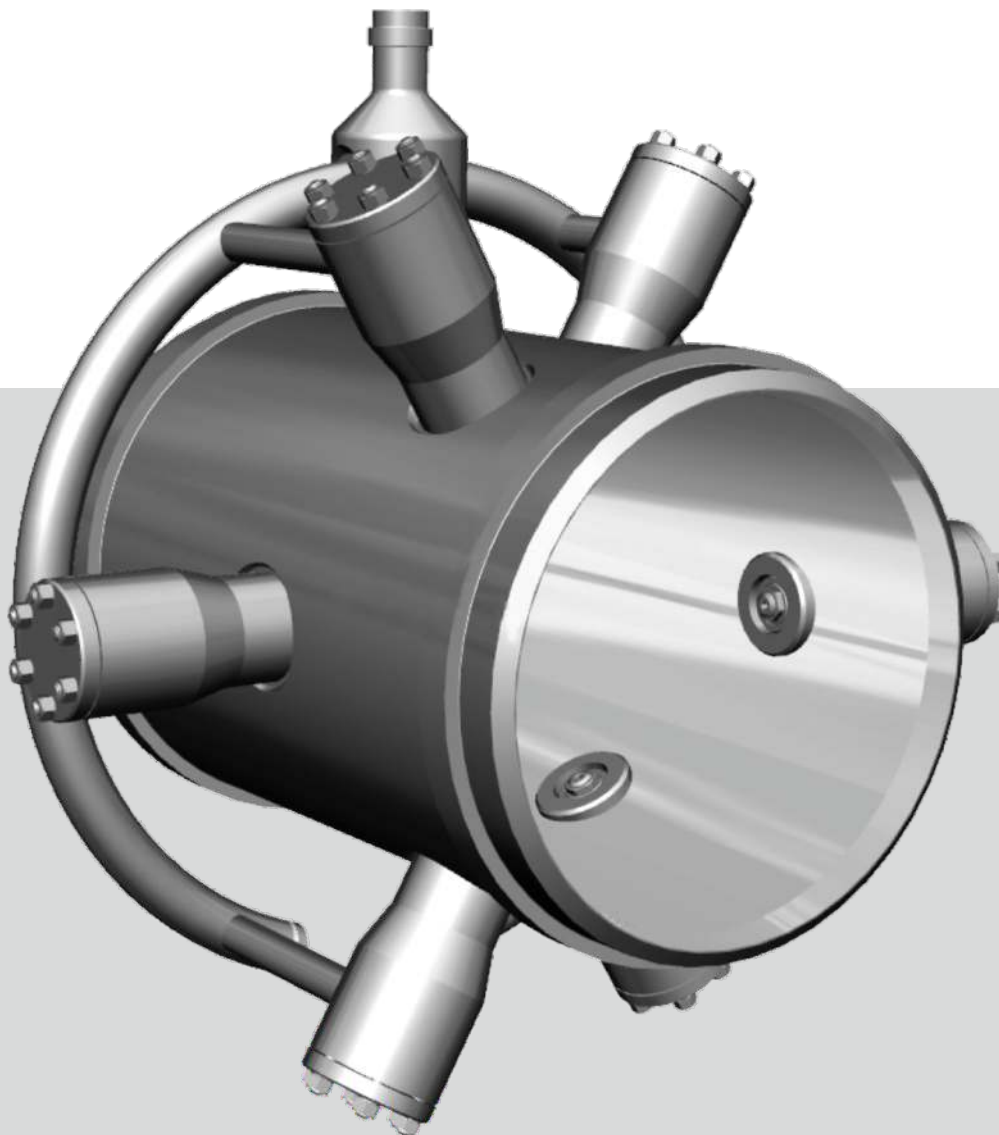
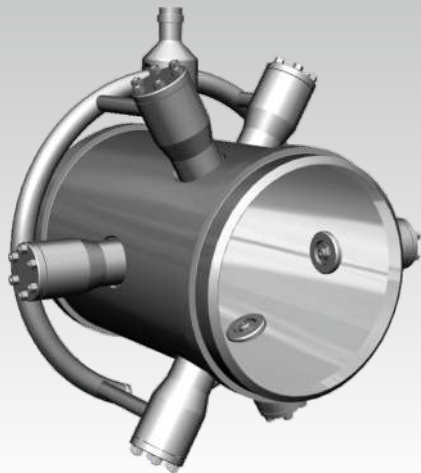




