

# 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

Address

Contact Tel.

Contact Email

Installer  
Name

Address

Contact Tel.

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

☐

[illegible]

[illegible]



# 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  
maintenance 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

2	Warranty Card
3	System Recording
6	Warranty Terms & Conditions
8	Pre-installation Notes
9	Product Selection
10	InvaVent 200
16	InvaVent 350
22	InvaVent 550
28	InvaVent Maxi
32	System Build - Supply & Exhaust
34	Semi Rigid System
44	Rigid Radial System
50	Flatpack System
56	Air Valve Installation
58	Balancing & Commissioning
59	Maintenance & Servicing

# 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 system 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 100m <sup>2</sup>



### InvaVent 350

Code	Conn. Ø (mm)
MH-HR-INVA-350	150

Dim. W/H/D (mm)	Floor Area
719 / 879 / 480	up to 230m <sup>2</sup>



### InvaVent 550

Code	Conn. Ø (mm)
MH-HR-INVA-550	200

Dim. W/H/D (mm)	Floor Area
825 / 758 / 741	up to 300m <sup>2</sup>

## 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 5° 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

InvaVent 200



## Key Features

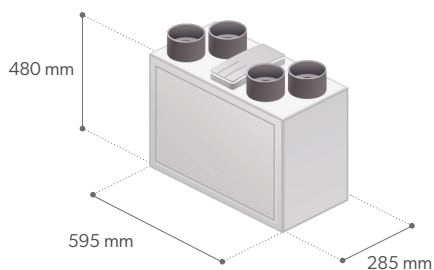
- Ideal for dwellings up to **100 m<sup>2</sup>**
- Weight **16 kg**
- Minimal size (width 595 mm)
- Easy vertical or horizontal wall installation
- Summer By-Pass
- Digital Controller
- Automatic Frost Protection

## Specification

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



SAP Appx. Q Certified  
Ideal For Houses  
Ideal For Apartments



Connection Ø 125 mm

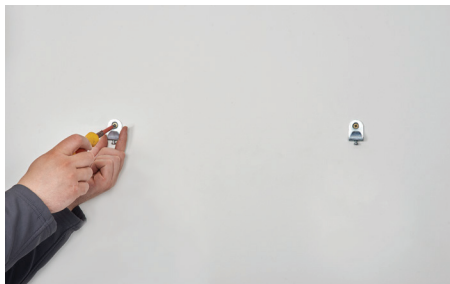
## SAP Appendix Q - Approved Results

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.



