IndiTech

DESUPERHEATERS

INDITECH VALVES PVT. LTD.

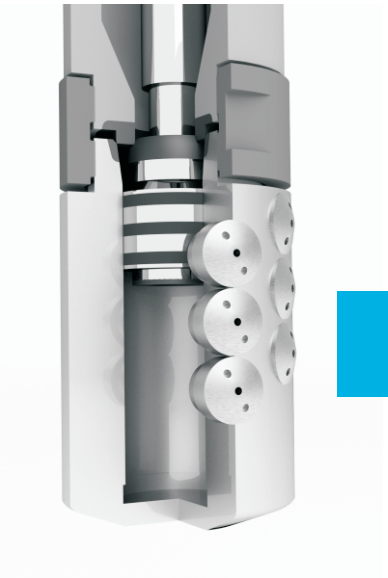
VALUES 'n' VALVES

VARIABLE NOZZLE / MULTI NOZZLE DESUPERHEATERS

IndiTech Series 230 variable nozzle desuperheaters are best suited for applications involving high load fluctuations. They are designed to control the quantity of spray water at the point of water injection, thereby eliminating the need of a separate water control valve. This is achieved by coupling the desuperheater with an actuator and subsequently varying the number of injection nozzles in operation. Nozzle opening is controlled through precise positioning of the desuperheater stem in response to feedback from a controller and downstream temperature sensor. Temperature reduction occurs as the fine mist of water rapidly vaporizes into the superheated steam.

Technical Data

Steam Line Size	6" to 24" NB
Connection Size	Steam Side Mounting Flange 3" - 4" NB
	Water Flange 1" - 1½" - 2" NB
Pressure Rating	ANSI #150 to #2500
Body MOC	A105 / A182 F11 / A182 F22
Nozzle MOC	SS316 (Stellited optional)
Actuator	Pneumatic / Electrical
End Connections	Flanged
Rangeability	40:1

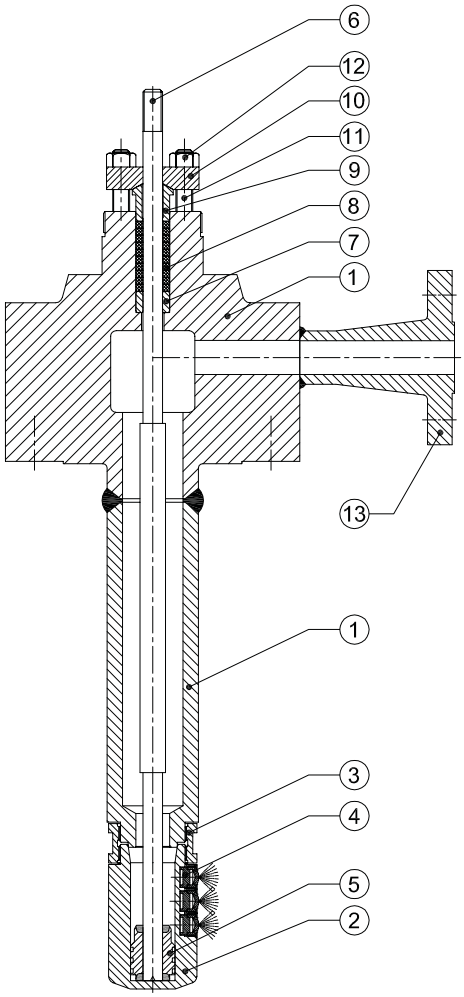


Features

- No external cooling water control valve required.
- Capable of maintaining steam temperature to saturation + 6°C.
- High performance spray nozzles that atomize water into a fine mist. Nozzles are stellited for water pressure drop more than 25 bar.
- Single piece forged body.
- Wide range of K_v / C_v values by using special nozzle combinations.
- All sealing joints (body-seat & body-nozzle holder) are stellited to provide leak tightness even after prolonged usage.
- Spray nozzles vacuum brazed to the body to prevent leakage, thereby avoiding disturbances in the water swirl pattern and atomization.

