Samson Ringo- Desuperheater units
Compact, nozzle and venturi types

Desuperheater units for process engineering and industrial applications

Nominal steam size	**DN 25 to 800**	**NPS 1 to 32**
Nominal stem pressure	**Up to PN 400**	**Up to Class 2500**
Steam Temperature	**Up to 650°C**	**Up to 1200 °F**

Steam and water control valve body made of

- Carbon steel
- Alloy steel
- Stainless steel
- Duplex and superduplex
- Nickel based alloys

The control valves can be equipped with various accessories such as positioners, solenoid valves and other devices Conforming to VDI/VDE 3845.

Steam pressure reducing valve is equipped with Samson Ringo PILOT trim; a balanced plug that ensures smooth control and low actuator forces and leakage class V for any pressure or temperature.

For further information, you can see type 3595 control valve data sheet.

Desuerpheater features

– Type 1: Spray nozzle type: Easy configuration when process data is not in severe service range.

– Type 2: Venturi type (Figure 1): Used commonly when low water pressure is available.

– Type 3: Integrated solution: Typical for reduced available space.

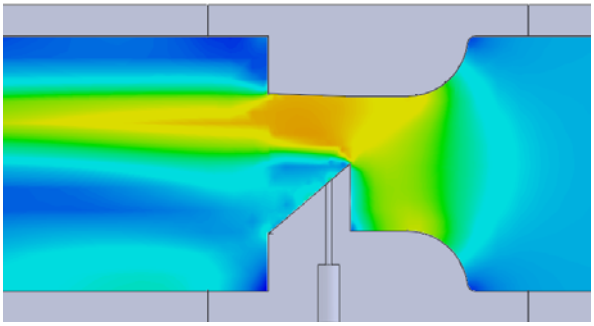
Figure 1: Typical Ringo venture desuperheater unit

Principle of operation

Steam desuperheating is the process which reduces steam temperature with water contact

It is very important to ensure that required water flow, temperature and pressure is provided to steam flow in the proper drop diameter to ensure good performance of the system.

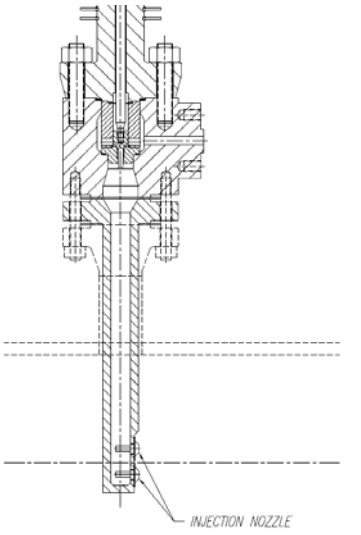
Pressure reduction of steam need to be performed by severe service control valve with multistage solution and silencer plates for the most critical superheated steam cases



Type 1: Spray nozzle type:

The easiest compact way to reduce steam temperature by accurate injection of water drops.

The combination of variable nozzles and type 3595 high rangeability multistep trim ensures possibility to perform accurate desuperheating over 1:10 ratios.



Type 2: Venturi type:

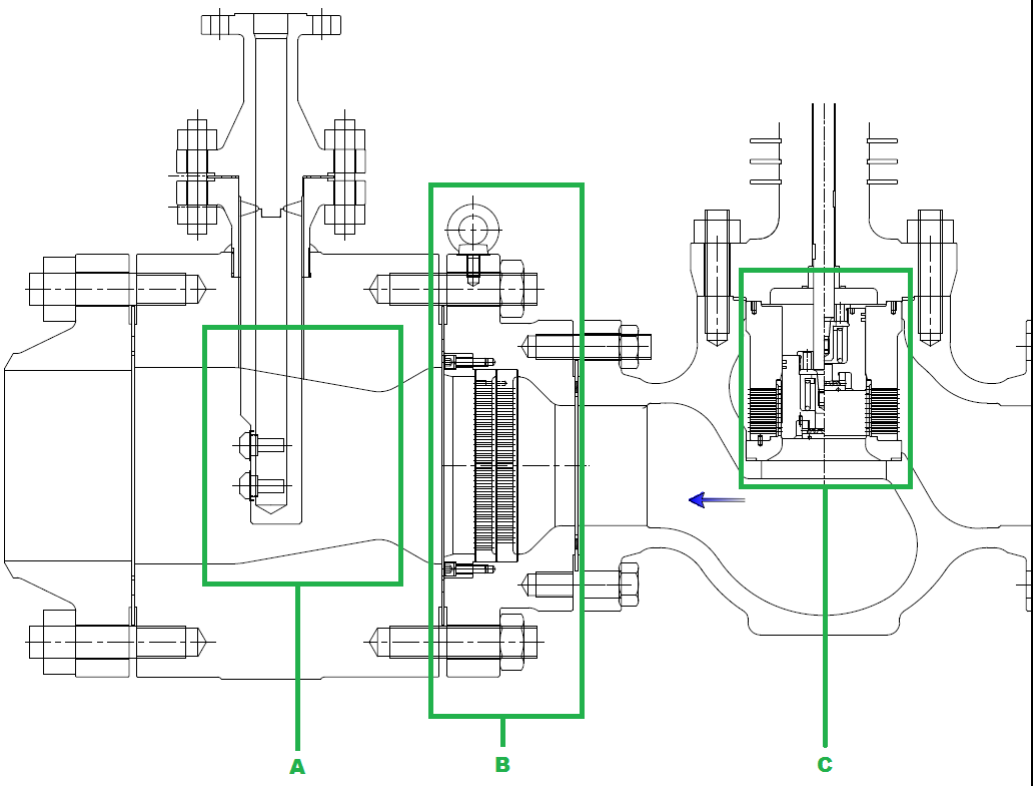
The pressure reducing valve and venture desuperheater unit is the most common system to reduce high pressure and temperature steam without high noise and vibration.

