

WE DELIVER PURE QUALITY
JUST LIKE YOU









## **EXPECT LASTING INNOVATIONS**



### Inhouse R&D

In our Development Department in Denmark, ideas and suggestions for new products are gathered, and existing products are updated continuously.

We use FEA (Finite Element Analysis) to optimise the strength and geometry of our components and CFD (Computational Fluid Dynamics) analyses to validate different product designs prior to creating physical prototypes. This enables us to predict consequences in cases where it is impossible to create full scale tests on physical products.

We make our own test and production equipment, and in our flow lab, we conduct thorough prototype and life cycle tests prior to release for production. New product types are generally field tested in co-operation with end users before final launch.

### **Quality certifications**

AVK's quality management system is certified according to ISO 9001. Moreover, we are certified to the ISO 14001 standard for environmental management, the ISO 50001 standard for Energy Management, and the ISO 45001 standard for occupational health and safety.



## EXPECT US TO EXCEED MARKET STANDARDS

### Third party certification

Authorities such as DVGW (Germany), KIWA (Netherlands) and UL & FM (the US) offer certification of finished valves, and these are also recognised and accepted by other countries that do not have their own certification schemes.

By obtaining and maintaining the most widely accepted certification, we show our customers that AVK valves always meet the highest quality and safety standards.

### Expect... AVK

In our business there are five cornerstones that must be in place in order to meet customer expectations: Quality, reliability, innovation, sustainability and customer service.

But we need to go further than that. We go further to exceed our customers' needs and expectations.

"Expect... AVK" means that our customers should rightfully expect us to exceed market standards. "Expect... AVK" means that we relentlessly strive for increased customer benefits!

To ensure that we keep pushing the boundaries of what the market can expect, we have formulated promises that we will strive to deliver in all our markets:

**EXPECT** A LONG-TERM PARTNERSHIP

**EXPECT QUALITY IN EVERY STEP** 

**EXPECT LASTING INNOVATIONS** 

**EXPECT** TOTAL SAVINGS

**EXPECT** SOLUTIONS, NOT JUST PRODUCTS

**EXPECT** GLOBAL LEADERSHIP AND LOCAL

COMMITMENT

**EXPECT PROMPT RESPONSE** 

**EXPECT** IT TO BE EFFECTIVE AND EASY

See more on www.avkvalves.eu

























# AVK GATE VALVES RENOWNED FOR SUPERIOR QUALITY



The wedge is the heart of a gate valve and the quality of the wedge rubber is crucial for the valve function and durability. AVK wedges are fully vulcanised with AVK's rubber compound offering outstanding characteristics.

The double bonding vulcanisation process ensures maximum adhesion of the rubber and prevents creeping corrosion.

### Fixed wedge nut prevents corrosion

AVK's wedge nut design with a fixed, integral wedge nut outperforms the traditional loose wedge nut design as it prevents vibration and thus also corrosion and malfunction. It is made of dezincificaion resistant brass certified for use in contact with drinking water according to the stringent EU standards.

### Wedge shoes for smooth operation

The fixed wedge nut and the vulcanised wedge shoes secure a smooth operation of the valve and low operating torques. The wedge shoes protect the rubber against wear which otherwise would arise from friction during operation.

### State-of-the-art rubber technology

AVK GUMMI A/S develops and manufactures the rubber compound for wedges and gaskets using highly advanced technologies.

Data is collected throughout the entire manufacturing process which secures traceability of every single ingredient, compound and final component. AVK performs a number of tests to ensure that the compression set values, the adhesion and the tensile strength of the rubber meet the predefined requirements.





Safe operation

The large stem hole prevents stagnant water and accumulation of impurities. The large rubber volume in the sealing area combined with the excellent compression set provide optimum sealing.



### Efficient bonding is the key to durability

The wedge core is immersed in two different baths to provide ultimate bonding between core and rubber. Even if a sharp object penetrates the rubber during closing of the valve, the bonding is so strong that there is no risk of creeping corrosion. As a result, we offer the best possible corrosion protection of the wedge.

### No contamination of drinking water

The EPDM rubber recipes are composed with focus on minimising the formation of biofilm. The rubber will therefore not provide breeding ground for bacteria.

### **High resistance**

The drinking water approved EPDM compounds are resistant to ozone and water treatment chemicals, and are of course taste, smell and colour neutral.

### **Excellent ability to regain original shape**

AVK GUMMI A/S has a profound knowledge of a rubber's compression set, meaning its ability to regain original shape.

Even after many years of service where the wedge rubber has been compressed numerous times, the rubber will regain its original shape and ensure a tight sealing. Impurities will not affect the tightness of the valve, as the impurities will be absorbed in the rubber when the valve is in closed position and will be flushed away when the valve is reopened.



In closed position impurities are absorbed in the rubber



When reopened the rubber will regain its shape

### AVK GATE VALVES OFFER UNIQUE FEATURES





Gate valves DN450-600
In DN450-600 the valves are designed with two roller bearings and a thrust collar of stainless steel to ensure low operating torques.



Gate valves DN800-1200
Thrust washers and nylon bearings are used due to the higher axial forces.

### Wedge stop and rolled threads

The wedge stop provides a firm stop against the wedge nut when opening the valve. This prevents the wedge from compressing the stem seals and from damaging the coating inside the bonnet. Therefore, the wedge stop gives prolonged durability of the valve.

The stem threads are rolled in a cold pressing process which maintains the steel structure and therefore increases the strength of the stem. This method also ensures a smooth thread surface that gives low operating torques.

### Triple safety stem sealing

An NBR wiper ring protects against impurities from the outside. Tightness and low friction are provided by four NBR O-rings in a polyamide bearing, or optionally a replaceable brass stem nut, preventing galvanic corrosion. An EPDM manchette is the main seal to the flow.

The full circle thrust collar of high strength deszincification resistant brass provides fixation of the stem and low free running torques.

The stem is mounted from below, and the thrust collar expands inside the bonnet and fixes the stem, preventing it from being blown out

### Three strong coatings

The standard corrosion protection is an internal and external fusion bonded epoxy coating in compliance with DIN 3476 part 1 and EN 14901, GSK approved. We control each batch of epoxy coated components to ensure a layer thickness of minimum  $250\mu$ , a porefree surface, high impact resistance and adequate curing. In addition to our own tests, the independent GSK authorities control the adhesion and cathodic disbonding of the epoxy coating according to their guidelines.

Furthermore, we offer gate valves with a highly wear-resistant internal enamel lining offering excellent protection against creeping corrosion.

We also offer an external polyurethane (PUR) coating which gives outstanding protection of the valve against galvanic corrosion, shielding the valve completely from its surroundings. In addition, it eliminates any risk that electrical currents will penetrate the valve and gives additional protection when installed in aggressive soils. The polyurethane coating is quality tested according to EN10290 type 2, class B.



### Tight assembly of valve body and bonnet

An EPDM bonnet gasket is fixed in a recess in the bonnet to prevent blow-out. The stainless steel bonnet bolts are encircled by the bonnet gasket, embedded in the casting to ensure that no threads are exposed to the surroundings, and finally sealed with hot melt to prevent corrosion.

### Strong PE end connection

A fully welded PE pipe system offers a lot of benefits such as reduced risk of leakage, ease of installation and a high durability. With AVK's comprehensive range of gate valves with PE pipe ends you can design a fully welded PE pipe system up to 630 mm.

A piece of standard PE pipe is pressed directly onto the grooved valve end. The grooves combined with a sleeve around the valve/pipe connection ensure that the PE pipe material is firmly secured and that the connection remains tight and tensile during the entire service life of the pipeline. The connection is sealed with a shrink hose to provide corrosion protection.

### Pressure test

Every single valve is pressure tested according to EN 1074-1 and 2 / EN 12266 before leaving the factory.





### **Feature summary**

- Fixed, integral wedge nut prevents corrosion caused by vibration
- Wedge and body guide rails ensure stable operation
- AVK's wedge rubber has an excellent ability to regain its shape
- AVK's wedge rubber features an excellent bonding, minimum formation of biofilm and a high resistance to water treatment chemicals
- Wedge shoes protect the rubber against
   wear
- Large stem hole in the wedge prevents stagnant water
- · Rolled threads increase the stem's strength
- Anti-blowout stem design
- · Wedge stop protects seals and coating
- Triple safety stem sealing
- Thrust collar provides fixation of the stem and low free running torques
- Bonnet gasket is fixed in recess and encircles bonnet bolts to prevent blow-out
- Countersunk bonnet bolts sealed with hot melt to protect against corrosion
- Full bore ensures low head loss and enables use of pipe cleaning devices
- Low operating torques ensure easy operation
- Fusion bonded epoxy coating in compliance with DIN 3476 part 1 and EN 14901, GSK approved, optionally internal enamel and external PUR coating

# AVK DOUBLE ECCENTRIC BUTTERFLY VALVES THE SAFE CHOICE



AVK offers double eccentric butterfly valves in DN150-2800 designed with durability in focus. The tilted and firmly secured disc, the optimised seal design and the corrosion protected shaft end zones are features that exceed the market standards.

### Longer service life due to tilted disc

The tension on the disc is released after a few degrees of opening which minimises wear of the disc seal. Furthermore, the design minimises the compression of the sealing which ensures low operating torques.

### Safe disc and shaft connection

The disc and shaft are connected by means of a key and a keyway. The key is secured with two set screws to prevent fluttering caused by flow velocity and necessary play in the key and keyway connection. In the large dimensions the disc is secured with two stainless steel drive dowels, with key and keyway as back-up.

### Three seat designs

The integral seat design has a machined and epoxy coated ductile iron seat integrated in the body. The stainless steel seat design comes in two variants. One with a replaceable seat ring of stainless steel sealed with an 0-ring to avoid leakages under the seat ring and one with a welded stainless seat machined and polished to give a smooth surface.

