Dwelling Moisture Management

Installation Guide for *Unovent*® *v-line*™ system, including the *Unobrain*® install-and-forget, fully automated controller.

These guidelines have the purpose of helping the experienced and inexperienced manage the task of installing the ***Unovent***® system including the fully automatic, install-and-forget ***Unobrain***® for managing the system when the roof cavity air temperature and/or humidity makes this resource unsuitable for short periods in a single storey and some double storey dwellings with a gabled roof.

Please read this entire document thoroughly before commencing the installation.

Please note that, for the cable supplied, it is essential that the cable core marked red or white is always fitted to the plug and socket connectors marked with a red stripe. The fans in the room outlets will otherwise not function.

All product and component photos within this guide are for illustrative purposes only and colours, shapes and components used in the supplied product may change at any time but retain the same or improved functionality of the items illustrated.

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1. Decide where you plan to install the ceiling mounted ***Unovent®*** room outlets in each room selected. These should be living spaces, such as bedrooms, lounges, family rooms and dining rooms.

2. The first stage of this planning is to simply decide on the preferred locations where the 240mm holes are to be cut in the ceiling for mounting the ***Unovent®*** room outlets. Do not actually start cutting holes at this point – that will be described later in this instruction.

3. 
For the bedrooms, select the position on the ceiling where you expect the hole to be cut to take the ***Unovent®***. Ideally, the centre of the ***Unovent®*** room outlet should be placed in the corner of each bedroom diagonally opposite the doorway 800mm from the window wall and 800mm from the wall at right angles to the window wall. If this coincides with the head end of the bed, choose the other end of the window wall so that the centre of the ***Unovent®*** room outlet is 800mm from the window wall and 800mm from the wall at right angles to the window wall.

4. 
For lounge rooms, family rooms and dining rooms, the position selection is similar except that no consideration needs to be given for the head end of a bed. Again, ideally the centre of the ***Unovent®*** room outlet should be

placed in the corner of each room diagonally opposite the doorway 800mm from the window wall and 800mm from the wall at right angles to the window wall. If there is no doorway, a position in the corner of the room should be selected so that the ***Unovent***® room outlet is towards one end of the window wall using the 800mm by 800mm guideline.

5. These ideal or planned positions should be written into a note pad to avoid confusion but translated and noted as distances from the nearest light fitting. This is because the final positions of the centres of the holes to take the ***Unovent***® room outlets must be determined by checking up in the roof cavity and measuring from the nearest light fitting wiring connection point, more visible than wall edges up in the roof cavity. While tools like a stud finder can be helpful, they cannot be used for finding clear spaces to mount the ***Unovent***® room outlets because of not being able to locate all trusses, joists, beams and battens (some of these being applicable depending on the age of the dwelling).

6. From within the roof cavity, the centres of the holes to be cut are determined by checking first where the ideal noted positions are (based on distances from the light fittings wiring connection points as in item 5.) then adjusting these positions to enable a clear space of 350mm in diameter. A nail is then driven through the approximate centre of this space from up in the roof cavity.

7. Always be careful when in the ceiling cavity to ensure you only stand on beams, joists and trusses. Never stand on the battens or the ceiling lining material – these have no support capability.

8. When all locations have been determined and a nail driven through the ceiling material from above, the 240mm holes can be cut in the ceiling from below or from above (depending on the method of hole cutting preferred - see item 10.).

9. Before you leave the roof cavity area to cut the holes in the ceiling, ensure that all insulation materials and electrical cabling are placed outside of the area where the holes are to be cut.

10. If you choose to cut the holes from a position under the ceiling with a jig-saw or a straight bladed key-hole saw, it is recommended that you pencil scribe a 240mm diameter (120mm radius) circle onto the ceiling. This can be done using a string with one end tied in a loop and held at the centre with a nail in the nail hole with the other end tied in a loop at exactly 120mm in which the end of the pencil is held while you scribe the circle at 120mm radius. The hole can be cut from below the ceiling following this circle line. A helper can hold a vacuum cleaning tube up at the ceiling following your cutter tool to collect most of the plaster dust.

