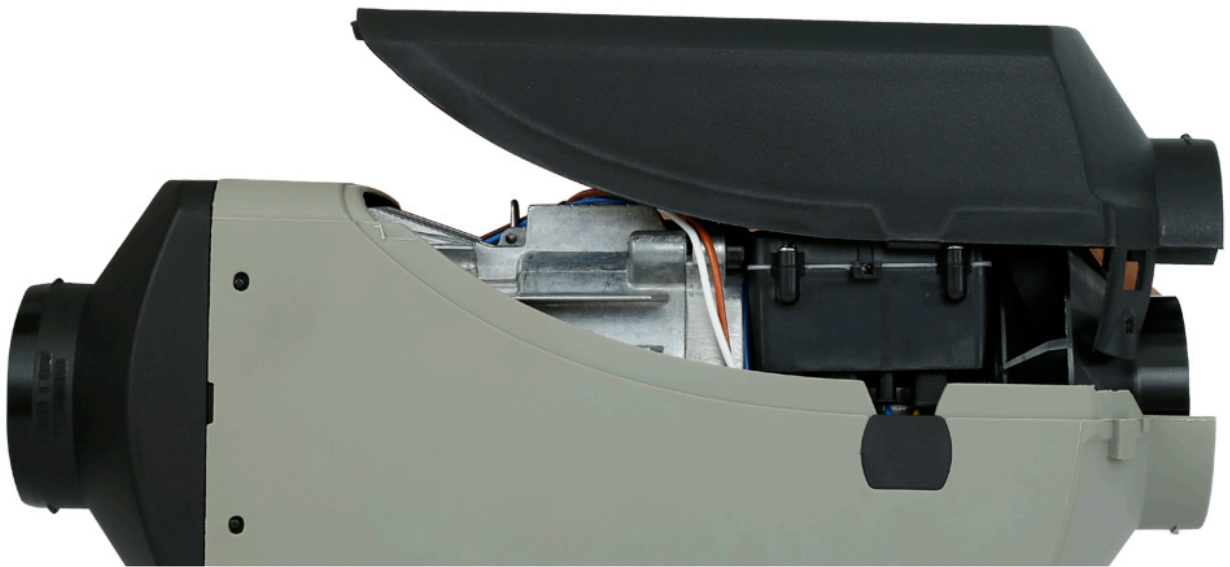




**General**  
COMPONENTS



---

BISON 2200A OWNER'S MANUAL

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## Preface

Thank you for purchasing the BISON 2200A diesel heater (hereinafter referred to as 'the heater'). This manual will attempt to describe the structure, working principle, installation and operation of the heater. For future reference please keep this manual in a safe and convenient place.

### NOTE

- This instruction booklet is subject to revision without notice but the instruction book is in conformity to the purchased product.
- The manual will attempt to answer any and all questions the user may have. If you have any further questions or find anything incorrect within this manual, please contact us directly.
- Please check that the heater is not damaged when first unpacking it and contact the dealer immediately if any problems are found.
- If any problems or faults arise during installation or operation, please contact us directly or any other customer service station authorized by our company. We shall do our best to offer you our full support.

## Uses and Applications

The heater works independently from the vehicle's engine, but is best fitted using the vehicle's battery and fuel tank. An auxiliary battery and/or fuel tank can be used if necessary.

The heater will operate under normal conditions in most vehicles from industrial and machinery sectors to leisure craft like yachts and motor homes.

The heater is best used for heating various cabins and compartments, engine preheating and glass defrosting.

It is **not recommended** for constant long-term operation for residential rooms, garages, holiday homes etc.

### NOTE

The most common faults that occur are generally due to poor fuel quality, dirty (or empty) fuel tanks or drops in voltage; particularly in older vehicles like live aboard narrowboats or used, commercial vehicles.

## Safety Information

Follow the installation guidelines carefully to ensure the heater has the appropriate amount of clearance between surfaces, so as not to become a fire hazard, and that the various parts of the heater that get hot, like the exhaust, are not exposed or contaminated by possible fuel and oil.

Sufficient ventilation is required allowing proper air-flow to the heater. If the heater is to be installed in a box or compartment, please ensure an air vent is installed for this reason. The air must also be fresh and not contaminated by exhaust fumes or other pollutants. Make sure that the air intakes and exhaust do not get blocked by other objects.

Take care to ensure that the exhaust outlet is installed in a way that prevents fumes from entering the vehicle or are discharged in the direction of the fresh air intake. Ensure the use of heat shields where necessary to avoid fire damage.

If work is to be carried out on or around the heater, turn it off at least an hour before so that it is cool enough to be handled. If necessary, wear safety gloves.

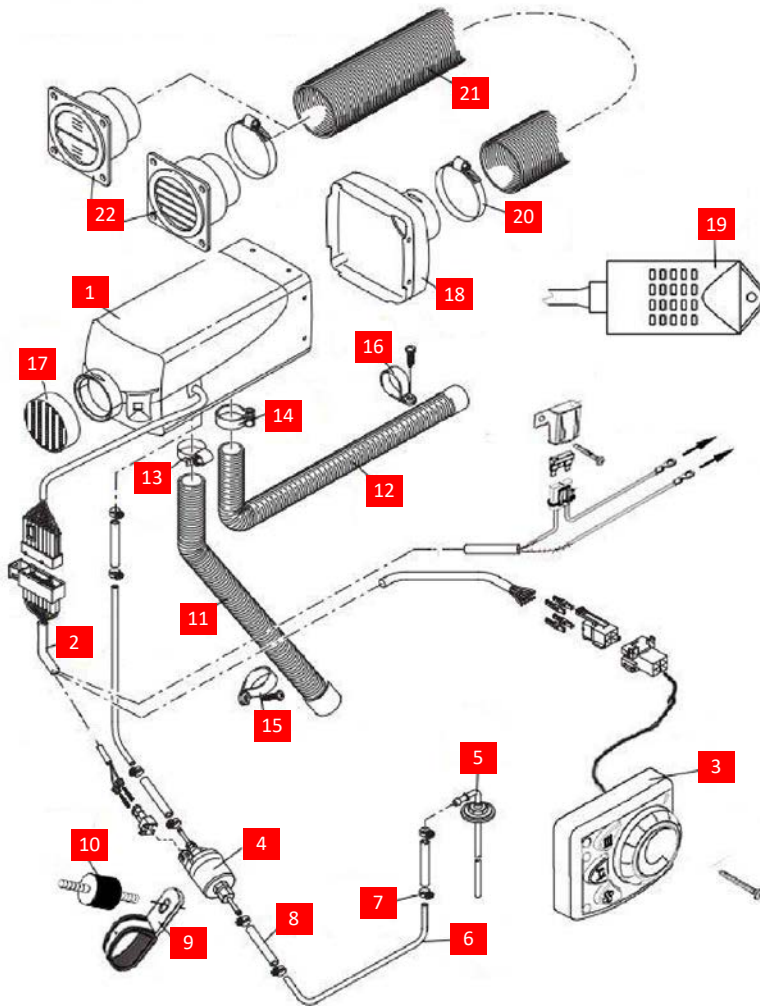
The fuel line must not be routed through the passenger compartment or the driver's cab in any vehicle. Ensure that they are also installed so that the exits are not at risk or in danger of becoming a possible fire hazard.

Finally, take care and follow any and all precautions when installing the heater to minimize injuries to yourself and damage to the heater.

