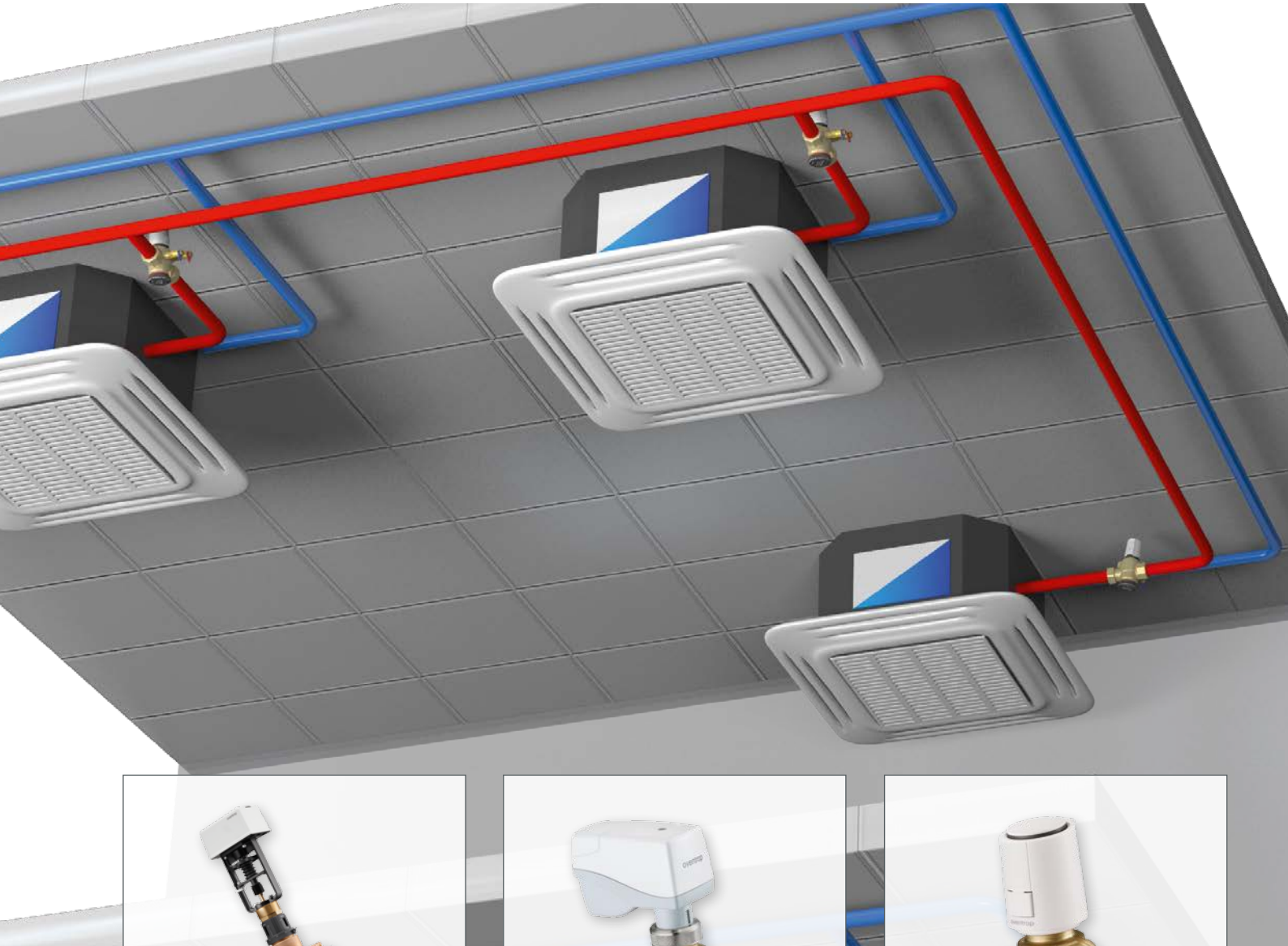
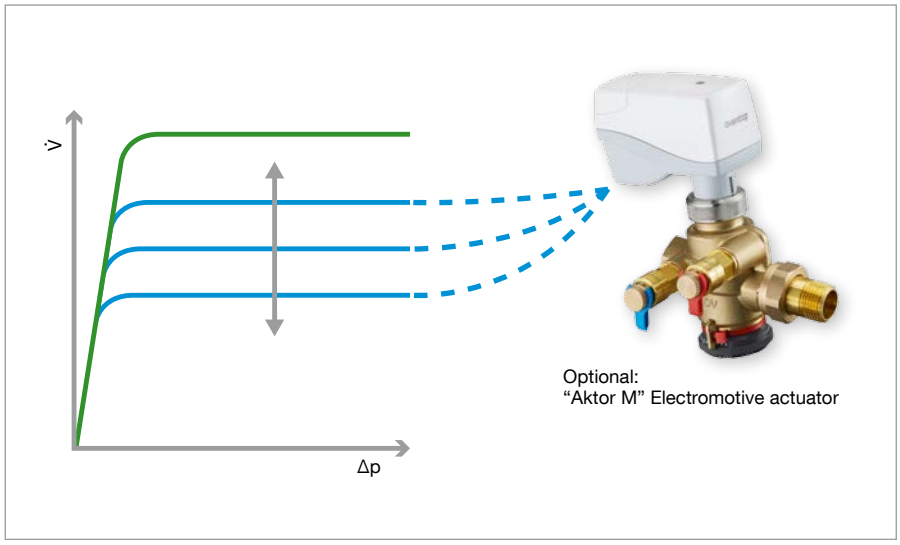
oventrop

