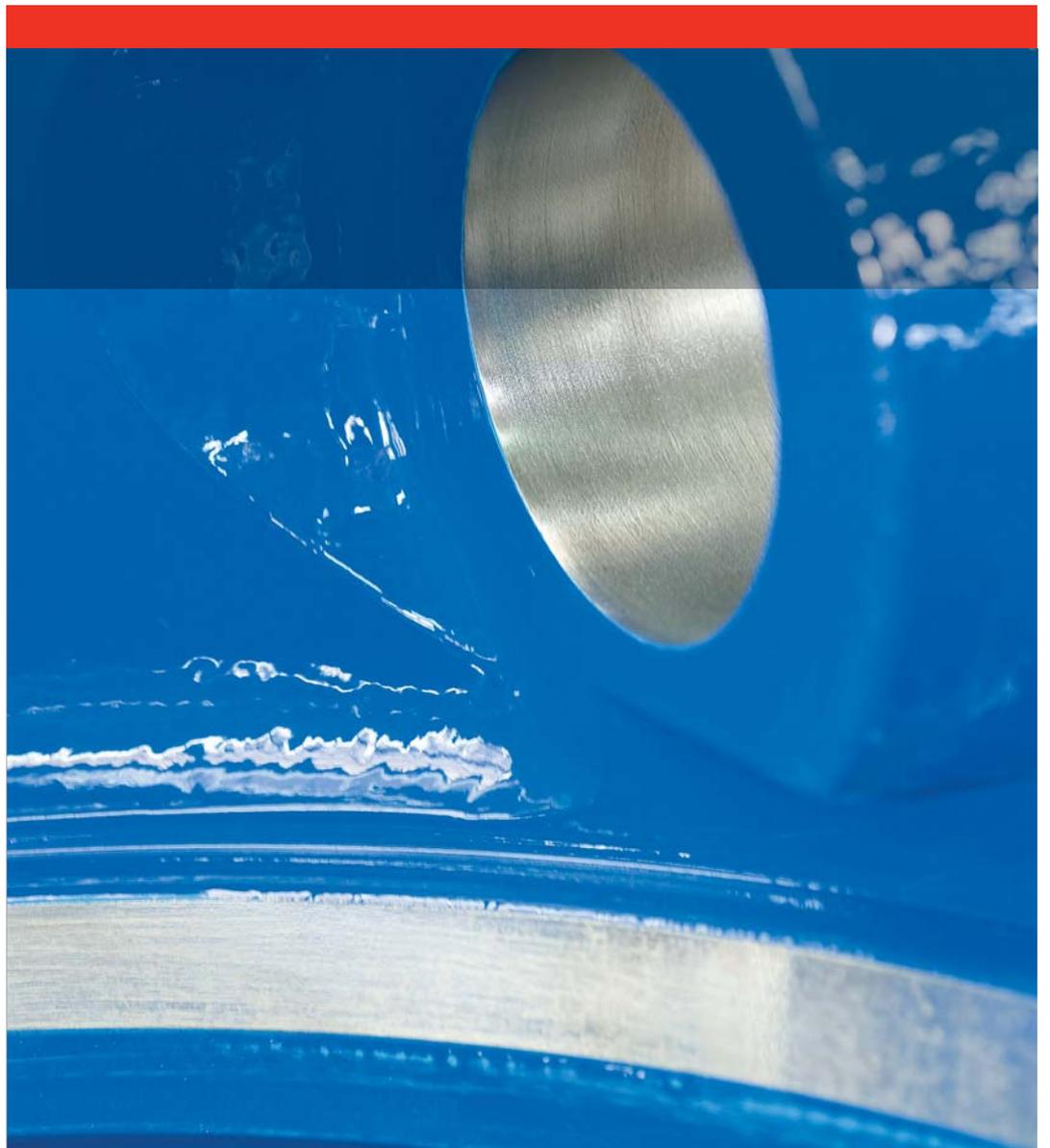
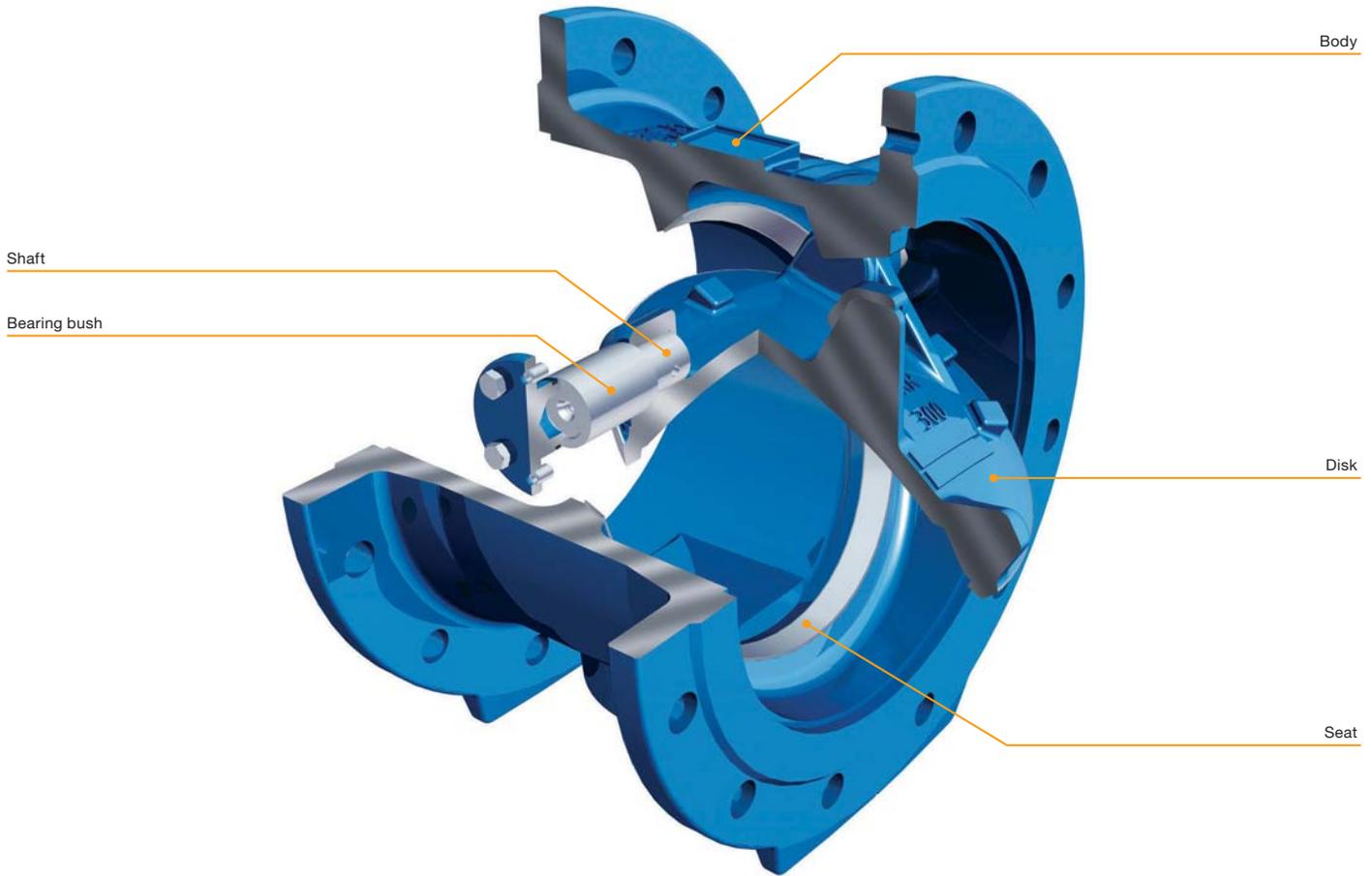


