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HEATING / HOT WATER / VENTILATION

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LE155 & 250 Mk3^{ErP}

High Efficiency Ventilation System

with Heat Recovery



INSTALLATION, COMMISSIONING & SERVICING INSTRUCTIONS

These instructions are to be left with the User



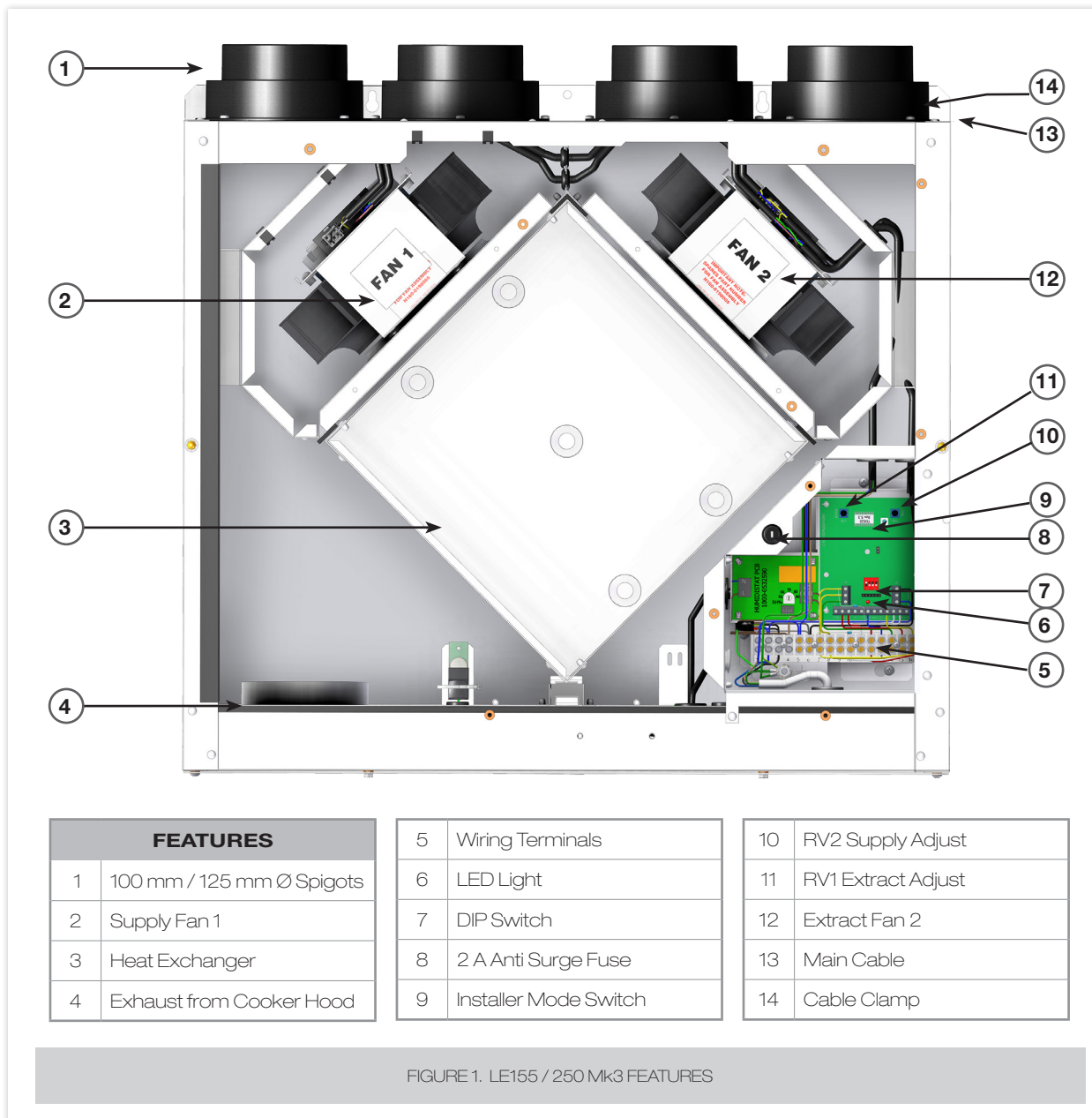
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In the interest of continuous development Johnson and Starley reserves the right to change specification without prior notice. Johnson and Starley prides itself on its ability to supply spare parts quickly and efficiently.

1. FEATURES



FEATURES	
1	100 mm / 125 mm Ø Spigots
2	Supply Fan 1
3	Heat Exchanger
4	Exhaust from Cooker Hood

5	Wiring Terminals
6	LED Light
7	DIP Switch
8	2 A Anti Surge Fuse
9	Installer Mode Switch

10	RV2 Supply Adjust
11	RV1 Extract Adjust
12	Extract Fan 2
13	Main Cable
14	Cable Clamp

FIGURE 1. LE155 / 250 Mk3 FEATURES

2. CONTENTS

ITEM	DESCRIPTION	QUANTITY
1	Heat Recovery Unit	1
2	Grommet	2
3	JS9 Boost Speed Control	1
4	Installation, Commissioning & Servicing Instructions	1
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3. GENERAL INFORMATION

- 3.1 The LE155 / 250 Mk3 system provides whole house mechanical ventilation to living areas and bedrooms. The heat from the LE155 / 250 Mk3 is recovered from stale contaminated air drawn from bathrooms and utility rooms in conjunction with stale air from the kitchen drawn through a cooker canopy if fitted.
- 3.2 The LE155 / 250 Mk3 uses a high performance heat exchanger that recovers heat and uses it to temper the incoming fresh air. The unit is supplied assembled for right hand configuration but may be changed to left hand configuration.

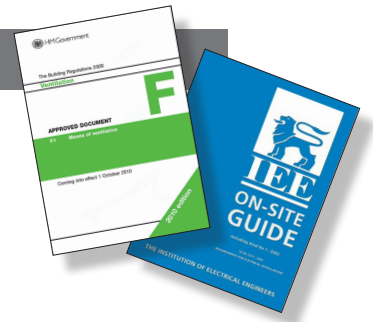
NOTE: For additional ancillary equipment (e.g. ducting, grilles, etc.), contact the Sales Dept. at Johnson & Starley Ltd.

4. BUILDING STANDARDS & REGULATIONS

4.1 BUILDING STANDARDS & INSTALLATION REGULATIONS

- Building Standards (Scotland Consolidation) Building Regulations
- Part F of the Building Regulations
- BS 5720 Mechanical Ventilation and Air Conditioning in Buildings
- BS 7671 Requirements for Electrical Installations. Wiring Regulations
- Institute of Electrical Engineers (IEE) Regulations
- Good Practice Guide 268

4.2 The design material specification and installation must only be carried out by “competent persons”.



5. SAFETY & ELECTRICAL INFORMATION

- 5.1 Ensure the mains supply voltage, frequency, number of phases and power rating comply with details on the rating label unit.
- 5.2 All wiring must be in accordance with the appropriate standards. The equipment must be provided with a local triple pole isolator switch.
- 5.3 Ensure safety regulations and practices are adhered to when installing and using this equipment.
- 5.4 Do not install this appliance where it is liable to be subject to water spray or where ducted air ambient temperature may exceed 40 °C.
- 5.5 When the unit is used to handle moist air, a suitable condensate trap and drainage system should be incorporated in the exhaust duct to ensure safe and healthy operating conditions as per the relevant standard.
- 5.6 DO NOT use this appliance where excessive moisture, excessive dust or fibres, grease or oil laden air is present.
- 5.7 When installing the unit, take care not to damage electrical or other hidden utilities.
- 5.8 Exhaust air must be vented to the outside.

IMPORTANT: It must be ensured that flue gases from fuel-burning equipment are not drawn into a living area. If any room where air is extracted contains a fuel burning appliance, such as a central heating boiler, then:

- a. its flue must be of the room sealed or balanced flue type, or,
- b. allowance must be made for an adequate supply of air into the room.

5.9 The fan motors are fitted with sealed for life bearings and therefore do not require lubrication.

6. ENERGY RATING ErP TECHNICAL DATA FICHE

Ecodesign energy-related products directive requires all appliances to be fully compliant with the ErP regulations. This will help the householder understand the energy efficiency within the home and help reduce energy consumption.

