

SKYPOD Roof Extract Units

Installation, Operation and Maintenance Manual

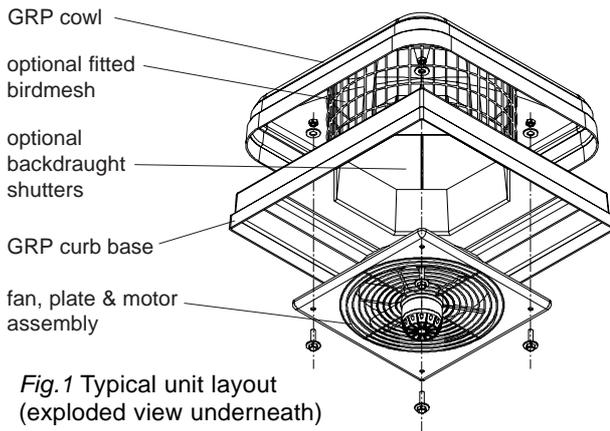


Fig.1 Typical unit layout (exploded view underneath)

IMPORTANT This manual must be read in full before installation, operation and maintenance of the unit/s supplied

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1 Introduction

The Skypod series is a range of axial fan roof extract units, with duties up to 4.5m³/s. Suitable for curb and profile sheet mounting, available in both low silhouette side extract and vertical discharge configurations. A roof terminal unit without fan is also available. The standard operating temperature of the unit is -10 to +50°C.

For further technical details contact VES on **08448 15 60 60**, quoting the sales order (SO) number and the unit type as found on the unit nameplate or visit www.ves.co.uk.

2 Receipt of Goods

Immediately upon receipt of goods, check for possible damage in transit, paying particular attention to fan impellers and motors. Prior to installation please check to ensure smooth rotation of the impeller after transit. Also check to ensure that any ancillary items are included. These will normally be supplied fitted or taped to the unit (in the case of small items).

In the event of any damage having occurred or if any item found to be missing, it is essential to inform VES Andover Ltd. within **3 working days** of delivery quoting sales order (SO) number and the unit type as found on the unit nameplate. After this period we will be unable to accept any claim for damaged or missing goods.

3 Installation

The entire system must be considered for safety purposes and it is the responsibility of the installer to ensure that all of the equipment is installed in compliance with the manufacturer's recommendations, with due regard to the current HEALTH AND SAFETY AT WORK ACT and conforms to all relevant statutory regulations. Where a unit is installed so that a failure of components could result in injury to personnel, precautions should be taken to prevent such an injury.

IMPORTANT Only experienced fitters should undertake this work. Take necessary safety precautions when working in elevated positions

When provided, the appropriate lifting lugs should be used and lifted using spreaders, taking into account the weight of the unit. The lifting gear should be arranged so as not to bear on the casework. The lifting lugs may be removed after installation if required. It is recommended that a bird guard mesh is fitted for safety reasons.

It is the installer's responsibility to ensure that, so far as is reasonably practicable, unit access is not obstructed in any way and safe working access for maintenance must be provided. Consideration must be given by the installer for adequate illumination of the unit location in order for safe maintenance.

Units with curb base mounting:

The Skypod is designed to sit on top of a prepared roof upstand, for further dimensional details refer to the unit outline drawing. Note: In some circumstances the fan fixing bolts may rest on the timber upstand, where necessary trim the upstand to suit to ensure correct seating.

We recommend that each unit be fixed to the upstand with coach screws or similar, through the side of curb base into the timber upstand see fig.2. This is especially important as strong winds could be encountered in exposed locations.

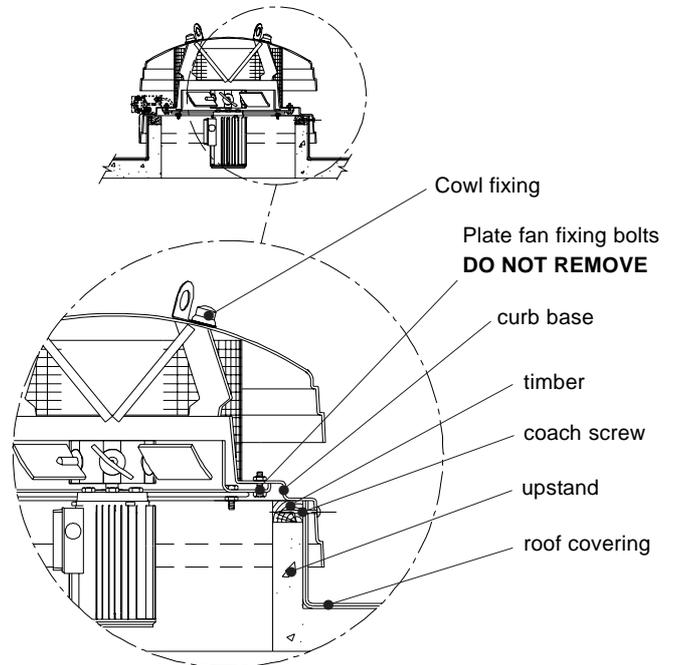


Fig.2 Typical curb base detail (SKC unit shown)

