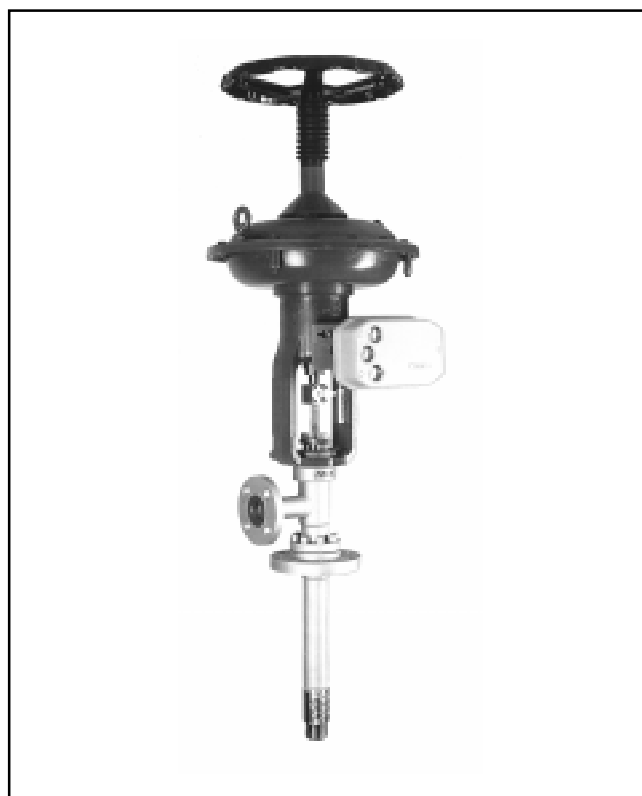


**SPRAYSAT
DESUPERHEATERS
Z91-4442 SERIES**



ZASTOSOWANIE

Z91-4442 series SPRAYSAT multiple nozzle desuperheaters are designed to provide optimum performances and high rangeability.

The independent spray nozzles, that are uncovered by the throttling piston, provide a good water atomization also at the minimum flow conditions.

In order to grant a precise control of steam temperature also on severe applications (for example when steam velocity or water-steam differential pressure are very low), different sizes of spray nozzles are available.

The built-in control system provides minimum dimension and very reliable and easy operation.

The split body design allows to change easily the orientation of water connection versus spray nozzles position and make very easy the seat replacement.

MAIN FEATURES

BODY

- sizes: water: 1" to 3"
- steam: 3", 4" or 6" depending on the selected Cv
- connections: ANSI, UNI and DIN flanged;
ANSI B16.25 butt welding end on request.
- ratings: water side: ANSI 150, 1500 (PN 16, 320);
steam side: ANSI 150, 900 (PN 16, 150);
higher ratings on request for special design
- construction: fabricated forged steel
- materials: carbon steel, CrMo steels.

PLUG

The flow control is performed by piston (11) sliding in the spray nozzles head.

The sealing is provided by plug (5) and seat (7).

- size: according to the steam onnection flange size and to the spray nozzles arrangement (see Cv table for minimum and maximum values)
- rangeability: (inherent) according to the maximum selected Cv, better than 40:1 for any spray nozzles arrangement
- guiding: the piston is guided by the spray nozzle head
- seat: clamped between upper and lower body for an easy replacement
- shutoff class: better than VIEC 534-4.

