



EXPECT
STORIES FROM THE
AVK WORLD

Expect... **AVK**

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Frontpage picture

The largest gate valve produced by AVK to date, standing ready at the production facilities in Anhui, China. The size is 2,2 m from side to side.

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DEAR READER

Water deficiency is one of the biggest challenges of our time, and the problem will grow exponentially in the coming decades. Today, 2.1 billion people do not have safe water in their homes and in 2025, it is expected that 1.8 billion people will live with absolute water deficiency. In Europe alone, 60% of all cities with more than 100,000 citizens will face problems before 2030 if they continue with their current water management.

Globally, the water infrastructure is underrated, underfinanced and poorly maintained. But to increase the focus on the importance of water compared to all of the other great challenges the world is facing, we at AVK have chosen to produce a booklet with facts about water. This booklet focuses on the importance of water for climate, energy, health, food production, and development of societies to name a few of the topics. In our opinion, not enough resources are assigned to this topic globally

and therefore, our aim is to make leaders and decision-makers aware of the fact that the global water issue not only concerns obtaining clean drinking water, but equally concerns health, people's well-being and the development of societies.

Clean water acts as a catalyst for economic growth. If USD 1 is invested in the water infrastructure, the private GDP output will increase to more than USD 6. With this in mind, we hope to be able to initiate projects within water infrastructure and to support this, we have asked leading people within the water sector to provide quotes for the material. You can read more on this topic on page 24.

I have said it before, but I will say it again: Covid-19 has clearly shown that digitalisation is the answer to a more agile way of doing business while simultaneously offering far greater mobility in operating a water supply. How? AVK Smart Water can

give you the answer you are looking for by assisting with monitoring and reporting on leakages. One thing is to detect leakages in the distribution net, another thing is to repair a pipe and close the leak. An essential factor in the attempt to minimise water loss is "speed of repair", which puts pressure on the supply chain to deliver repair kits. You can read examples of AVK's solutions on pages 4-5 and 6-7. AVK is able to deliver repair clamps from DN32 to DN3000.

But as always, AVK takes part in a great number of exciting projects around the world, and you can read about some of these in this edition of InterLink.

Enjoy the magazine and have a great summer on the northern hemisphere as well as a joyous winter on the southern hemisphere.

Michael Ramlau-Hansen



REPAIR OF EIGHT LEAKS ON THE **ADDUTTORE SINNI** **DN3000 PIPELINE**

ITALY



Hydro Stop socket encapsulation collars used for repairing eight leaks on the largest pipeline in southern Italy.

*By Dario Rotolo,
Managing Director,
HYDRO-COS*

In 2017, E.I.P.L.I. planned the repair of several leaks on the largest and most important pipeline in southern Italy: Adduttore Sinni. It is a DN3000 steel pipeline that supplies fresh water to Apulia and Lucania, serving about 4.5 million people. It goes from the Sinni dam to the western area of the Taranto district covering a distance of about 133 km.

Eight critical leaks – eight customised Hydro Stop socket encapsulation collars

There were many leaks on the old joints, so it was essential to plan the repair without causing water stoppage on this important water distribution line. In fact, E.I.P.L.I.'s technicians had identified eight critical leaks on the pipeline that needed particular attention and they asked us to perform inspections on these leaks in order to

provide a specific solution for each of them.

Basically, the DN3000 flanges that connected the pipes, as well as the expansion joints, were worn out and had started to leak severely. Considering the large population potentially involved in disruption of water supplies, the only possible way to perform any repair was by using

Article continues on the next page >

our Hydro Stop socket encapsulation collar.

For the eight big leaks, we designed eight different variants of Hydro Stop collars, capable of working not only as encapsulation and repair collars, but also as expansion joints: we offered a product capable of fulfilling two different purposes.

Challenging installation conditions

Seven days after the first inspection of the pipeline, the first Hydro Stop was installed on the location where the most severe leak had been detected. In the following months, seven additional socket encapsulation collars were manufactured and installed on the remaining severe leaks in order to reduce water losses on the 133 km pipeline.

E.I.P.L.I management was stunned by the flexibility and reliability of our Hydro Stop, and to date, these DN3000 collars are the largest socket encapsulating collars ever installed.

Often, we had to face severe conditions during installation. The most challenging installation was performed in the Montescaglioso district, where the pipeline crossed hillside. This special circumstance caused a pressure increase from the average of 10 to 16 bar up to a peak of 24 bar; a very high pressure for such a large pipeline! Stopping this leak was a real challenge, and we therefore decided to oversize the collar to ensure the highest possible reliability over time.



Hydro Stop socket encapsulation collars

The Hydro Stop socket encapsulation collar is a universal repair collar designed to encapsulate and seal leakage on the sleeve of a pipe as well as leaking or displaced spigot/socket joints while the pipeline is under pressure. The shaped carter can accommodate any kind of pipe socket including joints connecting two pipes of different materials, flange connections on steel pipes as well as remnants of previous repairs. The collar features up to 40 mm pipe OD tolerance, and is a safe solution even when the pipe OD has not been correctly detected, and in case of oval and damaged pipes. It is available in DN250-3000.

Hydro Fast socket encapsulation collars

Preventive repair of socket joints on DN1200 water pipeline

Hydro Fast socket encapsulation collars used for protection of two socket joints on a concrete pipe in Beirut City in Lebanon.

Repair of socket joint and basement on DN900 water pipeline

Hydro Fast socket encapsulation collar used for repairing a leaking socket joint on an old and fragile concrete pipeline located in the Lecce district in Puglia in southern Italy.

PREVENTIVE REPAIR OF SOCKET JOINTS ON DN1200 WATER PIPELINE

LEBANON

Hydro Fast socket encapsulation collars used to protect two socket joints on concrete pipeline in Beirut City in Lebanon.

*By Dario Rotolo,
Managing Director,
HYDRO-COS*

In 2018, we received a request from Beirut Water Authority, who wanted to secure two socket joints on the DN1200 concrete pipeline that supplies fresh water to Beirut City. This pipeline crosses the new Jal ed dib overpass, and the pillars of the new flyover were to be built next to the joints, so it was necessary to protect them from possible damage caused by the construction of the pillars. In fact, Beirut Water Authority wanted encapsulation collars for preventive repair of the socket joints.

Hydro Fast socket encapsulation collars did the job

Because of lack of space on site, a solution with a very short overall length was needed, since the maximum length was restricted to 600 mm. Therefore, we offered our Hydro Fast socket encapsulation collars, as they have no flanges, and the overall length could therefore be reduced to 530 mm.



Three weeks delivery time

The two repair collars were manufactured in 10 days and delivered in about three weeks including transportation. The contractor had asked us to supervise the installation, so we sent two fitters to Beirut to help the local workers. After two working days, both collars were installed, and no inconvenience had occurred during installation.

The head engineer from Beirut Water Authority was really pleased with the solution and our service. According to him, Hydro Fast socket encapsulation collars are "the best compromise between dependability and cost savings".

NEW WEBSITE FOR THE INDUSTRIAL MARKET

THE NETHERLANDS

At AVK Nederland, a new website has been launched to meet the requirements and expectations within the industrial sector even better.

By Dana Hofman,
Marketing Manager,
AVK Nederland BV

In March 2021, AVK Industrial Nederland launched a new website available in Dutch and English. Experience the new website here: www.avkindustrial.nl.

Especially for the industrial market, AVK Nederland can deliver both highly specialised engineered products and standard products able to meet the highest standards of safety and durability as required within these segments.

Repico® Grip Plast: your solution for a restraint connection of HDPE pipes

The Repico® pipe couplings and repair couplings offer a quick and simple connection solution for all pipes. To expand our existing range, we have now developed the Repico® Grip Plast.

This high-quality coupling provides a tensile / axial restraint connection especially for plastic pipes. This new coupling allows pipe section replacement and is suitable for high pressure. The specially designed flat rows of grips engage into the pipe surface without damaging the plastic material.

