



# COLLECTION GATE VALVES

*THAT SATISFIES*



GROUP

# 200

MANUFACTURE  
BROCHURE



DAVINCI  
VALVES™





# GATE VALVES

Gate valves are widely used for all types of applications and are suitable for both above-ground and underground installation. Not least for underground installations it is paramount to choose the right type of valve to avoid high replacement costs.

**Gate valves are designed for fully open or fully closed service.**

They are installed in pipelines as isolating valves, and should not be used as control or regulating valves. Operation of a gate valve is performed doing an either clockwise to close (CTC) or clockwise to open (CTO) rotating motion of the stem. When operating the valve stem, the gate moves up- or downwards on the threaded part of the stem.

Gate valves are often used when minimum pressure loss and a free bore is needed. When fully open, a typical gate valve has no obstruction in the flow path resulting in a very low pressure loss, and this design makes it possible to use a pipe-cleaning pig. A gate valve is a multiturn valve meaning that the operation of the valve is done by means of a threaded stem. As the valve has to turn multiple times to go from open to closed position, the slow operation also prevents water hammer effects.

Gate valves can be used for a vast number of fluids. **gate valves are suitable under the following working conditions:**

- **Potable water, wastewater and neutral liquids:** temperature between -20 and +70 °C, maximum 5 m/s flow velocity and up to 16 bar differential pressure.
- **Gas:** temperature between -20 and +60 °C, maximum 20 m/s flow velocity and up to 16 bar differential pressure.



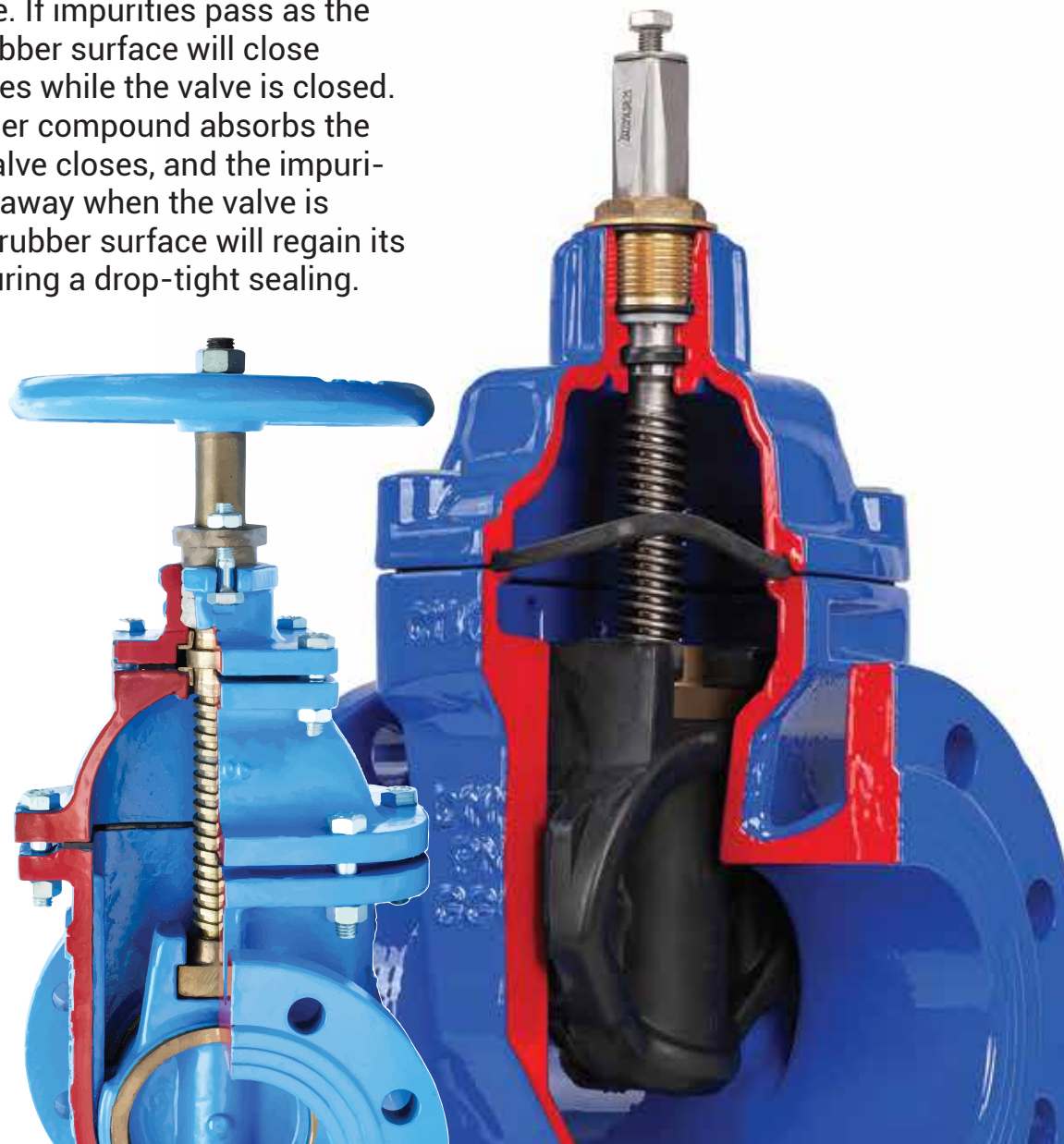
### **Parallel vs wedge-shaped gate valves**

Gate valves can be divided into two main types: Parallel and wedge-shaped. The parallel gate valves use a flat gate between two parallel seats, and a popular type is the knife gate valve designed with a sharp edge on the bottom of the gate. The wedge-shaped gate valves use two inclined seats and a slightly mismatched inclined gate.

### **Metal seated vs resilient seated gate valves**

Before the resilient seated gate valve was introduced to the market, gate valves with a metal seated wedge were widely used. The conical wedge design and angular sealing devices of a metal seated wedge require a depression in the valve bottom to ensure a tight closure. Herewith, sand and pebbles are embedded in the bore. The pipe system will never be completely free from impurities regardless of how thoroughly the pipe is flushed upon installation or repair. Thus any metal wedge will eventually lose its ability to be drop-tight.

A resilient seated gate valve has a plain valve bottom allowing free passage for sand and pebbles in the valve. If impurities pass as the valve closes, the rubber surface will close around the impurities while the valve is closed. A high-quality rubber compound absorbs the impurities as the valve closes, and the impurities will be flushed away when the valve is opened again. The rubber surface will regain its original shape securing a drop-tight sealing.



