DuctMaster
Square cased Fans
DSA (axial)&
DSM (mixed flow)

Installation and Maintenance

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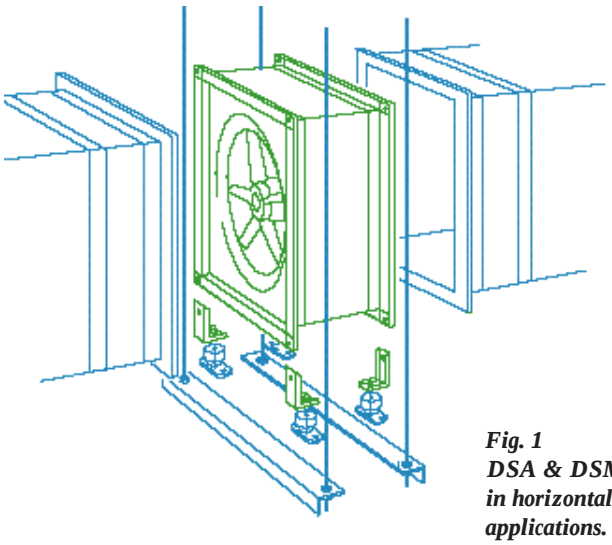


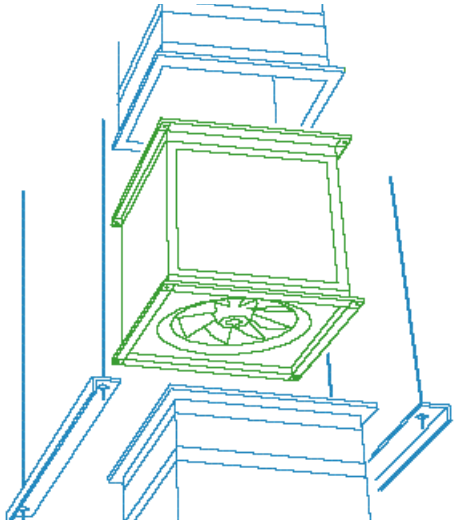


Fig. 1
DSA & DSM units shown in horizontal and vertical applications.

Introduction

NuAire DuctMaster DSA & DSM square cased fans are produced wth duty sizes up to 21m3/sec. and incorporate either Axial flow or Mixed flow impellers depending on the size of the unit concerned.

Casings are manufactured in galvanised steel with propriety flanges fitted to allow connection to ductwork. A full width access panel allows inspection of the motor and impeller whilst still in duct.

A full range of matching ancillaries is available including Silencers, Fan Guards, Resilient Mounting Kits, Speed Controls and Flexible Connectors.

All NuAire Airmovers are tested to BS848 in our BSI approved laboratories. This ensures all technical data is accurate, which means that units can be specified with confidence

Contents

Description

The units are produced in seven sizes, coded DSA315 to DSA1250. Units with mixed flow impellers are coded DSM followed by impeller diameter in mm. Silencers, flexible connectors, resilient mountings and gaurds are supplied as optional extras. Short and long versions of the silencer (SIL-S) & (SIL-L) are available for each size. Speed controls are available for most units.

Handling

Equipment must be handled carefully to avoid damage or distortion. Except for the smallest 315 size , units are provided with four lifting eyes. If spreaders are used, they should be positioned as near the end flanges as possible and in such a way that slings or webbing do not bear on the casing. Webbing, rope of any other material must not be passed through units for lifting purposes.

Installation

General

The design and provision of complementry ductwork supports, etc., is the resposibility of others. Adequate space, however, must be provided around the unit/silencer combination to enable it to be easily removed from the ductwork when required. It is also important that the fan unit is mounted so that it is readily accessible. Provide adequate space around the unit to allow for the removal and the replacement of the impeller and motor via the access panel.

Prior to installation, thoroughly clean the fan unit, paying particular attention to its interior. Be particularly thorough 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 prove to be very damaging, especially if throughput air were to be damp.

During installation insert a gasket strip between joint faces.

In a rigid mounting

If the unit is to be connected into, or at the end of ductwork, lift into position and bolt flanges together. If necessary, the unit can be lifted with suitable ties attached to the four lifting eyes provided on all sizes other than smallest 315,

If guards have been supplied, fit them to the open ends.

On resilient mountings

Resilient mountings are optional extras and are supplied complete with mounting feet and the necessary fixings, in kits numbered as specified in the table on page 4

Stiff structures must be available to mount the fan. These structures must be so designed that the DuctMaster will be seated on the resilient mountings, not over hanging from them. For dimensions see pages 3 and 4.

Prior to installation prepare as follows:

(a) If supplied, attach silencers directly to the airmovers using bolts at the corners.

(b) For units being prepared for horizontal mounting, attach the resilient mountings and mounting feet at the corner holes of the flanges as shown on this page and page 4.

(c) For units being prepared for vertical mounting, attach the resilient mountigs and mounting feet to the particular unit or unit/silencer combination flanges as shown on pages 3 and 5.

(d) Resilient mounting kits 4 to 7 can be adjusted for height by turning the set screw.

Lift the unit or unit/silencer combination into position and fix to the mounting structures. Resilient mountings must stand vertical and not be unduly deflected in any other plane.

