



RD 122 D

Self-acting regulator
of differential pressure
BEE line

DN 15 - 50
PN 25

Self-acting regulator of differential pressure series RD 122 D is designed to keep a constant differential pressure value of given appliance. Such a function is ensured by a diaphragm exposed to effects of inlet and outlet pressure of the appliance. Deflections of the diaphragm transfer to the valve plug and it closes the valve upon increase of differential pressure value. Owing to a pressure-balanced plug, value of differential pressure is not affected by pressure ratios within the valve. In case when required value of differential pressure is within range of two spring ranges, it is more suitable to choose the range with lower values to ensure sensitivity of the regulator.

Connecting impulse pipes for extraction of pressure from the pipeline are within the scope of supply as standard.

Technical data	
Series	RD 122 D
Execution	Self-acting regulator of differential pressure
Nominal diameter range	DN 15 to 50
Nominal pressure	PN 25
Body material	Spheroidal cast iron EN-JS1030
Plug material	Stainless steel 1.4006 / 17 027.6
Seat material	Stainless steel 1.4021 / 17 027.6
Stem material	Stainless steel 1.4305
Material of diaphragm and sealing	EPDM
Material of diaphragm chamber bonnets	Spheroidal cast iron / Carbon steel
Operating temperature range	+2 to +150 °C, version with condensing well up to +180°C
Connection	Externally threaded coupling + screw joints Flanges with raised faces Externally threaded coupling + weld unions
Material of weld unions	DN 15 to 32 ... 1.0036 / 11 373.0 DN 40 and 50 ... 1.0308 / 11 353.0
Plug type	Contoured, pressure-balanced, with soft seat sealing
Kvs values	0,63 to 32 m ³ /h
Leakage rate	Class IV. - S1 acc. to ČSN-EN 1349 (5/2001) (< 0.0005 % Kvs)
Range of adjustable diff. press. values	DN 15 to 25: 10; 15 to 60; 30 to 210; 60 to 400; 150 to 550; 220 to 1000 kPa DN 32 to 50: 10; 20; 25 to 70; 40 to 220; 70 to 410; 150 to 550; 220 to 1000 kPa
Δp_{set}	
The tolerance of setting of the end values of the range is 10% from the corresponding value of the range.	

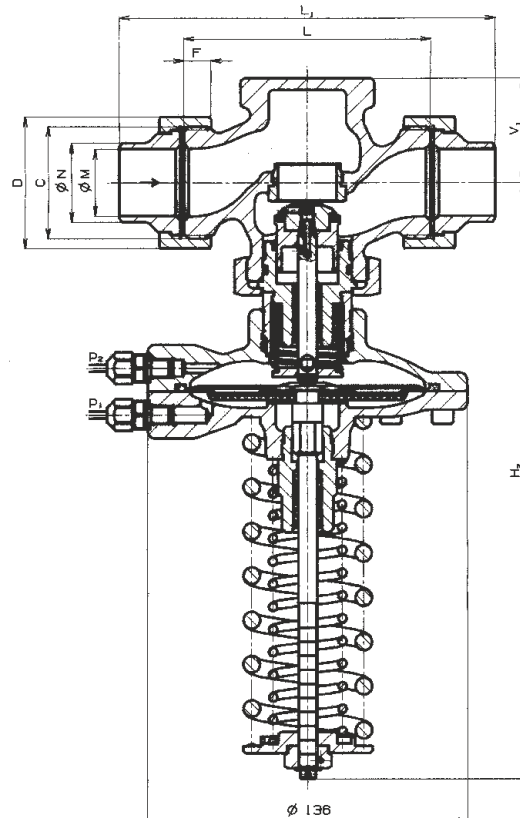
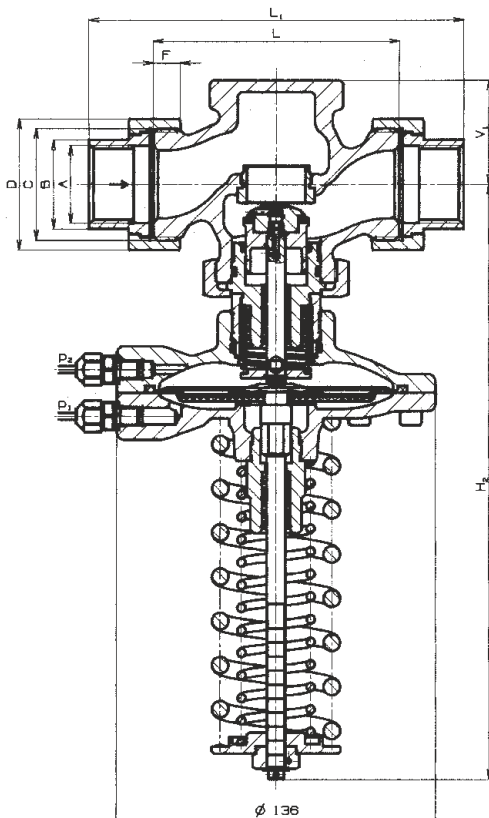
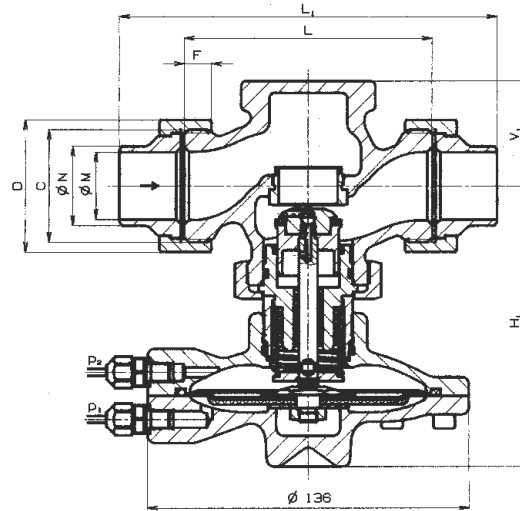
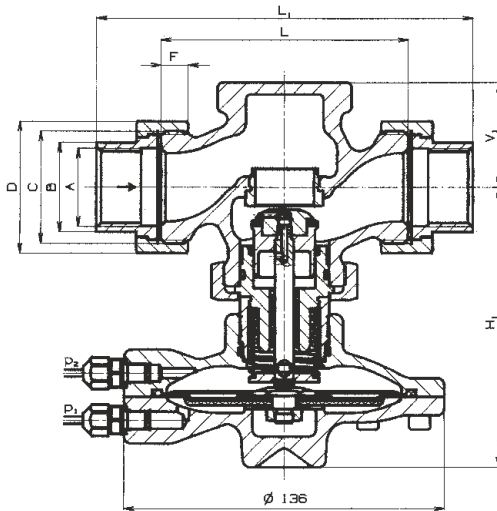
Dimensions and weights for RD 122 D../T with thread couplings and RD 122 D../W with weld unions

