NUAIRE

QTR QUIETWIN
Belt Drive Twinfans

Single & three phase, roof mounted

Installation and Maintenance

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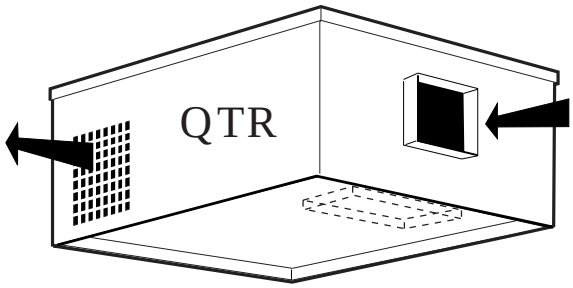


Fig. 1. General view of a typical QTR unit

NOTE:
This leaflet covers QTR units with case SIZES A, B ,C & D

Included are both end inlet and bottom inlet configurations.
The 'D' size units differ in that they are larger fans featuring a louvred end outlet.

The NuAire QUIETWIN Twinfan Belt Drive range consists of 4 basic designs with duties up to a maximum of 9m³/s. The 4 models are coded as follows:

QTE *(External Duct Mounted) in line unit*

QTR (Roof Mounted, end inlet) side exhaust unit.
QTRB (Roof Mounted bottom inlet) side exhaust unit.
QTRD Case size D. This is a large roof mounted fan, (bottom or end inlet) with end louvred exhaust.

QTR Quietwin models

Units are rectangular in section and have circular or square* rigid spigots at each end. The casing is manufactured from heavy gauge natural aluminium alloy.
A full size internally lined access panel is fitted to the top face. The panel is fully detachable for inspection purposes.
The motor plate and frames are supported on the base by resilient mountings allowing the fan unit to be operated without the need for separate anti vibration fan case mountings.
The units incorporate two independent motors with high efficiency, forward curved centrifugal impellers running in metal scrolls. Taperlocked pulleys and wedge drive belts are employed. 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 (case 'A' only) or three phase supply. Airflow and failure monitors are standard as is Class B insulation. Suitable for operation in ambient temperatures up to 40°C.
* *Case size D has rectangular spigots.*

Contents

QTR B units (sizes A, B & C) are supplied with a rigid aluminium alloy rectangular bottom inlet spigot and 2 opposed outlet grilles **(size D has a rectangular end inlet or bottom inlet spigot and a rectangular end outlet louvre)**.
QTR C units (case sizes A, B & C) are supplied with a rigid aluminium alloy CIRCULAR end inlet spigot and 2 opposed outlet grilles.
QTR S units (case sizes A, B & C) are supplied with a rigid aluminium alloy SQUARE end inlet spigot and 2 opposed outlet grilles.

Coding *(bottom inlet units sizes A,B & C).*

QTR = Quietwin, roof mounted, external use.
B = rectangular bottom inlet spigot & opposed outlet grilles.
A = Case size A,B,C & D
1 = Fan performance curve number.
3 or 1 = 3: 3ph 400v, 1: 1 ph 230v
M = Microsave integral fan control.
C = Mains fan control.

QTR B A 1 3 C = Quietwin, roof mounted, bottom inlet, case size A, 3 phase and Mains control.

Coding *(end inlet units sizes A,B & C).*

QTR = Quietwin, roof mounted, external use.
C = Circular end spigot & opposed outlet grilles.
S = Square end spigot & opposed outlet grilles.
A = Case size A,B,C & D
1 = Fan performance curve number.
3 or 1 = 3: 3ph 400v, 1: 1 ph 230v
M = Microsave integral fan control.
C = Mains fan control.

QTRC A 1 3 M = Quietwin, roof mounted, circular end inlet spigot, case size A, 3 phase and Microsave control.

Coding *(bottom/ end inlet units sizes D).*

QTR = Quietwin, roof mounted, external use.
R = Rectangular end inlet spigot.
B = Rectangular bottom inlet spigot.
D = Case size D only
1 = Fan performance curve number.
3 = 3ph 400v,
M = Microsave integral fan control.
C = Mains fan control.

QTRR D 1 3 M = Quietwin, roof mounted, rectangular end spigot, case size D, 3 phase and Microsave control.

Controls

Two methods of control are available:
i. MICROSAVE (M) control. (leaflet 670915)
ii. MAINS (C) control. (leaflet 670912)
Note that when a Microsave option is supplied, the user control is included inside the fan case for delivery.
Details of control installations are given in relevant separate leaflets which deal with each control type.

Installation

Quietwin **MUST NOT BE MOUNTED AT AN ANGLE OF MORE THAN 5º FROM THE HORIZONTAL** to ensure that the shutters operate satisfactorily.
Units should always be positioned with sufficient space to allow removal of the access covers and subsequent removal of fan and motor assemblies etc. from above.
The QTR units are supplied for installation onto vertical ductwork (bottom inlet) roof; back inlet roof and bottom inlet with end louvre outlet (case size 'D') applications. Ductwork connections must be airtight to prevent loss of performance.

The method of mounting used is the total responsibility of the installer. the lower edge of the casing has an internal skirt allowing the unit to be located on an upstand or prefabricated curb if desired. See prefabricated curb details on page 5.
The unit should be securely screwed to its curb or mounting to prevent vibration and/or wind damage.
If a unit is converted from bottom inlet to to side inlet after installation, the redundant bottom inlet must be blanked off at the spigot. It is essential that the cross sectional area of the new side inlet is not less than that of the original bottom inlet. Otherwise severe reductions in performance will occur.
It is the responsibility of the installer to drill the casing to allow the electrical cables to be connected. The cable entry should be effectively sealed Note that on the bottom inlet (QTRB units) the cabling could be carried up from inside the building, through the bottom inlet spigot.
If a NuAire control has been supplied, wire the control to the Fan unit and also to the mains supply. The QTR unit has an internal terminal box and is supplied ready for connection to the electrical supply via the chosen control. See page 6.

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.

ELECTRICAL 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

QTR Roof Mounted Belt Drive Twinfans
END INLET UNITS
Sizes: A, B & C.

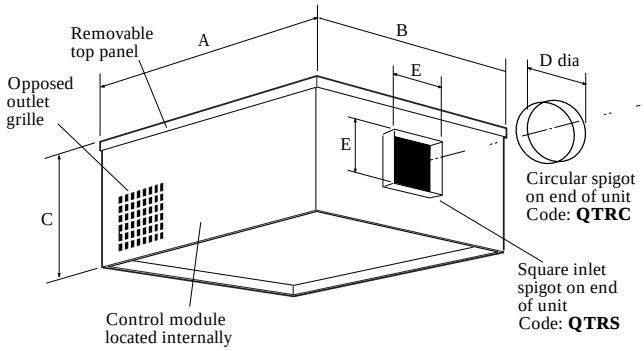


Fig. 2.

For unit weights see electrical tables

Table 1. **DIMENSIONS (mm)**

Unit	A	B	C	QTR 'C' D dia	QTR 'S' E sq
QTR A	974	974	622	400	305
QTR B	1233	1233	701	500	457
QTR C	1430	1635	796	630	610

NOTE: Circular or Square Spigots.

BOTTOM INLET UNITS
Sizes: A, B, C.

