

 LDM, spol. s r.o. Czech Republic	INSTRUCTION FOR INSTALLATION AND	VH
	INJECTION HEAD DN 25 - 50 PN 16 - 250	PM - 048/17/11/GB

The instructions for installation and service of injection head are binding for users to ensure proper function of injection head. The user must keep the rules said here while servicing, installation and using.

1. TECHNICAL DESCRIPTION AND VALVE FUNCTION:

1.1 Description

The injection head (further in text only VH) is a device designed to control the temperature of water steam. VH is equipped with a mechanical spraying nozzle with changeable flow. The nozzle is designed to create tiny drops of cooling water independently on water quantity. Water is sprayed proportionally so it could quickly evaporate. Injected water quantity is controlled by a separate control valve.

VH is supplied with connection to steam pipe using a flange DN 80, PN 100 to 400. The injected water connection is flanged.

Permitted operating pressure drop for VH is max. 1,5MPa.

1.2 Application

Injection head is designed to accurately control cooling water injection to the flow of water steam. It is especially designed for industrial applications, such as low-pressure steam production in heating plants, steam circuits of power plants or technologic processes.

1.3 Technical data

Series		VH	
Type of injection head		Injection head with 1, 2 or 3 nozzles	
Flange 1 (water connection)	Nominal diameter DN	25 to 50	
	Nominal pressure PN	16 to 250	
Flange 2 (connection to the steam pipe)	Nominal diameter DN	DN 80	
	Nominal pressure PN	100 to 400	
Body and flange material for connection to the steam pipe		1.0426 (P 280 GH)	20 to 350°C
		1.7335 (13CrMo4-5)	20 to 550°C
		1.7383 (11CrMo9-10)	20 to 600°C
		1.4922 (X20CrMoV11-1)	20 to 600°C
Flanges		Acc. to EN 1092-1 (07/2013)	
Working overpressures		Acc. to EN 12516-1 (08/2015)	

1.4 Operating medium

Injection head is designed for injection of cooling water without mechanical impurities. Using for some other medium should be consulted with producer.

For reliable function VH, the producer recommends to install the filter of mechanical impurities in front of the control valve injected water or properly ensured that the injected medium does not contain abrasive impurities or other mechanical impurities.

2. DIRECTIONS FOR INSTALLATION AND OPERATING OF INJECTION HEAD

2.1 Preparation before installation

The injection head is delivered from the company assembled, adjusted and tested. Before installation into pipeline you must check the data on the name-plate with data mentioned in accompanying documentation. Then check if the injection head is not damaged and dirty. Pay attention especially to inner space and packing surface of injection head.

2.2 Installation the injection head into pipeline

Injection head must be installed into pipeline so that flow of medium is according to arrows on the flange. The injection head can be installed in any position.

For proper function of injection head, below-mentioned instructions must be obeyed:

- no excessive forces can be transferred from pipeline to injection head.
 - the pipeline must be cleaned from dirt before injection head installation .
 - it is recommended to keep clean space around the injection head for easy manipulation and service.
- Space around the injection head = minimum length L (acc. to dimensional sketch - length " L ").

- installation itself must be done precisely. Pipeline flange must be coaxial with injection head flange.

2.2.1 Checking after installation

After installation, piping system should be pressured and checked if there is no leak.

2.3 Operating and service

2.3.1 Plug and seat of injection nozzle

When the injection head is used for medium with high dirt-content is probability that packing surface of plug will be wear out and internal leakage of injection head will be too high. In this case the professional service must be called.

2.4 Elimination of defects and malfunction

2.4.1 High leakage of injection nozzle

High leakage of nozzle can be caused:

1. by seizing of plug.
2. by insufficient thrust of spring.
3. by damaged seating faces of plug and seat. In this case the professional service must be called.

2.4.2 Enormous increasing of noise

Enormous increasing of noise can be caused by exceeding of operating parameters mentioned on the name-plate or by presence of undesirable particle in injection system of injection head. It is necessary to check the state and consult it with producer.

2.4.3 Injection head can't attain value temperature of steam

There is need to test the function and tightness of control valve for water injection. If valve is all right then take nozzle out and test function with the assistance of water pressure (overpressure 0.2MPa or 0.4MPa).