DN	L	L ₁	V ₁	H ₁ ^{*)}	H ₂ ^{*)}	A	B	C	D	ØM	ØN	ØF	m ₁ ^{*)}	m ₂ ^{*)}
	[mm]	[mm]	[mm]	[mm]	[mm]		[mm]		[mm]	[mm]	[mm]	[mm]	[kg]	[kg]
15	100	146	44.5	119	254	Rp 1/2	25	G 1	41	16.1	21.3	9	3.6	4.1
20	100	149	44.5	119	254	Rp 3/4	32	G 1 1/4	51	21.7	26.9	10	3.9	4.4
25	105	160	44.5	119	254	Rp 1	38	G 1 1/2	56	29.5	33.7	11	4.2	4.7
32	130	193	63	139	274	Rp 1 1/4	47	G 2	71	37.2	42.4	12	5.6	6.1
40	140	207	63	139	274	Rp 1 1/2	53	G 2 1/4	76	43.1	48.3	14	6.5	7.0
50	160	233	63	139	274	Rp 2	66	G 2 3/4	91	54.5	60.3	16	8.6	9.1

*) H₁, m₁ ... dimensions and weights for the valves with constant differential pressure value RD 122 D1
 H₂, m₂ ... dimensions and weights for the valves with adjustable differential pressure value RD 122 D2

