

Installation Guide



This information is provided as a guide and may differ from project to project. It is assumed that the property is a two storey dwelling. Obviously a bungalow represents a simpler task, all the duct normally being installed in the roof space, without the need for any serving a lower floor. The principles of duct installation remain the same.

PLEASE READ ALL SECTIONS OF THIS GUIDE BEFORE COMMENCING YOUR INSTALLATION AND IN CONJUNCTION WITH YOUR DRAWINGS.

The main components normally include the following:-

- HRV Unit
- Insulated duct
- Insulated acoustic duct
- Plain duct (un-insulated)
- Duct connectors
- T-pieces and reducers
- Ceiling frames
- Ceiling registers
- Controller & 12mtr low voltage cable
- Metal Duct Strapping

Other items include:-

- Duct joining tape
- Exterior fresh air supply and exhaust grilles or tile/slate vents
- Design drawings

Description & Application

The duct is semi rigid (flexible) delivered as a 1 mtr length which extends to 3 mtrs. (This ideally is carried out by 2 people, one at each end ensuring that the insulation and sleeve extends with the aluminium ducting).

Insulated duct is installed in the roof space and any cold void.

Acoustic duct is sound absorbing and is normally attached to the unit as the first length, on the supply air to the bedrooms/livings rooms and extract air from the house i.e. bathrooms etc. (Green label).

Plain duct is installed typically between the roof space and the ground floor. An exception is if comfort cooling is being fitted now or in the future. In such a case the entire supply duct to the habitable areas throughout the property should be insulated



Typical Loft Unit with controller



and each joint tape sealed in a similar manner to acoustic duct, as described in a subsequent section.

A T-piece is used to provide a branch off for another duct run.

A frame is the item used to attach the duct to a ceiling, to receive a louvre (register) at second fix.

A connector is used to connect two pieces of duct.

A reducer is used at a point where there is a change in duct size. It is usually attached to a T-piece.

Condensate hose is connected to the drain union on the heat recovery unit to remove occasional condensation produced by the heat exchange block. (Supplied and fitted by others).

NB! Not required on a "VSR, VTR" rotary wheel heat recovery unit.

Installation sequence

First fix - unit in loft

- The following suggestions assume that the property is at least felt and battened and therefore watertight.
- Activity can now move to the loft space. Remember that all duct within a cold loft space is to be fully insulated.
- Position the HRV unit and anti-vibration pads on a suitable stand similar to that provided for a water tank, i.e. chipboard sheet supported on 100mm x 50mm bearers (insulate underneath to prevent noise transference of unit above).
- Start at the unit. Depending on type, this will normally have 4 ports, namely:-

Fresh air supply from outside.

Exhaust to outside.

Supply air to habitable areas within the building.

Extract air from wet areas within the building.

Additionally some of our Heat Recovery units have a port dedicated to a cookerhood extract.

NB! Under no circumstances can this be connected to an independent cookerhood by others.











- Install the plain duct drops from the roofspace to ground floor as per the drawing. It is good practice to allow approx. 300mm of pre-insulated duct to enter the drop at the point of exiting the loft.
- Continue the plain duct drops, using connectors where necessary, to the frame positions shown on the drawing. Tape into each duct end, the appropriate size frame and bend the duct down to the eventual ceiling board level. When the ceiling is boarded use a relevant size connector as a template to cut a hole to accept the frame.



Electrical

- The power supply to the unit position should be as detailed on the drawing.
- Electrical Isolation (i.e. fused spur) supply should be adjacent to the unit. Please refer to your drawings for specific requirements.
- Prior to any boarding, a cable from the unit to the chosen controller position should be installed. Depending on what unit is included, this cable will be either a 12 mtr. low voltage type (supplied by Systemair and to be found in the unit) or standard cable incorporating the required number of conductive cores and earth.

Ductwork - (See colour key on drawings)

	SUPPLY AIR TO PROPERTY
	EXHAUST AIR FROM PROPERTY
	FRESH AIR INTAKE
	STALE AIR EXHAUST
	ACOUSTIC DUCT
 	FIRE DAMPER/ FIRE REGISTER.
	VACUUM INLET

Fit acoustic duct, as indicated on the drawing, to the spigots (this should be pulled to its total length and a slight bend made to ensure maximum acoustic efficiency). All wall mounted units will require a male sealed duct connector, supplied in kit of parts to be fitted into the unit allowing you to fit ducting as required. Fit a length of duct to the extract spigot. The installation instruction booklet supplied with the unit will help you identify the correct connections. Secure connections should be made with the jubilee clips supplied (at unit only) by pulling duct over spigots and securing with a jubilee clip over the insulation.

It is imperative that both ends of the white plastic sheath of the acoustic duct are completely sealed with tape to contain all the air within.

Continue to extend the duct runs as per the drawing, paying close attention to the appropriate sizes and where these change, making connections to tee pieces and other lengths of duct securely with tape. Keep all duct runs as straight as possible and where bends are required, keep these as gentle as practical, avoiding 90° (if at all possible). Fix frames to the duct ends with tape and link up the plain drops using the appropriate size connectors.

If using a rigid duct system, most of the above applies however, a change in direction (i.e. Bend) will be made with the rigid component supplied. **Refer to image 2.**

When joining two lengths of duct together, insert the duct connector into either end of duct and secure with duct tape. If duct is insulated then pull the two white plastic sheaths & insulation together so all metalwork, duct and tape are covered.

