Dwelling Moisture Management

Installation Guide for *Unovent*® *h-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*® *h-line*™** system for rooms with no roof cavity above including the fully automatic, install-and-forget ***Unobrain*®** for managing the system when the outside source air temperature and/or humidity makes this resource unsuitable for short periods.

Please read this entire document thoroughly before commencing the installation.

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.

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.

Version H180917

1. Installation of ***Unovent*® *h-line*™** system for rooms with no roof cavity requires a degree of skill and experience to ensure no damage is done to existing wall framing and electrical power cables. It is the responsibility of the installer and the home owner to ensure correct procedures are followed when installing any through-the-wall device and to ensure that the finished installation does not allow the ingress of water into the external wall structures. If uncertain about the critical requirements when installing devices which penetrate external walls, do not attempt such work until that uncertainty is removed. Alternatively, utilise the services of a qualified trades person who understands the requirements to prevent ingress of water into the external wall structures. (Unovent Limited does not take any responsibility for the finished water tightness or otherwise for the installation.)

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

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

4. For the bedrooms, lounge rooms, family rooms and dining rooms, select the position on the wall near the window and the ceiling where you expect the hole to be cut to take the ***Unovent*®** room outlet.

5. These ideal or planned positions should be written into a note pad to avoid confusion but translated and noted as distances from the edge of the window or similar. This is because the final positions of ***Unovent®*** room outlets must be determined by next checking both inside the room and outside of the house at the outer cladding for positions which will not interfere with wall framing. A stud finder could prove useful in determining positions clear of timber framing.

6. When all locations have been determined, with a high degree of confidence, an extra length drill could be used to drill a centre position through both the internal lining and the external cladding (if the latter is timber or fibrous plaster). In the case of a brick veneer external cladding, the same approach could be taken with an extra-long masonry drill to create a hole through the brick cladding which will be the centre point of the ***Unovent®*** room outlet.

7. Be mindful of ensuring that any timber framing is avoided when determining the centre points for the ***Unovent®*** room outlets and check carefully that no existing electrical power cables will be cut during this and subsequent installation steps.

8. The hole cut size diameter for the internal lining of the room for the ***Unovent®*** room outlets is 240 mm (120 mm radius). If the external cladding is timber or fibrous plaster, it is likely that the overall wall thickness will be approximately 140 mm. This means that the hole in the outer cladding will need to allow for a diameter of 170 mm (85 mm radius) to take the fan housing section of the ***Unovent®*** room outlet. If the external cladding is brick, it

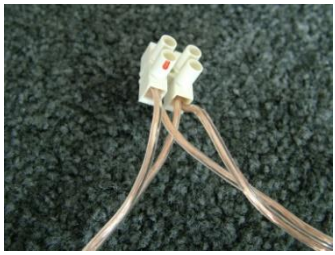
is likely that the overall wall thickness will be approximately 250 mm, which includes the 50 mm cavity between the brick and the wall framing. This means that the hole in the outer brick cladding will need to allow for a diameter of 110 mm (55 mm radius) to take the inlet tube section of the ***Unovent®*** room outlet.

9. The ***Unovent® h-line™*** room outlets are supplied with an inlet tube section which is cut to length to suit the overall wall thickness (from the internal lining visible face through to the face of the external cladding). For thinner overall wall thicknesses, this inlet tube section should not be cut to less than 25 mm from the edge of the plastic weld connecting this inlet tube section to the fan housing.

10. When all the holes have been cut in the walls for each room, 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 ends loosely hanging inside the rooms but placed along the shortest path so as not to waste the cable. These ends will ultimately be connected to the ***Unovent®*** room outlets utilising the plugs on the ***Unovent®*** room outlets and the sockets supplied for the cables. 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 outside under the eave or on the ceiling of an entrance porch or doorway. This is to ensure that the ***Unobrain®*** can sense the condition of the outside air to then leave the system running or to switch it off when the air outside is

too hot in the summer, too cold in the winter or too moist anytime when we get prolonged periods of rain. From the ***Unobrain®*** there is a cable connection to the plugin power supply (more on the ***Unobrain®*** in items 12 and 19).