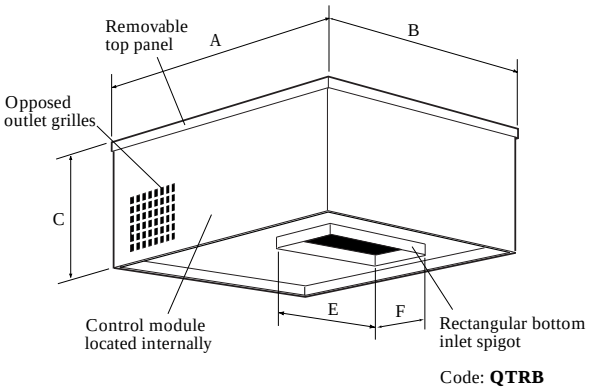


Fig. 3.

For unit weights see electrical tables

Table 2. **DIMENSIONS (mm)**

Unit	A	B	C	Spigot E	Spigot F
QTRB A	974	974	622	457	229
QTRB B	1233	1233	701	762	304
QTRB C	1430	1635	796	889	381

NOTE: Rectangular Bottom Spigot only.

QTRB D BOTTOM / END INLET
Size: D only.

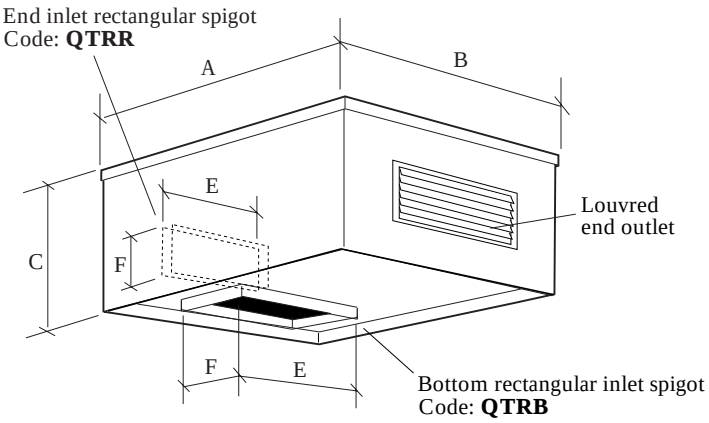


Fig. 4.

For unit weights see table 7

Table 3. **DIMENSIONS (mm)**

Unit	A	B	C	Rect Spigot E	Rect Spigot F
QTRR D	2315	2500	1230	1200	700
QTRB D	2315	2500	1230	1200	700

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.

Electrical Details (See table 3, 4 & 5).

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.

Table 4. Start & Run currents etc. **CASE SIZE 'A'**

General	Electrical				Weight
	1 Phase *(230v)* **3 Phase** *(400V)* (nominal)				
Unit Code*	**Speed rpm**	**Power** *(kw)*	**flc** *(amps)*	**sc** *(amps)*	**kg**
QTR*A 1-3*	535	0.18	0.75	2.3	**73**
QTR*A 2-3*	705	0.18	0.75	2.3	**73**
QTR*A 3-1*	835	0.25	2.1	5.3	**75.4**
QTR*A 3-3*	835	0.25	0.95	3.0	**75.4**
QTR*A 4-1*	835	0.37	2.9	7.3	**77.5**
QTR*A 4-3*	835	0.37	1.3	4.6	**77.5**
QTR*A 5-1*	935	0.25	2.1	5.3	**75.4**
QTR*A 5-3*	935	0.25	0.95	3.0	**75.4**
QTR*A 6-1*	935	0.37	2.9	7.3	**77.5**
QTR*A 6-3*	935	0.37	1.3	4.6	**77.5**
QTR*A 7-1*	1045	0.25	2.1	5.3	**75.4**
QTR*A 7-3*	1045	0.25	0.95	3.0	**75.4**
QTR*A 8-1*	1045	0.37	2.9	7.3	**77.5**
QTR*A 8-3*	1045	0.37	1.3	4.6	**77.5**
QTR*A 9-1*	1045	0.55	3.4	9.3	**84.4**
QTR*A 9-3*	1045	0.55	1.7	6.8	**84.4**
QTR*A 10-1*	1125	0.37	2.9	7.3	**77.5**
QTR*A 10-3*	1125	0.37	1.3	4.6	**77.5**
QTR*A 11-1*	1125	0.55	3.4	9.3	**82.4**
QTR*A 11-3*	1125	0.55	1.7	6.8	**82.4**
QTR*A 12-3*	1125	0.75	2.1	9.5	**84.4**
QTR*A 13-1*	1225	0.37	2.9	7.3	**77.5**
QTR*A 13-3*	1225	0.37	1.3	4.6	**77.5**
QTR*A 14-1*	1225	0.55	3.4	9.3	**82.4**
QTR*A 14-3*	1225	0.55	1.7	6.8	**82.4**
QTR*A 15-3*	1225	0.75	2.1	9.5	**84.4**
QTR*A 16-3*	1225	1.1	2.9	13.0	**90.4**
QTR*A 17-1*	1335	0.55	3.4	9.3	**82.4**
QTR*A 17-3*	1335	0.55	1.7	6.8	**82.4**
QTR*A 18-3*	1335	0.75	2.1	9.5	**84.4**
QTR*A 19-3*	1335	1.1	2.9	13.0	**90.4**
QTR*A 20-1*	1400	0.55	3.4	9.3	**82.4**
QTR*A 20-3*	1400	0.55	1.7	6.8	**82.4**
QTR*A 21-3*	1400	0.75	2.1	9.5	**84.4**
QTR*A 22-3*	1400	1.1	2.9	13.0	**90.4**
QTR*A 23-3*	1400	1.5	3.7	18.5	**96.4**

**** CODING eg.**

QTE*B1-3* = Quietwin, duct mounted, external use, case size B, performance curve 1, 3 phase electrical supply
Control choice 'M' or 'C'
Spigot location choice (see page 1)

QTR Roof Mounted Belt Drive Twinfans (continued)

Table 5. Start & Run currents etc. **CASE SIZE 'B'**

General	Electrical 3 Phase *(400V)* ONLY (nominal)				Weight (kg)
Unit Code	Speed rpm	Power *(kw)*	flc *(amps)*	sc *(amps)*	
QTR*B 1-3*	875	1.1	2.9	13.0	**116**
QTR*B 2-3*	1005	1.1	2.9	13.0	**116**
QTR*B 3-3*	1005	1.5	3.7	18.5	**125**
QTR*B 4-3*	1085	1.1	2.9	13.0	**116**
QTR*B 5-3*	1085	1.5	3.7	18.5	**125**
QTR*B 6-3*	1165	0.75	2.1	9.5	**113**
QTR*B 7-3*	1165	1.1	2.9	13.0	**116**
QTR*B 8-3*	1165	1.5	3.7	18.5	**125**
QTR*B 9-3*	1165	2.2	5.4	27.0	**134**
QTR*B 10-3*	1225	1.1	2.9	13.0	**116**
QTR*B 11-3*	1225	1.5	3.7	18.5	**125**
QTE*B 12-3*	1225	2.2	5.4	27.0	**134**
QTR*B 13-3*	1225	3.0	6.9	38.0	**140**

