



LAB FURNITURE & FUME CUPBOARDS  
PLASTIC FANS & FABRICATION

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## **THE DURAFAN RANGE OF CORROSION RESISTANT FANS**

### **GENERAL HEALTH AND SAFETY DATA**

The fan's main purpose is to develop a pressure drop, which can be used to move a gas from one place to another, to do this it uses a rotor.

This type of machine always carries a remote chance that the impeller may disintegrate. Clearly such a device needs to be sited with care.

In order to minimise this risk please keep the following points in mind:

- a) The fan case is non load bearing
- b) Use flexible connections
- c) Ensure that any motor of 4 kW capacity and above is fitted with a means of soft start, and stop
- d) Prior to initial start up make sure the rotor turns freely in the fan case
- e) After start up make sure the gas temperature does not exceed 25°C
- f) If you are to use an indirectly driven fan then before increasing the fan speed make sure it is both safe to do so and that the motor has sufficient power

Connection to the electrical supply should only be made by a qualified electrician and should comply with the prevailing regulations.

These Operating & Maintenance Instructions should be read and understood prior to work being undertaken.

**ALL COPIES SHOULD BE KEPT IN A SAFE PLACE AS FURTHER COPIES WILL BE CHARGEABLE**

**IF YOU ARE IN DOUBT PLEASE DO NOT HESITATE TO CONTACT US**



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**OPERATING AND MAINTENANCE INSTRUCTIONS**  
**FOR 'E' SERIES FANS**

**ORDER NO:** 17327

**FAN SIZE:** E250

**FAN SERIAL NO:** 26542

**VOLUME:** 0.41m<sup>3</sup>/sec

**PRESSURE:** 350Pa

**FAN SPEED:** 1210 rpm

**DRIVE ARRANGEMENT:** Direct/Inverter driven (duty fan speed of 42Hz must not be exceeded)

**MOTOR MAKE:** TEC

**kW:** 0.75

**FRAME SIZE:** 80

**SPEED:** 1440

**ENCLOSURE:** IP 55

**SUPPLY:** 415-3-50

**FULL LOAD CURRENT:** 1.93 Amps

**DOL STARTING CURRENT:** 11.58 Amps

**Fan Case:**

Fabricated from PVC sheet.

**Impeller:**

Forward curved multi-vane construction, moulded in polypropylene.

**Stand:**

Fabricated from galvanised mild steel rapid rails.

**Anti Vibration Mountings:**

AVM 265 SC,8525M8-R-1 manufactured by Polymax or equivalent.

**Motors:**

TEC machines or equivalent manufacture relevant standard – BS 4999, ISO 9001, EN29001 Class 'F' insulation and designed to IP 55 unless otherwise stated.

**Installation of a Fan:**

The fan should be sited on a level base, or alternatively, utilise a purpose made grillage. Anti-vibration mountings should be positioned between the fan and the supporting structure in order that vibration is not transmitted. It is important that the fan is fitted with flexible connections on both the inlet and discharge. The connections must be aligned so that no external forces are brought to bear on the fan case.

The performance figures are based on good inlet conditions to the fan. Poor inlet conditions (i.e. banjo connections, loose inlet flexibles, bends adjacent to the inlet etc.) should be avoided since they are detrimental to the performance and induce airborne noise.

The motors are suitable for direct on line starting below 4 kW. The full load and starting currents are set out on sheet 3 of 4. Starting equipment should be selected accordingly. It is strongly recommended that starters with 'single phasing protection' be employed in order to safeguard the motor from installation faults.

**Electrical Installation & Safety:**

It is important that the motor enclosure is soundly earthed by a metallic conduit run, by separate earth continuity conductor, or by separate earth bonding. In all cases the installation must be made and tested, and for this feature by a competent person, before the supply is applied to the motor.

Connection diagrams are supplied with each motor pertinent to its installation. Check that the supply details correspond with the data carried on the motor rating plate. Check the security of all electrical connections, plugs, sockets, etc., before switching on the supply.

It may be necessary to 'jog' the motor in order to determine the rotation. Instructions on reversing the rotation are given on the relevant connection diagram. If the fan and motor has been put in storage, check that no foreign matter, such as paper, etc., is present inside, as this can lead to disintegration of the impeller upon starting.

Test the installation resistance between phases, also to earth, with a 'Megger' at 500 v. This should not be less than 1 ohm. The motor should be taken to a dry, warm place until the correct resistance value is attained.

If these motors are not fitted with anti condensation heater coils and intermittent use is envisaged in a cold environment, a further check should be made to ensure that the terminal box is free from condensation.

### **Before Starting the Fan:**

Check that the impeller is free to rotate without catching. Check that the cable entry to the motor terminal box is secure and weatherproof.

Check that the ductwork is free from debris and that it is of adequate construction to withstand the pressure developed. Check that dampers in the system are shut when starting up to avoid the possible overloading of the motor. When commissioning, the dampers may be adjusted to give the design duty required.

### **After Starting the Fan**

Immediately check that the current being drawn does not exceed the full load current shown on the motor name plate.

If you are using a 3 phase motor make sure that the currents measured do not vary by more than 5%.

### **Maintenance**

#### **Fan Case:**

The case requires little attention other than a wash occasionally to remove atmospheric grime. The drain point should be kept clear of any build up of contaminant sedimentation.

If you are to work within the fan case then find out what fume/material may have passed through the system and protect yourself accordingly.

**Impeller:**

The impeller should be visually inspected periodically and any foreign matter carefully removed with water and mild detergent.

**Motor:**

The motor should be kept as clean as possible. Check that the cowl intake vents are not choked – this would restrict the flow of cooling air to the motor and cause overheating. On assembly, bearings are correctly packed with grease sufficient for at least two years continuous operation without attention under normal conditions. (Equivalent to approximately 5 years of 12 hours per day service). The recommended grease is Shell Alvania RA, or other maker's equivalent. The maintenance of the motor bearings is described in the manufacturers instructions.

**NOTE!**

**If the fan is not used for any length of time, then the bearings should be turned regularly to avoid race damage, which may induce premature failure of the bearing.**

**Prior to altering the speeds of these fans, it is important that you consult our technical staff for advice**

**Our policy is one of continuous improvement and we reserve the right to alter any details of our products at any time without giving notice.**

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