

INSTRUCTIONS FOR

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AQUAVENT SERIES REFILL VALVE FOR PRESSURE BOOSTED (POTABLE) WATER SUPPLY SYSTEMS

MODEL: HHA



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PED (Pressure Equipment Directive) Compliant
BSI Certificates CE 641230 & 641231



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0.0 GENERAL SAFETY INFORMATION



- These instructions are intended for the installer/operator/user/maintenance of this equipment and must be kept with the equipment, for the life of the equipment and made available to all persons. Please read GENERAL SAFETY INFORMATION 0.0, WARNINGS 0.1 and CAUTIONS 0.2, 0.3 & 0.4 before doing anything else, and then follow them carefully.
- The unit must only be installed/operated/used/maintained by a competent person; *A competent person is someone who is technically competent and familiar with safety practices and the hazards involved.*
- Failure to install/operate/use/maintain the equipment as recommended below could cause damage to the equipment any anything subsequently connected to it, and invalidate the warranty provided by AquaTech-Pressmain to the buyer.
- Any damage caused to the equipment by misapplication, mishandling or misuse could lead to risk of **Electrocution, Burns, Fire, Flooding or injury to people or property** dependent upon the circumstances involved.
- We accept no responsibility or liability for any consequences or damage/losses due to misapplication, mishandling or misuse of the equipment.
- The latest version of this instruction manual with up to date safety information can be downloaded from our website at www.aquatechpressmain.co.uk



0.1 WARNINGS

- 0.1.1 Some equipment is designed to operate with liquid temperatures up to 150 degrees centigrade and will constitute a Burns/scalding hazard.
- 0.1.2 The equipment must not be pressurised beyond the maximum working pressure as stated on the label otherwise serious mechanical damage/destruction could occur causing injury to people or property.
- 0.1.3 The equipment must not be heated/chilled beyond the maximum/minimum working temperature as stated on label otherwise serious mechanical damage/destruction could occur causing injury to people or property.
- 0.1.4 Any damage to equipment, pipework or system components caused by misapplication, mishandling or misuse could lead to a Flooding hazard or cause injury to people or property.
- 0.1.5 The equipment must never be disassembled whilst in use, it contains high pressure air/water which could cause injury to people or property.
- 0.1.6 Ensure the pipework to which the equipment is to be attached is sufficiently strong enough to carry the entire mass of the equipment including the water that it will contain under worst-case conditions. Failure to observe this could cause serious mechanical damage/destruction resulting in injury to people or property.
- 0.1.7 This equipment contains a fluid which may under certain circumstances leak/drip/spray fluid (e.g. servicing, repair or malfunction). Ensure any fluid discharge will not cause damage to the surroundings by taking appropriate action. E.g. install in a place that will not be damaged by leakage or install in a bunded area with adequate drainage.



0.2 CAUTIONS FOR INSTALLATION

- 0.2.1 READ GENERAL SAFETY INFORMATION 0.0, WARNINGS 0.1 and CAUTIONS 0.2, 0.3 & 0.4
- 0.2.2 The unit should only be installed/operated by a competent person; *A competent person is someone who is technically competent and familiar with safety practices and the hazards involved.*
- 0.2.3 Store in a dry place to avoid damp conditions deteriorating the equipment.

- 0.2.4 Protect against dirt, damage and frost. It is absolutely essential that no foreign matter such as pipe thread swarf, welding slag, grit or stones are allowed to enter the equipment. Debris of this type can cause severe damage. Frost/freezing will damage the equipment.
- 0.2.5 The equipment is only suitable for installation in a clean, dust free indoor environment, with adequate protection from heat and frost. Ambient air temperature should be between 5 and 40 degrees centigrade, non-condensating. Operation outside of these conditions could seriously damage the equipment.
- 0.2.6 If the equipment were to be stored or taken out of service for a period of time (e.g. 1 week or more), then we would recommend draining the equipment of all water/liquid (with due regard to any local regulations) to prevent frost damage to components. When restarting is required we would recommend commissioning by our authorised service agent.
- 0.2.7 Do not operate this equipment/pumpset prior to commissioning (section 2.2) This could cause irreparable damage to equipment/pumpset/pipework/system components.
- 0.2.8 Isolate the equipment before pressure testing system. Excess pressure could cause irreparable damage.
- 0.2.9 When chlorination of the system is carried out, ensure that any residual chlorine is removed by thorough flushing as detailed in the HSE approved code of practice L8, to avoid damaging the equipment/pumpset. The normal level of chlorination is up to 2 parts per million (ppm), but shock dosing for sterilization purposes, at 25-50 ppm for 24-48 hours is acceptable as long as all chlorine is removed once the process is complete. Chlorination beyond these limits could seriously damage components and WILL NOT be covered by the warranty.
- 0.2.10 The installer/user is responsible for the installation of the correct earthing and protection according to valid national and local standards. All operations must be carried out by a suitably qualified person.
- 0.2.11 The isolating valve must be left open to ensure normal operation.