## Technical Specifications

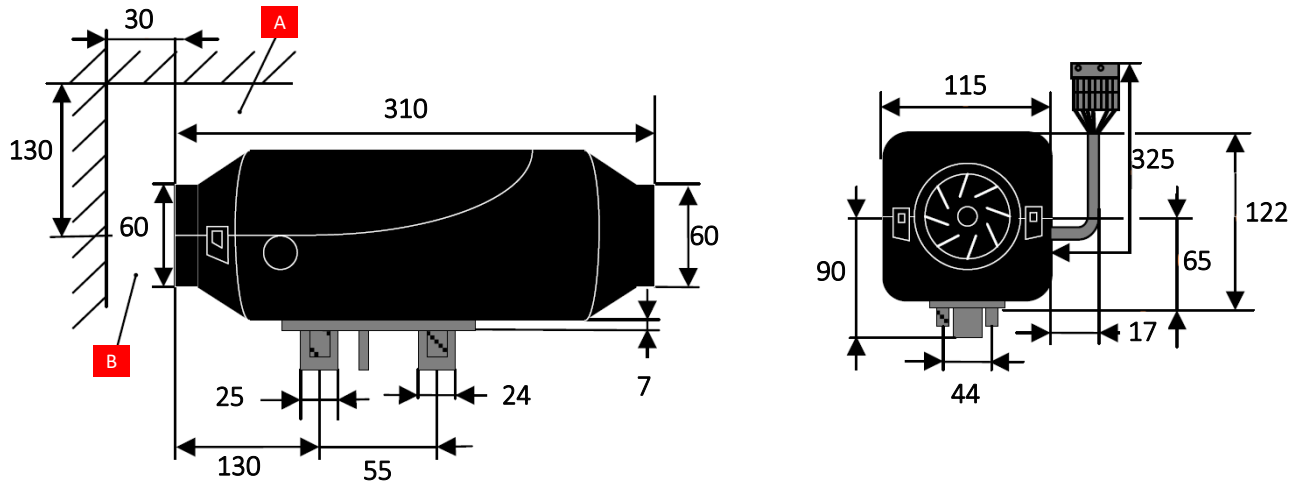
| Heat Output Range                           |            | Minimum  | Maximum     |
|---|------------|--|-------------|
| Heat Output: BTU/hr (kW/hr)                 |            | 2900 (0.85)  | 7506 (2.2)  |
| Diesel Fuel Consumption: U.S Gal./hr (L/hr) |            | 0.03 (0.1)   | 0.07 (0.28) |
| Electric Power Consumption: Amps (Watts)    | 12 Volt DC | 0.58 (7)   | 2.83 (34)   |
|   | 24 Volt DC | 0.29 (7)   | 1.42 (34)   |
| Voltage Operating Range: Volts DC           | 12 Volt DC | 10.5 - 16 with Low and High Voltage Protection               |             |
|   | 24 Volt DC | 21 - 32 with Low and High Voltage Protection                 |             |
| Operating Modes                             |            | Automatic Regulation - Adjustable 41°F to 95°F (5°C to 35°C) |             |
|   |            | Constant Heat Output Selection - Adjustable Min. to Max.     |             |
|   |            | Air Circulation / Ventilation - No Heat, Fan Only            |             |
| Dimensions: LxWxH, Inches (mm)              |            | 12.21 x 4.53 x 4.80 (310 x 115 x 122)                        |             |
| Weight: lbs (kg)                            |            | 5.95 (2.7)   |             |

## Kit Contents



1. Main Heater Unit
2. Main Wire Harness
3. Control Switch / Timer
4. Fuel Pump
5. Fuel Pick-up Tube
6. Fuel Line
7. Fuel Line Connector Hose Clip
8. Fuel Line Connector
9. Fuel Pump Mounting Bracket
10. Anti-Vibration Mount
11. Air Intake Pipe
12. Exhaust Pipe
13. Air Intake Pipe Clamp
14. Exhaust Pipe Clamp
15. Air Intake Pipe Mounting Clamp
16. Exhaust Pipe Mounting Clamp
17. Grill
18. Outlet Cover
19. Ambient Temperature Sensor (Optional)
20. Air Ducting Clamp
21. Air Ducting
22. Air Ducting Outlets

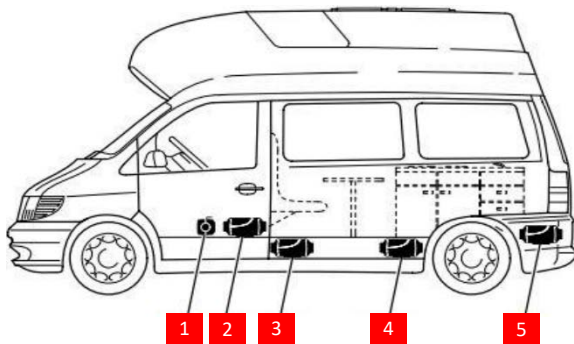
Dimensions, mm



- A. Minimum clearance required for opening lid and dismantling glow pin and E.C.U.
- B. Minimum clearance required for proper air intake.

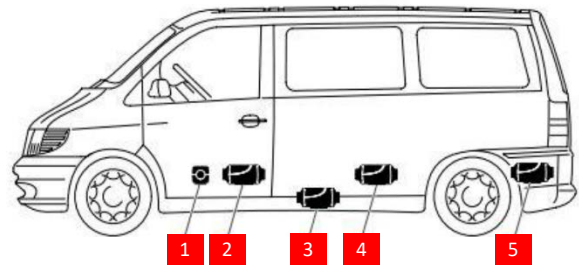
Installation

Figure I: Motorhome



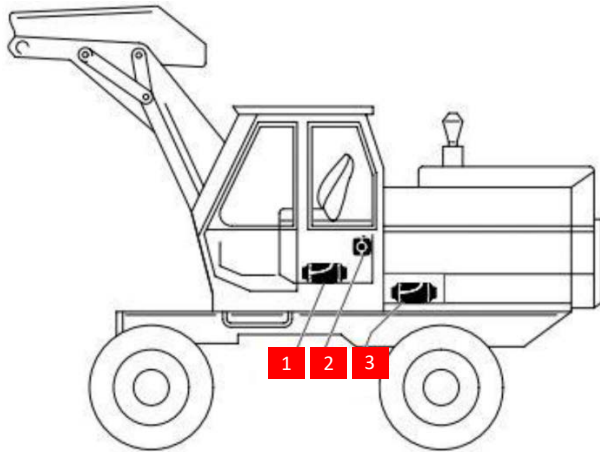
1. In front of the passenger seat
2. Between driver's and passenger's seat
3. Under the vehicle's floor
4. Under the rear seat
5. In rear trunk space

Figure II: Minivan



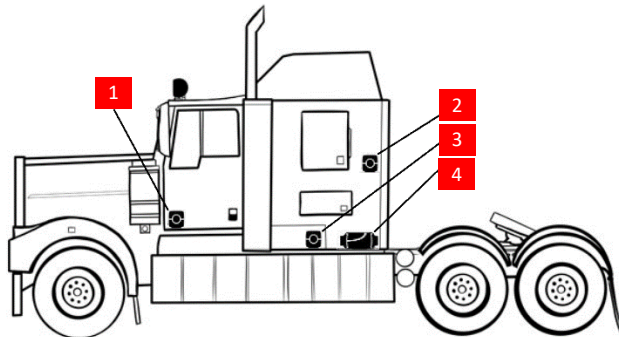
1. In front of the passenger seat
2. Between driver's and passenger's seat
3. Under the vehicle's floor
4. Under the rear seat
5. In rear trunk space

Figure III: Construction Equipment



1. In seat box
2. On rear wall
3. In a protective case outside

Figure IV: Truck

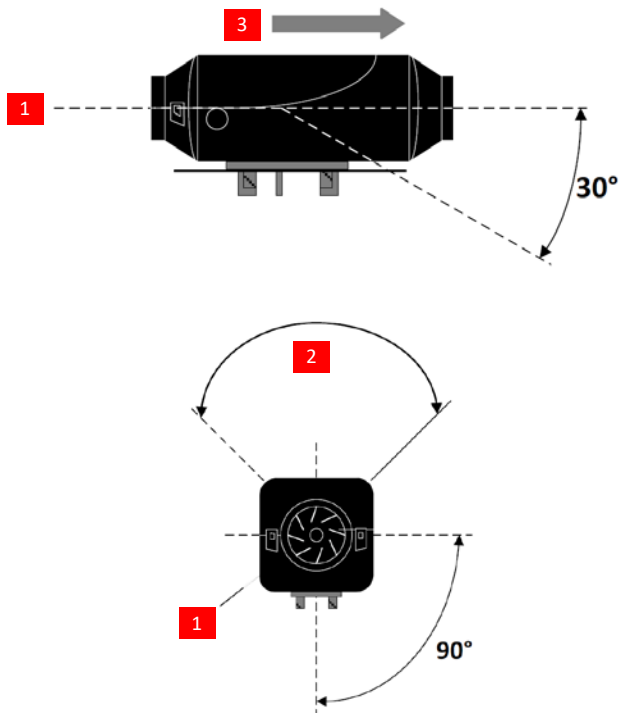


1. In passenger footwell
2. On cabin rear wall
3. In the toolbox
4. Under the bed

**Installation: Angle**

All positions suggested are examples. Other locations are possible so long as they correspond to the proper installation guidelines and requirements.

