, max, kg

KSh-1000-100-PGP-NU-UKhL1-Pr

1.2750.149.104.00-02

1000

10.0

pneumatic-and-hydraulic
with manual override – hydraulic pump
electro-pneumatic with unit of limit switches

24, 110, 220 V/DC

supply from pipeline

2.5

welded end (WE)*

12000

Material of main parts

Body

steel 09Г2С, zinc chromating 24 μ

Ball

steel 20ГЛ, HCP 30 μ

Stem

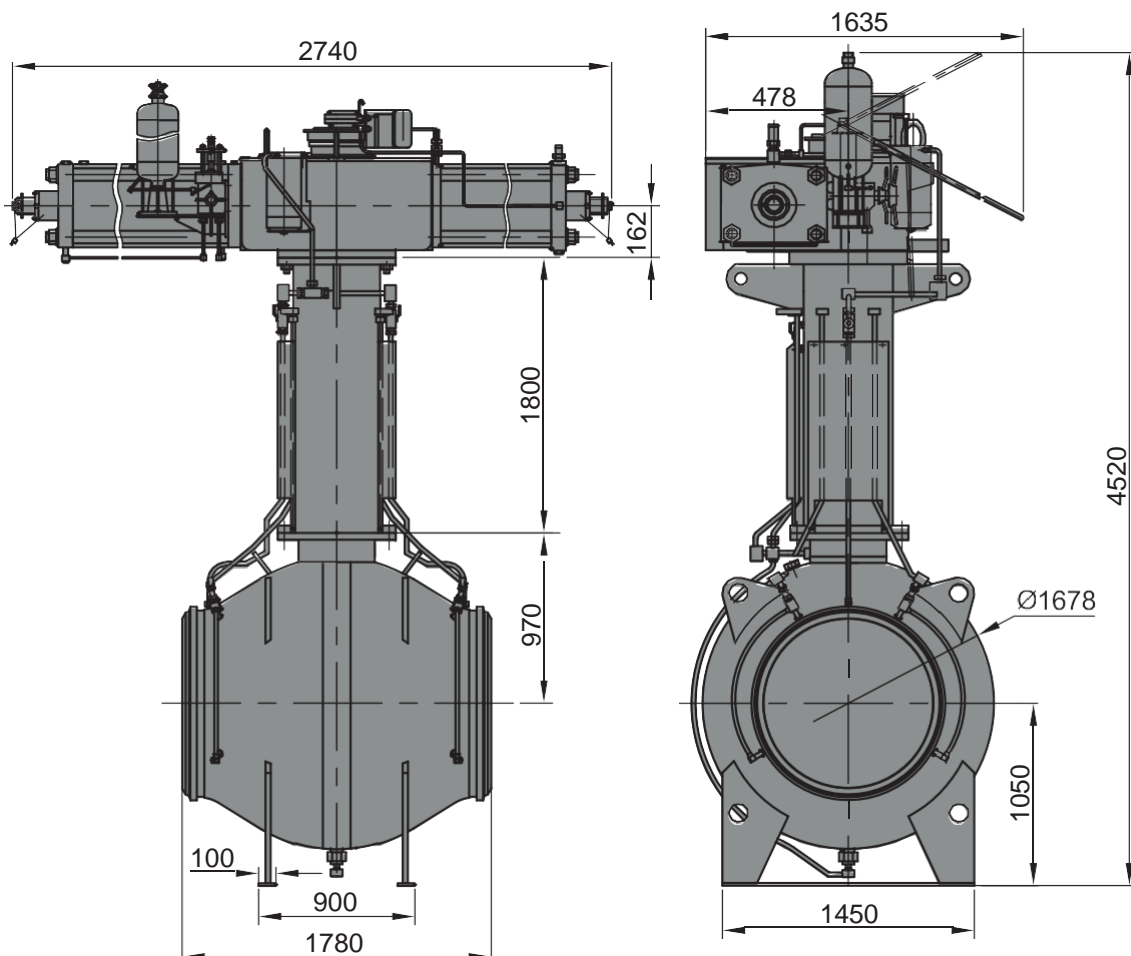
steel 40X, HCP 21 μ

Seat

steel 09Г2С, zinc chromating 9 μ

* Pipe is beveled to the pipe specified by a Customer.

Ball Valve DN 1000 PN 100 with Pneumatic-and-Hydraulic Actuator for Underground Installation



Product designation

Figure designation

Diameter Nominal, DN, mm
Pressure Nominal, PN, MPa
Actuator type

Control unit

Control unit voltage

Actuator operating medium

Min. control pressure at pressure differential
at valve closure member up to 2.0 MPa, MPa

Connection

Weight, max, kg

KSh-1000-100-PGP-PU-UKhL1-Pr

1.2750.157.104.00-02

1000

10.0

pneumatic-and-hydraulic
with manual override – hydraulic pump
electro-pneumatic with unit of limit switches
24, 110, 220 V/DC
supply from pipeline

2.5

welded end (WE)*

13300

Material of main parts

Body

Ball

Stem

Seat

steel 09Г2С, zinc chromating 24 μ

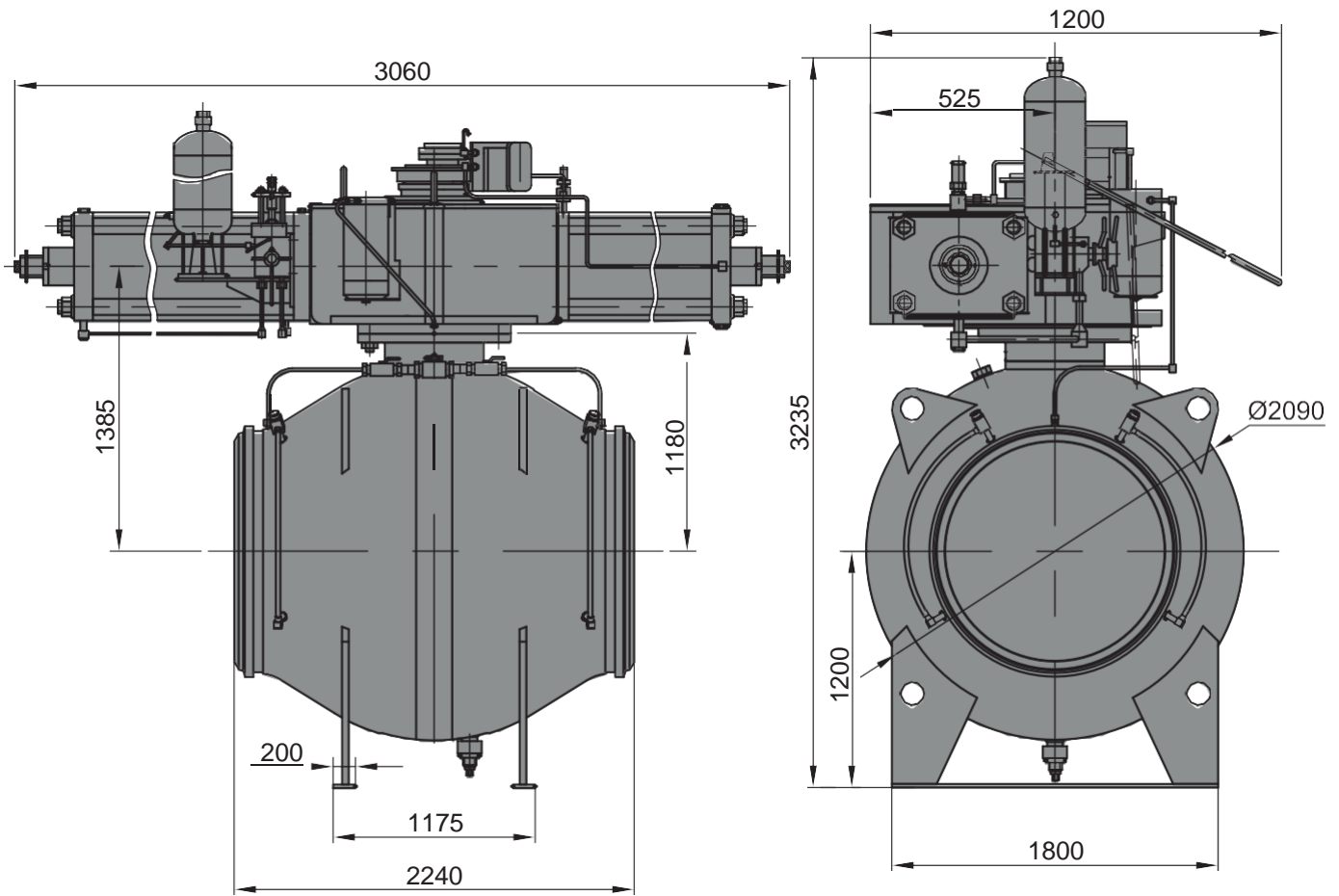
steel 20ГЛ, HCP 30 μ

steel 40X, HCP 21 μ

steel 09Г2С, zinc chromating 9 μ

* Pipe is beveled to the pipe specified by a Customer.

Ball Valve DN 1200 PN 100 with Pneumatic-and-Hydraulic Actuator



Product designation

Figure designation

Diameter Nominal, DN, mm
Pressure Nominal, PN, MPa
Actuator type

Control unit

Control unit voltage

Actuator operating medium

Min. control pressure at pressure differential
at valve closure member up to 2.0 MPa, MPa

Connection

Weight, max, kg

KSh-1200-100-PGP-NU-UKhL1-Pr

1.2750.163.104.00-02

1200

10.0

pneumatic-and-hydraulic

with manual override – hydraulic pump

electro-pneumatic with unit of limit switches

24, 110, 220 V/DC

supply from pipeline

2.5

welded end (WE)*

20425

Material of main parts

Body

steel 09Г2С

Ball

steel 20ГЛ, HCP 30 μ

Stem

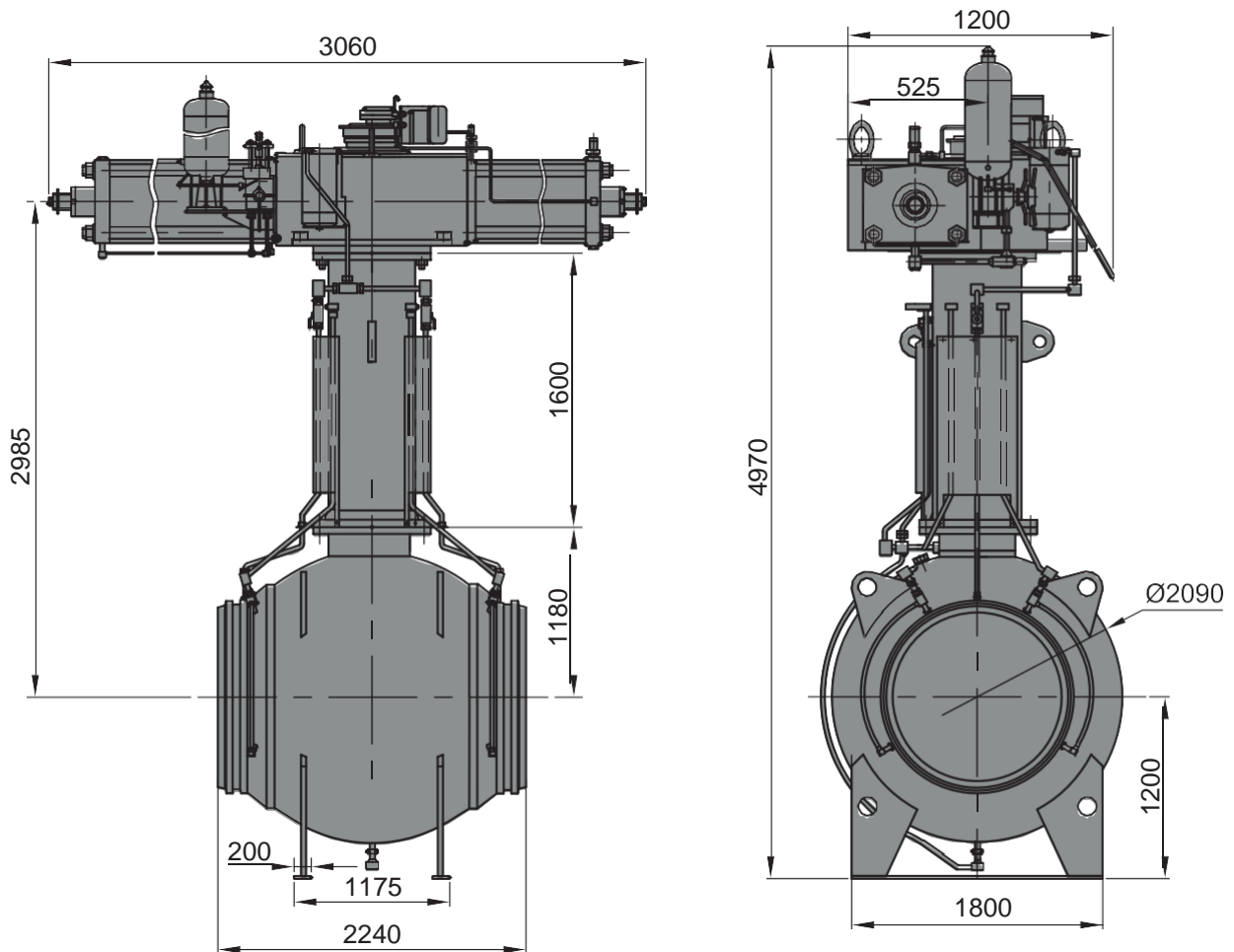
steel 45ХГМА, HCP 21 μ

Seat

steel 09Г2С, zinc chromating 9 μ

* Pipe is beveled to the pipe specified by a Customer.

Ball Valve DN 1200 PN 100 with Pneumatic-and-Hydraulic Actuator for Underground Installation



Product designation

Figure designation

Diameter Nominal, DN, mm
Pressure Nominal, PN, MPa
Actuator type

Control unit

Control unit voltage, V

Actuator operating medium

Min. control pressure at pressure differential
at valve closure member up to 2.0 MPa, MPa

Connection

Weight, max, kg

KSh-1200-100-PGP-PU-UKhL1-Pr

1.2750.166.104.00

1200

10.0

pneumatic-and-hydraulic

with manual override – hydraulic pump

electro-pneumatic with unit of limit switches

DC 24, 110, 220

supply from pipeline

2.5

welded end (WE)*

21400

Material of main parts

Body

steel 09Г2С

Ball

steel 20ГЛ, HCP 30 μ

Stem

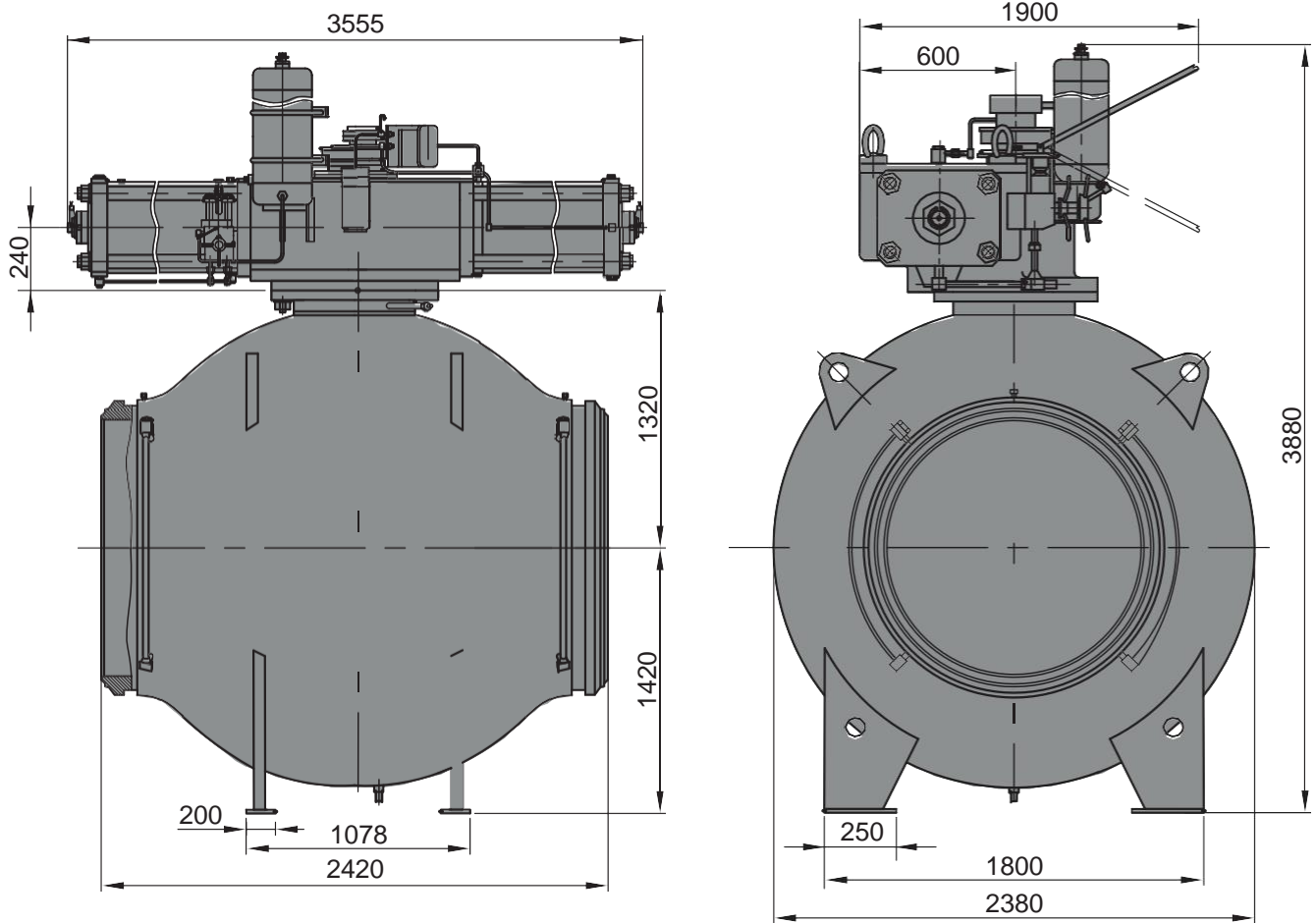
steel 45ХГМА, HCP 21 μ

Seat

steel 09Г2С, zinc chromating 9 μ

* Pipe is beveled to the pipe specified by a Customer.

Ball Valve DN 1400 PN 100 with Pneumatic-and-Hydraulic Actuator



Product designation

Figure designation

Diameter Nominal, DN, mm
Pressure Nominal, PN, MPa
Actuator type

Control unit

Control unit voltage, V

Actuator operating medium

Min. control pressure at pressure differential
at valve closure member up to 2.0 MPa, MPa

Connection

Weight, max, kg

KSh-1400-100-PGP-NU-UKhL1-Pr

1.2750.277.104.00

1400

10.0

pneumatic-and-hydraulic
with manual override – hydraulic pump
electro-pneumatic with unit of limit switches
DC 24, 110, 220

non-aggressive gaseous,
supply from pipeline

2.5

welded end (WE)*

25314

Material of main parts

Body

steel 09Г2С

Ball

steel 20ГЛ, HCP 30 μ

Stem

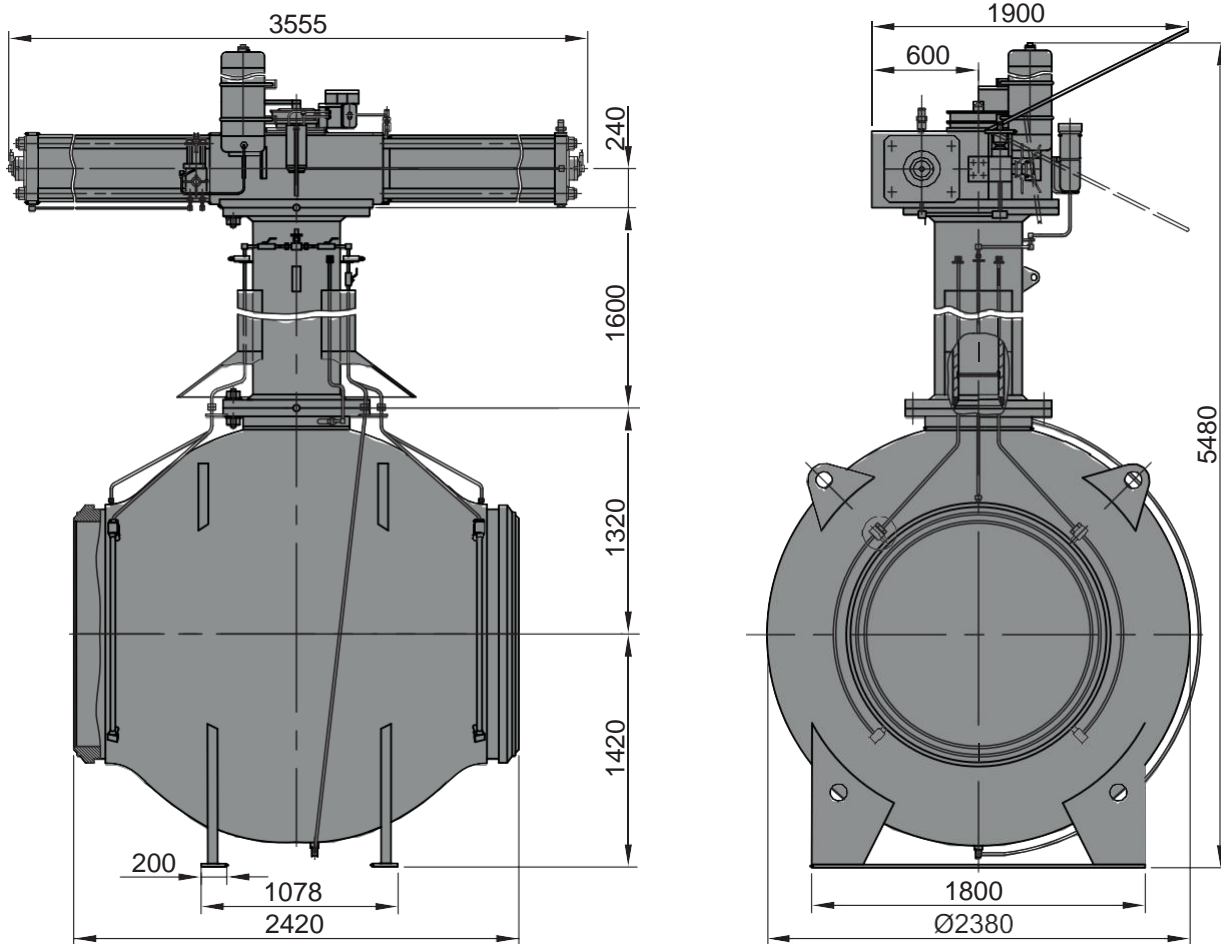
steel 30X H3 MΦA, HCP 21 μ

Seat

steel 09Г2С, zinc chromating 9 μ

* Pipe is beveled to the pipe specified by a Customer.

Ball Valve DN 1400 PN 100 with Pneumatic-and-Hydraulic Actuator for Underground Installation



Product designation

Figure designation

Diameter Nominal, DN, mm
Pressure Nominal, PN, MPa
Actuator type

Control unit

Control unit voltage, V

Actuator operating medium

Min. control pressure at pressure differential
at valve closure member up to 2.0 MPa, MPa

Connection

Weight, max, kg

KSh-1400-100-PGP-NU-UKhL1-Pr

1.2750.277.104.00

1400

10.0

pneumatic-and-hydraulic

with manual override – hydraulic pump

electro-pneumatic with unit of limit switches

DC 24, 110, 220

non-aggressive gaseous,
supply from pipeline

2.5

welded end (WE)*

25314

Material of main parts

Body

steel 09Г2С

Ball

steel 20ГЛ, HCP 30 μ

Stem

steel 30X H3 MΦA, HCP 21 μ

Seat

steel 09Г2С, zinc chromating 9 μ

* Pipe is beveled to the pipe specified by a Customer.