Repico® pipe and repair couplings

Are you looking for a fast and reliable connection between pipes? Or do you



have a leakage? With the Repico® stainless steel coupling you can quickly and easily create a tensile or flexible connection between two pipes. In case of a leak, apply the Repico® Repair coupling, by just tightening a few hexagon socket bolts. The Repico® guarantees a proper sealing

around the pipe in just a few minutes! Depending on the application, we can supply the Repico® with different rubber materials: EPDM, NBR, Silicone and FKM. The Repico® products can be used in the markets: industry, shipbuilding, gas, sewage, water and fire protection.



- Available in DN32-200 (DN250-400 in development)
- Easy installation by use of a torque wrench
- Limited space required for installation due to compact design
- Specially designed flat rows of grips engage into the pipe surface without damaging the plastic material
- Pressure range up to 16 bar
- Progressive sealing and anchoring
- Main components of stainless steel 316
- Green PTFE coated bolts
- Light weight, appr. 30% in comparison with flanged connections
- 60% noise reduction compared to rigid connections

OUTSTANDING PERFORMANCE BY AVK CHINA AT THE IE EXPO 2021

CHINA



The International Environmental Expo 2021 was held in Shanghai, China, during April 20-22. A strong and successful fair held in turbulent times.

*By Ken Yan
B&D Marketing Director
AVK China*

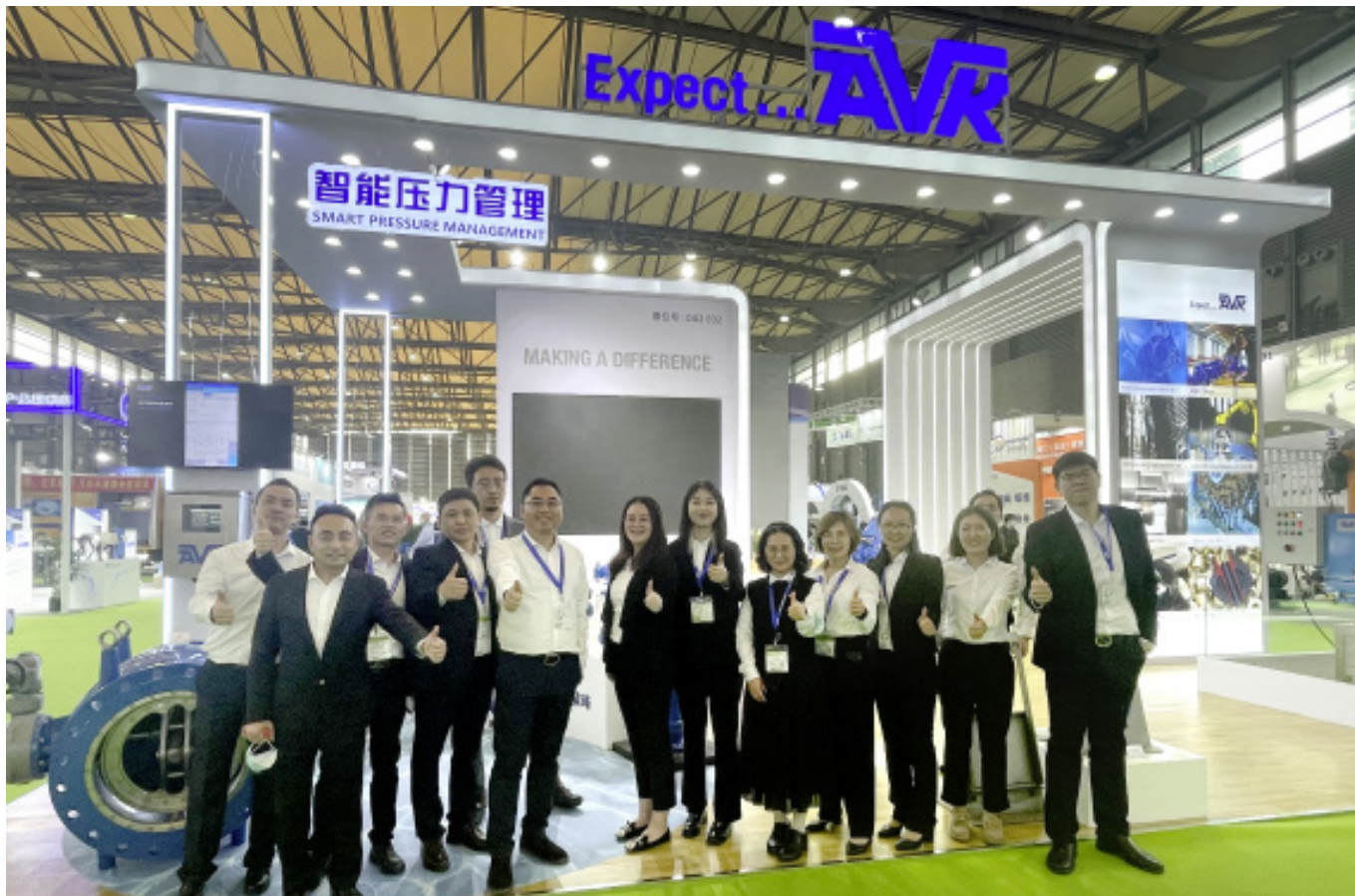
As the flagship environmental protection exhibition in Asia, the fair attracted more than 73,000 visitors eager to learn more about products, solutions and market prospects from more than 1,800 participating companies.

AVK China presented a creative booth with over 40 pieces of valves and fittings focusing on the advanced products' technology and innovative solutions.

During the exhibition, lots of senior professionals and experts within the

industry visited the booth. We got in touch with many customers, old and new, ranging from integrated eco-environment solution providers, large state-owned enterprises, private enterprises to equipment and component suppliers within various segments such as water supply, wastewater treatment, air, chemical processing.

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NRW (non-revenue water) solution journey makes its debut

AVK China had established a NRW solution journey for on-site experience where visitors could learn what AVK has to offer within this area and could experience operation first-hand via a mobile app and web portal.

One of the booth visitors was the Danish Consulate General, Mr. Jakob, who was given a thorough introduction by Mr. Hai Zhao, Managing Director of AVK Shanghai.

Reducing urban water loss

“In a time where more and more cities and regions are affected by water scarcity, making sure the water that is abstracted also reaches the consumer is more and more important than ever”, says Lea Wermelin, Danish Minister for the Environment in the foreword of State of Green’s new White Paper.

State of Green successfully launched the White Paper ‘Reducing Urban Water Loss’ online from Copenhagen and offline from the Danish water technology seminar at IE Expo China co-organised by the Danish Export Association. It attracted nearly 100 experts,

scholars, enterprises and government representatives. AVK China was invited as representative of Danish water solutions and together with experts from Denmark and China, we took part in a discussion about the challenges and solutions regarding NRW.

AVK China won the award ‘Top 100 Exhibitors at the IE Expo China 2021’

and as the only valve company on the list it demonstrates our strong position in the Chinese market. With the stable development of AVK China, we will continue to seize opportunities, take on new challenges, and strive to continue the progress and growth within the valve industry.



OVERCOMING WATER LOSS WITH SMART WATER SOLUTION

GLOBAL

By Ida Rohde Mikkelsen,
Marketing Coordinator,
AVK Smart Water

Water loss occurs in all distribution networks whether it is apparent or real loss. Often, it is challenging to detect where the water is lost, and the volume of loss can vary from the smallest leaks to huge bursts that cost a lot of time and money.

