



**BROEN  
BALLOREX®  
Venturi**



**Commissioning valves**

- Reduced energy consumption
- Reduced time of commissioning
- Reduced installation space required



## Regulation of water-based heating and cooling systems

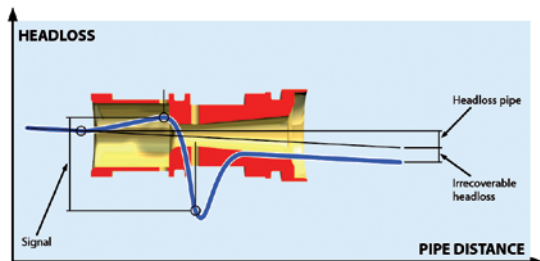
BROEN BALLOREX® Venturi is a range of static commissioning valves used for balancing of water-based heating and cooling systems, to ensure an evenly distributed flow in individual risers and terminal units. Applications are typically central or district heating and cooling systems, as well as fan coil units, in multi-story and high-rise buildings.

The BROEN BALLOREX® Venturi valve is compact having flow measuring, regulation and isolation functions all in one unit. The range consists of valves from size DN 15-50, manufactured in dezincification resistant brass (DZR), to valves from size DN 65-300, manufactured in steel.

## Perfect balance by accurate measuring

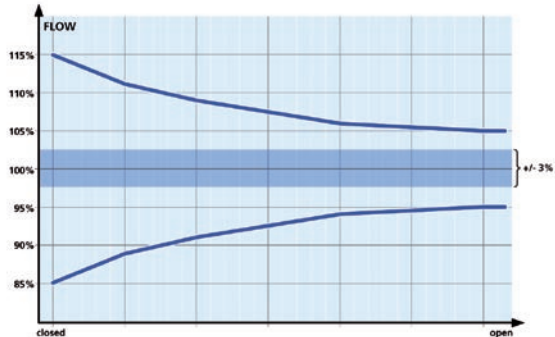
The BROEN BALLOREX® Venturi is based on the well-known Venturi principle, where flow is measured by registering the pressure difference through a fixed Venturi orifice.

The trumpet shaped design of the Venturi nozzle creates a higher signal without the pressure loss associated with more conventional orifice plates. As water enters the Venturi nozzle, it is compressed and accelerated through the wasp-waisted orifice, increasing the pressure differential. The water is then allowed to expand again within the trumpet, reducing the overall pressure loss through the Venturi nozzle. This generates a signal range of typically 10-100 kPa.



The fixed orifice of the Venturi nozzle generates a higher measuring signal compared to a normal orifice.

The controlled flow and the higher measuring signal generated enables the BROEN BALLOREX® Venturi to have consistent measuring accuracy better than  $\pm 3\%$  across the entire flow range. This makes the BROEN BALLOREX® Venturi more accurate compared to other commissioning valves in the market.



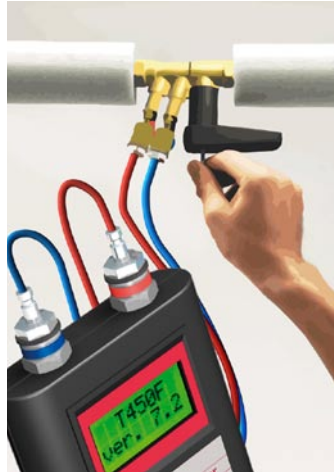
The BROEN BALLOREX® Venturi has a consistent accuracy better than  $\pm 3\%$  compared to other commissioning valves, which have a variable accuracy of  $\pm 15\%$  down to  $\pm 5\%$  depending on setting of the valve.

Another feature of the BROEN BALLOREX® Venturi is that accurate measuring through the test points can be done with the valve in any position because of the Venturi nozzle design. The BROEN BALLOREX® Venturi is, at the same time, also insensitive to clogging due to debris in the water, as two opposite sited pilot holes ensures a pressure reading no matter in which orientation the valve is positioned.

The BROEN BALLOREX® Venturi is, because of the higher accuracy and low loss characteristics, more efficient and reduces energy consumption when balancing heating and cooling systems.