Series 230

VARIABLE NOZZLE / MULTI NOZZLE DESUPERHEATERS



Sr. No.	Description	Material
1	Body	A105 / A182 F11 / A182 F22
2	Nozzle Holder	SS410 / SS431 Stellited
3	Coupling	C20
4	Nozzle	SS316 (Stellited optional)
5	Piston	SS410 / SS431 Stellited
6	Spindle	SS410 / SS431
7	Guide Bush	SS410 / SS431
8	Gland Packing	Graphite
9	Gland Follower	SS410 / SS431
10	Gland Flange	SS431
11	Stud	A193 B7
12	Nut	A194 2H
13	Water Flange	A105 / A182 F11 / A182 F22

Series 230

VENTURI DESUPERHEATERS

IndiTech Series 240 venturi desuperheaters are best suited for applications where water pressures are marginally above steam pressure. The inlet section of the venturi desuperheater has a converging profile, where the steam velocity increases. The steam then passes through a vena contracta. The spray water is injected at the outlet section of the venturi desuperheater, where the rapidly diverging profile causes increased turbulence levels. This ensures quick vaporization and efficient mixing of the spray water into the superheated steam flow. The spray water quantity is controlled by an external control valve which responds to feedback from a controller and downstream temperature sensor.

Technical Data

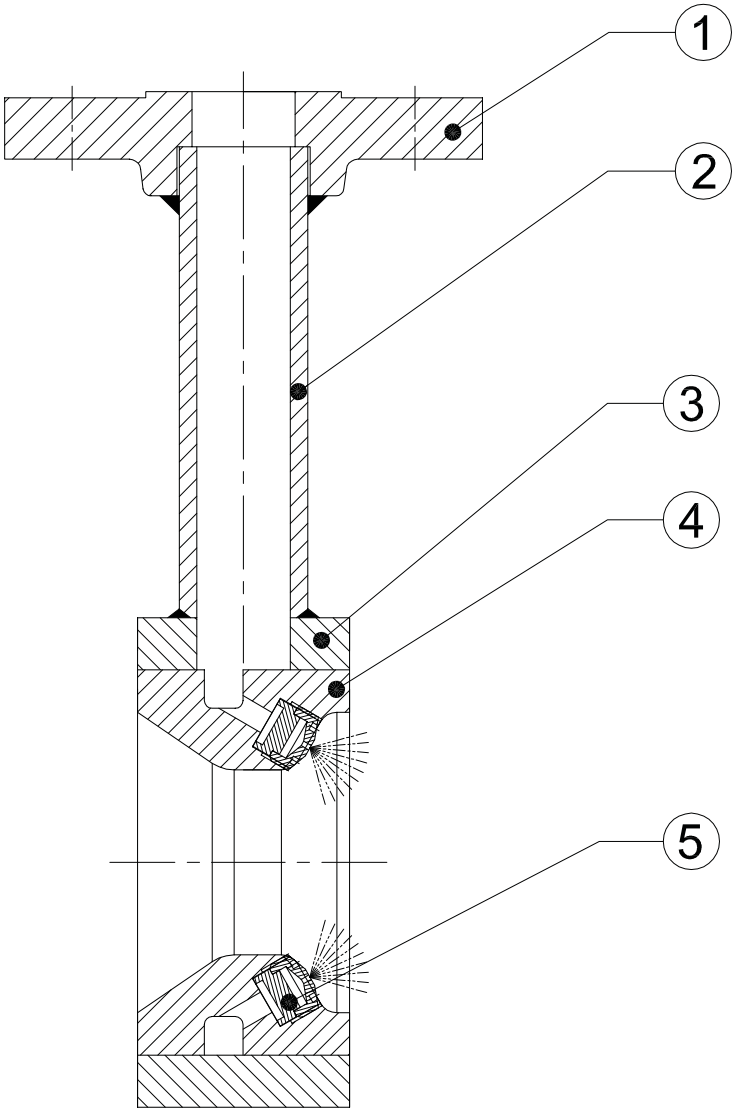
Steam Line Size	1" to 24" NB
Connection Size	Water Flange 1" - 1½" - 2" NB
Pressure Rating	ANSI #150 to #2500
Body MOC	A106 Gr. B / A335 P11 / A335 P22
Ring MOC	A105 / A182 F11 / A182 F22
Venturi MOC	SS 410 / SS 431
Nozzle MOC	SS316 (Stellited optional)
End Connections	Wafer Type / Butt Weld
Rangeability	10:1

Features

- Ideal for water pressure marginally above steam pressure.
- Efficient mixing due to water injection in highly turbulent & expanding steam after vena contracta.
- No moving parts or special supports required.
- Capable of maintaining steam temperature to saturation + 6°C.
- High performance spray nozzles that atomize water into a fine mist.
- Wide range of K_v / C_v values by using special nozzle combinations.
- Offers negligible steam pressure drop.

