

# SYMPTOM – LOW PRESSURE – PAGE 1 OF 4

## APPLICABLE TO "AUTOFILL" – MODELS AFS & AFP FROM APRIL 2004

### SEE WIRING DIAGRAM – AM052\* (INSIDE CONTROL BOX LID AND ONLINE)

#### WARNING! – MAINS VOLTAGE – ISOLATE BEFORE ELECTRICAL MAINTENANCE

INSUFFICIENT SUPPLY PRESSURE FOR REQUIRED SYSTEM PRESSURE.  
 CHECK SUPPLY PRESSURE TO AUTOFILL.  
 IS THERE A PRV THAT CAN BE INCREASED?  
 CHECK "Y" STRAINER (OR INSIDE AFL BALL VALVE PRE APRIL 2005) IN AUTOFILL - ESPECIALLY IF FILLING RATE TOO SLOW).  
 CHECK SUPPLY PRESSURE GAUGE.  
 CHECK SYSTEM PRESSURE GAUGE.  
 IF AVAILABLE - CAN AUTOFILL BE SUPPLIED FROM BOOSTER SET RATHER THAN MAINS?  
 IF NOT, CONSIDER AFP PUMP CONVERSION.  
 IF ALREADY MODEL AFP - REFER

CHECK POWER SUPPLY. IS THERE 230 V SUPPLY. CHECK FUSE ON AUTOFILL.  
 IF NEW FUSE BLOWS, DISCONNECT SOLENOID.  
 MODEL AFP - IF FUSE STILL BLOWS, DISCONNECT PUMP.

READ PRESSURE GAUGES. IS INLET (RIGHT) GAUGE MORE THAN 0.7 BAR ABOVE SYSTEM GAUGE (LEFT)?

CHECK SOLENOID - WHEN POWERED, COIL SHOULD PULL ON VALVE. CHECK COIL CONTINUITY (700 OHMS). STRIP SOLENOID OR REPLACE. MODEL AFP - IS THE PUMP RUNNING (SHOULD BE NOISY)?

TRY INCREASING PRESSURE ON PRV INSIDE AUTOFILL BY SCREWING IN CLOCKWISE. DOES THE AUTOFILL SWAP TO "STANDBY"?

AFP - USE VOLT METER TO CHECK POWER TO PUMP (TERMINALS 5&6). IS IT ABOUT 180 V? IF NOT, REMOVE DIODE (TERMINALS 4&5) AND TEST WITH DIODE TESTER (OR REPLACE).

REPLACE PUMP (COMES COMPLETE WITH THERMAL CUT OUT, NEW DIODE AND HOSES)

START HERE  
 LOW OR NO SYSTEM PRESSURE?  
 (LEFT GAUGE BELOW SWITCH ON PRESSURE)

IS THE "STANDBY" NEON ILLUMINATED?

IS "FILLING" NEON ILLUMINATED?

CLOSE OUTLET SERVICING VALVE ON HOSE. DOES AUTOFILL CHANGE OVER TO "STANDBY"?

CHECK FOR EXCESSIVE DEMAND (LEAKAGE). OPEN QUICK-FILL FOR A PERIOD TO SPEED UP FILLING.

CHECK "FILLING" PRESSURE SWITCH SETTING - TRY INCREASING. IF NO RESPONSE REPLACE SWITCH.  
 WHEN REPLACING, CHECK TUBE & FITTINGS ARE NOT BLOCKED - OPEN OUTLET SERVICING VALVE TO CHECK WATER COMES OUT.

#### DESCRIPTION OF OPERATION

The Autofill has two modes - Manual (quick fill) and Automatic (top-up).

**Quick fill** - No electrical power is required. The initial fill and substantial fills after partial draining - is achieved with the internal Quick-Fill valve. The supply pressure to the Autofill must be more than 0.6 bar more than the required system pressure. A Pressure Regulating Valve (PRV) is provided to avoid over pressurising the system during the manual quick fill stage. The factory setting for the PRV is 2.0 bar system, whilst the factory setting for automatic top-up is 1.5 bar (switch off).

**Automatic (top-up)** - The quick-fill valve should be closed and the top-up is via a solenoid valve, which is in parallel to the Quick-fill valve. When to system pressure is low (1.2 bar factory setting), the "Filling" pressure switch closes and engersises the solenoid. The switch opens once the desired pressure is reached (1.5 bar factory setting).

