



REFERENCE MATERIALS

1. Fundamentals of valve production

1. Main parameters

The term «**pipeline valve**» is understood as a device mounted on pipelines, units or vessels and designated to control (shut off, distribute, regulate, discharge, mix or separate phases) flows of operating mediums (liquid, gaseous, gas-liquid, powdered, suspension etc.) by change of passage area.

Pipeline valves are characterized by two main parameters:

- Port area (nominal size) and
- Nominal pressure.

Port area (nominal size) (Dy or DN) is a parameter applied for pipeline systems as a characteristic of attachable parts, for example, pipeline junctions, fittings and valves. Port area (nominal size) is approximately equal to the inner diameter of the attachable pipeline in millimeters. The values of port areas must correspond to the numbers of parameters series, determined in ГOCT 28338-89 (total 50 numbers from 205 to 4000).

Table 6

Values of port areas (nominal sizes) under GOST (ГOCT) 28338-89

2,5	40	350	2000
3	50	400	2200
4	63*	450	2400
5	65	500	2600**
6	80	600	2800
8	100	700	3000
10	125	800	3200**
12	150	900	3400
15	160*	1000	3600**
16*	175**	1200	3800**
20	200	1400	4000
25	250	1600	
32	300	1800	

*- tolerable for hydraulic and pneumatic devices

** - not tolerable for general purpose valves

A&L Simonyan Company

Mr. Arman Simonyan

Agency

* Chemical and Oil industry * Engineering * Raw material * Drive engineering



Port area or nominal size is marked using Dy or DN designation and the value chosen from the series. For example, port area (nominal size) of 200 should be marked as follows: Dy 200 or DN 200.

Nominal pressure (Py or PN) is the highest positive operating pressure under the operating medium temperature of 20 °C, at which the predetermined service life of pipeline junctions and valves with fixed dimensions grounded on stress calculation given the chosen materials and their strength properties under the temperature of 20 °C is guaranteed.ГОСТ 26349-84 determines the parameters series of nominal pressures including 27 parameters from 0.1 to 1,000 kgf/sq.cm. (Table 7). Nominal pressures under 0.1 kgf/sq.cm. Should be chosen from R5 series, and those above 1,000 kgf/sq.cm. should be chosen from R20 series according to ГОСТ 8032-56.

As against the nominal pressure test and operating pressures are distinguished.

Test pressure (Pтп) is the positive pressure at which hydraulic strength and leak testing of valves and pipeline parts with water under the temperature between 5 °C and 70 °C, if the specific value of the temperature is not indicated in the normative and technical documents, should be conducted.

Operating pressure (Pp) is the highest positive pressure at which the predetermined operational mode for valves and pipeline parts, which implies the set operating temperature, is guaranteed. The medium temperature should be assumed as equal to the temperature at which continuous service of the product takes place not taking into account short-term fluctuations specified as tolerable in the respective normative and technical documents.

Operating pressures are equal to nominal ones for carbon steel valves under medium temperature from -20 to + 200 °C, for grey cast iron valves – from -15 to +120 °C, for malleable cast iron valves – from -30 to +120°C, for brass and bronze valves – from -30 to +120 °C, for titanium alloys – from -40 to + 50 °C. At increase of operating medium temperature the tolerable operating pressure should be decreased depending on the material of the valves body details. Valves are produced from carbon steel for operating temperatures up to 445 °C, from grey cast iron – up to 300°C, from malleable cast iron – up to 400°C, from bronze and brass – up to 250 °C, from titanium – up to 350 °C.

Examples of designation codes under ГОСТ 356-80:

- Nominal pressure of 40 kgf/sq.cm. - Py 40 or PN 40
- Test pressure of 60 kgf/sq.cm. – Pтп 60
- Operating pressure of 250 kgf/sq.cm. under the temperature of 530 °C – Pp 250 t 530



Table 7

Values of nominal pressures under GOST (ГОСТ) 26349-84

MPa	kgf/sq.cm.	MPa	kgf/sq.cm.
0,01	0,1	6,3	63
0,016	0,16	8,0	80
0,025	0,25	10,0	100
0,040	0,4	12,5	125
0,063	0,63	16,0	160
0,1	1	20,0	200
0,16	1,6	25,0	250
0,25	2,5	32,0	320
0,4	4	40,0	400
0,63	6,3	50,0	500
1,0	10	63,0	630
1,6	16	80,0	800
2,5	25	100,0	1000
4,0	40		

2. General key terms and notions

Along with the mentioned main notions the following terms reflecting specific elements, objects and parameters of manufactured items are often used in valve production.