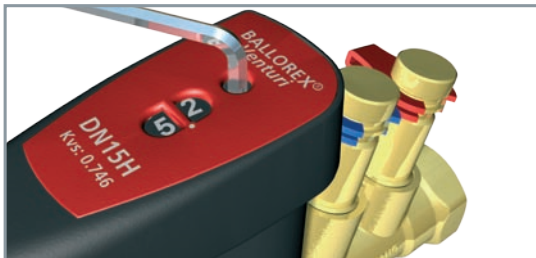
## One Kv-value makes regulation easy

By using a fixed orifice Venturi nozzle to meter the flow, the BROEN BALLOREX® Venturi has only one Kv-value (indicated on handle) for each valve size. This is a distinct advantage as regulation can be done simultaneously with measuring - this makes the setting fast and easy. Other commissioning valves measure across the valve seat causing the Kv-value to change every time the setting is changed, which makes the setting more difficult and more time consuming.



*Regulation is done while measuring.*

Setting of the BROEN BALLOREX® Venturi sizes DN 15-50 is done using an Allen key, in the handle of the valve, to rotate the regulating spindle inside the isolating ball valve. The digital setting scale on top of the handle has 100 different settings from 0.0 to 9.9, and is easy to read – even from a distance or hanging from a ceiling.



The isolating function of the BROEN BALLOREX® Venturi sizes DN 15-50 is operated by the ¼-turn handle of the built-in ball valve. The regulating function and the isolating function operate independently – therefore the desired setting remains when isolated and again when reopened. The BROEN BALLOREX® Venturi isolation function has a distinct advantage over multi-turn handles of other commissioning valves, where it is difficult to identify if the isolating function is activated or not and the setting is lost when isolated and when again reopened.



The BROEN BALLOREX® Venturi size DN 65-300 comprises of a butterfly valve gearbox operated with a built-in memory stop. This enables an accurate measuring and setting function of the valve with the benefit that the setting remains by use of the memory stop, when the butterfly valve is isolated and again reopened.

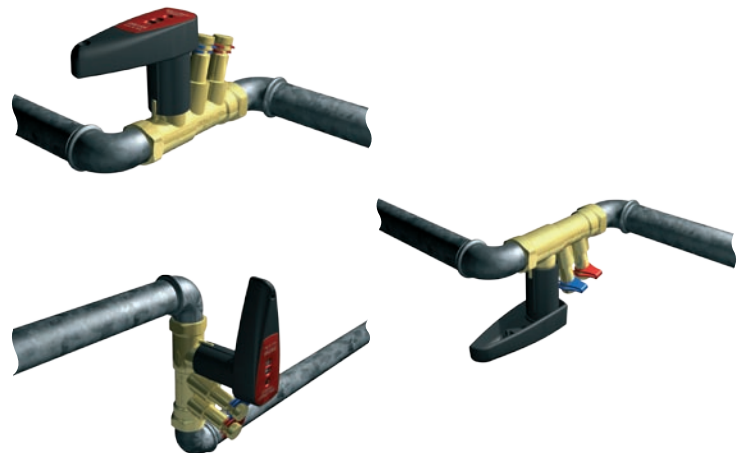
Easy valve selection and regulation of BROEN BALLOREX® Venturi is supported by a free comprehensive software program available at [www.venturivalves.com](http://www.venturivalves.com)

The BROEN BALLOREX® Venturi is, because of its design and use of the Venturi principle, accurate, fast and easy to commission.

## No need for straight piping means flexible installation

Using the Venturi nozzle there is no need for 3-5 DN lengths of straight piping before and after the BROEN BALLOREX® Venturi (DN 15-50) when installed to obtain an accurate reading. Installation can be done right next to bends, reducers or flexible hoses etc. This is unique compared to other commissioning valves that require the mentioned straight piping.

The BROEN BALLOREX® Venturi can at the same time, be installed in any position needed without affecting the measuring, setting or operation of the valve.

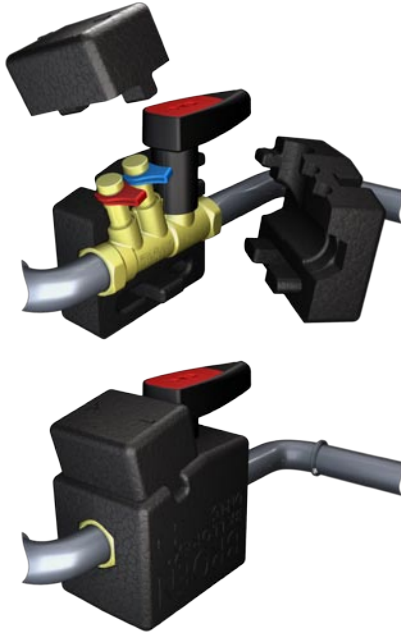


*Installation can be done in any position without straight piping.*

What also makes the installation flexible is the variety of BROEN BALLOREX® Venturi connections, like female, compression etc. which are available in sizes DN 15-50. For sizes DN 65-300 flange connection is used.