InvaVent 200

## 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

## InvaVent 200

### 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.



InvaVent 200

## 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

## InvaVent 200

### 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.

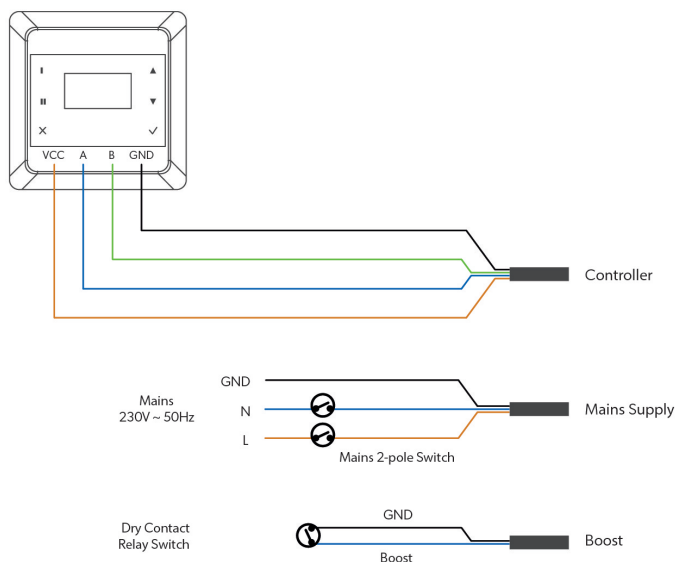


Failure to clean or replace filters can seriously affect system efficiency



Replacement required every 6 months to uphold warranty

## Wiring Diagram



# Electrical



Electrical work must be carried out by qualified person only

## 1. Electrical Access

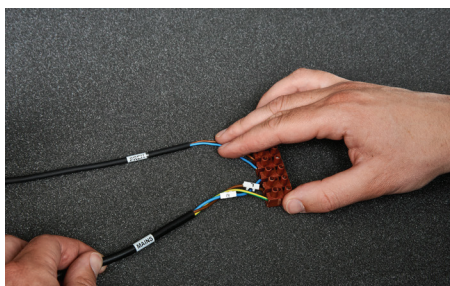
To gain access to the electrical connection remove the top cover of the electrical wiring box



InvaVent 200

## 2. Main Power Connection

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



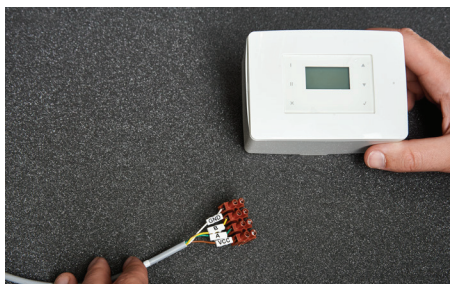
## 3. Boost Connection

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

InvaVent 350

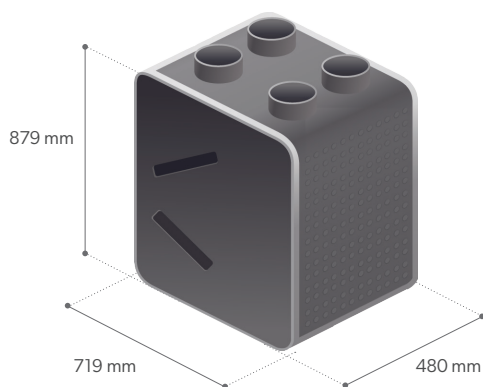


## Key Features

- 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	<b>InvaVent 350</b>
Code	<b>MH-HR-INVA-350</b>
V ~ 50Hz	<b>230</b>
W	<b>165</b>
A	<b>1.4</b>
RPM	<b>388</b>
Max Airflow (m³/h)	<b>108</b>
Max Pressure (Pa)	<b>690</b>
Max Temperature (°C)	<b>50</b>



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

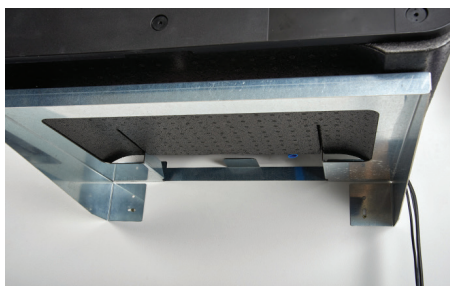
Fix the wall bracket provided to the wall as shown in the image. Ensure line is level before mounting the unit.



InvaVent 350

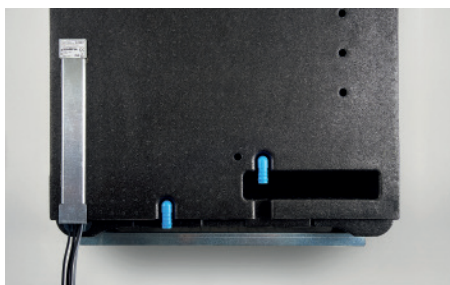
## 2. Unit Fixing

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.

InvaVent 350

## 1. Exhaust Air Outlet

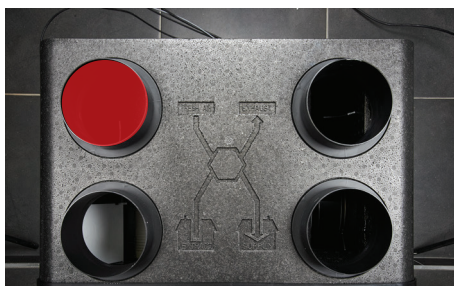
This outlet is used to expel stale air once it has been treated by the heat exchanger.