- The fresh air supply from outside can now be ducted which **must** be insulated.
- Next duct the exhaust which must be insulated to outside, as indicated on the drawing.
- The above two connections to outside will be tile vents or wall grilles. With duct sizes of 160mm & above there will additionally be plenum boxes that will be required to be fitted into the exterior wall. Please refer to your drawings for fitting instructions.
- Spacing of fresh air and exhaust grilles or roof vents should be a minimum of 1.0 mtr apart, but ideally as far a part as practically possible (2 mtr ideal).
- Condensate drain (if required, refer to unit type). This can be taken to the eaves and treated like a tank overflow.

NB! Condensate drain must be insulated to prevent freezing.

- Alternatively it may be taken to a soil pipe. In this case the connection must be incorporated with a "dry bladder trap", this being because the heat recovery unit will not produce water continually and therefore a normal trap could dry out allowing the ingress of undesirable odours. The condensate drain hose is supplied by others.

Additional information - flat channel duct

This form of duct is frequently used where building limitations restrict the use of circular duct. It is fixed/joined using silicone type of sealant and self-tapping screws (screws provided by others).

The duct is rigid plastic either 60 x 204mm or 90 x 220mm and is normally supplied in 1 mtr lengths, along with the associated components described below:-

Connector used to join lengths of duct. **Refer to image 22.**

Horizontal 90° bend, used to turn duct in the horizontal plane. e.g. flat against a ceiling. **Refer to image 24.**

Adjustable horizontal bend. As above but can be used for variable angles. **Refer to image 21.**

Vertical 90° bend, used to turn duct into different plane e.g. from flat along a ceiling to down a wall. **Refer to image 19.**

Adaptor (in line) converts duct run from rectangular to round. **Refer to image 17.**

- Depending on ceiling void depth, it may be necessary to extend down from the elbow bend with a short length of round plastic duct, to the ceiling level. It is not necessary to use a ceiling frame in this instance. It is often possible to fit the louvre directly into the elbow bend if the void is of minimal depth. **Refer to image 11.**

T piece used to provide a branch off of another duct. **Refer to image 43.**

Installation method

- All joints should be securely sealed with silicone type sealant & self tapping screws, as described previously.

Second Fix

(ideally carried out when decoration is completed).

- Fit the "push fit" extract louvres to the wet areas. These louvres are identified. **Refer to image 14.**
- Fit the "push fit" supply louvres to the habitable areas. These louvres are identified. **Refer to image 13.**
- Mount the controller and make connections as per the drawing.
- Controller to be fitted in an accessible, visible position (if applicable) usually on the landing or as per the drawings.

To commission the system

Commissioning to be carried out by a commissioning engineer to comply with current Building regulations. Please contact Systemair if required on **01993 778481.**

Important notice

1. Handling of semi rigid duct and related fittings can present the possibility of sharp edges causing injury. It is therefore strongly recommended that gloves be worn during the installation process.
2. All electrical connections should be made by a suitably qualified & competent person.

Components - Image and Description



45 Deg Bend With Seal



90 Deg Bend With Seal



Connector Male With Seal



Reducer W-Con Seal



Female Connector



Semi Duct Plain



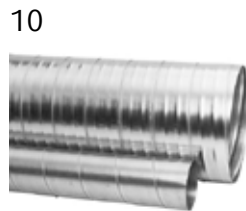
IS Flexible Duct (Insulated)



Acoustic Duct - Green Label



Acoustic Duct Internal View



Rigid Spiral Duct



Easi Pipe - Round Pipe



Insulation Sleeve



Supply Louvre



Extract Louvre



Fire Rated Air Valve (FSVHD)



Flat Channel 45 Deg Bend - Vertical



Mega Duct or Flat Channel Round to Rectangular Adaptor



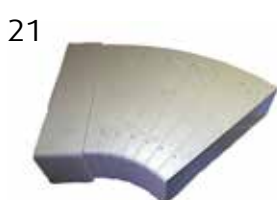
Mega Duct or Flat Channel



Mega or Flat Channel 90 Deg Vertical Bend



Mega or Flat Channel 45 Deg Horizontal Bend



Flat Channel Adjustable Horizontal Bend



Flat Channel Connector



Mega Duct 45 Deg Bend Vertical



Mega Duct or Flat Channel 90 Deg Vertical Bend

Components - Image and Description

25



UB19 Slate Vent

26



UB16 Roof Vent

27



UB19 Tile Vent

28



Felt Roof Adaptor

29



Anti Vibration Pad

30



Silicon Sealant

31



AS401 PVC Tape

32



Fire Damper (MFD)

33



FSMQC Metal Quick Clamp - Clip

34



Circular Duct Fan

35



Loft Mounted Heat Recovery Unit

36



Wall Mounted Heat Recovery Unit

37



KVKE Box Fan

38



CD Controller

39



MTP 20 Controller

40



SmartDial Wireless Control

Components - Image and Description

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Mega Duct Connector

42



Mega Duct Off-Set Elbow

43



Mega Duct or Flat Channel Horizontal Tee Piece

44



Mega to Supertube Flat Channel Adaptor

45



Mega Duct or Flat Channel Elbow

46



Slotted Steel Banding (25mm)

47



Frame - Nipple Flex

48



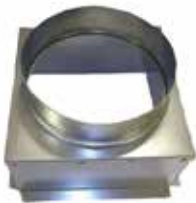
PKI Fire Damper (BEK)

49



PKI Fire Damper (BEK)

50



Plenum

51



Tee Piece With Seal

52



Flow Damper VSPBDU

53



Metal Louvred Grill for Plenum

54



Plastic Louvred Grill

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