InvaVent Domestic Ventilation Systems Installation & Maintenance Manual

REGISTER THIS PRODUCT ONLINE WITHIN 28 DAYS OF COMMISSIONING

UNITED KINGDOM / IRELAND

https://register-products.joule.ie

ENG-0011-2

Warranty Card

Please register your product online

MUST BE COMPLETED AND THEN REGISTERED ONLINE TO COMPLETE WARRANTY

Homeowner Name		**Installer Name**	
Address		**Address**	
Contact Tel.		**Contact Tel.**	
Contact Email		**Contact Email**	

Design Parameters

System Type	
Commissioning Date	
Location of Ventilation U.	
Model No.	

General Checks

Has the system been installed in accordance with manufacturer's requirements? ◯

Type of ductwork installed

- Semi Rigid ◯
- Rigid Circular ◯
- Rigid Flatpack ◯

Description of installed

- Timer ◯
- Humidity Thermostat ◯
- PIR ◯
- Other ◯

Condensate connection is complete and drains to an appropriate location ◯

Recording

Air Flow Measurement - Extract (MVHR & MEV)

Room Reference	Measured Air Flow High Rate (l/s)	Design Air Flow High Rate (l/s)	Measured Air Flow Low Rate (l/s)	Design Air Flow Low Rate (l/s)
Kitchen				
Utility				
Bathroom				
En Suite				

Recording

Air Flow Measurement - Supply (MVHR)

Room Reference	Measured Air Flow High Rate (l/s)	Design Air Flow High Rate (l/s)	Measured Air Flow Low Rate (l/s)	Design Air Flow Low Rate (l/s)
Sitting Room				
Living Room				
Bathroom				

Recording

Visual Checks

Total floor area of dwelling?	
Have the correct number and location of extract fans/terminals been installed?	◯ Yes
Is the installation complete with no obvious defects present?	◯ Yes
Do all internal doors have sufficient undercut to allow air transfer between rooms? (10 mm over and above final floor finish)?	◯ Yes
Has all protection/packaging been removed such that system is fully functional?	◯ Yes
For ducted systems, has the ductwork installation been installed in such manner that air resistance and leakage is kept to a minimum?	◯ Yes
Has the entire system been installed such that there is sufficient access for routine qwmaintenance and repair/replacement of components?	◯ Yes
Have appropriate air terminal devices been installed to allow system balance?	◯ Yes
Has the heat recovery unit (MVHR) and all ductwork been effectively insulated where installed in unheated spaces?	◯ Yes
Upon initial start-up, was any abnormal sound or vibration experienced, or unusual smells detected?	◯ Yes

Joule Product Warranty Terms & Conditions

Registration

It is a condition of the warranty that the Commissioning Checklist is completed and left in the Handover Pack, and the online Warranty Application is completed once the system is fully commissioned.

The ventilation system must be registered with Joule within 30 days of purchase. This is carried out by fully completing and returning the warranty registration form that accompanied the ventilation system.

Warranty

Joule hereby guarantees to you, the purchaser of the ventilation system to which this warranty is attached that the product will be free from defects in materials and workmanship, for a period dependent on the product from the date such product was purchased; provided that the product is installed in accordance with.

(a) The accompanying InvaVent Ventilation Installation Manual;
(b) Any special written design or installation guidelines provided by Joule;
(c) All applicable laws, rules, regulations, codes and standards applying in the territory in which the product is installed, including without limitation, all applicable local building and electrical codes.

Exclusions

If Joule finds the product to be defective as a sole result of defects in material or workmanship – then, during the Warranty Period, upon receipt of due notice from you and subject to the terms of this Warranty –

Joule shall:
1. Repair the product
2. Refund the cost for repair of the Product, as well as labour and materials required to repair the Product
3. Replace the Product, or parts thereof; or
4. Refund part or all the original purchase price.

The warranty does not cover and Joule shall not be held liable for any of the following damages:

a) damages caused, wholly or partially, due to abuse, misuse, negligence, application and/or maintenance not as recommended by Joule
b) damages to the product caused by workers, visitors on the job site, or post-installation work;
c) damages caused by accident, natural disasters (such as fire, floods, lightning, etc.) force majeure, sabotage, or any unforeseen circumstances;
d) special, indirect, incidental, secondary, consequential or any other damages of any nature arising out of ownership or use of the product including inconvenience or loss of use.

Joule refuses any warranty not provide herein, including any implied warranty of the merchant ability or implied warranty of fitness for a purpose. There are no warranties, which extend beyond the face of this document. No agent or representative of Joule has any authority to extend or modify this warranty unless such extension or modification is made in writing by a corporate officer.

Table Of Contents

Pre-installation Notes

Planning And Organising Your Project

The design and operation of a domestic ventilation system has a direct link to its output and efficiency. Consideration should be given to ventilation at an early stage in any project as the system requires to be integrated with construction and building project process.

Safety

- Do not use this appliance for functions other than those described in this booklet.
- Never touch the appliance with wet or damp hands, or when barefoot.
- Do not store inflammable products in the neighbourhood of the unit.
- The unit is only suitable for 230 VAC/50Hz electric mains.
- Never modify the fan or electronics by yourself.

Organising Your Ventilation Project Customer / Client

- Supply up to date plans and relevant information to system designer.

System Designer

- Prepare design calculations, specifications, material schedules and layout drawings

Installer

Clean and/or replace the filters on time. Filter pollution could damage your health!

Liability Of Installer

- Balancing and commissioning of the installation.
- Report measured air volumes on the grilles.
- Compliance to requirements and local additional rules.
- Explanation of the ventilation system to the user.
- Warning for the user, to check or replace the air filters on time.
- All the above, as set out in the latest edition of the Domestic Ventilation Compliance Guide and the Appendix Q – installation Guide and Checklist.

Joule Product Selection

One of the most important aspects of a well-planned, low energy highly efficient MVHR system is the ducting type, design, and the quality of installation.
Careful consideration to the design and choice of installation materials ensures your MVHR sytem delivers the correct ventilation rate and energy efficiency to your home.

System Build - MVHR Unit Type

InvaVent 200

Code	Conn. Ø (mm)
MH-HR-INVA-200	125
Dim. W/H/D (mm)	**Floor Area**
595 / 480 / 285	up to 100m²

InvaVent 350

Code	Conn. Ø (mm)
MH-HR-INVA-350	150
Dim. W/H/D (mm)	**Floor Area**
719 / 879 / 480	up to 230m²

InvaVent 550

Code	Conn. Ø (mm)
MH-HR-INVA-550	200
Dim. W/H/D (mm)	**Floor Area**
825 / 758 / 741	up to 300m²

System Build - MEV Unit Type

InvaVent Maxi

Code	Conn. Ø (mm)
M	125
Dim. W/H/D (mm)	**Wet Room No**
387 / 284 / 377	5

Location Of Ventilation Unit

- The unit should be located as specified by the InvaVent system designer.
- MVHR units should be installed to allow sufficient space to undertake routine maintenance on filters and heat exchanger block as appropriate
- Ventilation units should be installed to allow sufficient space for replacement at end of its operational life – whole unit or of key mechanical/electrical components. This should be achievable without need to remove fixed structures or remove significant lengths of connected ductwork
- The ventilation unit should be installed on a suitable sound structure, which is stable and level
- A condensate drain should be installed from the MVHR unit to an appropriate drain location. The condensate pipe should be installed to have a minimum 5º fall from the fan unit
- The condensate drain should be adequately secured and where passing through an unheated space must be adequately insulated to prevent freezing.

