



EXPECT  
STORIES FROM  
THE AVK WORLD

Expect... **AVK**

# DEAR READER

## Expect... Solutions, not just products

When our customers do business with AVK they are entitled to have expectations of us. Our customers should be able to come to us with their issues, and we should be able to offer a solution that correspond the issue. AVK's entire branding project is about giving our customers more than they expect.

In this edition of InterLink you can read some good case stories, where AVK not only has delivered products but also solutions to overcome an issue.

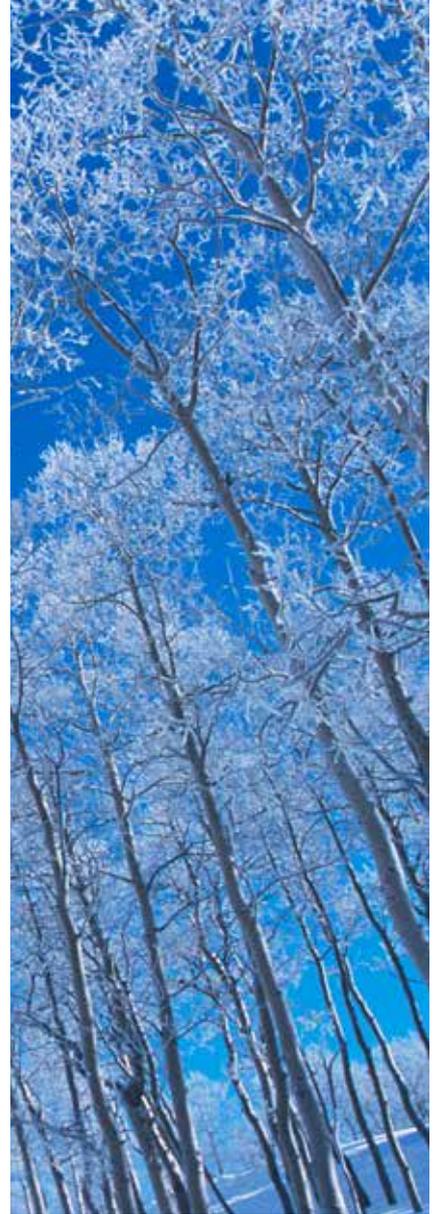
Regarding the sale it is important to honour those who make a special effort. On page 4-5 you can read about the presentation of His Royal Highness Prince Henrik's Medal of Honour to Richard Wang as an award for Richard's work with selling gas valves in China.

## Expect... Lasting innovations

In this edition you can also read about improved processes and the opening of AVK's own ultramodern foundry. Apart from selling products we continuously focus on improving our processes and optimizing our organization. In that way it is possible for us to always be able to deliver high quality products.

In conclusion, I would like to take this opportunity to wish all of our business associates and partners a happy and prosperous New Year.

Michael Ramlau-Hansen



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Photo of AVK owner Niels Aage Kjær from his Birthday reception Friday 12 December 2014.

### Index

AVK Aqua-Gas Manufacturing invests in state-of-the-art powder coating system.....	3
AVK distributor of gas valves in China is awarded the medal of honour .....	4
AVK UK Industrial and American AVK teamed up on the BP fire protection project .....	6
Dhaka Water Supply and Sewage Authority (DWASA) - development project.....	8
EXPECT... AVK with own foundry, a dream come true .....	10
New machining factory at AVK Anhui.....	12
New opportunities for AVK products in the European gas network .....	13
AVIT – AVK Valve Installation Tracker... ..	14
Swords project.....	15
Celebration of Niels Aage Kjær's 70 years birthday .....	16
Expect... total savings: AVK free flow hydrant for quick relief of water supply line.....	18

World's largest cruise ship in Dutch port with WWE butterfly valves on board .....	20
AVK contributes to the modernization of municipal infrastructure.....	21
High quality products delivered to new waterworks.....	22
Supa Maxi™ couplings used in the renovation of Peugeot Citroën's fire protection network.....	23
New flexible combi-cross with DN 400 centre part.....	24
New DN 400 Supa Maxi™ couplings .....	25
AVK Y-strainers .....	25
AVK participated in the NO-DIG fair and water loss forum in Turkey .....	26
Demo bus on tour in Slovenia.....	27
Estonian Waterworks Association (EVEL) delegation in Denmark.....	28
AVK Around the world.....	30
Competition .....	32

# AVK AQUA-GAS MANUFACTURING INVESTS IN STATE-OF-THE-ART POWDER COATING SYSTEM

UNITED KINGDOM



A recent investment at AVK's Aqua-Gas Manufacturing plant in Corby has ensured the integrity of the fusion bonded coating of blue epoxy applied to the hydrants and gate valves manufactured there to protect them against corrosion when they are installed underground.

*By Fran Brody, Managing Director,  
AVK UK Limited*

A total of £100,000 has gone into the new powder coating system, which incorporates state of the art equipment at all stages to ensure the efficiency of the process.

The flexibility of the latest design of reciprocating guns allows the powder coating to be applied either manually or robotically – whichever will give the product the most effective coating.

To complete the picture, the process has a very efficient mono-cyclone

recovery system that reclaims 98 % of the powder sprayed onto the products which, as well as keeping material costs down, is good for operator health and safety and minimizes environmental impact.

The powder coating system has been successfully integrated into Corby's automated product handling system installed in 2009. For customers, this means a quicker response and therefore opportunities to further reduce lead times.

# AVK DISTRIBUTOR OF GAS VALVES IN CHINA IS AWARDED THE MEDAL OF HONOUR

# CHINA

Richard Wang Daoshun has achieved a steady growth for AVK in the Chinese market as sole distributor of AVK gas valves.



*By Pernille Kjær,  
E-learning Project Manager,  
AVK Holding A/S*

His Royal Highness the Prince Consort of Denmark presented the Danish Export Association's Diploma and His Royal Highness Prince Henrik's Medal of Honour to Richard Wang Daoshun for his long-standing effort for AVK in the Chinese market.

Since 1998, Richard Wang Daoshun has been AVK's sole distributor of AVK gas valves in China. In recent years his company, Success Science & Technology Development Co. Ltd., has experienced a steady growth which is reflected directly in the Danish export statistics as the valves are produced by AVK in Denmark.

On 4 November 2014, His Royal Highness the Prince Consort of Denmark presented the Danish Export Association's Diploma and His Royal Highness Prince Henrik's Medal of Honour to Richard Wang Daoshun for his long-standing effort for AVK in the Chinese market.

scratch establishing the position of AVK products in the market in close cooperation with AVK. This has been a success and AVK's products account for a considerable share of the total market of gas valves in China.

"In 2014 we have experienced a considerable increase in sales in China, and around 90 percent of the products supplied to Richard Wang Daoshun and Tianjin Success Science & Technology Development Co. Ltd. are produced in Denmark. This is an export success story for AVK," says Group Director in AVK Holding A/S, Morten Sæderup Nielsen, who nominated Richard Wang Daoshun for the award.

