



Tel 01442 823 123
 Fax 01442 823 234

info@arrowvalves.co.uk
 www.arrowvalves.co.uk

Installation Instructions / Operating & Maintenance Manual Autofill Pressurisation Unit - Models – AFS, AFP

This unit must be tested by an accredited BA Valve Tester



FOREWORD

Autofill is a type of backflow prevention device for pressurisation and filling “non-house” heating or chilled water systems. Filling loops with a Double Check Valve must no longer be used for non-house primary circuits - see Water Regulations. Water Regulations approved KIWA UK A020027.

Autofill contains a BA device, which must be installed, commissioned and maintained in accordance with the Water Regulations 1 July 1999 and AIM 08-01 Issue 1. The design of this unit meets the relevant requirements.

Section	Item
1	Valve Testing
2	Literature Provided
3	Installation
4	Cold fill pressure
5	Expansion vessel
6	Testing and maintenance
A	Pressure adjustments
B	Solenoid service information
7	Options
8	Spares

1. VALVE TESTING

It is a mandatory Water Regulations requirement that BA devices are tested before use and annually thereafter. Arrow Valves normally test the BA valve only. The setting of the cold fill, vessel pressure etc is to be done by the boiler supplier or contractor, or option COM 7 will cover the cold fill and the cuts outs. To arrange for Arrow Valves to test the BA valve, please complete the test request form and fax back with at least 8 working days notice.

2. LITERATURE PROVIDED

Autofill datasheet

Wiring Diagram AM052*

Test request form. RPZ terms & conditions and despatch document

Parts List

3. INSTALLATION

- 3.1. The Autofill should be installed by a competent person with regard to the relevant requirements of the Health and Safety Regulations, building regulations, IEE Regulations, Water Supply (water fitting). Water Bye-Laws (Scotland) and other local Bye-laws
- 3.2. Install in an area not liable to flooding or freezing
- 3.3. Mount the unit to a suitable surface, with the base 300 – 1500 mm above the floor or permanent platform. Secure using suitable fasteners or the optional wall bracket.
- 3.4. Thoroughly flush the supply pipe before connecting. Ensure the supply pressure is at least 0.5 bar more than the cold fill pressure required before fitting – except for model AFP.
- 3.5. It is recommended a volumetric water meter be fitted before the Autofill option WMV4. Use water meter servicing valves.
- 3.6. Connect the supply to the **right** “Inlet” connection using the flexible hose supplied. Where the cold fill is to be more than 5 m, check there is sufficient mains pressure. If not, supply from a boosted cold water service or use model AFP. Note - the special flexible hoses supplied incorporate a servicing valve. Ensure Autofill is commissioned before the unit is signed off as installed.
- 3.7. Connect the outlet to the system at the bottom of the primary pipe and before the circulating pump. An “anti-gravity loop” is recommended.
- 3.8. Sterilise – if required – all fittings on the supply pipe before the Autofill in accordance with BS 6700
- 3.9. Electrical requirements 230 V supply to power the solenoid and pump (model AFP). Supply via a 5 A fused isolator. Route the cable through the conduit on the left of the unit into the electrical box and connect to terminal block – see wiring diagram AM.052*
- 3.10. Connect the boiler control circuit or BMS to the terminals in the electrical box – see wiring diagram. AM052*
- 3.11 The Autofill is supplied with a tundish and has a funnel output to connect to various size waste pipes. Under normal circumstances no discharge should occur. However some discharge can occur if a fault occurs within the valve (e.g. debris in the upstream check valve). A 22 mm (3/4”) warning pipe will generally provide sufficient capacity for DN15 – DN20 BA valves if the run is short – e.g. discharging directly through an exterior wall. Ensure discharging water can not splash onto any item where water damage may occur. Ensure that the drainage facility cannot become flooded, or become a health hazard.

4. COLD FILL PRESSURE

The cold fill “system” pressure is normally equal to the static head of the system plus 2 m to assist venting. However there may be a minimum pressure requirement specified by the boiler – e.g. 1.5 bar. Pressure switches have a “differential”, this being the difference between the switch on and switch off pressure. This is about 0.3 bar. The terms “falling” or “rising” clarify the setting of the switch. E.g. the system switch on pressure may be set to 1.1 bar falling and therefore the switch off will be 1.4 bar rising.

It should be noted that the “final working pressure”, i.e. hot pressure would be more than the cold fill.

Where the supply pressure is from the mains, it may be the case that insufficient pressure is available at times during the day. However, providing the pressure is sufficient at some stage during the 24 hours, the system will fill.

5. EXPANSION VESSEL

- 5.1. An appropriately sized expansion vessel is required. Arrow Valves supply two models – standard red EVCP and higher pressure blue EVUP.
- 5.2. All expansion vessels should have a special expansion vessel isolating valve (locked open) and drain tap – model BVEV.
- 5.3. The vessel should be pre-charged with air to the same pressure as the cold fill (switch on) – e.g. 1 bar for heads less than 8 metres.

6. TESTING AND MAINTENANCE

When the installation is complete, telephone 01442 823123 to arrange for the valve to be tested.