Ventily RD 122 D../T with thread couplings

Ventily RD 122 D../W with weld unions

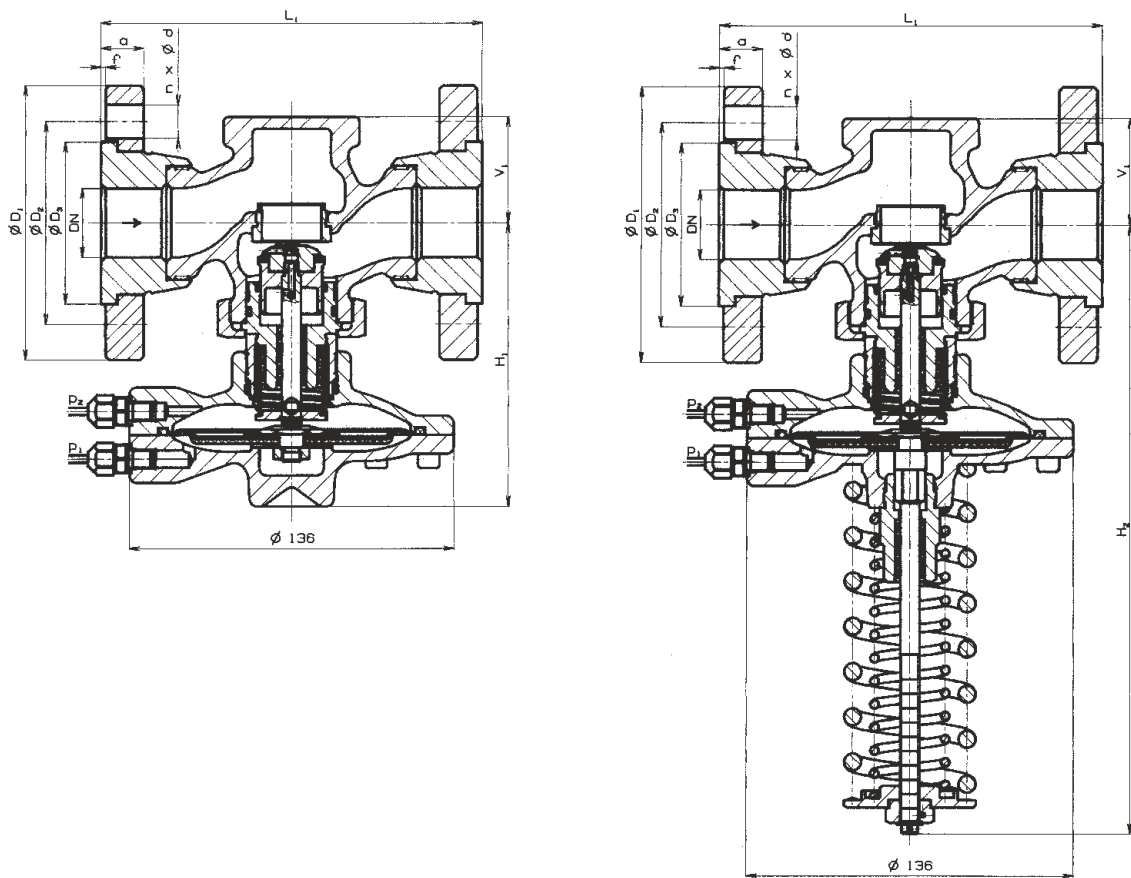


Dimensions and weights for RD 122 D../F with flange connection

DN	L_1 [mm]	V_1 [mm]	$H_1^{*)}$ [mm]	$H_2^{*)}$ [mm]	$\varnothing D_1$ [mm]	$\varnothing D_2$ [mm]	$\varnothing D_3$ [mm]	a [mm]	f [mm]	n	$\varnothing d$ [mm]	$m_1^{*)}$ [kg]	$m_2^{*)}$ [kg]
15	130	44.5	119	254	95	65	45	16	2	4	14	4.7	5.2
20	150	44.5	119	254	105	75	58	16	2	4	14	5.4	5.9
25	160	44.5	119	254	115	85	68	18	2	4	14	6.3	6.8
32	180	63	139	274	140	100	78	18	2	4	18	8.4	8.9
40	200	63	139	274	150	110	88	19	3	4	18	9.9	10.4
50	230	63	139	274	165	125	102	19	3	4	18	12.8	13.3

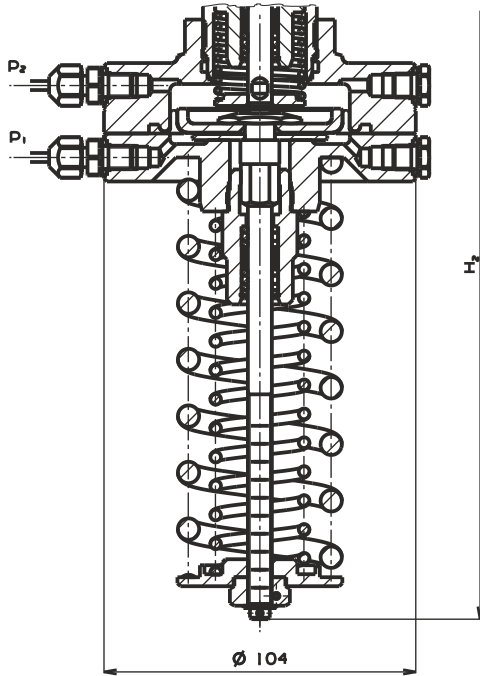
- *) H_1, m_1 ... dimensions and weights for the valves with constant differential pressure value RD 122 D1
 H_2, m_2 ... dimensions and weights for the valves with adjustable differential pressure value RD 122 D2