#### **The cooperation began at an exhibition**

AVK and Tianjin Success Science & Technology Development Co. Ltd. have cooperated since the contract was signed at the Shanghai Exhibition in 1998. Since then Richard Wang Daoshun has developed the business significantly, and as part of his market strategy he only sells AVK products.

Tianjin Success Science & Technology Development Co. Ltd. covers a wide area of China's economically strong regions, and AVK gas valves have been positioned as the best brand in terms of quality.

#### **Focus on municipal projects**

Frequent and intensive travel all over China has been part of Richard Wang Daoshun's job, and due to his persistence and enthusiasm he has become a key person in the municipal gas industry in China.

Tianjin Success Science & Technology Development Co. Ltd. started from

Since 1998, Richard Wang Daoshun has built a large customer base in the municipal gas industry in China. AVK and Tianjin Success Science & Technology Development Co. Ltd. will continue the cooperation, and we expect AVK's export of gas valves to China will more than double within the next three years.

**About the award**

The Diploma of the Danish Export Association & HRH Prince Henrik's

Medal of Honour is awarded in recognition of an outstanding effort in promoting and marketing Danish products and services abroad. The award is given to agents, distributors, subsidiaries or companies based abroad.

To be considered for the award, the recipients have to be able to demonstrate outstanding results for the past five years. Furthermore, the recipients must support and visualize

Danish values, for example by helping other Danish companies penetrate a foreign market and in general promote Danish products and services abroad.



# AVK UK INDUSTRIAL AND AMERICAN AVK TEAMED UP ON THE BP FIRE PROTECTION PROJECT

## UK & AMERICA



American AVK team, packing valves for shipment.

For the first time, AVK UK Industrial and American AVK worked together on a demanding assignment, and due to strict regulations focus was set upon the requirements of quality products and working relationships across national borders.

*By Michael Chambon,  
Business Development,  
American AVK Company*

On an ordinary morning in June at the American AVK Company in Minden, Nevada, the telephone rang. A man with a British accent introduced himself as being with AVK Industrial in UK. They were about to close a major order with BP (formerly British Petroleum), and

for this order, a fire protection system was required on a new gas refinery, supporting new offshore oil and gas rigs in the Caspian Sea, which accounted for a small part of a \$40 billion project for BP. The refinery would be an addition to an existing facility in Baku, Azerbaijan. The project would ultimately include 89 series 45 and 55 gate valves, each with a series 34 post indicator; 44 of those valves would be 40.64 cm in diameter. The requirements of the

project appeared complicated and the documentation to qualify AVK seemed endless.

### **Quality and commitment in every step**

KBR (the engineering & procurement contractors (EPC) for this project) and BP requested 3.1 material certifications on all bodies, bonnets and stems, and also dye penetrant inspection on stems which meant that all had to be checked for scratches and cracks. Every major



Series 55 gate valve with special BP tag and flange protectors.

component's supplier would have to be identified and qualified. The quality system would be audited with required documentation, describing every step of the manufacturing process. After an internal discussion, American AVK decided they were up for the challenge and found themselves receiving the order in the end which was worth approximately £450,000 to AVK UK Industrial.

**An effective kick-off meeting**

The order was launched with a week-long "kick-off meeting" in Minden,



One of two trucks, loaded with special BP crates and departing Minden, Nevada, with the Shah Deniz II shipment.

Nevada, attended by AVK along with two BP procurement team leaders. During the daily sessions, the team created the project deliverables, including purchasing schedules, production plans, testing protocols, detailed drawings, and spare parts lists – all required by BP and KBR initiating the project. In the evenings, BP and AVK spent time on teambuilding, while having barbecue and shuffleboard, and the order was officially launched. In addition to the "kick-off meeting", KBR and BP also conducted a factory quality audit, pre-assembly inspection, post-indicator operational test, and

witnessed AVK's pressure testing (15 minute shell test, 5 minutes on each side of the wedge). Ultimately, the 89 gate valves and post indicators were packed for long-term storage and shipped off to the Netherlands, where they will be stored and later deployed to the Shah Deniz refinery in Baku, Azerbaijan. A large binder was filled with production and test reports which became a part of the permanent project record or as BP stated it; the "Shah Deniz II Project Despatch Dossier".

*"The project was having difficulty sourcing a supplier of quality ductile iron valves. From my previous experience working in the water industry, I was aware of the Glenfield and Bryan Donkin brands, so we approached AVK, the owners of these brands, about their products. We have been delighted not only with the product and service we received so far, but also the willingness and professional attitude of the AVK personnel to assist us with our requirements, particularly in our highly regulated industry."*

*Jason Gardner, Piping Materials Engineer, BP Shah Deniz II*

*"Ductile iron valves were an early requirement for the Shah Deniz II Project and their on-time delivery was critical to the construction schedule of the project. AVK delivered the valves on time as promised, with a level of service and customer interface, beyond what the project team are used to."*

*AVK was not fascinated by the high project standards and specifications that was required, and they did everything that a good supplier should do to satisfy our requirements. They were highly competitive on price and maintained their prices for a long period of time, to benefit the project."*

*The level of customer service and communication during the procurement process was outstanding, and it is difficult to come across suppliers within this level of integrity and willingness, to adjust to changes, during the procurement process. I hope AVK is able to secure further work in the Oil and Gas industry in the future."*

*Rob Waldron, Procurement & Supply Chain Management, BP Global Projects Organisation*

# DHAKA WATER SUPPLY AND SEWAGE AUTHORITY (DWASA) - DEVELOPMENT PROJECT

# INDIA



The Asians believe that success in business comes from the mix of “hard work” and “good luck”. During my 17 years in Asia, I have rephrased this statement a bit: 50 % “hard work” and 50 % “good luck”; still, for the 50 % of hard work it takes 110 % dedication. This has also been the case for the below described landing of contract.

*By Niels Erik Andersen,  
Managing Director,  
AVK Valves India Pvt. Ltd.*

Bangladesh, a country whose history is closely linked with India, gained its independency from West Pakistan in 1971 following a bloody Independence War led by the Liberation Army.

AVK Overseas Asia investigated the market opportunities as early as in 2000 based on a DANIDA People to People program. During the past 20 years, Denmark has had Bangladesh on its aid list for the majority of NGO projects supporting water development (an NGO project basically consists of a bore hole, a deep-well pump, an overhead tank and a tapping facility).

The municipalities of Dhaka and the second largest town Chittagong have been falling behind in water development projects; however, in recent years they have created a new WTP project for Dhaka and an NRW project under the consultancy of the Dutch/Danish company, Grontmij – Carl Bro.

