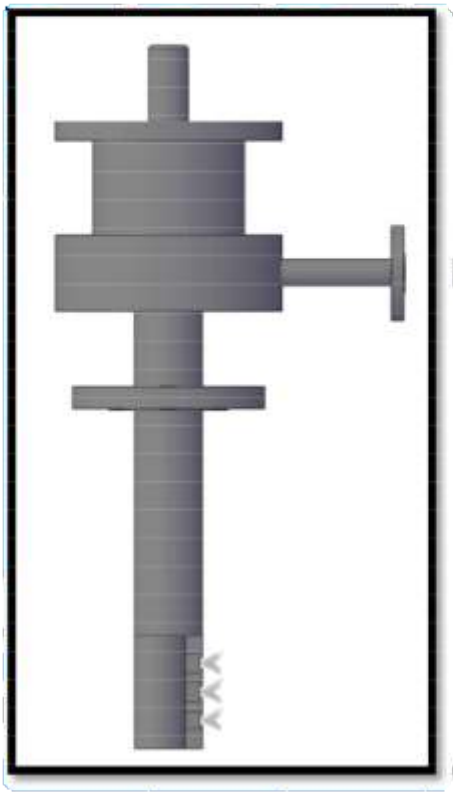
BOMAFA
Special Valve Solutions

Desuperheaters



Multi-Nozzle Desuperheater: MODEL NO: MND

Applications

Steam is quite often throttled and superheated for its efficient distribution. To maximise its heat transfer properties its steam temperature needs to be brought down as close to saturation as possible. Bomafa Desuperheaters are designed, manufactured and built to reduce the temperature of the superheated steam accurately for optimal heat transfer and efficiency.

Benefits

- *Detailed steam system knowledge is applied for design and sizing.*
- *Improved heat transfer.*
- *Continuous process performance.*

Key highlights

- A high turndown of 30:1 is offered as standard.
- Higher turndown can be provided on request.
- No steam side pressure drop and therefore is the ideal choice for duties where minimum steam side pressure drop is required.
- No casting thereby eliminating casting deformity & flaws.
- Internals are specially treated by plasma nitriding process which improves corrosion, erosion and galling by sticking. It also reduces friction and enhances seat tightness.
- The unit can be supplied with a double acting spring return pneumatic cylinder piston actuator/ pneumatic spring & diaphragm actuator / electric actuator.
- The nozzles vary according to load requirement and the units are provided with linear/ special characteristics as per the process requirement.
- The unit provides one of the most accurate, convenient and economical means of reducing the superheated steam temperature.

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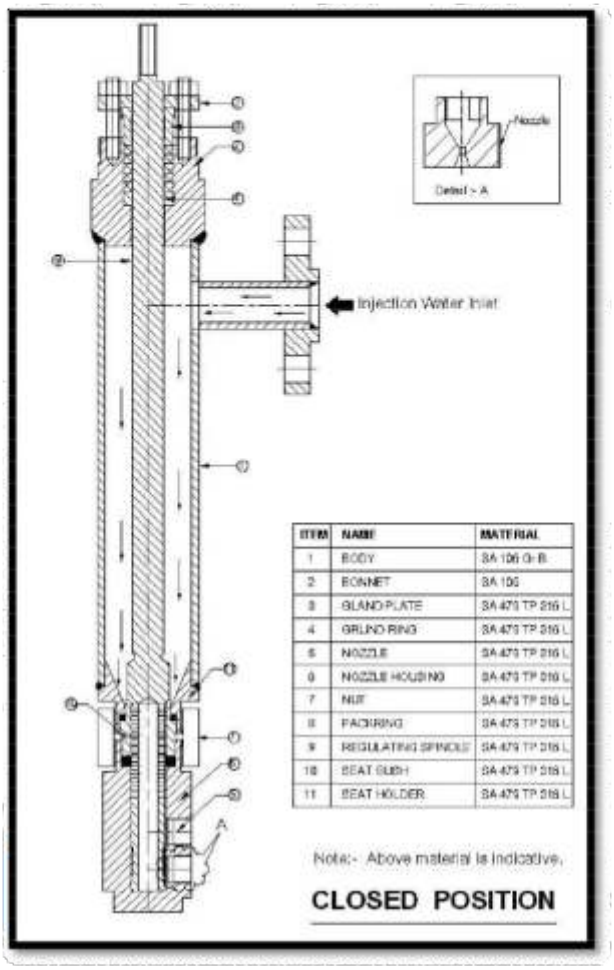
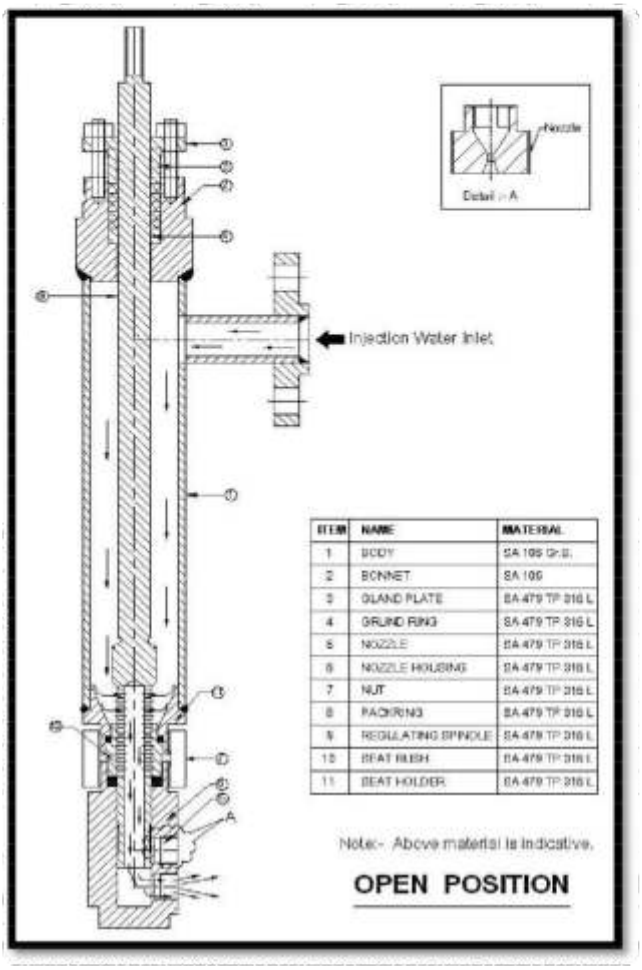


