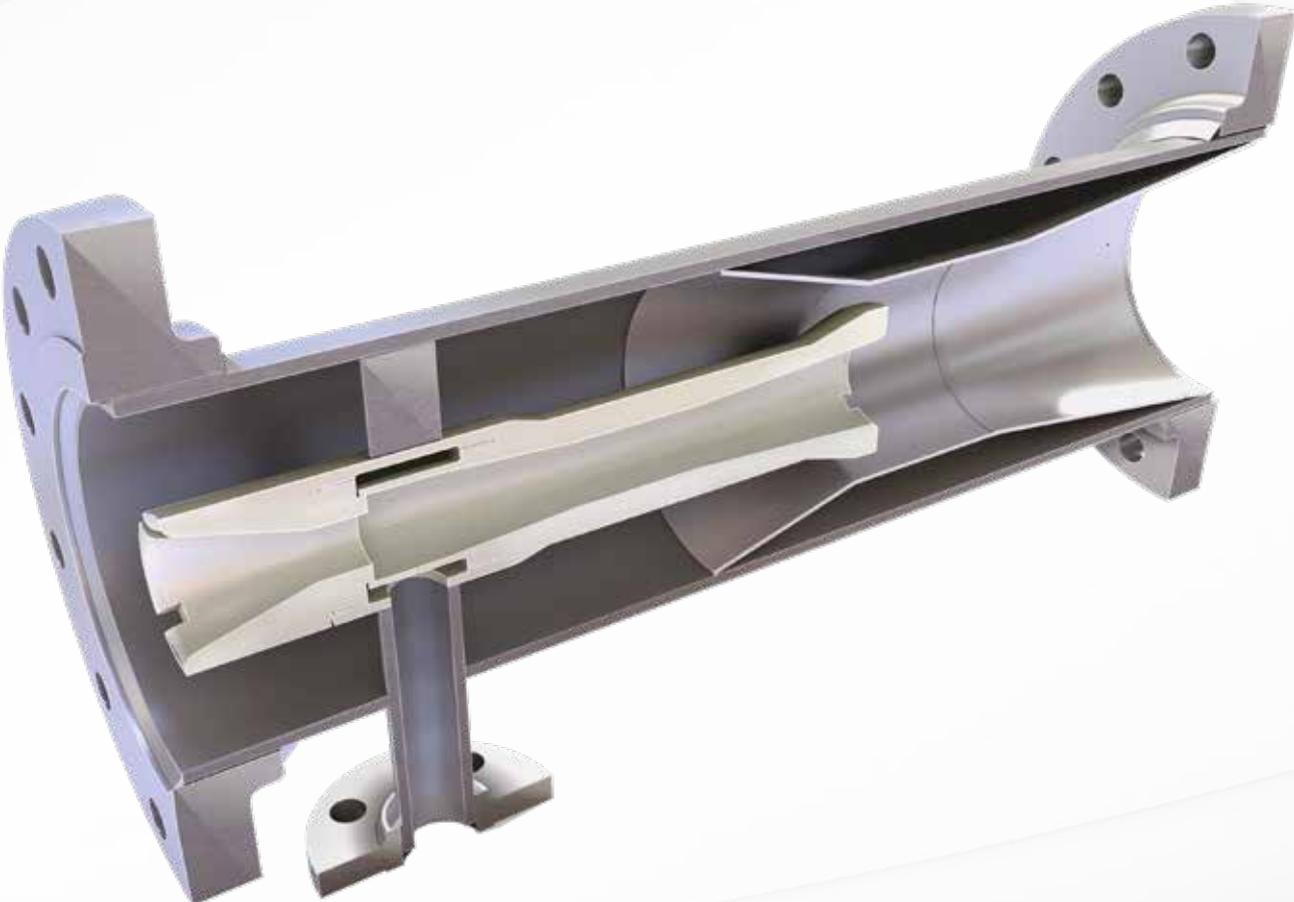


# Desuperheating solutions



*First for Steam Solutions*

EXPERTISE | SOLUTIONS | SUSTAINABILITY



# Desuperheating solutions for your applications

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.