For further information about the ErP Directive, visit the Johnson and Starley Ltd website or email our helpline on erp@johnsonsandstarley.co.uk

EU Regulations No. 1233/2014 and implementing Directive 2009/123/EC & supplementing Directive 2010/30/EN.



TABLE 1. ErP TECHNICAL FICHE		LE155 Mk3			LE250 Mk3		
PRODUCT DATA	SYMBOL	VALUE					
Declared Typology	-	RVU Bidirectional					
Type of Drive Installed	-	Variable Drive					
Type of Heat Recovery System	-	Recuperative					
Thermal Efficiency of Heat Recovery	%	70		70			
Maximum Flow Rate	m ³ /h	199		241			
Electrical Power Input at Maximum Flow Rate	W	140		206			
Sound Power Level	L _{WA}	46		48			
Reference Flow Rate	m ³ /h	139		169			
Reference Pressure Difference	Pa	50		50			
SPI	W/m ³ /h	0.453		0.414			
		CONTROL FACTOR	TYOLOGY	CONTROL FACTOR	TYOLOGY		
Control Factor and Control Typology	-	0.85	Central Demand Control	0.85	Central Demand Control		
		INTERNAL	EXTERNAL	INTERNAL	EXTERNAL		
Declared Maximum Internal and External Leakage Rates	%	10	10	10	10		
Mixing Rate	-	-	-	-	-		
Position and Description of Filter Warning	-	-	-	-	-		
ADDITIONAL DATA		COLD	AVERAGE	WARM	COLD	AVERAGE	WARM
Annual Electricity Consumption	kWh	9.92	4.86	4.10	9.57	4.51	3.75
Annual Heating Saved	kWh	74.68	38.17	17.26	74.68	38.17	17.26
Specific Energy Consumption	kWh/m ² /a	-58.60	-27.16	-7.01	-59.49	-28.04	-7.89
SEC Class		A+	B	F	A+	B	F

TABLE 2.		TECHNICAL DATA			
Volts	V ~ Hz	230 V, 50Hz		230 V, 50Hz	
Input	W	100		100	
Fuse Rate	A	3 A		3 A	
Weight	kg	20.2			

7. POSITIONING & PREPARATION

7.1 POSITIONING

- 7.1.1 The unit is best installed wall mounted in a kitchen above a cooker hood, but if this is not practicable, it can be positioned in the loft or any suitable location.
- 7.1.2 It is not advisable to install the unit so that it is directly above a bedroom or living room ceiling, or in an area that is part of a living area or bedroom. If this is likely to cause a problem, please contact Johnson and Starley Ltd.
- 7.1.3 Consideration must be given to access for servicing, as servicing of the fans and cleaning of the heat exchanger, which should be carried out annually.

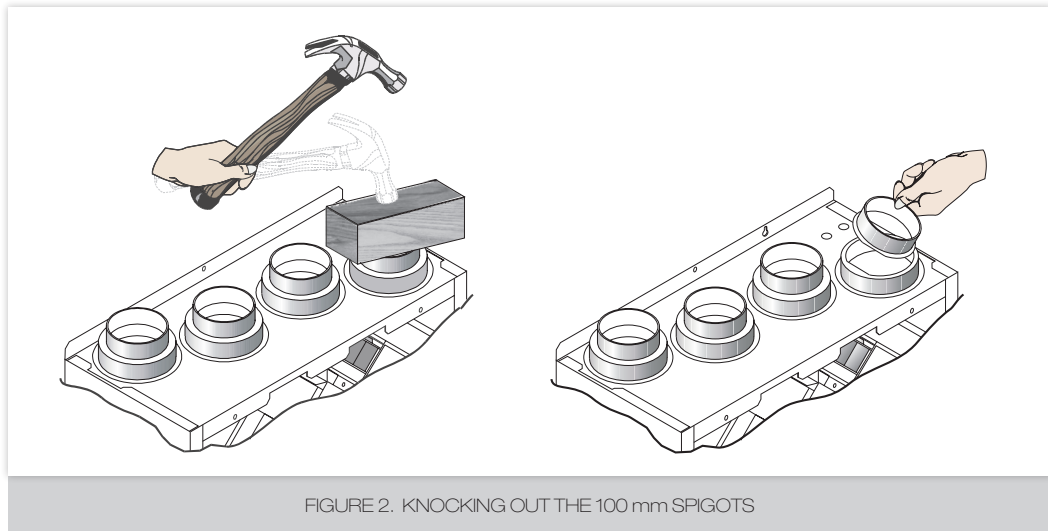
7.2 REMOTE SPEED CONTROL POSITION

- 7.2.1 The speed control is a remotely fitted control which can be fitted in a position of your choosing. The control is suitable for a single 32 mm deep back gang box which can be surface mounted. The front plate assembly can be fitted to an existing back box if required.
- 7.2.2 Remove the 2 screws securing the front plate assembly, and retain.
- 7.2.3 Follow the fitting instruction for the remote speed control.

7.3 PREPARATION OF SPIGOTS

- 7.3.1 The unit is supplied with 100 / 125 mm spigots and for satisfactory operation on the unit where the airflow rate is above 33 l/s (see performance curves on page 14), it is recommended that the centre part of the spigot is removed and 125 mm ducting used.
- 7.3.2 The centre part of the spigot can easily be removed by placing a flat piece of wood (or similar) over the centre part and applying a sharp tap with a hammer (see Figure 2).

NOTE: In situations where it is either not possible or not desirable to use 125 mm ducting, 100 mm ducting can be used but it **MUST** be noted, in "BOOST" mode might increase noise levels.



7.4 GENERAL PREPARATION

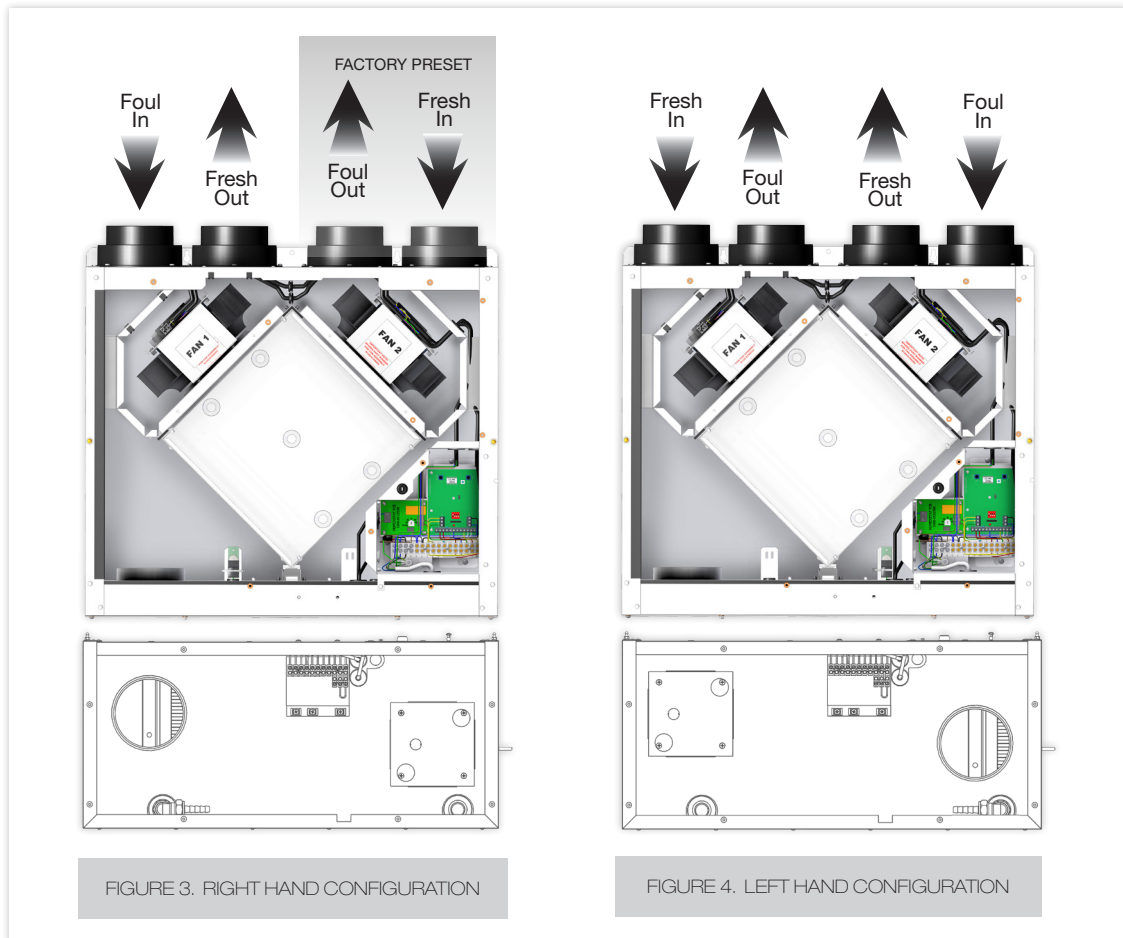
- 7.4.1 With reference to Figures 3 & 4, decide whether the unit is to be installed in the right or left handed configuration. If the handing of the unit is to be changed, proceed as follows:
 - a. Remove the 8 screws securing the blanking cover on the base tray. Remove the front cover then remove front sealing plate.
 - b. Alter wiring according to the circuit diagram (see Figure 9)
 - c. Swap the positions of the condensate drain blanking grommet, and the condensate drain elbow fitting complete with plastic washers.
 - d. Access to the drain elbow nut may be gained through the extract aperture.
 - e. Replace the sealing plate, front door and base tray.