AVK was late in regaining focus on Bangladesh, but in January 2013 Ananth Krishnan and Niels-Erik Andersen made a first attempt to include Bangladesh in the AVK Valves India sales territory. Hereafter, a potential distributor was identified and later selected and appointed with a clear target on two upcoming contracts - the ICB-04.5 gate valves and ICB-04.6 PRV/PSV/ARV.

The numerous trips between Bangalore and Dhaka and the “hard work” with 110 % dedication bore fruit. Coupled with the 50 % “good luck”, the result was the award of the contract ICB-04.6 by award letter issued 05.05.2014. The contract included 193 pcs. pressure reducing/pressure sustaining valves, GVL/AVK series 859 and 230 pcs. air valves, AVK series 851.

120 days to accomplish the job from the date of opened L/C called on action and dedicated work from the two supplying OCs - AVK Anhui in China for air valves and Glenfield Valves in the UK for PRV/PSV.

Both manufacturing units provided strong support to see this order on track for timely delivery. This was



Two inspectors from DWASA at AVK Anhui



Based on the above success in sales, AVK Valves India has simultaneously developed a service team in support to the series 859 for this particular order as for services foreseeable within the Indian market.

followed by SGS third part inspection and the client’s visit to AVK Anhui in China for several days in September combined with a valve inspection trip at Glenfield a couple of days in October.

The EXPECT...AVK mentality is reflected in the strong cooperation between the involved OCs within the AVK Group. It resulted in the supply of valves to DWASA and we look forward to seeing the valves installed.

# EXPECT... AVK WITH OWN FOUNDRY, A DREAM COME TRUE CHINA

18 September 2014 was an extraordinary day in the AVK history. More than 150 guests from all around the world witnessed the grand opening ceremony of AVK's new foundry, AVK Advanced Castings (Anhui) Co., Ltd. which is not only the first foundry established by the AVK Group but also the first lost foam foundry owned by a foreign valve manufacturer within the Chinese mainland.

*By Li Yu Ming,  
Vice General Manager,  
AVK Advanced Castings (Anhui) Co., Ltd.*



Ribbon cut by local authorities and AVK representatives.

The new foundry is just in front of the AVK Anhui fitting factory. With its 10,266 square meter brand new production facility, AVK has now supplied high quality ductile iron castings (valve wedges, bodies, bonnets, hydrant bodies and covers) for sister companies within the AVK Group since March 2014. The current capacity of the new foundry is 5,000 tons per year, and a further expansion to a total of 10,000 tons is scheduled for the near future.

The new foundry uses the latest lost foam casting process. Compared with a traditional sand casting process, the lost foam casting process has significant benefits:

- It is much more environmental friendly. The working conditions are much cleaner and also very limited solid waste is produced all through the manufacturing process.

- It produces higher quality casting not only with more precise dimensions but also with better surface finish, thus machining on castings can be dramatically reduced.

With the new foundry in operation, AVK can now tell its customers with more confidence that AVK products are not only BETTER but also GREENER.

The pictures and descriptions on next page give you a general view on how the lost foam casting process works in the new AVK foundry.



Classic Chinese lion dancing.



AVK's new lost foam foundry.



#### Step 1 - Foam pattern

Foam patterns are created from polystyrene beads. The beads are expanded, allowed to stabilize, and then molded into the desired shape.



#### Step 4 - Compaction and pouring

The tree is attached to a pouring funnel (called a sprue) and placed into the flask. The foam is evaporated as the metal is poured allowing the metal to take the shape of the cluster tree.



#### Step 2 - Tree clustering

The foam patterns are then assembled to a generic, central foam piece called a tree. Multiple patterns can be produced on a single clustered tree.



#### Step 5 - Dumping

Separation of sand and metal is accomplished at a Flask Dump Station. With no binders in the sand this process is performed easily.



#### Step 3 - Coating and drying

After assembly, the entire tree is dipped into a refractory coating to strengthen the tree. The coating is dried in a baking room.



#### Step 6 - Separation, shot-blasting and grinding

The cluster proceeds to the casting finishing area for sprue, gate and riser removal. After proper grinding the castings are shot-blasted.

# NEW MACHINING FACTORY AT AVK ANHUI CHINA

On 4 November 2014, AVK Anhui held a grand opening ceremony for its new machining factory. The new factory will further strengthen AVK Anhui's machining capability.

*By Gimmy Lee,  
Product Manager, AVK Anhui*



The new machining factory building (at left) is built next to the existing fitting factory buildings (at right).

AVK Anhui was established more than ten years ago based in a rented factory building in He Xian, which is 20 kilometers from the AVK owned factories in the Wu Jiang Development zone. The new machining factory opening ceremony was a big milestone symbolizing that AVK Anhui has completely moved out of the rented building, and our customers and guests can now take a "one-stop" tour in all AVK factories in Anhui much more conveniently.

After the opening ceremony, an AVK sponsored activity called "2014 Sustainable Smart Water Solution Symposium" was held in the training center of AVK Anhui. Representatives from AVK, Grundfos, DHI, Grontmij, Aarhus Water and China Development Research Foundation shared their valuable experience on water management solutions with the Chinese local municipal authorities and customers.



HRH the Prince Consort of Denmark gave a speech at the opening ceremony.



HRH the Prince Consort of Denmark in the new machining factory with Søren Kjær, Managing Director of AVK Anhui.



# NEW OPPORTUNITIES FOR AVK PRODUCTS IN THE EUROPEAN GAS NETWORK

# GERMANY

As a result of the continuous changes of political legislations regarding climate changes in the EU, more countries are focusing on the gas industry in Europe. Over the years, the gas network has continuously expanded and recently, AVK Mittelmänn Armaturen GmbH (AVKMA) has seized this great opportunity for creating new business.



*By Ilka Keilen,  
Marketing Manager,  
AVK Mittelmänn Armaturen GmbH*

## **Climate development opens new doors**

Gas plays a vital role in Europe's environmental and economic plans for climate changes as gas is the cleanest and most reliable source of energy. Gas is not only an environmentally friendly energy source, it also has long-term available reserves, making a significant contribution to secure energy supplies for Europe.

The European Network of Transmission System Operators for Gas (ENTSO-G) has an overview of ongoing- and scheduled projects for the gas network extensions or refurbishments in European markets. The information is

found in their report: "Ten-year network development plan 2013 – 2022". The report contains valuable information for each European market about the major players, project phases, financing and project size.

## **Growing trend on the German market**

The gas energy source is important for households as they rely on stabilized gas supply for heating. Back in the 90s, Germany was using nuclear energy, but due to politically imposed energy changes over the past years they now use alternative energy sources, including natural gas. Because of this, the demand is expected to increase over time.

## **Refurbishing gas line**

AVKMA has seized this opportunity as they recently worked together with German Stadtwerke Görlitz AG

in refurbishing a DN 500 gas supply line in steel in Görlitz. The line was established back in 1942, and has since then been the main gas supply for the centre of the city. In order to ensure a reliable supply of natural gas for Görlitz in the future, the municipality decided to refurbish this important gas line. The renovation will take place in two stages and encounters series 46 gate valves DN 300 - 400 with steel spigot ends.

