

FLOW CONTROL

# GATE VALVES.

RELIABLE, DEPENDABLE  
AND ECONOMICAL.



Düker gate valves are made of ductile cast iron, enamelled all around or coated with epoxy powder.

EXCELLENT.  
WATER.  
SOLUTIONS.

# Reliable, Dependable and Economical

## Ductile cast iron valves

In Germany alone, thousands of kilometers of pipes ensure a reliable supply of water, anytime and anywhere.

The piping used needs to meet the highest requirements:

- Resistance to intense soil movement
- Reliability even after many service years
- Securing of perfect hygiene
- Safe transport of our drinking water without loss

Cast iron is a natural material and forms the basis of the Düker valves. Due to its outstanding material properties, it complies 100% with the following requirements:

- Long service life
- High density
- Excellent corrosion resistance
- Economic efficiency
- 100% recyclable

## Ductile cast iron

Ductile cast iron is a special form of cast iron which is also known as nodular or spheroidal graphite iron. This material withstands both internal and external pressure as well as virtually all soil and traffic loads. It is therefore reliable and ideally suited to meet the requirements of our supply pipelines.

## The right coating is what matters

In the end, however, it is the coating that reliably guarantees permanent hygiene in our drinking water supply system. This is why the surface protection is just as important as the base material.

All Düker valves receive a seamless and pore-free epoxy powder coating or are completely enamelled. This procedure offers permanent corrosion and encrustation protection, and additionally makes the valves extremely adhesion and shock resistant.

The epoxy powder is applied onto the clean blasted casting at 200 °C with a layer thickness of at least 250 µm. As a member of the "Gütegemeinschaft Schwerer Korrosionsschutz" (GSK) association, Düker is entitled to carry the RAL quality seal.

Enamel, on the other hand, is a sign for integral corrosion protection. The perfectly smooth surface prevents potential bacteria build-up. Biofilm adhesion is actively prevented, thus ensuring a hygienically and physiologically safe drinking water supply.



**RAL GÜTEZEICHEN**  
SCHWERER KORROSIONSSCHUTZ  
VON ARMATUREN UND FORMSTÜCKEN

### Hygiene and safety for our drinking water

The German Federal Environment Agency is working on guidelines for all materials that come into contact with drinking water. The previous guidelines, e.g. the KTW guideline for plastics, will be converted into compulsory criteria over the next few years.

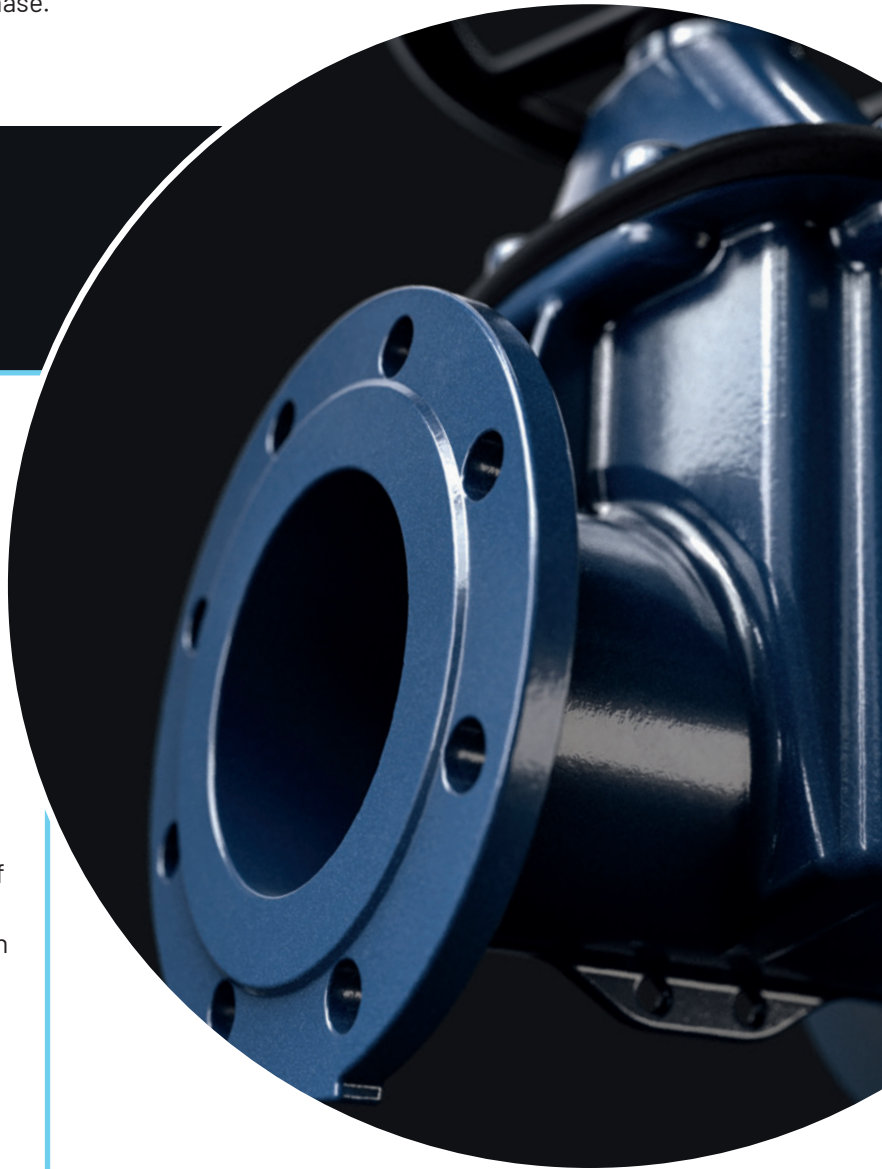
In April 2017, the criteria for metal came into force. It contains a specific list of authorised metals, which will continue to be updated and for example, amended to include new materials. Other criteria, e.g. for organic materials, are currently in the transition phase.