**AFP** - this model features a pump, which runs when the filling solenoid is powered.

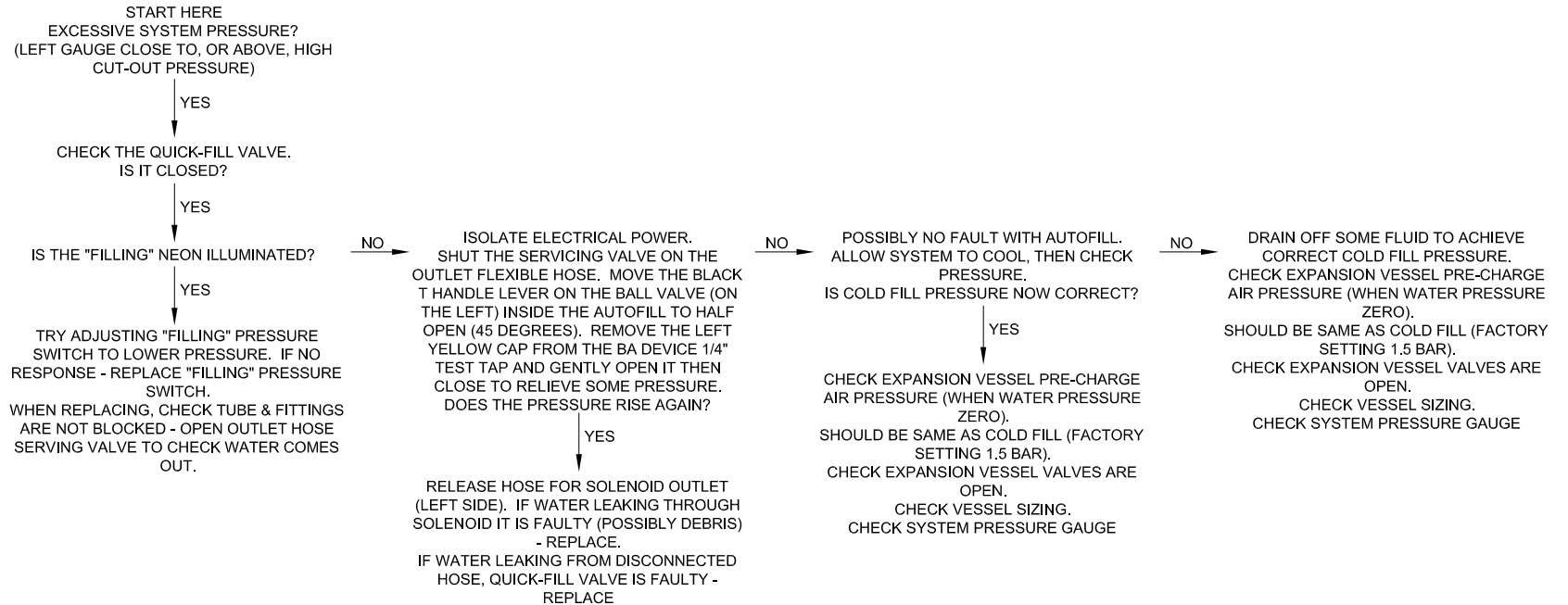
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**SYMPTOM – OVER PRESSURISING – PAGE 2 OF 4**  
**APPLICABLE TO "AUTOFILL" – MODELS AFS & AFP FROM APRIL 2004**  
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**DESCRIPTION OF OPERATION - OVER PRESSURISING**

Excessive pressure when hot may be due to ineffective expansion capabilities. Before concluding the Autofill has admitted too much water, check the system pressure when it is cold. If cold fill pressure is then correct, check the expansion vessels.

If the cold fill pressure wrongly increases when the Autofill is not powered, this may be due a faulty solenoid or Quick-Fill valve.

If a water meter is fitted (recommended), this can be used to record any filling.

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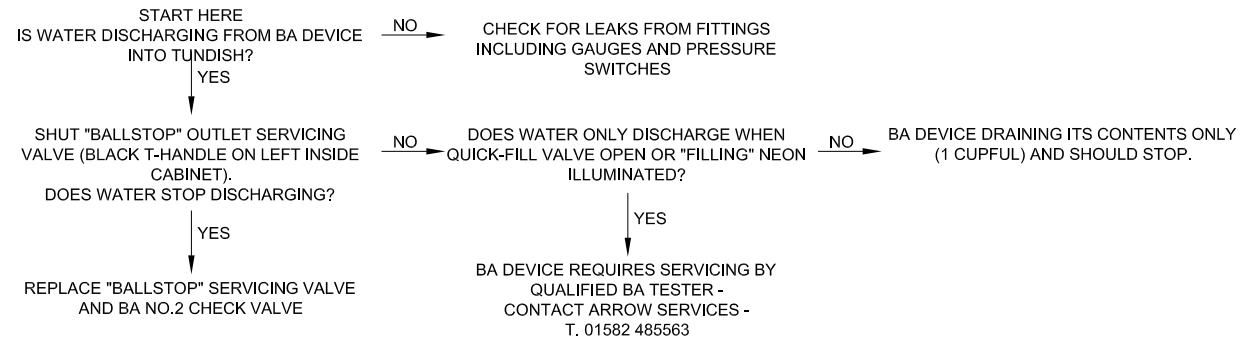


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# SYMPTOM – AUTOFILL DISCHARGING (LEAKING) – PAGE 3 OF 4

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## DESCRIPTION OF OPERATION - LEAKING

In standby mode the BA device is isolated upstream and therefore should not continue discharging beyond some operational discharge - i.e. BA may drip to empty its contents (1 cupful) after fill.

