



# Short Case Axial Fan

## Installation, Operation and Maintenance Manual

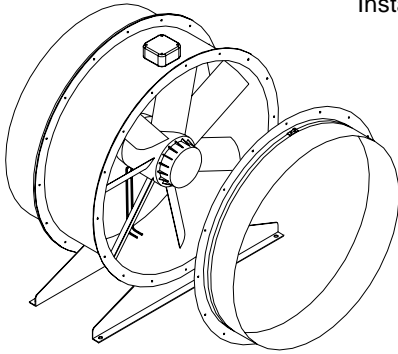


Fig 1. Unit arrangement

### IMPORTANT



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

Please ensure that this document is passed to the end user. This manual forms an integral part of the product and should be kept for the working life of the product. Additional copies of this and supporting documents are available by contacting VES or by visiting [www.ves.co.uk](http://www.ves.co.uk) and following the 'Download O & M's' link.

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## 1 Introduction

The Short Case Axial Fan range is a general-purpose fan for moving relatively large quantities of air against limited system resistance. They are suitable for a wide temperature range: -30°C to +70°C, and the fan motor is thermal class 'F' with IP54 protection.

The impellor is sickle bladed and the fan housing is manufactured from aluminium with a fully weatherproof paint finish.

All fans in the range are speed controllable.

For further technical details regarding dimensions and weights, contact VES on **08448 15 60 60**, quoting the sales order (SO) number and the unit type as found on the unit name plate or visit [www.ves.co.uk](http://www.ves.co.uk).

## 2 Receipt of Goods

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

**Note:** In the event of any damage having occurred or if any item is found missing, it is essential to inform VES Andover Ltd. within **7 working days** of delivery quoting sales order (SO) number and the unit type as found on the unit name plate. 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. It is the responsibility of the installer to ensure that all of the equipment is installed in compliance with the manufacturer's recommendations.

Consideration must be given by the installer to the positioning of the unit to ensure that access for maintenance can be provided in line with the Health and Safety and Building Regulations.

Adequate illumination of the unit's location must also be considered in order to carry out maintenance safely.

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

These products contain rotating parts and electrical connections, which can be a danger and could cause injury. The axial fans utilised in the Short Case Axial range also generate noise; it is advised that if activities have to be conducted in close proximity to the working units the noise level should be taken into account.

Taking the previously mentioned points into consideration, it is advised that this unit should be installed out of normal reach of personnel.

- Fans should be fitted to fixed circular duct flanges with M8 nuts and bolts with appropriate screw locking.
- We recommend using VES flexible connections with strangle bands for circular duct connections.
- Fan mounting/hanging feet can be provided to secure short case axial fans in place.

The following installation guidelines should be followed.

- Do not install Short Case Axial fans without adequate support. Mounting surface must be even. Axial fans must be supported independently from ductwork.
- Ensure that the clearance gap "A" (See fig 2.) is constant between the fan impellor and fan casework. Distortion due to uneven mounting surfaces may lead to fan failure.

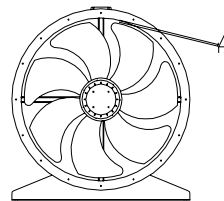


Fig 2. Impellor / casework clearance gap

### IMPORTANT



Consideration must also be given by the installer for adequate illumination of the unit location in order for safe maintenance.

### IMPORTANT



It is the responsibility of the installer to ensure that the unit is installed in a manner which will not result in injury or damage to either the unit or property.



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### 4 Wiring

All electrical connections 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 name plate.

- A local isolator must be fitted and mains cables should be suitably sized and terminated as shown on the underside of the fan terminal box lid, and in figures 3 and 4 below.
- Make the connection in the fan terminal box using the gland provided.

#### IMPORTANT

When used in conjunction with a speed controller make sure that the correct speed controller is used.

For details on connection of VES speed controllers to 'Short case axial fans', please refer to:  
 ID179 - Single phase transformer speed controller.  
 ID835 - Three phase transformer speed controller.

Fig 3. Single Phase fan wiring

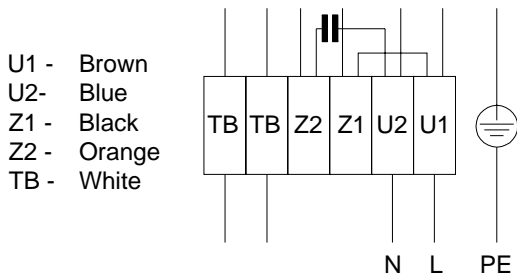
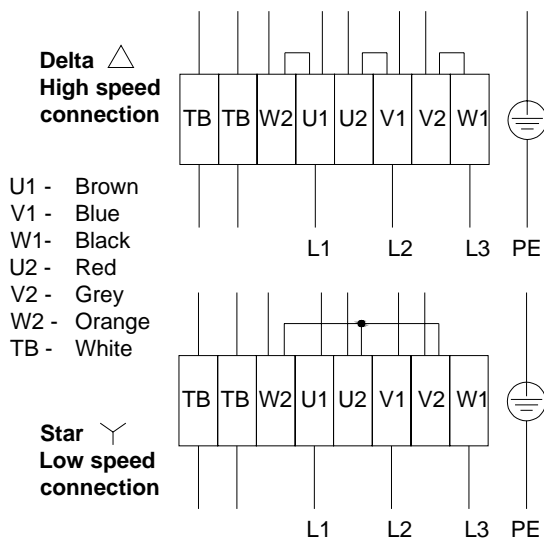


