Installation and operating instructions EN

D1 Pressure reducer

For You and Planet Blue.

BWT
BEST WATER TECHNOLOGY

Thank you very much for the confidence that you have shown in us by purchasing a BWT appliance.

Important notice: Always keep the fitting and operating instructions close at hand to avoid any mistakes and before carrying out any work on the device you should read the fitting and operating instructions carefully and follow them. While ourdata sheets and brochures should provide advice to the best of our knowledge, the content thereof is not legally binding. In addition to this, our general terms and conditions of trade apply (www.bwt.com).

Subject to alterations!

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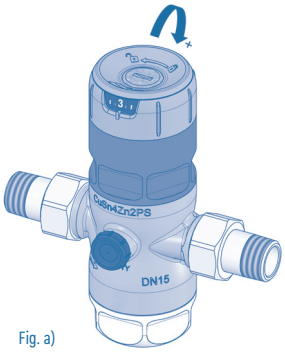


Fig. a)

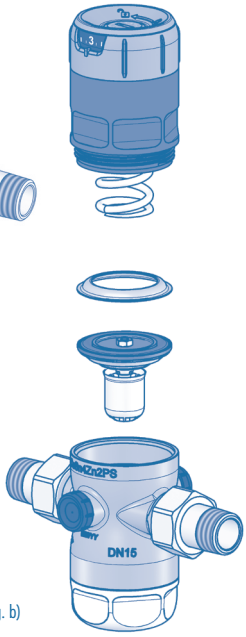
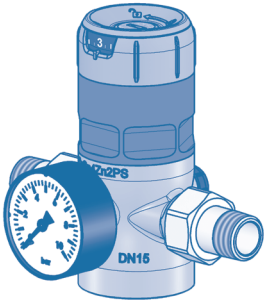


Fig. b)



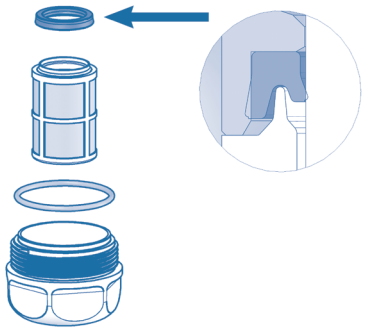


Fig. c)

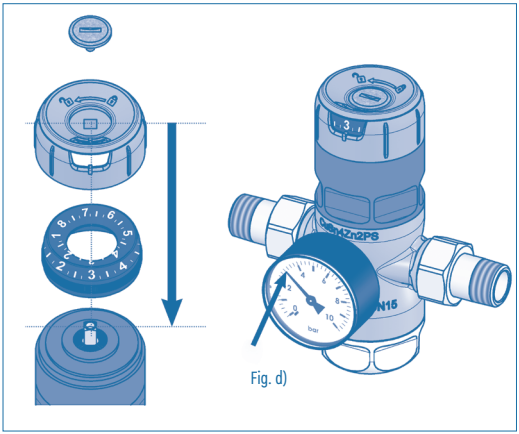


Fig. d)

1. General safety information

- Use the BWT D1 pressure reducer only:
  - for its intended purpose
  - in a flawless condition
  - in a safety and risk conscious manner
- The instructions must be observed.
- For use of the pressure reducer, standards DIN EN 806-2 and DIN 1988-200 must be taken into account and applied. Also observe other national standards and regulations!
- For proper use, it must be ensured that the pressure reducer is used only whe-re the operating pressure and temperature do not exceed the design criteria on which the order is based. The manufacturer is not responsible for damage caused by external forces or other external influences! Hazards to the pressure regulator emanating from the flow medium and the operating pressure must be prevented by means of suitable measures.
- All work must be carried out by authorised personnel.
- Keep this document in a safe place.
- Do not clean the plastic parts with alcohol or solvent-containing cleaning agents! Risk of damage!

2. Purpose of use

The BWT D1 pressure reducer protects water supply systems in single-family and multi-family homes, commercial and industrial buildings from excessive supply pressure acc. EN 806-2 and DIN 1988-200. It helps to avoid pressure damage, reduces water consumption and ensures sound insulation. The D1 is used to reduce pressure and regulates a set back-pressure and keeps it constant, even if the pre-pressure fluctuates greatly. A uniform and not too high pressure prevents fittings and appliances in the entire water supply system from damage.

3. Function

The D1 is a spring-loaded pressure reducer. The force of a setpoint-spring counteracts a membrane force. If the initial pressure drops due to a water consumption, the membrane force also decreases and the now greater spring force opens the valve. On the outlet side, the pressure is increased again until a equilibrium state between membrane force and spring force is reached.

4. Installation

The pressure reducer, which is factory-set to 3 bar of back pressure (for SP version), must be installed in the pipeline without stress. Make sure that the correct seals are fitted and only suitable tools are used!

It is advisable to maintain to a calming section of 5 x DN and to install shut-off valves on the admission and back-pressure sides. Also observe other local stan-dards and regulations.
The direction of flow must match the arrow on the housing.
The installation position is arbitrary.
The pipeline must be carefully flushed through before the pressure reducer is installed, This ensures that the impurities being carried along by the medium cannot impair the fault-free function.

