

# STOP DONT PANIC READ THE INSTRUCTIONS

## DIESELHEAT AIR HEATER INSTALLATION MANUAL



Taken at Derwent Bridge TAS by Lostnomads

We pride ourselves on our client's successful installation and use of their new heater. If you have any questions not answered by this manual please give us a call on **0418 130 971**

  
**dieselheat**

Congratulations on purchasing a high quality diesel heater from Dieselheat. Your kit contains everything you need to complete a professional, quiet, reliable installation.

Remember - help isn't far away, read the instructions first, but then feel free to call us if you need further help.

## TIPS FOR A GREAT JOB

- Be super careful when putting screws into cabinets and from the bottom up in the floor - floors and cabinets can be as thin as 12mm so long screws can protrude through.
- When drilling holes with a hole saw in cabinets always drill in from both sides to avoid splintering the cabinet. ie drill in from the first side until the pilot drill comes through, then back drill from the other side.



- Run all cabling under the floor or in places where it can be damaged (storage areas) in split corrugated conduit.



The hot air end of the heater is one with aluminum housing (look in the end), the cold air end is the one with the fan visible inside the end.



Outlet (hot end)



Inlet (cold end)

## SIMPLE MISTAKES TO AVOID

- Connect the heater directly to the battery, not via any existing fuse boxes or wiring, it needs plenty of power to start and existing wiring often isn't thick enough.
- Ensure all the fuel connections are well sealed. The nylon hose should be at least 12mm inside the rubber joiners and securely clamped or air leaks will stop the heater starting.
- Do not put ducting on the return air side of the heater, let it draw air from the compartment in which it is installed. This will prevent the compartment heating up.
- When starting for the first time, it will take up to 5 or 6 goes to suck in the fuel. Let the heater try and start twice, then if it hasn't started it will lock out (flashing red light or error P10). Don't worry, pull out the fuse to reset and try again.

## Part A - Fixed Points

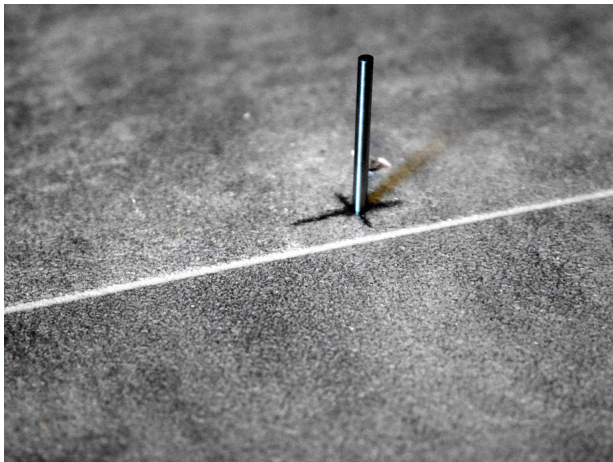
Get all the parts that are end points and have fixed locations installed first.

### Step A1 - Select a location for the heater and make the 145mm hole

When mounting the heater, it can go under a seat area, under bed, or in a low traffic area. Measure your proposed location carefully above and below the floor to check you have clearance for the heater above and for the ring on the mounting plate below. Avoid chassis rails, water tanks, gas pipes etc.

The easiest way to find an initial location is to find something going through the floor in the vicinity of the heater and use this as a marker to measure offsets above and below the floor.

After measuring, mark the spot and drill a small hole with a 2mm drill bit, leave the bit in the hole.



This enables you to locate the centre of your mounting plate hole and make sure that you have clearance around the hole.

Hold up the mounting plate underneath and check for clearance.

Hold the heater on the place above and check, you need a bit of space between the hot air outlet and the cupboard/bed wall to fit in the duct. Once you are sure the spot is

clear then drill/cut the 145mm hole for the mounting plate.

If you don't have a hole saw you can make the hole by drilling lots of 5 to 6mm holes very close together or by using a jigsaw if you have space.