Figure V: Position Angles



1. Heater air intake
2. Glow pin position
3. Direction of air flow

Figure V shows the ideal installation position of the heater; with exhaust pointing downward. Depending on its location it can be tilted by 30° with the air flow and hot air outlet facing the bottom. It can also be tilted on its longitudinal axis by 90° so long as the glow pin position points upward. During usual operation the heater can deviate by 15° each way with vehicle movement without impaired function of the heater.

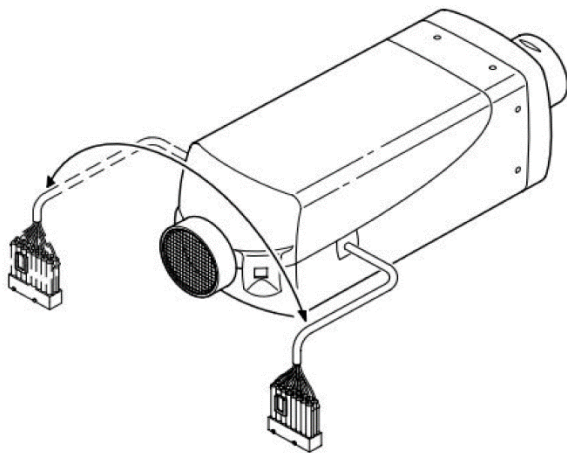
**Wiring Harness Connector Positions**

The main connector coming off the heater can be moved to the other side of the heater if necessary. In order to do so, you must first remove the air inlet grill by twisting it so it's clear of its securing lip and then

simply pulling it off. Next, remove the top cover by lifting up the two front flaps near the air inlet. Be careful, as flaps are fragile and may break off easily. You can then lift out the entire innards of the heater (heat exchanger, fan motor, etc.) removing the cable from the rubber securing bush and rerouting it underneath the fan motor where it can then sit in the cut-out on the opposite side. Ensure the rubber bush is properly inserted and the heat exchanger is back securely in position, then simply replace the lid and grill back in position.

**NOTE**

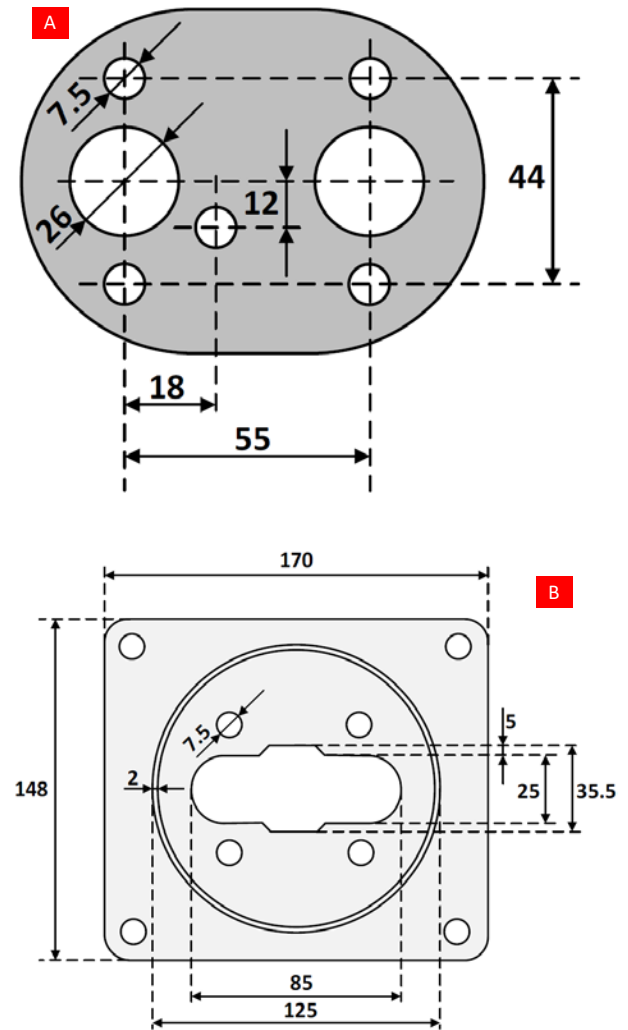
Ensure the bottom cover fits correctly inside the groove of the lid.



**Installation: Mounting**

The chosen mounting surface should be flat, and you will need to drill the appropriate size hole for the exhaust, combustion air inlet, fuel inlet and mounting bolts. It is a good idea to mount the heater on the supplied mounting bracket, particularly if the original mounting surface is thinner than 1.5mm.

Figure VI: Mounting Gasket and Plate



A. Mounting Gasket

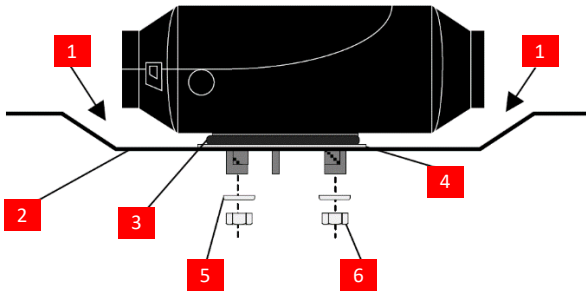
B. Mounting Plate

**NOTE**

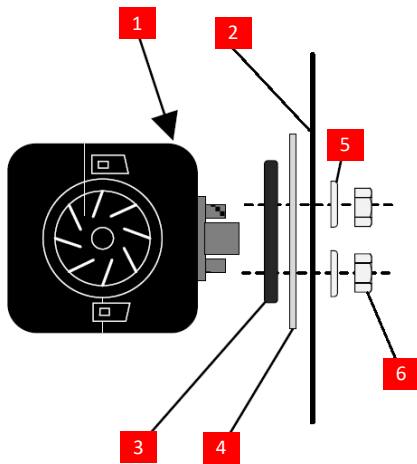
The mounting plate shown in figure VI may differ in overall size and the circular flange may not be present, however the heater footprint will remain the same.

### Installation: Mounting (Continued)

Figure VII: Mounting Positions



Above: Securing heater to the floor



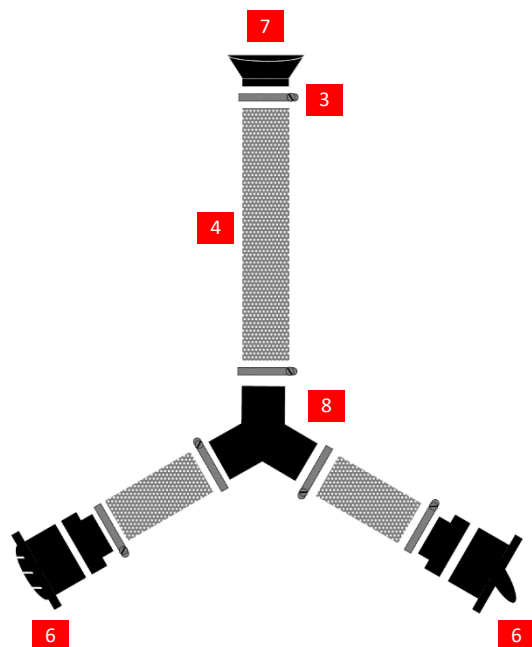
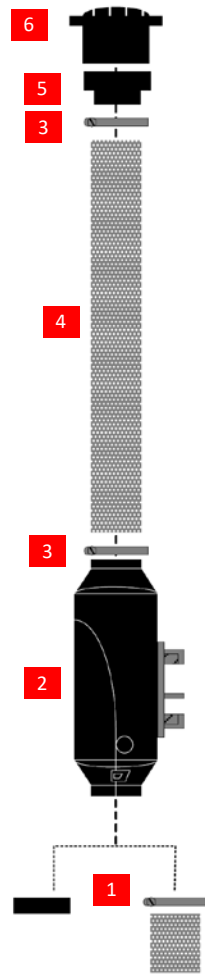
Above: Securing heater to the wall

