

NALTF

Direct Drive In-duct Twinfans

Installation and Maintenance

Introduction

The Nuaire NALTF in line twinfan range consists of 8 models with duties up to 1.53 m³/s.

Full sized access panels are fitted to the top and bottom faces and are fully detachable for inspection and maintenance purposes. Four fixing feet are supplied with the unit.

I.O Handling

Always handle the units carefully to avoid damage and distortion. If mechanical aids are used to lift the unit, (on heavier units (NALTF4 and above) spreaders should be employed and positioned so as to prevent the slings, webbing etc.

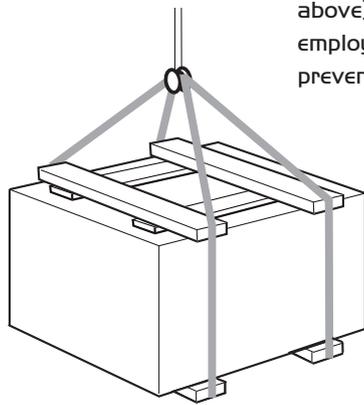


Figure 1. Lifting unit with slings via spreaders.

making contact with the casing. Correctly position slings to avoid twisting of the unit case and observe the centre of gravity before the final lift is made.

Note: the weight of unit from the rating plate.

2.0 Installation

The installation must be carried out by competent personnel in accordance with the appropriate authority and conforming to all statutory and governing regulations.

NALTF units can be mounted in any attitude except upside down or vertical with the outlet facing down.

In these positions the shutters will not operate satisfactorily. The NALTF units are designed to be installed indoors and are not suitable for external applications.

Units should always be positioned with sufficient space to allow removal of access covers and subsequent removal of fan and motor assemblies etc.

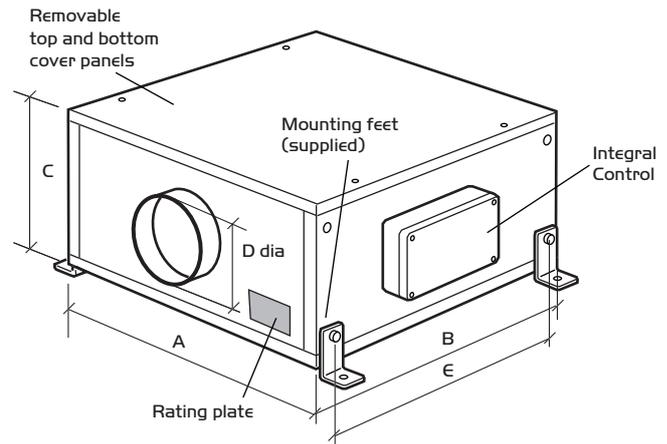
Note: When the unit is mounted horizontally the correct orientation must be observed as indicated by direction labels on the side of the unit.

Mounting

The method of mounting used is the total responsibility of the installer. All duct connections must be airtight to prevent any loss of performance.

3.0 Dimensions

Figure 2. NALTF Unit Dimensions



Code	A	B	C	D	E	Weight (Kg)
NALTF1	450	495	238	125	374	19.5
NALTF2	465	710	303	200	389	31.9
NALTF3	560	710	370	200	484	43.4
NALTF4	700	970	476	250	624	57.5
NALTF5	700	970	476	250	624	57.5
NALTF6	700	970	476	400	624	62.5
NALTF7	700	970	476	400	624	68.5
NALTF8	895	1174	575	500	995	154.0

4.0 Connection Details

IMPORTANT

Isolation - Note that the unit must be provided with a means of isolation (by others) for maintenance purposes etc. A suitable isolator can be supplied on request as a separate item.

Check that the fan details on the rating plate correspond with the supply voltage and frequency. The fan unit incorporates an integral auto-changeover controller which must be connected to the 230V external supply.

Electrical cable entry to the plastic control casing is the responsibility of the installer.

Motors are designed for Direct On Line starting.

Motor overloads should be set to the full load current on the fan rating label.

Run currents will be exceeded if the unit is operated with its cover removed. It is therefore recommended that the unit is not run for prolonged periods in this condition.

Control

The fan unit incorporates an integral auto-changeover controller which provides 6 hour duty shared operation and automatic selection of the standby fan should the duty fan fail.

