

Valves and accessories for sewage treatment



A complete package



AVK resilient seated gate valves meet world wide demands



AVK resilient seated gate valves are designed with a wedge fully vulcanised with rubber - internally and externally. With this design no unprotected iron parts are exposed to the medium and the excellent rubber vulcanisation prevents creeping corrosion underneath the rubber.

The rubber is vulcanised onto the wedge by AVK GUMMI A/S, one of Europe's leading manufacturers of high technology moulded rubber components.

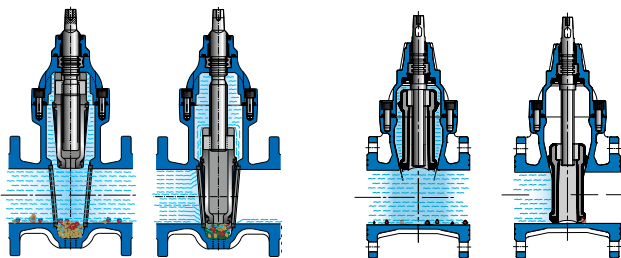


The high quality of AVK rubber is characterized by:

- high flexibility, no permanent deformation possible
- high durability, no wear of the rubber even after 10,000 operation cycles
- high impact resistance preventing damage to the rubber surface
- low friction ensuring low closing torques
- EPDM rubber resistant to acid remains, NBR rubber resistant to oil remains

Other design features

- full, straight bore ensures minimum pressure loss
- wedge guides ensure uniform closure
- fixed, integral wedge nut prevents malfunction
- 3 independent stem seals offer triple safety
- stainless steel stem with wedge stop and rolled threads ensures optimum operation
- bonnet gasket fixed in recess and countersunk bonnet bolts ensure tight valve assembly



Metal seated gate valves

Sand and other impurities will gather in the sump no matter how carefully the valve is installed.

Such impurities can become stuck during closing of a metal seated gate valve. The stem may be overloaded and the sealing rings permanently damaged.

Consequently the valve will be leaking.

Resilient seated gate valves

A published test from City of Roseville, US, has proved that impurities up to \varnothing 8.7 mm can be handled by a DN 150 mm AVK valve without any problems. The same test has also proved that the unique AVK rubber quality EDK 70 is the only rubber quality which instantly returns to the original shape when the valve is opened again.



Electrostatically applied epoxy coating ensures high corrosion resistance. Internal enamel available for extra protection.

A large diameter gate valve generation



The sizes DN 450, 500 and 600 continue the expansion of AVK's range of high quality gate valves.

The large dimensions are like other AVK gate valves resilient seated. The wedge is fully vulcanised with rubber - internally and externally.

The rubber on the wedge can absorb minor particles in the valve seat between wedge and body ensuring 100% tight closure. The wedge guides ensure uniform closure and prevent overload of the stem. Polyacetal shoes on the wedge guides give extra protection of the rubber and ensure minimum closing torques.

The valves are designed with a full and straight bore in contrast to other valve types, e.g. metal seated gate valves and butterfly valves. This feature prevents head loss in the pipe system, deposits in the valve bottom and facilitates pigging for cleaning of the piping system.

Further benefits are:

- The stem sealing exchangeable under pressure has three independent stem seals ensuring optimum operation
- ISO top flange for direct mounting of all standard types of electric actuators or gearboxes
- Lifting eyes in valve bonnet for easy handling
- All bolts of stainless steel
- Complete with By-Pass enabling slow filling/emptying of the mains

AVK PowerSaver™ gate valves

For above ground or chambered installation the new AVK PowerSaver™ gate valves feature a patented design which provides built-in torque reduction.

The construction ensures more than 60% reduction of the maximum closing torques compared to the standard for gate valves, but without increasing the number of turns from fully open to fully closed position significantly.

No gearing is needed and smaller electrical actuators than usual are sufficient for effective and cost saving valve operations.