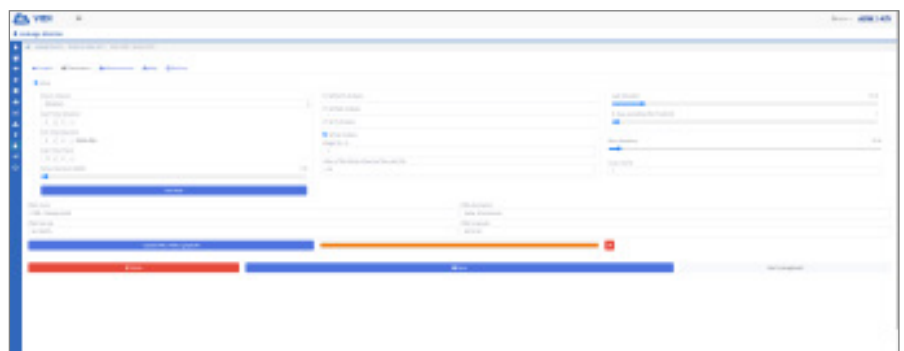
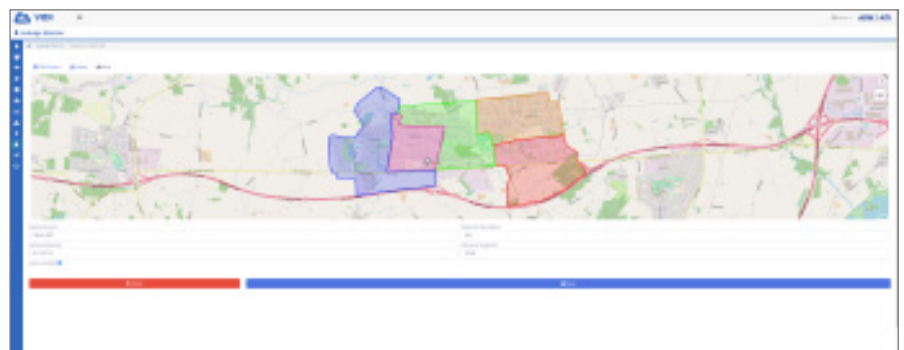
One of the primary causes of water loss is leaking pipes or equipment. It can often take days, weeks or even years to localise leaks in a huge network. Thus, monitoring of the distribution network is a necessary measure to take when trying to reduce water loss.

Advantages of monitoring:

- Full overview of network operation
- Discover and detect leaks and bursts daily
- Reduction of working hours used on manual inspections

Apparent loss can e.g. result from inaccuracies associated with systematic data handling errors, metering errors, data gaps, misreported data, unauthorised consumption (theft) and estimated volumes due to lack of metering.

Real loss, or physical water loss, can result from leaking water mains and service connections, storage tank overflow, water flow from damaged pipelines etc.



IoT sensors part of the solution

Daily monitoring of the distribution network provides information that makes it easier to prioritise and place efforts where need be. Among other things, it gives utilities the ability to ensure a faster repair, and thereby minimises the costs and time used to identify problems.

Usually, measuring water flow tells you about the consumption of water in a District Metered Area (DMA). But water flow data can do much more, especially in combination with other data. By monitoring water flow and pressure in the distribution network daily, utilities can discover leaks or bursts faster, and thereby react as soon as an alarm occurs.

AVK Smart Water offers a variety of IoT sensors that can help utilities obtain knowledge about selected sections in the distribution network. They are especially helpful where the

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distribution network is divided into sections (DMAs). By combining data from AVK Smart Water's pressure and flow sensors and the valve position indicator, it is possible to perform leakage detection and reduce water loss.

Collect and visualise data

But using sensors is just the first step; you also need to have the right software solution that can help decode the data from the sensors and turn it into understandable information. For example, data from development in

water consumption, flow and pressure can give an instant overview of leakage levels and bursts over time in a DMA. That way, utilities can easily monitor the different trends in the distribution network and at the same time, it will allow utilities to analyse and plan repairs more effectively.

Data from all AVK Smart Water sensors can be integrated in the software solution VIDI Cloud or a preferred IT-system through a standard API (Application Programming Interface).

AVK Smart Water offers the software solution VIDI Cloud with multiple features to monitor the distribution network. One of the features is the Leakage Monitoring module that provides utilities with an optimal solution to detect water loss. The Leakage Monitoring module calculates and analyses the events of leaks or bursts based on data received from AVK Smart Water flow sensors.

PLANT AUTOMATION PROJECT INCLUDING VCW PRODUCTS

BRAZIL

Innovative and automated processes are core elements in the city of Sorocaba's new water treatment plant, "Vitória Régia", equipped with various products from VCW.

*By Juliana Cristine Celestrim,
Marketing Assistant,
AVK Válvulas do Brasil*

With innovative features, including the capture of raw water directly from the Sorocaba river as well as the application of ozone in the treatment process, the plant will be fully automated.

The plant will have an initial capacity to treat 750 litres/second, and with a planned expansion this will reach 1,500 litres/second in the following phase. This volume corresponds to 60% of all water distributed today to the local population, now being treated at the Cerrado and Éden treatment plants.

VCW feels privileged to be part of a project that significantly contributes to the positive development of the city.

Products supplied to the project:

- Concentric butterfly valves, DN80-DN700
- Triple eccentric butterfly valves, DN150-900
- Fast check valves, DN400-600
- Duo check valves, 100-250
- Swing flex check valves, DN100-250
- Ball valves, 1/2"-2"

VCW supplied the valves to the local contractor GEL Engenharia who



VCW fast check valves installed on the water line.

installed the valves at the city's water company SAAE Sorocaba (SAAE: Water and Sewage Supply Service).

On the city's anniversary day (364 years), August 15th, VCW posted a local advertisement in the local newspaper to highlight the importance of the project.

BENEFITS OF LOCAL MANUFACTURING

SAUDI ARABIA

If there is one lesson learned during the past 18 months, it is the importance of a well-planned supply chain strategy.

*By Wim Brink,
Operations Director,
AVK SVMC*



Companies who set up their strategy on low cost (LC) countries, with long supply lines, have suffered a lot. Companies with a blended strategy, partially sourcing local and partially from LC countries, have had less disruptions. All supply chain consultants are now flooding social media with this new insight.

Back in 2014, at AVK Saudi Valves in Jeddah, we started to develop local suppliers for different reasons. Yes, supply lines were long (both China and Europe), and the response from suppliers often slow. And at the same time, one of the biggest customers in this region, Saudi Aramco, expressed that they wanted to buy more locally manufactured products, even willing to pay a different price for it. They also offered their assistance where and when needed. It became a major objective for the country's 2030 vision.

3D design models for all stages

After several commercial and technical assessments, AVK teamed up with

a local foundry, Saudi Mechanical Industries (SMI), for the development of finished machined castings for our series 45 valves. This foundry was not only approved by Aramco, it also has a very strong technical team in both foundry capabilities as well as machining capabilities. Based on 3D design models of bodies and bonnets, we quickly developed finished machined castings in a non-AVK material standard (an ASTM A395 material grade, specified by Aramco).

We deployed the following steps in order to get 'first time right' castings with this new supplier for new products. A 3D design model has been used to develop the patterns and core boxes. The 3D design model has also been used to simulate the foundry process and to decide how the foundry method should be set up (risers, feeders, filters, chillers, etc). The same 3D design model has been used to work out the CNC machining programs and to develop jigs and fixtures. And finally, with the help of these models,

inspection tools have been developed, like gauges and templates, for casting inspections and machining inspections on a 3D coordinate measurement machine (CMM). During every stage of development, AVK was invited to see and approve the results, making the process very transparent. The use of the 3D model has reduced mistakes and has sped up the sample process.

Less transport and lower costs

The relation between SMI and AVK is strong and we have developed more castings, some of them even cheaper than the ones from China. Based on our forecast, the foundry will plan and produce castings. In case of urgency, SMI only needs to machine and deliver. Transportation to Jeddah takes only two days. Recently SMI invested in a 3D core printing machine, which will reduce the lead-time for single piece castings (samples) and even avoids costs for core boxes.

OPTIMISING THE LOCAL WATER SUPPLY IN BATAM

INDONESIA



By Ahmad Fairu Zabadi,
Marketing Manager,
AVK Fusion Indonesia

To be able to distribute clean water from the Tembesi reservoir to the Muka Kuning area, AVK Fusion Indonesia supplied to a connection project.

The Batam area, located on the Riau Islands, Indonesia, was in the need of a clean water pump connection to be able to deliver enough clean water for the people in the city.

The project in details

To carry enough water, the project included the construction of a raw water pipe from the Tembesi Reservoir to the Muka Kuning area, Batam.

As a distributor of AVK Fusion products, PT Tirta Putra Malindo Sejati (TPMS), contributed to supply the needs of the Batam Concession Agency (BP) in creating the water pump connection.

The project had the value of \$3.5m, ran from May to September 2020, and the connection was finally inaugurated and put to use in October 2020.