Valve type – classification unit characterized by interaction of the moving element of the gate (closing element) with the operating medium flow, determining key design features of pipeline valves. For example, gate, cock, valve etc.

Valve class – classification unit characterizing functionality of the pipeline valves, for instance, shutoff, regulating valves etc.

Valve standard size – configuration of pipeline valves regulated by the port area and nominal pressure and marked in the group main design document (main version of the product).

Valve version – configuration of a type of pipeline valves regulated, apart from the port area and nominal size, by variable data: main parts' material, connection to pipeline, control type etc., the information of which is included into one group or basic design document. Version corresponds to a specific OKP code.

A&L Simonyan Company

Mr. Arman Simonyan

Agency

* Chemical and Oil industry * Engineering * Raw material * Drive engineering



Design series – pipeline valves of similar design differing only with port areas.

Parameter series – designs of pipeline valves with different port areas, but identical nominal parameters.

Nominal parameters – operating medium pressure and temperature, indicated without taking into account tolerance deviations.

Operating medium – liquid, gas, pulp or their mixtures and other substances which are supposed to be controlled (shut off, distributed, regulated, discharged, mixed, phases separated) with the help of pipeline valves.

External (ambient) medium – atmospheric air, gas, liquid or other substances surrounding pipeline valves.

Powering medium – liquid, gas or other substances used as working media in valve actuators, that is creating permutation effort on the shutoff or regulating element.

Command medium – liquid, gas or other substances used to transfer command signals to the valve actuator.

Absolute pressure (Paбс) – pressure measured taking into account atmospheric pressure.

Positive pressure (P) – pressure measured not taking into account atmospheric pressure – atmospheric pressure (Pa) is taken as reference zero, $P = Pa_{\text{бс}} - Pa$.
If $Pa_{\text{бс}} > Pa$ the pressure P is also called gauge pressure.

Vacuum (W) – positive difference between the atmospheric and the absolute pressures – $W = Pa - Pa_{\text{бс}}$ (когда $Pa > Pa_{\text{бс}}$). In engineering designing Pa is usually taken as equal to 1 kgf/sq.cm.

Operating temperature (Tp, °C) – maximum operating medium temperature in the normal course of production process without taking into consideration occasional short-term increases.

Actual length of valve (L) – linear dimension of the valve between external end planes of its mounting parts (flanges, couplings, sleeves, nipples, sockets for welding).

Overall height of valve (H) – distance from valve body connecting sockets axis to crown of the construction (spindle or actuator) at open position of the product.

Consumption – volume or weight of operating medium flowing through the throat of the valve within a unit of time at preset parameters (pressure, temperature, density).

A&L Simonyan Company

Mr. Arman Simonyan

Agency

* Chemical and Oil industry * Engineering * Raw material * Drive engineering



Hydraulic resistance coefficient – ratio of lost pressure and velocity (dynamic) pressure in the nominal (adopted) throat area.

Throat area – area formed at mutual bracing of movable and fixed elements of the gate.

Leakage – volume or weight of operating medium passing through the gate closed with the nominal pressure within a unit of time at preset parameters (pressure, temperature, density).

Air-tightness – property of connection (detachable or permanent, with movable or fixed contact) preventing leakage. Air-tightness in sealing devices is reached through creation of zero clearance between sealing parts with the help of a sealing element placed between them or due to strong contact of two sealing surfaces with the necessary effort, providing for the preset level of air-tightness, applied.

Norms of air-tightness are determined in state standard ГOCT (%;;-93, which also establishes requirements to air-tightness tests. In accordance with the specified ГOCT air-tightness tests should be conducted as follows:

- **Pressure and medium**

DN	PN	Gate air-tightness test
≤ 80	≥ 1	a) water – pressure 1,1x PN or
≥ 100	≤ 506)	air with pressure 6 ± 0,5 kgf/sq.cm.
≤ 200	≥ 63	Water – pressure 1,1 x PN
≥ 250	≥ 1	

- **Maximum testing time for gate air-tightness test**

DN	Maximum testing time, sec	
	Metal-to-metal seal	Non-metallic seal
≤ 50	15	15
≥ 65	30	
≤ 200		
≥ 250	60	30
≤ 400		
≥ 500	120	60

- **Maximum tolerated leakage values at acceptance tests for air-tightness classes**

Air-tightness class	Air-tightness class			
	A	B	C	D
No visible leakages	0,0006 cm ³ /min x DN (water)	0,0018 cm ³ /min x DN (water)	0,006 cm ³ /min x DN (water)	
		0,018 cm ³ /min xDN (air)	0,18 cm ³ /min xxDN (air)	1,8 cm ³ /min x DN (water)

A&L Simonyan Company

Mr. Arman Simonyan

Agency

* Chemical and Oil industry * Engineering * Raw material * Drive engineering



Air-tightness class for shutoff valves is indicated in technical specifications for every type of valves. Leakage values correspond to the case of discharge to atmosphere. When determining leakages the nominal diameter is assumed in millimetres.