Check Valves

DN 300 - 1000 PN 80, 100, 160

Designed to automatically prevent back flow of working medium, when transmitting non-aggressive natural gas and other non-aggressive media at the temperature ranged -60°C to $+80^{\circ}\text{C}$.

Tightness class per GOST 13252.

Welded end connection (flanged is possible).

Climatic version for areas with temperate and cold climate (-60°C thru $+45^{\circ}\text{C}$).

The average service life before overhaul is no more 40 years.

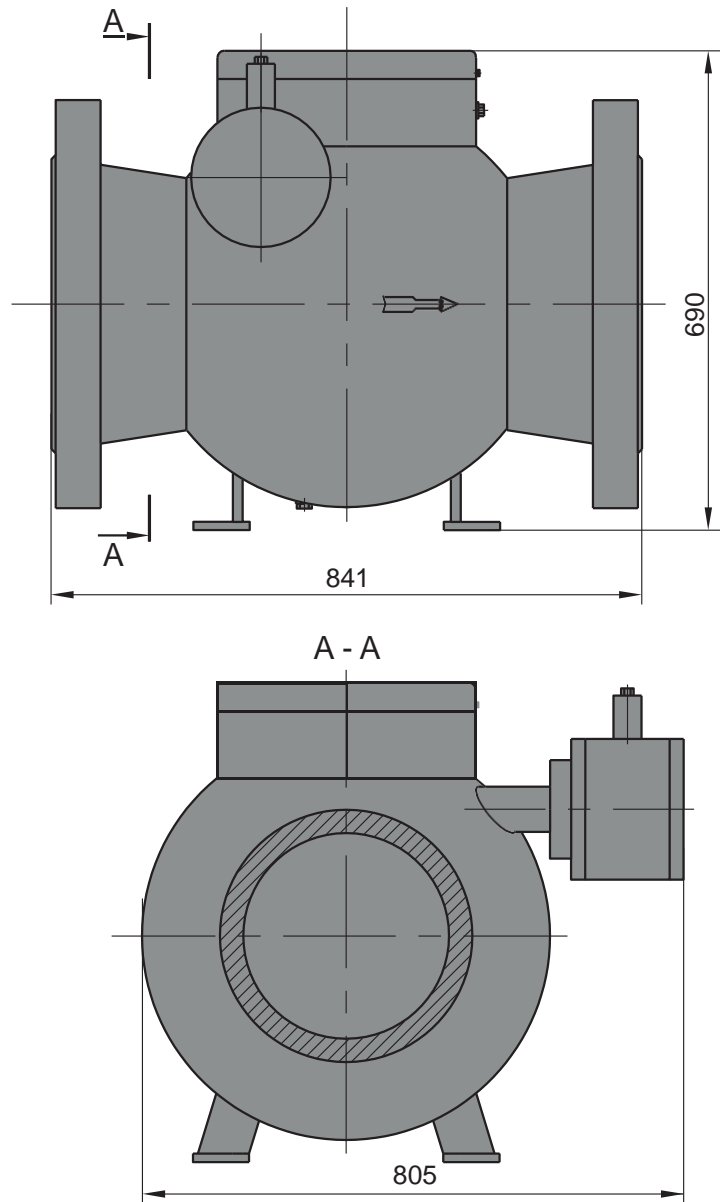
The Company reserves the right to make design changes to improve it, while minor changes may not be shown in the Catalog.



DN 700 PN 80

Design Features:

- Swing type.
- Liquid dampers for DN 300...500 and pneumatic dampers for - DN 700 and over to reduce impact loads.
- One-piece stamped and welded body design.
- High maintainability.
- Low pressure losses.

**Product designation****ZO-300-80-F-F****Figure designation****1.2770.21.200.00-01**

Diameter Nominal, DN, mm

300

Pressure Nominal, PN, MPa

8.0

Connection

Flanged end, with counter flanges, fasteners and sealing parts (WE)*

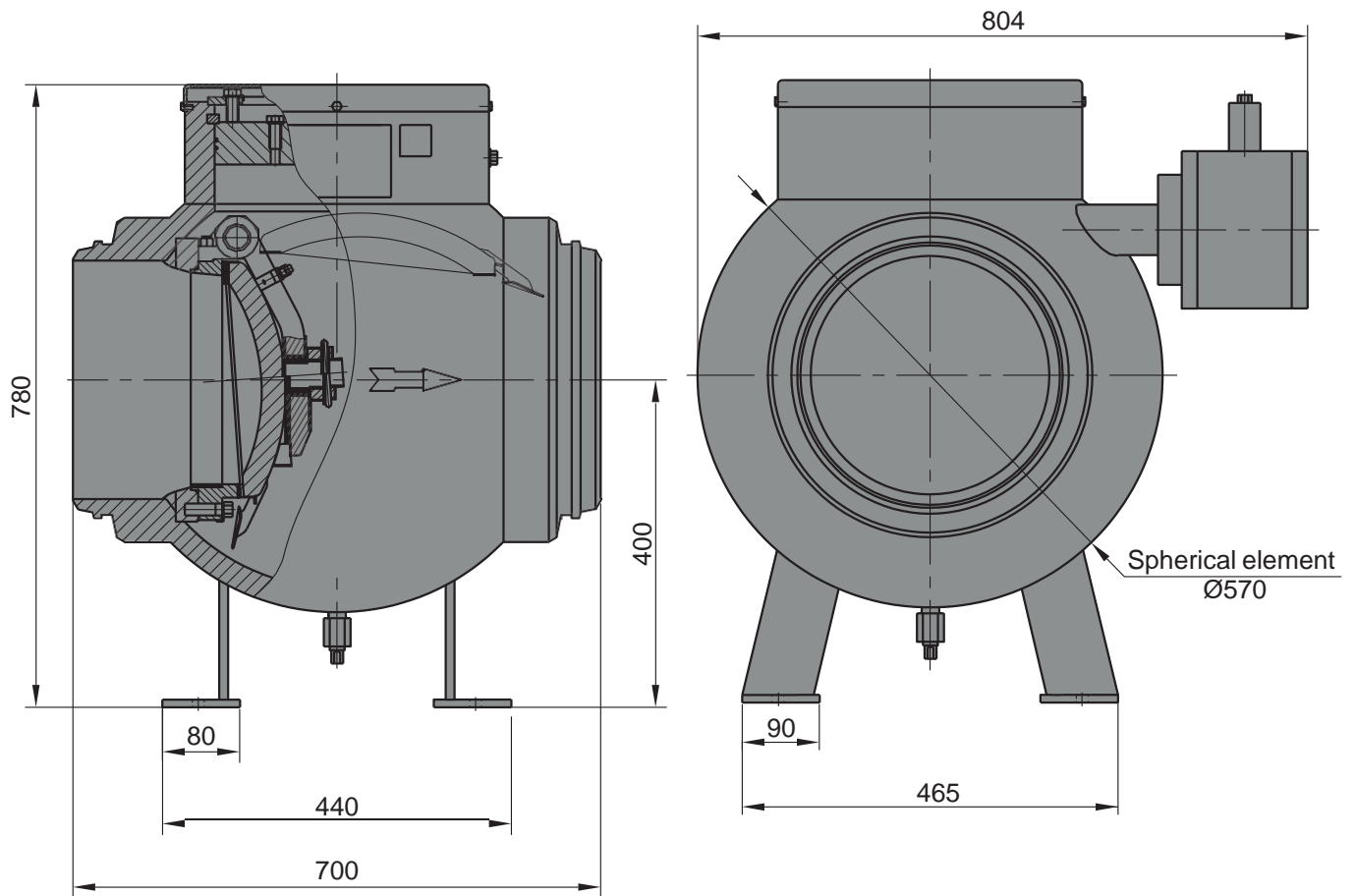
Weight, max, kg

640

Material of main parts

steel 10Г2

* Pipe is beveled to the pipe specified by a Customer.

**Product designation****ZO-300-100-Pr****Figure designation****1.2770.56.200.00-01**

Diameter Nominal, DN, mm

300

Pressure Nominal, PN, MPa

10.0

Connection

welded end (WE)*

Weight, max, kg

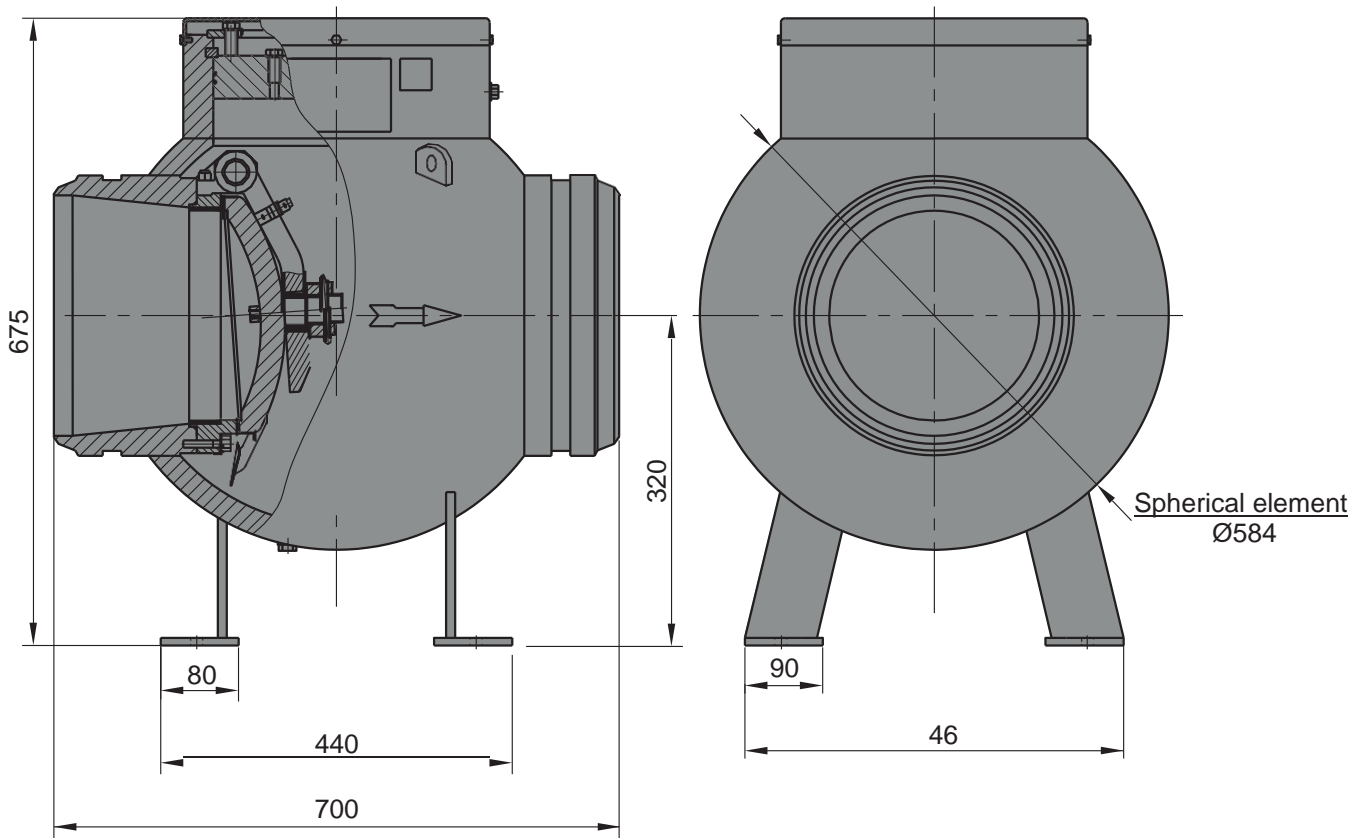
470

Material of main parts

steel 09Г2С

* Pipe is beveled to the pipe specified by a Customer.

51 Check Valve DN 300 PN 160



Product designation

ZO-300-160-Pr

Figure designation

1.2770.18.200.00

Diameter Nominal, DN, mm

300

Pressure Nominal, PN, MPa

16.0

Connection

welded end (WE)*

Weight, max, kg

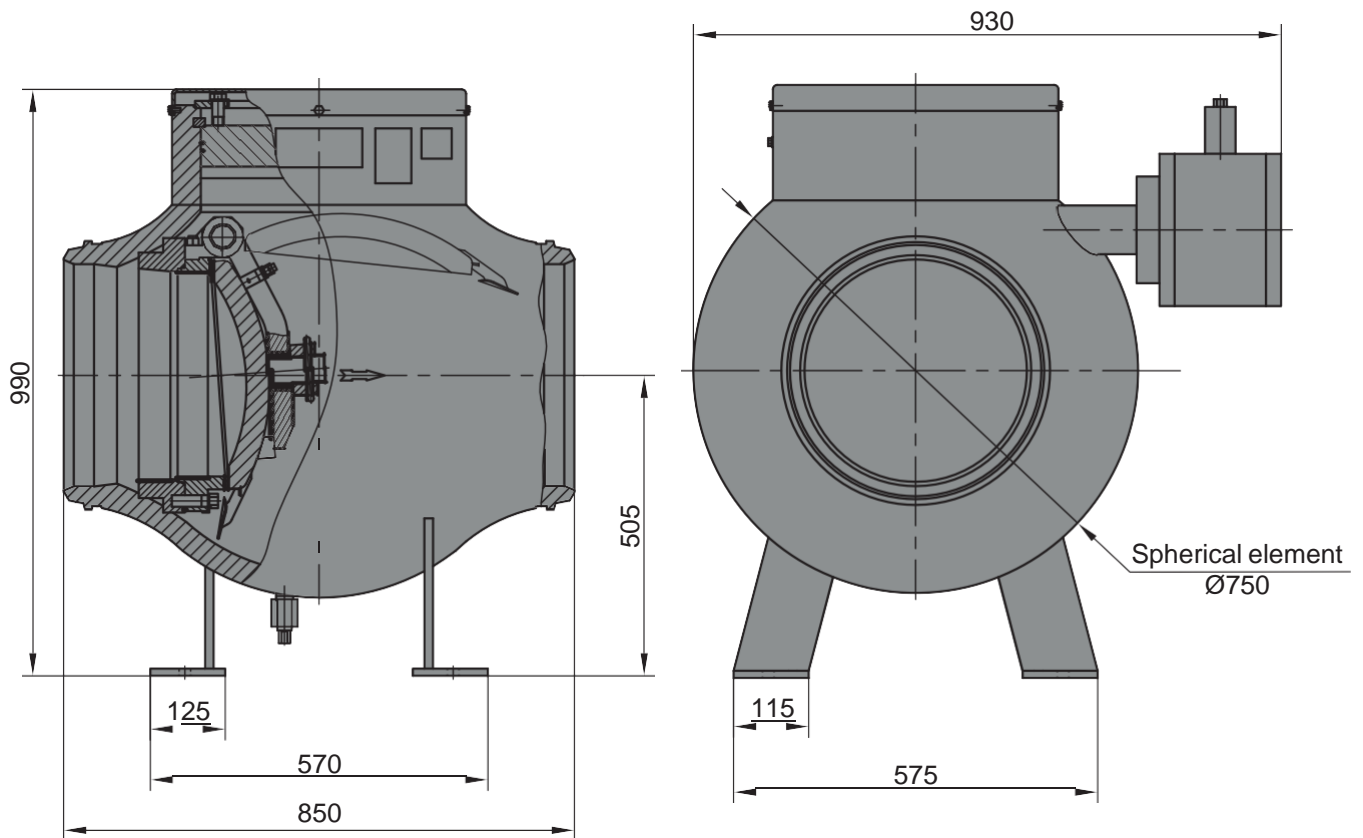
430

Material of main parts

steel 09Г2С

steel 10Г2

* Pipe is beveled to the pipe specified by a Customer.

**Product designation****ZO-400-100-Pr****Figure designation****1.2770.57.200.00-01**

Diameter Nominal, DN, mm

400

Pressure Nominal, PN, MPa

10.0

Connection

welded end (WE)*

Weight, max, kg

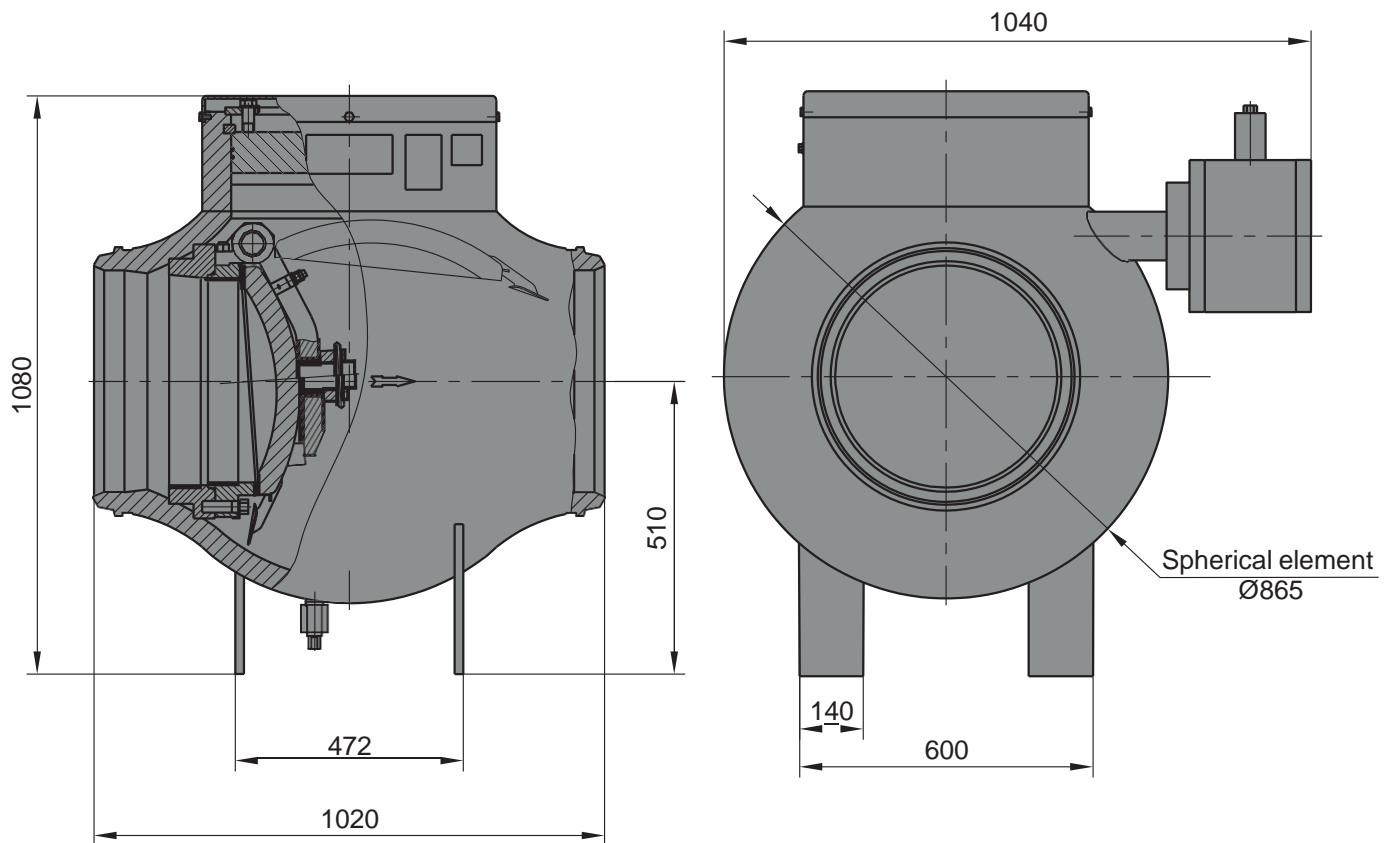
960

Material of main parts

steel 09Г2С

* Pipe is beveled to the pipe specified by a Customer.

53 Check Valve DN 500 PN 100



Product designation

Figure designation

Diameter Nominal, DN, mm
 Pressure Nominal, PN, MPa
 Connection
 Weight, max, kg

Material of main parts

ZO-500-100-Pr

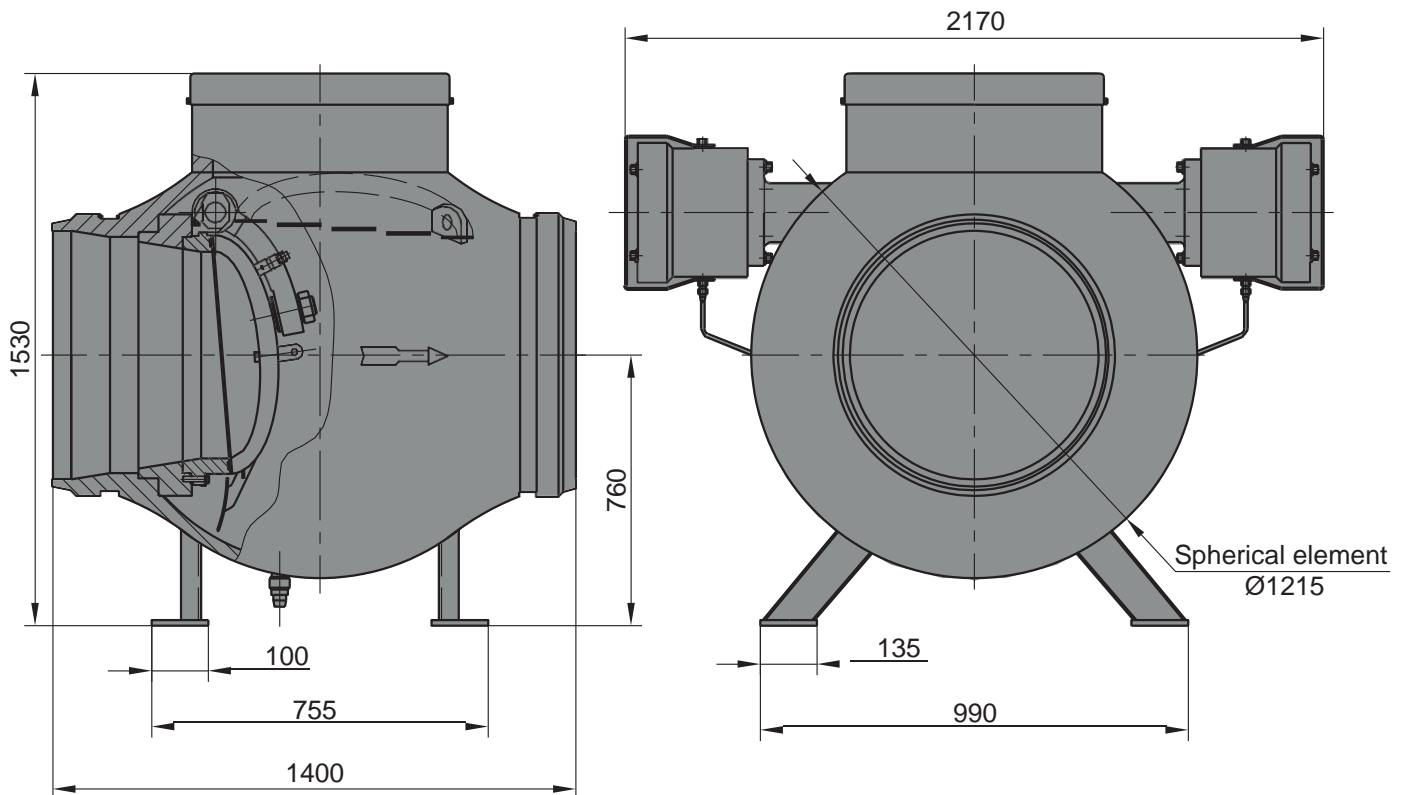
1.2770.55.200.00-01

500
 10.0
 welded end (WE)*
 1170

steel 09Г2С

* Pipe is beveled to the pipe specified by a Customer.