By participating in standardisation committees and commenting phases of the evaluation criteria, Düker is able to implement tests and changes to the materials at an early stage in order to optimally protect the valuable foodstuff 'drinking water'. This guarantees that Düker valves always comply with the latest UBA guidelines and criteria.

### Etec enamel – the special surface protection for valves

Etec enamel is a composite material which enters no chemical connection with the cast iron pipeline component. Its main strengths are:

- Inside and outside corrosion protection including soil class III
- High degree of resistance to mechanical stress (friction, impact, pressure, push)
- Ageing resistance
- Prevention of blistering between the base material and coating caused by diffusion of water through the coating
- No sub-surface corrosion migration even in the case of local damage to the surface
- Climate and medium resistance (UV radiation, humidity, temperature, organic solvents)





# Gate Valves 2004 and 4004

**Completely with shock-resistant enamelling for best possible corrosion protection and 100% hygiene**

## Area of application: Drinking water

- as per EN 1171 and EN 1074 part 1+2
- EPDM vulcanized wedge and gasket

## Area of application: Gas/waste water

- NBR vulcanized wedge and gasket

## Corrosion protection

- body inside and outside with complete and seamless shock-resistant enamelling as per the DEV guideline (soil class III, DIN 51178)
- or with complete epoxy powder coating as per GSK directives in blue (RAL 5005) for potable water or yellow (RAL 1023) for gas

Medium temperature range for gas and drinking water from -10 °C to +60 °C.

## Long service life of the valve

- Coating-optimized bonnet and body
- Highly corrosion-resistant to class III soils following the requirements of the DVGW publication GW 9

## Operator-friendly

- Low torques due to sophisticated design
- Low operating torque and high drive reserves
- New wedge guidance with vulcanized plastic sliding shoes

## Maintenance-free operation

- New stem bearing design

## No restrictions in ground installation

- Connection screws countersunk in the bonnet, with a protective plastic cap against dirt and humidity
- No additional measures required for the installation in highly aggressive soils
- Easy handling in all installation situations

## Universal application options

- Interface stem extension set - without adapter as per GW 336



## Optimal protection

- Medium-free stem bearing
- Full corrosion protection with etec enamel

## Full protection during transport and storage

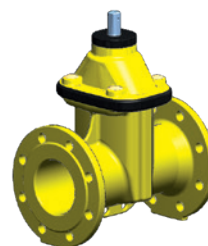
- Edge protection between bonnet and body, passage flanges with plastic cap protection

## Extensive accessory program

- GW 336 compliant stem extension sets
- Adjustable/rigid telescope with clip pins
- Uni-Clip stem extension sets
- Height-adjustable and rigid street caps
- Operating keys
- Hand wheels

## Versions

- With flange connection
- With socket connection
- Socket connection also possible with longitudinal thrust-resisting connections: Düker SMU and Düker SPEZIAL for screw sockets; TYTON SIT® and TYTON SIT PLUS® for TYTON® sockets; NOVO-SIT® and NOVO-Grip® III or PVC for Novo sockets.



