

Valves and accessories

Steam pressure reducing valve - BSP female threaded 316 stainless steel

Model 58971 1 - 6 bar

Model 58972 4 - 10 bar



Specifications

Dimensions: DN15 to DN25 (1/2" to 1")

Connection: BSP female thread in accordance with ISO 228-1

Pressure: 16 bar

Min. - max. ΔP: 1-10 bar

Max. Temperature: +180°C

Material: 1.4408 stainless steel
(for the stainless steel parts in contact with the fluid)

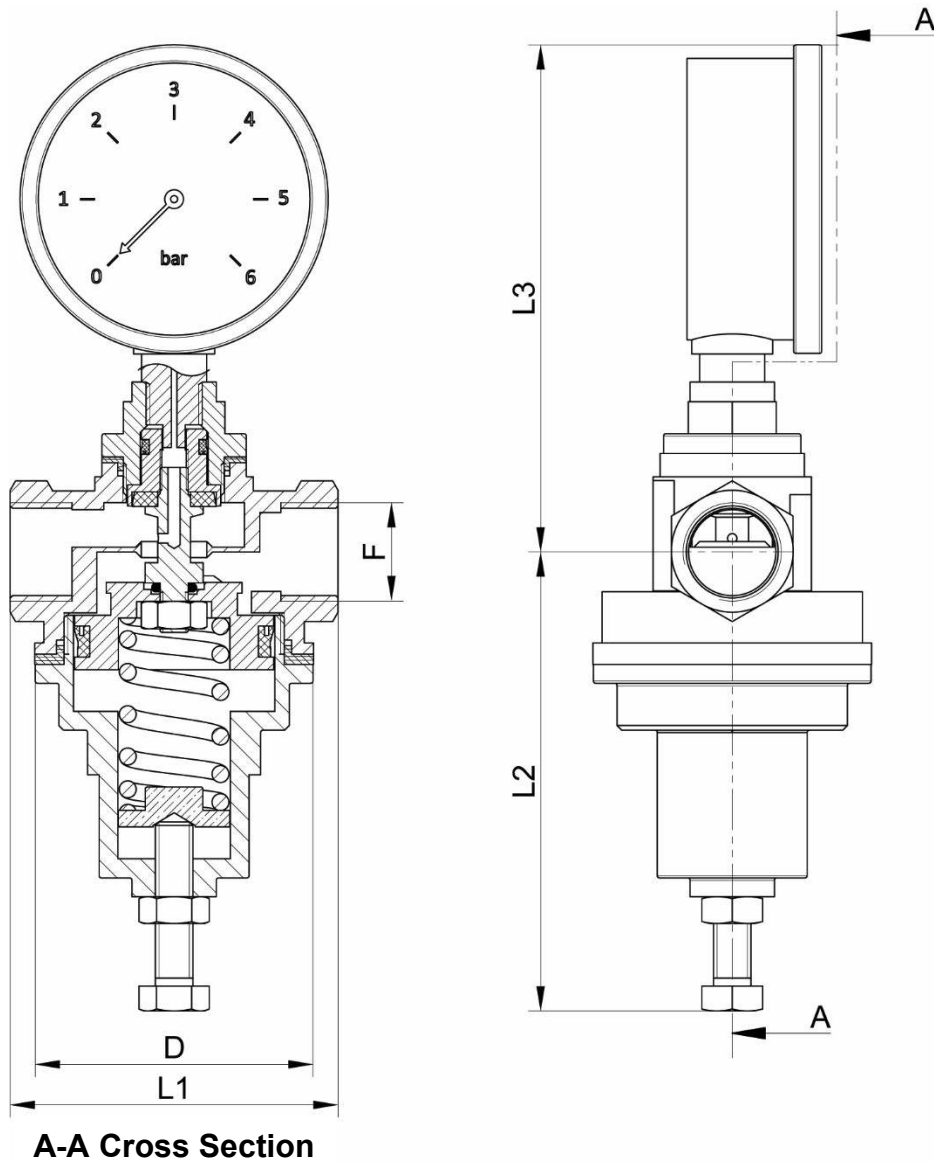
2 pressure reduction ranges

On request: flanged version

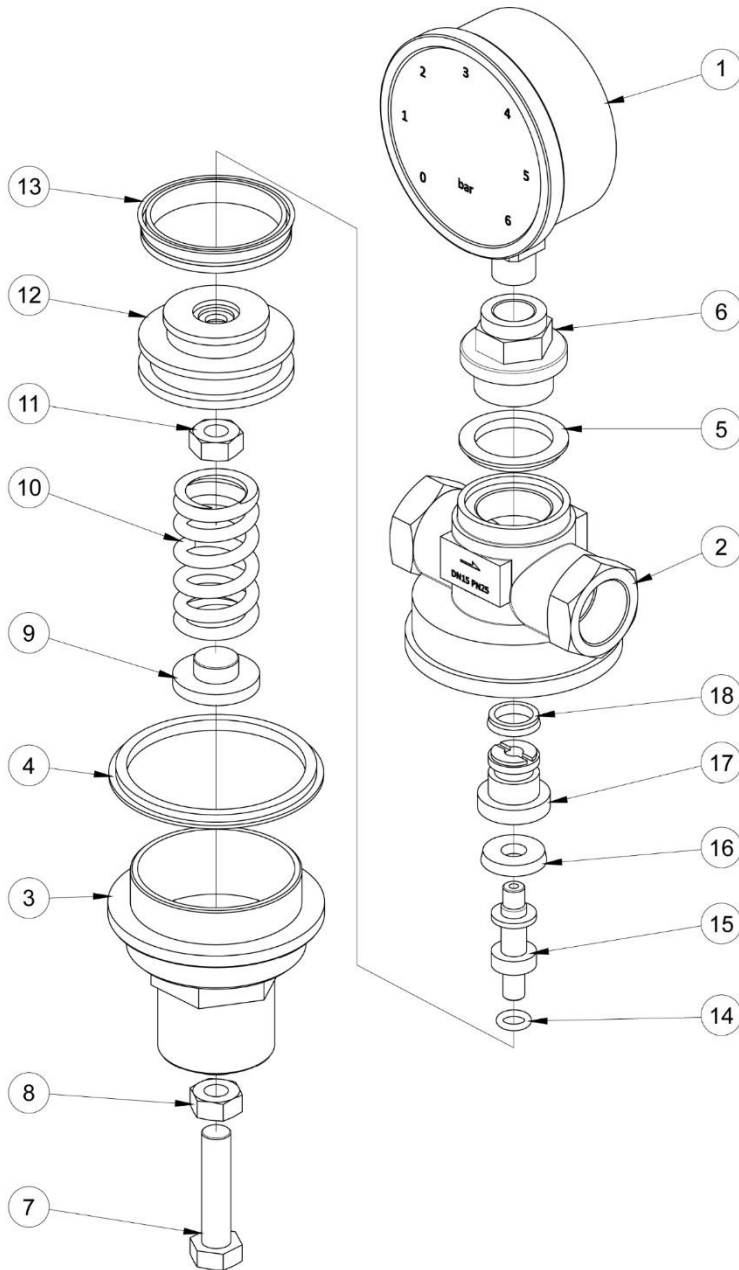


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DN (mm)	NB (inches)	D (mm)	F (inches)	L1 (mm)	L2 (mm)	L3 (mm)	Weight (kg)	Part number 1 - 6 bar	Part number 4 - 10 bar
15	1/2"	60	1/2"	70	80	120	0.8	458971-15	458972-15
20	3/4"	60	3/4"	85	105	125	1.0	458971-20	458972-20
25	1"	60	1"	92	105	130	1.1	458971-25	458972-25



N°	Part Name	Material
1	PRESSURE GAUGE	STAINLESS STEEL
2	BODY (UPPER PART)	CF8M
3	BODY (LOWER PART)	CF8M
4	BODY GASKET (LOWER PART)	FKM
5	GASKET (CLAMPING SCREW)	FKM
6	CLAMPING SCREW	1.4408
7	SET PRESSURE ADJUSTMENT SCREW	A2-70
8	ADJUSTMENT NUT	1.4408
9	SPRING SUPPORT	BRASS
10	SPRING	STEEL
11	NUT	A2-70
12	PISTON	1.4408
13	GASKET (PISTON)	FKM
14	SHAFT GASKET (LOWER PART)	FKM
15	LOWER SHAFT (MOVABLE PART)	1.4408
16	FLAT GASKET (SHAFT)	FKM
17	UPPER SHAFT (MOVABLE PART)	1.4408
18	SHAFT GASKET ((UPPER PART)	FKM

