# Process Automation

IMI CCI

MDAV-S Venturi-style desuperheater



Breakthrough engineering for a better world

# MDAV-S

# Venturi-style desuperheater

The MDAV-S desuperheater is designed for the attemperation of steam in small diameter pipelines. It features a single spray water nozzle installed into a flange, and allows - with high accuracy - control of the steam temperature down to 8°C / 15°F above saturation temperature.

## Key features

The MDAV-S is mostly used in industrial and municipal power and district heating systems as well as in the process industry. It is used for temperature control of super heated steam. Its simple design and lack of moving parts makes it very reliable, and reduces the need for service.

Spray water is controlled through an external spray water valve, and is then introduced to the superheated steam through a fixed nozzle installed in the steam flange. The venturi design, with the sharp edge against the flow, guarantees a high steam velocity at the point of water injection, which in

turn improves evaporation of the spray water with a minimal risk of water impingement on the pipe wall.



## **Benefits**

- Accurate temperature control - down to 8°C / 15°F

above the saturation temperature. - Fast evaporation / atomisation of the cooling water thanks to the

## Installation example

- A. Water strainer.
- B. External spray water control valve.
- C. MDAV-S desuperheater.
- D. Temperature sensor. E. Visual temperature instrumentation
- F. Drain.
- FT. Flow transmitter.
- TC. Temperature control.
- TT. Temperature transmitter.

### **Product specification**

- Nozzle Material EN 10222-2 11CrMo9-10 (S) A-182 F22Cl.3. Rangeability
- Design code
  - EN 12516-2 / PED ASME B16.34 ASME B16.34 /.

1″

- Water connection
- Flange size
- A-182 F22Cl.3. Pressure class ANSI 600 or 1500.

– Material

EN 10222-2

11CrMo9-10 (S)

# Dimensions

Determined by

water valve.



Nozzle sizes and maximum				
Size	l/h			
AO	375			
А	750			
В	1500			
С	3000			

В

## Application example

- A. High pressure steam.
- B. Feed water / condensate.
- C. MDAV-S desuperheater.
- D. Steam turbine.
- E. Steam turbine shaft.
- F. Generator.
- G. External spray water control valve.
- H. Shaft sealing steam / gland steam.
- I. Turbine extraction to process steam\*

\* Suitable for steam pipe dimensions up to 4"





### Steam connection Flange size 2" - 4".

- Materials EN 10222-2 11CrMo9-10 (S) A-182 F22Cl.3.
- Pressure drop max 5 bar / 70 psi

Other options The MDA-VS is a standardised product, with options limited to what is described within this document. If customised adaptations (e.g.

but not limited to materials, water connections, special venturi designs, etc.) are desired, IMI CCI recommends the MDA-V.

Venturi diameter				
0.6 x Steam pipe Ø				
0.7 x Steam pipe Ø				
0.8 x Steam pipe Ø				

water flow		Steam pipe diameters and nozzle asurements			
	US gal. / h	Steam pipe Ø	A [mm]	B [mm]	
	99	2"	202	120	
	198	2,5"	217	135	
	396	3"	227	145	
	792	4"	247	165	



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