Alternative for gas  
as per EN 13774  
DN 40 – 300,  
PN 10 – 16

## Details and materials

| No. | Description          | Material<br>DN 80 – 200 | No. | Description                           | Material<br>DN 40 – 65 & DN 250 – 300 |
|-----|----------------------|-------------------------|-----|---------------------------------------|---------------------------------------|
| 1   | Body                 | EN-JS 1050              | 1   | Body                                  | EN-JS 1050                            |
| 1   | Sealing wedge        | EPDM W270/NBR*          | 1   | Sealing wedge                         | EPDM W270/NBR*                        |
| 1   | Stem nut             | CuZn36Pb2As/bronze*     | 1   | Bonnet                                | EN-JS 1050                            |
| 1   | Stem                 | 1.4021(X20Cr13)/1.4571* | 1   | Stem                                  | 1.4021(X20Cr13)/1.4571*               |
| 1   | Gasket               | EPDM W270/NBR*          | 1   | Lock nut                              | CuZn35-NiMn2AlPb                      |
| 4   | Cylinder head screws | A2-70                   | 1   | Stem nut                              | CuZn35-NiMn2AlPb/bronze*              |
| 1   | Clamping piece       | CuZn35-NiMn2AlPb        | 1   | Screening ring                        | TPE                                   |
| 1   | Bonnet               | EN-JS 1050              | 2   | Sliding ring                          | red brass                             |
| 1   | Lock nut             | CuZn35-NiMn2AlPb        | 6   | Cylinder head screws                  | A2-70                                 |
| 1   | Adapter cap          | EPDM                    | 2   | O ring                                | EPDM W270/NBR*                        |
| 3   | O ring               | EPDM W270/NBR*          | 1   | O ring                                | EPDM W270/NBR*                        |
| 1   | Retaining ring       | 1.4541(X6CrNiTi1810)    | 1   | Gasket with integrated protective rim | EPDM W270/NBR*                        |
| 2   | O ring               | EPDM W270/NBR*          | 1   | Grooved cylindrical pin               | A2-70                                 |

\* for waste water



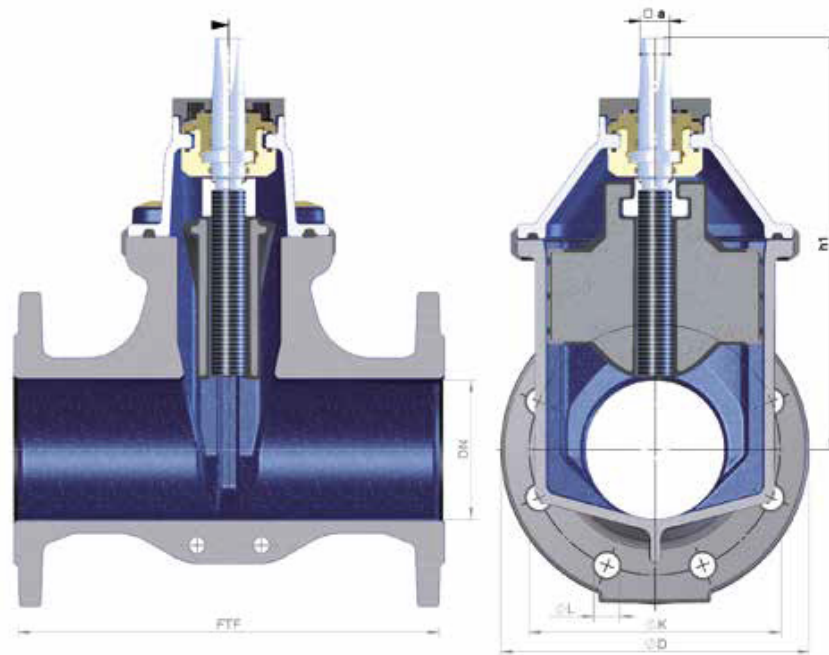
| Operating medium                             | Water    | Gas     | Gas      | Gas        | Test medium |
|----------------------------------------------|----------|---------|----------|------------|-------------|
| Allowable working pressure [bar]             | up to 16 | up to 4 | up to 10 | up to 16   |             |
| Pressure tests as per DIN EN 12266 T.1:      |          |         |          |            |             |
| Shell test [bar]                             | 24       | 24      | 24       | 24         | water       |
| High pressure closure test [bar]             | 17,6     |         |          |            | water       |
| Low pressure closure test [bar]              |          | 0,5 + 6 | 0,5 + 11 | 0,5 + 17,6 | air*        |
| Pressure test as per DIN 3230 T.5 PG1 / PG 2 |          | •       |          |            |             |
| Pressure test as per DIN 3230 T.5 PG13       |          | •       | •        | •          |             |