11. 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 ***Unovent®*** room outlet 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 ***Unovent®*** room outlet hole, both pairs are connected into the socket using these colour matches. Where there are three cable pairs hanging out of the ***Unovent®*** room outlet 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.

12. 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 plugin 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 plugin power supply location, the pair of cable ends are to be connected to the plug connector packaged with the plugin power supply. The ***Unobrain®*** is connected in series with the 12 volt supply from the plugin power supply with this plug and socket arrangement before the ***Unobrain®*** cable socket outlet is then to be connected to the first room outlet.

13. 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 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 240 volt switched outlet and plugin power supply be placed inside a cupboard or somewhere out of sight, with the 12 volt output cable going to the ***Unobrain®***.

14. 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.

15. 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.)

16. 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 edge of the bottom part of the four clamps against the edge of the hole by equal amounts (about 5mm overlap each also ensuring that the plug+socket assembly is upper most to ensure that inlet tube is pointing slightly downwards to assist water drainage) then in one quick movement of the whole room outlet, while maintaining a square-on alignment, push the ***Unovent*®** room outlet into the wall. This will cause the clamps to flip over and pull the surround edge up against the face of the wall lining. 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.

17. After final positioning of the ***Unovent*®** room outlet and certainty that it is all working correctly, take steps to waterproof and fill the spaces around the outer part of the ***Unovent*®** room outlet and the external house cladding to fully ensure that there will be no water ingress into the external wall structure. The external cowl can then be fixed to the inlet tube section of the ***Unovent*®** room outlet

with PVC glue or small stainless screws, the latter making it easier to remove at any time in the future.

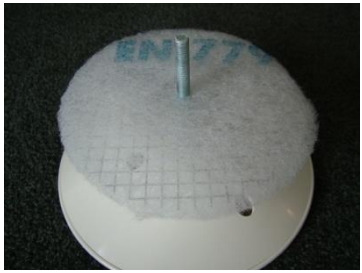
18. Steps 15. to 17. are repeated for all ***Unovent®*** room outlets.

19. The supplied ***Unobrain®*** fully automated install-and-forget controller (refer also to step 12) is to be installed outside under the eave or on the ceiling of an entrance porch or doorway facing downwards not more than approximately 5 metres from where the 12 volt plugin power supply is located. Alternatively, the ***Unobrain®*** is to be mounted with its logo label in a horizontal readable position if it is to be mounted on a vertical surface. The ***Unobrain®*** is mounted utilising the two screws supplied. The purpose of the ***Unobrain®*** is to switch off the system for short periods when the outside 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 have been prolonged periods of rain and at these times when the humidity of the outside air will reach 100%).

20. When the ***Unobrain®*** is first powered on, the green light flashes a number of times to indicate the software version then goes through a 10 second start-up check over which time the 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.

21. 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



22. 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 outside 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.

23. In the warm summer months, not known for condensation issues but a time when moisture is being introduced into the living spaces by the people living in the house, 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 due to higher temperature of the outside air.

For further support, please contact:

Unovent Limited
19 Trugood Drive
East Tamaki
Auckland 2013
p: +64 9 950 4436
a/h: +64 9 950 5344
m: +64 21 273 5533
info@unovent.co.nz
www.unovent.nz

Document Version H180917

***Unovent*® *h-line*™** 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 mounting screws, plug and socket
- 1 x bundle of connecting cable (one core marked red or white)
- 1 x installation guide

Connecting cable length supplied:

- 10 metres for 1 x room outlet system
- 20 metres for 2 x room outlet system
- 27 metres for 3 x room outlet system
- 34 metres for 4 x room outlet system
- 41 metres for 5 x room outlet system
- 48 metres for 6 x room outlet system
- 55 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 on page 10.

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.

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