



**EXPECT
STORIES FROM THE
AVK WORLD**

Expect... **AVK**



FRONTPAGE PICTURE

Discharge valves at the Woronora Dam

Woronora Dam is a mass gravity dam. The dam is 66 m high and 390 m long, curved in appearance and remains in position due to its own massive weight.

The dam is able to hold back a capacity of 71,790 megalitres (1 megalitre = 1 million litres!), and Lake Woronora covers an area of 4 square kilometres in total.

Located near Sydney's suburb of Waterfall, the dam discharges floodwater into the Woronora River,

downstream of the dam. To meet international dam safety standards, the dam was upgraded by a system of wall and foundation drains. Raw water from the dam is pumped to the adjacent Woronora water filtration plant, and the dam and water filtration plant supplies water to the surrounding areas.

In 2002/2003, Glenfield Invicta designed, manufactured and supplied three submerged discharge valves (series 856) to control the discharge flows which were required for environmental release. These valves ranged in size from DN375

inlet diameter to DN1100 inlet diameter. The valve shown in the image required to have an additional bespoke design feature at the top of the valve which would allow for future pipeline connections to be made to the valve at a later date if required. These valves were selected due to their excellent flow control capabilities and their compact energy dissipation characteristics.

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DEAR READER

The 'Global Risks Report 22', which was just released in February, no longer includes water or water-related issues among the top five threats lurking within the next ten years. Unfortunately, not because the world has got to grips with water infrastructure, in case you were wondering. Other threats have just come along and seem more plausible.

Climate action failure is now considered the greatest threat to human safety and well-being. By action failure is meant that even though we know what needs to be done, and we have the tools and technologies to do so, we will fail to follow through.

Failure to act will eventually drag water back into the picture, as extreme weather events have a direct impact on water infrastructure. Extreme rain will destroy sewer systems through overflow and create massive pollutants, or - as is seen in many places in the world - rip everything with it as it flows by; land, houses, cars, bridges and the like.

Before 2030, hundreds of millions of people will move because of water issues in their area. Either because of too much, too little, or too poor quality.

As you will notice throughout this magazine, more and more projects are initiated to prepare or optimise water infrastructure to accommodate for changes in the climate. Fortunately, that is because there are numerous solutions readily available to structure a future-safe, sustainable water infrastructure. Solutions to not only cope with the effects of climate changes but to also help bring down emissions and over-exploitation so we can prevent further impact.

IWA Conference and Exhibition, Copenhagen 2022

Having been shut down due to COVID-19 for two years, we are finally ready to receive guests and delegates to Copenhagen in September at the IWA World Water Congress and Exhibition.

The theme of the conference is "Water for smart, livable cities". At

the exhibition, our Danish pavilion will demonstrate how we can assist with efficient water management. The "LeakMan" project will be used as a demonstration of how it is possible to reach a close-to-zero leakage rate. For the project, AVK has contributed with our intelligent pressure management system as well as Smart Water products, which can all be experienced at the Danish pavilion.

We highly encourage all our sales organisations and customers to visit the event in Copenhagen to see and experience the last new measures for improved water infrastructure.

Welcome to a new issue of InterLink, and welcome to Copenhagen in September!

Enjoy reading.

Michael Ramlau-Hansen



UPDATED SMART WATER PORTFOLIO: NOW AVAILABLE WITH NB-IOT

GLOBAL

At AVK Smart Water (ASW) we are happy to announce the relaunch of our portfolio with new communication technology, meaning that our products will now be available in a NB-IoT version.



*By Ida Kirstine Rohde Mikkelsen,
Marketing Coordinator,
AVK Smart Water*

The decision to develop an NB-IoT version is based on experiences from pilots and thorough research and learnings from the market. NB-IoT sensors are easy and simple for customers to install, as NB-IoT uses the existing cell towers for connection – the same network that our smartphones use. Due to its superior coverage, NB-IoT is also ideal for installations deeply in the ground such as in wells.

The benefits of using NB-IoT are many, including high connection density, flexibility, low operating costs, wide range, and low power consumption.

What is the AVK Smart Water solution?

The AVK Smart Water solution is a combined solution of sensors and

software. The battery-operated sensors collect and decode the data, and the software platform visualises complex data and turns it into valuable insights.

Our sensors are designed to fit AVK core products such as gate valves, fire hydrants and AVK fittings. When installed, the sensors provide data directly from applications in the water distribution network and send the data to the dedicated software platform.

The sensors from AVK Smart Water include:

- Pressure sensor
- Flow sensor
- Temperature sensor
- Open/close sensor
- Level sensor
- Fire hydrant cap sensor
- Valve position indicator

What is NB-IoT?

In short, NB-IoT (Narrow Band Internet of Things) is a wireless communication standard for IoT using the existing telecommunication. Due to its wide coverage and its energy efficiency, NB-IoT is ideal for installations in the ground which demand maximum battery lifetime and strong coverage.



Scan/click to learn more about NB-IoT and our product portfolio

INTRODUCING THE VCW BRAND PRODUCT LINE

BRAZIL

By Juliana Celestrim,
Sales & Marketing,
AVK Válvulas do Brasil



Over the past few years, the previous VCW Válvulas company has been merged with AVK Válvulas do Brasil. A strong asset has been added to the Group, and a more solid, structured organisation is better equipped to meet national and international market requirements.

VCW Válvulas has been present in Brazil since 2007, and is specialised within the flow retention in basic/industrial sanitation, water and wastewater treatment markets. The company has always sought to reach the entire Brazilian and the international market with its variations of butterfly valves and check valves with their different materials and characteristics for certain types of applications.

In 2016, the AVK Group acquired most of its shares as to complement the Group's strong global product line within gate valves and strengthen the selection of butterfly and check valves.

Now, with this union, VCW has become a brand.

AVK Válvulas do Brasil is currently responsible for the VCW brand, taking

over and managing the entire product line.

Throughout 2021, employees from AVK Válvulas do Brasil and from AVK Holding have worked together to incorporate the VCW product line into the standards of the AVK Group.

The VCW brand line offers the following products:

- Split concentric butterfly valve, series 930
- Monoblock concentric butterfly valve, series 931
- Concentric butterfly valve with double-d system, series 936
- Double-eccentric butterfly valve, series 926
- High-performance double-eccentric butterfly valve, series 929
- Double-eccentric butterfly valve with internal vulcanisation, series 934

- Quick-closing check valve, series 928
- Single gate retaining valve, series 927
- Double gate retaining valve, series 932

A new Board of Directors

With years of experience in the valve sector, VCW's former owners and partners are now a part of the board of directors and function as the company's Financial Director, Commercial Director and Industrial Director.

We now feel like a more solid and structured company here in Brazil, and every day, we are seeking to improve business and manufacturing processes.

AC.MO AND AVK GULF DELIVER HIGH-PRESSURE FLOW CONTROL VALVE SOLUTION

UAE

For use in the water transmission scheme from Taweelah to Ajban, AC.MO and AVK Gulf delivered a high-pressure flow control valve solution (25 bar) to TRANSCO, Abu Dhabi Transmission & Despatch Company.



By Anurima Roy,
AVK Gulf,
Reg. Marketing Manager

In 2017, TRANSCO undertook the construction of the Taweelah to Ajban water transmission system in Abu Dhabi, the UAE. This scheme will maximise the utilisation of the transmission facilities from Taweelah-Ajban-Sweihan to supply the Al Ain Region's increasing water requirements; primarily for the large quantity required by the Al Maha Farms.

The scope of work

Valued at USD70 million, the project includes the installation of a new pump

Abu Dhabi Transmission and Despatch Company (TRANSCO) is responsible for the construction, development, operation, and maintenance of all high-voltage power and bulk water transmission networks in the Emirate of Abu Dhabi and in some other parts of the UAE.

with the same capacity (1x25.00 MIGD) at the Taweelah B pumping Station. Also, it comprises the installation of 1,35 km of new pipelines (DN1000) from the discharge header of the existing Ajban Transmission pumping station to the existing twin to the Sweihan Reception and onto the the Ajban transmission lines.

Additionally, the project includes supply and installation works for a provision connection from three transmission pipelines:

- 200 meters of new pipeline (DN1000) from the twin line at Sweihan Reception to the Ajban transmission, as well as to the existing twin line (DN1200) further onto the Sweihan pumping Station transmission line.
- 1 km of new pipeline (DN1600) from the discharge header of the existing Sweihan Transmission pumping station to the existing twin (DN1600) Fujairah Water transmission lines.
- Replacement of the existing pipelines (DN1200) and fittings with new higher pressure rating pipelines as well as fittings for the connection of the proposed pipelines with the

existing twin (DN1200) from Ajban to the Sweihan pumping station transmission lines by-passing Sweihan Reception.

Finally, the project covers full replacement of the existing control system with the latest technology SCADA system at the Taweelah B pumping station, including the integration with a Load Dispatch Center (LDC).

In October 2020, Hydropower Energy and General Construction was awarded the main contract to execute this project.

The right place at the right time

At that point of time, since AC.MO was already prequalified into ADWEA (Abu Dhabi Water and Electricity Authority) as an approved vendor of flow control valve solutions, we were perfectly

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positioned to engage with the client, consultant, and contractor directly. The solution offered was to use control valves with customised cylinders to obtain preferred control conditions depending on various hydraulic parameters.

