### **BWT NEWS**

Welcome to the latest edition of BWT News. You'll find news and product information from the BWT team.

#### EDITION 11

## Bermad's 700 series valve is the biggest of the best.

Over the last 30 years' our team has continued to improve our core range: the 700 series valve. We have made updates to the product's technical capability and have extended the number of sizes available for our customers for better project and application outcomes.

Today, our larger range of 700 series valves extends from 500mm up to 1200mm in size. With one of the most comprehensive ranges in the country, Bermad Water Technologies has the products you need to support your pumping station or pipeline requirements. <image>

Anti-cavitation trim control valves

Product feature

Diaphragm actuated control valves such as pressure relief valves, tank fill control valves, or pressure reduction valves are often used in applications with high differential pressures and velocities. This means that the interior of the valve can be affected by cavitation.

Cavitation can substantially reduce the life expectancy of a standard valve, as the vapourising air bubbles can impact the seat and body of the valve.

To mitigate this issue, our standard 700 series valve features a 'fat belly' design which is engineered to cope with high cavitation conditions. The design means that the energy does not typically impact the internal surface of the valve. To cater for extreme circumstances, or cases of very high differential pressure and velocity, it may be required to use a single or double cavitation cage to ensure the interior of the valve remains intact. Our engineers can advise you on whether this solution is suitable for your application or project. As part of our service, we provide a detailed cavitation report to our customers to ensure long term reliability within the application.

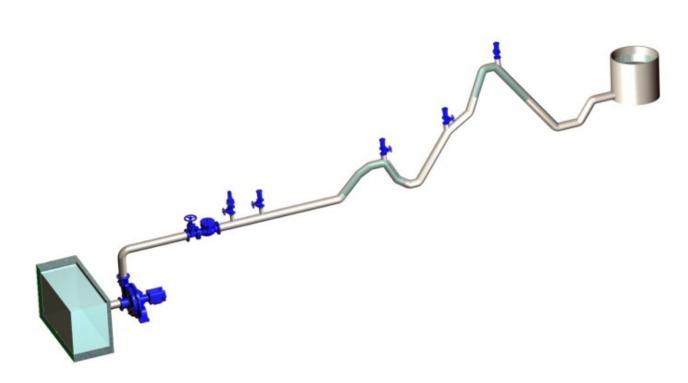
Get in touch with your nearest Bermad office to receive a sizing report that matches your requirements or visit our **online product page** to learn more about our 700 series valves.





One of the unique features of CSA's Fox-RFP valve range is the ability to seal at extremely low pressures (e.g. 1m). This ensures positive sealing for the valves and reduced pumping costs—as the need for excessive pressure in the pipeline is dramatically reduced.

As part of factory testing, CSA has automated the process to ensure that 100% of their valves are low pressure tested prior to shipment. This gives you a guarantee that each valve has been tested for function, purpose and reliability for future applications.



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CSA's guarantee for low pressure sealing on PN16 air valves

News



#### Fire Australia Conference and Tradeshow 2019

Event

We're excited to share that our team will be attending Fire Australia from 14 – 16 May at the Melbourne Convention and Exhibition Centre. As the largest conference of its kind in the Southern Hemisphere, Fire Australia offers three days of conference sessions, trade show access, networking opportunities and live demonstrations from exhibitors and presenters alike. Bermad will be exhibiting at the conference at Stand 124 and look forward to sharing updates on approvals, testing, and our Fire and Building product suite. If you require assistance, product guidance, technical information or have questions on our range, our team of engineers and specialists are onsite, and happy to help during the conference.

You can learn more about Fire Australia by visiting their **website**, or by **getting in touch** with our team.

# **FIREAUSTRALIA** CONFERENCE & TRADESHOW 2019

MELBOURNE CONVENTION & EXHIBITION CENTRE 14 - 16 MAY 2019

#### New developments in CSA's range for sewage applications

Product feature

#### Product developments create new opportunities to improve your system's performance.

CSA has recently released an additional model to its range of high performing air valves. The SCFC is a compact sewage air valve that adds value and function to the suite.

The product's rapid filling prevention mechanism ensures that no matter how fast a pump starts, the air valve will control the air discharge rate. This reduces air discharge and the potential for localised water hammer. In addition to these benefits, the valve also limits the possibility of sewage discharge entering the upper float mechanism, reducing the need for periodic maintenance.

If the valve is fitted to a pipeline remotely, it will reduce the effect of water hammer caused by column separation. This is achieved through dampening and the return surge at the air valve location.

Keeping these benefits in mind, the SCF-C-RFP air valve can create significant efficiencies in your pipeline. If you'd like more information on the product and its features, visit our **product page** today.