### Disc seal optimised for high performance

The disc seal is shaped to secure fixation in correct position providing a very reliable function. The excellent rubber quality makes it possible to reduce the amount of rubber which ensures low closing torques. The EPDM sealing is approved by DVGW, KIWA and WRAS.



The stainless steel retainer ring keeps the disc seal in place. It is fixed with stainless steel bolts coated with precoat 80 to prevent loosening. The threaded bolt holes in the disc are corrosion protected with 0-rings around the bolt heads.





### Shaft design features

The shaft sealing is replaceable under pressure to enable easy maintenance. Sealings of EPDM secure tightness from inside and out, and NBR sealings protect against impurities and fluids from outside.

The low friction PTFE bearings ensure low operating torques and the protected shaft ends secure durability since there are no uncoated ductile iron surfaces exposed to the media.

### **Bi-directional and slim**

The valves are bi-directional even though valves from DN700 and up are marked with an arrow

indicating the preferred flow direction. The weight is minimised to make handling easier, and to put less strain on the environment.

### **Product approvals**

The butterfly valves are approved by:

- DVGW in DN150 1200
- KIWA in DN200 800
- WRAS in DN900 1200

### **Actuation of your choice**

AVK can offer any type of actuation. Our standard options are IP67 gearboxes with handwheel for above ground installation, IP68 gearboxes for buried service, and ISO-input

gearboxes for mounting of electrical actuators. Furthermore, we offer extension stems, adaptors and handwheels.





Up to DN600 the shaft ends are protected with stainless steel plates with gaskets.

After mounting and successful pressure test, an extra layer of epoxy coating seals the steel plates. In larger dimensions the shaft ends are fully encapsulated in the disc and fixed to the disc with dowels.

### AVK CENTRIC BUTTERFLY VALVES FIXED OR LOOSE LINER



AVK offers the widest range of butterfly valves at the market. The fixed liner butterfly valves from AVK are among the very few of its kind and offer outstanding advantages. Furthermore, we offer a wide range of loose liner butterfly valves.

### Unique fixed liner design

An outstanding seating concept is the heart of the valve. The rubber is injection moulded directly on the valve body forming a permanent bond with an optimal rubber shore hardness. Consequently, there is no risk of deformation or dislocation of the liner and the valves are therefore suitable even under vacuum conditions.

The disc has a profiled sealing edge which requires minimal deformation of the liner to achieve a tight sealing. This gives less wear of the liner and low operating torques.

### **Feature summary**

- Fixed liner with no risk of deformation or dislocation, thus suitable under vacuum conditions
- AVK rubber liner with excellent ability to regain shape after compression
- Disc with profiled sealing edge gives less wear of liner
- Low operating torques due to fixed liner, profiled disc and shaft bearings
- Streamlined disc prevents turbulence, pressure drops and valve vibration
- Available as wafer, semilug, full lug, double flanged short and double flanged long in DN40-2000 with any type of actuation

### No turbulence or pressure drops

The streamlined disc gives low flow resistance when the valve is open. Therefore, the valves will not cause any turbulence, pressure drops or valve vibration, and will reduce energy costs for the user.



Profiled disc and unique AVK rubber ensure exceptional durability
The unique AVK rubber compound has an excellent ability to regain shape after compression, and this ability combined with the profiled disc secure tightness even after

thousands of operation cycles.





### Wide range with loose liner

AVK's range of loose liner butterfly valves comprises wafer, lug and U-section butterfly valves in DN25-1600 with any type of actuation and with a wide selection of disc and liner materials.

The replaceable liner of drinking water approved EPDM has a very robust construction. Its convex form and integrated lip sealings in the shaft passage ensure a tight connection with the shaft. Moreover, the special shape ensures a unique grip to the body, preventing any relative liner displacement during operation. The integrated gasket faces enable easy installation between flanges.



### **Feature summary**

- Stainless steel shaft with anti-blowout design and position indication
- Square driven disc mechanism with effective power transmission
- Disc of acid-resistant stainless steel with streamlined shape for optimum flow characteristics and polished edges for minimum wear of the liner
- Replaceable EPDM liner with a unique design
- Ductile iron body with extended neck for insulation and 200my fusion bonded epoxy coating

# AVK SWING CHECK VALVES ENSURE OPTIMUM PUMP PERFORMANCE



### Unique design

By unscrewing a few bolts the bonnet assembly including hinge and disc can be removed from the body. The hinge is tightened around the shaft with bolts to eliminate play and thus ensure durability.



AVK offers a wide range of swing check valves featuring full bore and low head loss resulting in maximum utilisation of the pump capacity. The swing check valves can be installed in both horizontal and vertical positions and are easy to maintain.

AVK swing check valves are available in DN50-600 and feature full bore and low head loss as well as easy access to maintenance and great durability.

### Lever and weight

Swing check valves with lever and weight are appropriate for installations with an increased risk of water hammer at standard velocities.

The solution enables visual check and valves in small dimensions offer the possibility of priming by moving the lever manually. The weight is adjustable on the lever to achieve a soft closing against the seat as well as an optimum closing speed to prevent water hammer.

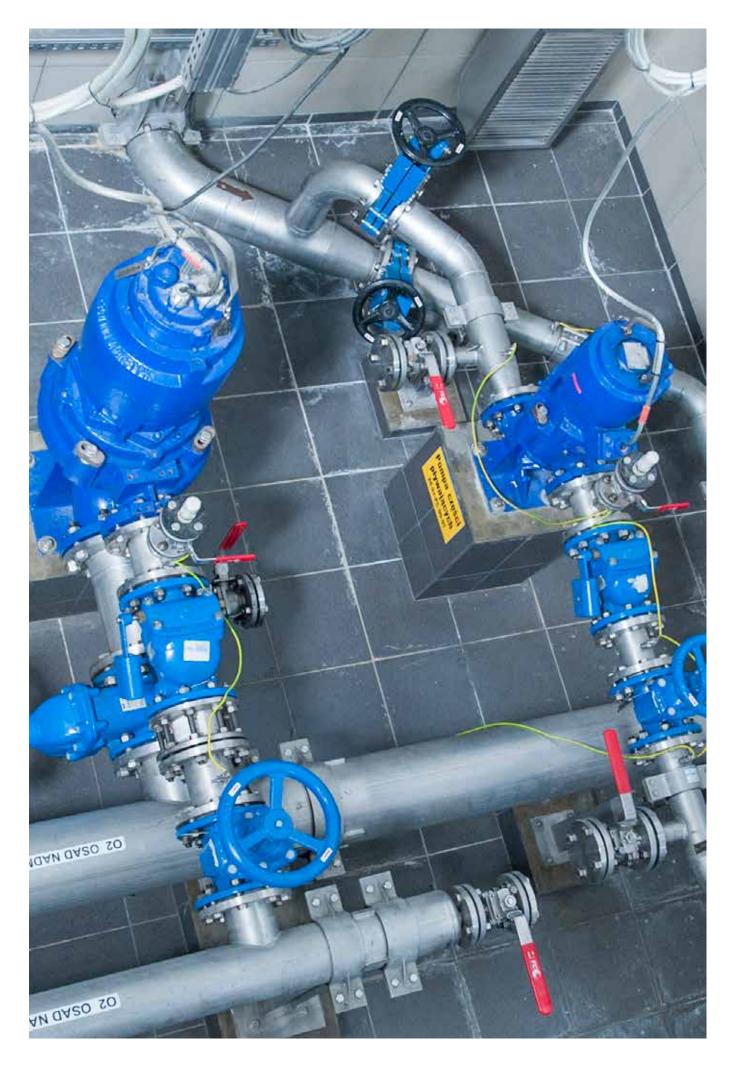
### **Feature summary**

- Bonnet/disc design gives easy access to maintenance
- Disc with steel insert is fully vulcanized with EPDM rubber (up to DN300) ensuring optimum sealing ability
- Lip sealing on the disc ensures tightness
- Light-weight disc requires a minimum of force to open and close the valve
- The disc is mounted in a nylon bushing, which allows it to move slightly both horizontally and vertically to close completely tight also in case of minor impurities in the seat
- Hinge tightened around the shaft with bolts to eliminate play and thus ensure durability
- Full bore ensures low head loss
- Ductile iron fusion bonded epoxy coating in compliance with DIN 3476 part 1 and EN 14901
- Available prepared for limit switch

A guard covering the lever and weight eliminates the risk of injuries. Optionally with limit switches for remote monitoring.

Swing check valves with lever and external spring are suitable for high pressure, insufficient back pressure and high flow velocities.





### AVK AIR VALVES FOR EFFECTIVE PIPELINE OPERATION



Top performance, minimum maintenance and high durability are the characteristics of AVK's wide range of automatic air valves, air and vacuum valves and combination air valves. The air valves are available in composite materials, which combine strength with extremely light weight and increased venting efficiency.

### Why use air valves?

Trapped air pockets in the piping system cause many problems:

- Increased corrosion
- Increased energy consumption and operation costs
- · Failure or inaccuracies in flow metering
- Pressure loss or even complete flow stop delays in the filling of mains
- · Increased risk of water hammer

Sudden movements of air pockets may result in a rapid change in flow velocity, leading to high pressure surges of a destructive nature.



### **Automatic air valves**

AVK automatic air valves series 701 are designed with a very soft and sensitive seal. It enables effective discharge of accumulated air from the system while under pressure. The automatic air release valve are lightweight and compact with a 12 mm² orifice enabling release of air at high flow rates not being exposed to obstruction by debris. All operating parts are made of specially selected corrosion-resistant materials.

### Air and vacuum valves

AVK air and vacuum valves are designed to discharge air during the filling of the system, and to admit air into the system during system drainage. The dynamic design allows for high velocity air discharge while preventing early closure. The special orifice seat design with a combination of bronze and EPDM rubber ensures long-term maintenance-free operation.