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# DESUPERHEATER **CHPR**





# CHPR

## Desuperheater

**DN 200 to 600**  
**PN 16 to 400**

### Description

The CHPR desuperheater (further CHPR only) is device designed for the process steam temperature control. CHPR is equipped with two or more mechanical nozzles with variable flow area. The number of nozzles is designed according to the required power. The amount of injection water is controlled by a separate control valve. CHPR is supplied in a welded version or as a part of reduction stations. Flanged or welded injection water connection.

### Application

The CHPR serves for precise and economical steam temperature control by a direct injection of cooling water into flow of steam. It is designed primarily for by-pass stations.

### Process media

The water without mechanical impurities is intended as process medium, other medias - please advice with CHPR 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

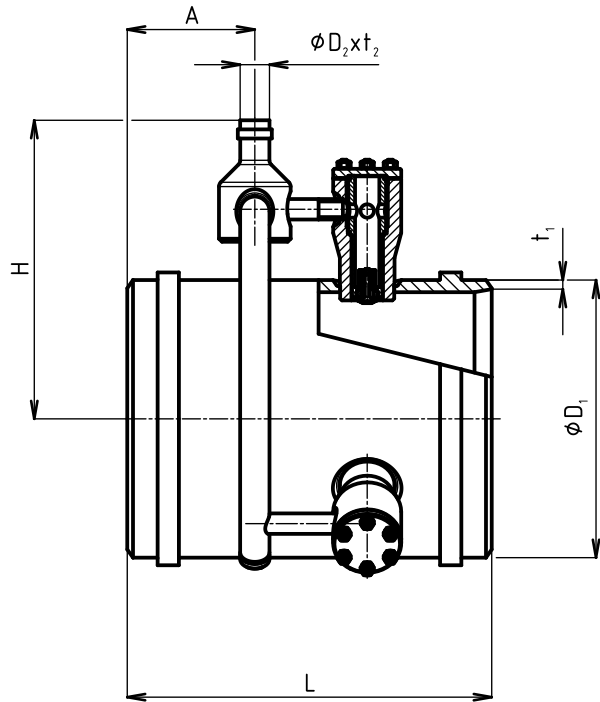
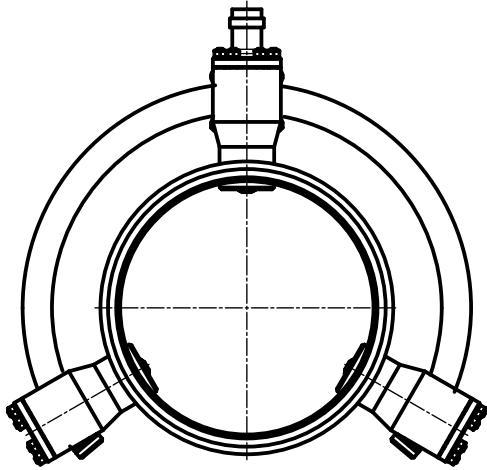
The CHPR must be installed into pipeline in the way the arrow indicated in the body coincides with steam flow direction. The free space for desuperheater dismantling must be considered.

