

QTI QUIETWINS Direct Drive Twinfans single phase

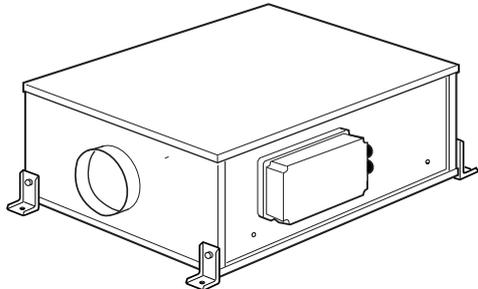


Fig. 1. General view of a typical QTI unit.

Introduction

The NuAire QUIETWIN Twinfan Direct Drive range consists of 4 basic designs with duties up to a maximum of 1.53m³/s. The 4 models are coded as follows:

QTI (Internal Duct Mounted) in line unit.

QTE (External Duct Mounted) in line unit

QTR (Roof Mounted, end inlet) side discharge unit.

QTRB (Roof Mounted bottom inlet) side discharge unit.

QTI Quietwin

Units are rectangular in section and have circular rigid spigots at each end (QTIC). Matching acoustic flexible connectors are included and four matching mounting feet are also supplied.

The casing is manufactured from coated galvanised steel. Full size access panels are fitted to the top and bottom faces. These panels are fully detachable for inspection purposes. The internal surfaces of the case (including the top and bottom panels) are lined with a fire retardant acoustic lining material. The units incorporate two independent motors with high efficiency, forward curved centrifugal impellers running in metal scrolls. The fans discharge into a common outlet chamber through a shutter system that prevents 'blowback through the standby fan.

The motors are manufactured to BS 5000 and are suitable for single phase supply. Airflow and failure monitors are standard as is Class B insulation. Suitable for operation in ambient temperatures up to 40°C.

Controls

The fans are designed to be used with SMART (S) controls.

Installation

IMPORTANT

The installation must be carried out by qualified personnel in accordance with the appropriate authority and conforming to all statutory and governing regulations eg. IEE, COHSE etc.

QTI units are supplied for installation into In-Line ductwork (internal) applications. The mounting feet on the QTI unit can be employed in surface or suspended applications.

ISOLATION

Before commencing work ensure the electrical supply is disconnected.

Installation Ancillaries

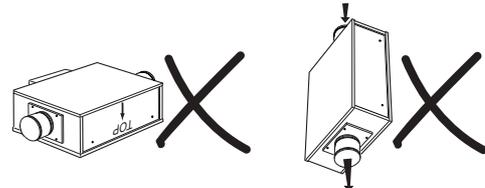
Anti vibration mountings and matching silencers are available

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



Unit must NOT be installed inverted (upside down)

Unit must NOT be installed with the outlet facing downward

Quietwin QTI units can be mounted in any attitude except vertical with the outlet facing down, or inverted i.e. upside down as these attitudes the shutters will not operate satisfactorily.

Ductwork connections must be airtight to prevent loss of performance. The method of mounting used is the total responsibility of the installer. The QTI unit has an external case side mounted control module / terminal box and is supplied ready for connection into the electrical supply.

Rigid Mounting

Note, the QTI unit and silencer cases have captive M8 nuts which can be used after removing the M8 screws plugging them.

On Resilient Mountings

Suspension rods / fixing screws are not supplied. Drill suitable holes in the support structure to receive the particular sizes. Note that the large round washers included in the resilient mounting kits are for fitting above or below the resilient mounting as required to safeguard the installation against break-up of, or damage to, a mounting. In the event of a resilient mounting failure the washer will support the weight of the unit.

Suspended from ceiling

Large washers should be fitted BELOW the resilient mounts.

Handling

Always handle the units carefully to avoid damage and distortion. If mechanical aids are used to lift the unit, spreaders should be employed and positioned so as to prevent the slings, webbing etc. making contact with the casing.

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 by NuAire on request as a separate item.