## Prefabricated insulation is easily applied

Insulation of the BROEN BALLOREX® Venturi is easily done using the prefabricated insulation. This insulation does not affect the measuring, setting and isolation of the BROEN BALLOREX® Venturi, which means that insulation can be applied even before the commissioning.

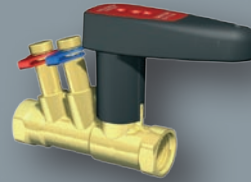


*The prefabricated insulation makes the insulation job fast and easy.*

The BROEN BALLOREX® Venturi is, because of its high flexibility of installation and insulation easy to install even where installation space is limited.

## Complete product range

BROEN BALLOREX® Venturi is available in numerous different configurations and sizes and can be supplied as preassembled hook-up units.



*BROEN BALLOREX® Venturi  
DN 15-50 FODRV  
with test points*



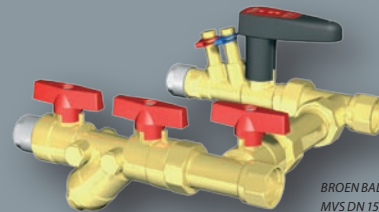
*BROEN BALLOREX® Venturi  
DN 15-50 DRV  
without test points*



*BROEN BALLOREX® Venturi  
DN 65-300 FODRV  
with test points*



*BROEN BALLOREX® Venturi  
DN 65-300 DRV  
without test points*

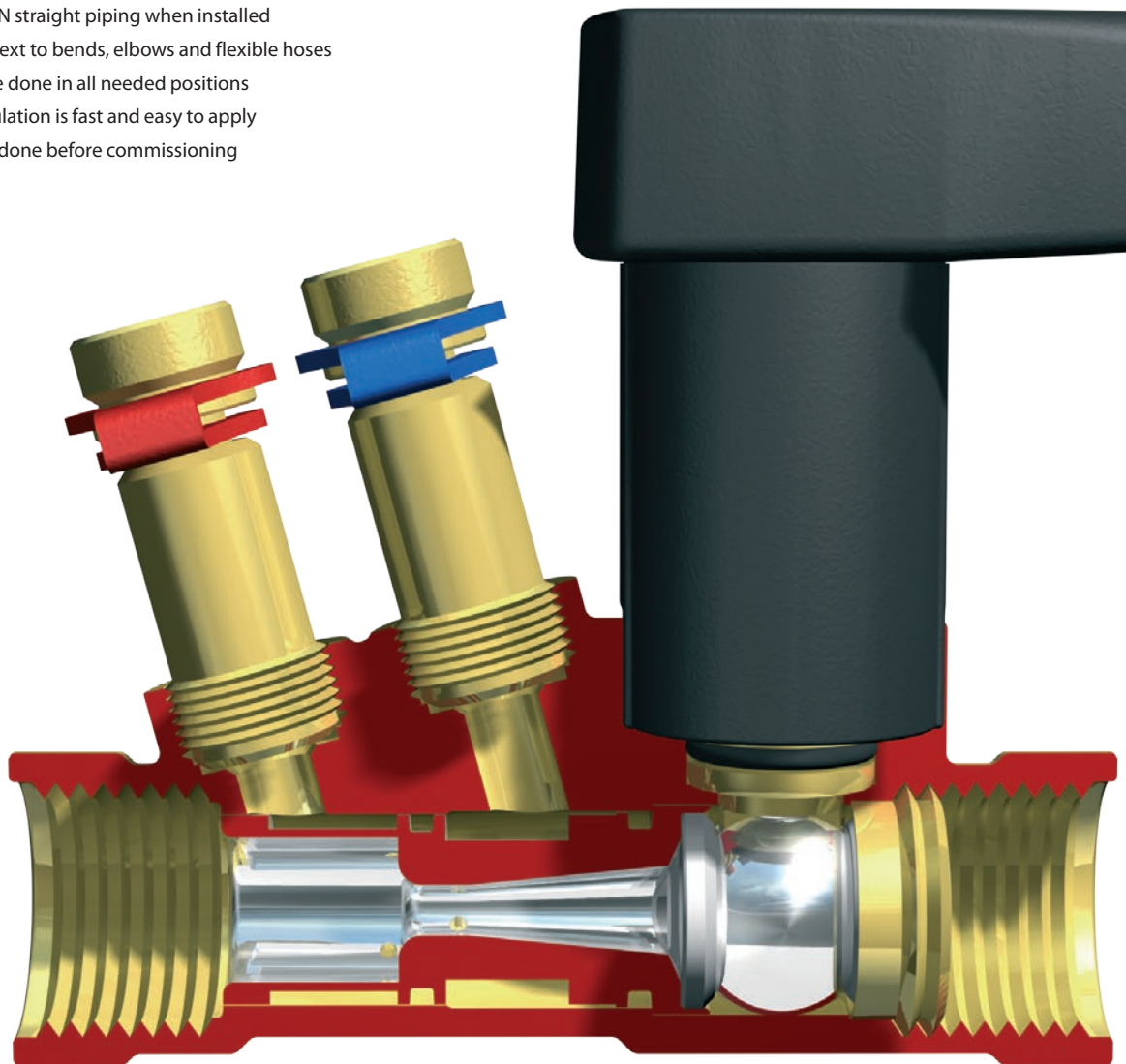


*BROEN BALLOREX® Venturi  
MVS DN 15-20  
preassembled hook-up unit*

DN	Description	FODRV and DRV Flow rates in l/s
15	Low Flow	0,01 - 0,07
	Standard Flow	0,06 - 0,15
	High Flow	0,14 - 0,33
20	Low Flow	0,06 - 0,15
	Standard Flow	0,14 - 0,33
	High Flow	0,26 - 0,60
25	Standard Flow	0,26 - 0,60
	High Flow	0,54 - 1,25
32	High Flow	0,54 - 1,25
40	High Flow	0,81 - 1,88
50	High Flow	1,52 - 3,51
65	Standard Flow	3 - 7
80	Standard Flow	6 - 15
100	Standard Flow	11 - 26
125	Standard Flow	17 - 40
150	Standard Flow	24 - 57
200	Standard Flow	42 - 100
250	Standard Flow	67 - 157
300	Standard Flow	94 - 226

## All the advantages of BROEN BALLOREX® Venturi

- Extensive product range from size DN 15-300
- Constant measuring accuracy better than +/- 3%
- Measuring system is insensitive to system debris
- One constant Kv-value indicated on handle
