



moisture**MASTER**

**moistureMASTER HX HEAT RECOVERY
HOME VENTILATION SYSTEM**

USER GUIDELINES MK6 Version (Sept 2017)



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.

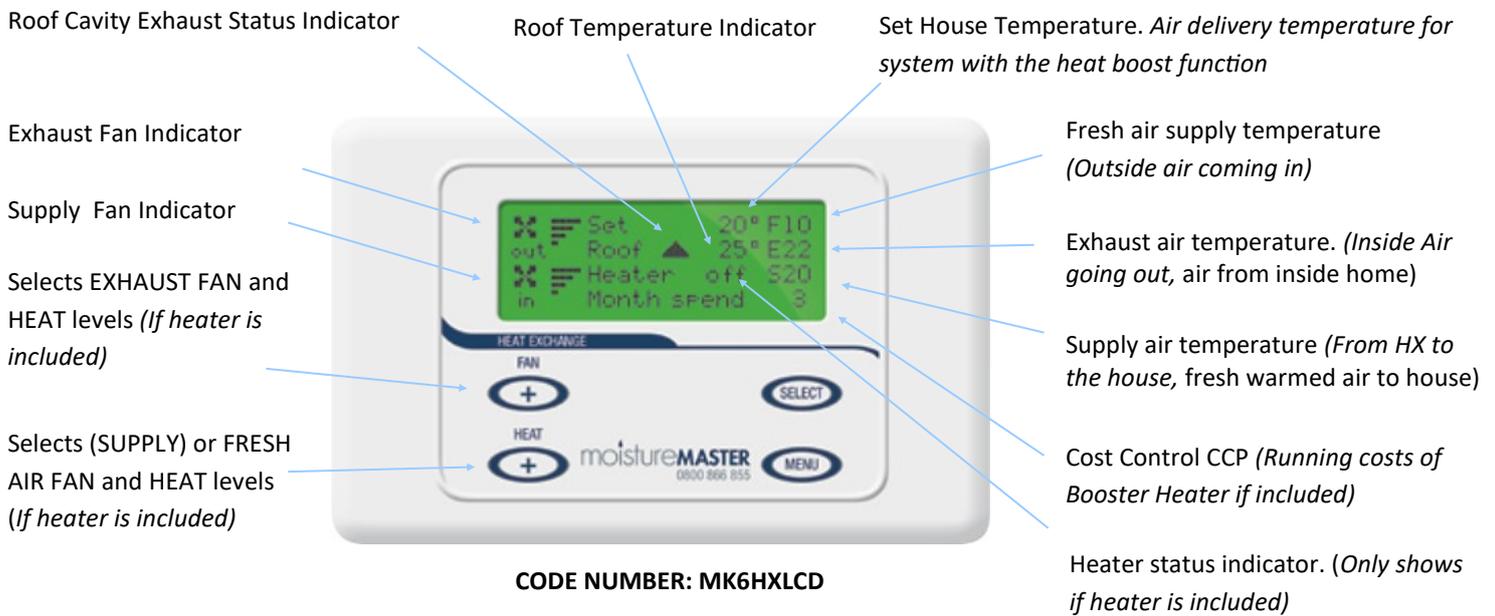
Eliminating condensation and problems associated with dampness is delivered through a process of dilution and the displacement. There indoor air is made drier by introducing drier air and the damp air is continuously removed by the ventilation system. The moment ventilation stops moisture levels quickly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

OPERATING THE SYSTEM

Please become familiar with the touchpad interface and you will soon find it easy and convenient to select the various options that you have included in your system. The menu contains all of the current options that are available with moistureMASTER™ and may include some which you have not included in your purchase. For further information on the options which are available please enquire from one of our trained consultants or call our customer services and support team.

The graphic that you will see most of the time is the “main screen”. It includes all the basic operational information that you will want to know. The main screen is only functional when the backlight is illuminated. The first press of any button illuminates the backlight and activates the buttons. Once the back light is illuminated the touch pad is operational and will accept setting changes. The LCD control has been designed to default back to the main screen 10 seconds after the last button press. 4 seconds after returning to the main screen the back light will extinguish and the touch pad enters the “standby” mode. It will remain in the standby mode until any button is pressed again and the back light is illuminated once more.

MAIN SCREEN - (Default)



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.