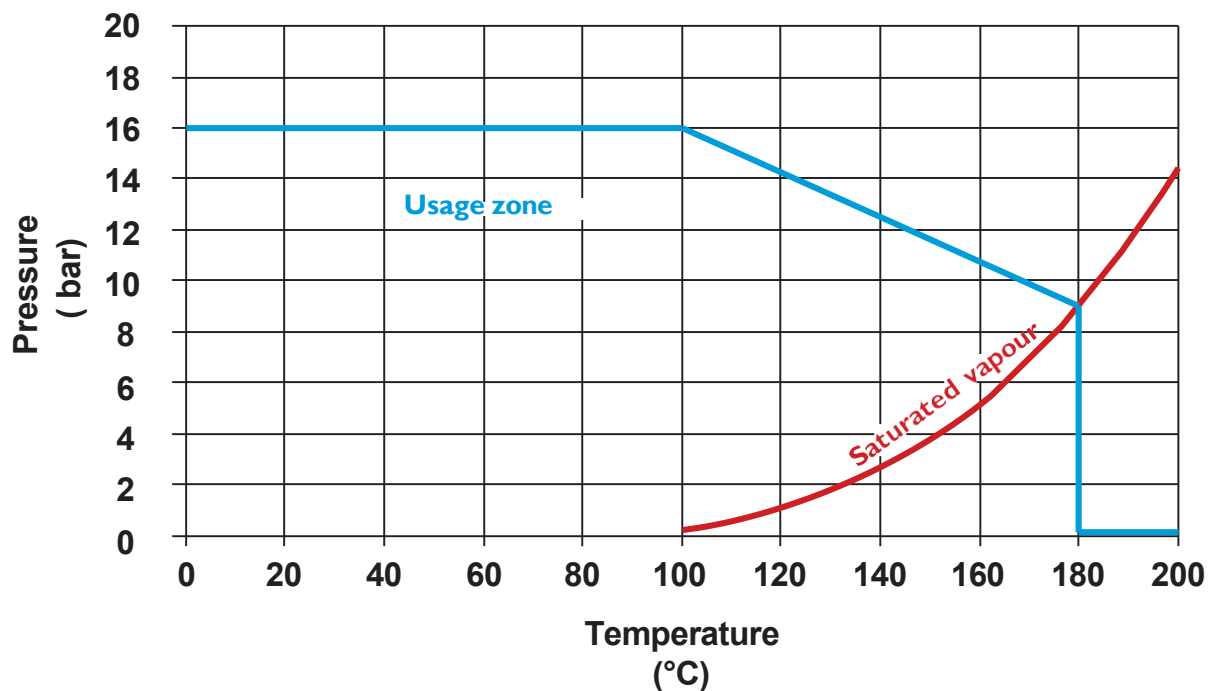
Use

The steam pressure reducing valve allows you to reduce pressure in clean steam networks. You can adjust the outlet (secondary) pressure with the adjustment screw. The pressure gauge shows you the reduced pressure.

You must take into account the direction of fluid circulation when you fit the steam pressure reducing valve (see the arrow on the valve's body).

Pressure and temperature

For pressure/temperature ratings, see the graph below.



Warning: If the steam pressure reducing valve is used with fluids that have a temperature above 60°C then people could burn themselves if they touch the valve.

Fluids

You can use the steam pressure reducing valve with clean steam that does not contain any particles. You must install a stainless steel filter in the piping that takes fluid into the valve.

