

NUAIRE

SSR

Smokeclearer

Square Roof

Installation and Maintenance

NUAIRE

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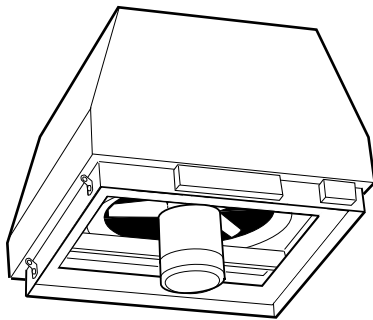


Fig 1a SSR
Roof Smokeclearer
300°C and 400°C

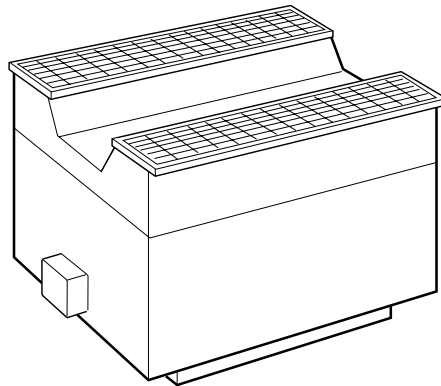


Fig 1b SSR
Roof Smokeclearer
800°C model

Description

The NuAire SSR Smokeclearer Square Roof unit is designed to operate as standard roof extract fan. However, in the event of a fire, the unit can extract smoke at temperatures up to 800°C for a maximum of two hours* Two design types are available.

A 300°C/400°C unit is available in five sizes:

SSR 560, SSR 710, SSR 1000, SSR 1250 & SSR 1400 (See page 2 for dimensions and weights). The 560 and 710 units are manufactured in aluminium alloy. 1000 to 1400 size units are manufactured in polyester powder painted galvanised steel.

All units have airflow operated shutters which are weather proof when closed. The bird/ safety guards on the outlet are designed to automatically displace if blocked by fire debris etc. The fan incorporates a directly driven, high performance, temperature rated, form 'A' axial flow type impeller.

A 800°C unit is also available, again in five sizes:

SSR500, SSR630, SSR800, SSR1000 & SSR1250 (See page 2 for dimensions and weights). The units are manufactured in aluminium alloy. All units have airflow operated shutters which are weather proof when closed. The bird/ safety guards on the outlet are designed to automatically displace if blocked by fire debris etc.

The fan incorporates a single inlet, high performance, aluminium alloy, mixed flow impeller. Access to the fans is by removing the top cover assembly.

This unit has a water drenching section fixed immediately below the inlet. A temperature reactive bulb is used to activate the drencher in the event of fire. A 20mm union is provided for connection to the water supply.

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Motors comply with BS5000 and have sealed for life bearings. 4kW units and above have provision for Star/Delta starting if required. We recommend D.O.L. starting whenever possible. Two speed motors, allowing normal ventilation at reduced noise levels, are available on all units. Electrical input connection is provided by a terminal box on the outside of the case. The box is pre-wired to the motor with heat resisting cable.

* Using patented water drenching design on unit SSR temperature code 9.

General (300°C/400°C units)

The 300°C/400°C unit is available in up to 3 temperature /Time combinations: 300°C for half an hour, 300°C for one hour, 400°C for two hours.

The type chosen is identified by a suffix in the unit order code for example:-

SSR-560-413 6 = 300°C for half an hour

7 = 300°C for one hour

8 = 400°C for two hours

The three numbers in the code prior to the suffix signify:

Number of poles, Performance curve number* and 1 or 3 phase

General (800°C units)

The 800°C unit is available in 1 temperature /Time combination: 800°C for two hours. This is identified by a suffix 9 placed at the end of the unit order code. For example:

SSR-500-613 9 = 800°C for 2 hours.

The three numbers in the code prior to the suffix signify:

Number of poles, Performance curve number* and 1 or 3 phase.

Units are delivered to site mounted onto wooden transit frames. In addition to making the fans easier to handle during transit, the frames also afford protection for the motor section. We advise that the wooden frames should remain on the fans until the moment of actual installation and fixing.

Handling

Handling the unit is best carried out with the unit fixed to the transit frame. When lifting, use spreader beams through the transit frame ensuring the unit is evenly balanced and that the lifting slings or webbing are not in direct contact with the casing. Larger units (1250-1400) have lifting lugs fitted to each lower corner to which the slings can be attached which makes the use of spreaders unnecessary. See figure 2a.

A typical lifting arrangement for a 300 / 400 oC fan is shown in figure 2b Note. When releasing a larger unit from its metal transit frame the weight of the unit should first be supported by jacks under the unit motor supports before attempting to remove the frame fixing screws. (See fig 2c).

1000, 1250 and 1400 units are supplied with eyelets bolted to the cowl, THESE ARE ONLY TO BE USED TO REMOVE THE COWL FROM THE BASE (See fig. 2a).

Under no circumstances must they be used to lift the complete unit. note also that units must not be stacked.

Fixing

All the units are designed to be fixed onto curbs (by others) although pre-fabricated curbs manufactured in aluminium alloy are available from NuAire as optional extras. More information about the curb fixing arrangements is shown on the following pages.

MOUNTING ANGLE

The unit may be installed at any angle up to 40° from horizontal but the longest side of the unit MUST run up the slope to ensure satisfactory shutter operation and weather sealing.

Fig. 2b Moving a medium size unit with its transit frame still in position.