ROOF CAVITY EXHAUST STATUS INDICATOR

-  Exhaust air all coming from the roof cavity “ON”
-  Exhaust air all coming from the house “OFF”
-  50% exhaust from the roof cavity and 50% exhaust from the house

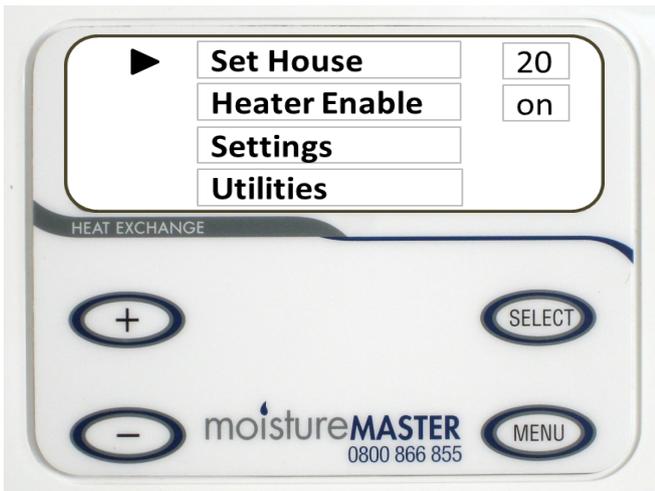
N.B. Please see page 9 for details on setting the roof cavity exhaust. When AUTO is selected ALL exhaust air comes from the house when the temperature is under the level selected and 50% from the house and 50% from the roof cavity when the temperature is above the selected level.

Fan Operation

Both fans are able to be controlled independently. The **+** and **-** buttons on the left of the control pad control the fan operation.

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 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 SELECTIONS - *How to make selections and set up options.*

Press the MENU button from the MAIN SCREEN and the following screen appears. The selection cursor is next to the Set House item. To scroll

through this screen press the **+** or **-** sign to move cursor up or down. When the cursor is next to the item you want to select press the SELECT button and that item is highlighted. You can now

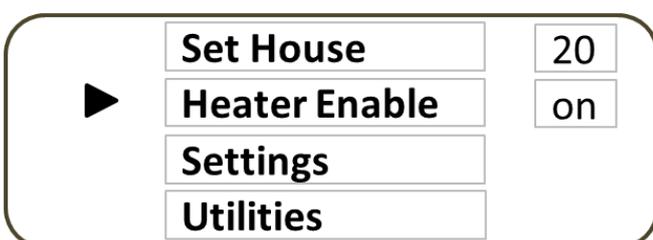
make your selections using the **+** or **-** buttons. Follow this proceed through all of the menu selections.

Set House

This is the minimum air temperature that you want the HX system to deliver air on the supply side of the system and is delivered to the room supply diffusers. This setting is used in conjunction with the booster heater and is designed to always deliver the temperature selected. When there is not enough heat within the home to deliver the Set House Temperature from the HX unit the booster heater can be “enabled” to come on and do that job. See the next section HEATER (Enable or Disable)

Heater (Enable or Disable)

The HX unit can be operated with or without the in-built supplementary 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 (default) screen the temperature at the bottom left of the screen is able to be adjusted up or down by pressing the **+** or **-** buttons. 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.



