Hydraulic Balancing

With the Valve Range VarioQ and the Measuring Instrument HMG 10.

Measure, adjust, done!

Measuring Instrument HMG 10
+ Valve Range VarioQ

Hydraulic Balancing

Gampper ARMATUREN
a brand of the AFRISO group

AFRISO EURO-INDEX

HYDRAULIC BALANCING

Highest efficiency, maximum energy saving and comfort.

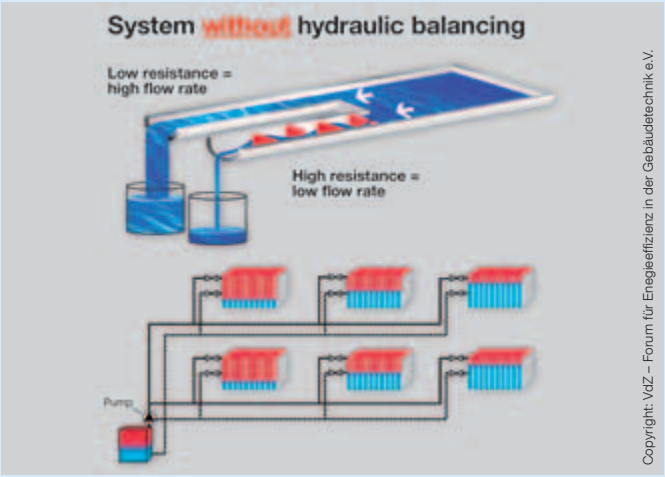
Has your heating system been balanced?

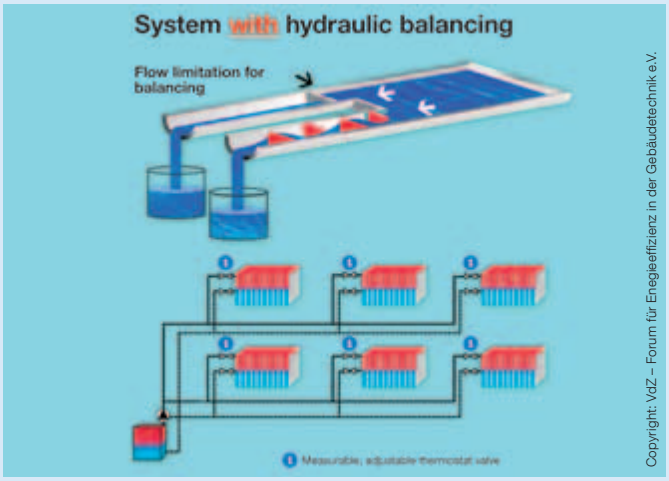
On its way to the radiators and back to the boiler, the hot water flow always chooses the path of least resistance. Due to this natural law, in heating systems without hydraulic balancing radiators further away from the pump are supplied with insufficient amounts of hot water while radiators close to the pump receive too much hot water. Typical countermeasures such as increased pump capacities or higher flow temperatures do not improve this situation, but rather amplify the negative effects. Such systems consume much more energy than necessary without providing the expected convenience.

Consequences of lack of hydraulic balancing:

- Uneven heat release
- Heating times of rooms/apartments differ
- Thermostat valves cannot properly control the room temperature
- Limited frost protection
- Disturbing flow noise in valves and pipes
- Excessive power consumption due to oversized and/or incorrectly set circulation pumps
- High losses when the heating system starts or is not used
- Low efficiency of condensing systems: Excessive flow through radiators close to the pump leads to high return temperatures and reduces the condensation effect (energy recovery during condensation of the flue gas)

What is hydraulic balancing?





Hydraulic balancing ensures optimum distribution of the water in the heating system. Based on the actual heat requirements of the building, the circulation pump, the control (flow temperature), the fittings and the valves are adjusted to change the volume flow in the pipes in such a way as to obtain the same flow resistance for all radiators. This forces the hot water to flow through the system exactly as required. The right method and suitable components allow for considerable savings. In individual cases, this may amount to as much as 15 % and more of the annual heating capacity.

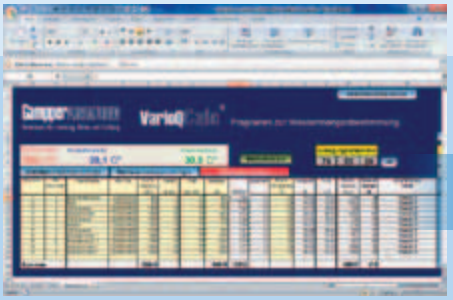
Advantages – your benefits

- Convenience: Rooms are heated evenly
- Radiators respond quickly to new thermostat valve settings
- Maximum frost protection safety
- No flow noise in the heating system
- Heating system/pump operate with maximum efficiency to save energy
- Increased system reliability
- Improved energetic quality of the building
- Reduced energy consumption saves money and protects the environment due to less emission

Legal obligations hydraulic balancing

In Germany, hydraulic balancing is required for all new heating systems and all heating systems to be renovated, as stipulated by the German VOB, part C (German Construction Contract Procedures), DIN 18380 as well as the German EnEV (Energy Savings Ordinance). In addition, owners can only benefit from public subsidies after hydraulic balancing has been performed.

