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Desuperheater Station:

75,000 pph

Trailer-Mounted Boiler

Steam Pressure: 250-650 PSIG

Control Temperature: 450-750°F

Nationwide Boiler's desuperheater station can be used in many applications to efficiently reduce the temperature of superheated steam to the desired set point. It includes the following components:

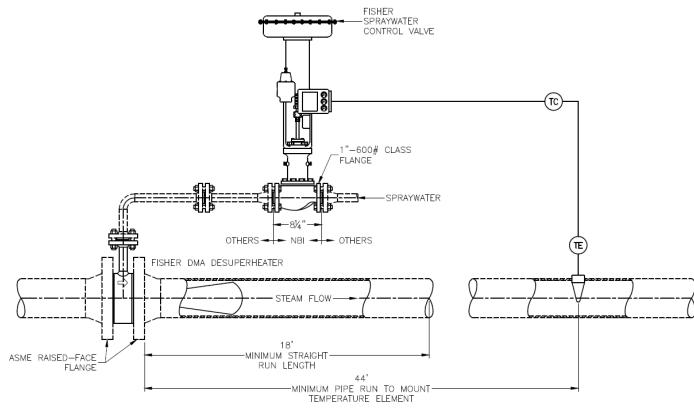
- Fisher DVI Desuperheater 6" or 8" -600# Class
- Fisher EZ Control Valve 1"-600# Class
- Boiler Control System to Control Temperature
- Thermocouple & Thermowell
- Field Installation, Wiring & Pipe Flanges Not Included

Principles of Operation:

For the most efficient use of heat energy from steam, it is necessary to reduce the temperature of steam to near the saturation temperature. With steam that is at or near the saturation temperature, it is possible to recover the large amount of energy that was put into the steam when it was heated from water to steam.

The desuperheater station produces a spray of cooling water in a steam line. The spraywater cools the steam to near the saturation temperature. The rate of cooling is dependent on spraywater droplet size, distribution, and velocity. The temperature is controlled by varying the amount of spraywater flow.

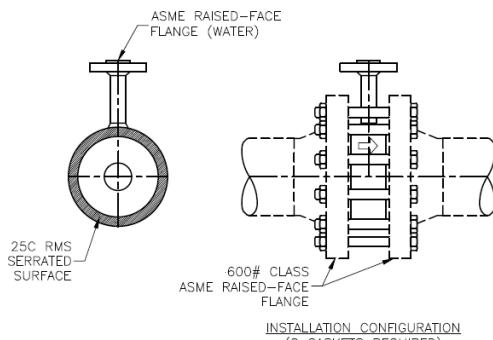
In operation, spraywater is supplied to a connection on the desuperheater. A signal from a downstream controller positions an actuator or valve to control the amount of spraywater flow for cooling. The spraywater control valve is a separate valve in the spraywater line. Spraywater enters the desuperheater water tube and continues into the distribution chamber and is forced into the injection orifices. Steam enters the desuperheating venturi at the point of water injection. The high steam velocity and turbulent steam flow improves mixing of water and steam, increasing rangeability.



Design Condition:

Steam Flow:	75,000 lb/hr Max 15,000 lb/hr Min
Water Flow:	12,000 lb/hr*
Water Pressure:	50-100 psig Above Steam Pressure
Water Temperature:	200° F
Final Steam Temperature:	450-700° F

* Water flow will depend on final steam temperature.
Water quality must be demineralized water at < 2.5 ppm TDS.



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