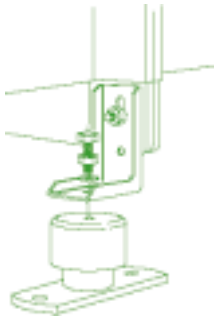


Fig. 2a Spring type resilient mounting

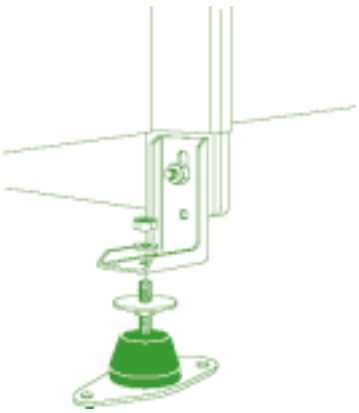


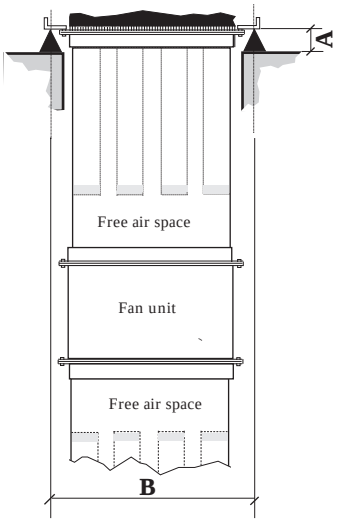
Fig. 2b Rubber type resilient mounting

Speed Controls

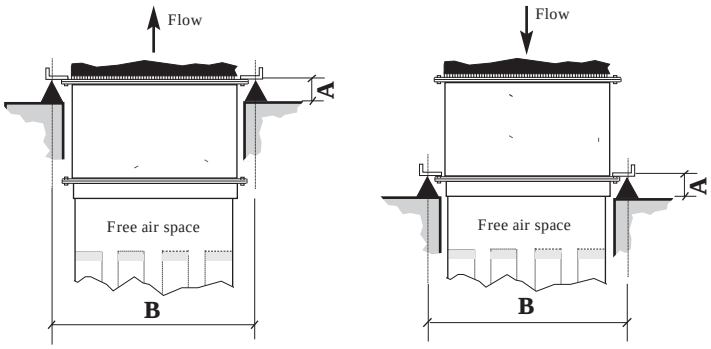
Controls can be mounted on any firm surfaces in any attitude, through fixing holes in the bases. Drill and plug the mounting surface as necessary, positioning controls so that cover retaining screws will remain accessible. This is particular important if a battery of controls is being fitted. Fix with No. 8 woodscrews (not supplied) or equivalent.

For wiring purposes, bases are provided with knock-outs for cable entry, up to 20mm conduit on all models. For dimensions and selection of speed controls see page 9 & 10.

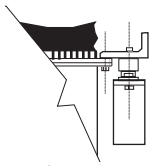
Vertical Mounting



Vertical mounting of an airmover or airmover/silencer combination where a silencer is positioned above the airmover. Applies whether flow is upwards or downwards.



Vertical mounting of a fan or fan /silencer combination where a silencer is **NOT** positioned above the fan. Left-hand view shows arrangement when flow is upwards as shown, right-hand view arrangement when flow is downwards.



Detail of resilient mounting onto steelwork

Dimensions

Airmover code	DSB only		SIL-S + DSB		SIL-S + DSB + SIL-S		SIL-L + DSB		SIL-L + DSB + SIL-L		SIL-L + DSB + SIL-S	
	A	B	A	B	A	B	A	B	A	B	A	B
DSB500 1-2	36	724	58	724	56	724	57	724	54	724	55	724
DSB630 3-4	52	794	47	794	42	794	45	794	37	794	40	794

Like horizontally mounted combinations, silencers must always be fitted with free air space at the airmover.

Dimensions in mm
(mountings normally compressed).

Installation (continued)

Electrical connections

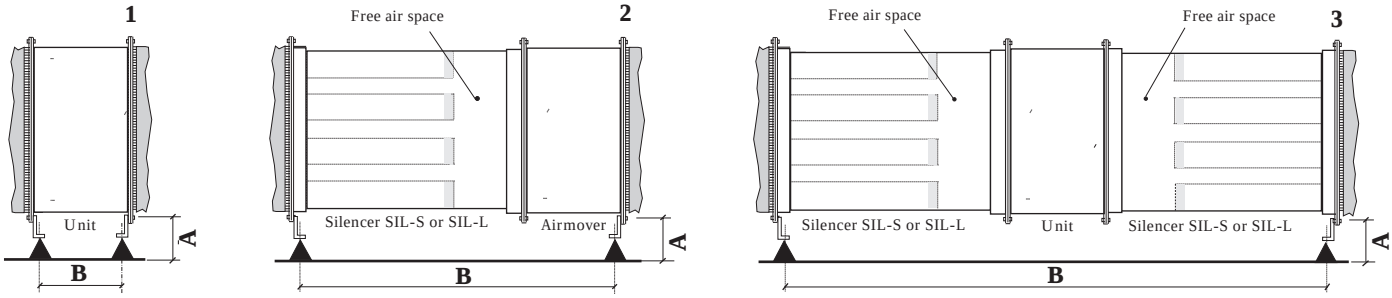
Basically, the Ductmaster unit and the speed control, if included, should be connected to the electrical supply and to each other in accordance with the wiring diagrams (page 9 on). Compatible site wiring and provisions of any start contactors, overloads, etc., are the responsibility of others. If a single phase Ductmaster is to be used with a speed control and the unit is fitted with a permanent capacitor motor, any link fitted between Ductmaster terminals 1 and 2 must be removed.