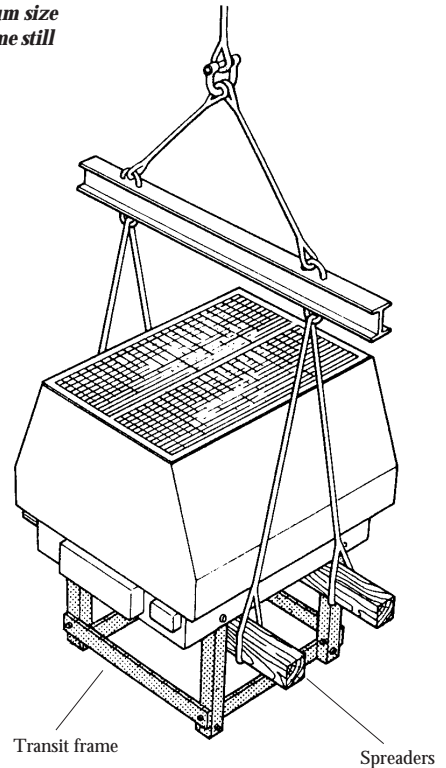


Fig. 2a 1250 /1400 size units lifted using the case corner lugs

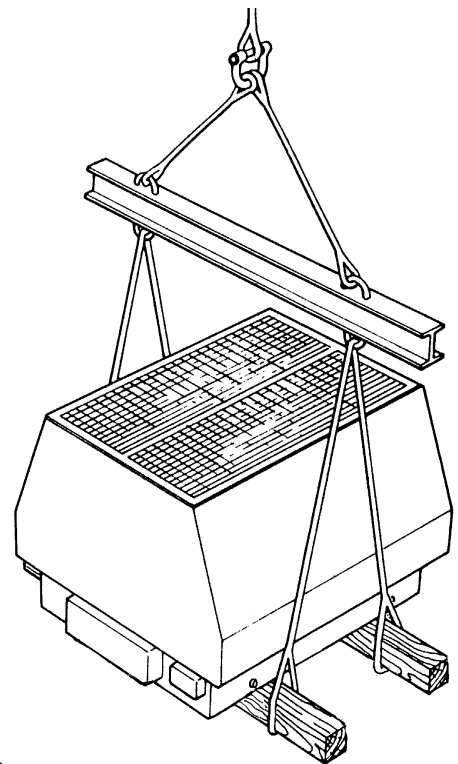
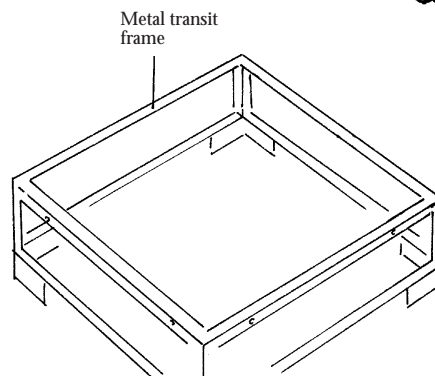
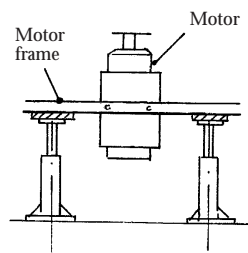
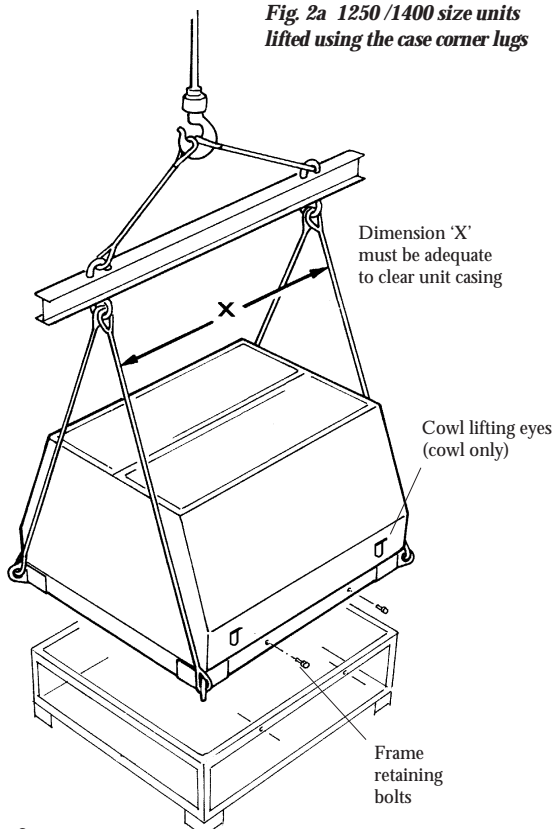
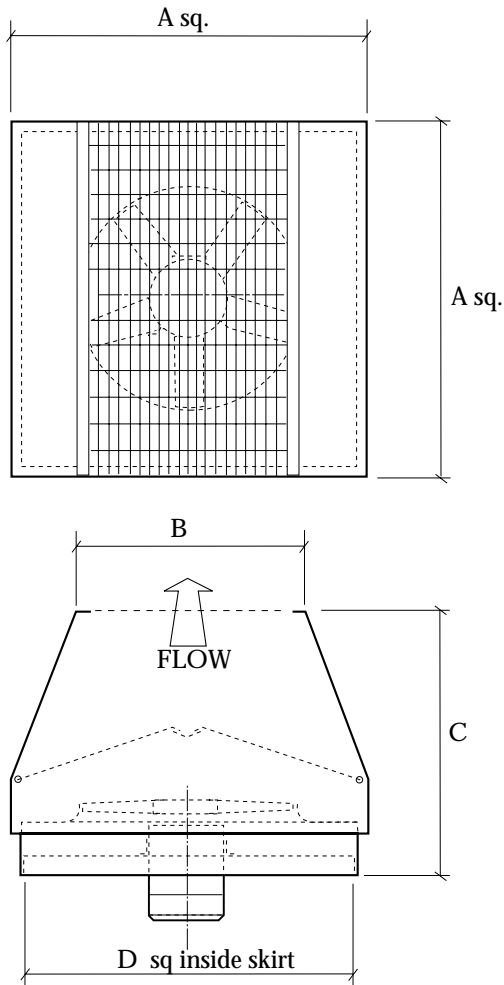
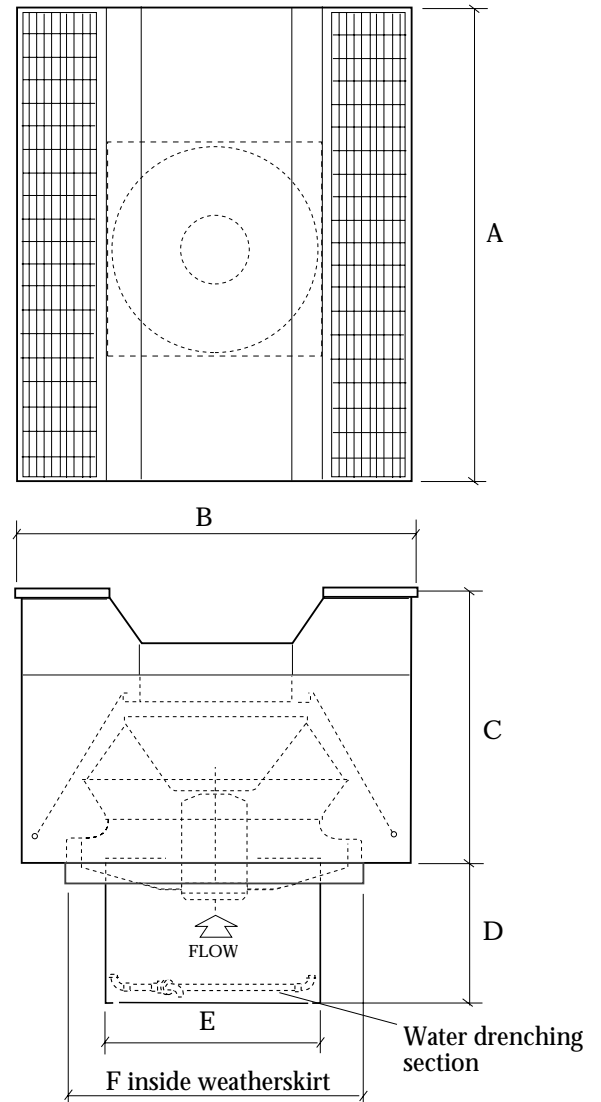