Dimensions

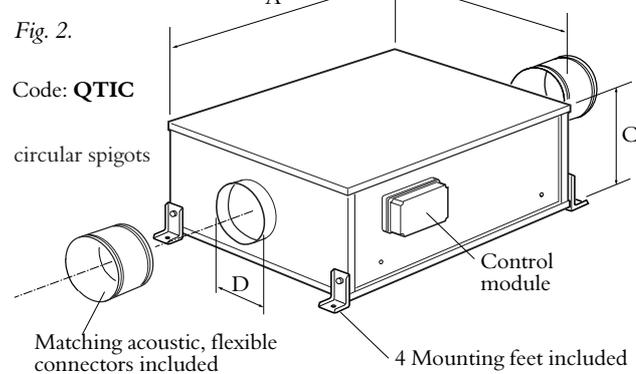


Table 1

DIMENSIONS (mm)					
Unit	A	B	C	QTIC D dia.	Weight (kg)
QTI 1	763	572	210	150	20
QTI 2	778	787	262	200	30
QTI 3	913	787	340	200	43
QTI 4	1063	1047	352	250	57
QTI 5	1193	1047	423	400	69
QTI 6	1193	1047	423	400	79
QTI 7	1195	1174	575	500	160
QTI 8	1195	1174	575	500	154

Coding

QTI = Quietwin, duct mounted, internal use.

C = Circular spigots with acoustic flexible connectors.

1 = Fan performance curve number (catalogue).

S = Smart integral fan control.

QTI C 1 S = Quietwin, internal duct mounted, circular spigots, acoustic flexible connectors and Smart integral control.

Motor Electrical Information

Table 2.

Unit Code	Speed rpm	Input Power (kW)	Electrical	
			1 Phase (230V) ONLY (nominal)	
			flc (amps)	sc (amps)
QTI 1	2040	0.086	0.65	1.3
QTI 2	1320	0.104	0.56	1.5
QTI 3	1260	0.230	1.60	4.5
QTI 4	1140	0.370	1.60	4.7
QTI 5	1110	0.660	2.95	10
QTI 6	1272	1.110	4.84	18
QTI 7	960	1.406	6.30	50
QTI 8	960	1.620	7.30	50

Electrical Details (See table 2).

Because the run and start currents depend upon the duty and associated ductwork 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.

Electrical Note

(See electrical wiring diagrams)

If a NuAire control has been supplied, wire the control to the Fan unit and also to the mains supply. Refer to the wiring section at the rear of this leaflet.

Testing after Installation

Ensure that the Fan unit and Control and particular control ancillaries if specified eg PIR, Run/Fail indicators, timeclock etc. are fitted.

Switch on and check that the fan unit runs satisfactorily.

Using your chosen control, switch over to the standby fan by means of the control's fan selection switch.

Check that the change-over occurs.

Switch off. If a Run-on Timer is fitted, check that the fan continues to run.

Time the run-on period, which is adjustable between 5 and 60 minutes nominal.

Timer controls are set at the works to the shortest period.

For speed controls follow the installation set-up procedure provided with the control.

Anti-Vibration Mountings for QTI unit

CODES: NAV* (typical)

The resilient mounts supplied for use with the Quietwin range are suitable for use in floor mounted or hanging type applications.

Table 3a.

A.V. dimensions

Code	A	B
NAV1	30	50
NAV2	40	75

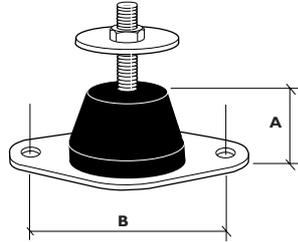


Fig. 4. A.V. mounting

Note:

QTE and QTR units are curb (upstand) mounted, anti vibration treatment by others (if required).

Table 3b.

A.V. Selection

Code (matched silencers)	Unit only
QTI 1	NAV1
QTI 2	NAV1
QTI 3	NAV2
QTI 4	NAV2
QTI 5	NAV2
QTI 6	NAV2
QTI 7	NAV2
QTI 8	NAV2

Matching Silencer for QTI units

The QTI unit has a matching silencer available as an ancillary item from NuAire. Code: QTI*SIL. (*would be the unit size). The QTI silencers are connected using flexible connectors or fast clamps available as ancillaries. Details of the QTI Silencer are shown in fig 3 below.

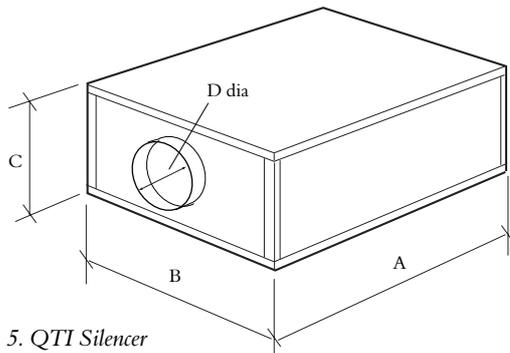


Fig. 5. QTI Silencer

Silencer Attenuation

Table 4.