2.5 Spare parts

Spare parts are not part of injection head delivery. They must be ordered separately. When the spare parts are ordered, following data must be written: type of a injection head, registration number of injection head and name of a spare part.

2.6 Guarantee conditions

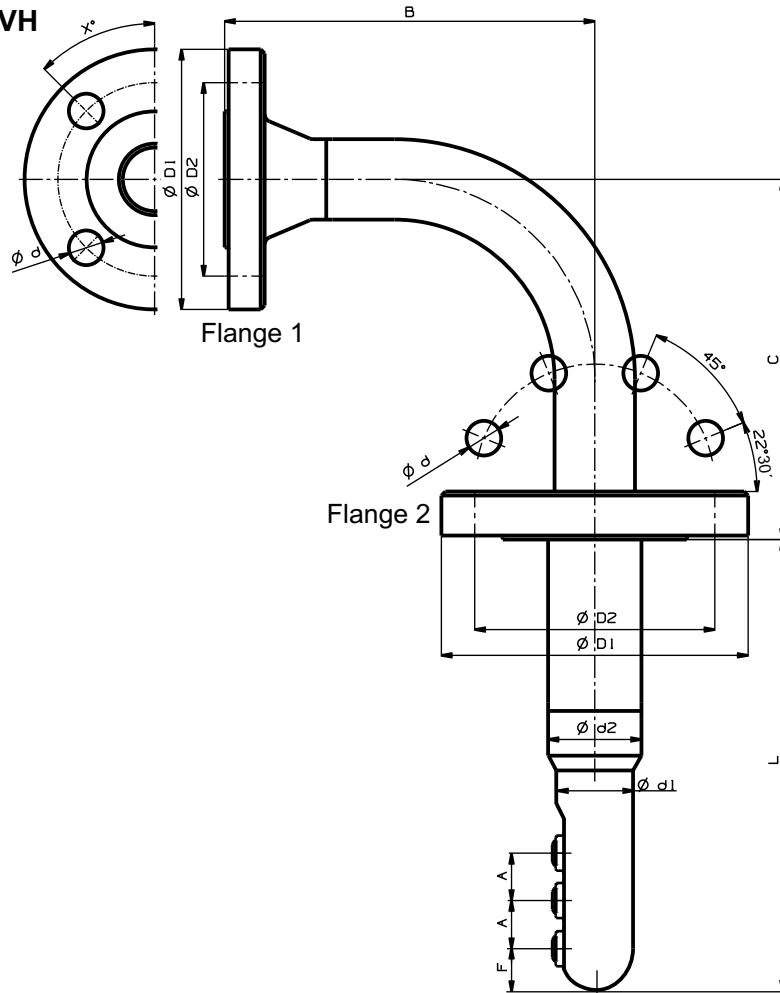
The producer does not guarantee the product operation and safety if the product was used in other way than stipulated in this instructions for installation and service and catalogue data sheet. Any use of the product under different conditions must be consulted with the producer.

The producer does not take over the guarantee if the user makes any change or modification to it without prior written consent from the producer.

2.7 Loading with wastes

Packaging material and the injection head shall be disposed of in the common way such as by handing over to a specialized enterprise for disposal of (body and metal parts - metal waste, other non-metal parts - communal waste).

Dimensional sketch VH



Connecting dimensions VH

Flange 1																			
DN	PN16-160		PN250		PN 16 - 40			PN 63			PN 100			PN 160			PN 250		
	n	X°	n	X°	D ₁	D ₂	d	D ₁	D ₂	d	D ₁	D ₂	d	D ₁	D ₂	d	D ₁	D ₂	d
25	4	45	4	45	115	85	14	as PN160						140	100	18	150	105	22
40	4	45	4	45	150	110	18	as PN160						170	125	22	185	135	26
50	4	45	8	22.5	165	125	18	180	135	22	195	145	26	195	145	26	200	150	26

Flange 2																
DN	PN 100, 160				PN 250				PN 320				PN 400			
	D ₁	D ₂	n	d	D ₁	D ₂	n	d	D ₁	D ₂	n	d	D ₁	D ₂	n	d
80	230	180	8	26	255	200	8	30	275	220	8	30	305	240	8	33