Ventily RD 122 D../F v přírubovém provedení s hrubou těsnicí lištou

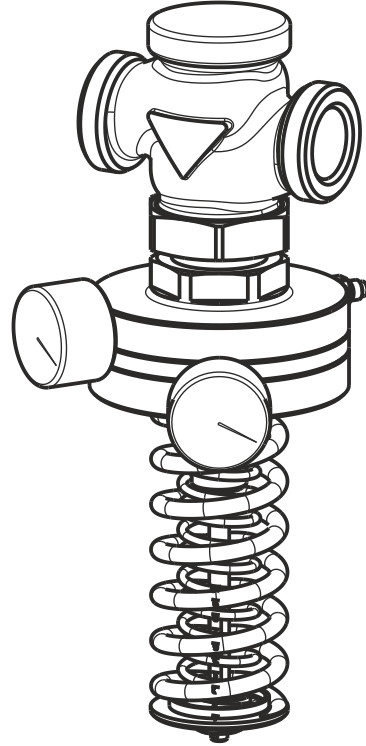


Dimensions and execution of head D3 or D4 with diaphragm 26 cm²

Dimensions of head RD 122 D3



Execution D4, with manometer



Specification code for ordering of valves RD 122 D

		XX	XXX	X	XXXX	XX	/	XXX	-	XX	/	X	
1. Valve	Self-acting pressure regulator	RD											
2. Series	Pressure-balanced		122										
3. Function	Differential pressure regulator			D									
4. Execution	With constant differential pressure value											1	
	With adjustable differential pressure value, diaphragm 63 cm ²											2	
	With adjustable differential pressure value, diaphragm 26 cm ²											3	
	With adjustable differential pressure value, diaphragm 26 cm ² , with manometers											4	
5. Range of pressure setting / spring colour <i>Max. differential pressure may not exceed 0,2 MPa for this setting range</i>	DN 15 to 25	10 kPa										11	
		15 to 60 kPa / red										22	
		30 to 210 kPa / red + yellow											23
		60 to 400 kPa / red + black											24
	DN 32 to 50	10 kPa ¹⁾											10
		20 kPa											11
		15 to 60 kPa ¹⁾ / red											20
		25 to 70 kPa / red											22
		40 to 220 kPa / red + yellow											23
	DN 15 to 50	70 to 410 kPa / red + black											24
		150 to 550 kPa / red + yellow											33
	DN 15 to 50	220 to 1000 kPa / red + black											34
150 to 550 kPa / red + yellow												43	
DN 15 to 50	220 to 1000 kPa / red + black											44	
6. Impulse pipeline	Standard 1,6 m											1	
	Extended 2,5 m											2	
	Width 1,6 m, with cock R 1/4											3	
	Extended 2,5 m, with cock R 1/4											4	
	Other execution after agreement											9	
7. Kvs	No. of the column of the Kvs values											X	
8. Pressure nominal	PN 25											25	
9. Max. operating temp. °C	150°C											150	
	With condensing well up to 180°C											180	
10. Nominal size	DN 15 to 50											XX	
11. Connection	Threaded couplings											T	
	Flange PN 25 with raised-faced flanges											F	
	Weld unions											W	

Note: flange dimensions for PN 25, PN 16 and PN 10 in range of DN 15 - 50 remain the same

Ordering example: **RD122 D 2411 25/150-25/W**

Kvs value table

DN	Kvs [m ³ /h]				
	1	2	3	4	5
15	5	2.5	1.6	1.0	0.63
20	8	---	---	---	---
25	10	---	---	---	---
32	15	---	---	---	---
40	21	---	---	---	---
50	32	---	---	---	---

Specification code for ordering of valves RD 122 V

		XX	XXX	X	XXXX	XX	/	XXX	-	XX	/	X
1. Valve	Self-acting pressure regulator	RD										
2. Series	Pressure-balanced		122									
3. Function	Regulator of outlet pressure			V								
4. Execution	Diaphragm 63 cm ² , without manometer, direct inlet of reducing press. from extraction from pipeline					2						
	Diaphragm 26 cm ² , with manometer, direct inlet of reducing press. from extraction from pipeline					3						
	Diaphragm 26 cm ² , with manometer, integral inlet of reducing pressure					4						
5. Range of pressure setting / spring colour	DN 15 to 50	25 to 70 kPa / red				22						
		40 to 220 kPa / red + yellow				23						
		70 to 410 kPa / red + black					24					
		150 to 550 kPa / red + yellow					33					
		220 to 1000 kPa / red + black					34					
		150 to 550 kPa / red + yellow					43					
6. Impulse pipeline		Without impulse pipeline (only for V4)				0						
		Standard 1,6 m				1						
		Extended 2,5 m					2					
		Width 1,6 m, with cock R 1/4					3					
		Extended 2,5 m, with cock R 1/4					4					
		Other execution after agreement					9					
7. Kvs	No. of the column of the Kvs values					X						
8. Pressure nominal	PN 25						25					
9. Max. operating temp. °C	150°C								150			
	With condensing well up to 180°C								180			
10. Nominal size	DN 15 to 50									XX		
11. Connection	Threaded couplings											T
	Flange PN 25 with raised-faced flanges											F
	Weld unions											W