InvaVent 200

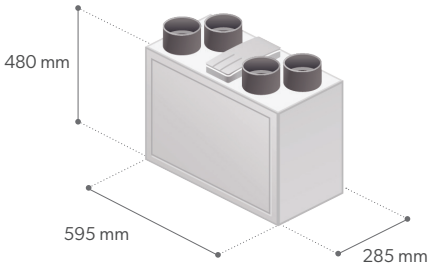
Key Features

- Ideal for dwellings up to **100 m²**
- Weight **16 kg**
- Minimal size (width 595 mm)
- Easy vertical or horizontal wall installation
- Summer By-Pass
- Digital Controller
- Automatic Frost Protection

Specification

Model	**InvaVent 200**
Code	**MH-HR-INVA-200**
V ~ 50Hz	**230**
W	**96**
A	**0.82**
RPM	**2800**
Max Airflow (m^3/h)	**225**
Max Airflow (l/s)	**63**
Max Pressure (mmH^2O)	**22.7**
Max Pressure (Pa)	**223**
Max Temperature (°C)	**50**

SAP Appx. Q Certified
Ideal For Houses
Ideal For Apartments



Connection Ø 125 mm

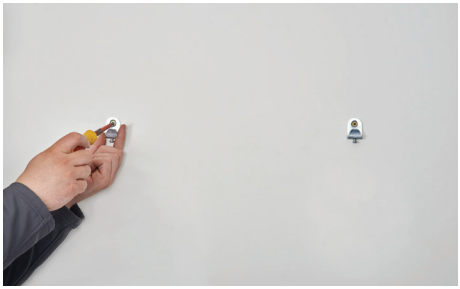
SAP Appendix Q - Approved Results

Configuration	Specific Fan Power	Heat Exch. Eff. (%)
Kitchen + 1 Wet Room	0.55	92%
Kitchen + 2 Wet Room	0.60	90%
Kitchen + 3 Wet Room	0.71	89%
Kitchen + 4 Wet Room	0.88	88%

Assembly

1. Vertical Mounting

Fix the hooks provided to the wall as shown in the photo. Ensure line level and mount the InvaVent 200 onto the hooks.



2. Access

The appliance must be easily accessible for servicing / maintenance purposes. It is important to leave a space of at least 500 mm in front of the front panel to facilitate the cleaning and replacement of the heat exchanger and filters.

3. Condensation Drainage Hose Connection

Remove the front cover and remove the heat exchanger.

Do not cut band surrounding heat exchanger

4. Locate The Connection

The connection point for condensation drain off is Located on the left corner of the bottom panel.

Assembly

5. Condensation Fitting Connection

Provided with the InvaVent 200 unit the condensing drain fitting is placed through the hole and tightened with the nut.

6. Re-installing The Heat Exchanger

Once the condensing drain fitting is water tight Place the heat exchanger back into the unit.

7. Fixing Front Panel

Along with placing the ventilation units' front cover ensuring a complete seal.

Fit a U-bend condensate drain having a minimum 60 mm water seal. Ensure there is a minimum 5° fall to allow drainage.

Pipe Connections

InvaVent 200 Spigots are 125mm in diameter.

1. Exhaust Air Outlet

This outlet is used to expel stale air once it has been treated by the heat exchanger.

The ducting is to be insulated to prevent the formation of condensation on internal and external components.

2. Supply Fresh Air Inlet

This inlet is used for carrying fresh air from outside.

3. Extract Air

This connection is used for carrying stale air from wet rooms.

4. Supply Air

This connection delivers fresh air into the house once it has been treated in the heat exchanger.

All ducting in an Unheated space must be insulated

Filters

1. Filter Change

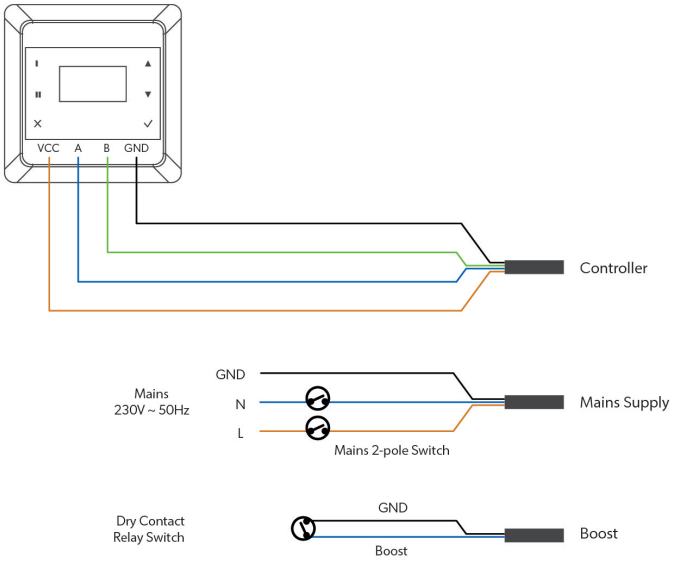
Two G3 filters housed in the inlet and extraction ducts close to the heat exchanger and accessible by removing the front panel, protect the appliance from impurities in the extracted stale air and prevent the introduction of polluted air into the areas served by the system.

The condition of the filters can be checked by removing the front panel and extracting them from their holders.

Failure to clean or replace filters can seriously affect system efficiency

Replacement required every 6 months to uphold warranty

Wiring Diagram



Electrical

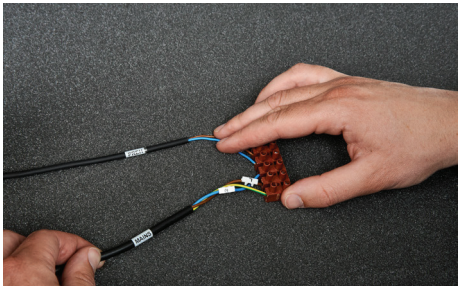
Electrical work must be carried out by qualified person only

1. Electrical Access

To gain access to the electrical connection remove the top cover of the electrical wiring box

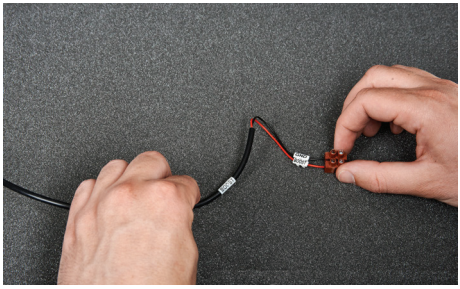
2. Main Power Connection

Connect the fused mains power supply to the relevant connections as shown in wiring diagram.



3. Boost Connection

Connect the boost switches to the ground and boost connections as shown in wiring diagram.



4. Controller

Connect the cables to the controller via the connection block as shown.

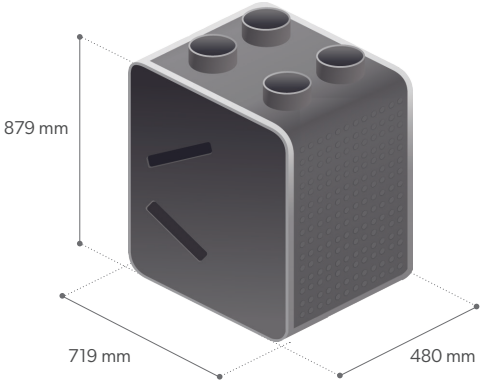
InvaVent 350

Key Features

- Ideal for dwellings up to **230 m²**
- Weight **22 kg**
- EPP Construction
- Boost Operation with Timer
- Summer By-Pass
- Digital Controller`
- Automatic Frost Protection

Specification

Model	**InvaVent 350**
Code	**MH-HR-INVA-350**
V ~ 50Hz	**230**
W	**165**
A	**1.4**
RPM	**388**
Max Airflow (m^3/h)	**108**
Max Pressure (Pa)	**690**
Max Temperature (°C)	**50**



Connection Ø 150 mm

SAP Appx. Q Certified
Ideal For Houses
Ideal For Apartments

SAP Appendix Q - Approved Results

Configuration	Specific Fan Power	Heat Exch. Eff. (%)
Kitchen + 1 Wet Room	0.61	91%
Kitchen + 2 Wet Room	0.56	91%
Kitchen + 3 Wet Room	0.56	90%
Kitchen + 4 Wet Room	0.65	90%
Kitchen + 5 Wet Room	0.72	89%
Kitchen + 6 Wet Room	0.85	89%
Kitchen + 7 Wet Room	0.99	88%

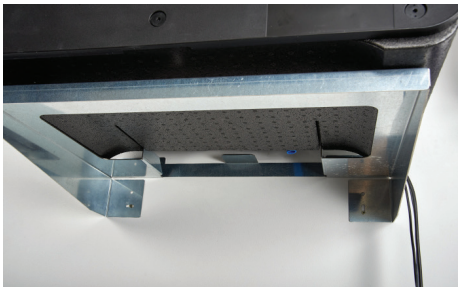
Assembly

1. Bracket Fixing

Fix the wall bracket provided to the wall as shown in the image. Ensure line is level before mounting the unit.