Hydronics

“Cocon”
Pressure independent control valves / Differential pressure regulators





Pressure independent flow limitation

The “Cocon QTZ” allows for automatic hydronic balancing of heating and cooling systems.

Hydronic balancing is paramount for the efficient operation of heating and cooling systems. The pressure independent control valve “Cocon QTZ” helps to simplify this process and to save energy.

The volume flow in the terminal unit required for room temperature control is kept at a constant level - irrespective of differential pressure variations in the installation.

The pressure independent control valve is a combination consisting of a differential pressure regulator and a regulating valve. The determined volume flow can be set precisely.

For control function, the “Cocon QTZ” can be equipped with an actuator, a temperature controller or a manual head. The valve is especially used in chilled ceilings, fan coil units, convectors as well as central and surface heating system.

Advantages “Cocon QTZ”

- 25% higher flow ranges compared to its predecessor model
- constant high valve authority (a=1)
- differential pressure independent valve
- flushing and draining facility
- maximum operating pressure: PN 25
- maximum differential pressure: 6 bar
- valve combining several functions
- dynamic, hydronic balancing by setting the required flow values
- the installed valves do not require a readjustment if the installation is extended or modified
- linear characteristic line
- can be combined with high-efficiency pumps
- compact dimensions

The pump setting can be optimised with the help of a measuring gauge, such as the “OV-DMC 3”. For this purpose the pump head is reduced until the “Cocon QTZ” is just working within the control range.

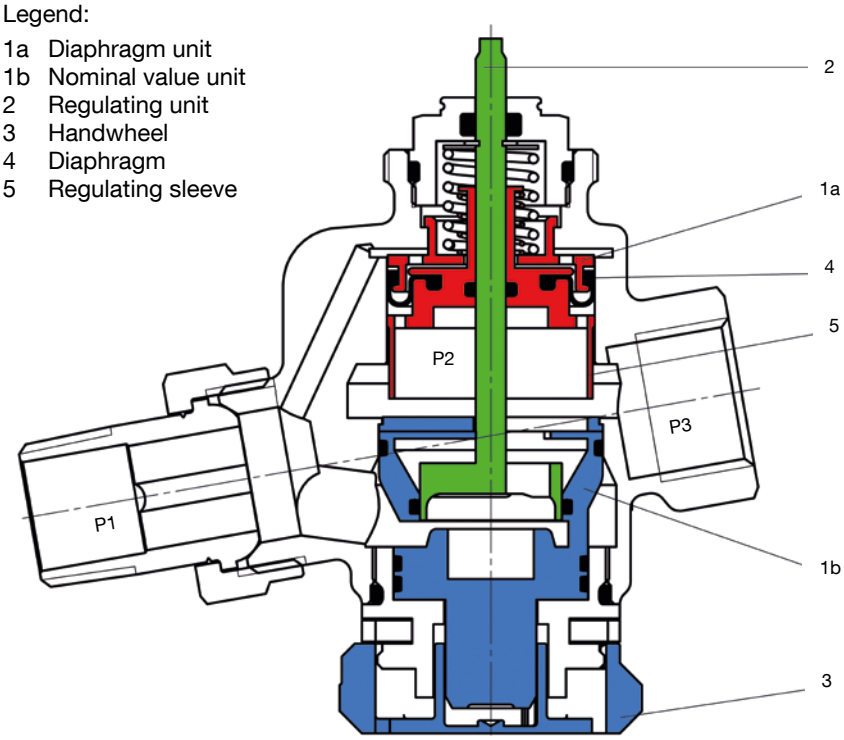
Even with the actuator in place, the required nominal values can be set and controlled with the help of the handwheel.

Optional: Comfortable flushing, filling and draining.