### Step A2 - Set up the heater

Mount your heater mounting plate onto the heater using the 4 x 6mm nuts and washers, make sure that the rubber seal is between the heater and the mounting plate.



Install the exhaust pipe and air inlet pipe onto the heater whilst it is still upside down on your bench. It is much easier to do this here than from under your RV.





## Step A3 - Install the heater

Put a bead of silicone or sikaflex around the underside of the mounting plate, then put the exhaust pipe and inlet pipe through the hole in the floor before placing the heater into its correct position. Secure with screws or bolts, make sure that there is a good seal so that no exhaust gas can leak through.

Then get underneath and put in a good thick bead of sikaflex or silicone around the outside of the ring onto the floor to protect the floor edges.

### 2KW HEATER ONLY

The power supply for the fuel pump exits out of the combustion air inlet pipe in the 2kW units. Follow these steps to set up the combustion air inlet pipe, with the heater on its back on a bench:

1. Push the fuel pump wires slightly back up in the air inlet pipe (to allow a bit of slack) and then jam them into the slot in the side of the pipe.
2. Cut a 15mm slot in the combustion air inlet pipe (skinny black pipe)
3. Slide the pipe onto the air inlet on the heater with the 15mm slot over the wires so they exit out the side.
4. Attach hose clamp and tighten to secure the hose, make sure the hose clamp doesn't pinch the pump wires, do up the clamp with a 7mm spanner



## Step A4 - Install the hot air and return air vents

Using a 60mm hole saw drill holes for the hot air vent and the inlet air vent. Think about the outlet location to minimise the duct length and to keep the duct as straight as possible. Pop off the front of the directional (eyeball) vent and attach with 3 small screws.



Use silicone or sikaflex to glue in the return air (flat) vent. Alternatively drill 2 small holes in the flange on the vent and screw it in with small screws.

*Do not put ducting on the return air side of the heater, let it draw air from the compartment in which it is installed. This will prevent the compartment heating up.*

Note: This is the last of the major drilling holes, now is a good time for a first vacuum/sweep.



## Step A5 - Set up your fuel pump and install

Follow the instructions in the fuel pump silent mount kit on how to set this up. If you didn't buy this kit then insert the pump into the rubber fuel pump mount and screw this directly to the floor/chassis.

Mount the fuel pump away from the bed under the kitchen or bathroom. When locating the fuel pump find a place which when you knock on it with your knuckles doesn't sound hollow or 'boomy'. A location that sounds dead or muffled when tapped will make the pump sound quieter inside.

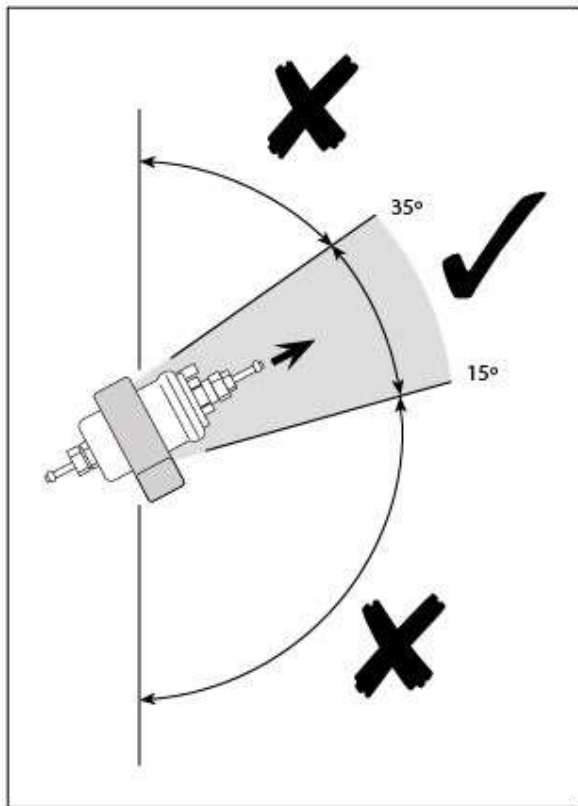
If the floor is thin (12mm) use a metal screw onto a chassis cross member as a short wood screw may not hang on well enough to the plywood floor. Allow space for the fuel



pipes to return back up onto the underside of the floor.



