



BOXER MSE

Modular Supply Unit

Installation and Maintenance

Boxer Modular Supply Unit

For convenience, the term 'unit' whenever it appears in this document, is used to cover the complete assembly of modules, fixed together in the required combination. **It does not include roof or wall terminals, prefabricated curbs and soaker sheets.**

Nuaire Modular Supply Equipment is a range of components in modular form, which can be arranged in combination to supply fresh air, recirculated air or a mixture of both within a building. The air can be heated or unheated, filtered or unfiltered as required.

Modules are mainly of aluminium alloy and externally flanged for connection together. They include mixed flow fans, heaters, filters, silencers, discharge heads, inlet bend, extensions and recirculation sections. Compatible roof terminals, louvred wall terminals, prefabricated curbs and soaker sheets are available. Heaters can be electric, hot water or steam types. Recirculation modules can be operated directly, by cord, electrically or pneumatically. Roof terminals can be filtered or unfiltered. Filter packs may be of a washable or disposable type. This also applies to those fitted into filter modules.

Fig. 1 Typical arrangement of modular supply equipment with roof and wall terminals installed.

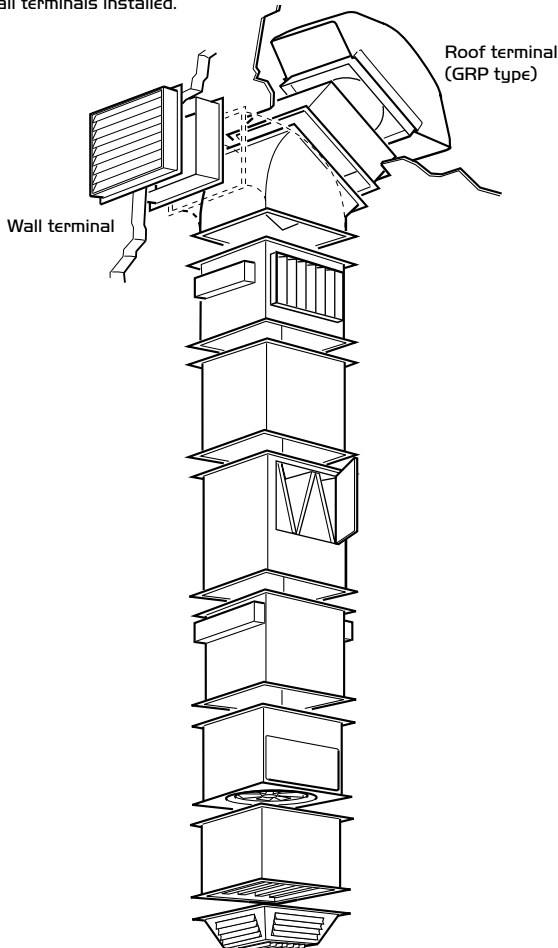
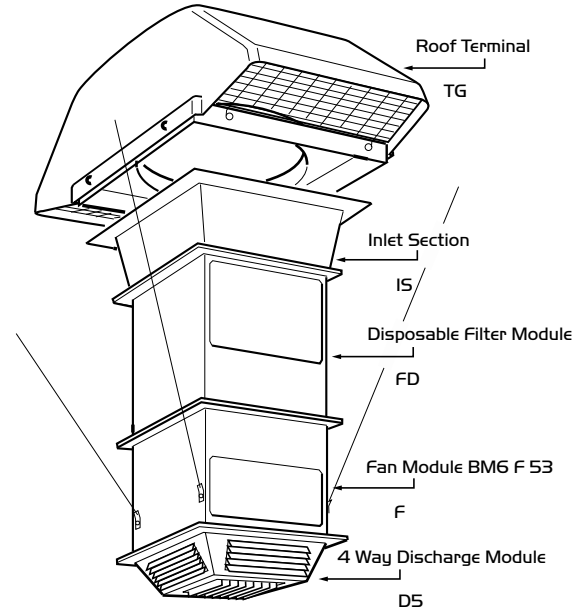


Fig. 2 Typical build up of modules.



1.0 Unit Code explanation

The modules are available in two sizes: 650mm square and 1000mm square. The modules codes all begin with the prefix BM (BOXER MODULE) followed by the size 6 or 10 (650 or 1000).

The next part of the code defines the module description for example -B (BEND) and finally the chosen option of, for example, angle -90 (90 DEGREES).

Although the unit code can be sometimes lengthy, it is logically constructed and exactly defines the constituent components and their relative positions. For example, the unit code for the combination in fig. 2 in a 650 size would be:

BM6-TS. BM6-IS. BM6-FD. BM6-F53. BM6-D5.

A typical code breakdown is shown below.

BM 6 - F W
 | | |
 | | | Washable
 | | | Filter Module
 | | | Size 650 sq

Boxer Module

The codes for each module are shown in the dimensions drawings on page 5.

2.0 Handling

Equipment should be handled carefully to avoid damage or distortion. Units which cannot be carried are best lifted on spreaders, positioned as near relevant flanges as possible. Webbing, rope or any other material must not be passed through equipment for lifting purposes.

3.0 Installation - General

The design and provision of complementary ductwork, pipework, supports, etc., are the responsibility of others. Although site conditions may dictate the best means of installation, the instructions within this section, if followed as closely as possible, will ensure that all the main requirements are addressed with special regard for safety and security.

Where possible, units are delivered pre-assembled except for bend modules and heater batteries. Bend modules are delivered separately to facilitate correct orientation on site.

Heater batteries are supplied separately to avoid damage in transit. Units, too bulky for transportation in one piece are despatched 'broken' at a convenient joint.

Units must be completely assembled before installation.

Inlet sections are not designed to support the unit. This is the function of the wire stays and until these are finally tensioned and clamped the unit should be temporarily supported by other means.