0.3 CAUTIONS FOR OPERATION/USER

- 0.3.1 READ GENERAL SAFETY INFORMATION 0.0, WARNINGS 0.1 and CAUTIONS 0.2, 0.3 & 0.4
- 0.3.2 The unit should only be operated/used by a competent person; *A competent person is someone who is technically competent and familiar with safety practices and the hazards involved.*
- 0.3.3 The set must not be run until commissioned by an authorised AquaTech-Pressmain agent, this could irreparably damage the equipment and/or system components/pipework connected to it.
- 0.3.4 The isolating valve must be left open to ensure normal operation.



0.4 CAUTIONS FOR MAINTENANCE

- 0.4.1 READ GENERAL SAFETY INFORMATION 0.0, WARNINGS 0.1 and CAUTIONS 0.2, 0.3 & 0.4
- 0.4.2 The unit should only be operated/maintained by a competent person; *A competent person is someone who is technically competent and familiar with safety practices and the hazards involved.*

1. INSTALLATION INSTRUCTIONS

This equipment is an Automatic, combined Air Release, Anti-Vacuum & Surge Protection valve for use on pressure boosted (potable) cold water systems to help prevent pressure shocks/water hammer damage to pipework systems and components.

These instructions are intended for the installer of this equipment. Please follow them carefully.

The unit should only be installed by a competent person; *A competent person is someone who is technically competent and familiar with safety practices and the hazards involved.*

Failure to install the equipment as recommended below could invalidate the warranty provided by AquaTech-Pressmain to the buyer

1.1 ADDITIONAL WARNINGS & CAUTIONS

- 1.1.1 READ GENERAL SAFETY INFORMATION 0.0, WARNINGS 0.1 and CAUTIONS 0.2, 0.3 & 0.4.
- 1.1.2 The AquaVent valve should be used in conjunction with AquaTech-Pressmain variable speed pressure booster sets with 2020+ controller with the "REPRESS" feature enabled, or fixed speed pumpsets in conjunction with AquaTech-Pressmain "REPRESS FS" valve.
- 1.1.3 Please Note: As the specific conditions prevailing at the time of riser drain down cannot be defined due to variations of use within any given building, it is impossible to guarantee that the AquaVent valve and 2020+ REPRESS feature will eliminate all instances of failure. We have however used our extensive experience to proffer a solution that will work in most cases.

1.2 LIMITS OF OPERATION

- 1.2.1 Typical operating temperature range is 5 to 60°C (see label on equipment for more product specific data)
- 1.2.2 Typical maximum operating pressure is 6.0 Bar (g) (valve will vent air up to this pressure) (see label on equipment for more product specific data)
- 1.2.3 Typical maximum allowable pressure is 13.5 Bar (g) (valve will not vent air above 6.0 Bar but case pressure can go up to 13.5 Bar) (see label on equipment for more product specific data)
- 1.2.4 Maximum air inlet rate 2l/s (during drain down of system pipework)
- 1.2.5 Maximum air discharge rate 4l/s at 6.0 Bar(g) (during refilling of system pipework)

1.3 PROCEDURE

1.3.1 LOCATION

If the equipment is to be installed in an unheated area, ensure that there is adequate frost protection. This equipment contains a fluid which may under certain circumstances leak/drip/spray fluid (e.g. servicing, repair or malfunction). Ensure any fluid discharge will not cause damage to the surroundings by taking appropriate action. E.g. install in a place that will not be damaged by leakage or install in a bunded area with adequate drainage.