Impermeability – property of a part material characterized by absence of cracks, porosity, gaseous inclusions, through which operating medium can penetrate.

Reliability – ability of pipeline valves to perform the predetermined functions preserving the set values of operational characteristics in the necessary limits with the course of time taking into account the mode of operation, conditions of use and maintenance, as well as repairs, storage and transportation. The property is comprehensive and includes such requirements as faultlessness, durability etc. These requirements can be considered separately or be included as a certain combination to the estimation of valve or its separate assemblies and parts' reliability.

Faultlessness – simple reliability index for pipeline valves characterizing their ability to survive continuously within some period of time or certain performance period.

Durability – simple reliability index characterizing ability of valves to survive before limit condition occurrence with necessary, determined by the established maintenance and repairs system. The indicator of durability is service life or endurance.

Working ability – a state in which pipeline valves can perform the predetermined functions.

Performance period – time of pipeline valves operation or its quantitative value measured in the number of its “closed-open” action cycles. Performance period can be continuous or with breaks, in the latter case the pooled estimate is taken into account.

Cycle – travel of the closing element from the starting position (“closed”, “open”) to the opposite one and back related to performance of the valve main function.

Service life – calendar duration of the valve operation from its beginning or resumption after a mid-life repair or overhaul to occurrence of the valve limit condition.

Endurance – performance period of the valves from the beginning of operation or its resumption after a mid-life repair or overhaul to occurrence of the limit condition stipulated in the normative and technical documents.

Limit condition – the condition of pipeline valves at which it can perform its functions, but cannot be used for further operation, which should be stopped due to unrecoverable violation of safety requirements. The limit condition can occur as the result of the preset parameters exceeding the established limits or in connection with the necessity of a mid-life repair or overhaul, as well as in connection with decline of efficiency of the valve operation.

A&L Simonyan Company

Mr. Arman Simonyan

Agency

* Chemical and Oil industry * Engineering * Raw material * Drive engineering



Long-term strength – ability of the part material to retain strength at long-term stress (especially important at high temperatures).

Cycle strength – ability of the part material to retain strength at periodical stress.

Thermal shock – sudden exposure of metal to high temperature (at sudden entry of high-heat liquid, for example, heat-transfer metal, to the valve).

Thermal cycle strength – ability of material to retain strength at thermal shocks.

Inflammable, explosive or toxic medium – gas or liquid able to ignite, explode or have adverse effect on humans or animals.

3. Reference designation

Application of a system of valve reference designation allows fixing some of the main technical parameters of the product in brief terms. Application of a system of indexes provides for a possibility of correct choice of valves, their proper use and increase of valve controllability during mounting. The most widespread is the system of TsKBA (Central Fittings Design-Engineering Bureau) featuring numerical and letter code of the valves main data (Table-Figure). According to the TsKBA system a product code includes 5 elements placed one after another (if there is no actuator, the code consists of four elements).

The first two digits indicate the valve type (Table 1), the next letters – the body material (Table 2), one or two digits after the letters – model number (design features of the product), if there are three digits: the first one indicates the actuator type (Table 3), and the next two ones mean the model number; the last letters stand for the material of sealing surfaces (Table 4) or the method of the body internal coating application (Table 5).

In some cases a digit indicating the version of the product or the fact of it being made of another material is added after the letters indicating the sealing surfaces material. Products without insertion or built-up rings, which is with sealing surfaces made directly on the body or the gate, are designated with letters «БК» (without rings).

For example:

15c922HЖ Steel shutoff straightway flange valve with electric actuator

15 – according to **Table 1** – shutoff valve

c – according to **Table 2** – from carbon steel

9 – according to **Table 3** – with electric actuator

22 – number of model

HЖ – according to **Table 4** – sealing surfaces built-up with corrosion-resistant steel.

