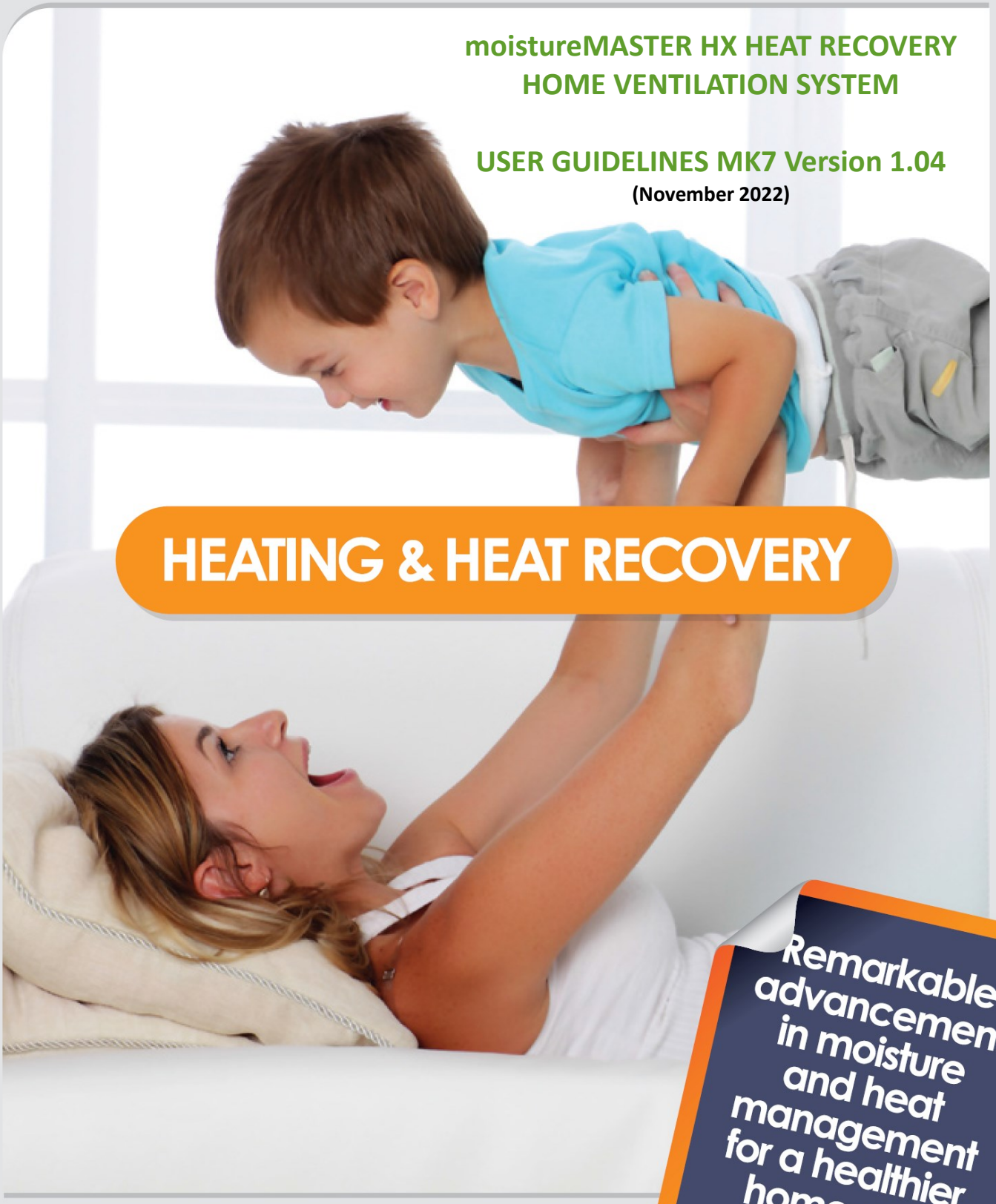
moistureMASTER

moistureMASTER HX HEAT RECOVERY HOME VENTILATION SYSTEM

USER GUIDELINES MK7 Version 1.04

(November 2022)



HEATING & HEAT RECOVERY

Remarkable advancement in moisture and heat management for a healthier home and family

Remove moisture for a healthier home

moistureMASTER HEAT RECOVERY VENTILATION

QUICK REFERENCE GUIDE TO RUNNING THE SYSTEM

A heat recovery ventilation system is not in itself a heating system. It helps to preserve the heat within your home at the same time as it replaces the indoor stale air with fresh air from outside. Fresh air from outside is unheated of course but the system is designed uses the existing heat that are already generating within your home to warm and temper the incoming fresh air. In many new homes where heat preservation is highly achievable you should not need extra heating to compensate for the little heat that you lose through ventilation. The system is simple to operate and in most cases you never have to interface with the controls once you have selected the ventilation rates that work best for you.