This meant that every flow control valve required individual attention by selecting an optimised size, cylinder, and actuator to meet the strict requirements. We were able to achieve the necessary flow condition to meet the stringent project requirement in a very short span of time compared to the competition, which proved to be the key deciding factor for the client, TRANSCO. This secured the order on April 1st, 2021, solidifying our position into TRANSCO's robust future project pipeline. Following this, the FAT (Factory Acceptance Test) at the AVK AC.MO facilities was conducted online in October 2021, due to the

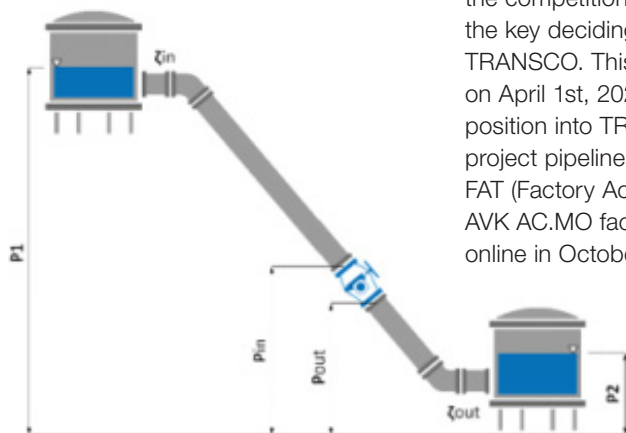
ongoing pandemic. This allowed us to deliver the order as per TRANSCO's expectations by November 2021.

Needle valves delivered to the project:

- 1 x DN80, PN25
- 1 x DN100, PN25
- 4 x DN150, PN25
- 3 x DN200, PN25
- 2 x DN400, PN25
- 1 x DN450, PN25
- 1 x DN500, PN25

Pipe pressure drop coefficient

Upstream pipe (xin): 91.83
 Downstream pipe (xout): 0.00
 Upstream reservoir level (P1): 127.41
 Downstream reservoir level (P2): 50.00



SOLE SUPPLIER OF MECHANICAL FITTINGS

UNITED KINGDOM

AVK UK was awarded South East Water's framework contract for sole supply of mechanical fittings.

*By Dean Wheatley,
 Business Development Manager,
 Fittings,
 AVK UK*

South East Water, which supplies water to over two million customers, has awarded a five-year framework contract to AVK for the sole supply of mechanical fittings. The contract covers couplings and adaptors (DN50-DN1200) to suit all pipe materials, as well as a range of specialist fittings and under-pressure tees.

This substantial contract award is the latest in a series of framework contract

wins for AVK with water companies across the UK and Ireland.

The AVK team put in a lot of work to ensure that we truly understood South East Water's mechanical fitting requirements. This enabled us to create an offer that addressed their key objectives. Whilst hitting key points was important, it was the combination of UK-based supply chain resilience, a coherent strategy and a comprehensive product range that gave us a competitive advantage.

Our fittings manufacturing facility is based in Hyde, Manchester. As well as creating standard stock items, Hyde is also the home of AVK's bespoke 24/7 fabrications unit for specialist fittings. These could include under-pressure tees, one-off repair clamps and dismantling joints. The substantial investment in robotics has

had a significant impact on the speed with which bespoke fittings can be fabricated.

Covid-19 has caused issues for all suppliers in terms of raw materials and components. I believe that this has made procurement teams truly value UK manufacturing and stockholding in terms of supply resilience. The fact that AVK's fittings range is not beholden to the vagaries of supply from China stood us in good stead during the contract review process.

I also believe that other water companies will be looking to review their supply arrangements for mechanical fittings in 2022, and feel confident that AVK has the range, supply chain, stockholdings, and technical competencies to put us in a position to win further framework contracts.

SEARCHING OUT THE BEST FLOW CONTROL SOLUTION

WALES



By Greg Morris,
Technical Manager, Water,
Glenfield Invicta

Glenfield Invicta's team of experts rise to the challenge to find the best valve and flow control solution for a reservoir project in Wales.

The Alwen Reservoir is the largest man-made 'lake' in Wales, covering some 3.64 km². The reservoir was constructed between 1911 and 1920 to provide water for the town of Birkenhead on The Wirral.

Lewis Civil Engineering, based in Pontyclun, South Wales, is leading a refurbishment project at Alwen Reservoir for Dwr Cymru Welsh Water (DCWW). A vital element of the enabling works was the creation of a duplicate water supply arrangement as the existing mains were to be shut off

whilst work was being carried out on the reservoir.

Lewis Civil Engineering contacted the team at Glenfield Invicta for guidance on the optimal choice of valve for the temporary supply pipeline. The temporary supply involved an over-pump arrangement at the top of the dam connecting to an existing supply pipeline 30 m below the reservoir level. The operational parameters stipulated by DCWW were challenging; a maximum pressure of 25 m to enter the existing works combined with the

ability to achieve a range of flow rates with a maximum of 462 litres/second.

The natural choice for this application would have been a pressure reducing valve. However, due to the small differential pressure requirement of 5 m, the pressure reducing valve (PRV) would have been working close to its limit. As it was critically important that pressures in excess of 25 m were not introduced into the existing

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infrastructure, an alternative control valve solution was required.

Demonstrating the engineering expertise of the Glenfield Invicta team

Glenfield Invicta analysed the application in detail, and considered using eccentric plug valves, needle valves and butterfly valves. The eccentric plug valve – like the pressure reducing valve - would also be operating close to its limit. The needle valve, although it would have been suitable, would have been at risk of becoming clogged due to the raw water passing through it; the needle valve has a smaller internal flow path and, when an anti-cavitation device is added which has additional smaller slots, any twigs, stones or solids may become stuck, and it could ultimately clog over time.

The Glenfield Invicta engineering team therefore considered whether a series 75 concentric butterfly valve would meet the operating criteria. To accommodate the range of specified flow requirements at the available pressures, a series 75 concentric butterfly valve (DN450) would be operating within a range of 35% and 45% open position. This is well within the allowable limits for the valve. Consequently, it was decided to install the series 75 concentric butterfly valve.

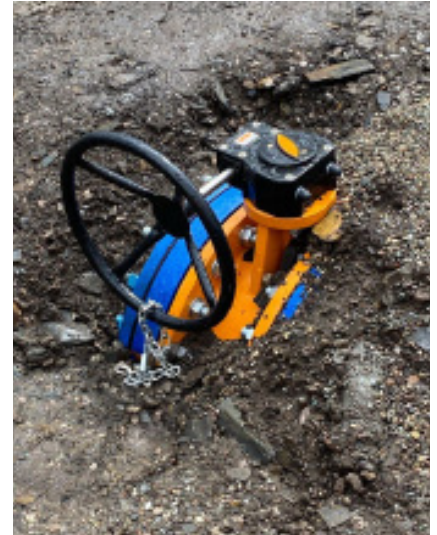
In order to ensure that the valve was installed and working as expected, the Glenfield Invicta team were on

site to commission the valve and to ensure that it was set to the correct position given the flow conditions. Due to the critical role of the valve, a locking device was fitted to ensure that accidental operation was avoided. A locking plate was bolted to the flange of the valve and a stainless steel chain and lock was connected to the gearbox handwheel. If there is a requirement in future to modify the flow rate, the locking device can be removed and the valve opens to the required position.

The commissioning of the valve was successful. It is now fully operational allowing the works on the main reservoir to proceed as planned.

The Alwen Reservoir project has shown that butterfly valves can be used for flow control applications and, in certain cases, can provide greater control when compared to alternatives such as pressure reducing and eccentric plug valves.

Clearly, the operating conditions for each system must be analysed closely to ensure that the correct valve type, size and specification is selected. When selecting flow control valves for a particular application, particularly where relatively low pressure differentials are involved, the concentric butterfly valve should definitely be considered. A concentric butterfly valve can provide the required flow control performance with the added benefits of being more economical,



easier to operate, and requires less space compared to other valve types referenced in this commentary.

Glenfield Invicta is part of the global AVK Group of companies. This gives us access to an unrivalled portfolio of different valve types, and it means that our engineers are able to specify the most optimal valve for a particular application. There is a danger in using a supplier with a limited selection, as it can sometimes lead to the use of a product that doesn't fully meet the exact specification requirements.

The Alwen Reservoir project demonstrates the engineering expertise of the Glenfield Invicta team and is a prime example of one of the AVK Group's promises: "Expect solutions, not just products"



AVK CHINA CONTRIBUTES TO WATER INTAKE PROJECT IN HANGZHOU

CHINA



At the Qiantang River, the mother river of the Hangzhou city, hundreds of thousands of tourists gather every year to experience a world-famous spectacle: the “Qiantang Tide”. While the phenomenon may look like a tsunami, it is in fact a tidal bore; a wave that flows upstream as high tide approaches. More than 80 rivers around the world have tidal bores, but the one at Qiantang is the largest with waves as high as 4 m (10 m at some locations), 3 km wide, a racing speed of 24 km/h and a rumble that can be heard more than an hour before it arrives.

*By Ken Yan,
B&D Marketing Director,
AVK Valves (Shanghai)*

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Fascinating, but complicated

More than 80% of the water supplied to the Hangzhou urban area comes from the Qiantang River, and for people living in Hangzhou, this phenomenon is more than just an exciting event. During the tidal flood season, the upward salt tide from the estuary is threatening drinking water sources for the millions of people living in Hangzhou.

Therefore, to coordinate the development of water sources and urban construction, and to reduce the threat of saltwater intrusion, Hangzhou has established a water intake upward movement project to optimise the layout of the water intake.

The water intake in Hangzhou was moved to the Shimen Shajiang section of the Fuchun River, and water intake pump stations were built at the Jiuxi water plant. A pipeline project was initiated at the Shansha reservoir, and the existing facilities of the water plant and the reservoir were renovated.

The construction of the water intake head, pump station and water pipelines are designed and constructed on the basis of the prospective scale of 3 million tons/day to accommodate for an increasing water need. The initial intake pump station was constructed to handle 1.7 million tons/day.

The project is planned to be implemented in two phases. In the



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first phase, the construction includes the water intake pump station to the Jiuxi water plant, a water transmission pipeline from the Shanhusha reservoir (parallel double pipes, single length about 6.6 km), multi-source water distribution wells in Jiuxi water plant, and relevant equipment renovation.