Fault indication to a remote fail indicator (supplied) is provided via volt free contacts of a relay.

Note: the relay is energised when no fault is present.

The integral run-on timer allows the fan to run-on for a pre-determined time after the initial source (eg. coupled light switch) has been switched off. The run-on period is adjustable between 1 and 60 minutes.

Ancillaries

A remote fail indicator (code NAL-RFI) is supplied with the fan.

A range of stepless speed controls is available to match the NALTF units.

All controls are supplied with full installation and operating instructions.

5.0 Electrical Details

IMPORTANT

Isolation - Before commencing work, electrically isolate the fan unit and /or the associated speed control, if fitted, from the mains supply.

Because the run and start currents depend upon the duty and associated duct work of an individual unit, the values quoted in the table are nominal.

Run currents will be exceeded if the unit is operated with its cover removed.

It is therefore recommended that the unit is not run for prolonged periods in this condition.

Motor Electrical Information

Single Phase (230V) ONLY

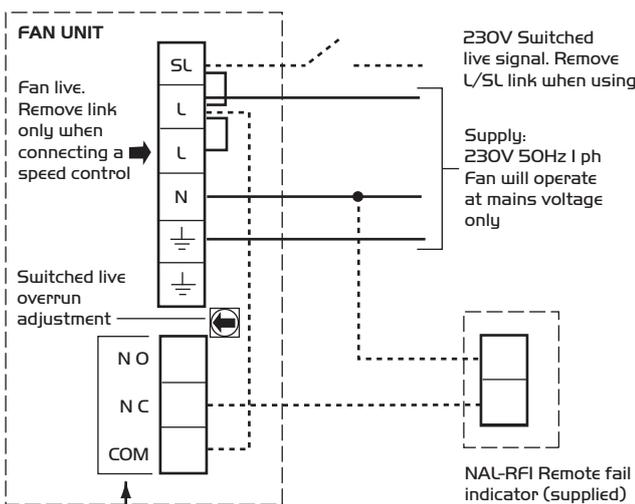
Unit Code	Speed rpm	Input power (kW)	flc (A)	sc (A)
NALTF1	2040	0.085	0.74	1.4
NALTF2	1320	0.093	0.68	1.5
NALTF3	1320	0.23	1.83	4.6
NALTF4	1140	0.375	2.13	5.5
NALTF5	1140	0.375	2.13	5.5
NALTF6	1104	0.65	3.63	8
NALTF7	1170	1.06	5.02	18
NALTF8	960	1.65	7.3	50

Electrical Note

(See electrical wiring diagrams below. If a electronic speed control has been supplied, wire the control to the fan unit and also to the mains supply.

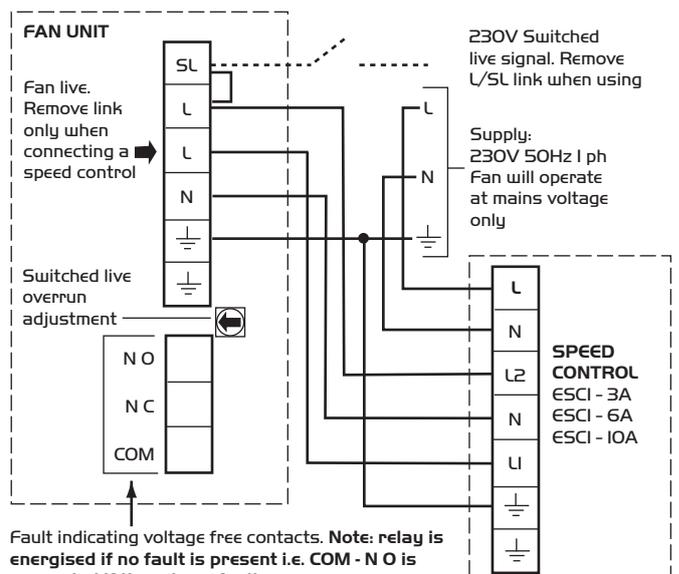
Electrical Wiring

Basic Fan Wiring Diagram



Fault indicating voltage free contacts. Note: relay is energised if no fault is present i.e. COM - N O is connected if there is no fault. Note: It is the responsibility of the installer to provide a suitable switchable local isolator for maintenance purposes etc.