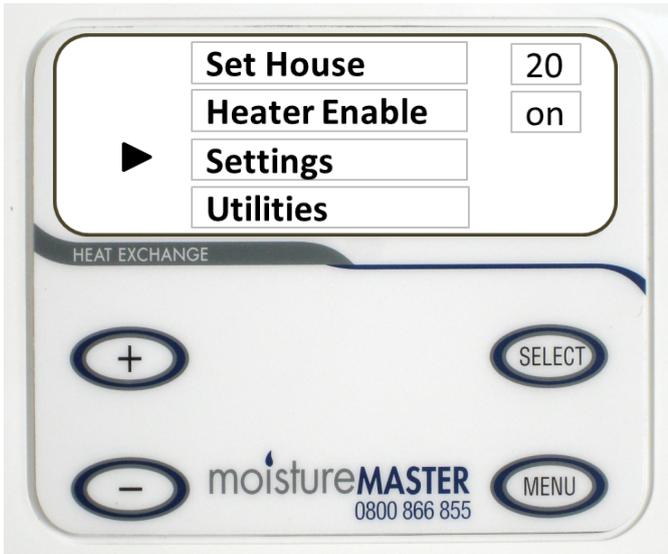
Heater Status On



Heater Status Off

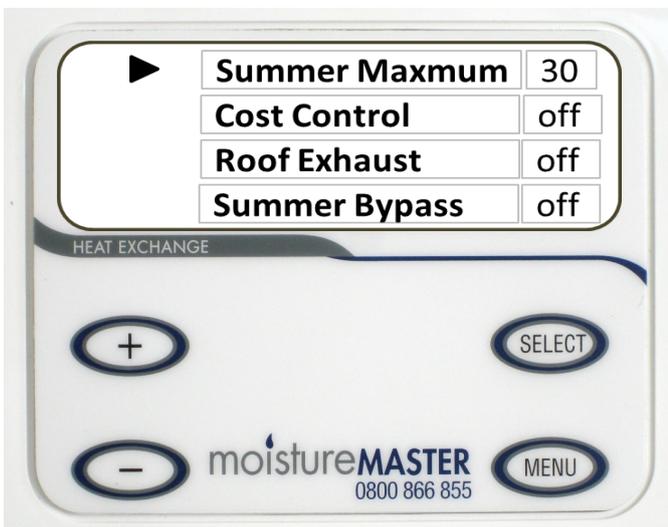
Settings Menu

The settings menu lists most of the useable features of the moistureMASTER HX system. Press the MENU button and use the **+** and **-** button to scroll the cursor to "Settings".



Press the SELECT button. A new menu will appear. Again use the **+** and **-** button to choose the item that you would like to set. Press the SELECT button to highlight the item and then you are able to make your selection. When you have made the selection press the SELECT button again to deselect the item and then you can move the cursor up or down to another item. Follow this procedure for all of the items that you want to select and set.

N.B. The Settings menu will only display the options that are included in the system.



Summer Maximum (Maximum)

With the cursor next to the Summer Maximum press the SELECT button and the selection is highlighted. Using the **+** and **-** button choose the summer maximum temperature. If you have an optional summer by-pass fitted this will be the temperature at which the by-pass is activated in the AUTO mode. If you do not have this fitted the Fresh Air Supply fan will stop working at this temperature. This will prevent the system from heating your home up on a hot summers day. The HX unit can only be used for cooling in conjunction with an air conditioning unit. However the summer By-pass will help to prevent daytime cooling and will provide a little cooling of the home at after dark when the night air is cooler. See page 10 for summer by-pass. 7

Cost Control

When the Cost Control Programme is selected to “on” CCP Settings will appear immediately under Cost Control. You will be able to enter a specific daily budget for the heater operation by setting your household power costs and making a selection on how much money you want to limit the heater operation to in your moistureMASTER system. Move the cursor to CCP settings then press SELECT and a series of screens will appear.

| | | |
|---|----------------|-----|
| ▶ | Summer Maximum | 30 |
| | Cost Control | off |
| | Roof Exhaust | off |
| | Summer Bypass | off |

| | | |
|---|----------------|-----|
| ▶ | Summer Maximum | 30 |
| | Cost Control | on |
| | Roof Exhaust | off |
| | Summer Bypass | off |

| | | |
|---|----------------|-----|
| ▶ | Summer Maximum | 30 |
| | Cost Control | on |
| | CCP Settings | |
| | Roof Exhaust | off |

The screens provide you with the ability to enter data that is necessary to calculate the heater running costs, Manage the budget that you set and provide you with historical feedback on the running costs of the Booster heater in the moistureMASTER HX system. Press menu to scroll through each screen.

Function: Set the Power rate - (Cents per kw hour from your monthly power account)

This is the first screen:

Press the + or - button to select correct kw power charge. This can be reset and any time and all calculations will be re-done to reflect the changed power rate. To move to the next screen press the MENU button.



Function: Set the Daily Budget - (Daily maximum cost for heater operation)

This is the second screen:

Press the + or - button to select your desired budget. The budget is set in 50 cent increments. The daily cycle commences at 12 midnight. Once the daily budget is expended the heater operation will cease. If additional daily budget is added the heater operation will recommence.



Function: Monthly Roll Over - (Unspent balances will accumulated and can be allocated to the next months budget)

This is the third screen:

Press the + or - button to make your selection

No Roll - Any accumulated unspent balance will not roll into the next month

Roll - Accumulated balances are carried over to the next month, apportioned and added to each daily budget.



Function: View Monthly Costs - (History of heater costs)

This is the fourth screen:

This screen merely displays the last months costs for running the booster heater and the month before that. The amount spent cannot total more that the daily accumulative totals for the month except any unspent previous months allocation which has been rolled into the new month will be included if it has been used.



To Exit the CCP Settings menu press SELECT. This will take you back to the Settings Menu.

Roof Cavity Exhausting (optional)

The **Roof Cavity Exhausting** includes a switching 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 heat is only available during the daytime when the sun is shining when heat within the home is minimal. This option is worthwhile particularly in homes that have a dark coloured steel roof where the heat gain can be significant even in winter. Obviously the benefits will be greater in some parts of New Zealand than others. At night this heat source is not available and the exhaust air can be switched back to be sourced only from within the warmer parts of the home.