Table 6. Start & Run currents etc. **CASE SIZE 'C'**

General	Electrical 3 Phase *(400V)* ONLY (nominal)				Weight (kg)
Unit Code	Speed pm	Power *(kw)*	flc *(amps)*	sc *(amps)*	
QTR*C 1-3*	820	2.2	5.4	27.0	**168.7**
QTR*C 2-3*	925	2.2	5.4	27.0	**168.7**
QTR*C 3-3*	925	3.0	6.9	38.0	**174.6**
QTR*C 4-3*	1040	1.5	3.7	18.5	**159.6**
QTR*C 5-3*	1040	2.2	5.4	27.0	**168.7**
QTR*C 6-3*	1040	3.0	6.9	38.0	**174.6**
QTR*C 7-3*	1040	4.0	10.0	60.0	**193.6**
QTR*C 8-3*	1160	2.2	5.4	27.0	**168.7**
QTR*C 9-3*	1160	3.0	6.9	38.0	**174.6**
QTR*C 10-3*	1160	4.0	10.0	60.0	**193.6**
QTR*C 11-3*	1160	5.5	12.0	75.0	**231.6**
QTR*C 13-3*	1260	3.0	6.9	38.0	**174.6**
QTR*C 14-3*	1260	4.0	10.0	60.0	**193.6**
QTR*C 15-3*	1260	5.5	12.0	75.0	**231.6**
QTR*C 16-3*	1360	3.0	6.9	38.0	**174.6**
QTR*C 17-3*	1360	4.0	10.0	60.0	**193.6**
QTR*C 18-3*	1360	5.5	12.0	75.0	**231.6**
QTR*C 19-3*	1440	3.0	6.9	38.0	**174.6**
QTR*C 20-3*	1440	4.0	10.0	60.0	**193.6**
QTR*C 21-3*	1440	5.5	12.0	75.0	**231.6**

Table 7. Start & Run currents etc. **CASE SIZE 'D'**

General	Electrical 3 Phase *(400v)* ONLY (nominal)				Weight kg
Unit Code	Speed rpm	Power *(kw)*	flc *(amps)*	sc *(amps)*	
QTR*D 1-3*	700	1.5	3.7	18.5	**682**
QTR*D 2-3*	700	2.2	5.4	27.0	**691**
QTR*D 3-3*	700	3.0	6.9	38..0	**697**
QTR*D 4-3*	700	4.0	10.0	60.0	**716**
QTR*D 5-3*	700	5.5	12.0	75.0	**730**
QTR*D 6-3*	700	7.5	16.0	98.0	**750**
QTR*D 7-3*	800	1.5	3.7	18.5	**682**
QTR*D 8-3*	800	2.2	5.4	27.0	**691**
QTR*D 9-3*	800	3.0	6.9	38.0	**697**
QTR*D 10-3*	800	4.0	10.0	60.0	**716**
QTR*D 11-3*	800	5.5	12.0	75.0	**730**
QTR*D 12-3*	800	7.5	16.0	98.0	**750**
QTR*D 13-3*	800	11.0	23.0	154.0	**794**
QTR*D 14-3*	900	3.0	6.9	38.0	**697**
QTR*D 15-3*	900	4.0	10.0	60.0	**716**
QTR*D 16-3*	900	5.5	12.0	75.0	**730**
QTR*D 17-3*	900	7.5	16.0	98.0	**750**
QTR*D 18-3*	900	11.0	23.0	154.0	**794**
QTR* D 19-3*	900	15.0	30.0	225.0	**824**
QTR*D 20-3*	1000	4.0	10.0	60.0	**716**
QTR*D 21-3*	1000	5.5	12.0	75.0	**730**
QTR*D 22-3*	1000	7.5	16.0	98.0	**750**
QTR*D 23-3*	1000	11.0	23.0	154.0	**794**
QTR*D 24-3*	1000	15.0	30.0	225.0	**824**
QTR*D 25-3*	1000	18.5	38.0	266.0	**910**
QTR*D 26-3*	1100	5.5	12.0	75.0	**730**
QTR*D 27-3*	1100	7.5	16.0	98.0	**750**
QTR*D 28-3*	1100	11.0	23.0	154.0	**794**
QTR*D 29-3*	1100	15.0	30.0	225.0	**824**
QTR*D 30-3*	1100	18.5	38.0	266.0	**910**
QTR*D 31-3*	1100	22.0	44.0	308.0	**940**
QTR*D 32-3*	1200	7.5	16.0	98.0	**750**
QTR*D 34-3*	1200	15.0	30.0	225.0	**824**
QTR*D 35-3*	1200	18.5	38.0	266.0	**910**
QTR*D 36-3*	1200	22.0	44.0	308.0	**940**
QTR*D 37-3*	1200	30.0	59.0	413.0	**1030**

Prefabricated Curb

Manufactured in aluminium alloy these curbs will reduce design work and guarantee correct unit mounting when on site.
Note: Upper faces of curb are fitted with robust sealing strip.

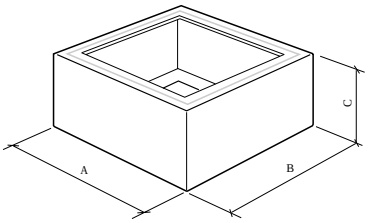


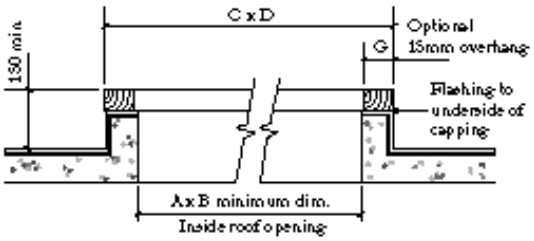
Fig. 5.

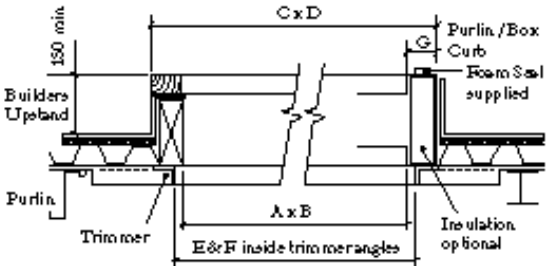
CODES: QTPFC* *(typical)*
Dimensions *(mm)*

Unit Code	Unit Code	Prefab Code	A	B	C
QTR*A	QTE*A	QTPFC 4	934	934	305
QTR*B	QTE*B	QTPFC 5	1233	1233	305
QTR*C	QTE*C	QTPFC 6	1374	1580	305

Table 8.

Roof Opening and Curb Dimensions *Fig. 6.*





Dimensions *(mm)* *Table 9.*

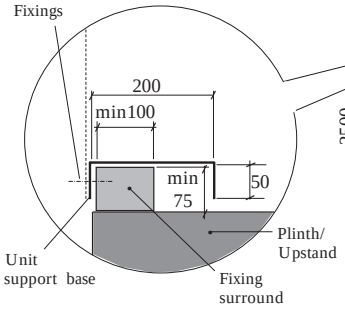
Unit Code	Unit Code	Prefab Code	A	B	C	D	E	F	G
QTR A	QTE A	QTPFC 4	767	767	947	947	837	837	75
QTR B	QTE B	QTPFC 5	973	973	1203	1203	1064	1064	100
QTR C	QTE C	QTPFC 6	1169	1375	1399	1605	1268	1471	100

Fixing Details for larger ('D' size) units *(Fig. 7)*

Unit Weight and Fixing Size D units

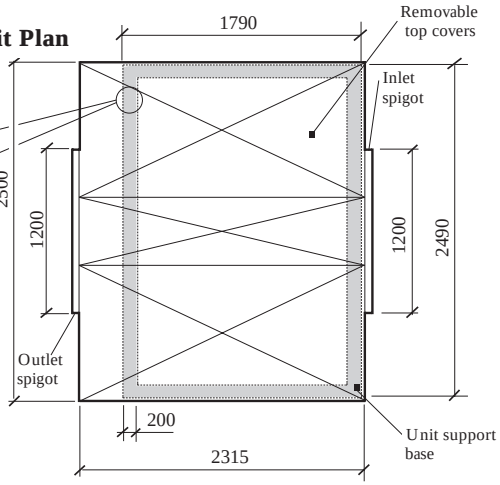
For unit weights see electrical information tables.