54 Check Valve DN 700 PN 100



Product designation

Figure designation

Diameter Nominal, DN, mm
 Pressure Nominal, PN, MPa
 Connection
 Weight, max, kg

ZO-700-100-Pr

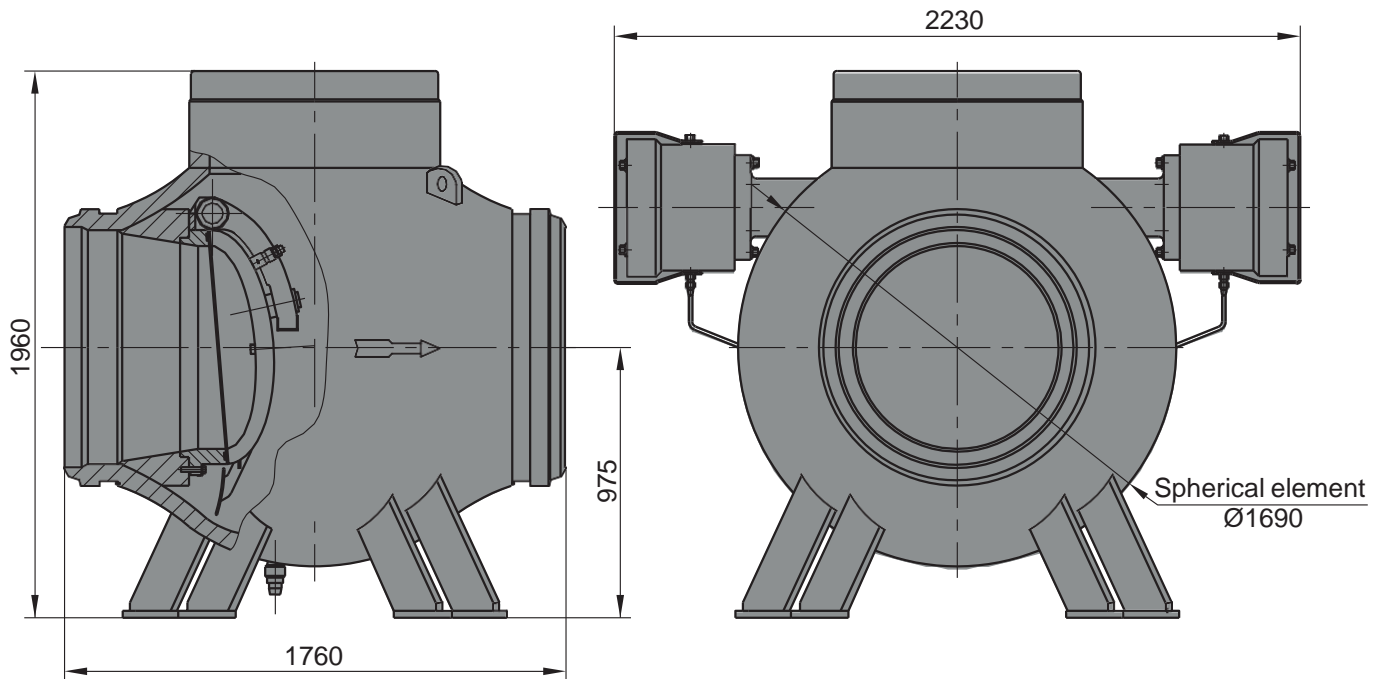
1.9000.150.00.00-02

700
 10.0
 welded end (WE)*
 3500

Material of main parts

steel 09Г2С

* Pipe is beveled to the pipe specified by a Customer.

**Product designation****ZO-1000-100-Pr****Figure designation****1.9000.151.00.00-01**

Diameter Nominal, DN, mm

1000

Pressure Nominal, PN, MPa

10.0

Connection

welded end (WE)*

Weight, max, kg

7600

Material of main parts

steel 09F2C

* Pipe is beveled to the pipe specified by a Customer.

Designed for protection of compressor rotor bundle against foreign-object damage.

Working medium is non-aggressive natural gas and other non-aggressive media at the temperature ranged -60°C to +80°C.

Welded end connection.

Climatic version for areas with temperate and cold climate (-60°C thru +45°C).

The average service life before overhaul is no more than 40 years.

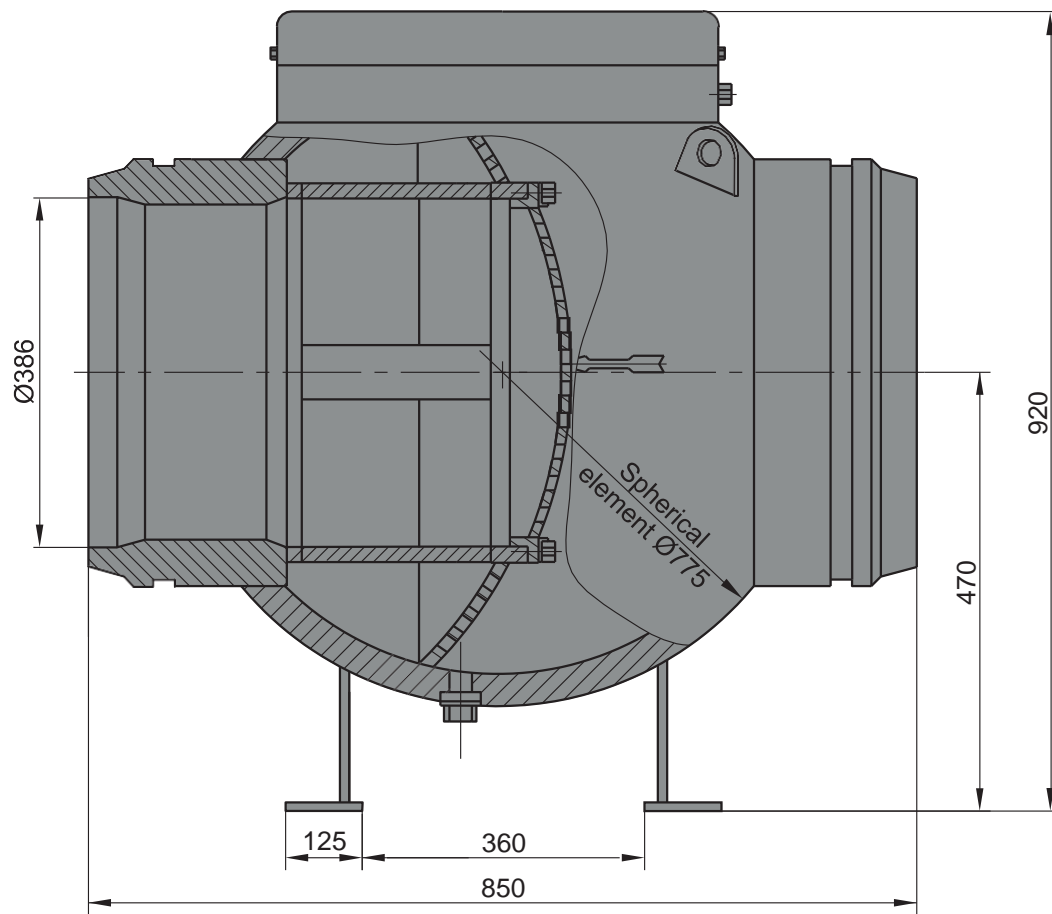
The Company reserves the right to make design changes to improve it, while minor changes may not be shown in the Catalog.

Design features:

- Minimum hydraulic resistance: perforated area is more than bore cross-section area of the pipeline.
- One-piece stamped and welded body.
- Replacement screen and manhole to remove solids and debris (DN 700 and over).
- High maintainability.



DN 700 PN 100

**Product designation****RZ-400-100-Pr****Figure designation****1.2790.163.100.00**

Diameter Nominal, DN, mm

400

Pressure Nominal, PN, MPa

10.0

Hydraulic pressure losses at nominal operation conditions, max, MPa

0.01

Total area of screen holes

larger than area of pipeline section

Connection

welded end (WE)*

Weight, max, kg

650

Material of main parts

Body

steel 09Г2С

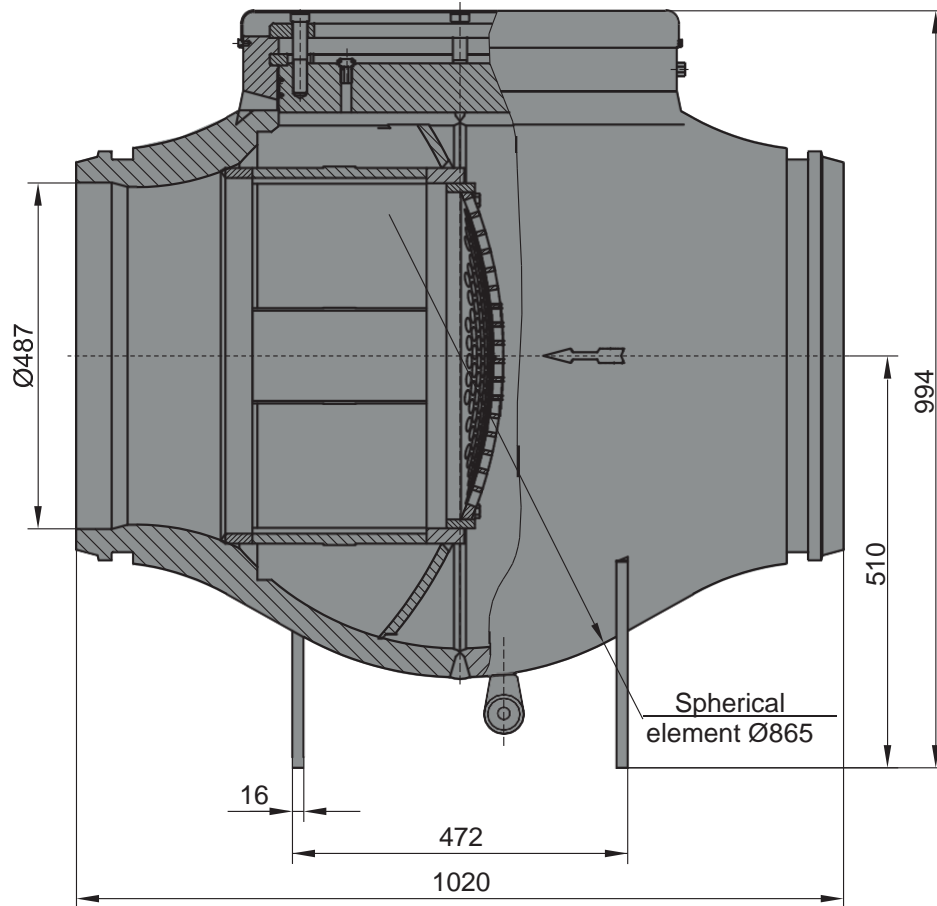
Cover

steel 09Г2С

Screen

steel 09Г2С

* Pipe is beveled to the pipe specified by a Customer.

**Product designation**

RZ-500-100-Pr

Figure designation

1.2790.125.100.00

Diameter Nominal, DN, mm

500

Pressure Nominal, PN, MPa

10.0

Hydraulic pressure losses at nominal operation conditions, max, MPa

0.01

Total area of screen holes

larger than area of pipeline section

Connection

welded end (WE)*

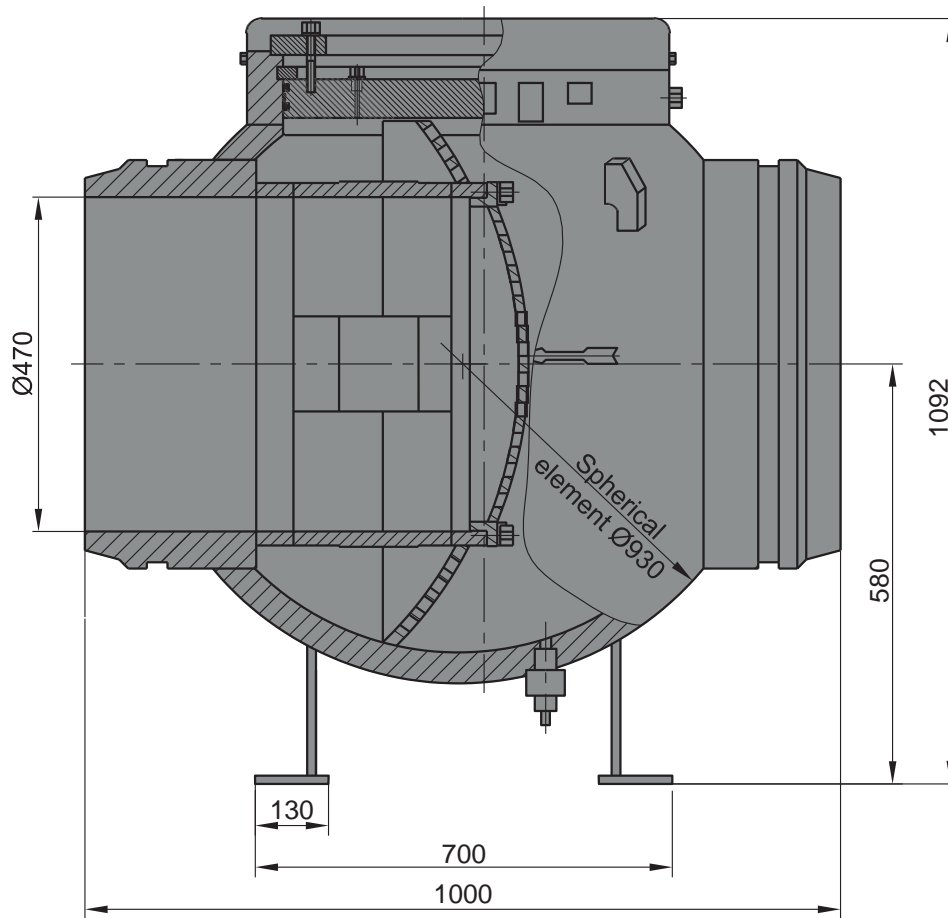
Weight, max, kg

1020

Material of main parts

Body	steel 09Г2С
Cover	steel 09Г2С
Screen	steel 09Г2С

* Pipe is beveled to the pipe specified by a Customer.

**Product designation****RZ-500-200-Pr****Figure designation****1.2790.176.100.00**

Diameter Nominal, DN, mm

500

Pressure Nominal, PN, MPa

20.0

Hydraulic pressure losses at nominal operation conditions, max, MPa

0.01

Total area of screen holes

larger than area of pipeline section

Connection

welded end (WE)*

Weight, max, kg

1345

Material of main parts

Body

steel 09Г2С

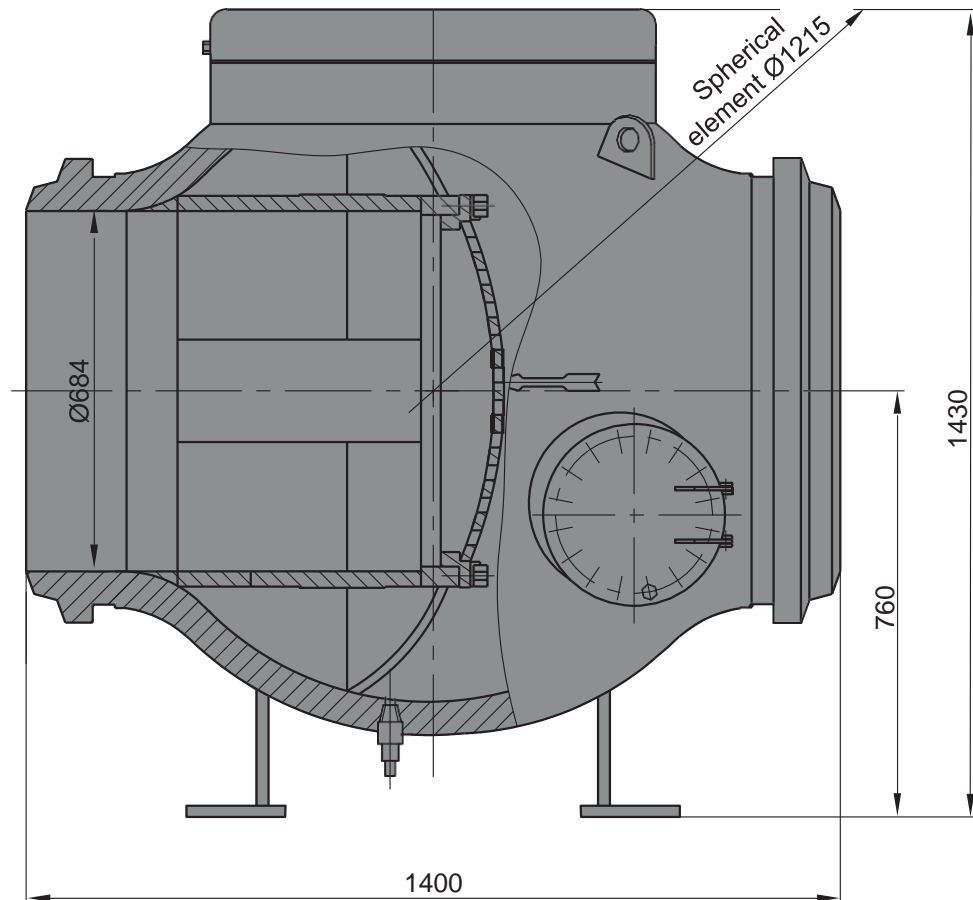
Cover

steel 09Г2С

Screen

steel 09Г2С

* Pipe is beveled to the pipe specified by a Customer.

**Product designation****RZ-700-100-Pr****Figure designation****1.2790.7.100.00-01**

Diameter Nominal, DN, mm

700

Pressure Nominal, PN, MPa

10.0

Hydraulic pressure losses at nominal operation conditions, max, MPa

0.01

Total area of screen holes

larger than area of pipeline section

Connection

welded end (WE)*

Weight, max, kg

3100

Material of main parts

Body

steel 09Г2С

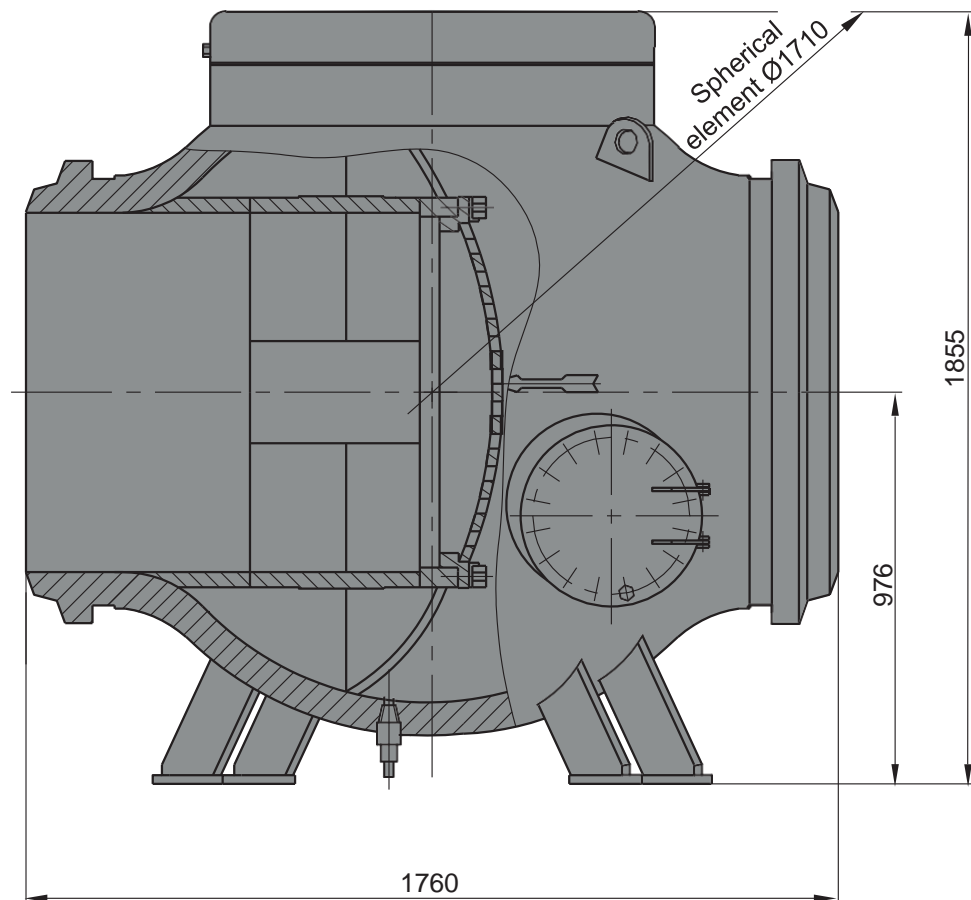
Cover

steel 09Г2С

Screen

steel 09Г2С

* Pipe is beveled to the pipe specified by a Customer.

**Product designation****RZ-1000-100-Pr****Figure designation****1.2790.3.100.00-01**

Diameter Nominal, DN, mm

1000

Pressure Nominal, PN, MPa

10.0

Hydraulic pressure losses at nominal operation conditions, max, MPa

0.01

Total area of screen holes

larger than area of pipeline section

Connection

welded end (WE)*

Weight, max, kg

6550

Material of main parts

Body

steel 09Г2С

Cover

steel 09Г2С

Screen

steel 09Г2С

* Pipe is beveled to the pipe specified by a Customer.

Valves to Complete Manufactured Equipment

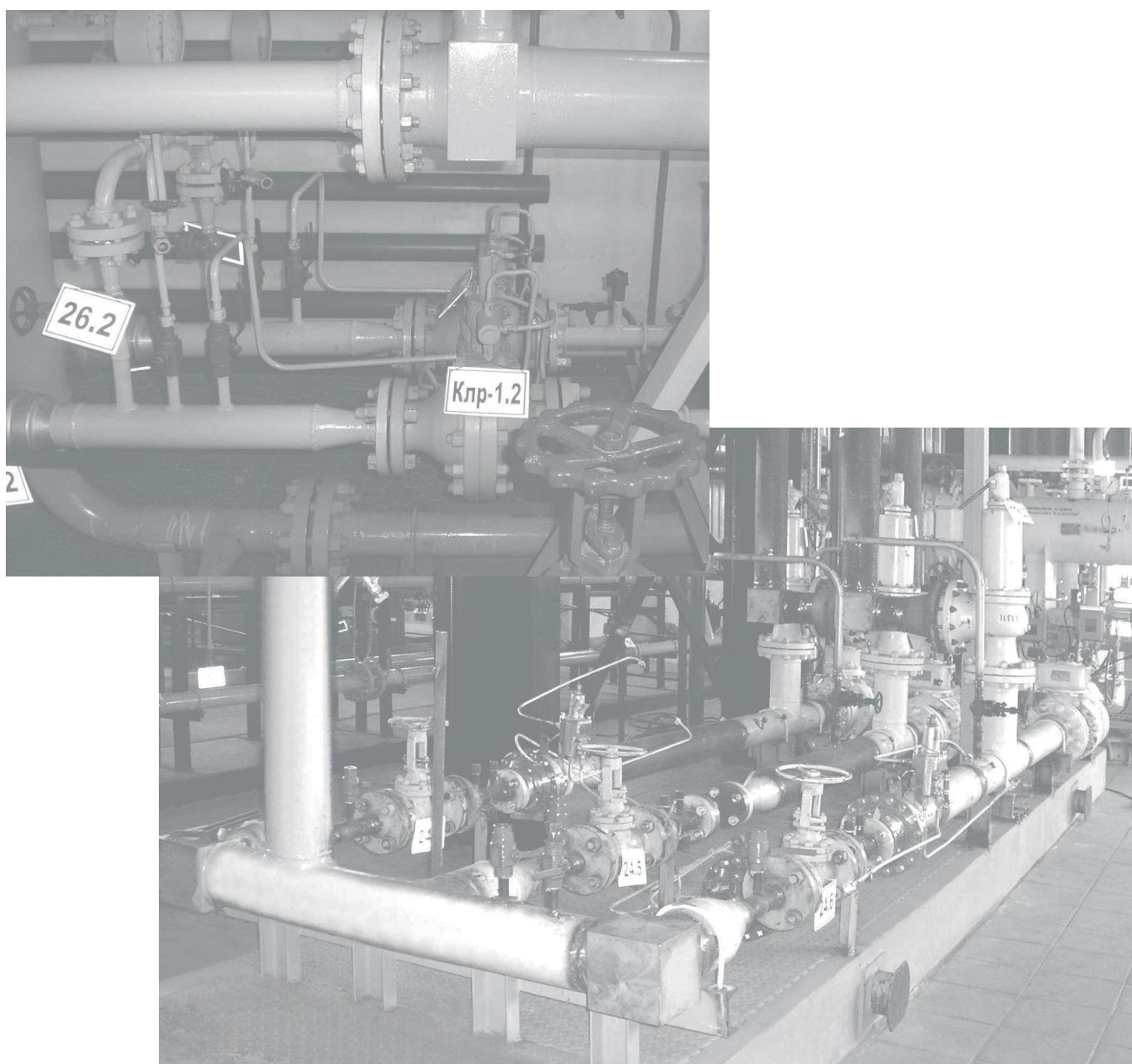
“SMNPO - Engineering” JSC is the recognized leader in the design and manufacture of modular compressor stations for oil, gas and oil refining industry.