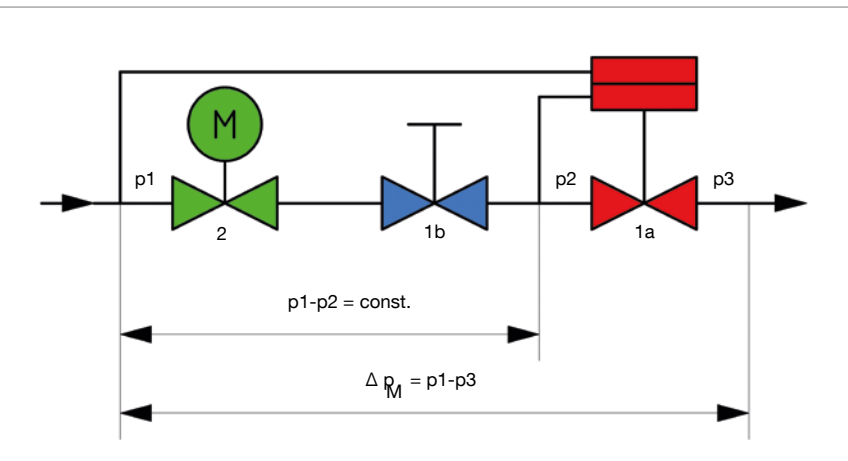
The setting is protected against unauthorised tampering with the help of the handwheel which engages automatically. The setting can be additionally secured by inserting the red locking ring which can be lead sealed. Even with the actuator in place, the settings of the “Cocon QTZ” can be read off and adjusted.

reddot award 2018
winner

The “Cocon QTZ” could convince the international expert jury of the “Red Dot Award: Product Design 2018”. The valve combination was honoured as “Winner” in the category “Heating and Air Conditioning Technology”. Criteria such as degree of innovation, longevity and functionality were part of the decision.

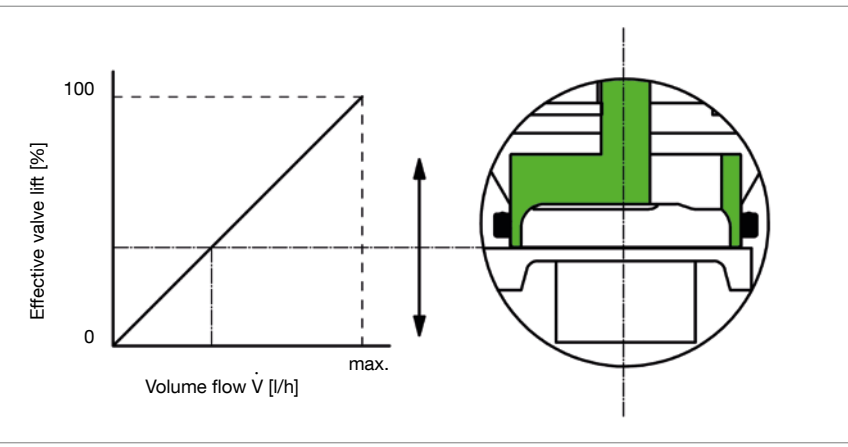


The required **flow rate** is set with the help of the handwheel (pos. 3). The illustrated section shows three pressure ranges: “p1” is the inlet and “p3” the outlet pressure of the valve. ”p2” is the pressure actuating the diaphragm unit (pos. 1a) which keeps the differential pressure “p1”-“p2” at a constant level.



The **integrated diaphragm unit** (pos. 1a) keeps the differential pressure “p1”-“p2” at a constant level via the regulating unit (pos. 2) which is activated through the actuator and via the nominal value unit (pos. 1b) which can be set to a maximum flow value.

Even where high differential pressure variations “p1”-”p3” occur, e.g. if sections of the system are activated or inactivated, the differential pressure “p1”-”p2” is kept at a constant level.



Due to the constant differential pressure, the valve authority always amounts to 100% (a=1).

Even during low demand periods with steady control (e.g. in conjunction with 0-10V actuators), the valve authority within the effective valve lift amounts to 100% (a =1).

“Cocon QTZ” with electromotive actuator for modulating control (0-10V) with connection thread M 30 x 1.5. Function and characteristic line selection via a DIP switch. For use in central heating and cooling systems for precise flow and temperature control.

Electromotive actuator with connection thread M 30 x 1.5. For room temperature control in conjunction with three point controllers. For use in radiant and chilled ceiling systems as well as induction air systems.

Electrothermal actuator, connection thread M 30 x 1.5. For room temperature control in conjunction with two point controllers.

Electromotive actuator with connection thread M 30 x 1.5. For room temperature control in conjunction with two point controllers. For use in radiant and chilled ceiling systems as well as induction air systems.

Electromotive actuator with connection thread M 30 x 1.5, system EIB, with integrated bus coupling. The electromotive actuator EIB is suitable for the direct connection to the European installation bus control system. The power absorption is extremely low, so that a separate power supply is not needed.

