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# MV Rotary Control

## Non-Plateau
## Air Heaters
## Instruction Manual
## Ed. 1.02

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# Contents

## Key

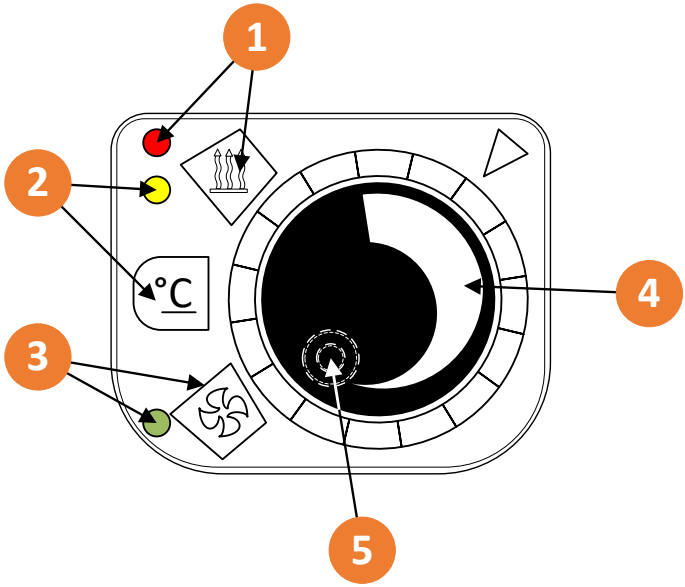


**Figure 1**

**1.** Variable Output Button and Indictor 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 rheostat (or rotary) control works by twisting the control knob to the desired heat setting, and using the buttons listed to determine the heaters' function. Variable output is simply high to low heat/fan speed. 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.

## Installing the Control

Remove the rotary knob by gently lifting it away using a small flat-bladed screwdriver. Use the fixing screw and mounting pad provided to fix the control to a suitable, flat, and clean surface. It is best installed so that it can be seen and operated easily to identify working conditions and for ease access.

Once mounted, simply push the rotary knob back into position, paying attention to its orientation. Connect the two plugs (black and clear) on the rotary loom, to the corresponding plugs on the wiring harness, making sure they are colour to colour, and the correct orientation.

### Plug Connections

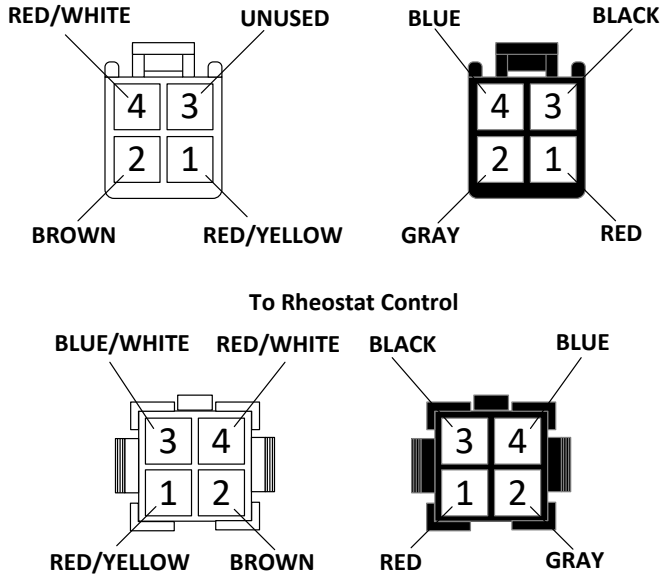


**Figure 2**

## Variable Output Mode

In variable output mode, once turned on the heater will continue to run until it is manually turned off again. Whilst turned on, the rotary knob is used to select the power output (fan speed) of the heater. The higher the fan speed, the greater the volume of hot air will be pushed into the heating space.

**1)** Press the top button to turn the heater on, and the red light will appear.

**2)** Use the rotary knob to control the heaters fan speed from high to low (the higher the fan speed, the quicker the vehicle will get warmer)

**3)** Press the top button again, to switch the unit off – The red light will switch off and the unit will then go into a two-minute cool-down cycle.

## Fan Mode

In fan only mode, once turned on the heater will only run the fresh air fan until it is manually turned off again. Whilst turned on, the rotary knob is used to select the fan speed. The higher the fan speed, the greater the volume of air will be pushed into the heating space.

**1)** Press the bottom button to use the fan only mode. The green light will appear.

**2)** Use the rotary knob to alter the fan speed from high to low.

**3)** Press the bottom button again to turn the fan off, the green light will switch off and the unit will shut down.

## Thermostatic Mode

In thermostatic mode, the heater will run until it has reached the set temperature and (version dependent) will either switch off completely or continue to run the fan until the temperature has dropped significantly that the heater will then relight and start again. The unit will continue to cycle until the controller is switched off completely, by pressing the thermostat button again, so the light disappears. Temperature will vary depending on where the temperature probe is installed, and how much ambient air flow it has.

**1)** Press the middle button to turn the heater on, and the amber light will appear.

**2)** Use the rotary knob to control the temperature from high to low. (35°C – 5°C respectively).

**4)** Once the heater reaches the temperature set on the rotary knob, it will shut itself down.

**5)** Once the temperature has dropped again, the heater will turn back on, and start to heat again.

**3)** This process will continue until you press the middle button again, to switch the unit off – The amber light will switch off, and the unit will go into a two-minute cool-down cycle.

## Fault Information

If the heater detects a fault, the controller will go into an error state. The current light (red, amber, green depending on what mode the unit is in) will switch off, and begin to flash a number of times, followed by a pause.

To determine the fault, count the number of flashes and refer to the table below to rectify the fault.

# Fault Codes

| Code on Digital Timer | Error Description | Error Light (Flashing Light) on Rotary Control |
|---|---|---|
| 00 | No Fault | F01 |
| 10 | Second start failure | |
| 20 | Heater does not light in time | F02 |
| 21 | Combustion termination | |
| 30 | Voltage too high | F03 |
| 31 | Voltage too low | |
| A9 | Voltage too low | |
| 41 | Overheated | F10 |
| 50 | Flame sensor open circuit | F05 |
| 51 | Flame sensor short circuit | |
| 52 | Hot air sensor open circuit | |
| 53 | Hot air sensor short circuit | |
| 54 | Hot air sensor overheated | |
| 65 | Inside temperature sensor broken circuit | F06 |
| 66 | Inside temperature sensor short circuit | |
| 68 | Outside temperature circuit broken circuit | |
| 69 | Outside temperature circuit short circuit | |
| 70 | Fuel pump short circuit | F07 |
| 71 | Fuel pump broken circuit | |
| 80 | Fan broken circuit | F08 |
| 81 | Fan short circuit | |
| 82 | fan speed too low | |
| 83 | Fan speed too high | |
| 84 | Fan speed measurement fault | |
| 90 | Glow pin open circuit | F09 |
| 91 | Glow pin short circuit | |
| 92 | Glow pin high resistance | |
| 93 | Glow plug drive open circuit | |
| a2 | Overheating | F10 |
| b4 | Overheating or sensor fault | F11 |
| b5 | Overheat sensor fault | |
| c0 | Hydro only - blower relay open circuit | F12 |
| c1 | Hydro only - blower relay short circuit | |
| c4 | Preheating temperature broken circuit | |
| c5 | Preheating temperature short circuit | |
| d0 | Crystal oscillator in ECU broken | F13 |
| d1 | Fault information storage failure | |
| d3 | Maintenance reminder | |
| - | Earthing Issue | Constant Flash |
| - | Connection Issue | Traffic Light |

## Notes

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