

# Temperature control units in process plants for liquid pharmaceuticals

High-quality, tried-and-tested GEMÜ valves for temperature regulation in process plants manufacturing liquid pharmaceuticals.

## Process description

Precise temperature control plays a pivotal role in batch processes within pharmaceutical and biotechnological industries, because the chemical and biological processes need to be reliably controlled.

Depending on the manufacturing method, such as fermentation or bioreaction, and depending on the sensitivity of the micro-organisms contained in the medium, the tanks may be tempered directly or indirectly.

Syntegon Processing & Packaging has been successfully using GEMÜ valves for supply/auxiliary processes and control systems for years to control the temperature in their modular SVP process plants.

## Suitable GEMÜ product range

### Globe valves

- GEMÜ 530, GEMÜ 534

### Angle seat globe valves

- GEMÜ 505, GEMÜ 507, GEMÜ 550, GEMÜ 554, GEMÜ 555

### Check valves

- GEMÜ 560

### Ball valves

- GEMÜ B24, GEMÜ B44

### Positioners and process controllers

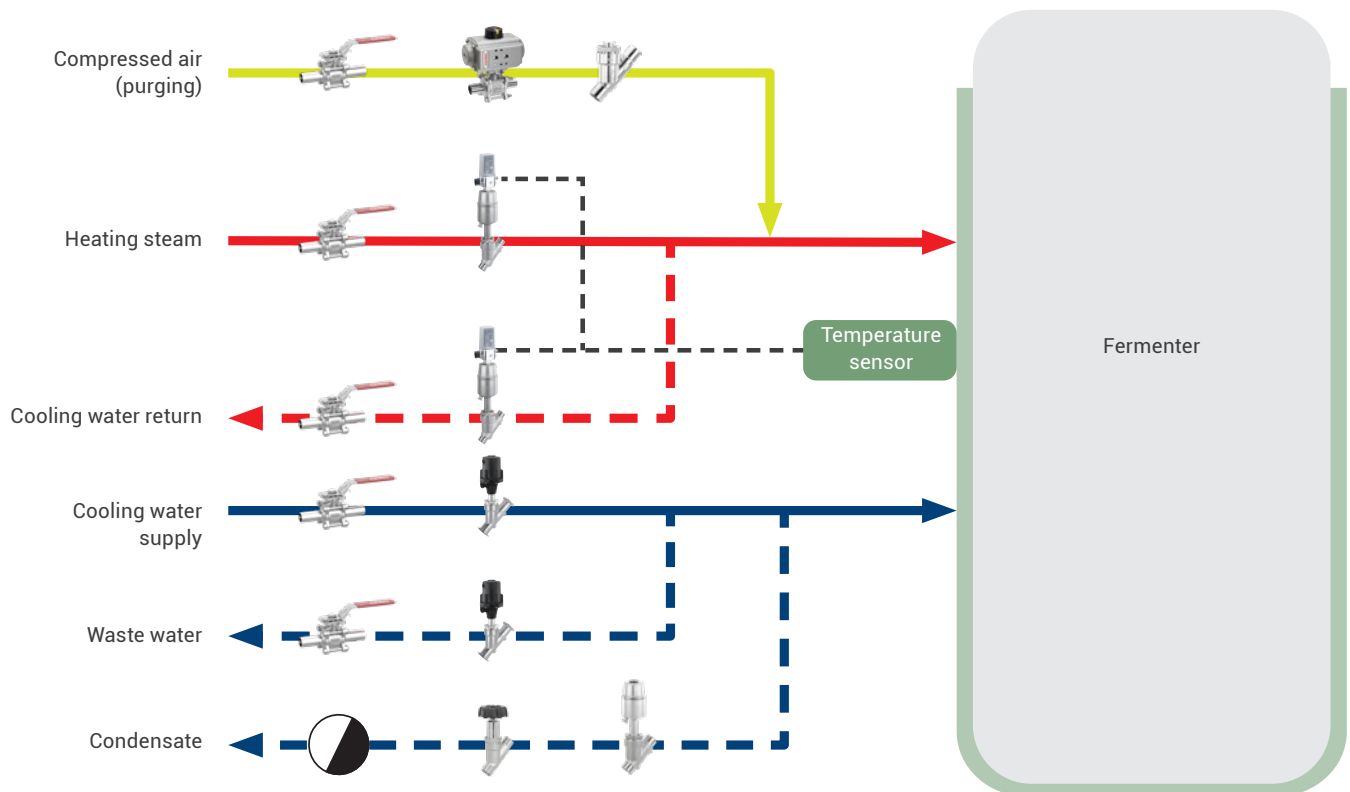
- GEMÜ 1434 µPos, GEMÜ 1441 cPos-X

## Basic information about the process *Syntegon SVP Formulation Systems*

- Working medium: Cooling water, heating steam
- Temperatures: 5 to 150 °C
- Tank sizes: 50 to 3000 l
- Other special features:
  - Standardized platform with functional modules for excellent flexibility
  - Modular system
  - Fully integrated, automated solution
  - Process plant and filling line are easy to integrate

