Worlds Valve

CE 0038 ISO9000

TIANJIN WORLDS VALVE CO.,LTD.

天津沃得斯阀门有限公司

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TIANJIN WORLDS VALVE LTD. is located at TIAN JIN BIN HAI where is only 3 kilometers away from Tianjin Xingang Port,TIANJIN WORLDS VALVE LTD. is a specialized manufacture enterprise that focuses producing, installing, sale and service. The main products include Center Line Butterfly Valve, Flanged Butterfly Valve, Metal Butterfly Valve, Check Valve, Gate Valve, Waterpower Control Valve, Microresistance Slow Close Check Valve, Multi-function Pump Control Valve and their series products. Moreover, we can produce control valve and pressure reducing valve that are different materials, pressures, specifications actuation ways. Our products include more than 50 serials and 1200 species, and the annual production output is more than 8.000 metric tons. WORLDS valves have been selling well a ll over China and exporting to Europe, America and other countries and areas, which are used widely in water supply and drainage, electric power, petrol chemical industry, metallurgy and other trades. Our products are quite creative, good quality, good price and excellent credit, so customers trust our products.

WORLDS has advanced technicians and engineers and has a lot of large and middle machines including 178 sets of manufacturing equipments and 32 sets of performance testing equipments importing from overseas. Our products have original design, exquisite technique, perfect manufacture and complete testing ways. It has passed ISO 9001 international quality system certification of DNV.WORLDS must supply best products and service for all customers.

Worlds Valve

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CE 0038 ISO9000 WRAS APPROVED PRODUCT ACS

Certificates And Patents

WORLDS has advanced technicians and engineers and has a lot of large and middle machines including 178 sets of manufacturing equipments and 32 sets of performance testing equipments importing from overseas. Our products have original design, exquisite technique, perfect manufacture and complete testing ways. It has made special equipment license TS, ISO9001 quality system certification and the European Pressure Equipment CE certification, the American Petroleum Institute API certification and a series of international certification auth -ority, over the years, with its first class enterprise management and product quality consistent valve industry . in order to ensure product quality, the company's main production equipment and testing instruments all use well-known brand, all products are in strict accordance with international standards, whether it is production management, and quality assurance system are comprehensive use of international advanced mode.

Worlds Valve

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Measuring And Packaging






Production System

The perfect process not only because of our advanced manufacturing technique equipment and complete tests but also for worlds multi department teams.

The technicians participance make our products be equipped with excellent quality and potential value during they being well manufactured



Normal Features

The OS&Y (Outside Screw and Yoke) gate valve is mainly used in fire protection sprinkler systems. The main difference from a standard NRS (Non Rising Stem) gate valve is that the stem and stem nut are placed outside the valve body. This makes it easy to see if the valve is open or closed, as almost the entire length of the stem is visible when the valve is open, while the stem is no longer visible when the valve is closed. In general this is a requirement in these kinds of systems to ensure a fast visual control of the system status. Some systems may include an alarm called a tamper switch. The switch causes an alarm when the valve position is changed, depending on the needs of the system. The alarm can be set to go to a master alarm panel, an alarm call center, or some other type of on-site panel.

On the suction pipe to the pump, an OS&Y valve is often specified in order to ensure full passage as well as fast visual control. Blocking of the passage (e.g. a butterfly valve) can create turbulence and thus decrease the effect of the pump or even cause damage of the pump. In the installations after the pump it is often allowedto use other types of valves.

The worlds series OS&Y gate valve meets the requirements of AWWA C509 (American Water Works Association) The main differences from similar valves at the market are our features, and mainly our wedge and fixed wedge nut design, our body/bonnet assembly and our high quality coating offering a great corrosion resistance and durability

Application

Resilient Seated Gate Valves are general service valves that can be made in a broad spectrum of sizes using a variety of materials. Resilient Seated Gate Valves are suitable for use in drinking water and waste water, which can be installed under or above ground. Rising stem gate valves are normally used in fire service application and socket resilient gate valves are normally used in PVC pipelines.Gate valves are primarily used to turn on or shut the flow as opposed to regulating flow and are characterized by a traveling wedge, which is moved with the operation of the stem nut. The wedge travels perpendicular to the direction of the flow. Gate valves usually have a minimum pressure drop when fully opened, provide tight shut-off when fully closed, and remain relatively free of contamination build up.