Roof structures should not be drilled to accommodate trimmers, wire stays, etc. Neither should trimmers be drilled. Suitable fixing devices and brackets not requiring drilling should be used.

Most fixing devices required are supplied within the equipment.

3.1 Completing assembly of the unit prior to installation

Bolt parts together at flanges. This allows holes to be orientated relative to each other to produce the most suitable configuration for the particular installation, even to the extent separating and re-orientating already assembled modules.

Modules should be orientated so that when installed the following conditions will be satisfied:

- (a) Fan module access panel will be readily accessible.

- (b) Access door at the filter module, if one is included, will be accessible with sufficient space to permit easy removal and replacement of filter elements.
- (c) If a hot water heater is included, its inlet connection will be at the downstream end of the heater module, i.e. at the end nearer in line to the fan.
- (d) If a steam heater is included, its condensate connection will be at a lower elevation than the steam inlet.
- (e) Direct or cord controls of manually operated recirculation dampers will be conveniently at hand.

3.2 Preparation of a roof opening and curb, if required

For recommended arrangements and dimensions see fig. 3. Make the opening in the roof and then position trimmers generally as shown.

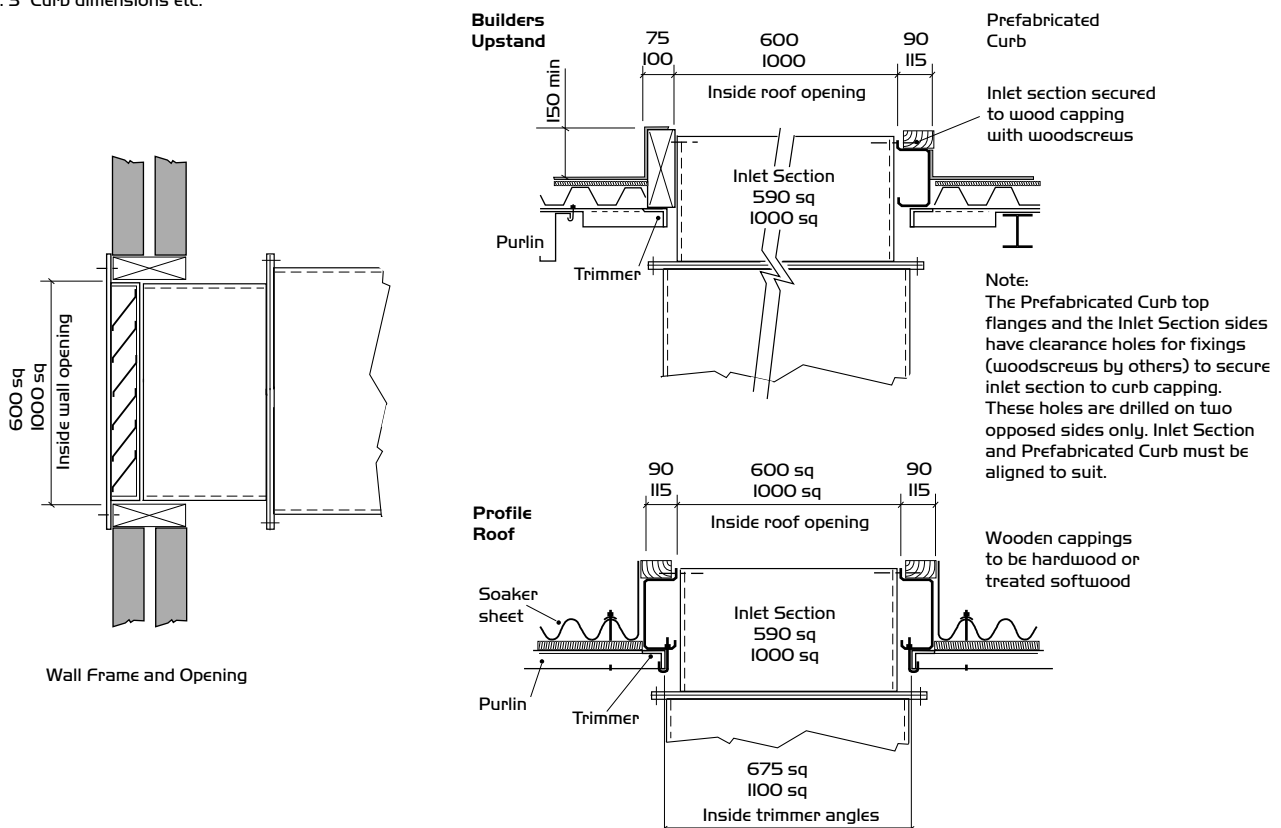
When despatched, a Nuaire prefabricated curb has its adjustable timber capping set at the maximum overhang of 15mm. For use on a decking roof leave it as is. For use on a profile roof in conjunction with a Nuaire soaker sheet reduce the overhang to 5mm. To do this, slacken the nuts inside the curb and move the capping pieces inwards as necessary.

Make sure the seal below the cappings is properly positioned and unrumpled, then re-tighten the nuts.

Fit the prefabricated curb and fix firmly in position. If a curb is not supplied, construct a builders upstand generally as shown. On a decking roof, flash up to the capping on a prefabricated curb or to the level of the top of the curb on a builders upstand.

On a profile roof, lower the soaker sheet over the curb. It should fit closely around the timber capping. If necessary re-adjust capping pieces. Trim the height of the soaker sheet upstand to approximately 5mm below the top of the curb. This will ensure that the roof terminal, when installed, will be supported by the curb, not by the soaker sheet. Build the soaker sheet into the roof following normal roofing practice.

Fig. 3 Curb dimensions etc.



3.3 Preparation of a wall opening, when required

For recommended arrangement and dimensions see fig. 3. Cut a hole through the wall. Line with timber to the required dimensions. Firmly fix and seal the timber into position.