Flow rate table for saturated vapour

Flow rate (kg/h)		Inlet (primary) pressure (bar)	3	4	5	6	8	10	12
		F							
Outlet (secondary) pressure (bar)	1	1/2"	50	67	84	100	134	168	201
		3/4"	190	254	318	381	508	636	763
		1"	230	307	384	460	614	768	921
	2	1/2"	50	67	84	100	134	168	201
		3/4"	187	250	318	381	508	636	763
		1"	225	302	384	460	614	768	921
	3	1/2"	-	61	84	100	134	168	201
		3/4"	-	233	318	381	508	636	763
		1"	-	281	384	460	614	768	921
	4	1/2"	-	-	72	100	134	168	201
		3/4"	-	-	271	373	499	636	763
		1"	-	-	327	451	603	768	921
	6	1/2"	-	-	-	-	134	168	201
		3/4"	-	-	-	-	465	635	749
		1"	-	-	-	-	562	767	905
	8	1/2"	-	-	-	-	-	168	201
		3/4"	-	-	-	-	-	542	747
		1"	-	-	-	-	-	654	902

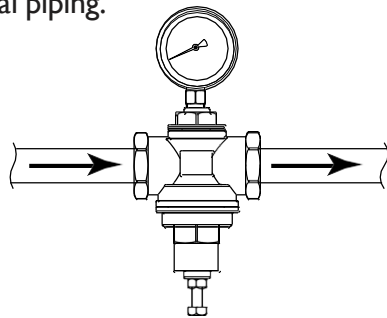
Flow coefficient Kv

DN (mm)	NB (inches)	Kv (m ³ /h)
15	1/2"	1.4
20	3/4"	5.3
25	1"	6.4

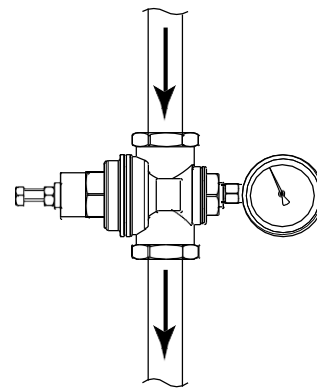
Assembly and maintenance instructions

Installation

Normally you should install the steam pressure reducing valve on horizontal piping, with the pressure gauge facing upwards. However, you can also install DN15 to DN25 steam pressure reducing valves on vertical piping, but only with fluids moving downwards. You must not install higher DN steam pressure reducing valves on vertical piping.



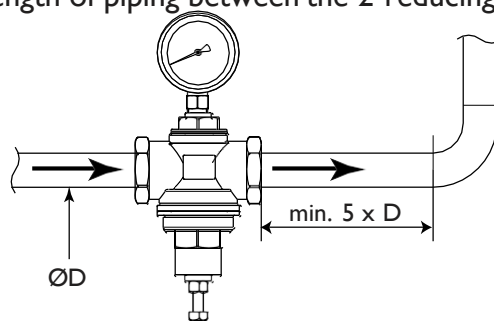
Horizontal installation for all DN's



Vertical installation for DN15 to DN25

The reduced pressure gas needs a larger flow cross-section at the valve's outlet than at its inlet. Due to this you must use larger diameter piping at the steam pressure reducing valve's outlet. You should connect it with a reduction part.

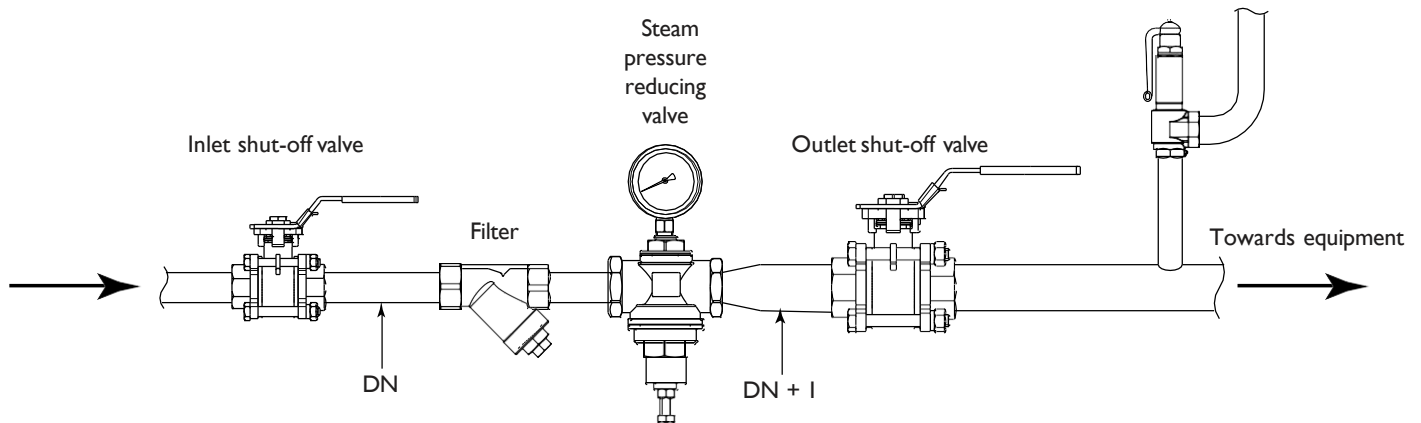
You can make sure the outlet (secondary) pressure is stable and reduce turbulence at the reducing valve's outlet (which will prevent problems with piping and equipment) by installing the reducing valve on straight piping that is 5 to 10 times the length of the pipe's diameter. If you install two steam pressure reducing valves you must also install this length of piping between the 2 reducing valves.