Parameter

Size: DN40 –600 Working pressure：10Bar-16Bar

General Design： AWWA C 509/ BS5163/ DIN3352 /BS EN 1171 /MSS SP-70 API 600 / API 6D

Face To Face : ASME/ANSI B16.10 /AWWA C509 /BS5163 /DIN 3202 F4/ F5

Flange End : ASME/ANSI B 16.5 & B16.47/ ASME B16.42 /AWWA C207 ISO7005 /DIN28533/ DIN EN1092/ DIN2501/ JIS B 2220

Pressure Rating : ASME/ANSI B16.34

Fire Safe Design : API 6FA

Inspection & Test :API 598 / API 6D/ISO5208

Valve parts design

Body Oval bore design to ensure good compression and deformation resist performance . Body surface coated to ensure good ageing resistance & weather resisting property.

Disc : Solid and Flexible Wedge

Stem: Rising stem gate valves are designed so that the stem is raised out of the flowpath when thevalve is open. Rising stem gate valves come in two basic designs. Some have a stem that risesthrough the hand wheel while others have a stem that is threaded to the bonnet.

seat, safety and integrated

Bonnet：Screw-in bonnets are the simplest design, offering a durable, pressure-tight seal. Union bonnets are suitable for applications requiring frequent inspection and cleaning. They also give the body added strength. Bolted bonnets are used for larger valves and higher pressure applications.

Back Seat：All gate valves have a back seating design. . When the gate valve is at fully open position, the sealing of the back seat is very reliable.

Gasket： Compound Graphite gasket,good performance and long service life

Bolt, Nut, Half Ring ： Stem is oriented by half ring and double bolt&nut to ensure the disc on-off freely.

Handwheel：Handwheel with tapered square hole, easy to install and fasten.

Packing ： Soft graphite, long service life,easy to sealing and maintain

Stem Nut：Usually, the stem nut is made of copper alloy or ASTM A439 D2. For large sized gate valves (NPS 10 for Class 150, NPS 8 for Class 300, NPS 6 for Class 600, NPS 5 for Class 900), a roller bearing is fitted under side of the stem nut in order to minimize the opening and closing torque of the gate valve.

Main Spare Part Material Quality

Design

BS5163 DIN3352 BS EN1171 API6D AWWA C509

Face to Face

DIN558-1 DIN3202 F4 F5 BS5163 ASME B16.10
AWWA C509

Testing

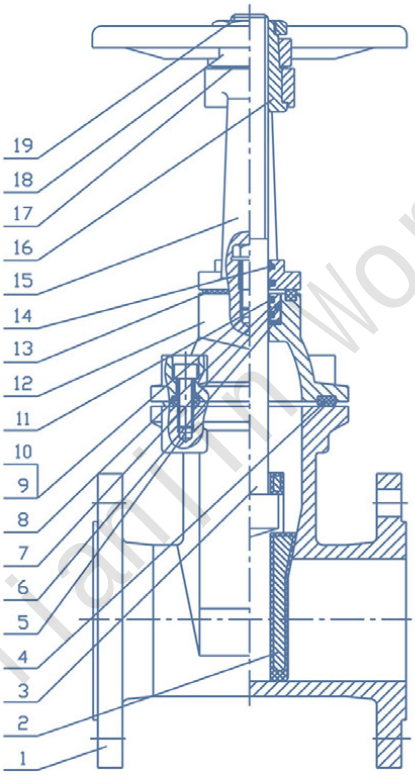
EN 12266-1 ISO5208 API598

Max working pressure

DN50-DN600	10Bar
DN50-DN600	16Bar

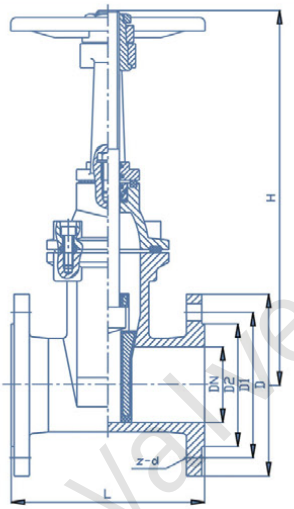
Flange PN10 PN16 150LB JIS10K AS"D""E"