Fig. 2c Supportin a larger size unit and releasing the transit

Dimensions (300°C/400°C units)



Dimensions (800°C units)



Unit Dimensions & Weights

Unit Code	A	B	C	D	Max weight kg
SSR 560	845	570	535	746	93
SSR710	1100	770	760	1016	146
SSR 1000	1295	1000	880	1198	364
SSR1250	1795	1300	1160	1700	615
SSR 1400	1970	1403	1609	1800	673

Unit Dimensions & Weights

Unit Code	A	B	C	D	E	F	Max weight kg
SSR 500	749	649	477	350	390	590	41.5
SSR 630	853	756	594	370	490	690	62.5
SSR 800	1150	1038	715	350	590	790	92
SSR 1000	1402	1102	847	350	790	1040	163
SSR 1250	1800	1500	1114	430	990	1240	316

Water Drenching Flow Rates (800°C units)

Unit code	Min. flow l/min.	Min. Pressure Bar
SSR 500	25	0.3
SSR 630	30	0.5
SSR 800	35	0.6
SSR 1000	40	0.75
SSR 1250	45	1.00

Installation (builders upstand)

The Smokeclearer must be securely attached to the curb or mounting to prevent damage by wind or vibration. Holes are provided which allow the unit to be directly attached. Fixing bolts should be of non corrodible type).

Units can be mounted on pitched roofs having an angle of not more than 40° from the horizontal. They must be installed with their longest side up the slope to ensure satisfactory operation of the gravity operated shutters. The 800°C unit has its shutters held open by spring loaded arms which are restrained by a fusible link.

Soaker Sheet

Soaker sheets are manufactured in GRP and can be supplied to match most roof profiles. The soaker sheet should be placed over the pre-fabricated curb, trimmed to height and built into the roof in accordance with standard building practice.

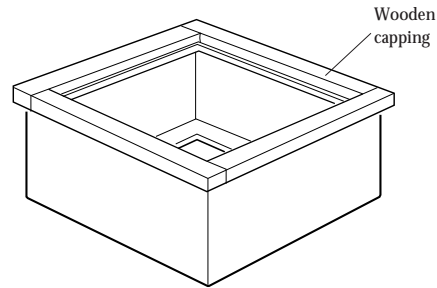
Installation using a Prefabricated Curb

NuAire pre-fabricated curbs are manufactured in aluminium alloy with adjustable wooden cappings set to the maximum overhang position of 15mm.