The pressure gauge, optionally arranged on the back pressure side, enables the set back pressure to be checked and is screwed to the threads provided by means of sealing tape.

Attention!!!
Before the pressure reducer is commissioned, it must be ensured that the two pressure gauge connections on the housing are sealed by means of pressure gauges or sealing plugs.

The required back pressure is set by turning the adjustment knob at quiescent pressure (zero consumption) **(Fig. a).**

There are 2 ways to do this:

1) Setting using an adjusting scale
The setting can be made without operating pressure! The adjusting scale, visible on both side, indicates the required setting pressure.

Loosen the fixing screw on the adjustment knob for a 1/4 turn (do not remove!) by turning to the left. Turning the adjustment knob clockwise increases the back pressure and turning anticlockwise reduces the back pressure. If necessary, check the pressure using a pressure gauge. Now re-tighten the fixing screw.

2) Setting using a pressure gauge

The setting can be made only with operating pressure!
Shut off the water supply and relieve the valve on the outlet side, e.g. by drawing off water, and make sure no further draw off is made. Loosen the fixing screw on the adjustment knob for a 1/4 turn (do not remove!) by turning to the left.

If a setting below 3 bar (and/or the pre-setting) is required, turn the adjustment knob to the left until the spring is completely relieved. Restore the water supply and turn the adjustment knob to the right until the desired setpoint is reached.

If a setting above 3 bar (and/or the pre-setting) is required, restore the water supply immediately and turn the adjustment knob to the right until the desired setpoint is reached.

When making the setting, bear in mind that the back pressure set for zero consump-tion will drop further as water is drawn off due to pressure and friction losses. The degree of drop will depend on the amount drawn off.

5. Operation

The D1 pressure reducer is intended to be operated in perfect condition and safety and hazard-conscious. For the operation, the EN 806 and DIN 1988-200 must be followed, as well as local standards and regulations.

The desired back-pressure is adjusted by turning the adjustment handle and reading it on the adjustment scale at resting pressure (zero consumption).

The optional manometer on the back-pressure side allows the control of the set rear-pressure.
Regular maintenance is also part of a proper operation of a technical device, which shall be done by a specialist.

6. Maintenance

According to DIN EN 806-5, inspection and maintenance must be carried out at least once per year to rectify any malfunctions that can be caused by contamination, corrosion, calcification and natural wear. This interval may be shorter, depending on the conditions of use.
During this maintenance/inspection procedure, the screen must be cleaned, the valve insert checked for fault-free condition and must be replaced if required. Then check the back pressure is correct at zero flow and peak flow. The function of the valve must be checked following prolonged shutdowns.

Attention!!!
During assembly work on the pressure reducer, the corresponding system part must be depressurised and drained, depending on the medium.

Remove the valve insert

1. Shut off the water supply and relieve the valve of pressure.
2. Loosen the fixing screw on the adjustment knob (do not remove!) by turning anticlockwise.
3. Turn the adjustment knob anticlockwise until the spring is completely relieved. Failure to observe this instruction can cause injury!
4. Loosen the hood using a spanner and remove the assembly **(Fig. b).**
5. Remove the spring set, slip ring, valve insert.
6. Clean/replace the valve insert as required.
7. For assembly, proceed in the reverse sequence.
8. Set the desired setpoint as described in Chapter 4.

Remove the filter screen

1. Shut off the water supply and relieve the valve of pressure.
2. Loosen the filter screen cup by hand/with a spanner by turning anticlockwise, and remove **(Fig. c).** Make sure that the filter screen cup is not damaged. If it is damaged, be sure to replace it with a new part.
3. Remove the screen.
4. Clean/replace the screen and grooved ring as required.
5. Assemble in the reverse sequence.
6. Make sure that the grooved ring and and the O-ring are in the correct position.
7. Tighten the filter screen cup flush by hand (max. 5 Nm).

7. Cause of malfunction and remedy

- **Back pressure increases above the setpoint – valve insert is contaminated or damaged**

Remedy: Clean or replace the valve insert.

On water heating systems in accordance with DIN 1988 and DIN 4753, the non-return
valve installed between the pressure reducer and water heater can leak. If this oc-curs, the pressure gauge can indicate a rising back pressure when the boiler heats up its expansion water, despite the pressure reducer working correctly.

Remedy: Replace the non-return valve.

- **The pressure on the adjusting scale and pressure gauge do not match**

If the scale ring is dismounted from the adjustment knob, the exact positioning of both parts is released.

Remedy: To reassemble, equalise the scale ring to the current pressure, position and mount. **(Fig. d)**

- **Water escapes from the spring hood**

If water escapes from the spring hood, either the spring hood is not correctly mounted or the diaphragm is damaged.

Remedy: Tighten the spring hood or replace the valve insert.

- **Low water pressure**

If the installation is correct but a low water pressure prevails on the outlet side, a clogged screen could be the cause.

Remedy: Clean or replace the screen.