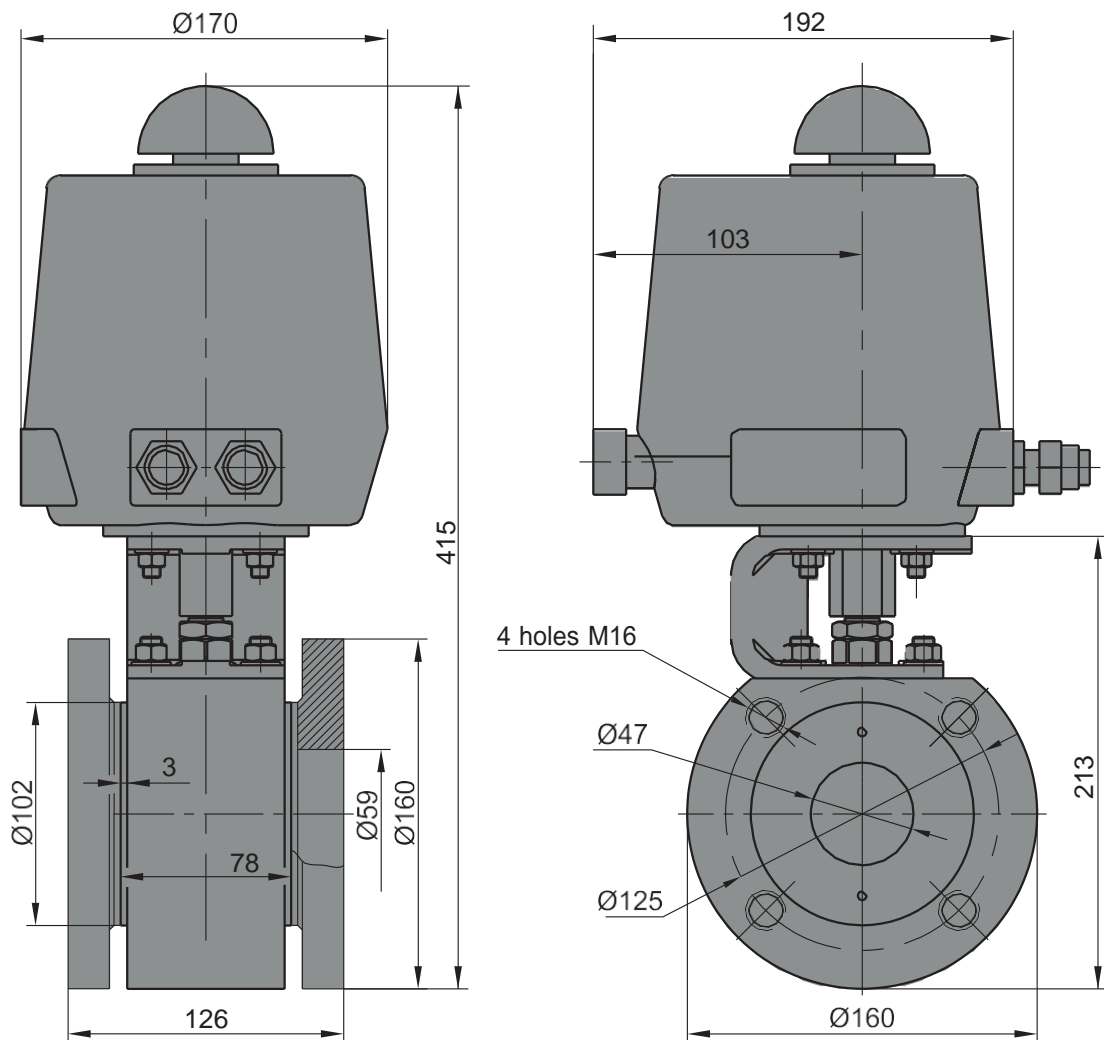
The main equipment of the station are turbo-compressor units with centrifugal or reciprocating compressors.

More than 2,300 turbo-compressor units successfully operate all over the world. Only in recent years the Company has constructed and installed its equipment at the following compressor stations: “Gubkinskaya”, “Yaro-Yakhinskaya” (Russia), “Tarutino” (Ukraine),

“Severnaya”, “Astara” (Azerbaijan), “Goturdepe”, “Yilanly”, “Zapadny Shatlyk”, “Deryalyk” (Turkmenistan), “Kokdumalak”, “Zevardy”, “Gazli” (Uzbekistan), “Bursa”, “Eskisehir” (Turkey), “Hajiabad”, “Abshirin”, “Sirjan” (Iran), Gas Complex Treatment Plants for Gubkinskoe, Severo-Komsomolskoe and Tarasovskoe oil fields of JSC “Rosneft”, etc.

Delivered compressor station equipment include valves manufactured by our Company.



**Product designation****Figure designation**

Diameter Nominal, DN, mm

Pressure Nominal, PN, MPa

Ambient temperature, °C

Actuator type

Voltage

Connection

Weight without counterparts set, max, kg

KSh-50-16-EP-NU-UKhL1-F-F**1.2750.278.306.00**

50

1.6

from -20 up to +45

electric

100-240 V/AC

Flanged end, with counter flanges, fasteners and sealing parts (welded end)

14

Material of main parts

Body

steel 10Г2, zinc chromating 12 μ

Ball

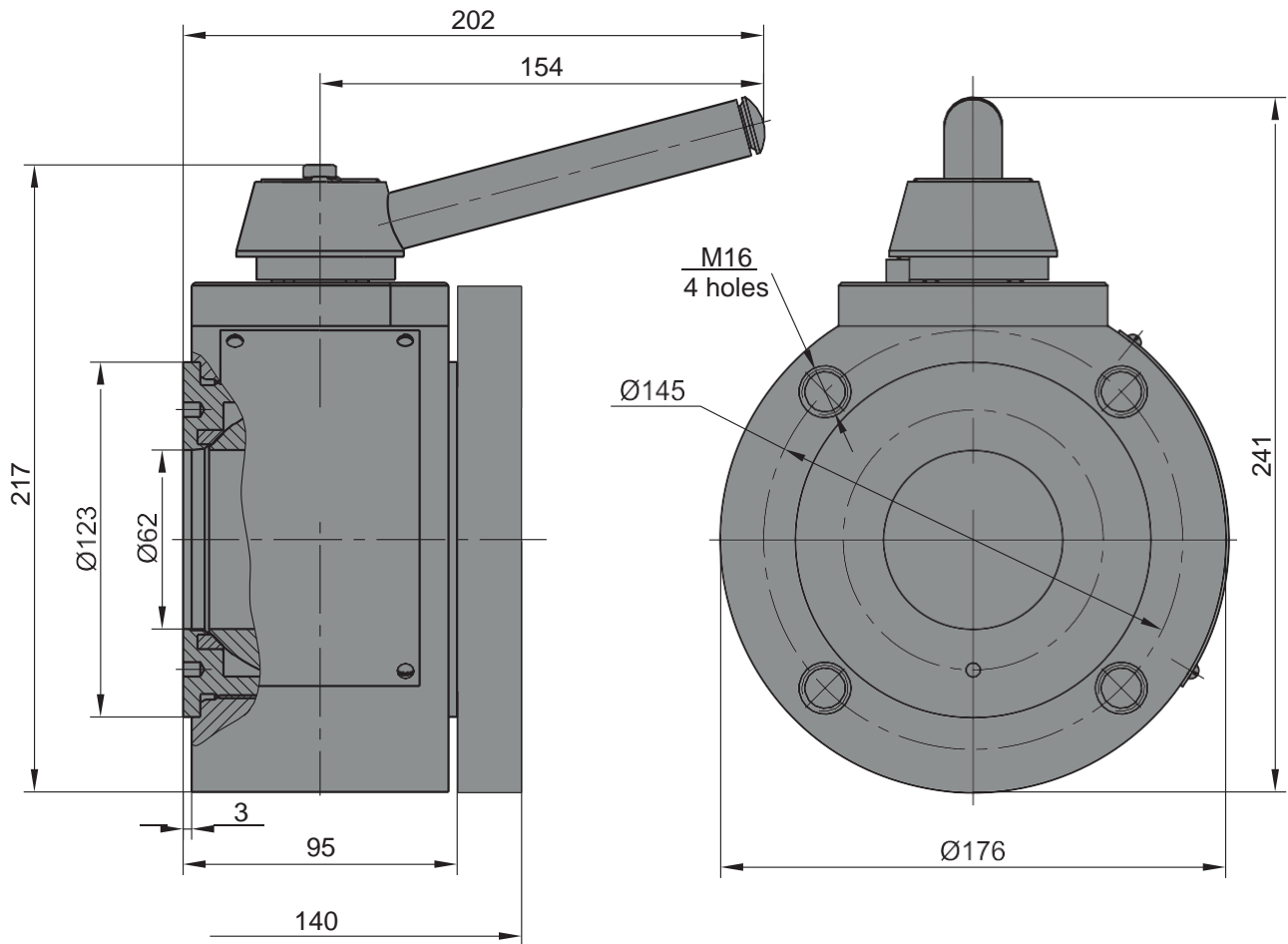
steel 20X13, HCP 21 μ

Stem

steel 14X17H2

Seat (cover)

steel 20X13

**Product designation****Figure designation**

Diameter Nominal, DN, mm

Pressure Nominal, PN, MPa

Actuator type

Connection

Weight, max, kg

KSh-50-16-R-NU-UKhL1-F-F**1.2750.298.301.00**

65

1.6

manual

Flanged end, with counter flanges, fasteners and sealing parts (welded end)

14

Material of main parts

Body

steel 10Г2, zinc chromating 9 μ

Ball

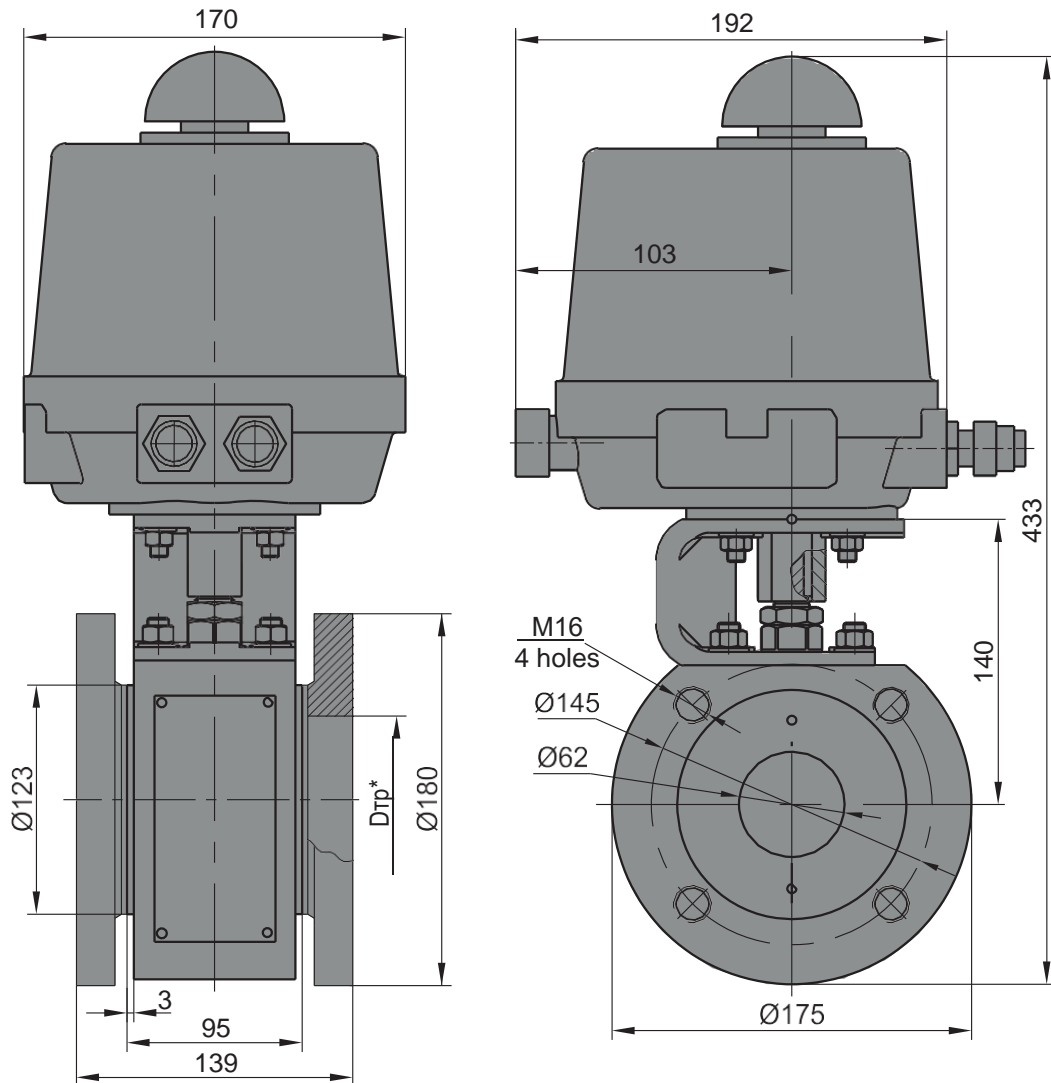
steel 20X13, HCP 21

Stem

steel 14X17H2

Seat

steel 20X13

**Product designation****Figure designation**

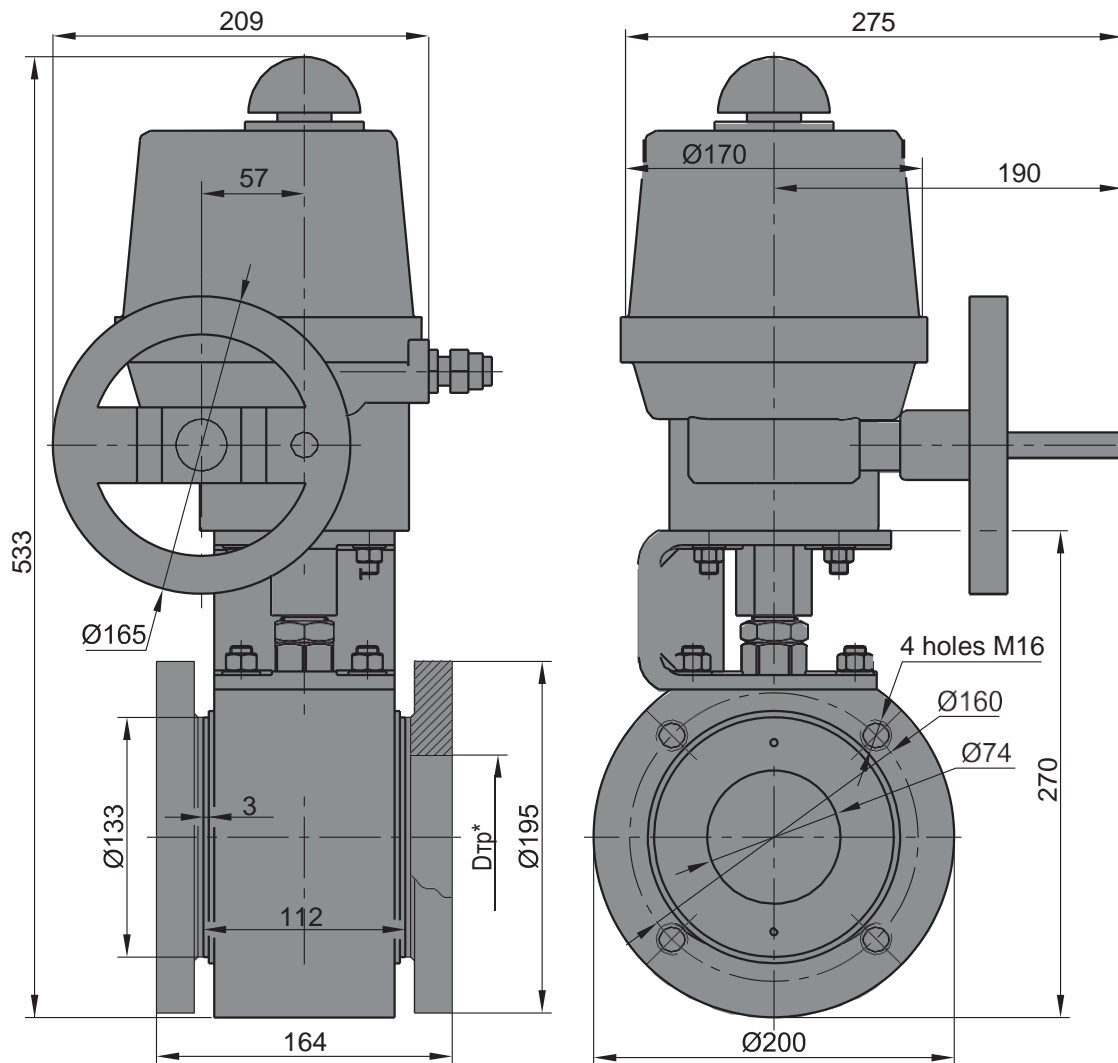
Diameter Nominal, DN, mm
 Pressure Nominal, PN, MPa
 Ambient temperature, °C
 Actuator type
 Voltage
 Connection
 Weight without counterparts set, max, kg

KSh-65-10-EP-NU-UKhL1-F-F**1.2750.279.306.00**

65
 1.0
 from -20 up to +45
 electric
 100-240 V/AC
 Flanged end, with counter flanges, fasteners
 and sealing parts (welded end)
 20

Material of main parts

Body	steel 10Г2, zinc chromating 12 μ
Ball	steel 20X13, HCP 21 μ
Stem	steel 14X17H2
Seat (cover)	steel 20X13

**Product designation****Figure designation**

Diameter Nominal, DN, mm
 Pressure Nominal, PN, MPa
 Actuator type
 Voltage
 Connection

Weight without counterparts set, max, kg

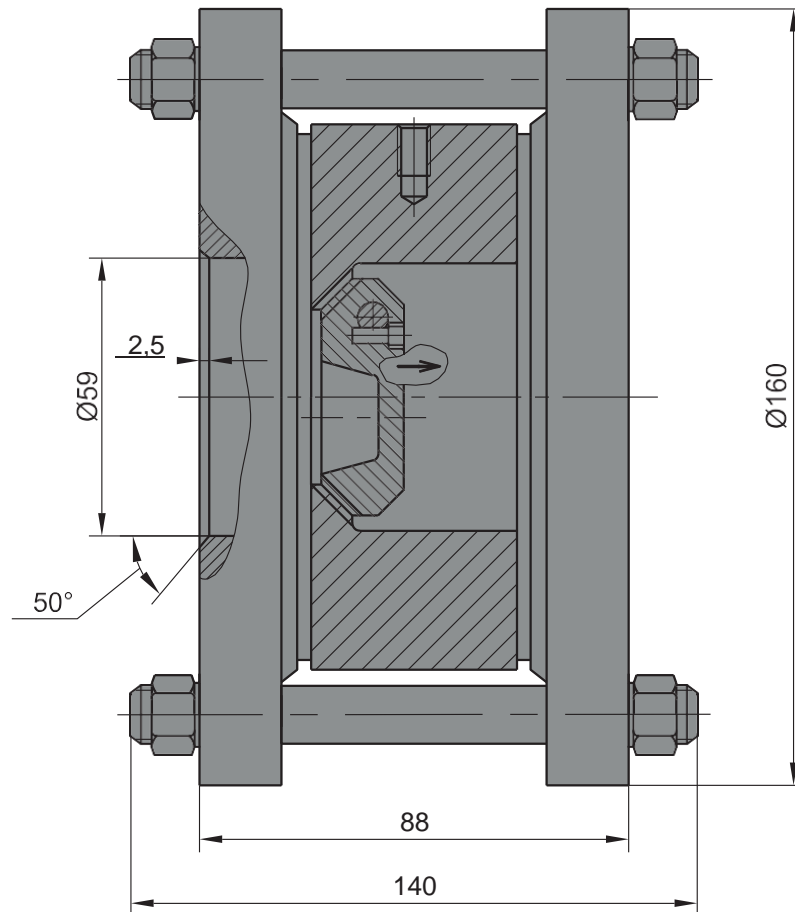
KSh-80-16-EP-NU-UKhL1-F-F

1.2750.260.306.00

80
 1.6
 electric
 100-240 V/AC
 Flanged end, with counter flanges, fasteners
 and sealing parts (welded end)
 30

Material of main parts

Body	steel 20X13
Ball	steel 20X13, HCP 21 μ
Stem	steel 14X17H2
Seat	steel 08X18H10T
Counter flange	steel 08X18H10T

**Product designation****ZO-50-16-F-F****Figure designation****1.2770.16.100.00-02**

Diameter Nominal, DN, mm

50

Pressure Nominal, PN, MPa

1.6

Tightness

as per GOST 13252

Connection

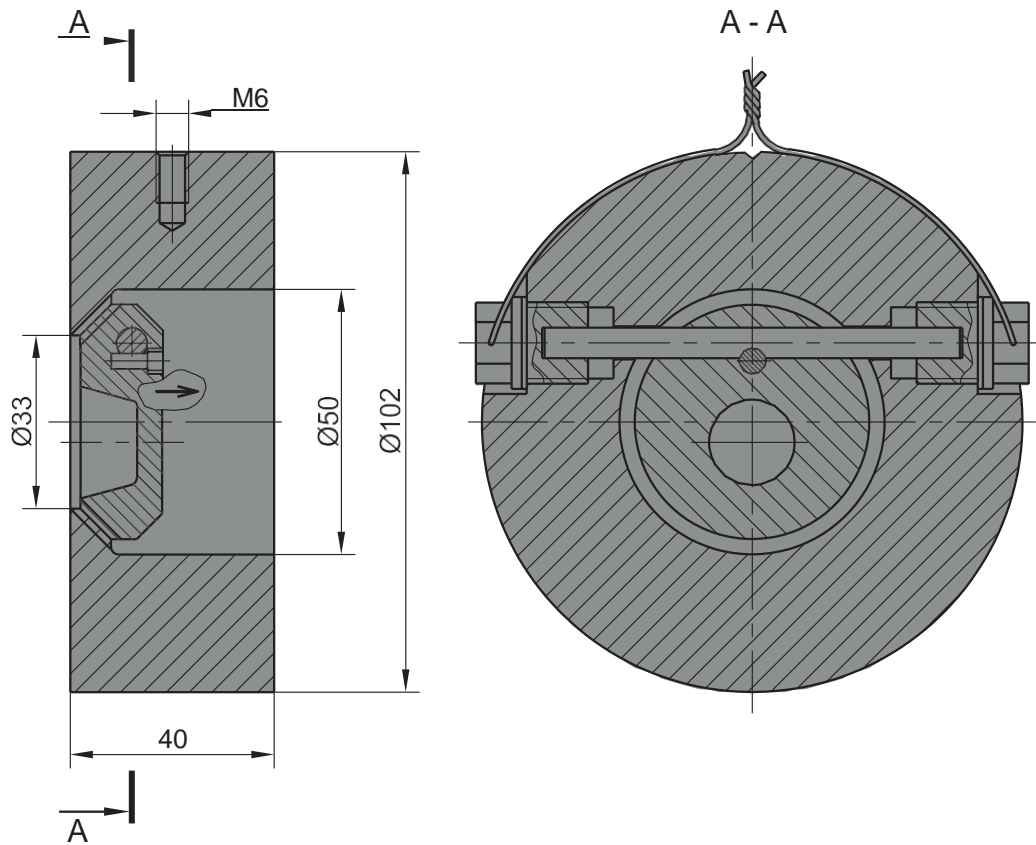
Flanged end, with counter flanges,
fasteners and sealing parts (WE)

