



# Installation & Operating Manual



## ART 678 Gunmetal Pressure Reducing Valve

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### 1. Introduction

- Albion Valves (UK) Ltd ART 678 Pressure Reducing Valves automatically reduce a higher inlet pressure to a lower outlet pressure.
- Albion Valves (UK) Ltd range of ART 678 have been classified in accordance with PED 2014/68/EU.
- ART 678 is suitable for drinking water applications, and not steam. (Other medium available on request).

### 2. Technical Data

Valve Type	Size Range	Connection Type	Temperature Rating	Pressure Rating (Max)
ART 678 LP	DN15 – DN50	Male Thread BSPT ISO 7/1 R	-5°C – 40°C	Inlet 16 bar Outlet 0.5-3.0 bar
ART 678 SP	DN15 – DN50	Male Thread BSPT ISO 7/1 R	-5°C – 40°C	Inlet 16 bar Outlet 1.5 -7.0 bar
ART 678 HP	DN15 – DN50	Male Thread BSPT ISO 7/1 R	-5°C – 40°C	Inlet 16 bar Outlet 3.0 – 12.0 bar

### 3. Valve Features

- Albion Valves (UK) Ltd ART 678 is designed to reduce a higher inlet pressure, to a lower, constant, safer outlet pressure.
- Lead free pressure reducing valve housing.
- Enhanced corrosion resistance for all water qualities.
- The valve insert is made of a high-quality plastic, PPSU, this offers convincing temperature and media resistance.
- The flow rate of the pressure reducing valve has also been rated for maximum output.
- Adjustment scale visible from two angles for adjustment without pressure gauge / operating pressure.

- Filter screen with 160µm mesh - protection of the system debris with easy access for cleaning.

#### 4. Valve Installation

- Albion Valves (UK) Ltd recommend that the installer adheres to the installation requirements as specified by the Water Supply Water Fittings Regulations 1999.
- Consideration should also be given to BS EN 806-2 (Specifications for installations inside buildings conveying water for human consumption).
- ART 678 should be sited to ensure ease of access, for both use and maintenance.
- It is the responsibility of the installer to ensure the valve is suitable for service conditions e.g., temperature, pressure, and service media.
- Consideration should always be given to galvanic corrosion during installation.
- It is the responsibility of the installer to ensure that the valve, and adjoining pipework is suitably supported to avoid any undue stresses being applied to the valve.
- Suitable sealing materials should be used during installation.
- Do not clean any parts of the valve with harsh chemicals that may cause damage.
- ART 678 is factory-set to 3 bar outlet pressure (for SP version).
- ART 678 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 have an uninterrupted length of 5 x nominal pipe diameter both before and after the valve to ensure laminar flow at both the inlet and outlet of the valve. This should be increased to 10 x upstream when installed immediately following a system pump.
- The pipeline must be carefully flushed through before the pressure reducer is installed. This ensures that any impurities being carried along by the medium will not be trapped in the valve as these may have a detrimental affect on the valve.
- The pressure gauge, positioned on the outlet side of the valve, enables the outlet pressure to be validated and is screwed to the threads and sealed by means of a suitable sealing tape.
- ART 678 can be installed in any given orientation.
- A flow velocity of between 1m/s and 2m/s should be adhered to at all times to avoid the risk of cavitation and wear on the seat.
- The direction of flow must match the arrow on the housing.
- Albion Valves (UK) Ltd recommend that 'shut-off' valves are installed immediately before and after pressure reducing valves.

#### **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.



## 5. Valve Setting

The required pressure is set by turning the adjustment knob, there are 2 ways to achieve the required set pressure:

### 1) Setting using the adjusting scale

The setting can be made without operating pressure!

The adjusting scale, visible on both sides, indicates the required setting pressure. Loosen the fixing screw, by 1/4 screw turn, on the adjustment knob (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, by 1/4 screw turn, on the adjustment knob (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 outlet pressure set for zero consumption 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.

## 6. Maintenance

According to BS 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 outlet pressure is correct at zero flow and peak flow. The function of the valve must be checked following prolonged shutdowns.

**Please ensure that the system is not under pressure during maintenance of the pressure reducing valve.**



### **Removing The Valve Insert**

- Turn off the water supply and relieve pressure.
- Loosen the fixing screw, by 1/4 screw turn, on the adjustment knob (do not remove!) by turning anti-clockwise.
- Turn the adjustment knob anticlockwise until the spring is completely relieved. Failure to observe this instruction can cause injury.
- Loosen the hood using a spanner and remove the assembly.
- Remove the spring set, slip ring and valve insert.
- Clean / replace the valve insert as required.
- For assembly, proceed in the reverse sequence. Please note, a light lubrication may be required during this process. Please ensure this is WRAS approved should the installation require this.
- Set the desired setpoint as described previously.

### **Remove The Screen**

- Shut off the water supply and relieve the valve of pressure.
- Loosen the filter screen cup by hand / with a spanner by turning CCW and remove. Ensure that the filter screen cup is not damaged. If it is damaged, replace it with a new part.
- Remove the screen.
- Clean / replace the screen and grooved ring as required.
- Reassemble in the reverse sequence.
- Make sure that the grooved ring and the O-ring are in the correct position.
- Tighten the filter screen cup flush by hand (max. 5 Nm).

## **7. Approvals Classification**

- Please contact Albion Valves (UK) Ltd Quality Department for further details of any specific product approvals and accreditations.

## **8. Troubleshooting**

ART 678, may from time to time malfunction. The most common causes, and how to rectify are given below: -

### **Outlet pressure increases above setpoint**

In this instance the valve insert / valve seat is likely to be contaminated or damaged. To rectify either clean or replace.

### **Leakage from the spring hood**

If water escapes from the spring hood it is likely that the spring hood is not correctly mounted or the diaphragm is damaged.



### **Low water pressure**

If a low water pressure is prevalent on the outlet side, it is likely that the screen is clogged. This can be rectified by cleaning or changing the screen.

A full risk assessment should be undertaken prior to any maintenance works taking place.

### **9. Warranty**

- For further details of Albion Valves (UK) Ltd warranty period, please refer to Albion Valves (UK) Ltd 'Conditions of Sale' available on our website.



## **About Albion Valves (UK) Ltd**

Albion has been supplying valves and fittings to the building services and industrial markets for the past 40 years.

Albion was created with the sole purpose of providing quality products at an affordable price. With a growing reputation for quality and reliability, Albion is now an established brand providing the industry with a trusted alternative to premium-priced products.

Our commitment to setting the highest standards in all areas of our business means, if you're looking for quality, service, delivery and choice — you'll find it's all at Albion.

### **Quality**

Whatever you need, you can rest assured that if it comes from Albion it has been designed and manufactured to deliver optimum performance and is accredited with the necessary approvals. Our in-house quality department are always on hand too!

### **Service**

We pride ourselves on our customer service – we have even won awards for it! Our cradle to grave approach means you will never be on your own!

### **Delivery**

We know that time is money, and when a priority project depends on a part you can trust Albion to deliver – next day for all orders placed before 4:00PM.

### **Choice**

We may have started out with a single brass ball valve, but our range has grown substantially since and we now consider ourselves to be a 'One Stop Shop' with our comprehensive range. It is becoming more and more apparent to the industry, that it really is all at Albion.