The connection runs over a distance of nearly 3.6 km and has a flow rate of 600 litres per second with a maximum capacity of 720 litres per second.

Products supplied to the project:

- Check Valve 300mm
- Butterfly Valve 300mm
- Butterfly Valve 700mm
- Gate Valve 200mm
- Gate Valve 700mm
- Air Valve 200mm

Clean water is top priority

According to the Head of BP, Purwiyanto, the next step will be the construction of a water treatment plant in Muka Kuning. It is planned to have a capacity of 350 litres per second, and to stand ready by 2024.

PT Tirta Putra Malindo Sejati (TPMS) specialises in providing pipe solutions for industrial clients, developers, and water companies. TPMS has been a distributor of AVK Fusion Indonesia since 2018.

Batam Concession Agency (BP) is a central government institution of the Republic of Indonesia with the task and authority to carry out management and development of local areas in accordance with the area's functions.

7M ARTWORK INSTALLED AT PIPELINE OUTLET

CHINA



The largest gate valve has just been installed in a wastewater transportation project in Jiaying City, China, to meet the needs of an increasing wastewater production.

Pollution from wastewater continues to be a major issue all over the planet. The lack of suitable water used for drinking, agriculture, farming, etc. is decreasing and proper methods of treating and recycling water is the key to sustaining our already limited water resource supply.

been operating under overload. This leaves the issues with wastewater transportation increasingly critical as days go by. Therefore, a sewage treatment expansion and discharge project was initiated, including a 63.5km DN1400-2200 pipeline with an ultimate sewage transport capacity of 400,000 m³/d. Three midway lifting

*By Kevin Ouyang,
Marketing Manager,
AVK Anhui*

Jiaying City, Zhejiang Province, China, experience an increase in the amount of daily wastewater production, and the existing treatment plant has long

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pump stations will be constructed as well.

Together with AVK Shanghai, AVK Anhui provided eight DN1800 metal seated gate valves as well as one giant DN2200 electric operated gate valve for this project. The giant weighs 27 tons and is more than 7m tall in total. It is installed at the outlet of the pump station pipeline which is connected to the wastewater treatment plant. Its full bore design offers lower head loss and pump consumption. A by-pass valve, drain valve, jacking screw as well as shoe-&-channel options ensure smooth operation of valve.

All in all a robust, reliable solution, which with its enormous size almost looks like a beautiful work of art.

The valve is the largest gate valve produced by AVK Anhui to date. With great support from AVK Tech and our global capabilities, AVK Anhui was able to deliver the valve from scratch: From drawings to raw castings, from machining to shot blasting, from coating to assembly, from testing to packing, and from delivery to final installation and commissioning. Each



step demonstrating the quality in every step of the process.

As one of the largest manufacturing sites within AVK group, AVK Anhui continues to improve and enhance their supply chain to all of our local sales companies all over the planet – especially within large, specialized valves.

Over the last decade, quite a few records have been set regarding size:

- S54 DN1800 metal seated gate valve (2011)
- S756 DN2800 double eccentric butterfly valve (2013)
- S641 DN1000 swing check valve (2015)
- S857 DN900 free discharge valve (2015)
- S06 DN1000 resilient seated gate valve (2017)
- S641 DN1200 recoil check valve (2018)
- S856 DN800/600 submerged discharge valve (2020)
- S756 DN1600 hydraulic operated butterfly valve (2021)
- S756 DN3000 double eccentric butterfly valve (2021)
- S872 DN1800 plunger valve (2021)
- S54 DN2200 metal seated gate valve (2021)

And more will follow soon, as the extension of our Big Valve factory will be ready by 2022, allowing us to double our production capacity of large valves.



CELEBRATING 80 YEARS OF THE AVK GROUP

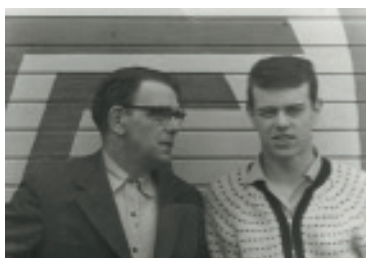
GLOBAL

The story of AVK begins with one man opening a small, local machine shop. He was called Aage Valdemar Kjær, whose initials, AVK, today are visible on products across the globe. Acting not only as a brand, but as a seal of quality.

Aage Valdemar Kjær was born in 1904. He was the son of a small holder and clog maker in rural Denmark. He was first trained as a blacksmith, but later went on to study engineering, whereafter he worked as a marine engineer and as engineer at the Galten Power Station.

In 1941, he established the "AVK Maskinværksted" in Galten, Denmark. Besides running his machine shop and being a fine craftsman, he was a dedicated member of the community and a good athlete.

The shop quickly became part of the local community and was frequently used by both private people, businesses, dairies, brick works and many others.



AVK
skydeventiler
og teleskop-indbygningsgarniture

Skydeventilen med de mange fordele:

- ★ Monteringsvenlig og absolut tæt gummiring.
- ★ Gummiskyder, der ikke slides.
- ★ Spindelbetning med O-ringe og læberingstætning.
- ★ Hus af tryktæt specialgods.
- ★ Overdimensioneret og korrosionsbestandig spindel.
- ★ Flængængel, udskiftelig trykklave.

BRØDRENE DAHL

During the 50's, Kjær extended his business with design and fabrication of refrigerating systems, but plumbing work also became an increasing part of the business with the installation of central heating in private households. AVK was a successful business and with increasing work, the facilities on

One of the first advertorials for an AVK gate valve, posted by a Danish distributor

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Søndergade in Galten were extended with a separate factory building.

In 1961, Kjær's son, Niels Aage Kjær, joined AVK as a 16-year-old apprentice. Niels Aage later went back to school to study engineering. As fully fledged engineer, he started working at the Technological Institute in Aarhus, while becoming more and more involved in his father's business.

In 1970, Niels Aage and his father became business partners. Sadly, a week later Aage Valdemar died at the age of 65, and Niels Aage took over the business. The same year, Niels Aage designed the first gate valve and made two samples.

From then on, AVK manufactured valves, which marked the beginning of a long expansion journey, starting with the neighbouring countries.

Up through the "amazing eighties", AVK increased the total number of employees from 115 to 650. With full focus on quality, AVK was certified

From the 80's where new AVK entered markets such as the UK, Saudi Arabia and the USA.

according to the ISO 9000 standard in 1990 - the second company in Denmark to achieve this certification.

AVK moving forward

Through decades of establishments, acquisitions and continuous growth, the AVK Group now counts 100+ companies across the planet as well as more than 4,400 dedicated employees.