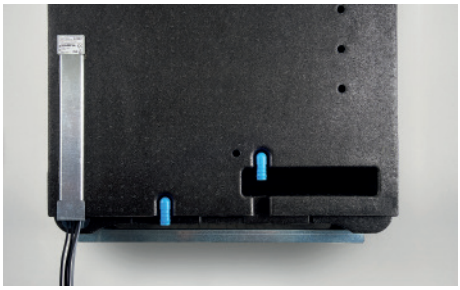
2. Unit Fixing

Make sure that the appliance is level in order to ensure faultless operation. Line the unit to the bracket to ensure stability as shown



3. Connection Points

The condensate connection points are located at the back of the unit, towards the bottom. The condensate drain can be provided by connecting the drain outlets to two flexible hoses with an internal diameter of 19 mm approx. A siphontrap should be created to prevent air bubbles from forming.



Fit a U-bend condensate drain having a minimum 60 mm water seal. Ensure there is a minimum 5° fall to allow drainage.

Pipe Connections

InvaVent 350 Spigots are 150mm in diameter.

1. Exhaust Air Outlet

This outlet is used to expel stale air once it has been treated by the heat exchanger.

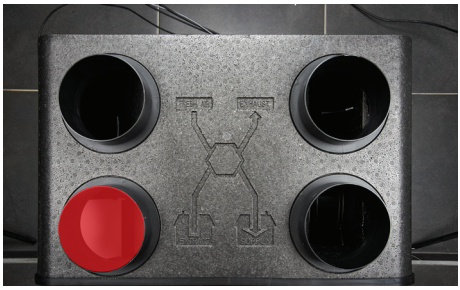
The ducting is to be insulated to prevent the formation of condensation on internal and external components.

2. Supply Fresh Air Inlet

This inlet is used for carrying fresh air from outside.

3. Extract Air

This connection is used for carrying stale air from wet rooms.



4. Supply Air

This connection delivers fresh air into the house once it has been treated in the heat exchanger.

All ducting in an unheated space must be insulated

Filters

Before any activity, please verify that the product is disconnected to the power supply

1. Filter Change

Two G3 filters housed in the inlet and extraction ducts close to the heat exchanger and accessible by removing the front filter panel, protect the appliance from impurities in the extracted stale air and prevent the introduction of polluted air into the areas served by the system.

2. Filter Cap Removal

To remove filters closing caps: you have to swipe caps with your hand, following the direction shown on closing caps.

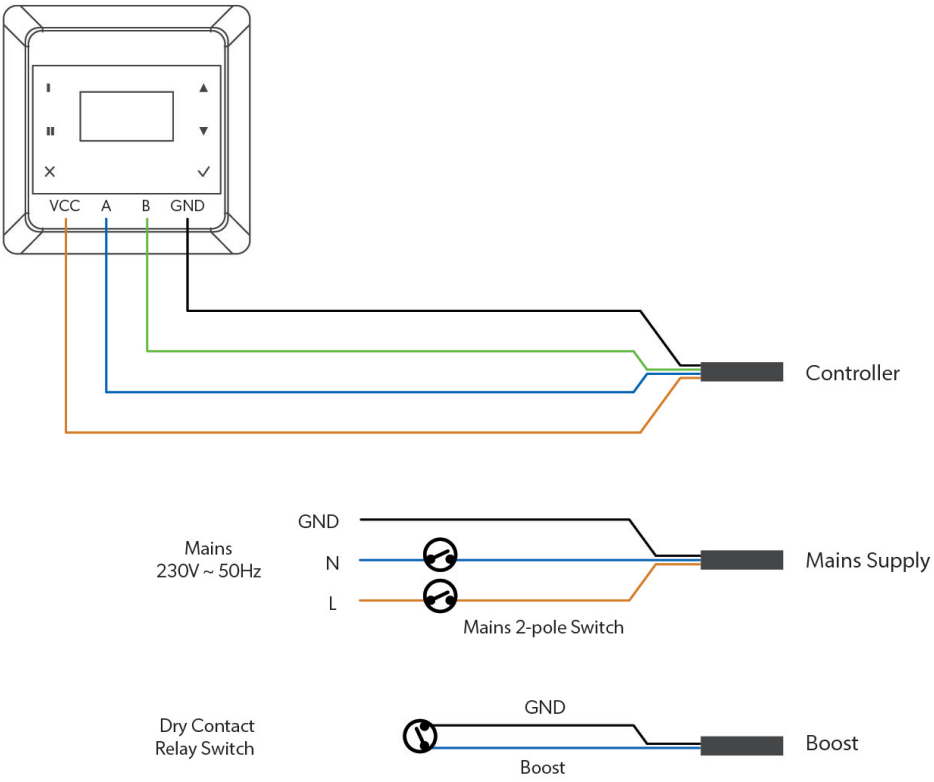
3. Remove Filter

Now filters are available to be removed: extracting with your hand is sufficient to remove filters

Failure to clean or replace filters can seriously affect system efficiency

Replacement required every 6 months to uphold warranty

Wiring Diagram

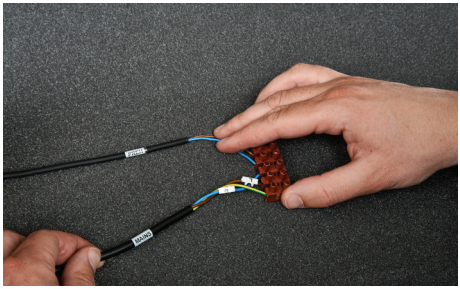


Electrical

Electrical work must be carried out by qualified person only

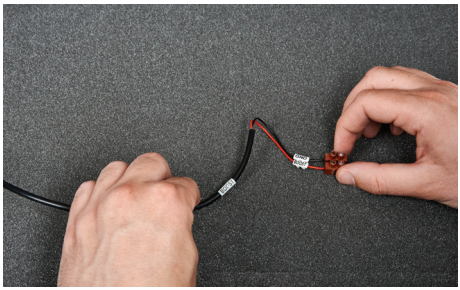
1. Main Power Connection

Connect the fused mains power supply to the Relevant connections as shown in wiring diagram.



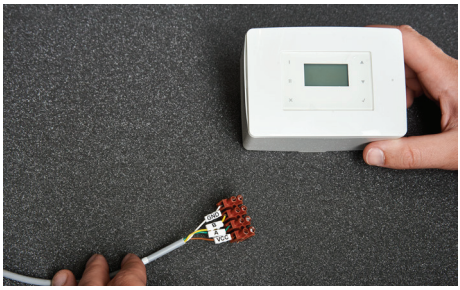
2. Boost Connection

Connect the boost switches to the ground And boost connections as shown in wiring diagram.



3. Controller

Connect the cables to the controller via the Connection block as shown in wiring diagram.



