

DM
VARISPRING[®]

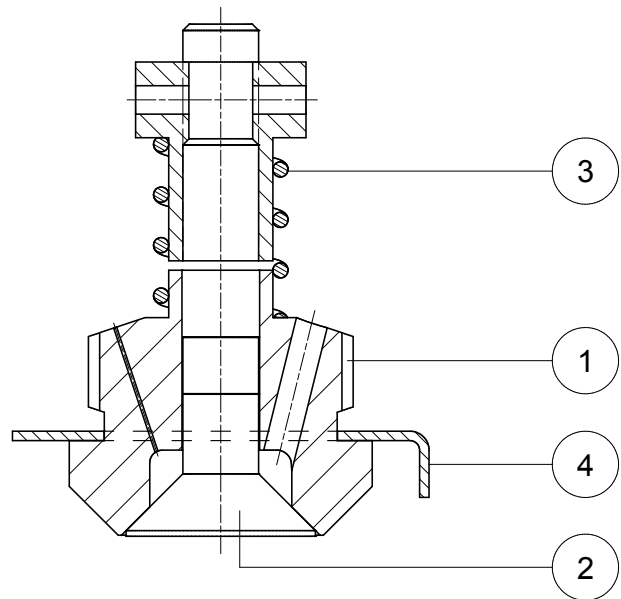
DESUPERHEATER
VARIABLE AREA
SPRING ASSISTED



VALTEK[™]
SULAMERICANA

Introduction

The VariSpring® desuperheater, with spring-assisted variable area nozzles, from ValtekSul, minimizes the limitations of desuperheaters with constant area nozzles. In the variable area nozzles, when the cooling water enters the spray head, there is a differential pressure between the water pressure and the vapor pressure. When this Δp exceeds a predetermined value, the differential force causes a compression in the nozzle spring allowing the proportional opening of the plug. This flow of water through the nozzle is dispersed and atomized by the conical plug surface, causing a spray of the cooling water into tiny particles, thus significantly increasing the efficiency of the evaporation process.



General Features

- Steam pipe nominal diameter:** 4 to 40 in.
- Water pipe nominal diameter:** 1 to 3 in.
- Water connection standard:** RF or RTJ
- Pressure Class:** ANSI 150-1500
- Body assembly connection:** 2, 3, 4, 6 and 8 in.
- Min. Control temperature:** 43°F (6°C) above the steam saturation temperature
- Max. Δp water/steam:** 435 psi (30 bar)
- Min. Δp water/steam:** 21.8 psi (1.5 bar)
- Max. number of nozzles:** 2

Nozzle Construction Materials

Materials Technology		
Item	Part	Material
1	Body	Stainless steel AISI 422HT
2	Plug	17-4 PH H1100
3	Spring	Inconel X750
4	Locking washer	Stainless steel AISI 316L