A&L Simonyan Company

Mr. Arman Simonyan

Agency

* Chemical and Oil industry * Engineering * Raw material * Drive engineering



For valves with electric actuators of explosion-proof version letter Б should be added at the end of the reference designation (for example, 3049066pБ), for tropical version – letter Т (for example, 3049066pТ). The letters Б and Т should be specified at ordering.

Along with the TsKBA system a code obtained by abbreviation of the product name is used, for example, KTC – three-way steel cock etc.

Certain constructions are designated only with the number of drawing used for production thereof. Sometimes the designation includes a letter indicating the plant manufacturing the valves.

Reference designations for the valves intended for oil-refining and oil-producing industries consist of letters and digits.

The letters indicate the valve type, digits following the letters show parameters of the product, for example, 3КП-200-16 means molded wedge gate valve with the port area of 200 mm and for the nominal pressure of 16 kgf/sq.cm. or КП-160 is feed valve for the nominal pressure of 160 kgf/sq.cm. Products not having reference designation are marked with the drawing number.

Nowadays there are many new reference designations for valves, and they cannot be systematized.

These designations are indicated in the form they were adopted in by the manufacturing plant (or the introducer).

Table 1

Valve type	Reference designation
Cock (draw)	10
Cock (for pipeline)	11
Locking device of level gage	12
Shutoff valve	13, 14, 15
Cutoff valve	22, 24
Check valve (back-pressure or intake with grid)	16
Safety valve	17
Check gate (check rotary valve),	
Hermetic valve	19
Bypass valve	20
Pressure regulator	18, 21
Distribution valve	23
Control valve	25, 26
Mixing valve	27
Flap	30, 31
Disk rotary gate	32
Hose flap	33
Elevator	40
Condensate-tapper	45

A&L Simonyan Company

Mr. Arman Simonyan

Agency

* Chemical and Oil industry * Engineering * Raw material * Drive engineering



Table 2

Body material	Reference designation
Carbon steel	С
Alloy steel	ЛС
Corrosion-resistant (stainless) steel	НЖ
Grey cast iron	Ч
Malleable cast iron	КЧ
High-duty cast iron	ВЧ
Brass, bronze	Б
Aluminium	а
Monel metal	МН
Plastics (except viniplast)	П
Viniplast	ВП
Porcelain	К
Titanium alloy	ТН
Glass	СК

Table 3

Actuator	Reference designation
For remote control	0
Mechanic with worm gearing	3
The same with cylindrical gearing	4
The same with bevel gearing	5
Pneumatic	6
Hydraulic	7
Pneumohydraulic	6 (7)
Electromagnetic	8
Electric	9

A&L Simonyan Company

Mr. Arman Simonyan

Agency

* Chemical and Oil industry * Engineering * Raw material * Drive engineering



Table 4

Sealing surfaces material	Reference designation
Brass, bronze	бр
Monel metal	МН
Corrosion-resistant (stainless) steel	НЖ
Nitrated steel	НТ
Babbitt	бт
Stellite	ст
Sormite	ср
Leather	к
Ebonite	э
Rubber	р
Plastics (except viniplast)	п
Viniplast	ВП
Fluoroplastic	фТ

Table 5

Method of internal coating	Reference designation
Rubberizing	ГМ
Enamelling	ЭМ
Leading	СВ
Lining with plastic	П
Lining with Nairit	Н