DN	d ₂	A	F	B						C	L _{max}
				PN 16	PN 25-40	PN 63	PN 100	PN 160	PN 250		
25	76	41	33	192	192	210	210	210	217	221	385
40				217	217	234	234	236	252	240	385
50				247	250	254	270	277	287	270	385

Ordering codes for injection head VH

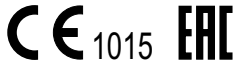
		XX	X		XX	/	XX	-	XXX	X	X	XXX
Series	Injection head	VH										
Number of nozzles	1		1									
	2		2									
	3		3									
DN flange 2 - steam line	DN 80				80							
DN flange 1 - water	DN - acc. to execution						XX					
PN of inlet medium (cooling medium)	PN - acc. to execution								XXX			
Material	1.0426 (20 to 350°C)									1		
	1.7335 (20 to 550°C)									2		
	1.7380 (20 to 600°C)									6		
	1.4922 (20 to 600°C)									7		
	Other material									9		
Opening overpressure	0,2 MPa										1	
	combin. 0,2 and 0,4 MPa										2	
	0,4 MPa										3	
Length L	Acc. to execution											XXX

Ordering example: Injection head with 1 nozzle, flange 2 DN 80, flange 1 DN 50, PN 160, material 1.0425 opening overpressure 0,4MPa, length L= 300mm is marked as:
VH1 80/50-160 1 3 300

PN and DN of steam piping must be stated in order and dimensions different from the catalogue are possible after consulting with producer.

1.4 Maximum permissible working overpressure acc. to EN 12516-1 [MPa]

Material	PN	Temperature [°C]										
		100	150	200	250	300	350	400	450	500	550	600
Cast steel 1.0426	16	1,6	1,6	1,6	1,55	1,42	1,31	---	---	---	---	---
	25	2,5	2,5	2,5	2,42	2,22	2,04	---	---	---	---	---
	40	4,0	4,0	4,0	3,88	3,55	3,26	---	---	---	---	---
	63	6,3	6,3	6,3	6,11	5,59	5,14	---	---	---	---	---
	100	10,0	10,0	10,0	9,70	8,88	8,16	---	---	---	---	---
	160	16,0	16,0	16,0	15,5	14,2	13,0	---	---	---	---	---
	250	25,0	25,0	25,0	24,2	22,2	20,4	---	---	---	---	---
	320	32,0	32,0	32,0	31,0	28,4	26,1	---	---	---	---	---
Alloy steel 1.7335	400	40,0	40,0	40,0	38,8	35,5	32,6	---	---	---	---	---
	16	1,6	1,6	1,6	1,6	1,6	1,49	1,37	1,26	1,0	0,47	---
	25	2,5	2,5	2,5	2,5	2,5	2,33	2,13	1,97	1,56	0,73	---
	40	4,0	4,0	4,0	4,0	4,0	3,73	3,41	3,15	2,5	1,17	---
	63	6,3	6,3	6,3	6,3	6,3	5,87	5,38	4,97	3,93	1,85	---
	100	10,0	10,0	10,0	10,0	10,0	9,31	8,53	7,89	6,24	2,93	---
	160	16,0	16,0	16,0	16,0	16,0	14,9	13,6	12,6	9,99	4,70	---
	250	25,0	25,0	25,0	25,0	25,0	23,2	21,3	19,7	15,6	7,34	---
Alloy steel 1.7383	320	32,0	32,0	32,0	32,0	32,0	29,8	27,3	25,2	19,9	9,39	---
	400	40,0	40,0	40,0	40,0	40,0	37,2	34,1	31,5	24,9	11,7	---
	16	1,6	1,6	1,6	1,6	1,6	1,5	1,37	1,26	1,05	0,56	0,24
	25	2,5	2,5	2,5	2,5	2,5	2,35	2,13	1,97	1,65	0,88	0,37
	40	4,0	4,0	4,0	4,0	4,0	3,75	3,41	3,15	2,63	1,41	0,6
	63	6,3	6,3	6,3	6,3	6,3	5,91	5,38	4,97	4,15	2,22	0,94
	100	10,0	10,0	10,0	10,0	10,0	9,38	8,53	7,89	6,58	3,52	1,49
	160	16,0	16,0	16,0	16,0	16,0	15,0	13,6	12,6	10,5	5,63	2,39
Stainless steel 1.4922	250	25,0	25,0	25,0	25,0	25,0	23,4	21,3	19,7	16,4	8,80	3,73
	320	32,0	32,0	32,0	32,0	32,0	30,0	27,3	25,2	21,0	11,2	4,78
	400	40,0	40,0	40,0	40,0	40,0	37,5	34,1	31,5	26,3	14,0	5,98
	16	1,6	1,6	1,6	1,6	1,6	1,5	1,37	1,26	1,05	0,9	0,42
	25	2,5	2,5	2,5	2,5	2,5	2,35	2,13	1,97	1,65	1,46	0,65
	40	4,0	4,0	4,0	4,0	4,0	3,75	3,41	3,15	2,63	2,33	1,05
	63	6,3	6,3	6,3	6,3	6,3	5,91	5,38	4,97	4,15	3,67	1,65
	100	10,0	10,0	10,0	10,0	10,0	9,38	8,53	7,89	6,58	5,82	2,61
160	16,0	16,0	16,0	16,0	16,0	15,0	13,6	12,6	10,5	9,32	4,18	
250	25,0	25,0	25,0	25,0	25,0	23,4	21,3	19,7	16,4	14,5	6,54	
320	32,0	32,0	32,0	32,0	32,0	30,0	27,3	25,2	21,0	18,6	8,37	
400	40,0	40,0	40,0	40,0	40,0	37,5	34,1	31,5	26,3	23,3	10,4	