Fan connected to Speed Control



Fault indicating voltage free contacts. Note: relay is energised if no fault is present i.e. COM - N O is connected if there is no fault. Note: It is the responsibility of the installer to provide a suitable switchable local isolator for maintenance purposes etc.

Note: The fan will only operate when a 230V mains signal is present at the SL terminal. When the SL signal is switched off the fan will continue to run for a preset period (1 - 60 mins). Adjust the overrun time at the pot marked 'SL Runon'. All mains connections (including SL) must be fed via a local, appropriately rated isolator (by others).

6.0 Maintenance

IMPORTANT

Isolation - Before commencing work, electrically isolate the fan unit and /or the associated speed control, if fitted, from the mains supply.

Maintenance Intervals

The first maintenance should be carried out three months after commissioning and thereafter at twelve monthly intervals. These intervals may need to be shortened if the unit is operating in adverse environmental conditions, or in heavily polluted air.

Lubrication

Motors are fitted with sealed for life bearings and therefore require no further lubrication.

General Cleaning and Inspection

Clean and inspect the exterior of the twin fan unit and associated controls etc. Remove the access panel from the unit, inspect and if necessary, clean the fan and motor assemblies and the interior of the case.

If the unit is heavily soiled it may be more convenient to remove the fan/motor assemblies.

Check that the shutters are free to move smoothly and that they seal the appropriate fan outlet effectively.

Clean and inspect each fan and motor assembly as follows; taking care not to damage, distort or disturb the balance of the impeller.

- a) Lightly brush away dirt and dust, paying particular attention to any build up at the motor ventilating slots. If necessary, carefully remove with a scraper.
- b) Stubborn dirt at the impeller may be carefully removed with a stiff nylon brush.
- c) Check all parts for security and general condition. Check that the impeller rotates freely.

Refit the assemblies to the unit (see replacement parts) then replace the access covers. If speed controls or remote indicators are fitted, remove the covers and carefully clean out the interiors as necessary. Check for damage.

Check security of components. Refit the access covers.

7.0 Replacement of Parts

The only item of the fan unit likely to require replacement is the fan/motor assembly due to a failed motor or damaged impeller. In either eventuality the complete fan/motor assembly must be removed from the unit case.

Note: Before commencing work, electrically isolate the fan unit and /or the associated speed control, if fitted, from the mains supply.

Remove the access cover. Unplug the motor connection from the underside of the built in control module. Support the weight of the fan/motor assembly and remove the mounting screws and washers. Lift the assembly out of the case. After replacing the faulty item, refit the fan/motor assembly and reconnected the incoming wiring to the fan mounted connection box. Replace the access cover.

When ordering spares please quote the serial number of the unit which can be found on the identification plate on the side of the unit casing.

8.0 Warranty

The unit has a one year warranty. The warranty starts from the date of delivery and covers faulty materials or workmanship and includes parts and labour. The labour element is subject to full, free and safe access to the equipment as recommended by the CDM regulations.

This warranty is void if the equipment is modified without authorisation, is incorrectly applied, misused, disassembled, or not installed, commissioned and maintained in accordance with the details contained in this manual and general good practice.

The product warranty applies to the UK mainland and in accordance with Clause 14 of our Conditions of Sale. Customers purchasing from outside of the UK should contact Nuair International Sales office for further details.

9.0 After Sales Enquiries

For technical assistance or further product information, please contact the After Sales Department.

Telephone 02920 858 400

DECLARATION OF INCORPORATION AND INFORMATION FOR SAFE INSTALLATION, OPERATION AND MAINTENANCE

We declare that the machinery named below is intended to be assembled with other components to constitute a system of machinery. The machinery shall not be put into service until the system has been declared to be in conformity with the provisions of the EC Machinery Directive.

Designation of machinery: DIRECT DRIVE TWINFAN
 Machinery Types: NALTF
 Relevant EC Council Directives: 2006/42/EC (Machinery Directive)
 Applied Harmonised Standards: BS EN ISO 12100-1, BS EN ISO 12100-2, EN294, EN60204-1, BS EN ISO 9001
 Applied National Standards: BS848 Parts One, Two and Five

Note: All standards used were current and valid at the date of signature.