Ensure the location is vented to atmosphere as the valve is required to draw in and release large quantities of air.

Ensure that location for equipment provides adequate clear space to accommodate it with reasonable access to all parts; AquaTech-Pressmain recommends a minimum distance of 300mm all around. There must be sufficient room to:-

- Isolate the valve;
- Remove the top of the valve to enable servicing;
- remove the entire valve assembly.

Should any of these location conditions not be satisfied AquaTech-Pressmain reserve the right to charge labour on any warranty work required on the equipment.

1.3.2 FIXING TO SYSTEM RISER PIPEWORK

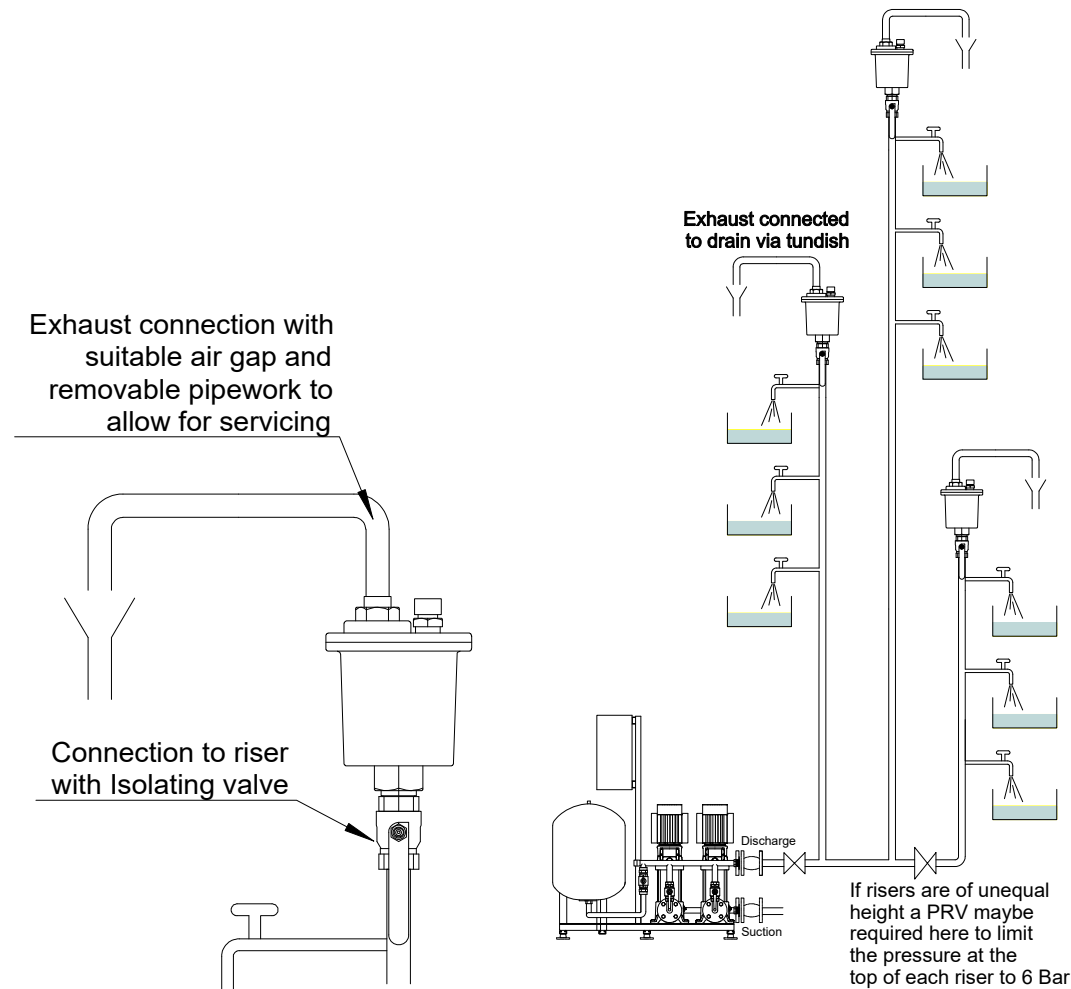


Fig. 1.1 Typical Pipework arrangement

Fig. 1.2 Example of multi-riser use

- 1.3.2.1 Install the AquaVent at the top of the riser (see Fig 1.1) noting location conditions above.
- 1.3.2.2 Keep inlet pipe as short as possible to prevent stagnation from occurring.
- 1.3.2.3 Where more than one riser is used, install an AquaVent at the top of each riser (see Fig 1.2).
- 1.3.2.4 Connection to the riser is via a 3/4" female connection with isolating valve, which is provided for servicing.
- 1.3.2.5 A 3/8" female exhaust port is provided on top of the valve to allow any released water to be discharged to drain via a suitable air gap. E.g. a Tundish. Free flow of air must be allowed out of this exhaust for the valve to operate correctly.
- 1.3.2.6 AquaVent must be installed vertically as shown in Fig 1.1
- 1.3.2.7 Ensure pipework connected to exhaust is removable to enable servicing of the valve.
- 1.3.2.8 Isolating valve must be left OPEN to ensure proper operation.

2. USER INSTRUCTIONS

2.1 CUSTOMER ASSURANCE

AQUATECH-PRESSMAIN ASSURE YOU THAT IF ANY PART OF THIS EQUIPMENT BECOMES DEFECTIVE DUE TO FAULTY MANUFACTURE OR MATERIALS WITHIN 24 MONTHS FROM THE DATE OF INVOICE OR 24 MONTHS FROM DATE OF COMMISSIONING BY AUTHORISED AQUATECH-PRESSMAIN AGENT, THE PART WILL BE REPAIRED OR REPLACED. THIS IS A RETURN TO BASE WARRANTY AND AS SUCH DOES NOT INCLUDE SITE LABOUR COST.

For full details please see the AquaTech-Pressmain "CONDITIONS OF SALE"

2.2 COMMISSIONING