VAG Non-Return Valves





VAG SKR Slanted Seat Tilting disk Check Valve



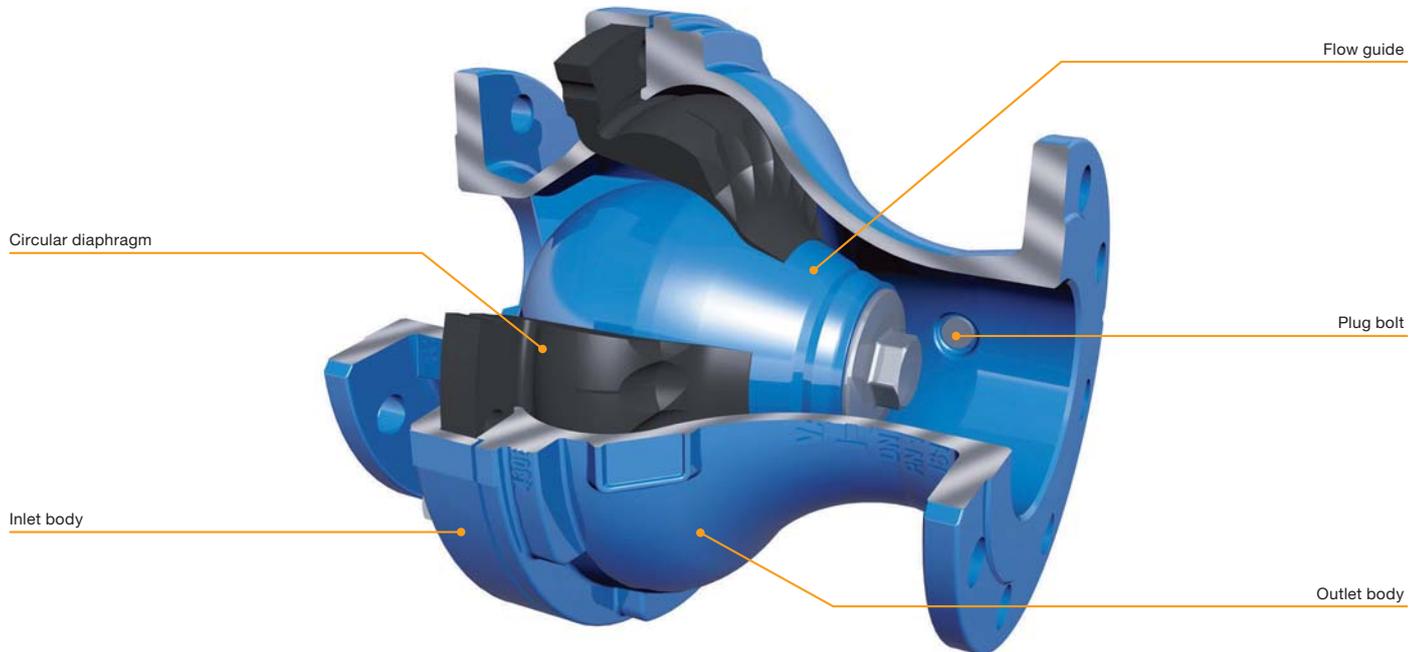
Technical details

- Nominal pressures PN 10, 16
- Nominal diameters DN 200 ... 1400
- Fields of application: drinking water, preclarified wastewater
- Face-to-face length to EN 558, basic series 14
- Recommended flow velocity: min. 1,6 m/s
- Standard version: body and disk made of ductile iron EN-GJS-400-15 (GGG-40), seat made of microfinished high-alloy weld overlay
- Inside and outside epoxy coating
- Special versions:
 - With internal damping unit
 - With blanking plate (prepared for internal damping unit)
 - With mechanical position indicator
 - With limit switches
 - With internal rubber lining
 - Welded or forged version
 - For hot water up to 150 °C
 - Stainless steel version
 - Nominal pressure PN 25

Product features

- Due to the tilting disk, the stroke is shortened by about 30°. This results in shorter closing times, less backflow and reduced slamming of the disk.
- disk swings and opens easily even at low flow velocities. This results in low headloss and pumping capacity (saving energy).
- Minimum space required for installation due to short face-to-face length and no external assembly components.
- No external shaft bushes due to the slanted seat design, no lever and weight required for assisted closing. Therefore no frictional sealing required and no hazardous external moving parts.
- Maintenance-free metallic sealing by way of a microfinished high-alloy weld overlay which ensures corrosion and wear resistant sealing faces.
- Additional internal damping units for the reduction of pressure surges – can also be retrofitted. Approximately 10-15 % before the final closed position, the damper takes effect and the disk moves slowly into the seat dampening the pressure surge and without slamming.

