

Diverter valves in gas combi boilers

Most combi gas boilers have a complicated hydraulic circuit with a circulator pump and a diverter valve. It is very important to find a good concept to combine these two functions, maybe even in one housing, as Grundfos did seven years ago with the Grundfos Basic Hydro Block.

Since then Grundfos has developed and produced many customised diverter valves for boiler manufacturers – both for the return and for the flow side. On a number of these designs Grundfos holds various patents with the valve in the innovative MultiPurpose IWC as the newest example.

New stand-alone diverter valve from Grundfos

Grundfos HVAC OEM has now developed a special stand-alone 3-way diverter valve to be used in different applications. The main features are:

- Design optimised for reduced pressure drop and noise reduction
- Actuator: 3 different versions
- Quick lock for easy assembly and replacement
- Special valve principle prevents deposits and extended wear.



Grundfos Diverter Valve

New technology
– innovative, flexible and reliable

0209/HVAC OEM/9265

Grundfos HVAC OEM Division

With an annual production of around ten million circulator pumps and hydraulic systems, Grundfos is the world's leading manufacturer of circulator pumps.

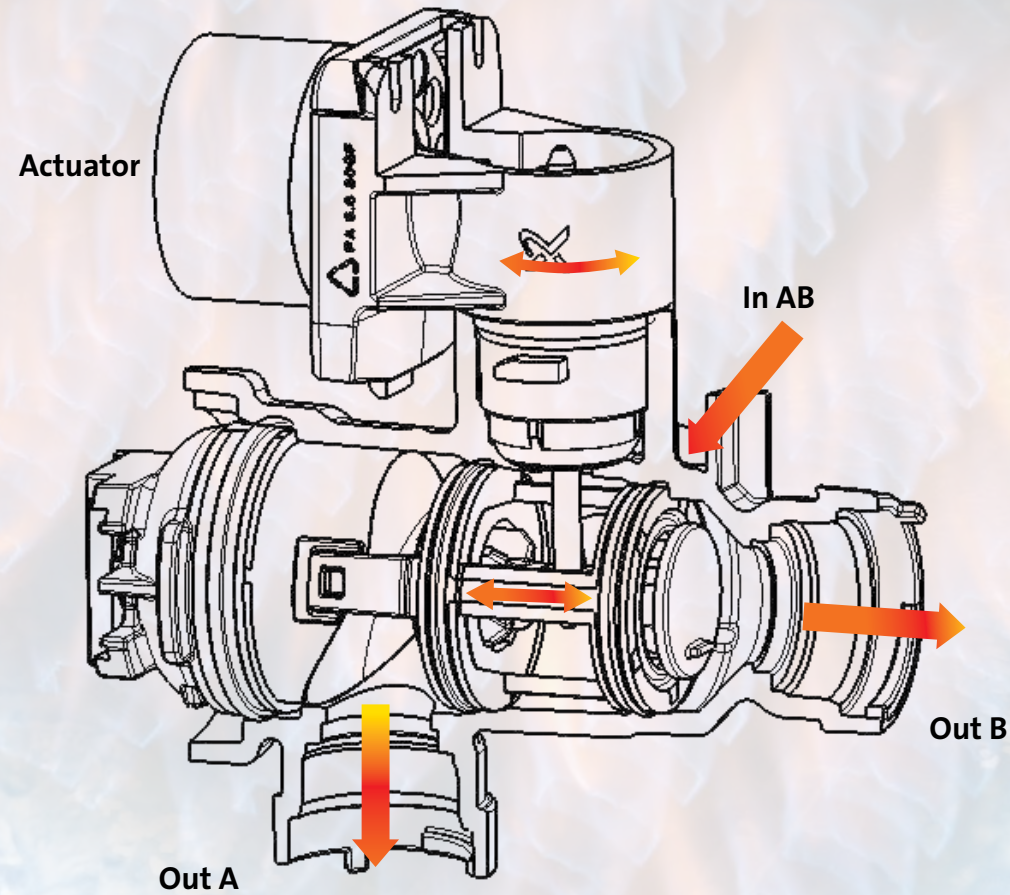
The Grundfos HVAC OEM Division is dedicated and organised to serving manufacturers of domestic heating systems worldwide. In the last ten years, a strong effort and the most ingenious solutions for pumps and hydraulic systems available to the domestic heating industry have made us the preferred supplier.

Here is why:

- Innovative products and solutions
- Reliable and long-living products
- Focus on low energy products
- Broad product portfolio from components to complete hydraulic systems
- Customer-oriented organisation.

Features

- 3-way housing
- Connection with bayonet clip
- 24 V DC, 24 V AC or 230 V AC actuators available
- Pressure differential up to 1 bar
- Quick and easy replacement of actuators – actuator replacement does not require draining of the system.
- K_V -value for outlet A: $K_{VS} = 4.7 \text{ m}^3/\text{h}$
- K_V -value for outlet B: $K_{VS} = 4.4 \text{ m}^3/\text{h}$
- Media temperature: -20°C to $+95^\circ\text{C}$
- System pressure: max. 3 bar
- Pumped media: central heating water with usual additives (e.g. glycol)
- Operational conditions
 - Amb. temperature: -20°C to max. $+60^\circ\text{C}$
 - Humidity: max. 95% RH



Description

- 3-way valve to divert between 2 circuits

The diverter valve consists of :

- Valve housing in PA6.6-30% GF
- Valve cartridge with valve piston, valve seats and flow deflector plate for reduced pressure drop and noise reduction
- Actuator consol includes a valve lever arm in stainless steel and over-moulded valve shaft seal
- Linear actuator in different versions as:
 - 24V DC stepper motor
 - 24V AC synchronous motor
 - 230V AC synchronous motor

Connections for 18 mm copper pipes:

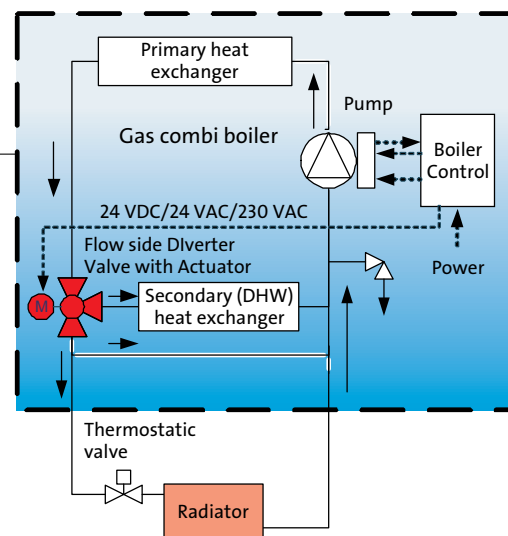
- Bayonet clip D18
- O-ring 17 x 4 (accessory)

Function:

The valve piston moves inside the 3-way valve cartridge in the axial direction. The piston is operated by the lever arm (shaft), which is operated by the actuator.

Due to the special principle of the valve, the shaft seal is not dynamically loaded by axial movement but statically loaded by a tilt motion. This prevents deposits at the shaft and extended wear.

Gas combi-boiler with UPM:



Pressure drop for diverter valve

