

Chapter 3

AXIAL VENT FANS FOR MARINE CRAFT

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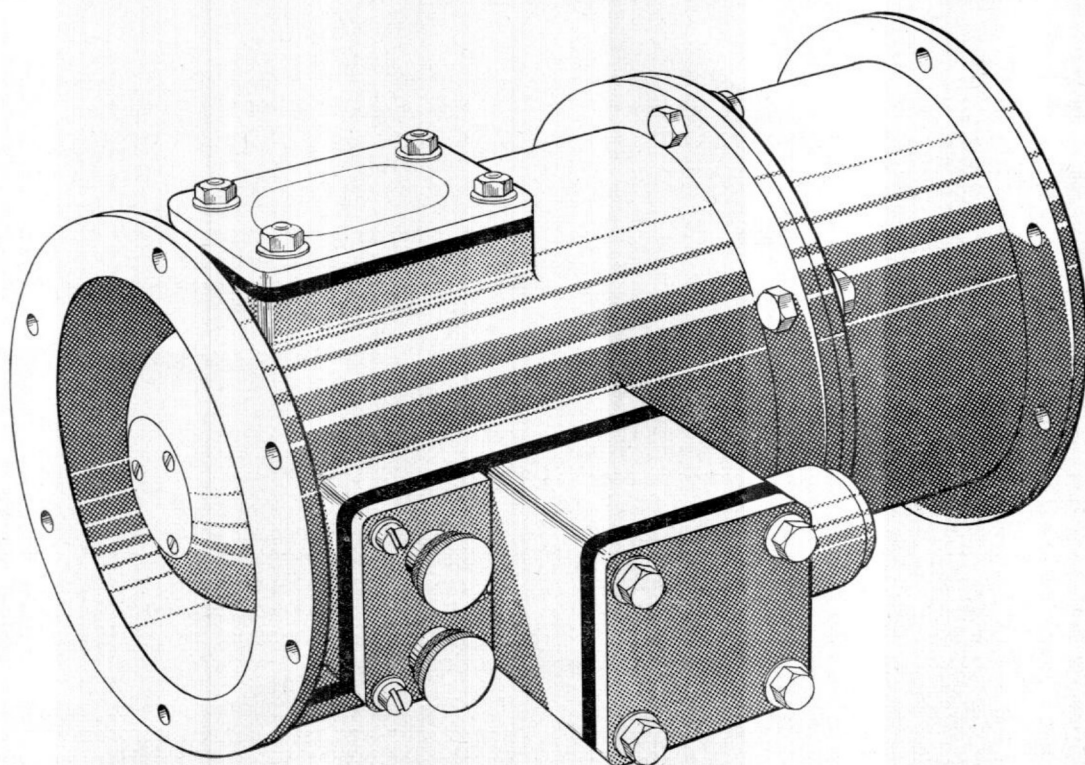