Weight, max, kg

9

Material of main parts

steel 09Г2С

**Product designation****Figure designation**

Diameter Nominal, DN, mm

Pressure Nominal, PN, MPa

Tightness

Connection

Weight, max, kg

Material of main parts

ZO-50-25-F**1.2770.16.100.00-01**

50

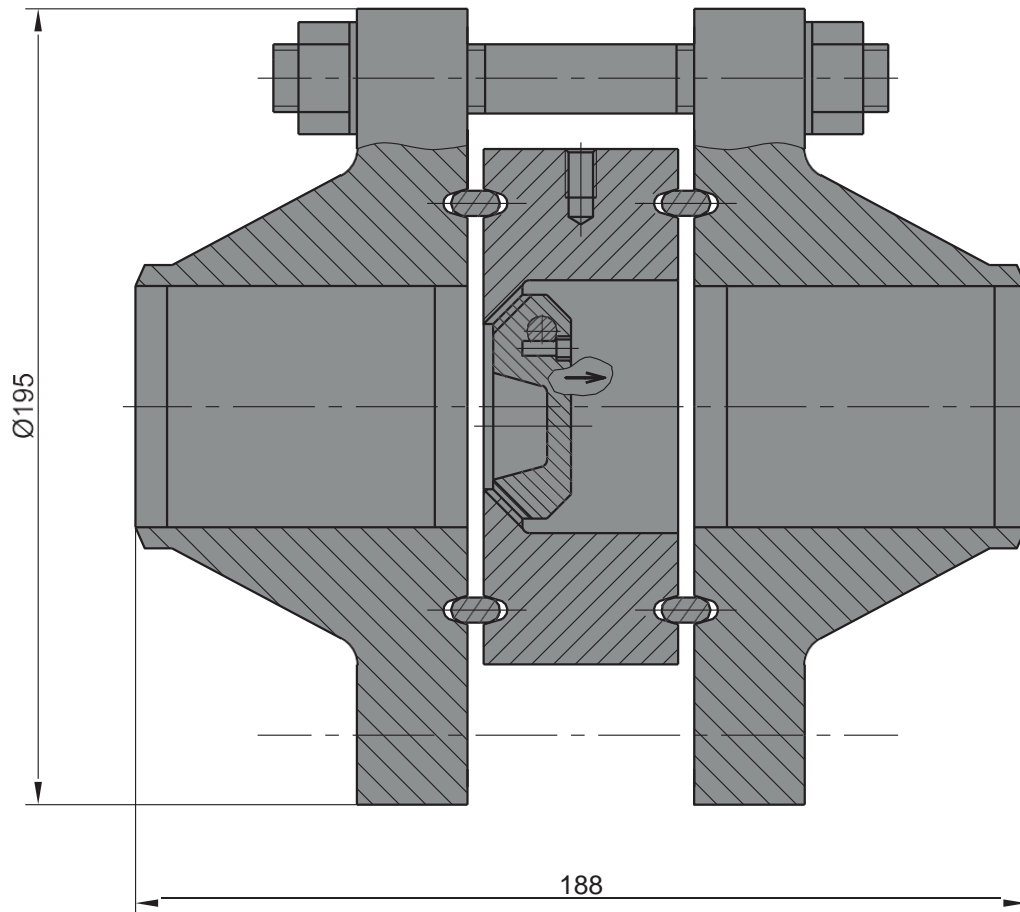
2.5

as per GOST 13252

Flanged end

2.3

steel 09Г2С

**Product designation****ZO-50-100-F-F****Figure designation****1.2770.23.100.00-01**

Diameter Nominal, DN, mm

50

Pressure Nominal, PN, MPa

10.0

Tightness

as per GOST 13252

Connection

Flanged end, with counter flanges, fasteners and sealing parts (WE)*

Weight, max, kg

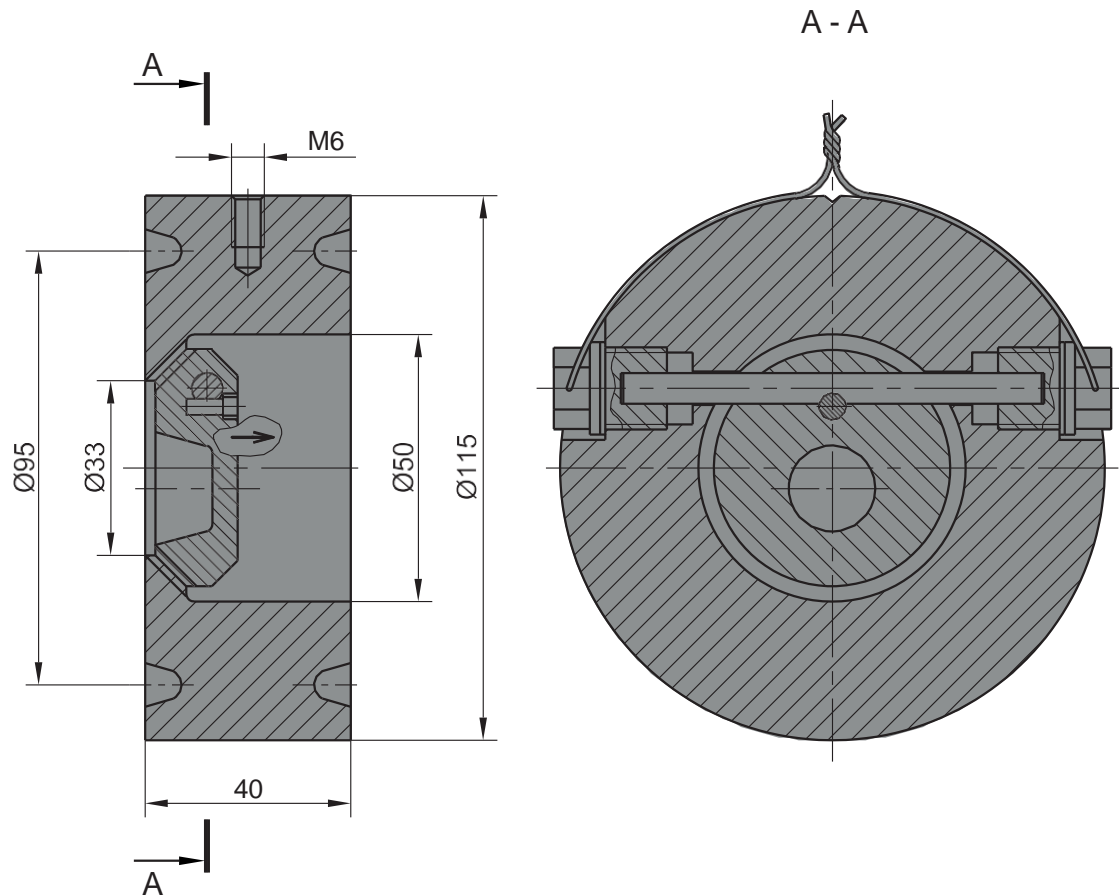
14.7

Material of main parts

steel 09Г2С

steel 10Г2

* *Pipe is beveled to the pipe specified by a Customer.*

**Product designation****Figure designation**

Diameter Nominal, DN, mm

Pressure Nominal, PN, MPa

Tightness

Connection

Weight, max, kg

Material of main parts

ZO-50-160-F**1.2770.34.100.00**

50

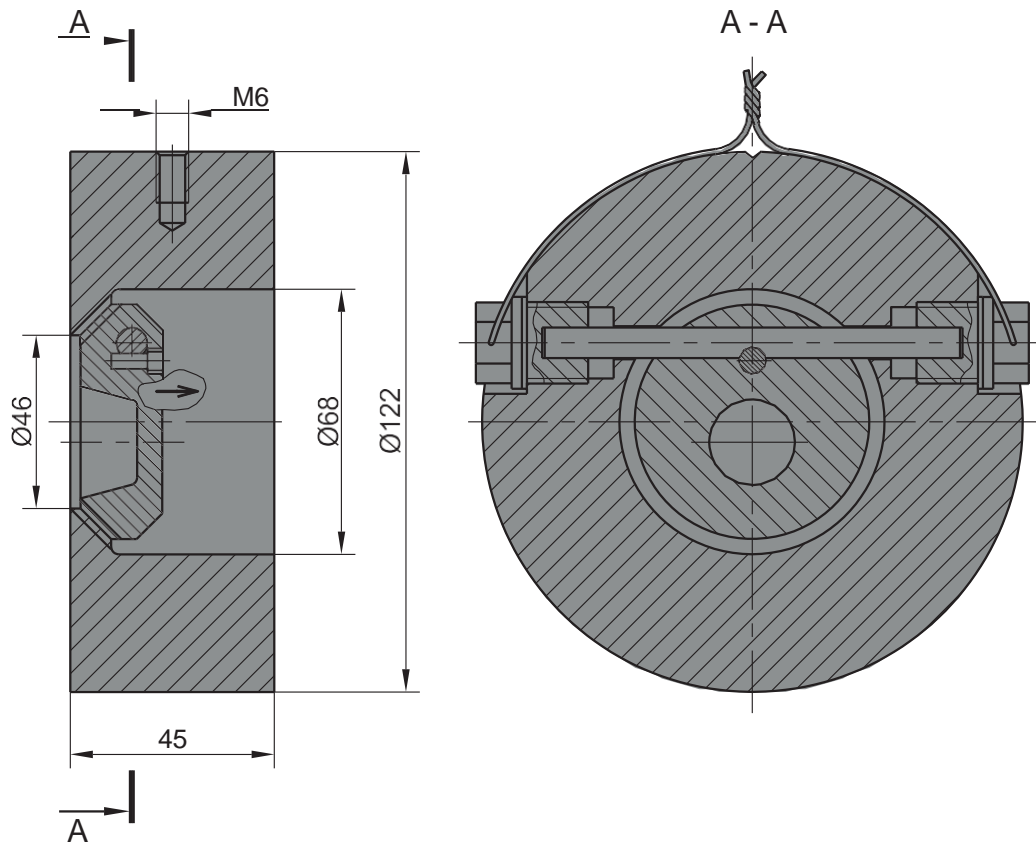
16.0

as per GOST 13252

Flanged end

2.8

steel 09Г2С

**Product designation****Figure designation**

Diameter Nominal, DN, mm

Pressure Nominal, PN, MPa

Tightness

Connection

Weight, max, kg

Material of main parts

ZO-65-25-F**1.2770.15.100.00-01**

65

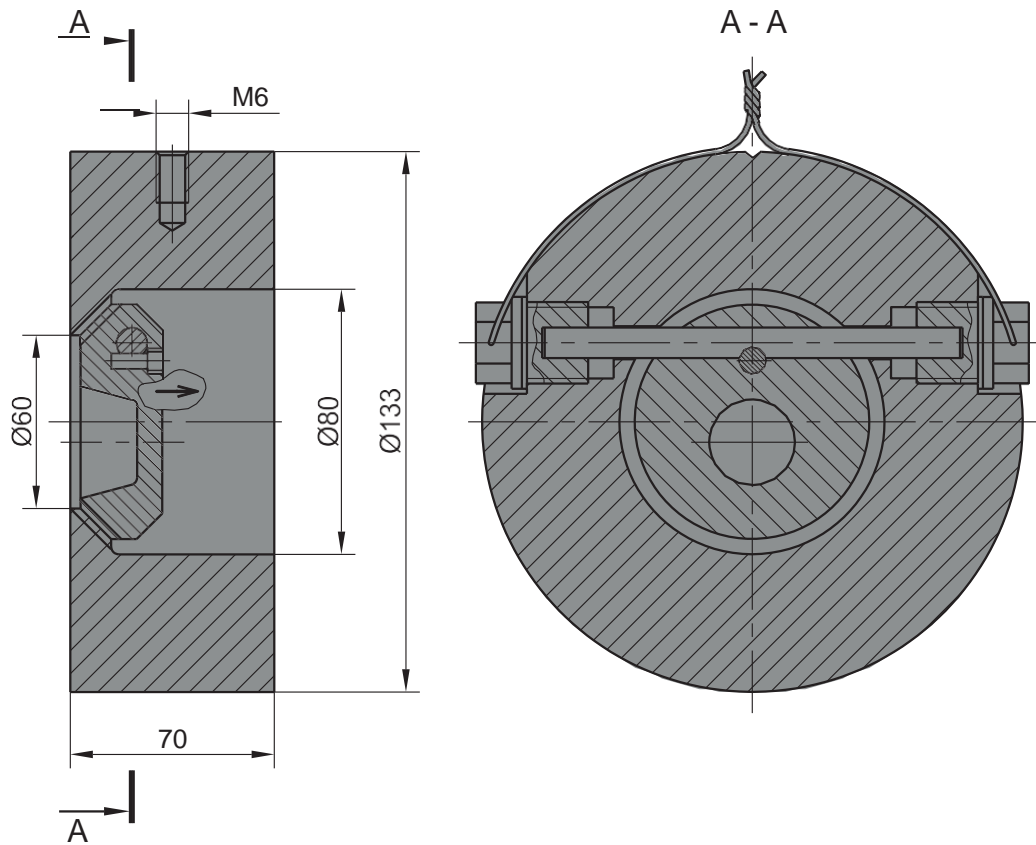
2.5

as per GOST 13252

Flanged end

3.4

steel 09Г2С

**Product designation****Figure designation**

Diameter Nominal, DN, mm

Pressure Nominal, PN, MPa

Tightness

Connection

Weight, max, kg

Material of main parts

ZO-80-25-F**1.2770.14.100.00-01**

80

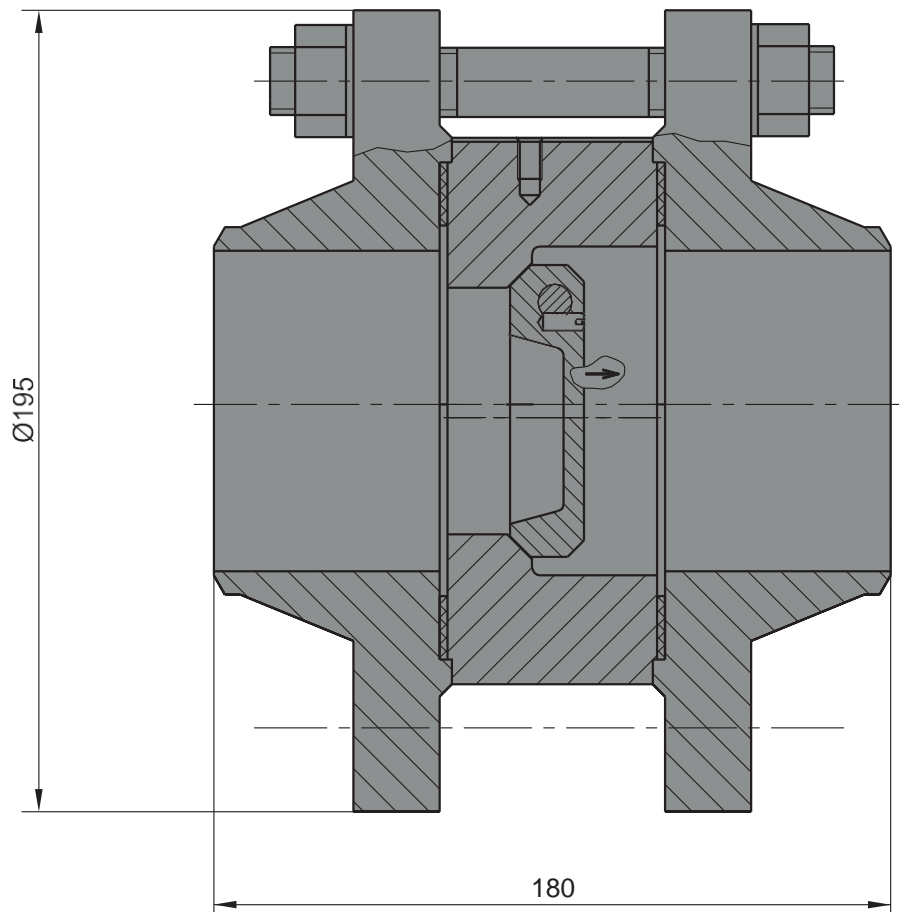
2.5

as per GOST 13252

Flanged end

6

steel 09Г2С

**Product designation****ZO-80-40-F-F****Figure designation****1.2770.14.100.00-02**

Diameter Nominal, DN, mm

80

Pressure Nominal, PN, MPa

4.0

Tightness

as per GOST 13252

Connection

Flanged end, with counter flanges,
fasteners and sealing parts (WE)*

Weight, max, kg

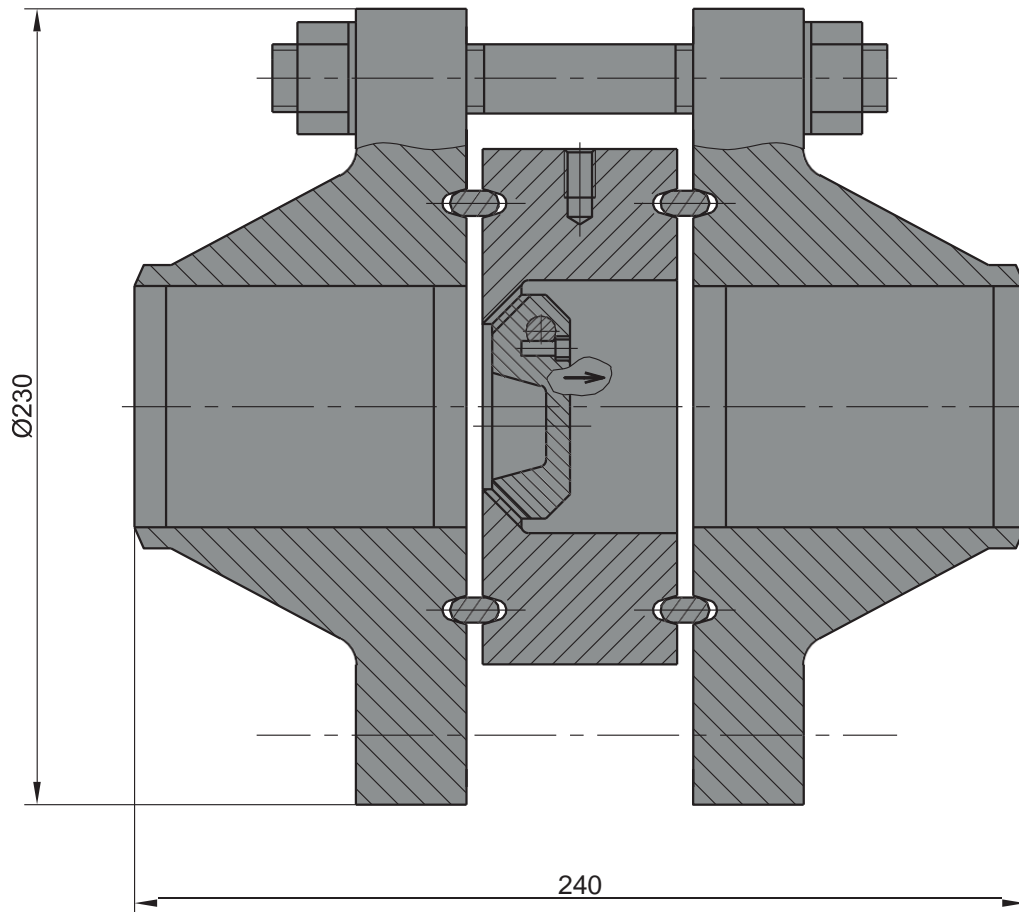
17

Material of main parts

steel 09Г2С

steel 10Г2

* Pipe is beveled to the pipe specified by a Customer.

**Product designation****ZO-80-100-F-F****Figure designation****1.2770.49.100.00-04**

Diameter Nominal, DN, mm

80

Pressure Nominal, PN, MPa

10.0

Tightness

as per GOST 13252

Connection

Flanged end, with counter flanges,
fasteners and sealing parts (WE)*

Weight, max, kg

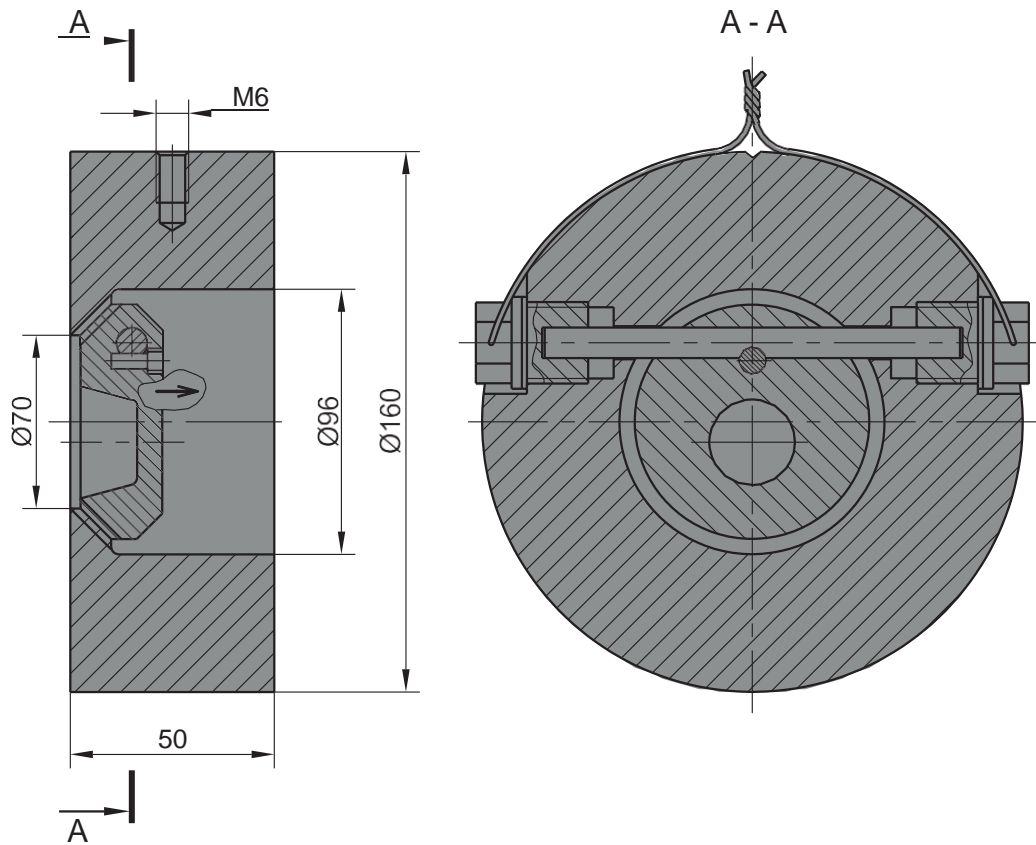
33

Material of main parts

steel 09Г2С

steel 10Г2

* Pipe is beveled to the pipe specified by a Customer.