8. Hygiene concept

With the reminder service in the BWT Best Water Home App, you are regularly reminded to clean the filter sieve in the pressure reducer. The self-control of the pollution is easy to carry out using the transparent cup. If it is necessary, the large stainless steel sieve is easy to replace.
Without a filter installed on the upstream pressure side, the filter screen should be replaced at least every 2 years, with a filter installed on the upstream pressure side at the latest every 5 years. An annual exchange is recommended for reasons of hygiene.

9. Water saving calculator

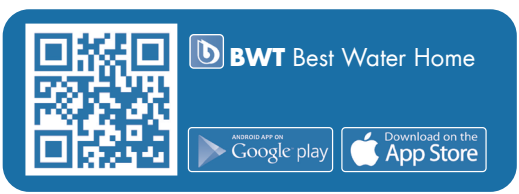
The water saving calculator that can be called up in the BWT Best Water Home App serves as a support to optimize the domestic water pressure and thus to reduce costs. For the water saving calculator, the input of the pre-pressure, back-pressure, water costs, number of people in the household and water consumption is necessary. On the basis of these data, the annual water cost saving potential is calculated with a selectable water pressure and can be read off quickly and clearly.
It serves as an indication or guide value in comparison to water costs without a pressure reducer in the system.

10. D1 warranty

Depending on the BWT national company, a 10-year guarantee is available for the BWT D1 pressure reducer.

Requirements for this are:

- Professional installation by authorized plumber
- Correct operation by system operator
- Registration (myproduct.bwt.com)



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11. Technical data

BWT D1 Pressure reducer									
Nominal diameter		**DN**		**15**	**20**	**25**	**32**	**40**	**50**
Threaded nozzle connection DIN EN 10226-1	G1			R ½"	R ¾"	R 1"	R 1 ¼"	R 1 ½"	R 2"
Connection body DIN ISO 228-1	G2			G ¾"	G 1"	G 1 ¼"	G 1 ½"	G 2"	G 2 ½"
Inlet pressure filter cup plastic		bar		max. 16	max. 16	max. 16	max. 16	max. 16	max. 16
Inlet pressure filter cup metal		bar		max. 25	max. 25	max. 25	max. 25	max. 25	max. 25
Operating temperature filter cup plastic		°C		40	40	40	40	40	40
Operating temperature filter cup metal		°C		85	85	85	85	85	85
Outlet pressure		bar		1.5 – 7	1.5 – 7	1,5 – 7	1.5 – 7	1.5 – 7	1.5 – 7
Installation dimension D1 Eco / Red	L	mm		136	152	170	191	220	254
Installation dimension D1 Inox	L	mm		140	160	180	200	225	255
Installation dimension D1 Eco / Red / Inox	l	mm		80	90	100	105	130	140
	H	mm		89	89	Eco: 89 111	111	151	151
	h	mm		58	58	Eco: 58 64	64	94	94
	T1	mm		37	37	Eco: 37 46	46	50	50
Key-width D1 Eco / Red / Inox	SW1	mm		30	37	46	52	65	80
	SW2	mm		46	46	Eco: 46 66	66	75	75
	SW3	mm		46	46	Eco: 46 65	65	75	75
Connection Manometer	G3			¼ " axial	¼ " axial	¼" axial	¼ " axial	¼ " axial	¼ " axial
Weight D1 Eco / Red		kg		0.8	0.9	Eco: 1.2 1.7	1.9	3.9	4.5
Weight D1 Inox		kg		0.8	0.9	1.6	1.8	3.6	4.0
Flow coefficient Kvs		m³/h		3.4	4.4	Eco: 4.7 9.3	10.5	19.5	20.5

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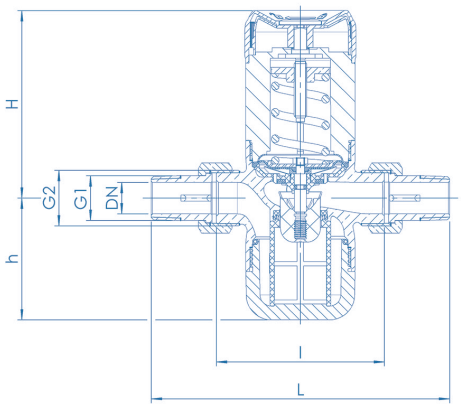
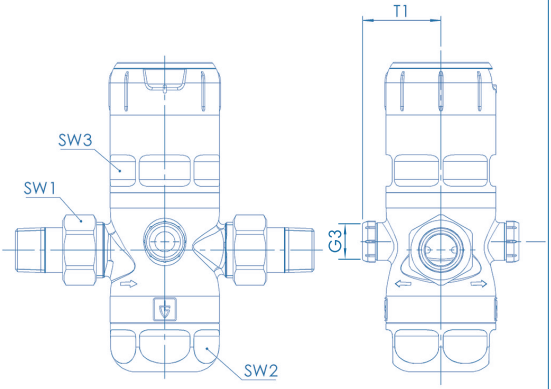
BWT D1 Main Dimensions, Installation Dimensions





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