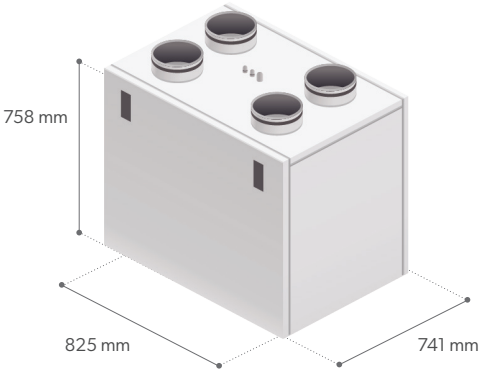
InvaVent 550

Key Features

- Ideal for dwellings up to **300 m²**
- Weight **83 kg**
- Humidity Sensor
- Easy wall installation
- Summer By-Pass
- Digital Controller`
- Automatic Frost Protection

Specification

Model	**InvaVent 550**
Code	**MH-HR-INVA-550**
V ~ 50Hz	**230**
W	**333**
A	**2.3**
RPM	**3230**
Max Airflow (m^3/h)	**700**
Max Airflow (l/s)	**195**
Max Temperature (°C)	**50**



Connection Ø 200 mm

SAP Appx. Q Certified
Ideal For Houses
Ideal For Apartments

SAP Appendix Q - Approved Results

Configuration	Specific Fan Power	Heat Exch. Eff. (%)
Kitchen + 1 Wet Room	0.71	84%
Kitchen + 2 Wet Room	0.65	85%
Kitchen + 3 Wet Room	0.68	85%
Kitchen + 4 Wet Room	0.76	85%
Kitchen + 5 Wet Room	0.88	85%
Kitchen + 6 Wet Room	1.02	85%
Kitchen + 7 Wet Room	1.20	84%

Assembly

Heavy object. Suitable structure and multi-person lift required.

1. Bracket Fixing

Fix the hooks provided to the wall as shown in the diagram. Ensure line is level and mount the InvaVent550 onto the bracket provided.

2. Locate The Condensate Connection

The gain access to the condensate connection Point remove the front panel.

The condensate point is on right side of the unit Remove the plug from the hole, install the provided Condenstate fitting.

3. Condensation Fitting Connection

Ensure the fitting is water tight underneath the Unit with the nut provided.

Fit a U-bend condensate drain having a minimum 60 mm water seal. Ensure there is a minimum 5° fall to allow drainage.

Pipe Connections

InvaVent 550 Spigots are 200mm in diameter.

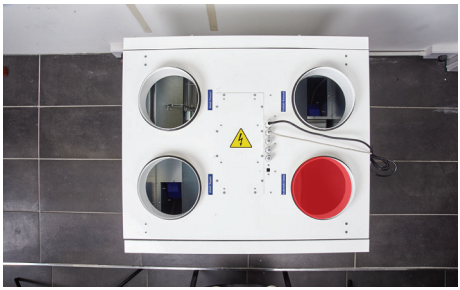
1. Exhaust Air Outlet

This outlet is used to expel stale air once it has been treated by the heat exchanger.

The ducting is to be insulated to prevent the formation of condensation on internal and external components.

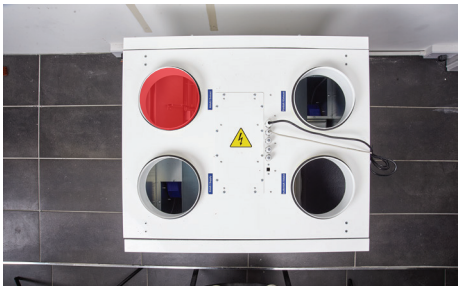
2. Supply Fresh Air Inlet

This inlet is used for carrying fresh air from outside.



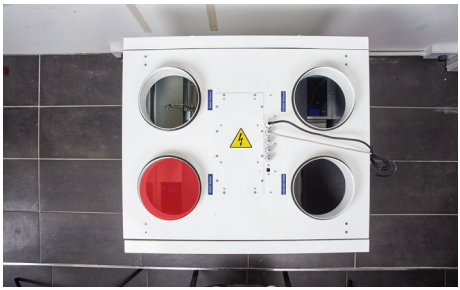
3. Extract Air

This connection is used for carrying stale air from wet rooms.



4. Supply Air

This connection delivers fresh air into the house once it has been treated in the heat exchanger.



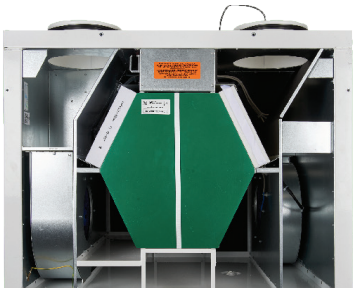
All ducting in an unheated space must be insulated

Filters

Before any activity, please verify that the product is disconnected to the power supply

1. Filter Change

Two G3 filters housed in the inlet and extraction ducts close to the heat exchanger and accessible by removing the front panel, protect the appliance from impurities in the extracted stale air and prevent the introduction of polluted air into the areas served by the system.



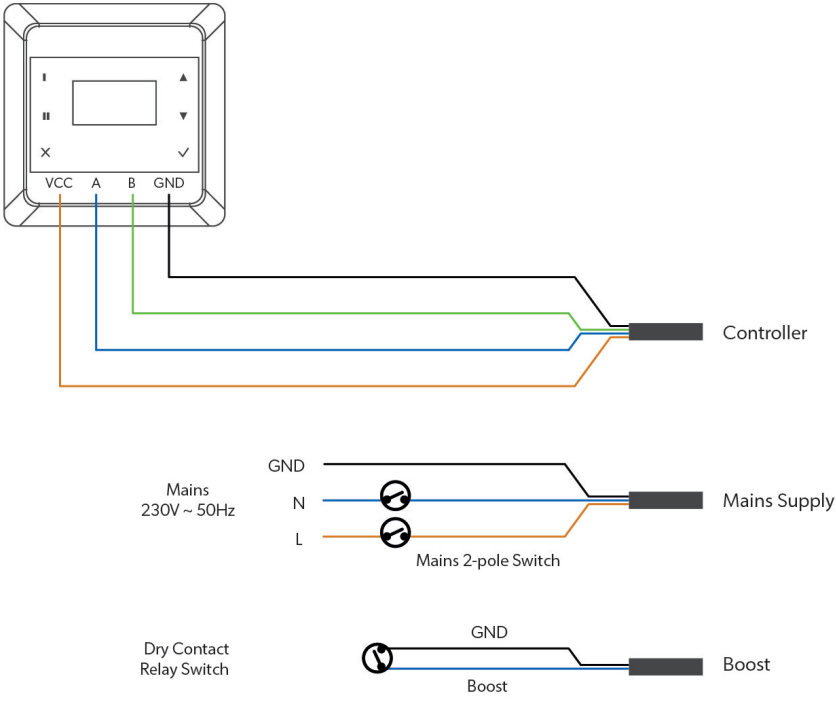
2. Filter Removal

Replace the filters after two consecutive cleanings. Contact the product seller to purchase new filters.

Failure to clean or replace filters can seriously affect system efficiency

Replacement required every 6 months to uphold warranty

Wiring Diagram



Electrical

Electrical work must be carried out by qualified person only

1. Mains Connection

Connect the unit to power mains using the pre-wired power cord with the Euro Plug

2. Controller

Connect the cables to the controller using the electrical connection provided. Ensure the pin block is installed correctly.

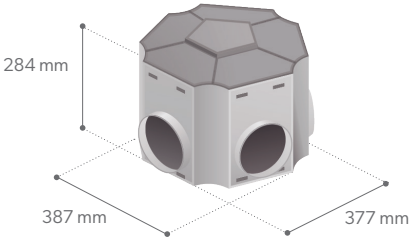
InvaVent Maxi

Key Features

- Ideal for dwellings up to **300 m²**
- Weight **3 kg**
- Up to 5 wet rooms
- Position in any orientation
- Humidity sensors
- Low Watt EC motor technology
- Low noise

Specification

Model	**InvaVent Maxi**
Code	**MH-HR-INVA-MAXI**
V ~ 50Hz	**230**
W	**70**
A	**0.3**
Max Airflow (m³/h)	**500**
Max Airflow (l/s)	**138**
Max Pressure (Pa)	**410**
Max Temperature (°C)	**50**



Connection Ø 125 mm

SAP Appx. Q Certified
Ideal For Houses
Ideal For Apartments

SAP Appendix Q - Approved Results

Configuration	Specific Fan Power
Kitchen + 1 Wet Room	0.24
Kitchen + 2 Wet Room	0.21
Kitchen + 3 Wet Room	0.20
Kitchen + 4 Wet Room	0.23
Kitchen + 5 Wet Room	0.25
Kitchen + 6 Wet Room	0.29

Assembly

InvaVent Maxi Spigots are 125 mm in diameter.