Substantial support and fixings are important due to the units weight and to avoid the motor start torque damaging the support base.



Section Through Unit Support Base

Unit Plan



NOTE:
The above Builders Work Details are for guidance only.

Brick/Concrete Upstand (Section)

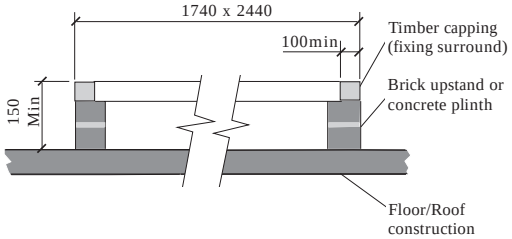


Fig. 8a.

Brick/Concrete Upstand c/w Timber Capping (General View)

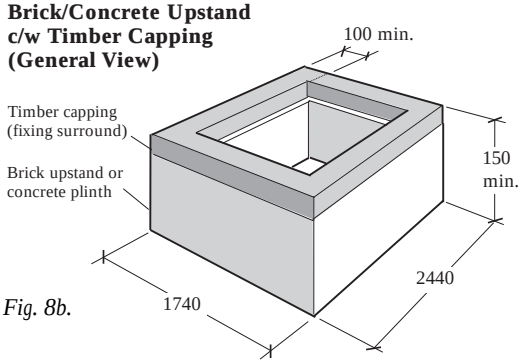


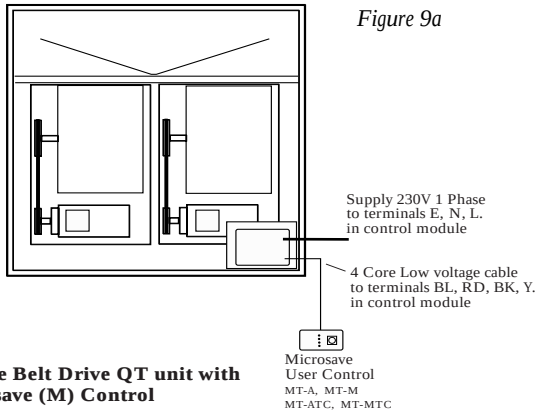
Fig. 8b.

Electrical Installation

Quietwin belt drive units may be specified with either Mains control(C) or Microsave control(M). Units are available for single or three phase connection.

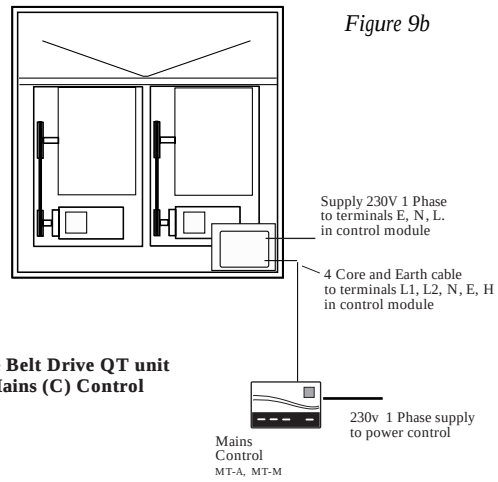
The location of the control system and supply wiring connections is shown in figure 9a-9d below.

Figure 9a



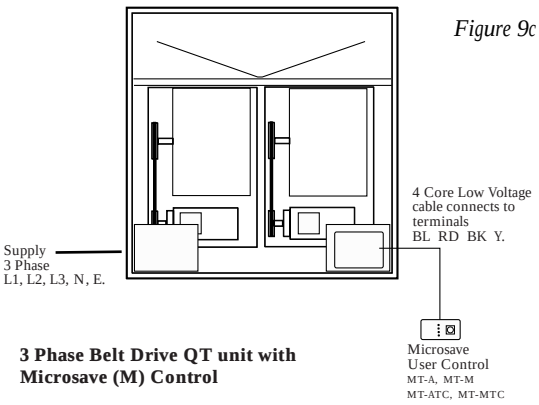
1 Phase Belt Drive QT unit with Microsave (M) Control

Figure 9b



1 Phase Belt Drive QT unit with Mains (C) Control

Figure 9c



3 Phase Belt Drive QT unit with Microsave (M) Control

3 Phase Belt Drive QT unit with Mains (C) Control

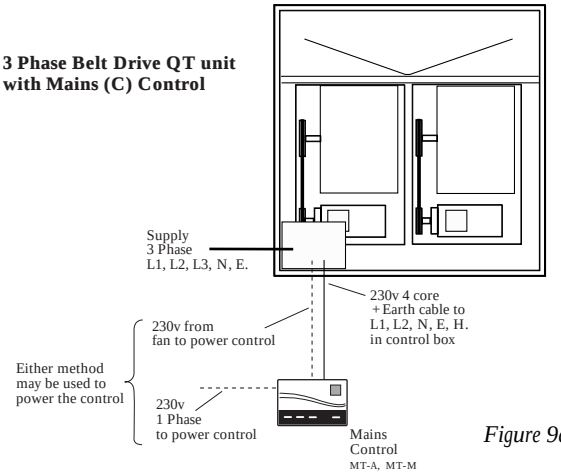


Figure 9d

Service

As a manufacturer NuAire can provide 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: **0222 858271**

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 SMART and NetLink control products.

Tel: 01222 858585 Fax: 01222 858586

3 YEAR WARRANTY

The three year warranty starts from the date of delivery and includes parts and labour for the first year.

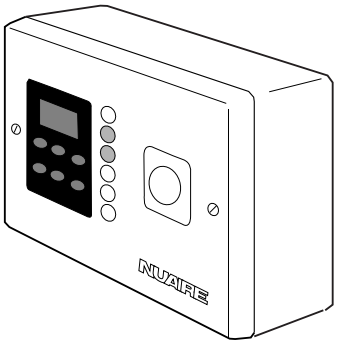
The labour element is subject to full, free and safe access to the equipment as recommended by the CDM regulations.

The remaining two years covers replacement parts only.

NOTE:
Installation & Maintenance of the equipment must be as directed in the instructions provided with the unit.

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.

Control Options
Twinfan Control 'Option 1' Microsave 'M'



Wiring Connections

Notes:

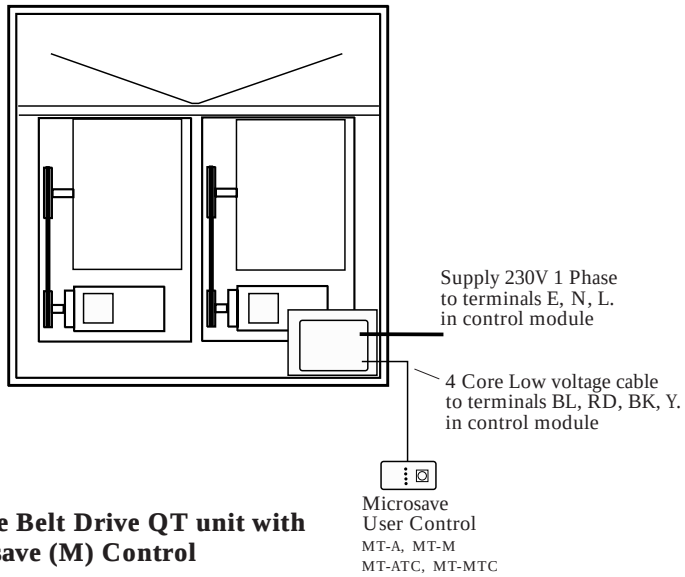
1. Only one Microsave User Control can be connected to each Microsave system (see note 2).