Unit code	Dynamic attenuation of silencer in dB Octave Band Mid frequency Hz						
	125	250	500	1k	2k	4k	8k
QTI 1 SIL	8	19	14	20	26	23	16
QTI 2 SIL	7	15	15	18	23	22	18
QTI 3 SIL	6	10	15	15	21	20	20
QTI 4 SIL	1	4	8	12	11	14	16
QTI 5 SIL	2	6	11	16	15	19	20
QTI 6 SIL	2	6	11	16	15	19	20
QTI 7 SIL	1	3	6	10	10	14	15
QTI 8 SIL	1	1	5	8	8	12	14

Table 5.

Dimensions (mm) & Selection						Unit weight (kg)
Unit code	Silencer code	A	B	C	D dia	
QTI 1	QT1 SIL	613	420	210	150	15
QTI 2	QT2 SIL	613	480	262	200	18
QTI 3	QT3 SIL	613	480	340	200	22
QTI 4	QT4 SIL	613	764	352	250	31
QTI 5	QT5 SIL	613	764	423	400	38
QTI 6	QT6 SIL	613	764	423	400	38
QTI 7	QT7 SIL	613	965	575	500	48
QTI 8	QT8 SIL	613	965	575	500	48

QTI Direct Drive, Smart (S) control

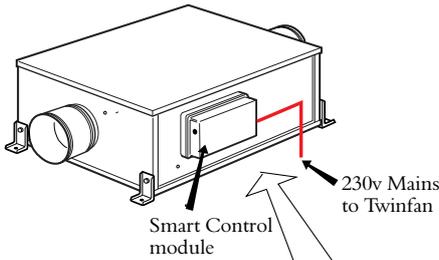


Fig. 6a. Control module location

Connecting unit to the mains 230v supply

Remove the control module cover (4 nylon fixings) Unscrew and remove the aluminium terminal cover plate, Feed the mains cable through the rubber grommet and connect your 230v supply to the terminals marked 'MAINS' (See fig. 6a & 6b).

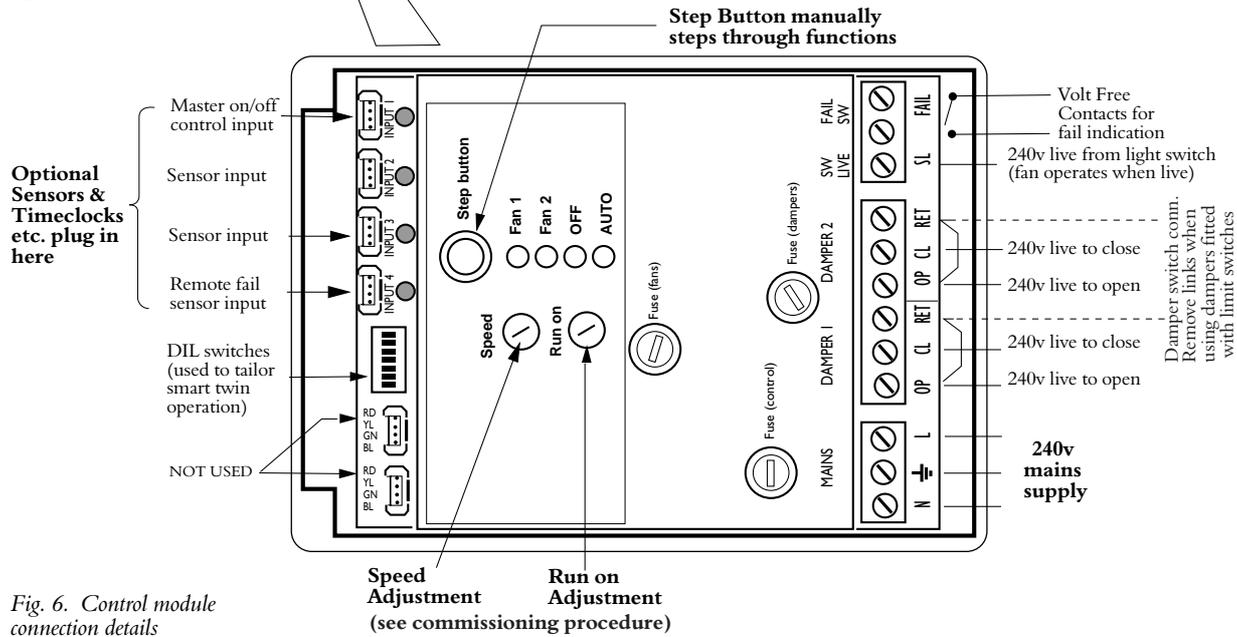
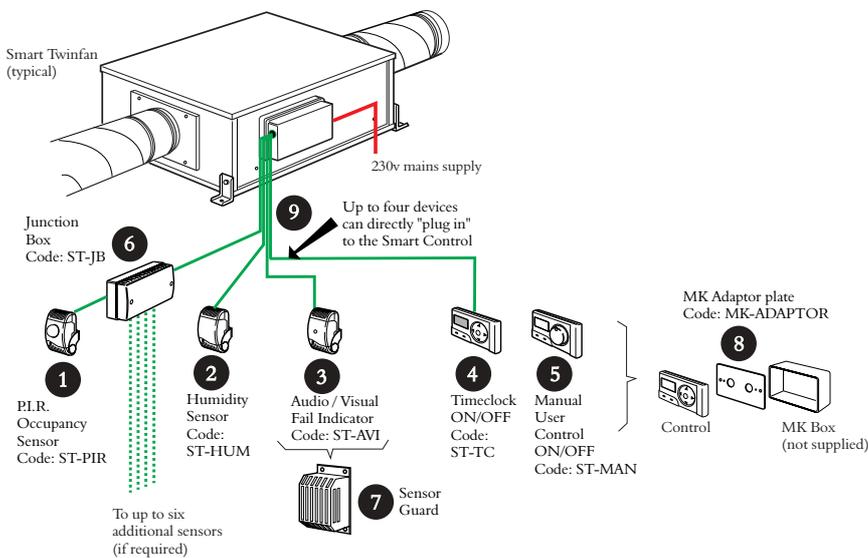


