

The safer way to control steam temperatures.



Yarway Circtemp attemperator

Yarway Circtemp™ - the next generation attemperator for high temperature and cycling duty.





STEAM TEMPERATURE CONTROL

THE NEXT GENERATION ATTEMPERATOR

CIRCTEMP™ THE NEXT GENERATION ATTEMPERATOR FOR HIGH TEMPERATURE AND CYCLING DUTY

WHAT IS THE INDUSTRY LOOKING FOR?

- High steam temperature valves
- High cycling duty
- Accurate steam temperature control
- Simple, easy to repair
- Long life
- Full assembly for steam temperature control: includes control valve, nozzles, pipe, pipe liner

OUR BENEFITS INCLUDE:

- No moving parts to break
- Proven technology
- Nozzle design for fast evaporation and no water carry over. FEA proves long life
- High turn ratio
- Repairable

PROVEN TECHNOLOGY

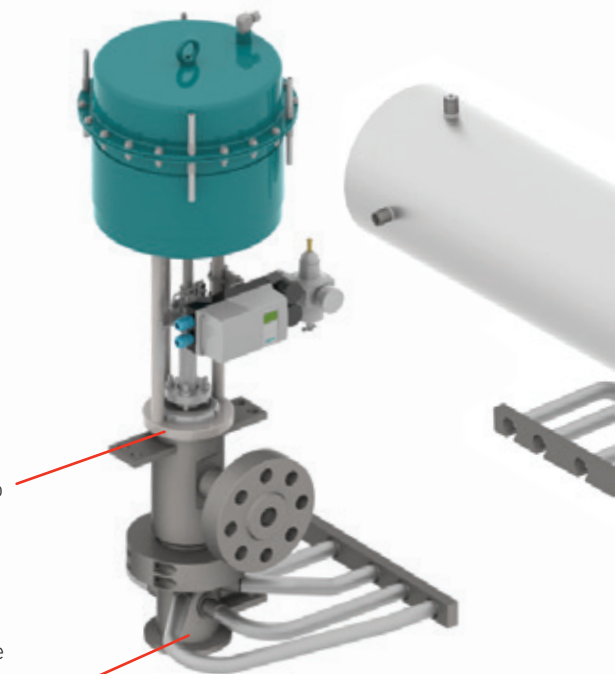
Yarway has a 25 year reputation of using the pressure swirl technique with great success in its day to day business of manufacturing and designing desuperheaters.

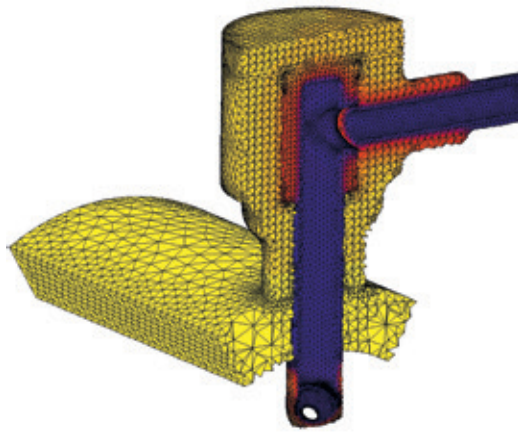
HIGH TURN DOWN / BETTER CONTROL

Sequential operation with multiple K_v / C_v configuration will allow you to achieve high turn-down ratios of 50:1 and up.

LOW NOISE / NO CAVITATION

The usage of the maximum pressure differential available in the system (water pressure before the control valve versus the steam pressure of the application) allows the pressure swirl nozzle to atomize with the smallest droplets (D_{32}) possible under these conditions.