- Simultaneous measuring and regulation
- Setting is fast and easy using an Allen key
- Digital setting scale is precise and easy to read
- No change in setting when isolated and reopened
- Isolation is simply done using the ¼-turn handle
- Easy identification of open or isolated position
- Free support software from [www.venturivalves.com](http://www.venturivalves.com)
- No need for 3-5 DN straight piping when installed
- Can be installed next to bends, elbows and flexible hoses
- Installation can be done in all needed positions
- Prefabricated insulation is fast and easy to apply
- Insulation can be done before commissioning



# BROEN

INTELLIGENT FLOW SOLUTIONS



BROEN's intelligent solutions have been designed to control the flow of natural resources – water, air and gas – for the benefit of people and the environment. We are one of the leading companies within our business areas: Building Installations, Building Controls, District Heating & Gas, LAB and Emergency Shower Systems. Our products are proven with regard to functionality and design, and they are applied in solutions all over the world within plumbing, HVAC, district heating, laboratories and safety equipment.

BROEN is a company based on the core values: Straightforward, Initiative, Insight and Development. These values sustain our business, as well as our solutions and relations. They create value for our customers and provide an open and developing working environment for the entire organisation.

BROEN is an international company with companies and cooperation partners all over the world. The BROEN staff counts more than 800 people worldwide and BROEN is part of the Dutch group Aalberts Industries N.V.

BUILDING  
INSTALLA-  
TIONS

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CONTROLS

DISTRICT  
HEATING  
& GAS

LAB

EMERGENCY  
SHOWER  
SYSTEMS

# BROEN

INTELLIGENT FLOW SOLUTIONS