3.4 Installing the unit.

Locate suitable brackets in the roof or ceiling structure to accept the 5/16in. UNF male threaded ends of the wire stays provided. Secure the threaded ends of the stays to the brackets. Vertically mounted units require one set of four stays, horizontally mounted units require two sets.

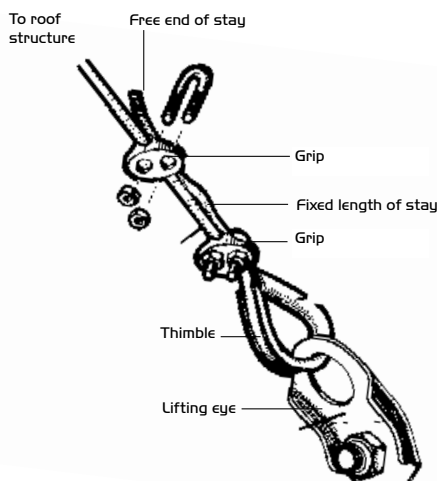
Before installation, remove the access panel at the fan module and clean the interior. Check that the impeller revolves freely.

Be particularly meticulous if the unit has been lying idle for several weeks on an active building site or in a dust laden environment. A build up of cement dust for example, could be very damaging, especially if throughput air were to be damp. Re-fit the access panel.

Lift the unit into position, guiding the inlet section into the roof or wall opening, as applicable. (Note that the prefab curb and inlet sections have holes for curb fixings on two sides and should be positioned to suit). At a convenient moment during installation, secure the inlet section from inside the opening using suitable woodscrews (by others). See figs. 3, 5 and 6. Note that these fixings are not intended to carry the weight of the inlet section etc but are simply used to locate the inlet to the curb.

Assemble the free ends of the wire stays to the unit lifting eyes, together with thimbles and grips as shown in figure 4. Adjust lengths to support the unit evenly without distortion. It is essential that the fixed part of the wire locates within the groove of the base of the grip, with the free end of the wire trapped beneath the U-bolt. Tighten nuts so that the U-bolt 'bites' into the wire, to give maximum purchase. Cut off surplus wire.

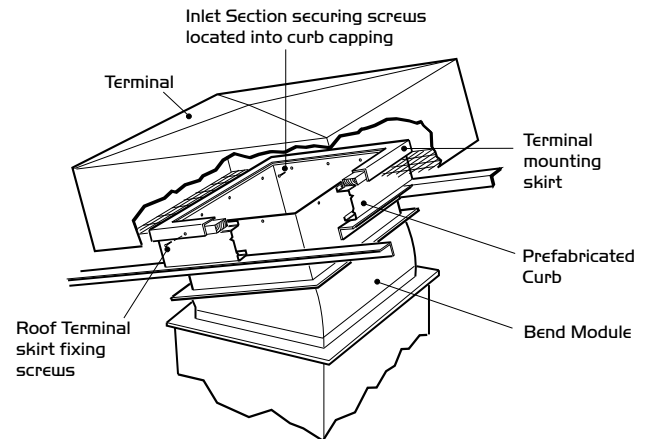
Fig. 4 Assembly of wire stays.



3.5 Fitting a roof terminal, if applicable

Position the terminal on the upstand curb with the terminal skirt seated over the curb. Secure to the curbs timber capping through the mounting holes in the skirt using wood screws (not supplied). See figure 5.

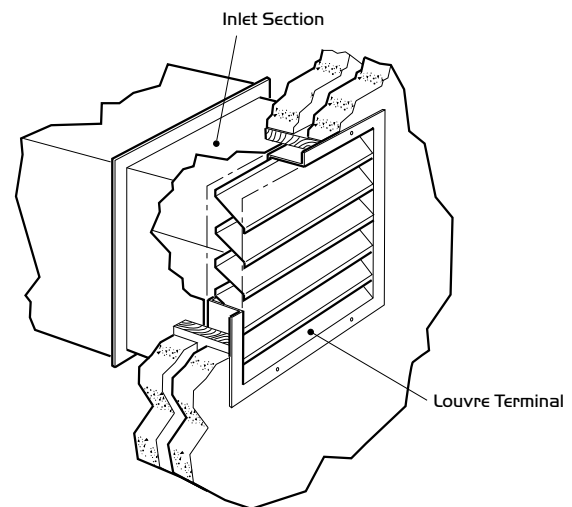
Fig. 5 Assembly of Roof Terminal



3.6 Fitting a wall terminal, if applicable

Locate the terminal into the wall opening. Secure with wood screws (not supplied) see Fig. 6.