7.5 CONDENSATE

IMPORTANT: At times the unit might produce condensate which **MUST** be drained away. The unit is provided with a drain elbow allowing a condensate drain hose with a 10 mm bore to be push connected.

- 7.5.1 The drain pipe, which must have a continuous minimum fall of 6 mm per 1 m run, can either be chased into the wall or run downwards from the unit, to terminate outside the building into the nearest drain or gutter.
- 7.5.2 In some instances, a condensate connecting point will already be provided as part of the building design. The position of this point, relative to where the heat recovery unit is to be installed, is to be checked for any appreciable connection misalignment and necessary adjustment made before proceeding any further.
- 7.5.3 Decide from which exit the condensate drain pipe is to be connected and remove the knockout from the appropriate side panel. If necessary, loosen the condensate elbow fitting, rotate it to face the knockout hole and re-tighten.

NOTE: The LE155 / 250 Mk3 unit is pre-configured for drainage from the left hand lower exit.



8. MOUNTING & INSTALLATION

- 8.1 Hang the unit onto the two top wall fixings. Mark through, drill and plug the remaining fixing holes.
- 8.2 Referring to Figure 5, determine the method to be used and make the condensate drain pipe connection to the unit.
- 8.3 Secure the unit to the wall, using washers under the screw heads if necessary, and complete the condensate drain system.
- 8.4 Fit the blanking plate to the base of the unit and secure using 8 screws provided.

8.5 WALL MOUNTED WITH SLIMLINE COOKER HOOD

NOTE: Refer to the Instructions provided with the Slimline Cooker Hood

8.5.1 Referring to Paragraph 4.1.1 and Figure 6, determine the height (H) of the cooker hood from the cooker top. Mark the base datum line for the Heat Recovery unit at H + 50 mm.

8.5.2 Position the HR unit such that the base of the unit aligns with the base datum previously marked and mark the position of the 2 x keyhole fixing points. Remove the HR unit.

NOTE: It is important that the unit is mounted perfectly horizontally, in order that the condensate drain shall function effectively.

8.5.3 Drill and plug the 2 x fixing holes and secure the Heat Recovery unit to the wall using suitable screws (not provided).

NOTE: For wall types other than masonry, prepare the wall to suit a purpose made fixing.

8.5.4 Referring to Figure 1, remove the front decor panel and gain access to the electrical panel by removing the electrical panel cover.

8.5.5 Referring to the Installation and User Instructions, fit the CHW or CHS Cooker Hood to the underside of the HR unit.

8.5.6 Referring to Figure 8, connect the canopy electrical cable as follows:
Brown connector to Terminal Block "BN",
Blue connector to Terminal Block terminal marked "BL",
Green/Yellow connector to the common Earth Point.

8.5.7 Refit the electrical panel cover and decor panel to the heat recovery unit.

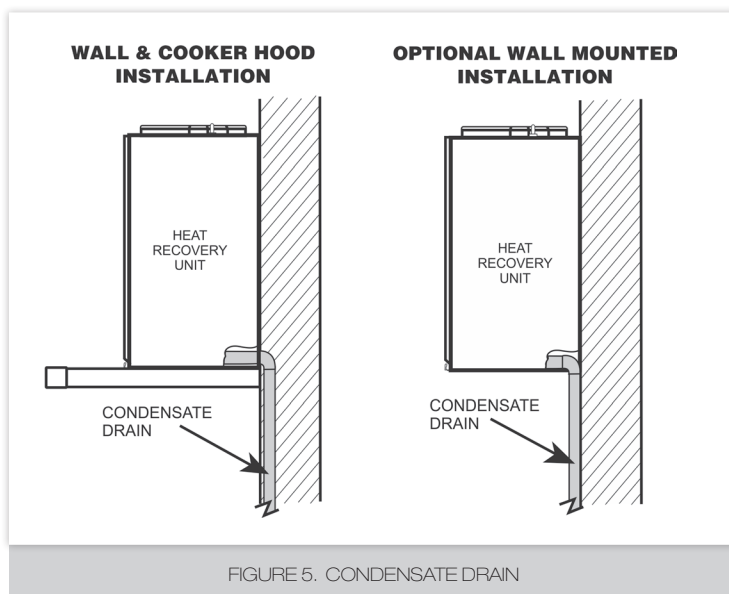
8.6 MOUNTING IN A LOFT

Mounting Kit MK150 is required for loft applications. These instructions are to be read in conjunction with those supplied with MK150.

8.6.1 Connect the drainage hose to the condensate drain connection (see paragraph 4.5.1 for minimum fall) and ensure that steps are taken to minimise the risk of mechanical damage to the drainage pipework. Run the pipe internally as far as possible and insulate to protect against freezing.

8.6.2 The drain pipe must terminate outside of the building and must be run as near vertical as possible into the nearest drain or gutter.

IMPORTANT: There must be a sufficiently large visible gap between the condensate drain pipe termination and the collection point, to prevent ice build-up.



9. DUCT & DUCT CONNECTIONS

(Refer to design drawing)

- 9.1 Four 100 / 125 mm nominal diameter spigots are provided for connection of the ducting. These must be connected to the supply and exhaust ducts according to left or right hand configuration (refer to Figures 4 & 5).
- NOTE:** Flexible or rigid ducting may be used, but must fit OVER the spigots. If 125 mm ducting is used, the 100 mm section MUST be removed.
- NOTE:** Where the dwelling is assessed using SAP Appendix Q, flexible duct is not to be used except for final connections.
- 9.2 Where ducts are exposed in unheated areas, they must all be insulated with at least 25 mm of polyurethane foam or equivalent, except for the exhaust duct from the unit to the atmosphere.
- 9.3 The duct layout must be designed to suit the requirements of the ventilation / recovery system and building layout, and suitable fire dampers MUST BE FITTED to protect against fire being transmitted through the ducting.
- 9.4 Where rigid ducting is used, it should be installed using the least number of fittings to minimise resistance to air flow. Where possible, final connection to grilles and the unit should be made with a flexible connection.
- 9.5 Where flexible ducts are used, ensure that:
- 9.5.1 ducting lengths are kept to minimum;
 - 9.5.2 ducting is stretched so that it is smooth and straight;
 - 9.5.3 where bends are necessary, their radius is as large as possible to avoid sharp corners;
 - 9.5.4 where ducting is run in restricted areas, the ducting is not crushed.
- 9.6 The inlet for the fresh air supply can be direct from outside or from within a ventilated roof space. If the supply is direct from outside, it must have an external wall baffle fitted if supplied through a wall, or a recognised roof terminal if supplied through a roof.
- 9.7 The exhaust air must exit to outside through either a wall or a roof and must be protected by a wall baffle or recognised roof terminal.
- 9.8 Kitchen extracts must be filtered.