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



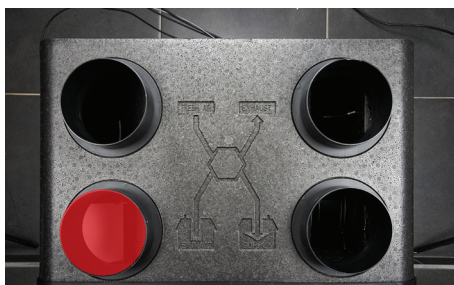
## 2. Supply Fresh Air Inlet

This inlet is used for carrying fresh air from outside.



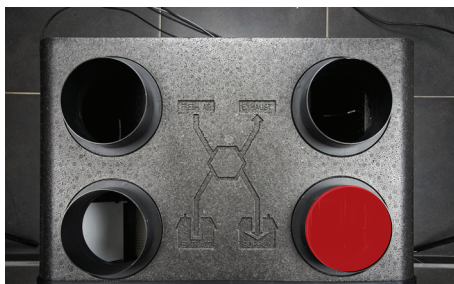
## 3. Extract Air

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 area served by the system.



InvaVent 350

## 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



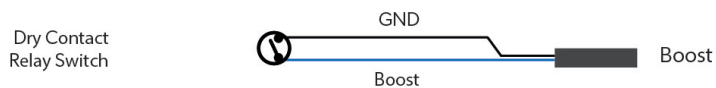
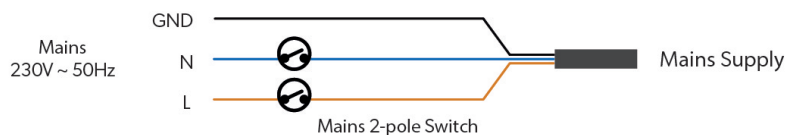
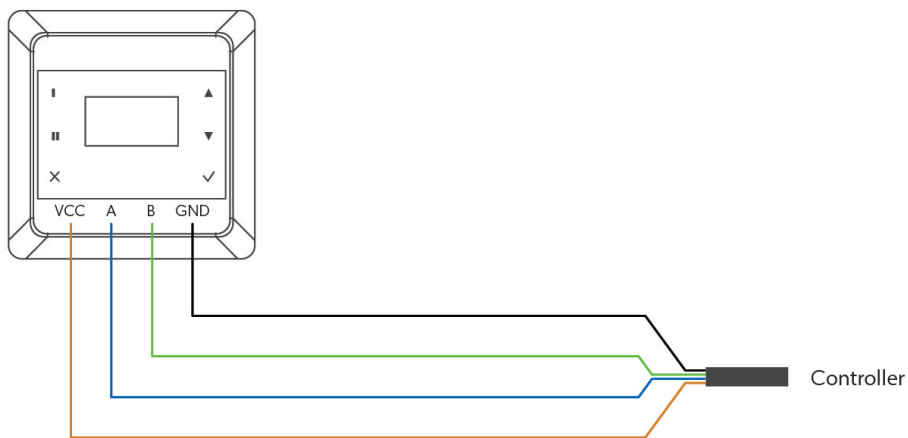
Failure to clean or replace filters can seriously affect system efficiency



Replacement required every 6 months to uphold warranty

# Wiring Diagram

InvaVent 350





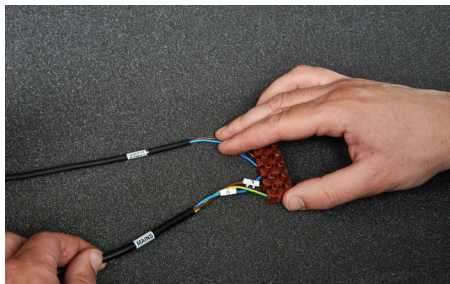
# Electrical



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.