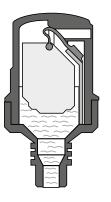
### **Combination air valves**

AVK combination air valves combine the function of automatic air release valves and air and vacuum valves. The automatic air release function releases accumulated air from the system while it is under pressure. The air and vacuum function discharges and admits large volumes of air during the filling or draining of pipelines.

The combination air valves are available in four main types:

- Compact design with rolling seat mechanism (series 701/4X)
- A design combining an automatic air valve with the air and vacuum valve (series 701/50 and series 701/60)
- Underground air valve unit (series 701/84)
- Double-float design (series 851)

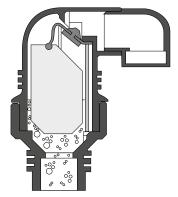
The underground air valve unit is designed to save manhole costs. It is suitable for frost protection and for installation under important crossings like roads and buildings where manholes would cause dangerous undermining of the ground.



### **Automatic air valve**

For discharge of air liberated from fluid in water mains under pressure

- When air bubbles appear in the valve, the float will drop, allowing air to be released
- When the water rises again, the float will be lifted, and the valve will close



### **Combination air valve**

It combines the function of an automatic air valve with the following:

- When emptying the pipeline, the float will drop completely, allowing large volume air intake through the large orifice
- When refilling the pipeline the water flow will force the air out through the large orifice

### AVK CONTROL VALVES DIAPHRAGM OPERATED



The safe choice with 10-year warranty

AVK diaphragm operated control valves are designed according to EN 1074-5 and to provide network stability, accurate regulation, easy maintenance and long durability.

AVK control valves are available in DN50-600, with reduced and with full bore. Control valves with reduced bore are appropriate for most applications, as the smaller bore often offers more accurate regulation. Control valves with full bore are recommended, if high Kv values are needed, e.g. in front of hydrants.

Water is a scarce resource that we need to protect. We need to secure water for the next generations and a growing population. Control valves can help reduce water losses and contribute to efficient water supply management by maintaining a certain pressure, flow or level, regardless of changes in the supply network.

### High quality WRAS approved materials

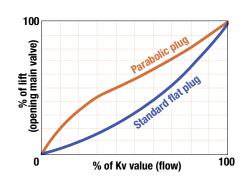
The body and bonnet are made of ductile iron with fusion bonded GSK approved epoxy coating.

The diaphragm is manufactured by AVK GUMMI and made of drinking water approved EPDM rubber with polyamide reinforcement.

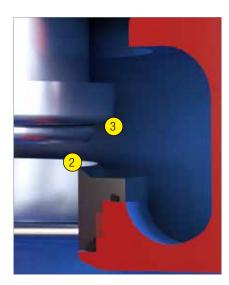
All non-coated internals are of stainless steel AISI 316 as standard and all materials are WRAS approved.

### Design features of the valve

- Large diaphragm design (1) secures fast reaction to changes in pressure. Its asymmetric axial position gives less stress near closed position.
- Lifted seat design (2) prevents damage inside the valve body caused by cavitation.
- Parabolic plug design (3) provides precise regulation and stability at low flow.
   Furthermore, it reduces noise and vibration.
   See below characteristics, illustrating the performance compared to a standard flat plug design.







## PATENTED PILOT SYSTEM WITH UNIQUE FEATURES





Pressure sustaining/relief valve

### Modular pilot system

The modular design with interchangeable parts offers great flexibility as the pilot system is easily altered to fit other or multiple applications without replacing the valve. The pilot system consists of three main components:

- The distribution block (1) connects the pilot system to the main valve. As a unique feature, it offers adjustment of regulation speed for full control, easily adjusted using standard tooling, and giving full control e.g. in situations, where water hammer may occur.
- The filter (2) features high capacity and easy maintenance. When using the optional flush valve it also offers easy access to cleaning, while the valve is in operation.
- . The hydraulic control block (3) can be set up for different applications. It features easy hand adjustment of the balanced pilot valve which is capable of very precise settings.

### Compact design

The external pipework takes up less space and is less vulnerable to damage during installation compared to many other control valves.

It is designed using components with standard threads offering easy sourcing of replacements as well as easy fitting using standard tools. All metal parts are of stainless steel AISI 316 as standard.





# AVK SERVICE CONNECTION VALVES OF DUCTILE IRON, BRASS AND POM



AVK service connection valves are long lasting and maintenance-free. The wedges are made of brass vulcanised with drinking water approved EPDM rubber according to the stringent EU regulations.

### Special wedge design

The wedge core is made of dezincification-resistant brass certified for use in contact with drinking water and vulcanised with drinking water approved EPDM rubber externally. The wedge is shaped with wedge guides, and a patented rubber profile ensures low closing torques.

The wedge rubber and vulcanisation is made at AVK GUMMI A/S with the same features and benefits as for mainline gate valves.

### POM valves

The bonnet, body and joints of POM (polyoxymethylene) are friction welded ensuring optimum strength. A built-in friction collar prevents overtorque of the valve.

### **Brass valves**

Our brass valves are made of hot forged dezincification-resistant brass certified for use in contact with drinking water and are designed with boltless connection between the body and bonnet. An NBR O-ring is countersunk and compressed when the valve bonnet is screwed onto the body thus ensuring a tight valve.

### **Ductile iron valves**

The design of our ductile iron service connection valves is the same as for the main-line gate valves except for the wedge design. The valves are as standard with internal and external fusion bonded epoxy coating in compliance with DIN 3476 part 1 and EN 14901, GSK approved.

### **Summary of common features**

- Wedge shaped with wedge guides ensures smooth operation
- AVK's wedge rubber has an excellent ability to regain its shape
- AVK's wedge rubber features an excellent bonding, minimum formation of biofilm and a high resistance to water treatment chemicals
- Rolled threads increase the stem's strength
- Thrust collar provides fixation of the stem and low free running torques
- Full bore ensures low head loss
- Low operating torques ensure easy operation

See separate brochure "AVK service connection system" for further details.







### **Ductile valves**

AVK offers a comprehensive range of service connection valves of ductile iron with internal threads, tensile socket ends, PE ends, screw couplings and PRK couplings as well as combinations with external thread.

### **Brass valves**

Our service connection valves of hot forged dezincification resistant brass are available with tensile brass screw couplings or PRK couplings and with AVK or T-type bonnet — all in DN25-50 for 32-63 mm PE pipes.

### POM valves

Our service connection valves of POM are available with PRK couplings, tensile socket ends, PE ends, and Pentomech™ couplings, as well as combinations with external thread. In addition, there are options with T-type bonnet.

### Wide range of tapping saddles

AVK offers a wide range of tapping saddles. A range that comprises tapping saddles for PE, PVC, ductile iron, cast iron, asbestos cement and steel pipes.

AVK tapping saddles offer easy and fast installation and reliable function and they are maintenance-free and designed to last.

See separate brochure "AVK service connection system" for further details.

# AVK SUPA LOCK<sup>TM</sup> THREADLESS CONNECTION SYSTEM



Connecting valves and fittings with a threaded connection can be time-consuming and often, it leaves part of the thread exposed to the medium and the external environment. Over time this will cause corrosion of the uncoated thread and may even result in a leakage. Supa  $\mathsf{Lock}^{\scriptscriptstyle\mathsf{TM}}$  solves this problem.

### **Full corrosion protection**

The patented Supa Lock™ system, provides a 100% corrosion free joint combined with fast and easy assembly with maximum flexibility. Thanks to its simple and ingenious design, Supa Lock™ offers long-term safety with optimum protection against corrosion and leaks and also protection against accidental disassembly of the joint when the pipeline is pressurised.

### Valves, tapping saddles and fittings

The wide Supa Lock™ range consists of valves, tapping saddles and fittings in ductile iron with a heavy duty epoxy coating complying with the strict GSK requirements. Furthermore, ball valves and fittings in dezincification resistant brass complying with the EU directive for material used in drinking water installations are part of the range.



Easy two-step assembly
After having lubricated the O-rings,
the Supa Lock™ spigot end is pushed
into the Supa Lock™ socket end,
and the safety retainer is clicked on
— and the assembly is done!





### Self-locking safety retainer

Supa Lock™ is designed as a tensile joint and withstands pressures up to PN16 x 1.5. The safety retainer is designed with an edge (1), which makes it self-locking whenever there is pressure in the pipeline. Therefore, no accidental disassembly can take place. The safety retainer has two finger knobs (2) for easy assembly and disassembly.







### No rotation of valves and connectors

Free rotation is restricted for the valves and the threaded connectors used for drilling machines to enable effective drilling. Small cast notches placed on the outer rim of the socket end and on the inner rim of the spigot end interlock and prevent rotation.

### Heavy duty O-rings provide extra safety

All Supa Lock™ joints are fitted with heavy duty Ø7 mm O-rings. They provide extra safety when taking into account that a minor permanent deformation of the O-rings is to be expected over the lifetime of the product. Also, when the joint is exposed to bending as a result of ground movements, the large O-rings provide maximum safety.

### 360° rotation of fittings

The design allows for a 360° rotation of the fittings, which is a unique feature only offered by the Supa Lock™ system. The free rotation of the joint allows the installer to direct the service pipe outlet in any direction from the main pipe, thus avoiding collision with other pipes or obstacles in the trench.

### **Corrosion-free access points**

For flanged connections in DN80-400, the wafer type spacer with Supa Lock™ socket connections offers a corrosion protected access point to the pipe. It can replace a tapping and in that way avoid weakening of the pipe.

Our range of socket and spigot fittings also serve as access points with no need for tapping the pipe.







# AVK SMART WATER SOLUTIONS FOR WIRELESS DIGITAL MONITORING



The AVK Smart Water concept consists of batteryoperated wireless IoT sensors for data collection directly from the network. The complex data is turned into valuable insights when integrated into either the existing IT system or into AVK Smart Water's dedicated software platform VIDI Cloud.

