

Injection head (drive-steam type)





Injection head (drive-steam type) DN 20 and 25 PN 25 to 100

Description

VHP is a device designed to regulate the temperature of the steam. VHP is equipped with Laval nozzle which sprays the injection water with the aid of kinetic energy of drive steam expanding in the nozzle. The used design enables creating tiny spray drops even with the minimum flow rate of cooling water which mostly depends on a rangeability of control valve piped before the injection head. VHP is supplied with flanged possibly welded connection with connection flange of DN 80 to the steam pipeline. The other dimensions (B, C, DN and PN of Flange 2 and 3) are subject to customer's requirements and must be clarified in the purchase contract.

Application

VHP is designed for precise and economic injection of cooling water into steam. VHP is especially designed for industrial applications such as production of low-pressure steam or steam production in technology.

Process media

VHP is designed to inject cooling water without mechanical impurities. Application of VHP for other process media must be considered with regard to the used material that is in contact with medium and it is recommended to consult it with the producer.

Installation

VH must be installed into pipeline always the way so that the flow of cooled medium will coincide with the arrows indicated on the flange No. 1. As far as the dismantling is considered, it is recommended to leave free space of min. height that is equal to the distance between flange lower edge and end point of body bent (length "L"). VHP can be piped in horizontal, vertical or inclined pipeline in any position.

Technical data

Series	VHP		
Execution	Injection head with Laval nozzle		
Nominal diameter	Flange 1 ... 80; flange 2 and 3 ... 20 and 25		
Nominal pressure	25 to 100		
Operating temp. range	-20 to 400°C		-20 to 550°C
Flange material DN 20, 25 and 80	Cast steel 1.0425	Alloy steel 1.7335	
Body material	Cast steel 1.0425	Alloy steel 1.7335	
Pipe material	Cast steel 1.0425	Alloy steel 1.7335	
Nozzle material	Alloy steel 1.7733		
Connecting dimensions (flanges / weld ends)	Acc. to ČSN EN 1092-1 (2/2003) / ČSN EN 12627 (8/2000) *)		

*) Dimensions and type of connection (flange / weld) acc. to customers requirements. It shall be specified in the order.

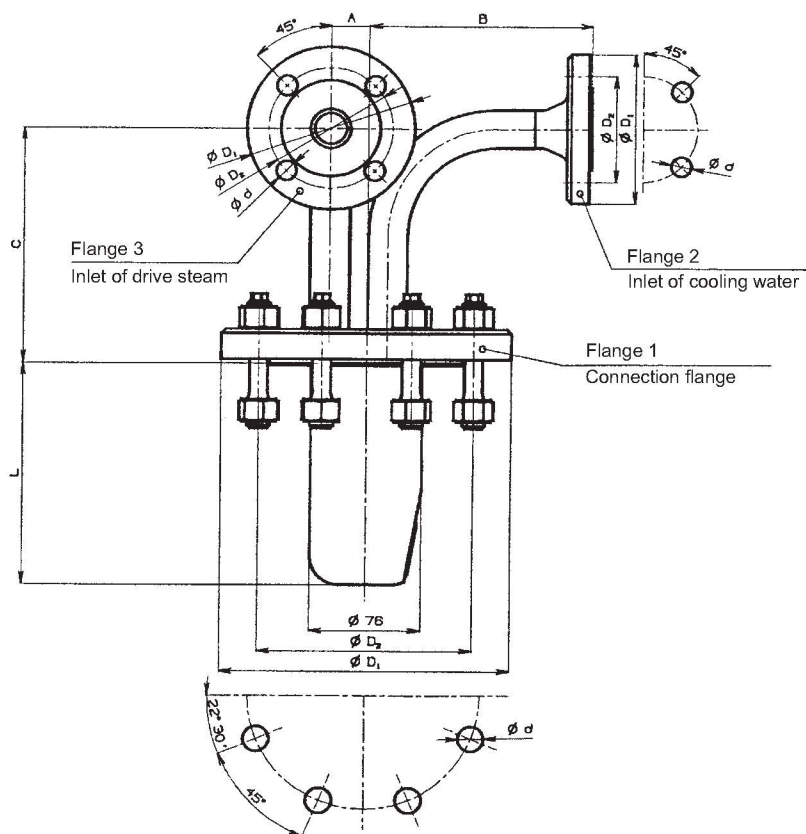
Max. permissible operating pressures [Mpa]

Material	PN	Temperature [°C]								Testing pressure at 20°C
		200	250	300	350	400	450	500	550	
Cast steel 1.0425	25	1,78	1,62	1,47	1,37	1,32	---	---	---	3,80
	40	2,84	2,60	2,35	2,19	2,11	---	---	---	6,00
	63	4,48	4,09	3,71	3,45	3,33	---	---	---	9,50
	100	7,11	6,50	5,89	5,48	5,28	---	---	---	15,0
Alloy steel 1.7335	25	---	---	2,08	1,93	1,80	1,67	1,39	0,55	5,30
	40	---	---	3,33	3,09	2,89	2,67	2,23	0,88	8,40
	63	---	---	5,24	4,86	4,55	4,20	3,51	1,39	13,0
	100	---	---	8,32	7,71	7,22	6,67	5,57	2,21	21,0

Connection dimensions

Flange										A	B _{min}	C _{min}	L
1					2 and 3								
PN	DN	D ₁	D ₂	d	PN	DN	D ₁	D ₂	d	mm	mm	mm	mm
		mm	mm	mm			mm	mm	mm				
100	80	230	180	26	25	20	105	75	14	24	150 *)	150 *)	156
						25	115	85					
					40	20	105	75	14				
						25	115	85					
					63	20	130	90	18				
						25	140	100					
100	20	130	90	18									
	25	140	100										

*1) Dimensions and type of connection (flange / weld) acc. to customers requirements. It shall be specified in the order.



Complete specification No. for ordering VHP

		XXX	XX	XX /	XX /	XX -	XXX	X
1. Series	Injection head	VHP						
2. Nozzle diameter	10		10					
3. Nominal diameter	Flange 1 DN 80 (connection flange - steam pipeline)			80				
	Flange 3 DN 20 (inlet of drive steam)				20			
	Flange 3 DN 25 (inlet of drive steam)				25			
	Flange 2 DN 20 (inlet of cooling water)					20		
	Flange 2 DN 25 (inlet of cooling water)					25		
5. Nominal pressure	PN 25						025	
	PN 40						040	
	PN 63						063	
	PN 100						100	
5. Body material	Cast steel 1.0425 (-20 to 400°C)							1
	Alloy steel 1.7335 (-20 to 550°C)							2

Ordering example : Injection head, flange 1 DN 80, flange 2 DN 25, flange 3 DN 20, PN 40, body material: cast steel 1.0425 is specified as follows : **VHP10 80/25/20-040 1**