InvaVent 350

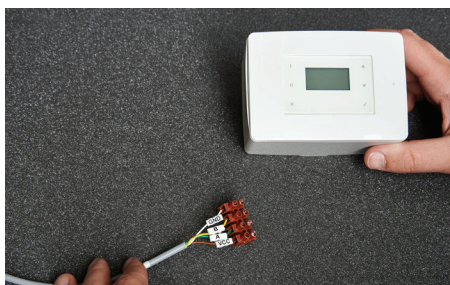
## 2. Boost Connection

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

InvaVent 550

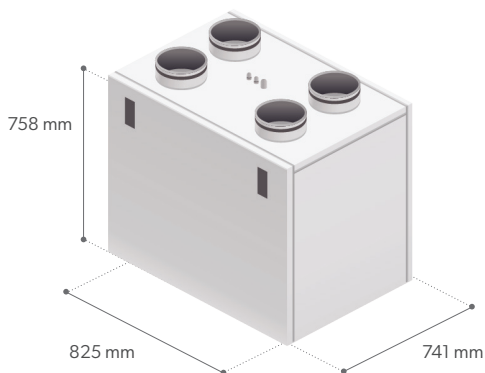


## Key Features

- 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	<b>InvaVent 550</b>
Code	<b>MH-HR-INVA-550</b>
V ~ 50Hz	<b>230</b>
W	<b>333</b>
A	<b>2.3</b>
RPM	<b>3230</b>
Max Airflow (m³/h)	<b>700</b>
Max Airflow (l/s)	<b>195</b>
Max Temperature (°C)	<b>50</b>



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.



InvaVent 550

## 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 Condensate 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.

## InvaVent 550

### 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.



InvaVent 550

## 2. Filter Removal

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



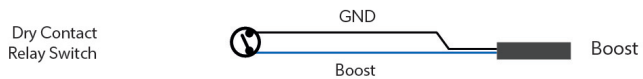
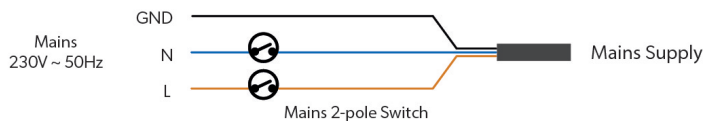
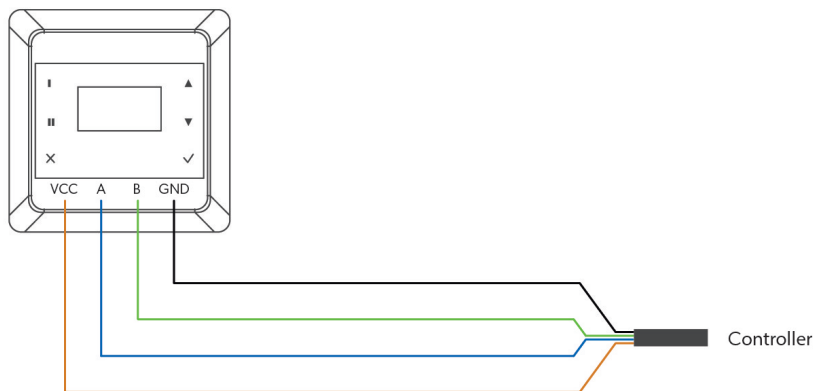
Failure to clean or replace filters can seriously affect system efficiency