2. Terminals are provided within the Control Box for
   - BMS (Building Management System) connection (on/off and

3. **Note that when a Microsave controlled unit is supplied , the User Control is included inside the fan unit for delivery to site**. Take care not to misplace the item before installation.

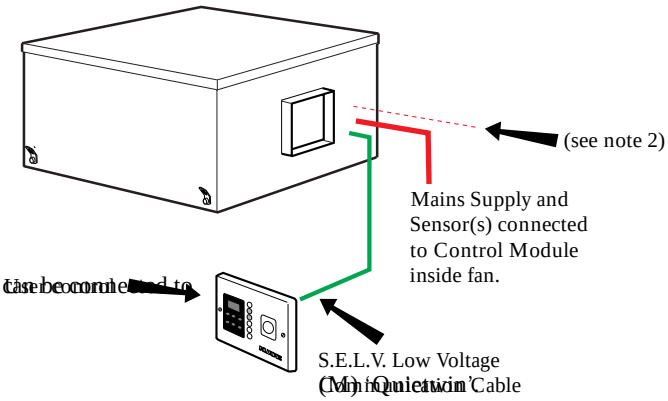
Microsave User Control Options

Code	Description
MT-A	Auto duty sharing
MT-M	Manual duty sharing
MT-ATC	Auto duty sharing with timeclock
MT-MTC	Manual duty sharing with timeclock

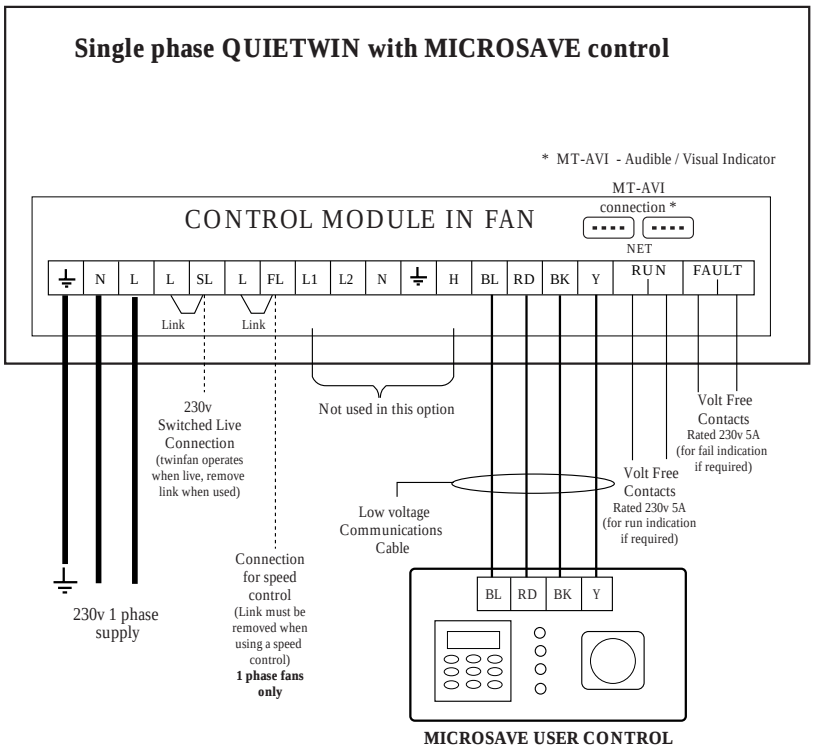


1 Phase Belt Drive QT unit with Microsave (M) Control

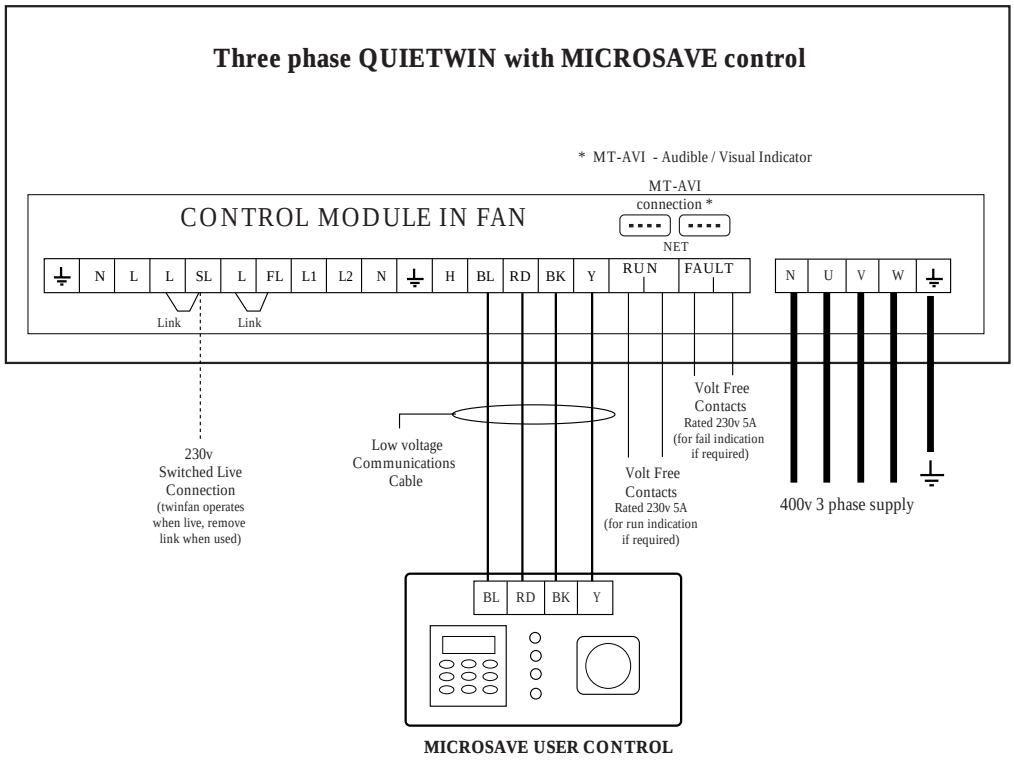
NOTE
See relevant Installation & Maintenance instructions for your chosen NuAire Control.
Microsave (M) Twinfan Control: Leaflet No: 670915
Copies are available from the NuAire Technical Library (01222 858231)



Control Options
Twinfan Control 'Option 1' Microsave 'M' continued.



1 Phase Fan



3 Phase Fan

Control Options
Twinfan Control 'Option 2' Mains 'C'

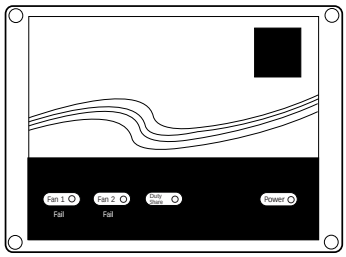
Notes:

1. Only one Mains User Control can be connected to each Mains (C) 'Quietwin'.

2. Mains power can be connected to the Mains Control or the 'Quietwin'.

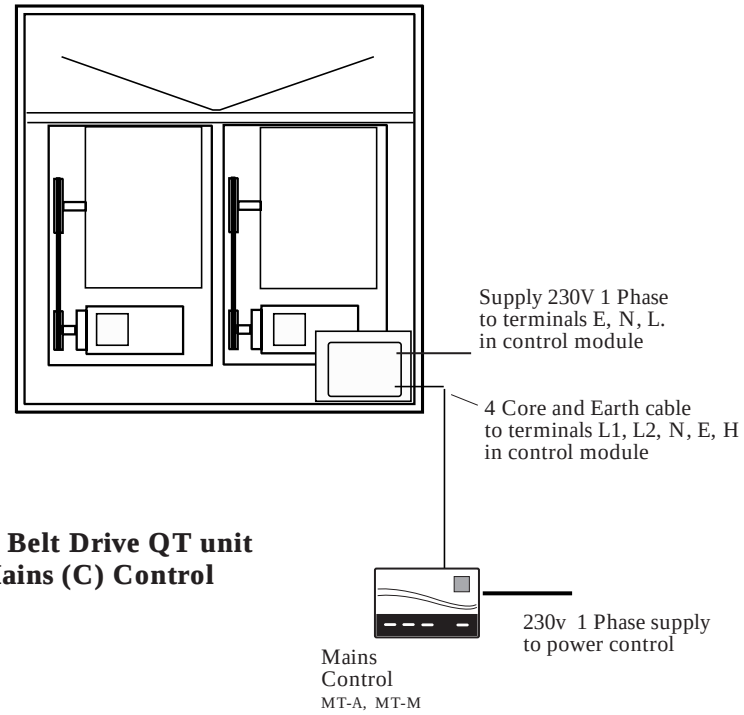
3. Terminals are provided within the Mains Control for the following:-

- BMS (Building Management System) override control (on/off and system status).

