Desuperheater 5090
DN50

Pneumatic control valve for cooling steam and process gas.

- robust design
- quiet operation
- Variable Kvs values
- minimal leakage
- long service life

Technical data

Body design	flange design
	for flanges acc. DIN EN 1092-1, form B
Nominal size cooling water inlet	DN 25 - DN 50
Nominal size cooling water supply	DN 100
Nominal pressure	PN 40 / ANSI 300
Temperature injection fluid	up to +220°C
Ambient temperature*	-30°C up to +100°C
Rangeability	14 : 1
Characteristic	modified linear
Leakage % of Kvs	<0,001

* Please consider the limitation of use of the positioner!

Materials

body	Stainless steel 1.4571
rack	Stainless steel 1.4112, treated
pressure spring	Stainless steel 1.4310
Fixed valve plate	Stainless steel 1.4112, treated
Moving valve disc	Stainless steel 1.4112, treated
slide ring	Stainless steel 1.4112, treated alternatively bronze
spring support	Stainless steel 1.4571
wear ring	Stainless steel 1.4571
body positioner	Aluminium anodized, synthetic

Positioners

For technical information of our positioners please refer to the corresponding data sheets.

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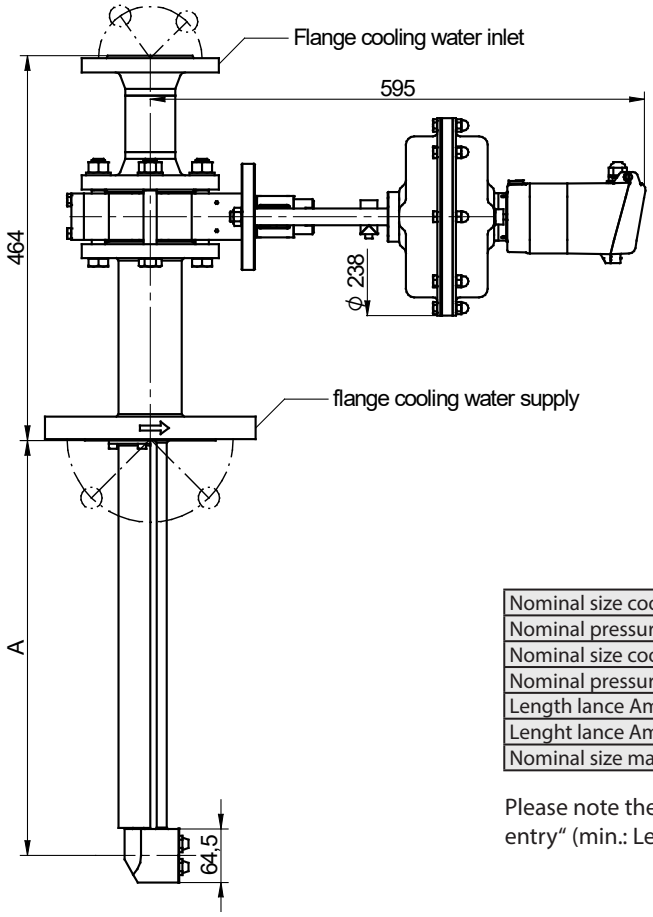
Dimensions



Nominal size cooling water inlet	DN25, DN50
Nominal pressure cooling water inlet	PN40, ANSI300
Nominal size cooling water supply	DN100
Nominal pressure cooling water supply	PN40, ANSI300
Length lance Amin.	150
Lenght lance Amax	900
Nominal size main steam pipe min.	300

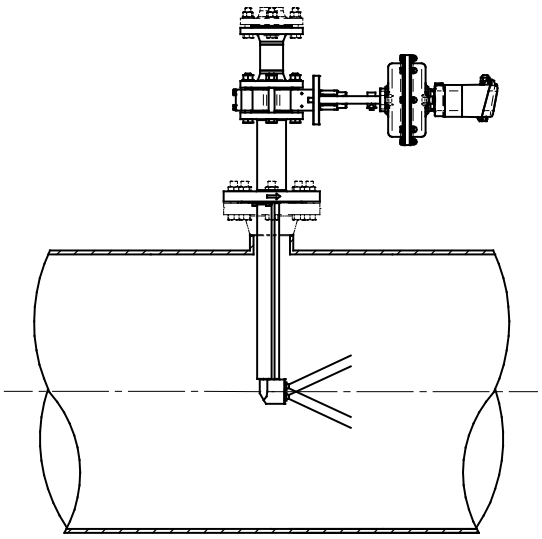
Please note the mounting space above the „flange entry“ (min.: Length of the lance „A“ + 550mm).

dimensions in mm

functional principle

The desuperheater controls the required quantity of injection water for cooling steam to the desired steam temperature.