A&L Simonyan Company

Mr. Arman Simonyan

Agency

* Chemical and Oil industry * Engineering * Raw material * Drive engineering



Normative and technical Documentation

- **List of industry standards in force in the field of valve production**

List of Industry Standards currently in force in the field of valve production

No.	Document designation	Name
1	OCT 24.207-01-90	Pipeline valves. Cast iron and non-ferrous alloy castings. General technical requirements.
2	OCT 26-07-400-84	Pipeline valves. Sealing gaskets from polytetrafluorethylene and composite materials on its basis. Design. Dimensions. Technical requirements.
3	OCT 26-07-420-83	Pipeline valves. Torques on flywheels (handwheels), double-armed and single-armed handles (keys).
4	OCT 26-07-755-86	Pipeline valves. Welding and welded joints quality control. Technical requirements
5	OCT 26-07-794-73	Low-temperature pipeline valves. General technical requirements
6	OCT 26-07-820-88	Pipeline valves. Methodical guidelines for preparing program and method of reliability tests.
7	OCT 26-07-1023-80	Automatic pipeline valves
8	OCT 26-07-1203-85	Pipeline valves. Electrotechnical, chemical and diffusion coatings. Technical requirements
9	OCT 26-07-1232-87	General purpose pipeline valves. Power threaded couples. Main dimensions. Technical requirements
10	OCT 26-07-1479-76	Pipeline valves sealing.
11	OCT 26-07-2014-79	Pipeline valves. Water and air hermeticity tests (instead of helium, Freon, kerosene)
12	OCT 26-07-2031-81	Pipeline valves. Method of acceptance statistic control
13	OCT 26-07-2032-87	Pipeline valves. System of control tests. Periodical tests. General requirements.
14	OCT 26-07-2033-81	Pipeline valves. Safety valves. Assembly of disc-disc holder coupling. Design and dimensions. Technical requirements
15	OCT 26-07-2040-81	Pipeline valves. Accelerated resource testing. General requirements to developing accelerated testing methods.
16	OCT 26-07-2042-81	Pipeline valves. Gates with metal-to-metal seal. Technical requirements
17	OCT 26-07-2043-81	Pipeline valves. Shutoff valves. Shape and dimensions of cast housings air-gas channels.
18	OCT 26-07-2045-82	Pipeline valves. Dust-proof-and-moisture-proof seals. Design and dimensions. Technical requirements
19	OCT 26-07-2046-82	Pipeline valves. Application of ECKД standards
20	OCT 26-07-2047-82	Pipeline valves. Technology and methods of polytetrafluorethylene sealing rings mounting in gates.

A&L Simonyan Company

Mr. Arman Simonyan

Agency

* Chemical and Oil industry * Engineering * Raw material * Drive engineering



- | | | |
|----|-------------------|--|
| 21 | OCT 26-07-2051-82 | Pipeline valves. Methods of climatic testing. |
| 22 | OCT 26-07-2054-83 | Pipeline valves. Welding deposition of YOHI-13/H1-БK electrodes on parts' sealing surfaces. Technical requirements |
| 23 | OCT 26-07-2060-83 | Shutoff pipeline valves. Modification of gate hermeticity according to the operation conditions and during running time. |
| 24 | OCT 26-07-2061-83 | Pipeline valves. Indices of repairability |
| 25 | OCT 26-07-2063-84 | General purpose pipeline valves delivered to NPP. Technical requirements |
| 26 | OCT 26-07-2064-84 | Pipeline valves. Thermal treatment of parts from non-ferrous alloys based on copper and nickel. Standard production method |
| 27 | OCT 26-07-2067-84 | Pipeline valves. Antifriction lubricant materials. Field of application. Consumption rates. |
| 28 | OCT 26-07-2069-86 | Pipeline valves for nuclear power objects. Incoming control of materials, half-finished products and component parts. Scope and methods. |
| 29 | OCT 26-07-2070-85 | Special ship pipeline valves. Antifriction lubricant materials. Grades. Consumption rates. |
| 30 | OCT 26-07-2071-87 | Pipeline valves from steels resistant to sulphide corrosion cracking. General technical specifications. |
| 31 | OCT B26-07-003-76 | General purpose pipeline valves. General requirements to temporary anti-corrosion protection. |
| 32 | OCT B26-07-006-82 | Pipeline valves for special equipment. General technical specifications. |
| 33 | OCT B26-07-007-75 | Materials for parts of pipeline valves operating in the special equipment media. Warranty periods. |
| 34 | OCT B26-07-008-78 | Special pipeline valves. Protective lacquer coatings. Standard production method |
| 35 | OCT B26-07-012-88 | General purpose pipeline valves and pipeline devices thereto. Procedure of design documentation for rubber technical products development. |
| 36 | OCT B26-07-400-84 | Pipeline valves. Sealing gaskets from fluoroplastic and composite materials based on it. Design. Dimensions. Technical requirements |
| 37 | OCT 26-07-790-73 | Control devices for pipeline valves. General technical specifications. |
| 38 | OCT 26-07-238-71 | Steel cast edge-to-edge welded male flanges for Py 1-64 atm. Design, dimensions and technical requirements |
| 39 | OCT 26-07-239-71 | Steel cast edge-to-edge welded male or female flanges for Py 1-64 atm. Design and dimensions. Technical requirements |
| 40 | OCT 26-07-240-71 | Steel cast edge-to-edge welded male or female flanges for Py 1-64 atm. Design and dimensions. Technical requirements |
| 41 | OCT 26-07-262-77 | Pins, bolts, screws and nuts for pipeline valves. General technical requirements |
| 42 | OCT 26-07-402-83 | Steel castings for pipeline valves and actuating units thereto. |