Isolate electrical power before removing the electrical box cover

A. PRESSURE ADJUSTMENTS – COLD FILL

The system pressure is indicated by the left “system” gauge on the door”

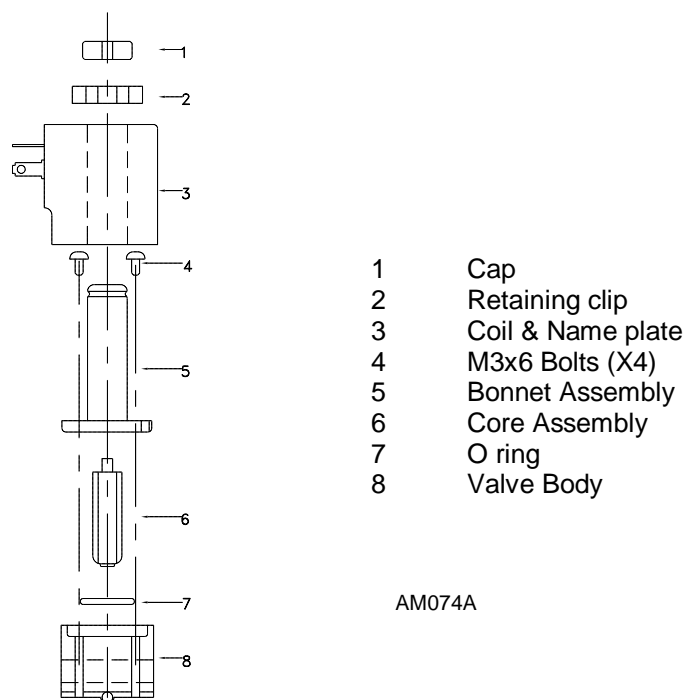
Model AFS, AFP These have a PRV set to 2.8 bar and may need to be adjusted, and pressure switch located in the plastic box, to **decrease** system pressure, rotate the screw on the system switch **clockwise**.

Adjust the High and low cut-out switches as required in the same way.

The static head can be determined by filling the system until water reaches the highest vent in the system and noting the “system” pressure on the gauge – the unit should not be filling at this point (isolate the water or electrical supply). Add to this pressure any additional head above this vent plus a further 2m. Where 1 bar = 10m of water column.

The cold fill pressure must be checked after adjustment. The servicing valve on the outlet hose should be shut – use a screwdriver. The pressure in the Autofill unit can be reduced by drawing a little water from the left test cock on the RPZ valve. To do this, first remove the plastic plug from the test cock, then slowly open the test cock until water discharges. Note the pressure on the gauge when the unit switches on. Adjust the system pressure switch as described above. The isolating valve on the left with the black “T” lever needs to be at the 45 ° to do this.

B .SOLENOID SERVICE INFORMATION



OPTIONS

Code	Description
AFS15	15 mm Pressurisation Unit
AFP15	15 mm Pressurisation Unit c/w Pump
AFCA15	15 mm Pressurisation Unit FC3
AFS22	22 mm Pressurisation Unit
AFS22LBN1	22 mm Unit c/w Solenoid & Water meter
AFP22	22 mm Pressurisation Unit c/w Pump
AFP22LBN1	22 mm Unit c/w Pump & Water Meter
AFNEON	High & Low Warning Lamps 230 / 24 V
AFPUMP	Pump Conversion Kit AFS - AFP
AFBRA	Wall Mounting Bracket - Stainless

AFP15 – The 15 mm Autofill comes with pump to boost output up to 2 bar

AFCA15 – The Autofill comes with a CA device instead of an RPZ

AFNEON – Additional lights on the door to warn of high or low pressures this option comes as a kit for onsite installation.

AFP22 – The 22 mm Autofill comes with pump to boost output up to 2 bar

AFP22LBN1 - The 22 mm Autofill comes with pump to boost output up to 2 bar, also supplied with volumetric water meter (class C)

AFPUMP – A pump conversion kit to add a pump to the unit after installation, comes with instructions

AFBRA - Stainless Steel wall bracket, complete with fasteners for Autofill .(ensure the fasteners are suitable for the wall it is being attached to.

7. SPARES

Code	Size	Description
EMKA Key		Cabinet Key
AFS/P		Gauge M5 Back for Autofill c/w Back Clamp
R.225.12 F	¼"	Filling Pressure Switch 1.2 bar falling
R.225.12 L	¼"	Low Cut Out Pressure Switch 0.5 bar Falling
R.225.12 H	¼"	High Cut Out Pressure Switch 2.8 bar Rising
BAK005900C70	15-20	Upstream Check Valve Assy ECO3T
BAK005900D70	DN25	Downstream Check Valve Assy EC03T
BAK005998C70	15-20	Relief Valve Assy ECO3T
0050114C70		Relief Valve Spring
005012C70		Manifold (c/w Relief Valve Seat)
ECO3T5	15-20	Combined Brandoni Spares Kit (5)
Tundish	DN40	Brandoni Tundish
BA15MUECO3T	DN15	RPZ Valve Compact DZR Brass
BA20MUECO3T	DN20	RPZ Valve Compact DZR Brass