For further information and actuators visit
www.oventrop.com
Webcode **C03001**

Pressure independent control valves “Cocon QFC” and “Cocon QTR”

The **“Cocon QTR/QFC”** allows for automatic hydronic balancing of large heating and cooling systems.

The volume flow in the terminal unit required for room temperature control is kept at a constant level - irrespective of differential pressure variations in the installation.

The pressure independent control valve is a combination consisting of a differential pressure regulator and a regulating valve. The determined volume flow can be set precisely.

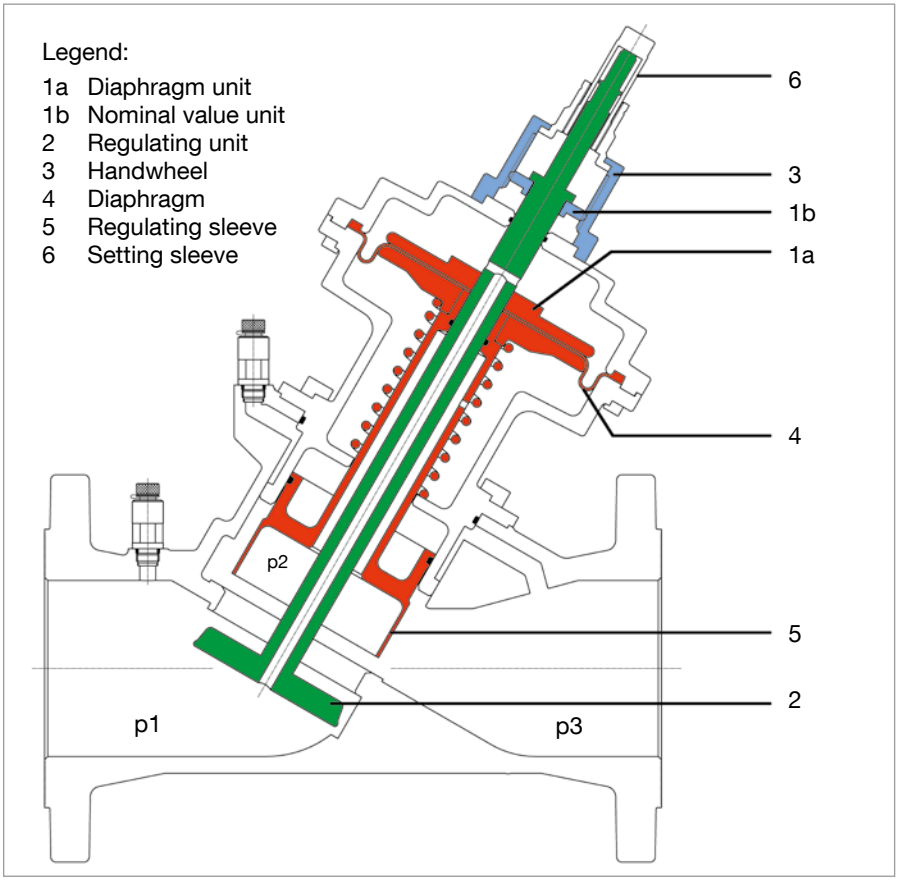
For control function, the “Cocon QTR/QFC” can be equipped with an actuator. The valve is especially used in central heating and cooling systems.

Operation with actuator

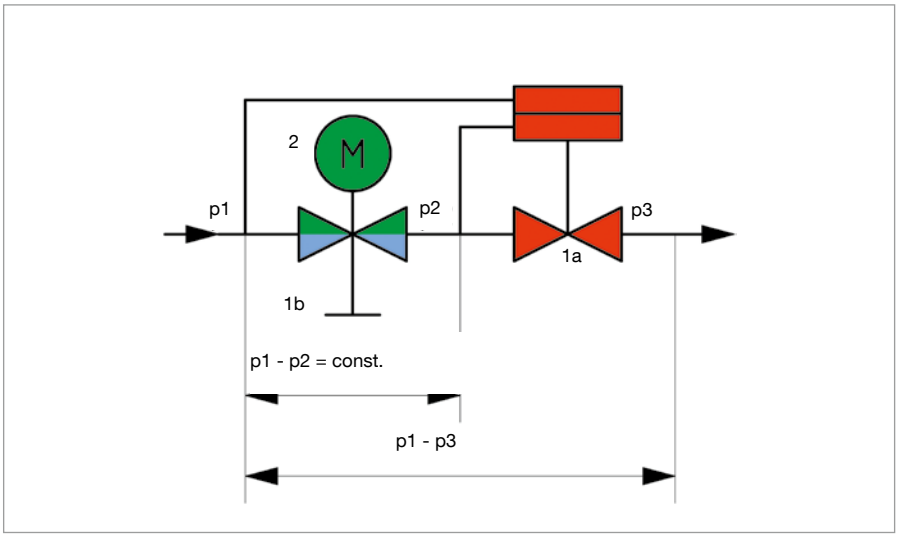
The nominal values are imprinted on three peripheral scales ensuring an excellent optical display of the values in any installation position. The nominal values can be set in m³/h. The locking clip can be lead sealed to secure the setting from unauthorized access.