1. Unit Fixing

The appliance can be wall or ceiling mounted. The unit has 5 vents: the exhaust connection outlet labelled on the unit while the other 4 inlets are extract connections

2. Duct Connections

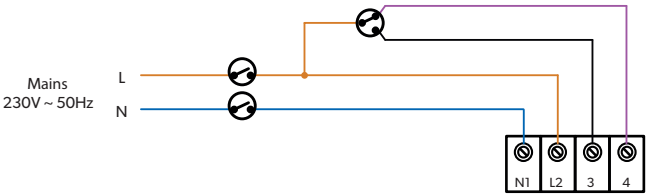
If installation dictates one or more extraction vents are must used, then these connections should be sealed.

3. Locate The Electrical Connections

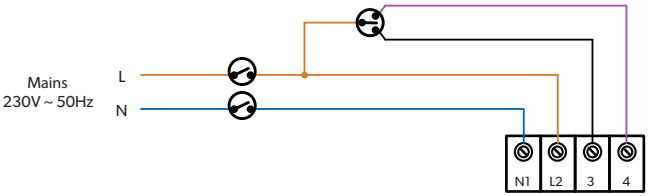
To locate the electrical connections undo the fixing screw and remove the cover.

Wiring Diagram

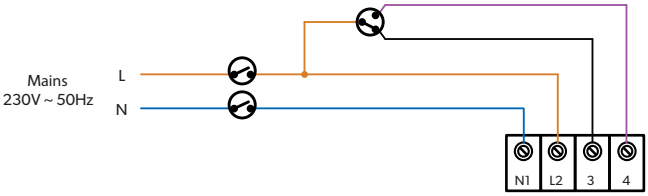
Minimum Speed



Medium Speed



Maximum Speed



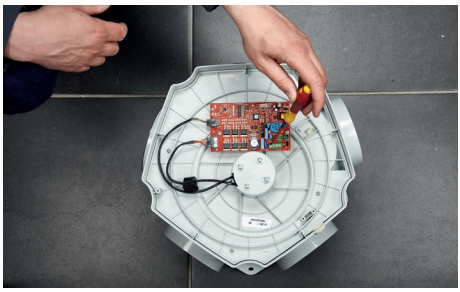
Please ensure installation is carried out as per wiring diagram shown above

Electrical

Electrical work must be carried out by qualified person only

1. Mains Connection

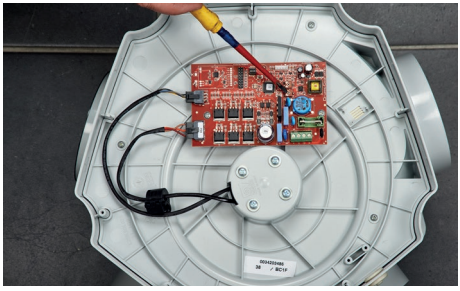
Connect the mains power supply and boost ca - ble To the connection block as shown.



2. System Setup

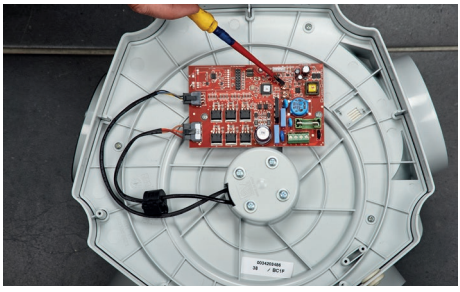
The electronics board fitted in the InvaVent Maxi has two potentiometers for setting the minimum and maximum speed parameters.

The setting of parameters must be carried out within one hour of con - necting the appliance to the mains.



3. System Setup

Before starting to adjust the settings, the two potentiometers must be set to "0". Under these conditions, the default settings are Vmax=600 and Vmin = 400.



4. Setting Up Procedure

With the speed selector circuit breaker closed;

- Change Vmax from 600 to 2500 rpm
- Open the speed selector circuit breaker;
- Change Vmin from 400 to Vmax
- Wait 5 minutes for the appliance to memorise the new settings;
- Turn the power supply to the appliance OFF;
- Turn the appliance back ON and check that the new settings have been successfully stored.

Pipe Connections

Supply Intake Air & Exhaust

1. Grille Install

Supply Intake Air Grilles and Exhaust Air Grilles should be located a minimum of 2m from each other to avoid cross-contamination (Separation maybe horizontal or vertical).
If grills are separated by a vertical distance, it is preferable that the Exhaust Air Grill is located higher than the Supply Intake Air grille.

2. Grille Install

Cut a hole through the exterior wall that is approximately 25mm larger in diameter than the outside diameter of the duct that will be connected to the grill. Open the cover of the grille and fasten the grille body to the exterior wall surface.

Where ductwork penetrates a building's air barrier, the continuity of the barrier must be maintained. The nature of the barrier and ease of achieving an effective seal should be considered before holes are drilled.

As with all other Grille and Hood types please ensure proper sealant to prevent water from penetrating around the Grille or Hood into the wall assembly.

Supply Air & Exhaust Ducting-Solid Circular With Insulation Wrap

1. Fitting Install

Ducts must be cut perpendicularly by means of a saw with a fine-tooth pitching (1–2 mm). Remove the rough edge from both the outside and inside surfaceswith sandpaper, and bevel the inner edge of the cut head to facilitate insertion of the connection piece

2. Sealant

Solid Rigid Ducting require all joints to be sealed with a suitable sealant to provide an airtight seal.

3. Aluminium Tape

For a airtight seal wrap the aluminium tape provided around the joint.

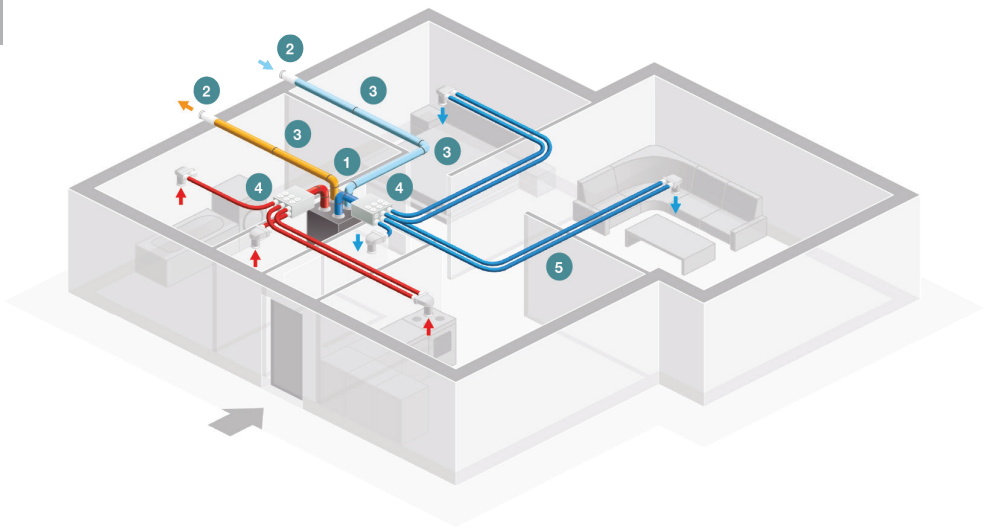
4. Duct Insulation

Always Insulate Rigid ducting going outside and in any unheated loft voids. Cut rolls of solid insulation in strips to suite diameter of pipe and tape together with silver foil tape

Semi Rigid System Layout

These guidelines are designed to be used in conjunction with the proprietary instructions

Solid rigid ducting is used between the heat recovery unit and the distribution boxes



1 

MVHR / MEV Unit

2 

Intake / Exhaust Terminals

3 

- **Thermal EPE Ducting**
- **Solid Radial**
- **Elbow & Fittings**

4 

Manifold and Manifold Cap

5 

- **Semi Rigid Ducting**
- **Primary Duct Fittings**
- **Radial Duct Plenum**
- **Ceiling Supply Extract Air Valve**

6 

- **Additional Duct Fittings**
- **Auxiliary Items**

System Build

2 Intake / Exhaust Terminal

SS Bull Nose Supply/Extr Term.