ABOUT HEATING

The overall performance of the heat recovery mechanism and its ability to help prevent indoor temperatures from cooling is very much dependent on the temperature of the indoor air. The warmer it is inside the home the more effective the system will be in maintaining indoor warmth and preventing fresh air from cooling the house down. We are using the indoor warmth to heat the incoming fresh air.

Particular attention needs to be paid to homes with radiant underfloor heating. Because of the characteristics of this form of heating the occupants of a home may feel warmer with the air at a lower temperature. For the best performance and comfort when you are operating a heat recovery ventilation system and radiant underfloor heating during the coldest winter months here in New Zealand you may need to operate the underfloor at a slightly higher temperature.

ABOUT VENTILATION

The amount of ventilation required to keep your home healthy and dry is very little, usually only about .35 air changes per hour. We suggest that you run the system on the lowest setting. A simple way of gauging whether or not you have enough input air can easily be determined by putting your hand to diffuser outlet. If you are able to feel a gentle wisp of air exiting the diffuser outlets then that should be enough. Too much ventilation without sufficient heat could have a slightly negative affect to your indoor temperature.

If condensation is a problem, keep increasing the airflow until morning condensation does not occur.

BALANCE

It is important to ensure that the correct balance between heat and ventilation be maintained. It may be necessary to experiment a little to achieve the optimum balance for your home. Balance is achieved when you feel that there is sufficient fresh air and warmth within the home.

The system should also be operated in a balanced way with a similar amount of air being pushed through the heat exchanger from both the Fresh air and Exhaust air fans in the winter time. The fans are able to be run at different flow rates so it is possible to over-pressurise or under-pressurise the home but generally it is better to have a balanced flow in and out of the home.

CONDENSATION CONTROL

Condensation control is easily achieved when there is sufficient drier air being introduced into the home. The airflow must be continuous and enough heat must be maintained within the home. Once you achieve the correct airflow and it is balanced with the heating, the control, prevention and elimination of condensation is easy to achieve and more importantly it is achieved in a completely unobtrusive way.

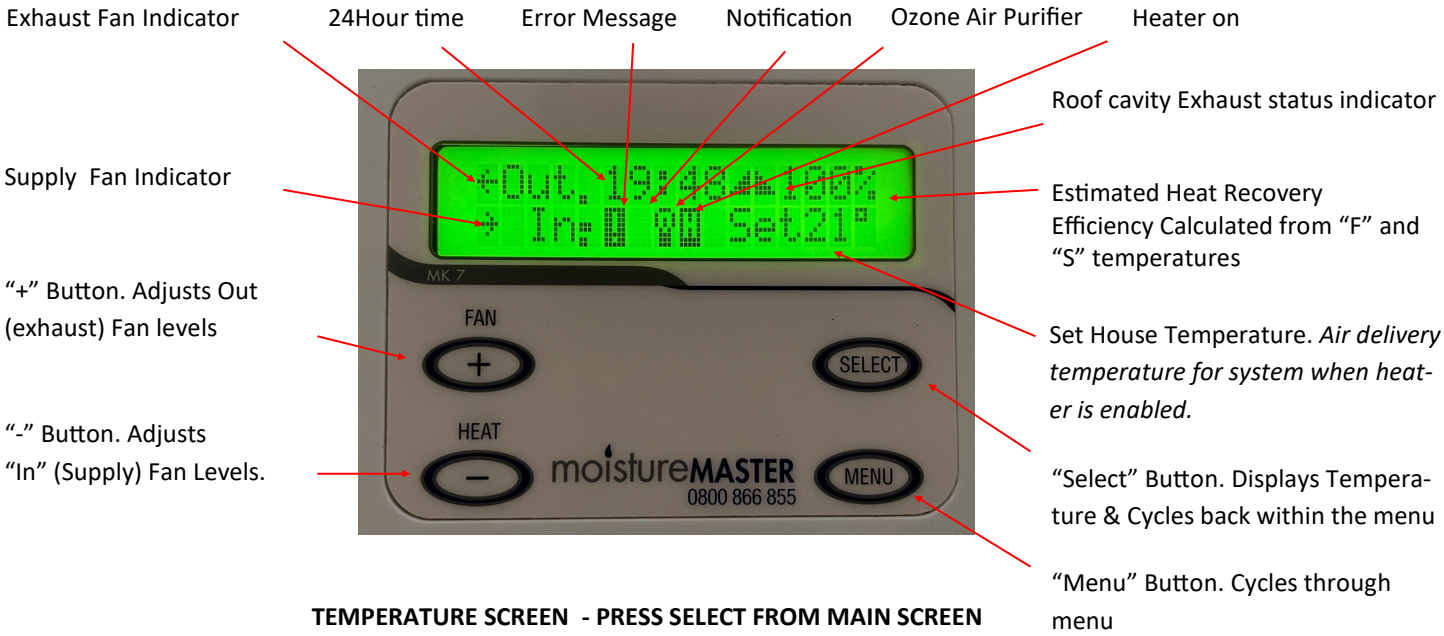
Eliminating condensation and problems associated with dampness is delivered through a process of dilution and the displacement. There indoor air is made drier by introducing drier air and the damp air is continuously removed by the ventilation system. The moment ventilation stops moisture levels quickly start to build up again. So ensure your system is always switched on during the winter months.

