



02 - 03.7
03.21.GB

DESUPERHEATER **CHPF**





CHPF

Desuperheater

DN 50 to 200
PN 16 to 400

Description

The CHPF desuperheater (further CHPF only) is device designed for the process steam temperature control. CHPF is equipped with one or more nozzles (according the desuperheater size and cooling capacity) with fixed geometry, which works on mechanical principle of water atomizing. There are used two types of nozzles. The H type serves for injection of higher water quantities; a full cone of relatively big droplets of cooling water is created. The M type utilizes pressure drop across the nozzle for very fine spraying of the injected water.

Quantity of cooling water is controlled by separated control valve. Regarding to used technology of water atomizing, the CHPF is not recommended for control ranges higher than 1 : 4.

The CHPF body is designed for installation between the flanges of steam pipeline; the cooling water pipe is connected through flange or butt-welded.

Application

The CHPF serves for precise and economical steam temperature control by a direct injection of cooling water into flow of steam. The CHPF is primary designed for industrial application, as low-pressure steam in district heating, steam circuits in power plants or steam for technological processes.

Process media

The water without mechanical impurities is intended as process medium, other medias - please advice with CHPF manufacturer. Regarding the impurities, the filter prior the cooling water control valve or other provision for impurities removal is strongly recommended.

For the correct function of the VH, the manufacturer recommends inserting a filter of mechanical impurities into the pipeline in front of the control valve of the injected water, or in another suitable way to ensure that the injected medium does not contain abrasive admixtures or other mechanical impurities.

Installation

The CHPF must be installed into pipeline in the way the arrow indicated in the body coincides with steam flow direction. The free space for desuperheater dismantling must be considered.

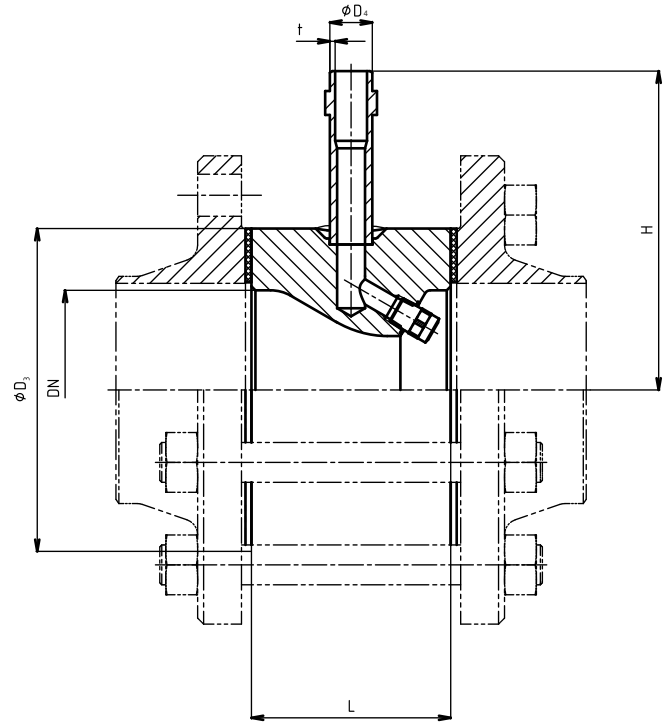
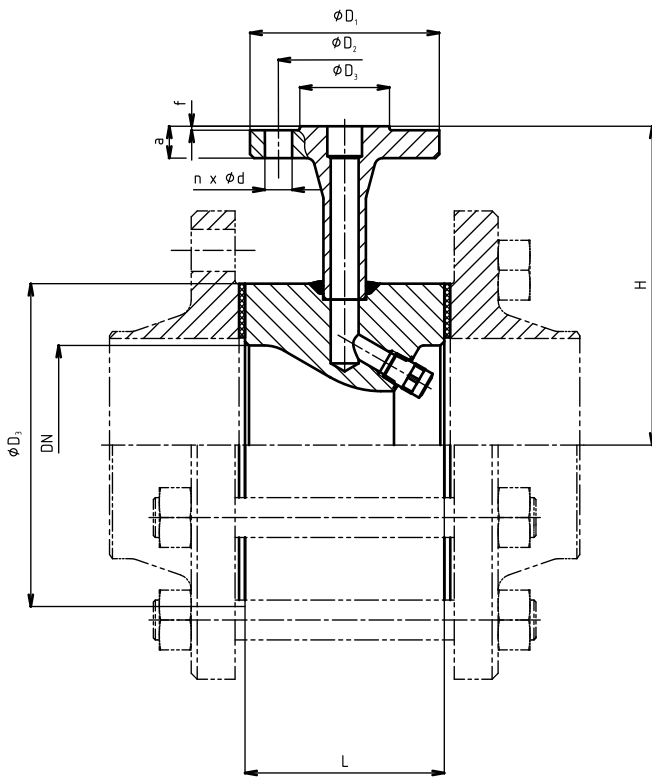
The CHPF can be installed in horizontal, vertical or inclined pipeline in any position.