Fig. 6. Control module connection details

Smart Control wiring to Twinfan

Figure 6 shows the inside of the case mounted Smart Control Module. All sensors and user controls / timeclock etc are 'plugged in' to the control module circuit board. Terminal connection strip is located on the right of the board. Note the mains connection terminals.

COMPREHENSIVE SMART SYSTEM



4 Fig. 7. Quietwin system showing additional options

Options

List of available sensors, user controls and ancillaries for "S" option users with a reference to corresponding information leaflets

- 1 PIR Occupancy sensor, code: ST-PIR (Leaflet No: 670864)
- 2 Humidity sensor, code:ST-HUM (Leaflet No: 670865)
- 3 Audio / visual fail indicator, code:ST-AVI (Leaflet No: 670877)
- 4 Timeclock on / off, code: ST-TC (Leaflet No: 670866)
- 5 Manual user control, code ST-MAN (Leaflet No: refer to Nuaire)
- 6 Junction Box, code: ST-JB (Leaflet No: refer to Nuaire)
- 7 Sensor guard, code: refer to Nuaire (Leaflet No: refer to Nuaire)
- 8 MK Adaptor plate, code:: MK ADAPTOR (Leaflet No: refer to Nuaire)
- 9 BMS Interface, code:ST-BMS (Leaflet No: 6708697)
- 10 Airflow direction box, code: ST-ADB (Leaflet No: refer to Nuaire)
- 11 Low voltage comms cable 10m length (Leaflet No: refer to Nuaire)

Control Module Connections /Inputs and their uses (see fig 6)

SENSOR INPUT 1:

This is the Master on/off control input and is usually 'linked out' with a special plug unless:

A Timeclock can be connected into this input e.g. ST-TC
During ON times the unit is allowed to operate.

During OFF times the unit is off- zero duty.

Note: The ST-TC Timeclock must always be plugged into the fan mounted control module NOT into a ST-JB junction box.

SENSOR INPUTS 2, 3 & 4

Any sensor can be connected to these inputs to allow activation of the unit. If any of these inputs is activated, the unit will run at the maximum set duty. These sensors include ST-PIR, ST-HUM, ST-TEMP.

Note: Additional sensors may be added by using an ST-JB Junction Box.

SWITCH LIVE terminals

This acts just like the sensor inputs 2,3,4. If 230v ac is detected on the SW - Live terminals, the unit will run at the max. set duty

DAMPER terminals (2 sets)

When the fan is running at full duty, both these damper connections will be activated. i.e. power will be available on the OP terminals of the damper connections. The fan will not go to full duty until the RET terminals have 230v ac (Limit Switch).

FAILURE RELAY

This relay is normally closed when there are no faults. When faults occur this relay will open and break the circuit. This method of operation allows all types of failure to be detected for example 'Power failed', 'Fan/s fail.

This connection is a volt free switch. it can handle power up to 5A (230v) and is fused for protection.

NO FAULT: The volt free switch is closed i.e. the two terminals are connected.

FAN FAULT: The volt free switch is opened. i.e. the two terminals are disconnected.

Using the Step button (see fig 6).

