

**Fig. 1 Control Panel**

## **PRIMUS AQWE6 (AQUAFLEX) HEATING SYSTEM**

Please read through the following operating instructions carefully before starting the heater.

### **General**

The AQWE6 (Aquaflex) is a modern heater intended for the supply of central heating and domestic hot water for caravans/motor homes. The heater is integrated with a 9-litre domestic water heater and is equipped 1+2 = 3 kW electrical heating coils. The gas burner operates in stages of 2, 5, 6 and 7 kW.

Regulation is fully automatic, and the heater drops to a lower stage the closer one approaches the selected temperature. This means that the heater operates very quietly and with low electrical power and gas consumption for most of its operating time.

### **Control panel**

The heater is regulated via the electronic control, which is integrated with the KT9/2000 control panel (Fig 1). The control panel has 4 switches for setting the desired functions and a knob for setting the desired temperature. To reach 20°C set the turning knob accordingly. The control range is approx. 5-30°C.

- GASIGN = Gas ignition will take place if heating is required
- 1KW = 1 kW electrical coil connected if heating is needed.
- 2KW = 2 kW electrical coil connected if heating is needed.
- WATER & HEAT = Tap water heating will be given priority.
- HEAT = Heat will be produced when required.

**GASIGN** means that the gas heater will start if heating is required. This switch should be in the On position at all times, except if the gas heater is not required to operate for whatever reason.

**1KW** and **2KW** means that the electrical heating coils will be switched on as heating is required. Both 1 and 2 kW electrical heating has to be selected when 3 kW is required.

**Note.** The choice of electrical power is ultimately governed by the current available from the site supply. A 5A outlet can allow 1000W, a 10A allows 2000W and a 16A allows 3000W.

**WATER & HEAT** means that heating tap water takes priority over room heating: When larger amounts of hot water is required for showering, washing or such then this button should be in the ON position. During cold periods enough hot water is normally produced at the same time as the living area is heated so it can be set in the HEAT position and it should always be in the HEAT position when no water is fed into the water heater. Heat will still be produced if the thermostat is not turned down.

**HEAT.** Hot water will be produced, as described above, as a function of the requirement to heat the living area except when the outside temperature is high and no heating of the living area will be required. Then the setting should be WATER & HEAT

and the thermostat turned down.

Both gas and electric can be connected at the same time if so desired.

**NB.** The programmable timer unit must be in the ON position to operate the heating system. (see Programmable Timer Instructions)

### **Mode of operation of the heater**

Control of the heater takes place fully automatically once the basic setting described above has been made. If both electrical and gas heating is selected priority is given to electrical heating.

If the setting has been made for automatic water heating, WATER & HEAT, priority will always be given to hot water. Except in the case of a living area which has fully cooled down, when the heater will prioritise room heating until the heat in the room has reached an acceptable level. The heater will then check the room temperature and water temperature alternately and will generate room heating or hot water as required. This means that hot water is always available, and that room heating is provided as required. It takes about 15-20 minutes to produce hot water starting from a fully cold system.

The temperature of the hot water is limited to 70°C. Note that 70°C is a high hot-water temperature and precautions should be taken during use.

If the red lamp lights up, this indicates that the heater has gone into safety mode as a consequence of the gas heater having attempted to ignite and having failed to ignite or that the built in secondary overheat thermostat has acted. This is usually because the gas supply has run out, but it may also be caused by the presence of air in the gas line or by a blocked gas supply or that the heater has been running without fluid.

Turning the GASIGN Off and On should normally restart a tripped gas heater. Note that for the secondary overheat thermostat the heater has to cool down.

### **Starting the heating system**

1. Make sure that the system has a power supply (12 V/220 V)
2. Open the gas cylinder
3. Check that the heating system is filled with water/glycol (60/40)
4. Set the desired temperature.
5. Turn on the desired function on the switches.
6. If optional Timer is installed check that it is turned to On. (See Timer instructions)

### **Shutting down the heating system**

1. Turn GASIGN and 1KW and 2KW switches Off. (If Timer is installed you only need to turn it Off)
2. Close the gas cylinder



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3. Empty the water heater if there is a risk of frost
4. Switch off the supply voltage

### Filling the water heater - domestic water

1. Ensure that the drain valve of the heater is closed
2. Start the fresh water pump
3. Open a water tap and leave it open until water arrives. If a mixing valve is present set it to the hot position and allow filling to take place as described above.