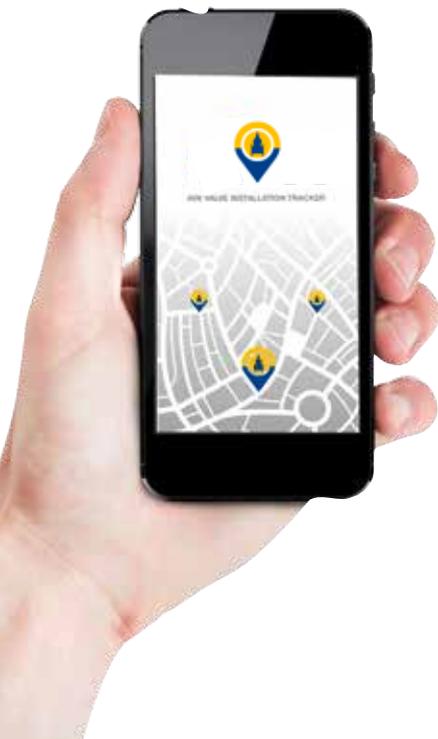
## **AVK's future in the market**

Thanks to the continued investment in highly-efficient, modern gas appliances that can deliver significant energy savings and reduce greenhouse gas emissions through Europe there is great potential for AVK to create new business in the European gas markets in the future.



# AVK VALVE INSTALLATION TRACKER

UNITED KINGDOM



For many years, the pipeline utility industries have faced a challenge in managing both the installation quality and the location of their underground assets. The location of strategic valve and hydrant assets has not been readily accessible to the utilities even where suppliers have indicated the importance of retaining traceability for their product in their installation instructions. The variable quality of installations has also been well documented and control over this has been made more problematic by a vast and disparate contracting network.

*By Kieran Fitzpatrick,  
Head of UK Marketing*

In response to this challenge, AVK UK took it upon itself to provide a solution. The project led by Adam Tkacz, Export Gas Key Account Manager, resulted in the creation of the **AVK VALVE INSTALLATION TRACKER**.

The system is principally based around QR code technology which, when combined with the functionality of modern smart phones and other mobile devices, can provide unique auditable data on valves that AVK supplies to its customers. The data set ranges from valve type, size, unique serial number and full material

traceability right up to a photo of the completed valve installation with an accurate GPS location on Google Maps. The data can then be made available for customers to audit through a secure web portal and also for implementation into their own GIS mapping systems. The benefits for the customer are enormous but added to this, AVK has offered a further inducement of an extended 10 year warranty for every valve installed correctly and registered using the App.

AVK UK has initially approached the major gas distribution network companies with this exciting new technology and all responses to date have been extremely positive. As a result there is a field trial

already agreed with one major UK gas network which will start late November 2014.

The system will be launched fully into the UK gas segment in the early part of 2015 but AVK is planning to open a dialogue with its water utility customer base to extend its application to this sector.

# SWORDS PROJECT

## UNITED KINGDOM



The Swords Waste Water Treatment Plant in Fingal County, Ireland is undergoing a huge development over the next year.

*By Brendan O'Dowd,  
General Manager, Ireland,  
AVK UK Ltd.*

The project started in the summer of 2014 and will run for around one year. The plant has reached its current capacity of 60,000 PE (Population Equivalent) and will be expanded by 50 % to 90,000 PE. This is due to the

Swords catchment area growing as part of the Dublin commuter belt. AVK UK has supplied the contractor, Aecom Ireland, approximately €120,000 worth of valves to the scheme to date; these include DN250 and DN400 series 21 resilient seated gate valves, series 41 non-return valves (as seen in the picture) and DN500 and DN600 series 54 metal seated gate valves.

AVK UK carried out technical presentations to the consultant, Byrne Looby Partners, demonstrating AVK's capability to influence the project specification and therefore its success.

AVK UK General Manager in Ireland, Brendan O' Dowd, said:

"Aecom wants to deal with AVK as a manufacturer because of the added value we can bring such as advising on design and specification on the project, over and above just supplying the products."

The development has been undertaken by Ireland's water services and is estimated to cost €23 million. The Swords scheme is one of many helped by a European investment bank loan of €200 million to the Water Services Investment Programme (WSIP).

This addition to North County Dublin's infrastructure will lift local restrictions and allow for future development in the area. With AVK UK's help the area can live up to its motto "Your Swords, an emerging city".

# CELEBRATION OF NIELS AAGE KJÆR'S 70 YEARS BIRTHDAY

# DENMARK



On Saturday 13 December 2014, our owner Niels Aage Kjær turned 70 years which was celebrated at the AVK Academy and Visitor Centre on Friday 12 December 2014.

Right from the start, visitors appeared in a constant stream and during the afternoon several hundred guests conveyed their congratulations and presents. One of the presents was an old AVK "coolmaster" refrigerator which was manufactured by AVK Maskinfabrik in the late 1950s and had been restored by AVK Tech for this occasion.





