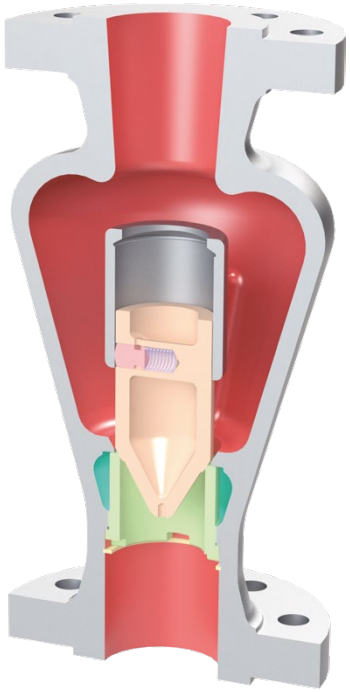
AB5900

One of the most innovative desuperheater product on the market, the IMI CCI AB5900 standard desuperheater incorporated 50 years of experience and lesson-learnt to increase plant performance in a robust compact design with high reliability.

The AB5900 desuperheater performance is exceptional at low steam velocity with high temperature control accuracy and operating near saturation point. Combine this with the highest available rangeability of steam flow the AB5900 desuperheater provides the flexibility needed to increase plant efficiency and productivity.

The AB5900 desuperheater is a robust compact design able to achieve complete evaporation with the shortest straight-pipe distance of just 1 meter and less than 5.5 meters of distance required to the temperature sensor. With a long history of installation, the AB5900 desuperheater is a proven reliable solution.



Key features

The enhanced features of the AB5900 desuperheater ensure complete evaporation in the shortest pipe distance for stable and accurate temperature control in high rangeability applications.

> Flow-plug
- Cooling water is ejected as a fine spray by high velocity steam flowing between the plug and nozzles.
- The flow-plug provides variable orifice area to maintain high velocity steam flow around the seat. The steam velocity is controlled by the rising flow-plug with optimum control for high rangeability.

> Seat ring with spray nozzle
- The seat ring with spray nozzle assists in circulating the spray water evenly around the annular passage.

> Upper body chamber
- High fluid turbulence in the upper body chamber increases the mixing efficiency, allowing time for the complete spray water evaporation in the shortest pipe distance.

Benefits

> Increase plant performance
- Enhanced operation conditions and flexibility needed to increase plant efficiency, productivity and reduce costs.

> Robust compact design
- Complete evaporation and uniformed steam temperature flow prevent cracked pipes, leakages and operational controllability issues.

> High reliability
- Comprising of 6 major components and no welding to allow for easy maintenance and a prolonged trouble-free life.