Whilst this equipment has been tested in the factory to the required settings it is impossible to simulate the actual on-site conditions, especially if they are unusual. Also, the equipment may have been disturbed since leaving the factory.

Therefore we strongly recommend **the equipment is commissioned by our authorised agent** who will prepare it, make any necessary adjustments and leave it in operational order.

Commissioning also enhances the Warranty (see Customer Assurance)

Prior to requesting an engineer to attend the site for commissioning, the client must ensure that;

- the equipment has been correctly installed;
 - any necessary chlorination or other treatment has been completed;
 - an adequate water supply is available;
 - the pipework etc in the building is capable of accepting the generated pressures.
- Failure to comply with the installation, commissioning and maintenance procedures will invalidate the warranty.

2.3 OPERATING INSTRUCTIONS

This equipment is an Automatic, combined Air Release, Anti-Vacuum & Surge Protection valve for use on pressure boosted (potable) cold water systems to help prevent pressure shocks/water hammer damage to pipework systems and components.

2.3.1 ADDITIONAL WARNINGS & CAUTIONS

READ GENERAL SAFETY INFORMATION 0.0, WARNINGS 0.1 and CAUTIONS 0.2, 0.3 & 0.4.

- 2.3.1 See Limits of Operation section 1.2
- 2.3.2 The AquaVent valve should be used in conjunction with AquaTech-Pressmain variable speed pressure booster sets with 2020+ controller with the “REPRESS” feature enabled, or fixed speed pumpsets in conjunction with AquaTech-Pressmain “REPRESS FS” valve.
- 2.3.3 Please Note: As the specific conditions prevailing at the time of riser drain down cannot be defined due to variations of use within any given building, it is impossible to guarantee that the AquaVent valve and 2020+ REPRESS feature will eliminate all instances of failure. We have however used our extensive experience to proffer a solution that will work in most cases.

2.3.2 NORMAL OPERATION

The AquaTech Pressmain AquaVent valve is designed to help assist with the draining down and refilling of pressure boosted (potable) water supply pipework by helping to prevent damaging pressure shocks from occurring.