### Monitoring with state-of-the-art technology

By installing AVK Smart Water sensors in the distribution network, utilities can achieve a transparent network that makes it possible to remotely monitor and diagnose problems, prioritise and manage maintenance issues, and optimise efficiency of the entire network.

Through digital monitoring, AVK Smart Water paves the way for reduced water loss from leaks, increased workflow efficiency and a clearer overview of network conditions.

AVK Smart Water sensors include:

- VIDI Positioner indicating valve position
- VIDI Cap sensor for fire hydrants
- · VIDI Open/Close sensor
- VIDI Flow
- VIDI Pressure
- VIDI Temperature sensors
- VIDI Level sensor

We provide data in an easy and accessible way through an API that makes it easy to integrate and combine data for creating a complete overview of the distribution network. We also offer a range of software solutions for visualisation and analysis.

### **Effectively lower water loss**

One of the most efficient methods to reduce leakage and bursts is pressure management. VIDI Pressure sensors provide the data needed to efficiently manage pressure, which will help utilities minimise leaks throughout the distribution network.

In addition, with the leak detection feature in VIDI Cloud, advanced algorithms use data from VIDI Flow sensors to monitor leakage levels. This will enable utilities to prioritise resources and reduce leak run-time.



Due to the wireless nature of IoT, the pressure sensors can be installed at any critical point in the distribution network.

Gate valve installed underground with VIDI Positioner mounted on the extension spindel, detecting when the valve is operated.





Hydrant with VIDI Caps installed. The use of a hydrant affects the pressure in an area. Therefore, it is important for the utility to know when the hydrant is being used in order to distinguish between a pressure drop coming from regular use or from a pipe burst.

With VIDI Caps on hydrants and VIDI Positioners on valves, utilities will receive an alarm when assets are operated. That way, utilities can limit the water loss due to tampering and theft from hydrants and publicly accessible gate valves.

### Increase workflow efficiency

Intelligent pressure sensors from AVK Smart Water will provide utilities with the data needed to manage pressure throughout the distribution network. This will result in less truck rolls as there will be fewer bursts to repair and lower energy consumption for pumps as the set point can be reduced, and generally it will extend the lifetime of your assets.

VIDI Pressure and VIDI Temperature provide the transparency needed to efficiently support customers' calls as all relevant network information is ready at hand. Utilities will thus be able to improve customer service while spending less time on support.

VIDI Positioners and VIDI Caps eliminate time wasted on investigating status of valves and hydrants while streamlining maintenance work. The solutions automatically keep track of the latest use and increase efficiency throughout the distribution management.

### Better overview of network conditions

There are many risks related to water distribution. Low pressure entails a risk of intrusion of polluted water and poses a serious health risk for consumers. With VIDI Pressure sensors, utilities will be warned if pressure falls below a certain set point.

Hydrants and publicly accessible gate valves are potential entrances for pollutants either by mistake or intentionally. VIDI Caps for hydrants and VIDI Positioners for gate valves help manage this risk by alerting utilities if hydrants or valves are opened.

The overall solution from AVK Smart Water keeps track of the current state of the water network. VIDI sensors register changes in the hydraulic setup, e.g. when a valve is opened or closed or when pressure, temperature or flow is abnormal in the network. With such misconfigurations, there is a risk of loss in hydraulic performance and pressure, which can result in increased energy costs for the utilities.



## AVK EXTENSION SPINDLES IN A USER FRIENDLY DESIGN



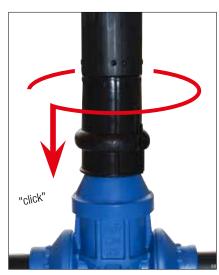
Extension spindles are used for easy access to operation of valves installed below ground. AVK extension spindles are produced on fully automated state-of-the-art production equipment to ensure a uniform quality.

Our extension spindles are made of corrosion resistant materials and random samples are torque tested with up to 675 Nm to ensure long service life. The inner tube is press fit to the key and stem adaptor to safeguard the corrosion protection of the tube. The bottom cover protects the valve spindle from impurities and enables it to rotate freely.

The "Safe Click" design provides a secure and fast three-step mounting process on service connection valves. A quick-mounting clip secures the connection between the stem and the bottom adapter and allows for mounting and demounting without use of tools.











### Fixed length design features easy shortening

Fixed length extension spindles are used when the distance between the valve and the ground surface is known so that adjustment of the length after installation is required to a limited extent or not at all.

The patented AVK design facilitates fast and easy shortening of the extension spindle. The complete adjustment of the length can be done merely by use of a hacksaw. The extension spindles are available with a pipe cover of 800-1000-1500-2000-3000 mm.

### Telescopic design facilitates on-site adjustments

Telescopic extension spindles are used when the distance between the valve and the ground surface is unknown and when an adjustment of the extension spindle is required after installation.

The top adaptor is designed with a defrosting hole and with ears that can be fixed into AVK surface boxes and support tiles. A lock spring prevents the telescopic part from collapsing during installation, as it creates friction inside the inner tube.

The blue center sleeve protects against penetration of impurities between the two outer PE pipes.

### Telescopic extension spindles with break zone

We also offer variants with break zone in the key adaptor which prevents damage of the valve in cases where a much too high torque is applied. In such cases the break nut of copper alloy is easily replaced, and the extension spindle can still be operated by means of a #20 socket wrench. Spare part sets are available.





The top spanner and the inner tube are press fit on telescopic extension spindles.



### AVK SURFACE BOXES A FULL RANGE



AVK offers a very comprehensive range of surface boxes in various designs and material combinations.

### Cast iron surface boxes

The ductile iron surface boxes are available in a floating design and a fixed/floating reversible design. The reversible surface box allows for deflection and internal fixation of telescopic extension spindles from both ends.

The fixed surface boxes of grey cast iron are height adjustable using ductile iron distance rings of a height of 10-50 mm.

### Floating surface boxes with great flexibility

The internal fixation of telescopic extension spindles enables height adjustment after installation. The deflection ability secures optimal fit on sloped surfaces.

The large chamber provides easy access for mounting and demounting of the extension spindle, and the closed design protects the extension spindle against impurities.

- Square or round surface plate
- Body of polyamide PA-6 or ductile iron
- Surface plate and lid of ductile iron with black epoxy or blue epoxy coating.







### Synthetic surface boxes

Synthetic surface boxes are lightweight, ensuring safe and easy handling in compliance with Health and Safety Regulations.

They are maintenance and corrosion free giving easy access throughout the year with no need to clean or grease the seat to protect against corrosion or frost.

Furthermore, they are silent in traffic zones as the synthetic material absorbs noises, and they are 100% recyclable and heat resistant to max. 250°C.

### **Designed for tough conditions**

The housing is made of PA+ (polyamide with additives) making the surface box suitable for heavy duty application areas in all seasons and conditions.

The material has high impact resistance at low temperatures and is sufficiently heat resistant for safe installation in tarmac roads. The ribs in the housing ensure optimal fixation in the road foundation.

### Height adjustable surface boxes

AVK offers a wide range of DIN DVGW approved height adjustable surface boxes specifically designed for tarmac installation. They enable easy and precise installation thanks to flexible positioning of the top part.

Height adjustable surface boxes prevent costly correction after installation and save time and money when roads are renovated.

The variants with reinforced rim offer increased support of the top part making them even more robust and suitable for heavy duty areas.

### Fixed height surface boxes

Our Classic fixed height surface boxes are DIN DVGW approved and designed to withstand heavy traffic loads. Therefore, they are often used in medium and heavy duty areas. Our Futura range is a lightweight and price competitive version and is often used in light to medium duty areas.

### Support tiles and top frames

Support tiles significantly increase the support required by surface boxes in weak soils. They also prevent telescopic extension spindles from being pushed back.

Top frames protect surface boxes in green zones and improve the visibility of the surface box. With a top frame, grass will not overgrow the surface box and combined with a support tile, easy access to valves installed below is quaranteed.

### Recognisable synthetic lids

Lids made of synthetic material are corrosion free, unattractive to thieves, more aesthetic and lightweight, and in compliance with Health and Safety Regulations.

To prevent the lid from being lifted by the suction of a passing vehicle, the reduced weight is compensated for with a locking clip around the bolt. Furthermore, AVK offers a solution that makes the surface box easily detectable by means of a ferromagnetic detector.



# AVK COUPLINGS AND FLANGE ADAPTORS UNIVERSAL AND DEDICATED



AVK offers a wide range of universal and dedicated couplings, flange adaptors and end caps designed for easy installation.

### AVK offers four great Supa® ranges

- Supa® universal and non-tensile
- Supa One<sup>™</sup>- universal and non-tensile
- Supa Plus<sup>™</sup> dedicated and tensile for PE/PVC
- Supa Maxi<sup>™</sup> universal and tensile

### Supa® - universal and non-tensile

Straight couplings, step couplings and flange adaptors in DN40-600.

- Drinking water approved EPDM gasket with moulded ribs absorbs minor imperfections in the pipe
- ±4° angular deflection

### Supa One™ - universal and non-tensile

Straight couplings and flange adaptors in DN80-200.

- Sturdy design according to EN 525
- Only one bolt to be tightened in each end of the coupling
- Gasket of EPDM approved for drinking water with a gasket bridge of stainless steel keeping the gasket in place
- ±4° angular deflection

### Supa Plus™ - tensile for PE/PVC

Straight couplings, flange adaptors, end caps and gate valves in DN40-300.

- Combined gasket of drinking water approved EPDM rubber with tensile grip segments.
- The compression type gasket makes it easy to insert the pipe, even in large dimensions
- ±3.5° angular deflection

### Supa Maxi™ - universal and tensile

Straight couplings and flange adaptors in DN50-800, end caps in DN50-400, step and transition couplings in DN50-300, and gate valves in DN80-300.