Americas

imiccisales.americas@imi-critical.com

IMI CCI Brazil
Sao Paulo
Brasil
Tel: +55 11 2691 3361

IMI CCI Houston
Texas
USA
Tel: +1 832 467 7200

IMI CCI RSM
California
USA
Tel: +1 949 858 1877

Asia-Pacific

imiccisales.apac@imi-critical.com

IMI CCI Australia
Melbourne
Australia
Tel: +61 3 9213 0800

IMI CCI Japan
Kobe
Japan
Tel: +81 78 322 1220

IMI CCI Korea
Paju-si
Korea
Tel: +82 31 980 9800

IMI CCI Malaysia
Kuala Lumpur
Malaysia
Tel: +60 3 6412 3500

IMI CCI Singapore
Singapore
Tel: +65 6653 7000

China

imiccisales.china@imi-critical.com

IMI CCI China
Shanghai
PR China
Tel: +86 21 3973 8000

Europe

imiccisales.europe@imi-critical.com

IMI CCI Austria
Wien
Austria
Tel: +43 1 869 27 40

IMI CCI Brno
Brno
Czech Republic
Tel: +420 511 188 288

IMI CCI Italy
Milano
Italy
Tel: +39 02 4345 8611

IMI CCI Sweden
Säffle
Sweden
Tel: +46 533 689 600

IMI CCI Switzerland
Balterswil
Switzerland
Tel: +41 52 264 9500

IMI CCI United Kingdom
Manchester
UK
Tel: +44 (0)161 655 1680

India

imiccisales.india@imi-critical.com

IMI CCI Bangalore
Bangalore
India
Tel: +91 80 4030 3500

IMI CCI SriCity
Andhra Pradesh
India
Tel: +91 85 7639 8000

Middle East and Africa

imiccisales.mea@imi-critical.com

IMI Critical MEA
Dubai
United Arab Emirates
Tel: +971 4 807 3111

IMI CCI South Africa
Witbank
South Africa
Tel: +27 13 697 3305

Other

imicci.sales@imi-critical.com

IMI Critical Engineering
Lakeside, Solihull Parkway
Birmingham Business Park
Birmingham B37 7XZ
United Kingdom

Tel: +44 (0)121 717 3700
Fax: +44 (0)121 717 3701

www.imi-critical.com

IMI Critical Engineering

01073.01-18en

IMI CCI

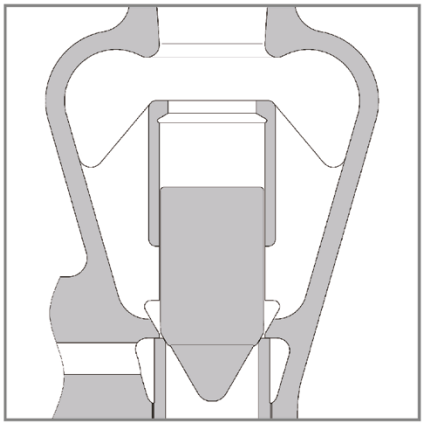
AB5900

Engineering GREAT Solutions

Variable Orifice Desuperheater

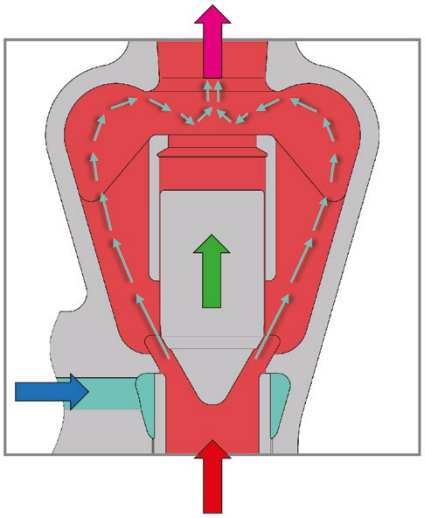
IMI Critical Engineering

Desuperheating principle



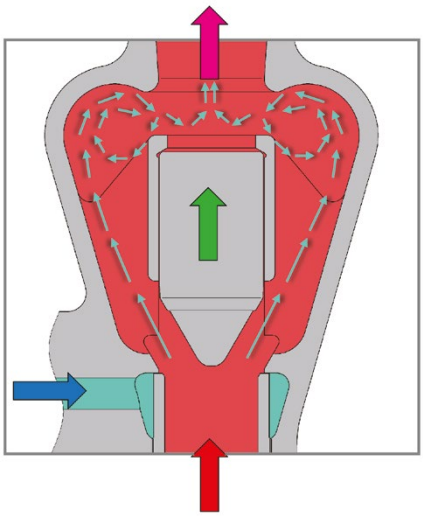
No load:

The flow-plug is seated on the seat ring when no steam-flow from the desuperheater inlet.



Low & normal load:

The flow-plug lifts higher off the seat providing normal operation of water and steam mixture.