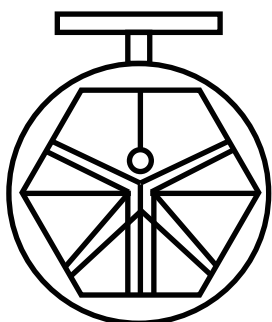


## Gate valves with rising vs non-rising stem design

Rising stems are fixed to the gate and they rise and lower together as the valve is operated, providing a visual indication of the valve position and making it possible to grease the stem. A nut rotates around the threaded stem and moves it. This type is only suitable for above-ground installation.

Non-rising stems are threaded into the gate, and rotate with the wedge rising and lowering inside the valve. They take up less vertical space since the stem is kept within the valve body. We offers gate valves with a factory-mounted indicator on the upper end of the stem to indicate the valve position. Gate valves with non-rising stems are suitable for both above-ground and underground installations.

The majority range are designed with non-rising stem, but we also offer gate valves with rising stem for water, wastewater and fire protection applications.



RISEING STEM



NON - RISING STEM



## How the GATE VALVES WORKS

A gate valve is used ONLY to start and stop the flow of liquid in water network.

Gate valves are most commonly used when restriction is needed. It is designed to be fully open or closed, and are not recommended to regulate the flow of liquid. Using it for "throttling" causes strain on the gate and eventually will damage it.

## General Advantages of Resilient Gate Valves

A gate valve, also known as a sluice valve, is a valve which opens by lifting gate out of the path of the fluid. Gate valves require very little space along the pipe axis and hardly restrict the flow of fluid when the gate is fully opened. The gate faces can be parallel, but are most commonly wedge-shaped (in order to be able to apply pressure on the sealing surface). Compared with other valves, gate valve has a wider range of applications for pressure, temperature and caliber.

- 1. The fluid resistance** of the valve is small. Because the valve body of gate valve is straight-through type and the flow of the medium doesn't change direction, the fluid resistance of it is small compared with other kinds of valves.
- 2. The sealing performance is better** than that of the shut-off valve. The opening and closing of it is more convenient than those of the shut-off valve.
- 3. The range of applications is wide.** In addition to steam, oil and other media, it can be used in medium containing granular solid and with a large viscosity. It can also be used as venting valve and low vacuum system valve.
- 4. Gate valve is a valve that has dual flow directions.** It's not subject to the flow directions of the medium. Therefore, it is suitable for use in pipeline where the medium may change the flow direction. It is also easy to install.
- 5. The Body of a Gate Valve is simple and easy to Operate.**
- 6. Gate Valve does not Disturb the Direction of the Liquid Flow.**
- 7. Consumes Less Power and is efficient to use.**

## DAVINCI Advantages for RESILIENT GATE VALVES

A resilient seated gate valve has a plain valve bottom allowing free passage for sand and pebbles in the valve. If impurities pass as the valve closes, the rubber surface will close around the impurities while the valve is closed.

### The rubber absorbs impurities

A correct rubber compound is soft enough to absorb impurities, yet strong enough to wash the impurities through when the valve is opened again. This means that the rubber surface will regain its original shape securing a drop-tight sealing. Tests prove that the rubber surface of a DN150 wedge absorbs impurities up to Ø8.7 mm.

### More great features

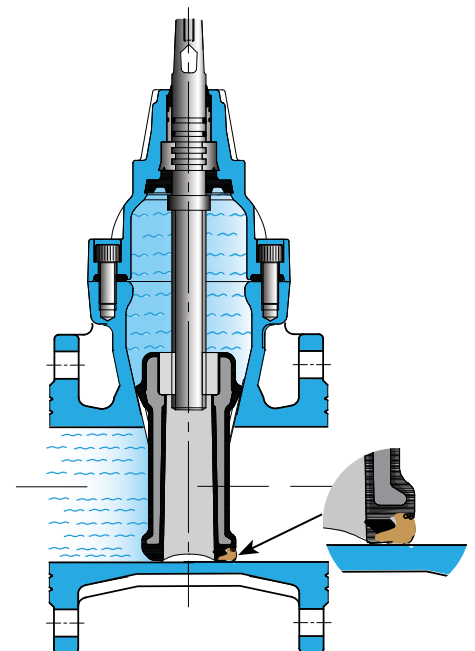
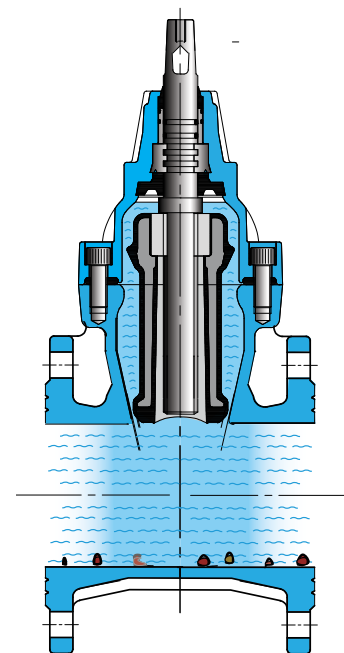
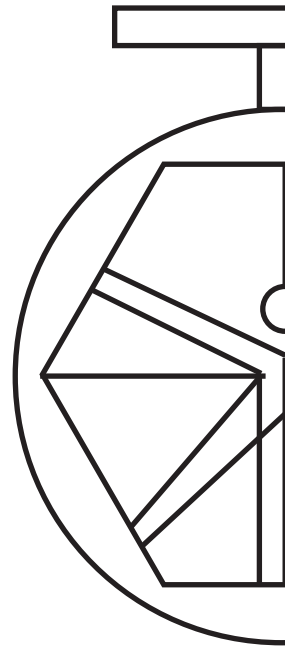
- Low torques with a large safety margin
- Wedge guides for safe shut-off function
- Fixed wedge nut
- Corrosion free wedge
- Resistant to differential pressures from -0.8 bar to 25 bar
- Approved for drinking water.