- · According to EN 14525
- Fully universal and tensile on all pipe materials, and even on oval pipes
- Patented SupaGrip<sup>™</sup> sealing support system with flexible bracket
- Permanent protection caps
- No re-tightening of bolts
- · Gasket of EPDM approved for drinking water
- ±4° angular deflection













### **AVK combi-flanges**

The range comprises tensile combi-flanges for PE/PVC and ductile iron pipes in DN50-300, non-tensile for PVC and ductile iron pipes in DN50-600, and non-tensile for steel pipes in DN50-300.

- The design features flexible positioning and chamfering of the pipe
- Up to ±3.5° deflection of the pipe is possible even in tensile executions
- The pipe will not move inwards during installation which secures a tight connection

### **Dismantling joints**

AVK dismantling joints are available in ductile iron in two ranges;

 with 8.8 galvanized tie rods in all bolt holes, fusion bonded epoxy coating in DN40-1600 and up to DN2600 with 2-pack epoxy coating  with A2 tie rods in all bolt holes or in every other bolt hole, GSK approved epoxy coating, available in DN4-1200.

### **Fabricated couplings**

AVK's range of dedicated fabricated couplings comprises non-tensile straight couplings, step couplings and flange adaptors in DN350-2000. The range is suitable for ductile and grey cast iron, steel, uPVC and GRP pipes for water and wastewater applications up to 25 bar.

Our range of universal fabricated couplings comprises non-tensile straight couplings and flange adaptors in DN400-2000 made in carbon steel and feature a wide tolerance of 30 mm up to DN450 and 40 mm from DN500. Optionally the universal couplings and adaptors are available in stainless steel, up to PN40 and in customised design.

### Repico® couplings

The Repico® range consists of stainless steel universal couplings in tensile and nontensile versions. Repico® offers a quick and simple connection solution for all pipes with possibility of angular deflection and easy handling due to the compact and light-weight design. The range is available from DN15 and up to DN2000, and with EPDM as well as NBR sealings.

See separate brochure "AVK couplings and adaptors" for further details.









### AVK FIRE HYDRANTS ABOVE-GROUND AND UNDERGROUND



AVK offers a wide range of fire hydrants for above and underground installation and in a wealth of variants to meet our customers' needs.

### Series 84 Multi hydrant

The Multi hydrant is a modern, slim lined hydrant featuring our standard series 84 below ground barrel with all the components known from our existing range. The upper barrel is made of stainless steel for a modern look, and the hydrant head of ductile iron is epoxy coated and has an extra layer of UV resistant polyester coating.

The head can be machined for several outlet configurations according to customer specifications such as 2 x Storz B or C, 3rd Storz B or C and an optional Storz A on DN100. The Multi hydrant is available with or without traffic break-away design and with single shutoff or double shut-off.

### Series 09 above-ground hydrants

Our series 09 hydrants are 360 degrees rotatable and height adjustable for easy installation. In case of traffic knock down the PE pipe, connecting the upper barrel with the foot bend, will just bend and not break.

The hydrants are available of aluminium or ductile iron with manual or automatic drainage, and as top operated or gate valve operated. The automatic drainage hydrant is made in a flush-proof design by means of a membrane drainage valve designed to close when the hydrant is under pressure, and open when the hydrant is shut-off, allowing the water inside the barrel to be drained.

The epoxy coating and an additional topcoat of UV-resistant polyester give a high durability and a strong corrosion protection.





### Series 84 above-ground hydrants

Our series 84 hydrants are designed with a double shut-off system for safe sealing of the hydrant during maintenance. The flanges connecting the upper and the lower barrel are assembled with special titanium bushes which are the only spare parts to be replaced in case of an accidental traffic knock down.

The upper part is available in a nostalgic design, a modern stainless steel design and in an execution with a lockable cover protecting against unauthorized operation. The lower part is designed with a PUR vulcanised ductile iron disc and vertical seal like the series 35 hydrants.

Series 84 hydrants are as standard with automatic drainage, and optionally with manual drainage. Back-flow protection can be fitted to protect against contamination of the water through the hydrant. The internal enamel and the external GSK approved epoxy coating with an additional topcoat of UV-resistant polyester give a high durability and a strong corrosion protection.

### Series 29 underground hydrants

Our series 29/40 hydrants are based on AVK's renowned gate valve design with fully vulcanized wedge, fixed wedge nut and triple safety stem sealing. It is available with bayonet, Storz or NOR coupling.

Our series 29/50 variant is designed with a riser pipe of stainless steel and an AVK extension spindle.

### Series 35 underground hydrants

Our series 35 hydrants seal vertically which gives a low closing torque and makes them easy to operate. The PUR vulcanised plug features a great compression set which ensures that the PUR will regain its shape after having been compressed. The automatic drainage ensures fully emptying of the hydrant after use. Series 35 is available with single shut-off or with double shut-off for easy maintenance, and optionally with internal enamel coating for extra corrosion protection.



### Free flow hydrant

The series 29/78 hydrant is designed without any parts obstructing the medium. The free flow gives a greatly enhanced flowrate, it makes the hydrants insensitive to hard particles in the water, and offers easy insertion and retrieval of pipe inspection and maintenance equipment..







### LARGE-SCALE HOSPITAL PROJECT IN DENMARK

The New University Hospital in Odense, New OUH, will be one of the largest new hospitals in Denmark with its 250,000 m<sup>2</sup> under roof on the 780,000 m<sup>2</sup> site. The turnkey contract amounts to 953m euros.

It will become a hospital of the future and will be part of Campus Odense — a new town focusing on innovation and development. In addition to the New University Hospital, the new town will host the University of Southern Denmark, Science Park Odense and the new Cortex Park supporting knowledge sharing and networking between the business community, the university and the hospital. Generally, innovative thinking characterises the project, and for easy access, new roads are being established and a tramway is being constructed with two planned stops at the new hospital.

### Almost 300 AVK valves and hydrants

All valves and hydrants for the project have been supplied by AVK, mainly gate valves with PE ends for direct welding into the PE pipe system, and a lot of these are in DN300-400 to be used for cooling water. Furthermore, flanged gate valves and ball check valves will be used for the wastewater system, and 12 fire hydrants will be spread over the big site.

The new hospital is expected to open in 2025.

Product	DN	Psc	Application
Gate valves with PE ends series 36, including extension spindles and surface boxes	65-250	117	Water and wastewater
	300-400	76	Water and cooling
Fire hydrants series 84		12	Fire protection
Flanged gate valves series 06	80	56	Wastewater
Ball check valves series 53	80	28	Wastewater









### UNDERGROUND FIRE HYDRANTS AND GARDEN FOUNTAIN POSTS



### **Series 29/40**

Underground fire hydrant with bayonet coupling DN100 PN16 Ductile iron

### Options:

- 3" stortz oupling
- 3" NOR coupling
- 4" stortz coupling



### **Series 29/50**

Underground fire hydrant with bayonet coupling With AVK extension spindle and riser pipe in stainless steel DN100 PN16 Ductile iron



### **Series 29/78**

Underground fire hydrant Free flow Single shut-off DN80 PN16 750-1500 mm Ductile iron



### **Series 35/31**

Underground fire hydrant Single shut-off DN80 PN16 750-1500 mm Ductile iron

### Ontions:

- stainless steel seat
- backflow prevention



### **Series 35/85**

Underground fire hydrant Additional ball shut-off DN80 PN16 750-1500 mm Stainless steel seat Ductile iron



### Series 35/72

Underground fire hydrant DN100-125 PN16 1000-3500 mm Ductile iron

### Options:

 drilling according to GOST



### Series 30

Underground fire hydrant For mounting on AVK combi-cross DN100 PN16 Grey cast iron



### Series 80/60

Flexdrain
Packing for underground
hydrant
DN80/100
PP with polyester
spunbond geotextile



### Series 78/7510

Fountain post "VICTORIA" Frost-proof DN40 Grey cast iron

### Options:

outlet for fire hose connection

## **ABOVE-GROUND FIRE HYDRANTS**



## **Series 84/05**

Above-ground fire hydrant Break-away design with additional ball shut-off Model P7 DN80/100 PN16 Ductile iron



• lateral flange



## **Series 84/72**

Above-ground fire hydrant Break-away design with additional ball shut-off Model P7 DN80/100 PN16 Stainless steel

Options:

lateral flange



## Series 84/45

Above-ground fire hydrant Break-away design with additional ball shut-off Model P7
"NOSTALGIA" **DN80** PN16 Ductile iron

## Options:

- lateral flange
- various coatings



## **Series 84/91**

Above-ground fire hydrant Breakable single shut-off Model N7 DN80/100 PN16 Stainless steel

## Options:

- non breakable
- double shut-off
- ductile iron



## **Series 84/93**

Tunnel fire hydrant Breakable double shut-off Model N7 DN80 PN16 Stainless steel



## **Series 84/26**

Above-ground fire hydrant Drop down pillar Model P7, Type C DN100 PN16 Ductile iron

## Options:

• lateral flange



## Series 09/30

Above-ground fire hydrant Screw down type B DN80 PN10 Ductile iron

## Options:

- manual or automatic drainage
- gate valve operated



Series 09/50 Above-ground fire hydrant Type A DN100 PN10 Aluminium

## Options:

• manual or automatic drainage

## FLANGED GATE VALVES FOR WATER



## **Series 06/30**

Flanged gate valve Face-to-face DIN F4 DN40-1200 PN10/16 Ductile iron

## Options:

- internal enamel
- duplex stem
- replaceable stem sealing



## **Series 06/52**

Premium 100 gate valve Flanged Face-to-face DIN F4 DN40-600 PN10/16 External PUR coating Ductile iron

### Options:

• face-to-face DIN F5



## Series 06/35

Flanged gate valve with position indicator Face-to-face DIN F4 DN50-400 PN10/16 Ductile iron

## Options:

• face-to-face DIN F5



## **Series 15/42**

Flanged gate valve with ISO top flange for actuator Face-to-face DIN F4 DN40-400 PN10/16 Ductile iron