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

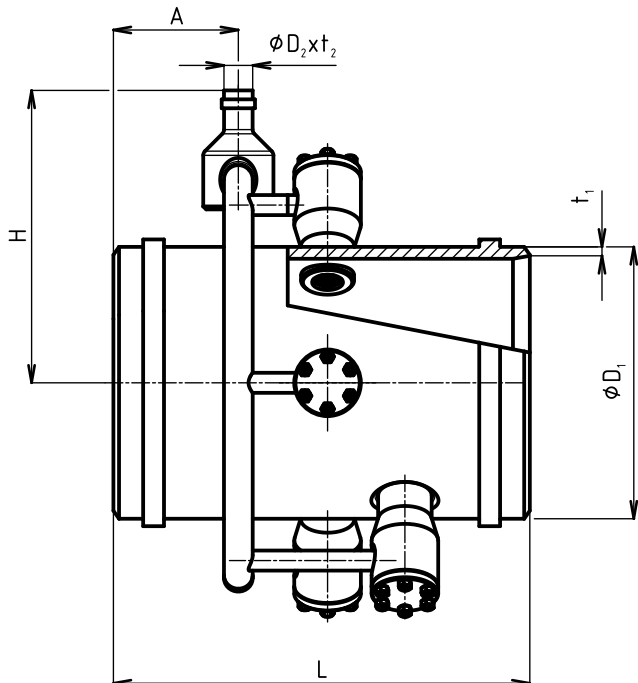
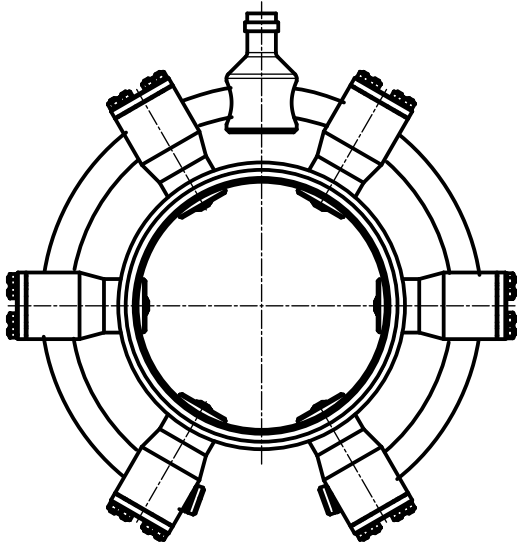
Detailed instructions for installation are given in document „Instruction for Installation and Maintenance“ and in „Heat balance calculation“ which is a part of the offer.

Technical data									
Series	<b>CHPR</b>								
Version	<b>weld ends</b>								
Nominal size (steam pipeline)	DN 200 to 600								
Nominal size (cooling water)	DN 15 to 100								
Nominal pressure	PN 16 to 400								
Body material	<table border="0"> <tr> <td>Cast steel 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 1.7383 (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 1.0426 (P280GH)	20 to 480 °C	Alloy steel 1.7335 (13CrMo4-5)	20 to 550 °C	Alloy steel 1.7383 (11CrMo9-10)	20 to 600 °C	Stainless steel 1.4922 (X20CrMoV11-1)	20 to 600 °C
Cast steel 1.0426 (P280GH)	20 to 480 °C								
Alloy steel 1.7335 (13CrMo4-5)	20 to 550 °C								
Alloy steel 1.7383 (11CrMo9-10)	20 to 600 °C								
Stainless steel 1.4922 (X20CrMoV11-1)	20 to 600 °C								
Flanges	Acc. to ČSN EN 1092-1 (07/2013)								
Weld ends	Acc. to ČSN EN 12627 (08/2000)								
Operating pressures	Acc. to ČSN EN 12516-1 (08/2015)								