Series 240

VENTURI DESUPERHEATERS



Sr. No.	Description	Material
1	Water Flange	A105 / A182 F11 / A182 F22
2	Body	A106 Gr. B / A335 P11 / A335 P22
3	Ring	A105 / A182 F11 / A182 F22
4	Venturi	SS410 / SS431
5	Nozzles	SS316 (Stellited optional)

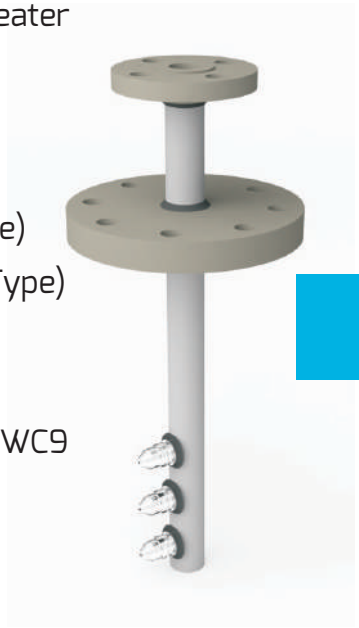
Series 240

FIXED NOZZLE DESUPERHEATERS

IndiTech Series 250 fixed nozzle desuperheaters are best suited for applications involving minimal load fluctuations. A fixed nozzle desuperheater utilizes high performance fixed geometry nozzles to reduce the steam temperature by directly injecting water inside the superheated steam flow. The water enters the main desuperheater body, passes through the spray nozzles and discharges into the steam line in the form of a fine mist. The spray water quantity is controlled by an external control valve which responds to feedback from a controller and downstream temperature sensor.

Technical Data

Types	250-M Minicooler Type Fixed Nozzle Desuperheater
	250-P Probe Type Fixed Nozzle Desuperheater
Steam Line Size	Minicooler Type - 1" to 4" NB
	Probe Type - 6" to 40" NB
Connection Size	Steam Flange 1" - 2" - 3" - 4" NB (Minicooler Type)
	Steam Side Mounting Flange 4" - 6" NB (Probe Type)
	Water Flange 1" - 1½" - 2" NB
Pressure Rating	ANSI #150 to #2500
Body MOC	Minicooler Type - A216 WCB / A217 WC6 / A217 WC9
	Probe Type - A106 Gr. B / A335 P11 / A335 P22
Nozzle MOC	SS 316 (Stellited optional)
End Connections	Flanged
Rangeability	4:1