Note: flange dimensions for PN 25, PN 16 and PN 10 in range of DN 15 - 50 remain the same
 Ordering example: **RD122 V 3311 25/150-25/W**

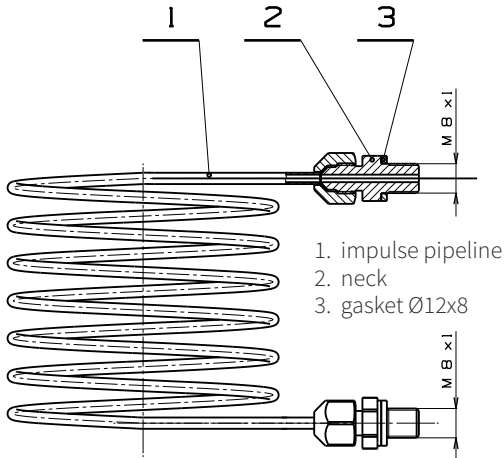
Kvs values table

DN	Kvs [m ³ /h]				
	1	2	3	4	5
15	5	2.5	1.6	1.0	0.63
20	8	---	---	---	---
25	10	---	---	---	---
32	15	---	---	---	---
40	21	---	---	---	---
50	32	---	---	---	---

Accessories

Impulse pipeline for supply of pressure impulse into regulator

It is in the scope of supply as standard.

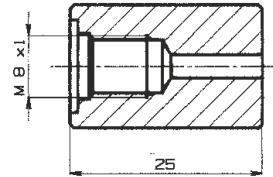


Welding coupling for connecting of impulse pipe

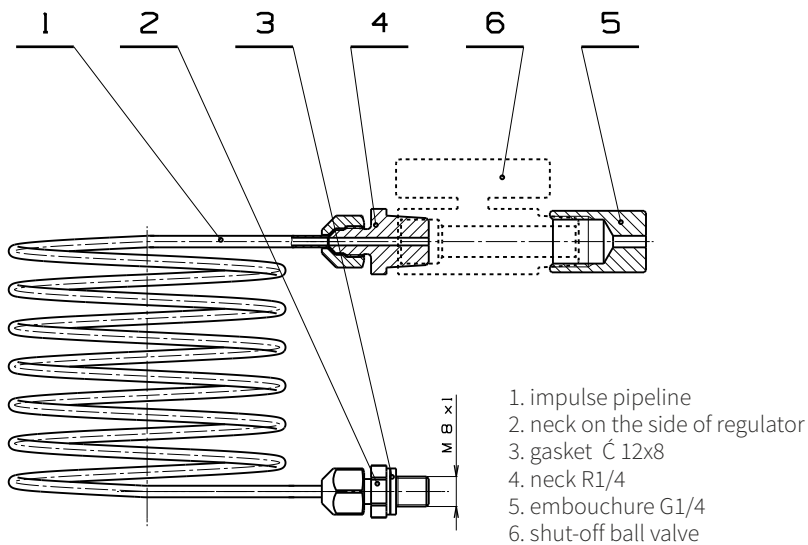
It is in the scope of supply as standard.

Material: **1.0036 / 11 373.0**

Ordering code: **VM 43 0046**



Impulse pipe for supplying a pressure impulse with shut-off ball valve and connecting thread 1/4"



Cooling condensing well

It is in the scope of supply as standard for valves with execution to 180°C.