A&L Simonyan Company

Mr. Arman Simonyan

Agency

* Chemical and Oil industry * Engineering * Raw material * Drive engineering



- 43 OCT 26-07-1114-74 Aluminium alloy castings for pipeline valves and actuating units.
- 44 OCT B26-07-402-83 Steel castings for pipeline valves and actuating units thereto. General technical specifications.
- 45 OCT 26-07-596-72 Electric actuators for pipeline valves produced for export, including to countries with tropical climate. Technical requirements
- 46 OCT 26-07-1144-75 Electric actuators for shutoff pipeline valves remote control.
- 47 OCT 26-07-763-73 Rotary actuating units for general purpose pipeline valves.
- 48 OCT 26-07-1152-92 Cylindrical spiral compression springs. General technical specifications
- 49 OCT 26-07-1204-75 Preparation of graphite lubricant.
- 50 OCT 26-07-1205-75 Methods of antifriction lubricants application to pipeline valve parts' surfaces.
- 51 OCT 26-07-1237-75 Thermal treatment of half-finished parts and welded assemblies of pipeline valves from high-alloy steels, corrosion-resistant and heat-resistant alloys. Standard production method
- 52 OCT 26-07-1373-75 Method of low-noise throttling device with constant hydraulic resistance design.
- 53 OCT 26-07-1374-76 Types and grades of plastic materials applied in valve production
- 54 OCT 26-07-1376-76 Ball cocks. Factory lengths.
- 55 OCT 26-07-1419-76 Forgings, presswork and rolled blank parts for pipeline valves. Technical requirements
- 56 OCT 26-07-1500-77 Swing disc gates. Factory lengths.
- 57 OCT 26-07-2001-78 T-slots in pipeline valves parts for Pp 20 MPa. Dimensions
- 58 OCT 26-07-2010-78 Gland seals for pipeline valves. Hermeticity norms.
- 59 OCT 26-07-2028-81 . Welding deposition of Θ -20X13 electrodes on parts' sealing surfaces. Technical requirements
- 60 OCT 26-07-2011-79 Safety valves. Main terms and definitions.
- 61 OCT 26-07-2075-87 High-lift safety valves. Gates with fluoroplastic seals. Design and main dimensions.
- 62 OCT 26-07-2019-81 Bellows from BT1-O alloy. Technical specifications
- 63 OCT B26-07-2019-81 Bellows from BT1-O alloy. Technical specifications
- 64 OCT 26-07-2020-79 Ferrule and rod friction assembly. Design and dimensions
- 65 OCT 26-07-2026-80 Footstep and footstep pillow friction assembly. Design and dimensions.
- 66 OCT 26-07-2021-79 Accelerated resource pipeline valves testing for wearability.
- 67 OCT 26-07-2024-80 Identification plates. Dimensions. Technical requirements
- 68 OCT 26-07-2027-80 Materials reference designation in design documents.
- 69 OCT 26-07-2029-81 Valve hub and handle. Design and dimensions. Technical requirements
- 70 OCT 26-07-2038-81 Solenoid-operated valves. Two-clamped boards. Design and main dimensions. Technical requirements
- 71 OCT 26-07-2053-83 Wedge-gate valves. Design of gates with polytetrafluorethylene seals. Technical requirements
- 72 OCT 26-07-2065-85 Quality control program for special NPP valves