# EXPECT... TOTAL SAVINGS: AVK FREE FLOW HYDRANT FOR QUICK RELIEF OF WATER SUPPLY LINE

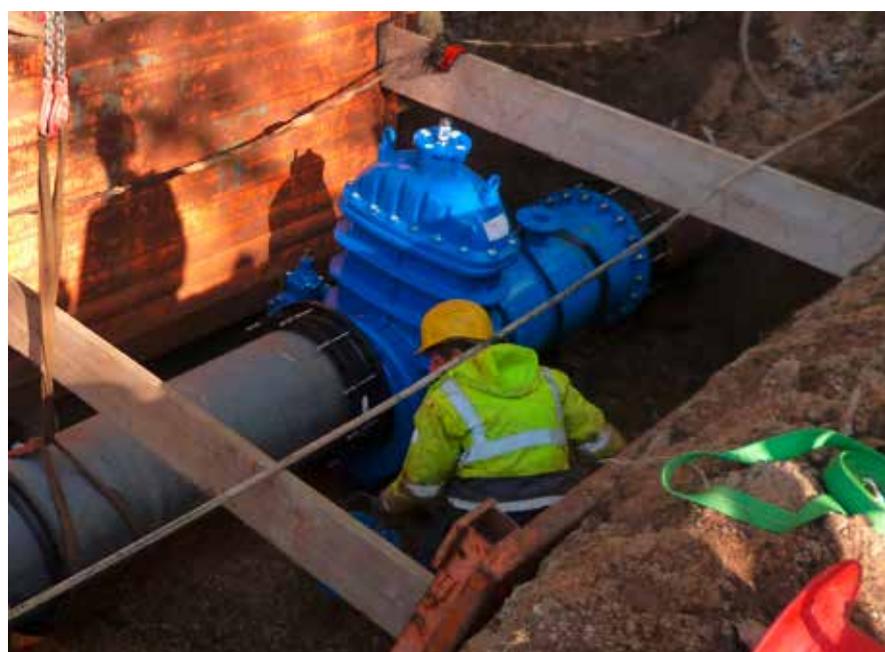
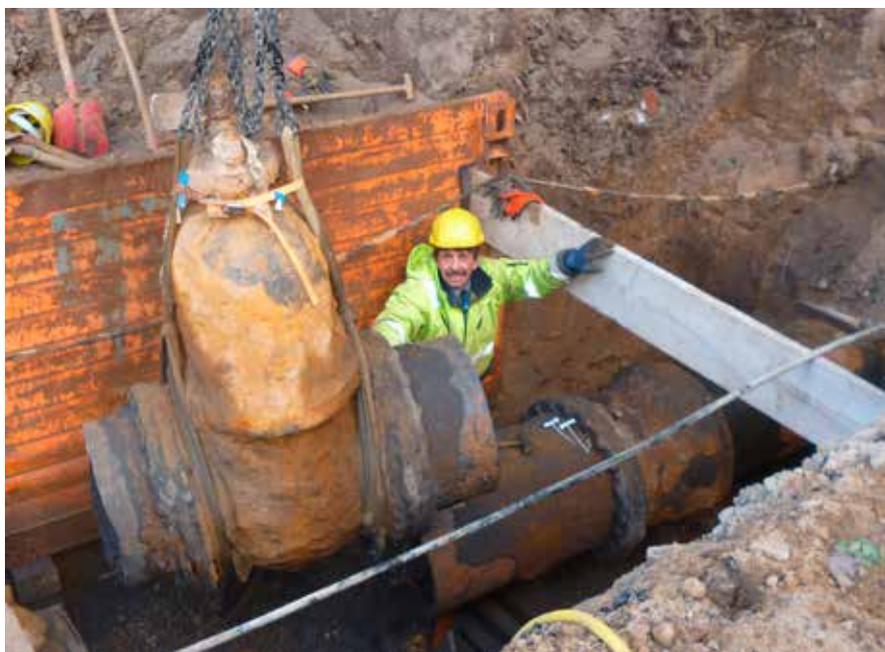
# GERMANY

In the summer 2014, Stadtwerke Herford - a municipality in the western part of Germany - started a comprehensive refurbishment of a DN500 drinking water supply line.

*By Ilka Keilen,  
Marketing Manager,  
AVK Mittelmann Armaturen GmbH*

In total, the line comprises a length of five kilometres. First, a DN500 gate valve was exchanged that, due to its long lifetime and age, had stopped functioning properly. A series 06/30 gate valve with by-pass was mounted instead. In order to change the valves, the old ductile iron pipe was cut, and disconnected from the old gate valve (see picture).

The maintenance and refurbishment of such a major supply line always implies certain obstacles to the public and to road traffic and high costs in general, and thus it is of great importance that these activities are carried out as time-saving as possible.



However, a supply line of such a large dimension always remains half-filled after a shut-off. Drainage of the line in the usual way, i.e. via a standard hydrant, takes a lot of time. The AVK free flow hydrant was mounted via a T-piece that was flanged directly to the AVK gate valve (see picture). Thanks to the full bore of the hydrant, a self-priming pump could easily be inserted to help drain the line. By means of this self-priming pump together with the free flow hydrant, an additional volume of 36 m<sup>3</sup>/h could be drained from the line.

After the successful installation, Stadtwerke Herford have planned to use additional AVK free flow hydrants and gate valves for the next parts of the supply line.



## SUMMARY OF TECHNICAL FEATURES AVK FREE FLOW HYDRANT

### Free flow of the medium

- Operation mechanism outside of medium
- Enhanced flow rate
- 157 m<sup>3</sup>/h at 1 bar differential pressure to VP325
- 216 m<sup>3</sup>/h at 1 bar differential pressure to EN14339

### Easy insertion and retrieval of pipe inspection and maintenance equipment

- Inside bore 80mm
- Smallest narrowing 71mm – bayonet

### Operation mechanism outside of medium

- No obstacles to the free flow of the medium
- No damage by impurities
- No contact to drinking water

### Improved corrosion protection

- Castings: Minimum coating thickness to GSK guidelines 250µm
- Stainless steel pipe: Material W1.4307 (AISI 304L) – reduced carbon < 0,03%, Additional outside EPOXY coating (min. 100µm), internally passivated

### Hydrant is insensitive to hard particles

- Operation mechanism outside of medium
- Valve rotary plate of stainless steel with additional antifriction coating
- Coating reduces friction and thus torque
- Coating protects against adhesion
- Operation mechanism with high torque protection
- According to EN 1074-6: MST 210 Nm
- According to Belgian standard: MST 280 Nm
- Automatic „brake“ reduces load on stem nut and valve rotary plate

### Automatic drainage

- Residual water vol. < 10ml (100 ml to EN 1074-6)
- Drainage time 30 sec. (15 min. to EN 1074-6)
- Flush-proof to VP325

### Especially large drainage hole

- Hole starts with 17x12mm inside the body and ends up in Ø20mm

# WORLD'S LARGEST CRUISE SHIP IN DUTCH PORT WITH WWE BUTTERFLY VALVES ON BOARD THE NETHERLANDS

In September 2014, the world's largest cruise ship "Oasis of the Seas" arrived in the harbour in Rotterdam for the first time.

By Marlies Assink,  
Marketing dept.,  
Wouter Witzel Eurovalve B.V.



## Facts – "Oasis of the Seas"

Length:	362 m
Sea Gauge:	9.30 m
Weight:	100,000 tonnes
Capacity:	6,360 passengers
Crew:	2,394
Launch:	22 November 2008
Building location:	Turku, Finland
Built by:	STX Europe

The pier in Rotterdam was adjusted for seven million Euros in order to receive this giant cruise ship and being a supplier as well as a Dutch company, we were of course excited to see "Oasis of the Seas" arriving in the Netherlands.

In 2008, Wouter Witzel Eurovalve B.V. supplied approximately 1,000 butterfly valves for various purposes for the building of this ship: bilge, ballast, sea water cooling, fresh water cooling, lubricating oil, fuel oil, grey water, black water, Jacuzzi and swimming pool systems, fire protection system, reverse osmosis, air conditioning, exhaust system, and the scrubber system.

"Oasis of the Seas" is a ship of Royal Caribbean Cruises Ltd. and the first of two ships of the Oasis-range. It is by far the largest cruise ship in the world.

The environmental impact was taken into account during the building of the ship. According to the owners, "Oasis of the Seas" is one of the most environmentally friendly ships in the world. The ship uses 25 % less energy than comparable, yet smaller cruise ships. Wastewater is reused and no sewage is dumped into the sea. The ship is equipped with nearly 2,000 square feet of solar panels to generate electricity.