Whether a system pipework is drained down intentionally for maintenance or unintentionally as a result of the pressure booster set stopping, either by power interruption or a low water condition there is the potential of pressure shocks when the pressure booster restarts. The AquaVent works to help prevent these shock conditions developing by allowing the system to be properly vented at all times and without wasting water.

During filling the vent will provide controlled discharge air release from the empty pipework, resulting in an effective deceleration of the water column as it rises to the top of the system.

When all air is evacuated the valve will close, as it is of a balanced design it will seal the system with very little or no loss of water.

Should the system require draining the valve ensures that a vacuum break can occur eliminating the possibility of a negative pressure within the draining riser.

“REPRESS” feature (for variable speed booster sets with 2020+ controller only)

This parameter is designed to help fill a booster sets system riser/pipe work gradually, after a power or mains water interruption.

e.g. we have found in some instances during a power cut or mains water interruption, that occupiers of flats in a tower block, would use water until the main water riser was partially or completely empty, resulting in the

system pressure possibly dropping to 0.0Bar. When power (or water) is restored, the booster set would allow all of the pumps to switch on in sequence and operate at full speed (100%) to try to build the pressure back up to the normal level. This could result in fittings at the top of the riser being subjected to high velocity water coming to a sudden stop, and the resultant kinetic energy loosening certain types of compression fittings if not completely tight. In order to help prevent this situation the 2020+ controller has some added features to refill the system gradually under automatic control. Once set at commissioning no further user intervention is required

2.4 MAINTENANCE INSTRUCTIONS FOR AQUAVENT SERIES

2.4.1 ADDITIONAL CAUTIONS

2.4.1.1 READ GENERAL SAFETY INFORMATION 0.0, WARNINGS 0.1 and CAUTIONS 0.2, 0.3 & 0.4.

2.4.2 PROCEDURE

Every 12 months the AquaVent valve should be maintained by authorised AquaTech-Pressmain service agents - see Servicing (Section 3.)

3. SERVICING

3.1 MAINTENANCE AND CARE OF YOUR EQUIPMENT

The AquaTech-Pressmain equipment that is described in this instruction booklet has been manufactured and tested to the highest standards of design and quality. It will give trouble free operation over many years provided it is maintained regularly from when it is commissioned. To keep it operating efficiently in a safe, economical and environmentally friendly condition, regular maintenance is an essential part.

AquaTech-Pressmain along with its' service division, Acorn Pressurisation Services are the official providers of commissioning and maintenance services. (see below).

Several companies operating under the Aquatronic Group Management structure are available to fulfil a wide range of servicing and maintenance requirements, as detailed on our website.



Plant Servicing & Inspection

ACORN PRESSURISATION SERVICES,

AGM House, Essex, CO6 1GT.

Ph: 01206 215151

10 Wheel Forge Way, Manchester. M17 1EH. Ph: 0161 226 4727

Acorn provides maintenance and installation of all types of packaged water

pumping equipment for building services. Its specialist fields are Pressure booster equipment and sealed systems for heating and chilled water distribution systems.

Regular servicing of any plant for essential services is vital because wear and tear are very gradual processes.

With preventative maintenance, the costs are small and benefits in reliability, safety and economy can be significant. Acorn Pressurisation Services can provide a complete package of schemes for preventative maintenance on all AquaTech-Pressmain and other makes of equipment.

3.2 SERVICE CONTACTS

For service during warranty period contact: AQUATECH-PRESSMAIN Service Department

Head Office Tel: 01206 215121 Manchester Office Tel: 0161 226 4727

For regular servicing, contact their service agents: ACORN PRESSURISATION SERVICES

Head Office Tel: 01206 215151 Manchester Office Tel: 0161 226 4727

who will be pleased to give you expert advice on this or any other servicing matter.

4. DISPOSAL

Disposal of this product must be carried out in accordance with the following guidelines:

Use the local public or private recycling/waste collection service.

In case such a recycling/waste collection service does not exist or cannot handle the materials used in this product, please deliver the product or any hazardous material from it to your nearest AquaTech-Pressmain office.