Advantages “Cocon QTR/QFC”

- constant high valve authority (a=1)
- differential pressure independent valve
- valve combining several functions
- pressure balanced valve disc
- optimisation of the installation by measuring the differential pressure
- automatic hydronic balancing by setting the required flow value
- the installed valves do not require a readjustment if the installation is extended or modified
- the nominal value setting can be secured from unauthorized access
- regulation during low demand periods with the help of an actuator
- linear characteristic line

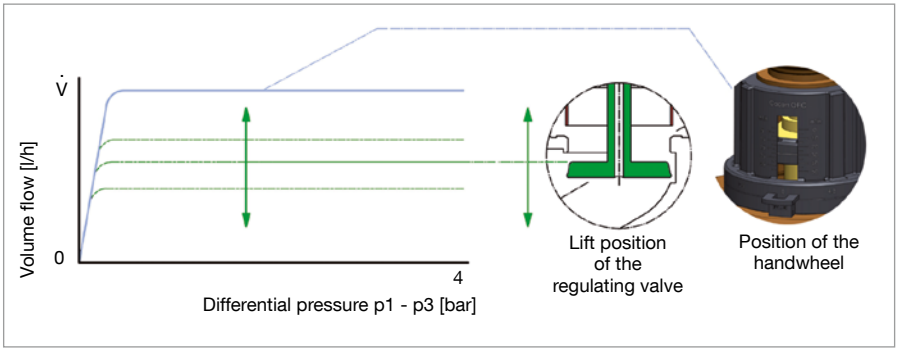


The required **flow rate** is set with the help of the handwheel (pos. 3). The illustrated section shows three pressure ranges: “p1” is the inlet and “p3” the outlet pressure of the valve. “p2” is the pressure actuating the diaphragm unit (pos. 1a) which keeps the differential pressure “p1”-”p2” at a constant level.



The **integrated diaphragm** unit (pos. 1a) keeps the differential pressure “p1”-”p2” at a constant level via the regulating unit (pos. 2) which is activated through the actuator and via the nominal value unit (pos. 1b) which can be set to a maximum flow value. Even where high differential pressure variations “p1” - “p3” occur, e.g. if sections of the system are activated or inactivated, the differential pressure “p1” - “p2” is kept at a constant level.

This way, the valve authority amounts to 100% (a=1). Even during low demand periods with steady control (for instance in conjunction with 0-10 V actuators) the valve authority within the effective valve lift amounts to100% (a=1).

