

## Marine Fan - Brushless

### Key Features

Our marine fan has been designed and built with the following in mind:

- Brushless design for maintenance free operation;
- An ideal combination of high volume flow with a light weight, compact construction;
- Variable speed and pitch to suit your requirements;
- Very high efficiency for minimum power consumption;
- Operates directly from your engine's DC supply;
- Built to naval standards throughout for long life under the most arduous conditions.

### Description

Providing your engines with fresh air is vital for performance and reliability. Even if your engines have dedicated air inlet ducts, your engine room will still need to be supplied with fresh air to cool ancillary equipment and of course for anyone working in the area. Whether providing forced air ventilation or operating as an extractor fan, your engine room will need at least one reliable fan.

The JEC Marine range of DC fans are extremely powerful for their size and are available with a range of blade pitches that can be tailored to meet your engine room needs. The small aperture size enables the fan to be fitted to bulkheads or panels out of the way without taking up engine room space. By simply changing blades you can alter the volume of airflow to suit changes you may make to engine room equipment. This also provides for the highest efficiency operation

with consequent electric power and fuel savings. Each fan is supplied adjusted for your application by our design team.

### Fan Blades

The six fan blades with a diameter of 400mm are made from polypropylene and are individually mounted. As an optional extra the size of the blades can be adjusted to meet special requirements. There are five selectable fan blade pitches of 30°, 35°, 40°, 45° & 50° providing the flexibility to accommodate various flow requirements while minimising power consumption.

The fan blade should be mounted in a short duct of at least 7cm. This is usually most conveniently provided by building out the engine room wall to this thickness.



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## Fan Motor & Construction

The precision built DC motor we fit is half the size of a similar AC powered motor. This saves weight and also reduces obstruction to the fan blades providing improved efficiency with a smaller diameter. For the first time a brushless design is now available giving maintenance-free operation with outstanding reliability. The standard maximum power output is 1.25kW on a 24V system. The motor is designed to handle varying supply voltage due to the battery charge cycle.

The drive shaft and bearings are stainless steel to eliminate corrosion. The body, fan hub, and rear end shield are made from hard anodised aluminium, sealed with sodium dichromate for exceptional corrosion resistance. This type of surface treatment is used on navy ships and large aircraft.

The unit has been precision built with the highest quality electrical components and insulation standards. Hermetically sealed construction techniques are used with this brushless design.

## Mounting Brackets

All mounting brackets are fabricated from hard anodised aluminium alloy and sealed with sodium dichromate for maximum strength, corrosion resistance and minimum airflow resistance. The six 316 stainless steel mounting bolts eliminate the need for nuts due to the use of special 'Secura Lock' threads in the bracket enabling the fan bolts to maintain their grip in extreme vibration conditions. This type of locking device has been developed especially for marine and aircraft conditions.

## Specifications

The following specifications are for the standard capacity fan. Reduced operating speed and alternative blade pitches and diameters cater for requirements with lower electrical supply capacity and airflow needs. Higher capacity versions are available with higher power ratings for the motor and potentially increased diameter.

For applications where space is limited the MF-3 can be supplied in a short version with the normally inbuilt motor controller supplied as a separate unit.

Also available is the MF-1, 300mm diameter fan which can be supplied for both 12 and 24V systems.

Model Specifications		
	MF-1	MF-3
Maximum Speed	2,800 rpm	2,700 rpm
Maximum Flow	1.1 m <sup>3</sup> /sec	2.7 m <sup>3</sup> /sec
Standard Diameter	300mm	400mm
Diameter Range	300mm	360 - 550mm
Maximum Power	0.45kW @ 28V	1.25kW @ 28V
Minimum Current	5A	20A
Maximum Current	18A	55A
Number of Blades	6	
Blade Pitches	30°, 35°, 40°, 45°, 50°	
Weight - short version	8kg (17.6 lbs)	12.7kg (28 lbs)
Weight - long version		14kg (30.9 lbs)

The above data, i.e. current and flow can vary slightly due to the fluctuating voltage on the vessel (23-29V). Our figures are based on mean average voltage with engines operating at cruising speeds and assume proper fan installation.



Model depicted is MF-3 long version.

Excellence in Engineering and Design

Jindra Energy Conversions Pty Ltd

Unit 26, 137-145 Rooks Road, Nunawading, VIC 3131 Australia. Phone: +61 3 8872 6555 Fax: +61 3 8872 6550

Email: [info@energyconversions.com.au](mailto:info@energyconversions.com.au) Website: [www.energyconversions.com.au](http://www.energyconversions.com.au)