Fig. 6 Assembly of Wall Terminal

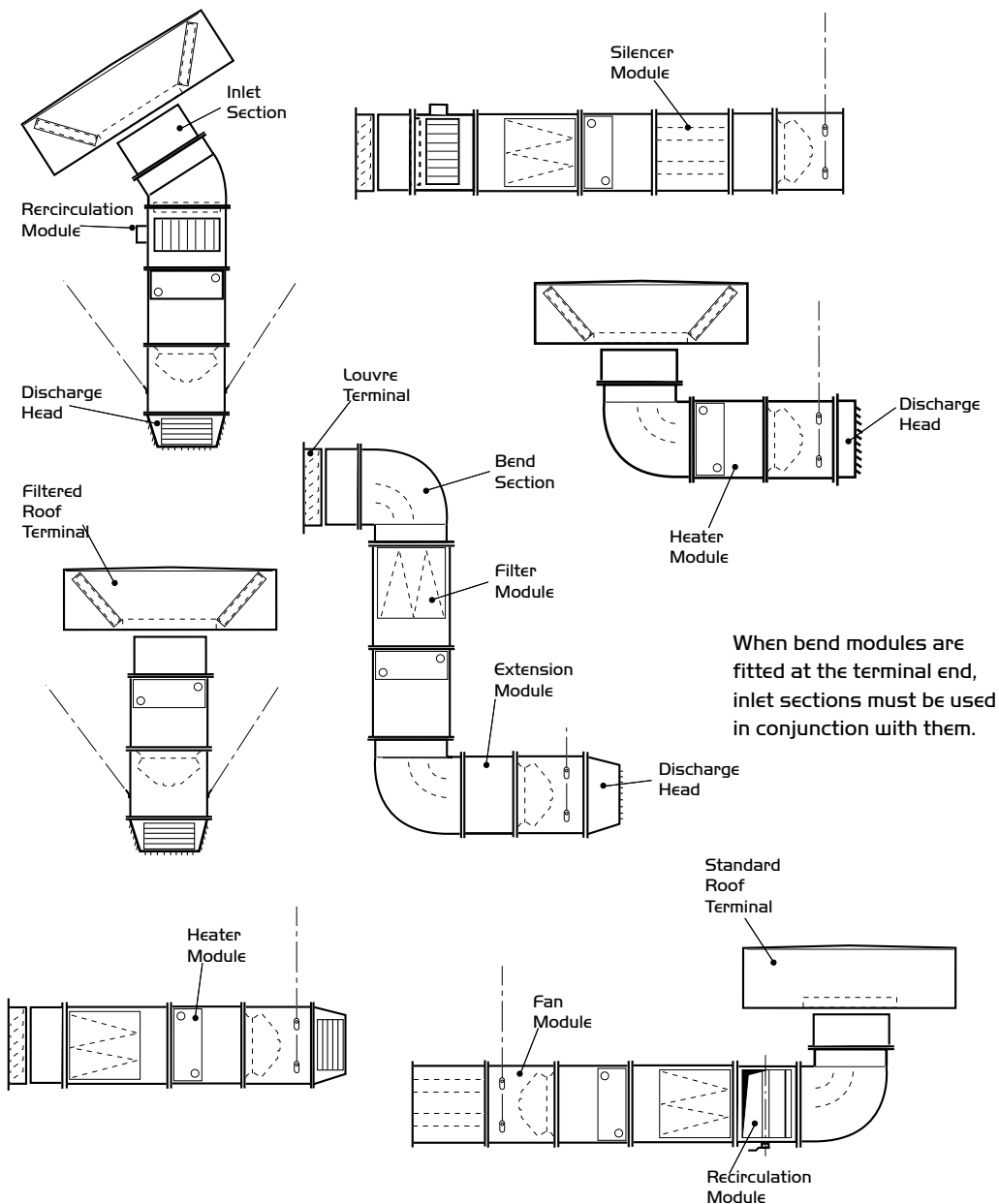


3.7 Connecting a hot water or steam heater (if fitted)

Site pipework should allow for heater coils to expand and contract freely. Provision should be made for draining the coils.

4.0 Typical arrangements

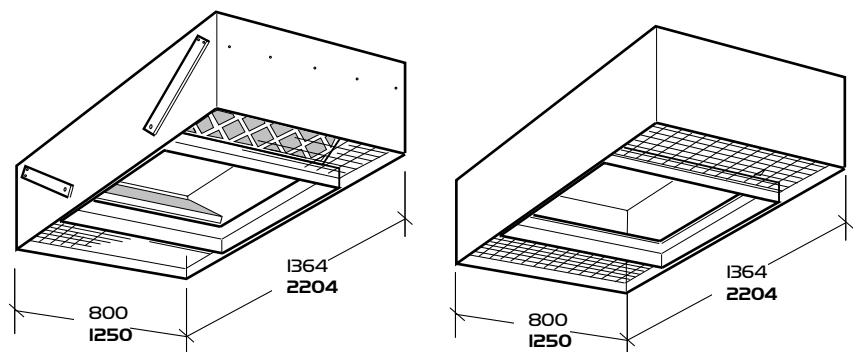
Fig. 7 Typical arrangements



5.0 Dimensions (mm) and Weight Aluminium Roof Terminals

Note:
 Figures in light type apply to size 600 modules.
 Figures in bold type apply to size 1000 modules.

Fig. 8 Roof Terminals.



Filtered Aluminium Roof Terminal
 Codes: BM6-TA*, **BM10-TA***
 * D = with disposable filters
 * W = with washable filters
 Weight kg: 25, **45**

Standard Aluminium Roof Terminal
 Codes: BM6-TA, **BM10-TA**
 Weight kg: 24, **41**

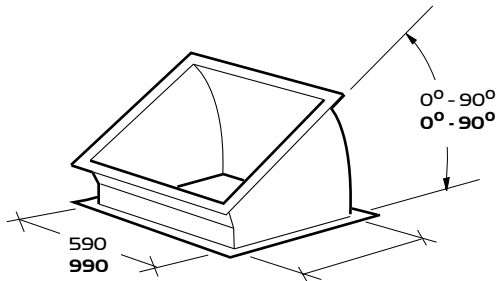
5.1 Dimensions (mm) and Weight Modules

Note:

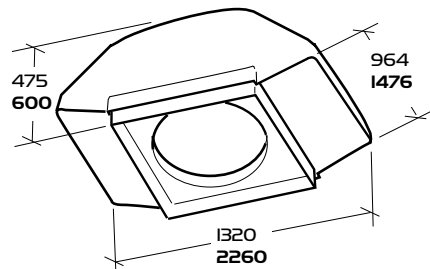
Figures in light type apply to size 600 modules.

Figures in bold type apply to size 1000 modules.

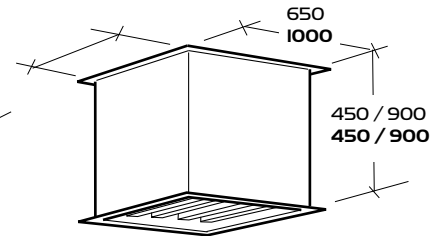
Fig. 9 Roof Terminals.