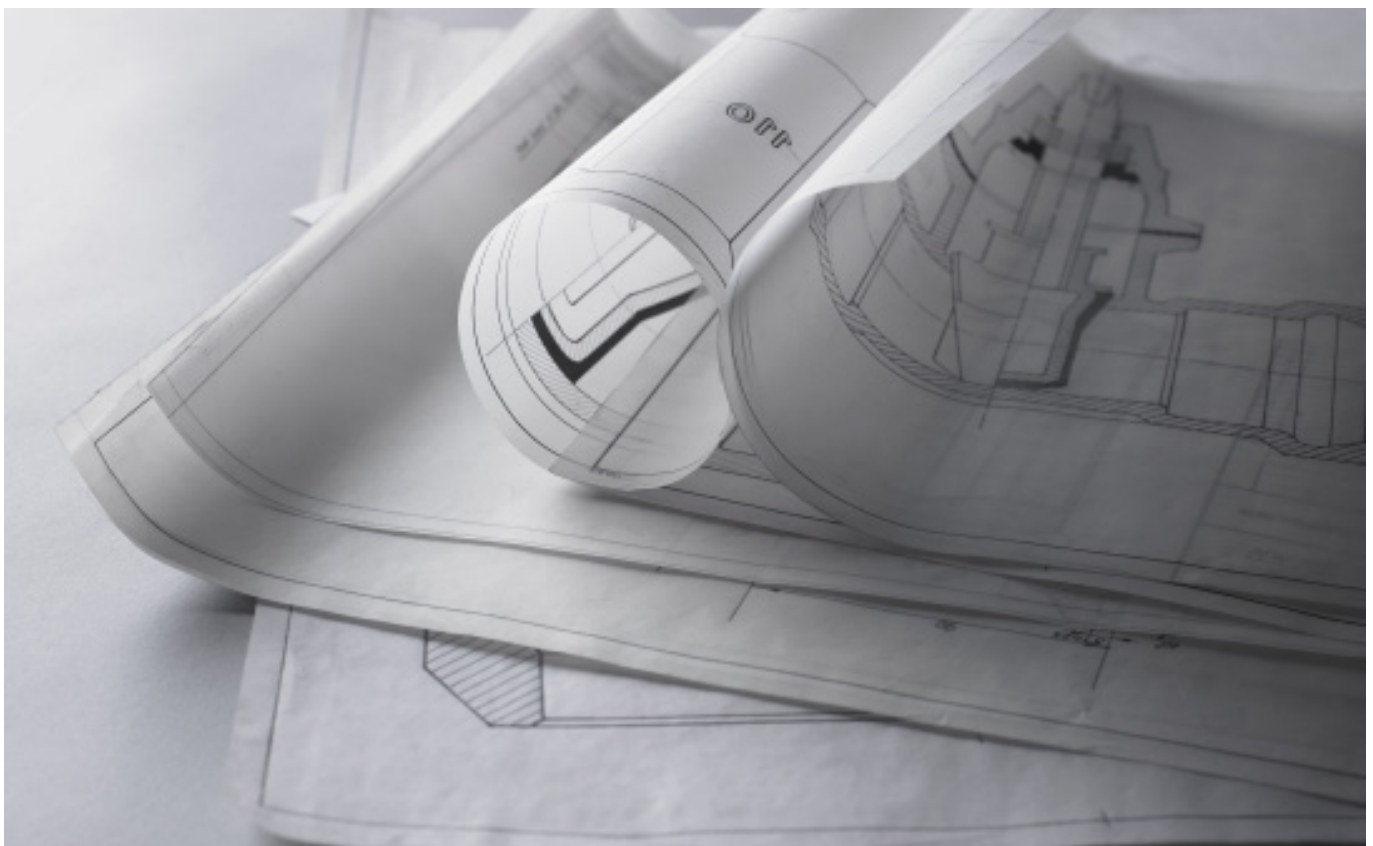
Through systematic product development and penetration of new markets, AVK is today one of the world's largest manufacturers and suppliers of valves and fittings.

Every day, our solutions help deliver clean water and sustainable energy to

millions of people in households and industries all over the world. We assist in transporting, treating and reutilising wastewater, and in assuring safe, secure surroundings ready to battle unfortunate events of fire. We work towards a better, more sustainable future, where natural resources are used and managed wisely - one day, one product and one solution at a time.

8 decades ago, the machine shop was founded on the values of quality, innovation, reliability, sustainability, and customer service, which still form the basis of AVK today.

"Our history is the key to our future success" – Niels Aage Kjær



INTRODUCING INDUSTRY APPROVED PUR COATED GATE VALVES

EMIRATES

For an extensive development project, AVK has delivered PUR coated gate valves with PE ends for a 12 km long pipeline network.



*By Raj Nair,
Sales Manager, Gas,
AVK Watecom LLC*

This October will witness Dubai host the world for 182 days, showcasing ideas and innovations from around the globe for a better and sustainable world. Spread across an expanse of 1,038 acres, the Expo 2020 site is located between the cities of Abu Dhabi and Dubai in the Dubai South district; a venue to create, co-operate and revolutionise.

The project in detail

An extensive development project of the site area was initiated back in 2016. Phase 2 of the project

The project was carried out by contractors Tristar Engineering & Construction LLC, Sixco-Oriscom and Lootah BC Gas & Integrated Gas Services Co LLC awarded by the Emirates National Oil Company (ENOC).

involved the construction of a 6 bar, 12 km long LPG (Liquefied Petroleum Gas) distribution pipeline network. The scope of work included design, construction, operation, maintenance, emergency activities and communication network including high pressure gas pipelines and the LPG distribution network ending at commercial and industrial customer's appliances in the Expo area. Strong relationships with both contractors and a proven track record in the region opened doors for the supply and testing of the ductile iron gate valves with PE ends ends (series 555) from Donkin as well as PE ball valves from AVK Syntec.

The Donkin gate valves supplied were with PUR coating which was an introduction to the Donkin Asset Protection System. The primary objective was to allow our customer to continuously innovate and at the same time reduce their cost of installation, protect their underground asset, address inconsistent practice,

provide a protective coating to industry standard specifications, ensure installation is suitable for adoption and last but not the least have an easy access to accurate installation records.

Introducing PUR coated gate valves in the market

Ensuring to keep the AVK promise: Expect solutions, not just products, experts from AVK carried out a number of presentations with the consultant and contractor engineers primarily focused on getting the gate valves with PE ends and PUR coating specified in the project differing from the competitors, who only offer flanged ductile iron products with epoxy paint in their solutions.

Products supplied to the project:

- Donkin gate valves, ductile iron, 7 bar
- Ball valves, 7 bar

AVK UK LINKS UP WITH AQUABOX TO ASSURE LIFE- SAVING WATER IN DISASTER AREAS

UNITED KINGDOM

AVK UK leverage their water management skills and expertise to help Aquabox provide clean water to those impacted by natural disasters around the world.

*By Julia Nixon
Head of Marketing,
AVK UK*



Aquabox is a UK-based charity, and since 1992, it has supplied AquaFilters into disaster areas. The filters enable those affected to transform potentially contaminated water from streams and wells into safe drinking water. For many, this safe drinking water is fundamental to their survival, as well as reducing the incidence of water-borne diseases such as cholera.

Central to AVK UK's support for Aquabox is the sponsorship of five AVK UK employees – AVK-Aquabox Ambassadors - to work alongside Aquabox volunteers. The AVK UK team will work on a variety of initiatives such as improving logistics, assembly processes, and marketing. AVK UK has also committed to providing direct financial support and fundraising throughout the year.

The AVK UK team is drawn from across Group companies with members located as far afield as Essex, Kilmarnock, Rugby and Chesterfield. It includes specialists in service delivery, procurement, business development and sales.

Paul Hubbard is Chairman of AVK UK:

"AVK UK takes its corporate social responsibilities (CSR) very seriously. Before linking up with Aquabox, I met with their representatives and quizzed them on their financial stability

and their plans for the future. I was impressed with their drive to double the number of filters and aid boxes they ship each year, and the way they partner with aid agencies in disaster areas to ensure the filters are deployed effectively.

Water is fundamental to life and ensuring its safe and effective distribution across the UK is at the heart of what we do at AVK UK. I am confident that our AVK-Aquabox Ambassadors will help meet the targets and improve the systems and processes. It's a really worthwhile and inspiring charity."

Follow the progress of the initiative on AVK UK's website, or read more about Aquabox at www.aquabox.org.

MEETING NEW DEMANDS THROUGH DEVELOPMENT OF EXISTING KEY PRODUCT

EMIRATES

An AVK fire hydrant was given a design brush-up to meet even more application requirements, and plays an important role in a major infrastructural project across the United Arab Emirates (UAE).

*By Anurima Roy
Marketing Manager
AVK Gulf*

AVK products continue to be an integral part of local infrastructure projects that aim to meet the demands of a constantly evolving market. With no less than \$810 billion for projects already initiated or underway, the UAE is the second largest projects market in the Middle East/North Africa region.

Such a market demand brought forward by our local partner, Dutco Tenant, was the supply requirement of a hydrant with a breakable flange traffic system for all upcoming and ongoing fire projects in the United Arab Emirates. More specifically, it should be able to withstand 300PSI, be UL listed and approved according to AWWA C503.

With our market insights, as we are involved in projects from the early stages, we were able to foresee the requirement way ahead of time. In June 2020, after a few brainstorming sessions with Saudi Valves Manufacturing Company and AVK Tech, the development process was initiated. Fortunately for us, we did not require to modify the existing Series 24

hydrant too much to be able to meet the 300PSI pressure rating standard as it was previously approved to 200PSI.