MZIF-F125-EX-S

MZIF-F150-EX-S

MZIF-F200-EX-S

White Grille Supply/Extr Term.

MZIF-F125-EX-W

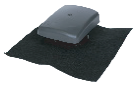
MZIF-F150-EX-W

MZIF-F200-EX-W

Uni Tile Roof Vent Terminal

MZVP-R-000000T

MZVP-R-ADA-150



Uni Slate Roof Vent Terminal

MZVP-R-000000Z

MZVP-R-ADA-150

3 Thermal EPE Ducting

Thermal Ducting - 2000mm

DZDP-D125-2000

DZDP-D150-2000

Thermal Ducting 90º Bend

DZDP-D-125.90D

DZDP-D-150.90D

Thermal Ducting 45º Bend

DZDP-D-125.45D

DZDP-D-150.45D

Thermal Ducting - Coupler

DZDP-D00125S

DZDP-D00150S

System Build

3 Primary Duct Fittings

Self Ducting - 2000mm

MZDP-D125-2000

MZDP-D150-2000

MZDP-D200-2000

Plastic Circular Duct Coupler

MZDP-F125-COUP

MZDP-F150-COUP

MZDP-F200-COUP

Plastic Circular 90º Bend

MZDP-F125-090D

MZDP-F150-090D

MZDP-F200-090D

Circular Duct Clip

MZDP-F125-CLIP

MZDP-F150-CLIP

MZDP-F200-CLIP

Solid Reducer

MZDP-F100-REDU

MZDP-F150-REDU

MZDP-F200-REDU

Plastic Circular Wall Plate

MZDP-F125-WP-0

MZDP-F150-WP-0

MZDP-F200-WP-0

4 Manifold and Manifold Cap

Invavent 6 Port Manifold

MZRP-F1575 - M06

Invavent 10 Port Manifold

MZRP-F1575 - M10

Invavent 14 Port Manifold

MZRP-F1575 - M14

Radial Ducting End Cap

MZRP-F0075-M-CA

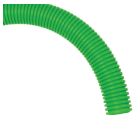
5 Semi Rigid Ducting And Fittings

Fire Rated Ceiling Supply Air Valve

MZ-VAL-SUP-125

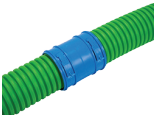
Fire Rated Ceiling Extract Air Valve

MZ-VAL-EXT-125



Radial Ducting

MZRP-D0075-0050



Radial Ducting Connector

MZRP-F0075-CONN

Radial Ducting 90° Bend

MZRP-F0075-90

2 Port Ceiling Plenum

MZRP-F0075-KIT

Radial Ducting Fixing Clamp

MZRP-F0075-CLAMP

6 Additional Duct Fittings/Auxiliary Items

Worm Drive Clip

MZIF-F125-CLAM

MZIF-F150-CLAM

MZIF-F200-CLAM

Aluminium Duct Tape

MZ-TP-00000000

Duct Sealant

MZ-DS-00000000

Insulated Flexible Ducting

MZIF-D100-FLEX

MZIF-D125-FLEX

MZIF-D150-FLEX

Solid Silencer

MZ-SIL-125-900

MZ-SIL-150-900

MZ-SIL-200-900

1.2 x 17m Insulation Wrap

MZ-IW-00000000

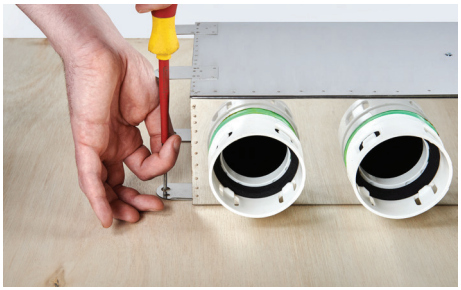
Installation
Manifold

1. Securing Manifold

The manifold boxes should be securely placed on a solid surface.

2. Securing Manifold

The manifold should be securely fixed at each corner using the pre fixed fixing tabs on the manifold box.

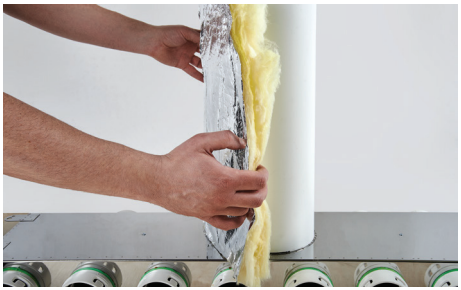


3. Pipe Connection

Connect the supply or extract duct to the manifold. The duct diameter should be at least equal to the diameter of the manifold.

4. Pipe Insulation

Once supply and exhaust pipework connected and secured ensure all pipework is insulated from the ventilation unit to the manifold



Install the distribution manifolds as located on the drawing provided, if no drawing is provided install in central location to keep ductwork symmetrical and short as possible

5. Connecting Semi Rigid

The ducting should be inserted into the manifold box ensuring a full connection is made to the built in sealing ring.

6. Connecting Semi Rigid

Once inserted the spigot will click indicating it has Locked the semi rigid radial ducting into position.

7. End Caps

If radial duct connection is not required end caps Are supplied and inserted as a push fit inside the Spigot connection

8. End Caps

Ensure the caps are fully inserted into each Spigot to provide an airtight seal.

Installation
Semi Rigid Duct

75mm Radial Duct is supplied in 50m rolls as standard and should be cut to length

1. Cutting Duct

Cut the radial semi rigid duct to the length required ensure the pipe is measured with no sagging or with tight bends.

2. Ensuring Straight Cut

When cutting ensure a straight cut is achieved. Ensure there are no sharp edges and end is smooth.

3. Securing Pipework

The galvanised banding is used by positioning over the duct to hold it in position and screwed into place. The banding is supplied in 10m length as required and fixed every 750mm along the ducting.

All InvaVent Radial Ducting has been designed to withstand 800N of pressure

Installation
Plenum

Before positioning plenums reference the air valve position in schematic provided

1. Plenum Positioning

Place the plenum in the required position and mark up fixing points

2. Plenum Fixing

Using galvanised banding fix the plenum into position ensuring the plenum is plumb and secure to the structure.

3. Pipe Connection

The semi rigid radial ducting should be inserted into the plenum ensuring a full connection is made to the built in sealing ring.

Once inserted the spigot will click indicating it has locked the semi rigid radial ducting into position.

4. Plenum Blank

If only one of the duct outlets or connection part is taken into use, the other outlet is closed with the plenum blank supplied. The blank is inserted as a push fit inside the spigot connection.

Ensure the caps are fully inserted into each spigot to provide an airtight seal.

Installation
Plenum

5. Connection Sealant

Using the Sealant supplied seal both sides of the supplied plenum coupler

6. Duct Fixing

Install the provided 350mm length of 125mm Diameter circular duct into the plenum.

Self tapping screws can be used to ensure duct remains in place.

7. Duct Fixing

Ensure the duct finishes below the finished ceiling height.