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

| | | |
|---|---------------|-----|
| ▶ | Summer Maxmum | 30 |
| | Cost Control | |
| | Roof Exhaust | on |
| | Summer Bypass | off |

All air from the roof cavity

| | | |
|---|---------------|------|
| ▶ | Summer Maxmum | 30 |
| | CCP Settings | |
| | Roof Exhaust | auto |
| | Summer Bypass | off |

All from the house or roof cavity

| | | |
|---|---------------|-----|
| ▶ | Summer Maxmum | 30 |
| | Cost Control | |
| | Roof Exhaust | off |
| | Summer Bypass | off |

All from the house

| | | |
|---|---------------|-----|
| ▶ | Summer Maxmum | 30 |
| | Cost Control | |
| | Roof Exhaust | 50% |
| | Summer Bypass | off |

50% from house and 50% from roof cavity

If AUTO is chosen an additional screen appears with a temperature selection. This is the temperature in which the exhaust damper will change its setting to draw exhaust air from the house or roof cavity. This can be adjusted by placing the cursor next to Exhaust Set and highlighting it by pressing the SELECT button. Select the temperature by pressing the + or - button. When AUTO is not selected the Exhaust Set selection and temperature will disappear from the screen.

Summer By-pass (optional)

The Summer Bypass includes a damper assembly which allows the supply fresh outside air directly into the home without going through the heat exchange system. Heat will not be recovered from the warmer inside air of the home so no further heat will be picked up through the heat exchange process. 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 the heat exchanger will 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.

| | | |
|---|---------------|-----|
| ▶ | Summer Maxmum | 30 |
| | Cost Control | |
| | Roof Exhaust | off |
| | Summer Bypass | off |

All Fresh air passes through the HX Unit

| | | |
|---|---------------|-----|
| ▶ | Summer Maxmum | 30 |
| | Cost Control | |
| | Roof Exhaust | off |
| | Summer Bypass | on |

All Fresh air by-passes through the HX Unit

Summer By-pass (continued)

In the Auto mode the summer bypass is only activated when the fresh air supply temperature reaches the Summer Maximum which is the first selection of the Settings Menu. When the temperature falls below that level the by-pass is turned off and the air resumes passing through the HX unit.

| | | |
|---|----------------|------|
| ▶ | Summer Maximum | 30 |
| | Cost Control | |
| | Roof Exhaust | off |
| | Summer Bypass | auto |

ZONE CONTROL (Optional)

Zone control is a motorised damper mechanism that is able to switch the supply air to two different parts of the home. It can also be used to vary the amount of air being delivered to both zones.

It can be used to switch or vary the amounts of air being exhausted through the heat exchange unit from different parts of the home as well. Only 1 zone damper can be fitted.

| | | |
|---|---------------|-----|
| ▶ | Roof Exhaust | 30 |
| | Summer Bypass | |
| | Zone Control | 1 |
| | Heater Timer | off |

Air is being supplied or exhausted
All from Zone 1

| | | |
|---|---------------|-----|
| ▶ | Roof Exhaust | 30 |
| | Summer Bypass | |
| | Zone Control | 30% |
| | Heater Timer | off |

Air is being supplied or exhausted
70% Zone 1
30% Zone 2

| | | |
|---|---------------|-----|
| ▶ | Roof Exhaust | 30 |
| | Summer Bypass | |
| | Zone Control | 50% |
| | Heater Timer | off |

Air is being supplied or exhausted
50% Zone 1
50% Zone 2

| | | |
|---|---------------|-----|
| ▶ | Roof Exhaust | 30 |
| | Summer Bypass | |
| | Zone Control | 70% |
| | Heater Timer | off |

Air is being supplied or exhausted
30% Zone 1
70% Zone 2

| | | |
|---|---------------|-----|
| ▶ | Roof Exhaust | 30 |
| | Summer Bypass | |
| | Zone Control | 2 |
| | Heater Timer | off |

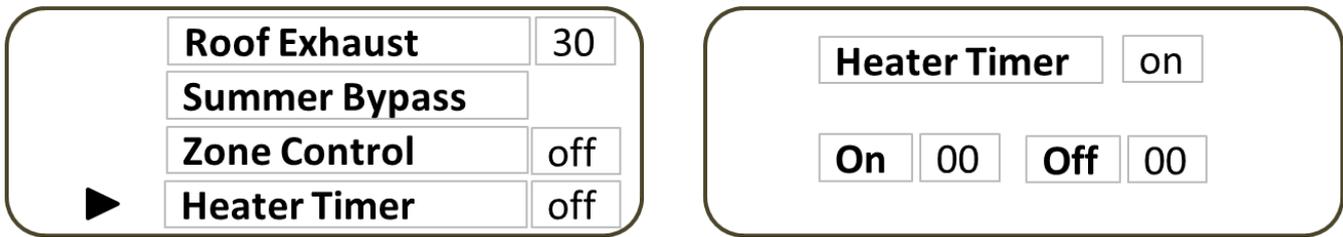
Air is being supplied or exhausted
All Air from Zone 2

Timer Function

The timer is used solely to control the booster heater operation of the HX Unit. It is the last selection in the Settings Menu. Place the cursor next to the Heater Timer label and press SELECT. The timer screen will automatically appear. Select the timer operation by pressing the + and - buttons.