This is done by opening and closing the four injection nozzles. The water pressure at the injection nozzle is therby approximately constant. A fine atomization of the water is ensured by that. The control is done by the proven positioner type 8049 of Schubert & Salzer (mounting of third party positioners possible). The amount of cooling water is controled outside of the fluid due to the design. This provides the advantage that no thermal distortion occures due to the temperature difference. Therefore the leakage is low.



Ordering Number System

Ordering Number:

5090/													Z				S			
Nominal Size																				
DN 50 = 050	xxx																			
Item																				
valve		V																		
seat kit		D																		
lower valve part		U																		
Design																				
SPV1 flangeless design PN25 (from DN250 PN16) (for flanges acc. DIN EN 1092-1, Form B)			1																	
Body material																				
stainless steel 1.4571				1																
Safety position																				
no safety position in case of power failure					-															
Fail Safe Function: Safety position closed in the case of power failure					0															
Fail Safe Function: Safety position opened in the case of power failure					1															
Actuator																				
without						-														
Diaphragm actuator 1000cm²						1														
diaphragm actuator 250cm²						2														
diaphragm actuator 500cm²						3														
Diaphragm actuator 1500cm²						5														
diaphragm actuator 3000cm²						7														
2 kN-actuator type 2030 with position electronics, IP67, incl. fault alarm output						A														
Special actuator (see following position)						S														
Special versions																				
(Standard) not encapsulated version							M													
Actuator version																				
standard								-												
12 spring								2												
Stem sealing																				
Standard (gland)									-											
Interior sealings																				
Standard (PTFE)										-										
EPDM										1										
Moving valve disc																				
Standard, stainless steel 1.4112, treated											-									
Fixed valve plate																				
Standard, stainless steel 1.4112, treated												-								
Nozzle diameter																				
Nozzle diameter A													-							
Nozzle diameter B													1							
Positioner																				
without														-						
digital positioner type 8049, 4-wire version, IP 65														C						
digital positioner type 8049, 2-wire version, IP 65														R						
i/p-positioner PS2 6DR 5010-0N, IP66														P						
control actuator with binary input (24VDC 3-point activation)														1						
Positioner settings																				
Standard															-					
Signal equipment																				
without																-				
cooling water inlet																				
without																	-			
size DN25, nominal pressure PN40																	1			
size DN50, nominal pressure PN40																	2			
size DN25, nominal pressure ANSI 300																	A			
size DN50, nominal pressure ANSI 300																	B			
connection cooling water supply																				
without																		-		
size DN100, nominal pressure PN40																		1		
size DN100, nominal pressure ANSI 300																		A		
length of the lance																				
without																			-	
length 500mm																			1	

ordering example: 5090/050V1102M------ZC--S111

desuperheater type 5090, size DN50, PN 10 - PN 40, body material stainless steel, spring closes, with pneumatic actuator 250cm², with positioner 8049-4, cooling water inlet DN25, connection cooling water supply DN100, length of the lance 500mm

Admissible Differential Pressure (For temperatures of up to 120°C)

For temperatures of 120°C and above: obey application limits !

effective area of the actuator (cm²)	250 cm²	500 cm²
pilot pressure (bar)	5	5
springs	10	20
	max. differential pressure [bar]	
max.	25	40
min.	2	2

minimum information for the dimensioning

steam values	
inlet pressure	
outlet pressure	
inlet temperature	
outlet temperature	
steam quantity max.	
steam quantity std.	
steam quantity min.	
water values	
pressure of cooling water	
temperature of cooling water	
other values	
Nominal size main steam pipe	