AVK China has provided a complete valve solution for the first phase, with exceptional durability and flexible configuration options to meet the project's strict requirements.

Products delivered to the project (so far):

- 22 x double eccentric butterfly valves (DN1600-3200)
- 40 x resilient seated gate valves (DN300-800)
- 22 x air valves (DN300)
- 5 x hydraulically operated check valves (DN1000-1200)

The large-diameter double eccentric butterfly valves (maximum diameter DN3200) are designed with AVK rubber sealing technology, combined with tilted and fixated disc which ensures long-term and stable operation of the water pipeline. Our hydraulically operated check valves are of a modular design concept, which effectively saves installation space and eases maintenance.

In addition, the AVK Group's largest overseas production base is in Anhui, covering an area of 330,000 m², including three production workshops such as large valve factory, fitting factory and a machining factory. Meanwhile, the AVK Asia Tech Centre, our AVK Advanced Casting Factory, AVK Syntech, AVK Sealing Technology Company and other companies surrounding AVK Anhui form a strong industrial chain to deliver affordable high-quality products to customers on time.

With global expertise and a localised strategy, AVK China is committed to becoming a trusted partner for all local customers. The Group membership ensures the customer's expectations for quality, innovation, reliability, sustainability and customer service.



CELEBRATING WORLD WATER DAY WITH PLANTABLE TAGS

BRAZIL

World Water Day, which is celebrated every March 22nd, was initiated in 1992 by the United Nations to reflect on the importance of water resources – essential for all life on earth. In addition, it is an important reminder of the urgent need to conserve aquatic environments, and to avoid pollution and contamination.



*By Juliana Celestrim,
Sales & Marketing,
AVK Válvulas do Brasil*

With that in mind, AVK Brasil will be promoting a campaign throughout the month of March to encourage planting, reuse and sustainable processes.

Practically, it means that on all invoices that we send along with our products, we include a tag made of ecological paper, informing about the importance of this day for our environment.

The tag will be available for our employees, partners and friends to take home as well.

Biodegradable material

The paper is made from recycled, ecological handmade paper that has

been embedded with seeds during the manufacturing process. The paper is biodegradable, so all that will be left behind is plants, and no waste.

The seeds we chose were: Arugula, clarkia and daisy.

How does it work?

1. Crush and wet the paper tag without damaging the seeds.
2. Plant the tag in a pot, and cover with a light layer of fertile soil.
3. Water every day – after 20 days it will start to germinate.
4. Place the pot in good exposure to the sun.

Through this initiative, we intend to contribute to a more conscious society, where we commit to our environmental and social responsibilities.

We are also switching all our A4 paper used for printing to recyclable paper.



Arugula



Clarkia



Daisy

ATHENS WATER UTILITY RELY ON AVK VALVES

GREECE

Athens water utility (EYDAP) is renovating the largest water treatment plant in Athens and counts on AVK valves to ensure reliable supply.

*By Nikolaos Simos,
Area Sales Manager,
(Greece, Cyprus, Bulgaria & Albania)
AVK International A/S*



With a daily capacity of 800.000 m³, the water treatment plant in Acharnai is crucial for the reliable supply of drinking water to the citizens of Attica.

The plant was constructed in 1972, and was first renovated in 1992.

As the city and population is continuously developing, a new upgrade was mandatory as well as the implementation of a sludge treatment

plant for the process of sludge and the backwash stream.

A long stainless steel pipe collects sludge from the 16 rectangular settling tanks, and each outlet duct is having a pneumatic operated butterfly valve (DN500) opening and closing when necessary, to transport the sludge to the new plant.

Additionally, there is an isolating double eccentric butterfly valve (DN800) at the collection pipe inlet.

Manually operated centric butterfly valves and double eccentric butterfly valves were also used during the renovation of the pump station's main and by-pass lines.

Knife gate valves with non-rising stem and ball check valves were used in the circuits of the sludge processing and dewatering, which are particularly popular products in Greece.

Products supplied to the project:

- 20 x centric butterfly valves, series 820 (DN500)
- 4 x double eccentric butterfly valves, series 756 (DN800)
- 8 x dismantling joints, series 873 (DN500 and DN800)
- 27 x knife gate valves, series 702 (DN80-250)
- 6 x ball check valves, series 53 (DN100-250)



WANT TO GET UPDATED ON THE LATEST WATER TRENDS AND TECHNOLOGIES?

GLOBAL

*By Michael Ramlau Hansen,
Public Affairs,
AVK Holding*

The Advanced Water Cycle Management Course (AWCMC) is primarily an offer to students from around the world within the biology, chemistry, geology and engineering disciplines. It is a thorough introduction to how water infrastructure is constructed, managed and optimised in a responsible way, while protecting our sparse water resources.

After a few Covid-19-related cancellations, we are back in original line-up with the course being completed as a two-week overnight programme at Låsby Kro – a local Inn near our AVK headquarters. The settings and vibe of the location help give the course an extra dimension, with quiet rural surroundings and local atmosphere offering the students great possibilities to network and socialise.

The course is also an option for employees in the private business community and to authorities working on regulation, resource planning

or legislation within the water and wastewater business.

In Denmark, we have put a lot of effort into groundwater management, both in terms of quality, capacity and reserves. We have regulated our water supply in terms of leakage and non-revenue water and must be able to meet the revised EU drinking water directive.

In doing so, we dare to call Denmark a progressive country when it comes to managing water infrastructure sustainably. We are boasting the fact that you can dive into the water from every port wharf in the country without any consequences to your health (but mind you, it will be cold).

necessary, and how it pays off to use and manage groundwater resources in a sustainable way.

The other day, I spoke to a student from the 2019 course, who is now working at a Danish embassy abroad, hired in as a sector expert to help support the new Water Export Strategy recently launched by the Danish government. She got a job after completing the course in a major Danish water supply, and from there, the road was open to get out into the world and help make a difference.



Scan/click the code to learn more about the AWCMC course on our website

Participation in the AWCMC course can open up for many opportunities. It will give a broad understanding of water's importance for a wide range of other themes; climate, energy, health, livability, just to name a few.

The course will help give an understanding of why consumers must pay a fair price for the water they consume, why regulation and legislation of the water supply is

THE YEAR OF THE TIGER

CHINA

After celebrating the Chinese New Year, China kicks off the Year of the Tiger – a year expected to show continued growth, although at a slower pace than in recent years. And with special focus on greener energy and better digital infrastructure, the Chinese market has become increasingly attractive to FLONIDAN.

By Lis Muusmann,
Chief Marketing Officer,
FLONIDAN A/S

Growing gas demand

Driven by the desire to see CO₂ emissions decrease, China has set a goal to be carbon-neutral before 2060. As part of this, China has shifted large parts of its coal consumption to natural gas, and by 2025 it is expected that natural gas will account for 10% of the total energy mix.

Following the shift to gas, China has seen a huge demand for gas equipment

- and in recent years, especially smart gas meters - supported by the government.

Smart meters pave the way

Similar to the smart meter roll-out in Europe, Chinese gas companies are beginning to replace traditional meters with smart meters, due to their data communication features.

Data communication enables frequent meter readings, accurate consumption billing, safety alarms and better balancing of demand and supply. With global shortage in natural gas supply, increased human costs and roaring energy prices, accurate billing and balanced supply has become increasingly important.

Ultrasonic gas meters are the future

Another interesting trend in the Chinese gas meter industry is the shift in meter technology. Today, the market is dominated by membrane meters, but ultrasonic meters are predicted to be the future standard. With unparalleled advantages in accuracy, range, repeatability, resistance, and service life ultrasonic meters are expected to be the priority choice for gas companies to improve management and profits.

Challenging a monopoly

Many Chinese gas meter manufacturers already have an ultrasonic gas meter ready, but so far none of them have succeeded developing the critical key component: an industrial flow sensor. Hence, they all rely on one and the same supplier of flow sensors to integrate and assemble their own housing into ultrasonic gas meters. Designing an industrial flow sensor is no easy task, but at FLONIDAN we have successfully managed to launch our first ultrasonic gas meter two years ago.

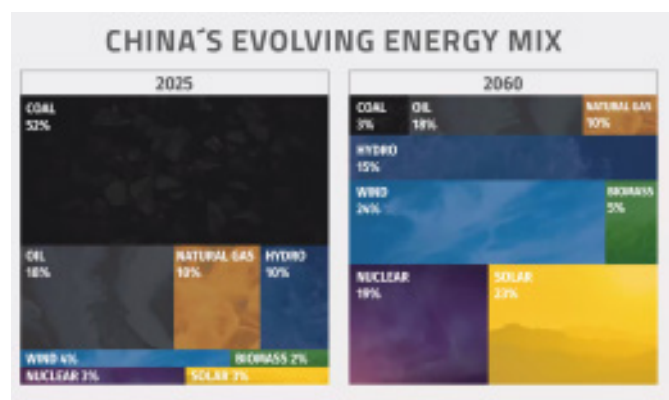
Time is of the essence

Predictions are, that domestic manufacturers will succeed in designing matured ultrasonic gas meters with their own flow sensor in some 5-6 years, leaving room for newcomers who are able to deliver mature, price-competitive ultrasonic gas meters in high volumes already now.

Own Man in China

With good assistance from AVK Shanghai, FLONIDAN took its first step towards entering the Chinese market in October last year, when welcoming our first Chinese employees.

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SMART METERING: The demand for smart gas meters in China is booming. In 2020 almost 8 out of 10 meters sold were smart. Smart gas meters are electronic and equipped with data communication modules, which enable daily meter readings via NB-IoT, NarrowBand-Internet of Things. Smart gas meters are battery powered, and with required 10 years lifetime and daily communication low-power design is key. FLONIDAN has designed a smart ultrasonic gas meter, SciFlo®, which excels in accurate, low power operation. A Chinese version of SciFlo® will be launched in 2023.