Signature of manufacture representatives:

Name:	Position:	Date:
1) C. Biggs	Technical Director	20. 07. 07
2) A. Jones	Manufacturing Director	20. 07. 07



INFORMATION FOR SAFE INSTALLATION, OPERATION AND MAINTENANCE OF NUAIRE VENTILATION EQUIPMENT

To comply with EC Council Directives 2006/42/EC Machinery Directive and 2014/30/EU (EMC).

To be read in conjunction with the relevant Product Documentation (see 2.1)

1.0 GENERAL

- 1.1 The equipment referred to in this Declaration of Incorporation is supplied by Nuaire to be assembled into a ventilation system which may or may not include additional components.
 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 manufacturers recommendations and with due regard to current legislation and codes of practice.

2.0 INFORMATION SUPPLIED WITH THE EQUIPMENT

- 2.1 Each item of equipment is supplied with a set of documentation which provides the information required for the safe installation and maintenance of the equipment. This may be in the form of a Data sheet and/or Installation and Maintenance instruction.
 2.2 Each unit has a rating plate attached to its outer casing. The rating plate provides essential data relating to the equipment such as serial number, unit code and electrical data. Any further data that may be required will be found in the documentation. If any item is unclear or more information is required, contact Nuaire.
 2.3 Where warning labels or notices are attached to the unit the instructions given must be adhered to.

3.0 TRANSPORTATION, HANDLING AND STORAGE

- 3.1 Care must be taken at all times to prevent damage to the equipment. Note that shock to the unit may result in the balance of the impeller being affected.
 3.2 When handling the equipment, care should be taken with corners and edges and that the weight distribution within the unit is considered. Lifting gear such as slings or ropes must be arranged so as not to bear on the casing.
 3.3 Equipment stored on site prior to installation should be protected from the weather and steps taken to prevent ingress of contaminants.

4.0 OPERATIONAL LIMITS

- 4.1 It is important that the specified operational limits for the equipment are adhered to e.g. operational air temperature, air borne contaminants and unit orientation.
 4.2 Where installation accessories are supplied with the specified equipment eg. wall mounting brackets. They are to be used to support the equipment only. Other system components must have separate provision for support.
 4.3 Flanges and connection spigots are provided for the purpose of joining to duct work systems. They must not be used to support the ductwork.

5.0 INSTALLATION REQUIREMENTS

In addition to the particular requirements given for the individual product, the following general requirements should be noted.

- 5.1 Where access to any part of equipment which moves, or can become electrically live are not prevented by the equipment panels or by fixed installation detail (eg ducting), then guarding to the appropriate standard must be fitted.
 5.2 The electrical installation of the equipment must comply with the requirements of the relevant local electrical safety regulations.
 5.3 For EMC all control and sensor cables should not be placed within 50mm or on the same metal cable tray as 230V switched live, lighting or power cables and any cables not intended for use with this product.

6.0 COMMISSIONING REQUIREMENTS

- 6.1 General pre-commissioning checks relevant to safe operation consist of the following:
 Ensure that no foreign bodies are present within the fan or casing.
 Check electrical safety. e.g. Insulation and earthing.
 Check guarding of system.
 Check operation of Isolators/Controls.
 Check fastenings for security.
 6.2 Other commissioning requirements are given in the relevant product documentation.

7.0 OPERATIONAL REQUIREMENTS

- 7.1 Equipment access panels must be in place at all times during operation of the unit, and must be secured with the original fastenings.
 7.2 If failure of the equipment occurs or is suspected then it should be taken out of service until a competent person can effect repair or examination. (Note that certain ranges of equipment are designed to detect and compensate for fan failure).

8.0 MAINTENANCE REQUIREMENTS

- 8.1 Specific maintenance requirements are given in the relevant product documentation.
 8.2 It is important that the correct tools are used for the various tasks required.
 8.3 If the access panels are to be removed for any reason the electrical supply to the unit must be isolated.
 8.4 A minimum period of two minutes should be allowed after electrical disconnection before access panels are removed. This will allow the impeller to come to rest.
NB: Care should still be taken however since airflow generated at some other point in the system can cause the impeller to "windmill" even when power is not present.
 8.5 Care should be taken when removing and storing access panels in windy conditions.

Technical or commercial considerations may, from time to time, make it necessary to alter the design, performance and dimensions of equipment and the right is reserved to make such changes without prior notice.