Replacement required every 6 months to uphold warranty

# Wiring Diagram

InvaVent 550



# 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



InvaVent 550

## 2. Controller

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



# InvaVent Maxi

InvaVent Maxi

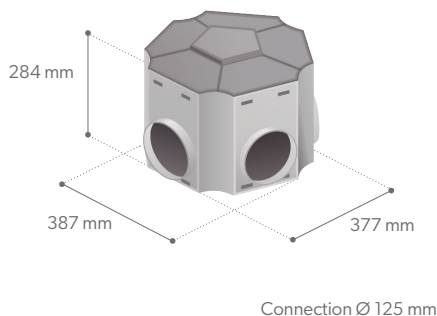


## Key Features

- Ideal for dwellings up to **300 m<sup>2</sup>**
- Weight **3 kg**
- Up to 5 wet rooms
- Position in any orientation
- Humidity sensors
- Low Watt EC motor technology
- Low noise

## Specification

Model	<b>InvaVent Maxi</b>
Code	<b>MH-HR-INV-MAXI</b>
V ~ 50Hz	<b>230</b>
W	<b>70</b>
A	<b>0.3</b>
Max Airflow (m <sup>3</sup> /h)	<b>500</b>
Max Airflow (l/s)	<b>138</b>
Max Pressure (Pa)	<b>410</b>
Max Temperature (°C)	<b>50</b>



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



InvaVent Maxi

## 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

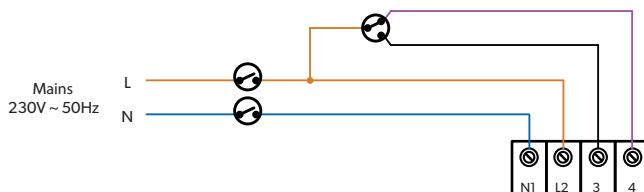
To locate the electrical connections undo the fixing screw and remove the cover.



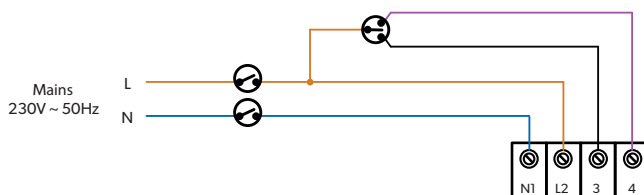
# Wiring Diagram

InvaVent Maxi

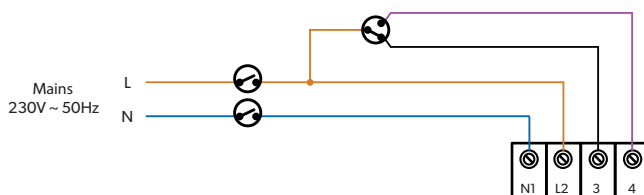
**Minimum Speed**



**Medium Speed**



**Maximum Speed**



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

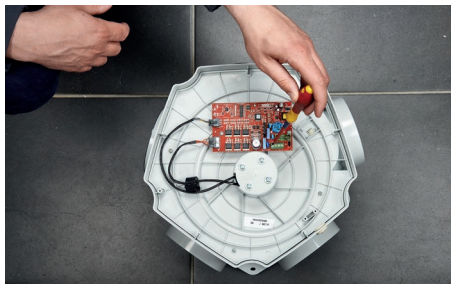
# Electrical



Electrical work must be carried out by qualified person only

## 1. Mains Connection

Connect the mains power supply and boost cable To the connection block as shown.



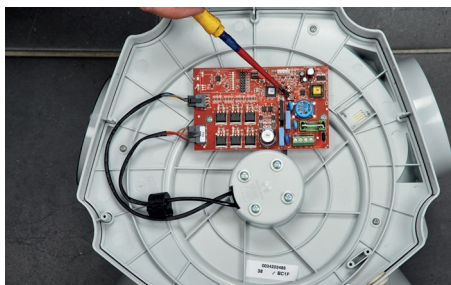
InvaVent Maxi

## 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 connecting 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  $V_{max}=600$  and  $V_{min} = 400$ .



## 4. Setting Up Procedure

With the speed selector circuit breaker closed;

- Change  $V_{max}$  from 600 to 2500 rpm
- Open the speed selector circuit breaker;
- Change  $V_{min}$  from 400 to  $V_{max}$
- 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 may be horizontal or vertical).