### Safe operation and long durability

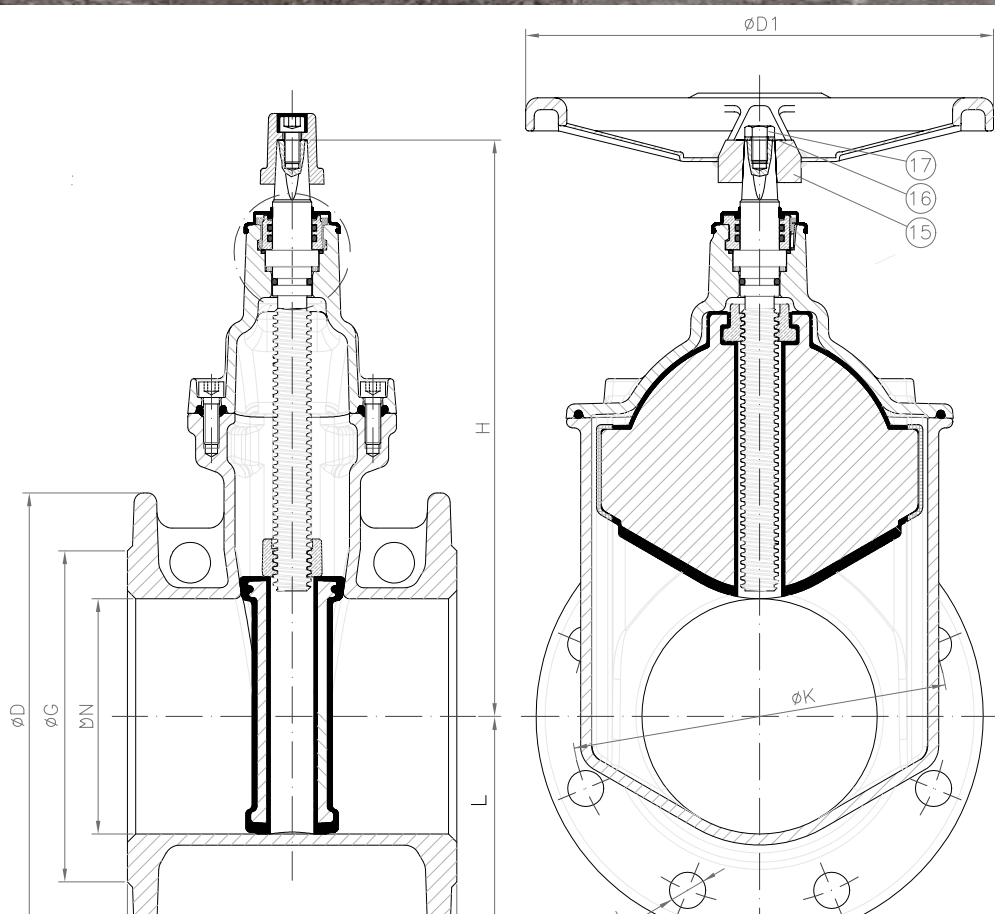
A fixed wedge nut reduces the number of moveable parts and prevents vibration and thus also corrosion and malfunction.

The wedge nut is made of dezincification resistant low-lead brass with lubricating abilities which provides optimum compatibility with the stainless steel stem. It is sealed at the top and bottom with rubber to prevent corrosion.

A wedge design with a fixed wedge nut offers superior performance but it also requires accurate and efficient wedge guides in order to make sure that the stem does not bend at extreme flow velocity and that the wedge has an equal operating torque during the entire process from open to closed position.







COMPONENTS

**Handwheel:**

Valves supplied with handwheel or bare shaft with square cap

**Gland:**

Stainless steel gland provides effective sealing against dirt and other impurities.

**Seal Bush:**

POM material has long service life.

**Plastic Seal:**

SS Bolts used to secure bonnet to valve body are further protected with Plastic Seal to provide extra sealing and protection. Particularly well suited for buried services.

**O-ring**

Top Two O-Rings are replaceable with valve fully open and under pressure. There are also Two-O-Rings on stem, which is invisible from this angle.

**Lubricant Gasket:**

POM material gasket provides a good lubricating property.

**Stem:**

One-piece design, integrate stem and trust bearing to a whole. Stem made of Bronze, SS 410/420/431/316 Forged and Machined to high strength and performance.

**Wedge-Disc:**

Cast or Ductile Iron, fully encapsulated in vulcanized EPDM rubber leaving no exposed metal surface. Central guides help reduce friction between wedge and body during open/close operations.

**Coating:**

Fusion Bonded Epoxy Coating to a min DFT of 300 microns provides an effective Corrosion Protection

- Minimum head loss.
- Full bore.
- Repackable under pipeline pressure.
- 100% watertight.
- Bidirectional flow.
- RF type DIN PN 10/16 flanges.
- Guided gate to ensure the correct sealing.
- Bolts protected against environmental conditions.
- WRAS certificate for drinking water.
- Working temperature between -10°C and 90°C.

**Standards Applied**

- Design according to DIN 3352.
- Hydrostatic tests according to EN 12266-1, class A.
- EC Directive.
- Fabrication according to EN 1074-2.
- Distance between flanges according to EN 558 series 14.
- Side flanges according to ISO 7005-2.
- Top flange (optional) according to ISO 5211







## HIGH QUALITY RUBBER COMPOUNDS

DAVINCI VALVES uses rubber compounds durable enough to resist repeated open/close operations.

Furthermore, the friction against the valve body's internal epoxy coating is very low with this rubber quality, whereby very low operating torques and closing torques are achieved.

The ductile iron core is fully vulcanised with rubber both inside and outside. A minimum of 1.5 mm rubber is applied on all pressure bearing surfaces and a minimum of 4 mm on all sealing surfaces regardless of the design.

The quality of the bonding between the rubber and the wedge core is of vital importance. We use a unique double bonding system that ensures optimum adhesion.

The first to prepare the ductile iron core and the second to vulcanise the rubber to the core.

The rubber is vulcanised to the metal wedge core with a process that fully bonds the two materials.

Even if a sharp object penetrates the rubber the bonding is so strong that there is no risk of creeping corrosion underneath the rubber.

As a result, we can offer the best rubber adhesion and corrosion protection on the market.



# TECHNICAL INFORMATION - RUBBER

## GATE VALVES

### RUBBER SPECIFICATIONS:

Rubber quality Rubber type	EUW-70 EPDM	EUW-75 EPDM	EUW-80 EPDM	EAW-70 EPDM	EAW-75 EPDM	EDK-55 EPDM	EDK-70 EPDM	EDK-80 EPDM
Hardness (ShA)	70	76	80	70	76	56	70	80
Tensile strength (Mpa)	14.0	15.0	13.0	12.0	10.1	10.0	13.0	13.0
Elongation at break (%)	370	353	350	400	361	500	300	290
Density (g/cm <sup>3</sup> )	1.10	1.18	1.21	1.23	1.31	1.19	1.12	1.17
Temperature range in dry atmospheric air:								
Minimum temperature (°C) *)	-40	-40	-40	-40	-40	-40	-40	-40
Maximum temperature (°C) *)	+120	+120	+120	+120	+120	+120	+120	+120
Compression set DIN 53517, 24 hours /70°C (%)	15.0	12.0	15.0	15.0	12.5	12.0	8.0	17.0
Characteristics:								
Wear resistance	3	3	3	2	2	2	3	3
Tear resistance	4	4	4	3	3	2	3	3
Resistance to weather and ozone	4	4	4	4	4	4	4	4
Resistance to hydrolysis (water and steam)	4	4	4	4	4	4	4	4
Resistance to chemicals (acids/bases)	3	3	3	3	3	3	3	3
Resistance to mineral oil and gas	0	0	0	0	0	0	0	0
Permeability	1	1	1	1	1	1	1	1