The roof flashing can be run up the sides of the curb to finish just beneath the top. Alternatively if adequate clearance is available the flashing could be run over the top of the capping prior to lowering the unit onto the curb.

When installed the curb must be bolted securely to the roof trimmer angles.

Fig. 4 NuAire prefabricated curb.



Prefabricated curb upstand (available from NuAire)

Upstand & Curb details

Fig. 3 Section through curbs / upstands with dimensions

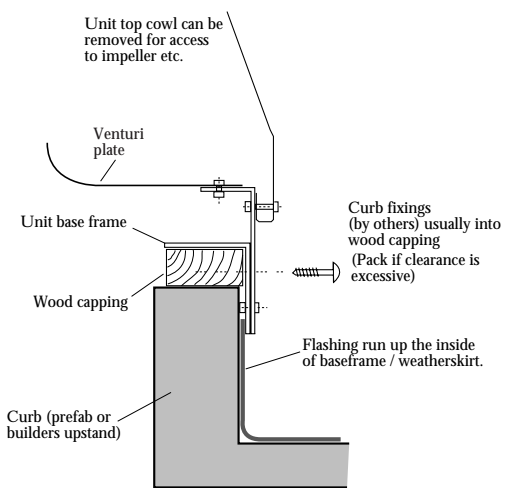
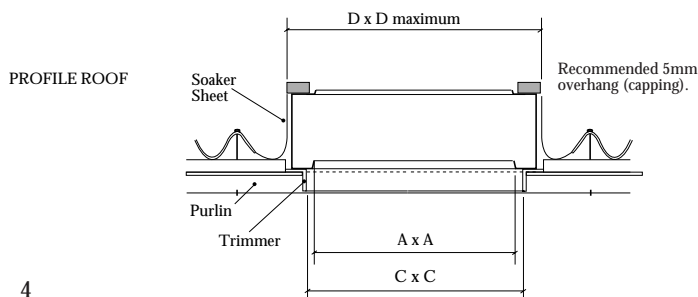
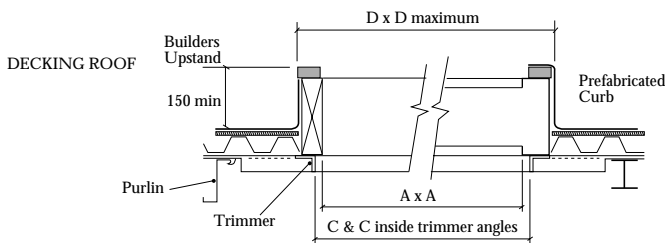
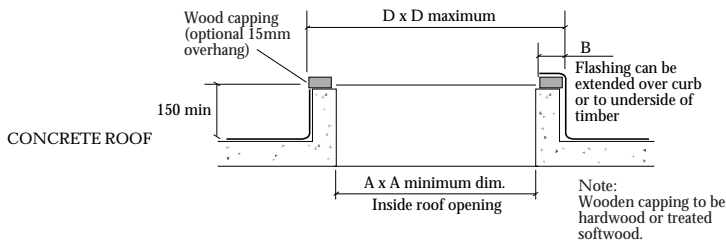


Fig. 5 Part section through upstand

Curb Dimensions (refer to fig3)

(300oC /400oC units)	Unit Code	A	B	C	D
	SSR 560	600	75	675	746
	SSR710	800	100	875	1016
	SSR 1000	1000	100	1100	1198
	SSR1250	1500	100	1600	1700
	SSR 1400	1600	100	1700	1800

(800oC units)	Unit Code	A	B	C	D
	SSR 500	400	50	475	580
	SSR 630	500	75	575	680
	SSR 800	600	75	675	780
	SSR 1000	800	75	900	1030
	SSR 1250	1000	75	1100	1230

Electrical details

Unit Code	Speed r.p.m.	Power kW	300°C		300°C 60 mins		300°C 30 mins		300°C 60 mins	
			f.l.c	sc DOL	f.l.c	sc DOL	f.l.c	sc DOL	f.l.c	sc DOL
SSR560-413	1440	0.37	1.14	5.60	1.00	4.00	-	-	-	-
SSR560-423	1440	0.75	1.95	8.80	1.95	8.80	-	-	-	-
SSR560-433	1440	1.50	3.45	17.3	3.60	18.9	-	-	-	-
SSR710-413	1440	1.10	2.60	13.0	3.00	13.5	-	-	-	-
SSR710-423	1440	2.20	4.85	26.7	5.00	29.0	-	-	-	-
SSR710-433	1440	3.00	6.55	36.3	6.80	42.9	-	-	-	-
SSR1000-413	1440	5.50	10.9	80.0	10.7	72.8	27.0	25.7	-	-
SSR1000-423	1440	7.50	14.5	115.0	14.5	109.0	35.0	34.8	-	-
SSR1000-433	1440	11.0	20.0	130.0	20.0	130.0	42.0	40.0	-	-
SSR1000-443	1440	15.0	27.0	195.0	27.0	195.0	63.0	65.0	-	-
SSR1250-613	960	7.50	15.6	94.0	16.0	112.0	32.0	37.0	-	-
SSR1250-623	960	11.0	24.0	168.0	23.0	161.0	56.0	53.0	-	-
SSR1250-633	960	15.0	29.0	203.0	28.0	182.0	67.0	59.0	-	-
SSR1250-643	960	18.5	36.0	227.0	35.0	210.0	80.0	63.0	-	-
SSR1400-653	960	22.0	41.0	267.0	42.0	252.0	103.0	76.0	-	-