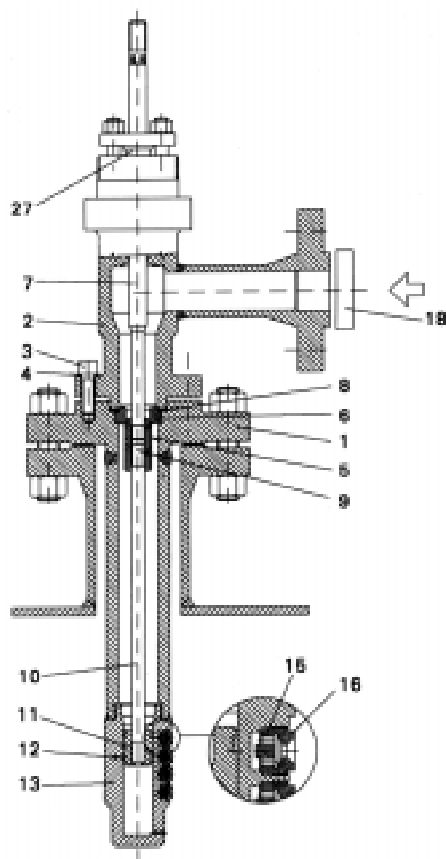
COOLING WATER FILTER

To avoid spray nozzles obstruction desuperheaters with lower dimension spray are normally supplied with a filter mounted on water connection.