It is important to get the angle on the fuel pump correct, the outlet should be between 15 and 35 degrees upwards to allow air to purge from the pump.

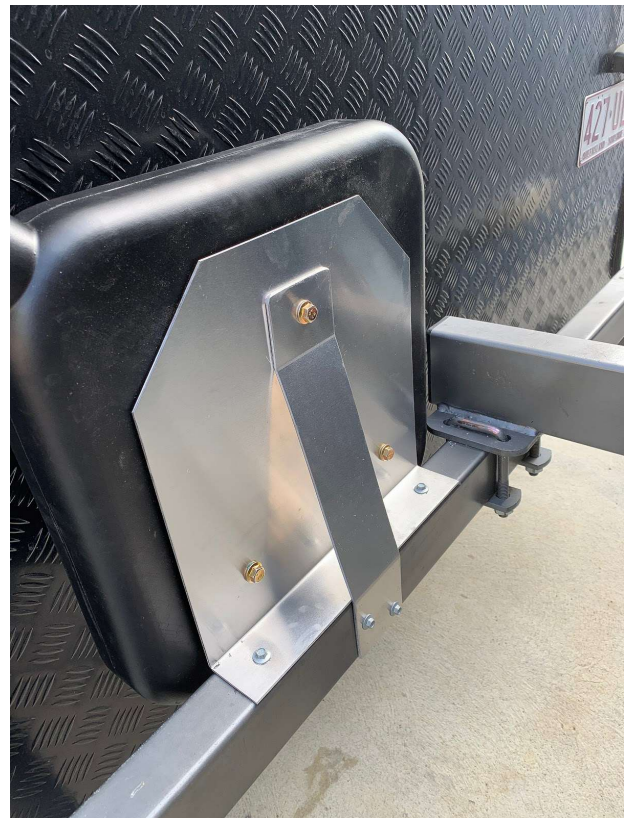


## Step A6 - Install the fuel tank

Wafer Tank

Using the 3 mounting holes, bolt the wafer tank to your front box, mounting bracket etc.

Ensure the outlet nipple is tightened firmly but be careful not to overtighten as it will spin the ferrule in the tank destroying it.



Easy fit tank

Pre-drill holes in the base of the splash box and apply silicon or sikaflex to the underside

around the holes before screwing it down. Screw or rivet the breather pipe so it is above the tank. These tanks are designed to be inside, if you are installing it outside, cover the quick disconnect fittings with a bit of corrugated conduit for UV protection.



In this photo the splash box has been cut down to facilitate easy tank removal.

## Part B - Make the connections

Well done!!! You have done the hardest parts, now you just need to connect it all together.

### B1 - Fuel line

It is recommended to install the fuel line in split corrugated conduit to protect it. Start at the heater and run the line to the pump. The outlet side of the pump is the one with the electrical connector on it. There is also an arrow on the pump for the outlet direction.



Install the fuel line back from the pump to the tank. Remember to install the fuel filter between the tank and the pump.

Use P clips or cable ties to secure the fuel line up against the underside of the floor.

Note: The pump power cable and fuel line can run in the same conduit or it can be run separately.

## B2 - Loom and Main power

### 2kW Heaters

The main wiring loom has 2 cables, one for main power and the other for the control. The end of the loom has a rectangular plug with a locating tag on it, remove the grey cover from the top of the heater this cover has "PARKING HEATER" on it, plug the loom into the heater fit the rubber sealing grommet and replace the cover.



The cover on the top of the heater must be replaced neatly as this stops the fan air supply from escaping, take care that the



rubber cable grommet fitting sits in the slot properly.