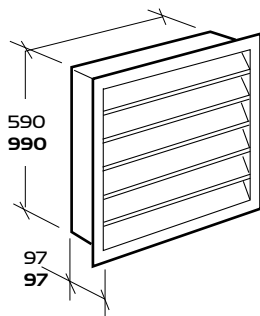
Bend
Codes: BM6-B*, **BMIO-B***
* Required angle



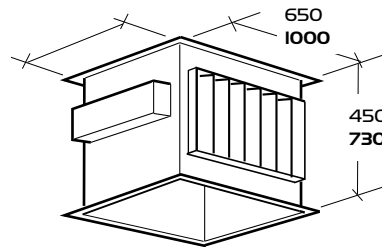
Standard Roof Terminal
Codes: BM6-TG, **BMIO-TG**
Weight kg: 26, **88**



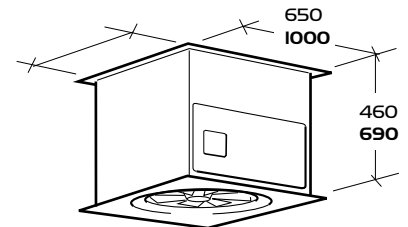
Silencer Module
Codes: BM6-A*, **BMIO-A***
*S= short, L= long
Weight kg (S): 24, **55**
(L): 55, **92**



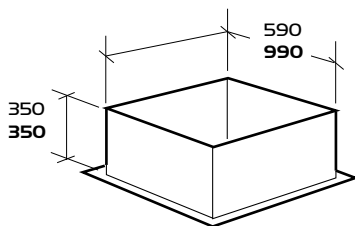
Louvre Terminal
Codes: BM6-TL, **BMIO-TL**
Weight kg: 7, **20**



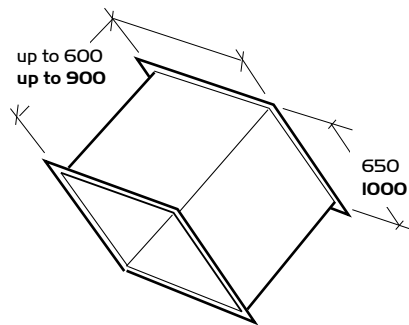
Recirculation Module
Codes: BM6-R*, **BMIO-R***
* E=elec. M=manual, C=cord, P=pneumatic
Weight kg: 12, **19**



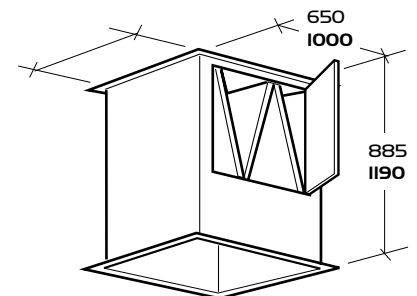
Fan Module
Codes: BM6-F*, **BMIO-F***
* Performance curve No.
Weight kg(max): 30, **105**



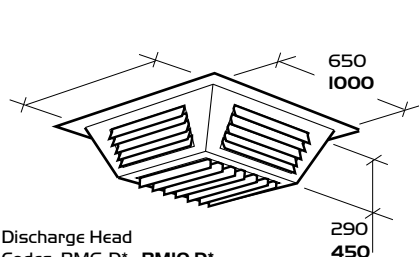
Inlet Section
Codes: BM6-IS*, **BMIO-IS***
* G= GRP terminal *A= Aluminium terminal
Weight kg: 6, **9**



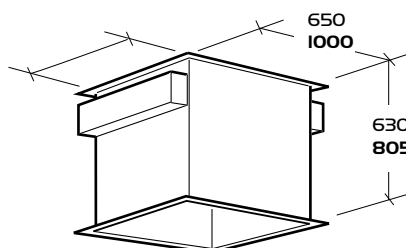
Extension Module
Codes: BM6-E*, **BMIO-E***
* Length (l to 6 x 100mm)
(l to 9 x 100mm)
Weight kg (max): 18, **20**



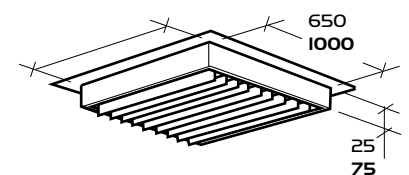
Filter Module
Codes: BM6-F*, **BMIO-F***
* D= disposable W= washable
Weight kg: 20, **28**



Discharge Head
Codes: BM6-D*, **BMIO-D***
* Number of directions
Weight kg: 8, **22**



Heater Module
Codes: BM6-H*, **BMIO-H***
* Heater type
Weight kg (max): 74, **135**



Discharge Module
Codes: BM6-V*, **BMIO-V***
* S= single deflection
* D= double deflection
Weight kg: 8, **22**

6.0 Electrical information

6.1 Electrical connections, fan

The wiring diagrams on this page show the terminations for single phase, three phase, DOL or Star/Delta starting.

Compatible site wiring and provision of any start conductors, overloads, etc., are the responsibility of others.

All connections into the fan are to be made directly to the terminal strips in the terminal box. Obtain access by removing the terminal box cover. Route cabling through the cable gland on the terminal box.

6.2 Electrical connections, electric heater, if fitted

The arrangement of compatible site wiring is the responsibility of others.

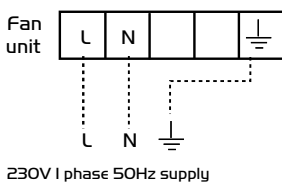
It is important, however, that the circuit is so designed that when the heater is switched off the fan will 'run-on' for a cooling down period.

The heater is fitted with a normally closed safety cut-out pre set to open at 165°C. This should be wired into circuit so that it breaks the electrical supply to the heater should this temperature be reached.