\* or inert gas

## Gate Valves

Type 4004 - face-to-face length: as per EN 558, basic series 15

Type 2004 - face-to-face length: as per EN 558, basic series 14



## Dimensions and weights

| DN  | PN<br>bar | FTF<br>mm<br>2004 | FTF<br>mm<br>4004 | h <sub>1</sub><br>mm | D<br>mm | K<br>mm | Number<br>of bolts | L<br>mm | □ a<br>mm | U    | Weight<br>kg<br>2004 | Weight<br>kg<br>4004 |
|-----|-----------|-------------------|-------------------|----------------------|---------|---------|--------------------|---------|-----------|------|----------------------|----------------------|
| 40  | 16        | 140               | 240               | 207                  | 150     | 110     | 4                  | 19      | 14        | 11   | 11,2                 | 12,5                 |
| 50  | 16        | 150               | 250               | 233                  | 165     | 125     | 4                  | 19      | 14        | 14,5 | 13,3                 | 14,7                 |
| 65  | 16        | 170               | 270               | 270                  | 185     | 145     | 4                  | 19      | 17        | 14   | 17,0                 | 18,8                 |
| 80  | 16        | 180               | 280               | 270                  | 200     | 160     | 8                  | 19      | 17        | 16   | 17,8                 | 17,5                 |
| 100 | 16        | 190               | 300               | 295                  | 220     | 180     | 8                  | 19      | 19        | 25   | 22,5                 | 24,6                 |
| 125 | 16        | 200               | 325               | 330                  | 250     | 210     | 8                  | 19      | 19        | 25   | 27,8                 | 31,0                 |
| 150 | 16        | 210               | 350               | 373                  | 285     | 240     | 8                  | 23      | 19        | 30   | 36,0                 | 40,6                 |
| 200 | 10        | 230               | 400               | 462                  | 340     | 295     | 8                  | 23      | 24        | 34   | 54,8                 | 61,5                 |
| 200 | 16        | 230               | 400               | 462                  | 340     | 295     | 12                 | 23      | 24        | 34   | 54,4                 | 61,0                 |
| 250 | 10        | 250               | 450               | 648                  | 400     | 350     | 12                 | 23      | 27        | 42   | 104,4                | 113,6                |
| 250 | 16        | 250               | 450               | 648                  | 400     | 355     | 12                 | 28      | 27        | 42   | 104,0                | 113,0                |
| 300 | 10        | 270               | 500               | 723                  | 445     | 400     | 12                 | 23      | 27        | 51   | 145,7                | 161,0                |
| 300 | 16        | 270               | 500               | 723                  | 445     | 410     | 12                 | 28      | 27        | 51   | 146,0                | 160,0                |