Fig. 1. Typical Airmax fan

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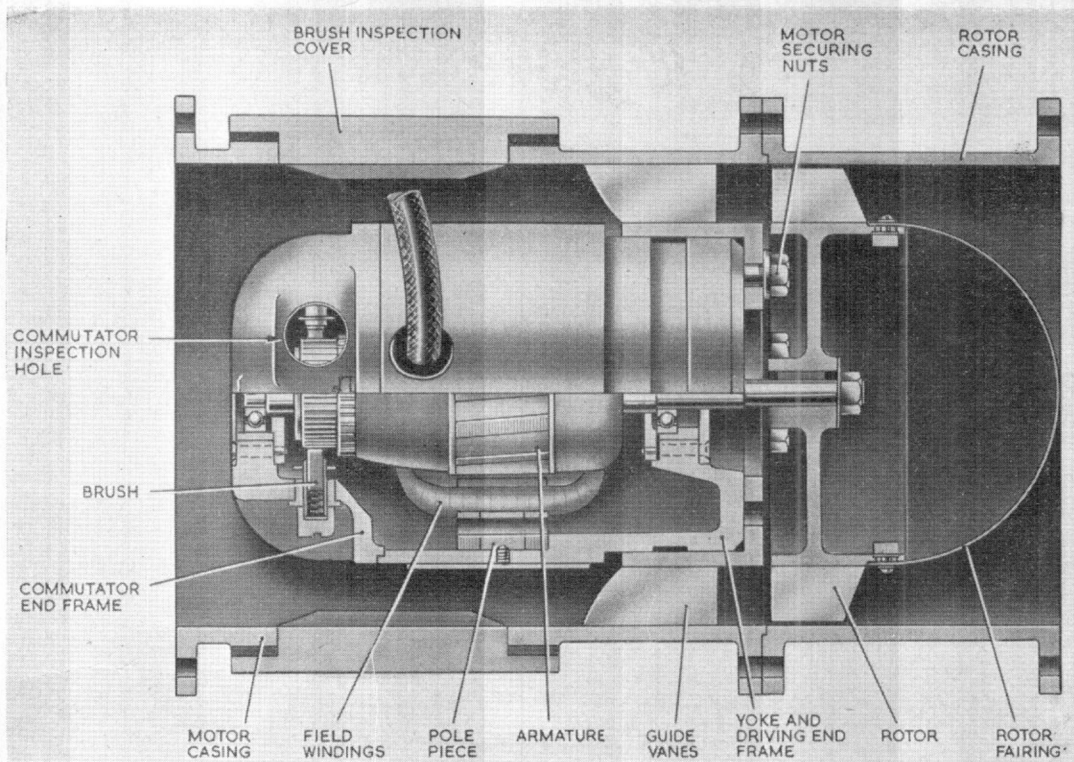


Fig. 2. Sectional view of fan

Introduction

1. This chapter gives general information on the Airmax range of fans, which are used on marine craft for general ventilation. They are of various sizes, the larger ones normally being fitted in the engine room, and the smaller ones used as extractor fans for bilges, tank spaces, toilets, galleys, etc. Specific details for particular fans are given in A.P.4343M, Vol. 1, Sect. 14.

DESCRIPTION

2. A typical fan, the 5 in. Airmax No. 2, is illustrated in fig. 1, and a sectional view of the same fan in fig. 2. The machine consists of a cylindrical corrosion-proof aluminium casting, within which is fitted a rotor driven by a small series-wound motor, suitable for a 24-volt d.c. supply, and mounted to the guide vane hub. The rotor blades are of aerofoil section, the airflow being assisted by the guide vanes, which are also of aerofoil section.

3. The airflow is in the direction indicated in fig. 2, i.e., the intake is at the rotor end of the machine. If the fan is intended for use as a supply fan, it must be mounted

accordingly, so that the air is delivered from the motor end. Mounting flanges are provided at each end of the outer casting.

4. Access to the brushgear is gained by removal of the inspection doors shown in fig. 2, and the brushes removed by unscrewing the brush caps. In the smaller model it is necessary to remove the motor end cover.

5. Fig. 2 also shows two inspection holes, which have a Perspex cover through which the commutator is visible. These holes are not present on all fans, but when fitted enable undue sparking at the commutator to be detected.

6. Electrical connection to this fan is made at the terminal block on the outer casing; the smaller fan is not provided with a terminal block, but the motor supply leads are taken through a grommet in the side of the housing.

7. The fan as illustrated has no internal suppression against radio and compass interference, and in this condition is normally used with a suitable external suppressor. The

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smaller fans, however, are normally internally suppressed.

INSTALLATION

8. For details of the installation of fans in a particular craft, reference should be made to the chapter on the craft in A.P.4343M, Vol. 1, Sect. 11. The fan is mounted by means of the flanges at each end; for use as an extractor fan the rotor end of the machine should be innermost, and for use as a supply fan it is reversed. The fans may be mounted in any position

and can be used in conjunction with suitable ducting and external vents.

SERVICING

9. The motor bearings are grease-lubricated on manufacture and should require no further attention. Servicing of the motor will normally be restricted to renewal of the brushes when they are worn to approximately 50 per cent of their original size. Inspection should also be made for general freedom from mechanical damage, and security of electrical connections.

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