0: Low 1: Limited 2: Medium 3: Considerable 4: High

Rubber quality Rubber type	NDG-80 NBR	NGW-70 NBR	SAK-70 SBR
Hardness (ShA)	80	70	70
Tensile strength (Mpa)	18.0	15.0	15.0
Elongation at break (%)	220	320	300
Density (g/cm <sup>3</sup> )	1.26	1.23	1.17
Temperature range in dry atmospheric air:			
Minimum temperature (°C) *)	-35	-40	-50
Maximum temperature (°C) *)	+110	+110	+100
Compression set DIN 53517, 24 hours /70°C (%)	8.0	8.0	13.0
Characteristics:			
Wear resistance	3	3	4
Tear resistance	3	3	3
Resistance to weather and ozone	3	3	3
Resistance to hydrolysis - water/steam	3	3	3
Resistance to chemicals - acids/bases	2-3	2-3	2
Resistance to mineral oil and gas	4	4	0
Permeability	4	4	2

0: Low 1: Limited 2: Medium 3: Considerable 4: High

### Approvals/remarks:

EUW-70: KTW D1/D2, W270, WRAS (60°C), ACS XP P 41-250, AS/NZS 4020, NSF-61, EN 681-1, AS 1646-2007, Önorm B5014

EUW-75: KTW D1/D2, W270, WRAS (50°C), ACS XP P 41-250, EN 681-1

EUW-80: KTW D1/D2, W270, WRAS, ACS XP P 41-250, EN 681-1

EAW-70: KTW D1/D2 (warm 60°C), W270

EAW-75: KTW D1/D2, W270

EDK-55: ACS XP P41-250

EDK-70: KTW D1/D2 (60°C), ACS XP P 41-250, CSN 75 7111, NBN S 29003, Hydrochek

EDK-80: KTW D1/D2

NGW-70: EN 682 type GBL, KTW D2

SAK-70: UL-listed 22.06.1993

Above mentioned results are based on laboratory tests and must be evaluated for specific articles and applications. Fire may create small amounts of hydrogen sulphide, and carbon dioxide. Disposal by incineration in compliance with local regulations.

\* Different temperature restrictions may apply to valves due to bonding between metal and rubber

DAVINCI  
VALVES™



QUALITY  
ASSUREMENT

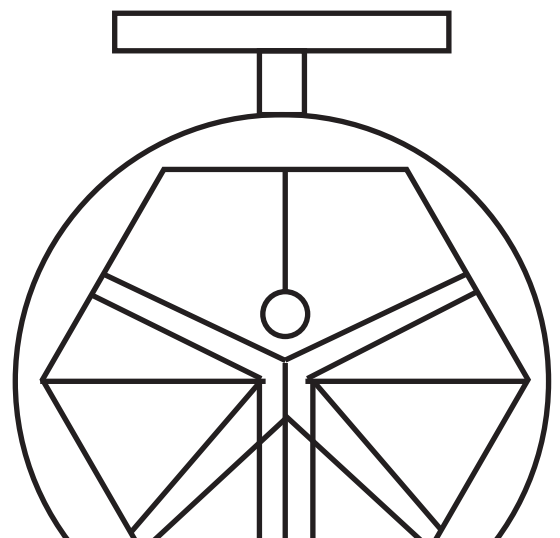


### **BLAST CLEANING:**

All cast components are blast cleaned according to ISO 12944-4, SA 2½. The components are cleaned in a shot-blasting plant. The cleaned parts are held with fibre-free gloves and are transported to the oven without delay according to GSK specifications.

When viewed, the surface shall be visibly free from oil, grease, dirt, mill scale, rust, paint and foreign objects. Any remaining traces of contamination shall show only as slight stains in the form of spots or stripes. The surface shall have a uniform metallic colour, visually and compared with test plates.

The process ensures an optimum bonding of the coating, which is essential for corrosion resistance.





## TECHNICAL INFORMATION - TEST PROCEDURES

### COATING GATE VALVES

#### 1. Coating thickness

The coating layer thickness shall be no less than 250 µm.

- Pore-free coating

The coating must be completely free of penetrating pores to avoid subsequent corrosion of the casting underneath. A 3V holiday detector with a brush electrode is used to electrically reveal and locate any pores in the coating.

#### 2. Cross linkage

One drop of methyl isobutyl ketone are put on a horizontal epoxy resin coated surface of the test piece at room temperature. After 30 seconds the test area is wiped with a clean white cloth. It is checked that the test surface has not become neither matt nor smeared, and that the cloth remains clean. The test is carried out 24 hours after the coating process.

#### 3. Adhesion

The adhesion of the powder coating is tested on one side of a test plate four times a year for each coating plant according to GSK guidelines using the punch separation method according to DIN 24624. The coating thickness over a dispersed area of the test item shall be within the range 250 µm to 400 µm.

The test pieces are immersed for seven days in deionised water at 90°C, and then dried in an oven for 3 hours.

A conditioning phase of 3 to 5 days in normal atmosphere is then allowed to elapse. No blisters may arise during the period immersed in the water bath. The surface of the test piece is degreased and then roughened with abrasive paper. The roughened surface is cleaned from dust with oil-free compressed air and recleaned. The adhesion is tested with a minimum pulling force of >12 N/mm<sup>2</sup>.

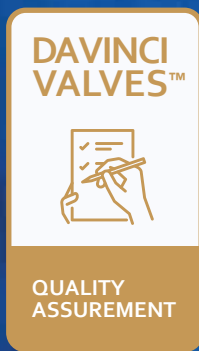
#### 4. Cathodic disbonding

Cathodic disbonding tests are carried out on one of each type of component at least twice a year.

No bubbles in the coating may develop during the test for cathodic disbonding. For this test, the coating thickness over a dispersed area of the test item shall be within the range 250 µm to 400 µm.

#### Approvals:

The coating is approved for use in drinking water systems, meeting all specified toxicological conditions.



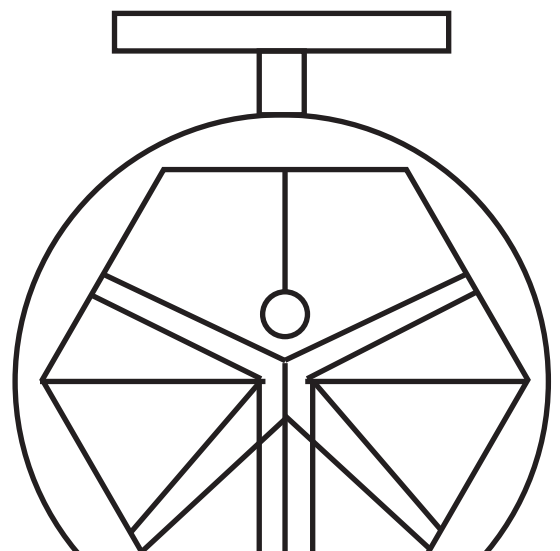
## EPOXY COATING:

The valve bodies and bonnets and other components are fusion bonded epoxy coating in compliance with DIN 3476 part 1 and EN 14901, GSK guidelines.