## Options:

• face-to-face DIN F5



## Series 02/60

Flanged gate valve Face-to-face DIN F5 DN40-500 PN10/16 Ductile iron

### Options:

- internal enamel
- PN25
- duplex stem • to GOST



## Series 02/75

Flanged gate valve Face-to-face DIN F5 Replaceable stem sealing DN40-500 PN10/16 Ductile iron

### Options:

• PN25



## Series 02/20

Flanged gate valve Face-to-face BS DN50-400 PN10/16 Ductile iron



## Series 9002

Flanged gate valve for irrigation
Face-to-face DIN F4
DN40-400
PN10/16
Light blue RAL 5012
No drinking water approvals
Ductile iron



• face-to-face DIN F5



## Series 55/30

Flanged gate valve DN450-500-600-800 Face-to-face DIN F5 PN10/16 Resilient seated Replaceable stem sealing Ductile iron

## Options:

• DN80 By-pass



## Series 54

Flanged gate valve DN700-800-900 Face-to-face BS PN10/16 Metal seated Ductile iron

## Options:

• DN80 By-pass



## Series 18/70

Combi-cross with 4 outlets DN100-300 PN10/16 Ductile iron

## Options:

- with ball valve service outlets
- with blind flange on DN100 centre outlet
- with 3 outlets
- DN80 center outlet



## Series 18/01

Combi-cross flexible design DN100-400 PN10/16 Ductile iron

- with ball valve service outlets
- with blind flange on centre outlet
- duplex stem

# GATE VALVES WITH PE ENDS, SPIGOT, COUPLINGS AND SOCKET ENDS FOR WATER



## **Series 36/80**

Gate valve with PE ends DN65-500 PE100/SDR11

0d75-630 mm Ductile iron

## Options:

- SafeTech ends
- duplex stem
- PE100/SDR17



## Series 638

Gate valve with Supa Maxi™/PE end DN80-300

PE100/SDR11 Ductile iron

## Options:

• PE100/SDR17



## **Series 36/52**

Premium 100 gate valve with PE ends DN65-400 PE100/SDR11

0d75-400 mm External PUR coating Ductile iron

### Options:

- Black/blue pipe ends up to 630 mm
- PE100/SDR17



## Series 636

Supa Maxi<sup>™</sup> gate valve Universal and tensile coupling ends for all pipes DN80-300 PN16 Ductile iron



**Series 38/80** Gate valve with flange/PE end DN50-200 PE100/SDR11 Ductile iron

Options:

• PE100/SDR17



## **Series 01/70**

Supa Plus<sup>™</sup> gate valve with tensile coupling ends for PE and uPVC pipes DN40-300 PN16 Ductile iron

### Options:

• duplex stem



## Series 12/51

Gate valve with flange/spigot end for cast iron pipes DN50-300 PN10/16 Ductile iron



## Series 32/40

Gate valve with long spigot ends for cast iron pipes DN80-300 PN16 Ductile iron

## Ontions:

• short spigot ends for D.I. pipes or AC pipes



## **Series 06/38**

Gate valve with grooved ends DN50-300 PN16 Ductile iron



## **Series 01/80**

Gate valve with "Euro" socket ends for uPVC pipes DN40-400 PN16 Ductile iron

## Options:

duplex stem



## **Series 33/00**

Gate valve with socket ends for cast iron pipes DN80-300 PN16 With internal enamel Ductile iron

## Options:

internal epoxy



## **Series 33/50**

Gate valve with BLS® socket end/ BLS® spigot end for cast iron pipes DN80-300 PN16 Ductile iron

## DOUBLE ECCENTRIC AND CENTRIC BUTTERFLY VALVES



## Series 756/100

Butterfly valve Double eccentric IP 67 gearbox DN150-2800 PN10/16 Ductile iron



- integral seat / stainless steel seat / welded stainless steel seat
- internal enamel
- PN25



## Series 756/102

Butterfly valve Double eccentric ISO-input gearbox DN150-2800 PN10/16 Ductile iron

Options:

- integral seat / stainless steel seat / welded stainless steel seat
- internal enamel
- PN25



## Series 756/106

Butterfly valve Double eccentric IP 68 gearbox DN150-2800 PN10/16 Ductile iron

Options:

- integral seat / stainless steel seat / welded stainless steel seat
- internal enamel
- PN25



### Series 75

Butterfly valve Centric with fixed liner Wafer type DN40-1400 PN10/16 Ductile iron

Options:

various actuators



### Series 75

Butterfly valve Centric with fixed liner Semi-lug type DN50-200 PN10/16 Ductile iron

Options:

various actuators



## Series 75

Butterfly valve Centric with fixed liner Full lug type DN50-1200 PN10/16 Ductile iron

Options:

various actuators



## Series 75

Butterfly valve Centric with fixed liner Double flanged short DN50-2000 PN10/16 Ductile iron

Options:

- Double flanged long
- various actuators



## Series 820/00

Butterfly valve Centric with loose liner Wafer type DN25-1000 PN10/16 Ductile iron

Options:

various actuators



## Series 820/10

Butterfly valve Centric with loose liner Lug type DN25-600 PN10/16 Ductile iron

Options:

• various actuators



## Series 820/20

Butterfly valve Centric with loose liner U-section type DN150-1600 PN10/16 Ductile iron

Options:

various actuators



## Series 813/80

Butterfly valve Centric with loose liner Double flanged short DN350-600 PN10/16 Ductile iron

# CONTROL VALVES, NEEDLE VALVES AND CHECK VALVES



Series 859 Control valve Pressure reducing DN50-600 PN10/16 Ductile iron/AISI 316



Series 859 Control valve Pressure sustaining DN50-600 PN10/16 Ductile iron/AISI 316



Series 859 Control valve Constant flow DN50-600 PN10/16 Ductile iron/AISI316



Series 872

Needle valve DN 80-1600 PN 10/16/25/40 Stainless steel DN80-150 Ductile iron from DN200

### Options:

- various actuators and accessories
- up to PN100 and DN2000



Series 41/61 Swing check valve Resilient seated Closed bushings DN50-300 PN10/16

Ductile iron



## Series 41/60

Swing check valve Resilient seated Free shaft DN50-300 PN10/16 Ductile iron

## Options:

- lever and weight
- lever and spring
- prepared for limit switch



## Series 41/36

Swing check valve Metal seated Closed bushings DN350-600 PN10/16 Ductile iron



• free shaft



## Series 41/23

Lever and weight kit for swing check valve DN50-300 Ductile iron



## Series 41/32

Spring kit for swing check valve DN50-300 Ductile iron



## Series 41/1

Guard kit for swing check valve DN80-300 ABS plastic



## Series 874

Tilting disc check valve With lever and weight DN150-1600 PN10/16 Ductile iron

Options:

hydraulic damper



## Series 875 Slanted seat check valve DN200-1000 PN10/16

Ductile iron

## AIR VALVES AND FLOAT VALVES



## Series 701/10 Automatic air valve Threaded BSP ¾" or 1" DN20-25 PN16 Reinforced polyamide

Options:

• brass base



Series 701/20 Automatic air valve Threaded BSP ½", ¾", or 1" DN20-32 PN16 Ductile iron



Series 701/30 Air & vacuum valve Inlet flange DN50-300 PN16 Ductile iron



Series 701/40 Combination air valve DN20, 25 and 50 Threaded BSP ¾", 1"

Threaded BSP ¾", 1" or 2" PN16 Reinforced polyamide



Series 701/46

Combination air valve
High flow
Threaded BSP 2"/DN50150 inlet flange
PN16
Ductile iron



Series 701/50

Combination air valve Inlet flange DN50-300 PN16 Grey cast iron/ Reinforced polyamide



Series 701/60

Combination air valve Inlet flange DN50-300 PN16 Ductile iron



## Series 701/84

Underground air valve installation system DN50-100 PN16 Air valve box of PVC

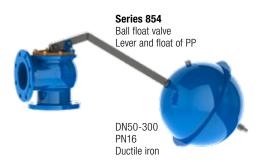


## Series 851/41

Combination air valve DN50-200 ABS float Ductile iron

Options:

stainless steel float



## Options:

 lever and float of stainless steel

42 | Water supply

## SUPA LOCK™ THREADLESS CONNECTION SYSTEM



## Series 103/00

Service connection valve with Supa Lock™ spigot/ socket end **DN32** PN16 Ductile iron

### Options:

- Supa Lock<sup>™</sup> spigot end/ PRK coupling
- duplex stem



## Series 103/31

Angle service connection valve with Supa Lock™ spigot/push-in socket end DN32 PN16 Ductile iron

## Options:

- Supa Lock<sup>™</sup> spigot/ socket end
- duplex stem



## Series 343/81

Ball valve with Supa Lock™ spigot end/BSP thread 1"-11/2" DN32, PN16 Brass

## Options:

- Supa Lock<sup>™</sup> spigot end/
- PRK coupling
   Supa Lock™ spigot end/ screw coupling
- with T-type bonnet



## Series 100/14

Tapping saddle for iron/steel pipes Ø 60-223 mm DN32 Ductile iron

### Options:

for PE/PVC pipes



## **Series 100/85**

Tapping saddle with blade shut-off for iron/steel pipes Ø 50-360 mm DN32 Ductile iron/stainless steel

## Options:

• for PE/PVC pipes



## **Series 107/74**

Tapping head with blade shut-off DN32 Ductile iron



## Series 107/31

90° push-in fitting for PE pipes Ø 32-63 mm DN32 Ductile iron

## Options:

- straight push-in fitting for PE pipes
- 45° push-in fitting
- Supa Lock<sup>™</sup> socket end