# Gate Valve 4004 with PE 100 Pipe Ends

The innovative valve series for the application with plastic pipes

## Area of application water

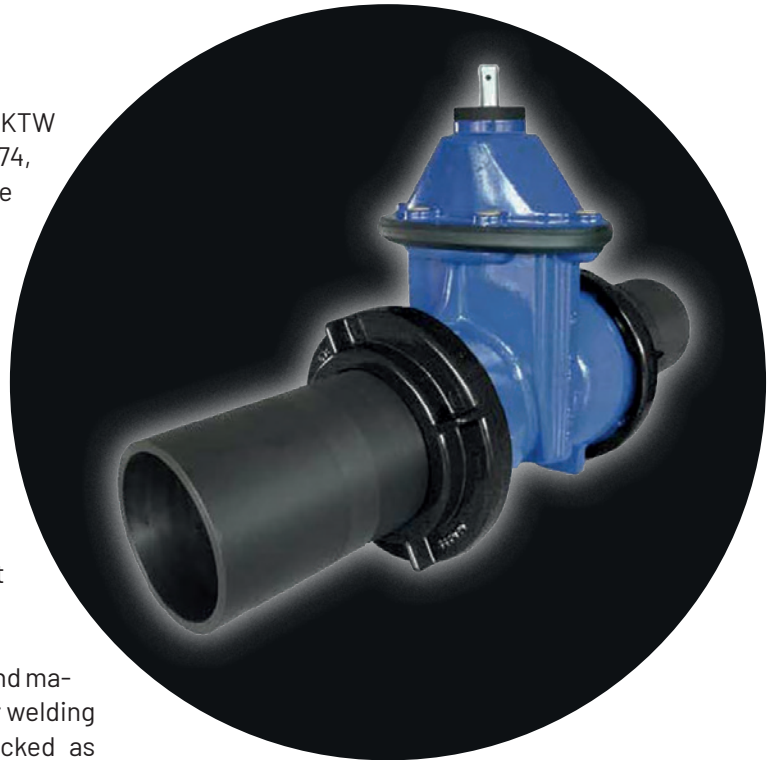
- as per EN 1171 and EN 1074 part 1+2
- for temperatures up to +60 °C

EPDM vulcanized wedge and gaskets are KTW and W 270 tested. Pipes according to DIN 8074, inspection report Engler-Bunte-Institute regarding connection technology on the basis of DVGW-VP600, melting index group MFI 005 and 010, according to the guidelines of the DVGW publication G 477 and bulletin DVS 2207.

As an option, the gate valve 4004 with PE 100 pipe ends for welding may be equipped with a hand wheel, a stem extension set for underground installation, electric or pneumatic drive and clear shaft end.

The PE pipe ends for welding are extruded and machined pipe spigots. These PE pipe ends for welding are mounted tension-free and friction-locked as plug-in connection in the TYTON® socket. Locking and axial restraint is ensured through a thrust resisting joint ring on the outside.

**During the welding process, the advantage of this design is that it enables the valve to remain rotatable without impairing the axial restraint and tightness.**



## Long service life of the valve

- Coating-optimized bonnet and body
- Highly corrosion-resistant to class III soils following the requirements of the DVGW publication GW 9

## Operator-friendly

- Low torques due to sophisticated design
- Low operating torque and high actuator reserves
- New wedge guidance with vulcanized plastic sliding shoes

## Optimal protection

- Medium-free stem bearing
- Full corrosion protection



#### Area of application gas

- as per EN 1171 and EN 13774
- for all gases according to DVGW publication G 260/I

Inspection report Engler-Bunte-Institute regarding connection technology on the basis of DVGW-VP600, melting index group MFI 005 and MFI 010, according to the guidelines of the DVGW publication G 477 and bulletin DVS 2207. Gas PN 10 in case of transition couplings.

As an option, the gate valve 4004 may be equipped with a hand wheel, a stem extension set for underground installation, electric or pneumatic drive and clear shaft end.

#### Maintenance-free operation

- New stem bearing design

#### No restrictions in underground installation

- Connection screws countersunk in the bonnet, with a protective plastic cap against dirt and humidity
- No additional measures required for the installation in highly aggressive soils
- Easy handling in all installation situations

#### Universal application options

- Interface stem extension set – without adapter as per GW 336

#### Corrosion protection

The standard version of the gate valve is equipped with a high quality epoxy powder coating according to the RAL-GZ 662 quality assurance of the "Gütegemeinschaft schwerer Korrosionsschutz (GSK)", the German quality association for Corrosion Protection of Powder Coated Valves and Fittings.