VAG TOP-STOP® Non-Return Valve



Technical details

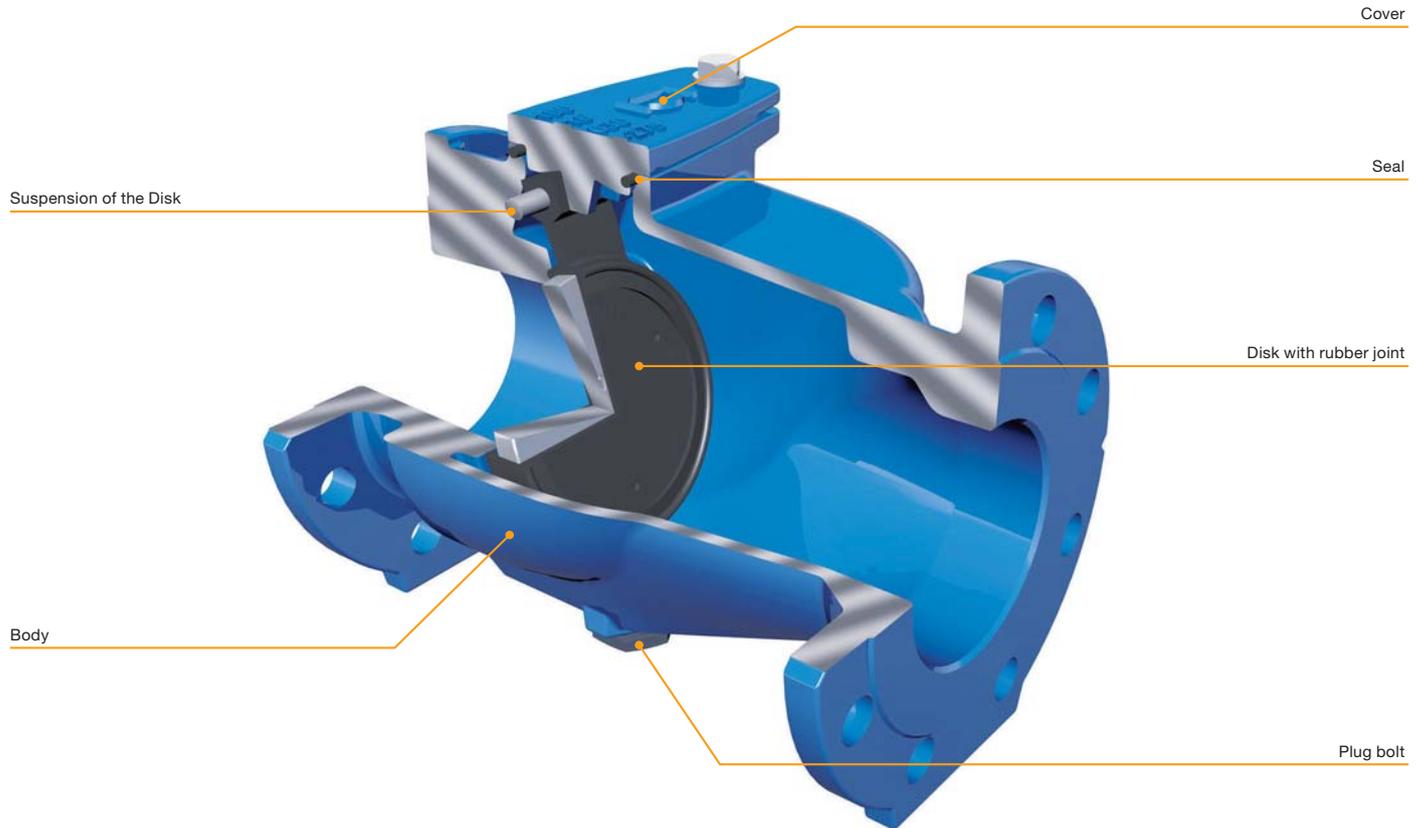
- Nominal pressures PN 10, 16
- Nominal diameters DN 40 ... 400
- Fields of application: drinking water, service water
- Face-to-face length to EN 558, basic series 48
- Recommended flow velocity: min. 1,5 m/s (horizontal installation) / min. 1,5 m/s (vertical installation)
- Standard model: body and flow guide made of ductile iron EN-GJS-400-15 (GGG-40) with epoxy coating, circular diaphragm made of EPDM
- Epoxy coating to GSK guidelines

Product features

- Optimum damping of pressure surges caused by quick flow reversal due to pre-tensioned elastic diaphragm.
- Low space requirement due to compact design.
- At flow reversal, the circular diaphragm closes quickly, emitting little noise. Therefore no metallic slamming while the valve is closing.
- Quick and safe response and extremely short closing times due to almost inertial less diaphragm.
- Pre-formed diaphragm ensures safe and reliable operation in any installation position.
- No mechanic moving parts internally or externally. This reduces maintenance and ensures optimum accident prevention in the operating area.
- Maintenance-friendly due to easy replacement of the diaphragm.
- Integrated plugs allow the simple assembly of a bypass on site.