### Emptying the domestic hot water heater

1. Switch off the fresh water pump. When at risk from frost and heating is turned off, always drain the domestic hot water from the boiler

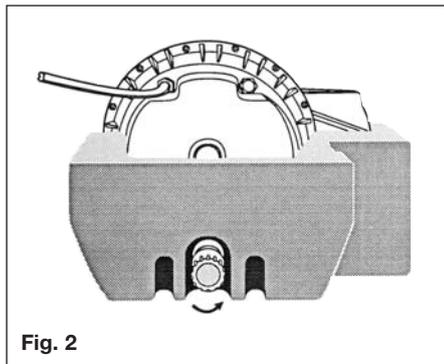


Fig. 2

2. Open the drain valve on the heater by rotating the red knob by two clicks in an anti-clockwise direction (Fig.2)
3. Open all the hot water taps.
4. Check that water is running in the drainage pipe, (The easiest way is to look under the vehicle). This is particularly important during the winter, when snow and slush may block the pipe.

### Maintenance of domestic Hot water heater

The heater may be descaled with vinegar or formic acid, or alternatively with a special descaling agent.

The agent is added to the fresh water that is circulating through the system. After descaling, the system is flushed with clean water. **(Do not use agents containing bleach)**. The domestic hot water heater can be removed from the main heater without affecting other functions. Depending on the position of installation the heater may require removal to provide access to the domestic hot water heater tank.

**Note.** The exhaust outlet in such a case must be removed and refitted. The small O-ring in the exhaust-connecting piece must be replaced whenever the exhaust outlet is removed.

The domestic hot water heater can be washed out and refitted. Check that the O-ring is undamaged before fitting.

**Note:** Only nuts with metal friction locking may be used. Check that the domestic hot water heater is leak-proof after fitting by pressurising the system.

### Electrical coils

The heater is equipped with 2 electrical coils, with an output of 1000 + 2000W. Regulation is taken care of automatically by setting the switches as described earlier. The electrical coils have a mechanical overheating protection device capable of tripping if the system is operated without water.

Pressing the red button on the side of the heater (Fig.3) performs resetting of the tripped overheating protection. Resetting is only possible after the system has cooled down, and the button must be pressed

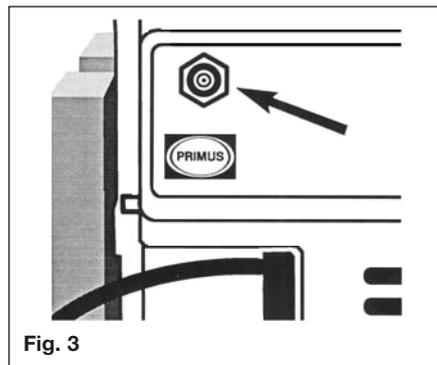


Fig. 3

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firmly. If the protection trips once more, the cause of the fault must be investigated. Consult a specialist.

**The heater must only to be connected to the mains via the integrated 3 way connector provided.**

**If the cover to the electrical heater is removed the mains must be disconnected.**

**Important Note:** Any interference with and modification to the heater may lead to serious functional problems. Changes to the gas or exhaust components can pose a direct risk to life, and Primus declines all responsibility in the event of such changes being made.

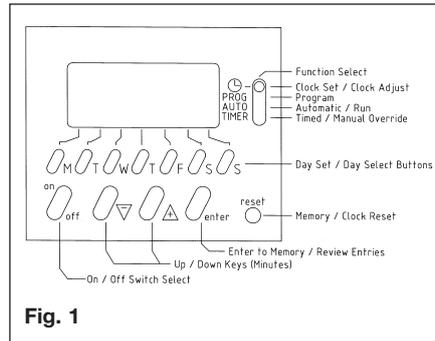
1. The guarantee lapses with immediate effect if any work is performed other than by a specialist.
2. Use only Primus original spare parts.
3. Only a specialist must carry out repairs.
4. The small O-ring must be replaced if the exhaust outlet is dismantled.
5. The gas installation and any tests must conform to national requirements.
6. Keep the exhaust outlet and the air inlet free from dirt, snow and ice.
7. The heater must not be in use when refuelling and when in the garage.
8. The domestic hot water heater is equipped with a safety valve, which

opens at approx. 3 bar. (Any drainage takes place via a drainpipe through the floor.)