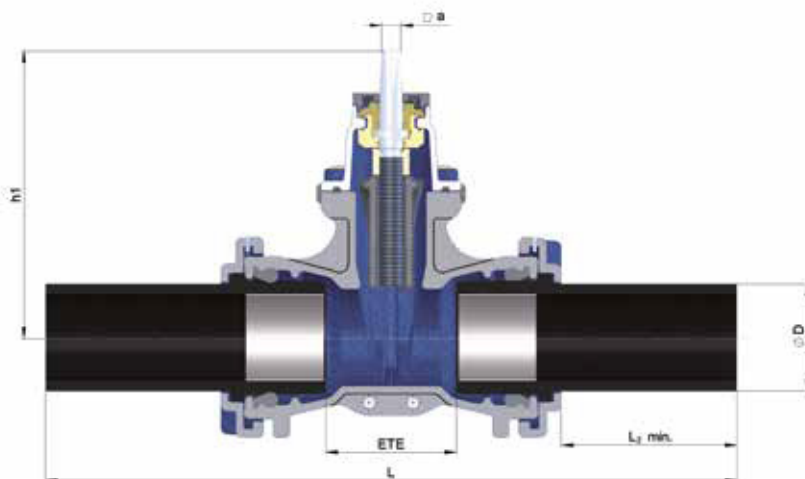
#### Full protection during transport and storage

- Edge protection between bonnet and body, PE ends secured against impact

#### Further Versions

- Type 4004 PE 100 on one side, TYTON® or Novo socket on the other side
- Type 2004 PE 100 end on one side, flange on the other side
- Also refer to service connection valve type 1004 DN 25 – 50 with PE 100 welding pipe ends





PE 100 pipe welding studs (black for water and gas) with stainless steel support sleeve.

For welding in PE pipelines applying the heating element butt welding method. Pipe length laid out for two welding processes. Testing according to DIN 3230-5 PG 2 or PG 3; including 3.1 B certificate according to EN 10204.

### Dimensions and weights

| DN  | D mm | L mm | h <sub>1</sub> mm | ETE mm | □ a mm | L <sub>2</sub> min. mm | Weight kg |
|-----|------|------|-------------------|--------|--------|------------------------|-----------|
| 80  | 90   | 680  | 270               | 120    | 17     | 175                    | 24        |
| 100 | 110  | 710  | 295               | 134    | 19     | 180                    | 30        |
| 100 | 125  | 736  | 295               | 136    | 19     | 190                    | 31        |
| 125 | 125  | 790  | 330               | 152    | 19     | 203                    | 40        |
| 125 | 140  | 790  | 330               | 152    | 19     | 203                    | 40        |
| 150 | 160  | 840  | 373               | 162    | 19     | 220                    | 55        |
| 150 | 180  | 860  | 373               | 160    | 19     | 231                    | 55        |
| 200 | 200  | 970  | 462               | 170    | 24     | 265                    | 87        |
| 200 | 225  | 954  | 462               | 170    | 24     | 257                    | 88        |
| 200 | 250  | 1185 | 462               | 170    | 24     | 373                    | 93        |

### Wall thicknesses and pressure classes

| DN  | PE 100 pipe d | wall thickness* | SDR11 Ps for water | Ps for gas | wall thickness* | SDR17 Ps for water | Ps for gas |
|-----|---------------|-----------------|--------------------|------------|-----------------|--------------------|------------|
| 80  | 90            | 8,2             | 16                 | 5 / 10     | 5,4             | 10                 | 5          |
| 100 | 110           | 10,0            | 16                 | 5 / 10     | 6,6             | 10                 | 5          |
| 100 | 125           | 11,4            | 16                 | 5 / 10     | 7,4             | 10                 | 5          |
| 125 | 140           | 12,7            | 16                 | 5 / 10     | 8,3             | 10                 | 5          |
| 150 | 160           | 14,6            | 16                 | 5 / 10     | 9,5             | 10                 | 5          |
| 150 | 180           | 16,4            | 16                 | 5 / 10     | 10,7            | 10                 | 5          |
| 200 | 200           | 18,2            | 16                 | 5 / 10     | 11,9            | 10                 | 5          |
| 200 | 225           | 20,5            | 16                 | 5 / 10     | 13,4            | 10                 | 5          |
| 200 | 250           | 22,7            | 16                 | 5 / 10     | 14,8            | 10                 | 5          |

\*Wall thicknesses of PE pipes as per DIN 8074, all dimensions in mm



# Replacement and Repair Gate Valve 2004 and 4004

The perfect valve for the application in pipe trenches

## Area of application water

- as per EN 1171 and EN 1074 part 1+2
- for drinking and untreated water up to PN 10/16
- ambient temperature up to +60 °C
- for all plant and pipeline network operators

## Corrosion protection

Shock-resistant enamelling inside and outside. Loose flanges with axial restraint with black epoxy powder coating.