Units with soaker sheet base mounting:

Before cutting into the roof ensure that the correct profile base has been purchased. All roof apertures must be independently supported by structural trimmers in accordance with local building regulations, in order to protect plant weight, and to support any service personnel.

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3 Installation *continued*

The Skypod unit complete with soaker sheet is designed for sloping roofs only, to a maximum pitch of 30°. We recommend that each unit be supported by and fixed to a purlin box, using the appropriate fixings (supplied by others), through the top of the curb base and fan plate (see *fig. 3*). In some circumstances the fan fixing bolts may rest on the trim around the top of the purlin box upstand. Cut and trim this to suit, to ensure the unit is correctly seated. This installation may require more than one engineer as access to both the roof and ventilated area may be required. The soaker sheet acts as flashing to ensure weather proofing.

It may not always be possible to install the unit in its optimum position, however the following should be considered when positioning the unit:

If locating roof units in roof lights, trimmer supports are essential. Care should be taken to avoid siting units directly above tie bars or purlins as this may obstruct the fan and reduce the unit performance.

IMPORTANT !
 When the unit is fitted to corrugated roofs, the unit must sit central to any one sheet and not where two sheets join together to ensure there is adequate support for the unit.

On existing roofs we recommend that the top edge of the soaker sheet be installed under the ridge capping, however good weather proofing can also be achieved further down the roof provided the soaker sheet top edge tucks under the existing roof panel. For structural support a purlin box should be used, and trimmers fitted between the purlins to support the assembly. For tiled roofs, the soaker sheet should be appropriately flashed as you would a chimney so as to ensure good weatherproofing.

On metal decking roofs it is often impractical and unwise to attempt to lift the roofing sheets and install the roof unit as described above. In these circumstances we recommend that a sufficiently sized hole be cut in the required location for the roof unit and the unit be supported and fixed into position as above.

Once in position a cover sheet can be run from the apex (under the ridge capping), down to and just overlapping the edge of the unit soaker sheet, to ensure weatherproofing (see *fig.4*).

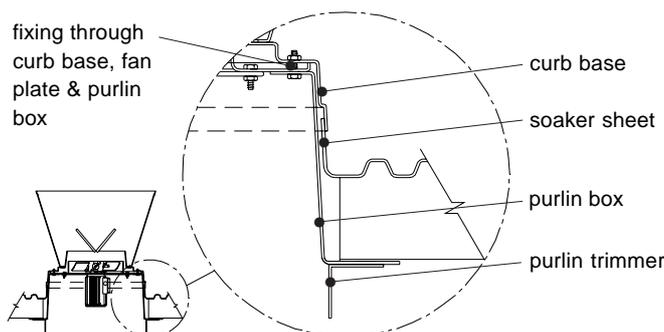


Fig.3 Typical profile roof detail (SKV unit shown)

Ideal location

Where possible site the roof unit with the top edge of the soaker sheet placed under the ridge capping.

If a lower position is required tuck top edge of soaker sheet under desired roof panel to ensure weatherproofing.

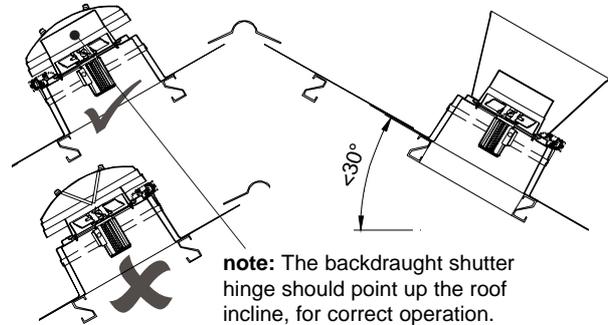


Fig.4 Recommended soaker sheet installation

3 Wiring

The Skypod series contain an axial plate fan, acting as extract roof units.

All electrical connections to any unit must be carried out in accordance with the current edition of the I.E.E REGULATIONS and only competent electricians should be allowed to affect any electrical work to our units.