With an enhanced product design, stronger body and polyester fusion bonded epoxy coating, the hydrant was ready for testing at the Saudi Valves factory in remarkable time. The hydrant was tested by AVK Tech in Denmark and UL labs in the United States of America, following which the UL certification came through in January 2021.

In our efforts to do things differently, a preliminary market survey is currently underway to gain insight into the challenges faced by the respective operation and maintenance teams with the existing wet barrel hydrants in sites to deliver the best suitable AVK solutions to address their pain points empowering us to not only connect with the authorities on a deeper level, but also strengthen our long-term relationship.

Thus, we are one of few suppliers to obtain the necessary local approvals



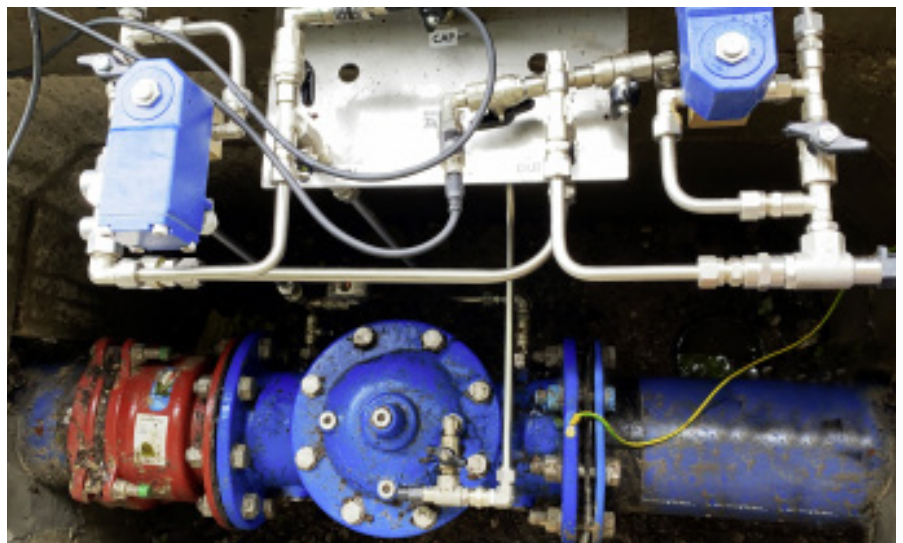
in the region, securing contracts to supply into flagship development projects and allowing us to set foot into emerging new opportunities.

So far, Series 24 Hydrants have been supplied to:

- Dubai Hills; A luxurious residential comprising of an 18-hole championship golf course with nature trails and hotels
- The Dubai Maritime City; A manmade peninsula located in the heart of Dubai
- Emaar South Development; A lush golf course community
- Dubai Airport
- KIZAD; The integrated trade and logistics industrial zone Abu Dhabi

PRESSURE MANAGEMENT DEVICE ELIMINATES THE NEED FOR ON-SITE OPERATIONAL STAFF

UNITED KINGDOM



By Julia Nixon,
Head of Marketing,
AVK UK

Rugeley is a market town located in Staffordshire, UK. It is located near the boundary of the areas covered by South Staffordshire Water (South Staffs) and Severn Trent Water (STW).

STW and South Staffs both trade bulk water supplies across their common boundary. One of the shared pipelines is located at Brindley Bank in Rugeley where South Staffs transfers water to STW to enable it to fill a local reservoir. The transfer takes place at night between midnight and 6am. An AVK UK pressure reduction valve (PRV) was installed and an engineer would manually operate a downstream gate valve at midnight and manually close it in the morning to enable the transfer of water to proceed.

Automatic, intelligent operation

AVK and Flowco, working for Severn Trent, have exchanged the pilot circuit from pressure reducing to multi-function flow control and retrofitted an

AVK UK smart pressure management device (PMD). The PMD automatically opens and closes the valve to control the flow at the required times. It will soon be possible to change these times remotely once the Modbus protocol is set up thereby removing any need to ever visit the site:

“This smart PMD installation is a great example of how a relatively simple procedure can have a huge impact on clean water operations.” - Dave Hurley, AVK UK’s Business Development Manager (Smart)

Reduced carbon footprint

This simple retrofit removes the need for 730 operative visits throughout the period of one year, reduces STW’s

carbon footprint, and greatly increases the operational flexibility of the valve. Although the PMD is currently measuring and controlling flow, it also has the ability to measure pressure and level as well.

Pioneering Canal Builder

Brindley Bank is named after James Brindley (1716 – 1772), the pioneering canal builder who built the Trent and Mersey Canal that, in Rugeley, runs parallel to the River Trent.

SANDEFJORD – A SMART CITY

NORWAY

Sandefjord municipality aims to become a 'smart city' with digital solutions for the benefit of both residents and the environment.

*By Kjetil Myhra,
Product Manager - Water,
AVK Norge AS*



Smart city as a concept is fairly new in Norway and most investments are still in the "starting pit".

The concept is broad, with meeting climate and environmental challenges as the most important focus area. Several smart city initiatives are based on the UN's overall sustainability goals, which include ensuring access to clean water for all and making cities safe, robust and sustainable.

Monitoring the water supply

Regarding water supply, Sandefjord municipality is in the process of revising and building a new structure for monitoring the water supply system. This is done to reduce water loss through leakages and at the same time be able to offer a good and safe water supply with sufficient capacity to residents and businesses in the municipality. It is crucial to have continuous access to measurement data from the water supply system to get an overview of water consumption and optimise pressure conditions in the various water zones.

Sandefjord has previously built up the water supply system in consumption zones and pressure zones with measuring equipment connected to a central monitoring system. With AVK's Smart Water products, the municipality sees the opportunity to place more sensors to measure and retrieve useful information from the system. This enables further division of consumption zones with sensors that continuously monitor consumption and pressure conditions, and the waterworks will receive data from a larger part of the water supply system and quality-assured settings within the water zones.

"When we also integrate AVK's Smart Water products with the municipality's other measuring equipment, we expect great utility value", says Yrjan Fevang, department engineer in the Department of Urban Management - Planning and Project, Sandefjord municipality.

A pilot project

Sandefjord municipality, together with AVK, has tested Smart Water products

on two sites in a pilot project. This has given the municipality insight into the possibilities of obtaining measurement data from several places in the pipeline network. In collaboration with AVK, pressure loggers, valve position sensors have been installed on zone valves and measuring equipment in inlet chamber. Sandefjord municipality will build their internal structure for communication of measurement data and for the monitoring system before the pilot project is finally expanded.

We as suppliers find the collaboration very exciting, and not least important for building knowledge and gaining experience within this smart product segment.

"For the time being, we see the collaboration with AVK and Smart Water products as very interesting for further developing Sandefjord municipality as a Smart City". - Yrjan Fevang adds.

ORBINOX CANADA SUPPLY BONNETED GATES FOR CLE ELUM FISH PASSAGE PROJECT

CANADA

In Washington, a fish passage project has been initiated to provide fish access to a historic habitat and to restore biodiversity and reproduction in the area.

*By Mikel Larrea,
Hydraulic Works–Project Coordinator,
ORBINOX Valves International*



For this project, our “BU” model gate has been engineered to meet the strict project specifications, which require the guard gates to be installed and operated horizontally instead of vertically. The guard gate is mounted on rolling supports, which allow removal of the gates in case future maintenance work is required. The valves are shipped fully assembled and tested which will significantly reduce the time for installation.

The guard gates will be part of the innovative Cle Elum fish passage facility. The project includes reinforced concrete intake structures stacked vertically to allow water and fish to be drawn into the juvenile facility over a reservoir water surface fluctuation of 63 feet. Water then flows to the juvenile facility through precast concrete

conduits, ranging in length from 5 to 500 feet.

The Gate Chamber houses an underground 6-storey tall steel structure that supports the guard gate and steel pipe for each of the (6) levels in the existing secant pile shaft. The Helix Chamber houses an underground 48-foot diameter helix structure that dissipates the energy from transporting water and fish from a long vertical distance.