Drawings And Materials



NO.	NAME	MATERIAL
19	LOCKING NUT	BRASS
18	WHEEL	DUCTILE IRON
17	WASHER	TFL
16	STEM NUT	BRASS
15	YOKE	DUCTILE IRON
14	DUST RING	EPDM
13	WASHER	TFL
12	BONNET	DUCTILE IRON
11	O-RING	EPDM
10	WASHER	CARBON STEEL
9	BOLT	CARBON STEEL
8	SEAL RING	BRASS
7	O-RING	EPDM
6	WASHER	TFL
5	BOLT	CARBON STEEL
4	GASKET	EPDM
3	STEM	STAINLESS STEEL
2	WEDGE	DUCTILE IRON/EPDM
1	BODY	DUCTILE IRON

Design & Pressure



Design: DIN3352

Face to Face: DIN3202 F4

Testing : EN 12266-1

Max working pressure

DN50-DN600 10Bar

DN50-DN600 16Bar

Flange: DIN2501 PN10/16

ISO7005 PN10/16

EN1092 PN10/16

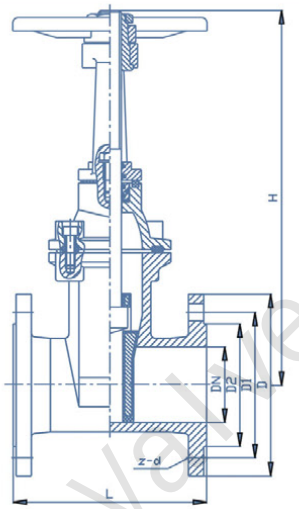
Outline Dimensions &Weight (DIN3202 F4 PN10)

DN	D	D1	D2	L	H	z-d
ø50	ø165	ø125	ø99	150	317	4-ø19
ø65	ø185	ø145	ø118	170	354	4-ø19
ø80	ø200	ø160	ø132	180	391	8-ø19
ø100	ø220	ø180	ø156	190	450	8-ø19
ø125	ø250	ø210	ø184	200	549	8-ø19
ø150	ø285	ø240	ø211	210	605	8-ø23
ø200	ø340	ø295	ø266	230	756	8-ø23
ø250	ø395	ø350	ø319	250	896	12-ø23
ø300	ø445	ø400	ø370	270	1031	12-ø23
ø350	ø505	ø460	ø429	290	1169	16-ø23
ø400	ø565	ø515	ø480	310	1297	16-ø28
ø450	ø615	ø565	ø530	330	1430	20-ø28
ø500	ø670	ø620	ø582	350	1560	20-ø28
ø600	ø780	ø725	ø682	390	1830	20-ø31

Outline Dimensions &Weight (DIN3202 F4 PN16)

DN	D	D1	D2	L	H	z-d
ø50	ø165	ø125	ø99	150	317	4-ø19
ø65	ø185	ø145	ø118	170	354	4-ø19
ø80	ø200	ø160	ø132	180	391	8-ø19
ø100	ø220	ø180	ø156	190	450	8-ø19
ø125	ø250	ø210	ø184	200	549	8-ø19
ø150	ø285	ø240	ø211	210	605	8-ø23
ø200	ø340	ø295	ø266	230	756	12-ø23
ø250	ø405	ø355	ø319	250	896	12-ø28
ø300	ø460	ø410	ø370	270	1031	12-ø28
ø350	ø520	ø470	ø429	290	1169	16-ø28
ø400	ø580	ø525	ø480	310	1297	16-ø31
ø450	ø640	ø585	ø548	330	1430	20-ø31
ø500	ø715	ø650	ø609	350	1560	20-ø34
ø600	ø840	ø770	ø720	390	1830	20-ø37