### Single-row design



### Double-row design



#### Dimensions of CHPR

Version	L	A
	[mm]	
single-row	600	210
double-row	700	210

CHPR type number specification		XXXX	X	XXX	/	XXX	-	XXX	/	XXX	X	X	X	X
<b>Series</b>	Desuperheater with radial injection	CHPR												
<b>No. of nozzles</b>	According to the required cooling capacity		X											
<b>DN (steam)</b>	DN 200 to 600			XXX										
<b>DN (cooling water)</b>	DN 15 to 100					XXX								
<b>PN (steam)</b>	PN 16 to 400							XXX						
<b>PN (cooling water)</b>	PN 16 to 400									XXX				
<b>Connect. (steam pipeline)</b>	Weld ends											4		
<b>Connection (water)</b>	Flange with raised face													1
	Flange with recess													2
	Plain flange													3
	Weld ends													4
<b>Material</b>	Carbon steel 1.0426 (20 to 500°C)													1
	Alloy steel 1.7335 (20 to 550°C)													2
	Alloy steel 1.7383 (20 to 600°C)													6
	Stainless steel 1.4922 (20 to 600°C)													7
	Other material													9
<b>Opening pressure</b>	0,2 MPa													1
	combined 0,2 and 0,4 MPa													2
	0,4 MPa													3

**Order example:** Desuperheater CHPR with 3 nozzles; opening pressure 0,4 MPa; connection to steam pipeline DN200, PN100; flanged connection of cooling water; flange DN 25, PN 160 type B1, body material alloy steel 1.7335 is marked as follows:  
**CHPR3 200/025-100/160 4123**

Max. permissible operating pressures [MPa]													
Material	PN	Temperature [ °C ]											
		100	150	200	250	300	350	400	450	480	500	550	600
<b>Cast steel 1.0426</b>	<b>16</b>	1.5	1.42	1.34	1.23	1.11	1.04	0.96	0.59	0.36	---	---	---
	<b>25</b>	2.34	2.22	2.10	1.92	1.74	1.62	1.50	0.92	0.56	---	---	---
	<b>40</b>	3.74	3.55	3.36	3.07	2.78	2.59	2.40	1.47	0.90	---	---	---
	<b>63</b>	5.90	5.59	5.29	4.84	4.38	4.08	3.78	2.32	1.41	---	---	---
	<b>100</b>	9.36	8.88	8.40	7.68	6.96	6.48	6.00	3.68	2.24	---	---	---
	<b>160</b>	14.9	14.2	13.4	12.2	11.1	10.3	9.60	5.89	3.59	---	---	---
	<b>250</b>	23.4	22.2	21.0	19.2	17.4	16.2	15.0	9.20	5.60	---	---	---
	<b>320</b>	29.9	28.4	26.8	24.5	22.2	20.7	19.2	11.7	7.17	---	---	---
	<b>400</b>	37.4	35.5	33.6	30.7	27.8	25.9	24.0	14.7	8.96	---	---	---
<b>Alloy steel 1.7335</b>	<b>16</b>	1.6	1.6	1.6	1.6	1.6	1.49	1.37	1.26	1.0	0.47	---	
	<b>25</b>	2.5	2.5	2.5	2.5	2.5	2.33	2.13	1.97	1.56	0.73	---	
	<b>40</b>	4.0	4.0	4.0	4.0	4.0	3.73	3.41	3.15	2.5	1.17	---	
	<b>63</b>	6.3	6.3	6.3	6.3	6.3	5.87	5.38	4.97	3.93	1.85	---	
	<b>100</b>	10.0	10.0	10.0	10.0	10.0	9.31	8.53	7.89	6.24	2.93	---	
	<b>160</b>	16.0	16.0	16.0	16.0	16.0	14.9	13.6	12.6	9.99	4.70	---	
	<b>250</b>	25.0	25.0	25.0	25.0	25.0	23.2	21.3	19.7	15.6	7.34	---	
	<b>320</b>	32.0	32.0	32.0	32.0	32.0	29.8	27.3	25.2	19.9	9.39	---	
	<b>400</b>	40.0	40.0	40.0	40.0	40.0	37.2	34.1	31.5	24.9	11.7	---	
<b>Alloy steel 1.7383</b>	<b>16</b>	1.6	1.6	1.6	1.6	1.6	1.5	1.37	1.26	1.05	0.56	0.24	
	<b>25</b>	2.5	2.5	2.5	2.5	2.5	2.35	2.13	1.97	1.65	0.88	0.37	
	<b>40</b>	4.0	4.0	4.0	4.0	4.0	3.75	3.41	3.15	2.63	1.41	0.6	
	<b>63</b>	6.3	6.3	6.3	6.3	6.3	5.91	5.38	4.97	4.15	2.22	0.94	
	<b>100</b>	10.0	10.0	10.0	10.0	10.0	9.38	8.53	7.89	6.58	3.52	1.49	
	<b>160</b>	16.0	16.0	16.0	16.0	16.0	15.0	13.6	12.6	10.5	5.63	2.39	
	<b>250</b>	25.0	25.0	25.0	25.0	25.0	23.4	21.3	19.7	16.4	8.80	3.73	
	<b>320</b>	32.0	32.0	32.0	32.0	32.0	30.0	27.3	25.2	21.0	11.2	4.78	
	<b>400</b>	40.0	40.0	40.0	40.0	40.0	37.5	34.1	31.5	26.3	14.0	5.98	
<b>Stainless steel 1.4922</b>	<b>16</b>	1.6	1.6	1.6	1.6	1.6	1.5	1.37	1.26	1.05	0.9	0.42	
	<b>25</b>	2.5	2.5	2.5	2.5	2.5	2.35	2.13	1.97	1.65	1.46	0.65	
	<b>40</b>	4.0	4.0	4.0	4.0	4.0	3.75	3.41	3.15	2.63	2.33	1.05	
	<b>63</b>	6.3	6.3	6.3	6.3	6.3	5.91	5.38	4.97	4.15	3.67	1.65	
	<b>100</b>	10.0	10.0	10.0	10.0	10.0	9.38	8.53	7.89	6.58	5.82	2.61	
	<b>160</b>	16.0	16.0	16.0	16.0	16.0	15.0	13.6	12.6	10.5	9.32	4.18	
	<b>250</b>	25.0	25.0	25.0	25.0	25.0	23.4	21.3	19.7	16.4	14.5	6.54	
	<b>320</b>	32.0	32.0	32.0	32.0	32.0	30.0	27.3	25.2	21.0	18.6	8.37	
	<b>400</b>	40.0	40.0	40.0	40.0	40.0	37.5	34.1	31.5	26.3	23.3	10.4	