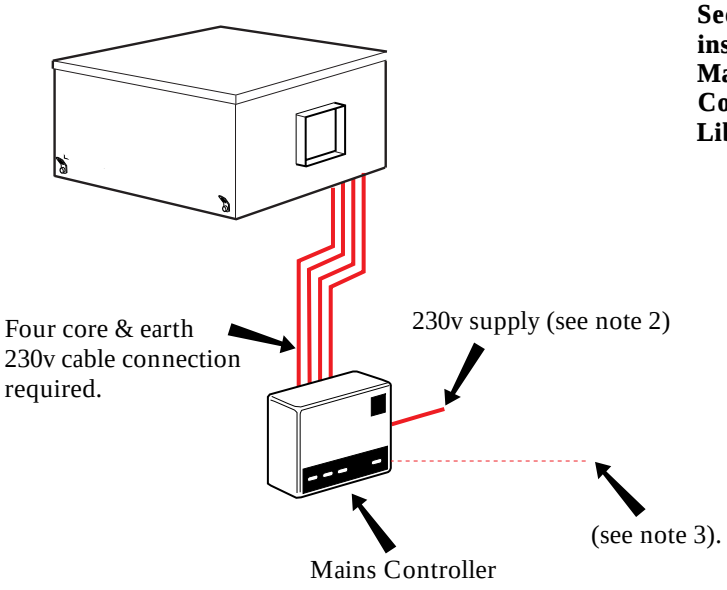


Mains Control Options

Code	Description
CT-A	Auto duty sharing
CT-M	Manual duty sharing

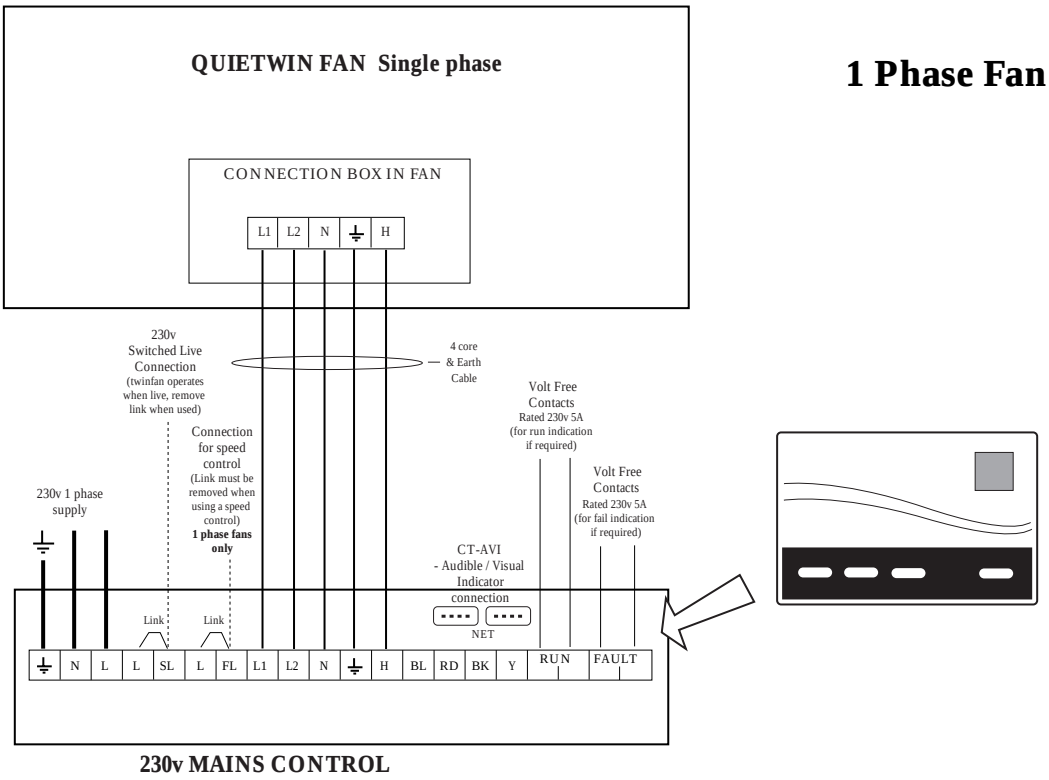


1 Phase Belt Drive QT unit with Mains (C) Control

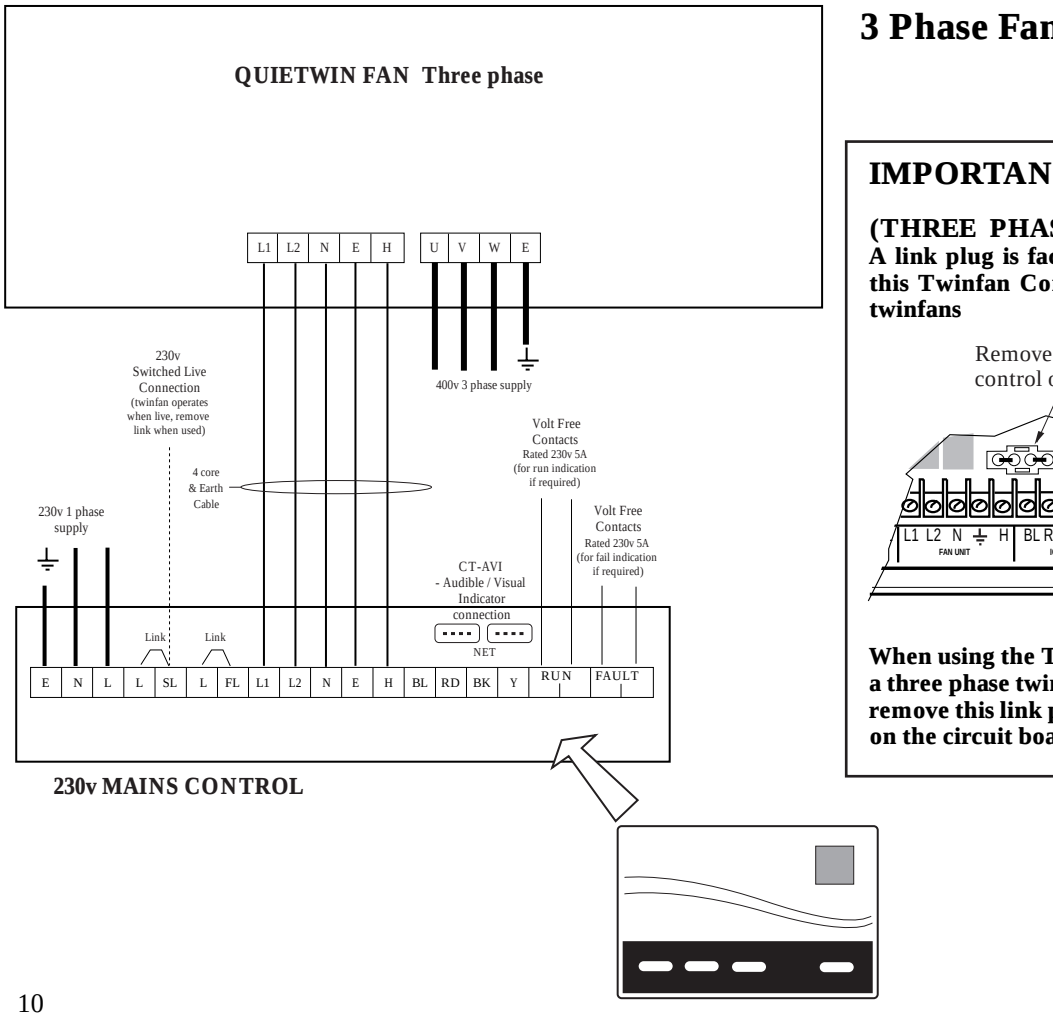


NOTE
See relevant Installation & Maintenance instructions for your chosen NuAire Control. Mains (C) Twinfan Control. Leaflet No: 670912 Copies are available from the NuAire Technical Library (01222 858231)

Control Options
Twinfan Control 'Option 2' Mains 'C' continued.



1 Phase Fan

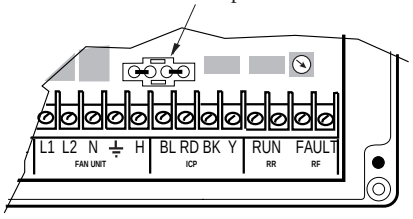


3 Phase Fan

IMPORTANT NOTE:

(THREE PHASE TWINFANS)
A link plug is factory fitted to match this Twinfan Control to single phase twinfans

Remove this plug to allow control of 3 phase fans



When using the Twinfan Control with a three phase twinfan you must first remove this link plug which is located on the circuit board.

Maintenance General

CASE SIZE 'A' 'B' 'C' UNITS

ISOLATION
BEFORE COMMENCING WORK MAKE SURE THAT THE UNIT AND NUAIRE CONTROL, IF FITTED, ARE ELECTRICALLY ISOLATED FROM THE MAINS SUPPLY.

Access to the unit internals is gained by removing the top cover(s) Isolate the unit and inspect the following items three months after commissioning and then once per year.

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.

Motors
Brush away any dust or dirt from the motor housings and ensure that the motor vents are unblocked.

Bearings
Lubrication is unnecessary as the motors are fitted with sealed for life bearings.

Impellers
Remove any dust and check that the impellers are securely fixed to the motor shafts. Take care not to disturb any balance weights fitted. Check sealed for life bearings for excessive wear.

Shutter Assembly
Remove any dust and check that the shutters operate freely. and that they seal the appropriate fan outlet effectively. (Fig 10)

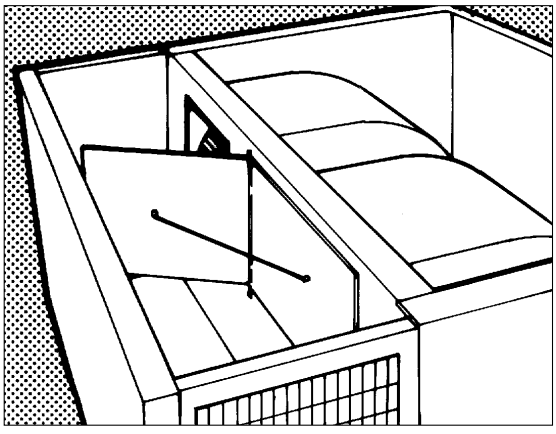


Fig. 10. Quietwin shutter detail.

Anti-vibration mountings
Four resilient mountings support each fan tray. Check that the mountings are secure and in good condition.

Aiflow Flapswitch for Auto changeover
Check the flag switches operate freely by locating the spindle and flap (through the blower outlet aperture) and carefully moving the flap. A click will be heard when the switch operates. See fig. 11.
NOTE: Do not bend the flaps.

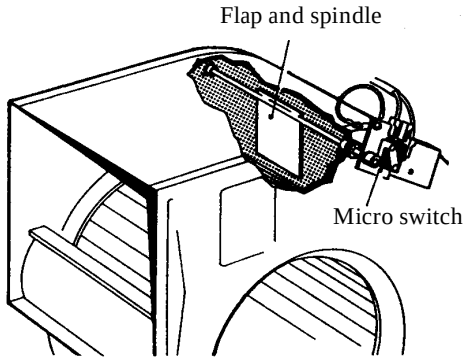


Fig.11 Auto change over flap switch.

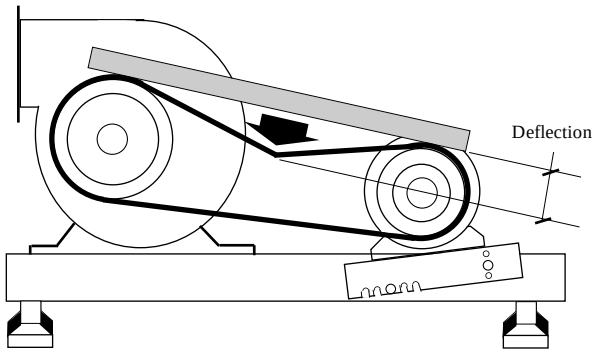


Fig.12 Adjusting the drive belt (A, B, C units).

Changing a drive belt.
To replace a belt, remove the two bolts from the motor mounting furthest from the fan and slacken the remaining two bolts. Lift the motor plate and remove the belt. Replacing the belt is the reverse of this procedure.

Adjusting drive belt tension.
To check the correct tension of a drive belt, apply a force at right angles to the centre of the belt span sufficient to deflect the belt 16mm for every metre of span length (see fig. 12). The force required to deflect the 'V' belt should be from 0.5kg to 0.8kg. The tension of the belt should be checked after 24hrs of continuous running and adjusted as necessary.

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.
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.

General
1. Check that all fixings are tight.

2. Check sealing strips around the fan outlets are tight up against the bulkhead.

3. Check that duct connections are not leaking.

Maintenance (continued).

CASE SIZE 'D' UNITS

ISOLATION
BEFORE COMMENCING WORK MAKE SURE THAT THE UNIT AND NUAIRE CONTROL, IF FITTED, ARE ELECTRICALLY ISOLATED FROM THE MAINS SUPPLY.

Access to the unit internals is gained by removing the top cover(s) Isolate the unit and inspect the following items three months after commissioning and then once per year.

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.

Motors
Brush away any dust or dirt from the motor housings and ensure that the motor vents are unblocked.

Bearings
Lubrication is unnecessary as the motors are fitted with sealed for life bearings.

Impellers
Remove any dust and check that the impellers are securely fixed to the motor shafts. Take care not to disturb any balance weights fitted. Check sealed for life bearings for excessive wear.

Shutter Assembly
Remove any dust and check that the shutters operate freely. and that they seal the appropriate fan outlet effectively.