A&L Simonyan Company

Mr. Arman Simonyan

Agency

* Chemical and Oil industry * Engineering * Raw material * Drive engineering



- List of State standards in force in the field of valve production

List of State Standards currently in force in the field of valve production

No.	No. of GOCT Standard	Name of Standard	Time of introduction
1	9702-87	Lifting-plug and ball cocks. Main parameters.	
2	14187-84	Lifting-plug cocks. Factory lengths.	
3	21345-78	Lifting-plug, ball and cylindrical cocks for Py 16 MPa. General technical requirements.	
4	28343-89 (ICO 7121-86)	Steel flange ball cocks. Factory lengths	
5	28908-91	Ball cocks and disk gates. Factory lengths	
6	24570-81	Safety valves for steam and hot water boilers.	
7	3326-86	Shutoff valves, check valves and gates. Factory lengths	
8	9697-87	Shutoff valves. Main parameters.	
9	28291-89	Shutoff valves for heat power plants. Types and main parameters.	
10	5761-74	Valves for nominal pressure of Py 25 MPa. General technical specifications	
11	27477-87	Check valves. Main parameters	
12	11823-91	Check valves for nominal pressure of PN 25 MPa. General technical specifications	
13	16587-71	Safety and regulating valves and pressure regulators. Factory lengths	
14	12532-88	Direct acting safety valves. Main parameters	
15	9789-75	Spring safety valves, high-lift flange steel for Py 1.6 and 4.0 MPa. Technical specifications	
16	23866-87	Single-seat, double-seat and cell regulating valves. Main parameters	
17	12893-83	Single-seat, double-seat and cell regulating valves. General technical specifications	
18	3706-93	Flaps. Factory lengths	
19	5762-74	Flaps for nominal pressure of Py?25 MPa. General technical specifications	
20	5762-2002	Flaps for nominal pressure of Py ≤25 MPa	
21	9698-86	Flaps. Main parameters	
22	22445-88	Check gates. Main parameters	
23	13252-91	Check gates for nominal pressure of P 25 MPa. General technical specifications.	
24	12521-89	Disk gates. Main parameters	
25	13547-79	Swing disk gates for Py up to 1.6 MPa. General technical specifications	

A&L Simonyan Company

Mr. Arman Simonyan

Agency

* Chemical and Oil industry * Engineering * Raw material * Drive engineering



26	25923-89	Regulating disk gates. Main parameters.
27	12678-80	Direct acting pressure regulators. Main parameters
28	22223-76	Shutoff devices for pressure gauges. Main parameters
29	12547-76	Level gauges with shutoff device. Types and parameters.
30	22642-88	Hose pipeline valves. Main parameters
31	24990-81	Pipeline valves with protective coating. Main parameters
32	27581-88	Glass valves. Main parameters
33	22309-77	Pipeline valves. Electric actuators. Main parameters
34	22413-89	Pipeline valves with solenoid actuator. Main parameters
35	14715-88	Vacuum valves. Types. Main parameters.
36	9544-75	Shutoff pipeline valves. Norms of closure hermeticity.
37	28289-89	Check valves for heat power plants. Types and main parameters.
38	12.2.063-81	CCBT. Industrial pipeline valves. General safety requirements.
39	4666-75	Pipeline valves. Marking and distinctive colouring
40	9544-93	Shutoff pipeline valves. Norms of closure hermeticity
41	24856-81	Industrial pipeline valves. Terms and definitions
42	4.114-84	СПКП. Industrial pipeline valves. Range of main indicators.
43	26304-84	Industrial pipeline valves for export. General technical specifications
44	28338-89	Pipeline and valve junctions. Port areas (nominal sizes). Series.
45	22512-77	Steel male and female flanges for Py up to 6.4 MPa and Dy up to 300 mm. Mounting dimensions
46	12815-80	Flanges of valves, fittings and pipelines for Py from 0.1 to 20.0 MPa. Types. Mounting dimensions and dimensions of sealing surfaces.
47	12816-80	Flanges of valves, fittings and pipelines for Py from 0.1 to 20.0 MPa. General technical requirements.
48	12817-80	Cast flanges from grey cast iron for Py from 0.1 to 1.6 MPa. Design and dimensions
49	12818-80	Cast flanges from malleable cast iron for Py for 1.6 to 4.0 MPa. Design and dimensions
50	12819-80	Steel cast flanges for Py from 1.6 to 20.0 MPa. Design and dimensions
51	12820-80	Plane welded steel flanges for Py from 0.1 to 2.5 MPa. Design and dimensions
52	12821-80	Edge-to-edge welded steel flanges for Py from 0.1 to 20.0 MPa. Design and dimensions