Leveraging the “Own Man in China” concept, FLONIDAN hired Lei Dai and Xie Yun. With years of working experience in the Chinese gas sector, they have paved the way for a new FLONIDAN venture and a new product - a Chinese FLONIDAN company, helping the Chinese gas utility sector to optimise and digitalise their gas supply with ultrasonic smart gas meters.

2023 is the year

The first prototypes of a Chinese FLONIDAN gas meter is planned for Q3 this year. Then follows the required Chinese approval procedures and if all goes well, FLONIDAN will sign the demand of 20 million smart gas meters annually and hopes to secure a future business in China.



ORBINOX EXPANDS THE PRODUCTION CAPACITY

CHINA

*By Katherine Badiola,
Communication Manager,
ORBINOX VALVES
INTERNATIONAL S.L.*

As part of the ORBINOX Group’s growth strategy, ORBINOX VALVES (Ningbo) Co., Ltd in China has increased the production capacity with additional workshop space from September 2021.

The production workshop has been expanded from 2.000 to 3.300 m².

In the last fiscal year, ORBINOX VALVES (Ningbo) Co., Ltd China has achieved a 30% turnover increase. Consequently, the workforce too has grown with the hiring of nine additional employees.

The journey continues

ORBINOX’s growth strategy also includes expansion plans of the production facilities in Spain and India.



READY FOR THE HYDROGEN REVOLUTION

UNITED KINGDOM



*By Jon Briafield,
Market Sector Manager, Gas,
AVK UK*

The Donkin brand, part of the AVK Group, has been designing and manufacturing gas products and solutions in the UK for over 170 years. When asked to supply products for the demonstration gas network being constructed by DNV at their Spadeadam Research and Development Centre in Cumbria, AVK, Fusion and Peak Pipe Systems embraced the opportunity to be involved in the future of energy, drawing on both their experience and capabilities.

The network forms part of the H21 project led by Northern Gas Networks with the collaboration of all other distribution network operators (DNO), National Grid and the HSE Science Division.

In December 2020, the UK Government announced a plan to reduce greenhouse gas emissions by at least 68% compared to 1990 levels by 2030. This builds on the legally binding commitment, signed into law in June 2019, to reach a target of net zero emissions by 2050.

A switch to hydrogen could play a major role in helping the UK achieve these targets: a hydrogen revolution. At AVK UK, Fusion Group and Peak Pipe Systems, we are ready for the hydrogen revolution.

The H21 network at DNV Spadeadam is being used to establish whether normal gas network operations can function safely on a network transporting 100% hydrogen gas.

Fundamental to the success of the project is that the valves and fittings used on natural gas networks – and the methods used to install them – are safe and effective in a hydrogen network world.

The hydrogen is stored at 70 bar in a 48" steel reservoir. The pressure is initially reduced to 7 bar (intermediate pressure) and subsequently to 2 bar (medium pressure) and finally to 75 millibar and below (low pressure).

The network itself is around 1 km of PE pipes ranging in diameters. It incorporates a large number of Donkin valves for such a small area, and the

Article continues on the next page >

DNV and NGN teams undertaking the installation work have done a great job under challenging conditions. AVK UK supplied 19 different variants and sizes of the Donkin gate valve (series 555), over 30 valves in total and a number of additional Donkin ball valves (series 460 and series 455).

Most of the low-pressure valves are installed in a large underground concrete chamber. Each valve has purge and vent point risers, coming up through a metal grid across the top of the chamber to facilitate purging and venting operations without the need to enter the chamber.

The electrofusion fittings and fabrications on the network have been supplied by Fusion Group Ltd, an AVK UK Group company. In total, Fusion supplied over 110 different products including multi-seal tapping tees, branch saddles and stub flanges; sizes ranged from 630 mm down to 32 mm.

Fusion Group also supplied the PE pipe, which was manufactured by Peak Pipe Systems, on its three extrusion lines. All the products were approved to current gas standards specifically, designed and manufactured in the UK for the project.

Sharon Foster is Peak Pipe Systems' Commercial Director: "We made the first delivery of pipe to DNV Spadeadam in September 2020. Peak pipe systems provided at least 9 different pipe sizes ranging from 180 mm and 125 mm 7 bar orange pipe, to SDR17.6 pipe in sizes from 355 mm all the way down to 63 mm."

The UK gas mains replacement programme of old metal gas distribution pipes with PE has, almost by accident, put the UK in a strong position with regards to introducing hydrogen into the legacy gas distribution network. It is estimated that 90% of the entire network will be PE by 2032.

There are, of course, a huge number of legacy AVK Donkin valves and fittings on the existing network. We have been in detailed discussions with Northern Gas Networks, Cadent and HSE to build the safety case for the introduction of hydrogen into public

gas networks in the North East and North West as part of the next phases of H21 and the HyDeploy project.

The H21 project team will be sharing the research project outputs gathered at DNV Spadeadam through the knowledge dissemination process with AVK UK, Fusion Group and Peak Pipe Systems and this will provide us with valuable insights into the compatibility of our current product portfolios with any future hydrogen gas networks.

H21 is just one of many hydrogen-related projects being supported by AVK across the UK. For example, it is also contributing to a project looking at the safe blending of hydrogen with natural gas into the existing gas network, and to the SGN H100 project to build and operate a pilot public hydrogen network by 2022/23.

The hydrogen revolution is nationally important. Despite the huge growth of renewable energy sources such as wind, solar and hydro, 85% of homes and 40% of the UK's electricity generation currently relies on gas. Being able to use the existing gas network for hydrogen distribution with

only minimal modifications would be hugely beneficial. One of the most effective ways of producing hydrogen is electrolysis which uses electricity to split water into hydrogen and oxygen. The surplus electricity generated by renewable sources could be supplied at low cost to power electrolyzers. This effectively transforms something that cannot be stored, electricity, into something that can: hydrogen.

The possible move to a blend of hydrogen and natural gas, and eventually to a 100% hydrogen gas network has a precedent. During the 1960s and 1970s, the UK transitioned from town gas to natural gas. Ironically, town gas typically contained around 50% hydrogen!



SUPPLYING 100+ VALVES TO EUROPE'S LARGEST GOLD MINE

FINLAND



Agnico Eagle Finland Oy is a subsidiary of the Canadian Agnico Eagle Mines Limited. It operates the Kittilä gold mine in Finland and explores actively in Finland and Sweden.

The Kittilä mine is the largest gold mine in Europe and it is located in the beautiful Lapland, about 900 km from Helsinki and about 150 km from the Arctic Circle.

*By Renja Aarnio,
Account Manager,
AVK Finland Oy*

A significant expansion project of the mine is going on at the moment, and a new plant project was commissioned in 2020, expected to increase the production capacity by 25%. The project is going to be finished in 2022.

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A part of the project is a 22 km long, pressurised discharge pipeline with 20 km of PE710 and 2 km of PE630 pipes.

AVK Finland Oy was the main supplier of various valves for this discharge pipeline and delivered resilient seated gate valves, pressure valves, strainers, air valves, fittings, and butterfly valves for the project. The contract included over 100 valves in total, of which 50 pcs were DN600 and 21 pcs DN500 resilient seated gate valves. The valve sizes in this project varied between DN80 and DN600.

"AVK is known as one of the largest manufacturers of quality valves. This was very important to us, because it gave us confidence that their valves have all the international approvals needed and they can be delivered to the site on schedule. We also appreciated the strict quality control of AVK, including pressure testing of the valves, which was one of our decision criteria besides competitive pricing. The valve deliveries were right on time and the project was finished ahead of schedule", says Jaakko Saukkoriipi, the department manager of environmental control at Agnico Eagle Finland Oy.



PREFERRED SUPPLIER OF REPAIR CLAMP SOLUTIONS

ROMANIA

The connection to a new raw water line has been equipped with a flange outlet repair clamp from AVK; a solution that is now recommended for similar projects.

*By Felix Gyori,
Product and Promotion Manager,
AVK International A/S (Romania)
and*

*Georgian Pîrnă
Regional Sales Manager, Vestra
Industry*

It was decided to have a new raw water line to supply the lake and the fountain located in Zavoi Park, instead of using a drinking water supply.

The branching solution from an azbo-cement pipe (DN800) to a PE pipe (DN200) includes an AVK series



748 repair clamp with a flange outlet (DN200) as well as a 06/30 gate valve (DN200), both delivered by our Romanian partner Vestra Industry.

The solution was chosen by the contractor Vilforest based on previous positive experiences with our products.



After mounting and testing, the client is very pleased with the solution. Previously, they had had doubts due to bad experiences with similar products from other suppliers, where the repair clamps with outlets did not assure a 100% tightness after mounting. After installation, the solution from AVK is approved and recommended for other future projects.

UPGRADING A VITAL DRAINAGE PUMPING STATION

UNITED KINGDOM



*By Alex Philo,
Product Manager, Penstocks,
AVK UK*

The history behind

The Fens is a coastal plain in the East of England and is one of the most productive arable farming areas in the United Kingdom. Prior to being drained, the Fens was a relatively desolate area covered by tall grasses and flat wetlands.

The Fens were drained by a Dutch engineer, Cornelius Vermuyden, in the 1630s under the instruction of King Charles I (who was beheaded for treason in 1649 at the end of the English Civil War). Vermuyden had first worked for King Charles in 1626 when he was asked to drain an area to the northwest of the Fens known as the Isle of Axeholme.

Drainage continues to be a major challenge in the area and Keadby pumping station, completed in 1940, plays a vital role in balancing the drainage and irrigation needs of the area.

Context

Keadby Pumping Station is located alongside the tidal River Trent. A lagoon at the pumping station receives water from three waterways, collectively known as the 'Three Rivers', which are fed by a network of tributaries and drainage channels some of which date back to the time of Vermuyden.