Detailed instructions for installation are given in document „Instruction for Installation and Maintenance” and in „Heat balance calculation” which is a part of the offer.

Technical data									
Series	CHPF								
Version	installation between the flanges								
Nominal size DN (steam pipeline)	50 to 200								
Nominal size DN (cooling water)	15 to 25								
Nominal pressure PN	16 to 400								
Body material (including flange / weld end)	<table border="0"> <tr> <td>Cast steel 1.0425 (P265GH) / 1.0426 (P280GH)</td> <td>20 to 480 °C</td> </tr> <tr> <td>Alloy steel 1.7335 (13CrMo4-5)</td> <td>20 to 550 °C</td> </tr> <tr> <td>Alloy steel 1.7380 (10CrMo9-10) / 1.7383 (11CrMo9-10)</td> <td>20 to 600 °C</td> </tr> <tr> <td>Stainless steel 1.4922 (X20CrMoV11-1)</td> <td>20 to 600 °C</td> </tr> </table>	Cast steel 1.0425 (P265GH) / 1.0426 (P280GH)	20 to 480 °C	Alloy steel 1.7335 (13CrMo4-5)	20 to 550 °C	Alloy steel 1.7380 (10CrMo9-10) / 1.7383 (11CrMo9-10)	20 to 600 °C	Stainless steel 1.4922 (X20CrMoV11-1)	20 to 600 °C
Cast steel 1.0425 (P265GH) / 1.0426 (P280GH)	20 to 480 °C								
Alloy steel 1.7335 (13CrMo4-5)	20 to 550 °C								
Alloy steel 1.7380 (10CrMo9-10) / 1.7383 (11CrMo9-10)	20 to 600 °C								
Stainless steel 1.4922 (X20CrMoV11-1)	20 to 600 °C								
Flanges	Acc. to EN 1092-1 (07/2013)								
Weld ends	Acc. to EN 12627 (08/2000)								
Max. permissible working pressures	Acc. to EN 12516-1 (08/2015)								

Version with flange

Version with weld end



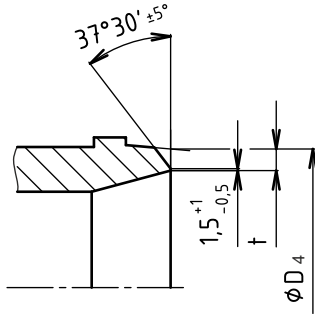
Note: The bolts, nuts and flange sealings for connection into steam pipeline are scope of delivery. The flanges can be delivered as option

CHPF dimensions				
DN	L	H		D ₃
		PN16-200	PN250-400	
[mm]				
50	100	130	102	102
65		140	122	122
80		148	138	138
100		160	162	162
125		173	188	188
150		188	218	218
200		222	285	285

DN	PN 16-40					PN 63-100					PN 160					PN 250						
	D1	D2	a	d	n	D1	D2	a	d	n	D1	D2	a	d	n	D1	D2	a	d	n		
[mm]																						
15	95	65	16	14	4	105	75	20	14	4	105	75	20	14	4	130	90	26	18	4		
20	105	75	18			130	90	22	18		---	---	---	---	---	---	---	---	---	---	---	---
25	115	85				140	100	24	18		140	100	24	18	4	150	105	28	22	4		

DN	PN 320					PN 400					PN 16-400	
	D1	D2	a	d	n	D1	D2	a	d	n	D3	f
[mm]												
15	130	90	26	18	4	145	100	30	22	4	45	2
20	---					---					58	
25	160	115	34	22	4	180	130	38	26	4	68	

Weld-end shape according to EN 12627



The shape and dimension of weld end can be modified according to customers demand

Nozzle data			
Тип	Размер	Квс	Δр _{макс} [бар]
M	1	0,002	70
	2	0,004	
	3	0,007	
	4	0,009	
	6	0,014	
	8	0,018	
	10	0,023	
	12	0,027	
	14	0,032	
	18	0,041	
H	20	0,045	10
	22	0,050	
	26	0,059	
	3	0,076	
	5	0,125	
	6	0,164	
	10	0,250	
15	0,377		
22	0,563		

Cooling water weld-end dimensions													
DN	PN												
	16	25	40	63	100	160	250	320	400	16 - 160	250	320	400
	t						D ₄						
	[mm]												
15			2				2.6	3.2	5		21.3		26.9
20		2.3					---			26.9		---	
25		2.6				2.9	3.6	5	7.1		33.7		42.4