IMPORTANT !
 Do not connect any unit to an electrical supply voltage outside of that indicated on the motor nameplate

If an optional isolator is fitted make the appropriate electrical connection as shown in *fig 13* using a suitable weatherproof gland (supplied by others) and the appropriate knockout in the isolator. Should the installation require a supply from within the building a pre-punched hole in the isolator plate and fan have been provided (see *fig 5*). Using the hole in the plate as a guide, carefully make a hole in the GRP and again gland as appropriate. It may be necessary to remove the cowl or the entire fan assembly in order to affect this work; it is important only the required fixings are removed (refer to *fig 2*) and that all parts are reinstated correctly.

The mains supply cable should be suitably sized and terminated as shown in *fig.7, 8, 9, 10, 11, & 12* electrical details are shown in *fig.6*.

Pre-punched hole for 20mm cable gland to connect supply to the isolator from within the building.

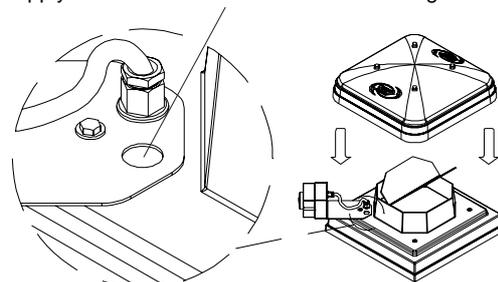


Fig.5 Isolator bracket



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4 Wiring *continued*

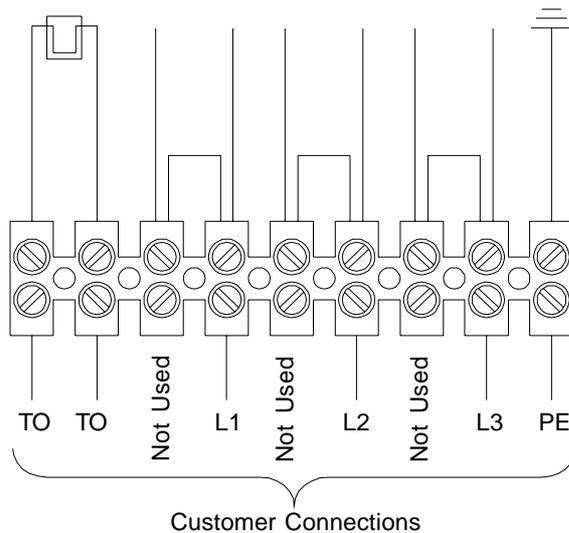
Fig.6 Electrical Details

MODEL	FAN SPEED RPM	MOTOR SIZE kW	FLC 230V	FLC 400V
SKC/SKV 250 / 4 - 1	1400	0.04	0.27	-
SKC/SKV 315 / 4 - 1	1400	0.14	0.67	-
SKC/SKV 355 / 4 - 1	1400	0.16	0.76	-
SKC/SKV 400 / 4 - 1	1400	0.25	1.06	-
SKC/SKV 400 / 6 - 1	900	0.12	0.54	-
SKC/SKV 450 / 4 - 1	1400	0.45	1.96	-
SKC/SKV 450 / 6 - 1	900	0.17	0.74	-
SKC/SKV 500 / 4 - 1	1400	0.72	3.29	-
SKC/SKV 500 / 6 - 1	900	0.29	1.40	-
SKC/SKV 560 / 4 - 1	1400	0.90	3.67	-
SKC/SKV 560 / 4 - 3	1400	1.03	-	1.83
SKC/SKV 560 / 6 - 1	900	0.44	1.83	-
SKC/SKV 630 / 4 - 3	1400	1.23	-	2.13
SKC/SKV 630 / 6 - 1	900	0.54	2.40	-
SKC/SKV 630 / 6 - 3	900	0.53	-	1.10
SKC/SKV 630 / 8 - 1	700	0.28	1.47	-
SKC/SKV 800 / 6 - 1	830	1.35	6.30	-
SKC/SKV 800 / 6 - 3	900	1.40	-	3.80
SKC/SKV 800 / 8 - 1	660	0.64	2.70	-
SKC/SKV 800 / 8 - 3	670	0.69	-	1.75