Refer to the label on the controls inside cover for more guidance. Pressing the step button will sequence through the options and change the modes as follows:

1. FAN 1 in manual mode (used for commissioning)
2. FAN 2 in manual mode (used for commissioning)
3. SYSTEM OFF
4. SYSTEM IN AUTOMATIC (normal selection)

To clear a fail, press the STEP button until the fail has cleared.

IMPORTANT After commissioning, press the STEP button through until AUTO is illuminated.

System is now in automatic mode.

Commissioning Procedure (see fig. 6).

1. Switch on the supply to the QTI Quietwin fan.
2. Locate the control module panel **Care must be taken if the module has any covering panels removed as live 230v incoming supply terminals may be exposed.**
Note covers **MUST** be properly replaced when commissioning has been completed.
3. Wait approximately 60 seconds for the system to complete its self test'
4. Press the step sequencing button several times until **only** the 'FAN 1' light is illuminated and the 'AUTO' light is off. (See detail of control panel Fig. 6).
5. Connect a manometer across the tappings provided on the outside of the fan casing. Reading the manometer and using the graph, determine the airflow. The fan is factory set at full speed. Using the rotary graduated control, reduce the speed to the desired setting (may require a screwdriver).
NOTE: allow 30 seconds for the fan to reach the set speed.
6. **Set the Run on timer control.** (Adjustable 5-60 min).
(See detail of control panel Fig. 6).
7. Press the step button through the sequence until 'AUTO' light shows.

COMMISSIONING IS NOW COMPLETE.

Using the graphs

The graph is designed to assist you in establishing an AIR VOLUME FLOW RATE for your fan installation.

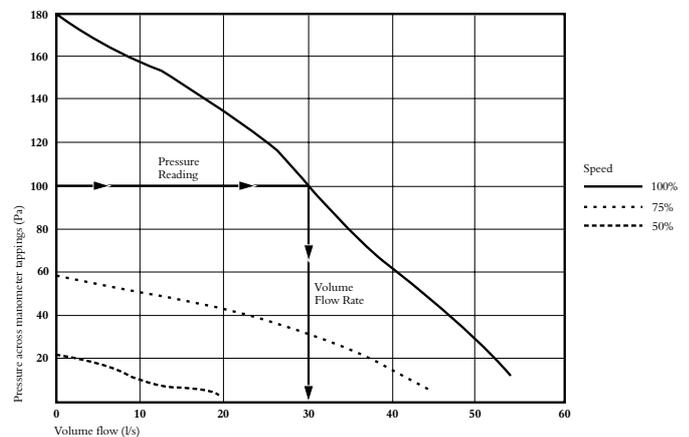
The curves shown indicate performance at 100%, 75% and 50%.

Assuming that the ventilation system is installed and the fan is connected to all ductwork. Connect a manometer across the tappings provided on the outside of the fan unit casing.

The fan is factory set for full speed. With the fan operating at this full speed (100%) take a pressure reading in Pa from the manometer. Refer to the relevant graph for your size of unit and with your Pa figure, read across the graph to where the line intersects the 100% curve.

Drop a line vertically down from this point and the air volume flow is indicated on the base line of the graph.

QTI Quietwin graphs are shown on the following pages



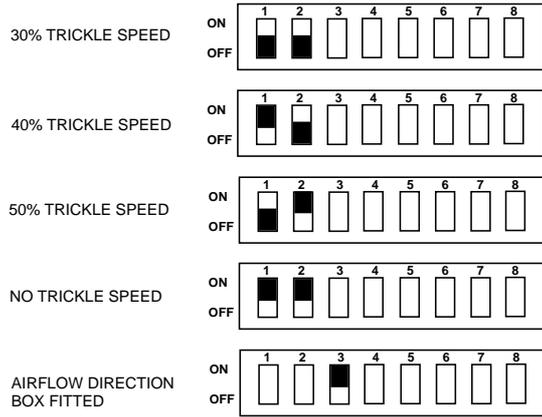
Typical QTI graph (Size 1 unit shown)

Smart Twinfan DIL switch settings (see fig 6).

The Smart Twins operation can be individually tailored to suit your own particular application. A label is attached to the inside of the control module cover detailing the various switch functions. Refer also to switch settings shown opposite.

DEFAULT MODE:

- The fan runs in trickle mode until the toilet is occupied
- Switch 1 & Switch 2**Trickle mode and rate
- Switch 3**2 way Damper Box fitted
 - ON = Damper Box fitted (split duty system)
 - OFF = No Damper Box fitted



Split duty via Damper Box. (AIRFLOW DIRECTION BOX)

A typical application of the damper is illustrated in fig 7.