VAG RETO-STOP Non-Return Valve



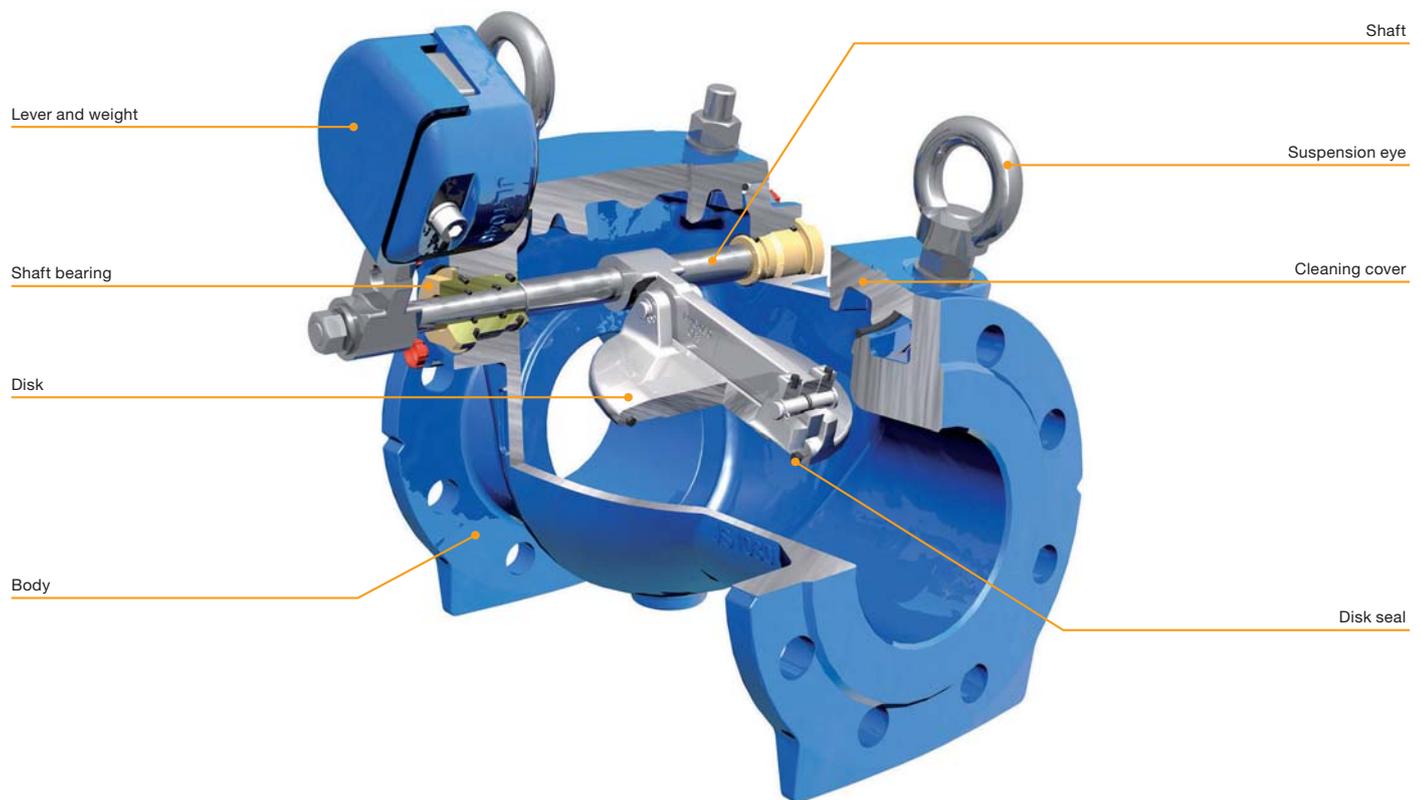
Technical details

- Nominal pressure: PN 10, 16
- Nominal diameter: DN 40 ... 300
- Fields of application: drinking water, service water, wastewater
- Face-to-face length to EN 558, basic series 48
- Recommended flow velocity: min. 1,5 m/s (horizontal installation) / min. 2,0 m/s (vertical installation)
- Standard model: body and cover made of ductile iron EN-GJS-400-15 (GGG-40), disk made of ductile iron EN-GJS-400-15 (GGG-40), EPDM vulcanised all over
- Epoxy coating to GSK guidelines
- Special versions:
 - With lifting device G 3/4"

Product features

- The low-resistance disk suspension ensures the opening of the valve even at low differential pressures.
- Low pressure loss due to the optimised shape of the body with a 90 % opening degree of the disk.
- The smooth disk with no sharp edges minimises the deposit of dirt particles and makes the valve also suitable for polluted media (wastewater).
- No friction of the bearings due to integrated suspension of the disk and therefore no wear.
- The suspension of the disk with pre-formed rubber joint accelerates and supports the closing movement of the disk to reduce pressure surges.
- The rubber joint prevents the jamming or clogging of the disk suspension even in polluted media.
- For maintenance purposes the disk can be reversed and used on both sides (integrated spare part), which doubles the life expectancy of the valve.
- Maintenance-friendly due to large cover for easy maintenance of the disk.
- An optional lifting device allows lifting of the disk allowing filling or purging of the pipeline.
- The optional bypass valve allows bypassing even at full operating pressure.

VAG LIMU-STOP® Non-Return Valve



Technical details

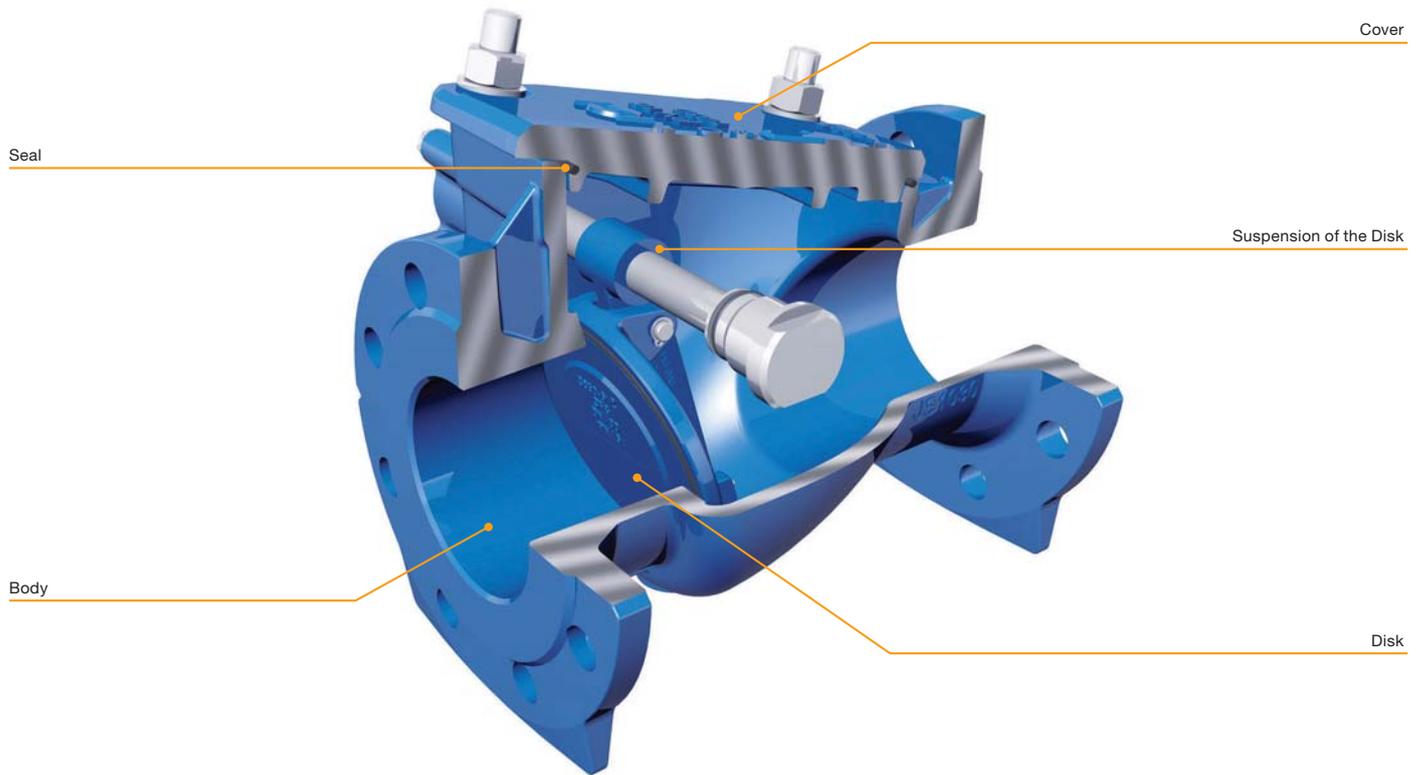
- Nominal pressure PN 10, 16
- Nominal diameter DN 50 ... 300
- Fields of application: service water, wastewater
- Face-to-face length to EN 558, basic series 48
- Recommended flow velocity: min. 1,5 m/s (horizontal installation) / min. 2,0 m/s (vertical installation)
- Standard version: with lever and weight body and cover made of ductile iron EN-GJS-400-15 (GGG-40), disk made of stainless steel grade 1.4308, disk seal made of NBR, shaft made of stainless steel grade 1.4057, shaft bearing made of zinc-free bronze
- Epoxy coating to GSK guidelines
- Special versions:
 - With lever and weight and wire guard
 - With internal shaft

