

## JM / HT JM Axial Flow Fan

## Range Feature Summary

- 15 diameters available; 12.4" to 63"
- Air Flow volumes up to 13,380 cfm
- Static pressures up to 9.65 inwg
- Fans tested to ISO5801, BS848 and EN12101-3 (High Temperature) F300 (572°F for 2 hours)
- High efficiency design optimizes running costs
- Low installed noise levels
- NEMA Premium efficiency, UL Listed motors
- Motor ingress protection IP55 as standard
- Hot dip galvanized fan housing

## IMPELLER

**Material:** Aluminum Hub and Blades (LM6 or LM13 dependent on application and rotational speed) or Steel Hub with Aluminum Blades.

**Blade Design:** High Twist Aerofoil section blades

**Hub Design:** Aluminum 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. Alternatively, steel hubs are available for some applications.

**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 (as standard)

**Impeller location and fixing:** Impeller is located and fastened 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 locked 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. 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 data.

## FAN HOUSING

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

**Housing Design:** Housing and flange thickness varies depending on fan diameter. Fan housings are of the long type, enclosing the entire length of the impeller and motor assembly.

**Fan Housing Finish:** Hot dip galvanized after manufacture to BSENISO1461

**Connection Flanges:** Flanges are an integral part of the fan housing and feature fixing holes that are equally 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 and are NEMA Premium efficiency machines, which are UL Listed.

**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 (for standard temperature fans) is Class "F". High temperature fans designed for Smoke Extraction have a minimum insulation standard of Class "H". When operating under the most onerous catalogued condition the motor temperature rise will be in accordance with EN 60034-1, or EN 12101-3 in cases of Emergency High Temperature applications.

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**Motor output ratings:** Motor outputs are *integrated fan motor* ratings (based on insulation class), unless otherwise agreed. Power ratings reply on an enhanced level of cooling being provided by the fan impeller, motor mounting shaft and fan casing and as such, the motor is therefore considered to be an integrated fan component. Performance is generally in accordance with BSEN 60034-1.

**Motor Finish:** Aluminum self-finish or 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.

**Standard Temperature fans:** Fans are designed for Continuous operation from -40°F to +104°F, but is suitable for frequent starting down to -4°F. Motor insulation is class F.

**High Temperature (HT) Range:** Once off emergency use up to (300°C) 572°F for a duration of 2 hours in accordance with EN12101-3.

Motor insulation is class H.

**Supply:** Three Phase, 208v, 230v or 460v, 60Hz, 3 phase.

## 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 (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<sup>-12</sup> watts) for each of the eight octave bands (63Hz to 8kHz).

## WARRANTY PERIOD

Our standard warranty period for both the fan and motor is 1 year from date of dispatch.

## STANDARD ACCESSORIES

### BELLMOUTH INLETS

Bellmouth inlets can be provided for fans with long or short housings and are spun from mild steel which complies with BSEN 10111 Grade DD14. Bellmouths are hot dip galvanized in accordance with 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 fiber fabric. The materials should withstand temperatures up to 392°F/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.