ITEM	NAME	MATERIAL
1	BODY	SA 106 Gr.B
2	BONNET	SA 106
3	GLAND PLATE	SA 479 TP 316 L
4	GRUND RING	SA 479 TP 316 L
5	NOZZLE	SA 479 TP 316 L
6	NOZZLE HOUSING	SA 479 TP 316 L
7	NUT	SA 479 TP 316 L
8	PACKRING	SA 479 TP 316 L
9	REGULATING SPINDLE	SA 479 TP 316 L
10	SEAT BUSH	SA 479 TP 316 L
11	SEAT HOLDER	SA 479 TP 316 L



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Description

- The unit controls/ regulates the amount of spray water by opening/ closing the number of orifices as per the requirement.
- This ensures that the spray water is controlled right throughout full load conditions and a very good and uniform spray pattern over the full load of the desuperheater is maintained.
- This design minimizes accumulation of the spray water droplets in the steam pipeline. No separate spray water control valve is required to control the spray water quantity.
- Full water/ steam pressure differential is maintained during full load variation for ultimate efficiency and the water flow is controlled at the point of injection thereby providing most accurate spray water control design.
- The signal from the temperature control loop given to the actuator positions the plug which will either cover or uncover the series of nozzles.
- As more command is given, the unit will go on opening more orifices till they are completely open.
- Similarly, when less command is given the unit will go on closing orifices till they are completely closed thereby regulating the steam temperature.