Product features

- Little pressure loss due to optimised body design with a 90 % opening degree of the disk.
- Safe and reliable function due to flexible and dampened double bearing of the disk.
- Low-wear bearing of the shaft ensured by low-friction bronze bushes.
- Piggable in flow direction due to the large opening degree of the disk.
- Large cleaning cover and thus fast, easy and maintenance-friendly cleaning of the disk by turning it out and without the need of disassembly.
- Easy replacement of the disk ensured by O-ring inserted in the disk.
- Shortened stroke due to the slanted seat of the disk. This results in a reduced closing time, less backflow and less intensive impact of the disk.
- Very long service life due to dampened limit stop of the disk in the body.
- Easy assembly thanks to suspension eyes.



VAG RETA Check Valve



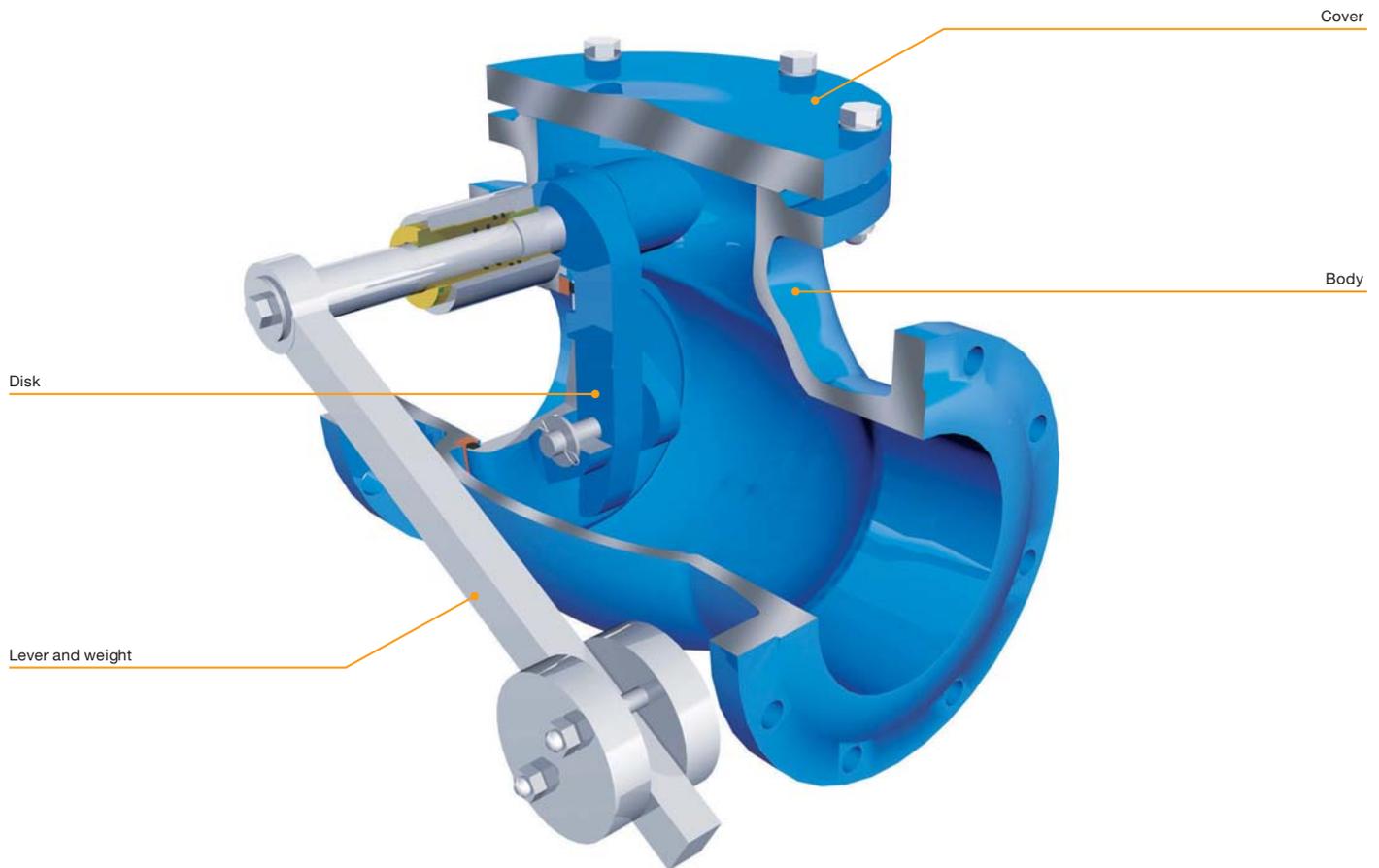
Technical details

- Nominal pressures PN 10, 16
- Nominal diameters DN 40 ... 250
- Fields of application: drinking water, service water
- Face-to-face length to EN 558, basic series 48
- Recommended flow velocity: min. 1,5 m/s (horizontal installation) / min. 2,0 m/s (vertical installation)
- Standard version: resilient-seated, body, cover and disk made of cast iron EN-GJL-250 (GG-25)
- Inside and outside epoxy coating
- Special versions:
 - With lever and weight
 - Metallic sealing with synthetic resin coating for higher temperatures

Product features

- Low pressure loss due to the optimised shape of the body with a 90° opening degree of the disk.
- Can be adapted to different plant conditions as it can be used in both horizontal and vertical (flow from bottom to top) pipelines.
- Maintenance-friendly due to cover for easy replacement of the disk.
- Available with or without lever and weight for optical position indication.
- The optional bypass valve allows operation even at full operating pressure.