Installation recommendations:

- You can install a shut-off valve in the piping that takes steam into the steam pressure reducing valve. As the steam pressure reducing valve is not necessarily free of leaks when there is no flow through it, it cannot be used to isolate piping sections.
- You must install a filter element in the piping that takes steam into the reducing valve to protect its working parts from foreign bodies (filtration level 0.5mm)
- For gas pressure reduction: as the reducing valve is not necessarily free of leaks when there is no flow through it, the inlet and outlet pressure can become equal. So you should install a safety valve in order to protect the equipment on the outlet side of the valve.

Example for steam:



How to install a steam pressure reducing valve:

Check that there is enough space to carry out maintenance operations where you are planning to install the steam pressure reducing valve. Check that the installation is clean and free from foreign bodies that could damage the steam pressure reducing valve.

Check that all piping is perfectly aligned and that the piping support structure is dimensioned so that the valve is not subject to any external stresses. The piping support structure must only support the pipes, not the steam pressure reducing valve.

You must not use the steam pressure reducing valve when you are tightening it (this could damage the steam pressure reducing valve).

You must only use the 2 hex nut wrenches provided for this purpose.

Use a flat gasket to make sure the valve's threaded connections are sealed correctly.

Use the set pressure adjustment screw **7** and the pressure gauge **1** to adjust the outlet pressure as required.

Clean the installation so that there are no foreign bodies in the piping.

Pressure test the installation according to the applicable standards, but do not exceed the steam pressure reducing valve's specifications.

Maintenance

The steam pressure reducing valve does not require any specific maintenance if it is used in normal operating conditions.

You may need to change some of the valve's parts due to unusual wear and tear, or if a fluid has damaged the valve and caused a leak or malfunction.

If this is the case follow the instructions below.

Assembly / Disassembly

The maintenance and the removal/installation of the steam pressure reducing valve must be carried out by personnel who are qualified and trained for this type of intervention.



Warning: Before you work on the steam pressure reducing valve, check that the installation has been stopped and that the piping is empty and is not pressurised.

Warning: If the steam pressure reducing valve is used with fluids that have a temperature above 60°C then people could burn themselves if they touch it.

Warning: Beware of hazardous materials - follow the instructions provided by the suppliers.

Completely unscrew the adjustment screw **7**.

Unscrew the body parts **2** and **3**. Check the gaskets (**4, 5, 13, 14, 16** et **18**) and replace them if you need to. Check the condition of the spring **10** and replace it if you need to.

Clean and inspect all of the other parts. Replace any worn parts. You are strongly advised to replace any sealing parts (gaskets) that have been disassembled.

Follow the disassembly steps in reverse order to reassemble the steam pressure reducing valve.

Set the pressure with the adjustment screw.

Standards and compliance

- Connection: BSP female thread in accordance with EN ISO 228-1
- Leak testing according to EN 12266 / API 598
- This steam pressure reducing valve complies with European Pressure Equipment Directive (PED) 2014/68/EU (formerly 97/23/EC)