CONTROL MODULE CONNECTIONS

Sensor/s are connected to sensor input 2
When the sensor is activated, the duty fan will run at 50% of the max. set duty and damper relay 1 will be activated.

Sensor/s are connected to sensor input 3
When the sensor is activated, the duty fan will run at 50% of the max. set duty and damper relay 2 will be activated. If both sensor input 2 and sensor input 3 are activated together, the fan will run on the maximum set duty.

Also, if sensor input 4 (or SL) is activated when a damper box / split duty system is being used, both the damper relays will operate and the fan will run at full duty.

Wiring Connections from QTI to optional Airflow Direction Box. Code: ST-ADB

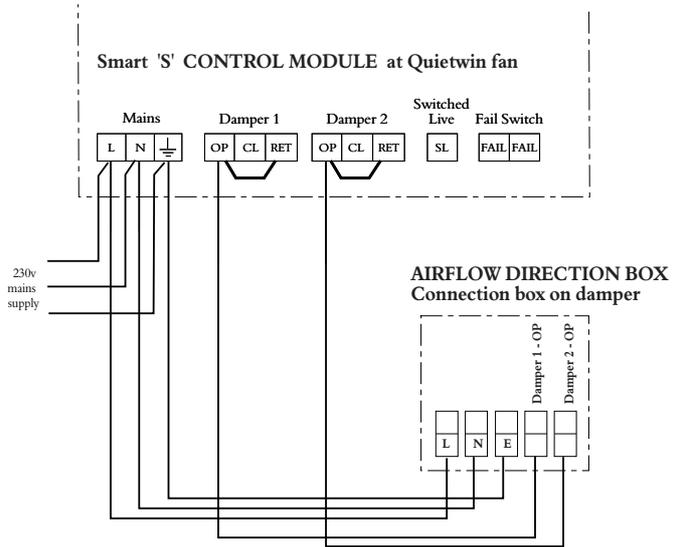
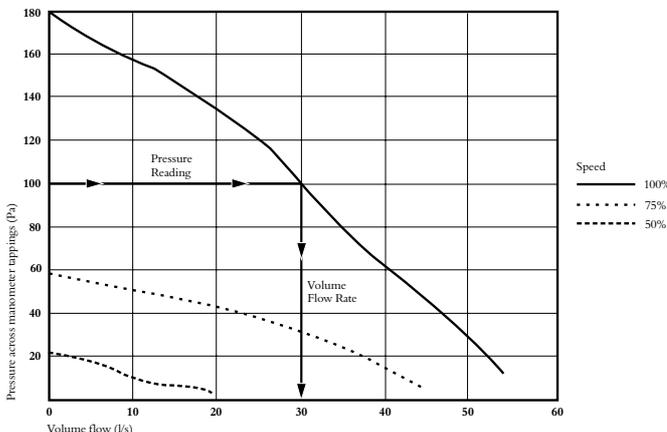


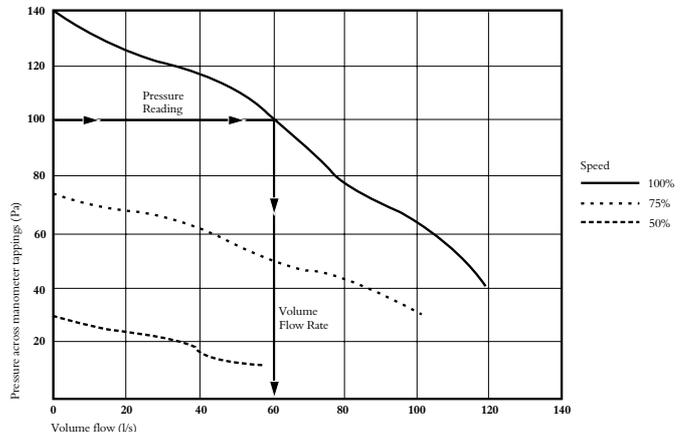
Fig 8 Airflow direction Box terminal connections

Commissioning Graphs QTI Quietwins

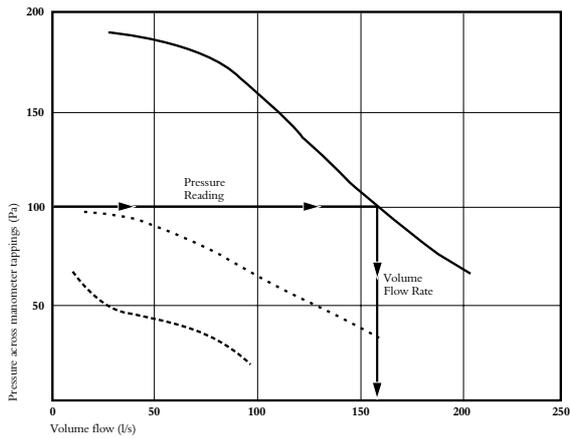
To be used in conjunction with the commissioning procedure as detailed on page 5. The QTI Quietwin is offered in 8 performance curve sizes numbered 1-8. The eight graphs are shown.