Wiring diagrams

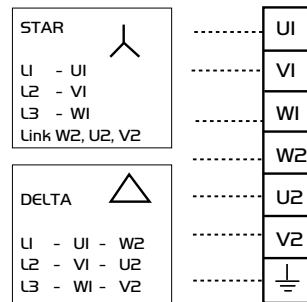
1 Phase

Single Speed (all below 0.55kW)



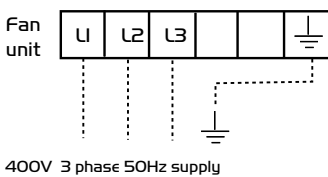
400V 3 phase 50Hz supply

3 Phase for Star / Delta starting (4kW and above)



3 Phase

Single Speed (below 4kW)



6.3 Connecting pneumatically operated dampers, if applicable

A supply of clean, dry and lubricated air at 550-690 kPa (80-100 lb. in.²) through a shut off valve is required.

A size BMIO unit module is fitted with a double acting pneumatic cylinder. A size BM6 unit module is fitted with a single acting spring return pneumatic cylinder. Supplied loose with both sizes is a pressure regulator, a length of 1/4 in. o.d. nylon tubing and the necessary 1/8 in. B.S.P. fittings.

A control valve is additionally supplied with a size BMIO unit.

The pressure regulator, and the control valve supplied with the BMIO unit, should be fixed in a position convenient to for manual operation. Pipe the regulator to the supply.

If the supply is obtained from a main, take the airline from its topside and ensure that it rises at least 50mm before reaching the regulator level. This is to prevent the regulator line acting as a drain for condensation in the main line.

With a size BM6 unit, pipe the regulator directly to the pneumatic cylinder. See fig. 10.

With a size 1000 unit, pipe the regulator to the inlet port of the control valve. Pipe the outlet ports of the control valve to the pneumatic cylinder at the re-circulation module. See fig. 10.

6.4 Electrical connections, electrically operated dampers if fitted

A recommended wiring diagram is in fig 11. Two dampers are employed to provide the recirculating facility and both 24V motors are pre-wired to terminal boxes fitted to the side of the recirculation module.

Fig. 10 Pneumatically operated dampers.

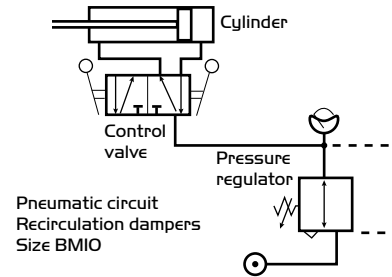
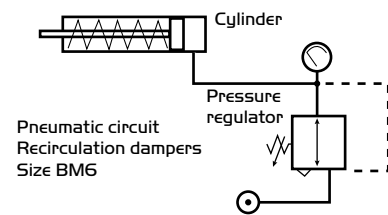
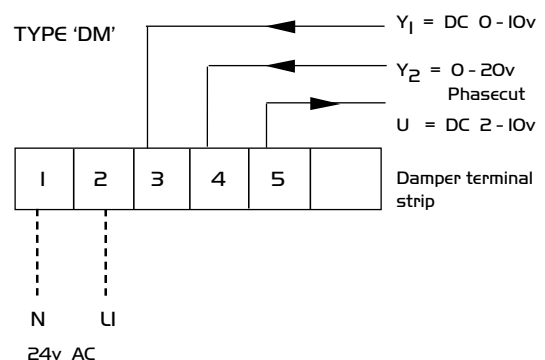


Fig. 11 Electrically operated dampers.



The Motorised Dampers supplied with the BOXER range are designed to be fitted to any of the unit end panels.

Type 'DM' dampers are fitted with a modulating damper motors which allow setting of the damper block positions at any point via a control signal.

The Damper Module requires no routine maintenance.

7.0 Testing & setting after installation

IMPORTANT

WARNING - DANGER

This equipment incorporates rotating and moving parts as well as electrical components and conductors. It is the responsibility of the installer to ensure that any such items that remain externally accessible once the equipment is installed are adequately guarded. This precaution is necessary to avoid the possibility of accidental injury or death. Particular attention must be paid to the inlet side of rotating impellers.

Precautions

Prior to testing, make sure that no loose items have been left in the fan module. Whenever the unit has to be switched on with the fan access module panel removed, first check that all personnel are clear of the open access panel aperture.

Do not switch or turn on the heater until specifically instructed to do so, and then, make sure that the fan is already running. Switch off the heater before the fan, allowing this to 'run on' for a cooling down period.

Checking the fan

Remove the access panel at the fan module, if in place. Ensure that the access door at the filter module, if one is fitted is closed.

Switch on the fan, just sufficiently long to ensure that it runs. Switch off. During run-down and by observation through the open access panel aperture, check for correct rotation and for any evidence of malfunctioning as follows:

- (a) Check that the impeller is rotating freely and securely on the shaft, with no signs of slipping.
- (b) Check rotation. A single phase fan is unlikely to be incorrect, as rotation is carefully checked at the factory. Should a three phase unit be incorrect, reverse any two of the supply lines.

With the access panel is re-fitted, switch on the fan. Check that air is being discharged satisfactorily. Set louvres at the discharge head, if applicable, to direct air to the best advantage.

Checking the heater

With the fan running, switch or turn on the heater. At a hot water or steam heater, check connections for leaks. Make good as necessary. Check that warm air is discharged as required.

Checking damper controls

With the fan running and the heater operating, check the operation of the damper controls as detailed in 'Operating the Unit'

If the controls are pneumatic, check all joints for leaks and make good as necessary. If the unit is a BMIO size, preset its pressure regulator as follows:

- a) Set the pressure regulator to zero.
- b) Select either damper position on the control valve. Raise pressure by adjustment of the regulator until the dampers move to the selected position or it is obvious that the dampers are already in that position. Return the pressure to zero.

- c) Select the other damper position on the control valve. Raise pressure until the dampers change-over.
- d) Maintaining the regulator at this setting, select damper positions alternately and check that movement is smooth, uninterrupted and without excessive impact at the ends of travel. Adjust regulator pressure if necessary to obtain the best results, then lock the regulator control knob with its locking ring.

