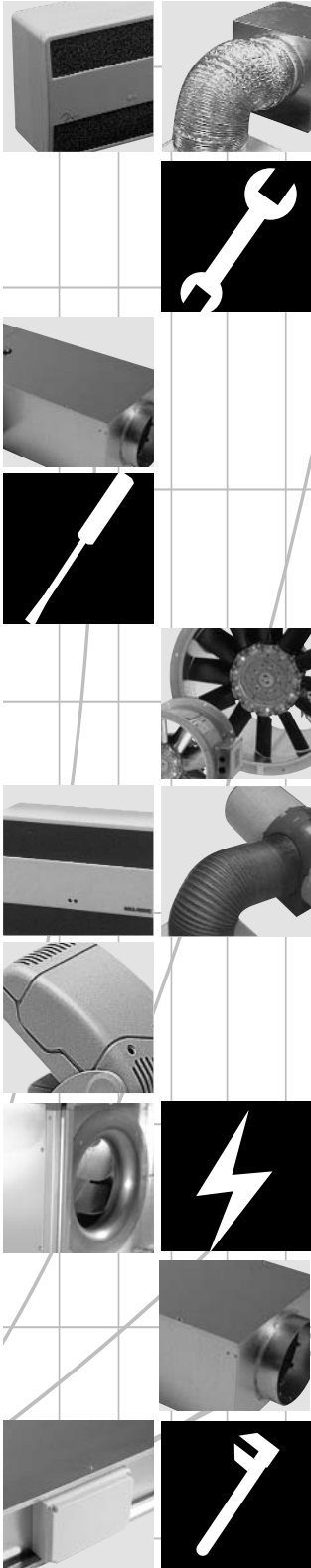


Good Fan Installation



Introduction

The majority of fan failure complaints can be proven to be attributable to application or installation errors.

The fundamental requirements of a good installation whether a roof fan, a duct fan or a domestic fan, whether in a residential, commercial or industrial application are broadly similar.

The system designer and installer are urged to view the appropriate product Installation and Maintenance (I&M) documents before installing (available on our web site): www.nuaire.co.uk. The following 'hints and tips' are intended as a general aid.

The right man for the job

NUAIRE recommends that only competent personnel complete the installation and that it should be in accordance with good industry practice, the appropriate authority and in conformance with all statutory and governing regulations i.e. CIBSE, COHSE, HVCA, ATEX, BSI and EN standards etc.

If the fan is to be installed in a potentially explosive atmosphere it will have been designed and manufactured to the ATEX-100 directive 94/9/EC, refer to data sheet 671216 for further advice.

Preparation

Thoroughly examine the goods upon receipt and immediately report any damages or deviations to the seller, supplier or agent quoting the order and product details from the rating plate, see fig 1.

Ensure the availability of necessary components and ancillaries before commencing work and ensure their compatibility. A typical installation could consist of any combination of the following:

The fan	✓	Speed control	✓
Support brackets	✓	Silencers	✓
Inlet cones	✓	Fire dampers	✓
Flexi duct connectors	✓	Guards	✓
Ecosmart control	✓	AV mounts	✓
Shutters	✓	Sensors	✓

The fan must be sited in accordance with the I&M instructions. Indoor units and controls should be located in a weather tight building away from sources of heat, water spray and steam generating devices.

In an ideal installation features such as bends,

dampers and silencers will be positioned 0.5 to 2 metres apart.

Sensors should be installed in the most appropriate position to measure the typical condition in a room not in close proximity to doorways, radiators and windows.

Always allow sufficient clearance for the removal of inspection panels and access doors for ease of future maintenance.

Handling

Always handle fans with care. Ensure all packaging is removed and refer to the product rating plate for weight detail before lifting, (fig 1). If lifting aids are employed apply the methods prescribed in the product I&M document.

Figure 1.

Product	AX63AD-473F		
Construction Date	04-07-03	Conditions of Use	Zone 1 Gas
Safety Marking	CE 51A10000	Ex	II2G EEx de IIA T3
I & M Standard	Leaflet 671054	Number of Standard	GRP 2 CAT 2G
Serial No	0667207	Speed	1430 rpm
FLC	7.8 A	ARC No.	
Supply	400 V 50 Hz 3 ~	Weight	113 kgs
	06672071104877		