All connections into the fan are to be made as shown in the wiring diagrams (page 9 on).

Isolation to be provided by others and in accordance with electrical regulations.

Horizontal Mounting

It is essential that silencers are always fitted with the free air space near the unit, as performance may otherwise be impaired.



1. Unit only.

2. Unit with silencer fitted one side only. Could be either side.

3. Unit with silencer fitted on both sides. Could be two off SIL-S silencers, two off SIL-L or one of each.

Mounting Centres Dimensions

Unit code	Unit only		SIL-S + Unit		SIL-S + Unit + SIL-S		SIL-L + Unit		SIL-L + Unit + SIL-L		SIL-L + Unit + SIL-S	
	A	B	A	B	A	B	A	B	A	B	A	B
DSA315 & 450 DSA500 DSA560 & 630 DSA800 DSA1000												
DSM315 DSM400 DSM500 DSM630 DSM800 DSM1000 DSM1250												

Ductmaster Square Mixed Flow Code	DSM only		DSS*S + DSM		DSS*S + DSM + DSS*S		DSS*L + DSM		DSS*L + DSM + DSS*L		DSS*L + DSM + DSS*S	
	Kit	Type	Kit	Type	Kit	Type	Kit	Type	Kit	Type	Kit	Type
DSM315,1,2,3	DAV1	A	DAV1	A	DAV2	A	DAV1	A	DAV2	A	DAV2	A
DSM315,4,5	DAV1	A	DAV1	A	DAV2	A	DAV2	A	DAV2	A	DAV2	A
DSM400,1,2	DAV1	A	DAV2	B	DAV2	B	DAV2	B	DAV2	B	DAV5	B
DS,500,3,4,5	DAV1	C	DAV2	C	DAV5	C	DAV5	C	DAV3	C	DAV5	C
DSM500,6,7,8	DAV1	A	DAV2	B	DAV5	B	DAV5	B	DAV3	B	DAV5	B
DSM630,1,2,3	DAV2	C	DAV5	C	DAV3	C	DAV5	C	DAV4	C	DAV3	C
DSM800,4,5	DAV5	C	DAV3	C	DAV6	C	DAV4	C	DAV6	C	DAV6	C
DSM1000,1	DAV3	C	DAV6	C	DAV34	C	DAV34	C	DAV34	C	DAV34	C
DSM1000,2,3,4	DAV4	C	DAV6	C	DAV34	C	DAV34	C	DAV34	C	DAV34	C
DSM1250,5,6	DAV34	C	DAV34	C	DAV34	C	DAV34	C	DAV35	C	DAV34	C

Ductmaster Square Axial Code	DSA only	DSS*S + DSA	DSS*S + DSA + DSS*S	DSS*L + DSA	DSS*L + DSA + DSS*L
	Kit	Kit	Kit	Kit	Kit
DSA315	DAV1	DAV2	DAV5	DAV5	DAV3
DSA350	DAV1	DAV2	DAV5	DAV5	DAV3
DSA400	DAV1	DAV2	DAV5	DAV5	DAV3
DSA450	DAV1	DAV2	DAV5	DAV5	DAV3
DSA500	DAV1	DAV2	DAV5	DAV5	DAV4
DSA560	DAV1	DAV5	DAV4	DAV5	DAV4
DSA630	DAV2	DAV5	DAV4	DAV3	DAV4
DSA800	DAV34	DAV34	DAV34	DAV34	DAV34
DSA1000	DAV34	DAV34	DAV34	DAV34	DAV34

Testing after installation

Precautions

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

Make sure that the external control switch or contactor as relavent, is switched off,

Testing

Remove the access panel from the DuctMaster. Switch on the local isolator (by others).

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

(a) Check that the impeller is rotating freely and is secure on the shaft

(b) Check rotation. A single phase unit 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 connections in the airmover isolation box

If a NuAire speed control is fitted, check that it regulates speed as required (see the remarks in "Operating the DuctMaster").

Removing & Refitting the unit

Isolation

Before commencing, make sure that the unit is externally isolated from the electrical supply.

Removal

Remove the terminal box cover on the side of the unit and disconnect the electrical supply leads noting the connections.
Support the unit and remove all fixing devices.
If silencers are fitted, the unit should be removed complete with them. Move the unit and the silencers, if fitted, to the working area.

Re-fitting

Re-fitting is the reverse of removal. Sandwich a gasket between joint faces. Make sure that the unit is mechanically and electrically connected exactly as it was prior to removal.

Operating the Airmover

The access panel must be firmly fixed to the side of the unit.