The high quality epoxy coating is GSK approved and applied manually or using a fluidized bed epoxy coating system.

After the valve components have been blast cleaned, the clean and preheated components are submerged in epoxy powder.

The powder melts when in contact with the preheated components and cures when the components enter the cooling tunnel shortly after the coating process.



# FLOW, KV VALUES AND ZETA VALUES FOR GATE VALVES, RESILIENT- AND METAL SEATED

Calculated flow (m³/hr) going through a nominal valve size (DN40 = inside dia of 40 mm) at different flow velocities

Water velocity (m/sec)	DN40	DN50	DN65	DN80	DN100	DN125	DN150	DN200	DN250	DN300	DN350	DN400	DN450	DN500	DN600	DN700	DN800	DN900	DN1000
1	5	7	12	18	28	44	64	113	177	254	346	452	573	707	1018	1385	1810	2290	2827
1,5	7	11	18	27	42	66	95	170	265	382	520	679	859	1060	1527	2078	2714	3435	4241
2	9	14	24	36	57	88	127	226	353	509	693	905	1145	1414	2036	2771	3619	4580	5655
2,5	11	18	30	45	71	110	159	283	442	636	866	1131	1431	1767	2545	3464	4524	5726	7069
3	14	21	36	54	85	133	191	339	530	763	1039	1357	1718	2121	3054	4156	5429	6871	8482
3,5	16	25	42	63	99	155	223	396	619	891	1212	1583	2004	2474	3563	4849	6333	8016	9896
4	18	28	48	72	113	177	254	452	707	1018	1385	1810	2290	2827	4072	5542	7238	9161	11310
4,5	20	32	54	81	127	199	286	509	795	1145	1559	2036	2576	3181	4580	6234	8143	10306	12723
5	23	35	60	90	141	221	318	565	884	1272	1732	2262	2863	3534	5089	6927	9048	11451	14137

Hydraulic values, fully open valve

	DN40	DN50	DN65	DN80	DN100	DN125	DN150	DN200	DN250	DN300	DN350	DN400	DN450	DN500	DN600	DN700	DN800	DN900	DN1000
Kv (m³/hr - 1 bar)	310	555	650	1050	1945	2770	5715	7755	15405	27295	37150	48520	61410	75815	109175	148600	194090	229572	283422
Cv (Usg/min - 1 psi)	363	649	761	1229	2276	3241	6687	9073	18024	31935	43466	56768	71850	88704	127735	173862	227085	268599	331604
Zeta	0.04	0.03	0.07	0.06	0.04	0.05	0.02	0.04	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02

NOTE: Hydraulic figures are based on tests or calculations, depending on size. Value uncertainty as per ref EN1267

Definitions / formulas:  
 Kv-value: Actual flow of water (m³ / hr) creating pressure loss of 1 bar.  
 Pressure loss coefficient Zeta (K): Value: Ratio of static to dynamic pressure loss.

Zeta (K) = Diff pressure / (500 X V²)  
 Diff pressure (Pa)  
 V: Water flow velocity (m/sec)

Actual diff pressure (bar) = (Q / Kv)²  
 Q: Actual water flow (m³/hr)

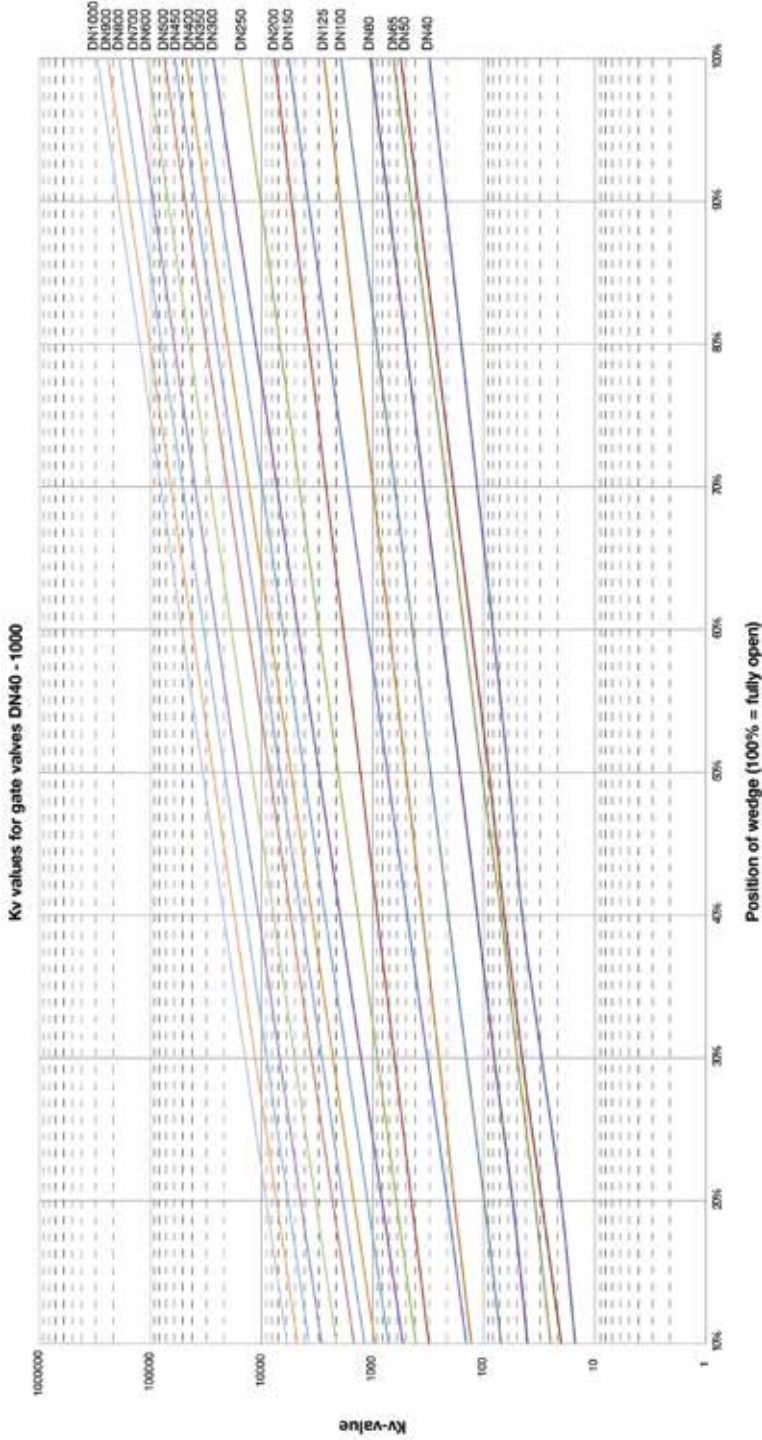


FLOW, KV VALUES AND ZETA VALUES FOR GATE VALVES, RESILIENT- AND METAL SEATED

Kv values, valve in semi-open position. Percentage, based on turns of stem, from closed to fully open valve.