10. ELECTRICAL

WARNING: THIS APPLIANCE MUST BE EARTHED. ALL WIRING MUST CONFORM TO INSTITUTE OF ELECTRICAL ENGINEERS (IEE) REGULATIONS (CURRENT EDITION)

- 10.1 The unit is suitable for a 230 V, 50 Hz single phase supply fused at 3 A.
- 10.2 The unit is supplied with a mains flexible cord (PVC sheathed, 4-core black brown, blue & green/yellow 0.75 mm² to BS 6500) connected to a terminal block and exiting through a grommet and cable clamp at the right hand top of the unit.

NOTE: If no external switched line is to be used, black wire is not connected.

- 10.3 A fused spur, or double pole switch having a minimum contact separation of 3.0 mm, must be used to provide isolation for the unit.
- 10.4 Unit is fitted with 20 mm time lag fuse.

IMPORTANT: If the unit is required opposite hand to that supplied, then the YELLOW leads to terminal 7 & 8 must be swapped. And likewise with the white leads on terminals 10 & 11.

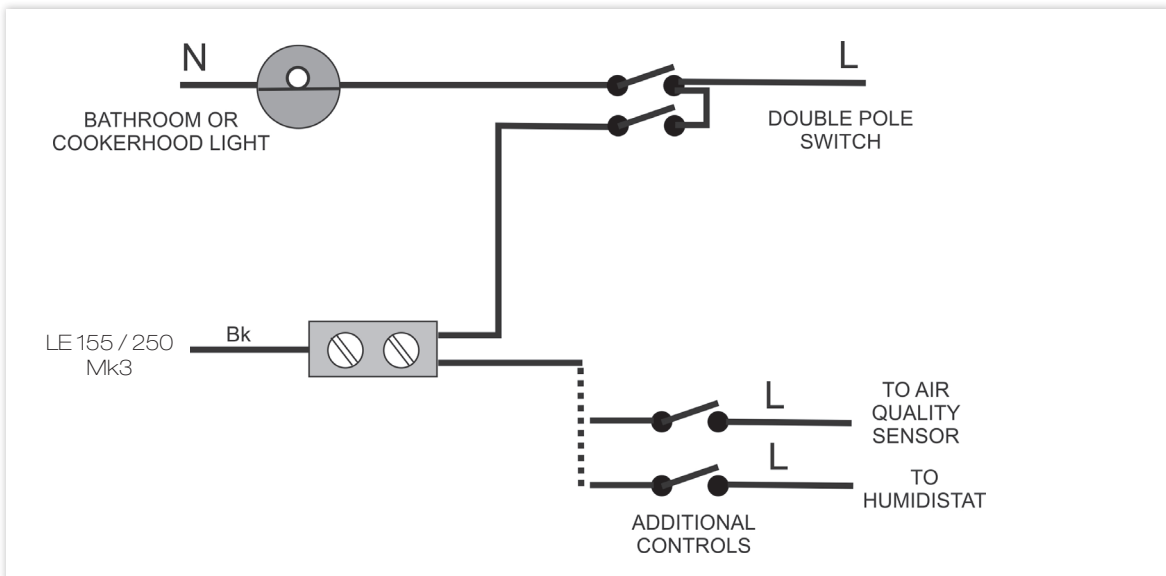


FIGURE 7. CIRCUIT DIAGRAM FOR BOOST SPEED CONTROL

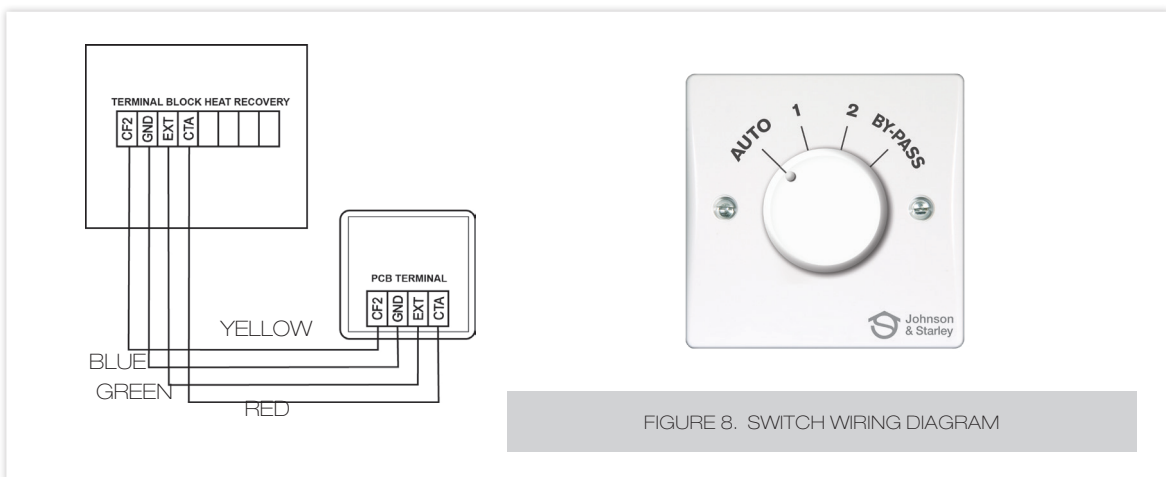
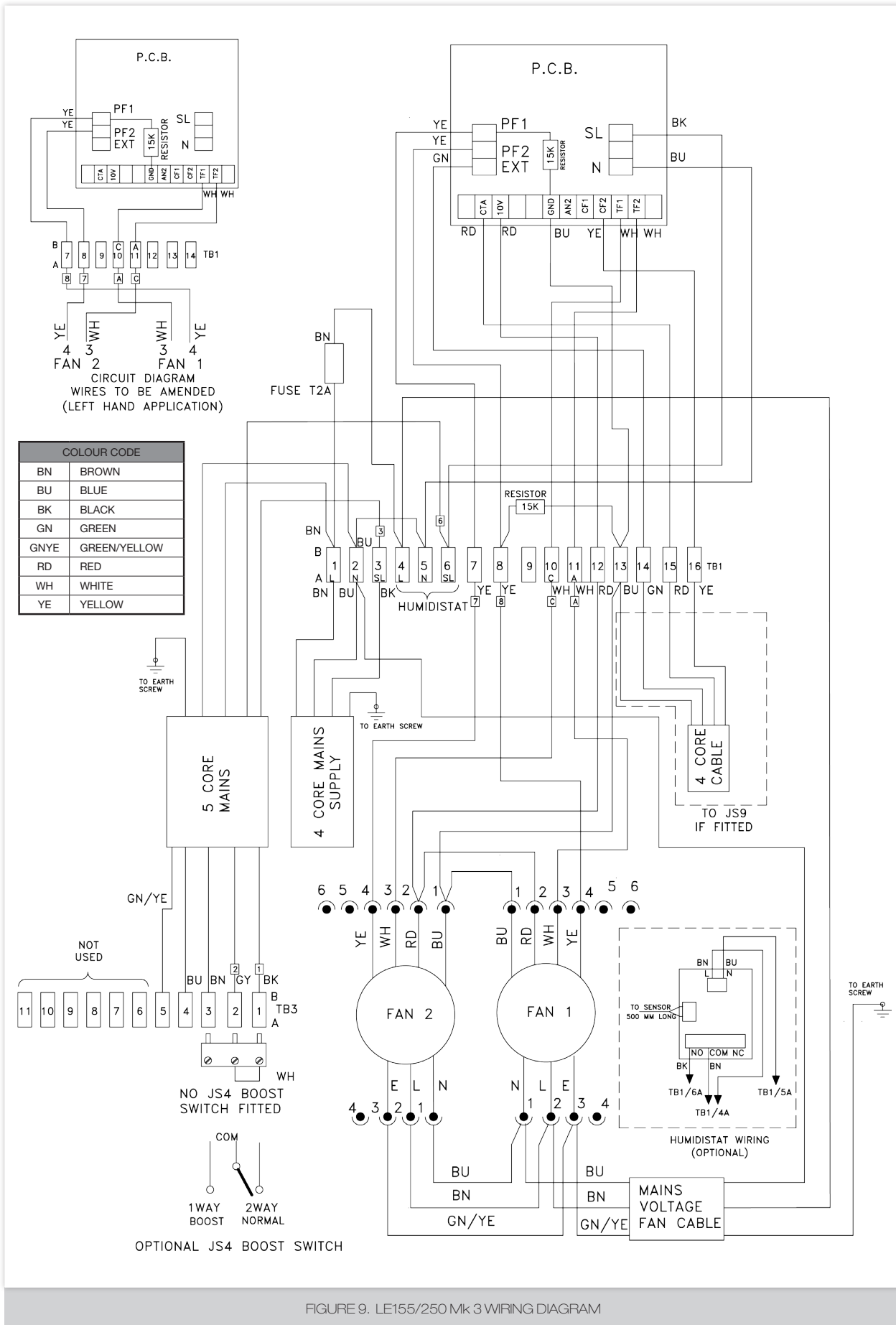