Switch isolation device (by others) to the ON position

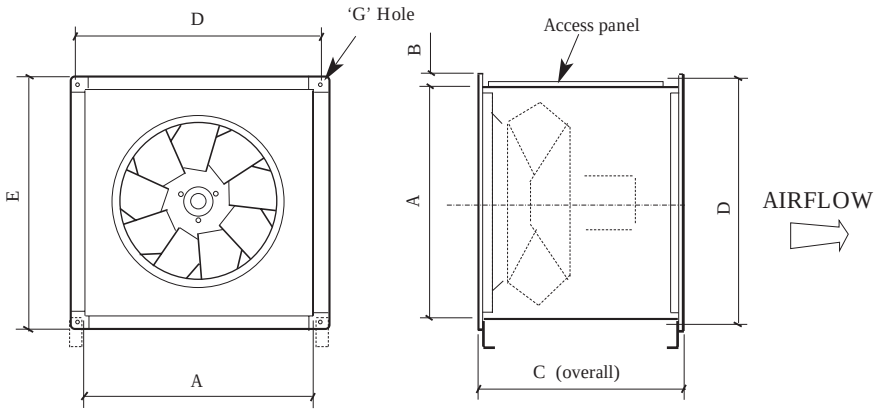
If a NuAire speed control is fitted, this can also be used to switch the airmover OFF and ON. Note that the unit may not always start from cold at the lowest control setting, though there is no danger of overheating. It is therefore recommended that the unit is started at one of the higher settings. Speed can be changed whilst the unit is running.

Dimensions

Fan Unit (mixed flow unit shown)

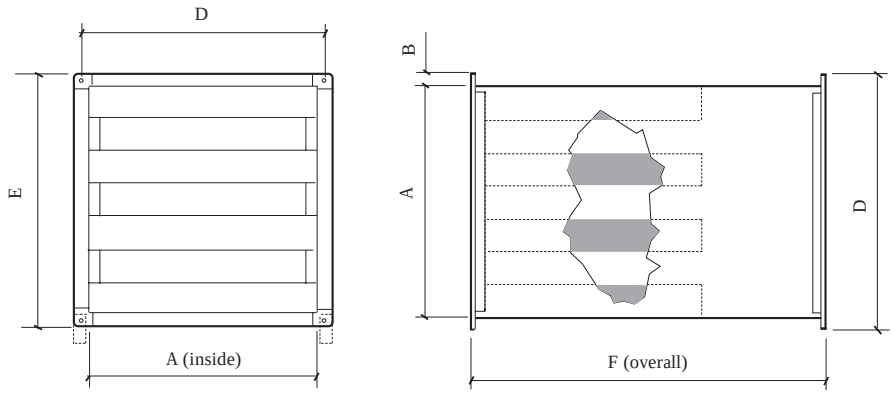
Codes
Note that the two speed models have the suffix TS e.g. DSA 500 TS

Note
Two speed (TS) models have same dimensions etc.



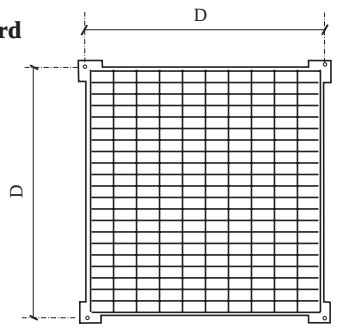
Fan Size	Dimensions (mm) A	B	C	D	E	G dia.	Weight (kg)
315							
350							
400							
450							
500							
560							
630							
800							
1000							
1250							

Silencer

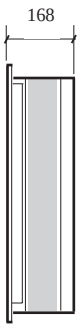


Silencer Size	Silencer Code Short	Long	Dimensions (mm) A	B	C	D	Silencer E	F (SIL-S)	F (SIL-L)	G dia.	Weight kg (SIL-S)	(SIL-L)
315	AM 315 SIL-S	AM315 SIL-L										
350	AM 350 SIL-S	AM 350 SIL-L										
400												
450												
500												
560												
630												
800												
1000												
1250												

Guard



Flexible Connector



Unit Size	Guard	Flexible Connector
315	AM FG 315	AM 315 FLEX
350	AM FG 350	AM 350 FLEX
400	AM FG 400	AM 400 FLEX
450	AM FG 450	AM 450 FLEX
500	AM FG 500	AM 500 FLEX
560	AM FG 560	AM 560 FLEX
630	AM FG 630	AM 630 FLEX
800	AM FG 800	AM 800 FLEX
1000	AM FG 1000	AM 1000 FLEX
1250	AM FG 1250	AM 1250 FLEX

Rountine Maintenance

Isolation
Before commencing, make sure that the DuctMaster and speed control, if fitted, are externally isolated from the electrical supply.

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

General cleaning and inspection
Clean the exterior of the unit, silencers, flexible connectors, resilient mountings, etc., as fitted. Inspect for security and condition. Check tightness of fixing devices. Remove the unit access panel. Inspect internal components for security and condition. Check that the impeller rotates freely. Clean components as necessary (for cleaning the impeller see below).

Cleaning the Impeller
A build-up of dust may be removed by carefully brushing with a stiff brush. Take care not to damage or distort impeller blades nor to disturb balance weights. If the impeller is too badly fouled to allow adequate cleaning in situ, it should be removed via the access panel. (See p.7). Alternatively, remove the complete unit/silencer combination from the installation. When removed, clean the impeller as follows:
(a) If a silencer is fitted to the impeller side of the unit, remove it. Alternativley remove the impeller from the unit as described on page 7
b) Sponge the impeller with warm soapy water and leave to soak. Do not use caustic fluids under any circumstances. Whan applying water, take care to prevent it getting onto or into the electrical parts.
c) After soaking, rinse with fresh water and thoroughly dry.
(d) If applicable, refit the silencer to the unit, with a gasket sandwiched between the joint faces. Refit the unit or unit/silencer combination back into the installation, again sandwiching a gasket between joint faces.
(e) If the impeller has been removed it should be refitted as described on page 8.