- Accurately control the temperature of steam
- Waste and residual heat recovered and recycled

## A solution to match your requirements:

Our solution enables the ideal desuperheater selection for your application, ensuring a perfect fit for a wide range of industries, including oil and gas and petrochemicals for applications such as combined heat and power.



**First for Steam Solutions**



# Desuperheating solutions

## Increased process efficiency

Efficiently cool your superheated steam for use in a wide variety of applications. Waste and residual heat can be recovered and recycled to increase process efficiency and reduce costs.

## Consistent water velocity and reliability

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

## Highly cost effective

Our range of desuperheating solutions offers a cost effective, long term solution with multiple features and a low cost of ownership.

## Built to last

Stainless steel internals guarantee a durable, long lasting installation that resists corrosion and erosion. Our desuperheaters can be installed with a number of body material options to ensure the solution comfortably operates within a wide range of applications 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 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.

## Variable area solution

### High turndown

With up to 50:1 capability you can be sure your entire flow range is covered across a variety of applications.

### Adaptable

The flexibility of the variable area design ensures that the desuperheater is operating as efficiently as possible within highly variable process loads.

### Easy to install

The VAD is a compact insertion design which is easy to install.



VAD with a PN9000 series actuator



VAD with a TN2000 series actuator

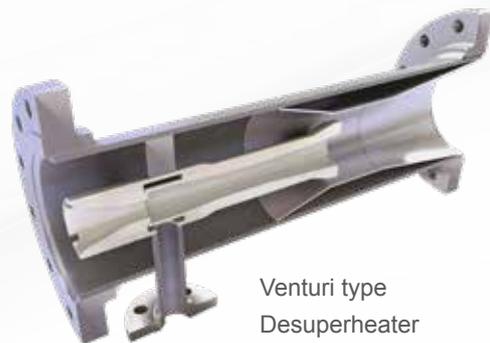
## Fixed area solution

### Bespoke design

Each fixed area unit is bespoke, designed to meet your exact process conditions.