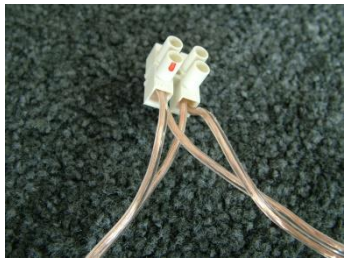
11. As an alternative, the holes can be cut from above in the roof cavity by scribing the circle from above as described in 10. above and having a helper hold a vacuum cleaning tube up at the ceiling following your cutter tool to collect most of the plaster dust.

12. Although there is yet another option which is to acquire a ceiling hole cutter capable of cutting holes up to 300mm diameter, which is designed for operating with an electric

drill and which has an integrated dust collector for collecting dust when cutting holes in ceilings above you, these are not recommended when a simple hand-held keyhole saw is less cumbersome to use. A helper with a vacuum cleaner will prevent plaster dust going everywhere.

13. When all the holes have been cut in the ceiling, lengths of the cable supplied should be placed from one hole to the next hole, then from that second hole to the third and so on, all loosely on the top side (roof cavity side) of the ceiling but along the shortest path so as not to waste the cable. A short length of about 300mm to 400mm at each end of each cable run should be left hanging through the holes in the ceiling. Finally, a run of cable should be placed from the nearest cut hole (with 300mm to 400mm hanging out of the hole) to the place where the ***Unobrain®*** will be located then from there to where the plugin power supply will be located (more on the ***Unobrain®*** in items 15 and 21).

14. From the living space areas, the supplied socket connectors (supplied as part of the ***Unovent®*** room outlets) should be connected to the cable ends hanging through the ceiling holes, ensuring that the cable with the red or white marking is always connected to the socket marked with the red stripe (this is the 12 volt positive connection). The other unmarked cable has its cable ends connected to the unmarked socket. Where



there are two cable pairs hanging out of the ceiling hole, both pairs are connected into the socket using these colour matches. Where there are three cable pairs hanging out of the ceiling hole (one of these cable ends belonging to the cable going to the ***Unobrain®***), all three pairs are connected into the socket using these colour matches.

15. At the end of the cable which has been run to where the ***Unobrain®*** will be located, the pair of ends are to be connected to the plug connector packaged with the ***Unobrain®***. The pair of ends on the cable going to the power supply location are to be connected to the socket connector, packaged with the ***Unobrain®***, where the ***Unobrain®*** will be located. At the other end of this cable at the power supply location, the pair of cable ends are to be connected to the plug connector packaged with the power supply. The ***Unobrain®*** is connected in series with the 12 volt supply from the power supply with this plug and socket arrangement before then being connected to the first room outlet.

16. A 240 volt switched outlet is required for the plugin power supply to be plugged into. This switched 240 volt outlet can be located in the roof cavity, inside a cupboard or on a wall in a convenient place. If you require a 240 volt switched outlet

to be installed, consult your local electrician. It is recommended that the better solutions are either a 240 volt switched outlet in the roof cavity or inside a cupboard, the latter then connected to the cable going up into the roof cavity via a small hole in the top of the cupboard.

17. Initially, set the switch on the power supply to 12 volts using the key supplied. Next, plug the power supply into the 240 volt switched outlet, turn the power on then fit the ***Unovent***® room outlets into position one by one.

18. Before placing each ***Unovent***® room outlet into its final position, connect the cable connected socket onto the ***Unovent***® plug and check that the fan runs. (If the fan does not run, a cable connection has been incorrectly done – each connection must consistently be red or white marked cables to red marked sockets.)

19. If the fan runs on the ***Unovent***® room outlet, it is now ready to be put in place with its spring loaded clamps. Put the clamps in the position as shown in the photo to the right, place the top edge of the bottom part of the four clamps against the edge of the hole by equal amounts (about 5mm overlap each) then in one quick movement of the whole room outlet, while maintaining a square-on alignment, push the ***Unovent***® room outlet upwards. This will cause the

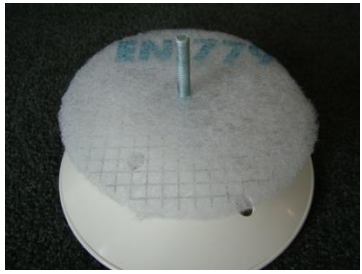
clamps to flip over and pull the surround edge up against the ceiling. After about 3 days, the voltage setting can be set at 9 volts or 7.5 volts to reduce air flow but reset to a higher voltage if the air flow proves insufficient for the reduction of condensation on windows in the winter.