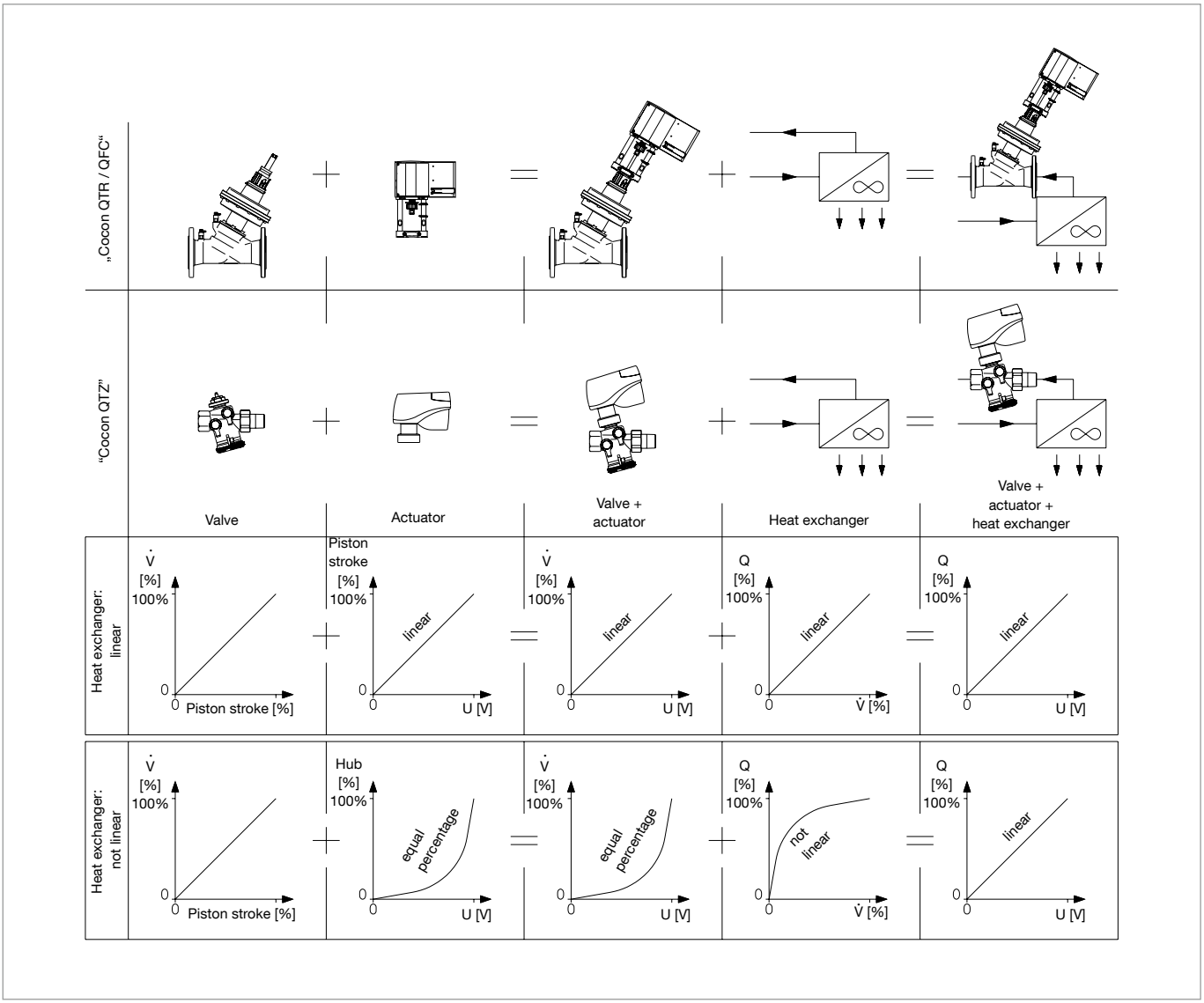


The maximum volume flow ($\dot{V}$) within in the control range (0.2 - 4 bar) is set with the help of the handwheel. During low demand periods, the volume flow is regulated to the required value by the lift position of the regulating valve.

Electromotive actuator for modulating control (0-10 V), may also be used for two or three point control.

Electromotive actuator with Modbus RTU interface, automatic anti-blocking function and recognition of neutral point.

For further information and actuators visit
www.oventrop.com
Webcode **C03002**



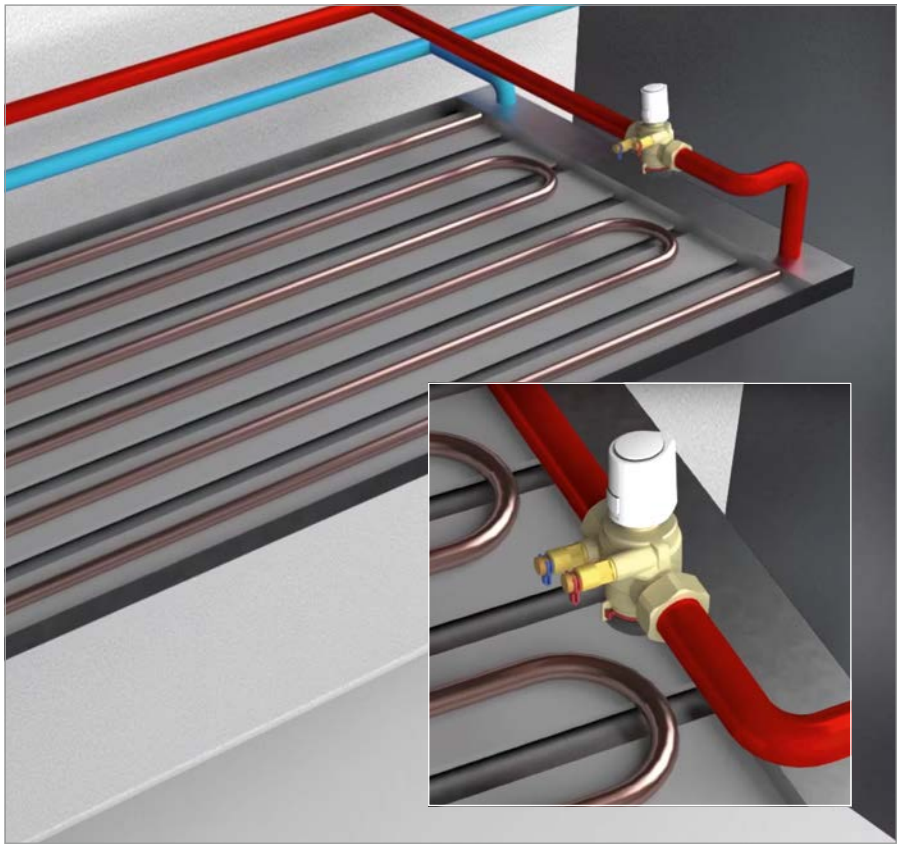
Optimisation of the interaction of valve, actuator and heat exchanger with modulating 0-10 V actuators.
The illustration shows idealised characteristic lines explaining the control principle.