If grilles 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 surfaces with 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

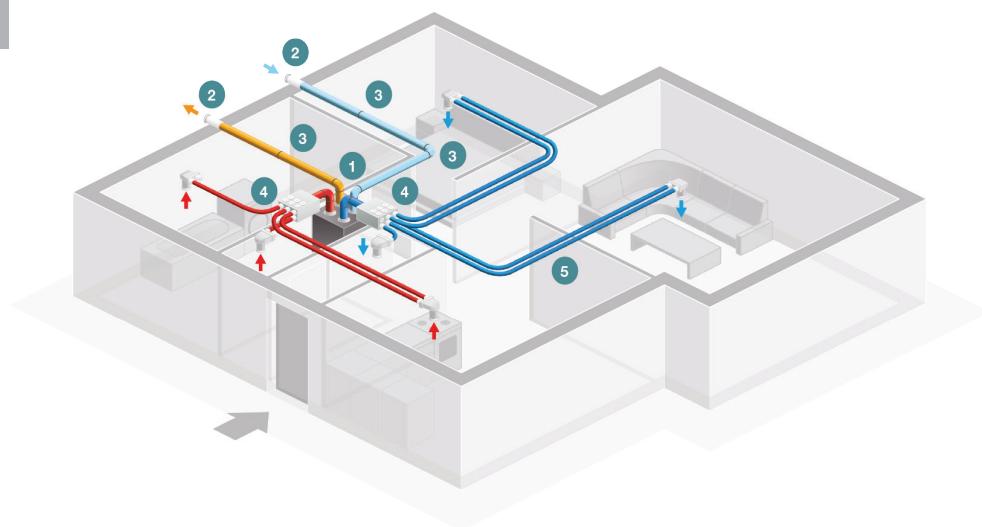
## Semi Rigid



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



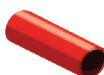
**MVHR / MEV Unit**

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

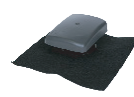


White Grille Supply/Extr Term.

MZIF-F125-EX-W

MZIF-F150-EX-W

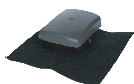
MZIF-F200-EX-W



Uni Tile Roof Vent Terminal

MZVP-R-000000T

MZVP-R-ADA-150



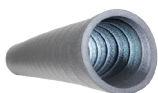
Uni Slate Roof Vent Terminal

MZVP-R-000000Z

MZVP-R-ADA-150

Semi Rigid

## 3 Thermal EPE Ducting



Thermal Ducting - 2000mm

DZDP-D125-2000

DZDP-D150-2000



Thermal Ducting 90° Bend

DZDP-D-125.90D

DZDP-D-150.90D



Thermal Ducting 45° Bend

DZDP-D-125.45D

DZDP-D-150.45D



Thermal Ducting - Coupler

DZDP-D00125S

DZDP-D00150S

# System Build

## Semi Rigid

### 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 90° 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

Semi Rigid

6

## Additional Duct Fittings/Auxiliary Items



Worm Drive Clip  
MZIF-F125-CLAM  
MZIF-F150-CLAM  
MZIF-F200-CLAM



Aluminium Duct Tape  
MZ-TP-00000000



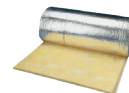
Duct Sealant  
MZ-DS-00000000



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.

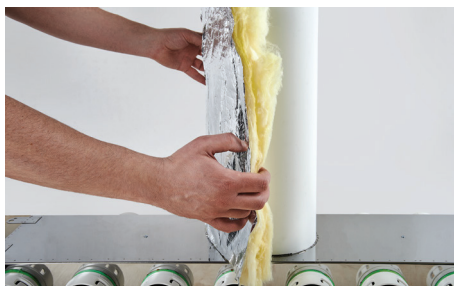


### 4. Pipe Insulation

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.