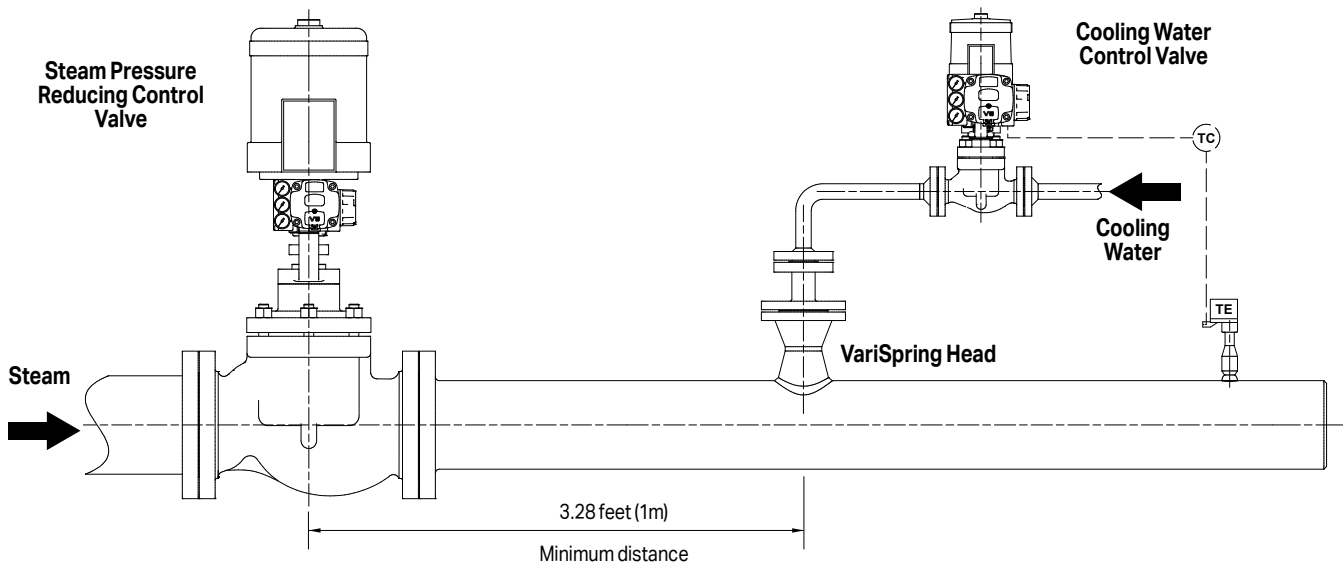
Flow coefficient - C_v

Nozzles Code	Seat Diameter		Plug Stroke		C_v	Max. Flow Rate $m^3/h^{(1)}$
	in.	mm	in.	mm		
DM4	0.55	14	0.03	0.7	1	4.3
DM8	0.83	21	0.04	1.0	2	8.6
DM12	1.10	28	0.05	1.2	3	12.9
DM25	1.54	39	0.06	1.5	6	25.9
DM40	1.89	48	0.08	2.0	10	43.0
DM65	2.16	55	0.10	2.5	16	64.5

Note: (1) Calculated for $\Delta p = 362$ psi (25 bar)

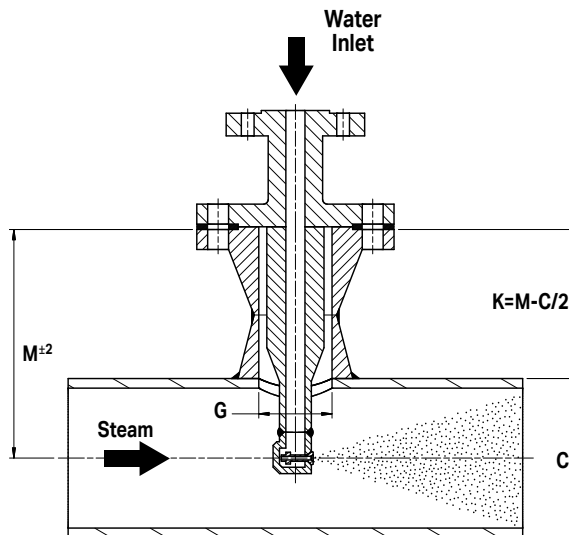
Item	DM4	DM8	DM12	DM25	DM40	DM65
Water connection (in.)	1	1	1.5	2	2.5	3
Steam fitting connection (in.)	2	3	4	4	6	8
Minimum steam pipe size (in.)	4	6	8	8	12	14

Typical Control Loop



Dimensions

Steam Collector Nominal Diameter (in.)	Dimensions M (in.)											
	Nozzles Code											
	DM4		DM8		DM12		DF25		DF40		DF65	
	Number of Nozzles											
	1	2	1	2	1	2	1	2	1	2	1	2
4												
6	10	10	12	12	14	14	14	14	18	18	18	18
8												
10												
12												
14	11											
16	12											
18	13		13									
20	14		14		15		15					
22	15		15		16		16					
24	16		16		17		17					
26	17		17		18		18		19		19	
28 to 40	18		18		19		19		20		20	



Quality Management System



ISO 9001-2015

Certificate N° 311001 QM 15
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