ADDRESS OF FACTORY

LDM, spol. s r.o.
Litomyšlská 1378
560 02 Česká Třebová
Czech Republic

tel.: +420 465 502 511
fax: +420 465 533 101
E-mail: sale@ldm.cz
<http://www.ldmvalves.com>

REGIONAL OFFICES

LDM, spol. s r.o.
Office in Prague
Podolská 50
147 01 Praha 4
Czech Republic

tel.: +420 241087360
fax: +420 241087192
E-mail: tomas.suchanek@ldm.cz

LDM, spol. s r.o.
Office in Ústí nad Labem
Ladova 2548/38
400 11 Ústí nad Labem - Severní Terasa
Czech Republic

tel.: +420 602708257
E-mail: tomas.kriz@ldm.cz

SERVICE ORGANIZATION

LDM servis, spol. s r.o.
Litomyšlská 1378
560 02 Česká Třebová
Czech Republic

tel: +420 465502411-13
fax: +420 465531010
E-mail: servis@ldm.cz

LDM SUBSIDIARIES ABROAD

OOO "LDM Promarmatura"
Jubilejnyi prospekt, dom.6a, of. 601
141407 Khimki
Moscow Region
Russia

tel.: +7 495 7772238
fax: +7 495 7772238
mobile: +7 9032254333
e-mail: inforus@ldmvalves.com

TOO "LDM"
Shakirova 33/1, kab. 103
100012 Karaganda
Kazachstan

tel.: +7 7212566936
fax: +7 7212566936
mobile: +7 7017383679
e-mail: sale@ldm.kz

LDM, Bratislava s.r.o.
Mierová 151
821 05 Bratislava
Slovakia

tel: +421 243415027-8
fax: +421 243415029
E-mail: ldm@ldm.sk
<http://www.ldm.sk>

LDM Armaturen GmbH
Wupperweg 21
D-51789 Lindlar
Deutschland

tel: +49 2266 440333
fax: +49 2266 440372
mobile: +49 1772960469
E-mail: ldmarmaturen@ldmvalves.com

LDM, Polska Sp. z o.o.
ul. Bednorza 1
40-384 Katowice
Polska

tel: +48 327305633
fax: +48 327305233
mobile: +48 601354999
E-mail: ldmpolska@ldm.cz

LDM Bulgaria Ltd.
z.k.Mladost 1
bl.42, floor 12, app.57
1784 Sofia
Bulgaria

tel: +359 2 9746311
fax: +359 2 8771344
mobile: +359 888925766
E-mail: ldm.bg@ldmvalves.com

www.ldmvalves.com

LDM, spol. s r.o. reserves the right to modify or improve the designs or specifications of such products at any time without notice
Guarantee and after guarantee service provided.