1. Ensure that the fan wheel spins freely and that there is sufficient clearance between the heater and the vehicle floor.
2. Ensure that the mounting surface is flat and smooth.
3. The mounting gasket supplied must be fitted.
4. Mounting plate should be used to even out the roughness of the surface.
5. M6 Washer
6. M6 Nut

### Installation: Ducting and Pipework

Figure VIII: Ducting

1. Ducting and/or Grill
2. Main Heater Body
3. 60mm Hose Clamp
4. 60mm Air Ducting
5. 60 mm Reducer
6. 80 mm Directional Vent
7. Heater's Hot Air Outlet
8. 60 mm 'Y' Connector





## Installation: Ducting and Pipework (Continued)

Ducting can be installed as shown on the previous page. Extra outlets can be installed to fit your own needs however you should ideally not fit more than the maximum of 3 outlets, to ensure you are receiving sufficient hot air output.

## Exhaust System

### NOTE

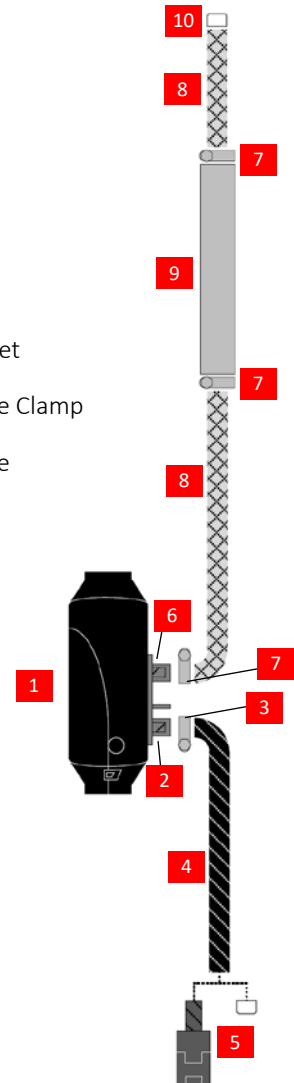
Do not work on the exhaust system unless the heater has been switched off for over an hour and wear safety gloves if necessary. All types of combustion produce high temperatures and toxic fumes and must be installed in accordance to these instructions.

The flexible exhaust pipe can be shortened to no less than 20cm and should not exceed a length of 1.2 m, depending on the installation parameters. Route the exhaust pipe from the heater to a suitable outlet, ensuring that it is securely fitted to the heater using the clamp supplied in the kit.

As the exhaust gets very hot during operation, it should be installed in such a way that will not cause damage to the vehicle. Ensure that it has sufficient clearance of heat sensitive parts; paying close attention to fuel lines (plastic and copper) and electrical components. Make sure that the outlet ends in open air and does not point in the direction of travel. The whole system should also point downwards and if necessary, a 5mm hole should be drilled near the bottom to drain off any condensation. You should also route the exhaust so that the fumes are not taken back in by the air intakes of the heater and ensure that the outlet does not get clogged by snow, rock salt/sand, road debris etc.

Figure IX: Air Intake and Exhaust

1. Heater Body
2. 25 mm Combustion Air Inlet
3. Combustion Air Intake Pipe Clamp
4. Combustion Air Intake Pipe
5. Air Filter OR End Cap
6. 24 mm Exhaust Outlet
7. Exhaust Clamp
8. Exhaust Pipe
9. Exhaust Muffler
10. Exhaust End Cap



## Combustion Air Intake

Like the exhaust pipe, the combustion air intake can be shortened to up to 20 cm or lengthened to no more than 1.2 m, again depending on installation conditions. Some models can also be fitted with a combustion air filter to prevent particles and debris from entering the system.

## Installation: Fuel Lines

### NOTE

When installing, priming, repairing fuel lines etc. there is always a risk of injuries due to flammable and toxic sources. Take all the necessary safety precautions when fitting any fuel line or fuel line parts.

When working on or near any fuel lines or parts!

### DO NOT

- Smoke.
- Use open flames.
- Inhale fumes.

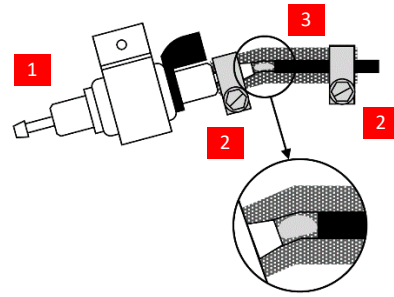
### DO

- Ensure the engine and heater are switched off before attempting any and all work on the fuel line installation or repair.
- Cut any fuel line with a sharp knife to ensure a clean cut free from crushes and burrs.
- Ensure that the line going from the fuel pump to the heater is on a gradual rise.
- Ensure fuel lines are fastened safely to prevent noise rattle and securely fitted to prevent any damage.
- Route fuel lines so that vehicle vibration and movement will not have any lasting effects on the service life.
- Route the fuel line away from **any and all heat sources**. Ensure adequate clearing from heat sources if it cannot be avoided or use a suitable heat shield.
- Make sure all connectors are fastened securely to prevent dripping of fuel, particularly onto hot surfaces or electrical components.

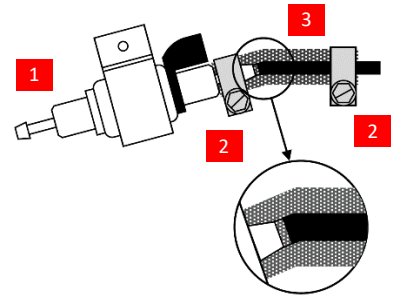
## Installation: Fuel Line Connectors

When connecting fuel lines into rubber connectors always mount them flush and not on a bend as shown in [Figure X](#).

Figure X: Fuel Connector Installation



Above: Improper Connection



Above: Proper Connection

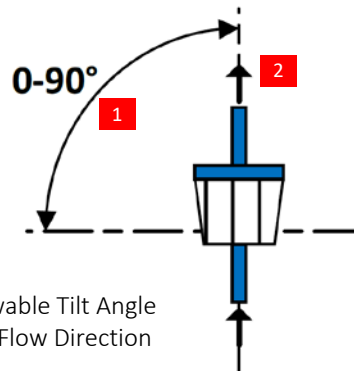
1. Fuel Pump
2. Fuel Connector Clamp
3. Fuel Line Connector

A fuel filter must be fitted for all diesel heaters. Make sure that it is installed the correct way according to fuel flow as shown in figure XI.

### NOTE

Fuel filter, lines, connectors and clamps should be replaced every 2 years.