Opening of valve	DN40	DN50	DN65	DN80	DN100	DN125	DN150	DN200	DN250	DN300	DN350	DN400	DN450	DN500	DN600	DN700	DN800	DN900	DN1000
10%	15	20	25	40	70	130	145	315	410	535	725	950	1200	1480	2135	2905	3790	4485	5538
20%	20	30	35	55	100	185	215	450	615	825	1125	1470	1860	2295	3305	4495	5870	9930	12259
30%	30	45	50	80	145	255	325	640	915	1280	1740	2275	2875	3550	5115	6960	9095	15497	19132
40%	45	65	70	115	210	360	490	915	1370	1980	2695	3520	4455	5500	7920	10780	14080	22703	28029
50%	60	90	105	165	305	505	740	1305	2055	3065	4175	5450	6900	8515	12265	16690	21800	30812	38040
75%	135	225	260	420	770	1185	2055	3180	5625	9150	12450	16260	20580	25410	36590	49805	65050	63740	78692
100%	310	555	650	1050	1945	2770	5715	7755	15405	27295	37150	48520	61410	75815	109175	148600	194090	229572	283422

NOTE: Hydraulic figures are based on tests or calculations, depending on size. Value uncertainty as per EN1267

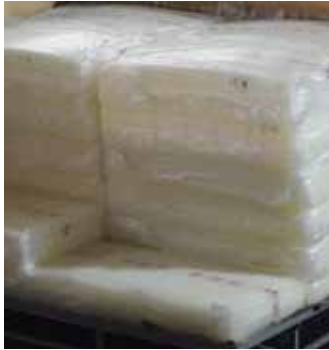


# MANUFACTURE

In DAVINCI VALVES we manufacture the best quality gate valves and our manufacture programm includes our technical service through all the different steps necessary to get your product just the way you need.

1

## RAW MATERIAL.1



2

## FOUNDRY



3

## MOULDS



4

## ELASTOMERS



5

## BODY



6

## SAND BLASTING



7

## MECANIZE BODY



8

## MECANIZE PARTS



9

## PAINTING



10

## ASSEMBLY



11

## TESTING



12

## PACKING



*"Quality that satisfies"*

# TESTING



If you need specific certification for the different types of tests that verify the measurements, the quantities, the weights, in addition to the tests that check both, the components and the final product, this is the absolute guarantee service of DAVINCI VALVES LTD, through which it is ensured that the order sent to you is the one actually contracted.



The consumption of time, resources and efforts in the import process is overwhelming due to the complexity it requires and it is highly recommended to be advised by experts in this field. Avoiding possible delays and unnecessary complications you will have enough room to dedicate your time to matters of greater importance in your company. In DAVINCI VALVES LTD we offer you a personalized service adapted to your requirements.



While the import process lasts, you will know the status of your goods with all detailed information.





## TECHNICAL INFORMATION - QUALITY ASSURANCE GATE VALVES

### PRESSURE TESTS:

Gate valves/Fire hydrants for water

Hydraulic test according to EN 1074-1 and 2 / EN 12266

Shell test with water:	Valves PN 10 tested at 17 Bar Valves PN 16 tested at 25 Bar Valves PN 25 tested at 37.5 Bar
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Shell test for AWWA valves:	2 x PN
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Seat test with water:	Valves PN x 1.1
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Seat test for AWWA valves:	1.0 x PN
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Seat tests are done from both sides and with one end open.

Gate valves for gas

According to EN 13774, class 2

The product shall pass the above specified test for water first.

Shell test:	1.5 x PN water 1.1 x PN air
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Seat test:	0.5 bar air 1.1 x PN air
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Seat tests are done from both sides and with one end open.

### CERTIFICATIONS:

The production of all products in the programme are controlled in accordance with the procedures and specifications laid down in the QUALITY MANUAL«.

certified according to:

- ISO 9001 (quality)
- ISO 14001 (environment)
- ISO 45001 (working environment and safety)

Approval Number: 1808532  
Test Report: MAT/LAB 623B



Water Regulations Advisory Scheme Ltd.  
Unit 13,  
Willow Road,  
Pen y Fan Industrial Estate,  
Crumlin,  
Gwent,  
NP11 4EG

DAVINCI VALVES LTD  
18 Dongyu Street, Square One,  
11th Floor 1101, Jinjiang District,  
Chengdu, Sichuan CHINA

WATER REGULATIONS ADVISORY SCHEME LTD. (WRAS)  
MATERIAL APPROVAL

The material referred to in this letter is suitable for contact with wholesome water for domestic purposes meeting the requirements of BS 6920-1:2000 and/or 2014 'Suitability of non-metallic products for use in contact with water intended for human consumption with regard to their effect on the quality of the water'.

The reference relates solely to its effect on the quality of the water with which it may come into contact and does not signify the approval of its mechanical or physical properties for any use.

RUBBERS - ETHYLENE PROPYLENE DIENE MONOMER (EPDM) - MATERIAL ONLY. 5365

'JM-EP01'. Black coloured, compression moulded EPDM material. Shore hardness 75. Tested in-radius size 1.0mm. For use with water up to 85° C.

APPROVAL NUMBER: 1808532  
APPROVAL HOLDER: DAVINCI VALVES LTD

The Scheme reserves the right to review approval.  
Approval 1808532 is valid between August 2018 and August 2023

An entry, as above, will accordingly be included in the Water Fittings Directory on-line under the section headed, "Materials which have passed full tests of effect on water quality".

The Directory may be found at: [www.wras.co.uk/directory](http://www.wras.co.uk/directory)

Yours faithfully

A handwritten signature in dark ink, appearing to read 'J Furnival', written over a large, diagonal, orange 'CERTIFIED' watermark.