Standard motor wiring arrangement

Fig.7 400V 3Ph 50Hz

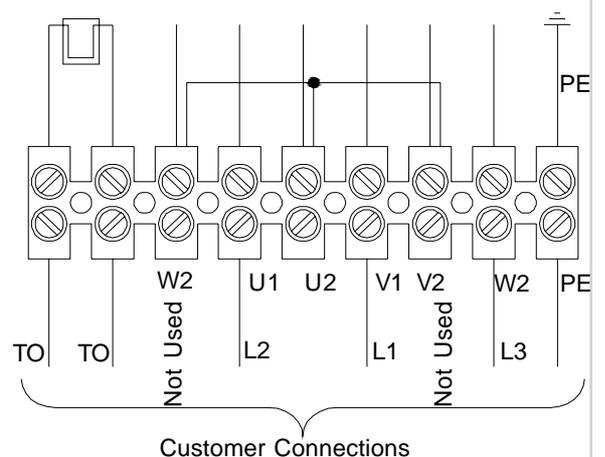
For SKC/SKV Units:
560/4-3, 630/4-3 & 630/6-3



Standard motor wiring arrangement

Fig.8 400V 3Ph 50Hz

For SKC/SKV Units:
800/6-3 & 800/8-3



Note: A trial connection of the three phase (3Ph) supply should be made to check that the fan rotates in the correct direction as indicated on the fan. If the rotation is incorrect, interchange any two phases of the incoming supply at the terminal block.

IMPORTANT



When SKC/SKV 800 3~ units are used in conjunction with a SC310 speed controller, a Neutral should be run from the central star point 'U2' on the fan motor, back to the controller.



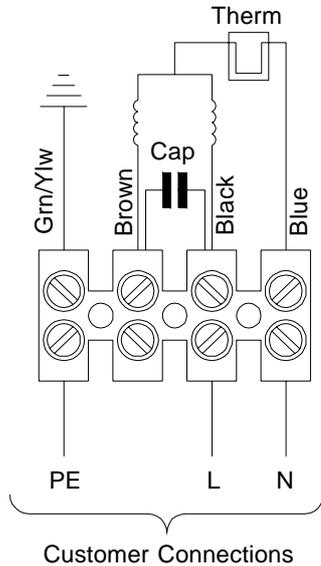
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4 Wiring *continued*

Standard motor wiring arrangement

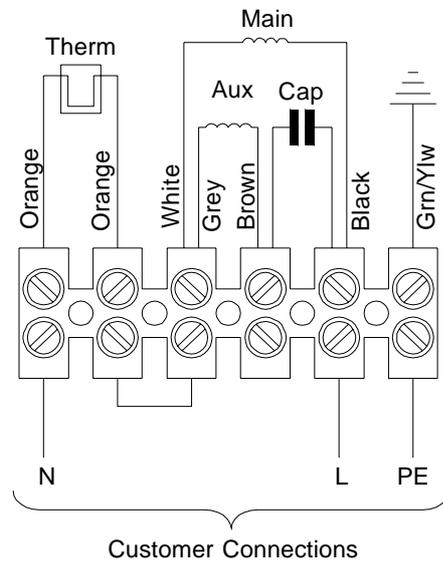
Fig.9 230V 1Ph 50Hz



For SKC/SKV Units:
250/4-1

Standard motor wiring arrangement

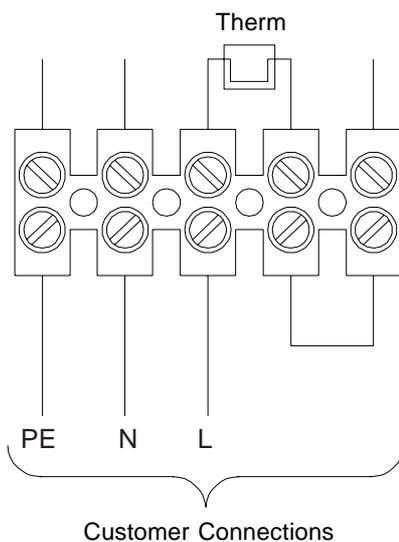
Fig.10 230V 1Ph 50Hz



For SKC/SKV Units:
315/4-1, 355/4-1, 355/6-1, 400/4-1,
400/6-1, 450/4-1, 450/6-1, 450/8-1
500/4-1, 500/6-1, 500/8-1, 560/4-1,
560/6-1, 560/8-1, 630/6-1 & 630/8-1

