VENT-AXIA

BIFURCATED CASE AXIAL FANS (BIF)

- Sizes 250 to 800 dia.
- Motors protected to IP55.
- Motor insulation Class 'F'.
- Maximum ambient temperature 200°C.
- Speed controllable via transformer or inverter (when the ambient air temperature is not higher than 60°C).
- IP55 terminal box.
- Suitable for relative humidity levels up to 95% R.H.
- Manufactured to BS EN ISO 9001.
- Performance tested to BS 848 parts 1, 2 and ISO 5801.
- 2 Year Guarantee.

BIFURCATED CASE AXIAL FANS

The Bifurcated Case Axial range has been specifically developed to meet the need for an axial fan which can handle atmospheres normally detrimental to the life of the fan motor.

By isolating the motor from the system airstream, the bifurcated fan can handle a wide variety of saturated and dust-laden atmospheres, heated air and hot gases.

The range has a split airway with a direct driven motor operating in ambient air within the motor compartment. They are suitable, as standard, for handling air temperatures up to +200°C.

MOTORS

The motors are specially selected to operate within the motor compartment with the airstream in the duct system, at an elevated temperature.

Motors are of the B3 foot mounting type, totally enclosed and fan cooled.

Being foot mounted the motors can, in the event of a failure, be readily interchanged with a comparable frame size from a wide range of manufacturers to cover temperatures of up to 200°C.

The motor is suitable for speed control by either an inverter or a 3-step auto transformer speed controller when the ambient air temperature is not higher than 60°C.

ELECTRICAL

Single phase 220-240V/50 Hz supply are available in two sizes 250 and 315 dia. in either 2 or 4 pole versions. Three phase 380-440V/50Hz supply are available in sizes 250, 315, 400, 500, 630 and 800 dia. in either 2 or 4 pole versions (630 and 800 dia are available as 4 pole).

IMPELLERS AND CASING

The aluminium alloy impellers are die cast and have an adjustable pitch which allows a wide range of air outputs to be selected. All the casings are manufactured in steel and hot dipped galvanised to BS EN ISO 1461 after fabrication. Motor mountings and fixings used in the assembly of the fans are zinc plated and passivated.

FORM OF RUNNING

Terminal Box

To IP55, protected against dust and water jets from any angle, allowing outside applications.

Performance

Tested to BS 848 Part 1 & 2. Published dBA figures are free field sound pressure levels at 3m with spherical propagation at a reference level of 2 x 10^-12 Watts (1 pico-watt).

Cooling

External cooling is provided by a fan mounted at the non-drive end of the motor, protected by a cover with a grid air intake. The airflow, guided by the fan cover, is directed longitudinally on the entire periphery of the motor in the channels formed by the frame ribs.

Adequate space is provided within the motor compartment to ensure a plentiful supply of cooling air. The air within the motor compartment must not exceed 40°C. For ambient in excess of this, please consult our Technical Services Department for further information.
### BIFURCATED CASE AXIAL FANS PERFORMANCE GUIDE

Red tabulations indicate a stock fan with a preset pitch angle. Black tabulations indicate the duty range of the preset fans in a 2° increment. The impellers will be factory set and dispatched within two days.

#### 4 POLY

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Green tabulations indicate fans available on request. Please contact your local Sales Office for delivery information.

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BIFURCATED CASE AXIAL FANS
DIMENSIONS (mm)

BIF250-BIF500 DIMENSIONS

BIF630-BIF800 DIMENSIONS

BIFURCATED CASE AXIAL FANS ACCESSORIES DETAILS

MOUNTING FOOT

AXIAL ANCILLARY PACK
consists of:
2 Matching flanges
2 Flexible connectors
2 Mounting feet
4 Anti vibration mounts
4 Worm drive clips

INLET WIRE GUARD
Available for direct fixing to either side of the fan using flange sizing holes.
Constructed to meet BS 848 Part 5.

COUPLING FLANGE
Rolled from mild steel. Dimensionally matched to fan flange and fixing holes.

INLET WIRE GUARD
‘K’ factor loss 0.25

BIFURCATED CASE AXIAL FANS (BIF)

Stock Ref. No. A B C D E F G Approx. Weight Kg
BIF250 / 2 & 4 / 3 & 8-32 250 535 302 328 8 10 200 452 30
BIF315 / 2 & 4 / 16 & 8-30 315 535 355 388 8 10 224 452 30
BIF400 / 2 & 4 / 8-22 400 625 450 480 8 10 280 585 49
BIF500 / 4 / 3 / 8-22 500 660 560 590 12 12 315 695 66
BIF500 / 2 / 3 / 8-20 500 710 560 590 12 12 315 695 87
VENT-AXIA
BIFURCATED CASE AXIAL FANS
ACCESSORIES

An attenuator without pod offers negligible resistance to air flow, and therefore the pressure loss can be considered to be the same as that for the equivalent length of ducting.