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The pumping station drains excess water from the waterways into the River Trent, maintains sufficient water for irrigation of the fertile farmland upstream of the Three Rivers, and prevents excess water from the river flowing into the waterways during high tides and flood events.

The project in detail

The Environment Agency, which is tasked with protecting and enhancing the environment in England, is completing a GBP35 million project to upgrade the pumping station. Glenfield Invicta has played a fundamental role in the project, designing, supplying, installing and commissioning all of the penstocks, flap valves and associated control mechanisms on the project.

The upgrade of the pumping station is being led by GBV, a joint venture between Galliford Try and Black & Veatch. In addition to the penstocks and flap valves, all six pumps are being replaced and the outfall headwall rebuilt.

Both the flap valves and the pumps have been designed to be 'fish friendly' to allow safe navigation for fish and eels on their natural migration. The Environment Agency consulted with a specialist to ensure the design of the flap valve and pumps met the necessary standard.

Flap valves

The twelve flap valves are fabricated from HDPE (High-density polyethylene) with neoprene seals. The valves are large with the valve's aperture itself measuring 1980 mm x 1580 mm. The flap valves incorporate a 'fish friendly' spring damper system, each consisting of eight individual stainless-steel springs, which control the closure of the valves. The system ensures that the flap valves remain open for a short duration as the tide rises, so as to ensure that the valves are not a barrier to fish and eels migrating into the Three Rivers. The use of a spring damper system is a novel technology for this type of application where rubber dampers would traditionally be used. Glenfield Invicta's engineers chose the spring dampers to provide greater operational consistency over time and for ease of adjustability on site.



Penstocks

The eighteen penstocks designed by Glenfield Invicta feature EPDM resilient elastomer seals and are manufactured from stainless steel grade 316Ti; a titanium stabilised austenitic stainless steel highly resistant to corrosion, making it ideally suited to the brackish water environment in which the penstocks operate. With 1600 mm x 2000 mm and 1700 mm x 1900 mm apertures, the penstocks are large. On the twelve outfall penstocks, vertical 8m long extension spindles connect the penstocks to Auma electric actuators, positioned over a mesh floor for access, 2 m above the top of the chamber. The six penstocks in the forebay are equipped with Auma variable speed actuators, complete with integral uninterruptible power supplies (UPS), mounted directly to their extended frames and feature safety guards to safeguard the operator.

Thoughts on the project

The Keadby Pumping Station is a fascinating project. The Environmental

Agency subjected the penstocks to one of most intensive and thorough Factory Acceptance Tests I have ever experienced. At the factory, we recreated the conditions under which the penstocks will be working, including subjecting the penstocks to a head of water equal to the maximum that the penstocks will experience in operation. The emphasis was on ensuring that the leakage rate was within the allowable standard and that the actuator could open the gate whilst the maximum differential head of 8.3 m was across it. All tests were passed with flying colours, with virtually no leakage experienced during the tests.

Although the order for the penstocks and flap valves was awarded back in April 2019, all those involved in the project have had to flex to accommodate the strictures placed on construction projects due to the pandemic. Despite this, the Glenfield Invicta installation team has maintained progress and I am confident this complex project will be completed by the end of 2022.

PRESSURE MANAGEMENT PROJECT REDUCES WATER LOSSES AND NETWORK DETERIORATION

MALAWI

The Lilongwe Water Board (LWB) utility in Malawi was experiencing high pressures in the water distribution network; a phenomenon that was enhancing silent leakages especially during periods of low water consumption. Moreover, the network pressures were not stable, leading to cyclic stresses that were contributing to deterioration of the pipes' strength.



*By Prosper Shoniwa,
Exports Business Development
Manager,
&
Craig Barbeito,
Product Specialist, pressure reducing
valves,
AVK Valves Southern Africa*

Ultimately, LWB wants to reduce physical water losses and promote water demand management, and to achieve levelled pressures to preserve the pipes' service life. In so doing, they can save revenue which can be invested in other sectors within the functions of the utility.

For the water utility, a low-hanging fruit in this case would be to apply pressure management. As consumption in the water distribution network is variable, it is vital to go for technologies that accommodate autopiloting of the pressure settings. This ensures that customers get the optimum pressure only when required. AVK is able to provide utilities with some of the novel technologies within pressure management, not only as valve manufacturers but in applying the technology as well, both on and off-site.

Benefits for the consumers

As most water utilities in the area are struggling with high levels of non-

revenue water, pressure management is a preferred strategy to curb water losses. The water saved can be used to serve the unserved population and hence improving their living standards. This is also good for the environment, as utilities do not abstract water to wastage. Moreover, the utilities will realise an increased revenue resulting from the sales of the water savings.

It is expected that the interventions shall benefit about 50,000 customers from the water saved through the water demand management. At the customer

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end, it is expected that the fittings at household level will be lasting longer than before when the customers were experiencing higher pressures.

Winning the order

We got information that Sino Hydro Malawi had been awarded this contract by Lilongwe Water Board and approached them both to pitch our product offering. Another supplier had initially been awarded the supply contract but failed to get an approval from the engineers. We

offered our AC.MO range of pressure reducing valves that ultimately met the specifications. Through months of rigorous negotiations, we managed to secure the order of 58 different sizes.

Hands-on product training

In January 2022, after the valves were installed, we headed to Malawi to assist with onsite supervision, dry training and practical hands-on experience. Attendees consisted of the delegates from LWB and consultants from Posch + Partners Consulting

Engineers. The training was held on January 17-18, and included the following:

- Presentation of the series 879 (M117 Dual stage Day/Night) pressure control valve
- Presentation on maintenance procedures, stripping the valve and its components
- Presentation on the installation and operations procedures covering commissioning of the valves
- Hands-on training on the M117 Valve Timer/ Programming Key to set times of the day and night.

Sino Hydro staff and Posch + Partners consultants accompanied AVK on-site for commissioning of the first installed valve. Ultimately, the project owner, client and consultants were all happy about our product offering and service. We hope to use the installation as a pilot project for all water utilities in Malawi and the rest of the African continent.

AVK MEETS ITS UKCA MARKING REQUIREMENTS AHEAD OF SCHEDULE

*By Emily Davies,
Marketing Manager,
AVK UK*

Following the United Kingdom's withdrawal from the European Union, new regulations have been introduced to replace the CE mark for products being sold ('placed') in Britain. As of January 1st 2023, all relevant products will have to carry UKCA – United Kingdom Conformity Assessed – markings.

All AVK UK products covered by the Construction Products Regulation and the Pressure Equipment Regulations

have now completed the UKCA process and are dual marked CE and UKCA. These new markings will apply to over 70,000 gas valves and water hydrants manufactured by AVK companies in the UK in 2022.

Robin Morewood, Head of Technical and Product Development at AVK UK, has led the Group's UKCA marking programme:

"AVK UK was ideally placed to comply with UKCA marking requirements as our quality system is built around the relevant regulations. The UKCA process entailed the creation of new instructions, new declarations of

conformity, and new essential safety requirements. Our water and gas customers can rest assured that all AVK UK products are already correctly marked and labelled in line with UKCA requirements well in advance of the legal deadline."



BIG INTERNATIONAL TRADE SHOWS IN JUNE 2022

This summer we will attend two big trade shows that will take place in June. Both are postponed from 2020 due to Covid-19, so we really hope that our existing and potential customers look forward to visiting these international trade shows again after a long break. Together with our German colleagues in AVK Armaturen we are preparing great booths to welcome all of them – including you!

By Lene Mark,
Head of Marketing, Continental Europe,
AVK International A/S

IFAT in Munich, 30 May – 3 June, AVK booth #C2.351/450

IFAT presents themselves as “the world’s leading trade show for environmental technologies” and is by far the most important international trade show within water and wastewater in our region.

The show is usually held every two years, and this year, AVK will have our

biggest booth to date. Our ground floor will be 264 m² (3x12 m bigger than in 2018), where we will show a large selection of our product range. On the 1st floor we will seat our visitors and serve food and drinks.



I am proud to see that on the IFAT’s official website under “facts and figures” our Frank Lieser from AVK Armaturen is quoted, after all there are quite a few exhibitors to choose from.

“Time has come again for us to cautiously and mindfully attend international exhibitions to get in touch with our business partners. Meeting digitally simply isn’t the same as meeting face to face – and IFAT is just the right place for the latter!” – Frank K. Lieser, AVK Armaturen

InterSchutz in Hannover, 20 – 25 June, AVK booth #B03, hall 12

INTERSCHUTZ presents themselves as “the world’s leading trade fair for the fire and rescue services, civil protection, safety and security”, and is usually held every five years. AVK will have a 48 m² booth with a selection of our product range for fire protection.



We hope to see you in Munich and Hannover in June!

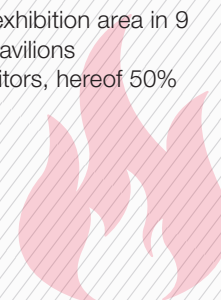
Facts about IFAT Munich

- 140,000+ visitors from 162 countries in 2018, hereof 38,500 from municipal and 12,800 from private utilities and waste management organisations, and 27,000 from engineering/consulting companies
- 260,000 m² exhibition area in 18 halls
- 3,300 exhibitors from 58 countries in 2018 (2,500 in 2022)



Facts about InterSchutz

- 157,000+ visitors from 50 countries in 2015
- 178,000 m² exhibition area in 9 halls and 4 pavilions
- +1,500 exhibitors, hereof 50% international



RAINWATER BASIN UTILITY RELY ON AVK VALVES

DENMARK



Randers is a large provincial city and is the only city in Denmark with a river port – a port that lies on the bank of a river.