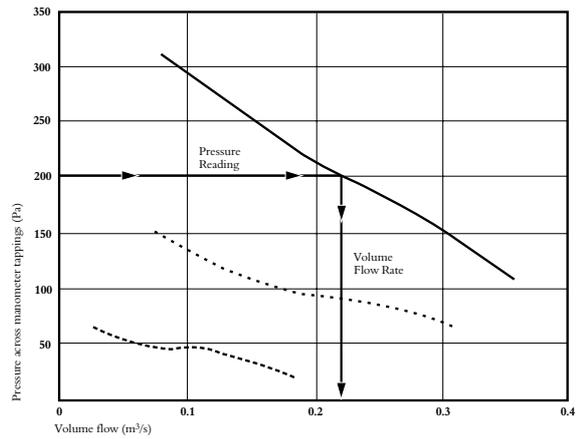
QTI Quietwins Size 1



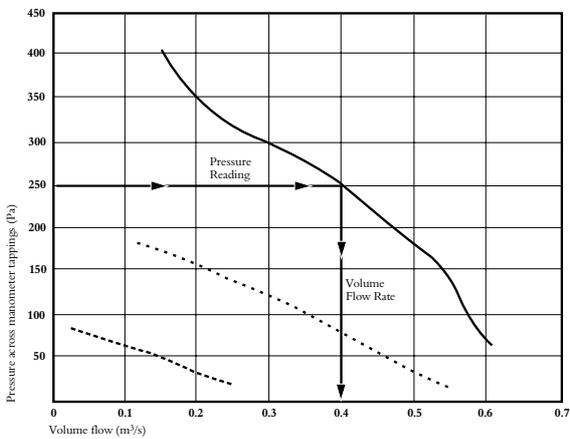
QTI Quietwins Size 2



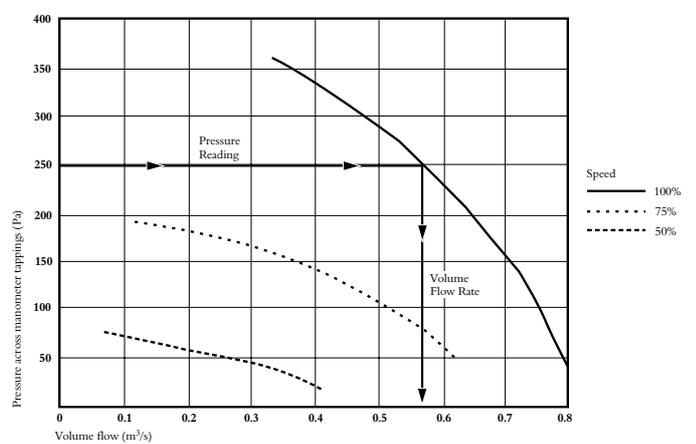
QTI Quietwins Size 3



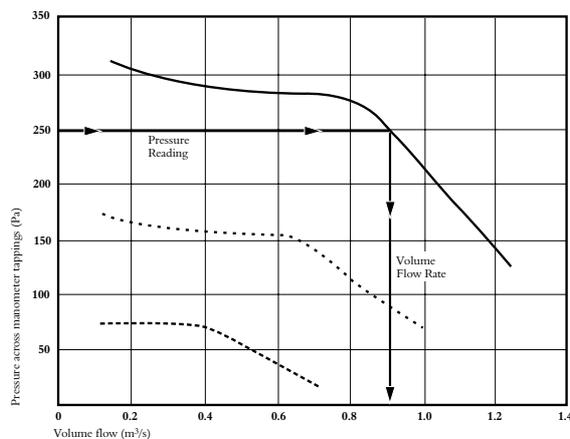
QTI Quietwins Size 4



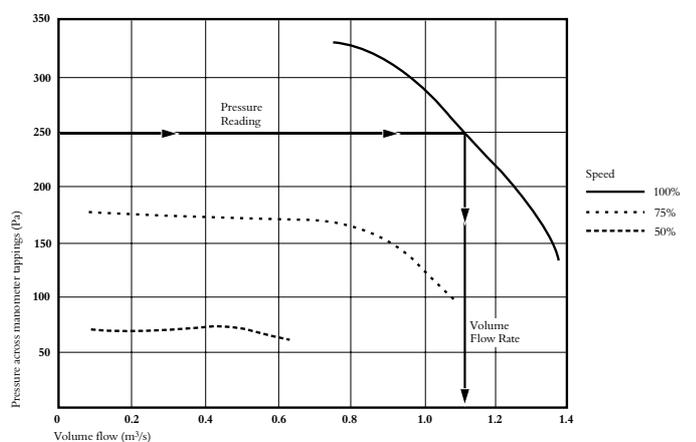
QTI Quietwins Size 5



QTI Quietwins Size 6



QTI Quietwins Size 7



QTI Quietwins Size 8

Maintenance (General)

ISOLATION

BEFORE COMMENCING WORK MAKE SURE THAT THE UNIT AND NUAIRE CONTROL, IF FITTED, ARE ELECTRICALLY ISOLATED 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. NOTE: Failure to maintain the unit as recommended will invalidate the warranty.

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 fan unit and associated controls etc.

Remove the access panel from the fan 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 blade or 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 of Parts) then replace the access covers

If NuAire controls and 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.

Service

As a manufacturer NuAire provides you with factory trained Service Engineers.

Our Engineers are supported by a comprehensive range of spare parts 'off the shelf'.

If you are an industrial or commercial user, you may be interested in details of NuAire's regular maintenance Service Contracts. This is a worthwhile service that helps you get the most from our products.

Our Service Department will be happy to give you more information.

Please telephone: **029 2085 8585**

Replacement of Parts

The only item of the fan units unit likely to require replacement are the fan/motor assemblies 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 NUAIRE CONTROL, IF FITTED, FROM THE MAINS SUPPLY.

Remove the access cover. Disconnect the incoming wiring from the connection box (located on the fan scroll) on the particular fan/motor assembly to be removed. 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 reconnect the incoming wiring to the fan mounted connection box. Replace the access cover.

Schedule of Parts

When ordering spares please quote the serial number of the unit together with the part number. If the part number is not known please give a full description of the part required. The serial number will be found on the identification plate attached to the unit casing

Unit code	Blower assembly c/w motor.
QTI 1	772819
QTI 2	772820
QTI 3	772821
QTI 4	772822
QTI 5	772823
QTI 6	772824
QTI 7	772825
QTI 8	772825

Table 6 Spares listing

Controls Application Service (CAS)

A team of Engineers and technicians is available to provide pre and post order support.