FIGURE 8. SWITCH WIRING DIAGRAM

11. WIRING DIAGRAM



12. COMMISSIONING

- 12.1 The unit operates by extracting warm, stale air from kitchens, toilets / bathrooms, etc, passing it through a heat exchanger and out to atmosphere. A second fan draws in cool fresh air and passes it through the same heat exchanger where it absorbs heat from the outgoing stale air.
- 12.2 The unit must be set up as detailed in section 10.3, so that the NORMAL setting on the fan speed control enables the INLET fan to deliver the designed volume airflow. The switching from NORMAL to BOOST allows the unit to extract at a greater rate to cope with any increase in the build-up of condensation or foul air, e.g. when cooking, etc.
- 12.3 Before commencing the commissioning procedure, refer to the design drawing for correct air flows.

NOTE: Extract air and supply air volumes will not always be equal, therefore, when setting up, the extract system should be the datum.

- 12.3.1 Ensure that the exhaust and supply grilles or valves are open and the minimum setting is on "0" (A).
- 12.3.2 Check the airflows at the grilles or valves, and adjust to suit the design figures by turning the centre of the grille clockwise to decrease the airflow, and anti-clockwise to increase the airflow.

12.4 PRE-COMMISSIONING CHECK

NOTE: Extract air and supply air volumes will not always be equal, therefore, when setting up, the extract system should be the datum.

- 12.4.1 Ensure that the exhaust and supply grilles or valves are open.
- 12.4.2 Check the airflow at the grilles or valves, and adjust to suit the design figures.

12.5 FAN ADJUSTMENT FOR EXTRACT FROM WET ROOMS

At the start of any fan adjustment, you MUST check the trickle airflow rate and boost airflow rate before commencing.

12.6 INSTALLER MODE

NOTE: The install mode has a time out function. If the unit has been powered up but not commissioned within 3 hours, then you will not be able to access the installer mode without first turning the power supply off for 20 seconds and then back on again.

This function is there to allow for situations where the unit is not taken out of installer mode.

- 12.6.1 To activate "Installer Mode", isolate the electrical supply, wait 20 seconds and reconnect.
- 12.6.2 When installer mode is ready, the red LED indicator will start flashing every second. Now extract and supply fans can be adjusted.
- 12.6.3 To set trickle, see paragraph 12.7.
- 12.6.4 To set boost, see paragraph 12.8.
- 12.6.5 Once both settings are correct, press installer mode switch.
- 12.6.6 When out of installer mode, the Red LED will stop flashing.

NOTE: When switch live is OFF, there is no switch live present.
When switch live is ON, switch live is present.

12.7 TRICKLE AIRFLOW ADJUSTMENT ONLY

- 12.7.1 To adjust TRICKLE airflow the switch live should be OFF and set JS9 switch to AUTO if fitted.



NOTE: During the adjustment, do not put switch live ON at any point.

- 12.7.2 Put unit into installer mode.
- 12.7.3 To adjust the TRICKLE setting, turn RV1 (extract fan) and RV2 (supply air fan) clockwise to increase the airflow rate and anti-clockwise to decrease the airflow rate. See Figure 10.

- 12.7.4 When it is set to the desired airflow rate, take the unit out of installer mode. Red LED will stop flashing.

12.8 BOOST AIRFLOW ADJUSTMENT ONLY

- 12.5.1 To adjust BOOST airflow the switch live should be ON.

NOTE: During the adjustment, do not switch OFF the switch live at any point.

- 12.8.2 To adjust the BOOST setting, turn RV1 (extract fan). In default mode only the extract fan will boost.
- 12.8.3 When it is set to the desired setting, take the unit out of installation mode. Red LED will stop flashing.

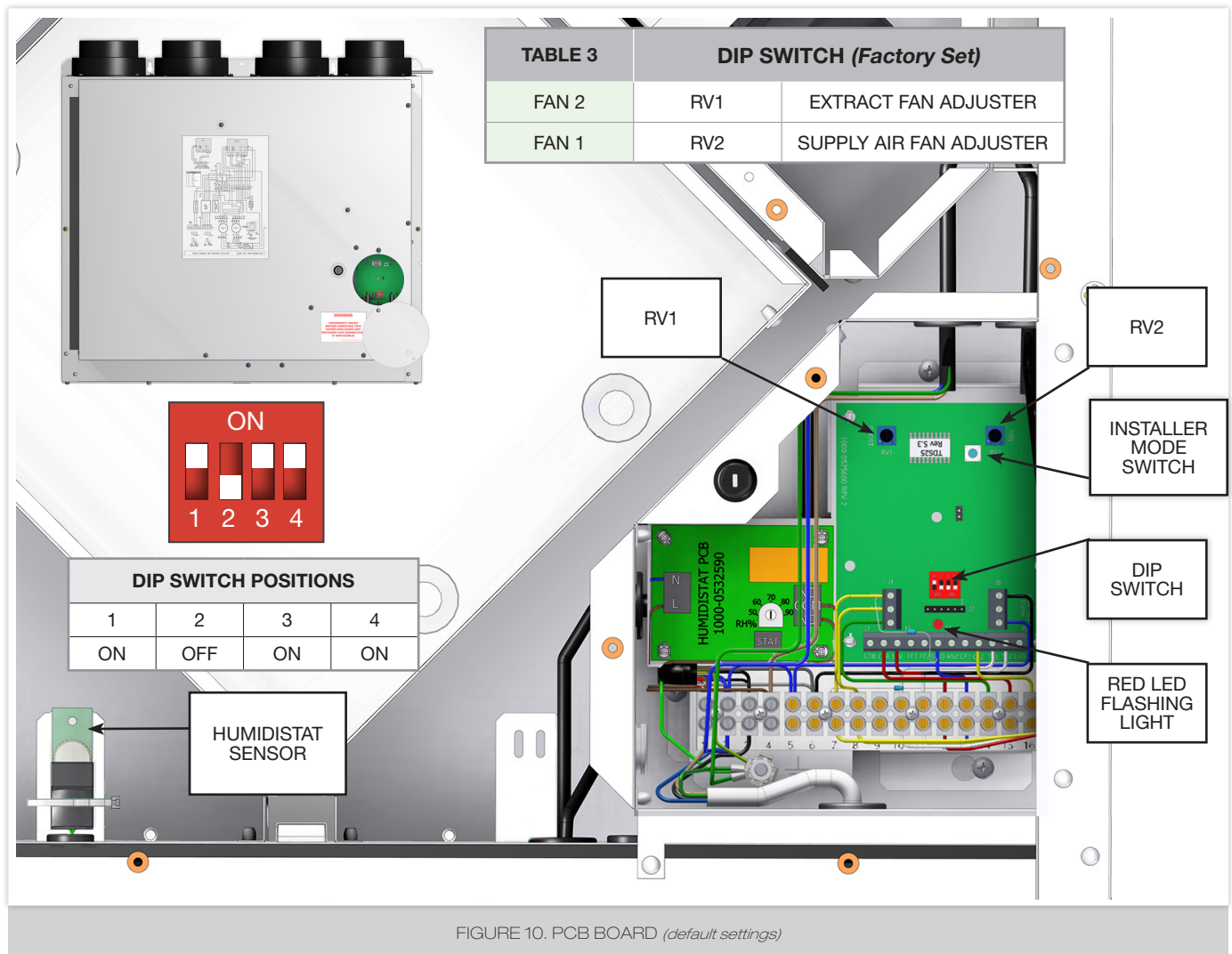


FIGURE 10. PCB BOARD (default settings)

12.9 BOOST AIRFLOW WITH JS9 SWITCH & NO SWITCH LIVE FITTED

- 12.9.1 Set the JS9 switch to position 1.
- 12.9.2 Remove the cover of the JS9 switch.
- 12.6.3 Adjust potentiometer RV1 to set the required airflow. See Figure 9.
- 12.6.4 On a larger premises, when the required airflow has not been reached, set JS9 to position 2 and adjust potentiometer RV2 until the required airflow is reached.