Lubrication
Most motors have sealed-for-life bearings and therefore need no lubrication.

Testing
Refit the unit access panel. Test run the unit. Check that the speed control, if fitted, regulates speed as required.

Repalcement of Parts

Isolation
Before commencing, make sure that the DuctMaster is externally isolated from the electrical supply
Parts
For the ordering of spare and replcement parts see the SCHEDULE OF PARTS on page 8. Before fitting, remove any protective coating from repalcement parts.

Isolator or Capacitor
Replacement is self evident after the removal of the unit access panel. When disconnecting leads make a note of connections. Make sure the new component is wired in the same way.

Motor or Impeller
The access panel allows inspection of the motor and impeller in the duct. If any components are to be replaced or serviced the unit unit must be removed from the installation using suitable hoists for the larger sizes.

To remove the motor proceed as follows:
Disconnect the unit electrically and remove it from the duct before commencing work.
(a) Remove the access panel and locate the terminal box fitted to the motor, remove its cover and disconnect the leads. Disconnect the flexible conduit at the motor end and move leads and conduit clear. Note: To facilitate replacement note the position of all leads tag if necessary
(b) Size 315. Remove the access panel. Release the transverse motor mounting plate by unscrewing from the case side. Move back until the impeller clears the venturi. Release the impeller from the motor shaft (see below) and remove
(c) All other units. Remove the access panel, release the motor/impeller assembly from the motor support. Move the whole assembly back (away from the venturi) to allow access to the front of the impeller.
To assist replacement, measure and note the amount by which the end of the motor shaft either protrudes from or is recessed into the bore of the impeller. Remove the impeller as detailed below.

Mixed Flow Impellers
Size 315M. Slaken two grub screws in the boss and withdraw the impeller from the motor shaft.
Size 400M-1250M. Impellers are retained by a taper lock fitting, for removal details see page 8

Axial Flow Impellers
Impellers on these units are retained by a spigot type fitting. To remove, unscrew the fixing bolt and withdraw impeller from shaft. In stubborn cases place suitable levers between the back of the spigot and the motor case. Lever off the impeller using the minimum force necessary.
If, however, the motor is to be changed, first remove the impeller as already described then remove the motor and motor plate assembly through the access aperture. Note. On unit size 315 it will be necessary to first remove the motor from the plate.

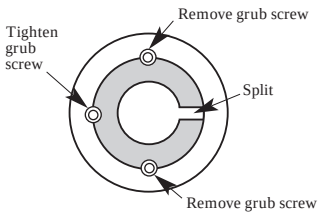
Transfer the flexible conduit adaptor to the new motor, if this has a terminal box. Fit the new motor to the original mounting plate and replace the motor/motor plate assembly in the reward position in the unit. Assemble the impeller to the shaft. On unit size 315 position the impeller as close as possible to the the position noted during removal. This applies whether the original or a new impeller is being fitted. Secure the impeller by tightening the two grubscrews in the boss. On all other sizes fit impeller as described on page 8. Replacement is the reversal of the removal procedure. Ensure the impeller can rotate freely with the overlap as specified on page 8. and that it is concentric with the venturi. If neccessary adjust the overlap and concentricity by moving the impeller along the shaft or by using the slots in the motor plate.

Removing a taperlocked impeller from a motor.

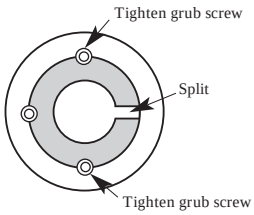
From the locking holes of the taperlock (see illustration) remove one grub screw. Lightly oil the thread and point and insert it into the jacking hole. Slaken the other grub screws.

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.

Releasing Taperlock



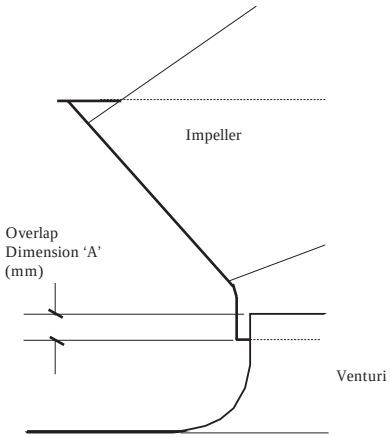
Locking Taperlock



Fitting a taperlock impeller to a motor

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 illustration above).

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 alternatley until pulled up tight, noting that the bush will nip the shaft first and then the hub will be slightly drawn onto the shaft. Fill empty holes with grease to exclude dirt.



Impeller / Venturi overlap

Unit Size	Dim.'A'	Applies to
315		
350		
400		
450		
500		
560		
630		
800		
1000		
1250		

Schedule of Spare Parts

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

Airmover Code	Impeller	Motor
AM315-1	770255	530426
AM315-2	770257	530427
AM315-3	770253	530427
AM315-4	770254	030067
AM315-5	770255	030067
AM315-6	770255	030015
AM315-7	770257	030015
AM315-8	770253	530288
AM400-1	770288	530271
AM400-2	770288	530289
THIS TABLE NEEDS COMPLETELY REVISING OR DELETING		
AM400-3	770289	530289
AM400-4	770289	530271
AM500-1	770290	530374
AM500-2	770290	530369
AM500-3	770292	530373
AM500-4	770292	530368
AM500-5	770290	530377
AM500-6	770290	530363
AM500-7	770292	530363
AM630-1	770293	530320
AM630-2	770293	530378
AM630-3	770293	530380
AM800-1	770295	530327
AM800-2	770295	530329