OPERATING THE SYSTEM

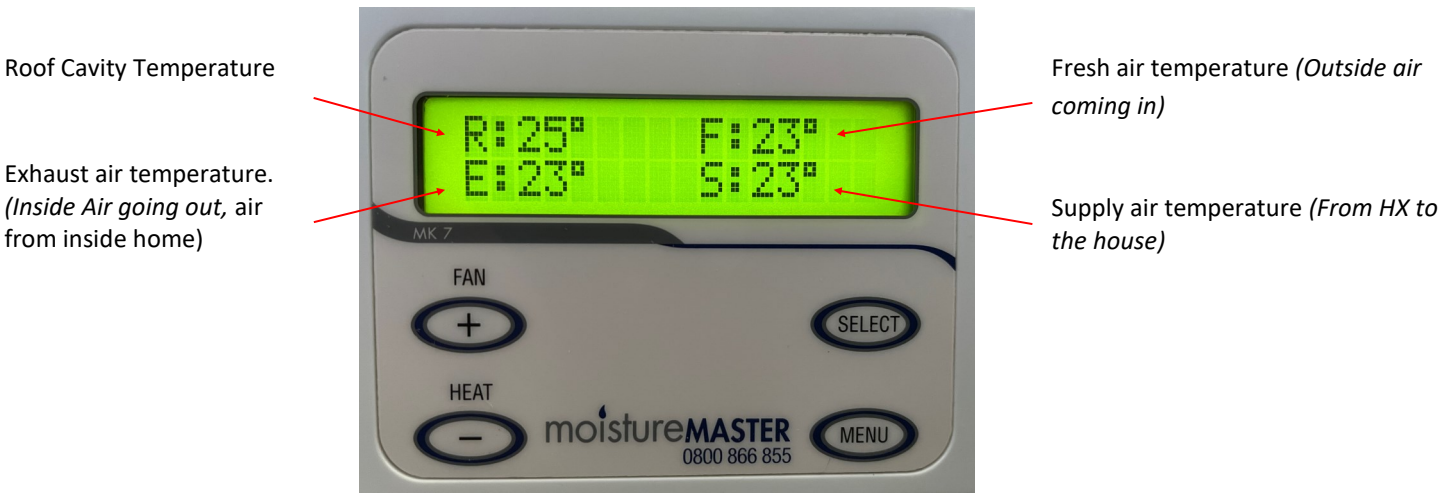
CODE NUMBER: MK7HXLCD

Please become familiar with the touchpad interface and you will soon find it easy to operate.
Every HX system has two three speed fans, Supply fan (In) and Exhaust fan (Out). The two fans should be set to run on the same speed. Usually level 1 or level 2. Level 3 is used for the "Boost Function" and when an increased level of ventilation is required.
The first graphic below is the "main screen". It displays the current system status.
The first press of any button illuminates the backlight and activates the buttons the backlight will time out after 10 seconds. Pressing "Select" from the Home Screen will display the current temperatures of the 4 temperature probes installed in the system. R– Roof Cavity, F-Fresh E- Exhaust S-Supply. Pressing the "Menu" button will cycle through the menu options. When an option is displayed use the "+" & "-" buttons to adjust. Keep pressing "Menu" to cycle through the options when all options have been cycled the "Main Screen" will be displayed. You can press "Select" to cycle back within the "Menu"
The Optional Extras installed on your HX system will appear in the "Menu". The Extra options include Heater, Summer By-pass, Zone Control, Roof Cavity Exhaust, Air Purifier and Boost Extraction.

