

## JM.Bif 200°C Bifurcated Axial Flow Fan

### Range Feature Summary

- 5 diameters available, 400 to 1000mm #
- Flow rates up to 49,115 m<sup>3</sup>/h (13.64 m<sup>3</sup>/s)
- Static pressures up to 987 Pa
- Fans tested to ISO5801 and BS848
- Motor mounted out of airstream
- Low installed noise levels
- Motor protection IP55
- Hot dip galvanised casing
- Designed for continuous use at temperatures up to 200°C

# Larger sizes (1120mm and 1250mm diameters) available on request.

### IMPELLER

**Material:** Aluminium (LM6 or LM13 dependent on application and rotational speed).

**Blade Design:** High Efficiency Aerofoil section.

**Hub Design:** Aluminium hub and clamp-plate, with integral steel shaft insert to ensure correct motor drive shaft fit. Hub design allows for each blade pitch angle to be individually adjusted.

**Manufacture:** All die cast impeller components are examined using real time X-ray radiography (in accordance with ASTM E-155) before machining to ensure highest quality.

**Balance:** In accordance with BS 848-7 / ISO 14694, Grade G16 to G6.3, depending on rated motor power.

**Form of Running:** Form B: Airflow through impeller then over the motor.

**Impeller location and fixing:** Impeller is located and fixed to the motor drive shaft by a key and keyway manufactured in accordance with BS 4235:1972. Axial location is provided by a collar or shoulder on the drive shaft together with a retaining washer and screw, fitted into a tapped hole in the end of the shaft. The screw is secured in position.

**Aerodynamic design:** Fan maximum absorbed power is designed to occur within the normal working range, i.e. Fan exhibits a non-

overloading characteristic. In order to provide an extended operational life, impellers are designed to have low stress levels, when operated below the maximum speed stated within the published fan performance characteristic.

### FAN CASING

**Material:** Casings are manufactured from mild steel to BSEN 10111 Grade DD14.

**Casing Design:** Casing and flanges will have a thickness of 3 mm for fans up to and including 630mm in diameter, while fans of 800mm up to and including 1000mm in diameter will have a casing and flange thickness of up to 6 mm (depending on fan and motor size). Casings are of the long type, enclosing the entire length of the impeller and motor assembly. The motor is mounted inside a motor enclosure or tunnel, which is open to atmosphere to allow the motor to be cooled, whilst also being designed to protect the motor from the hot gases flowing through the fan. The fan is therefore designed for continuous use at a temperature of up to 200°C.

**Casing Finish:** Hot dip galvanised after manufacture to BSENISO1461

**Connection Flanges:** Flanges are an integral part of the fan casing and feature fixing holes that are equi-spaced around a pitch circle diameter to facilitate connection to duct work in accordance with BS EN 13351:2009.

### MOTOR

**Type:** Fan motors are of the totally enclosed, squirrel cage induction, continuous duty variable torque type.

**Efficiency Grade:** Motors have a minimum efficiency grade of IE3, where required by relevant Regulations.

**Bearings:** Either ball or roller type bearing with an L<sub>10</sub> design life of at least 20,000 hours when calculated using ISO 281 for rated fan duty.

**Motor insulation:** The minimum insulation standard is Class "F". When operating under the most onerous catalogued condition the motor temperature rise will be in accordance with EN 60034-1.

## JM.Bif 200°C Bifurcated Axial Flow Fan

**Motor output ratings:** Motor outputs are IEC Power rated (based on cooling being provided by an integral cooling fan mounted on the non-drive end). Performance is generally in accordance with BSEN 60034-1.

**Motor Finish:** Cast iron, painted to motor manufacturers specification.

**Ingress Protection:** IP55 with drain plug fitted.

**Terminal Boxes:** All terminal boxes shall have the same level of protection as the motor.

**Elevated Temperature fans:** Fans are designed for Continuous operation from -20°C up to +200°C.

Motor insulation is class F.

**Supply:** Three Phase, 50Hz

### MOTOR SPEED CONTROL

**Speed Control:** All three phase, single speed, motors are suitable for inverter control.

### PERFORMANCE DATA

Published fan performance data represents what will be achieved when tested to ISO 5801 (or equivalent to AMCA standard 210) and the achieved sound power level, when tested to BSENISO 5136 (which replaces BS 848-1, BS 848-2.5, etc.) or equivalent to AMCA standard 300. Acoustic data is to be given as sound power levels (Lw re: 1 pW ( $10^{-12}$  watts) for each of the eight octave bands (63Hz to 8kHz).

### WARRANTY PERIOD

Our standard warranty period for both the fan and motor is 2 years from date of despatch.

### STANDARD ACCESSORIES

#### BELLMOUTH INLETS

Bellmouth inlets can be provided for long and short cased fans and are spun from mild steel to BSEN 10111 Grade DD14 and hot dip galvanized to BSENISO 1461 after manufacture.

### INLET/OUTLET GUARD

Inlet and outlet wire guards can be provided where requested and are fabricated from mild steel wire and rod as a welded assembly, which is either hot dip galvanized, or zinc plated after manufacture. Guards are manufactured in accordance with BS 848-5/ISO 12499.

### FAN MOUNTING FEET

Fans can be provided with attachable feet where requested, suitable for horizontal or vertical mounting, fabricated from mild steel to BSEN 10111 Grade DD14, up to 8mm thick. Feet are hot dip galvanized in accordance with BSENISO 1461 after manufacture or in accordance with BS EN 10346:2015.

### FLEXIBLE CONNECTORS

Flexible connectors can be provided where requested and are fabricated from silicon coated glass fibre fabric. The materials should withstand temperatures up to 400°C/2hrs and be flame resistant, conforming to BS 476-7. Flexible connectors should be fitted using stainless steel worm drive clips.

### ANTI-VIBRATION MOUNTS

Two mount variants are available. Rubber in-shear mounts are designed for standard temperature fans, while spring mounts are available for high temperature fans.