20. Steps 18. and 19. are repeated for all ***Unovent***® room outlets.

21. The supplied ***Unobrain***® fully automated install-and-forget controller (refer also to step 15) is to be installed in the roof cavity not far from where the 12 volt power supply is located or from where the 12 volt supply enters the roof cavity. In any event, the ***Unobrain***® is to be installed somewhere near the centre of the roof cavity and about half way between the roof ceiling and the roof peak. The ***Unobrain***® is hung with the two screws supplied, which can be screwed into the face of a roof truss. The ***Unobrain***® should be mounted with its logo label in a horizontal position. The purpose of the ***Unobrain***® is to switch off the system for short periods when the roof cavity air temperature is too high (in the summer) or too low (in the winter) or when the humidity is too high (which can happen when there are prolonged periods of rain. At these times, the humidity in the roof cavity can reach the high 90's per cent).

22. When the ***Unobrain***® is first powered on, it flashes a number of times to indicate the software version then goes through a 10 second start-up check over which time its green light glows continuously. While it goes through this check, any room outlets connected will run. When it has successfully completed the start-up check, it goes into "***room outlets on***" mode (green light flashes quickly) or it goes into "***room outlets off***" mode (green light flashes slowly). In "***room outlets on***" mode, this means that the roof cavity air is below the high temperature set point ***AND*** above the low temperature set point ***AND*** below the high humidity set point and the room outlets remain running. In the "***room outlets off***" mode, this means that the roof cavity air is above the high temperature set point ***OR*** below the low temperature set point ***OR*** above the high humidity set point and the room outlets stop running.

23. Filter washing maintenance is carried out every 12 months. Filters are accessed from within the living space by screwing the ***Unovent***® room outlet centre cone fully out in an anti-clockwise direction until it disconnects from the fixed part of the ***Unovent***® room outlet. The filter cloth is sitting on a mesh platform and is carefully lifted off for washing by hand in warn soapy water. It can be placed back on the mesh platform immediately after washing and then the centre cone can be screwed clockwise back into position ensuring that it aligns correctly with the fixed part of the ***Unovent***® room outlet. It is screwed back until the cone no longer turns easily, which is when a tubular spacer holding the mesh platform in place prevents further



turning and the face of the cone is approximately flush with the outer flange face of the fixed part of the ***Unovent***® room outlet. Do not over tighten to prevent stripping of the plastic thread in the fixed part of the ***Unovent***® room outlet. Alternatively, filters can be replaced by ordering online from Unovent Limited.

24. In the cooler months through autumn, winter and spring, the ***Unovent***® system can be kept running 24/7 and the ***Unobrain***® will switch the system off for short periods when the roof cavity air temperature is too cold. In situations when the ***Unovent***® system is running and the general living space temperature is on the cool side, it is advisable to consider effective heating being activated to counter this. This can include inexpensive low wattage flat panel heaters in the hall and bedrooms controlled by timers integrated into the flat panel heaters.

25. In the warm summer months, not known for condensation issues, it is advisable to leave the ***Unovent***® system switched on 24/7 and the ***Unobrain***® will switch the system off to reduce any unnecessary rise of the inside living area temperature.

Unovent® system kitset box or boxes contain the following:

- required ***Unovent***® room outlets purchased with filters
- 1 x power supply to provide up to 12 volts to each ***Unovent***® room outlet complete with a connector plug and voltage setting key
- 1 x ***Unobrain***® sensor controller with a mounting screw, plug and socket
- 1 x bundle of connecting cable (one core marked red or white)
- 1 x installation guide

Connecting cable length supplied:

- 7 metres for 1 x room outlet system
- 20 metres for 2 x room outlet system
- 25 metres for 3 x room outlet system
- 30 metres for 4 x room outlet system
- 35 metres for 5 x room outlet system
- 40 metres for 6 x room outlet system
- 45 metres for 7 x room outlet system

We appreciate any feedback you wish to provide regarding the clarity or otherwise regarding these guidelines. If you have any suggestions for improvement in the wording, please contact us by any of the methods indicated below.

The Unovent® product design is covered by New Zealand Patent Application 629739, Australian Patent Application 2015201820 with other International Rights Reserved for this unique product design and options for dwelling ventilation moisture reduction.

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Unovent typical wiring ***(red or white marked cables are always connected to red marked plugs and sockets)***