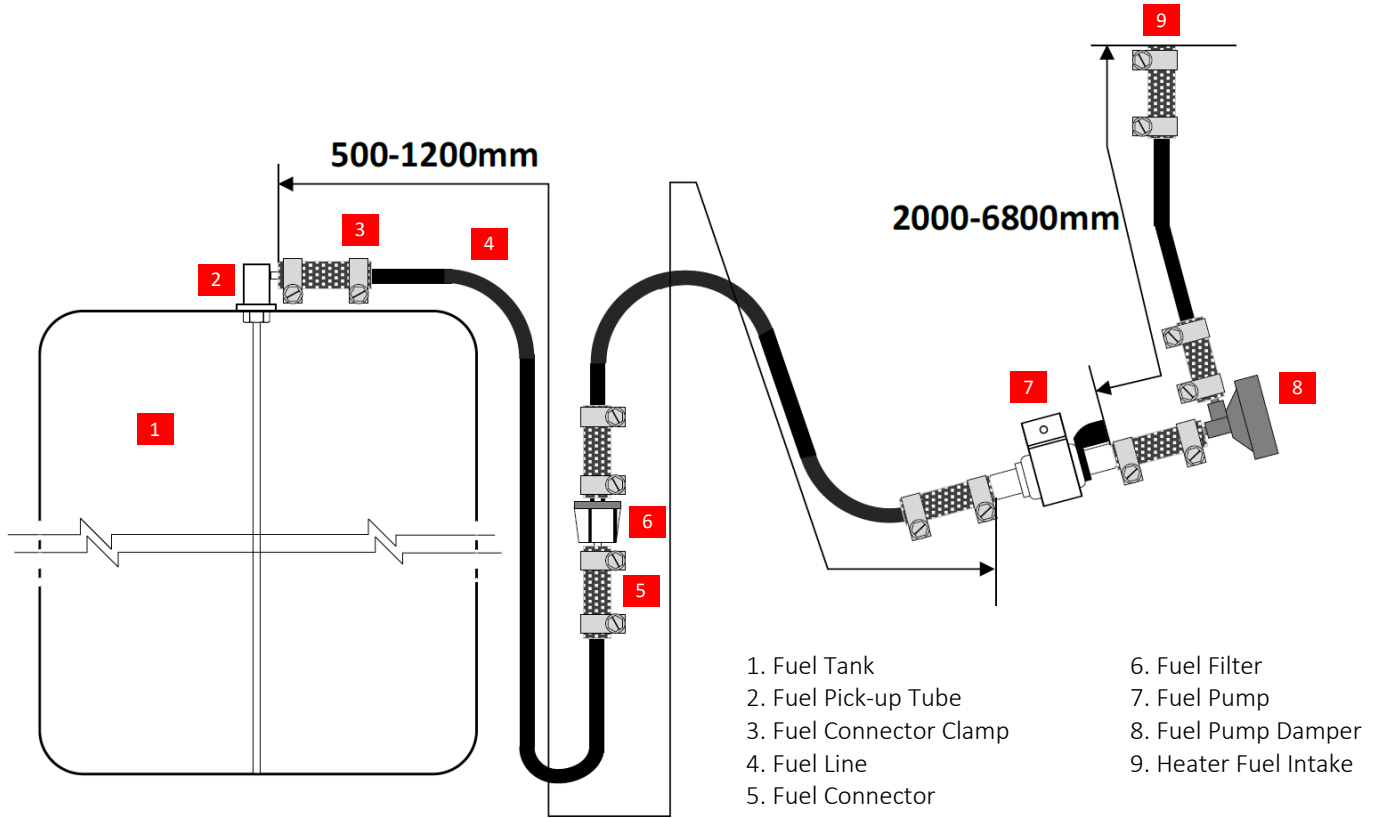
Figure XI: Fuel Filter



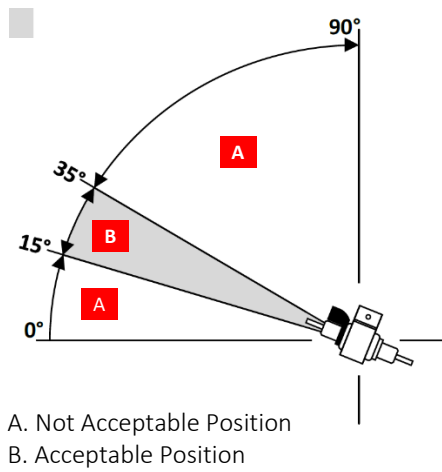
1. Allowable Tilt Angle
2. Fuel Flow Direction

**Installation: Fuel Line Length and Order**

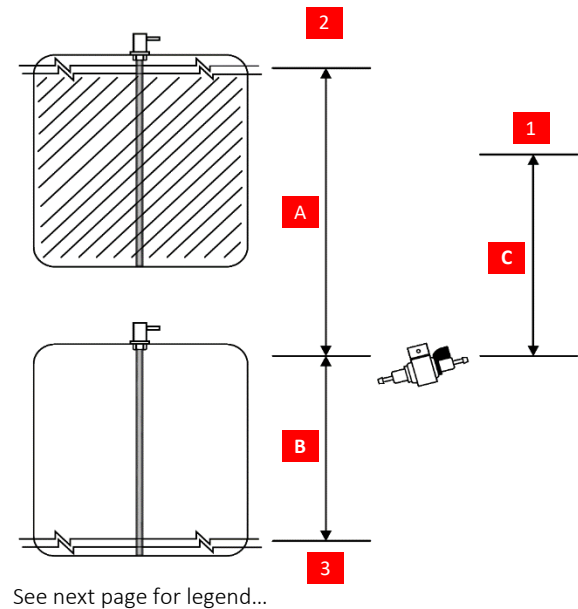
Figure XII: Fuel Line Setup



**Installation Fuel Pump Angle**



**Installation: Fuel Tank Head**



## Installation: Fuel Tank (Continued)

1. Connection to heater body
2. Maximum fuel level
3. Minimum Fuel Level

Suction Height for Fuel Pump:

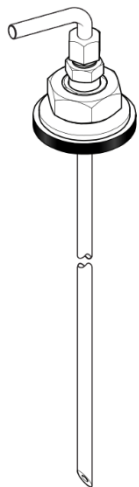
- A. 3000 mm
- B. 1000 mm (diesel), 500 mm (gasoline)
- C. 2000 mm

## Installation: Fuel Pick-up Tube

A fuel pick-up tube will need to be installed in the vehicle's fuel tank or an independent fuel tank depending on what the installation calls for. Sealant is not required to fit the pick-up tubes.

Depending on the pick-up tube provided in the kit, you will need to install the pick-up tube in one of two ways.

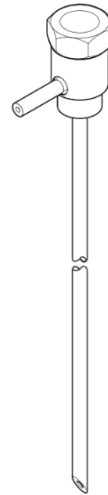
### Pick-up Tube: Option 1 (GC0101)



To Install this type of Pick-up Tube:

- Drill a hole in the top of the vehicle's fuel tank  $\Phi 22 \pm 0.2\text{mm}$  in size. Ensure it is smooth and clean of burrs
- Remove the top nut and washers and bend the standpipe straight
- Cut the standpipe down to size if necessary
- Fit the standpipe by tilting it into position into the newly drilled hole
- Place the rubber and metal washers back on top followed by the nut and tighten it securely on top

### Pick-up Tube: Option 2 (GC0100)



To Install this type of Pick-up Tube:

- If possible, remove the sender unit from the vehicle's fuel tank, this will make it easier to attach the nut securely back onto the pick-up tube.
- Drill a  $\Phi 6 \pm 0.2\text{mm}$  hole into the sender unit
- Remove the nut from the pick-up tube and feed it through the hole ensuring the rubber 'o' ring remains on the pick-up tube 'head' side
- Replace the nut on the standpipe to secure it safely to the sender unit
- Replace the sender unit into the fuel tank.

The bottom of the fuel standpipe should be 30-40 mm from the bottom of the fuel tank to allow enough suction of fuel and at the same time not allow impurities and sediment to be drawn up the standpipe.

## Electrical Components

Make sure that all electrical components are arranged in the vehicle so that they function correctly under normal heater operations. Firstly, ensure that no wires are damaged in any way and avoid feeding them through areas that may cause damage to the loom or cause kinking, jamming or exposure to heat. If necessary, fit rubber grommets and plugs around the loom in areas that are not waterproof or may get damaged by road debris. Lastly make sure all connections are free of corrosion and all firmly connected.

## Analog Controller and Digital Timer

To install the analog controller, simply remove the rotary knob (it is quite stiff) and secure in a suitable location with the screw provided, then replace the knob back in the correct location.

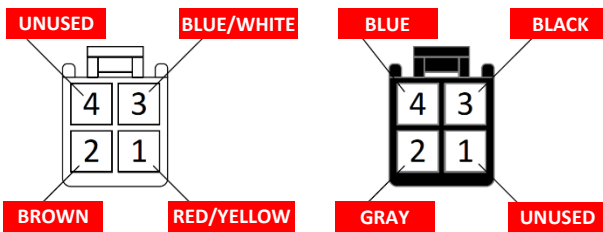
Alternatively, to fit the digital timer, simply fit the appropriate screw inside the hole located at the center of the timer. Both plug into the corresponding black and clear plugs on the loom.