#### Tasmania's largest rollout of iPerl smart meters with Bermad.

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Case Study

#### Over the last three years, the team at Bermad Water Technologies have worked closely with TasWater to roll out over 45,000 iPerl meters across the state.

The project was an opportunity to put the iPerl's drive-by system and technical capability to the test in one of Australia's most diverse geographical regions.

Covering the business case for the project, billing integration, training support, and future opportunities, TasWater's Rob Cameron steps us through the project in our first case study video series. We've also captured insights from Damian Muir and Michael Harrison, two of our metering specialists that played a key part during the project's trial, rollout, and eventual success.

You can learn more about the project by watching the series on the **Bermad YouTube channel**, or on our website today.



#### How to: design and install a Magflow meter to avoid trapped air

How to



In most irrigation applications, the installation of electromagnetic flow meters is an integral part of the water supply system. Within farm irrigation networks, the meter is generally used for control or billing purposes.

The nature of a flow meter's design means that entrapped air can cause a variety of stability and reading errors, affecting the overall performance of the system. By designing the system with this issue in mind, we can mitigate this problem for greater function and optimisation.



The Problem

A magnetic flow meter, generates a magnetic field inside the flow tube (sensor).

Following Faraday's Law, the flow of a conductive liquid through the magnetic field creates a voltage signal that is sensed by electrodes located on the flow tube walls.

The presence of entrapped air can cause the reading to be erratic, and/or highly inaccurate with potential for over reading. Many meters can go into a fault mode due to the instability of the reading.

While most manufacturers provide detailed installation advice on how to install their meters, they rarely discuss how air moves through the pipeline, and the best ways to minimise these problems.

How to move the entrapped air away from the flow meter

It is generally assumed that air inside a pipeline will always move to the top of the pipe, and will shift if flow is passed along a horizontal pipeline. What this example shows, is that the greater the pipe diameter, the greater the required velocity. Without this velocity, the air pocket will remain at the same location.

It is also important to understand the effect that water pressure has on the nature of the air inside the pipeline. The lower the pressure, the greater the entrapped air.

This can compound the impact on the flow meter's performance. By increasing the pressure in the pipeline, the entrapped air poses less harm. This can be achieved by installing pressure sustaining valves within the network to keep the system pressure consistent.

One solution is to install the meter with a rising gradient to ensure that the air will move to a higher spot. Suitable air release valves can be installed in order to release air from the pipe and maximise the flow capability of the system.

We would suggest the minimum slope in an upward flow should have a gradient of 1 : 500 or steeper to induce the air pocket to rise away from the meter.



A second solution is to mount the meter vertically, with the flow moving upwards. This ensures the air always moves quickly past the meter without generating ongoing issues.

A general principle of any installation is to ensure the meter is always kept full of water. This is not always possible, as part of the network may drain out as pumps are turned off.

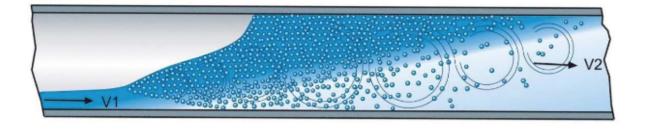
It is then critical to ensure that the design incorporates suitable air release valves to release the air on pump start—so that the meter starts reading immediately that the flow has passed.

However, this assumption is not always the case. Often, a specific water velocity is required to move the air within a pipeline, and the greater the pipe diameter, the greater the air velocity required.

Most Magflow installations are sized to the pipe diameter rather than the flow rate within the pipe. This means that water velocity can often be less than 0.5 m/s, which can be very problematic if entrapped air is present.

Using the example of a flat pipe with zero gradient, these are the specific water velocities required to move air within the pipe:

- DN50 0.4 m/s
- DN150 0.7 m/s
- DN300 1 m/s
- DN600 1.5 m/s



The design of the air valve is also critical to ensure that the entrapped air is effectively released. Kinetic air valves or vacuum breakers should be avoided, as combination air valves with an automatic and kinetic orifice are best practice for these types of applications.

These combination valves will ensure that larger volumes of entrapped air are released effectively during the filling and the operation of the pipeline.

#### Where to find full system design assistance

It's always best to discuss the design of the pipeline prior to any installation. Our team of engineers and pipeline specialists are available to help make recommendations to ensure the success of your pumping station, pipeline or irrigation system.

**Get in touch** with us online, or visit our **YouTube channel** for more resources, insights, and 'how to' instructions.



We're here to help.



Our team of dedicated staff are always prepared to find a solution. We offer extensive technical information and engineering data on our product pages, which are available within our website.

If you require on field assistance, get in touch with our team via our live field support tool, or contact our team online.

Get in touch - BWT can be found Australia-wide For more information or to speak to one of our staff, call the number in your state

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