Design & Pressure



Design: DIN3352

Face to Face: DIN3202 F5

Testing : EN 12266-1

Max working pressure

DN50-DN600 10Bar

DN50-DN600 16Bar

Flange: DIN2501 PN10/16

ISO7005 PN10/16

EN1092 PN10/16

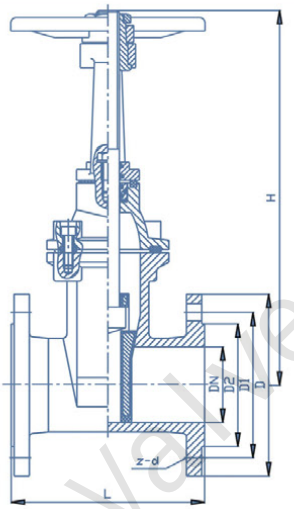
Outline Dimensions &Weight (DIN3202 F5 PN10)

DN	D	D1	D2	L	H	z-d
ø50	ø165	ø125	ø99	250	317	4-ø19
ø65	ø185	ø145	ø118	270	354	4-ø19
ø80	ø200	ø160	ø132	280	391	8-ø19
ø100	ø220	ø180	ø156	300	450	8-ø19
ø125	ø250	ø210	ø184	325	549	8-ø19
ø150	ø285	ø240	ø211	350	605	8-ø23
ø200	ø340	ø295	ø266	400	756	8-ø23
ø250	ø395	ø350	ø319	450	896	12-ø23
ø300	ø445	ø400	ø370	500	1031	12-ø23
ø350	ø505	ø460	ø429	550	1169	16-ø23
ø400	ø565	ø515	ø480	600	1297	16-ø28
ø450	ø615	ø565	ø530	650	1430	20-ø28
ø500	ø670	ø620	ø582	700	1560	20-ø28
ø600	ø780	ø725	ø682	800	1830	20-ø31

Outline Dimensions &Weight (DIN3202 F5 PN16)

DN	D	D1	D2	L	H	z-d
ø50	ø165	ø125	ø99	250	317	4-ø19
ø65	ø185	ø145	ø118	270	354	4-ø19
ø80	ø200	ø160	ø132	280	391	8-ø19
ø100	ø220	ø180	ø156	300	450	8-ø19
ø125	ø250	ø210	ø184	325	549	8-ø19
ø150	ø285	ø240	ø211	350	605	8-ø23
ø200	ø340	ø295	ø266	400	756	12-ø23
ø250	ø405	ø355	ø319	450	896	12-ø28
ø300	ø460	ø410	ø370	500	1031	12-ø28
ø350	ø520	ø470	ø429	550	1169	16-ø28
ø400	ø580	ø525	ø480	600	1297	16-ø31
ø450	ø640	ø585	ø548	650	1430	20-ø31
ø500	ø715	ø650	ø609	700	1560	20-ø34
ø600	ø840	ø770	ø720	800	1830	20-ø37

Design & Pressure



Design: BS5163

Face to Face: BS51634

Testing : EN 12266-1

Max working pressure

DN50-DN600 10Bar

DN50-DN600 16Bar

Flange: DIN2501 PN10/16

ISO7005 PN10/16

EN1092 PN10/16

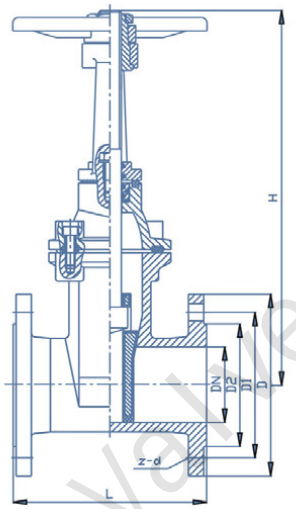
Outline Dimensions &Weight (BS5163 PN10)