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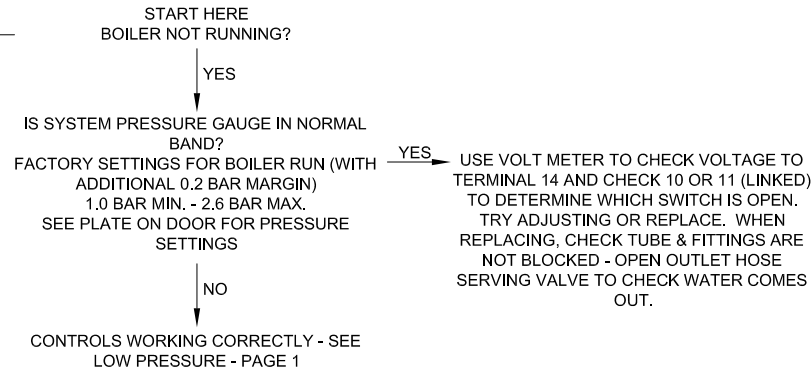
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# SYMPTOM – CONTROLS FAILURE (HIGH & LOW CUT-OUT SWITCHES) – PAGE 4 OF 4

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IF BOILER NOT STOPPING WHEN PRESSURE TOO HIGH OR TOO LOW CHECK CHECK APPROPRIATE PRESSURE SWITCH. TRY ADJUSTING OR REPLACE. WHEN REPLACING, CHECK TUBE & FITTINGS ARE NOT BLOCKED - OPEN OUTLET HOSE SERVING VALVE TO CHECK WATER COMES OUT.



## PRESSURE SWITCH SETTINGS (factory default)

See separate commissioning instructions.

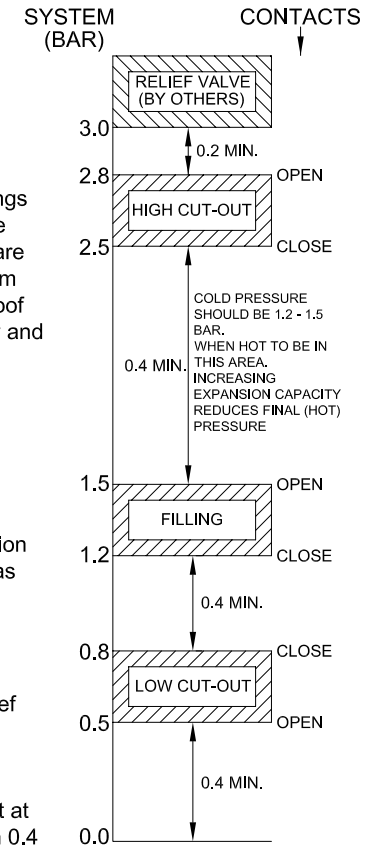
The diagram shows the factory settings for the three pressure switches in the Autofill control box. These settings are suitable for static heads of up to 13 m above the Autofill. (Remember for roof top installations, the system is below and therefore the factory settings are generally suitable).

The pressure switch "differential" or "hysteresis" is about 0.3 bar.

It is important that the switches are correctly "spaced" for reliable operation with a minimum of 0.4 bar between as shown.

The High Cut-out (opening on rising) should be at least 0.2 bar below the relief valve to avoid discharge. (Relief valve not part of Autofill - typically "Nabic").

The Low Cut-out switch is factory set at 0.5 bar and cannot be set lower than 0.4 bar (falling).



## DESCRIPTION OF OPERATION - BOILER (OR OTHER APPLIANCE) CONTROLS

Factory wiring is configured for "healthy" to be normally closed circuit (boiler run) between terminals 13 & 14. The high & low cut-out switches are volt free and in series. Optional 24 V or 230 V lamps available, which can be powered from control circuit - see "Autofill Neon Wiring" on-line AM078\*. Terminals 9 & 11 may be connected together to provide common fault (i.e. high or low) alarm.

The "low cut-out" switch is factory set to open at 0.5 bar (falling) and close again at about 0.8 bar (rising). This cannot reliably be set lower and generally no reason to increase. If it is increased, it should be no more than any increase to the "filling" pressure switch adjustment.

The "high cut-out" switch is factory set to open at 2.8 bar (rising) and close again at about 2.5 bar (falling). This cannot reliably be set lower. before increasing, check pressure relief valve setting and other system constraints.

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