The **“Cocon QDP”** allows for automatic hydronic balancing of heating and cooling systems and maintains the differential pressure at a constant level.

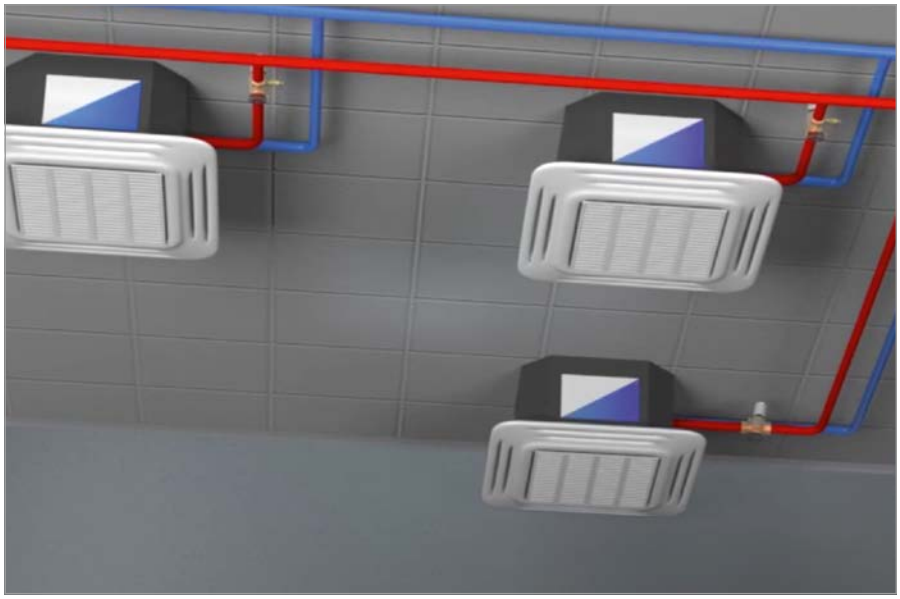
The differential pressure regulators “Cocon QDP” with flow limitation and flow control are preset to a fixed nominal value for differential pressure control. With the differential pressure in the installation increasing, the regulator maintains a constant differential pressure within a necessary proportional band without auxiliary energy.

Moreover, the regulators serve the control of another variable (e.g. room temperature) by modifying the flow rate with the help of actuators, thermostats or temperature controllers.

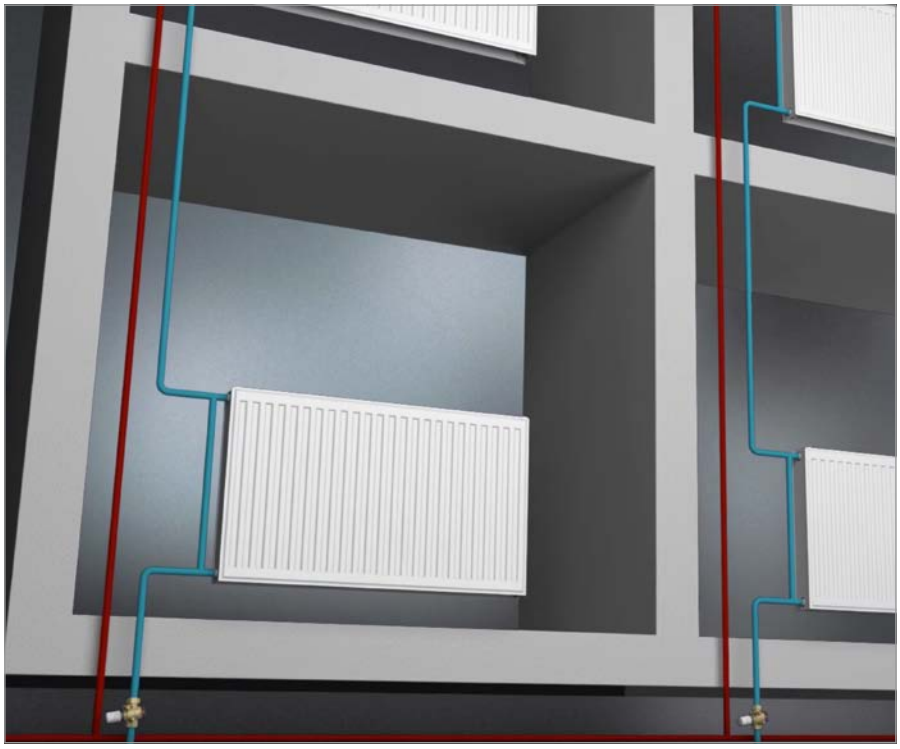
The regulators are made of de-zincification resistant brass and are designed for installation in the return pipe.