**Product designation****ZO-100-25-F****Figure designation****1.2770.141.100.00**

Diameter Nominal, DN, mm

100

Pressure Nominal, PN, MPa

2.5

Tightness

as per GOST 13252

Connection

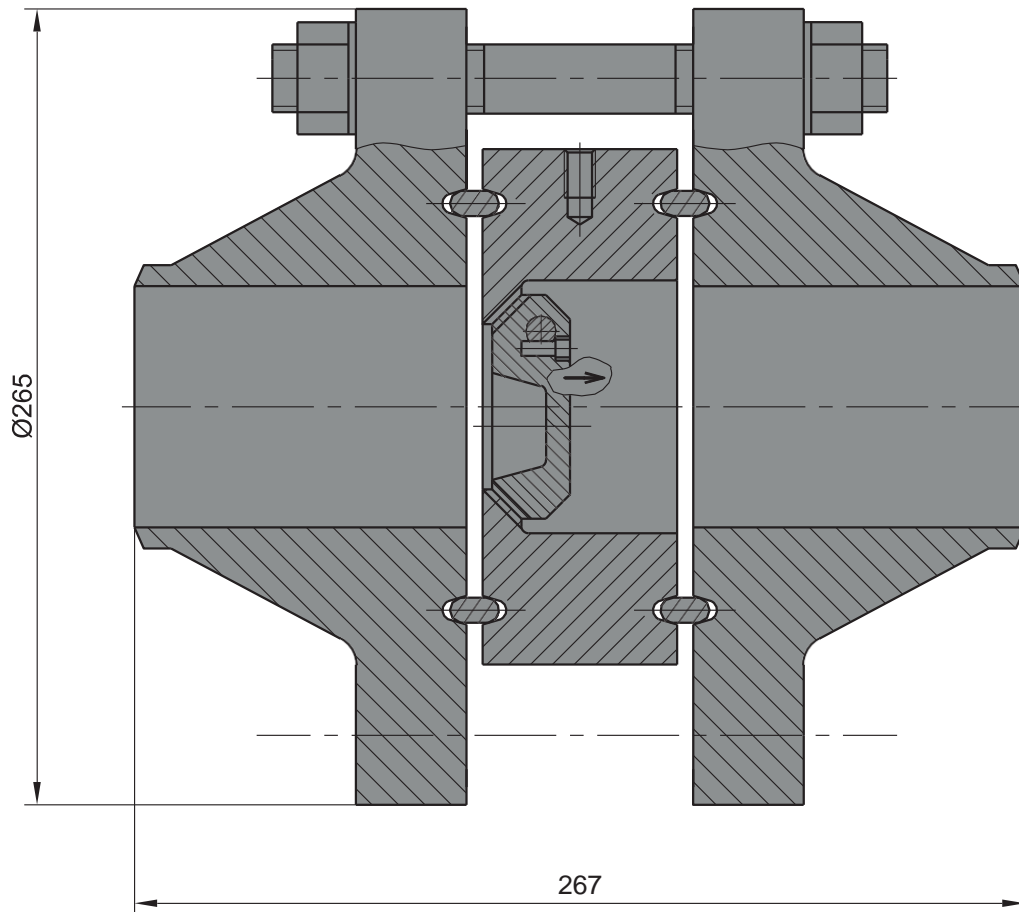
Flanged end

Weight, max, kg

6.0

Material of main parts

steel 10Г2

**Product designation****ZO-100-100-F-F****Figure designation****1.2770.33.100.00**

Diameter Nominal, DN, mm

100

Pressure Nominal, PN, MPa

10.0

Tightness

as per GOST 13252

Connection

Flanged end, with counter flanges, fasteners and sealing parts (WE)*

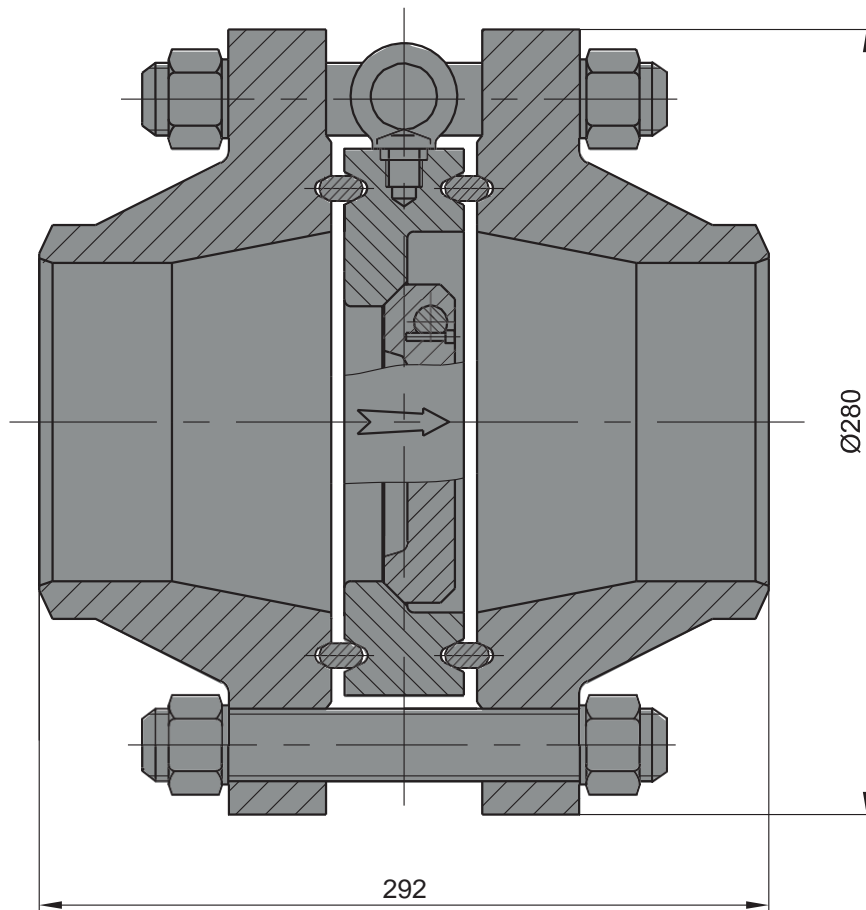
Weight, max, kg

50

Material of main parts

steel 10Г2

* Pipe is beveled to the pipe specified by a Customer.

**Product designation****ZO-150-63-F-F****Figure designation****1.2770.47.100.00-03**

Diameter Nominal, DN, mm

150

Pressure Nominal, PN, MPa

6.3

Tightness

as per GOST 13252

Connection

Flanged end, with counter flanges,
fasteners and sealing parts (WE)*

Weight, max, kg

86

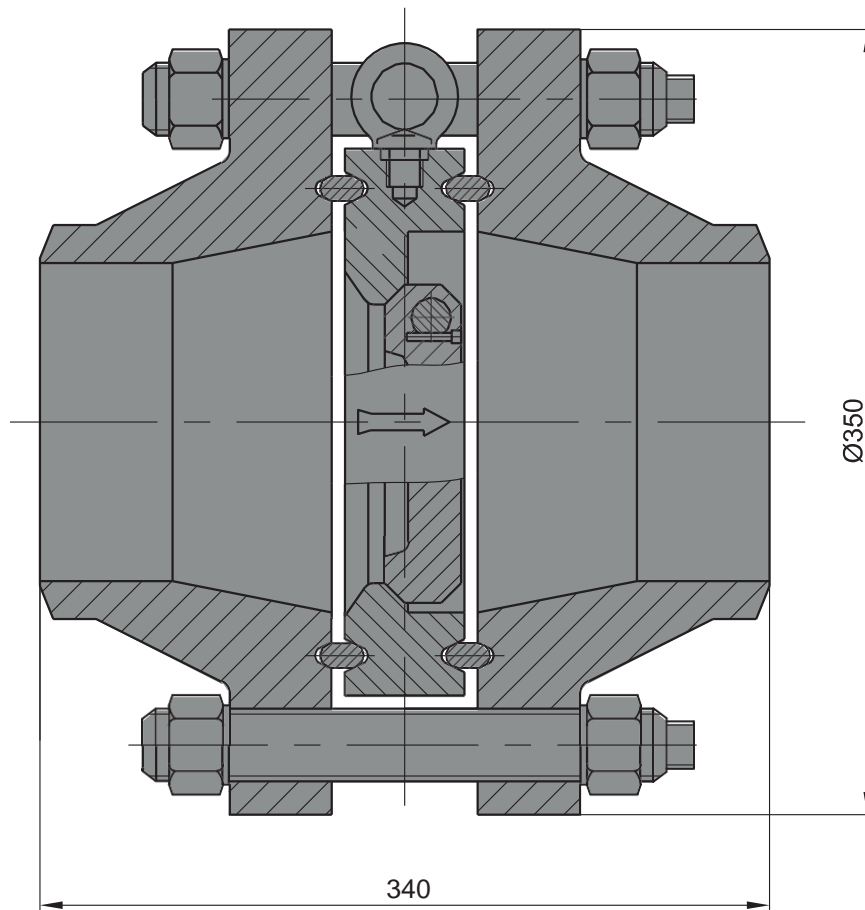
Material of main parts

steel 09Г2С

steel 10Г2

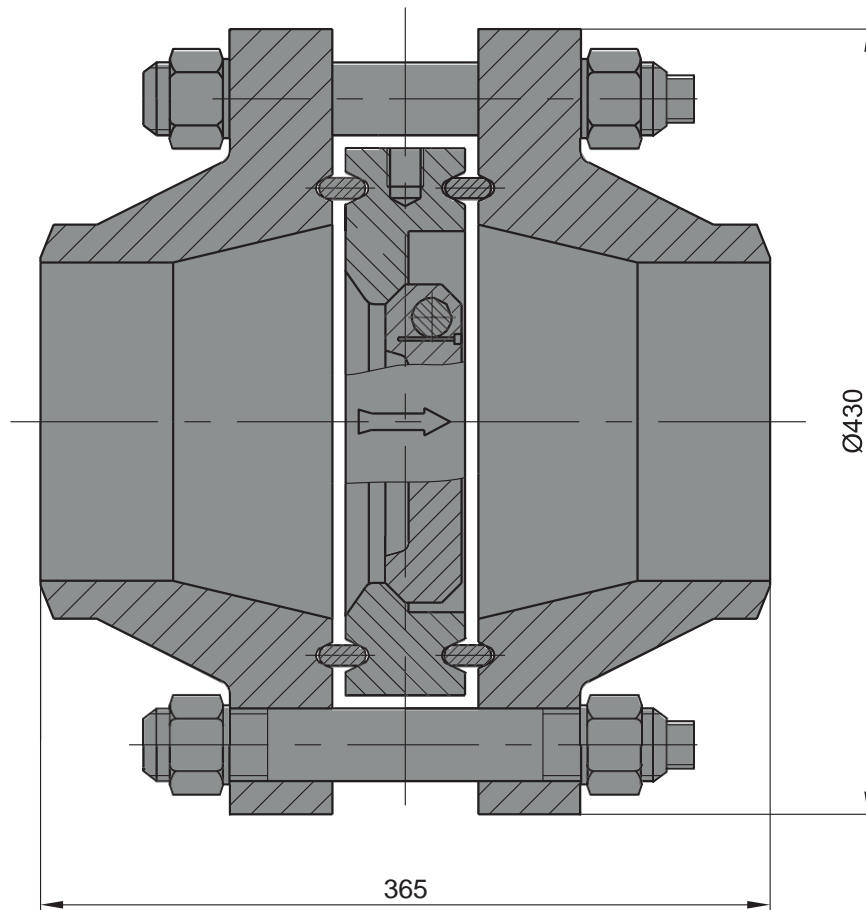
* Pipe is beveled to the pipe specified by a Customer.

78 Check Valve DN 150 PN 160



Product designation	ZO-150-160-F-F
Figure designation	1.2770.12.100.00
Diameter Nominal, DN, mm	150
Pressure Nominal, PN, MPa	16.0
Tightness	as per GOST 13252
Connection	Flanged end, with counter flanges, fasteners and sealing parts (WE)*
Weight, (with mounting parts), max, kg	110
Material of main parts	steel 09Г2С steel 10Г2

* Pipe is beveled to the pipe specified by a Customer.

**Product designation****ZO-200-100-F-F****Figure designation****1.2770.59.100.00-02**

Diameter Nominal, DN, mm

200

Pressure Nominal, PN, MPa

10.0

Tightness

as per GOST 13252

Connection

Flanged end, with counter flanges,
fasteners and sealing parts (WE)*

Weight, max, kg

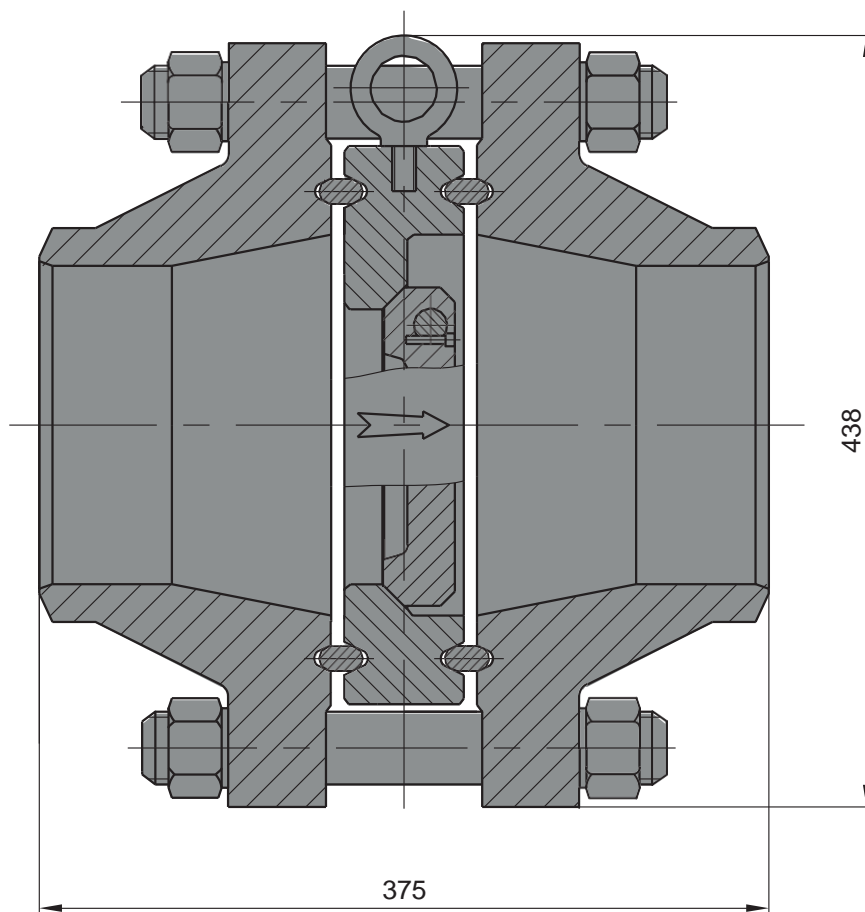
170

Material of main parts

steel 09Г2С

steel 10Г2

* Pipe is beveled to the pipe specified by a Customer.

**Product designation****ZO-200-160-F-F****Figure designation****1.2770.17.100.00**

Diameter Nominal, DN, mm

200

Pressure Nominal, PN, MPa

16.0

Tightness

as per GOST 13252

Connection

Flanged end, with counter flanges, fasteners and sealing parts (WE)*

Weight, max, kg

184

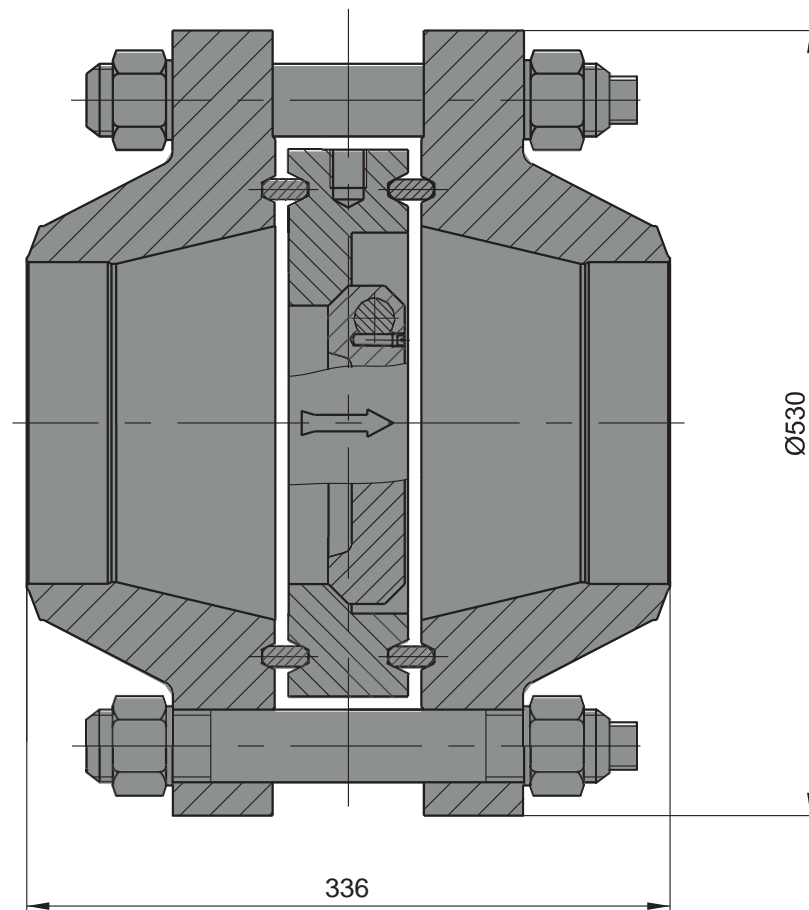
Material of main parts

steel 09Г2С

steel 10Г2

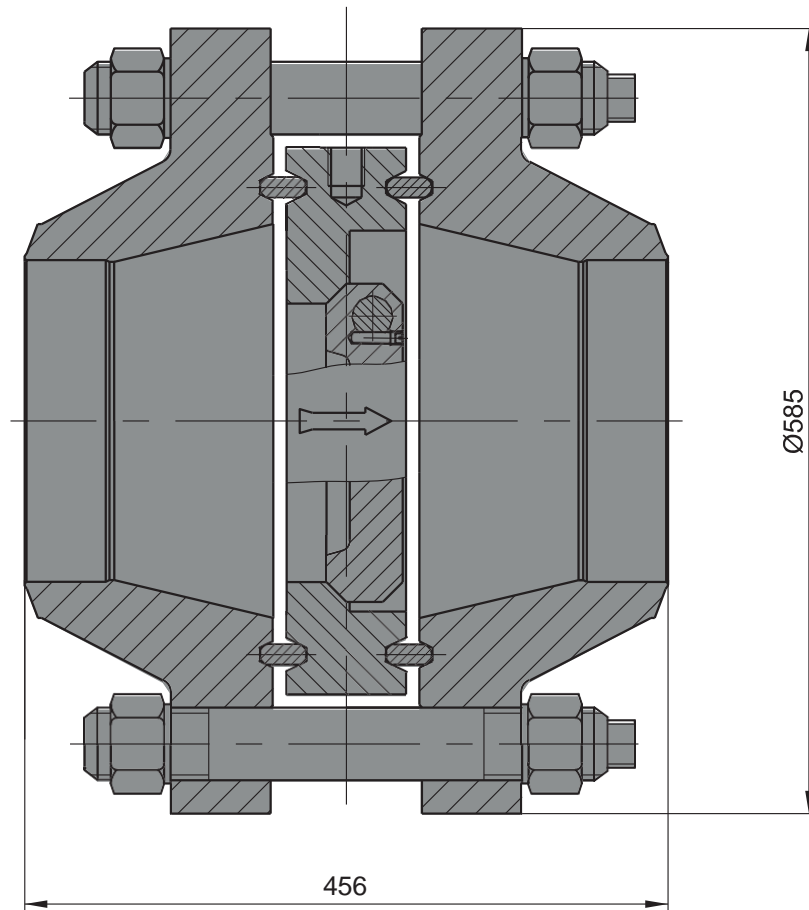
steel 20X13

* Pipe is beveled to the pipe specified by a Customer.



Product designation	ZO-300-63-F-F
Figure designation	1.2770.45.100.00
Diameter Nominal, DN, mm	300
Pressure Nominal, PN, MPa	6.3
Tightness	as per GOST 13252
Connection	Flanged end, with counter flanges, fasteners and sealing parts (WE)*
Weight, (with mounting parts), max, kg	232
Material of main parts	steel 09Г2С

* Pipe is beveled to the pipe specified by a Customer.

**Product designation****ZO-300-100-F-F****Figure designation****1.2770.45.100.00-01**

Diameter Nominal, DN, mm

300

Pressure Nominal, PN, MPa

10.0

Tightness

as per GOST 13252

Connection

Flanged end, with counter flanges,
fasteners and sealing parts (WE)*

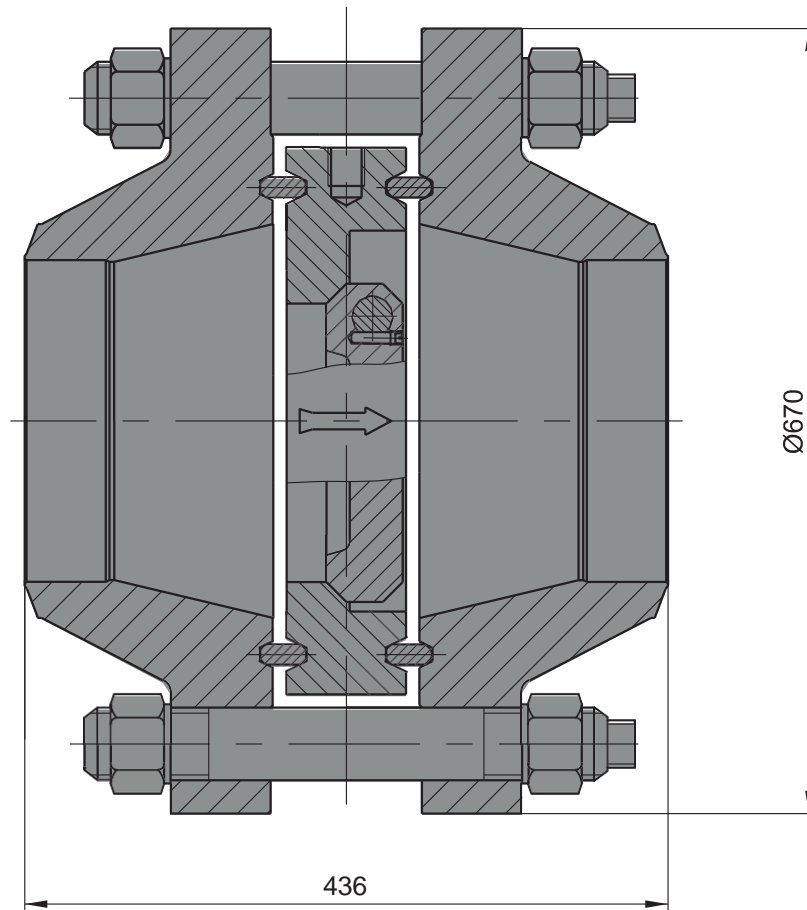
Weight, (with mounting parts), max, kg

358

Material of main parts

steel 09Г2С

* Pipe is beveled to the pipe specified by a Customer.