The basis of this valve is the tried and tested Düker repair valve concept. This series has undergone continuous innovations and improvements and is now available with the nominal diameters DN 80–200.

The proven concept allows operators cost-efficient utilization of their resources – either for new construction projects or as a replacement valve in the course of facilities and public water supply redevelopment measures. Depending on the material choice of the dismantling joints, the savings potential for new investments is between 5 and 20%.

## Long service life of the valve

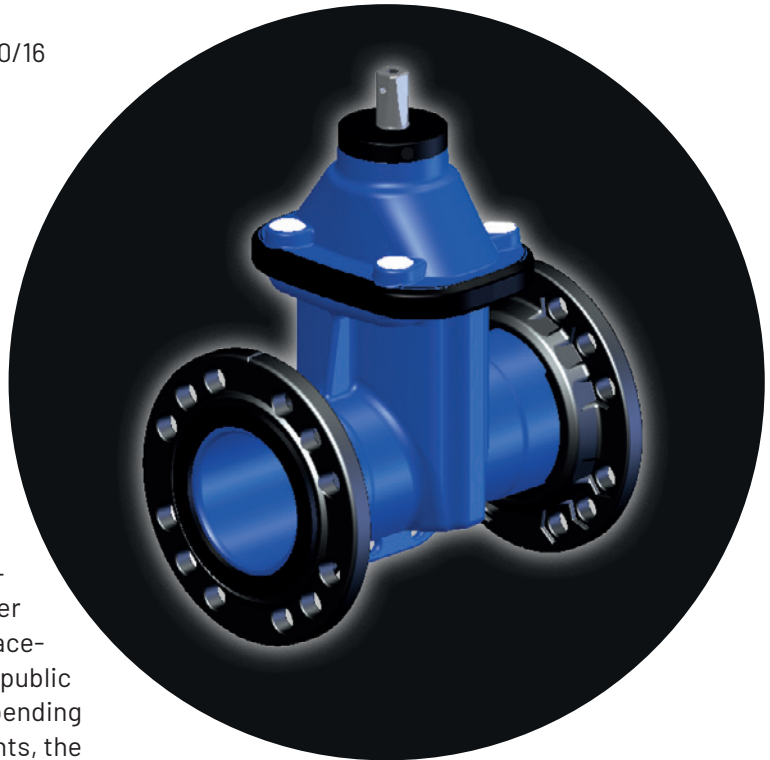
- Coating-optimized bonnet and body
- Highly corrosion-resistant to class III soils following the requirements of the DVGW publication GW 9
- Loose flanges with axial restraint on both sides

## Operator-friendly

- Low torques due to sophisticated design
- Low operating torque and high drive reserves
- New wedge guidance with vulcanized plastic sliding shoes

