

Desuperheating solutions



First for Steam Solutions

spirax
sarco

Desuperheating solutions

The Spirax Sarco desuperheater range offers an efficient solution for the transfer of thermal energy in a range of applications.

Spirax Sarco desuperheaters provide the answer when the precise control and reduction of superheated steam temperature is required. Our engineers are able to design the correct desuperheater for your application, ensuring a perfect fit for a wide range of industries including combined heat and power, oil & petrochemical and pharmaceutical.

Features and Benefits:

- Desuperheater range provides turndown from 3:1 to 50:1
- Spray type, venturi and steam atomising desuperheaters cover a variety of atomisation requirements
- Can be installed vertically or horizontally to suit application design
- Increase process efficiency - Waste and residual heat can be recovered and recycled
- No moving parts – Virtually maintenance free
- Pre-assembled – Saves time on installation
- Robust, durable design – High quality stainless steel inner that can resist corrosion and options of carbon steel or chrome molybdenum outer to withstand high temperature applications.



Consistent water velocity and reliability

Desuperheaters reduce the temperature of superheated process steam by introducing finely atomized cooling water droplets into the steam flow. For effective desuperheating to occur, water droplets must remain suspended in the downstream pipework for as long as possible, otherwise 'water droplet fall-out' occurs resulting in loss of efficiency and possible corrosion.

Spirax Sarco desuperheaters eliminate water droplet fallout and ensure a reliable, efficient energy transfer.

Maintenance free

The innovative design incorporates no moving parts, removing the need for regular servicing and precise construction of each desuperheater ensures hassle free operation.

Built to last, tailored to each requirement

Stainless steel internals guarantee a durable, long lasting installation and the option of having either carbon steel or chrome molybdenum bodies means that the desuperheaters are suited to a wide range of operating temperatures.

Compact installation

Each desuperheater can be skid mounted and is easily installed with existing Spirax Sarco products, providing a complete engineered solution.

Proven technology

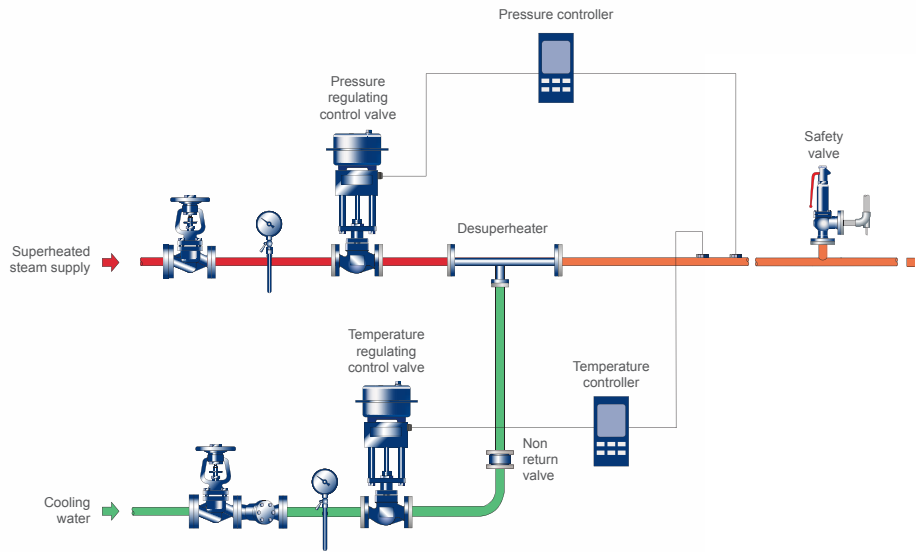
The Spirax Sarco desuperheater range has been successfully installed in a variety of applications, from power generation and product conditioning to thermocompressor discharge and mechanical vapour re-compression.

Backed by Spirax Sarco's knowledge and expertise, the desuperheater range covers virtually any situation where desuperheated steam management is required.