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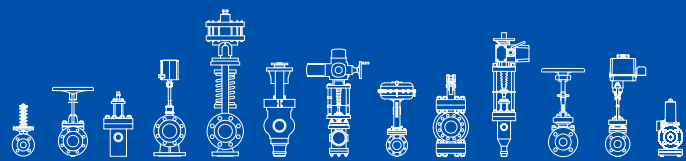
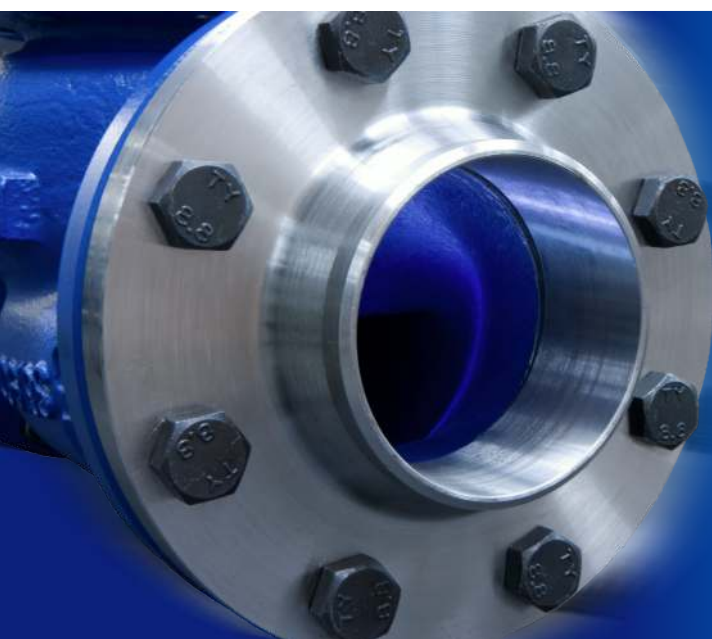
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