### 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.

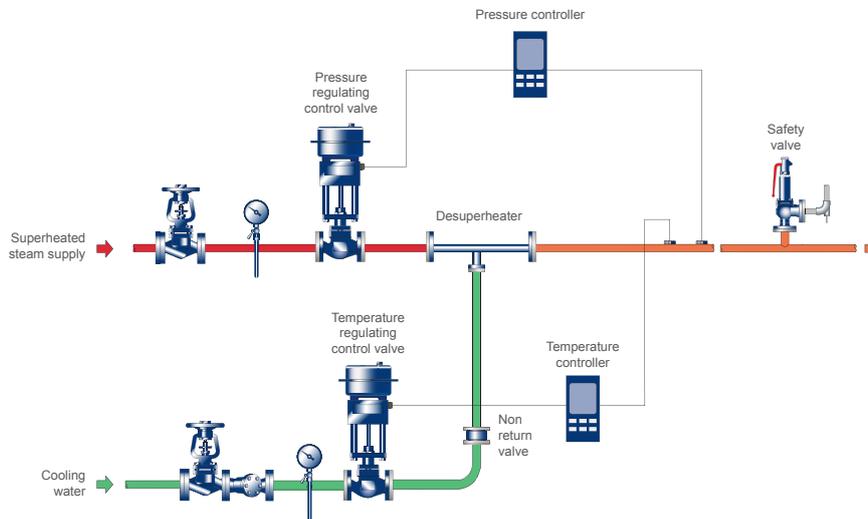


Venturi type  
Desuperheater  
– Fixed Area

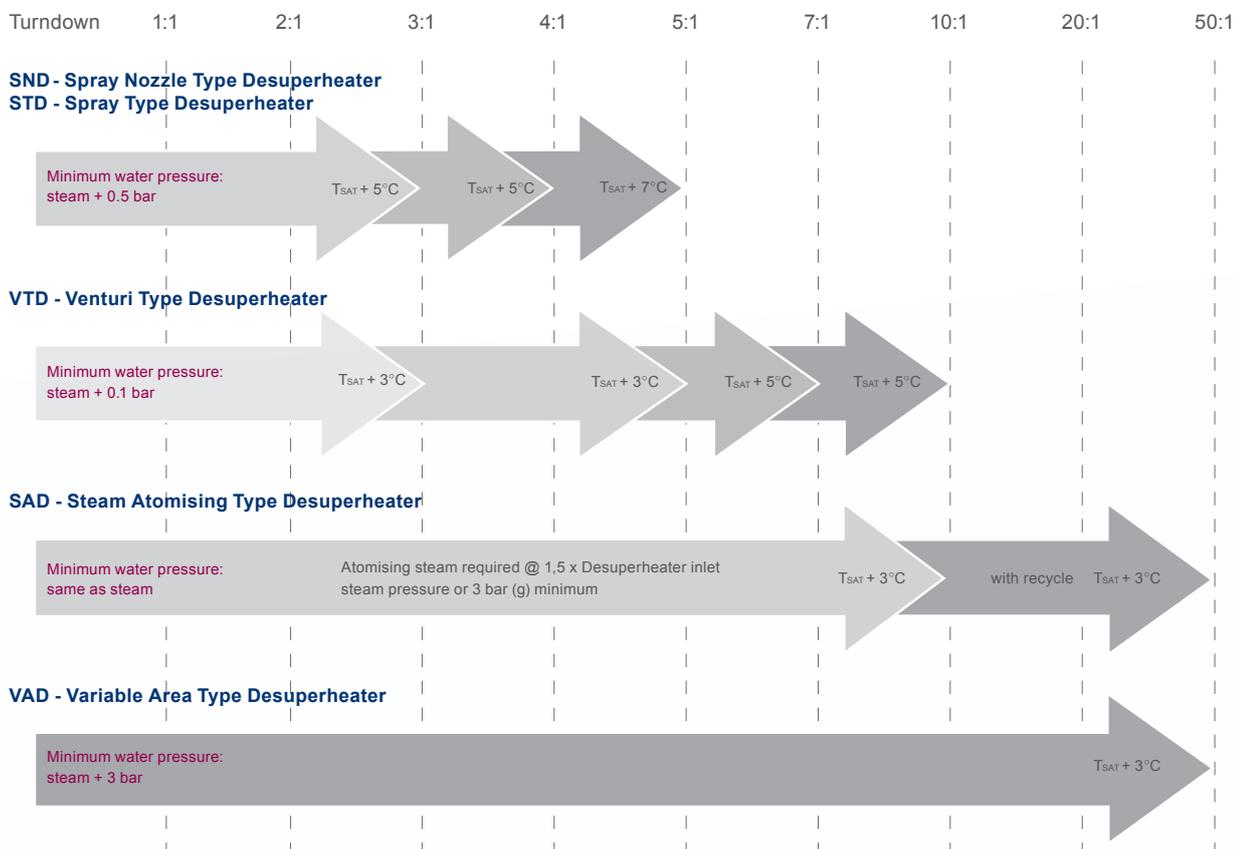
### Did you know?

To reduce the temperature of superheated process steam, desuperheaters, introduce finely atomised cooling water droplets into the flow. For effective desuperheating to occur, these droplets must remain suspended in the downstream pipework for as long as possible, otherwise 'water droplet fall-out' occurs resulting in loss of control and potential erosion and corrosion damage.