MAIN SCREEN - (Default)



TEMPERATURE SCREEN - PRESS SELECT FROM MAIN SCREEN



N.B. The temperatures displayed have an accuracy of at least + or – 1 degrees so caution needs to be applied if you are relying on them to ascertain efficiency levels of the overall system.

Fan Operation

Both fans are able to be controlled independently. The + and - buttons on the left of the control pad are used to adjust the fan speeds.
The TOP fan on the LCD screen is the EXHAUST air fan which moves the stale, warmer air out of the home.
The BOTTOM fan is the FRESH air supply fan which moves the fresh air into the home
In the SUMMER the FRESH air fan is able to be switched off manually or programmed to turn off automatically at a user selected temperature **(SUMMER MAXIMUM)** to prevent the home from becoming hotter. The EXHAUST air fan cannot be programmed to turn off automatically because it could be connected to the bathroom, ensuite or toilet extraction system which may be required to run continuously even in the summer. However the EXHAUST air fan is able to be turned off manually.

MENU OPTIONS - *How to adjust settings and set up options.*
Press the MENU button from the MAIN SCREEN to cycle through the options that have been included in your system. If you have not purchased certain options they will not appear in the menu list.

Press the + and - buttons to adjust settings.
Press the SELECT button to move back to previous option.

MoistureMASTER HX Heat Boost Function

The HX unit can be operated with or without the in-built heater enabled or disabled; If disabled the heater will not function. If enabled the temperature of the supply air may be regulated. Sometimes there may not be enough existing heat within the home to deliver the supply air at a temperature that you desire. In the home screen the temperature at the bottom left (SET with a temperature) is able to be adjusted up or down by pressing the + or - buttons on the House Set screen in the menu. If enabled the in-built heater will cycle on and off and maintain the temperature that you have selected. The supplementary heater should not be regarded as a heating system but merely to ensure that cool air may be avoided regardless of the prevailing climatic or weather conditions. The ultimate performance of the heater is dependent on the area of the home, how well the home is insulated and also the amount of background heat that is present.

Heater Status (Enable On or Enable Off)

When Heater enable is “On” the Set Temperature screen appears at the next press of the Menu button. At this screen you are able to choose the minimum air temperature that you want the HX system to deliver air on the supply side of the system.

N.B. The temperature of the air arriving at the diffusers will always be a little less than this due to small losses of air temperature as the air passes through the duct.

When there is not enough heat within the home to deliver the Set House Temperature from the HX unit the booster heater will deliver this temperature if the Heater is “enable”.

N.B. The House Set Temp screen does not appear when the Heater enable is “Off”.

Heater enable Off

If the Heater enable is off the heater will not operate and the temperature of the source air will only reflect the air temperature that the exchange plate is capable of delivering to the supply side of the system to the house.
A point to remember
If the heat is enabled the percentage of heat recovery will be reading higher than the actual amount being generated by the heat exchange. However when the heat enable is “Off” the amount of heat recovery displayed on the main menu screen is accurate.

N.B.1 The heater symbol on the main screen is only shown when the heater is producing heat.
N.B.2 Both fans must be on for the heater to turn on. If the heat needs to turn on but either fan is off, there will be an info message shown from the home screen.

Summer Maximum Temperature

If you do not have the SUMMER BYPASS Option fitted the Fresh Air Supply fan will stop working at the SUMMER MAX TEMP. This will prevent the system from heating your home up on a hot summers day.
A point to remember
The HX unit can only be used for cooling in conjunction with an air conditioning unit. However the summer By-pass will help to lower the daytime heat build-up and will provide a little cooling of the home after dark when the night air is cooler. See page 8 for summer by-pass.

Summer By-pass (optional)

The Summer Bypass includes a motorised damper assembly and when on it switches the fresh outside air directly into the home without going through the heat exchanger. Heat will not be recovered from the warmer inside air of the home. When the Summer Bypass is “off” the air is switched back to run through the heat exchanger again.

N.B. The summer bypass is not recommended if your home is “air conditioned” and it is being used to cool the inside air. In this case turn the by-pass to closed so the heat exchanger can act in reverse by cooling the warmer fresh incoming air before it is introduced.

In the Summer Bypass mode there are **three selections of operation**. **Closed, Auto & Open.**

N.B When the summer bypass is active the heater cannot operate.