**Product designation****ZO-400-63-F-F****Figure designation****1.2770.48.100.00-04**

Diameter Nominal, DN, mm

400

Pressure Nominal, PN, MPa

6.3

Tightness

as per GOST 13252

Connection

Flanged end, with counter flanges, fasteners and sealing parts (WE)*

Weight, (with mounting parts), max, kg

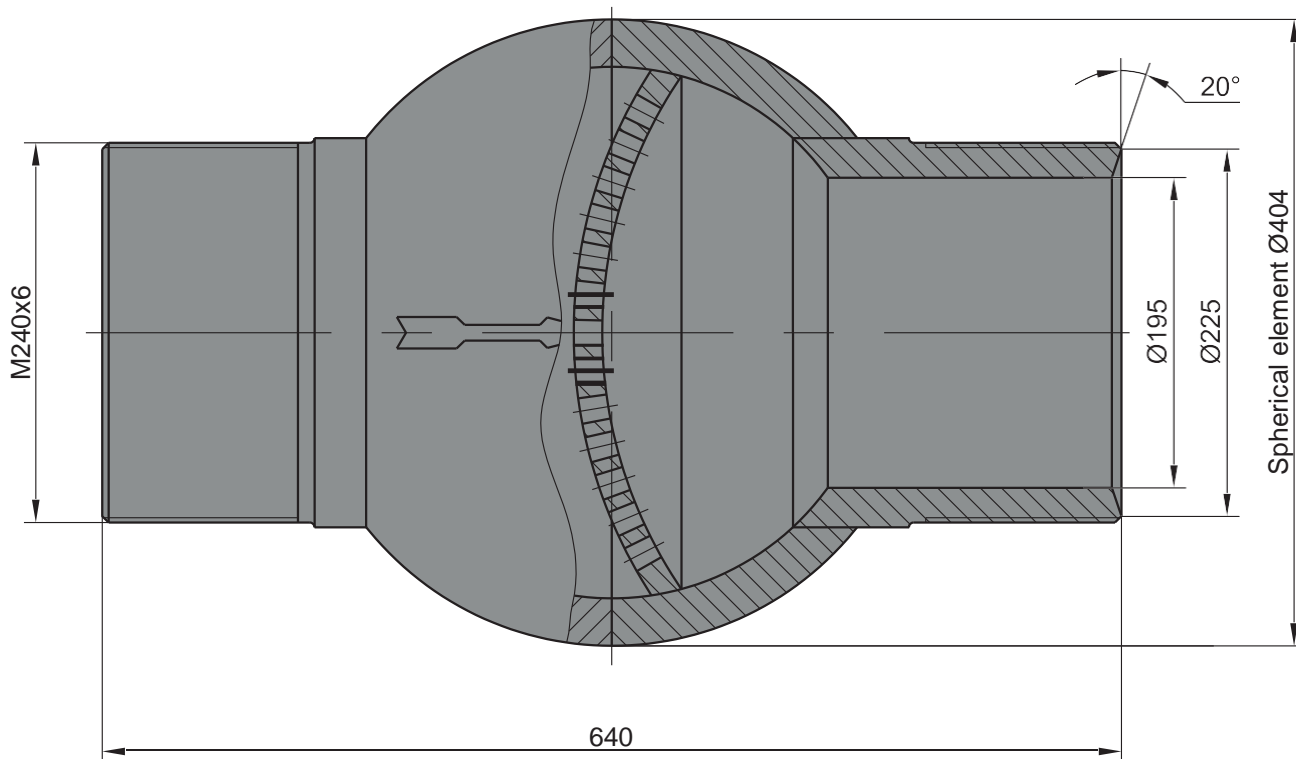
565

Material of main parts

steel 09Г2С

* Pipe is beveled to the pipe specified by a Customer.

84 Convex Strainer DN 200 PN 100



Product designation

RZ-200-100-L

Figure designation

1.2790.65.100.00

Diameter Nominal, DN, mm

200

Pressure Nominal, PN, MPa

10.0

Hydraulic pressure losses at nominal operation conditions, max, MPa

0.03

Connection

lens acc. to National Standard GOST 9400

Weight, max, kg

150

Material of main parts

Body

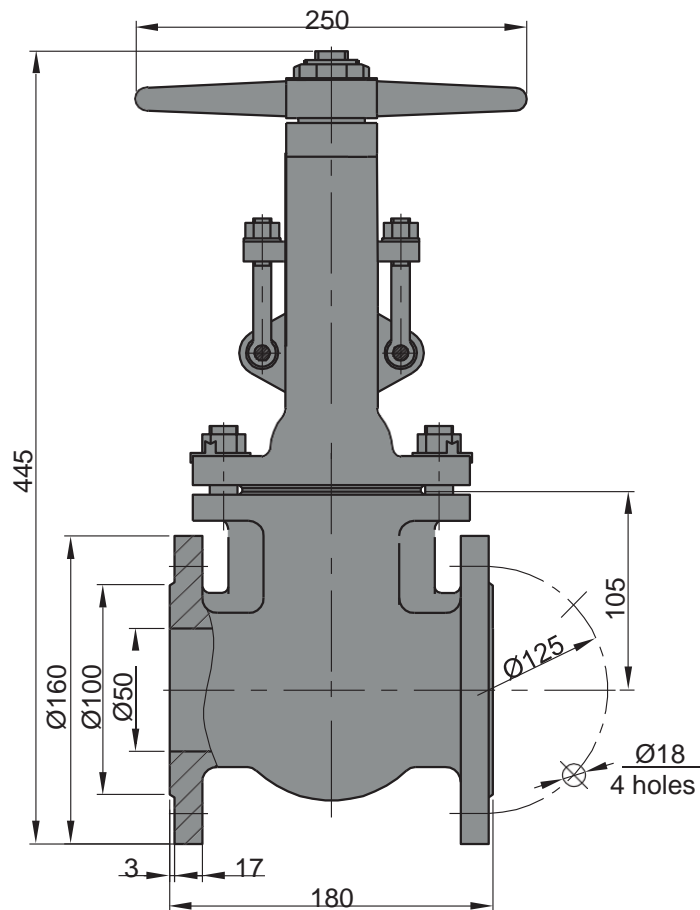
steel 09Г2С

Connection pipe

steel 09Г2С

Screen

steel 09Г2С

**Product designation****ZKL-50-16-UKhL1****Figure designation****1.9000-468.08-00M**

Diameter Nominal, DN, mm

50

Pressure Nominal, PN, MPa

1.6

Fluid

non-aggressive liquid or gaseous

Fluid temperature, °C

up to plus 425

Actuator type

manual

Connection

flanged

Weight, max, kg

30

Material of main parts

Body

steel 20ГЛ

Cover

steel 20ГЛ

Stem

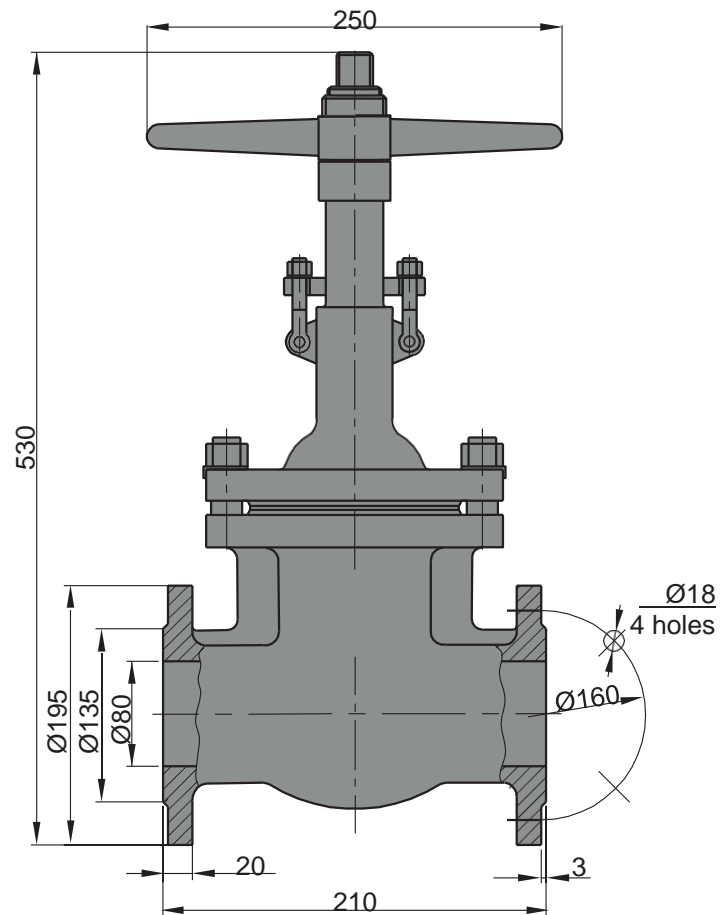
steel 14X17H2

Wedge

steel 09Г2С-6

Stem sealing

stem packing АГИ6x6

**Product designation****ZKL-80-16-UKhL1****Figure designation****1.9000-469.01-00M**

Diameter Nominal, DN, mm

80

Pressure Nominal, PN, MPa

1.6

Fluid

non-aggressive liquid or gaseous

Fluid temperature, °C

up to plus 425

Actuator type

manual

Connection

flanged

Weight, max, kg

36

Material of main parts

Body

steel 20ГЛ

Cover

steel 20ГЛ

Stem

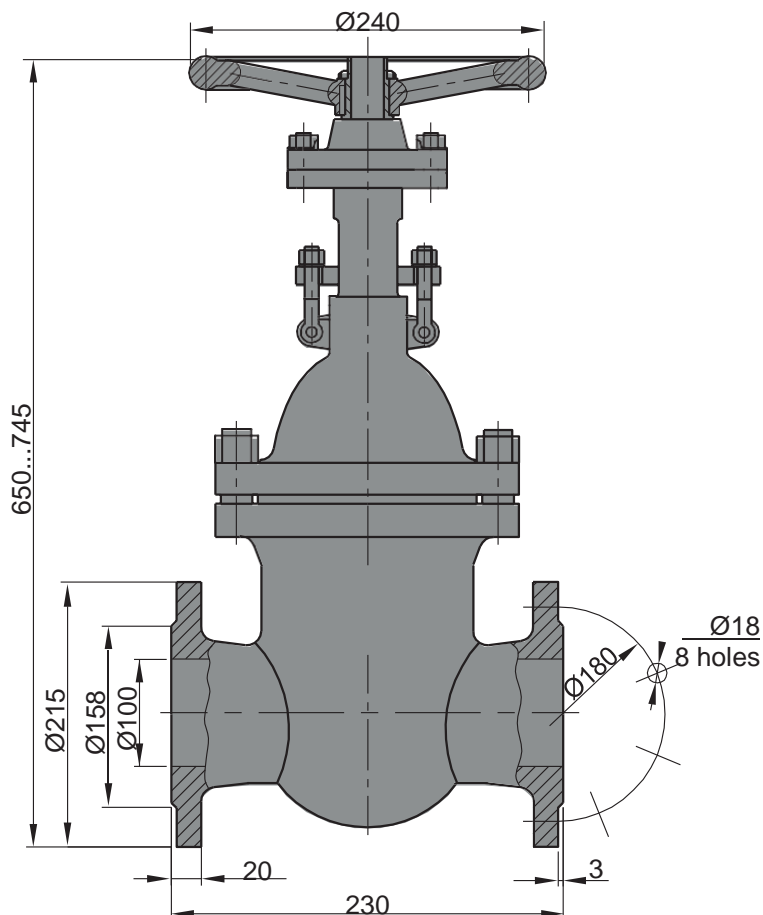
steel 14X17H2

Wedge

steel 09Г2С-6

Stem sealing

stem packing АГИ6х6

**Product designation****ZKL-100-16-UKhL1****Figure designation****1.2790.84.000.00-06**

Diameter Nominal, DN, mm

100

Pressure Nominal, PN, MPa

1.6

Fluid

non-aggressive liquid or gaseous

Fluid temperature, °C

up to plus 425

Actuator type

manual

Connection

flanged

Weight, max, kg

65

Material of main parts

Body

steel 20ГЛ

Cover

steel 20ГЛ

Stem

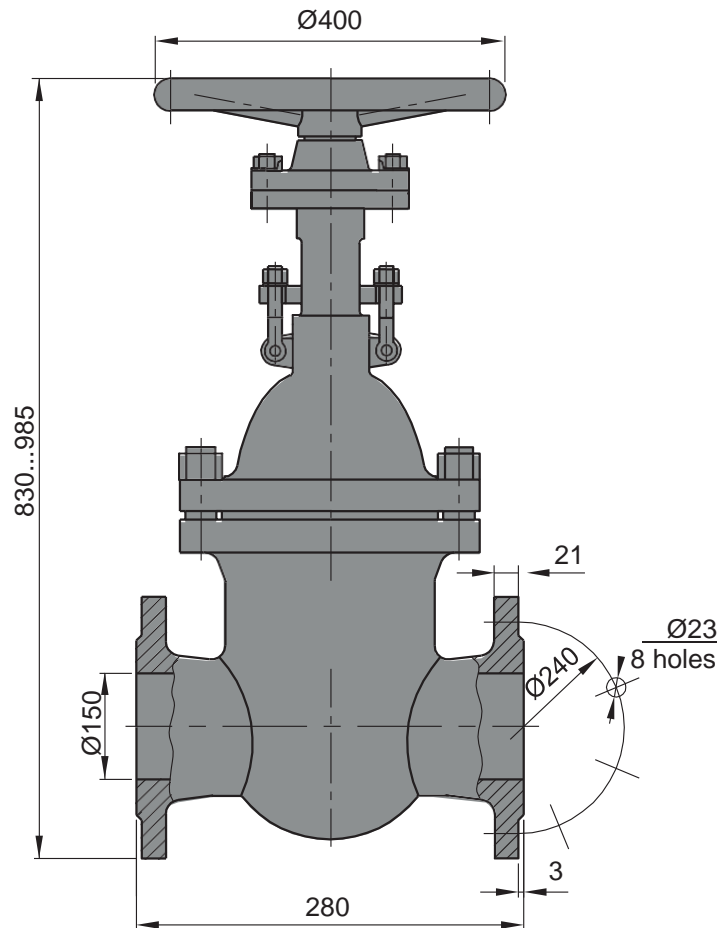
steel 14X17H2

Wedge

steel 09Г2С

Stem sealing

stem packing АГИ6х6

**Product designation****ZKL-150-16-UKhL1****Figure designation****1.2790.84.000.00-07**

Diameter Nominal, DN, mm

150

Pressure Nominal, PN, MPa

1.6

Fluid

non-aggressive liquid or gaseous

Fluid temperature, °C

up to plus 425

Actuator type

manual

Connection

flanged

Weight, max, kg

105

Material of main parts

Body

steel 20ГЛ

Cover

steel 20ГЛ

Stem

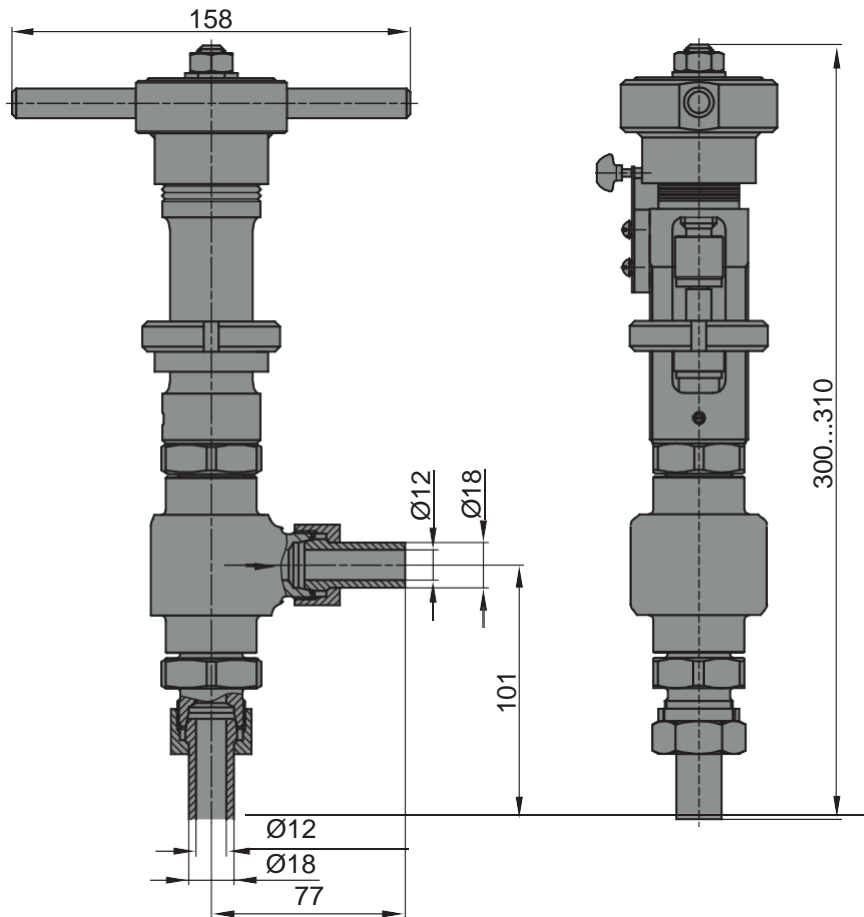
steel 14X17H2

Wedge

steel 09Г2С

Stem sealing

stem packing АГИ6x6

**Product designation****KZR-15-250-UKhL1****Figure designation****1.2790.251.000.00**

Diameter Nominal, DN, mm

15

Pressure Nominal, PN, MPa

25.0

Fluid

non-aggressive liquid or gaseous

Fluid temperature, °C

minus 60 through plus 425

Kv, m³/h

0.1

Actuator type

manual

Connection

fitting

Weight, max, kg

3.0

Material of main parts

Body

steel 40X + zinc chromating 9μ

Nozzle

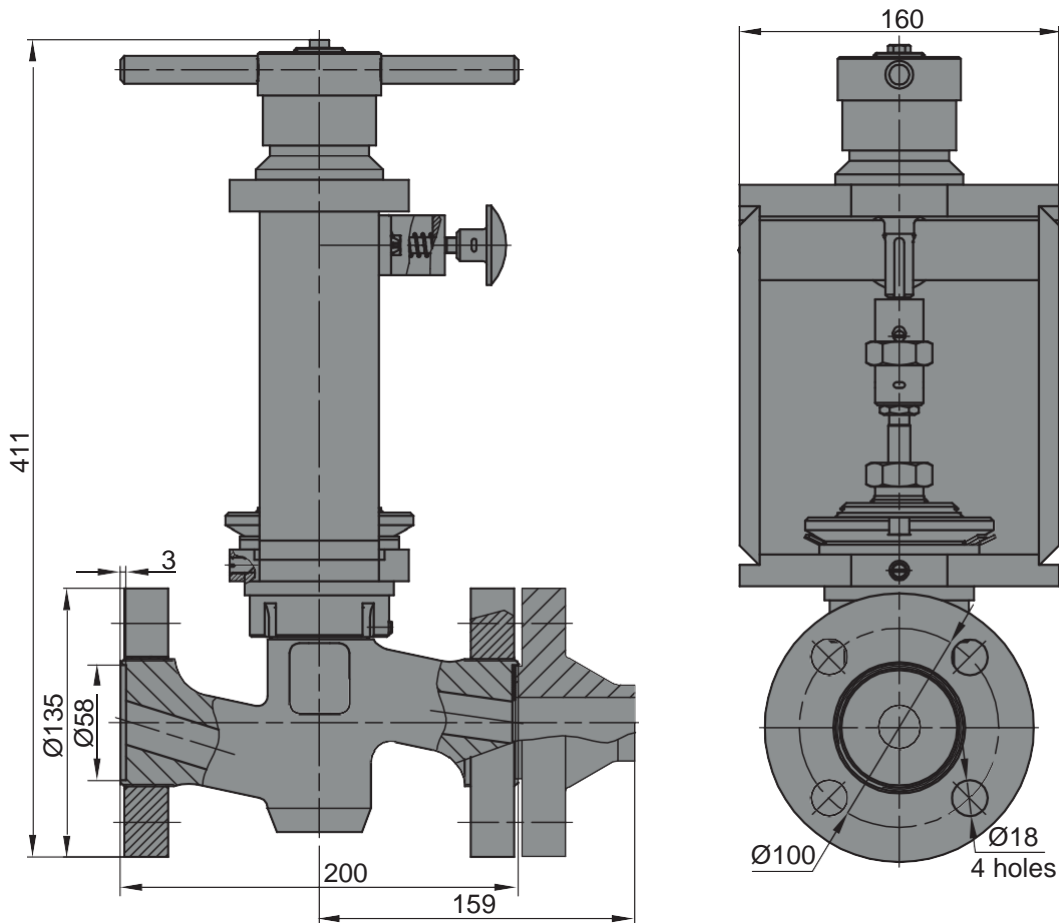
steel 40X + zinc chromating 9μ

Stem

steel 14X17H2

Rod

steel 12X13

**Product designation****KZR-25-100-UKhL1****Figure designation****1.2790.222.000.00**

Diameter Nominal, DN, mm

25

Pressure Nominal, PN, MPa

10.0

Fluid

non-aggressive liquid or gaseous

Fluid temperature, °C

up to plus 120

Kv, m³/h

8.0

Actuator type

manual

Connection

flanged with mating flanges*

Weight without the mating parts set, max, kg

16

Weight with the mating parts set, max, kg

23

Material of main parts

Body

steel 09Г2С + zinc chromating 9μ

Upper rod

steel 14X17H2

Rod

steel 20X13

Rod seal

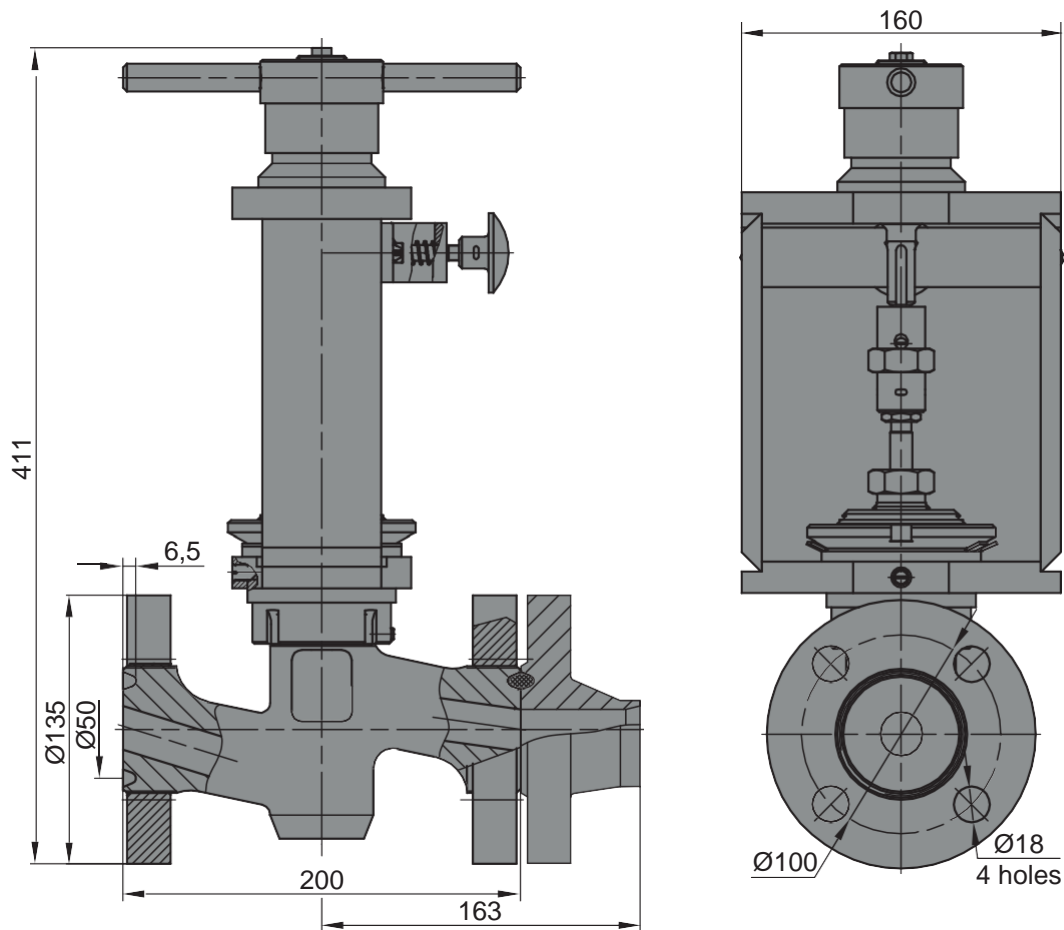
fluoroplast Ø4K20

Counter flange

steel 09Г2С

* Pipe is beveled to the pipe specified by a Customer.