Fan current — Voltage — Product weight



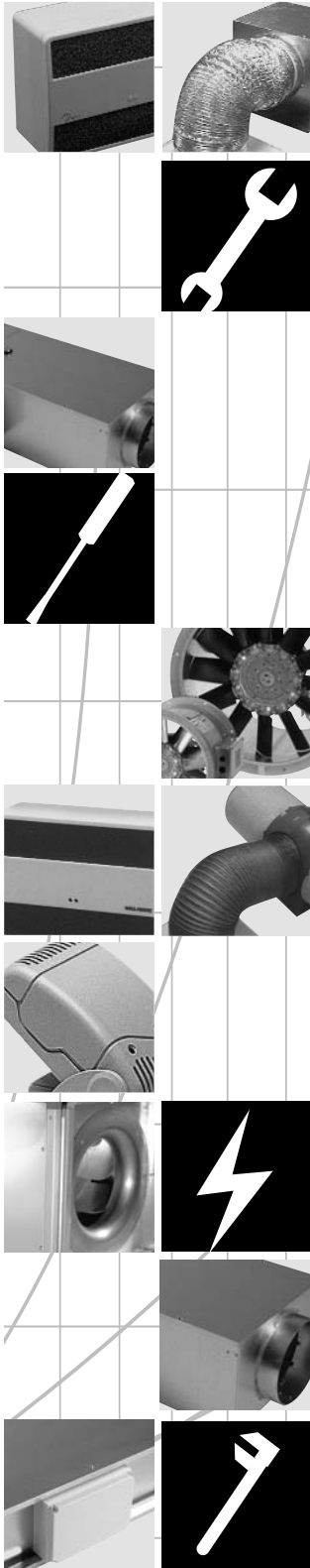
Mechanical Installation

- Prepare the surface, wall or mounting pad to receive the fan case or support bracket.
- If accessible, carefully rotate the impeller by hand to ensure free and smooth rotation and check that no transit or handling damage has occurred.
- Observe the direction of airflow and direction of rotation arrow on the case side. Match this to the system design.
- Assemble any optional accessories such as flexible connectors, inlet cones, fan guards etc.
- Anti Vibration mounts are selected to support the weight of the fan only. Ancillaries such as silencers or dampers should be positioned 'outside' the flexible duct connections and supported on separate AV's if appropriate. Refer to I&M document 671224 for further advice.

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Good Fan Installation



- When offering the fan to the ducted system be sure that inlet and/or outlet spigots are perfectly aligned and that flexible connections are correctly tensioned.
- Ensure external electrical connection boxes and controls are accessible to the installing electrician and that access panels and inspection doors are positioned to allow for future maintenance.

⚡ Electrical Installation - observe IEE Regulations

- Ensure the electrical supply is suitable for the fan and that all wiring, fuses and over load protection is appropriately sized in accordance with the rating plate.
- Fan units are not supplied with local electrical isolators, their installation however is recommended and they should isolate ALL incoming mains and control wiring.
- Wiring from the local isolator to the fan should be in a flexible conduit in order to minimise noise transference across the AV mounts or flexible connectors.
- Establish the correct mode of connection relative to the starter, speed control, frequency inverter or Ecosmart control always refer to the relevant control I&M document before making any connections.
- For all three-phase fans of 4KW and above, the final connection must be in DELTA.
- Wiring for low voltage sensors, user controls or BMS interfaces should be of the appropriate data cable, it should not be installed in the same conduit, containment or traywork as mains carrying cable and be at least 50mm

apart. If data cable must traverse mains cables, do so at right angles.

- Recheck all connections before switching on the mains.

🔧 Setting to work and commissioning

- Ensure all electrical and mechanical connections, guards and fixings are secure and that inlet and outlet ductwork is free of any obstruction or debris.
- Briefly switch the power on/off to ascertain correct direction of rotation, compare to the rotational label applied to the fan and correct if necessary.
- Turn the fan on, check and record starting current, full load current, speed, noise, vibration and compare to the I&M document.
- It is good custom and practice to proportionally balance any interconnecting ductwork by adjusting dampers or speed control to give desired volume flow rate and commission the system.

🔧 Maintenance

- Check the fan three months after commissioning and at least annually thereafter. Systems heavily laden with airborne contaminants may require more frequent attention.
- Advise the end user on system functionality and establish a maintenance routine referring to the product I&M documentation.

Trouble-shooting - some typical faults and causes

Fault	Cause	Fault	Cause
Fails to start	Check that the fuse rating is correctly valued and will accommodate starting current Check for correct electrical connection Ensure fan is free to rotate	Shuts down after a period	Check thermal overloads are set correctly Ensure correct control interfaces are in place
Noise	Flexible connections not correctly tensioned Loose lids, covers and fixings Debris in the system Dampers and shutters not opening Other ducted features i.e silencer, dampers too close to fan	Under or Over duty	System resistance not as designed Incorrect fan rotation Flexible connections too slack System blockages Leaking duct joints Wrong unit selection

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