Jason Furnival  
Approvals & Enquiries Manager  
Water Regulations Advisory Scheme

Approval Number: 1808509  
Test Report: MAT/LAB 630B



Water Regulations Advisory Scheme Ltd.  
Unit 13,  
Willow Road,  
Pen y Fan Industrial Estate,  
Crumlin,  
Gwent,  
NP11 4EG

DAVINCI VALVES LTD  
18 Dongyu Street, Square One,  
11th Floor 1101, Jinjiang District,  
Chengdu, Sichuan CHINA

WATER REGULATIONS ADVISORY SCHEME LTD. (WRAS)  
MATERIAL APPROVAL

The material referred to in this letter is suitable for contact with wholesome water for domestic purposes having met the requirements of BS 6920-1:2000 and/or 2014 'Suitability of non-metallic products for use in contact with water intended for human consumption with regard to their effect on the quality of the water'.

The reference relates solely to its effect on the quality of the water with which it may come into contact and does not signify the approval of its mechanical or physical properties for any use.

COATINGS, PAINTS & LININGS - FACTORY APPLIED PIPE & FITTINGS COATINGS. 5030

'JM 9-2910'. Factory applied, blue coloured epoxy powder coating. Apply as per manufacturer's instructions 'edition no.1', issue date 2012-8-5. Cure for 15 minutes @ 180° C. For use with water up to 85° C.

This material is only approved for the curing conditions that appear on the approval. If the cure conditions are varied from those specified on the approval then the material is not covered by the scope of the approval.

APPROVAL NUMBER: 1808509

APPROVAL HOLDER: DAVINCI VALVES LTD

The Scheme reserves the right to review approval.

Approval 1808509 is valid between August 2018 and August 2023

An entry, as above, will accordingly be included in the Water Fittings Directory on-line under the section headed, "Materials which have passed full tests of effect on water quality".

The Directory may be found at: [www.wras.co.uk/directory](http://www.wras.co.uk/directory)

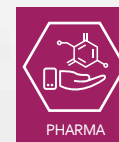
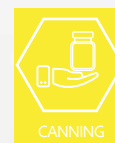
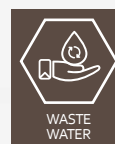
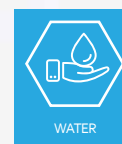
Yours faithfully

A handwritten signature in dark ink, appearing to read 'Jason Furnival', written in a cursive style.

Jason Furnival  
Approvals & Enquiries Manager  
Water Regulations Advisory Scheme



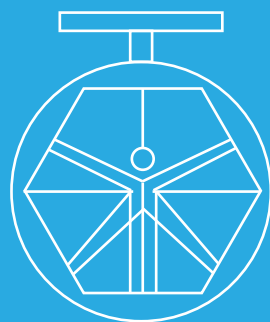
# APPLICATIONS



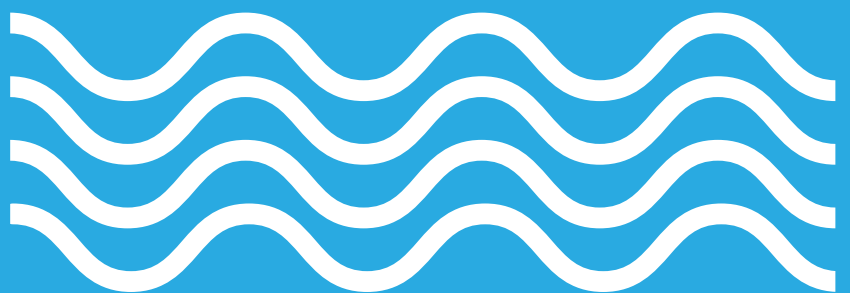


*For professionals who wants more.*

WATER  
SERIES



DAVINCI  
VALVES™





# GATE VALVES / WATER



## **RESILIENT SEAT GATE VALVE NON\_RISING STEM F4-F5 Ref. 200A/PN25**

Range from ND40 up to ND300  
Full Bore  
100% Tightness in both ways  
Repackable under pipeline pressure.  
Low torque values.  
Epoxy Paint 250 microns.



## **RESILIENT SEAT GATE VALVE NON\_RISING STEM BS5163 Ref. 200A/150 PSI**

Range from ND40 up to ND1200  
WRAS Certificate for Drinking Water  
Complies acc. the Norm EN 1074-2  
Full Bore.  
100% Tightness in both ways.  
Minimum Head Loss.  
Repackable under Pipeline Pressure.  
Low Torque Values.  
Epoxy paint 250 Microns: RAL 5015.



## **RESILIENT SEAT GATE VALVE NON\_RISING WITH PE Ref. 200A/150 PSI**

Range from ND50 up to ND300  
WRAS Certificate for Drinking Water (Rubber and Paint)  
Complies acc. to the norm EN 1074 - 2  
Full Bore.  
100% Tightness in both ways.  
Minimum Head Loss.  
Repackable under pipeline pressure.  
Low torque values.  
Epoxy Paint 250 Microns: RAL 501 S.



## **RESILIENT SEAT GATE VALVE NON\_RISING WITH PE Ref. 200A/150 PSI**

Range from ND50 up to ND300  
WRAS Certificate for Drinking Water (Rubber and Paint)  
Complies acc. to the norm EN 1074 - 2  
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100% Tightness in both ways.  
Minimum Head Loss.  
Repackable under pipeline pressure.  
Low torque values.  
Epoxy Paint 250 Microns: RAL 501 S.



# GATE VALVES / WATER



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100% Tightness in both ways.  
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Repackable under pipeline pressure.  
Low torque values.  
Epoxy Paint 250 Microns: RAL 501 S.

## **RESILIENT SEAT GATE VALVE NON\_RISING WITH PE Ref. 200A/150 PSI**

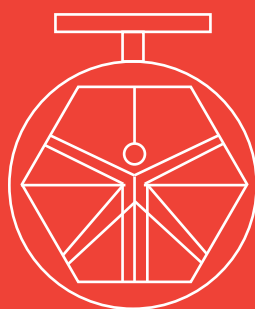
Range from ND50 up to ND300  
WRAS Certificate for Drinking Water (Rubber and Paint)  
Complies acc. to the norm EN 1074 - 2  
Full Bore.  
100% Tightness in both ways.  
Minimum Head Loss.  
Repackable under pipeline pressure.  
Low torque values.  
Epoxy Paint 250 Microns: RAL 501 S.