300°C / 400°C

Unit Code	Speed r.p.m.	Power kW	800°C 2 hrs	
			f.l.c	sc DOL
SSR500-613	924	0.18	0.85	2.20
SSR500-423	1410	0.55	1.70	7.40
SSR800-833	708	0.75	2.80	11.0
SSR630-443	1416	1.50	3.70	20.4
SSR800-653	948	1.50	4.20	18.9
SSR1000-863	708	2.20	6.80	32.5
SSR1000-673	957	4.00	9.70	47.0
SSR1250-1283	480	1.90	7.90	27.7
SSR1250-893	715	7.50	19.20	85.0

800°C

Unit Wiring 800°C unit

The 800°C for 2 hrs unit is fitted with an isolator as standard, prewired at the works to the motor with heat and fire resisting cable. Incoming cable (by others) must also be heat and fire resistant. For connection from underneath, the cable should be routed into the unit through the drencher section and fan mounting plate to the isolator passing through the gland used to carry the connection between the isolator and motor.

Alternatively, the unit may be wired over the roof by removing the blanking plate from the underside of the isolator housing and feeding the cabling through the 20mm hole before making the connections to the isolator switch.

Testing Warning!

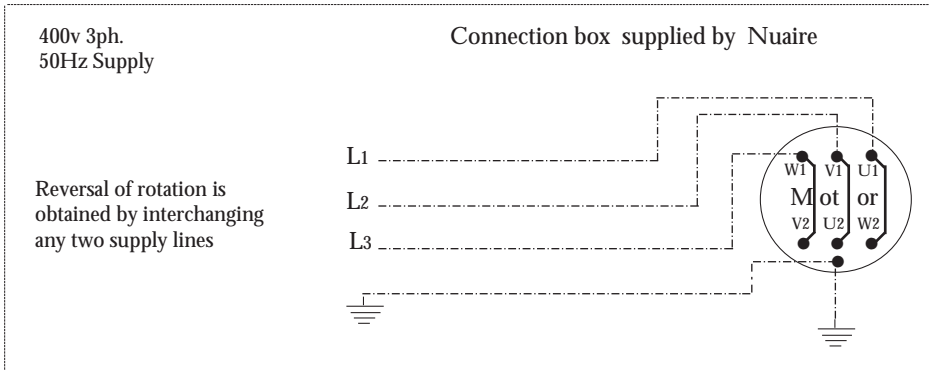
Before carrying out any test, check that no loose items, tools etc. are left inside the unit. The Smokeclearer should not be operated with panels removed. If this proves impractical (during testing for example) ensure that all personnel are well clear of the unit.

Testing

Switch on the Smokeclearer for a sufficiently long period to ensure that the impeller runs correctly. Switch off during the run-down period check for correct direction of rotation and for evidence of any fault as follows:-

- Check that impeller is rotating freely with no signs of slipping.
- Check direction of rotation. A single phase unit is unlikely to be incorrect, as the unit was carefully checked at works prior to delivery. To change the direction of rotation on a three phase unit simply reverse any two of the supply connections in the isolator box.

Three phase for D.O.L. starting, Single Speed below 4kW.



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.

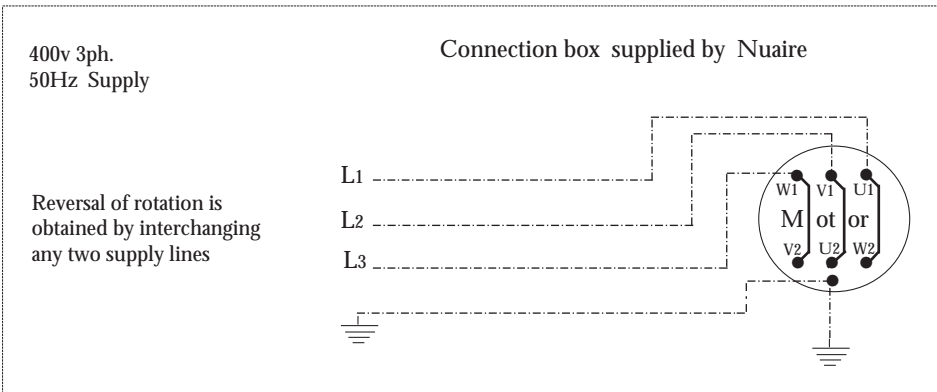
Standard

Customer / Installere wires directly into motor terminal block.

Special

If required, NuAire will pre-wire the motor into a terminal box mounted on the side of the unit.

Three phase for D.O.L. starting, 4kW and above. Recommended by NuAire for safety reasons.