Fig 4. Three Phase fan wiring

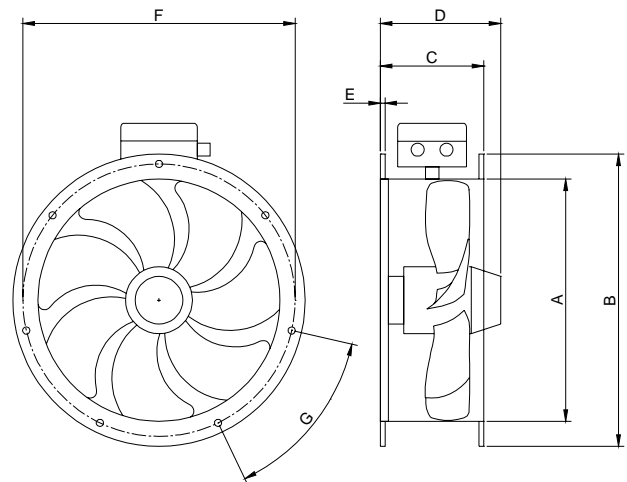


**Note:** A trial connection of the three phase (3Ph) supply should be made to check that the fan rotates in the correct direction as indicated on the fan. If the rotation is incorrect, interchange any two phases of the incoming supply at the terminal block.

Model	Fan speed	Motor size kW	FLC	FLC	SC	SC	Speed Controller
	RPM		230V	400V	230V	400V	
AX315/4-1	1400	0.13	0.59		1.5		T1
AX350/4-1	1400	0.2	0.99		2.5		T1
AX400/4-1	1320	0.31	1.35		2.9		T4
AX450/4-1	1310	0.61	2.8		7		T4
AX500/4-1	1250	0.78	3.4		7.1		T4
AX560/4-3	1250/850	1.15/0.57		2.4/1.15		7.0/2.3	SC303
AX630/4-3	1310/1000	2.6/1.6		4.8/2.7		21/7.0	SC305

Fig 5. Electrical Details

### 5 Unit Dimension



Unit	DIM							Weight kgs
	A	B	C	D	E	F	G	
AX315/4-1	316.5	382	135	-	6	356	8 x 45°	6.1
AX350/4-1	356	421	135	137	6	395	8 x 45°	7.1
AX400/4-1	400	466	155	-	6	438	12 x 30°	9.8
AX450/4-1	451	515	160	175	6	487	12 x 30°	15.2
AX500/4-1	503	567	166	176	6	541	12 x 30°	15.7
AX560/4-3	559	635	210	228	7	605	16 x 22.5°	20.1
AX630/4-3	634	707	220	226	7	674	16 x 22.5°	44.0

Fig 6. Unit Dimensions



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## 6 Commissioning

Before operation, the following checks should be carried out:

- Installation and electrical connection have been carried out as per the instructions in this document and associated documents.
- Safety equipment is in place, (terminal box cover overload protection, Isolators installed)
- All leftover materials and other foreign materials have been removed from the fan cavity before start up.
- Earth has been connected
- Temperature monitor/motor protection has been connected if required.
- Cable gland is properly sealed.
- Check for correct fan rotation direction of three phase fans as stated on the fan blade. If the rotation is incorrect, interchange any two phases of the incoming supply at the terminal block.

If these checks are carried out, and risk is assessed as being low, the unit can be switched on.

## 7 Maintenance

In general, this series of units require very little maintenance.

In the unlikely event of component failure, please contact VES Andover Ltd.

### IMPORTANT !

Before attempting to carry out any work on our units, the unit **MUST BE COMPLETELY ISOLATED** from its electrical supply. Ensure a minimum of two minutes after electrical disconnection before commencing work. This will allow any moving part to come to a rest, all accompanying documentation including warning labels on the unit must be referenced.

### WARNING !

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


### 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.

### Annual checks

Check inside the unit for an accumulation of dust, grease etc. If the fan impeller is heavily soiled, clean out 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.

**WEEE Directive**



At the end of their useful life the packaging and product should be disposed of via a suitable recycling centre. Do not dispose of with normal household waste. Do not burn.

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.

<b>Telephone</b>	<b>08448 15 60 60</b>
<b>Fax</b>	<b>02380 26 12 04</b>



**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: 15th September 2008  
Product: Short Case Axial Ventilation Units  
Type: Axial fan  
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 2006/95/EC (Low Voltage Directive)

The European Harmonised Standards applied are:

BS EN ISO 12100, EN 294, EN61000, EN 60204-1, EN 60950-1

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