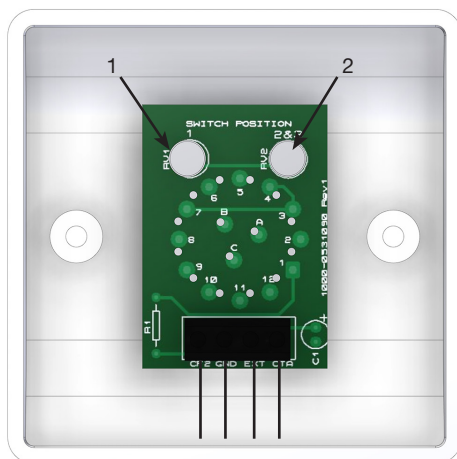


FIGURE 11. POTENTIOMETERS ON REVERSE OF SWITCH COVER

12.10 SETTING SPEED POSITIONS 1 & 2



- 12.10.1 Ensure unit is out of installer mode and switch live is OFF.
- 12.10.2 After setting the required airflows in auto mode turn the switch to position 1.
- 12.10.3 Rotate the potentiometer 1 (RV1 on reverse side of the switch) to the required position to provide the required airflow.
- 12.10.4 Turn switch to position 2.
- 12.10.5 Rotate the potentiometer 2 (RV2 on the reverse side of the switch) to the required position to provide the required airflow.



NOTE: In manual modes 1 & 2, if the switch live is turned ON, both fans turn to the setting which was set in the auto mode.

12.11 BYPASS POSITION 3



- 12.11.1** In warm weather, in order to reduce the effectiveness of the heat recovery switch to bypass mode, the JS9 switch setting BYPASS reduces the supply fan to the minimum set commissioning speed. The extract fan increases to maximum set boost speed.

12.12 BOOST ON DELAY

To set boost on delay for 2 minutes, set dip switch 3 to off.

12.13 OVERRUN

Boost overrun time can be set by linking JP1 with link provided. The time can then be adjusted using RV1 (0 - 30 minutes).

12.14 HUMIDISTAT (OPTIONAL)

- 12.14.1 The Humidistat control boosts the airflow of the unit. It is triggered by a sensor located within the MVHR System.
- 12.14.2 It is factory set for a nominal 70% RH.
- 12.14.3 The Humidistat is adjustable and can be carried out by rotating the potentiometer on the control board.
- 12.14.4 Turn anti-clockwise to lower the set point and clockwise to increase the set point.