**NOTE**  
Only one controller can be used at a time.

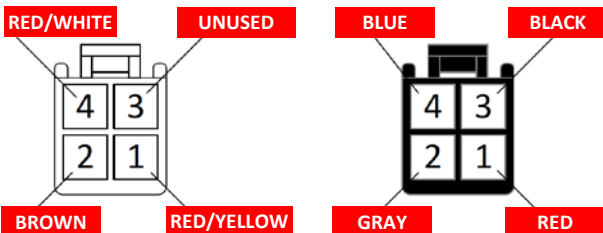
### Controller Connections

The controllers are best installed in a manner that they can be seen and operated easily to identify working conditions and also for easy access. The black and clear plugs connect to the corresponding plugs on the loom (below). The remaining three-pin socket on the timer or rheostat control plugs into the remote control receiver if one is installed. An adaptor cable may be necessary.

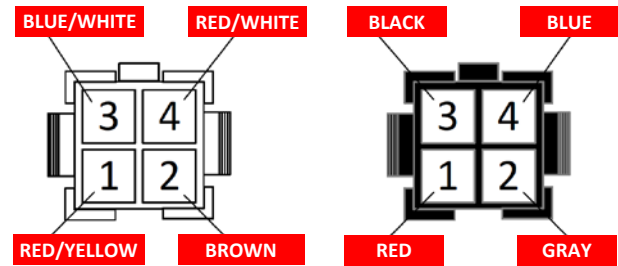
#### Digital Timer Connections



#### Analog Controller Connections



#### Wire Harness Connections

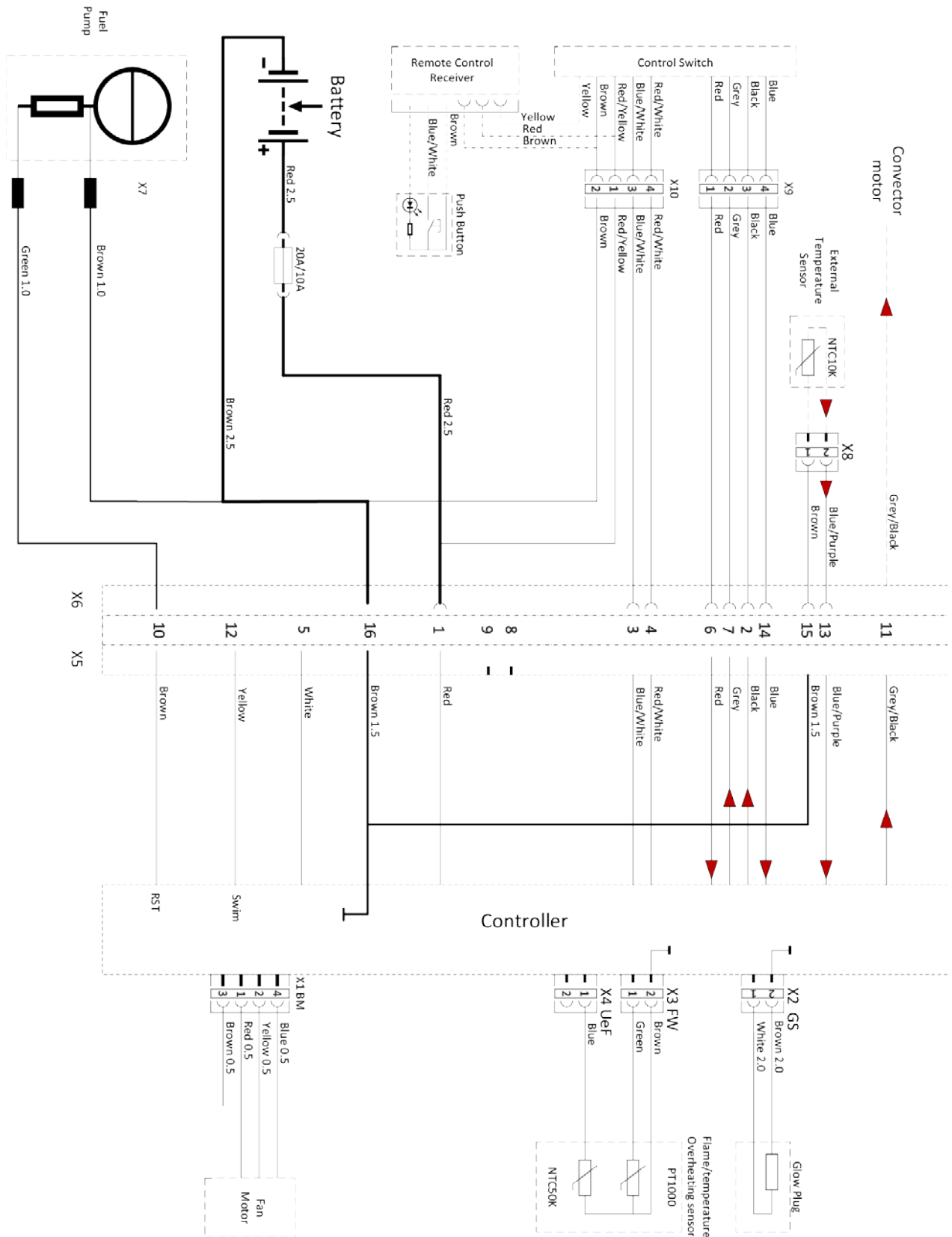


**NOTE**  
Any surplus wires should be kept in good condition and wrapped in electric tape to avoid short circuiting.

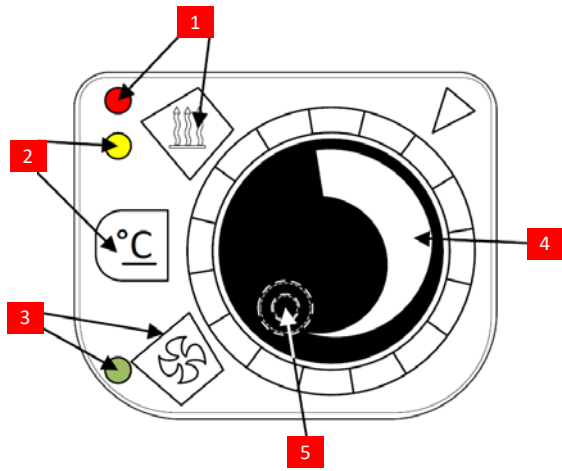
#### Ambient Temperature Sensor

The external temperature sensor plugs into the corresponding blue and brown wired socket on the diagram and should ideally be mounted at shoulder height when sat down to ensure correct reading of the air temperature. It should not be mounted in such a way as to obstruct air flow; like up high, in the corner of the vehicle cabin or above heat sources.

### Electrical Diagram



**Operation: Analog Controller**



- |                       |                         |
|-----------------------|-------------------------|
| 1. LCD Screen         | A. Days of the Week     |
| 2. Left Arrow Button  | B. Heating Symbol       |
| 3. Right Arrow Button | C. Fan Symbol           |
| 4. Power/Back Button  | D. 'P' (Program) Symbol |
| 5. OK Button          | E. Clock Symbol         |
| 6. Fixing Screw Hole  | F. Clock Face           |

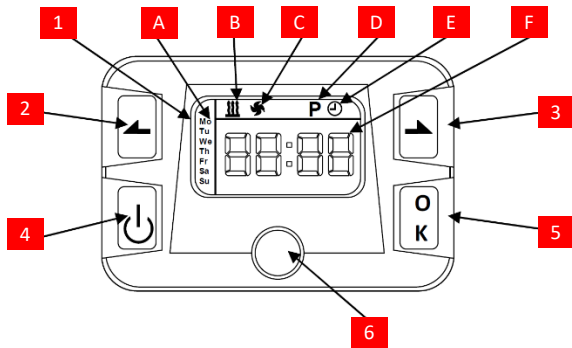
Functions

- Digital timer can be programmed for 3 different start times daily on any combination of the 7 days of the week
- 7 step variable output mode
- Thermostatic mode from 05°C to 35°C
- Adjustable cold air fan mode

1. Variable Output Button and Indicator Light
2. Temperature Button and Indicator Light
3. Fan Only (Cold Air) Button and Indicator Light
4. Control Knob
5. Fixing Screw Hole (Located underneath control knob)

The analog dial controller works by twisting the control knob to the desired heat setting, and using the buttons listed to determine the heater's function. Variable output is simply high to low heat. The temperature button switches the heater to thermostatic mode (the heater will then switch to a cool-down cycle automatically once it has reached the selected temperature). The fan button only switches the fan on for cool air.