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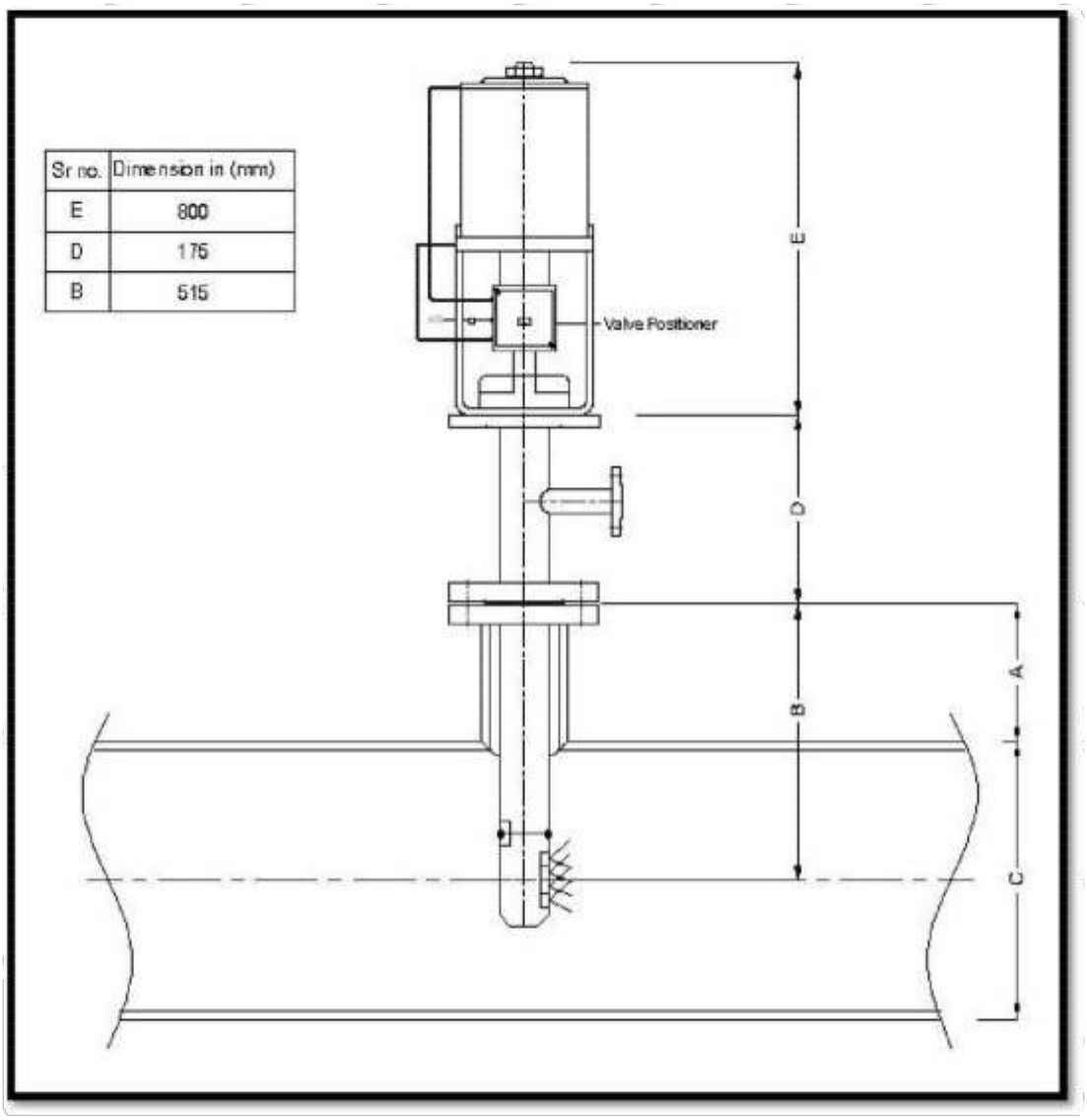
Recommended Installation Dimensions



Notes:-

1. Material of construction:
   a. Desuperheater Pipe: SA 106 Gr. B, SA 335 P11, SA 335 P22, SA 335 P91.
   b. Nozzle: SS 304/ 316, DIN 1.4122/ DIN 1.4923
   c. Injection Water Pipe: SA 106 Gr. B, SA 335 P11, SA 335 P22, SA 335 P91.
   d. Flanges: SA 105, SA 182 F11, SA 182 F22, SA 182 F91.
2. Dimensions can be engineered to fit existing piping/ flange requirements.
3. Dimensions are subject to change without notice.
4. For higher sizes, consult factory.
5. Different grades of material also available as an option.

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Dimensions

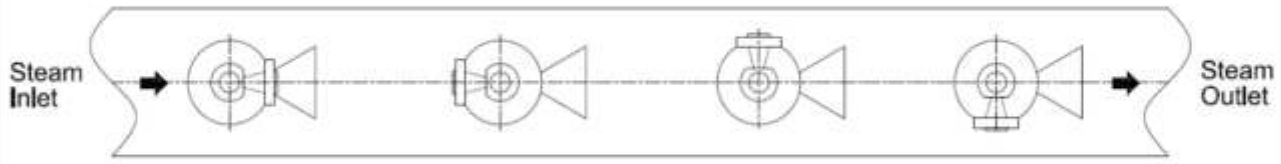
- The dimensions will vary depending upon the mounting/ stub length 'A'. Stub size is normally in 3" or 4". This dimension varies as the steam pipeline varies depending upon the load requirement and the desuperheater has to be mounted such that orifice/ nozzles will remain in the centre portion of the steam pipeline. This dimension can also be calculated as per the following formula:

$$A = B - \frac{C}{2}$$

Sr. No.	Dimensions (mm)
E	800
D	175
B	515

- For normal maintenance, please leave undisturbed length of 300 mm at the top.
- For steam pipeline size above 24", please refer factory for dimensions.
- Top/ side mounted hand wheel provided as an option.

Variable Options of Nozzle Installations



Note:- Depending on customer's requirement spray water connections can be configurated with respect to spray nozzle arrangement.

NOZZLE DESIGNATION	Cv
BOM-1	0.35
BOM-2	0.60
BOM-3	1.30
BOM-4	2.00
BOM-5	3.75
BOM-6	6.50
BOM-7	10.0
BOM-8	13.0

Note:
1. Cv indicated above are standard.
2. Higher and lower Cvs are also available as per requirement.

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