## Maintenance-free operation

- Newly designed stem bearing

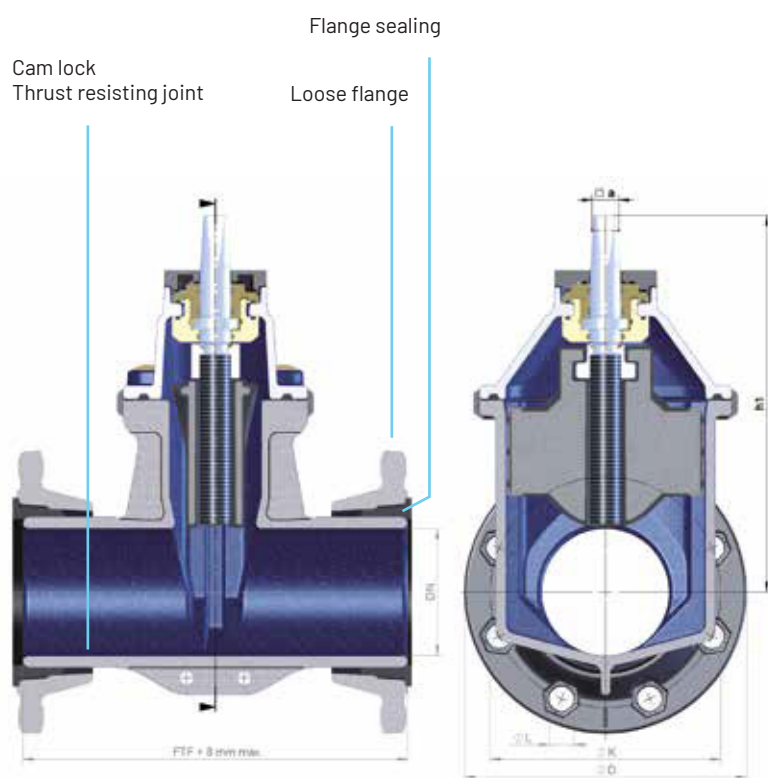


## No restrictions in underground installation

- Connection screws countersunk in the bonnet, with a protective plastic cap against dirt and humidity
- No additional measures required for the installation in highly aggressive soils
- Easy handling in all installation situations

## Quick replacement as and when required

- Even in case of dismantling joints with immovable stems, it is sufficient to replace the valve
- Ability to even out misalignments on the existing pipeline
- No necessity to spread pipeline and valve in order to install the flange gasket



The loose flanges can be drawn out within a tolerance range of 4 mm on each side. In addition, their connection to the valve body is fully restrained.

The elimination of the old flange gaskets provides an additional tolerance, which is compensated for by sliding and adjusting the loose flanges.

Available with long and short face-to-face length!

**Type 4004, face-to-face length:**  
as per EN 558, basic series 15

**Type 2004, face-to-face length:**  
as per EN 558, basic series 14

#### Dimensions and weights type 2004 and 4004

| DN  | PN bar | FTF mm 2004 | FTF mm 4004 | h <sub>1</sub> mm | D mm | K mm | □ a mm | L mm | Weight kg 2004 | Weight kg 4004 |
|-----|--------|-------------|-------------|-------------------|------|------|--------|------|----------------|----------------|
| 80  | 16     | 180         | 280         | 270               | 200  | 160  | 17     | 19   | 18             | 20             |
| 100 | 16     | 190         | 300         | 295               | 220  | 180  | 19     | 19   | 22             | 25             |
| 125 | 16     | 200         | 325         | 330               | 250  | 210  | 19     | 19   | 28             | 33             |
| 150 | 16     | 210         | 350         | 373               | 285  | 240  | 19     | 23   | 36             | 44             |
| 200 | 10     | 230         | 400         | 462               | 340  | 295  | 24     | 23   | 55             | 65             |
| 200 | 16     | 230         | 400         | 462               | 340  | 295  | 24     | 23   | 55             | 65             |

#### Universal application options

- No changes necessary. Ready for use in facilities and underground installation
- Universal interface stem extension set - without adapter as per GW 336
- Use of complete flanges with EN 1092-2 complying connections

#### Optimal protection

- Medium-free stem bearing
- Full corrosion protection with etec enamel

#### Saving time and materials

- No need for dismantling joints
- Minimizing labor time as a result of integrated, axially restrained loose flanges with sealing elements.

#### Full protection during transport and storage

- Edge protection between bonnet and body



# Gate Valve 3004 with Steel Pipe Ends for Welding

Shock-resistant enamel on the inside and "PUR" polyurethane coating on the outside – the perfect solution for gas supply

## Area of application gas

- For all gases according to DVGW publication G 260/I with PG 3 pressure test

## Corrosion protection

Enamel on the inside pursuant to the DEV guideline (except for the welding area). Outside coating "PUR" polyurethane. The inspection is carried out as per DIN 30677 part two and with 15 kV.

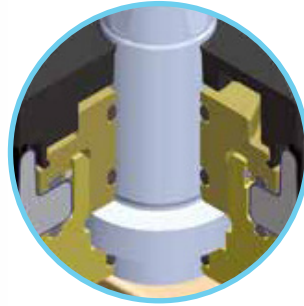
## Gate valve type 3004

Resilient seated with a smooth passage according to EN 13774. Body and bonnet in EN-GJS-400-18 with shod ends from St. 35.8 edge form 22. Wedge with new guidance, vulcanized plastic sliding shoes. Stem made of stainless austenitic chromium steel, material no. 1.4021, with rolled thread. Mediumfree stem bearing. Stem sealing with two O-rings and back seal.



The 3004 gate valve is also available as "blow-out unit" in two versions, either steel ends or PE ends.







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