9. The heater must be run with water/glycol (60/40) in the system at all times. If the heater is operated dry, it will normally be stopped by the operating thermostat. The thermostat will close after cooling, and the heater will then function normally provided that water is present in the system. If the operating thermostat fails to trip for any reason in the event of the system overheating, the heater will be stopped by a built-in secondary overheat thermostat. A red LED on the control panel indicates this. The electrical cartridge has a separate overheating protection.

Technical Data	AQWE6	Technical Data	AQWE6
Gas	I3BP /I3+	Max gas consumption	210/420/580 g/h
Working gas pressure	30 mbar/28-30/37mbar	Number of steps electric heater	3
Wall exhaust	Yes	Output electrical power	1/2/3 kW
Volume Boiler	9 lit	Working voltage	12 V = /230 V AC
Heating-up time hot water	20 minutes	Electric power consumption 12 V	300/400/750 mA
Max D: H: W. pressure	2,8 bar	Electric power consumption 230 V	5/10/16 A
Length x Width x Height	500 x 400 x 300	Exhaust length max.	45-mm
Weight (without water)	15,1 kg	Exhaust diameter	54,3-mm
Number of steps in gas burner	3	Air inlet diameter	88,3-mm
Max power	2.6/5.0/7.0 kW		





**Fig. 1**

**Note: Primus system with servicepump 721850.**

There are two pumps installed in the heating system: One strong pump for filling and flushing the system and one weaker for normal use of the system. (For position of reservoir tank for filling see schematic heating layouts).

The strong pump must be used during filling or topping up of the system and for flushing of air in the system.

The manually operated switch for the service pump is situated alongside the 230V switch on the bed front.

**PROGRAMMABLE HEATING TIMER (USER INSTRUCTIONS)**

(Fig.1)

**Features: -**

- 7 Day / 24 Hour Programmable Timing
- 12V DC Operation
- Manual and Timed Override Option

**USER INSTRUCTIONS**

**Setting the Clock: -**

1. Move the Function Select Slider Switch into the top "Clock set / Clock Adjust" position indicated by a Clock Face symbol.
2. Set the day by pressing the corresponding day button M = Monday, T = Tuesday, etc.
3. Set the time by using the + and - arrow keys to increase or decrease the time shown until the correct time is reached (Holding the + and - keys in will Scroll quickly to the desired time)

**Programming the Heating Timer: -**

1. Move the Red slider switch to the Position Marked "PROG" (Program).
2. Using the + and - Arrow Keys set the first Program time, the ON time (note - ON is shown in the top right corner of the display)
3. Set the Day or Days this switching time should be active, using the Day Select buttons.

**(Note -** an active day will appear as mark at the bottom of the display

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- corresponding to a day select button.)
4. Press the Enter Key to store this information. After pressing the Enter key the display will change, ready to set the next time. OFF or ON will be shown in the top right corner indicating which time is next.
  5. The next switching time can now be programmed by repeating steps 2, 3 and 4.
  6. Run the programmed switching sequence by moving the Function Select Slider to the "Auto" position. The module will now carry out the switching operations as programmed, displaying the current time along with the state of the switch i.e. ON or OFF.

**Note** - the Time display will not be seen if 12V DC is not present.

### Timed / Manual Override.

This function gives the ability to Manually override the Timer switch Program turning the Heating system ON or OFF, and also allows the user to set this override to last for a timed period (set in hours)

### Manual Override: -

1. Move the Function select slider down to the "Timed / Manual Override" position. The display will read - h with ON or OFF to the Right (depending on the current switch state).

2. Change the current switch state press the "On / Off Switch Select" button the display will change to read the new switch state on the right side. This timer will remain in this state until the Switch Select Button is pressed again or the Function select slider is returned to the "Auto" position and a switching program is run.