Single Speed Units with motors rated below 4kW

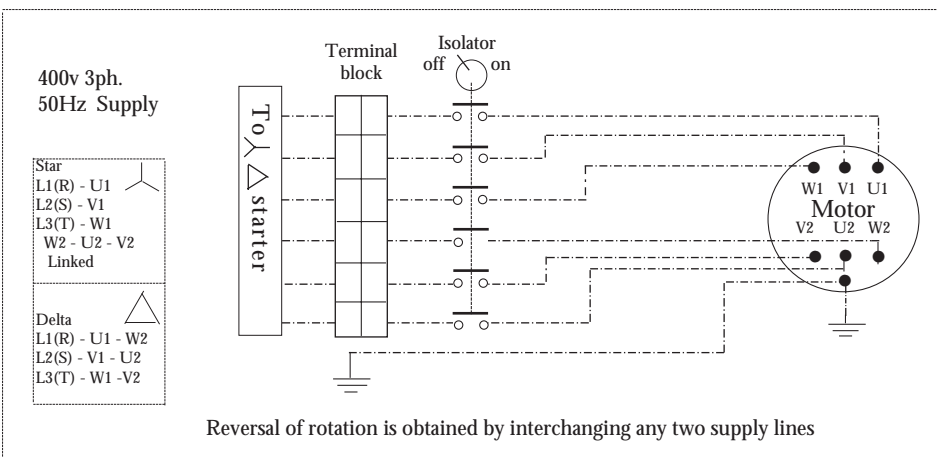
are wired for D.O.L. starting only. For safety reasons NuAire recommends that all Smokefoil units are wired for D.O.L. starting

Single Speed Units 4kW and above.

are supplied for Star Delta starting. NB. Star Delta starting must only be used where permitted by the appropriate approval authorities.

All two speed units must be wired for D.O.L. starting.

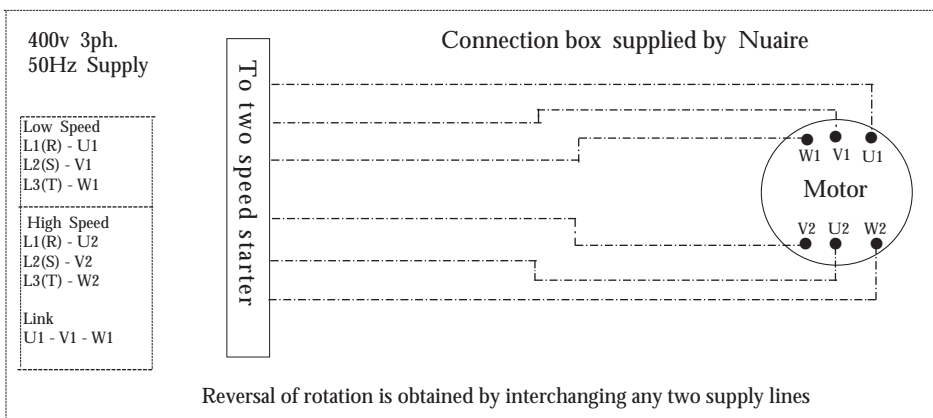
Three phase for Star / Delta starting, 4kW and above.



Controls

A range of matching starters / controls are available. Contact us to discuss your requirements. Please specify D.O.L. or Star/Delta.

Two Speed Unit. D.O.L. starting only.



Controls

General

Standard controls operate on electrical mains supplies of 400 volts 3 phase 50Hz and control supplies of either 230 volts 1 phase 50Hz or 24 volts d.c. Three versions are available.....

1. **Smokeclearer Control for Emergency Use only,**
for Smokeclearers installed for emergency smokeclearing only.
2. **Smokeclearer Control Day to Day with Emergency Override,**
provides manual ventilation as well as emergency smoke clearing control of Smokeclearers fitted with single speed motors.
3. **Smokeclearer Control Low speed Day to Day High Speed Emergency**
provides normal ventilation control at slow speed as well as emergency smokeclearing control at fast speed of Smokeclearers fitted with two speed motors.

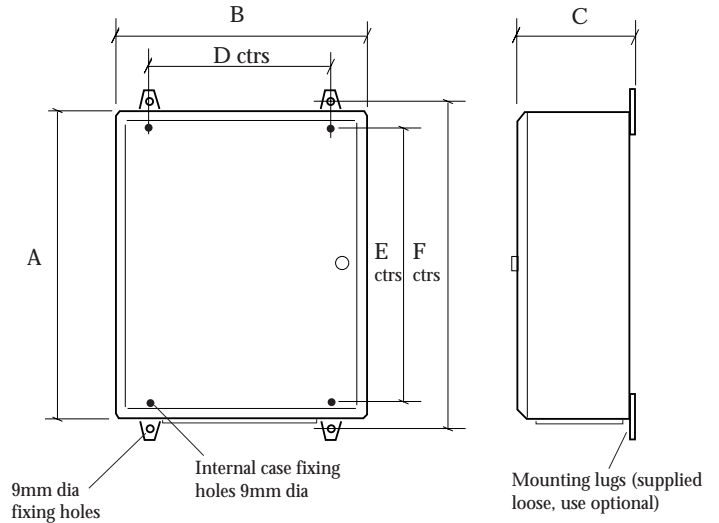
Controls are designed for use with remote emergency switches and/or smoke detectors which have voltage free contacts open when operated. Each control is fitted with and EMERGENCY START push button on its front face and a mains isolator. Dual Purpose controls (2 and 3) have, in addition, NORMAL START and NORMAL STOP push buttons for normal ventilation control and an AUTO-RESET-TEST key switch for proving the emergency exhaust function and for resetting when required. In an emergency, the fan motor can be started in one of three ways: activation of one of the automatic smoke detectors, operation of one of the remote emergency switches or by using the EMERGENCY START push button on the control panel.

Smokeclearer Control for Emergency Use only. (See fig. 7)

This control incorporates a control relay (R) and a motor contactor (C) for DOL starting. In service, the relay is kept energized by the maintained control supply through the remote emergency switches (as fitted), the smoke detectors and the control panel emergency start switch. A now open pair of relay contacts holds the contactor open. Operation of any emergency start switch (remote or on the control panel) will de-energize the relay, whose contacts close to energize the contactor, after a pick-up delay of approximately 20 milliseconds provided by the thermistor, to start the fan motor. The contactor becomes latched to ensure continuous running.