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

The proximity to the river is occasionally problematic for the city due to weather conditions and changes in the climate. Besides the issue of having a river flowing through, there is also a level difference of around 60 m in the area. When there is heavy rain, the rainwater travels to the low points, and if the river's water level is too high, the city faces massive flooding issues.

The city's wastewater utility has therefore initiated a project called "Østervold" (Eastern rampart) with the aim of assuring a recreative, biodiverse and climate ready city. The boulevard of Østervold has been transformed into a highway for rainwater which, instead of creating flooding, ends up in a newly established rainwater basin. Here, the

rainwater is cleaned before it is led into the port and further into Randers fiord. Additionally, the rainwater basin has transformed a dull, grey area into an area full of green plants and biodiversity as well as a great place to socialise along the sides of the basin.

In December 2021, AVK had a delegation visit from Houston, Texas who was interested in experiencing some of our Danish solutions to

accommodate climate changes. They visited our headquarters in Galten to experience our products for intelligent pressure management and smart devices for monitoring the water network, and afterwards, we invited them to see the Østervold project in Randers. They were impressed, and the visit was a great opportunity to network, share knowledge and get inspired.



INTRODUCING THE NEW AVK PREMIUM 100 GATE VALVES

Premium 100 gate valves provide exceptional protection against corrosion and wear. They are ideal for installation in places where excavation is not a real option, and where long life and durability is crucial.

*By Lene Mark,
Head of Marketing, Continental Europe,
AVK International A/S*

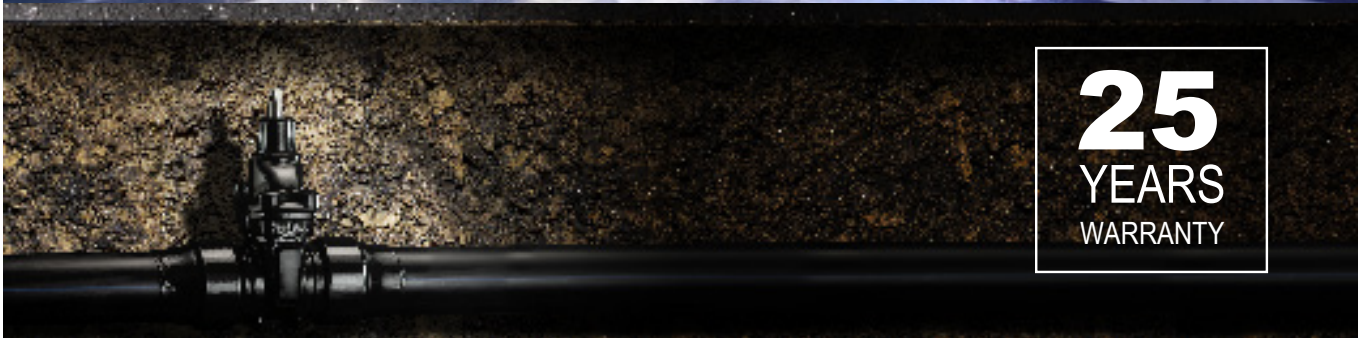
This could be busy roads, public and tourist attraction places, coastal areas or locations with oil or gasoline contamination.

The valves are designed to withstand minimum 10 times EN 1074-1 requirements to opening/closing cycles, corresponding to minimum 25,000 under normal flow/pressure conditions.

Five main types

AVK Premium 100 valves are available with flanged or PE pipe connections:

- Flanged gate valves, short
- Flanged gate valves, long
- Gate valves with black/blue PE ends
- Gate valves with SafeTech/Profuse PE ends
- Service connection valves with black/blue PE ends



AVK PREMIUM 100

Built to last a century!

Superior corrosion protection

- External PUR coating
- Internal and external epoxy coating exceeds GSK requirements
- Documented pinhole free

Exceptional wear protection

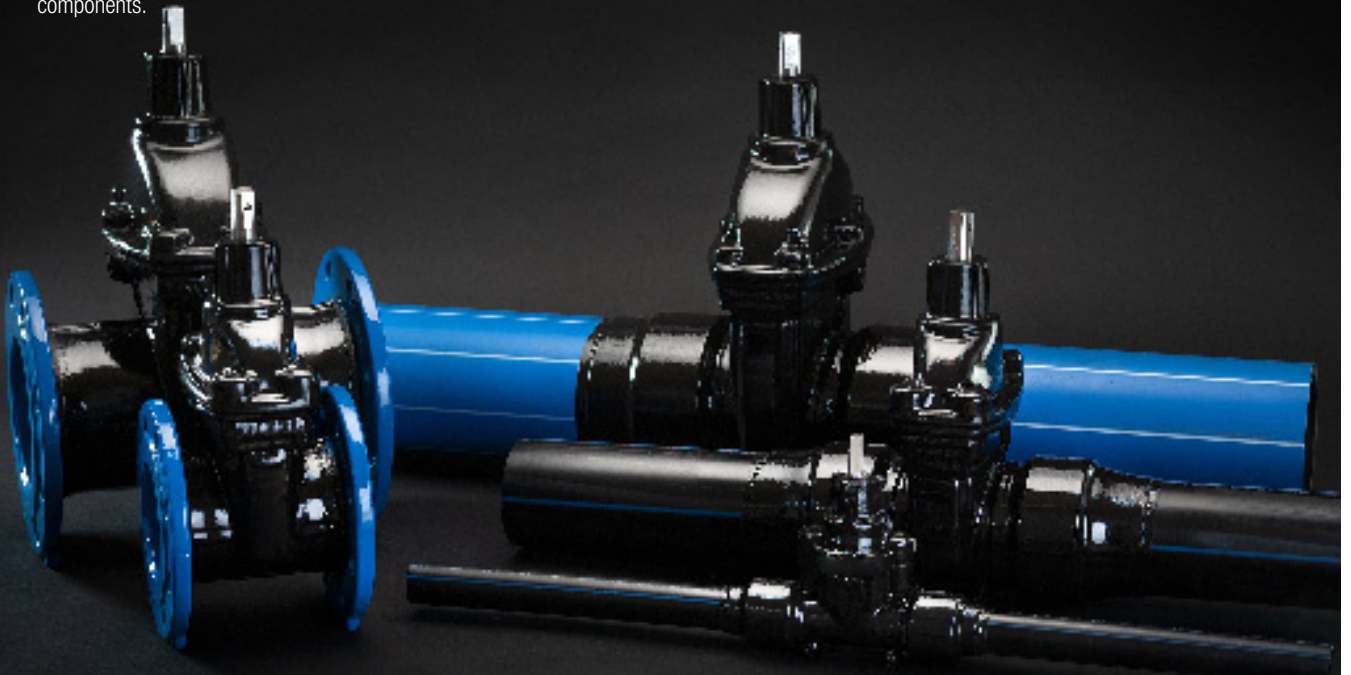
- Stem of duplex w.1.4362
- Thrust collar and wedge nut of ECO BRASS
- AVK's renowned rubber compounds produced inhouse

Full traceability

A unique serial number for each valve is linked to material and test records and allows for full traceability of the valve and all main components.

Renowned AVK design

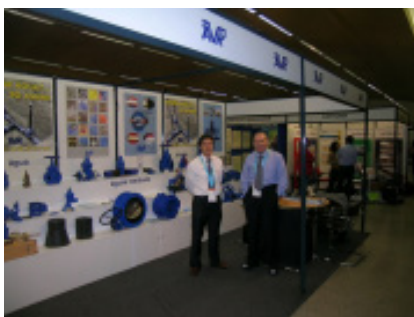
The renowned AVK gate valve design – according to global standards, meeting local requirements.



AVK PARTICIPATED IN ENEG 2021

PORTUGAL

The largest ever edition of the Portuguese National Meeting of Water and Sanitation Management Entities (ENEG) took place at the Algarve Congress Centre on November 23-26, 2021.



AVK participation in 2005.

AVK participation in 2021.

*By Nuno Guerreiro,
Sales Manager,
AVK Válvulas (Portugal)*

The Hotel Marina Tivoli received 995 registered participants, 218 communications, 44 speakers, 53 entities in the area of the exhibitions and several contests.

Once again, AVK was present in the exhibition area with a stand showing off our product range. Since 2005, which was the first year of our participation in ENEG, we have been present in all editions as we consider it to be a reference event in the Water sector held in Portugal – so, a great setting for us to meet and network with customers and partners.

We hope to see you in 2023!



AIR VALVES PASS THE TEST IN PLANT EFFICIENCY PROJECT

INDIA

To obtain a safe and efficient water network, the piping system must be able to take in or release accumulated air.

By Anuj Kumar,
Assistant Sales Manager, North,
AVK India

Talwandi Sabo Power Project is a vital thermal power plant located in Banawala village in the Indian state of Punjab. The power plant is operated by Talwandi Sabo Power Limited (TSPL), a subsidiary of Vedanta.

The plant has a capacity of 1,980 Megawatt – enough to supply more than 400,000 homes. As per the guidelines of the Government in India, TSPL supplies 100% of the electricity to the Punjab State Electricity Board (PSEB) for 25 years. A cooling tower system is used to remove the heat from the water for reuse in condenser during power generation. Two lines are connected to the tower; a hot line (about 45-60°C) and a cold line (15-25°C).

A few air valves were installed in both lines to maintain the air breathing as per AWWA C512, but maintenance issues for the valves were occurring. Generally, water was spilling out from the installed valves regularly after 5-6 months of operation. Consequently, the plant was facing issues of flooding near most of the valves and the overall efficiency of the system was declining.

On-site observation

The valves used were ball type double acting air valves, and they were leaking



due to pre/post closure. Dissolved air is also creating issues as the line is typically completely filled with water and has a lot of bends and joints. The AVK team visited the plant along with a representative from Errand Enterprises and conducted a survey. Our team collected the required details to understand the operated air volume in the piping system and other details that can affect operation. After review, we suggested to install series 851/45 triple acting air valves.