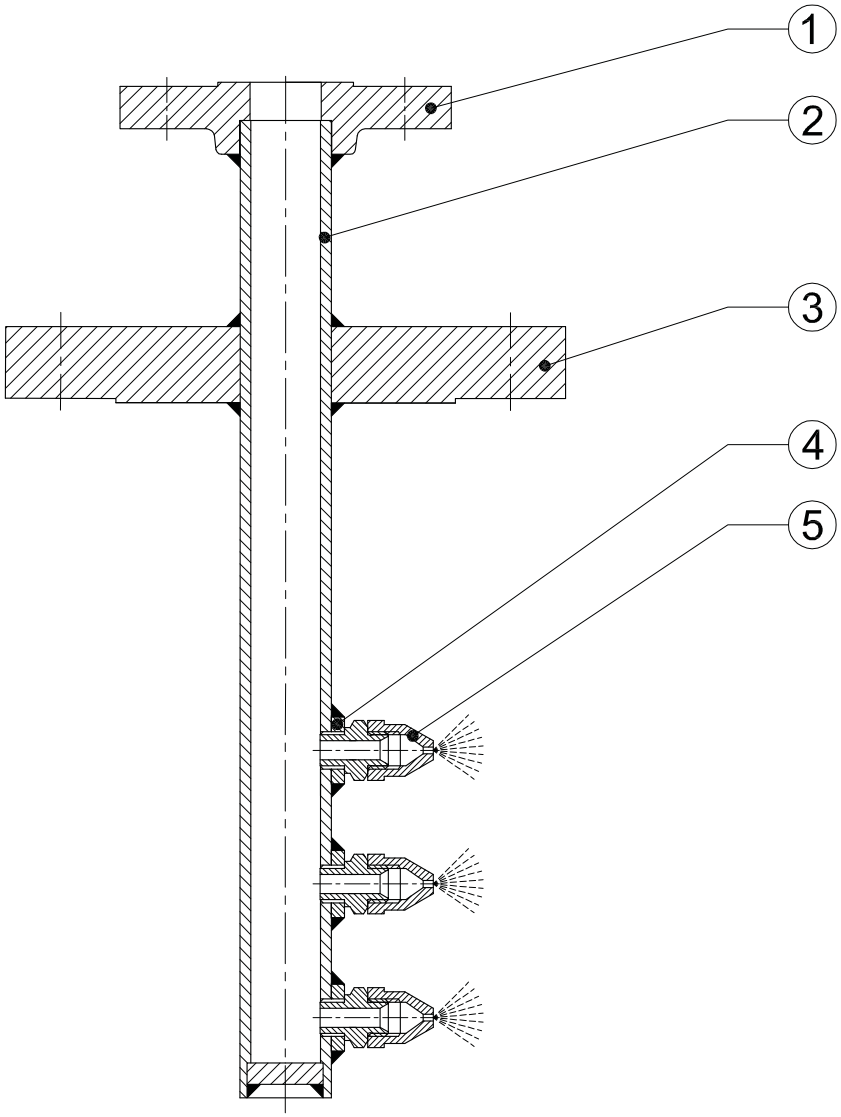


Features

- Fixed area orifice desuperheater.
- Most simple and economical desuperheater.
- No moving parts or special supports required.
- Capable of maintaining steam temperature to saturation + 6°C.
- High performance fixed geometry nozzles that atomize water into a fine mist. Nozzles are stellited for water pressure drop more than 25 bar.
- Spray nozzles have in-built check valve to prevent entry of steam into water line.
- Wide range of K_v / C_v values by using special nozzle combinations.