8.0 Operating the Unit

The access panel must be fitted to the side of the fan module. For general ON/OFF operations, a separate control switch or contactor is recommended.

Switch on the fan before switching on the heater, whether it be electric, hot water or steam. Switch off the heater before the fan, allowing this to 'run on' for a cooling down period.

Operate the dampers as follows:

- a) If manual, operation is self evident.
- b) If electric and generally wired as shown in fig. II, operate to the extreme positions by means of the selector switch. Select switch neutral (off) whilst the dampers are moving to stop them in any intermediate position, to provide a mixture of recirculatory and inlet air as required.
- c) If pneumatic and a size BM6, operate by increasing or decreasing pressure to the pneumatic cylinder through the pressures regulator.
- d) If pneumatic and a size BMIO operate by selection through the control valve. Do not touch the pressure regulator, except to pre-set if required.

For information on this see 'Checking Damper Controls'.

9.0 Routine Maintenance

IMPORTANT

Isolation - Before commencing work electrically isolate the fan, electric heater and electric damper actuator as fitted.

Maintenance Periods

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

The filters of filtered roof terminal and of a filter module, when either is fitted, should be inspected every three months.

Washable filters should be washed.

General cleaning and inspection - Fan unit

Clean all available parts and inspect for condition and security, especially wire stays. Remove the fan module access panel to clean and inspect the internal parts.

Check that the impeller rotates freely. For detailed cleaning of the impeller and the filters of a filter module, if one is fitted, see the following paragraphs. Use a damp cloth to wipe clean the louvre blades of a discharge head, if one is fitted. A build-up of dust on blade edges could lead to local turbulence and result in a drop in distribution efficiency.

Take care not to disturb settings. Do not use caustic fluids under any circumstances.

General cleaning and inspection - Wall Terminal

Check for security. Wipe clean with a damp cloth. If this is insufficient, remove any build up of dust etc., with a stiff brush.

General cleaning and inspection - Roof Terminal

Clean the outside and check for security and condition. From below the casing, remove any debris that might impede air entry. For cleaning and inspection of filters when fitted and washable, see following paragraphs.

Cleaning the Impeller

A build up of dust may be removed by carefully brushing with a stiff brush, taking care not to disturb or distort the impeller blades nor to disturb any balance weights. If the impeller is too badly fouled to allow adequate cleaning in situ it will be necessary to remove the complete unit from the installation. See 'Removal and Refitting a Unit'.

When the unit is removed, proceed as follows:-

- a) Separate the fan module (at its inlet flange) from the remainder of the unit. Make a note of the relative orientation.
- b) Sponge the impeller with warm soapy water and leave to soak. Do not use caustic fluids under any circumstances.
When applying the water, take care to prevent it getting into or onto electrical parts.
- c) After soaking, rinse with fresh water and thoroughly dry.
- d) Re-fit the fan module to the unit. Ensure that the module is orientated relative to the remaining unit exactly as it was prior to removal.

Return the complete unit to the installation.

Lubrication

Most motors have sealed for life bearings and therefore need no lubrication. Some motors may however, be found with grease nipples. Lubricate these in accordance with the lubrication plate fixed to the motor and normally in view through the access panel aperture.

If a Recirculation Module is fitted, lubricate each pivot connection at the linkage with a few drops of light machine oil.

Filters (Roof Terminal or Filter Module)

Filter frames are easily removable for inspection of the filters. Unlock the quick release fasteners at the cover plate and slide out.

Disposable filters should be replaced when excessively dirty or when their resistance has increased by 125Pa (0.5 in w.g.)

Manometers are available as optional extras and may be found already factory fitted.

Washable filters should be washed in warm soapy water and allowed to dry before being fitted.

Do not add soda to the water or use any caustic fluids.

Testing

Test run the fan.

Check for air leaks at joints, making good as necessary.

With the fan running check that the dampers operate satisfactorily, whether manually, electrically or pneumatically controlled.

Check pneumatic lines and joints for leakage, making good as necessary.

With the fan running, switch or turn on the heater.

Check that the warm air is discharged. If steam or hot water operated, check pipe connections for leakage.

Make good as necessary.

10.0 Removal and Refitting a Fan Unit

IMPORTANT

Isolation - Before commencing work electrically isolate the fan, electric heater and electric damper actuator as fitted. Shut off the supply and return lines connected to a hot water or steam heater, if either is fitted. Shut off the air line to a pneumatic damper actuator, if fitted.

Removal

Arrange some means of temporarily supporting the unit whilst it is being disconnected.

Electrically disconnect as follows, noting connection details:

- a) Remove the fan module access panel.
Disconnect leads coming in to the unit.
Withdraw these leads from the unit.
- b) Disconnect the Electric Heater, if fitted.
- c) Disconnect the Electric Damper Actuator, if fitted, at the adjacent terminal block.

Drain and disconnect a hot water or steam heater, if either is fitted.

Disconnect the air lines from the pneumatic damper cylinder, if fitted.

With the unit still supported, free it from the installation as follows:

- a) Remove the roof or wall terminal, as applicable.
Remove fastenings fixing the inlet section within the opening. Temporarily refit the terminal to weather proof the opening.
- b) If the outlet end of the unit is connected to ducting, disconnect.
- c) Disconnect wire stays.

The unit can now be lowered to the floor as convenient.

Refitting

Refitting is the reverse of removal.

Make sure that the unit is mechanically and electrically connected exactly as it was prior to removal.

11.0 Replacement of parts

IMPORTANT

Isolation - Before commencing work electrically isolate the fan, electric heater and electric damper actuator as fitted.

Spare Parts

When ordering spare parts, please quote the serial number of the unit together with the part number if quoted. If not quoted, please fully describe the part. Serial number will be found on the identification plate fixed to the unit.