Shut-off Control Valve DN 25 PN 160 Kv8 with Manual Actuator



Product designation

KZR-25-160-UKhL1

Figure designation

1.2790.242.000.00

Diameter Nominal, DN, mm

25

Pressure Nominal, PN, MPa

16.0

Fluid

non-aggressive gaseous

Fluid temperature, °C

up to plus 120

Kv, m³/h

8.0

Actuator type

manual

Connection

flanged with mating flanges*

Weight without the mating parts set, max, kg

16.5

Weight with the mating parts set, max, kg

23.0

Material of main parts

Body

steel 09Г2С + zinc chromating 9μ

Upper rod

steel 14X17H2

Rod

steel 20X13

Rod seal

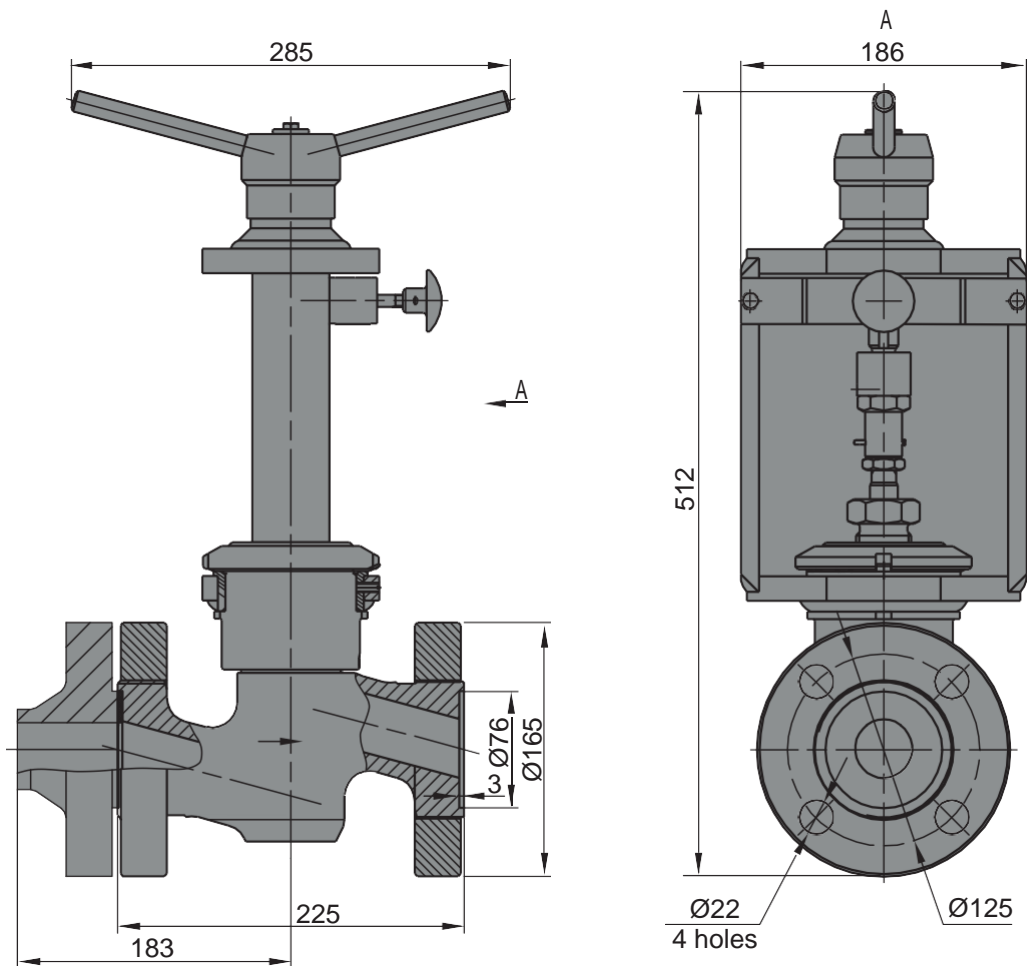
fluoroplast Φ4K20

Counter flange

steel 09Г2С

* Pipe is beveled to the pipe specified by a Customer.

Shut-off Control Valve DN 40 PN 100 Kv32 with Manual Actuator



Product designation

Figure designation

Diameter Nominal, DN, mm
Pressure Nominal, PN, MPa

Fluid

Fluid temperature, °C

Kv, m³/h

Actuator type

Connection

Weight without the mating parts set, max, kg

Weight with the mating parts set, max, kg

KZR-40-100-UKhL1

1.2790.223.000.00-02

40

10.0

non-aggressive liquid

up to plus 120

32.0

manual

flanged with mating flanges*

26

38

Material of main parts

Body

Upper rod

Rod

Rod seal

Counter flange

steel 09Г2С + zinc chromating 9μ

steel 14X17H2

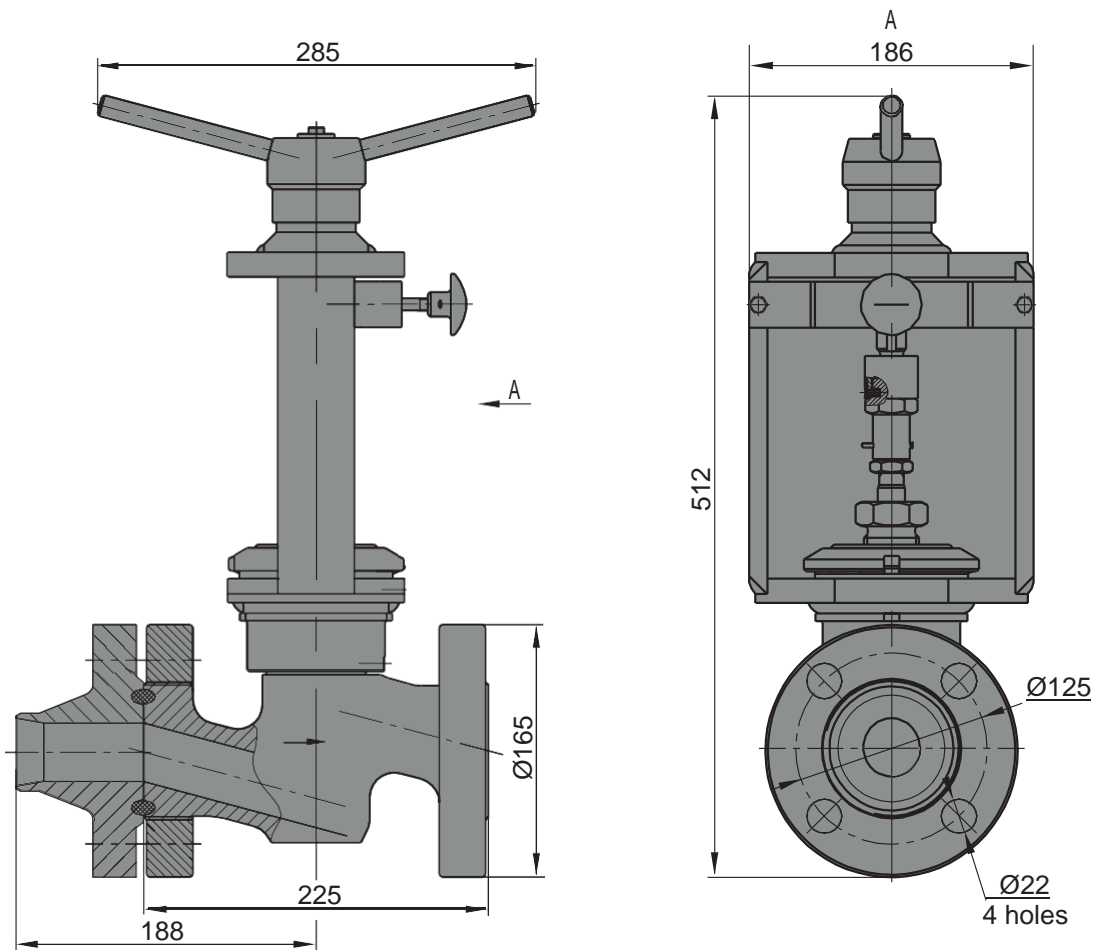
steel 20X13

fluoroplast Φ4K20

steel 09Г2С

* Pipe is beveled to the pipe specified by a Customer.

Shut-off Control Valve DN 40 PN 160 Kv32 with Manual Actuator



Product designation

Figure designation

Diameter Nominal, DN, mm
Pressure Nominal, PN, MPa

Fluid

Fluid temperature, °C

Kv, m³/h

Actuator type

Connection

Weight without the mating parts set, max, kg

Weight with the mating parts set, max, kg

KZR-40-160-UKhL1

1.2790.243.000.00-02

40

16.0

non-aggressive liquid or gaseous

up to plus 120

32.0

manual

flanged with mating flanges*

26

38

Material of main parts

Body

steel 09Г2С + zinc chromating 9μ

Upper rod

steel 14X17H2

Rod

steel 20X13

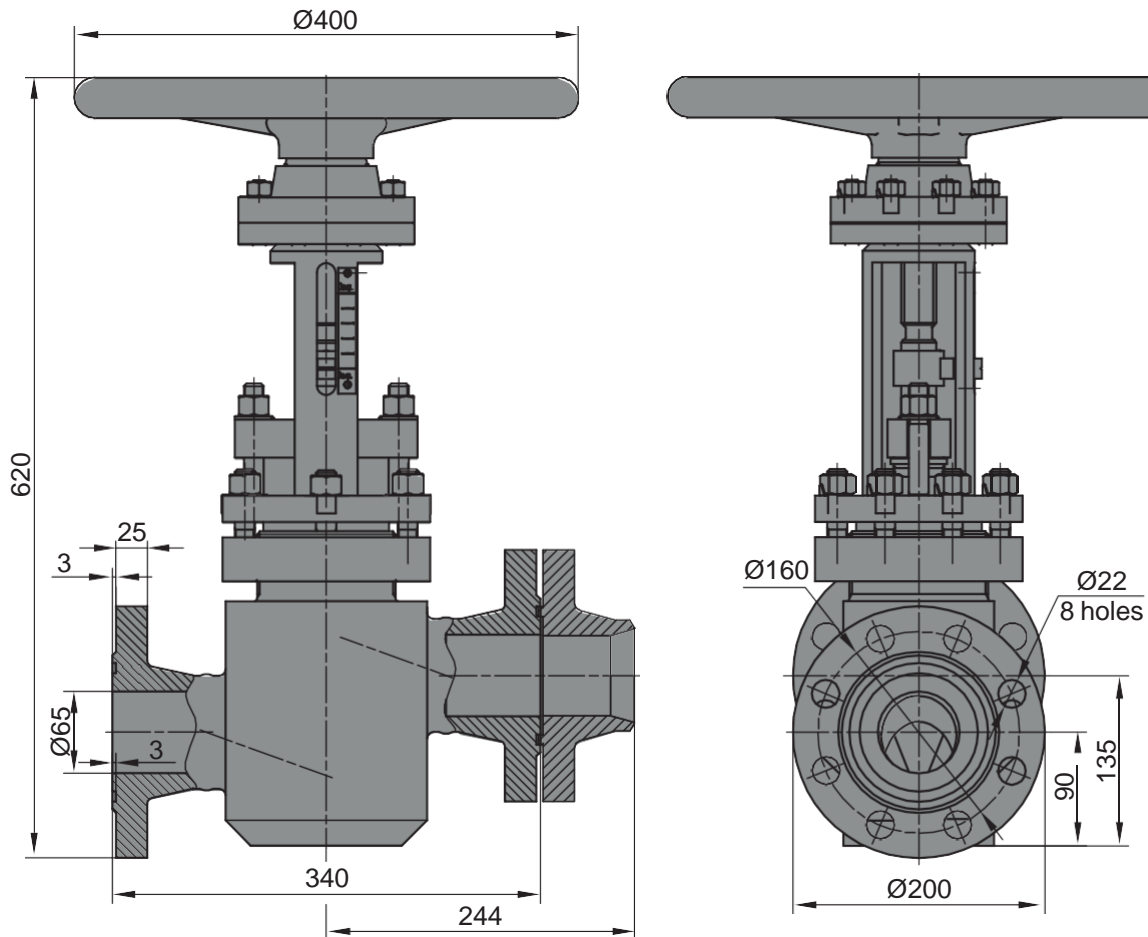
Rod seal

fluoroplast Ø4K20

Counter flange

steel 09Г2С

* Pipe is beveled to the pipe specified by a Customer.

**Product designation****KZR-65-63-UKhL1****Figure designation****1.2790.255.000.00**

Diameter Nominal, DN, mm

65

Pressure Nominal, PN, MPa

6.3

Fluid

non-aggressive liquid or gaseous

Fluid temperature, °C

up to plus 350

Kv, m³/h

80

Actuator type

manual

Connection

flanged with mating flanges*

Weight without the mating parts set, max, kg

72

Weight with the mating parts set, max, kg

91

Material of main parts

Body

steel 09Г2С + zinc chromating 9μ

Rod

steel 20X13

Rod seal

tamping AΦT 6x6

Counter flange

steel 09Г2С

* Pipe is beveled to the pipe specified by a Customer.

SMNPO - Engineering		BALL VALVE		Page 1 from 2
Specification No.		Data Sheet No.		
Date: 20_____.		Customer -		
Tel: +38 0542 77-32-29; 24-37-75		Designer - SMNPO - Engineering		
Fax: +38 0542 77-32-28; 22-55-32		Object -		
1	Designation			
	Drawing No.			
2	Quantity	<i>Pcs.</i>		
3	Diameter Nominal	<i>DN, mm</i>		
4	Pressure Nominal	<i>PN, bar</i>		
5	Pipeline diameter	<i>Outside (mm)</i>		
6	Pipe wall thickness	<i>mm</i>		
7	Pipe material	<i>Steel grade, Standard</i>		
8	Pup carbon equivalent	<i>[C]e, max</i>		
9	Pipeline position	<i>horizontal / vertical</i>		
10	Installation	<i>Above-ground / under-ground</i>		
11	Depth from ground surface to pipe top (for underground installation)	<i>mm</i>		
12	Connection	<i>Welded end / flanged</i>		
13	Counter-flanges	<i>yes / no</i>		
14	Working medium			
15	Aggressive components of working medium	<i>mg/m³, max</i>		
16	Mechanical impurities in working medium	<i>g/m³, max</i>		
17	Working medium temperature	<i>°C</i>		
18	Ambient temperature	<i>°C</i>		
19	Working pressure	<i>bar</i>		
20	Max. pressure differential	<i>bar</i>		
21	Max. pressure differential under operation	<i>bar</i>		
22	Ball valve body type	<i>welded / split</i>		
23	Seat tightness	<i>Bi-directional / uni-directional</i>		
24	Tightness class	<i>A, B, C, D as per GOST 9544.2005 or ISO 5208 1, 2, 3 as per GOST 9544-75</i>		
25	Seat sealing	<i>elastomeric / metal-to-metal</i>		
26	Protective coating	<i>local / remote / local + remote</i>		
27	Actuator type	<i>manual / electric / electro-hydraulic / pneumatic / pneumatic-and-hydraulic</i>		
28	Type of operating medium (for pneumatic and pneumatic-and-hydraulic actuators)	<i>From the pipe / from a separate source (power gas)</i>		
29	Power gas pressure	<i>bar</i>		
30	Manual override	<i>yes / no</i>		
31	Limit switch	<i>yes / no</i>		

SMNPO - Engineering		BALL VALVE		Page 2 from 2
Specification No.		Data Sheet No.		
Date: 20____.____.____		Customer -		
Tel: +38 0542 77-32-29; 24-37-75		Designer - SMNPO - Engineering		
Fax: +38 0542 77-32-28; 22-55-32		Object -		
32	Nominal voltage of control unit	24 / 110 / 220V AC/DC		
33	Nominal voltage of limit switches	24 / 110 / 220V AC/DC		
34	Motor power voltage (for electric and electro-hydraulic actuators)	24 / 110 / 220 / 380 V AC / DC		
35	Valve emergency shut off automatic device (Manufacturer)	yes / no		
36	Protective covering type	Over-ground part: polymer / paint		
		Under-ground part: polymer / paint		
37	Paint	color		
38	Additional data:			
	Name	Signature / Date	Tel. / Fax	
Designed				
Approved				

When ordering, please specify product and drawing designation.

The example of an order: KSh-1000-100-PGP-PU-UKhL1-Pr, voltage 24 V; 1.2750.150.104.00-02

where

- KSh - ball valve;
- 1000 - Diameter Nominal, DN, mm;
- 100 - Pressure Nominal, PN, bar;
- PGP - Pneumatic-and-Hydraulic Actuator (R - Manual Actuator; RP - Manual Mechanical Actuator; PP - Pneumatic Actuator; PGP - Pneumatic-and-Hydraulic Actuator; EP - Electric Actuator);
- PU - under-ground installation; (NU - over-ground installation; PU - under-ground installation);
- UKhL1 - for areas with temperate and cold climate (temperature range -60°C - +45°C)
(U1 - for districts with temperate climate; KhL1 - for districts with cold climate);
- Pr - welded end connection (F-F - flanged connection with counter flanges, fasteners and sealing parts Pr - welded end);
- Control unit - 24 V (24,110, 220 V);
- 1.2750.150.104.00-02 - drawing designation.

When ordering, please specify dimensions, material and mechanical properties of the pipe to be connected to.

97 Data Sheet for Check Valve

SMNPO - Engineering	CHECK VALVE	Page 1 from 1
Specification No.	Data Sheet No.	
Date: 20_____	Customer -	
Tel: +38 0542 77-32-29; 24-37-75	Designer - SMNPO - Engineering	
Fax: +38 0542 77-32-28; 22-55-32	Object -	

1	Designation		
	Drawing No.		
2	Quantity	<i>Pcs.</i>	
3	Nominal diameter	<i>DN, mm</i>	
4	Nominal pressure	<i>PN, bar</i>	
5	Pipeline diameter	<i>Outside (mm)</i>	
6	Pipe wall thickness	<i>mm</i>	
7	Pipe material	<i>Steel grade, Standard</i>	
8	Pup carbon equivalent	<i>[C]e, max</i>	
9	Pipeline position	<i>Horizontal /</i>	
10	Installation	<i>Over-ground / under-ground</i>	
11	Connection	<i>Welded end / flanged end</i>	
12	Counter-flanges	<i>yes / no</i>	
13	Working medium		
14	Aggressive components of working medium	<i>mg/m³, max</i>	
15	Mechanical impurities in working medium	<i>g/m³, max</i>	
16	Working medium temperature	<i>°C</i>	
17	Ambient temperature	<i>°C</i>	
18	Work pressure	<i>bar</i>	
19	Max. pressure differential	<i>bar</i>	
20	Working medium velocity (flow rate)	<i>m/sec (nm³/min)</i>	
21	Type	<i>swing</i>	
22	Body type	<i>welded / split</i>	
23	Damper availability	<i>yes / no</i>	
24	Protective covering type	<i>polymer / paint</i>	
25	Paint	<i>color</i>	
26	Additional data:		
	Name	Signature / Date	Tel. / Fax
Designed			
Approved			

When ordering, please specify product and drawing designation.

The example of an order: ZO-300-100-Pr; 1.2770.56.200.00-01.

where

- | | |
|---------------------|---|
| ZO | - check valve; |
| 300 | - Diameter Nominal, DN, mm; |
| 100 | - Pressure Nominal, PN, bar; |
| Pr | - welded end (F-F - flanged connection with counter flanges, fasteners and sealing parts
Pr – welded end); |
| 1.2770.56.200.00-01 | - drawing designation. |

When ordering, please specify dimensions, material and mechanical properties of the pipe to be connected to.

SMNPO - Engineering		CONVEX STRAINER		Page 1 from 1
Specification No.		Data Sheet No.		
Date: 20____.____.____		Customer -		
Tel: +38 0542 77-32-29; 24-37-75		Designer - SMNPO - Engineering		
Fax: +38 0542 77-32-28; 22-55-32		Object -		
1	Designation			
	Drawing No.			
2	Quantity	<i>Pcs.</i>		
3	Diameter Nominal	<i>DN, mm</i>		
4	Pressure Nominal	<i>PN, MPa</i>		
5	Pipeline diameter	<i>Outside, mm</i>		
6	Pipe wall thickness	<i>mm</i>		
7	Pipe material	<i>Steel grade, σ_B, σ_T, MPa</i>		
8	Working pressure	<i>MPa</i>		
9	Pipeline position	<i>Horizontal /</i>		
10	Installation	<i>Over-ground / under-ground</i>		
11	Connection	<i>Welded end</i>		
12	Working medium			
13	Aggressive components of working medium	<i>% the volume</i>		
14	Working medium velocity	<i>m/sec min, nom, max</i>		
15	Working medium temperature	<i>°C</i>		
16	Ambient temperature	<i>°C</i>		
17	Max. pressure differential	<i>MPa</i>		
18	Pressure losses at nominal conditions	<i>MPa</i>		
19	Material			
20	Protective covering type	<i>polymer / paint</i>		
21	Paint	<i>color</i>		
22	Additional data:			
	Name	Signature / Date	Tel. / Fax	
Designed				
Approved				

When ordering, please specify product and drawing designation.

The example of an order: RZ-400-100-Pr; 1.2790.163.100.00.

where

- | | |
|-------------------|--|
| RZ | - convex strainer; |
| 400 | - Diameter Nominal, DN, mm; |
| 100 | - Pressure Nominal, PN, bar; |
| Pr | - welded end (Pr – welded end; L – lens connection (acc. to National Standard GOST 9400)); |
| 1.2790.163.100.00 | - drawing designation. |

When ordering, please specify dimensions, material and mechanical properties of the pipe to be connected to.

- | | | |
|----|--------------------------|---|
| 1. | TU 26-07-1346-84 | Check valve DN 700 |
| 2. | TU 26-07-1391-86 | Check valve DN 1000 |
| 3. | TU U3.20-05747991-026-95 | Check valves for gas industry |
| 4. | TU U3.20-05747991-032-96 | Convex strainers |
| 5. | TU 26-07-1365-85 | Ball valves DN 500 with mechanical actuator |
| 6. | TU 26-07-1419-87 | Ball valves DN 500 with pneumatic-and-hydraulic actuator |
| 7. | TU U3.20-05747991-025-95 | Ball valves DN 300, 400 with manual and pneumatic-and-hydraulic actuators |
| 8. | TU U3.20-05747991-037-97 | Ball valves DN 700 with manual and pneumatic-and-hydraulic actuators |
| 9. | TU U3.88-05747991-003-99 | Spherical valves for gas industry |

100 Certificates and Approvals

Certificates of compliance:

- ISO 9001:2008 quality management system certificate;
- OHSAS 18001-2007 occupational health and safety management system certificate;
- ISO 14001-2004 Environmental management system certificate.