Semi Rigid

## 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

### Semi Rigid

#### 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



Semi Rigid

### 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.

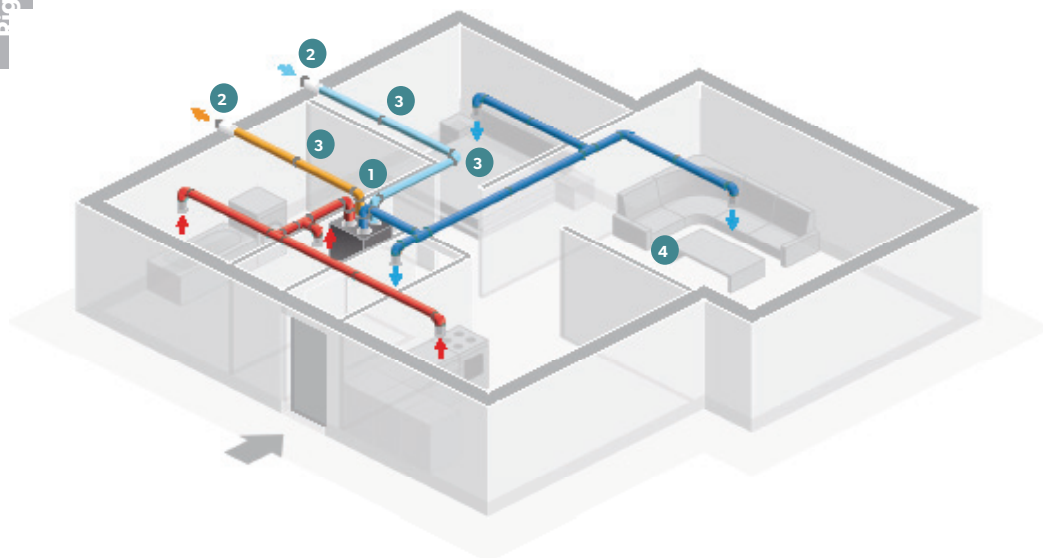


# Rigid Radial Layout

## Rigid Radial



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

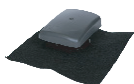
MZIF-F200-EX-W



Uni Tile Roof Vent Terminal

MZVP-R-000000T

MZVP-R-ADA-150



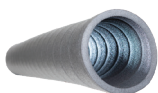
Uni Slate Roof Vent Terminal

MZVP-R-000000Z

MZVP-R-ADA-150

Rigid Radial

## 3 Thermal EPE Ducting



Thermal Ducting - 2000mm

DZDP-D125-2000

DZDP-D150-2000



Thermal Ducting 90° Bend

DZDP-D-125.90D

DZDP-D-150.90D



Thermal Ducting 45° Bend

DZDP-D-125.45D

DZDP-D-150.45D



Thermal Ducting - Coupler

DZDP-D00125S

DZDP-D00150S

# System Build

## Rigid Radial

### 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



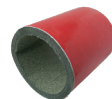
Fire Rated Ceiling Supply Air Valve  
MZ-VAL-SUP-125



Worm Drive Clip  
MZIF-F125-CLAM  
MZIF-F150-CLAM  
MZIF-F200-CLAM



Aluminium Duct Tape  
MZ-TP-00000000



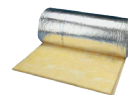
Circular Fire Sleeves  
MZ-VAL-COL-125  
MZ-VAL-COL-150