A&L Simonyan Company

Mr. Arman Simonyan

Agency

* Chemical and Oil industry * Engineering * Raw material * Drive engineering



- | | | |
|----|------------|---|
| 53 | 12822-80 | Loose steel flanges on welded ring from Py from 0.1 to 2.5 MPa. Design and dimensions |
| 54 | 9399-81 | Threaded steel flanges for Py 20-100 MPa (200 -1000 kgf/cm ²). Technical specifications. |
| 55 | 4433-76 | Ship flanges of valves, fittings and pipelines. Types. |
| 56 | 5260-75 | Cast iron flywheels for pipeline valves. Types, main dimensions and technical requirements |
| 57 | 6527-68 | Coupling ends with cylinder pipe thread. Dimensions |
| 58 | 15180-86 | Flat elastic gaskets. Main parameters and dimensions |
| 59 | 21557-83 | Hubs and joint rings for metal bellows. Technical specifications |
| 60 | 21744-83 | Multilayer metal bellows. Technical specifications |
| 61 | 4.124 -84 | Reducers, motor-reducers, variable speed drives and motorized conveyor drums. Range of indicators. |
| 62 | 977-88 | Steel castings. General technical specifications. |
| 63 | 26645-85 | Steel and metal castings. |
| 64 | 19200-80 | Cast iron and steel metals. Terms and defect definitions. |
| 65 | 1759.0-82 | Bolts, screws, pins and nuts. Technical specifications. |
| 66 | 1759.1-82 | Bolts, screws, pins, nuts and cap screws. Allowable tolerances, methods of dimensions and deviations in shape and surfaces arrangement control. |
| 67 | 31759.2-82 | Bolts, screws and pins. Surface defects and control methods. |
| 68 | 3033-79 | Hinged bolts. Design and dimensions. |
| 69 | 23304-78 | Bolts, pins, nuts and washers for flange couplings of nuclear power units. |
| 70 | 5272-68 | Corrosion of metals. Terms. |
| 71 | 5632-72 | High-alloy steels and corrosion-resistant, heat-resistant and refractory alloys. Grades. |
| 72 | 6130-71 | Metals. Methods of heat resistance determination. |
| 73 | 9012-59 | Metals and alloys. Method of Brinell hardness measurement. |
| 74 | 6996-66 | Welded joints. Methods of mechanical properties determination. |
| 75 | 8479-70 | Forgings from structural carbon and alloyed steel. General technical specifications. |
| 76 | 9567- 75 | Steel precision pipes. Range. |
| 77 | 11017-80 | Steel seamless high-pressure pipes. Technical specifications. |
| 78 | 11472-69 | Allowable tolerances and seats. Accuracy classes 02-09. |
| 79 | 15066-78 | Foundry molding machines. Accuracy norms. |
| 80 | 19521-74 | Metal welding. Classification. |

A&L Simonyan Company

Mr. Arman Simonyan

Agency

* Chemical and Oil industry * Engineering * Raw material * Drive engineering



- 81 21027-75 Power systems. Terms and definitions.
82 15.309-98 System of products development and delivery to production. Testing and acceptance of manufactured products. Fundamental provisions.
83 15.000-82 System of products development and delivery to production. General provisions.
84 26279-84 Heat stations on organic fuel. General requirements for acoustic protection.
85 26691-85 Heat-and-power engineering. Terms and definitions.
86 15.311-90 Products' introduction as based on foreign companies' technical documentation.
87 15.001-88 Products for industrial engineering purposes.
88 19.201-78 Performance specifications. Requirements to contents and execution.
89 356-80 Nominal, test and operating pressures. Series.
90 17375-2003 Seamless welded pipeline parts from carbon low-alloy steel. Knuckle bands, type 3D.
(ICO 3419-81)
91 17376-2003 Seamless welded pipeline parts from carbon low-alloy steel. T-bends.
(ICO 3419-81)
92 17378-2003 Seamless welded pipeline parts from carbon low-alloy steel. Swages.
(ICO 3419-81)
93 17379-2003 Seamless welded pipeline parts from carbon low-alloy steel. Elliptic plugs.
(ICO 3419-81)
94 17380-2003 Seamless welded pipeline parts from carbon low-alloy steel. General technical specifications.
(ICO 3419-81)
95 30753-2001 Seamless welded pipeline parts from carbon low-alloy steel.
(ICO 3419-81)
Taps sharp arched type 2D.
96 7.60-90 Publications. Main types. Terms and definitions.
97 7.22-80 Industrial catalogues. General requirements.
98 2.114-95 Unified system of design documentation. Technical specifications.
99 20911-89 Engineering diagnostics. Terms and definitions.

A&L Simonyan Company

Mr. Arman Simonyan

Agency

* Chemical and Oil industry * Engineering * Raw material * Drive engineering



QUALITY

The main goal of the management and staff of the enterprise is manufacturing high-quality, competitive, safe and profit-making products. Achievement of the goal is provided due to quality control system functioning at the enterprise. The system is based on the following principles:

- General responsibility of management for the quality of products;
- Use of leading-edge technology implying quality control on all stages of products manufacturing, control and testing;
- Application of a range of remedial and preventive measures in order to identify, analyze and eliminate potential reasons of inconformity;
- Letting the consumer check the enterprise's capability of providing the necessary quality level.

Enterprises taking part in the international programs have extensive experience in the field, confirmed with all the necessary permits, as well as international European certificates attesting quality assurance systems of the manufacturing enterprises.