Full load:

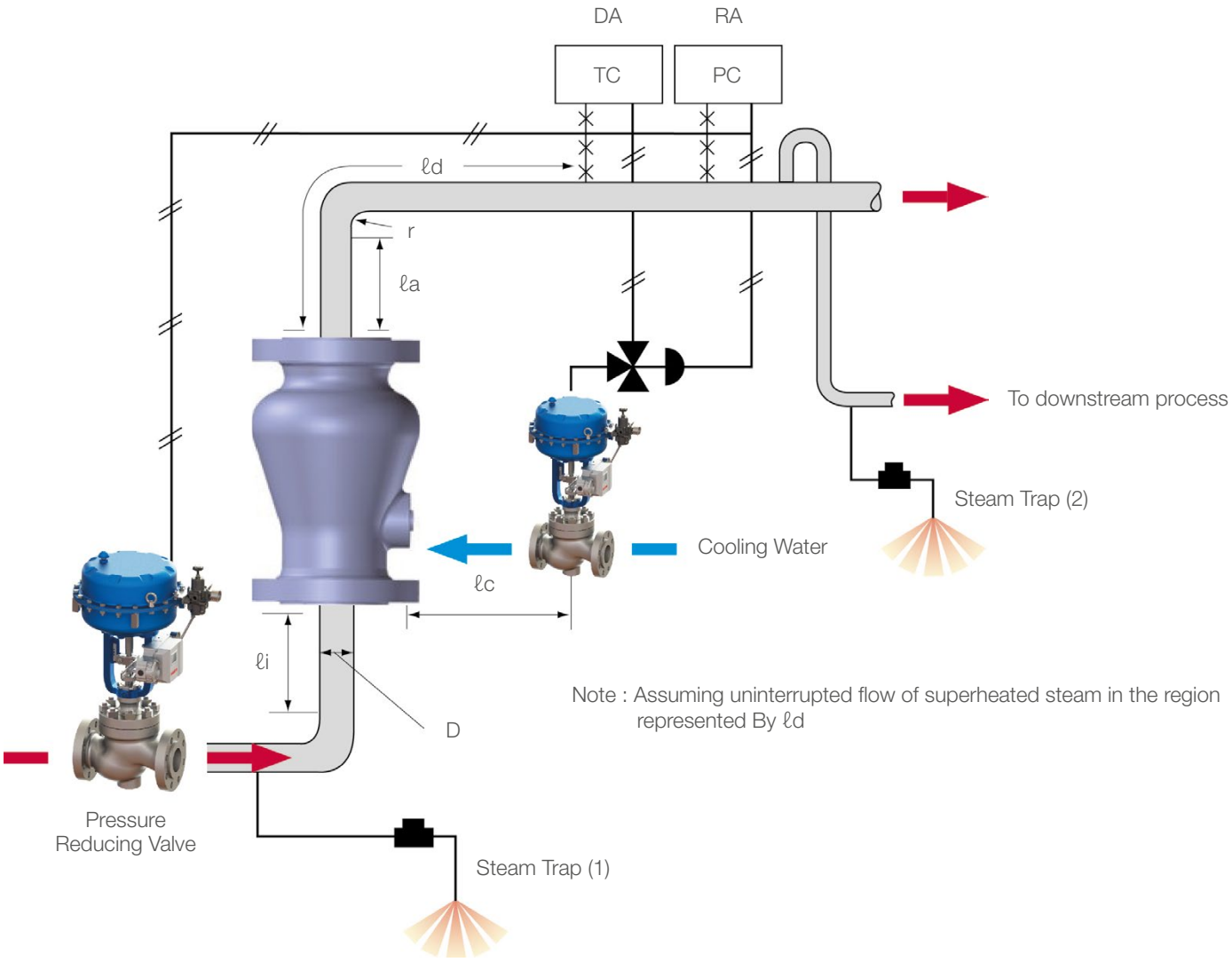
At full flow-plug opening, the water and steam are mixed under high turbulence to allow for efficient water evaporation within the desuperheater.

Product specification

Size		2”, 3”, 4”, 6”, 8”, 10”
Pressure ratings	ASME/JPI	150, 300, 600
	JIS	10K, 20K, 30K, 40K
Body material		A216-WCB, A217-WC6, A217-WC9
End connection	ASME/JPI	Flange
	JIS	Flange
Mounting		Vertical Orientation
Rangeability		120:1*
Outlet temperature		Saturated temperature + 5.6°C or higher
Control accuracy		± 2.8°C
Cooling water pressure		Line pressure + 3 bar or higher
Pressure loss		0.20-0.34 bar*
Temperature sensor distance		3.7-5.5 m*

* Depending on operating condition.

