Vortex Flow Control Valves
Product and Installation Guide
Vortex Flow Control Valves

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Intesio – for optimum stormwater management

Continuing urban development, a changing climate and the consequences of intensified rainfall: all are increasingly prominent issues on the political and environmental agenda. In combination, they represent a complex need for the most intelligent, effective solution.

Intesio is Wavin’s specialist approach to responsible management of stormwater, including its efficient capture, transportation, cleansing, infiltration, attenuation and re-use. We’re ready to contribute at any stage in a project, with one central goal: to help achieve the optimum project outcome. Our in-depth expertise, design insight and proven system technology is applied wherever required to ensure each installed scheme achieves maximum efficiency of cost and integrated function, and full compliance with the latest regulatory criteria.

Intesio Vortex Flow Control Valves

The Intesio range of Vortex Flow Control Valves enables precise control of discharge flow rates from drainage, storage attenuation and infiltration/soakaway systems. The device controls surface stormwater flow by hydraulic effect without the requirement of moving parts.

During low flow conditions, water entering through the inlet of the Vortex Flow Control Valve passes through the valve with negligible pressure drop. During high flow conditions, a vortex flow pattern develops within the device creating an air filled core. This phenomenon restricts and throttles flow through the device, creating back pressure immediately upstream of its discharge.

Unlike a traditional orifice plate, debris that might cause an obstruction or blockage is able to pass through the valve due to the relatively larger flow path opening.

The Intesio range of Vortex Flow Control Valves offers two methods of fixation:
Fluidic-Amp – for low flow discharges.
Fluidic-Cone – for high flow discharges
– both are available with either spigot or plate fixings.

Applications

The Intesio Vortex Control Valve can be used wherever there is a need to limit the rate of flow of surface stormwater within a drainage system, and is typically used in applications including:
• Modular stormwater attenuation systems (e.g. AquaCell)
• Traditional attenuation storage
• Excess flows from infiltration/soakaway systems
• Wetlands, Ponds and Swales

Benefits of Intesio Vortex Flow Control Valves

• Precise flow control
• No moving parts or power requirements
• Self activating
• Reduced risk of blockages compared to orifice plates
• Integral by-pass door allows access for cleaning
• Custom built
• Manufactured from corrosion-resistant stainless steel construction

Product Selector

<table>
<thead>
<tr>
<th>Vortex valve unit</th>
<th>Peak design discharge</th>
<th>Design head</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluidic-Amp with Spigot</td>
<td>0-50 l/s</td>
<td>0-1.6m in height/depth</td>
</tr>
<tr>
<td>Fluidic-Amp with Plate</td>
<td>0-50 l/s</td>
<td>0-1.6m in height/depth</td>
</tr>
<tr>
<td>Fluidic-Cone with Spigot</td>
<td>0-120 l/s</td>
<td>0-3m in height/depth</td>
</tr>
<tr>
<td>Fluidic-Cone with Plate</td>
<td>0-120 l/s</td>
<td>0-3m in height/depth</td>
</tr>
</tbody>
</table>
Typical Application

Off-Line AquaCell Attenuation Tank using Fluidic-Amp with spigot
Typical example of an off-line AquaCell attenuation tank using Fluidic-Amp Vortex Valve with spigot

Section through control chamber

Fluidic-Amp

- Pull wire
- Pivoting bypass door
- Min 200mm sump

Fluidic-Cone

- Pull wire
- Pivoting bypass door

Note:
The style and orientation of the inlet shown may be designated as a "right hand" box inlet

Typical Installation Details
Technical Advice
Our technical advisory team can advise on the most appropriate product for your application. To enable us to specify the correct product we will require the following information:

- Type of Application – Surface Water, Foul Water or Combined System
- Design Head
- Design Peak Discharge Rate
- Details of the proposed application, manhole or flow control chamber

On receipt of the above, Wavin can provide:

- Vortex Valve model, size and specification
- Typical installation drawing
- Quotation for supply of the Vortex Valve

Performance
The following graph demonstrates the typical head/discharge characteristics of the fluidic-amp and fluidic-cone Vortex Valves.
**Maintenance**

As the Vortex Valve has no moving parts, maintenance requirements are minimal, however in the event of a blockage, the Vortex Valve units are fitted with an integral pivoting bypass door mounted on the front face of the unit. The bypass door is fitted with stainless steel wire rope that can be pulled from ground level. The door opens exposing a larger aperture on the front plate of the unit allowing the system to be drained of water. Once the water level in the housing structure subsides, the blockage can be easily accessed and removed.
Intesio – working to ensure optimum stormwater management

The combination of urban development and intensified rainfall from climate change can create serious problems. Stormwater situations are challenges that may be unavoidable, but they can be very effectively overcome when the right expertise is applied.

Intesio is Wavin’s specialist focus for the most efficient capture, transportation, cleansing, infiltration, attenuation and re-use of stormwater at source.

The Intesio Team has the essential experience and design insight to help engineer the best possible solution, in its widest sense, every time.

Our well-proven system technology is intelligently applied to the individual needs of each location and situation. We make thorough checks to ensure efficient performance and full adherence to the latest statutory regulations.

By making Intesio part of your project approach, the outcome is assured: the optimum balance of cost, function and compliance.