Select On with the + button

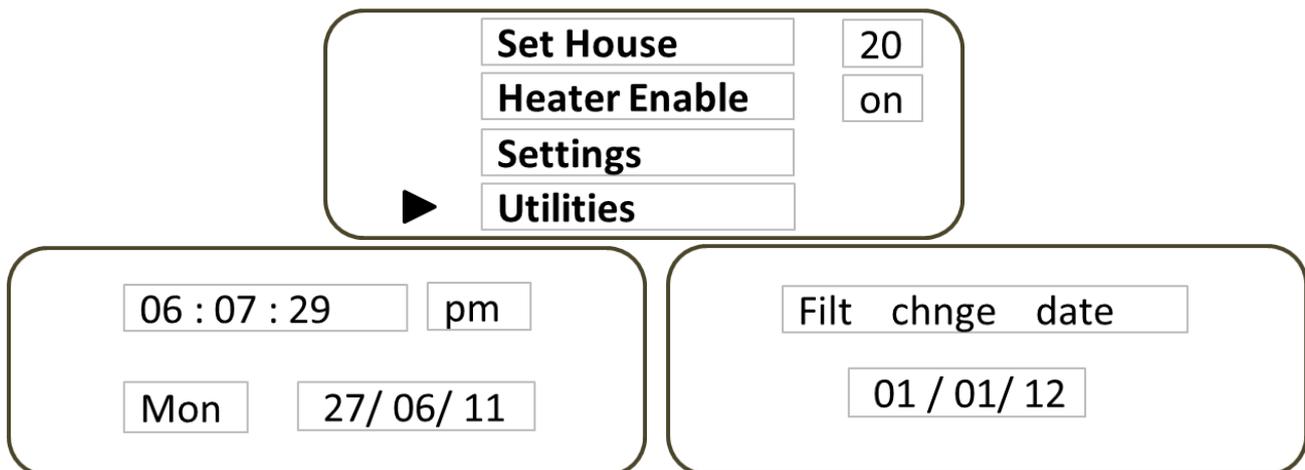
Select Off with the - button



Utilities Menu

There are two items that are sourced via the Utilities Menu. Setting the time and date and viewing the filter change date.

Select Utilities by placing the cursor next to the label in the main menu screen. Highlight it by pressing the SELECT button. The first item to appear is the time and date. Pressing the menu button moves through the various components that will need to be set. These are set by pressing the + or - buttons. When you have finished setting the time and date press the SELECT button which advances the screen to view the filter change date. Exit the Utilities mode by pressing the SELECT button one more time.



Filter Change

Filter changing with approved moistureMASTER filters is also necessary to maintain the warranty that the manufacturers of moistureMASTER have provided. Failure to replace the filter at the required intervals with the prescribed moistureMASTER filters will void the warranty. Although reminder letters are routinely sent by Condensation Control Ltd it is the owner's responsibility to ensure this is carried out at least annually and in some cases it is probably a good idea to replace filters more regularly than this. In order to remind you we have built into the electronics a calendar which displays the date around which the filter should be changed. When the moistureMASTER HX was installed the Technician would have set the time and date and activated the filter calendar. This date will be set into the filter change display which is selected in the AM or Advanced Menu.

It is important that the filters in the system be changed at least once a year to maintain the unit's integrity and efficient operation. Where a summer ventilation By-pass is fitted it may be necessary to replace the filter twice a year. Bulk packs are available for purchase from the manufacturer at reduced rates.

When the filter date is reached the date will flash continuously across the temperature display on the main screen. It is time to call for a filter service.

You may purchase the filters directly from Condensation Control Ltd and change the filter yourself. Instructions to do this are included with each filter. Our customer services centre will also provide you with instructions to clear the filter indicator. Clearing the filter indicator advances the change date to the current date plus 1 year when it will flash across the LCD screen again. You may also call us and arrange for one of our service technicians to do this for you. This will give us an opportunity to check the system over to make sure that everything is working as it should.