**Operation: Digital Timer**

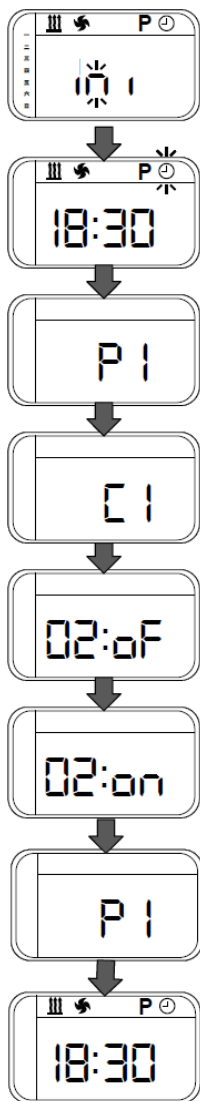


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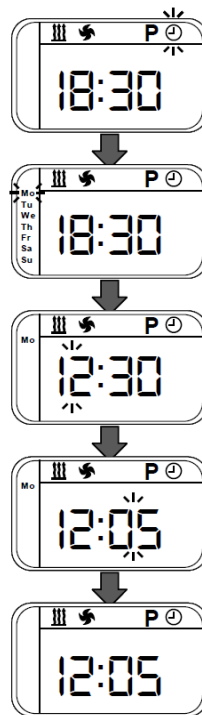
### Changing Language

The language should be set to English. However, if it isn't or the control has been reset to default settings it will revert to Chinese. Please follow these steps to convert the language to English.

1. Turn on the control with the power button. Wait for the symbols to stop flashing, then press the power button again.
2. Navigate to the clock face symbol at the top of the control by using the arrow keys. When it is flashing press both arrow keys simultaneously.
3. P1 now appears.
4. Press OK and C1 will appear
5. Keep pressing OK slowly until '02:oF' appears.
6. Press and of the arrow keys until the screen reads '02:on'.
7. Keep pressing OK until back to the P1 menu screen.
8. Press power button to return. The language will now be set to English.



### Changing Date and Time

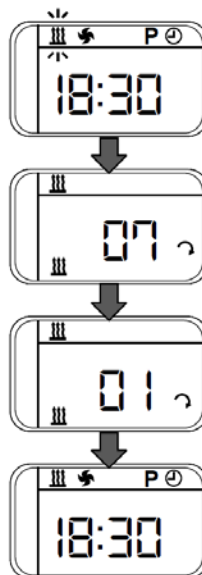


1. To change the date and time, navigate to the clock symbol and press OK.
2. Select the current day of the week using arrow keys and press OK to confirm.
3. Select the hour using the arrow keys and press OK to confirm
4. Select minutes and press OK to confirm.
5. Once completed, the control will return to the home screen, displaying correct time.

**NOTE**

Disconnecting timer from the harness resets the date and time.

### Manual On / Off



1. To turn the power on manually, navigate to the heating icon and press OK
2. The heater will start automatically
3. Use the arrow keys to adjust the output of the heater from high to low (07 to 01 respectively)
4. To switch the heater off, press the heater button to return to the home screen.



### Switching to Thermostatic Mode

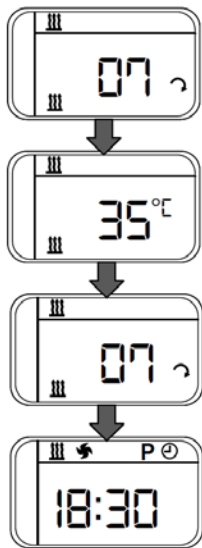
To switch the heater to thermostatic mode, turn the heater on manually, as discussed in previous section.

1. Once the heater is on, press and hold the OK button for three seconds and then release it.

2. The display will change to a temperature setting, which can be adjusted from 05°C to 35°C using the arrow keys.

3. To adjust back to the variable output mode, press and hold the OK button again for 3 seconds and then release it.

4. To switch the heater off, press the power button to return to the home screen.

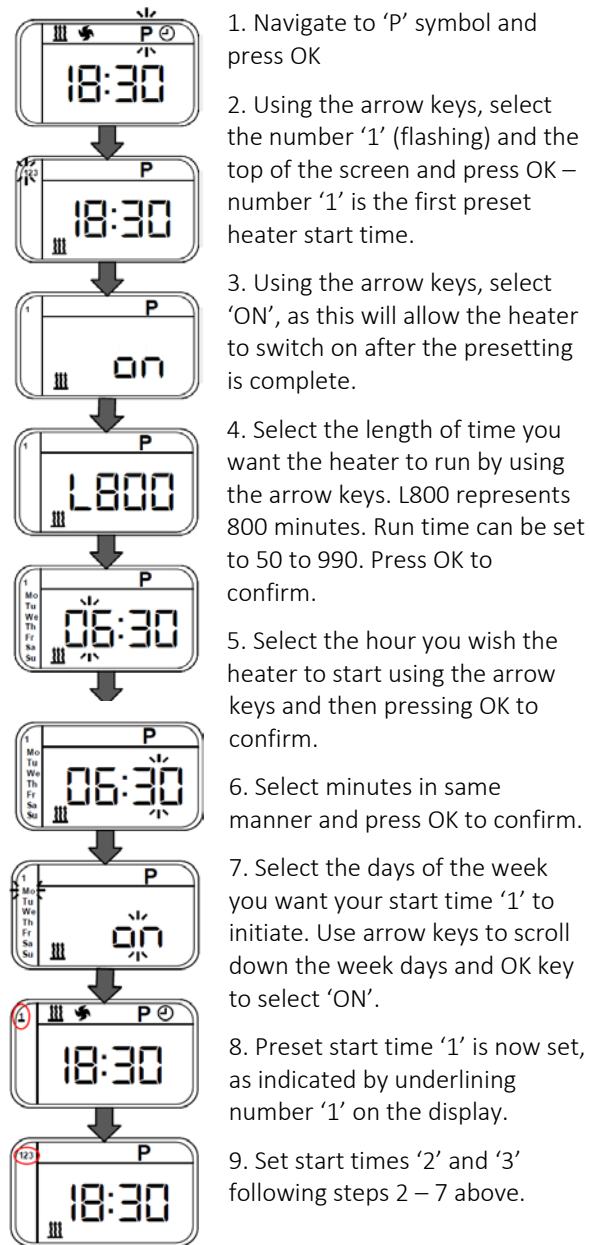


### Fan Mode

The fan mode works in the same way as the manual on/off mode. Simply navigate across to the fan symbol and confirm with OK. The fan will then automatically switch on and its speed can be adjusted from high to low (07 to 01 respectively) using the arrow keys. To switch it off, press the power button.

### Programming Heater Start Times

The digital timer can be programmed for three individual start times per day on any combination of seven days.



1. Navigate to 'P' symbol and press OK
2. Using the arrow keys, select the number '1' (flashing) and the top of the screen and press OK – number '1' is the first preset heater start time.
3. Using the arrow keys, select 'ON', as this will allow the heater to switch on after the presetting is complete.
4. Select the length of time you want the heater to run by using the arrow keys. L800 represents 800 minutes. Run time can be set to 50 to 990. Press OK to confirm.
5. Select the hour you wish the heater to start using the arrow keys and then pressing OK to confirm.
6. Select minutes in same manner and press OK to confirm.
7. Select the days of the week you want your start time '1' to initiate. Use arrow keys to scroll down the week days and OK key to select 'ON'.
8. Preset start time '1' is now set, as indicated by underlining number '1' on the display.
9. Set start times '2' and '3' following steps 2 – 7 above.