AVK air valves met the requirements

TSPL agreed to install four valves (DN200) as an initial solution and wanted to review the operation of the valves for at least six months. The valves were supplied and installed in 2020. TSPL observed the operation for a year and found it satisfactory. TSPL now shared the requirement for another 20 air valves and request that we support them with an appropriate solution to replace the defective ones installed.

Products supplied to the project

- 4 x DN200
- 8 x DN200 - yet to be installed
- 12 x DN150 - yet to be installed

Did you know?

In the absence of a suitable air valve in a water system, the following issues can occur:

- Destructive vacuum conditions
- High pressure surge
- Cavitation damage
- Lower pumping efficiency
- Inaccuracy in the measurement of fluid volumes
- The presence of air can have a detrimental effect on system drainage efficiency
- Metal parts in the system and system accessories corrode at a higher rate
- Physical risk - when large volumes of air under pressure are released at high velocities
- Reduced air pockets in the system cross sectional area, higher energy losses, tremors in the system and in extreme conditions: an entire stoppage of the flow

AVK NEDERLAND REACHES LEVEL 4 ON THE CSR PERFORMANCE LADDER

Our goal is to create a better world around us together with our customers, suppliers, employees and other stakeholders.

*By Dana Hofman,
Marketing Manager,
AVK Nederland*

For us at AVK Nederland, sustainability and sound economics go hand-in-hand. Last year we decided to make our efforts in this area tangible and objectively demonstrable by means of the CSR Performance Ladder certificate.



As one of only 38 companies in the Netherlands, we are proud to have achieved level 4 of the ladder - the second highest level. The certificate is valid for three years and our level 4 has recently been reconfirmed after an annual audit.

We also see that more and more of our customers have sustainability as a high priority. In some tenders you get points for sustainable matters. It is a good development that contracting parties are drawing attention to the importance of sustainability.

What is the CSR Performance Ladder?

The CSR Performance Ladder is a management system and certification standard for Corporate Social Responsibility. It is based, among other things, on the principles in

international guidelines for sustainability (ISO 26000).

We have integrated the 31 CSR themes into our Management System and will develop them further in consultation with our stakeholders. We want to work with our relations on the right balance between People, Planet and Profit, and through this collaboration to have a reinforcing effect on making the chain more sustainable.

Sustainability at AVK Nederland

At AVK Nederland we believe it is important that we give our employees the opportunity to develop, to have a safe and healthy workplace, and that everyone is always treated equally. We



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care about the vitality of our employees and want to support and strengthen them. Also, social return is part of our sustainable personnel policy.

Another goal is to reduce the consumption of water, gas, electricity and CO² emissions, make our processes more sustainable and increase the recyclability of raw materials, end products and packaging. We want to achieve

an important part of increasing recyclability through the development of raw material passports. At AVK Nederland, we have a local and regional sponsorship policy, and like to invest in local initiatives, entrepreneurs, sporting activities and nature.

READ OUR NEW SUSTAINABILITY REPORT 2020/2021

GLOBAL

The purpose of the Group is to develop, manufacture and market products of high quality and with a long lifetime. Our products are parts of vital infrastructure including water supply, wastewater treatment and energy supply as well as a variety of other industrial applications that all together contribute to sustainable development, people's health and a better environment.

We recognise that we have a responsibility to reduce our environmental impact, and we continuously strive to minimise the impact our activities have on the climate. AVK's environmental policy is built on an environmentally sound operation and is a natural part of the Group's objectives for energy and water consumption. The Group's policies are available in our quality management system (QEMS) and thereby communicated to all our companies. The implemented policies underline that AVK is a credible and ethically responsible business partner for customers, suppliers, and other stakeholders.

"I am happy to present our sustainability report for the financial year 2020/21. 2021 has been a challenging year for our company, our customers, and our employees across the world. Despite these challenges, the AVK Group has achieved a good result which will help ensure our future development based on long-term and sustainable investments to the benefit of our company, our employees, our customers, and the environment."
 – Niels Aage Kjær, Owner and CEO



Scan/click to read the report

IWA CONFERENCE AND EXHIBITION IN COPENHAGEN

DENMARK

Under the headline “Water for smart, livable cities”, the International Water Association will unite in Denmark for this year’s water conference. As the headline suggests, focus will be on water’s impact on development and well-being.



*By Michael Ramlau Hansen,
Public Affairs,
AVK Holding*

Back in 2018, Copenhagen was announced the no. 1 place to visit if you are looking to combine vibrant capital life with a cool swim; “The water in Copenhagen’s harbour is so clean that you can go for a swim without any health-related consequences” (The New York Times, 2018). Behind this phrase lies a longer explanation, that had made the world look towards the Danish model for sustainable water infrastructure.

From waste to valuable resource

To obtain a water infrastructure as the one in Copenhagen - and in the rest of Denmark, for that matter - proper wastewater management is key. Our wastewater processes do not impact the fragile environments in our surrounding lakes and seas. The leftover sludge from the cleansing process can be used to produce energy, which has meant that some

of our wastewater plants actually produce more energy than they use. And regarding water loss, decades of national restrictions has meant that we have an overall leakage rate as low as about 7%.

2022 IWA World Water Congress & Exhibition, Bella Center Copenhagen

AVK will be present at the Danish pavilion, which is built up as a town square showing the visitors water’s journey through society. The exhibition is supported by Danish water companies, water supplies, engineers and technology providers. Each exhibitor will show how they or their products fit perfectly into the water infrastructure.

At the entrance, visitors will be met with an “Information wall” introducing the state-of-the-art LEAKman project,

which was initiated to explore how to run a distribution network with an NRW rate as close to zero as possible, demonstrating the district metered areas (DMA) technology.

The LEAKman project will also act as a site visit, where visitors can come and explore the solution on-site.

AVK supplied the project with newly developed street covers big enough to hold an acoustic noise logger listening for leaks via our gate vales, as well as our intelligent, demand-driven pressure management solutions and the latest innovations within smart water management.

All our contributions will be visible at our booth during the conference, running from September 11-15, 2022.

HAVE YOU DOWNLOADED THE AVK DONKIN GAS HANDBOOK YET?

UNITED KINGDOM

By Emily Davies,
Marketing Manager,
AVK UK

The AVK Donkin Gas Handbook is an essential tool for gas engineers, buyers, technical managers, installation engineers and just about anyone in the gas industry.

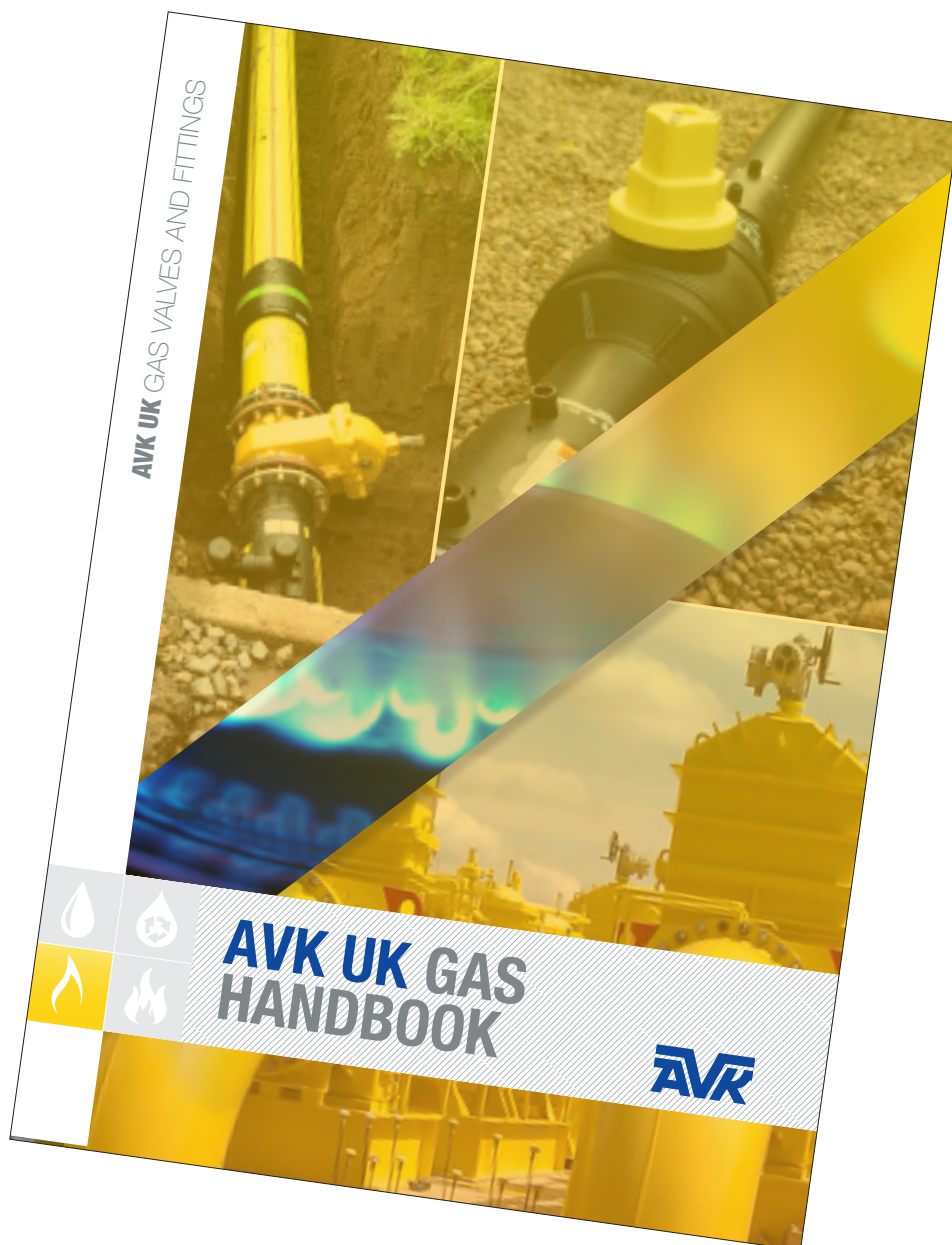
Downloading the brochure is easy, it's free, and no login is required, so why not take a closer look?