Before fitting remove any protective coating from the replacement parts.

Any complete module

To change any module it will be necessary to remove the complete unit from the installation and effect replacement at floor level.

The new module must be orientated exactly as was the old one. Then return the complete assembly to the installation.

Note the additional isolation of hot water, steam and pneumatic lines required, if included.

Pneumatic Damper Actuator

This part can be changed with the unit in situ. Shut off the air supply and disconnect the the pipe lines. Disconnect from the Damper linkage. Release and remove the actuator, fit the new one.

Connect to the damper linkage and air supply. Test for satisfactory operation, re-adjusting linkage if necessary.

Electric Damper Actuator

This part can also be changed with the unit in situ. Disconnect at the terminal box. Slacken U-clamp nuts. Remove motor. Manually set dampers so that recirculation ports are fully open. Fit new motor, but do not tighten U-clamp bolts. Disengage gears by depressing the manual release button on the motor casing, holding the button depressed, rotate the motor clamp until its pointer is one division before the 'O' end of the scale. Release the button to allow the gears to re-engage. Tighten U-clamp nuts. test for satisfactory operation.

Impeller or Motor

It is not practicable to change either of these parts with the unit in situ; it must first be removed from the installation.

Note the additional isolation of hot water, steam and pneumatic lines required, if included. When the unit has been removed, separate the fan module from the remainder, noting the relative orientation.

Using suitable hoisting facilities for the larger sizes, remove the motor and impeller assembly from the fan module as follows:-

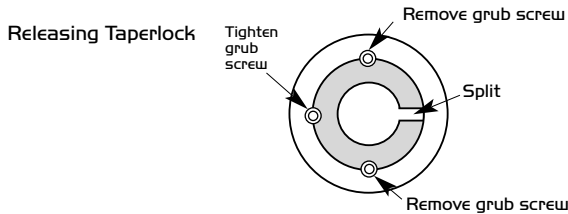
- a) If fitted, remove the access panel at the fan module. if the motor leads are integral with the motor, disconnect and withdraw the leads. If the motor is fitted with a terminal box, however, remove its cover. Disconnect the leads, disconnect the conduit at the motor end and remove both leads and conduit clear. Whatever the arrangements, make a note of the connections.
- b) Size BM6 units: release the ends of the two angle sections supporting the motor mounting plate and lift out the sections complete with motor and impeller.

- c) Size BMIO units: first remove the two tie rods. Release the bracket supporting the motor mounting plate and lift out complete with motor and impeller.

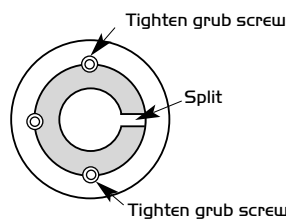
To assist during replacement, measure and note the amount by which the end of the motor shaft protrudes from, or is recessed into, the impeller bore.

Remove the impeller from the shaft as follows:-

Fig. I2 Taperlock bush



Locking Taperlock



From the locking holes of the taperlock (see Fig. I2) remove one grub screw. Lightly oil the thread and point and insert it into the jacking hole. Slacken the other grub screws.

Tighten the screw until the bush is loosened in the hub and the assembly of impeller and bush can be drawn from the shaft.

Remove the screw and separate the impeller and bush.

If only the impeller is to be changed, this is the limit of dismantling.

Fix the new impeller as detailed in the paragraph after next and proceed from there.

Replacing a Fan Motor

If the motor is to be changed release and move it clear after the impeller has been removed. If the motor has a terminal block, transfer the flexible conduit adaptor from the old to the new.

Fix the new motor to the mounting plate..

Fitting a taperlock impeller to a motor

Assemble the impeller (new or original) as relevant to the shaft as follows:-

- a) Making sure that tapered mating surfaces are thoroughly clean, insert the taperlock bush into the impeller hub. Line up holes. Lightly oil threads and points of grub screws and assemble loosely into the locking holes (see fig. I2).

- b) Clean the motor shaft and fit the impeller and bush as one unit to the shaft in the position noted during removal.

If relevant, makes sure that a key is fitted into the slot in the shaft. Tighten screws gradually and alternately until pulled up tight, noting that the bush will nip the shaft first and then the hub will be slightly drawn onto the shaft.

- c) Fill empty holes with grease to exclude dirt.

Return the assembly to the fan module, locating and retaining it in the reverse of removal. Ensure that the impeller rotates freely and is concentric with the venturi.

Adjust concentricity by taking up, as convenient, clearances in fixing holes for the motor, motor mounting plate and angle sections etc.

Connect the motor to the terminal box connecting flexible conduit as necessary. return the fan module to the unit, making sure the orientation is as it was prior to removal.

Reinstall the complete unit and test run..

I2.0 Warranty

The 3 year warranty starts from the day of delivery and includes parts and labour for the first year. The remaining period covers replacement parts only. This warranty is conditional on planned maintenance being undertaken..

I3.0 Service Enquiries

Nuaire can assist you in all aspects of service. Our service department will be happy to provide any assistance required, initially by telephone and If necessary arrange for an engineer to call.

Telephone 029 2085 8585
Fax 029 2085 8586

15.0 Certification



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. All parts except for moving parts requiring the correct installation of safety guards comply with the essential requirements of the Machinery Directive. 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: BOXER MSE
Machinery Types: BNG-F, BMIO-F
Relevant EC Council Directives: 2006/42/EC (Machinery Directive)
Applied Harmonised Standards: BS EN ISO 12100, BS EN 60204-1, BS EN ISO 9001, BS EN ISO 13857
I & M Serial No: 670158
Applied National Standards: BS848 Parts 1, 2.2 and 5
Date of manufacture: 2011

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	21. 10. 11
2) A. Jones 	Manufacturing Director	21. 10. 11

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

To comply with EC Council Directive 2006/42/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 Nuairé 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 Nuairé.
 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.



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