### 2.2kW, 4kW and 5kW Heaters

The main wiring loom has 3 cables, the controller, the main power and the fuel pump. The main wiring loom plugs into the matching loom coming from the heater, slide the locking catch to retain the main loom.

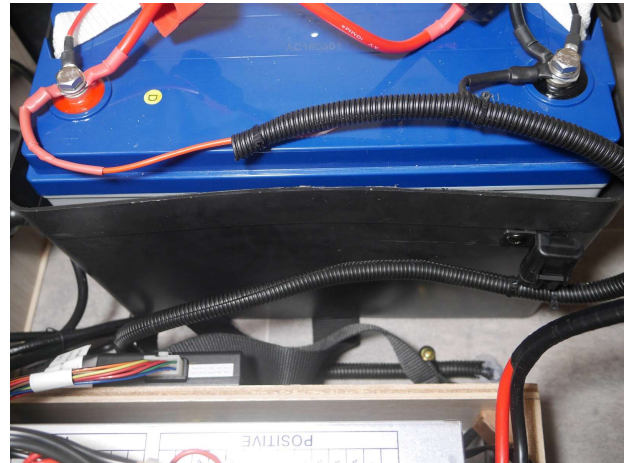


Generally the fuel pump and main power cables need to go through a small hole in the floor to be routed to the fuel pump and battery (unless the battery is in the same compartment).

### All Heaters

The power supply cable is the one which is thicker and has a brown (or black) and red

cable and a fuse holder. If you are routing the cable under the floor to reach the battery then cut off the fuse holder. Enclose the power cable in split corrugated conduit and apply silicone to the hole where it passes through the floor. Once the cable is routed to the battery cut off any excess and join the fuse holder back onto the loom. Solder all connections in the power cable to avoid voltage drops. Mount the fuse holder or tuck it neatly into the battery box.



If the standard loom is too short we recommend replacing all the main power cable by cutting it off near the heater and soldering on good quality 6mm<sup>2</sup> twin cable for the full extended length.

*Always run the heater directly from the battery not via existing fuse boxes or wiring as voltage drops will make it hard to start.*

### B3 - Fuel pump power



## 2KW HEATER ONLY

The fuel pump power cable exits the heater under the floor via the inlet air pipe. The 2kW heater has its own separate fuel pump extension cable with matching plugs on each end. You can either use the whole cable, and loop up any excess length and cable tie it out of the way under the floor, or shorten it. Make sure you push the plugs hard home and the wire clip is secure when installing the cable.

### Shortening the fuel pump cable (optional)

Run the cable back from the pump to the heater so the excess is under the heater. You can cut the plug fitting off the 2 wires coming out of the combustion inlet. Cut the excess off the cable from the pump. Join the 2 cables. We suggest soldering and heat shrink. The fuel pump is not polarised so the 2 cables can be joined either way.

### 2.2kW, 4kW and 5kW Heaters

The fuel pump cable is part of the main loom. This needs to go through the floor next to the heater possibly with the main power cable (depending on where the battery is located). The best way to do this is to cut the plug off the end of the cable, rout the cable to the fuel pump, trim off any excess and then re-join the cable. We suggest soldering and heat shrink. The fuel pump is not polarised so the 2 cables can be joined either way.

Note: The pump power cable and fuel line can run in the same conduit.

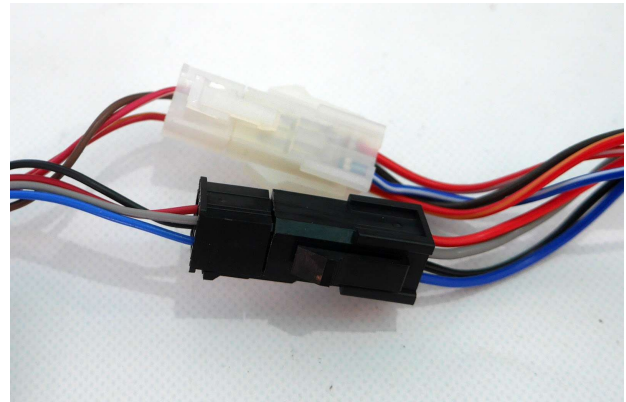
## B4 - Heater Control

Locate the control where you can reach it without getting out of bed!!!! Aside from this, the best locations are within easy reach of the heater (to make the cable routing easier), and where there are places to hide the cables in cupboards etc.