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**FIRE  
SERIES**



**DAVINCI  
VALVES™**



# GATE VALVES / FIRE



## **RESILIENT SEAT GATE Ref. 114/16 DAVINCI VALVES FIRE SYSTEM UL/FM RISING STEM GROOVE ENDS**

Material construction  
in Ductile Iron GJS500.  
Vulcanize wedge EPDM  
Epoxy paint FBE Min 250 Mic  
Standard design AWWAC515  
Max working pressure 200PSI  
Groove Standard AWWA606



## **RESILIENT SEAT GATE Ref. 115/18 DAVINCI VALVES FIRE SYSTEM UL/FM NON RISING STEM FLANGED ENDS**

Material construction in  
Ductile Iron GJS500.  
Vulcanize wedge EPDM  
Epoxy paint FBE Min 250 Mic  
Standard design AWWAC515  
Max working pressure 200PSI/300PSI  
Flanged end standards DIN NP 10/16/25  
ASME/ANSI B16,1 Class 125/150  
Face to face  
EN 558 Serie 3 (ANSI B16.10)



## **RESILIENT SEAT GATE Ref. 115/19 DAVINCI VALVES FIRE SYSTEM UL/FM FLANGED ENDS WITH ISO FLANGE TOP**

Material construction in  
Ductile Iron GJS500.  
Vulcanize wedge EPDM  
Epoxy paint FBE Min 250 Mic  
Standard design AWWAC515  
Max working pressure 200PSI/300PSI  
Flanged end standards DIN NP 10/16/25  
ASME/ANSI B16,1 Class 125/150  
Face to face  
EN 558 Serie 3 (ANSI B16.10)



## **RESILIENT SEAT GATE Ref. 115/20 DAVINCI VALVES FIRE SYSTEM UL/FM RISING STEM FLANGED ENDS**

Material construction in  
Ductile Iron GJS500.  
Vulcanize wedge EPDM  
Epoxy paint FBE Min 250 Mic  
Standard design AWWAC515  
Max working pressure 200PSI/300PSI  
Flanged end standards DIN NP 10/16/25  
ASME/ANSI B16,1 Class 125/150  
Face to face  
EN 558 Serie 3 (ANSI B16.10)



# GATE VALVES / FIRE



## **RESILIENT SEAT GATE VALVE FLANGED-GROOVE ENDS WITH ISO FLANGE ON TOP 300PSI UL-FM FIRE SYSTEMS**

Material construction in Ductile Iron GJS500.  
Vulcanize wedge EPDM  
Epoxy paint FBE Min 250 Mic  
Standard design AWWAC515 Max working pressure 300PSI  
FLANGED/GROOVE END standards DIN NP 10/16/25  
ASME/ANSI B16,1 Class 125/150  
Face to face EN 558 Serie 3 (ANSI B16.10)



## **RESILIENT SEAT GATE VALVE RISING STEM FLANGED+GROOVED ENDS 300PSI UL-FM FIRE SYSTEMS**

Material construction in Ductile Iron GJS500.  
Vulcanize wedge EPDM  
Epoxy paint FBE Min 250 Mic  
Standard design AWWAC515 Max working pressure 300PSI  
FLANGED/GROOVE END standards  
DIN NP 10/16/25 ASME/ANSI B16,1 Class 125/150  
Face to face EN 558 Serie 3 (ANSI B16.10)



## **RESILIENT SEAT GATE VALVE FLANGED END 300PSI UL-FM WITH ISO FLANGE FIRE SYSTEMS**

Material construction in Ductile Iron GJS500.  
Vulcanize wedge EPDM  
Epoxy paint FBE Min 250 Mic  
Standard design AWWAC515 Max  
Working pressure 300PSI  
Flanged end standards DIN NP 10/16/25  
ASME/ANSI B16,1 Class 125/150  
Face to face EN 558 Serie 3 (ANSI B16.10)



## **RESILIENT SEAT GATE VALVE RISING STEM FLANGED+GROOVED ENDS 200PSI UL-FM FIRE SYSTEMS**

Material construction in Ductile Iron GJS500.  
Vulcanize wedge EPDM  
Epoxy paint FBE Min 250 Mic  
Standard design AWWAC515 Max working  
pressure 200PSI  
FLANGED/GROOVE END standards  
DIN NP 10/16/25 ASME/ANSI B16,1 Class 125/150  
Face to face EN 558 Serie 3 (ANSI B16.10)



## SPINDLE EXTENSION FOR GATE VALVE

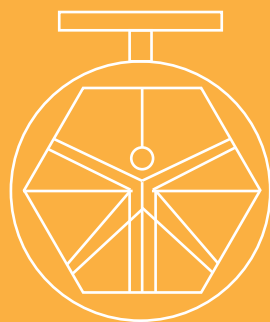
Material construction in Steel bar  
with PVC tube protection





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INDUSTRY  
SERIES



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# GATE VALVES / INDUSTRY



## **GATE VALVE CF8M NP16 FLANGED END**

Construction in S.steel CF8M  
Metal to metal seat  
Working pressure 1.0Mpa 1.6Mpa  
Face to face EN 558 Serie 14 & serie 15  
(DIN 3202 F4/F5)



## **METAL SEAT GATE VALVE NP25-40-63 FLANGED END**

Material construction WCB (NP25/40/63)  
Gate valve GJS500, Body: Laton  
Painting Epoxy 80 Mic / Epoxy FBE Min 250 Mic  
Working pressure 2.5Mpa 4.0Mpa 6.3Mpa  
Face to face EN 558 Serie 14 & serie 15  
(DIN 3202 F4/F5/F7)



## **GATE VALVE THREAD END**

Material construction in SS316  
Obturator SS316  
Working pressure PN16  
Thread end GAS/NP

# Functional operation

## DEFINITION

Operation of the gate valve is performed through rotating motion of the stem with an appropriate operating element (Handwheel, T-Key, ...). When turning the valve stem, the wedge moves up or downwards, along the threaded part of the stem, in order to open or close the passage.

Depending regions, countries or customers, the valve is closed by turning the operating element:

- To the right, i.e. in a clockwise direction.
- To the left, i.e. in an anti-clockwise direction.

In all cases, the closing direction is indicated on the valves.



Handwheel



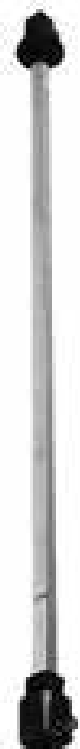
Captop (square cap)



Operating Key



Telescopic or  
fix extension  
set



Fix  
extension  
stem

GROUP

# 300

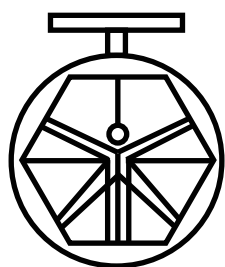
# GATE VALVES COLLECTION

China / Hong Kong: (0086) 1734 0168 233

España: (0034) 616 553 797

18 Dongyu Street, Square One,  
11th Floor 1101, Jinjiang District,  
Chengdu, Sichuan CHINA

10F/Tower A, Billion Center,  
1 Wang Kwong Road, Kowloon Bay Kowloon HONG KONG



**DAVINCI**  
**VALVES** <sup>TM</sup>

[www.davincivalves.com](http://www.davincivalves.com)