2000 Series Engine Heater

Thank you for purchasing a P1 Australia 2000 Series Engine Heater.

Use these instructions for heater codes #112401 - 112450. Code is found on the bottom of heater.

This guide is to assist you with understanding, operating and storing the unit.
We have designed the unit to be simple operation with minimal maintenance required.
The heater has an internal preset thermostat that enables an aluminium V8 engine to achieve heating temperature 170*F / 45 mins. pending ambient temperature and conditions.
Please read the instructions carefully before operating.
These instructions apply to heaters with serial #112401- onwards

General Recommendations

- All connection ports MUST be a minimum AN8 size for optimum heating.
- Radiator inhibitor is recommended to prevent heater corrosion.
- Diesel is recommended but Kerosene can be used.
- Ensure that exhaust is facing outwards with an unobstructed path to allow hot exhaust gases to escape.
- NEVER refuel whilst heater is operating.
- Charge battery after every 4-5 hours of heater operation.
- Drain all coolant if heater is subjected to freezing temperatures, whilst in storage or transportation.
- Do not operate heater outdoors when raining. It has electrical components!

Initial Heater Set up.

1. Remove heater from packaging.
2. Remove battery charger from packaging box and connect supplied cable to battery outlet on the 2000 Series Engine Heater and a suitable 110v power source to ensure battery is fully charged before operation.
3. The charger will display a green light when fully charged.
4. Install -8 hose fittings to the pushlock hoses.
   1 x-8 straight hose end and 1 x -8 90* hose end fitting to each pushlock hose.
5. Install -8 Red female quick disconnect (QR)fitting to hose.
6. Install -8 Red QR hose to the heater fitting icon marked “To Engine”.
7. Install -8 Blue female quick disconnect (QR)fitting to hose.
8. Install -8 Blue QR to the icon marked “From Engine”.
9. Disconnect battery charger.
10. Remove engine heater radiator cap and fill with radiator inhibitor.
11. Remove engine heater fuel cap and fill tank with diesel or kerosene.
12. Engine Heater is now ready to use.

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Connecting heater to engine to circulate coolant.

(Recommended whenever cooling system has been emptied. E.g. new engine installed. This ensures that all air is evacuated from the cooling system. Failure to do this may cause the heater to operate incorrectly when heating is attempted.)

1. Connect Red QR hose to Red QR fitting on engine. (Red fitting should be the top fitting on the remote bracket).
2. Connect Blue QR hose to Blue QR fitting on engine. (Blue fitting should be the lower fitting on the remote bracket).
3. Open control panel flap.
4. Press red main power switch on “I”.
5. Press small black Pump switch on “I”.
6. Close control panel flap.
7. Engine heater will now circulate coolant only. NO heating.

Disconnecting heater from engine after circulating coolant

1. Disconnect Blue QR hose to Blue QR fitting on engine.
2. Open control panel flap.
3. Press small black Pump switch off “O”.
4. Press red main power switch off “O”.
5. Close control panel flap.
6. Disconnect Red QR hose to Red QR fitting on engine.

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Connecting heater to engine to begin heating.

1. Connect Red QR hose to Red QR fitting on engine.
(Red fitting should be the top fitting on the remote bracket).
2. Connect Blue QR hose to Blue QR fitting on engine.
(Blue fitting should be the lower fitting on the remote bracket).
3. Open control panel flap.
4. Press red main power switch on “I”.
5. Press big black switch, the green light will come on and the heater will start working.
6. Close control panel flap.
7. Heating will now begin. (When the heater activates it will sound like a jet plane taking off. There may be a slight delay from turning the unit on and hearing this sound).

*****DO NOT PRESS THE PUMP SWITCH. PUMP AUTOMATICALLY ACTIVATES BY PRESSING THE BIG BLACK SWITCH*****

Disconnecting heater from engine after heating

1. Disconnect Blue QR hose from engine.
2. Open control panel flap.
3. Press big black switch, the green light goes out and the heater enters the cooling off mode. **Failure to allow the heater to cool down will damage the heater.**
4. Press Red main power switch off “O”.
5. Close control panel flap.
6. Disconnect Red QR hose from engine.