## Series 107/36

Fitting with PE pipe end Ø 32-63 mm DN32 Ductile iron



## Series 106/01

Fitting with PRK coupling for PE pipes Ø 32-40 mm DN32 Ductile iron

## Options:

· double spigot fitting



## Series 106/01

Fitting with screw coupling for PE pipes Ø 32-50 mm DN32 Brass

## Options:

- PRK coupling
- sensor fitting



## Series 106/02

Threaded connector For connection to drilling machines 1"-2" DN32 Brass

## Options:

- ductile iron
- threaded transition connector



## Series 109

Spacer for flanged connections DN80-400 DN32 Ductile iron

- · 3-way socket fitting
- 4-way socket fitting
- socket/tyton fittings
- blind flange

## **SERVICE CONNECTION VALVES**



## Series 03/00

Service connection valve with internal BSP thread DN25-50 PN16 Ductile iron



• internal enamel



## **Series 03/30**

Service connection valve with tensile socket ends for PE pipes DN20-50 PN16 Ductile iron

Options:

• duplex stem



## **Series 03/40**

Service connection valve for side tapping with internal thread /external thread DN25-50 PN16 Ductile iron



## Series 36/5X

Premium 100 service connection valve with PE ends DN25-50 PE100/PN10

External PUR coating Ductile iron



• PE100/PN16



## Series 03/65

Service connection valve with tensile screw couplings for PE pipes DN25-50 PN16 Ductile iron



## Series 03/85

Service connection valve with tensile screw coupling for PE pipes / external thread DN25-32 PN16 Ductile iron



## Series 36/8X

Service connection valve with PE ends DN25-50 PE100/PN10 Ductile iron



- PE100/PN16
- duplex stem



## Series 03/90

Service connection valve with PRK couplings for PE pipes DN20-50 PN16 Ductile iron

Options:

• internal enamel



## **Series 16/01**

Service connection valve with PRK coupling/ external thread DN25-50 PN16 POM (Polyoxymethylene)



## **Series 16/29**

Service connection valve with tensile socket end/ external thread DN25-50 PN16 POM (Polyoxymethylene)



## Series 16/50

Service connection valve with tensile socket ends for PE pipes DN25-50 PN16 POM (Polyoxymethylene)

Ontions

- T-type bonnet
- duplex stem



## Series 16/59

Service connection
valve with Pentomech™
couplings
DN25-50
PN16
POM (Polyoxymethylene)

Options:

duplex stem

## SERVICE CONNECTION VALVES



## **Series 16/80**

Service connection valve with PE ends DN25-50 PE100/PN16 POM (Polyoxymethylene)



- T-type bonnet
- long PE end
- duplex stem



## **Series 16/90**

Service connection valve with PRK couplings DN25-50 PN16 POM (Polyoxymethylene)

## Options:

- T-type bonnetduplex stem



## **Series 16/05**

Service connection valve with tensile screw couplings for PE pipes DN25-50 PN16 Brass

## Options:

T-type bonnet



## **Series 16/25**

Service connection valve with PRK couplings for PE pipes DN25-50 PN16 Brass

## Options:

• T-type bonnet



## **Series 11/00**

Service connection angle valve with external thread on inlet and internal thread on outlet DN25-50 PN16 Ductile iron



## **Series 11/30**

Service connection angle valve with external thread on inlet and tensile socket end for PE pipes on outlet DN25-50 PN16 Ductile iron

## TAPPING SADDLES



Series 10/00
Tapping saddle
for uPVC and PE pipes
DN50-300
Lower part in stainless
steel from DN250
Ductile iron



Series 10/14
Tapping saddle
for cast iron, ductile iron
and steel pipes
DN50-300
Ductile iron



Series 730/2 Universal tapping saddle for ductile iron, steel and other metal pipes DN50-300 Ductile iron/steel



Series 730

Universal tapping saddle with blade shut-off for ductile iron, steel and other metal pipes DN50-300 Ductile iron/steel

Options:

without blade shut-off



Series 727/10
Tapping saddle
for underpressure drilling
For PE and PVC pipes
DN80-200
Ductile iron



Series 727/20
Tapping saddle SWIC
for underpressure drilling
With integrated cutter
For PE and PVC pipes
0D50-225
Ductile iron



Series 727/21
Tapping saddle SWIC
for underpressure drilling
With integrated cutter for
PVC pipes
0D90-160 mm
Ductile iron



**Series 6731**Flanged universal tapping saddle with blade shutoff for iron, steel, PE and

PVC pipes Ductile iron

Options:

slim type

## **VALVE ACCESSORIES**



## **Series 04/02**

Extension spindle for gate valves Fixed length DN40-400 Polyethylene (PE)

## Options:

with solid bar



## **Series 04/04**

Extension spindle for gate valves Telescopic DN40-600 Polyethylene (PE)

## Options:

• with break zone



## **Series 04/05**

Extension spindle for service connection valves Fixed length DN25-50 Polyethylene (PE)

## Options:

• with solid bar



## Series 04/F

Extension spindle for service connection valves Telescopic DN25-50 Polyethylene (PE)



## Series 04/F

Extension spindle for double eccentric butterfly valves Telescopic DN200-1200 Polyethylene (PE)



## **Series 04/15**

T-key for gate valves DN40-400 Steel



## Series 04/08/55

Stem caps for gate valves and service connection valves DN25-600 Ductile iron



## Series 08

Handwheel for gate valves DN50-600 CTC Grey cast iron



• CTO



## Series 756/9

Handwheel for double eccentric butterfly valves DN200-600 Grey cast iron



## Series 36/15

Valve foundation for gate valves with PE ends DN25-100 Steel



## Series 756/5

Adaptor for connecting gearside to extension rod, wall post indicator or post indicator DN200-1200 Ductile iron



## Series 910

Y-strainer DN50-300 Ductile iron

## **SURFACE BOXES**



Series 04/10
Fixed surface box
with distance ring
Cast iron with blue epoxy

Options:

floating



Series 04/12 Universal surface box Reversible design Ductile iron with blue epoxy



Series 04/43
Fixed surface box
Lid of cast iron
Body of PE



Series 04/007

Floating surface box for telescopic extension spindle Flange and lid of ductile iron Body of PE

Options:

- round or square surface plate - black epoxy
- round or square surface plate - blue epoxy



## Series 04/008

Floating surface box for telescopic extension spindle Ductile iron with black epoxy

Options:

- round or square surface plate
- round or square lid



Series 04/088

Double surface box Round and square lid with "V" inscription Ductile iron with black epoxy



## Series 80/30

Surface box "Classic" according to DIN 4055 for underground hydrants Fixed height Body of PA+

Options:

- oval top
- · rectangular top
- cast iron lid
- synthetic lid



## **Series 80/30**

Surface box "Classic" according to DIN 4055 for underground hydrants Height adjustable Cast iron lid Body of PA+

Options:

• reinforced rim



## Series 80/30

Surface box "Futura" for underground hydrants Fixed height Body of PA+

Options:

- oval top
- rectangular top
- cast iron lid
- synthetic lid



## Series 80/31

Surface box "Classic" according to DIN 4056 for distribution valves Fixed height Body of PA+

Options:

- round top
- square top
- cast iron lid
- synthetic lid



## Series 80/31

Surface box "Classic" according to DIN 4056 for distribution valves Height adjustable Cast iron lid Body of PA+

Options:

reinforced rim



## Series 80/31

Surface box "Futura" for distribution valves Fixed height Body of PA+

- round top
- square top
- cast iron lid
- synthetic lid

## SURFACE BOXES AND ACCESSORIES



## **Series 80/32**

Surface box according to DIN 4057 for service connection valves Fixed height Body of PA+

## Options:

- round top
- square top
- · cast iron lid
- synthetic lid



## **Series 80/32**

Surface box according to DIN 4057 for service connection valves Height adjustable Cast iron lid Body of PA+

## Options:

- round top
- square top
- hexagonal top
- reinforced rim



## **Series 80/32**

Surface box 4057
"Futura"
for service connection
valves
Fixed height
Body of PA+

## Options:

- round top
- square top
- cast iron lid
- synthetic lid
- hexagonal top



## **Series 80/21**

Surface box "Logger" for service connection and distribution valves Fixed height Square top Cast iron lid PA inscription plates HDPE body



## **Series 80/22**

Surface box Multi Purpose for service connection valves Round top Body of PA+

## Options:

- fixed height
- height adjustable
- cast iron lid
- synthetic lid
- inscription plate



## Series 80/41

Surface box PURBRA for underground hydrants Fixed height rectangular top Cast iron lid PA inscription plate HDPE body



## Series 80/40

Surface box PERA for distribution valves Fixed height square top Cast iron lid PA inscription plate HDPE body



## Series 80/42

Surface box PURDIE for service connection valves Fixed height square top Cast iron lid PA inscription plate HDPE body



## **Series 80/46**

Support tile for surface boxes for gate valves and service connection valves HDPE

## Options:

- large spindle fixation
- small spindle fixation
- spindle interface



## Series 80/46

Support tile for surface boxes for underground hydrants HDPE



## Series 80/46

Top frame for surface boxes HDPE

Suitable in combination with various surface boxes:

- for hydrants
- for distribution valves
- for service connection valves

## SUPA ONE<sup>™</sup>, SUPA MAXI<sup>™</sup>, SUPA PLUS<sup>™</sup> AND SUPA<sup>®</sup> COUPLINGS, ADAPTORS, END CAPS AND VALVES



Series 651/00 Supa One™ straight coupling Universal for ductile iron, steel, PVC and PE pipes DN80-200 PN16 Ductile iron



Series 653/00 Supa One™ flange adaptor Universal for ductile iron, steel, PVC and PE pipes DN80-200 PN16 Ductile iron



Series 636 Supa Maxi™ gate valve Universal and tensile for all pipes DN80-300 PN16 Ductile iron

Options:

Supa Maxi™/PE end



Series 631 Supa Maxi™ straight coupling Universal and tensile for all pipes DN50-800 PN16

Ductile iron
Options:

• step coupling



Series 633
Supa Maxi™ flange adaptor
Universal and tensile for all pipes
Universal drilling
DN40-800
PN10/16
Ductile iron