#### NOTE

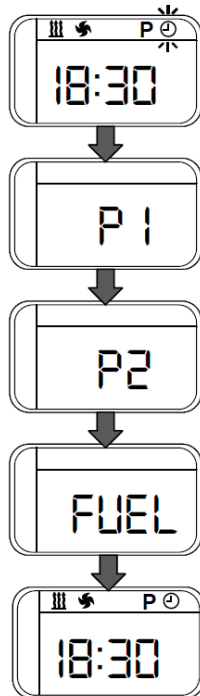
To turn any of the preset times off without altering set times, repeat step '3' above and select 'OFF' using arrow keys. Then repeatedly press OK until you return to home screen.

Fuel Line Priming Feature

**ATTENTION:**

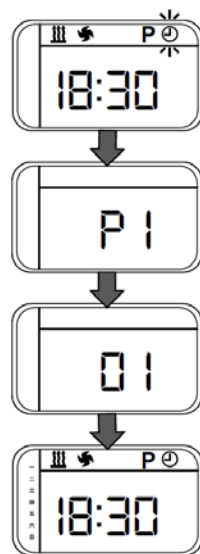
- Not to be used during normal heater operation.
- Disconnect the fuel line from the heater to prevent flooding of the heater with fuel and place it in a suitable receptacle.

1. To enter the fuel priming mode, navigate to the clock face symbol using the arrow keys and press both arrow keys simultaneously.
2. P1 will appear on the screen.
3. Select P2 using any arrow key and press OK to confirm.
4. The fuel pump will begin to rapidly pump the fuel.
5. It will automatically shut down after three minutes. You can alternatively press any key to stop the pumping at any time and return to home screen.



Resetting Timer to Factory Settings

1. Navigate to the clock face symbol of the menu and simultaneously press both arrow keys.
2. P1 will appear on the screen.
3. Using left arrow key select '01' and press OK to confirm.
4. The Digital Timer will now be reset to its default factory settings.



**Fault Codes**

Analog Controller

When the ECU had discovered a fault, the analog controller will flash a fault code. The controller should therefore be ideally placed where it can be clearly seen and accessed.

The faults will be displayed as short flashes followed by long flashes. To determine the code, you must count the number of long flashes.

| Flash Count | Cause  |
|-------------|--|
| 1           | Failure of second start                          |
| 3           | Termination of third time of combustion          |
| 3           | Voltage power out of specified range             |
| 4           | Glow pin temperature increases slowly            |
| 5           | N/A - Air Heater will not flash 5 times          |
| 6           | Temp. Sensor: broken circuit or short circuit    |
| 7           | Fuel Pump: broken circuit or short circuit       |
| 8           | Fan Motor: broken circuit or short circuit       |
| 9           | Glow Pin: broken circuit or short circuit        |
| 10          | Overheat   |
| 11          | Overheat Sensor: broken circuit or short circuit |
| 12          | Controller: broken circuit or short circuit      |

Digital Timer

The digital timer will display the fault code on its LCD monitor.

| Code  | Cause   |
|-------|---|
| 1E-02 | Overheat - Check for obstruction or damaged ducting.              |
| 1E-10 | Ignition failure - Check fuel supply, blocked supply or fuel pump |
| 1E-30 | Voltage too high  |
| 1E-31 | Voltage too low - check battery or voltage drop in supply cable   |
| 1E-52 | Overheat sensor failure   |
| 1E-70 | Fuel Pump open circuit or ECU failure                             |
| 1E-80 | Fan Motor failure   |
| 1E-90 | Glow Pin Failure  |
| 1E-d3 | Maintenance reminder  |

## Parts List

|           |  |
|-----------|--|
| GC0095    | L-Shaped Mounting Plate                          |
| GC0168    | Self-Tapping Screw                               |
| GC0361    | Self-Drilling and Self-Tapping Screw             |
| GC0555    | Thru Hull Fitting, 22 mm                         |
| GC0556    | Thru Hull Fitting, 24 mm                         |
| GC0360    | Self-Drilling and Self-Tapping Screw             |
| GC0422    | Nylon Zip Ties, 200 mm Length                    |
| GC0357    | Self-Tapping Screw                               |
| GC0363    | Nut  |
| GC0228    | Blower Motor Support Bracket                     |
| GC0192    | Protection Pad for Analog Controller             |
| GC0252    | Base Gasket                                      |
| GC0088    | Air Duct Connector, 60 mm to 90mm                |
| GC0084    | Air Outlet, 60 mm                                |
| GC0086    | T-Joint, 60 mm                                   |
| GC0089    | Straight Connector, 60 mm                        |
| GC0091    | Ducting Hose Clip, 50-70 mm                      |
| GC0093    | L-shaped Elbow, 60 mm                            |
| GC0604    | Air Ducting, 60 mm, 1M Length                    |
| GC5002    | Air Ducting, 60 mm (Water Resistant Layer)       |
| GC0237    | Inlet Grill                                      |
| GC0174    | Combustion Air Hose Clip, 24 mm                  |
| GC0193    | Combustion Air Pipe                              |
| GC0226    | Casing for Blower Motor                          |
| GC0227    | Wheel for Blower Motor Assembly                  |
| GC0229    | Heat Exchanger                                   |
| GC0230    | Burner   |
| GC0239    | Wheel for Blower Motor Assembly                  |
| GC0509    | Motor Gasket                                     |
| GC0612    | Burner Gasket                                    |
| GC0223    | Glow Pin, 24V                                    |
| GC0231    | Glow Pin Screen                                  |
| GC0235    | Upper Casing                                     |
| GC0236    | Lower Casing                                     |
| GC0238    | Outer Hood                                       |
| GC0334    | Fuse   |
| GC0335    | Fuse   |
| GC0611    | Analog Control                                   |
| GC0653    | Digital Control Switch                           |
| GC0654    | Digital Control Switch                           |
| GC0695    | Analog Controller with GSM Receiver              |
| GC0221    | Controller, 24V                                  |
| GC0224    | Blower Motor, 12V                                |
| GC0225    | Blower Motor, 24V                                |
| GC0234    | Flame Sensor Retaining Clip                      |
| GC0697    | Controller, 12V                                  |
| GC0097-03 | External Temperature Sensor                      |
| GC0183    | Wire Harness                                     |
| GC0222    | Glow Pin, 12V                                    |
| GC0233    | Overheat Sensor                                  |
| GC0173    | Exhaust Pipe P-clip                              |
| GC0113    | Exhaust Pipe                                     |
| GC0199    | Exhaust Pipe P-clip                              |
| GC0207    | Flange Seal Exhaust                              |
| GC0075    | Fuel Tank, 5L, Metal                             |
| GC0076    | Fuel Tank, 10L, Plastic                          |
| GC0122    | Fuel Line Connector, 5 mm, 50 mm Length (Diesel) |
| GC0162    | Fuel Pump Mounting P-clip, 34 mm                 |
| GC0163    | Fuel Line Connection Tee, 8 x 8 x 6 mm           |

|        |  |
|--------|--|
| GC0187 | Inline Fuel Filter                                   |
| GC0427 | Fuel Line Connector, 3.5 mm, 50 mm Length (Gasoline) |
| GC0500 | Fuel Pump Damper                                     |
| GC0101 | Fuel Pick-up Tube                                    |
| GC0158 | Fuel Pipe Clamp, 11 mm                               |
| GC0160 | Fuel Pipe Clamp, 14 mm                               |
| GC0132 | Fuel pump, 12V                                       |
| GC0182 | Fuel pump, 24V                                       |
| GC0204 | Fuel Pipe Clamp, 10 mm                               |
| GC0197 | Fuel Pipe Connection Tee                             |
| GC0609 | Fuel Pipe, 1.5 mm, 1.2 M Length                      |
| GC0610 | Fuel Pipe, 1.5 mm, 4 M Length                        |

For pictures and further descriptions of each part, please visit [www.generalcomponents.ca](http://www.generalcomponents.ca)