Scan/click to read the report

This must-have brochure tells you all you need to know about:

- The AVK Donkin gas and renewable gas product range
- Industry technical and application guidance at-a-glance



There's also detailed information relating to product selection, valve standards and specifications as well as pipe diameter charts, installation schematics and much more.

Whether it's materials and traceability you are interested in, or coating options, testing, quality and design,

there's plenty of information, right here, at your fingertips.

Why not download this go-to AVK Donkin resource and keep it to hand on your desktop – we are here whenever you need us.

WORLD WATER DAY 2022: CELEBRATING OUR ACCESS TO PURE DRINKING WATER

DENMARK



*By Katrine Klejnstrup Sørensen,
Marketing & Communications,
AVK Holding*

In principle, bottled water is just as clean as tap water, but it can age within the bottle and build up bacteria. Tap water on the other hand is (depending on where you live, of course) well-controlled, tastes fresh and clean, and as a bonus, it is a lot cheaper and better for the environment.

In fact, it is 900 times better for the environment

However, still, the average Dane buys as much as 21 litres of bottled water every year. This is completely unnecessary, when such a simple act can save so much on the climate account – and in the pocket. In 2018, calculations from HOFOR (The Capital Region's Supply Utility) showed that tap water is 900 times more environmentally friendly than bottled water. The numbers suggest that when one litre of water leaves a

Article continues on the next page >

tap in the city, 0.0002 kg of CO₂ has been used in order to pump, prepare and transport that amount. For bottled water, that same number is 0.18 kg – a massive, thought-provoking difference.

In Denmark, every water supply utility is responsible for testing the water regularly, and make sure that the quality lives up to the stringent criteria stipulated in the Danish law.

Eco-friendly processes on the table

To celebrate this year's World Water Day, which focuses on groundwater, we wanted to highlight the fact that we are able to serve water directly from the ground and into the glass. Behind this fact lies a longer explanation; one that has made the world look towards the Danish model for sustainable water infrastructure.

Groundwater may be out of sight, but it must not be out of mind – and our products and solutions help protect and transport millions of litres of it every single day.

Therefore, we have decided to add information about the water utility on our water decanters in all our offices, to make it more tangible that the water is actually pumped up and served directly from the ground below us; both for all our employees, and for all

our guests visiting from all across the planet.

The texts reads: PURE TAP WATER: This water is clean ground water from the underground here in East Jutland, delivered by Skovby Water Utility. To protect the high water quality, several tests are performed every year, which are analysed and approved by an accredited laboratory. Skovby Water Utility is 100% owned by the area's consumers.

Did you know that...

- It can take years - even decades - for rainwater to reach the groundwater table. Once there, some drops stay a few months or years in the ground, while some spend thousands of years.
- Theoretically, in your next glass of water, there is a 99.9% probability that a molecule once drunk by Cleopatra will be present. And, basically, all the other molecules have been inside a dinosaur's belly
- It takes 170 litres of water to produce half a litre of beer.
- Water is the primary ingredient in humans and makes up about 85% of the human brain.

Feeling thirsty right now? Then you've already lost 1% of your water reserves. Cheers!

PURE TAP WATER

This water is clean ground water from the underground here in East Jutland, delivered by Skovby Water Utility.

To protect the high water quality, several tests are performed every year, which are analysed and approved by an accredited laboratory.

Skovby Water Utility supplies 1,355 households including farms, institutions, industrial companies and homes.

Expect... **AVK**

Naturally flavoured

A few tips to jazz up your tap water:

- Make some berry ice cubes and add for a refreshing cool taste
- Add herbs like i.e. fresh mint leaves, basil or ginger (watermelon and basil is a perfect match)
- Add colour to the glass with some lemon, lime or orange peels
- Add slices of fruit or vegetables like cucumbers, lemon, orange, strawberry, kiwi etc.

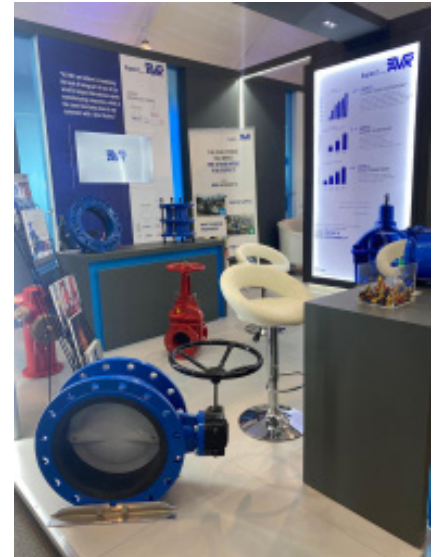
OR - just enjoy a fresh glass of cold tap water.

AVK SAUDI PROUDLY SUPPORTS THE 2030 VISION

SAUDI ARABIA

With localisation and sustainability on the agenda, AVK Saudi once again took part in the annual IKTVA Forum & Exhibition.

*By Randa Abu Mazen
Marketing Coordinator,
AVK Saudi Valves Manufacturing*



The “In Kingdom Total Value Add” (IKTVA) program is created by Saudi Aramco, the world’s largest oil company, to measure and support increased levels of localisation in the Kingdom. IKTVA has become one of the Kingdom’s most significant and vital strategic programs, focused on modifying the energy sector and creating a world-class supply chain.

The key areas of the progress are the effects there will be on individuals’ lives, creating jobs, empowering learning, expanding career options, and furthermore upgrading the Saudi business environment.

The theme for the 2022 IKTVA event is “Paving the way to economic success”, with future readiness forged from localisation. The event, which is the 7th annual IKTVA celebration, was held on January 24-26 and has taken our AVK success story even further in line with the Kingdom’s vision for 2030 and the strategic economic framework.

Being a part of IKTVA was a great opportunity to promote our investment in our new local factory in Jeddah. The investment has allowed us to localise multiple products, such as fabricated fittings and butterfly valves in several models, which were previously imported from elsewhere in the AVK Group.

IKTVA supported us to show that since AVK Saudi inaugurated the new factory in Jeddah, the focus has been on ensuring that the factory and products are approved and listed with the main water authorities and end-users in the Kingdom of Saudi Arabia.

AVK SVMC manufactures a huge range of valves and fire hydrants locally, all meeting national and international standards. These products have received the approval of all major customers in the Kingdom of Saudi Arabia, such as Saudi Aramco, Ministries, National Water Company, Water Directorates, Royal commission, and many others. We export our

products to all GCC countries, the Middle East, Europe, Asia and Africa.

As AVK is one of the first companies to contribute to localisation and water sustainability, we are proud to be a part of IKTVA. This helps us in meeting both loyal and new customers’ requirements and in fully supporting the goals of Saudi Arabia’s vision for 2030.

CELEBRATING 25 YEARS OF PARTNERSHIP

SRI LANKA

Hovael Holding has for 25 years been AVK's sole partner in Sri Lanka. It is a long-term partnership built on strong collaboration and trust.



*By Frederik Lykke Fonager,
Regional Marketing Manager S&SEA,
AVK Valves Manufacturing Malaysia.*

One of AVK's brand promises is "Expect a long-term partnership". One of the strongest examples of this is the partnership between Hovael Holding and AVK, which has gone from strength to strength over 25 years.

The partnership started in January 1997 when Hovael's Directors – Joel Selvanayagam and Kapila Wijayarathne – were visiting Europe. Hovael Holding was facing very long delivery times on air valves already ordered from the UK and needed a new supplier. Meetings had already been setup with other suppliers, but a single meeting between AVK's Niels-Erik Andersen, Joel, and Kapila was all it took: The first order was signed then and there.

Hovael and AVK have supported each other, and executed together, close to 100 major water and wastewater projects in Sri Lanka. Hovael Holding has been instrumental in promoting AVK in Sri Lanka, and AVK now enjoys the position of market leader for water and wastewater valves. Hovael Holding's dedication was lauded in 2017, when Joel and Kapila received the Diploma of the Danish Export Association and His Royal Highness Prince Henrik's Medal of Honour.

"Hovael Holding is one of the oldest partners of the AVK Group. We view Hovael as part of the AVK family and they are our eyes, ears, and hands on the ground in Sri Lanka. Our strong position in the Sri Lankan market today

is the outcome of 25 years of tireless work by Hovael Holding. The strength of the partnership has never been more evident than it is today in 2022, which we expect to be one of our strongest years in our 25-year history. We look forward to a continued partnership for many more years to come." says AVK Malaysia's Managing Director Rasmus Martensen.

COMPETITION



We are happy to announce that the winners of the competition in AVK InterLink no. 58 are:

- Leif Lindbom, AVK Finland Oy
- Melissa Baert, AVK Belgium nv
- Danilo Melo, AVK Válvulas do Brasil

Gifts are on their way.

The correct answer is: 80 + 31 years.

New competition:

How many m² covers the total production area at AVK Anhui in China?

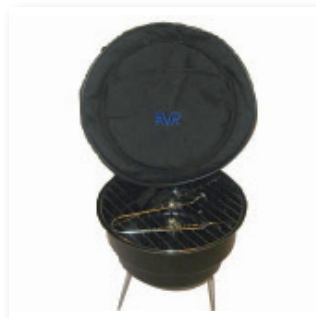
Send an e-mail with the correct answer in which you state your address and the gift you would like to receive – if you win.

E-mail to: lios@avk.dk

Choose between:



Beach towel with AVK valve



Picnic grill in a cooler bag



Ocean bottle

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