### Timed Override: -

1. Move the Function Select Slider down to the "Timed Manual Override" position. The display will read - h with ON or OFF to the Right (depending on the current switch state).
2. Set the override duration using the + and - "Up / Down Keys" the time is shown in (h) hours and (d) days and the set time can be from 1 to 23 hours or 1 to 27 days.
3. Change the current switch state to the override state by pressing the "On /Off Switch Select" button.
4. Return the Function select slider to the "Auto" position. The override will start ONLY when the Function Select Slider is returned to the "Auto" mode, when in auto mode the ON / OFF display will flash to show the override state.

**Note on Duration:** - If X hours are selected, the override timer decrementation will start on changing mode.

If X days are selected, the override timer decrementation will start at midnight (the present day counting for a whole day).

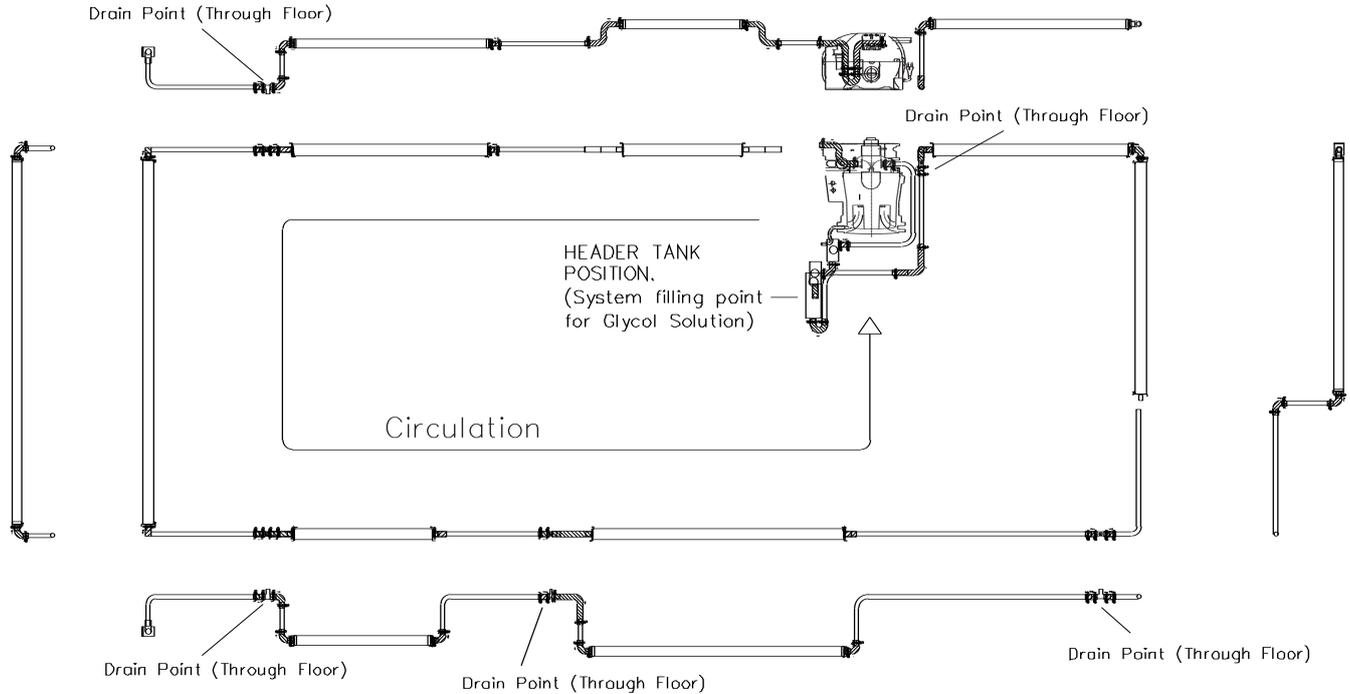
### Power Supply

The Programmable Timer Module requires a 12v supply to operate fully, without this supply switching actions will not take place and the display in "Auto" Mode will not appear. The unit is fitted with internal battery backup of 25000hrs minimum reserve this will retain all programming and allow new programming when a 12v supply is not present.



# Fitted Equipment

## PRIMUS HEATING SYSTEM - BESSACARR CAMEO 535SL



## PRIMUS HEATING SYSTEM - BESSACARR CAMEO 550GL