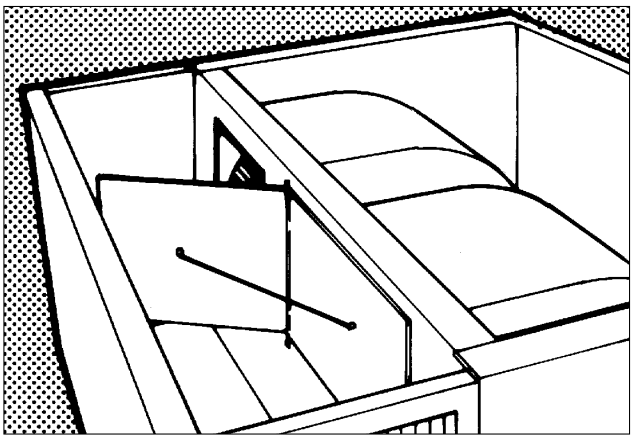


Fig. 13. Quietwin shutter detail.

Anti Vibration motor plate mountings
Each motor plate is supported on ten individual resilient mountings. Check that all the mountings are secure and in good condition. See fig 13.

Aiflow Flapswitch for Auto changeover
Check the flag switches operate freely by locating the spindle and flap (through the blower outlet aperture) and carefully moving the flap. A click will be heard when the switch operates. See fig. 14.
NOTE: Do not bend the flaps.

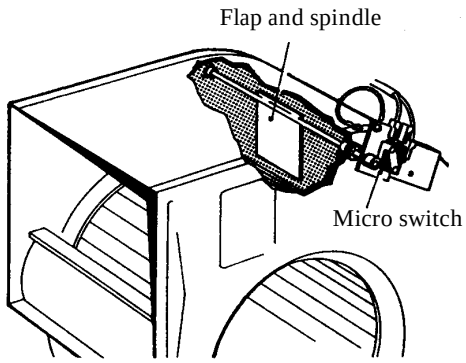


Fig. 14 Auto changeover flap switch

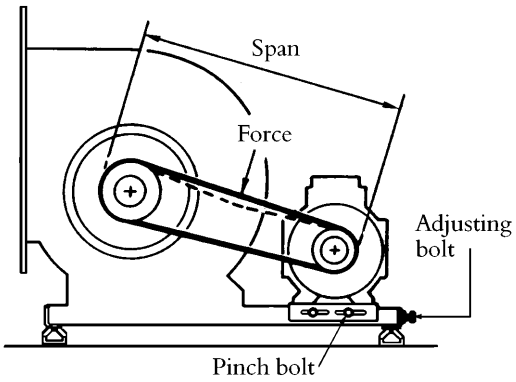


Fig. 15 Tensioning the drive belts on size 'D' units.

Belts
All belt drive units incorporate belt tensioning devices. To adjust the belt tension, slacken the pinch bolt on the sides of the motor plate. Turn the adjusting bolt clockwise to tighten the belt and counter clockwise to loosen it.
The drive should be tensioned until a slight bow appears in the slack side of the 'V' belt when running under load. To check for correct tension, proceed as follows.

1. Measure the span length (See fig. 15).

2. At the centre of the span, apply a force at right angles to the belt sufficient to deflect one belt 16mm for every metre of span length (see fig. 7). The force required to deflect the 'V' belt should be from 0.5kg to 0.8kg.

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.
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.

General
1. Check that all fixings are tight.

2. Check sealing strips around the fan outlets are tight up against the bulkhead.

3. Check that duct connections are not leaking.

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.

SPARES

QTR *Table 10.*
Case size A

Unit code	Motor.
QTR 1	530371
QTR 2	530371
QTR 3	530372
QTR 3*1	530364
QTR 4	530373
QTR 4*1	530368
QTR 5	530372
QTR 5*1	530367
QTR 6	530373
QTR 6*1	530368
QTR 7	530372
QTR 7*1	530367
QTR 8	530373
QTR 8*1	530368
QTR 9	530374
QTR 9*1	530369
QTR 10	530373
QTR 10*1	530368
QTR 11	530374
QTR 11*1	530369
QTR 12	530375
QTR 13	530373
QTR 13*1	530368
QTR 14	530374
QTR 15	530375
QTR 16	530376
QTR 17	530374
QTR 17*1	530369
QTR 18	530375
QTR 19	530376
QTR 20	530374
QTR 20*1	530369
QTR 21	530375
QTR 22	530376
QTR 23	530320

QTR *Table 11.*
Case size B

Unit code	Motor.
QTR 1	530376
QTR 2	530376
QTR 3	530320
QTR 4	530376
QTR 5	530320
QTR 6	530375
QTR 7	530376
QTR 8	530320
QTR 9	530376
QTR 10	530376
QTR 11	530320
QTR 12	530321
QTR 13	530322

QTR Quietwins
Blower Assemblies *Table 14.*

Case Size	Part No.
A	770572
B	770573
C	770574
D	770988

Schedule of Parts

When ordering spares please quote the serial number of the unit together with the part number if. 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.

QTR *Table 12.*
Case size C

Unit code	Motor.
QTR 1	530321
QTR 2	530321
QTR 3	530322
QTR 4	530320
QTR 5	530321
QTR 6	530322
QTR 7	530323
QTR 8	530321
QTR 9	530322
QTR 10	530323
QTR 11	530324
QTR 12	530321
QTR 13	530322
QTR 14	530323
QTR 15	530324
QTR 16	530322
QTR 17	530323
QTR 18	530324
QTR 19	530322
QTR 20	530323
QTR 21	530324

QTR *Table 13.*
Case size D

Unit code	Motor.
QTR 1	530320
QTR 2	530321
QTR 3	530322
QTR 4	530323
QTR 5	530324
QTR 6	530325
QTR 7	530320
QTR 8	530321
QTR 9	530322
QTR 10	530323
QTR 11	530324
QTR 12	530325
QTR 13	531110
QTR 14	530322
QTR 15	530323
QTR 16	530324
QTR 17	530325
QTR 18	531110
QTR 19	531109
QTR 20	530323
QTR 21	530324
QTR 22	530325
QTR 23	531110
QTR 24	531109
QTR 25	531108
QTR 26	530324
QTR 27	530325
QTR 28	531110
QTR 29	531109
QTR 30	531108
QTR 31	531107
QTR 32	530325
QTR 33	531110
QTR 34	530109
QTR 35	531108
QTR 36	531107
QTR 37	531106

NUAIRE

NuAire Limited,
Western Industrial Estate,
Caerphilly, Mid Glamorgan,
CF83 1XH. United Kingdom.
Telephone: 01222 885911
Fax: 01222 887033
Email: info @ nuaire. co. uk

CE DECLARATION OF CONFORMITY

OCTOBER 1998

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 :-	QUIETWIN BELT DRIVE
Machinery Types :-	QTR
Relevant EC Council Directives :-	89/336/EEC, 92/31/EEC (EMC) 73/23/EEC, 93/68/EEC (Low Voltage Directive)
Applied Harmonised Standards :-	E50081-1, EN50082-1, 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	2. 10. 98
2)		M. Fussell	Manufacturing Director	2. 10. 98

NUAIRE

NuAire Limited,
Western Industrial Estate,
Caerphilly, Mid Glamorgan,
CF8 1XH. United Kingdom.
Telephone: 01222 885911
Fax: 01222 887033
Email: info @ nuaire. co. uk

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

OCTOBER 1998

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 :-	QUIETWIN BELT DRIVE
Machinery Types :-	QTR
Relevant EC Council Directives :-	98/37/EC (Machinery Directive) 93/44/EEC (Amendment to the 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	3.10.98
2)		M. Fussell	Manufacturing Director	3.10.98

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

To comply with EC Council Directives 89/392/EEC Machinery Directive & 93/44/EEC Amendment to the 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 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, 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 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 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 minium 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.