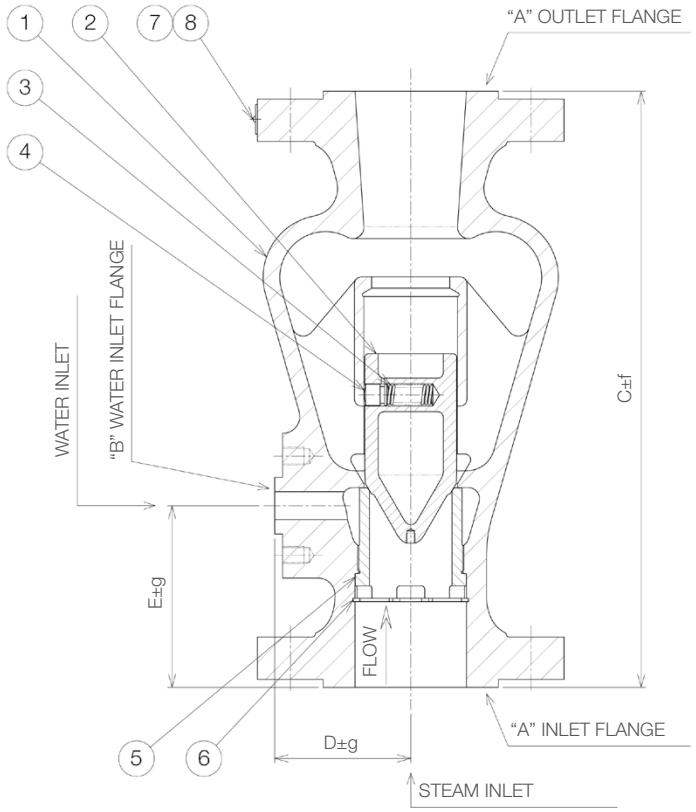
Piping layout



Dimension	Measurement	Reasons
ℓi	5 X D	To uniformly distribute passing velocity around the flow plug
ℓa	1m or longer	To hold the outlet below the drain and recycle it
ℓd	3.7-5.5m* or longer	To guarantee the time to evaporation of cooling-water
r	Long-elbow or longer	To prevent cooling-water particles from touching pipe walls
ℓc	Near position	To decrease response lag
D	Nominal diameter	Restriction imposed by desuperheater size

* Depending on operating condition.

Dimensions & weights (ASME flange)



BODY SIZE			2	3	4	6	8	10
CONNECTION	BODY	A	2	3	4	6	8	10
	WATER	B	3/4	3/4	1	1	1 1/2	1 1/2
CLASS	150	C	334	422	494	576	676	806
		D	84	101	121	164	194	238
		E	123	136	144	159	167	180
		APPROX. MASS [kg]	23	45	76	150	224	401
	300	C	340	432	510	598	702	840
		D	84	101	121	164	194	238
		E	126	141	152	170	180	197
		APPROX. MASS [kg]	26	50	86	174	251	444
	600	C	360	452	536	634	775	908
		D	84	101	121	164	209	256
		E	136	151	165	188	211	220
		APPROX. MASS [kg]	27	52	98	203	384	698
TOLERANCE		f		8			10	
		g			5			

UNIT: mm

No	PART NAME	MATERIAL	No	PART NAME	MATERIAL
1	BODY	A216 WCB, A217 WC6, A217 WC9	5	SEAT RING	A182 F11
2	FLOW PLUG	A182 F11 (2"&3") A217 WC6 (4"-10")	6	SNAP RING	SUS304
3	LOADING SPRING	ASTM A683. 660 (eq.)	7	NAME PLATE	SUS304
4	GUIDE BUTTON	SUS420J2	8	PARKER RIVET	SUS304