Main components are:

A Venturi desuerpheater unit with variable water injection nozzles

B Compact flanged style diffuser plates and expansion cone

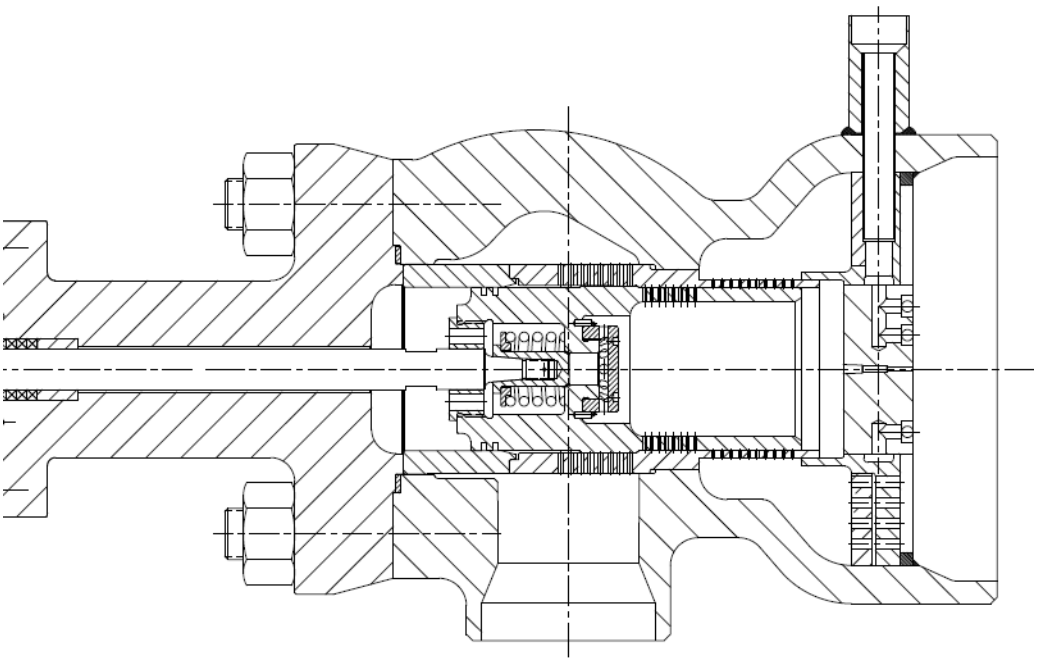
C Balanced Ringo PILOT plug will multi stage cage guided design.



Type 3: Integrated solution:

For reduced space and high demanding application, combination of water injection inside valve trim is possible. This ensures that low steam flows are accurate conditioned and energy from high pressure drop steam flows is dissipated via multistage cages.

We can see also that PILOT plug is used to have balanced trim with high leakage class (Class V).



Samson Ringo type	Desuperheater unit
Nominal size (Steam line)	25 to 800 / 1“ to 32“
Body style	Flanged or BW
Pressure rating of body flanges	PN 10 to 400 // Class 150 to 2500
Characteristic	linear or equal percentage characteristic
Rangeability	75 : 1, bigger on request
Temperature range	Up to 650 °C (1200 °F)