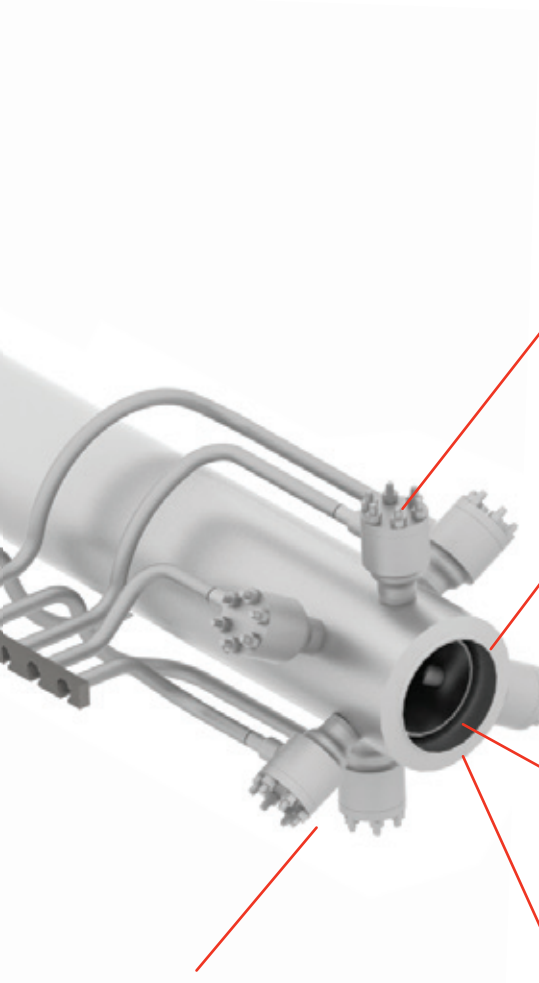


IMPROVED CYCLING CAPABILITY

The design is analyzed by means of Finite Element Analysis (FEA) to improve its performance and to predict possible failures in time under the severest conditions.

DESIGN FOR HIGH TEMPERATURE AND FAST CYCLING

The parts that are in direct contact with the highest operation steam temperature and the relative cold injection water are isolated from each other and with the thermal sleeve construction and the use of high temperature resistant material, the design is ready for the next generation of HRSG boilers.



QUICK REPAIR

Removable injection probe is easy to change and gives the advantage to update the K_v / C_v value in case of change in plant operation.

SHORTEST EVAPORATION LENGTH

A study performed by the Technical University of Eindhoven proofed this nozzle design will give smaller droplets [D32; Sauter diameter] compared to a spring loaded nozzle operated under the same conditions.

SUPERIOR ATOMIZATION

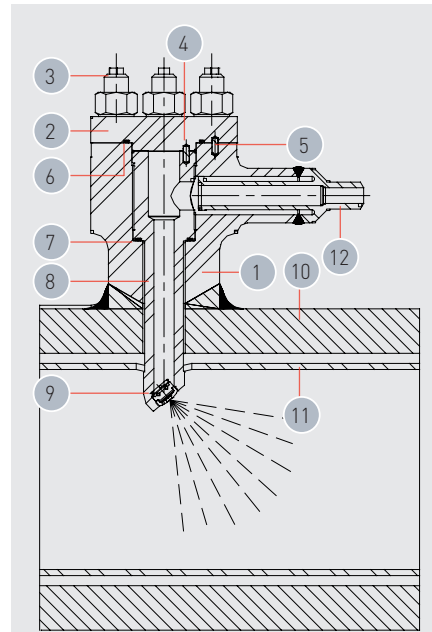
The smaller the droplets are in size, the better the evaporation performance, resulting in short evaporation lengths and no water carry over. CFD modeling of water injection into a steam flow concurs this.

NO MOVING PARTS

Moving parts under severe conditions are subjected to a high wear and tear rate and therefore doomed to fail.

EASY MAINTENANCE

The injection probe is easy to change wear and tear part for quick overhaul during maintenance stops. The nozzle itself is optimized for the plant life cycle.



1. BODY
2. COVER
3. STUDS/NUTS
4. PIN
5. PIN
6. GRAPHITE SEAL
7. GRAPHITE SEAL
8. INJECTION PROBE
9. SWIRL NOZZLE
10. STEAM PIPE
11. LINER (THERMAL LINER OPTIONAL)
12. WATER INLET PIPE

TECHNICAL DATA

CONTROL PART

Design code ASME B16.34
 Temperature: max 300°C / 572°F
 Pressure: 400 bar / 5800 psi (#2500)

INJECTION PART

Design code ASME B31.1
 Temperature: 650°C / 1200°F
 Pressure: 200 bar / 2900 psi

AVAILABLE MATERIALS

SA335 P91 & SA182 F91 / SA335 P22
 Other materials on request
 Minimum steam pipe size: 6"
 Multiple nozzles design based on requirements
 Main steam pipe section incl. thermal liner

The next generation attenuator for high temperature and cycling duty.

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