Series 250

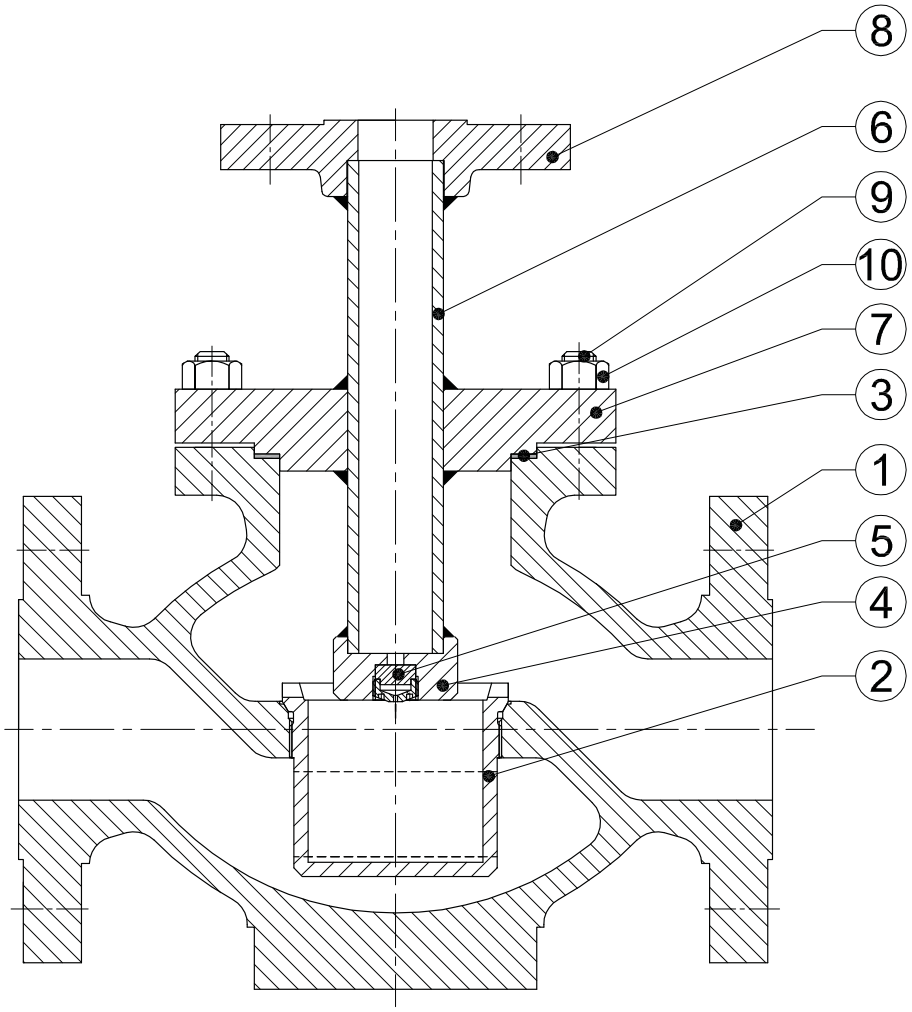
PROBE TYPE FIXED NOZZLE DESUPERHEATERS



Sr. No.	Description	Material
1	Water Flange	A105 / A182 F11 / A182 F22
2	Body	A106 Gr. B / A335 P11 / A335 P22
3	Steam Side Mounting Flange	A515 Gr. 60 / A182 F11 / A182 F22
4	Adapter	SS431
5	Nozzles	SS316 (Stellited optional)

Series 250-P

MINICOOLER TYPE FIXED NOZZLE DESUPERHEATERS



Sr. No.	Description	Material
1	Body	A216 WCB / A217 WC6 / A217 WC9
2	Seat	SS410 / SS431 / SS316
3	Gasket	Graphite
4	Nozzle Holder	SS410 / SS431 Stellited
5	Nozzle	SS316 (Stellited optional)
6	Spray Pipe	A106 Gr. B / A335 P11 / A335 P22
7	Top Flange	A105 / A182 F11 / A182 F22
8	Water Flange	A105 / A182 F11 / A182 F22
9	Stud	A193 B7
10	Nut	A194 2H

Series 250-M

SPRING LOADED NOZZLE DESUPERHEATERS

IndiTech Series 260 spring loaded nozzle desuperheaters are best suited for applications involving moderate load fluctuations. A spring loaded nozzle desuperheater utilizes high performance variable geometry nozzles to reduce the steam temperature by directly injecting water inside the superheated steam flow. The spray water enters the nozzle chamber through multiple tangentially drilled holes, thereby causing water to swirl within the nozzle chamber. The spring, which is pre-compressed to a certain set pressure, keeps the nozzle plug pressed against the seat. As soon as the pressure differential between the water & steam exceeds this set pressure, the plug lifts from its seat and the spray water exits through the small circumferential opening, in the form of a fine mist. Number of nozzles, spring range and spring set pressure is selected based on the process specifications. The spray water quantity is controlled by an external control valve which responds to feedback from a controller and downstream temperature sensor.