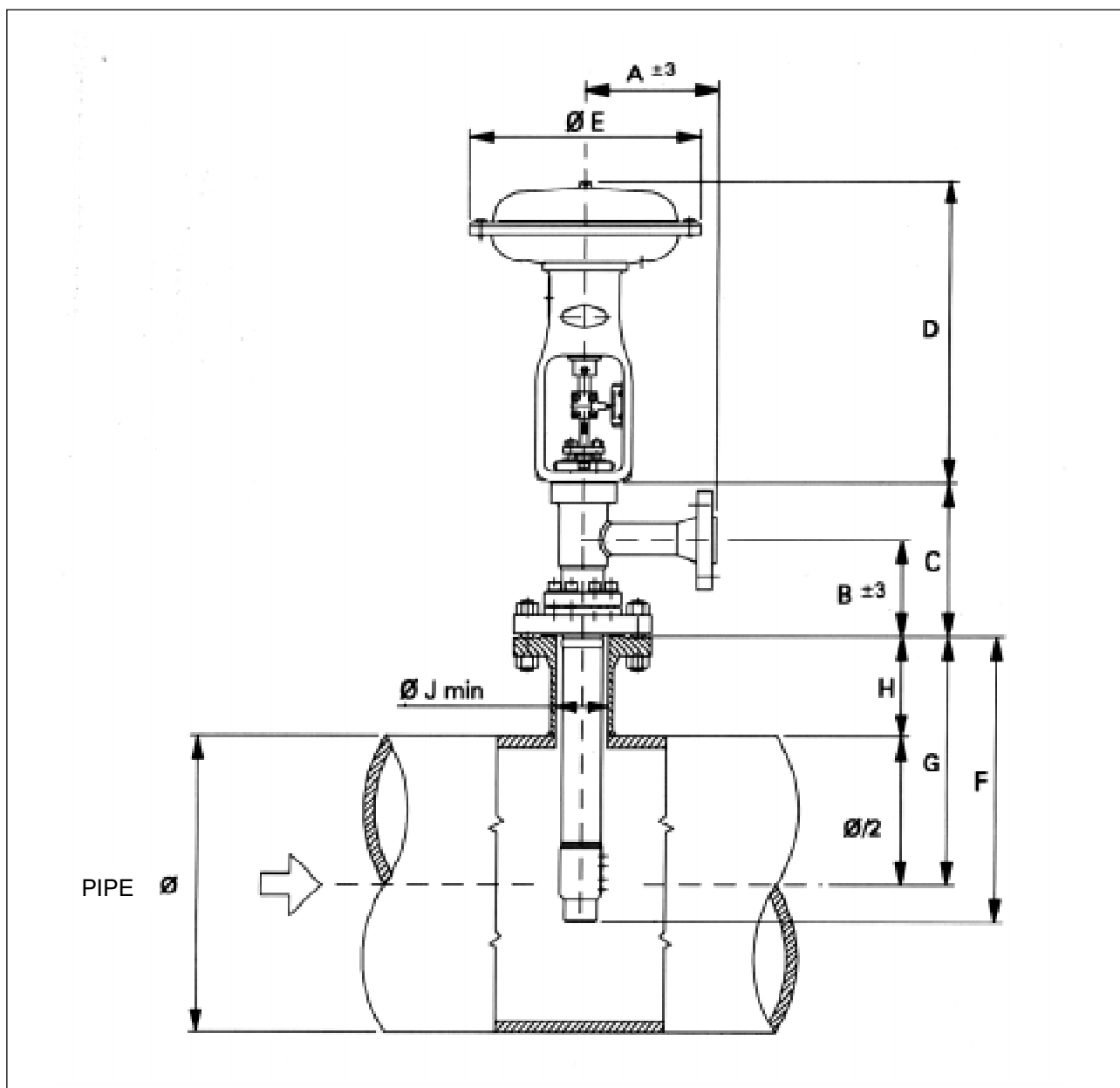
Cv i Δp table

water		para		Stroke mm	Cv max (2)	Number of nozzles	Minimum rangeability	Max Δ p shutoff (bar)	Spraying Δ p min (bar)
DN (1)		DN							
mm	in.	mm	in.						
25 - 40	1 - 1.1/2	80	3	60	0,2 - 3	10	40	150	2
				100	0,3 - 4,5	16	50	150	3
40 - 50	1.1/2 - 2	100	4	76	1,6 - 6,5	10	40	150	2
				100	2 - 8	13	50	100	3
50 - 80	2 - 3	150	6	100	4 - 13	15	50	150	3

- (1) Higher diameters shall be selected to limit the maximum water speed (max. 6 , 7 m/s).
- (2) Any Cv value included in the listed ranges can be obtained by changing the spray nozzles composition.
- (3) Δp values with diaphragm actuators PARCOL 1-X-210 or 1-X-250 series, air supply pressure = 50 psi.
- (4) Maximum water steam pressure drop in open position is 60 bar. Up to 80 bar with specialty trim design.



POS.	PART NAME	MATERIAL
1	LOWER BODY	Cr-Mo STEEL
2	UPPER BODY	CARBON STEEL
3	SCREW	AISI 304
4	ELASTIC WASHER	CARBON STEEL
5	PLUG	HARDENED STAINLESS STEEL
6	SEAT	HARDENED ST. STEEL + STELLITE
7	UPPER STEM	ASTM A 276 XM19
8	GASKET	AISI 321 + GRAPHITE
9	ELASTIC PIN	AISI 304
10	LOWER STEM	ASTM A 276 XM19
11	PISTON	HARDENED ST. STEEL NITRIDED
12	PISTON RING	ASTM A 276 XM19
13	SPRAY NOZZLE HEAD	HARDENED ST. STEEL NITRIDED
15	VORTEX GENERATOR	HARDENED STAINLESS. STEEL
16	SPRAY NOZZLE	X19 CrMoVNbN 11-1
18	WATER FILTER (in any)	AISI 304
27	STEM PACKING	GRAPHITE



$$H = G - \frac{\text{PIPE } \varnothing}{2} \quad (1)$$

water		steam		Actuator	Stroke [mm]	Ø LINE ⁽¹⁾ inches	A	B	C	D	E	F	G	J
DN (1)		DN												
mm	in.	mm	in.											
25 - 40	1 - 1.1/2	80	3	1-X210 D450	60	8 - 16	180	150	240	585	485	395	355	70
				1-X250 D46	100	10 - 18	180	150	240	800	465	430	380	70
40 - 50	1.1/2 - 2	100	4	1-X210 D600	76	12 - 24	220	180	280	755	630	525	485	95
				1-X250 D46	100	14 - 26	220	180	280	800	465	560	510	95
50 - 80	2 - 3	150	6	1-X210 D600L	100	16 - 28	260	200	340	940	630	600	550	140

(1) For pipe diameters higher than the maximum listed the value of H shall be calculated by using the maximum pipe diameter listed on the table



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