DN	D	D1	D2	L	H	z-d
ø50	ø165	ø125	ø99	178	317	4-ø19
ø65	ø185	ø145	ø118	190	354	4-ø19
ø80	ø200	ø160	ø132	203	391	8-ø19
ø100	ø220	ø180	ø156	229	450	8-ø19
ø125	ø250	ø210	ø184	254	549	8-ø19
ø150	ø285	ø240	ø211	267	605	8-ø23
ø200	ø340	ø295	ø266	292	756	8-ø23
ø250	ø395	ø350	ø319	330	896	12-ø23
ø300	ø445	ø400	ø370	356	1031	12-ø23
ø350	ø505	ø460	ø429	381	1169	16-ø23
ø400	ø565	ø515	ø480	406	1297	16-ø28
ø450	ø615	ø565	ø530	432	1430	20-ø28
ø500	ø670	ø620	ø582	457	1560	20-ø28
ø600	ø780	ø725	ø682	508	1830	20-ø31

Outline Dimensions &Weight (BS5163 PN16)

DN	D	D1	D2	L	H	z-d
ø50	ø165	ø125	ø99	178	317	4-ø19
ø65	ø185	ø145	ø118	190	354	4-ø19
ø80	ø200	ø160	ø132	203	391	8-ø19
ø100	ø220	ø180	ø156	229	450	8-ø19
ø125	ø250	ø210	ø184	254	549	8-ø19
ø150	ø285	ø240	ø211	267	605	8-ø23
ø200	ø340	ø295	ø266	292	756	12-ø23
ø250	ø405	ø355	ø319	330	896	12-ø28
ø300	ø460	ø410	ø370	356	1031	12-ø28
ø350	ø520	ø470	ø429	381	1169	16-ø28
ø400	ø580	ø525	ø480	406	1297	16-ø31
ø450	ø640	ø585	ø548	432	1430	20-ø31
ø500	ø715	ø650	ø609	457	1560	20-ø34
ø600	ø840	ø770	ø720	508	1830	20-ø37

Design & Pressure



Design: BS5163

Face to Face: ASME B16.10 AWWAC509

Testing : API 598

Max working pressure

DN50-DN600 10Bar

DN50-DN600 16Bar

Flange: ASME B 16.5 150LB

Outline Dimensions &Weight (ASME B16. 10 150LB)

DN	D	D1	D2	L	H	z-d
2	ø150	ø120.7	ø91.9	178	317	4-19
2.5	ø180	ø139.7	ø104.6	190	354	4-19
3	ø190	ø152.4	ø127	203	391	4-19
4	ø230	ø190.5	ø157.2	229	450	8-19
5	ø255	ø215.9	ø185.7	254	549	8-22
6	ø280	ø241.3	ø215.9	267	605	8-22
8	ø345	ø298.5	ø269.7	292	756	8-22
10	ø405	ø362	ø323.8	330	896	12-26
12	ø485	ø431.8	ø381	356	1031	12-26
14	ø535	ø476.3	ø412.7	381	1169	12-29
16	ø595	ø539.8	ø469.9	406	1297	16-29
18	ø635	ø577.9	ø533.4	432	1430	16-32
20	ø700	ø635	ø584.2	457	1560	20-32
24	ø815	ø749.3	ø692.1	508	1830	20-35

Outline Dimensions &Weight (AWWA C509 150LB)

DN	D	D1	D2	L	H	z-d
2	ø150	ø120.7	ø91.9	178	317	4-19
2.5	ø180	ø139.7	ø104.6	190	354	4-19
3	ø190	ø152.4	ø127	203	391	4-19
4	ø230	ø190.5	ø157.2	229	450	8-19
5	ø255	ø215.9	ø185.7	254	549	8-22
6	ø280	ø241.3	ø215.9	267	605	8-22
8	ø345	ø298.5	ø269.7	292	756	8-22
10	ø405	ø362	ø323.8	330	896	12-26
12	ø485	ø431.8	ø381	356	1031	12-26
14	ø535	ø476.3	ø412.7	381	1169	12-29
16	ø595	ø539.8	ø469.9	406	1297	16-29
18	ø635	ø577.9	ø533.4	432	1430	16-32
20	ø700	ø635	ø584.2	457	1560	20-32
24	ø815	ø749.3	ø692.1	508	1830	20-35

Installation

1 The valve should be checked to ensure it is suitable for the service conditions e.g. pres sure, temperature and service media.