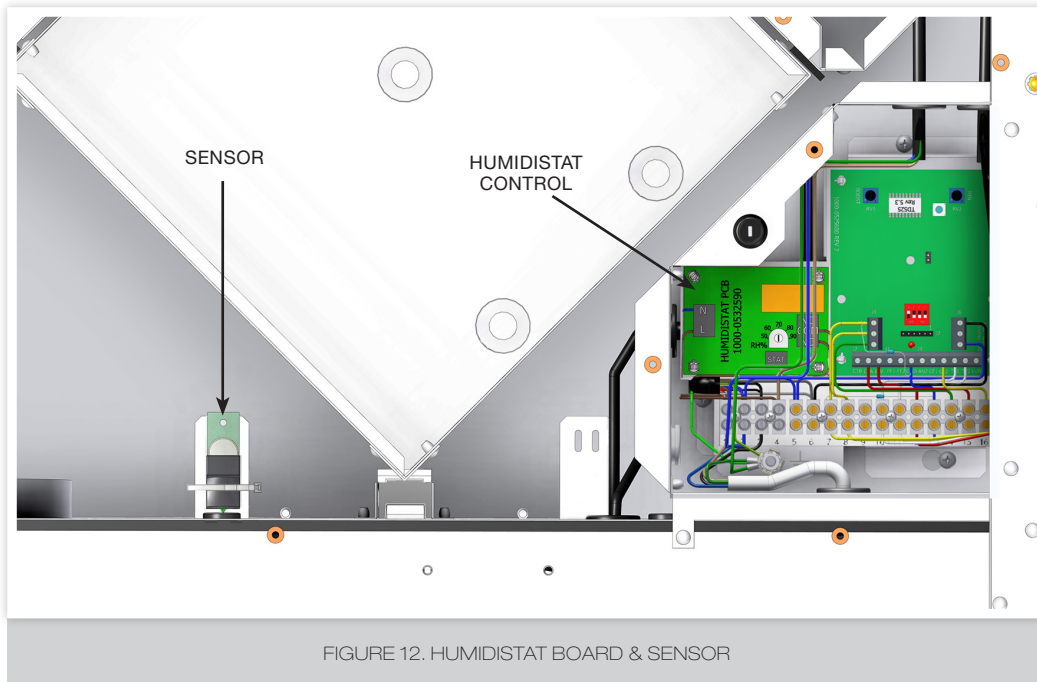


FIGURE 12. HUMIDISTAT BOARD & SENSOR

13. FAN PERFORMANCE GRAPHS

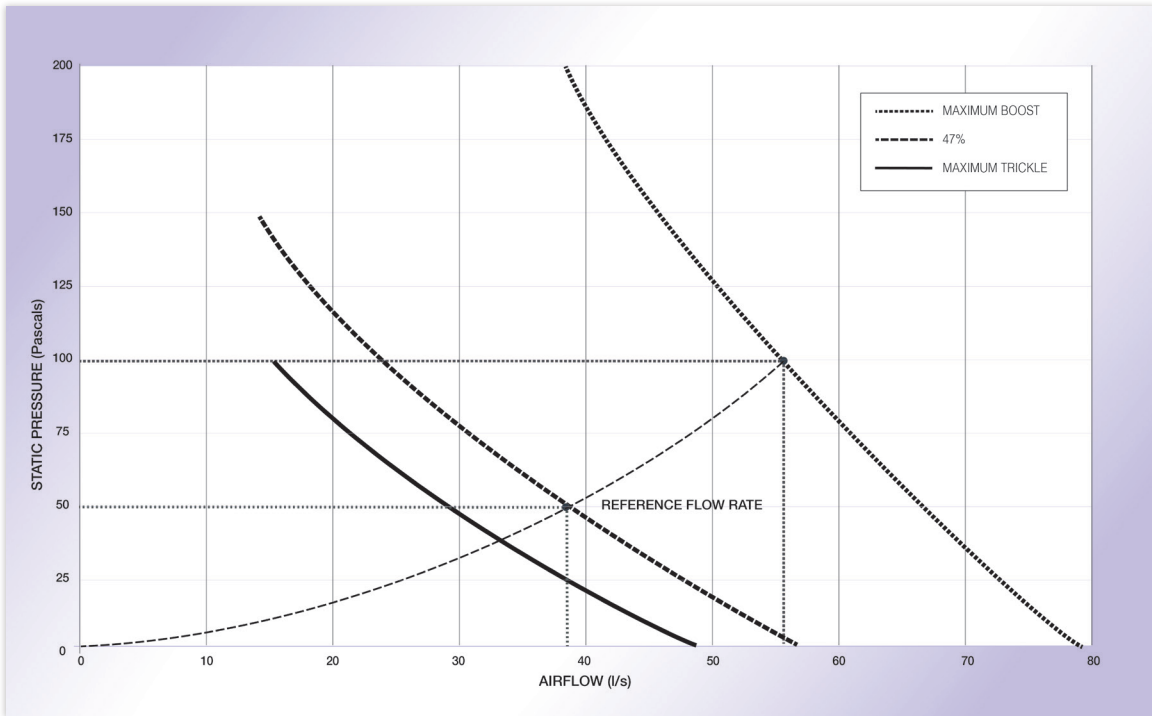


FIGURE 13. LE155 Mk3 FAN PERFORMANCE GRAPH

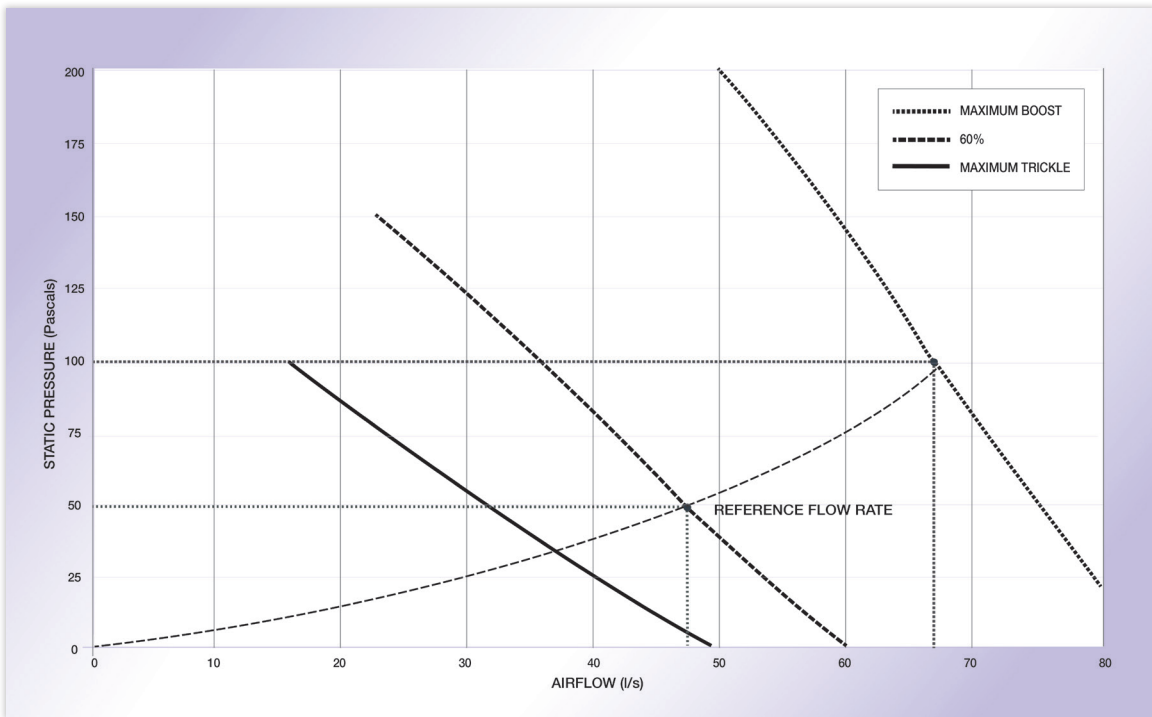


FIGURE 14. LE250 Mk3 FAN PERFORMANCE GRAPH

14. SERVICING & MAINTENANCE

IMPORTANT: Before commencing any servicing or component replacement, ensure the ELECTRICAL SUPPLY to the unit is ISOLATED.

Cleaning of the extract and supply fans and heat exchanger is required annually. Kitchen extract may require cleaning more frequently. Clean in accordance with their relevant instructions.

14.1 HEAT EXCHANGER REMOVAL AND SERVICING

14.1.1 Remove the front decor panel. Release the 8 screws securing the sealing cover, and remove the sealing cover, taking care to avoid damage to the gasket.

14.1.2 Withdraw the heat exchanger by pulling on the strap and remove the heat exchanger from the unit, taking care to avoid damaging the heat exchanger air passages.

14.1.3 Check all the air passages are free from obstruction. If not, clean by washing in a soapy solution, or with a light brush.

NOTE: Under no circumstance must any sharp implement, that is likely to distort or puncture the air passage walls, be used.

14.1.4 Refitment or replacement is in reverse order.



FIGURE 15. SEALING DOOR REMOVAL

14.2 FAN ASSEMBLY REMOVAL AND SERVICING

14.2.1 Referring to section 14.1, remove the heat exchanger.

14.2.2 Disconnect the wiring from the electrical panel to the fan, at the fan connectors.

14.2.3 Release the 4 screws (using a torx screw driver) securing the fan assembly to the heat exchanger compartment, and withdraw the fan assembly.

14.2.4 Remove all dust etc. from both the impeller and the motor, taking care not to disturb the balance of the fan.

14.2.5 Refitment or replacement is in reverse order.



FIGURE 16. HEAT EXCHANGER REMOVAL

14.3 SYSTEM MAINTENANCE

14.3.1 Clean any in-line filter that may be fitted in accordance with the filter's instructions.

14.3.2 Clean the kitchen extract grille filter (if fitted) by washing in a soap solution.

14.3.3 Clean the filter in the cooker hood (if fitted) in accordance with the instructions provided with the cooker hood.



TORX SCREWS



FIGURE 17. FAN REMOVAL

15. TROUBLESHOOTING

JS9/10 SWITCH NOT WORKING

Make sure there is no mains across TB1 2 & 6 i.e. No switched live & unit is not in installer mode (LED indicator should not be flashing)

Switch 1 of dip switch should be in the on position.

ONE ← Rotate switch from auto to 2. Do fans speed up? → BOTH

If fans not speeding up on position one only then preset RV1 on the rear of switches requires adjusting.

NO
On the switch check voltage across GND and CTA. Is the voltage approximately 5 V DC?

NO → 5 V DC is supplied from CTA & GND of PCB Via TB1 13 & 15. Check connections and cables for an open circuit, insulations clamped, etc.

YES
On the switch, check voltage between GND and EXT. Is the voltage between 2.4 and 5 V DC depending on RV2 setting?

YES → 2.4 and 5 V DC (depending on RV2 setting) has to go to is EXT & GND of PCB Via TB1 14 & 13. Check connections and cables for an open circuit, insulations clamped, etc.

NO
Either Switch or PCB is faulty or a short between EXT and GND. Remove EXT wire and recheck voltage.

If voltage goes up then check wiring for shorts.

Check PCB by linking TB1 14 to TB 15
If PCB is working then fans will run at full speed.

ONE OR BOTH FANS NOT BOOSTING

One or both fan/s not boosting when both are required to boost?

ONE → One fan running

→ Make sure switch 4 of dip switch in the off position as that will prevent supply fan from boosting.

BOTH

With bathroom light or boost switch on: Is there mains present across terminal block 2 & 6 also across SL & N on right side of PCB?

NO → Open circuit between switched live source e.g. bathroom light switch and the blue and black wires going into the right hand side vertical terminal block of main PCB. Make sure link is connected on underside TB3 1 & 2

YES
Is switch 3 of dip switch in the on position?

NO → If in off position there will be a 2 minute delay before fan/s will boost.

YES
Remove mains, wait 20 seconds and reconnect mains.

→ With switched live still enabled - After 10 seconds press installer button.

Is the voltage at least 9 to 10 V?

→ Carefully turn RV1 fully clock wise. Measure DC voltage across TB1 7 & 13

YES
A fan with 9 to 10 V across TB1 7 & 13 (GND) should be running at full speed. If not, replace fan.

NO → Faulty PCB as it's not detecting switched live is present across N and SL terminals.

FANS NOT RUNNING

Is there 230 V AC present across TB2 & 4?

NO → Only one fan running.

YES → Remove yellow of affected fan, labelled 7 or 8 and touch 10 V terminal screw on PCB Does fan now run at a fast speed?

NO → Check fuse & fuse spur for mains.

YES → Is there 10 V present across TB1 12 & TB21 13?

YES → Faulty Main PCB

NO → Either faulty fan or connector. Physically swap fans to determine what the issue is.

YES → Either faulty PCB faulty or wires between terminal block 1 and PF1 or PF2 of PCB. There should be at least 1 V DC present on PF1 or PF2. If not replace PCB.

NO → Remove red wire from TB1 12 Does 10 V return to TB12A?

YES → Faulty Main PCB

NO → Remove mains cover. Is there mains going to the fans connectors?

NO → Remove mains supply & check continuity from the fan connectors to PCB. Check screws are tight and not trapping wire insulation.

YES → Is there 10 V DC across blue & red of fan connector of either fan

NO → One fan could be dragging 10 V DC line down. Unplug a fan at a time and see is 10 V line is restored. If so the unplugged fan is faulty. Both fans could have been damaged if unable to establish 10 V.