When the **Bypass is Closed** all the fresh air from outside passes through the heat exchange system.

The fresh air is heated by the warmer inside exhaust air or cooled by the cooler inside air if you are operating an aircon system and that is being drawn into the exhaust vent.

In the **Summer Bypass Auto mode** the system switches from closed to open at selected temperatures in the installer set-up. These temperatures can only be changed in the "Installer Set – Up",
The Factory default temperatures are set to Inside Temp 22 Outside temp 24 (these settings may have been changed by your installer).
The default settings are explained below.

The default settings of the AUTO Bypass - B/P:

- **The B/P is Closed** when the Outside temperature is less than 24 degrees C and the Inside temperature is less than 22 degrees C.
- **The B/P is Open** when the outside temperature is greater than 24 degrees C and the Inside temperature is greater than 22 degrees C.

(Both Temperatures have to be met before the bypass will switch)

When the Bypass is Open all the fresh air from outside by-passes the heat exchange system and travels directly to the inside.

The open bypass should not be selected when running an air-conditioning system for cooling.

Roof Cavity Exhaust - Optional

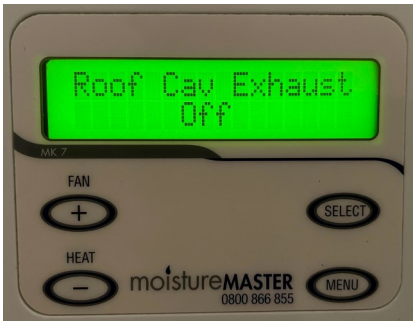
The **Roof Cavity Exhaust** includes a motorised damper assembly and allows the system to exhaust the warm air through the heat exchange unit and recover the heat within the roof cavity when its available. This option is worthwhile particularly in homes that have a dark coloured steel roof where the heat gain can be significant even in winter. At night this heat source is not available and the exhaust air can be switched back to be sourced from within the home.

For the Roof Cavity Exhaust there are four selections of operation.

Roof Cavity Exhaust On

In the **On** position the Roof Cavity Exhaust damper is fully open and sources all of the exhaust air from the roof cavity.

Roof Cavity Exhaust Off



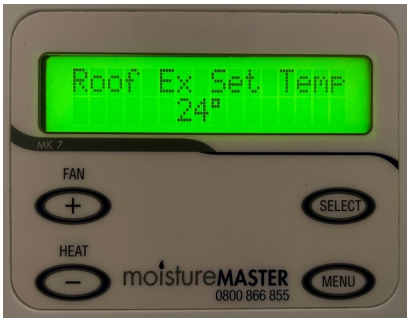
In the **Off** position the Roof Cavity Exhaust damper is fully closed and all of the exhaust air is sourced from inside the home.

Roof Cavity Exhaust 50%

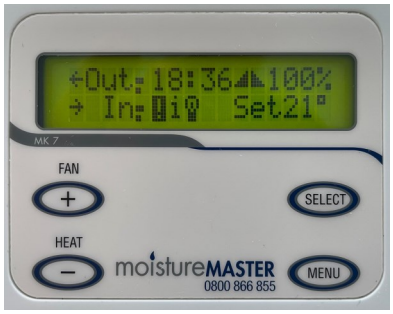
In the **50%** position the Roof Cavity Exhaust damper is only closed half way and therefor approximately 50% of the exhaust air will come from the roof cavity with the remaining 50% being exhausted from within the home.

Roof Cavity Exhaust Auto

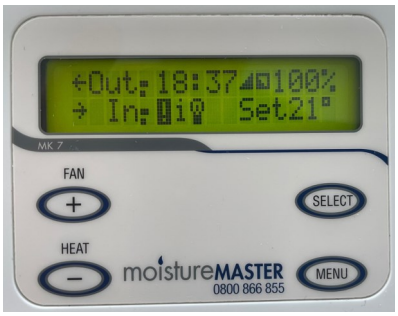
Select Auto mode and another screen will appear - **Roof Ex Set Temp Screen.**
Above the Set Temp - exhaust from roof cavity.
Below the Set Temp - exhaust from within the home



Roof Cavity Exhaust Status is depicted graphically on Home Menu Screen



Roof Cavity Exhaust Off



Roof Cavity Exhaust On

Roof Cavity Exhaust 50%

Zone Control - Optional

The **Zone Control** includes a switching assembly and allows the system to either supply air or exhaust from different places within the home.
We recommend the benefits of continuous air supply to all areas of the house so for fresh air the zone control is less useful.
However for exhausting from the home this can be a useful tool. If there are a couple of significant heat sources which are not always used together then the ability to close an area off when there is no heat to exhaust can be useful in maintaining the best heat redistribution throughout the home.
In a centrally heated homes where the heat is equally distributed throughout this is not so useful

Zone Control - 50/50

Zone Control 50/50 supplies fresh air or exhausts air from both Zone 1 and Zone 2.