Hydraulic balancing easier than ever before:

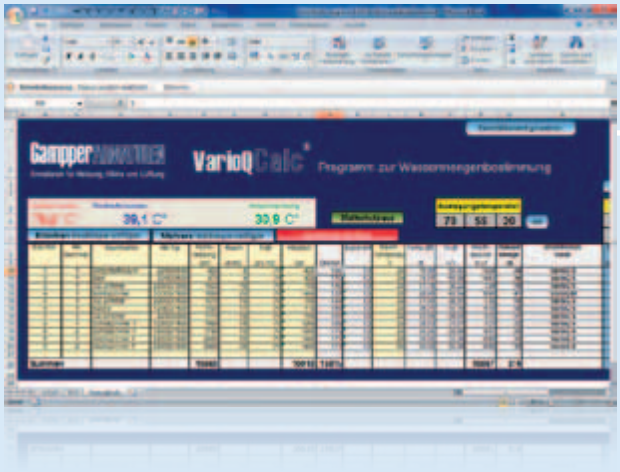


Determine the optimum water volume per radiator

Open the measuring nipple

Fast and easy hydraulic balancing

Traditional hydraulic balancing often involves a lot of estimating and approximation since precise information on the pipe system is unavailable. This is particularly true of older systems where pipe lengths and cross sections may not be documented so that a decisive factor required for precise adjustment of the valves is missing. The patented Gampper valve range VarioQ uses a different approach for hydraulic balancing. The triple-stage system optimises the heating system on the basis of calculation, measurement and adjustment without additional adjustment valves (such as line valves). The heating system expert adjusts the heat distribution directly at each radiator by limiting the amount of hot water—quickly and easy. Even minimum flow rates can be set with this system.



Calculation software VarioQCalc

The easy-to-use software determines the required optimum water volume as well as the VarioQ valves for each radiator. Only the flow temperature of the system, the radiator capacity and the heat requirements of the rooms to be heated are needed as a basis for the calculation. Parameters and estimated values of the pipe system do not have to be considered.

Gampper valve range VarioQ

The adjustable thermostat valves feature an integrated, fixed, calibrated measuring unit for accurate adjustment of the volume flow directly at the valve.

Measuring instrument HMG 10

HMG 10 receives its data from VarioQCalc via a USB interface. The measuring instrument measures the flow rate in litres per hour and the water volume can be easily set at the valve without conversion. In addition, more than 1,200 standard measuring valves and line fittings are stored and can be intuitively selected via the graphical user interface.

Insert the measuring probes

Adjust the radiator

Close the measuring opening – done!

Programme overview measurable and adjustable valves VarioQ

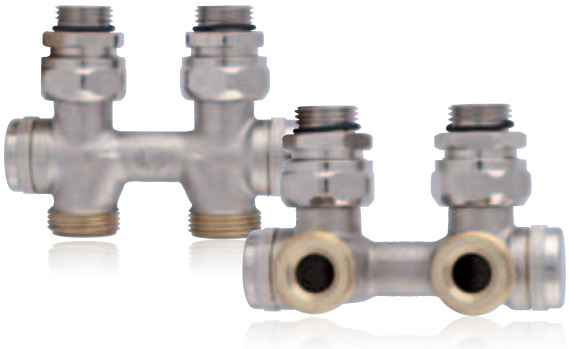
The patented Gampper valve range VarioQ is available in the standard dimensions and designs for small, medium and large water volumes; the dimensions comply with EN-215. This allows for easy replacement of existing valves without changes to the connection pipes.

Thermostat valve bodies VarioQ

- Fixed, calibrated measuring unit for accurate adjustment of the radiator
- Fully adjustable
- Versions S, M, L
- Straight or angled design
- Nominal diameters DN 10, DN 15, DN 20

Radiator return fittings type 454Q

- Fixed, calibrated measuring unit for accurate adjustment of the radiator
- Adjustment via adjustable thermostat valve in the flow line
- Shut-off and drain functions, e.g. for replacing the radiator without draining the heating system
- Versions S, M
- Straight or angled design
- Nominal diameters DN 10, DN 15



Combination blocks VarioQ-Kombi for compact radiators with valve

- Fixed, calibrated measuring unit for accurate adjustment of the compact radiator with valve
- Available for wall and floor connection
- Also suitable for baseboard heating systems
- Versions S, M
- Straight or angled design
- Nominal diameter DN 15

Thermostat control heads

- With liquid probe
- Adjustable eco setting
- Adjustment range can be limited and blocked with ring
- Fits without adapter to many valve radiators due to threaded connection M30 x 1.5 mm
- Numerous options: With remote probe or in various safety versions for protection against damage and misuse

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The Company

AFRISO, founded by Adalbert Fritz in Schmiedefeld, Germany in 1869, is an innovative, medium-sized company with a total staff of 900 worldwide, 475 of which are employed at the four German sites.

Traditionally, we manufacture measuring and control devices for temperature and pressure. For more than 50 years now, we have also been manufacturing measuring, control and monitoring devices and systems for environmental protection:

- Level indicators
- Overfill prevention systems
- Leak detectors
- Fittings for heating systems
- Flue gas analysers

Headquarters Güglingen

The ever growing knowledge of our highly motivated and qualified staff, combined with the close customer contact of our sales advisors leads us permanently to new product designs which reflect the latest market requirements.

Our product range spans from low cost, well proven standard design products to highly specialised custom made single product solutions ...

- Research and Development
- Tool making and assembly fixture design
- Multi-shift and highly rationalised production
- Highest quality levels
- National and international approvals

... make AFRISO designs to customer and market approved brand products.

Environmental management according to ISO 14001 is an obvious and standard norm for us.

For detailed information please request a CD-ROM copy of our full catalogue under www.afriso.de/catalogue

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Technology for Environmental Protection
Measuring. Controlling. Monitoring.

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