# AVK CONTRIBUTES TO THE MODERNIZATION OF MUNICIPAL INFRASTRUCTURE

# UKRAINE

Since its launch in August 2007, the World Bank's "Urban Infrastructure Project" (UIP) has been targeting priority on energy-efficient investments in water and sanitation infrastructure, moving these utilities towards greater efficiency and more cost-effective services in 14 cities in Ukraine.

*By Oleksandr Voyevodin,  
Area Sales Manager,  
AVK International A/S*

Sub-projects in eight cities have already been completed and by the closing date in September 2014, improved water and sanitation services will have reached four million citizens in total.

## Challenge

Municipal infrastructure and services in Ukraine, particularly in the water and wastewater sectors, have been suffering from decades of underinvestment. Low tariff and government subsidy levels leave no incentive to increase the efficiency of provided services, including energy efficiency. Deprived of a reliable cash flow, the service providers cannot maintain aging infrastructure, and steadily worsening service makes cost recovery through tariff increases and efficiency improvements an uphill battle. The need for rehabilitation has increased by the overall energy inefficiency of water production and wastewater treatment.

## Solution

Via UIP, the World Bank is assisting the participating utilities in moving toward higher service quality and reliability, and in reducing the cost of service through a series of institutional improvements, and selective investments in the rehabilitation of deteriorated water supply and sanitation infrastructure.

Under this project, AVK has won tenders for supply of valves to several cities in Ukraine thus contributing to the modernization of municipal infrastructure in Ukraine. The beneficiaries of the UIP are the four million Ukrainians who now have better access to clean, safe and reliable water.

## Result

The following results have been achieved through UIP between August 2007 and March 2014:

- The average energy savings reached in UIP utilities is around 27 percent, resulting in UAH 47.8 million annual savings
- Reconstruction of 418 pumping stations (water and sewer)
- Replacement and new construction of 53 kilometres of water and sewer networks
- Procurement of 44 units of specialized automotive vehicles (excavators, mobile workshops, cleaners, etc.)
- Development of business plans by three participating utilities to improve their strategic planning and decision-making practices, and ultimately to have a positive impact on their long-term capacity and financial condition
- Improved water and sanitation services to four million people in Ukraine



The city of Kolomyia in Ivano-Frankivsk oblast (Western Ukraine).

The city of Kolomyia in Ivano-Frankivsk oblast (Western Ukraine) is one of the cities in which the AVK valves have been installed. Mayor of Kolomyia, Ihor Slyuzar, is most proud of what is no longer in the water: chlorine. "We have changed the water quality. We've changed it radically. No one in Ivano-Frankivsk oblast has a system like this. No more dangerous chlorine. There is safety. Water quality is now much higher".

The new water equipment, including AVK valves, has meant far fewer breakdowns and engineers estimate the new system will save approx. 1 million kilowatt hours of electricity per year. That's money that can now be spent on much needed education and health projects.

# HIGH QUALITY PRODUCTS DELIVERED TO NEW WATERWORKS

# DENMARK



AVK has delivered valves to a new waterworks in Kolt-Hasselager. A high level of quality and operational reliability was required of both products and suppliers.

*By Heidi Kjær,  
Communications Coordinator,  
AVK International A/S*

When a residential or industrial area is expanding it often requires an extension of the water supply. Hasselager-Kolt, a suburb of Aarhus, has experienced a great increase in industrial companies and private houses. Due to that, Hasselager-Kolt waterworks expands at the same rate in order to increase the drinking water capacity. In 2012 it was decided to build a new fully automatic waterworks with automatic sand filters to avoid bacterial growth. The new waterworks was ready for opening in September 2014.

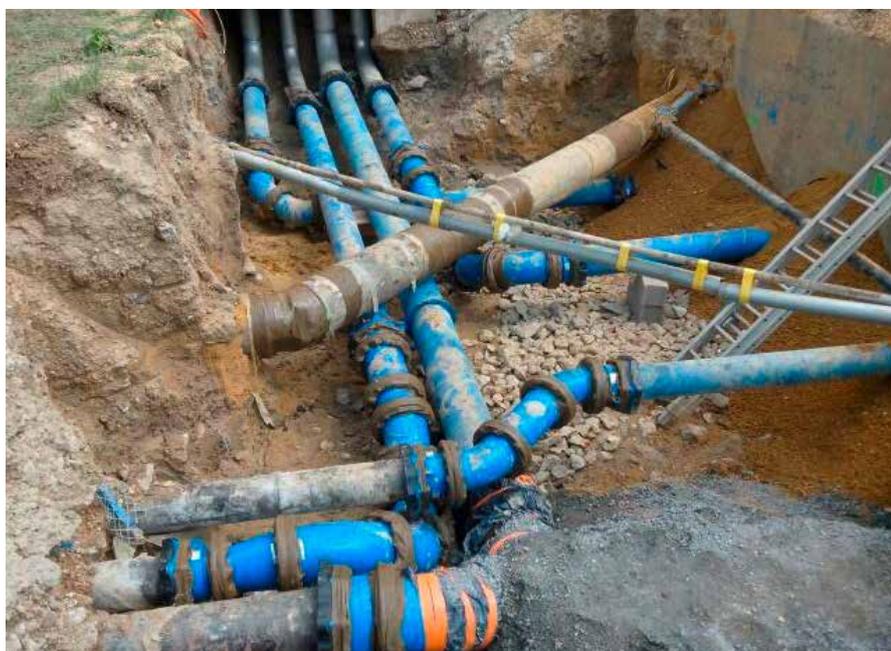
AVK is proud to have supplied all the valves and with that having contributed to the extension of the water capacity in the area. In total, AVK delivered 57 butterfly valves in DN 100-200 along

with five gate valves in DN 150 and 250. The valves are primarily delivered with pneumatic actuators for automatic operation.

An important factor has been to future-proof the new waterworks in correlation with performance and component deliveries. This means, that all the products used for the waterworks have been specifically selected with focus on high quality.

Furthermore, the waterworks has been designed so that if the need arises, it is possible to expand the capacity with another 50 %. With that, the citizens and industries in the Hasselager-Kolt area are not at any risk of experiencing a shortage of water for many years ahead.

# SUPA MAXI™ COUPLINGS USED IN THE RENOVATION OF PEUGEOT CITRÖEN'S FIRE PROTECTION NETWORK FRANCE



Supa Maxi™ is a coupling with numerous features making it applicable to various installations.

*By Francisco Viskinge,  
Managing Director,  
AVK France S.A.S.*

When the Peugeot Citroën factory in Moselle needed to renovate their fire protection network, the Supa Maxi™ universal tensile couplings were considered among other solutions. Pros and cons were assessed, and in spite of Supa Maxi™ being more expensive than the couplings offered by a competitor, and compared to AVK's own Supa couplings and combi-flanges, it turned out to be the most advantageous solution for the renovation.