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Weekly Maintenance

- Wipe over with clean shop towel to remove any dust or debris.
- Ensure that all switches in control panel are off. “O”
- Check coolant level and refill as required.
- Check fuel level and refill as required.
- Charge battery.
- Inspect & clean air filter. (only required monthly)

Prolonged Storage

- Ensure that all switches in control panel are in the off position. “O”
- Drain all fuel and coolant from the heater.
- Inspect & clean air cleaner.
- Ensure battery is fully charged before storage.
- Start the heater once every three months for 30 minutes of operation.
- Check battery voltage to ensure is fully charged during storage.

General Specifications

- Fuel tank capacity: 2.8L / 0.739 Gal.
- Fuel consumption / per hour: 0.45L/Hr / 0.12G/Hr.
- Coolant tank capacity: 2L / 0.528 Gal
- Radiator cap pressure: 1.93 Bar / 28psi
- Battery specifications: 12v 40HA Lithium

Contact us if you have any questions sales@p1australia.com

2000 Series Engine Heater Error Codes

When the 2000 Series Engine heater is operating correctly a green light will illuminate on the big black switch, indicating all is ok.

Should any faults occur, a red light will "flash" on the big black switch. If this happens, disconnect power to the heater for 3 seconds, then turn on again. The fault should be cleared.

If the fault code is not cleared it will remain until the fault is rectified.

The user will need to count the number of slow and fast "flashes" of the red light and then refer to the troubleshooting table below.

Please note that 0 indicates slow flashing and 1 indicates fast flashing.
EXAMPLE : E01,00000 indicates 5 slow flashes. E02,00001 indicates 4 slow flashes and 1 fast flash.

ERROR CODE	RED LIGHT FLASHES	FAULT	TROUBLESHOOTING
E01	00000	Overheating sensor open circuit	Overheating temperature sensor has loose connection or faulty. Reconnect and test.
E02	00001	Motor or fuel pump failure	Test motor or fuel pump resistance, replace the part/s as required.
E03	00010	The voltage is too high	The voltage is continuously higher than 16V for 5 seconds. (not common)
E04	00011	Low battery voltage	The voltage is continuously lower than 10V for 20 seconds.
E05	00100	Overheating sensor short circuit	Replace overheating sensor.
E06	00101	Water temperature sensor failure	Check water temperature sensor plug is connected securely or replace sensor.
E07	00110	Water temperature sensor failure	Replace water temperature sensor.
E08	01000	Fuel pump failure	Check the fuel pump plug connection & wiring harness for shorts. Replace the fuel pump.
E09	01101	Ignition failure	1. If there is smoke from the exhaust pipe and no fuel leaks, check the fuel delivery system and the fuel pump connection. 2. If there is fuel leaking from the exhaust pipe and no smoke, check the glow pin and the glow pin connection.
E10	01110	Heater suddenly stops operating	1. Check fuel and supply lines, check excessive carbon buildup in heater.

		during normal operation	2. Check if fuel pump is operating.
E11	10010	Glow pin open circuit	Check the glow pin plug connection. Check if the glow pin is working properly.
E12	10011	Glow pin short circuit	Replace glow pin and glow pin filter.
E13	10101	Motor failure	Check if the motor fan is operating.
E14	11011	Heater is excessively hot when touched	Check the combustion air inlet and exhaust pipe to ensure that they are not blocked.
E15	11101	Electric fan failure	Check electric fan connection and if fan is operating. Replace as required.
E16	11110	Heater not circulating coolant properly	Check that the water pump is operating. Make sure that there is no air in the heater or hoses.
E17	11111	Heater switch failure	Check wiring connection of switch to the heater unit. (not common)