Series 634 Supa Maxi™ end cap Universal and tensile for all pipes DN50-400 PN16 Ductile iron



Series 635

Supa Maxi™ transition coupling with PN10 or PN16 pipe end Universal and tensile for all pipes DN50-300 PN10/16 Ductile iron



## **Series 01/70**

Supa Plus<sup>™</sup> gate valve Tensile for PE and uPVC pipes DN40-300 PN16 Ductile iron

Options:

• duplex stem



## Series 621/10

Supa Plus™ straight coupling Tensile for PE and uPVC pipes DN32-300 PN16 Ductile iron

Options:

• flange adaptor



## Series 624/10

Supa Plus™ end cap Tensile for PE and uPVC pipes DN40-300 PN16 Ductile iron



## Series 601

Supa® straight coupling universal for uPVC, AC, steel, cast iron and ductile iron pipes DN40-400 PN16 Ductile iron

Options:

step coupling



## Series 603

Supa® flange adaptor universal for uPVC, AC, steel, cast iron and ductile iron pipes Universal drilling DN40-400 PN10/16 Ductile iron

# COMBI-FLANGES, FABRICATED COUPLINGS & ADAPTORS AND DISMANTLING JOINTS



## **Series 05** Combi-flange for ductile

iron pipes Non-tensile DN50-300 PN10/16 Ductile iron



• for PVC pipes



## Series 05

Combi-flange for PE and PVC pipes Tensile DN50-300 PN10/16 Ductile iron

## Options:

• for ductile iron pipes



### Series 05

Combi-flange for uPVC, steel or ductile iron pipes Non-tensile DN400-600 (uPVC and ductile) DN50-300 (steel) PN10/16 Ductile iron



## Series 05

Combi-flange sealing for uPVC, steel or ductile iron pipes Non-tensile SBR rubber DN400-600 (uPVC and ductile) DN50-300 (steel)



## Series 05

Support bush for PE pipes Suitable for Supa Maxi™, Supa Plus™ and combiflanges
DN50-600
PN6.3/10/16
Stainless steel



## Series 745/01

Repico® grip coupling Universal and tensile for all metal pipes NBR or EPDM sealing DN15-400 Stainless steel AISI 316

### Ontions

- for medium pressure up to DN200
- for PE/PVC pipes



## Series 745/20

Repico® slip coupling Universal and non-tensile for all pipes NBR or EPDM sealing DN15-600 Stainless steel AISI 316

## Options:

• 2 locks up to DN1000



## Series 258

Fabricated dedicated straight coupling for AC, steel, cast iron or ductile iron pipes DN350-2000 PN8 to 25 Steel

## Options:

- step coupling
- flange adaptor



## Series 8004

Fabricated universal coupling DN400-2000 PN16 Steel

## Options:

- flange adaptor
- stainless steal



## Series 265/30

Fabricated dismantling joint for all pipe materials DN300-1200 PN10/16/25 Steel

## Options:

With centre flange



## Series 265/910

Dismantling joint for all pipe materials DN40-1200 PN10/16 Ductile iron with GSK coating

## Options:

• With long/short tie rods in every other bolt hole



## Series 873

Dismantling joint for all pipe materials With centre flange DN40-2600 PN10/16/25 Ductile iron

# ENCAPSULATION COLLARS, REPAIR CLAMPS AND FITTINGS



**Series 8001**Hydro Stop universal socket encapsulation

collar EPDM rubber DN250-2000 Steel

## Options:

- Pipe encapsulation collar
- Customised design and larger DNs



## Series 8002

Hydro Fast dedicated socket encapsulation collar EPDM rubber DN300-2000 Steel

## Options:

- Pipe encapsulation collar
- Customised design and larger DNs



## Series 8003

Hydro Smart dedicated socket encapsulation collar EPDM rubber DN80-250 Steel

## Options:

Customised design



## Series 748/01

Repair clamp Single band or AISI 316 NBR or EPDM rubber Stainless steel AISI 304

## Options:

• handgrip



## Series 748/02

Repair clamp Double band or AISI 316 NBR or EPDM rubber Stainless steel AISI 304

## Options:

handgrip



## Series 748/03

Repair clamp Triple band NBR or EPDM rubber Stainless steel AISI 304 or AISI 316



Series 712

Flanged bend Ductile iron

## Options:

various types



## Series 712

Flanged cross Ductile iron

## Options:

· various types



## Series 712

Flanged reducer Ductile iron

## Options:

various lengths



Series 712

Reducer flange Ductile iron



## Series 712

Blind flange Ductile iron

## Options:

various types



## Series 712

Duckfoot bend Ductile iron

## SMART WATER IOT SENSORS AND SOFTWARE



## Series 3004/002

VIDI Positioner
Open/close position
indicator for AVK
extension spindles
Wireless
10-year battery life
NB-IoT or LoRa®
communication
IP68



## Series 3004/101

VIDI Positioner Open/close position indicator for gate valves Wireless 10-year battery life NB-IoT or LoRa communication IP68



## Series 3002/002

VIDI Cap Hydrant cap detecting open/close status For threaded Storz B outlet Wireless 10-year battery life NB-IoT or LoRa® communication IP68



## Series 3001/001

VIDI Pressure Sensor measuring water pressure Wireless 10-year battery life NB-loT or LoRa® communication IP68 (transmitter)



## Series 3001/002

VIDI Flow
Sensor transmitting water
flow
Wireless
10-year battery life
NB-IoT or LoRa®
communication
IP68 (transmitter)



## Series 3001/004

VIDI Level Sensor measuring distance to nearest surface Wireless 10-year battery life NB-IoT or LoRa® communication IP68 (transmitter) IP67 (level sensor)



## Series 3001/003

VIDI Temperature Sensor measuring water temperature Wireless 10-year battery life NB-IoT or LoRa® communication IP68 (transmitter)



## Series 3004/001

VIDI Open/Close Open/close position indicator for AVK valves Wireless 10-year battery life NB-IoT or LoRa® communication IP68 (transmitter)



## Series 3005/001

Outdoor LoRaWAN®gateway for series 3001, 3002 and 3004 Subsection (RJ45) IP67



## Series 3005/002

VIDI software for collecting and visualising data Access through standard web browser Unlimited number of units and users

- VIDI Basic
- VIDI Advanced
- VIDI Premium

# SUPPORT ACTIVE LEAKAGE CONTROL WITH VIDI POSITIONER

Knowing if and when DMA boundary valves are operated is important, as this commonly influences non-revenue water (NRW) management. HOFOR, the largest utility company in Denmark, has therefore installed VIDI Positioners for remote monitoring of valve open/close positions.

## **Increased reliability**

Flow meters on DMA inlet pipes and shut-off valves on the pipes connecting DMAs enable water balance calculations at DMA level.

Accurate calculations rely on robust, precise and complete data where all water entering and leaving a DMA is monitored and measured.

Such calculations highly depend upon valid information confirming that all boundary valves are closed during the water balance assessment period. It is a well-known problem, that boundary valves opened during maintenance work, sometimes are not brought back to closed position afterwards.

Thus, monitoring the open/closed position can help prevent unmeasured flow between DMAs and thereby provide more reliable data and calculations.

## Improved overview

VIDI Positioners have been installed at three strategically important boundary valves between DMAs in HOFOR's distribution area. VIDI Positioner is an IoT sensor that indicates in percentages how much the valve is open and reports any operating activities. At regular intervals and whenever the valve is operated, data is automatically sent to the utility and integrated with their GIS.

Data is further integrated with a management information system directly connected with the hydraulic model where the hydraulic simulations then automatically will reflect the change in valve position. Further, water balance calculations will be disabled during periods where the DMA boundary valves are open. This way, VIDI Positioner allows for a better overview and automated knowledge sharing.





## SUSTAINABILITY AT AVK











## We contribute actively to the UN SDGs

Our solutions contribute to the UN sustainable development goals by ensuring clean water and sanitation, by reducing water waste, electricity consumption and CO2 emissions, and by turning wastewater into affordable and clean energy. Our valve design is not only optimised to ensure long durability and 100% tightness; it also offers low operating torque, allowing for the use of cost-efficient electrical actuators.

AVK has entered into partnerships with other leading Danish companies aimed at sharing knowledge within water technology and at offering joint solutions for a more sustainable world. Furthermore, to help implement the already known and well-proven technologies, we have founded and host a summer school which runs under the name "Advanced Water Cycle Management Course". With the latest knowledge at hand and a holistic approach to the journey of water through society, we focus on obtaining the most efficient supply and treatment processes.

## **Environmental efforts**

At the AVK Advanced Castings foundry, supplying the AVK Group with castings for valves and hydrants and other metal castings, we use the innovative lost foam method, and this method allows for an improvement in performance, reducing energy consumption and the amount of particle emissions into the

atmosphere. In our castings, we use recycled steel scrap as the principal component — up to 85-90% of the total melt.

The AVK Group has strict requirements and standards for energy and water consumption its production companies must meet.

Consequently, all companies make great efforts to reduce consumption wherever they can.

## **Global responsibility**

AVK is a global company operating worldwide and must as such take different circumstances and conditions in different countries into account and the consequent risks. In all countries where AVK is present, it is fundamental to act responsibly towards employees, environment and the surrounding society.

The AVK Group keeps a close watch on all business units and ensures through regular visits that all AVK companies comply with the defined principles. Whatever country or location, we focus on the health and safety of our employees. We carefully monitor the number of work-related accidents and work proactively on preventive measures. The result of this is a steady decline in the number of accidents. We also ensure maintenance, inspection and development of working conditions, equipment and tools that are necessary to complete a given business process.

The AVK Group has agreed to adhere to standards that our suppliers must adhere to as well in order to become a certified supplier of the Group. Sustainability is vital for us throughout the entire supply chain. Therefore, we only cooperate with partners with high ethical standards, who are strongly committed to comply with international legislation in the field of labour.

## AVK International A/S

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