Speed Controls (single phase)

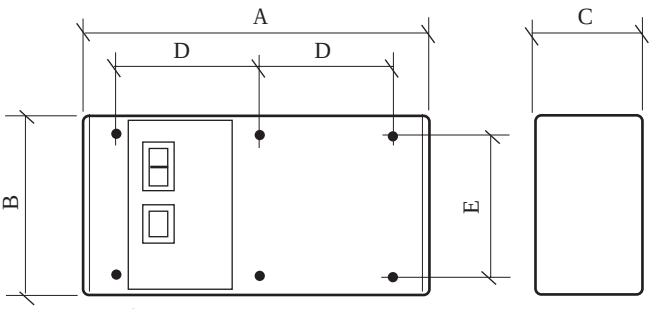
SP CON 1, 4, 5, & 6

Single phase speed controls are fixed through holes in the base which are accessible on removal of the cover. Bases are provided with 20mm & 25mm knockouts for cable entry.
When delivered, units fitted with a permanent capacitor motor will have links fitted. When used with a speed control, one link must be removed and the motor wired as shown in the appropriate wiring diagram.
See diagrams at the end of this section

General Note:

The associated airmover may not always start from cold at the lowest control setting, though there is no danger of overheating, it is recommended that the unit is started at one of the higher settings.

Dimensions



6 fixing hole 5mm dia

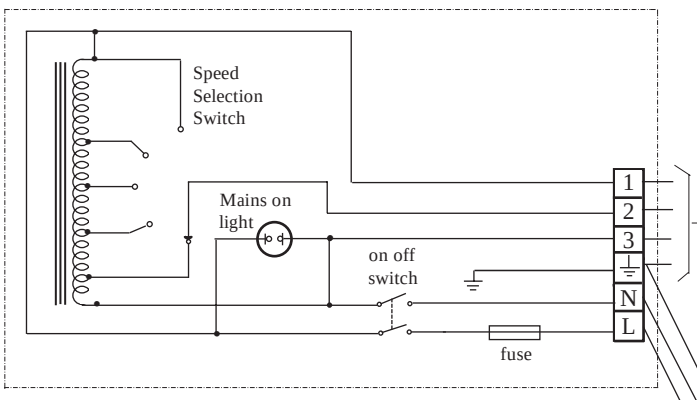
Unit Code	A	B	C	D	E
SPCON 1 & 4	315	140	75	125	124
SPCON 5 & 6	315	185	105	128	170

Speed Control Selection

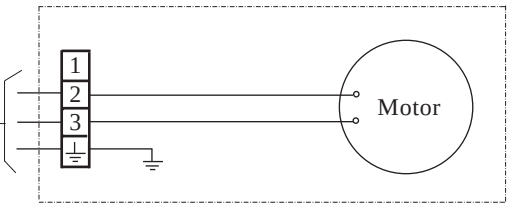
Code	SPCON 4	SPCON 5	SPCON 6	SPCON 15
Control Steps	5	5	5	3
Enclosure	Metal	Metal	Metal	Metal
AXIALS				
DSA315-41			X	
DSA350-42			X	
DSA400-43			X	
DSA 450-44			X	
DSA500-45		X		
DSA560-46				X
DSA450-61			X	
DSA500-62			X	
DSA560-63		X		
DSA630-64				X
MIXED FLOW				
DSM315-11	X			
DSM315-31				
DSM315-41	X		X	
DSM315-51			X	
DSM400-2	X			
DSM500-41			X	
DSM500-6		X		
DSM500-71		X		

Three Phase Speed Controls

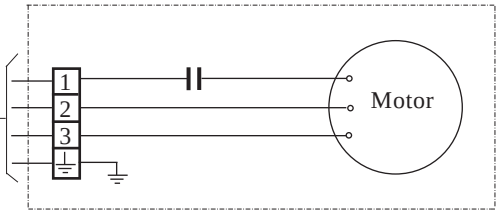
Wiring Diagram SPCON 1, 4, 5 & 6



Shaded pole motor



Split Phase Permanent Capacitor Motor



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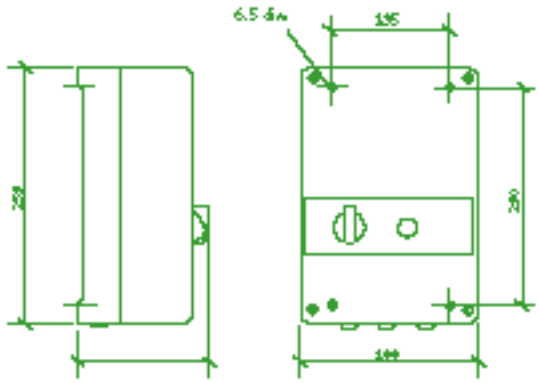
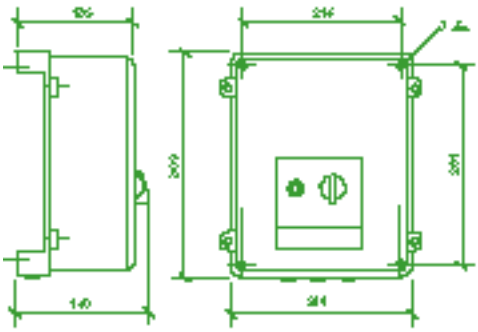
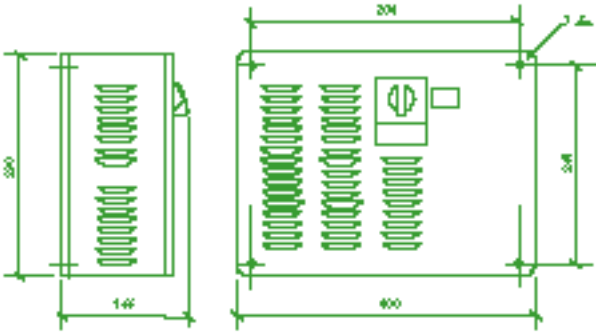