YES → Remove mains supply & check continuity from the fan connectors to PCB. Check screws are tight and not trapping wire insulation.

16. DIMENSIONS

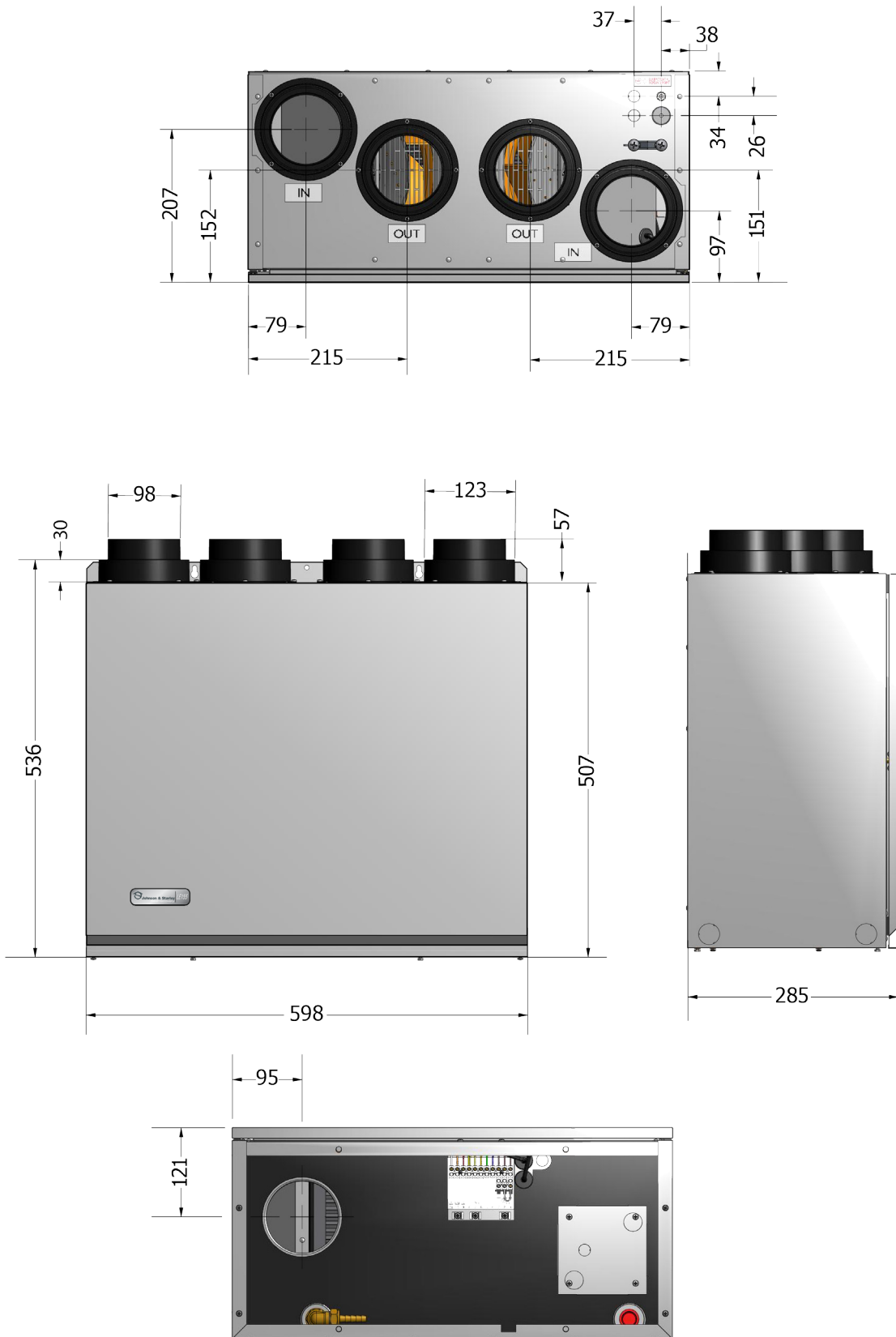


FIGURE 18. LE Mk3 DIMENSIONS

17. EXPLODED DIAGRAM

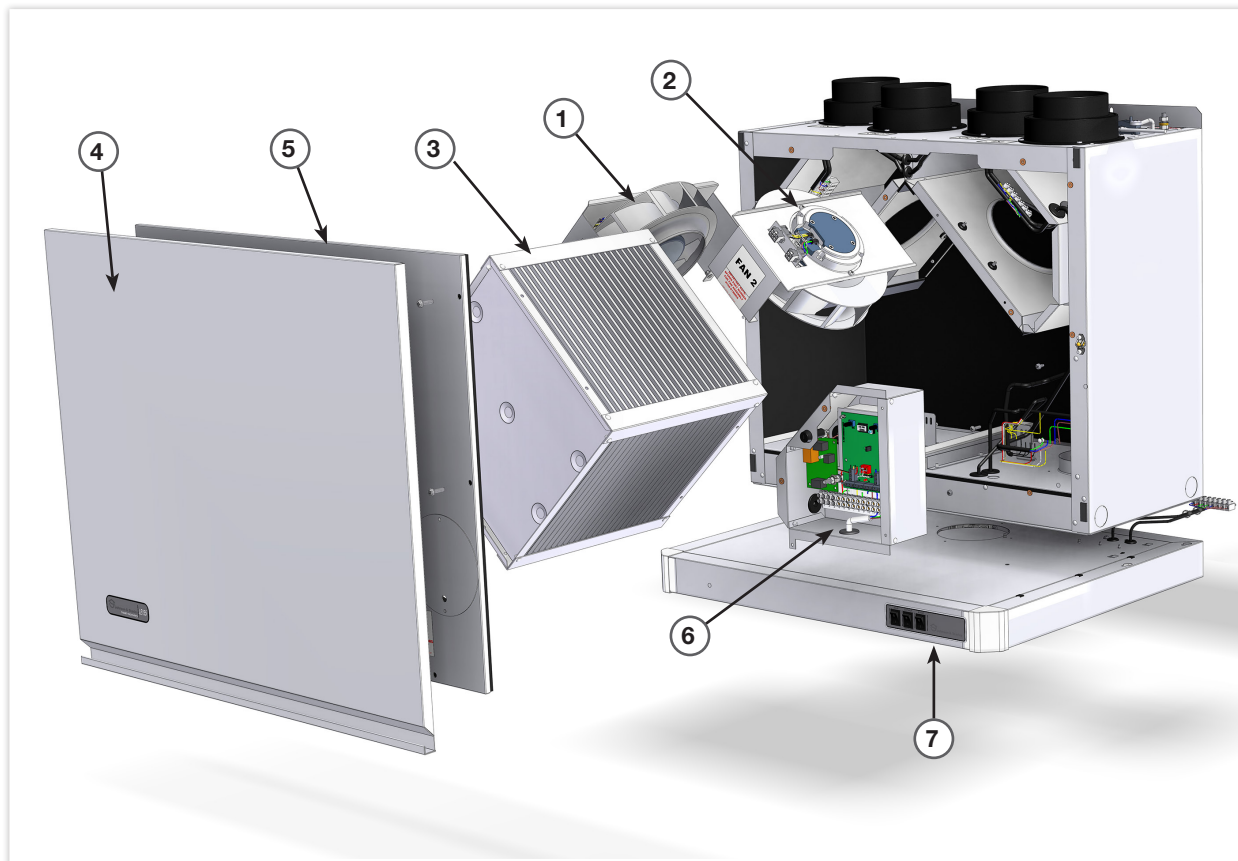


FIGURE 19. LE Mk3 EXPLODED DIAGRAM

18. SPARES LIST

ITEM	DESCRIPTION	LE155 Mk3	LE250 Mk3	QTY
1	Extract Air Circulating Fan	H160-0199005	LE260-0198005	1
2	Supply Air Circulating Fan	H160-0199005	LE260-0198005	1
3	Heat Exchanger	1000-0300175		1
4	Front Decor Panel	H250-0210005		1
5	Sealing Plate Assembly	H155-0197005		1
6	Electronic Module	H163-0220000		1
7	Slimline Cooker Hood (<i>not supplied</i>)	CHW-S		1



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