Check valves solving common problems in sewage treatment installations



The complete range of ball check valves, DN 32-400, is designed with a bonnet ensuring easy access to service. The design of the valve body ensures minimum pressure drop across the valve, and consequently optimum use of pump capacity.

Further benefits are:

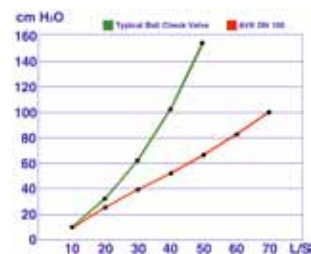
- Self cleaning function for minimum maintenance
- The ball does not appear in the flow path when the valve is in open position and consequently the flow path is not reduced
- No deposits in the valve due to the straight bore
- Fast closing to avoid water hammer and to ensure silence during operation possible by means of different ball weights
- Optimum sealing in both vertical and horizontal installation, even at very low working pressure. At horizontal installation the ball is placed in almost closed position, as the valve bottom supports the ball against the seat



The newly updated range of swing check valves in the sizes DN 50-300 offers various features in the field of back flow prevention.

The programme of swing check valves can be characterised as very user-friendly as to installation, service and maintenance, and offers several application possibilities.

The design reduces the pressure loss considerably



The new delivery concept for series 41 comprises valves with or without external closing device. Without external closing device the valves are available in two versions:

- standard version with vulcanized disc, hinge of ductile iron and with stainless steel shaft or
- low noise version of NBR rubber with disc and hinge in one piece.

Valves with external closing device will be delivered with bare shaft end prepared for either lever and weight or spring kit. Lever and weight and spring kit can be ordered separately. This will minimize the need for variants in stock and when needed give more flexibility in retrofitting of external closing.



High quality materials ensure long life:

- ductile iron body and cover
- bolts of stainless steel AISI 316
- chambered NBR bonnet gasket
- epoxy coating according to DIN 30677

Innovative air valve design for top performance



An innovative design with a large air gap between liquid and sealing system ensures top performance, even when used with an impure or particularly aggressive medium.

The valve combines large volume air discharge/intake whilst filling/draining a pipeline, with automatic discharge of air/gas liberated from the fluid.

Other design features and benefits:

- Funnel-shaped lower body prevents accumulation of deposits at the bottom of the valve
- Spring between stem and upper float compensates for slight pressure changes in the line, and maintains the air gap
- Large orifice in the automatic valve releases large volumes of air or gas when the line is under pressure
- Lightweight construction offers easy handling
- Drain in the valve's side gives possibility of drainage and flushing from external clean water source
- Stainless steel float system provides high corrosion resistance
- Threaded opening on top of air valve enables mounting of exhaust pipe



During the filling of the line, air is released at a high flow rate through the orifice of the kinetic valve until the line is full.

During normal operation the kinetic orifice remains closed, and the automatic orifice releases trapped air accumulated in the line.

The spring prevents unnecessary opening of the automatic valve, thus the water level will not rise up to the sealing system and discharge into the open.

During emptying of the line, the kinetic orifice admits air at a high flow rate to prevent vacuum damage to the system.

Knife gate valves and butterfly valves complete the valve package



AVK knife gate valves are characterized by a simple construction with few components:

- Full and plain passage, no pressure loss and no bottom sump where grid and stones can be trapped
- Gate, stem and secondary bolts, screws and nuts are of stainless steel AISI 316
- Installation without any restriction as to the direction of flow
- Body in cast iron, optionally in stainless steel
- Spindle engaged to comply with European standards when operated with actuator
- Easy mounting of position indicator
- ISO top flange for direct mounting of actuators
- Available complete with lever, handwheel, wormgear or actuator
- Available with rising or non-rising stem

The butterfly valves are of a concentric construction with internal rubber lining vulcanised to the body, offering an optimum combination of high quality and a simple and maintenance free installation.