Products supplied to the project:

- BU bonneted gates, more specifically:
 - DN2100 – 84”
 - Rubber seal for higher tightness
 - Gates manufactured at ORBINOX SA

Point of application:

- Upstream fish passage facility
- Bottom outlet

WATER IN THE WORLD: LOCAL AND GLOBAL CHALLENGES

GLOBAL

When looking objectively at how drinking water and wastewater is handled across countries, a depressing picture emerges. Continuous inaction has already created massive problems for millions of people. And how does the future look?

*By Katrine Klejnstrup
Sørensen,
Communications &
Marketing,
AVK Holding A/S*



Are you updated on the water situation, and ready to join the dialogue?

Download the PDF for free through our website, just follow the QR code:

Article continues on the next page >

Water has a huge impact on the health and quality of life, on energy consumption and on our climate. In other words, on all the underlying problems that have led to the UN Sustainable Development Goal #6: "Clean water and sanitation for all".

As part of AVK's effort to contribute, we have published a booklet about water management across the globe. The booklet explains how the current ways of managing water affects areas such as water scarcity, pollution, health, energy consumption and financials, as well as how our water access is affected by ie climate, overexploitation, the food industry etc. We want to create awareness and set the scene for a dialogue about all the competencies and solutions that are just waiting to be implemented.

Today, we are wasting the water for tomorrow

In many places in the world, water is a scarce resource. Despite this, worldwide between 35% and 40% of the water we gain and produce from different sources is wasted. More than a third of the produced drinking water never reaches the end user:

"Water loss is the worst – it is a waste of an often-sparse resource and also of the resources (energy, labour and write-off of infrastructure) used to extract the water." - Bjørn Kaare Jensen, VC, Danish Water Forum, President, European Water Association

Poor quality water costs millions of lives every year and is a massive burden on healthcare. Meeting the goals of proper drinking water and sanitation can save 10% on healthcare globally.

We use a lot of energy for no reason

With 35-40% lost water, this means that a third of the energy used in the production and distribution of water is wasted too. The global water industry uses approximately 120 MTOE every year - roughly corresponding to the combined energy consumption of Australia.

"We can shut down all coal-fired power plants in the EU from one day to the next if we implement the knowledge and technology at our disposal today."
- Lars Schröder, Director, Århus Vand

demand deficit. Populations are growing and growing up. The standard of living is increasing." - Dr. Kalanithy Vairavamoorthy, Executive Director, IWA

..and this is just the current status.

"Where are we 10 years from now? Just as many of the populations worldwide, the current water scarcity issue will grow exponentially in the decades to come. We have a supply-



5 HINTS TO SELECTING THE VALVE YOU NEED

GLOBAL

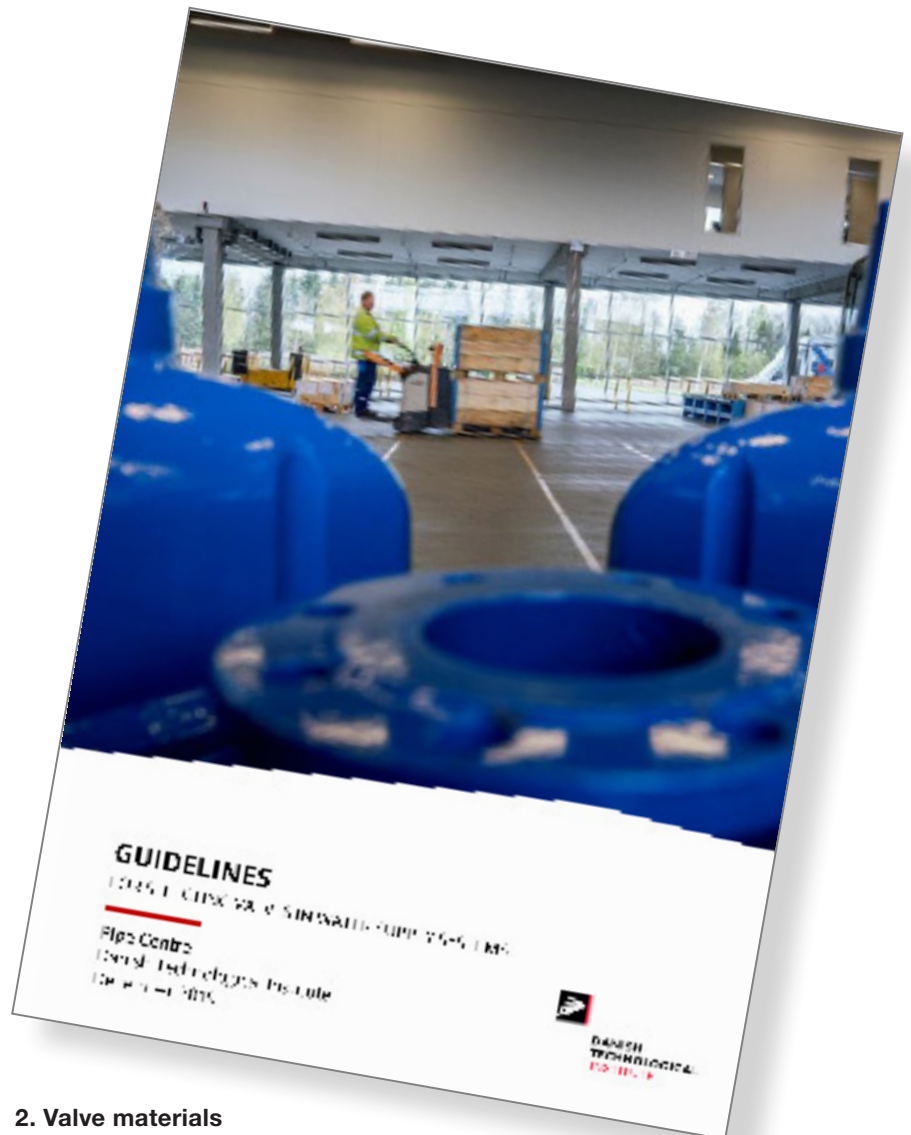
Valves are designed to control liquid or gas flow in any outdoor or indoor system. But different systems mean different requirements, and therefore, valves come in various types and with numerous functionalities.

*By Michael Ramlau-Hansen,
Public Affairs,
AVK Holding A/S*

So which valve should you use? It is crucial that you find exactly what you need, so you won't have to replace it again soon - not just in terms of functionality, but also regarding the costs and the complete service life of the valve. And there are various aspects to keep in mind when making the decision. Below, find five hints to help you make the right choice for your next project:

1. Key functionality

First of all, what is the purpose of the valve; preventing backflow, control, open/close, water/air? By specifying the exact performance requirements for the system that the valve should be installed in, you can compare these requirements with the principles and basic functionalities of the different types. Find the detailed principles and functionalities of the most common valve types in the guideline (PDF) below, including e.g. gate valves, butterfly valves, check valves, control valves, ball valves, house connections as well as hydrants.



2. Valve materials and characteristics

The most important parameters when it comes to service life is the quality of the valve wedge, the stem and the coating layer. Therefore, it makes sense to consider the component materials as well as their resistance against i.e. corrosion, porosity, upbuild of biofilm etc. In the guideline, you will be introduced to the most commonly used materials in valve construction, and what you should be aware of.

3. Pressure loss

For especially water systems, it is crucial to select a valve with either none or as low pressure loss as possible. Pressure loss is basically loss of used energy to pump the water, so any loss across the system will mean that you will be using more energy. Learn more about working pressure,

Article continues on the next page >

optimal temperatures, water hammer as well as workplace security in the guideline.

4. Total Cost of Ownership (TCO)

When considering the costs of a valve, it is important not to focus solely on the purchase price. You need to look at the total costs of owning the valve - from purchase to disposal, and everything in between such as operation, maintenance, durability, lifetime etc. The guideline introduces an easy TCO method to help decision makers make

a more detailed decision than just the initial costs.

5. Size and specifications

The proper size is perhaps the most important step to match the field of application. Here factors such as temperature, flow pressure, connections, and any requirements for specific actuation should be considered, as well as any local market requirements such as design standards, tests, approvals or certifications.

Need more details? Find a complete guideline for download on our website to make sure you consider all the relevant aspects before your next valve purchase.