2 Remove all packing/protection material from the valve. Before installation examine the pipeline for impurities and foreign matter, removing and cleaning if necessary.

3 The valves may be installed in horizontal pipework with the stem in the vertical position, or in vertical pipework with the stem horizontal. The valves should not be installed in horizon tal pipework with the stem horizontal because shut off performance may be impaired.

4 Consideration should be given to access for operation and maintenance. Valves installed outside will need protection against the direct effects of extreme weather conditions.

5 Suitable flange gaskets should be used during installation of the valve. The distance be tween the pipe flanges should exceed the face to face dimension of the valve by at least 20mm. This will ensure that raised faces are not damaged and gaskets can be inserted.

6 In accordance with good engineering practice mating flanges must be parallel and concen tric. Bolt tightening must be even and diagonal to prevent distortion.

Operation & Maintenance

1.Valves should be stored in a dry room, neatly stacked, not allowed to be stored outside to prevent damage and corrosion.

2.If the valve is stored for a long period of time, it should be inspected regularly and coated with anti-rust oil on the processing surface.

3.Regularly check the condition of the valve and related pipe lines. Valves should be cleaned regularly.

4.The valve may start to leak in winter or cold areas, which is not a quality problem, and will return to normal when it is used.

Technical appendix - flow data

Definitions / formulas:

Kv-value: Actual flow of water (m^2/hr) creating pressure loss of 1 bar.

Pressure loss coefficient Zeta (K)value:

Ratio of static and dynamic pressure loss.

Pressure loss coefficient,

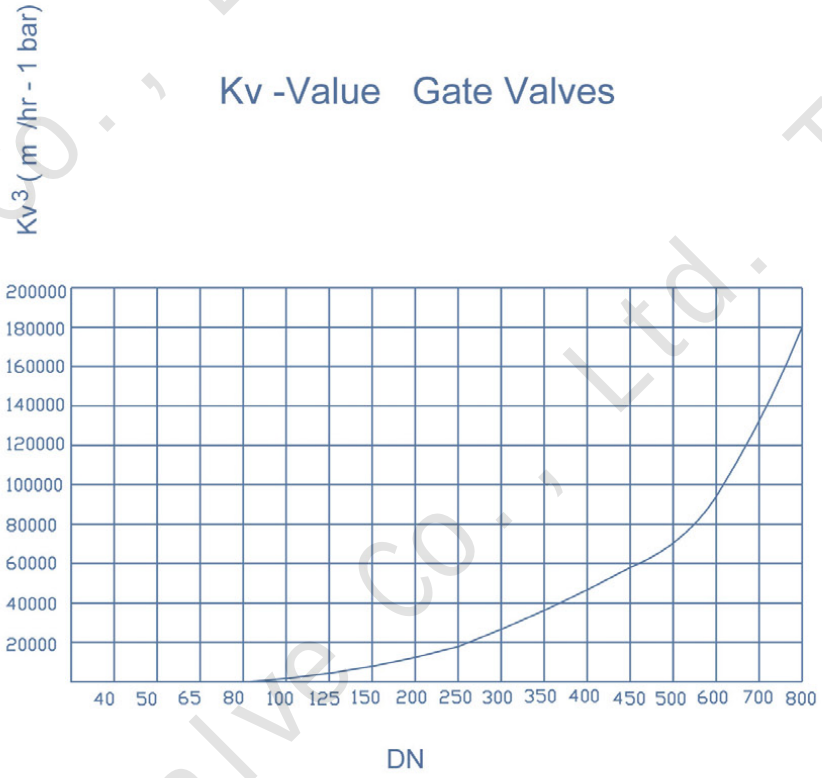
Zeta (K-value) = Diff pressure /(500 X V^2)

Diff pressure (Pa)

V: Water flow velocity (m/sec)

Actual diff pressure (bar) = $(Q / Kv)^2$

Q: Actual water flow (m^3/hr)



Zeta values:

DN 40-125:	0.06
DN 150-250:	0.04
DN 300-800:	0.02

Hydraulic values, fully open valve

	DN40	DN50	DN65	DN80	DN100	DN125	DN150	DN200
Kv (m^3/hr-1bar)	310	555	650	1050	1945	2770	5715	7755
Cv(Usg/min-1psi)	363	649	761	1229	2276	3241	6687	9073
Zeta	0.04	0.03	0.07	0.06	0.04	0.05	0.02	0.04

	DN250	DN300	DN350	DN400	DN450	DN500	DN600	DN700	DN800
Kv (m^3/hr-1bar)	15405	27295	37150	48520	61410	75815	109175	148600	194090
Cv(Usg/min-1psi)	18024	31935	43466	56768	71850	88704	127735	173862	227085
Zeta	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02

Calculated flow (m^3/hr) going through a nominal valve size at different flow velocities

Q m^3/h

Flow velocity (m/sec)	DN40	DN50	DN65	DN80	DN100	DN125	DN150	DN200
1.0	4.5	7.1	11.9	18.1	28.3	44.2	63.6	113.1
1.5	6.8	10.6	17.9	27.1	42.4	66.3	95.4	169.6
2.0	9.0	14.1	23.9	36.2	56.5	88.4	127.2	226.2
2.5	11.3	17.7	29.9	45.2	70.7	110.4	159	282.7
3.0	13.6	21.2	35.8	54.3	84.8	132.5	190.9	339.3
3.5	15.8	24.7	41.8	63.3	99	154.6	222.7	395.8
4.0	18.1	28.3	47.8	72.4	113.1	176.7	254.5	452.4
4.5	20.4	31.8	53.8	81.4	127.2	198.8	286.3	508.9
5.0	22.6	35.3	59.7	90.5	141.4	220.9	318.1	565.5

Q m^3/h

Flow velocity (m/sec)	DN250	DN300	DN350	DN400	DN450	DN500	DN600	DN700	DN800
1.0	176.7	254.5	346.4	452.4	572.6	706.9	1017.9	6267.6	12791
1.5	265.1	381.7	519.5	678.6	858.8	1060.3	1526.8	9401.4	19186.5
2.0	353.4	508.9	692.7	904.8	1145.1	1413.7	2035.8	12535.2	25582
2.5	441.8	636.2	865.9	1131	1431.4	1767.1	2544.7	15669	31977.5
3.0	530.1	763.4	1039.1	1357.2	1717.7	2120.6	3053.6	18802.8	38373
3.5	618.5	890.6	1212.3	1583.4	2003.9	2474	3562.6	21936.6	44768.5
4.0	706.9	1017.9	1385.4	1809.6	2290.2	2827.4	4071.5	25070.4	51164
4.5	795.2	1145.1	1558.6	2035.8	2576.5	3180.9	4580.4	28204.2	57559.5
5.0	883.6	1272.3	1731.8	2261.9	2862.8	3534.3	5089.4	31338	63955

Kv values, valve in different position.

Kv

Opening%	DN40	DN50	DN65	DN80	DN100	DN125	DN150	DN200
10%	20	15	22	36	64	122	135	293
20%	41	40	53	96	159	238	273	549
30%	63	60	83	148	247	366	461	850
40%	86	85	129	219	359	530	688	1244
50%	118	133	204	351	549	741	1024	1729
75%	240	314	431	722	1094	1527	2335	4033
100%	291	520	606	984	1819	2588	5339	7246

Kv

Opening%	DN250	DN300	DN350	DN400	DN450	DN500	DN600	DN700	DN800
10%	383	498	678	886	1121	1384	1994	2713	3544
20%	773	1103	1502	1962	2483	3065	4413	6007	7846
30%	1247	1722	2344	3061	3874	4783	6888	9375	12245
40%	1869	2523	3433	4485	5676	7007	10090	13734	17938
50%	2731	3424	4660	6086	7703	9510	13694	18639	24345
75%	5325	7082	9640	12591	15935	19673	28329	38559	50363
100%	14395	25508	34719	45348	57393	70856	102032	138877	181390

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