AVK butterfly valves are vulcanised using the "transfer injection moulding method". The fixed liner design has many advantages compared to the loose liner design:

- No risk of corrosion between body and liner
- Less force (Nm) by open/close function
- No tolerance problems between body and liner
- Optimum fixation of liner to body
- No "balloon" effect in open position
- No deformation of liner
- Longer life than a valve with loose liner



Other design features and benefits

- Concentric design enables mounting without any restriction as to the direction of flow
- Low weight and compact design for easy handling
- Streamlined disc shape ensures minimum turbulence and head loss
- Low torques ease operation and allow smaller actuators



Universal couplings, flange adaptors, dismantling joints and collars



AVK's combi-flange system consists of a wide range of flanges, sealing types and support bushes.

The wide range having the flexibility of using the same flange for all the different pipe materials has resulted in world-wide acknowledgement and usage of the system within the water supply and sewage sectors.

- The flange adaptor is made of ductile iron GGG-50, and is available with PN 10 and PN 16 drillings.
- Standard non tensile resistant sealings are available for PVC, cast iron and steel pipes in DN 50-600
- Tensile resistant sealings are available for cast iron, PVC and PE pipes in DN 50-300
- Support bushes for PE-pipes are available for PE 80 and PE 100 pipes (SDR 11 and SDR 17)



AVK universal couplings and flange adaptors are highly suitable for mechanical assembly of different pipe materials with different outside pipe diameters, as the wide tolerances enable a quick connection by using one single coupling.

Tensile resistant Supa Plus™ couplings and adaptors for connecting PE/PVC-pipes are also part of the range.

AVK large diameter non-tensile couplings and adaptors (DN 350-1200) of fabricated steel are manufactured to order. They are suitable for cast iron, ductile iron, steel and PVC pipes.



AVK dismantling joints are developed to give optimum flexibility in the planning, installation and later removal, if necessary, of flanged equipment in larger sizes. The dismantling joint allows longitudinal adjustment by a telescopic action between the inner and outer flange body. Once the required length is achieved the joint can be locked with the threaded rods and nuts.



AVK universal supacollar repair system features a unique design with built-in advantages handling most leak repairs. The patented rubber seal with ductile iron inserts allows up to 30 mm tolerance on the diameter and a total angular deflection of $\pm 4^\circ$. The bolts and sealing mechanism automatically stay in position during tightening, as they are fitted with O-rings and lugs, ensuring ease of installation on site. The supacollars are suitable for all cast iron and asbestos cement pipes.

A wide range of high quality valves for sewage treatment installations



AVK's valve range for sewage treatment is characterized by a high design quality.

The built-in features are developed on the basis of our endusers' demands to ensure maximum durability, high performance and easy operation.



Gate Valves

Series 02
Long body DIN F5
DN 40-500, short body BS 5163
DN 50-400

Series 06
Short body DIN F4
DN 40-600, optionally with pin
indicator or prepared for actuator

Series 25
To AWWA, OS&Y, DN 65-300

Series 55
Available to BS, AWWA and DIN
Resilient seated - DN 450-600
Metal seated - DN 700-1200



Air Valves

Series 701/70
Combination air valve
Orifice 12/804 mm²
2" and DN 50-200

Series 701/75
Combination air valve
reinforced nylon
orifice 12/804 mm²
2-3" BSP/NPT threaded inlet and
DN 50-100 flanged inlet

Knife Valves

Series 702
DN 50-1000
With free stem, lever, handwheel
or actuator



Check Valves

Series 53
Ball check valves
With flanges - DN 50-400
With internal thread - DN 32-50

Series 41
Swing check valves
Resilient seated
With or without lever and weight
DN 50-300

Series 41
Swing check valves
Resilient seated
Free shaft prepared for lever and
weight kit or spring kit
DN 50-300



Butterfly Valves

Series 75/10
Wafer type, DN 40-1000

Series 75/20
Mono flanged type, DN 80-1000

Series 75/30
Semi lug type, DN 50-300

Series 75/40
Double flanged type, short
DN 40-1600

Series 75/42
Double flanged type, long
DN 50-1000



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