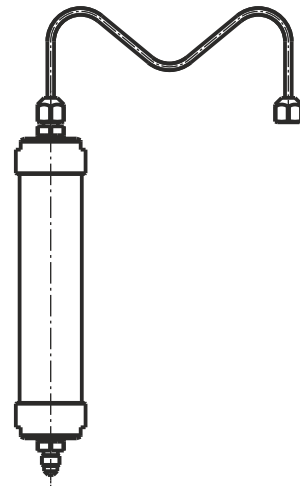
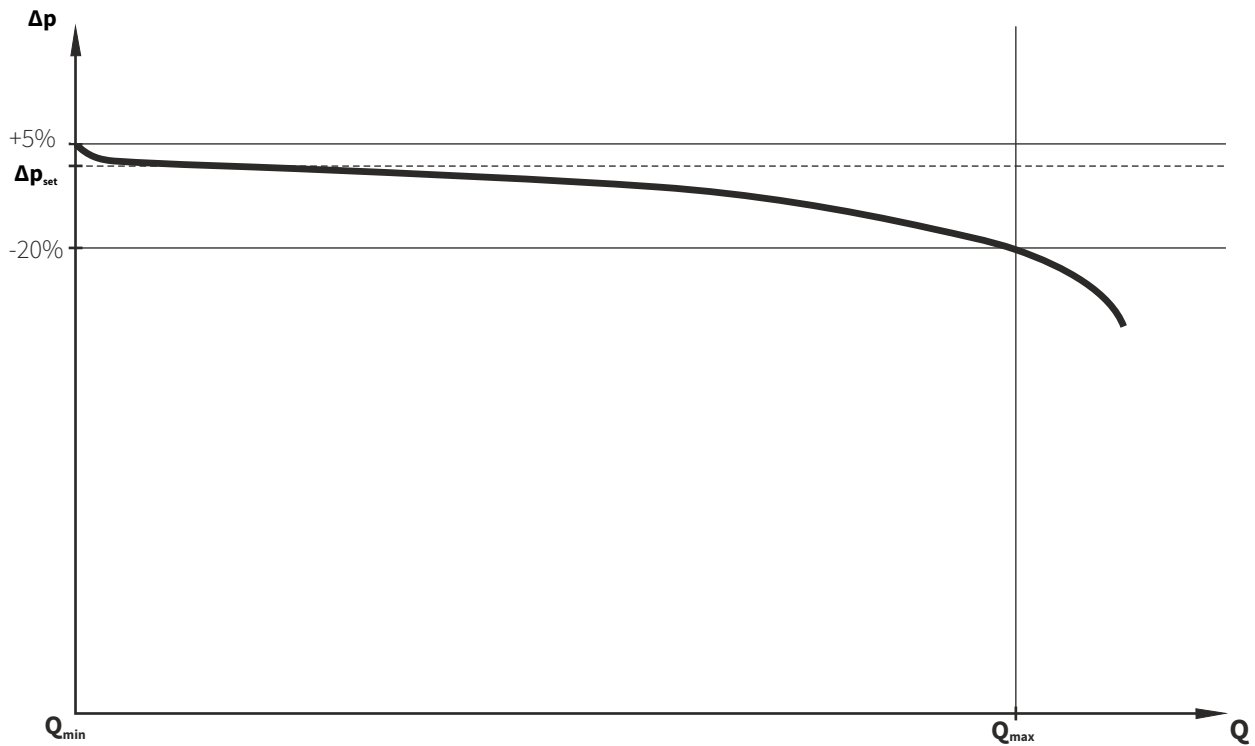


Diagram of behaviour of Δp of the protected line with flow rate Q in the circuit



The table specifying flow rate values Q_{max} [m^3/h] for different Δp_{set} values

The values have been measured at total pressure drop $\Delta p_{avail} = 2 \times \Delta p_{set}$

DN	Kvs	Δp_{set} [kPa]								Součinitel k
		10	25	40	60	80	100	180	400	
15	2.5	0.85	1.60	2.05	2.25	2.40	2.70	3.80	4.70	1
15	5	1.35	2.20	3.00	3.80	4.00	4.70	6.50	7.60	1.12
20	8	1.85	3.25	4.45	5.50	6.20	7.00	9.50	12.00	1.15
25	10	2.65	4.60	6.40	7.80	8.80	9.80	13.00	16.00	1.1

The values have been measured at total pressure drop $\Delta p_{disp} = 2 \times \Delta p_{set}$

DN	Kvs	Δp_{set} [kPa]								Součinitel k
		10	20	30	45	65	100	180	400	
32	15	5.50	6.70	8.70	10.50	12.70	14.90	20.50	25.00	1
40	21	6.30	10.80	11.90	13.30	16.00	20.00	26.40	33.00	1.05
50	32	7.00	12.10	14.40	17.50	21.00	26.50	34.00	42.00	1.25

For in-between values of Δp_{set} , it is possible to calculate an approximate value of Q_{max} according to the following formula:

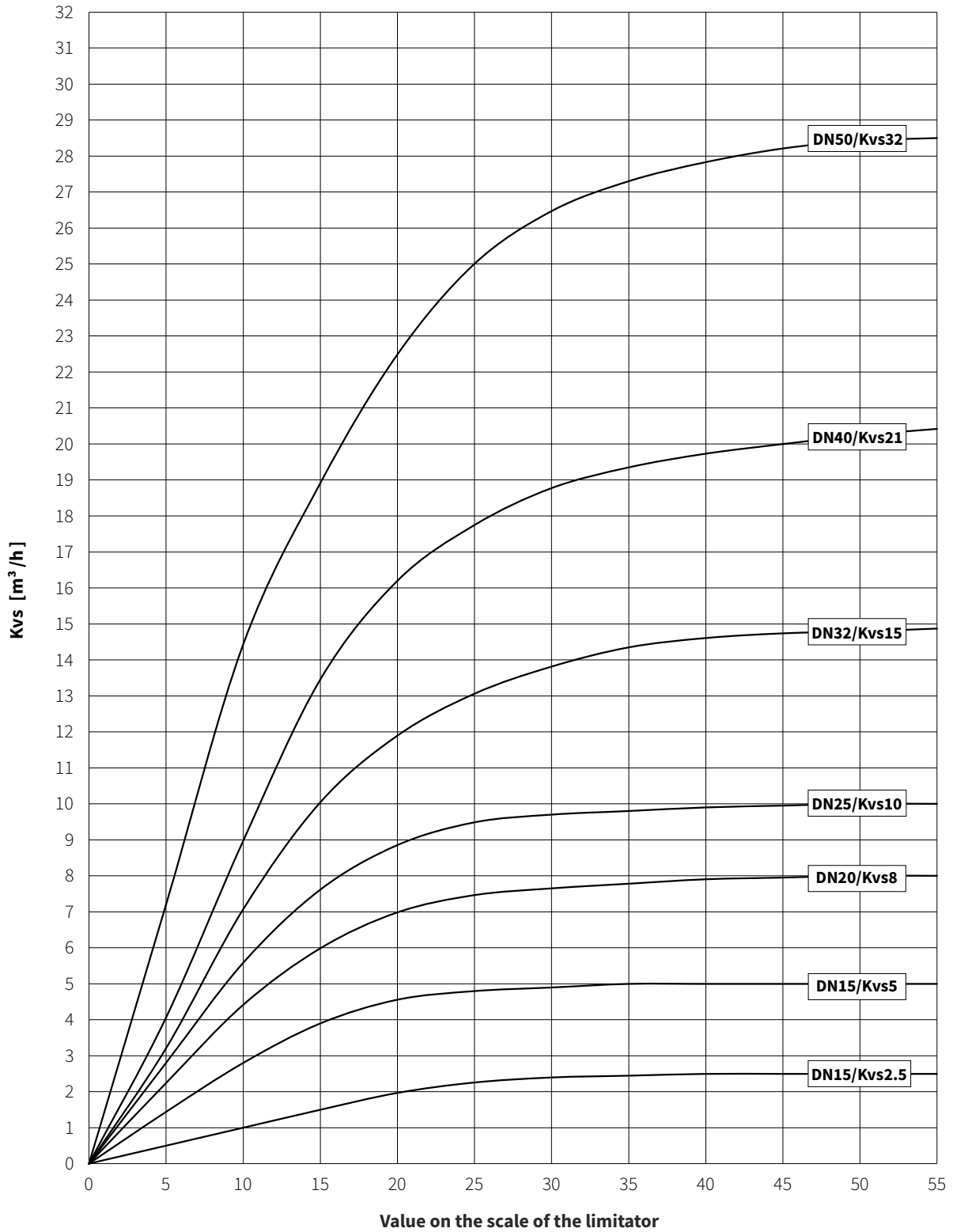
$$Q_{max} = \frac{Kvs}{k} \cdot \sqrt{\frac{\Delta p_{set}}{100}}$$

where: Δp_{set} stands for set differential pressure value [kPa]

