

# Case study



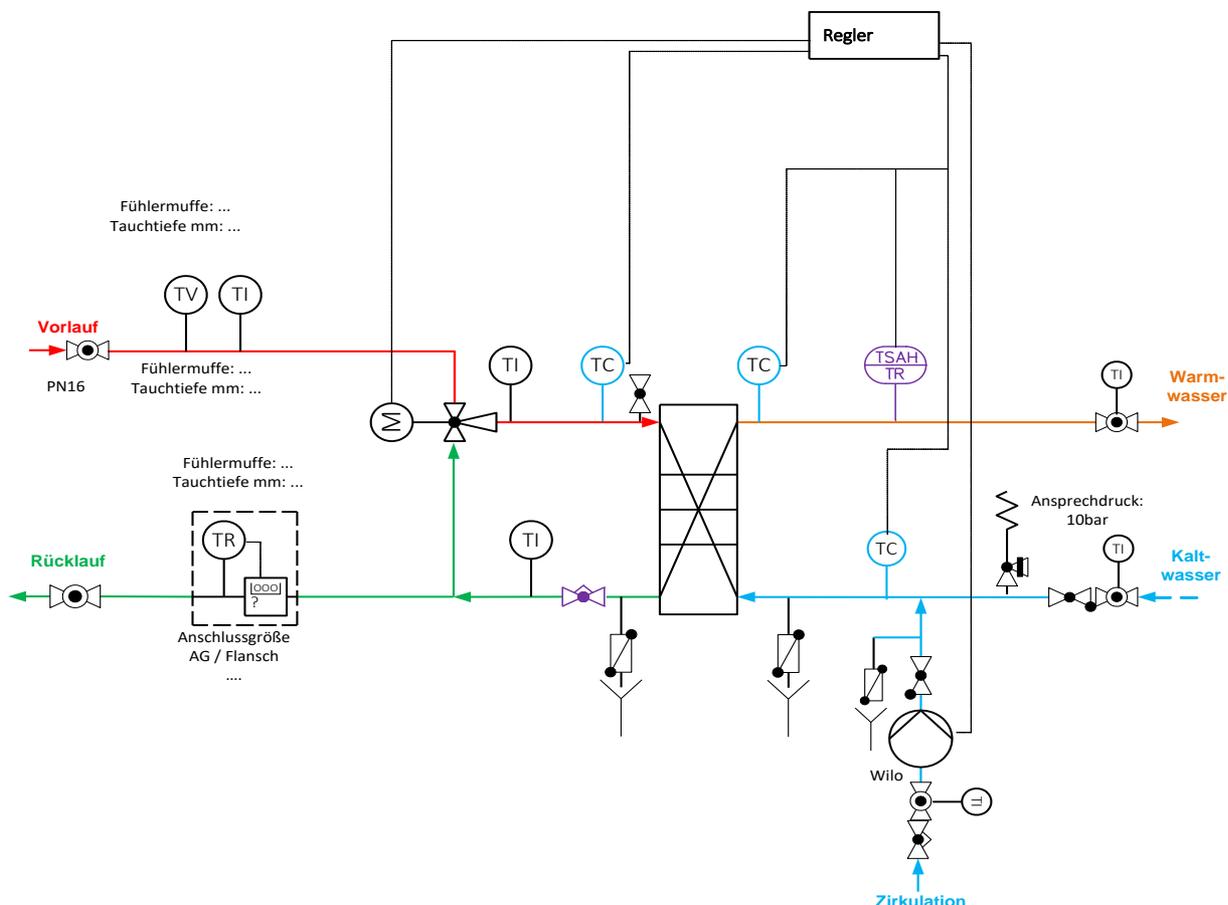
**BAELZ PRODUCT:** Water heating system  
**INDUSTRY:** Construction  
**COMPANY:** Bayer  
**COUNTRY:** Germany, eastern region

## INITIAL SITUATION

In the flow-through principle, a hot water heating system has hygienic and energetic advantages compared to a variation with a drinking water storage tank. The combination with the mixing control on the primary side, by means of a jet pump, makes the system perfect. Approximately 9 times the current water quantity is circulated over the heating surface of the heat exchanger in the lower load range, compared to the standard choke circuit. This ensures good heat transfer in all loading conditions, even during the nightly minimum circulation, and therefore proper regulation with stable, lower return temperatures.

**Example:** Some 60°C drinking water needs to be monitored. In the choke circuit with through-flow control valves, the network temperature would be sent, unchanged, from the supplier to the heat exchanger in all loading conditions. This network temperature is often high, and poses various disadvantages for the material and regulation. Our system reduces the inlet temperature to the temperature required for heat transfer.

## TECHNICAL MODIFICATIONS



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## SAVINGS / PROFITABILITY

1. Reduction of material stress on the heat exchanger
2. Reduction of calcification by temperature reduction
3. Increase of the circulating water capacity on the primary side of the heat exchanger in partial-load operation
4. Stable control behavior of 1-100% load fluctuations
5. Fast reactions through cascade control
6. Adjustment of pressure fluctuations in the primary network of the heat supplier
7. Simplified hydraulics



## Overview of the technology

The basic idea of the jet pump technology is to use the differential pressure present in water distribution systems. As with a standard control valve, the temperature of a technical system is controlled by a jet pump. In addition, the admixture and circulation of hot water by users (heating surfaces, heat exchangers) is carried out by the differential pressure present, through the injection effect of the Jetomat. Mixing control without circulation pumps is also possible.

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