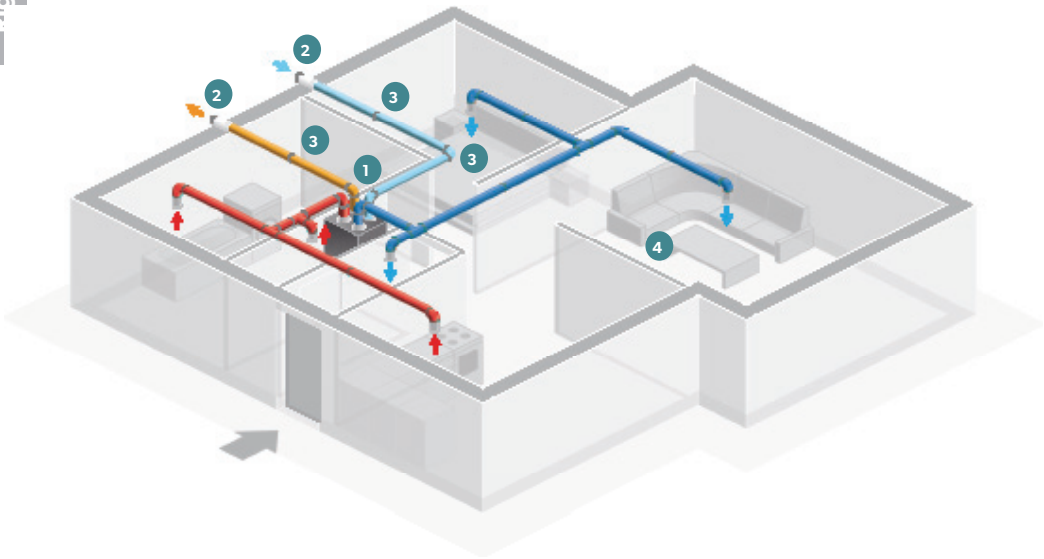
Semi Rigid flexible ducts must avoid slopes,
· tauten the straight parts so that the duct is smooth and straight,
· avoid having too many bends (make them gradual, with a large curvature),
· do not crush the duct or squeeze it to force it through a narrow passage.

The ducts must be located in the heated volume in order to guarantee the energy performance of the system.

Notes

Rigid Radial Layout

These guidelines are designed to be used in conjunction with the proprietary instructions



1 

MVHR / MEV Unit

2 

Intake / Exhaust Terminals

3 

- **Thermal EPE Ducting**
- **Solid Radial**
- **Elbow & Fittings**

4 

Auxiliary Items

System Build

2 Intake / Exhaust Terminal

SS Bull Nose Supply/Extr Term.

MZIF-F125-EX-S

MZIF-F150-EX-S

MZIF-F200-EX-S

White Grille Supply/Extr Term.

MZIF-F125-EX-W

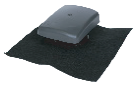
MZIF-F150-EX-W

MZIF-F200-EX-W

Uni Tile Roof Vent Terminal

MZVP-R-000000T

MZVP-R-ADA-150



Uni Slate Roof Vent Terminal

MZVP-R-000000Z

MZVP-R-ADA-150

3 Thermal EPE Ducting

Thermal Ducting - 2000mm

DZDP-D125-2000

DZDP-D150-2000

Thermal Ducting 90º Bend

DZDP-D-125.90D

DZDP-D-150.90D

Thermal Ducting 45º Bend

DZDP-D-125.45D

DZDP-D-150.45D

Thermal Ducting - Coupler

DZDP-D00125S

DZDP-D00150S

System Build

3 Duct and Fittings

Self Ducting - 2000mm

MZDP-D125-2000

MZDP-D150-2000

MZDP-D200-2000

Plastic Circular Duct Coupler

MZDP-F125-COUP

MZDP-F150-COUP

MZDP-F200-COUP

Plastic Circular 90◦ Bend

MZDP-F125-090D

MZDP-F150-090D

MZDP-F200-090D

Plastic Circular Tee Piece

MZDP-F125-000T

MZDP-F150-000T

MZDP-F200-000T

Plastic Circular 45◦ Bend

MZDP-D-125-45D

MZDP-D-150-45D

Plastic Circular Wall Plate

MZDP-F125-WP-0

MZDP-F150-WP-0

MZDP-F200-WP-0

Solid Reducer

MZDP-F100-REDU

MZDP-F150-REDU

MZDP-F200-REDU

Circular Duct Clip

MZDP-F125-CLIP

MZDP-F150-CLIP

MZDP-F200-CLIP

Fire Rated Ceiling Extract Air Valve

MZ-VAL-EXT-125

Fire Rated Ceiling Supply Air Valve

MZ-VAL-SUP-125

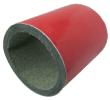
4 Auxiliary Items

Worm Drive Clip

MZIF-F125-CLAM
MZIF-F150-CLAM
MZIF-F200-CLAM

Aluminium Duct Tape

MZ-TP-00000000



Circular Fire Sleeves

MZ-VAL-COL-125
MZ-VAL-COL-150

Insulated Flexible Ducting

MZIF-D100-FLEX
MZIF-D125-FLEX
MZIF-D150-FLEX

Solid Silencer

MZ-SIL-125-900
MZ-SIL-150-900
MZ-SIL-200-900

1.2 x 17m Insulation Wrap

MZ-IW-00000000

Duct Sealant

MZ-DS-00000000

Installation
Rigid Radial Duct

1. Installation

Follow design drawing layouts, unless constraints in the building require another route to be taken. Do not introduce unnecessary bends into the system and avoid changes in duct size/shape as this will increase resistance

2. Sealing Joints

To ensure optimum performance is achieved and to avoid damage from condensate leakage, all duct joints must be 100% sealed with duct sealant and taped.

3. Duct Insulation

All ducting passing through unheated spaces must be insulated to prevent condensation and to preserve heat. Ductwork should not be in direct contact with other surfaces, such as plasterboard ceilings that may transfer noise to the dwelling.

4. Air Valve Connection

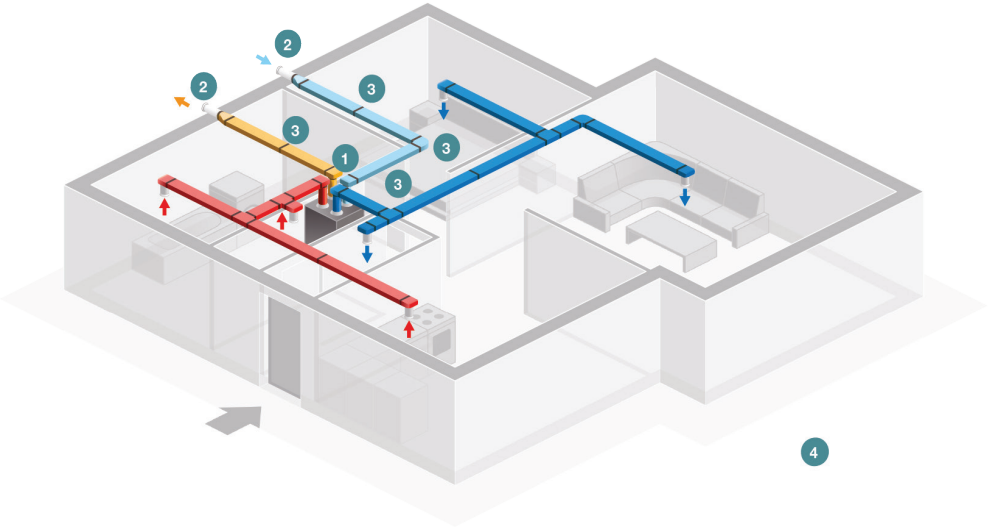
To connect to the air valves ensure the pipe length dropping down protrudes past the finish ceilings height. When you have finished installing the plasterboard cut the extra pipe below the ceiling before plasterwork commences.

The duct size is determined by the diameter of the duct connections fitted to the appliance to achieve maximum appliance efficiency.

Notes

Flatpack System Layout

These guidelines are designed to be used in conjunction with the proprietary instructions



1 

MVHR / MEVUnit

See Step 1 for options

2 

Intake / Exhaust Terminals

See Step 2 for options

3 

- **Thermal EPE Ducting**
- **Solid Radial**
- **Elbow & Fittings**
- **Additional Duct Fittings**

4 

- **Auxiliary Items**

System Build

2 Intake / Exhaust Terminal

SS Bull Nose Supply/Extr Term.