Resistence Graph For Axial Attenuator With Pod

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BIFURCATED CASE AXIAL FANS
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Resistence Graph For Axial Attenuator With Pod
VENT-AXIA

BIFURCATED CASE AXIAL FANS

ELECTRICAL DETAILS

1 PHASE 2 POLE MOTORS

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<th>Pitch Angle</th>
<th>Range</th>
<th>Nominal r.p.m.</th>
<th>Motor kW</th>
<th>Amps F.S.C.</th>
<th>Amps S.C.</th>
<th>Type of Starter</th>
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<th>Overload</th>
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1 PHASE 4 POLE MOTORS

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3 PHASE 2 POLE MOTORS

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<th>Range</th>
<th>Nominal r.p.m.</th>
<th>Motor kW</th>
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3 PHASE 4 POLE MOTORS

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The motor is suitable for speed control by either an inverter or a 5-step auto transformer speed controller when the ambient air temperature is not higher than 60°C.

SPREAD CONTROLLER

Used in conjunction with spread control fans Vent-Axia offers a choice of speed controllers, the traditional five-step Auto Transformer or the Inverter Speed Controller.

The Five-Step Auto Transformer provides five stepped speed settings with the electronic motor harmonic noise associated with all electronic or solid state type Speed Controllers. Must be interlaced with a D.O.L. Starter.

The Inverter Speed Controller offers a more flexible solution to speed control and is infinitely variable. The inverter controller package, comprises of the inverter controller, a built-in or separate filter where applicable and separate Inverter Low Voltage Controller. The Inverter Controller is installed adjacent to the fan. The Low Voltage Controller can then be installed up to a distance of 50m away from the Inverter Controller and is wired using 5 core low voltage wire. This controller has a rotary speed control and separate On/Off switch. The Inverter Controller package is factory matched to the individual fan for ease of installation.

Inverter Controllers

Inverter (Variable speed drives) are suitable for all models of inverter controllable three phase fans. 0 filtering complete user adaptability Vent-Axia Inverters offer the following benefits -

Frequency control setting resolution from 0-100% in 0.1 increments (not only providing total speed control, but also enabling energy savings to be made through the fine tuning/optimisation of the fan)

Pre-settable minimum/maximum speed. 0 overload protection - 150% for 1 minute, therefore protecting the fan from drawing excessive current.

Stall prevention during acceleration, deceleration and constant speed, preventing nuisance tripping and problems.

The versatility of the Inverter means that a single drive unit can be used to control the speed of multiple fans, provided that their combined loads do not exceed the drive capacity.

Using an Inverter is by far the most effective and efficient way of controlling and optimising your fan or fans.

The Inverter controller, will include either a built in or separate EMC filter, a ferrite coil and a low voltage drive capacity.

The Inverter Controller can be used to control the speed of multiple fans. The controls set will be matched to each individual fan and factory set, this will eliminate the need for any programming of the inverter controller on site.
VENT-AXIA
BIFURCATED CASE AXIAL FANS
PERFORMANCE CURVES

To obtain the sound spectrum in the octave bands 63 to 8000 Hz, subtract the constants shown under each performance chart from the dBW figure on the chart.

| IN DUCT | OCTAVE BAND MID-FREQUENCY Hz (c/s) | SPECTRUM | 63 125 250 500 1000 2000 4000 8000 | CONSTANTS | 6 8 9 11 16 20 21 |

| IN DUCT | OCTAVE BAND MID-FREQUENCY Hz (c/s) | SPECTRUM | 63 125 250 500 1000 2000 4000 8000 | CONSTANTS | 4 5 7 9 12 17 21 23 |

| IN DUCT | OCTAVE BAND MID-FREQUENCY Hz (c/s) | SPECTRUM | 63 125 250 500 1000 2000 4000 8000 | CONSTANTS | 5 6 8 7 11 17 20 22 |

To obtain spectrum, subtract above constants from Sound Power Level etc.
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To obtain spectrum, subtract above constants from Sound Power Level etc.
VENT-AXIA
BIFURCATED CASE AXIAL FAN
PERFORMANCE CURVES

To obtain the sound spectrum in the octave bands 63 to 8000 Hz, subtract the constants shown under each performance chart from the dBW figure on the chart.

BIFURCATED CASE AXIAL FAN
WIRING DIAGRAMS

SINGLE PHASE FAN
CONNECTED TO A D.O.L. STARTER

1 Phase Supply (220-240V 50 Hz)

N.B. Links between terminals 1 to A1, 3 to 6, 5 to 95 and 24 to 96 must be fitted.

240 Volt D.O.L. Starter
A suitable sized overload relay must be fitted to provide motor protection.

BIFURCATED CASE AXIAL FANS (BIF)