VAG AW disk Check Valve

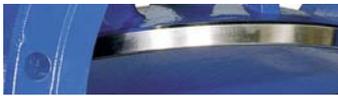


Technical details

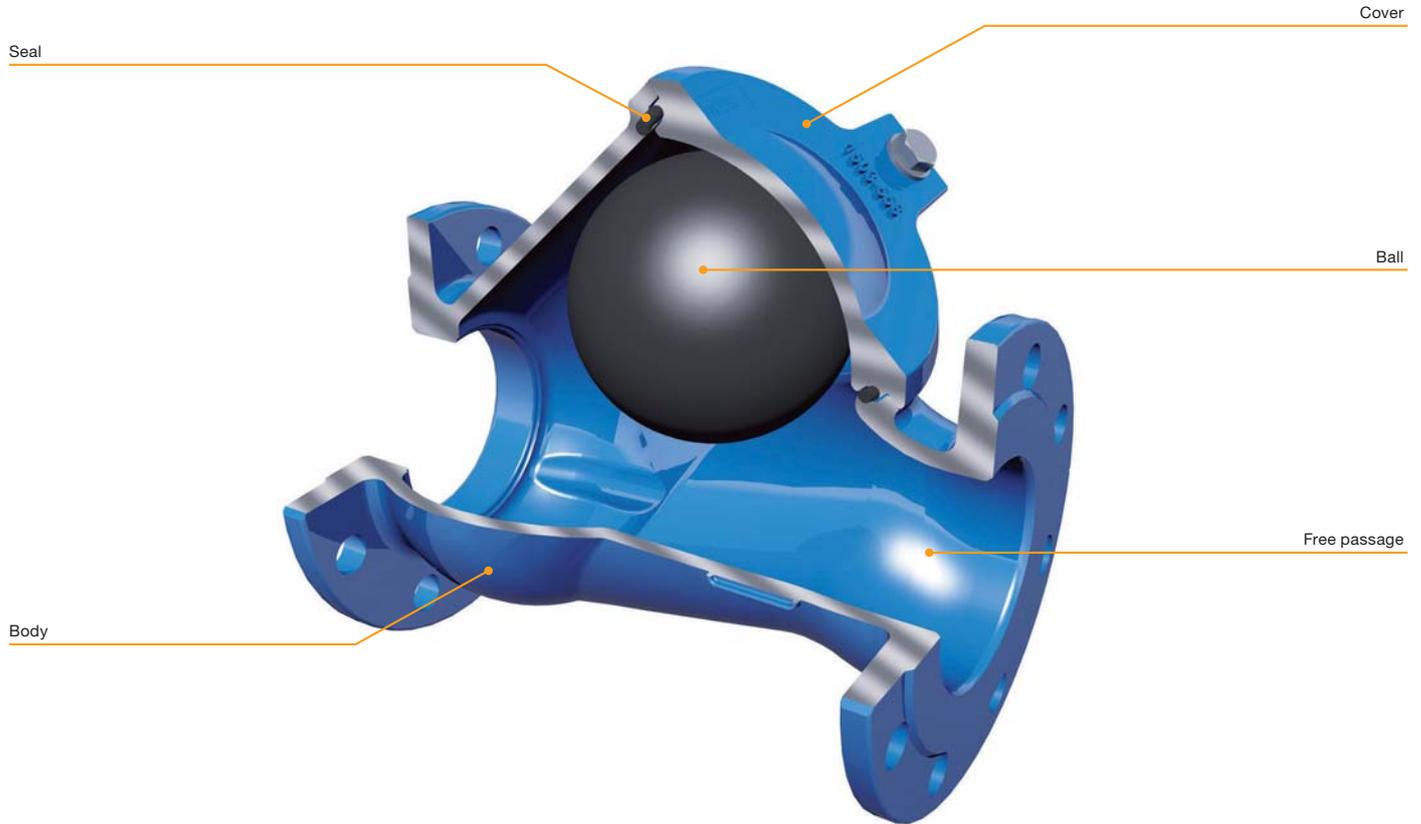
- Nominal pressure PN 10, 16
- Nominal diameter DN 50 ... 800
- Field of application: wastewater
- Face-to-face length to EN 558, basic series 48
- Recommended flow velocity: min. 1,5 m/s (horizontal installation) / min. 2,0 m/s (vertical installation)
- Standard version: resilient-seated, with lever and weight, body, cover and disk made of ductile iron EN-GJS-400-15 (GGG-40), shaft made of stainless steel 1.4057, shaft bushing: O-rings made of NBR
- Inside and outside epoxy coating
- Special versions:
 - Metallic sealing
 - With factory-mounted wire guard
 - Horizontal / vertical type

Product features

- Resistance to media due to the use of premium-quality materials.
- Depending on its type, the valve can be used for various plant conditions as well as in horizontal or vertical pipelines.
- Maintenance-friendly due to large inspection cover.