MZIF-F125-EX-S

MZIF-F150-EX-S

MZIF-F200-EX-S

White Grille Supply/Extr Term.

MZIF-F125-EX-W

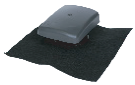
MZIF-F150-EX-W

MZIF-F200-EX-W

Uni Tile Roof Vent Terminal

MZVP-R-000000T

MZVP-R-ADA-150



Uni Slate Roof Vent Terminal

MZVP-R-000000Z

MZVP-R-ADA-150

3 Thermal EPE Ducting

Thermal Ducting - 2000mm

DZDP-D125-2000

DZDP-D150-2000

Thermal Ducting 90º Bend

DZDP-D-125.90D

DZDP-D-150.90D

Thermal Ducting 45º Bend

DZDP-D-125.45D

DZDP-D-150.45D

Thermal Ducting - Coupler

DZDP-D00125S

DZDP-D00150S

System Build

3 Duct and Fittings

Self Ducting - 2000mm

MZDP-D125-2000

MZDP-D150-2000

MZDP-D200-2000

Plastic Circular Duct Coupler

MZDP-F125-COUP

MZDP-F150-COUP

MZDP-F200-COUP

Plastic Circular 90º Bend

MZDP-F125-090D

MZDP-F150-090D

MZDP-F200-090D

Circular Duct Clip

MZDP-F125-CLIP

MZDP-F150-CLIP

MZDP-F200-CLIP

Solid Reducer

MZRP-F100-REDU

MZRP-F150-REDU

MZRP-F200-REDU

Plastic Circular 45º Bend

MZDP-D-125-45D

MZDP-D-150-45D

Flat Solid Ducting - 2000mm

MZFP-D204-2000

MZFP-D220-2000

Flat Duct Coupler

MZFP-F204-COUP

MZFP-F220-COUP

Horizontal 90º Bend

MZFP-F204-H90D

MZFP-F220-H90D

Horizontal 45º Bend

MZFP-F204-H45D

MZFP-F220-H45D

Tee Piece

MZFP-F204-000T

MZFP-F220-000T

Vertical 90º Bend

MZFP-F204-V90D

MZFP-F220-V90D

Vertical 45º Bend

MZFP-F204-V45D

MZFP-F220-V45D

Mounting Clip

MZFP-F204-CLIP

MZFP-F220-CLIP

Flat to Round 90º Adaptor

MZFP-F204-125T

MZFP-F220-125T

Flat to Round Straight Adaptor

MZFP-D204-CONV

MZFP-D220-CONV

Fire Rated Ceiling Supply Air Valve

MZ-VAL-SUP-125

Fire Rated Ceiling Extract Air Valve

MZ-VAL-EXT-125

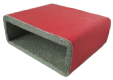
4 Auxiliary Items

Aluminium Duct Tape

MZ-TP-00000000

Duct Sealant

MZ-DS-00000000



Rectangular Fire Sleeve

MZ-VAL-COL-204

MZ-VAL-COL-220

Insulated Flexible Ducting

MZIF-D100-FLEX

MZIF-D125-FLEX

MZIF-D150-FLEX

Solid Silencer

MZ-SIL-125-900

MZ-SIL-150-900

MZ-SIL-200-900

1.2 x 17m Insulation Wrap

MZ-IW-00000000

Installation
Flatpack Duct

1. Installation

Follow design drawing layouts, unless constraints in the building require another route to be taken. Do not introduce unnecessary bends into the system and avoid changes in duct size/shape as this will increase resistance

2. Sealing Joints

Ensure there is a tight seal with no air gaps around The entire joint.

3. Aluminium Tape

To ensure optimum performance is achieved and to avoid damage from condensate leakage, all duct joints must be 100% sealed with
duct sealant and taped.

4. Adapters

To transfer from flatpack to circular install the Straight or angular transfer provided.

5. Duct Insulation

All ducting passing through unheated spaces must be insulated to prevent condensation and to preserve heat.

6. Air Valve Connection

In order to connect to the air valves an angular flat pack to circular transformer is installed as shown.

To connect to the air valves ensure the pipe length dropping down protrudes past the finished ceilings height.

When you have finished installing the plasterboard cut the extra pipe below the ceiling before plasterwork commences.

The duct size is determined by the diameter of the duct connections fitted to the appliance and the air flow rates/ pressure drop requirements in order to achieve maximum appliance efficiency.

Installation
Air Valve

1. Installation

Always cover over ends of pipework to stop contaminants entering pipework during construction and do not use the system during construction work

For air valves, the holes should be cut to the minimum required size such that the spigot fits snug into the hole

2. Installation

Air Valves are installed and adjusted after the final cleaning of the work site.

Push the air valve into position and secure to the ceiling structure with sealant.

3. Adjustability

Locking nut used to fix the position of the valve.

Rotate the inner valve disc to position.

4. Extract Valve

Ensure the extract air valve is installed in all wet rooms

5. Supply Valve

Ensure the extract air valve is installed in all Habitable rooms

6. Fixing Valve

Locking nut used to fix the position of the valve.

Rotate the inner valve disc to position.

Positions Of Air Valves

To create cross ventilation within a room, low velocity supply air valves should be:

- Positioned on the opposite side of the room from internal door opening
- Not be closer than 200mm to walls, where located on a ceiling
- Not more than 400mm from the ceiling, where located on a wall
- Extracting air valves in kitchens should be a min. of 600mm away from hobs, measured on plan.

Air valves should be positioned to consider the location of tall furniture, and the avoidance of drafts over beds or seating areas.

Balancing & Commissioning

The system must be balanced to achieve the air change rates calculated to meet the requirements of Building Regulation Part F. This will require an air flow meter to measure the air velocity in metres per second at each inlet or extract point.

Before commissioning can take place, the works listed below must be completed since smooth operation can only be guaranteed afterwards:

- the unit is installed in a frost-free installation room
- the installation of the unit including condensation pipework is complete
- supply and extract air ducts have been connected, including insulation
- all supply and extract air valves can be accessed
- unit, filter, and pipe system are not contaminated
- power supply and electrical connection have been established
- any external controls have been connected
- internal fitout works (e.g. plasterboard installation) have been completed
- any required silencers have been installed
- in general, the intended use of the ventilation system according to the operating and installation manual is guaranteed

1. System Balancing

Start at the nearest valves and check the air flow volumes at all the outlets and note the air volume to each room, whilst doing this make sure that the direction of flow is correct.

2. System Balancing

If the measured air flow is above or below the requirement adjusts each air valve by rotating the central cone on its screw thread to increase or decrease the size of the air opening,

Maintenance & Servicing

Air Filter - 6 Months

Inspection of all air filters for contamination and replacement is required every 6 months.

Ventilation Unit - 2 Years

Inspection and cleaning, if necessary, of the heat exchangers, fans. Inspection of condensation discharge and siphon every 2 years.

Air Distribution - 2 Years

Inspection and cleaning, if necessary, of the ventilation ducts, manifolds and ventilation valves every 2 years.

JOULE IE

Unit 407 NW Business Park,
Cappagh Road,Ballycoolin,
Blanchardstown, Dublin
tel +353 (1) 623 7080
fax +353 (1) 626 9337
mail info@joule.ie
web www.joule.ie

JOULE UK

Unit 1 & Unit 3,
Leftfield Park, Park Road, West Yorkshire,
WF8 4PS, United Kingdom
tel +44 (0) 330 808 8488
fax +44 (0) 1513 568 336
mail info@jouleuk.co.uk
web www.jouleuk.co.uk

JOULE PL

Strzegomska 55D,
53-611 Wroclaw, Polska
tel +48 (0) 128811171
fax +48 (0) 814709046
mail biuro@joule-pl.pl
web www.joule-pl.pl

ENG-0011-2