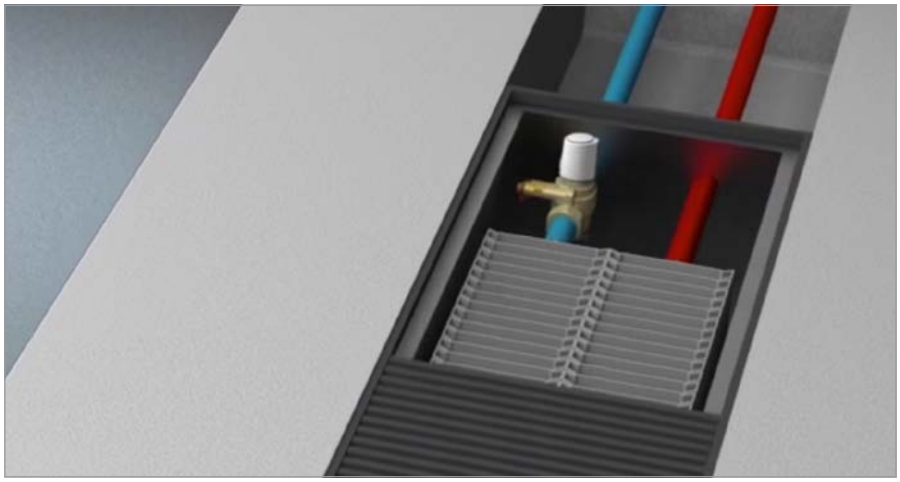
Room temperature control via chilled ceilings
The pressure independent control valve “Cocon QTZ” is used for the hydronic balancing of the individual chilled ceiling elements and for additional room temperature control.
If sections of the system are activated or inactivated, the control of the remaining chilled ceilings will not be influenced. Oventrop room thermostats and actuators are used for room temperature control.



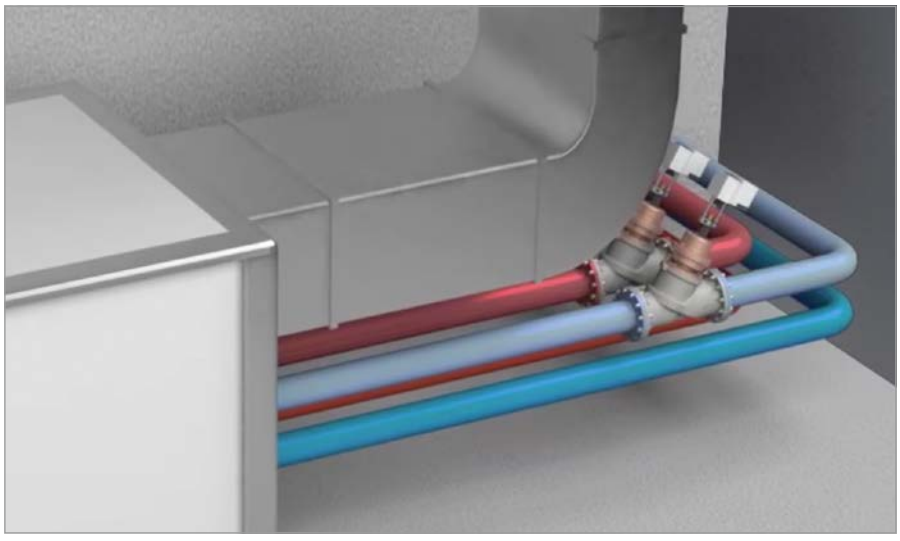
Room temperature control via fan coils
The “Cocon QTZ” valves allow for the hydronic balancing of each fan coil unit in a fan coil system. Due to the high valve authority of the valves, a good room temperature control is achieved even during low demand periods



Volume flow control in one pipe heating systems
The hydronic balance of a one pipe heating system is achieved by installing the “Cocon QTZ” valve in the return pipe. Further information on the use in one pipe heating systems can be found in the leaflet “Unofix system for the refurbishment of one pipe heating systems with a good benefit/cost ratio”.



Room temperature control via convectors
Room temperature control and hydronic balancing of a central heating or cooling system equipped with convectors, is guaranteed by using “Cocon QTZ” valves with mounted actuators.



Room temperature control via combined heating and cooling systems
Hydronic balancing of heating and cooling elements. The nominal flow rate is set with the help of the handwheel of the “Cocon QTR/QFC” valve. During low demand periods, the lift position of the valve is set by the actuator.

Room climate

Hydronics

Stations
Storage cylinders
Pipes

Potable water

Oil
Solar

Smart Home
Smart Building

Subject to technical modifications without notice.
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