## 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

# Industry applications

## Industries that can benefit from a desuperheating solution.

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 gas industry

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



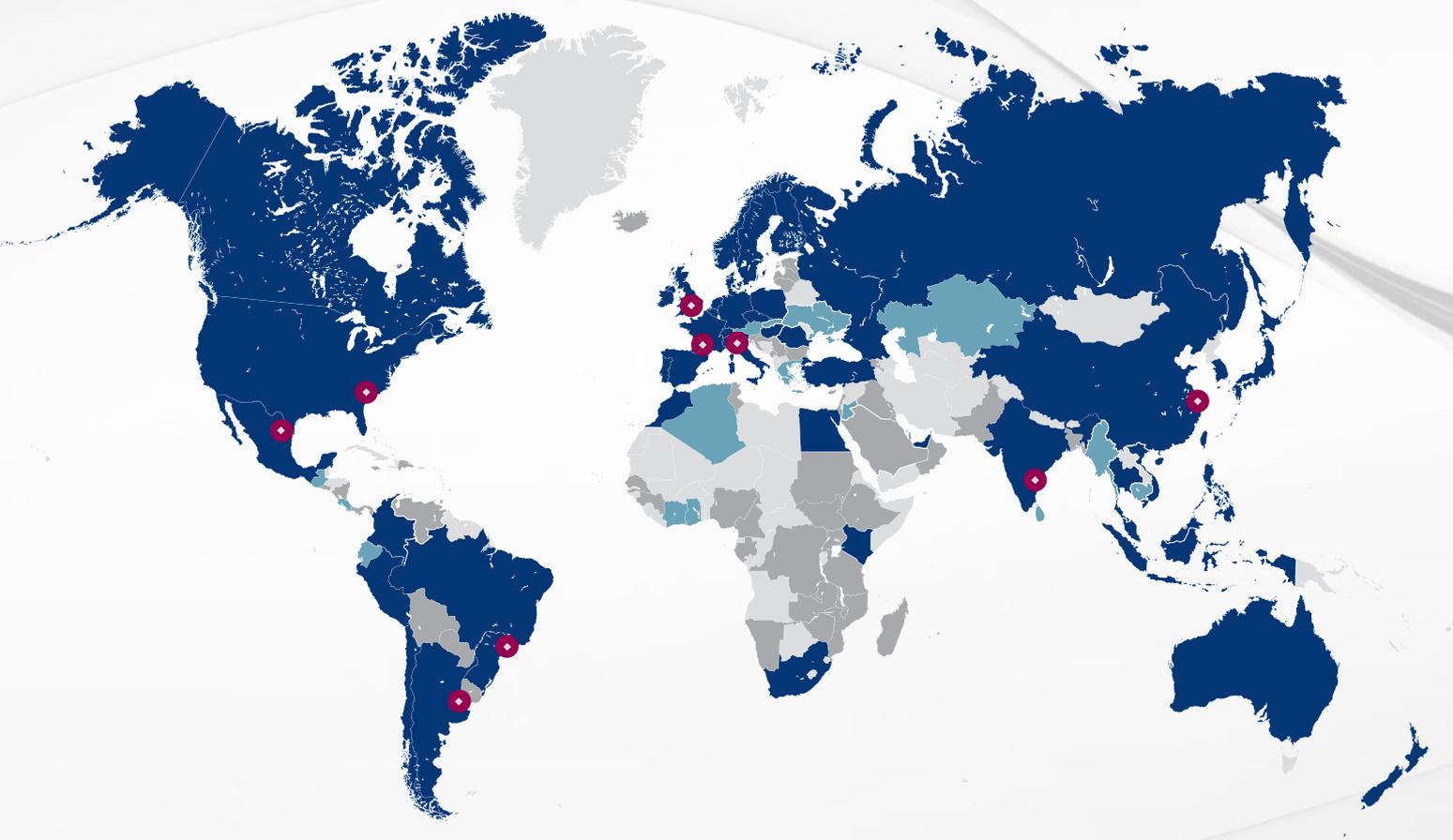
### Brewing and distilling industry

- Steam heating system



### Boiler and turbine installations

- Power generation
- Shipbuilding
- Coffee
- Chemical



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