AVK AROUND THE WORLD

SPARKLING AVK HYDRANT ENJOYING THE SEA VIEW

*By Katrine Klejnstrup Sørensen,
Communications & Marketing,
AVK Holding A/S*

Spotted right next to the beautiful beach in Fjellerup, Denmark.



AMERICAN AVK OFFER PRODUCT WEBINARS TO CUSTOMERS

USA

In August 2020, we introduced product webinars as a new way to reach and assist our customers.

By Anne Paine,
Training Manager,
American AVK

Why offer webinars?

The primary objective was to create an efficient way to connect and engage our customers since travel was discouraged or not possible during the COVID-19 pandemic. The secondary objectives were to reach our external customers on a new platform, increase product and brand awareness, establish authority and become a leader in knowledge sharing in our industry.

Several platforms were tested, and each had their share of pros and cons. Some of the biggest considerations were registration, webinar metrics, and the ability to follow up easily on leads. We are currently using Demio (Webinar platform), but this may change because all platforms are adding more features to increase engagement.



Join us in our next episode of Tailgate Talk

AVK Field Assist

June 15th, 2021
10AM (PST)

What is AVK Field Assist?
How will this help me?
What is Augmented Reality?
How can I use AVK Field Assist?



The Panel will be discussing all of these questions and will show how AVK Field Assist has helped solve troubleshooting issues in the field, and hear a few testimonials from utilities that have used this service.

What are we offering?

PowerPoint presentations were created for the webinar medium along with scripts to keep the messaging consistent. Each of our Territory Managers were provided training on the technology and practiced in front of internal audiences to prepare for their presentations in front of external audiences. Our topics range from Product Overviews to Installation and Maintenance.

We have recently started a new series called "Tailgate Talk". This is more of a discussion-based webinar which eventually will turn into a podcast type of export. We invite industry leaders to discuss different topics and will

include customers to talk about their experiences or give testimonials. This format is really working well and is getting a lot of positive feedback.

A schedule is created setting up topic, presenter, registration link, marketing flyers, and is broadcasted via our newsletters, email banners, websites and emails. Registration is handled within the Demio platform, which sends out confirmations and reminders to all participants.

Promising results

We have presented 22 webinars to date with a total of approximately 450 participants. We present a webinar every Tuesday at 10:00 AM (PST), which is recorded and placed on our YouTube channel within 48 hours unless it is a repeat webinar. Our YouTube Channel acts as our repository and is a great place to send our customers if they happen to miss a webinar. Overall, we have learned a great deal with this new medium and we are still learning. We have received great feedback and feel the more we learn and adjust to those findings, this will continue to be an effective way to reach and assist our customers.

AVK Invites you to the
**Series 24 Overview &
Flowguard II Webinar**

March 30th, 2021
10:00 am (PST)

Presented by:
Gary Mossa
AVK Territory Manager

This webinar will
provide an Overview
of Series 24 Wet Barrel
Hydrant and the
Flowguard II



LEADING THE LOCAL GAS INDUSTRY

CZECH REPUBLIC

In December 2020, AVK VOD-KA signed a three-year contract (2021-2023) with the company GasNet regarding the supply of electrofusion fittings, butt fittings, PE ball valves and telescopic spindles. GasNet operates about 70% of the local gas market.



*By Patrik Opa,
FUSION specialist,
AVK VOD-KA a.s.*

This victory was preceded by almost three-month, two-round selection procedure, which, thanks to the accommodating, fast and professional help of our colleagues from Poland and England, was excellent and we became the exclusive supplier for

their internal services and one of three partners for their supplier assembly companies in the Czech republic.

With the contract, we broke almost 20-years of cooperation with their other suppliers. Thanks to high quality, extensive production, testing and inspection, continuous improvement of Fusion products and excellent service, we are gradually succeeding in gaining more customers on our side.

Quality in every step – from product to training

Even in the difficult covid-times, we manage to train our customers directly on the construction sites and bring Fusion quality into all steps. We often experience ignorance and that even the most basic technological regulations and procedures are not followed. The most common mistakes are the non-use of clamping and levelling jigs. Together with GasNet's technical staff, we try to eliminate situations like these as much as possible and supervise the compliances with the prescribed rules. Many customers then order the levelling jigs from us, so the benefits go both ways.

From my point of view, this breakthrough into the Czech gas industry is the best celebration of Fusion's 50th anniversary and confirmation of its position as a world leader.



SHOWTIME: AVK AUSTRALIA AT OZWATER'21

AUSTRALIA

Under the theme 'Fit for life, quality solutions', AVK Australia showcased a wide range of valves, clamps, couplings, and fittings for the water, wastewater, industrial, and mining markets.

*By Tiffany Birmingham,
General Manager, Marketing,
AVK Australia*



The location was the Australian Water Association tradeshow, Ozwater'21, hosted in Adelaide, South Australia. Star products included the 1.8 tonne S570 resilient seat gate valve, the impressive Wouter Witzel orange butterfly valve, and the new AVK S76 butterfly valve, etc.

Represented as ONE AVK with Expect...AVK shirts and promotional collateral, we operated as an umbrella to the raft of brands within the AVK group such as Wang, Orbinox, Wouter Witzel, Interapp, Glenfield, Fusion etc. Our focus was to continuously build stronger relationships with our key distributors so we can deliver our innovative market-based solutions whenever, wherever they are needed.

Through our value proposition messaging, we demonstrated to stakeholders what they can EXPECT when doing business with AVK. We were encouraging stakeholders to ASK AVK and to talk to our product experts on the stand and learn about the value we bring to the market through our customised solutions, innovative

design, and dedicated people to support our customers.

We listen, We lead, We deliver.

To assist our customers even further and help them track their assets, AVK was promoting the new tracking App, AVK ASSIST.



All AVK employees at Wingfield, South Australia had the opportunity to visit Ozwater'21 and Marketing conducted guided tours. This was a great initiative for the industry to see the real people behind the AVK brand and the importance we place on operating as ONE AVK.

In conjunction with the exhibition, AVK Australia hosted groups of customers

through the AVK Wingfield, South Australia production facility to show the quality in every step of the AVK manufacturing process.



QUICK ASSISTANCE AT URGENT REPAIR TASK

SOUTHERN AFRICA

In early October 2020, a client ordered two flanged butterfly valves drilled according to SANS1600/3. Upon delivery for the installation phase, the consultant discovered that the pipe flanges and valve flanges had different drillings and were therefore unable to fit.



*By Nicole Singh,
Group Marketing Manager,
AVK Southern Africa*

The customer contacted a third party closer to the required site installation in the area to assist in changing the valve flange drilling to match the pipe flange drilling. They lacked the required expertise to remedy the situation, and unintentionally caused damage to the valves.

The fitment of the valves was urgent to avoid any delays in the tight project timeline, and a solution had to be found quickly. At the time of contact, which was during a factory shutdown

period, the customer contacted Danie Breedts from our Water division for urgent assistance.

The factory team took on the task of repairing the damage and correctly matching the valve flanges to SANS 1000/3 to tie in with the pipe flanges. The results were a very satisfied customer and a BIG thank you to a great team effort by AVK PVE factory and AVK Southern Africa's logistics department.

COMPETITION



We are happy to announce that the winners of the competition in AVK InterLink no. 56 are:

- Arun Raj Ravi, Scorpion General Construction LLC
- Radu Mihaesc, AVK Válvulas, S.A.
- Oliver Tillery, AVK UK Ltd

Gifts are on their way.

The correct answer is: 5.2 m from top to bottom and side to side.

New competition:

What does UN SDG 6 stand for?

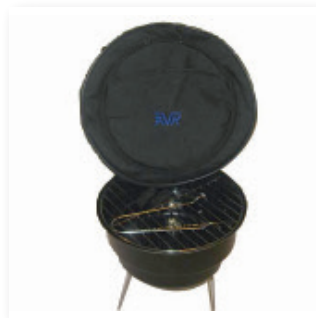
Send an e-mail with the correct answer in which you state your address and the gift you would like to receive – if you win.

E-mail to: lios@avk.dk

Choose between:



Beach towel with AVK valve



Picnic grill in a cooler bag



Ocean bottle

AVK Holding A/S

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www.avkvalves.com

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Expect... **AVK**



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Paper from
responsible sources
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