3SPCON 1, 1A & 2



3SPCON 4, 4A, 4B & 7

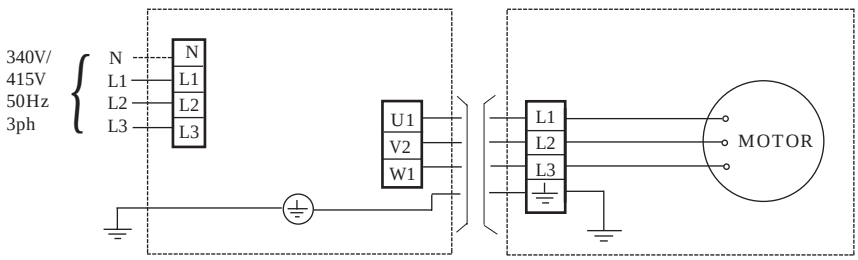


3SPCON 14

3 phase Speed Control Selection Table

Code Control Steps Enclosure	3SPCON 1 5 Plastic	3SPCON 1A 5 Plastic	3SPCON 2 5 Plastic	3SPCON 4 5 Metal	3SPCON 4A 5 Metal	3SPCON 4B 5 Metal	3SPCON 7 5 Metal	3SPCON 14 5 Metal
DSA 315-41	X							
DSA350-42	X							
DSA400-43			X					
DSA450-44			X					
DSA500-45			X					
DSA560-46				X				
DSA450-61		X						
DSA500-62	X							
DSA560-63		X						
DSA630-64							X	
DSA630-413							X	
DSA800-423	Star Delta starting only							
DSA1000-433	Star Delta starting only							
DSA1000-443	Star Delta starting only							
DSA1000-453	Star Delta starting only							
DSA1000-4463	Star Delta starting only							

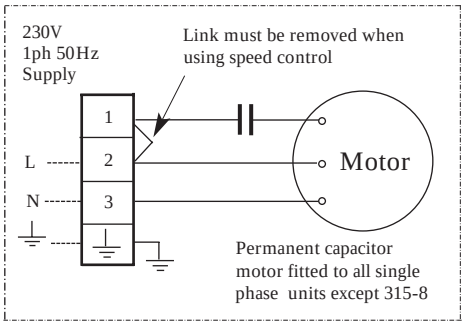
Wiring Diagram 3SPCON 1, 1A, 2, 4, 4A, 4B, 7 &14

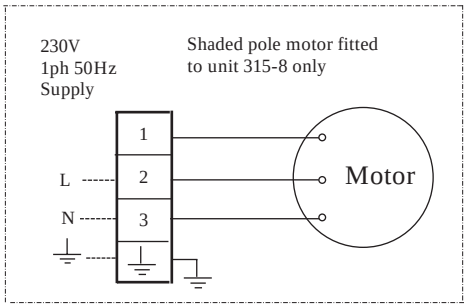


General Note:

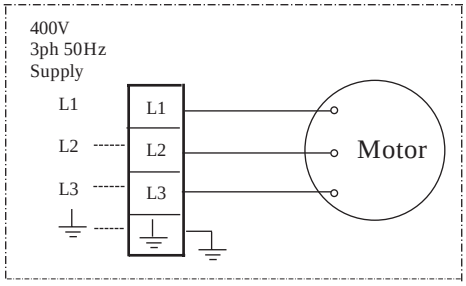
The associated airmover may not always start from cold at the lowest control setting, though there is no danger of overheating.
It is therefore recommended that the unit is started at one of the higher settings

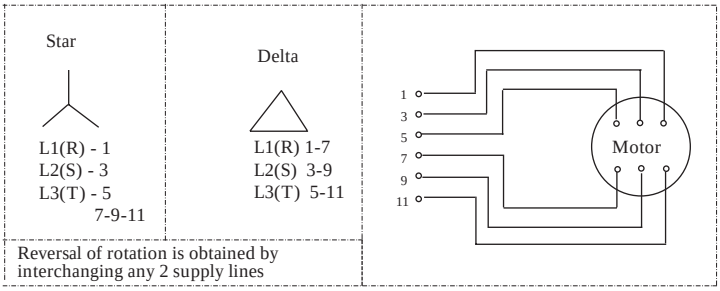
Wiring Diagrams Single Phase



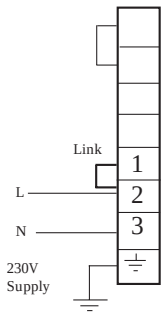


Wiring Diagram Three Phase

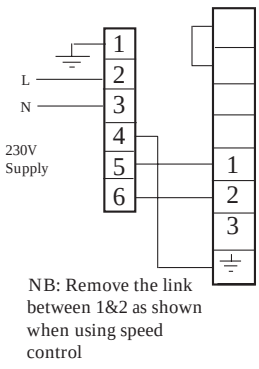




Wiring Diagrams for 400-2 & 400-3 units

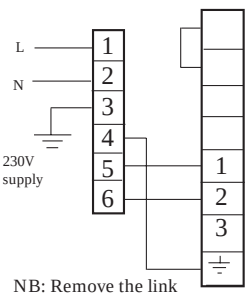


Single Speed
230V 50Hz
Single Phase
*Link between terminals 1 and 2 should be removed when speed control is used
NOTE: Thermal protection on this unit is prewired by NuAire during manufacture.



