

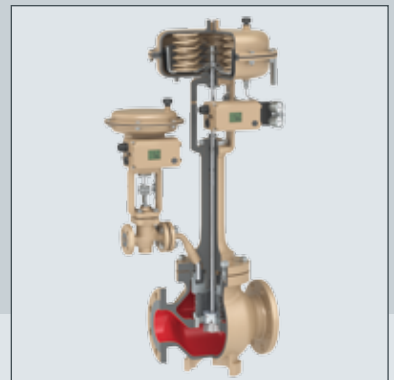
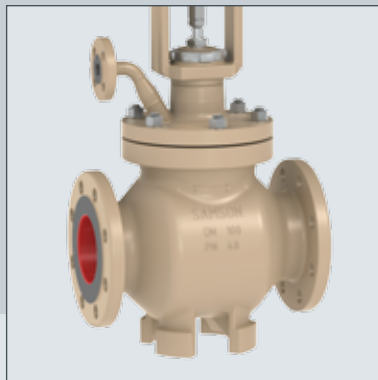
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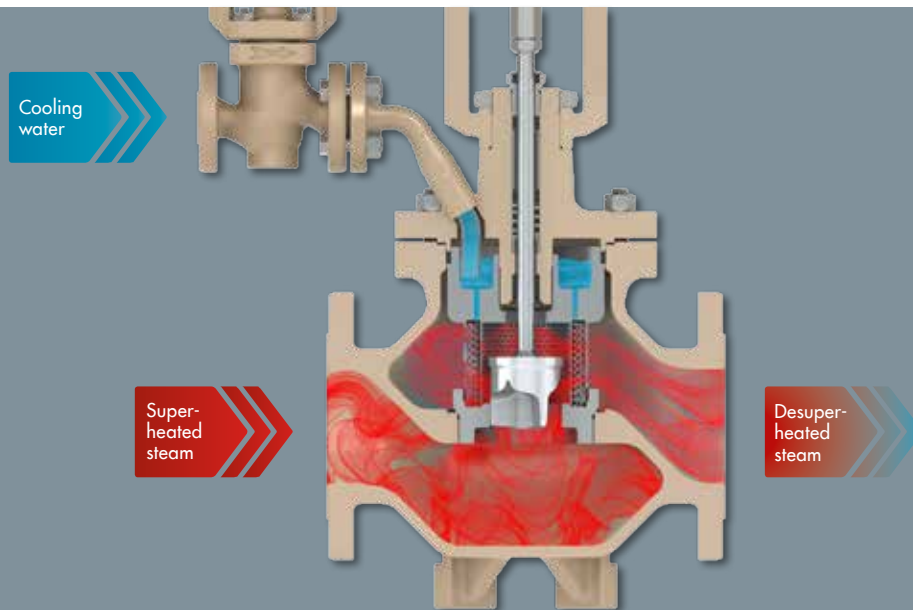


## Steam-converting Valves

Series 280



# DESUPERHEATING AND PRESSURE REDUCTION



## Desuperheating and pressure reduction in one unit

Steam-converting valves simultaneously reduce the temperature and pressure of superheated steam. These control valves inject water into the steam directly downstream of the vena contracta, utilizing the very high velocities created, which ensures that steam and water are mixed optimally. SAMSON offers the Series 280 Valves for steam-converting applications.

## Steam-converting valves

- maximize process efficiency by using steam near saturation temperature,
- minimize the cost of investment as the injected cooling water does not need to be pre-heated,\*
- protect the downstream piping and equipment against excessive pressures and temperatures.

\* depending on the process conditions

# EFFICIENCY AND RELIABILITY

## Low cooling water temperature

- No preheating required above 20 °C (depending on the process conditions)

## Long service life

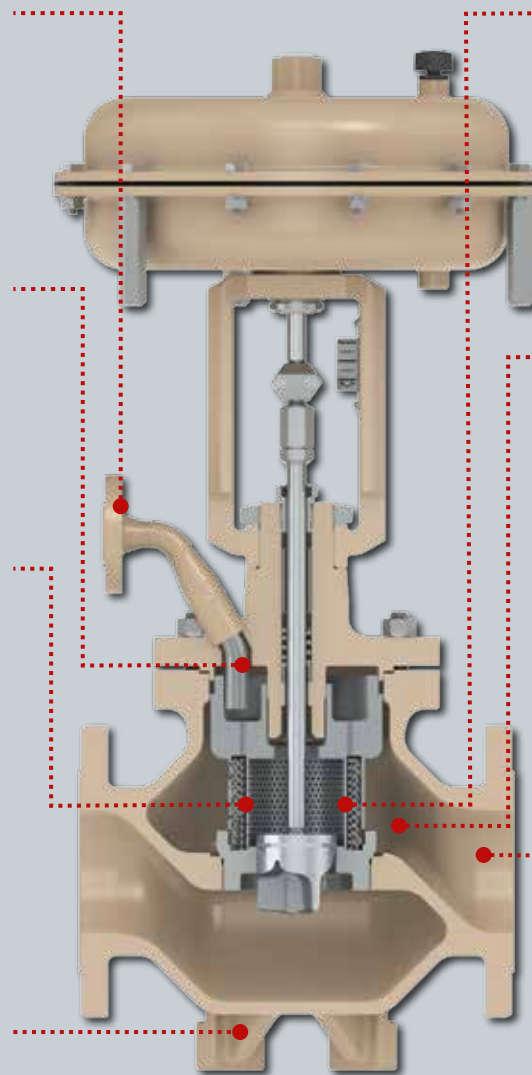
- No erosion and temperature shocks as there is no contact between the cooling water and the valve body

## Flow divider III

- Low-noise and low-vibration operation
- Excellent heat transfer rates thanks to large surface area
- Excellent mixing of steam and water
- Fast evaporation of the steam

## Low cost of installation

- Compact valve design



## Good temperature control

- Excellent atomizing of the water across the entire operating range as the flow velocity at the vena contracta is independent of the flow rate

## Short evaporation time

- Spray water and steam are mixed where the steam's flow velocity is at its maximum

## High efficiency

- Outlet temperatures between 5 and 10 °C above the saturated steam temperature (depending on the process conditions)

# SAMPLE APPLICATIONS



## Heating up of substances in the chemical industry

- High efficiency of heat exchangers by using steam near the saturation curve
- Use of high-pressure and low-pressure steam
- Safe and efficient heating up of products

## Steam box control in pulp and paper mills

- Supply of constant pressure and temperature to steam boxes
- Improved mill output thanks to more efficient drying of the paper
- Protection of paper from excessive pressures and temperatures as well as water droplet damage

## Sterilization and cooking in the food industry

- Supply of steam near the saturation temperature to ensure a uniform heat transfer
- Accurate temperature control to ensure proper sterilization
- Exact control for short cooking times

# FIELD OF APPLICATION



|                           |             |  |                        |
|---------------------------|-------------|--|------------------------|
| Valve size                | Globe valve | DN 50 to 500   | NPS 2 to 20            |
|                           | Angle valve | DN 50 to 300   | NPS 2 to 12            |
| Pressure rating           |             | PN 16 to 160   | Class 150 to 900       |
| Temperature range         |             | Up to 500 °C   | Up to 930 °F           |
| Materials                 |             | 1.0619<br>1.7357   | A 216 WCC<br>A 217 WC6 |
| Outlet temperature        |             | At least 5 to 10 °C above the saturated steam temperature, depending on the process conditions |                        |
| Cooling water temperature |             | At least 20 °C, depending on the process conditions  |                        |

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## Steam-converting Valves



● Production sites    ● Subsidiaries

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