VAG KRV Ball Check Valve



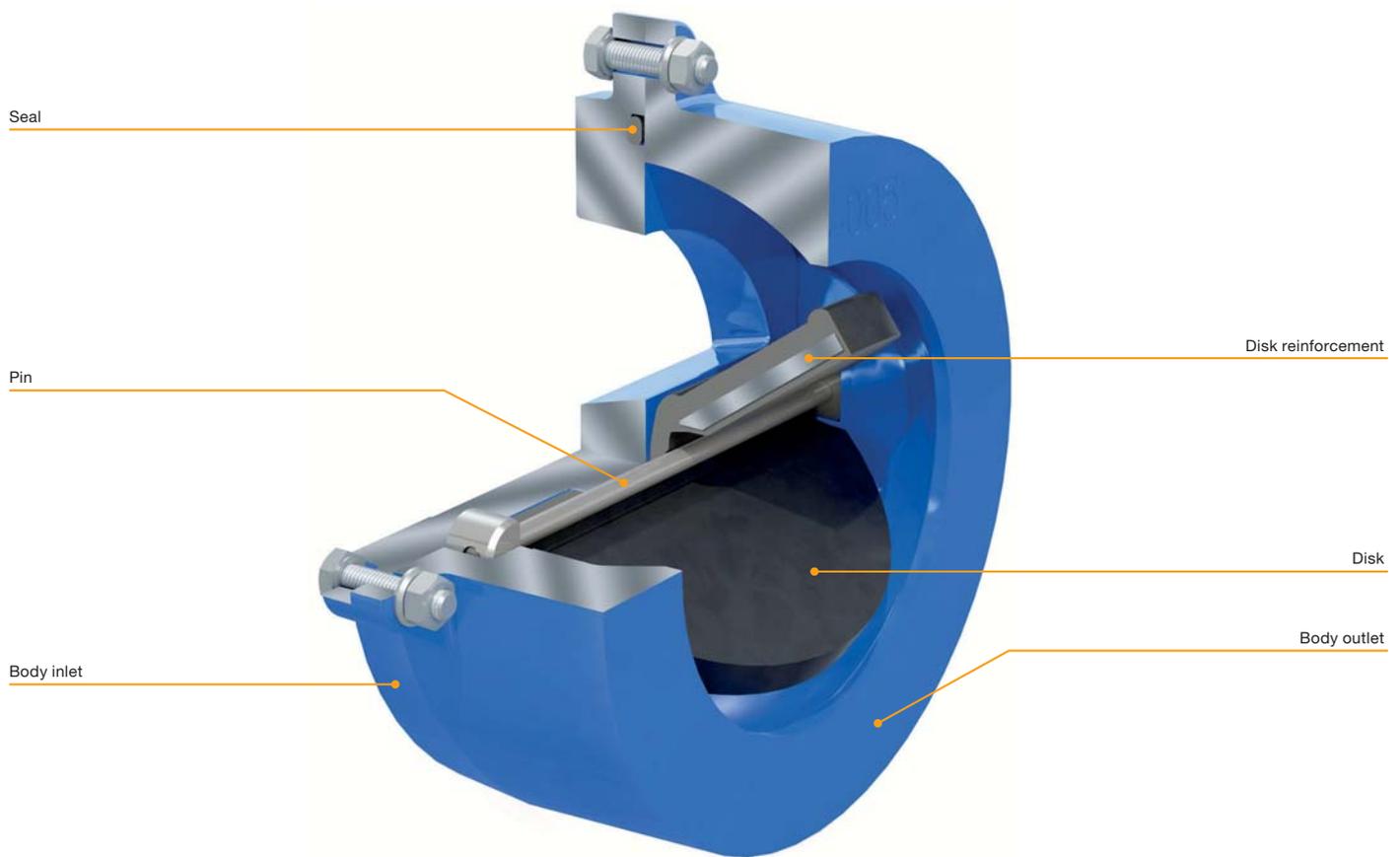
Technical details

- Nominal pressures PN 10, 16
- Nominal diameters DN 50 ... 200
- Fields of application: service water, wastewater
- Face-to-face length to EN 558, basic series 48
- Recommended flow velocity: min. 3,0 m/s
- Standard model: body and cover made of ductile iron EN-GJS-400-15 (GGG-40), ball core made of aluminium and NBR rubber coated all over
- Inside and outside epoxy coating to GSK guidelines

Product features

- The ball is lifted into the dome by the flow and releases the full passage.
- Free flow cross-section without any edges provides optimum suitability for use with polluted media (wastewater) and minimises the risk of clogging.
- Low pressure loss due to optimised body shape with free passage and thus low flow resistance.
- Prevents back flow even at low differential pressure by making use of the ball-check principle.
- The ball-check principle allows shut-off in all directions.
- Maintenance-friendly due to large opening for cleaning the dome.
- No mechanically moved parts on the inside and outside. This reduces wear and maintenance work and ensures optimum accident prevention in the operating area.

VAG ZETKA Non-Return Valve



Technical details

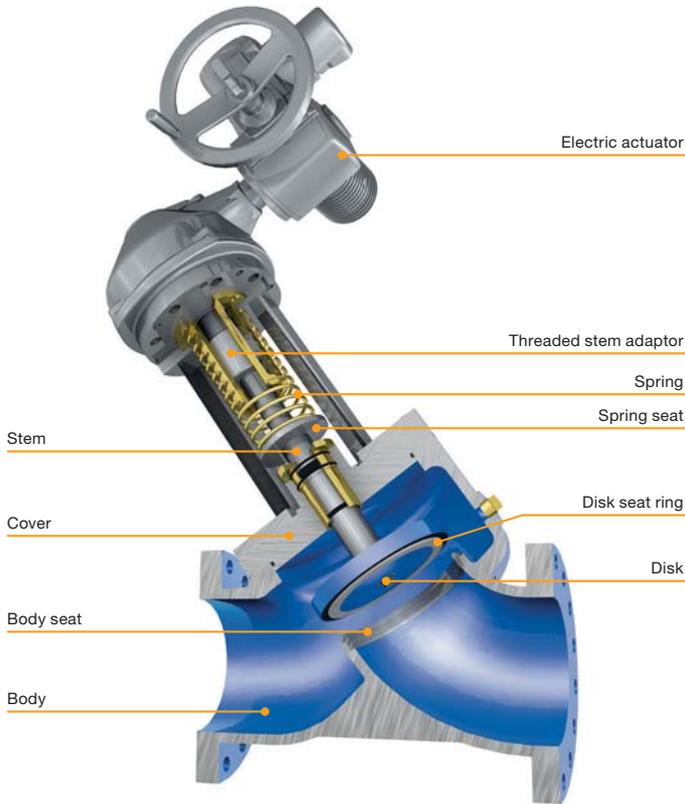
- Nominal pressures PN 10, 16
- Nominal diameters DN 40 ... 300
- Fields of application: drinking water, service water
- Face-to-face length to EN 558, basic series 16
- Recommended flow velocity: max. 3,5 m/s
- Standard model: body parts made of ductile iron EN-GJS-400-15 (GGG-40) and cast iron EN-GJL-250 (GG-25), check valve disk made of steel 1.0570 , EPDM vulcanised all over
- Inside and outside epoxy coating
- Special versions:
 - Disk NR vulcanised all over

Product features

- Short closing time due to design of the disk.
- Applicable for low pressure differences.
- Easy installation between pipeline flanges.



VAG CHECKtronic Pump Safety Valve

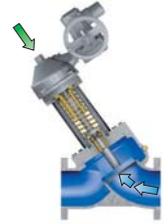


Technical details

- Nominal pressures PN 10, 16, 25
- Nominal diameters DN 80 ... 600
- Fields of application: Water, wastewater
- Standard version: Body, cover and disk made of ductile iron ASTM A536 grade 65-45-12 (EN-GJS-500-7), body seat made of stainless steel type 316 (1.4401), disk seat ring made of ultra-high molecular weight polyethylene (UHMWPE) ASTM D-4020
- With electric actuator
- Inside and outside epoxy coating
- Special versions:
 - Higher head on request
 - Other materials on request
 - Bigger sizes on request
 - Various flange systems available upon request
 - With hydraulic damping for controlled closing in the event of a power failure

Pump start-up

The electric actuator keeps the valve closed against the pump starting up. When the pump has reached its operating speed, the electric actuator slowly opens the valve and checks how fast the water column accelerates to flow velocity to minimise pressure surges at pump start-up.