The versatility of the Supa Maxi™ for connecting pipes of different materials incl. steel pipes, as well as the fast delivery and installment, made it the optimal choice for this particular renovation. Apart from the product's

diversity, the "round the clock" after sales service AVK France provides settled the final choice.

A total of 50 Supa Maxi™ couplings were installed in the sizes DN 200, DN 250 and DN 300 in connection with the renovation.

This case shows that a more expensive solution is not necessarily a hindrance, as long as the total offering of product quality and features as well as a great service provides a better value for money to the customer.



# NEW FLEXIBLE COMBI-CROSS WITH DN 400 CENTRE PART

# DENMARK



The flexible combi-cross offers optimal flexibility in both installation and potential retrofit of the valves.

*By Lene Mark,  
Marketing Manager,  
AVK International A/S*

## Unique flexible design

The combi-cross is designed with a full bore DN 400 centre part and can be supplied with valve sizes from DN 150 to 400 or a blind cap on any of the four outlets. Often only two of the valve outlets are needed in DN 400, whereas the other valve outlets are to be connected to pipes in smaller dimensions. With our new DN 400 combi-cross it is not necessary to use reduction flanges or transition flanges to reduce one or more of the outlets to the appropriate size. This reduces the number of bolted connections and saves time and money. Regardless of the valve size mounted, the face to face lengths remain unchanged.

The valves are mounted on the centre part by means of a two-part bracket based on a coupling design similar to the renowned Victaulic design. A profiled EPDM gasket seals the connection. If needed, the valves can easily be removed and replaced by valves in other dimensions, as the design enables a vertical replacement of the valves without the use of special tools. To ease the installation, we have cast a guide hinge on the valve side.

## Meets stringent safety requirements

The design also conforms to the stringent safety requirements recently introduced in Norway regarding installation in chambers. The combi-cross is anchored in the chamber by means of the fixation lugs on the centre part, which means that replacement of valves will not affect the anchoring of the combi-cross. The full bore DN 400 centre outlet allows for insertion of solid foam pipe cleaning devices. It is equipped with a DN 100 flange, which can be used as inspection

access point to the water stream. All the gate valves are in the renowned AVK design including GSK approved coating and drinking water approved rubber parts. They are supplied with 1" ball valve service outlets, making it possible to take out water samples or to supply auxiliary water. The outlets are mounted with bolts to avoid unprotected threads.

## Feature summary

- Flexible design with no need for reduction or transition flanges
- Easy replacement of valves
- Safe anchoring of the centre part
- Valves supplied with ball valve service outlets
- Full bore DN 400 centre outlet allows for pipe cleaning
- Renowned AVK gate valve design
- Covers the demand for a DN 400 combi-cross and meets our customers' request for flexibility, safety and cost efficiency

# NEW DN 400 SUPA MAXI™ COUPLINGS

AVK extends the renowned range of Supa Maxi™ universal tensile couplings with a new DN 400 straight coupling, flange adaptor and end cap.

*By Lene Mark,  
Marketing Manager,  
AVK International A/S*

The sealing range of the DN 400 covers all types of pipes in 392-442 mm, and the couplings are, like all the other dimensions in the range, suitable for up to PN 16. The KIWA approval is pending.

The new DN 400 has the same features as the remaining range,

including the outstanding SupaGrip™ sealing system. When tightening the bolts, the bracket segments and bolts move inwards, securing that the gasket tightens around the pipe - even on minimum pipe sizes within the tolerance range, and when used on oval pipes.

## Feature summary

- Fully universal and tensile on all pipe materials
- Patented SupaGrip™ sealing support system with flexible bracket
- PN 16 in all dimensions for water (WP -0,9 to 16 bar)
- ±4° (8° in total) angular deflection on each side
- Large insertion depth tolerances allow for easy installation
- Permanent protection caps with closed removable centre part protect during handling and installation

- No re-tightening of bolts needed due to metal grip segments
- Lifting eye on items with a weight exceeding 10 kilos (DN 100-400)
- Fusion bonded epoxy coating to DIN 30677-2, GSK approved
- Gasket of EPDM rubber approved for drinking water

Please see our new Supa Maxi™ section on [www.avkvalves.eu](http://www.avkvalves.eu). Here you will find all relevant information and downloads for this range.



# AVK Y-STRAINERS - EASY MAINTENANCE OF THE SYSTEM AND MAXIMUM DURABILITY

Y-Strainers are used in water systems to protect other equipment such as control valves and pumps from minor accumulations of dirt, pebbles and impurities.

*By Bo Ellerup,  
Product Management,  
AVK International A/S*

## Easy maintenance

The position of the drain plug enables full drainage, and afterwards the lid can easily be removed just by loosening two bolts.

## Maximum durability

The durability is ensured by a fusion bonded 250 my epoxy coating internally and externally, a stainless steel screen in a robust one-piece

design, high quality rubber parts, and bolts/nuts/washers of A2 with the nuts fixed in cast slots to prevent corrosion of the threads.

A lifting eye is built-in from DN 100 for easy handling. The Y-strainers can be ordered with PT ports, which make it possible to measure the differential pressure.



# AVK PARTICIPATED IN THE NO-DIG FAIR AND WATER LOSS FORUM IN TURKEY

# TURKEY



No-Dig Trenchless Technologies fair was held 28-31 August 2014 in Istanbul with the Turkey Waterloss Forum.

*By Ismail Sincik,  
Country Manager,  
AVK International A/S in Turkey*



The fair and Forum received a high degree of involvement from Turkish public enterprises. AVK participated at the fair and successfully promoted its products to potential customers and decision makers.

The advanced gate valve design combined with epoxy coating meeting GSK requirements and up to 10 years warranty period were the most attractive AVK features during the fair.

Country manager Ismail Sincik gave a presentation about "reasons of waterloss in valves and factors to consider in valve selection" and underlined the effect of quality and service life of a valve on waterloss management.

# DEMO BUS ON TOUR IN SLOVENIA

# SLOVENIA

The idea behind the AVK show bus is to obtain a close contact with end users in water and wastewater companies in all parts of Europe.

*Marketing department  
AVK International A/S*

In November 2014, our Product and Promotion Manager, Branislav Milosevic went to Slovenia with an AVK show bus and several meetings in his calendar. The plan was to hold three meetings every day in each region of Slovenia; and during the six days the bus toured Slovenia, Branislav Milosevic welcomed visitors from 17 different companies - the majority of which were water and wastewater companies.