All holes for routing the control cable need to be 16mm to ensure the plugs will fit through them.

There are 2 plugs for the control onto the loom containing colored wires, match the

plugs and check the colored wires are matching red with yellow trace to red with yellow trace. Sometimes the plugs are black to black and white to white but not in all cases. The third plug further down the loom from the control switch plugs is not used.



## Rotary Controller

To mount the control switch, pull off the knob by putting your finger nails behind the edges, it is tight but will click off.



Put a small amount of silicon on the back of the control switch this will stop it from moving on the screw. Mount the control switch through a wall using the provided screw ensuring it is pushed down and to the right so it covers all of the hole drilled for the cables.

Replace the knob, note it will only go back on when properly aligned to it's shaft.

### Digital Controller

Put a small amount of silicon on the back of the control switch this will stop it from moving on the screw. Mount the control switch through a wall using the provided screw ensuring it is pushed down and to the right so it covers all of the hole drilled for the cables.

### B5 - Duct

Fit the duct between the heater outlet and the directional vent, secure with the supplied clamps.

Do not install duct on the inlet side.



### B6 - Exhaust

The exhaust pipe where it fits the muffler needs the slot in it extended to approx 20mm, so if you cut the pipe make sure you put the slot back in it using a 1mm blade on an angle grinder, if you don't the clamps won't tighten on the muffler.



If the exhaust from the muffler to outside has a low point in it drill a 3mm hole in the bottom of the pipe to drain any condensation that forms.

### B7 - Inlet Air silencer

The air silencer goes on the end of the combustion pipe and secured with a hose clip and cable tied up under the chassis in an area that is protected from stones and water with its end hanging down slightly to stop water getting into it





## Finishing Off

All cable holes should be sealed with silicon, all fuel lines, power cables, combustion pipes, exhaust pipes should be cable tied or clipped securely in place.

Make sure that the exhaust is separated from the combustion air and the fuel inlet. Make sure the exhaust cannot contact any other wiring, pipework etc. as it will melt plastic.

Put at least 2L of Diesel in the fuel tank to ensure the fuel straw is down into the fuel.

## First startup procedure

When you have finished the install it is time to start the heater, insert the fuse into the fuse holder, press the heat symbol button, the light will turn red, the heater will run through its internal safety check and the dosing pump should start to tick, depending on the length of fuel line it may take a little time for the heater to start, it will try and start 2 times and then go into alarm red light will flash one time saying "i have no fuel i can't start", remove the fuse and then replace it, this will reset the heater, you may have to do this up to 5 or 6 times before the heater will start.

## Simple Fault Finding

If your heater hasn't started after 5-6 resets we normally only have 2 problems.

### Air leaks in the fuel lines

- check to see if you can see fuel in the fuel filter.
- check for air bubbles in the fuel line

If the fuel filter is dry or there are air bubbles you must have a loose fuel connection or other fuel supply issue. Re-check all connections, check the fuel pump is facing the right way, ensure the tank has sufficient fuel for the pickup to be immersed.

### Low battery/power

The heater requires 9 amps to start so it is important that it has a good power supply.

The batteries may have 12.5 volts no load but may drop well below this under load. Check the battery voltage when the heater is trying to start. Make sure your cables go directly to the battery not via any existing wiring.

**If you have a problem call us on 0418 130 971 we will be glad to help, being a self-install it is important that the unit is installed properly so if you have any doubts check with us first.**