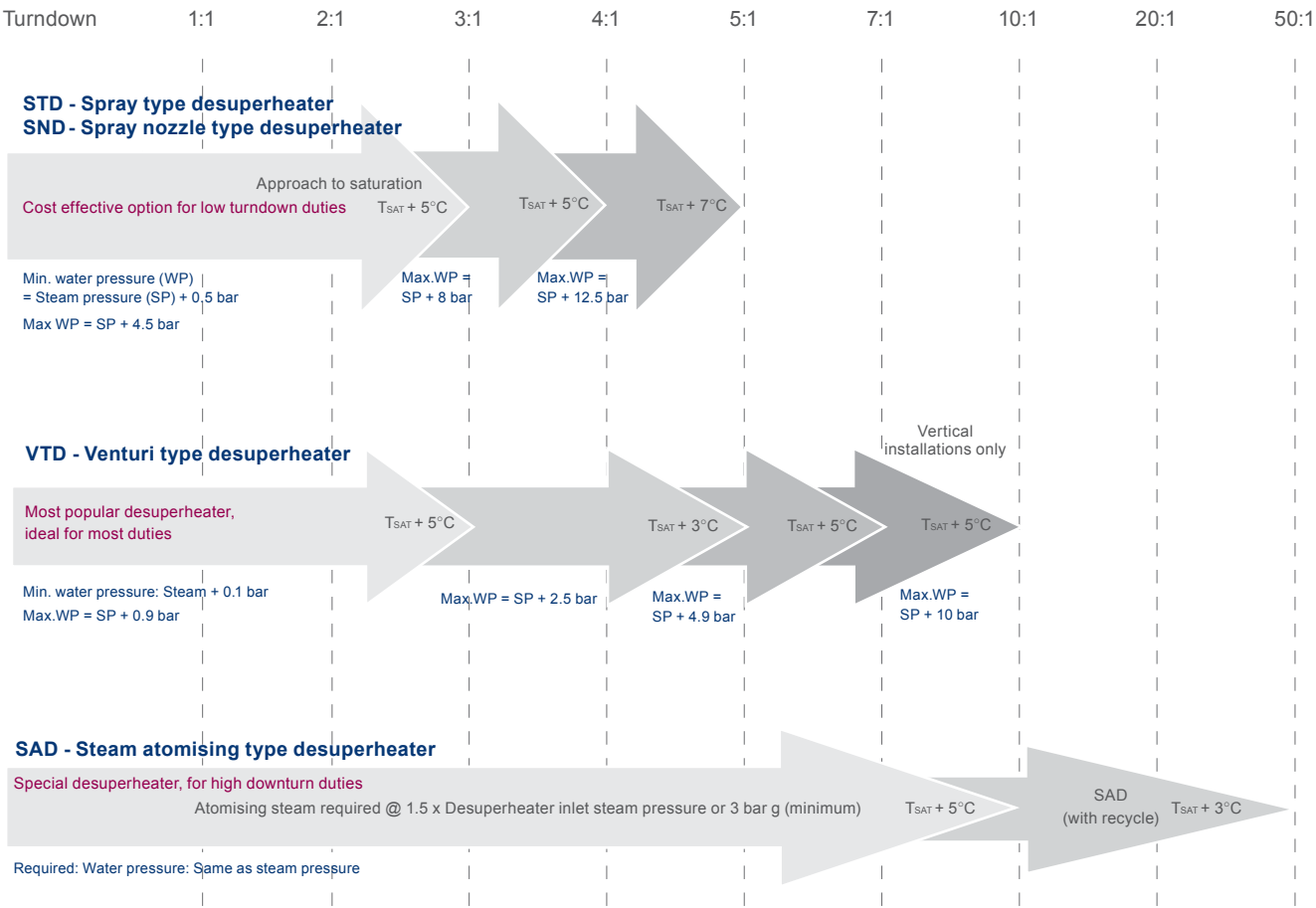


This desuperheater package was designed to reduce 13 bar g superheated steam at 275°C steam to 8 bar g at 5°C above saturation temperature. The customer uses superheated steam for its processes then uses the desuperheated steam to supply two Spirax Sarco heat exchangers for heating and hot water.

A typical in-line desuperheater installation



Desuperheater selection chart



Turndown ratio is dependent on a wide variety of factors, such as, installation (horizontal or vertical), amount of residual superheat, and piping. Dependant on conditions the turndown figures quoted for desuperheaters are the maximum capable

Typical applications

The following is a list of typical applications where desuperheaters have been installed:

Power generation

To reduce the temperature of steam discharged from turbine bypass systems to that required for other parts of the plant.

- Turbine washing

Process industries

In process industries, desuperheaters are used as part of a system for reducing the temperature and pressure of steam from boilers to economic levels of operation.

Paper and board industry

- Paper drying machines

Food industry

- Steam cooking kettles
- Evaporator heat exchanger
- Product conditioning

Textile industry

- Fabric finishing autoclaves

Tobacco industry

- Tobacco leaf drying plants

Chemical and pharmaceutical industry

- Reactor heater jackets and coils
- Steam supply to process heaters

Oil and petrochemical industry

- Vacuum distillation start-up heaters
- Steam supply to process heaters
- Let-down station and turbine bypass
- Thermocompressor discharge
- Mechanical vapor re-compression

Brewing and distilling industry

- Steam heating system

Boiler and turbine installations

- Power generation
- Shipbuilding
- Coffee
- Chemical



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