We are on hand to provide help and advice from the most basic use of any NuAire equipment to the more complex applications, maximising on the versatility of our control products.

Telephone: 029 2085 8585

Facsimile: 029 2085 8586

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

AUGUST 2001

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 Council Machinery Directive.

Designation of machinery :-	QTI QUIETWIN DIRECT DRIVE
Machinery Types :-	QTI
Relevant EC Council Directives :-	98/37/EC (Machinery Directive)
Applied Harmonised Standards :-	EN292-1, EN292-2, EN294, EN29001
Applied National Standards :-	BS848 Parts One, Two and Five

Signature of manufacture representatives :-

Name:	Position:	Date:
1) C. Biggs 	Technical Director	3.8.01
2) W. Glover 	Manufacturing Director	3.8.01

AUGUST 2001

We declare that the machine named below conforms to the requirements of EC Council Directives relating to Electromagnetic Compatibility and Safety of Electrical Equipment.

Designation of machinery :-	QTI QUIETWIN DIRECT DRIVE
Machinery Types :-	QTI
Relevant EC Council Directives :-	89/336/EEC, 92/31/EEC (EMC) 73/23/EEC, 93/68/EEC (Low Voltage Directive)
Applied Harmonised Standards :-	EN55014-1, EN55014-2, EN60204-1 EN60335-2-80
Basis of Self Attestation :-	Quality Assurance to BS EN ISO 9001 BSI Registered Firm Certificate No. FM 149

Signature of manufacture representatives :-

Name:	Position:	Date:
1) C. Biggs 	Technical Director	3. 8. 01
2) W. Glover 	Manufacturing Director	3. 8. 01

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

To comply with EC Council Directives 98/37/EC Machinery Directive

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 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, please 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 in particular 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 *e.g. 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 ductwork 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.

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.

3 Year Warranty (UK only)



The 3 year warranty starts from the date of delivery and includes parts and labour for the first year. The labour element is subject to full, free and safe access to the equipment as recommended by the CDM regulations. The remaining 2 years covers replacement parts only.

Installation & Maintenance of the equipment must be as directed in the NuAire Installation & Maintenance leaflet.

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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.