The feedback from the visiting companies was very positive, and they were pleased to experience an AVK office on wheels, where AVK news was brought to them and not the other way around. A great advantage is that the show bus brings the products to the customers, and in the bus they can have technical explanations and discussions. Some of the product discussions between chief of maintenance and fitters led to the conclusion that certain AVK products would have been the solution to previous problems and as such, AVK got a lot of supporters with just one visit. It is very important for AVK to get in contact with end users in this way, because you very easily realise how things are done in some companies and what products could be interesting to them. You can present new products and solutions to the customers and



sometimes, these product discussions can also lead to new solutions or even contribute with ideas to new product developments.

Due to the time pressure during a work day, it can be difficult to arrange meetings with end users, but the AVK show bus made it possible to visit them when it was best suitable.

*"This trip is an example of how the bus can be used to bring AVK to clients, and in that way identify what they need, how they need it, and how the different companies work. I must say it was a really big pleasure to use the bus for AVK promotion, and I think it is a far better promotion tool than any other way"*

*– Branislav Milosevic*

# ESTONIAN WATERWORKS ASSOCIATION (EVEL) DELEGATION IN DENMARK

## DENMARK

When Estonia joined the European Union in 2004, it was obvious that a renovation and reconstruction of the country's drinking water system was necessary in order to transpose the water quality indicators to the EU requirements. The Estonian water sector has indeed developed rapidly in the last 10 years with help from EU funds but still, it is important to get the maximum from our system developments.



Skanderborg wastewater treatment plant.

By Marju Murumets  
Communication manager,  
EVEL, Estonia

In May 2013, Vahur Tarkmees (Executive Director at EVEL) and Kristian Kjeldgaard (General Sales and Marketing Manager at AVK International A/S) met at the Danish Embassy in Tallinn, Estonia. From their meeting, the idea arose to arrange a study tour in Denmark for an Estonian delegation with the primary goal to learn about effective energy saving technologies and best practises within water treatment management in Denmark.

The study tour was conducted on 24 – 27 November 2014, and the plan was to visit as many water and waste water treatment plants as possible to get to know the Danish strategies for water treatment management, sludge

treatment/management, storm water management etc. and also to learn more about the co-operation between waterworks (utilities), state agencies (legislative process etc.) and various associations. Also, we would like to hear about the challenges within the water management sector in Denmark, and last but not least to visit the Danish waterworks association to build up relationships for a future co-operation.

During our visit in Denmark, we were introduced to energy efficiency, how to approach this and implement it in different types of water companies. To fully see and understand how this can be put into practice, we visited a variety of Danish water companies



Horsens Vand A/S, Rugballe Waterworks - diesel generator.



Horsens Vand A/S, Rugballe Waterworks.



AVK International A/S.

that gave us factory tours and introductions to their individual focus points. On our tour we experienced how a great focus on environmental parameters, resources, and energy efficiency can be successfully implemented at a wastewater treatment plant. At waterworks focus lies on similar elements, but here our focus was also on drinking water quality, distribution, management, and control systems for optimisation of energy efficiency. In addition to all of this, we also learned more about pumps and pumping systems, the perspectives for the Danish water utilities, and aeration technology for municipal water treatment.

We are grateful to have had the opportunity to visit so many different companies. Therefore, we would like to thank Skanderborg Forsyning A/S, Liqflow A/S, Danwell A/S, Horsens Vand A/S, Rugballe waterworks, Picca Automation A/S, AO Vaga Teknik A/S, DANVA, Siemens A/S and Hvidtved A/S in Silkeborg where we saw a half-loaded truck almost ready to leave for one of the largest water companies in Estonia, Järve Biopuhastus OÜ. Thank you very much for your hospitality and great knowledge sharing.

Our main partner on this trip was The Danish Water Technology Group and our special thanks goes to Benny Hagelskjær. He was indispensable during this trip and he took very

well care of us by organising the best accommodation, dinners and transportation for us.

We also would like to thank Jurgis Trams (Product and Promotion Manager at AVK International A/S) who helped us start planning this study tour.

With this tour, we realised we have a lot of things in common with the Danish people and Denmark, and our co-operation will continue for sure.

Thank you Denmark for hosting us!

# AVK AROUND THE WORLD

## DANISH BUSINESS DELEGATION IN CROATIA

*By Claus Møller-Nielsen, Business Development Manager, AVK International A/S*

On 21 – 23 October 2014, Her Majesty the Queen and His Royal Highness the Prince Consort of Denmark visited Croatia together with a Danish business delegation.

AVK International A/S participated in the business delegation along with 26 other major Danish companies and was represented by General Sales and Marketing Manager Kristian Kjeldgaard, Product and Promotion Manager Branislav Milosevic and myself.

The visit provided a unique opportunity to highlight Danish key competences and companies within selected sectors, like the environmental technologies and energy & energy efficiency.



## REPAIR CLAMPS - GOOD FOR TEAMBUILDING

*By Yvonne Kruisweg, Secretary, AVK Nederland B.V.*

The manufacturing of an universal repair clamp, range 2200 - 2700 mm, length 800 mm, material AISI 316 was good for our teambuilding, at AVK Nederland B.V.



# AVK AROUND THE WORLD

## LIVING ADVERTISEMENT TO RECRUIT NEW EMPLOYEES

By Vibeke Juhl, Secretary,  
AVK GUMMI A/S

In our efforts to recruit new employees for a number of vacancies as for example operator, chemical engineer, PT-engineer, finance assistant and not least in order to make AVK GUMMI more visible in the local area, we decided to make a different approach than previously, says managing director Peter Lorentzen. The idea of making a living advertisement came to our mind and for four weeks we had our advert on the rear end of 25 city busses in Aarhus with this text:



### ARE YOU LOOKING FOR A JOB?

Challenging work place - 20 minutes from Aarhus  
[www.avk.gummi.dk](http://www.avk.gummi.dk)

It turned out to be a great success and resulted in an increased number of usable job applications from both skilled and unskilled people. The initiative gave positive feedback also

in other respects and is certainly a new way for us of highlighting AVK GUMMI and attracting new employees, concludes Peter Lorentzen.

## AVK VICTORIA FOUNTAIN IN WROCLAW OLD TOWN IN POLAND

By Jørn Urup Nielsen, former employee at AVK



## AROUND THE WORLD WITH YOU

Would you like to share a short story or photo from the AVK world in the "Around the world section"?

Please send your story/picture to [lios@avk.dk](mailto:lios@avk.dk).

Selected contributions will be published in the future Interlink magazines.

# COMPETITION



We are happy to announce that the winners of the competition in AVK interlink no. 43 are:

- Rudolf Kočíško, VVS, a.s. Košice, Slovakia
- Benjamin Shipley, Bryan Donkin Valves Ltd., England
- Jiao Ping, AVK Anhui, China

Gifts are on their way.

The correct answer is: Butterfly, HDPE BFV wafer type.

New competition:

Which product does this enlargement show?

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](mailto:lios@avk.dk)



Choose between:



Bowl from TripTrap,  
Ø32 mm



Picnic grill in a cooler  
bag



Hoptimist in yellow

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