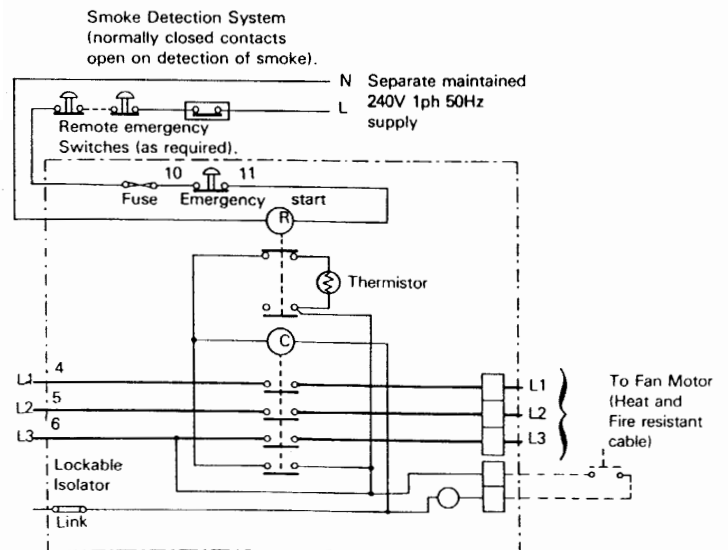
All wiring to the controls (Dual Purpose or Emergency Exhaust Only) and from the Controls to the Smoke-clearers, must be heat and fire resisting. The electrical supply to each Control must be maintained in the event of fire and must be protected by HRC switch fuse, clearly labeled 'FIRE PROTECTION SUPPLY - DO NOT SWITCH OFF'

Fig. 6 Standard Smokeclearer Controls.



Control Function	Control Code	Dimensions (mm)						
		A	B	C	D	E	F	G
Smokeclearer Control for Emergency use only	SCEMER	300	250	150	204	254	358	40
Smokeclearer Control for Day to Day with Emergency Override	SCDD	400	300	200	254	354	458	40
Smokeclearer Control for Low Speed Day to Day, High Speed Emergency	SCDDTS	400	300	200	254	354	458	40

Separate maintained supply 415V 3ph and N 50Hz supply (Heat and Fire resistant cable)



Maintained Control Supply can be 24 volts d.c. or 240 volts 1 Ph 50Hz a.c., as required

Fig. 7 Control wiring diagram, Emergency use only

Controls

Smokeclearer control, Day to Day, Emergency Override (See Fig. 8)

This control incorporates a control relay (A) a motor contactor (S) in series with a triple pole thermal overload relay, and a motor contactor (F). Both contactors provide DOL starting of the fan motor, contactor (S) for normal ventilation control and contactor (F) for emergency smokeclearing control.

In service, relay (A) is kept energized by the maintained control supply through the remote emergency switches (ad fitted), the smoke detectors and the control panel emergency start switch. Relay contacts 30-31 are now open to prevent energization of contactor (F) thus inhibiting operation for the emergency exhaust circuits. Contacts 25-26 are closed in the coil circuit to contactor (S), through the NORMAL START and NORMAL STOP push buttons.

In emergency, operation of any emergency start switch (remote or on the control panel) or a smoke detector will de-energize relay A. contacts 25-26 will open to break the circuit to contactor (S), thus inhibiting normal ventilation control. Contacts 30-31 will close to energize contactor (F), after a pick-up delay of approximately 20 milliseconds provided by the thermistor, to start the fan motor. The contactor becomes latched to ensure continuous running. In the emergency mode, the thermal overload relay is out of circuit.

The AUTO-RESET-TEST switch is shown in the AUTO position, when it forms part of the latching circuit to contactor (F). In the TEST position the switch provides a means of proving the emergency circuits during normal service. Switching to RESET, in either the AUTO or TEST positions, breaks the contactors latching circuit to return the control to normal. The key which operates the switch can be removed in the AUTO and the TEST positions, but not in the RESET position.

Smokeclearer Control, Low Speed Day to Day, High Speed Emergency (Fig. 9)

This control is similar to the Day to Day, Emergency Override one featured above. For normal ventilation, contactor (S) operates in the same way to control the two speed motor fitted, but only at slow speed through output terminals 1,3,5. For emergency purposes, contactors (F) also operates in the same way to run the motor, but at fast speed through terminals 7,9,11. An additional relay (F1), in parallel with contactor (F), provides the star point by connecting together output terminals 1,3,5.