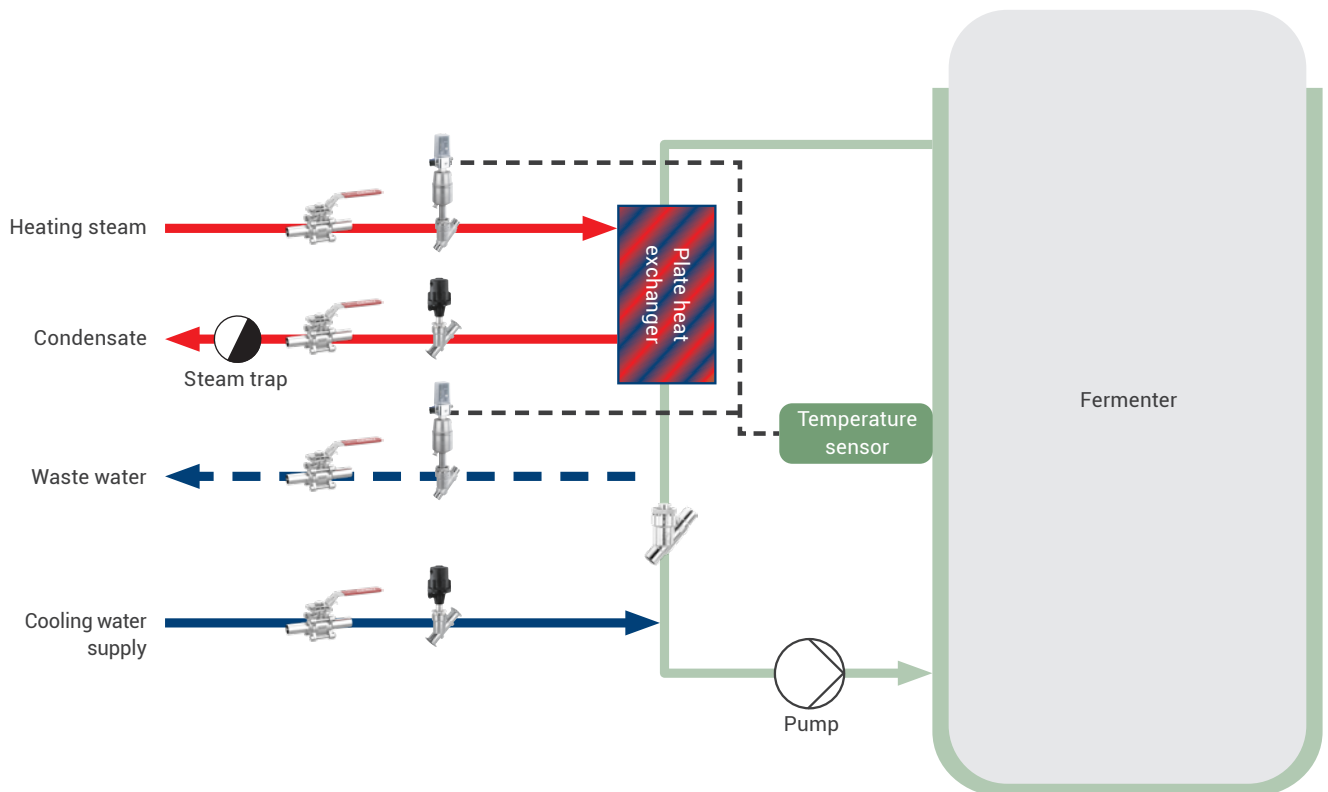
# Direct tempering

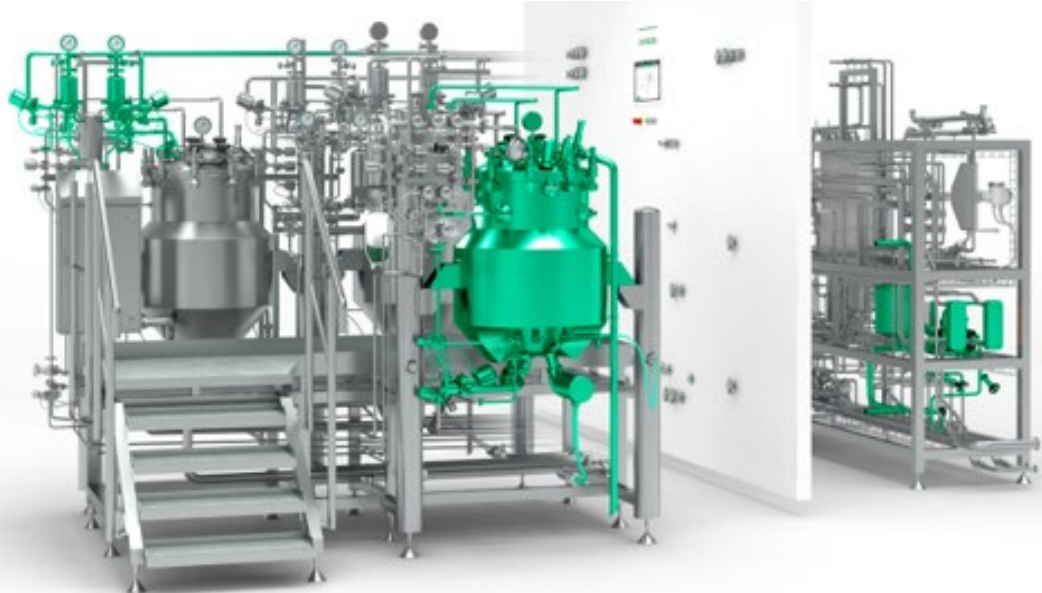
With direct tempering, the cooling water or the heating steam are introduced directly into the tank's tempering jacket. This method allows the medium to be heated and cooled rapidly.



# Indirect tempering

With indirect tempering, a secondary water circuit is heated to the required process temperature by means of a plate heat exchanger and heating steam, and is channelled through the tank's tempering jacket. Using this method, tempering can be more gentle and more precise.





GEMÜ 550 with  
GEMÜ 1434 µPos



GEMÜ 554 with  
GEMÜ 1441 cPosX



GEMÜ 507



GEMÜ B24



GEMÜ B44



GEMÜ 560

## Why GEMÜ?

GEMÜ offers the appropriate solutions for every process step and every application, especially for supply/auxiliary processes. Offering a wide range of valve types and accessories with various properties, approvals and certificates, GEMÜ is a one-stop shop for complete valves as well as measurement and control systems. If you're searching for a highly skilled provider for your system supplier, we are the partner for you. We can also supply you with the technical expertise relating to the applied procedures.

GEMÜ manufactures and supplies a variety of tried-and-tested valve fittings that meet the highest standards of quality. The wide variety of control valves and quarter turn valves is particularly noteworthy here. As are the space-saving options of block solutions, including for complex applications, and the planning and production of entire subsystems via GEMÜ Systems.

We ensure optimal support, including on-site support for end users, through a worldwide sales and service network of subsidiaries and distributors.

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