Pump operation

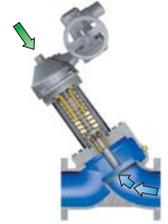
During normal pump operation, the valve is in fully open position.



Normal switch-off of the pump

While the pump is in operation, the electric actuator starts closing the valve slowly to check how fast the water column decelerates to minimise the separation of the column and pressure surges.

The pump motor switches off when the valve disk has completely moved into the seat and the medium has stopped flowing.



Pump or power failure

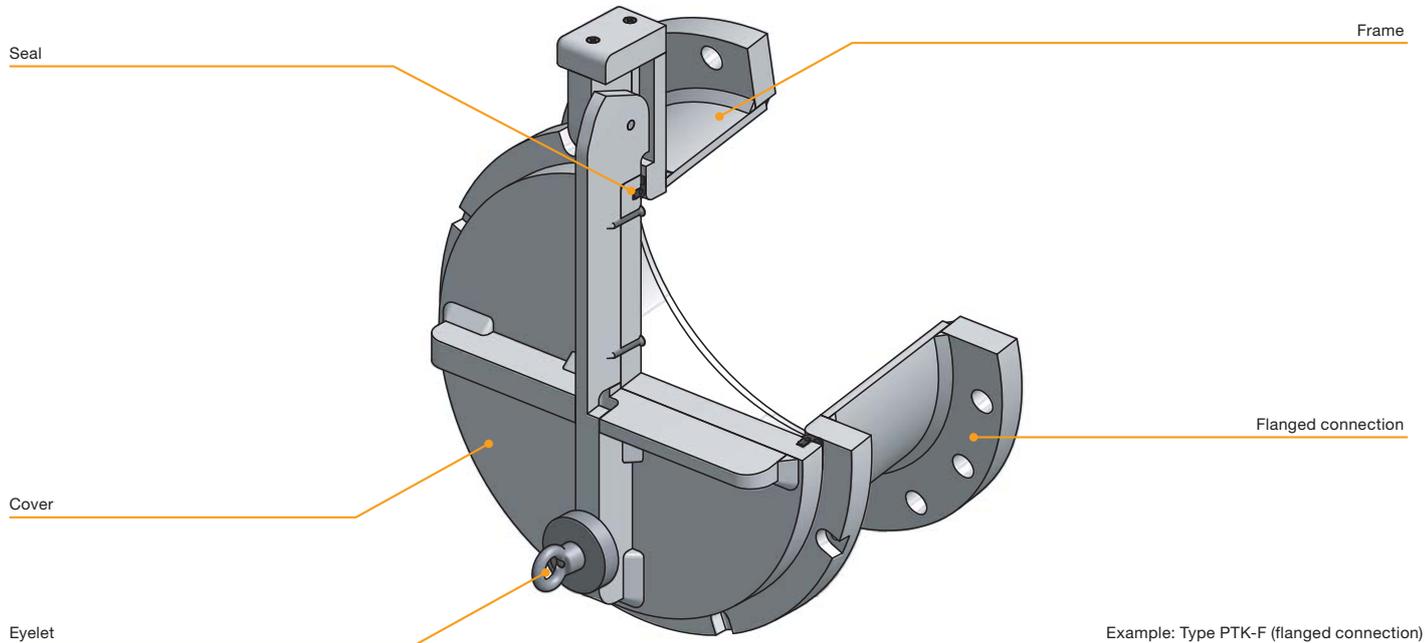
If the valve is in open position and if the power supply of the pump fails, the integrated spring-loaded shut-off control is disconnected automatically from the electric actuator and quickly closes the valve to prevent return flow through the pump.



Product features

- The electric actuator allows the start-up of the pump against the closed valve; slow opening and closing for normal pump operation.
- In the event of a failure of the pump, the motor or the power supply, closing of the spring-loaded disk is possible independent of the electric actuator.
- The opening and closing times of the electrically operated valve can be adjusted in dependence of the operating conditions, which allows the optimum control of pressure surges.
- Any kind of maintenance work can be performed from above through the body, eliminating the need to dismantle the valve from the pipeline.
- Seat, stem and internal fasteners made of corrosion-resistant stainless steel, which ensures a long service life.
- The replaceable, abrasion-resistant UHMWPE seat ensures permanent leak-tightness in the seat.

VAG HADE® Flap Valve



Example: Type PTK-F (flanged connection)

Technical details

- Nominal diameters DN 150 ... 1000
- Fields of application: gravity lines and pump lines, wastewater (storm water, mixed water)
- Vertical or slanted disk
- Standard version: body made of PE-HD, for clowelling to even concrete walls
- Installation on the wall or end of pipeline
- Special versions:
 - For larger nominal diameters, e.g. also rectangular cross-sections, available upon request
 - For PVC and PE pipes
 - For insertion into concrete pipes
 - With flange

Product features

- The low-resistance flap suspension ensures the opening of the valve even at low differential pressure.
- For discharge above and below the external water level.
- Corrosion-resistant due to the use of rust-proof materials.
- Equipped with an attachment possibility for manual opening of the flap valve.
- Damping of the flap via the circumferential seal.
- Maintenance-friendly due to few moved components.
- Low weight due to the PE-HD material used.
- Wide range of applications due to various attachment possibilities (fixing by dowels, insertion, flange mounting).



Reference projects

Wastewater pumping station
Birkenheide, Germany

VAG RETO-STOP Non-Return
Valves

VAG ZETA® Knife Gate Valves



Water treatment plant
Gredice, Croatia

VAG TOP-STOP® Diaphragm Non-
Return Valves

VAG EKO®plus Gate Valves

VAG EKN® Butterfly valves

VAG DUOJET® Automatic Air Valves



Flood protection
Prague, Czech Republic

VAG HADE® Flap Valves

VAG ZETA® Knife Gate Valves



Cooling-water circuit of refinery
Plock, Poland

VAG SKR Slanted Seat Tilting disk
Check Valves



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For detailed information about nominal diameters, nominal pressures and types the technical documentation KAT-A is authoritative • The pictures are non-binding