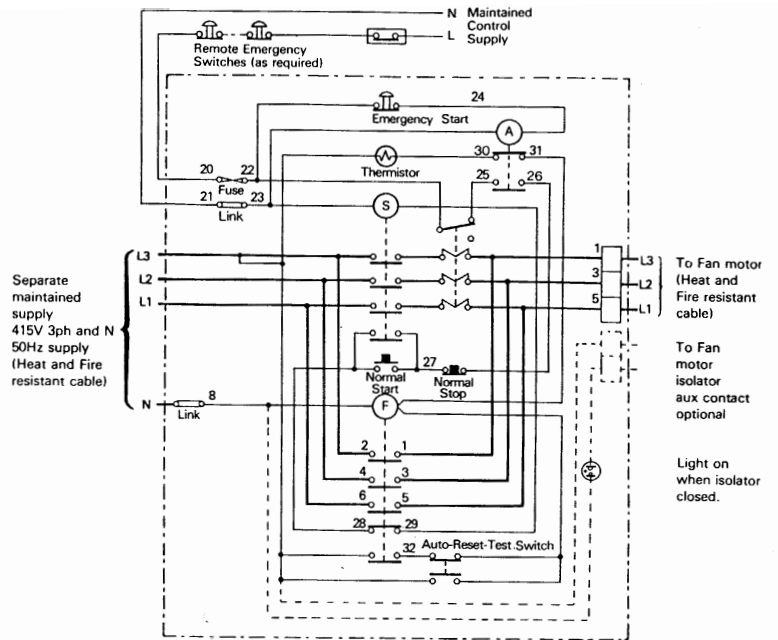


Fig. 8 Control wiring diagram. Day to Day, Emergency Override.

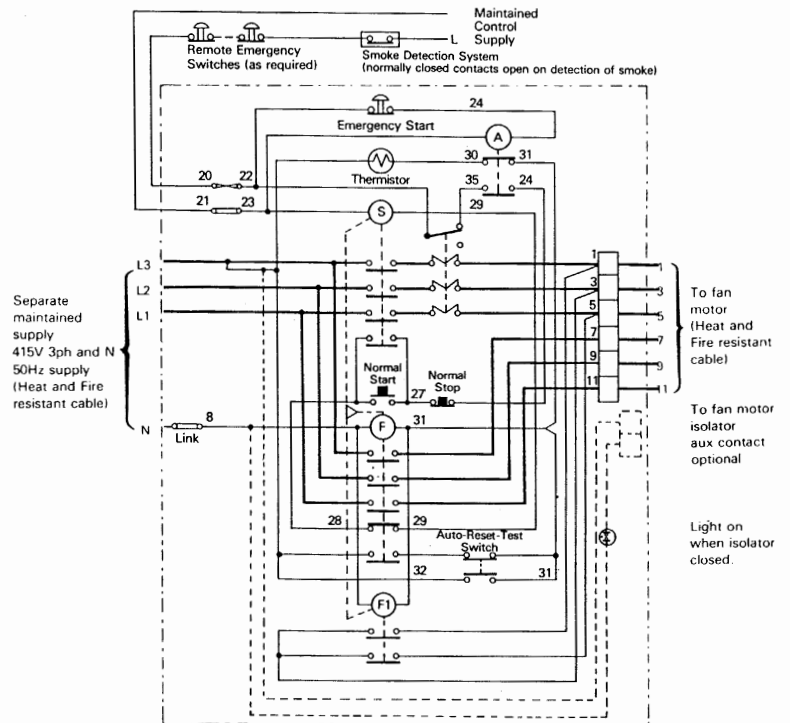


Fig. 9 Control wiring diagram 'Low Speed, Day to Day, High Speed Emergency .

Maintained Control Supply can be 24 volts d.c. or 230 volts 1 Ph 50Hz as required

Maintenance

ISOLATION

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

Electrically isolate unit before removing any panels. Make sure that the unit and any speed control (if fitted) are externally electrically isolated from the supply. On 800c unit make sure the isolator is in the off position.

It is essential that maintenance work on Smokeclearers is carried out regularly.

Intervals

First inspection three months after the unit has been commissioned. Thereafter at six monthly intervals. These intervals may need to be shortened if the unit is operating in adverse environmental conditions, or in heavily polluted air.

Lubrication

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

General Cleaning and Inspection

Clean and inspect the exterior of the fan unit and associated controls etc.

Remove the access panel (or top cowl on the 300 / 500 units) from the fan unit. Note that on larger unit cowls, lifting eyes are fitted to assist removal of the cowl. 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.

Checklist

- a) Check that the birdguard/ safety grille is free of any obstruction.
- b) On the 300/500 model, check that both shutters move freely through their full range of movement.
- c) Check that the impeller is clean and does not foul the casing.
- d) Visually check wiring for signs of damage, check also for loose bolts, fasteners etc.
- e) 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.
- f) Stubborn dirt at the impeller may be carefully removed with a stiff nylon brush.
- g) Check all parts for security and general condition and check that the impeller rotates freely.

Note:

Take care not to damage or distort the impeller blades nor to disturb any balance weights attached to the impeller.

Refit the assemblies to the unit then replace the access covers or unit cowl.

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.

Spares

When ordering spares please quote the unit code and serial number of the unit, together with a full description of the part required. The unit's serial number and code number will be found on the identification plate fixed to the unit.

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: 01222 858254

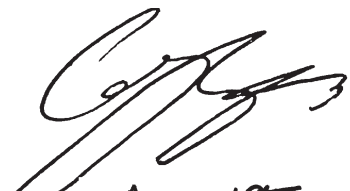



OCTOBER 1998

*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 :-	SMOKECLEARER (ROOF)
Machinery Types :-	SSR
Relevant EC Council Directives :-	89/336/EEC, 92/31/EEC (EMC) 73/23/EEC, 93/68/EEC (Low Voltage Directive)
Applied Harmonised Standards :-	EN50081-1, 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)	 Michael J. Fussell	Manufacturing Director	2. 10. 98

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 :-	SMOKECLEARER (ROOF)
Machinery Types :-	SSR
Relevant EC Council Directives :-	89/392/EEC (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)	 Michael J. 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 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.