Standard motor wiring arrangement

Fig.11 230V 1Ph 50Hz



For SKC/SKV Units:
800/6-1 & 800/8-1



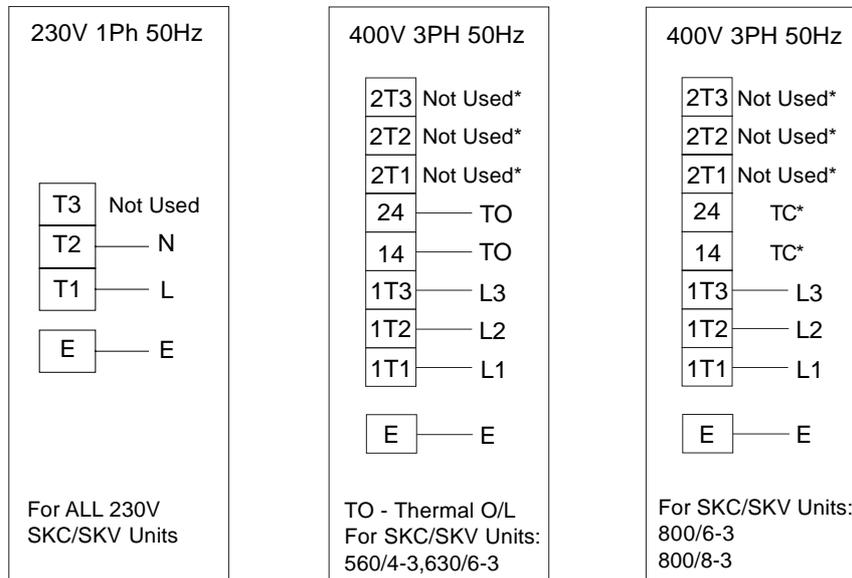
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4 Wiring *continued*

Standard motor wiring arrangement

Fig.12 Customer connections to local isolator



Note: A trial connection of the three phase (3Ph) supply should be made to check that the fan rotates in the correct direction as indicated on the fan. If the rotation is incorrect, interchange any two phases of the incoming supply at the terminal block.

Important: When used in conjunction with a speed controller refer to the appropriate controller wiring diagram*

5 Maintenance

IMPORTANT !

Before attempting to carry out any maintenance work, investigative or repair work on our units, the unit **MUST BE COMPLETELY ISOLATED** from its electrical supply.

Ensure a minimum of two minutes after electrical disconnection before removing cowl or guard. This will allow any moving parts to come to a rest

WARNING !

When used in conjunction with an Inverter for speed control, a minimum of 5 minutes should be given to allow for the capacitors to discharge before starting work

In general, this series of units require very little maintenance. All fan and motor bearings are supplied fully greased and lubricated and are sealed for life. In the unlikely event of component failure, spares are available from stock at VES Andover Ltd.

IMPORTANT !

Before attempting to carry out any work on our units, all accompanying documentation including warning labels on the unit must be referenced.

Care should also be taken whilst cleaning the unit in the event that wind or air movement should cause the fan to freewheel.

Recommended checks

Check the plate fan for signs of contamination. If the fan impeller is heavily soiled, clean carefully (ensure the

unit is properly isolated). Failure to do this periodically could lead to a loss of performance or the fan to become out of balance, leading to bearing failure. **Annual check** Clean under the cowl (and around the bird mesh) regularly to ensure performance is maintained. It may be necessary to remove the cowl to gain full access to the bird mesh: remove the four cowl fixings on the top of the unit as required

WARNING !

DO NOT REMOVE plate fan fixing bolts whilst in place, as this will leave the plate fan unsupported see *fig. 2*.

Check the GRP for signs of cracking or the possibility of water leakage, paying particular attention to the curb base fixings. Replace as necessary.

When enquiring after or ordering spares contact VES Spares Department, quoting the sales order (SO) number and unit type as found on the unit nameplate.

Telephone 08448 15 60 60
Fax 02380 26 12 04



PLEASE ENSURE THAT THIS DOCUMENT IS PASSED ON TO THE END USER.

We reserve the right to alter the specification without notice



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Declaration of Conformity

Date: 24th January 2006
Product: SKYPOD Roof Extract Units
Type: SKC, SKV
Manufacturer: VES Andover Limited

The product above is produced in accordance with EC Council Directives:

98/37/EC (Machinery Directive)
2004/108/EC (Electromagnetic Compatibility Directive)
73/223/EEC and amendment 93/68/EEC (Low Voltage Directive)

The European Harmonised Standards applied are:

BS EN ISO 12100, EN 294, EN61000, EN 60204-1

The National Standards applied in particular are :

BS 848 Part 1

Basis of Self attestation:

Quality Assurance to ISO 9001-2000, BSI Reg. Firm Cert. No. Q5375

Signature of Manufacturer:

Position of Signatory:

Technical Director