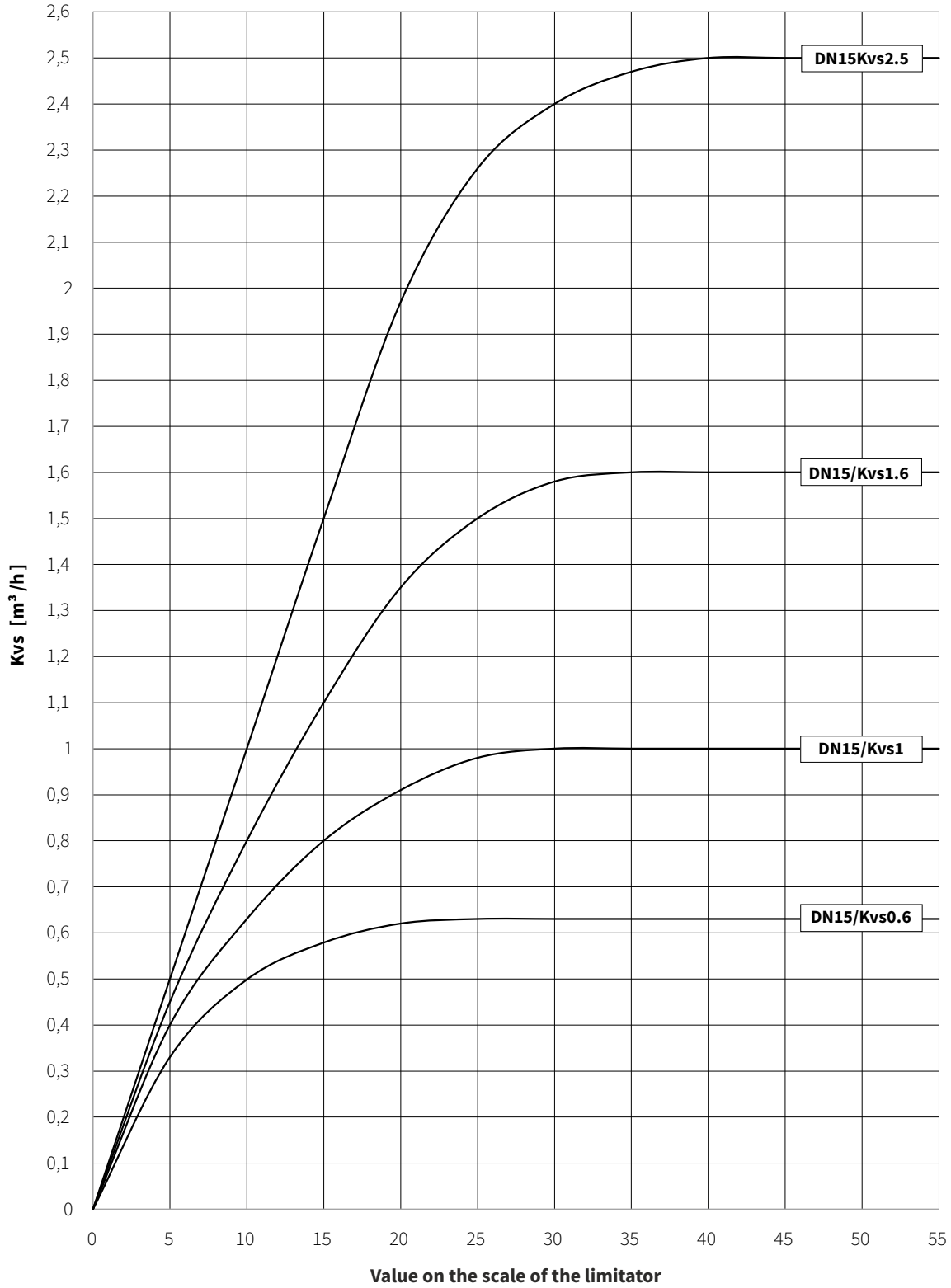
k is correction coefficient [-]

For minimum flow rate Q_{min} the following applies $Q_{min} = 0$.

RD 122 P - behaviour of Kvs value with flow limiter setting



RD 122 P - behaviour of Kvs value with flow limiter setting



Maximal permissible pressure values [MPa]

Material	PN	Temperature [°C]				
		RT ¹⁾	100	120	150	180
Spheroidal cast iron EN-JS1030	25	2,50	2,50	2,50	2,43	2,38

¹⁾ -10°C to 50°C



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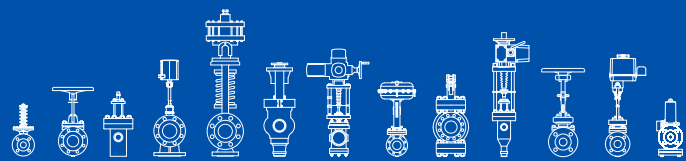
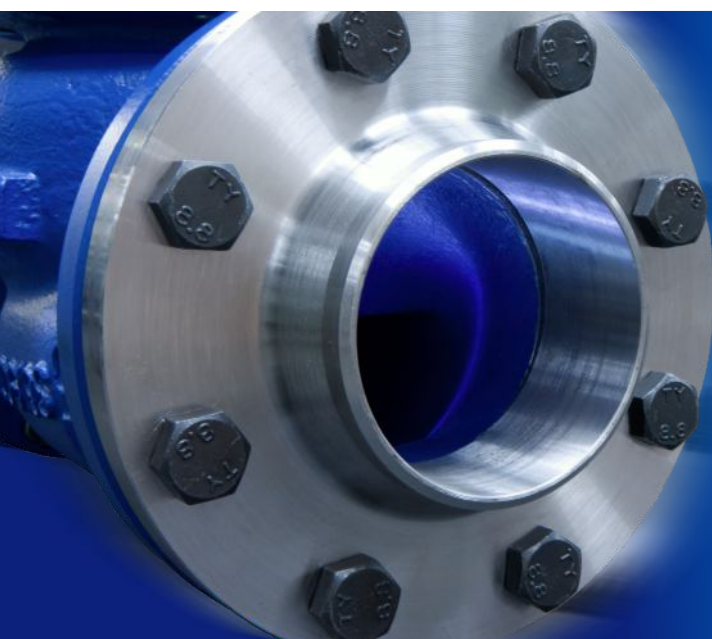
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