CHPF type number specification		XXXX	X	XXX	/	XXX	-	XXX	/	XXX	X	X	X	X	XX
Series	Desuperheater	CHPF													
No. of nozzles	According to water quantity		X												
DN steam	DN 50 to 200			XXX											
DN cooling water	DN 15 to 25					XXX									
PN steam	DN 16 to 400							XXX							
PN cooling water	DN 16 to 400									XXX					
Connection - steam pipeline	Flange with raised face (type B1)											1			
	Flange with recess (type F)											2			
	Flange with raised face (type B2)											3			
Connection - water pipeline	Flange with raised face (type B1)											1			
	Flange with recess (type F)											2			
	Flange with raised face (type B2)											3			
Material	Weld-end											4			
	1.0425 (P265GH) / 1.0426 (P280GH) (20 to 500 °C)												1		
	1.7335 (13CrMo4-5) (20 to 550 °C)													2	
	1.7380 (10CrMo9-10) / 1.7383 (11CrMo9-10) (20 to 600 °C)														6
	1.4922 (X20CrMoV11-1) (20 to 600 °C)														
Other material (on demand)															9
Nozzle type	Type H or M														X
Nozzle size	According to table „Nozzle data”														XX

Order example: Desuperheater CHPF with one H type nozzle, dimension of nozzle 3; connection to steam pipeline DN150, PN100; flanged connection of cooling water, flange DN25, PN16, type B1; body material - alloy steel 1.7335 is marked as follows: **CHPF1 150/025-100/160 112 H03**

Max. permissible operating pressures [MPa]													
Material	PN	Temperature [°C]											
		100	150	200	250	300	350	400	450	480	500	550	600
Cast steel 1.0425 / 1.0426	16	1.5	1.42	1.34	1.23	1.11	1.04	0.96	0.59	0.36	---	---	---
	25	2.34	2.22	2.10	1.92	1.74	1.62	1.50	0.92	0.56	---	---	---
	40	3.74	3.55	3.36	3.07	2.78	2.59	2.40	1.47	0.90	---	---	---
	63	5.90	5.59	5.29	4.84	4.38	4.08	3.78	2.32	1.41	---	---	---
	100	9.36	8.88	8.40	7.68	6.96	6.48	6.00	3.68	2.24	---	---	---
	160	14.9	14.2	13.4	12.2	11.1	10.3	9.60	5.89	3.59	---	---	---
	250	23.4	22.2	21.0	19.2	17.4	16.2	15.0	9.20	5.60	---	---	---
	320	29.9	28.4	26.8	24.5	22.2	20.7	19.2	11.7	7.17	---	---	---
	400	37.4	35.5	33.6	30.7	27.8	25.9	24.0	14.7	8.96	---	---	---
Alloy steel 1.7335	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	---
	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	---
	630	63.0	63.0	63.0	63.0	63.0	58.7	53.8	49.7		39.3	18.5	---
Alloy steel 1.7380, 1.7383	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
	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
Stainless steel 1.4922	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



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

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

tel.: +420 241 087 360
fax: +420 241 087 192
e-mail: sale@ldm.cz

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

tel.: +420 602 708 257
e-mail: tomas.kriz@ldm.cz

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

tel.: +420 465 502 411-3
fax: +420 465 531 010
e-mail: servis@ldm.cz

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

tel.: +421 2 43415027-8
fax: +421 2 43415029
e-mail: ldm@ldm.sk

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

tel.: +48 32 730 56 33
fax: +48 32 730 52 33
mobile: +48 601 354 999
e-mail: ldmpolska@ldm.cz

LDM Armaturen GmbH
Wupperweg 21
D-51789 Lindlar
Germany

tel.: +49 2266 440333
fax: +49 2266 440372
mobile: +49 177 2960469
e-mail: ldmmarmaturen@ldmvalves.com

OOO "LDM Promarmatura"
Jubilejnyj prospekt,
dom.6a, of. 601
141400 Khimki Moscow Region
Russia

tel.: +7 4957772238
fax: +7 4956662212
mobile: +7 9032254333
e-mail: inforus@ldmvalves.com

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

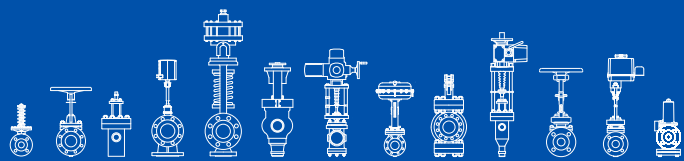
tel.: +7 7212 566 936
fax: +7 7212 566 936
mobile: +7 701 738 36 79
e-mail: sale@ldm.kz

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

tel.: +359 2 9746311
fax: +359 2 9746311
mobile: +359 888 925 766
e-mail: ldm.bg@ldmvalves.com

www.ldmvalves.com

LDM, reserves the right to modify or improve the designs or specifications of such products at any time without notice



POWER THROUGH IDEAS