Zone Control - Zone 1

Zone Control 1 supplies fresh air or exhausts air from Zone 1.

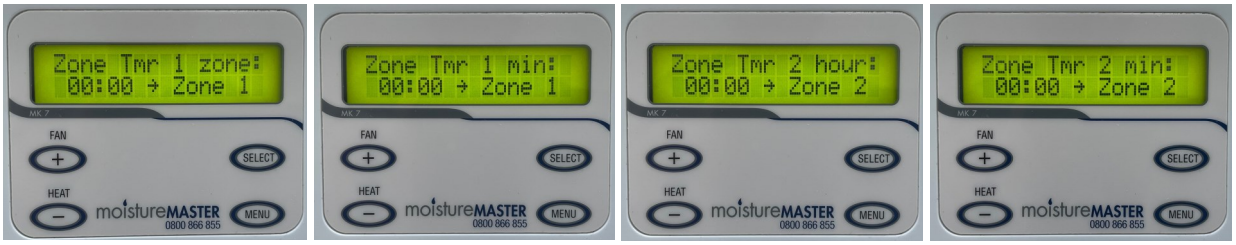
Zone Control - Zone 2

Zone Control 2 supplies fresh air or exhausts air from Zone 2.

Zone Control - Timer

Zone Control - Timer Both zones can bet set to operate at different times.
Cycle through the time settings by pressing the Select button and use the **+** and **-** buttons to choose the time - hours and minutes.

Timer Setting - Zone



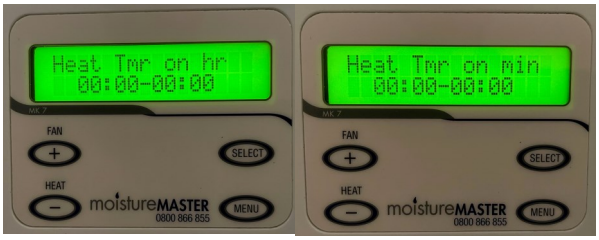
Set hour and minutes for each zone using the + and - buttons

Heater Timer

The heater timer can be set to enable or disable the heater within a given timeframe for each day. This is useful for conserving energy and can take advantage of free power time plan you may be on with your power company. The heater timer is in 24hour format

Heater Timer is off and no timer settings can be made.

Heat timer on an additional screen will appears to set the time

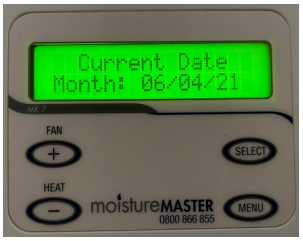


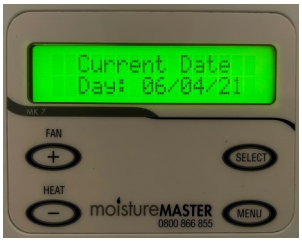
Set hour and minutes for time the heater is to be enabled using the + and - buttons

Set hour and minutes for time the heater is to be disabled using the + and - buttons

Date & Time Setting

To set date & time by using the **+** and **-** buttons. If you choose "Yes" an additional series of screens appears use **+** and **-** to adjust and menu to advance to the next setting.



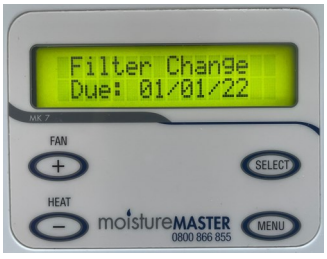


Pure Air - Optional

The **Air Purifier** is a UV lamp installed in the supply duct. This generates Ozone and is useful for removing odours and smog that may be being introduced from outside.

Choose Air Purifier On or Off by using the + and - buttons.

Filter Change Date



Filter Change date is displayed. Filter date should be reset when the filters have been changed.
If the filter is not changed within the 1 year period and the filter has not been reset the word FILTER will flash intermittently on the screen.
Resetting the filter advances the filter change date to one you.
Hold down the bottom two buttons - and Menu 15 seconds to advance the filter due date by 1 year.