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

### Rigid Radial

#### 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.



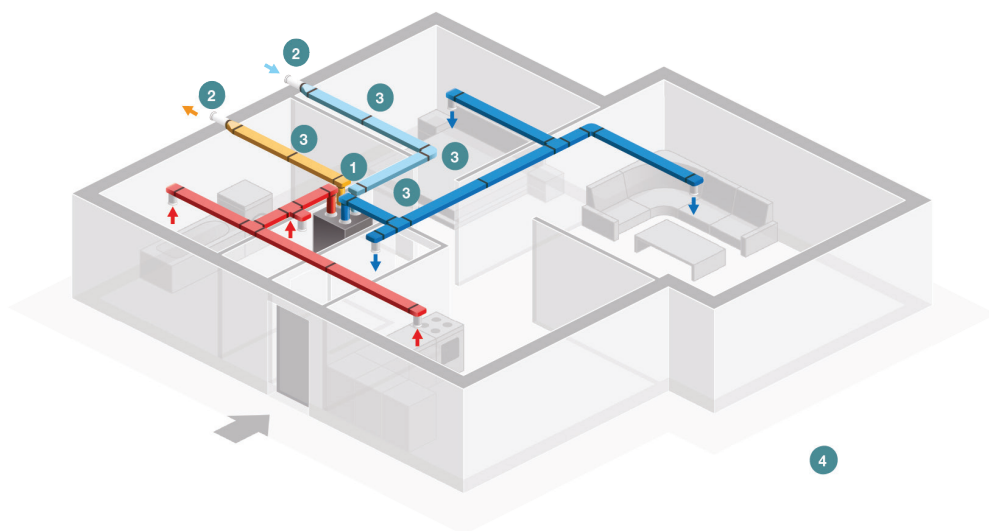


# Flatpack System Layout

## Flatpack



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

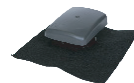


White Grille Supply/Extr Term.

MZIF-F125-EX-W

MZIF-F150-EX-W

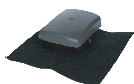
MZIF-F200-EX-W



Uni Tile Roof Vent Terminal

MZVP-R-000000T

MZVP-R-ADA-150



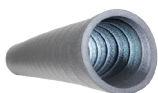
Uni Slate Roof Vent Terminal

MZVP-R-000000Z

MZVP-R-ADA-150

Flatpack

## 3 Thermal EPE Ducting



Thermal Ducting - 2000mm

DZDP-D125-2000

DZDP-D150-2000



Thermal Ducting 90° Bend

DZDP-D-125.90D

DZDP-D-150.90D



Thermal Ducting 45° Bend

DZDP-D-125.45D

DZDP-D-150.45D



Thermal Ducting - Coupler

DZDP-D00125S

DZDP-D00150S

# System Build

Flatpack

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



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 45° 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 90° Bend  
MZFP-F204-H90D  
MZFP-F220-H90D



Horizontal 45° Bend  
MZFP-F204-H45D  
MZFP-F220-H45D



Tee Piece  
MZFP-F204-000T  
MZFP-F220-000T



Vertical 90° Bend  
MZFP-F204-V90D  
MZFP-F220-V90D





Vertical 45° Bend  
MZFP-F204-V45D  
MZFP-F220-V45D



Mounting Clip  
MZFP-F204-CLIP  
MZFP-F220-CLIP



Flat to Round 90° 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

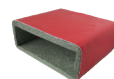
## Auxiliary Items



Aluminium Duct Tape  
MZ-TP-00000000



Duct Sealant  
MZ-DS-00000000



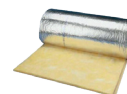
Rectangular Fire Sleeve  
MZ-VAL-COL-204  
MZ-VAL-COL-220



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.



Flatpack

## 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



Flatpack

## 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](mailto:info@joule.ie)  
web [www.joule.ie](http://www.joule.ie)

## JOULE PL

Strzegomska 55D,  
53-611 Wrocław, Polska  
tel +48 (0) 128811171  
fax +48 (0) 814709046  
mail [biuro@joule-pl.pl](mailto:biuro@joule-pl.pl)  
web [www.joule-pl.pl](http://www.joule-pl.pl)

## 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](mailto:info@jouleuk.co.uk)  
web [www.jouleuk.co.uk](http://www.jouleuk.co.uk)

ENG-0011-2