Technical Data

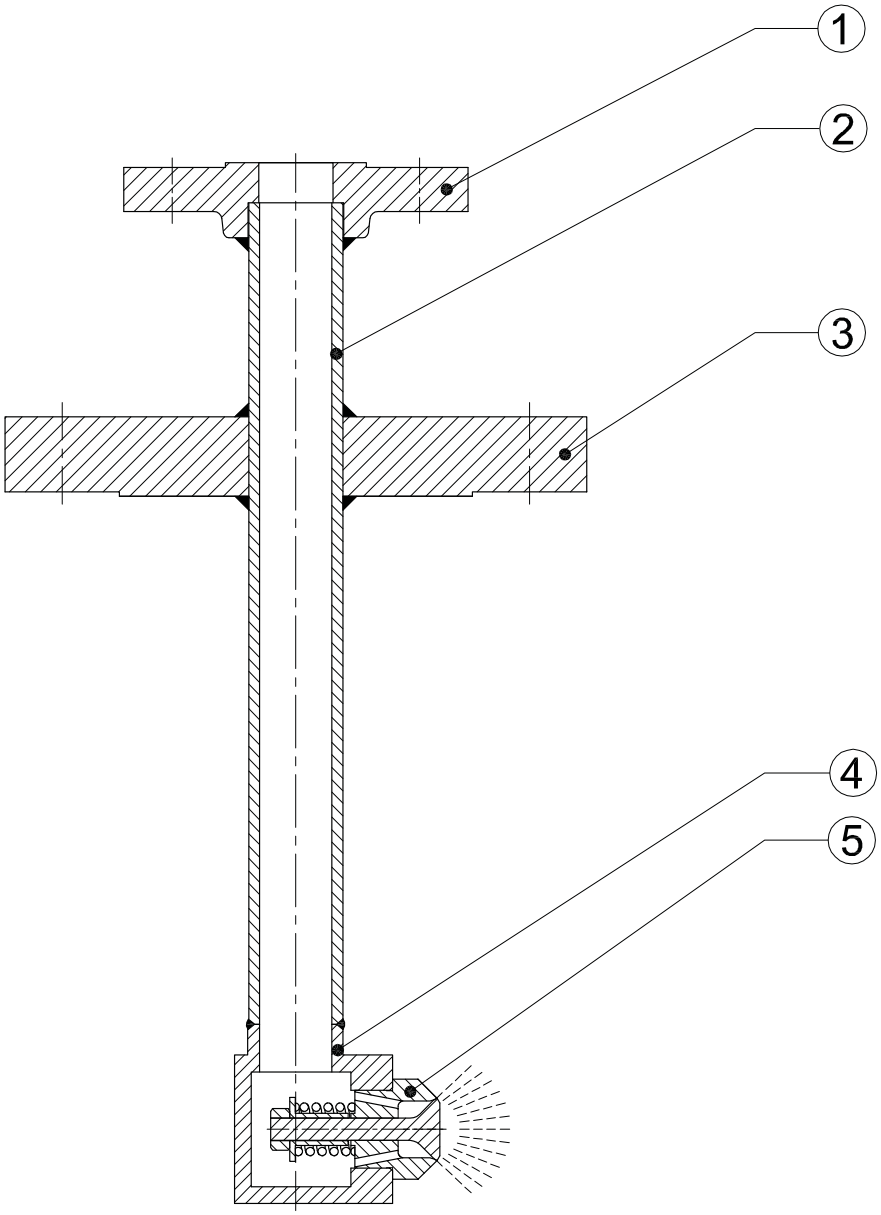
Steam Line Size	6" to 40" NB
Connection Size	Steam Side Mounting Flange 4" - 6" NB
Water Flange	1" - 1½" - 2" - 3" NB
Pressure Rating	ANSI #150 to #2500
Body MOC	A106 Gr. B / A335 P11 / A335 P22
Nozzle MOC	SS 316 (Stellited optional)
End Connections	Flanged
Rangeability	20:1

Features

- Variable area orifice, back pressure activated desuperheater.
- Capable of maintaining steam temperature to saturation + 6°C.
- High performance variable geometry nozzles that atomize water into a fine mist.
- Wide range of K_v / C_v values by using special nozzle combinations.
- Set pressure & spring range selection ensures sequential opening of the individual nozzles. This leads to precise control of water flow and thereby temperature.
- Replaceable individual nozzles.

Series 260

SPRING LOADED NOZZLE DESUPERHEATERS



Sr. No.	Description	Material
1	Water Flange	A105 / A182 F11 / A182 F22
2	Body	A106 Gr. B / A335 P11 / A335 P22
3	Steam Side Mounting Flange	A515 Gr. 60 / A182 F11 / A182 F22
4	Nozzle Holder	SS410 / SS431
5	Spring Loaded Nozzle	SS316 (Stellited optional)

Series 260

IndiTech

IndiTech Products

- Control Valves
- PRDS Valves
- Blowdown Valves
- Desuperheaters
- PRS & PRDS Systems
- Lifting Ball Type Check Valves

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