NB: Remove the link between 1&2 as shown when using speed control

Electronic Speed controlled
230V 50Hz
Single Phase
Unit as supplied for single speed operation
NOTE: Thermal protection on this unit is prewired by NuAire during manufacture



NB: Remove the link between 1&2 as shown when using speed control

Transformer Speed Controlled
230V 50Hz
Single Phase
Unit as supplied for single speed operation
NOTE: Thermal protection on this unit is prewired by NuAire during manufacture.

Electrical Details

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 remaining externally accessible once the equipment is installed are adequately guarded.

This precaution is neccessary to avoid the possibility of accidental injury or death.

Particular attention must be paid to the inlet side of rotating impellers.

Because start and run currents depend upon the duty of an individual unit and associated system the values quoted in the table are nominal.
Start currents are peak instantaneous values and are for DOL starting unless otherwise indicated.

Overloads must be set to the maximum full load current of the equipment they are protecting. the recommended overload setting will be found on the rating plate issued with each unit.

Table of unit weights, speed, run and start currents.

Airmover Code	Nominal Fan Speed		Motor Rating	Start and run currents (amp)				Weights (kg)		
				240V 1Ø 50 Hz		415V 3Ø 50Hz		Fan	Silencer	
	r/s	rpm	(kw)	FLC	SC	FLC	SC		SIL-S	SIL-L
AM 315-1	43.00	2580	0.200	1.40	14.20	-	-	12.30		
AM 315-2	43.00	2580	0.065	0.86	1.90	-	-	11.30		
AM 315-3	43.00	2580	0.065	0.67	1.90	-	-	11.10		
AM 315-4	24.00	1440	0.049	0.47	0.78	-	-	10.60		
AM 315-5	24.00	1440	0.049	0.47	0.78	-	-	10.60	11	15
AM 315-6	23.30	1398	0.015	0.33	0.39	-	-	10.10		
AM 315-7	23.30	1398	0.015	0.33	0.39	-	-	10.10		
AM 315-8	21.70	1300	0.010	0.37	0.48	-	-	10.10		
AM 400-1	22.80	1368	0.180	-	-	0.80	2.40	20.50		
AM 400-2	23.00	1380	0.180	1.30	2.70	-	-	16.00	15	22
AM 400-3	23.00	1380	0.180	1.30	2.70	-	-	16.00		
AM 400-4	22.80	1360	0.180	-	-	0.80	2.40	20.50		
AM 500-1	22.50	1410	0.550	-	-	1.70	6.80	28.00		
AM 500-2	22.70	1362	0.550	3.40	9.25	-	-	28.00		
AM 500-3	23.30	1398	0.370	-	-	1.30	4.60	25.50		
AM 500-4	23.00	1380	0.370	2.90	7.25	-	-	25.50	24	38
AM 500-5	15.50	930	0.180	-	-	0.95	2.40	24.50		
AM 500-6	15.00	900	0.180	1.70	3.00	-	-	24.50		
AM 500-7	15.50	930	0.180	-	-	0.95	2.40	24.50		
AM 630-1	23.80	1428	1.550	-	-	3.50	18.00	42.00		
AM 630-2	15.00	900	0.550	-	-	1.80	6.30	35.30	29	43
AM 630-3	11.30	678	0.230	-	-	1.00	2.50	35.30		
AM 800-1	16.00	960	1.500	-	-	4.40	16.50	70.80		
AM 800-2	11.80	708	0.750	-	-	2.80	10.00	58.30		
AMX 800-3	23.70	1420	1.500	-	-	3.70	20.40	66.00	42	60
AMX 800-4	23.70	1420	0.550	-	-	1.70	7.40	59.00		
AM 1000-1	15.50	930	4.000	-	-	9.70	26.40	142.00		
AM 1000-2	11.70	702	2.200	-	-	7.50	34.00	125.00		
AM 1000-3	9.67	580	1.100	-	-	3.10	10.50	131.00	61	91
AM 1000-4	7.70	462	0.800	-	-	4.00	8.40	127.00		
AMX 1000-5	23.80	1425	4.000	-	-	9.00	18.30	118.00		
AM 1250-1	12.00	720	7.500	-	-	16.50	48.00	300.00		
AM 1250-2	8.00	480	1.900	-	-	7.70	23.00	288.00		
AMX 1250-3	24.50	1470	22.000	-	-	44.00	114.40	348.00	81	116
AMX 1250-4	24.50	1470	22.000	-	-	44.00	114.40	348.00		
AMX 1250-5	24.30	1455	15.000	-	-	29.00	82.20	290.00		
AMX 1250-6	23.80	1455	7.500	-	-	15.30	35.70	253.00		

Technical or commercail considerations may from time to time, make it neccessary 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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