



# JetVent Mixed Flow Installation and Maintenance Instructions

**THESE INSTRUCTIONS MUST BE READ FULLY BEFORE COMMENCING INSTALLATION**

## IMPORTANT NOTE

JetVent Mixed Flow Fan Units may not be modified, altered or disassembled without the prior agreement of Elta Fans Ltd. They are manufactured under strict quality procedures and carry their own product CE mark under EC Certificate of Conformity No: 0086-CPD-493001. A full range of fan accessories have also been tested and certified. The use of items not supplied by Elta Fans Ltd may invalidate the certification under which the overall equipment is supplied.

## ELECTRICAL DATA – 400v / 3Ph / 50Hz

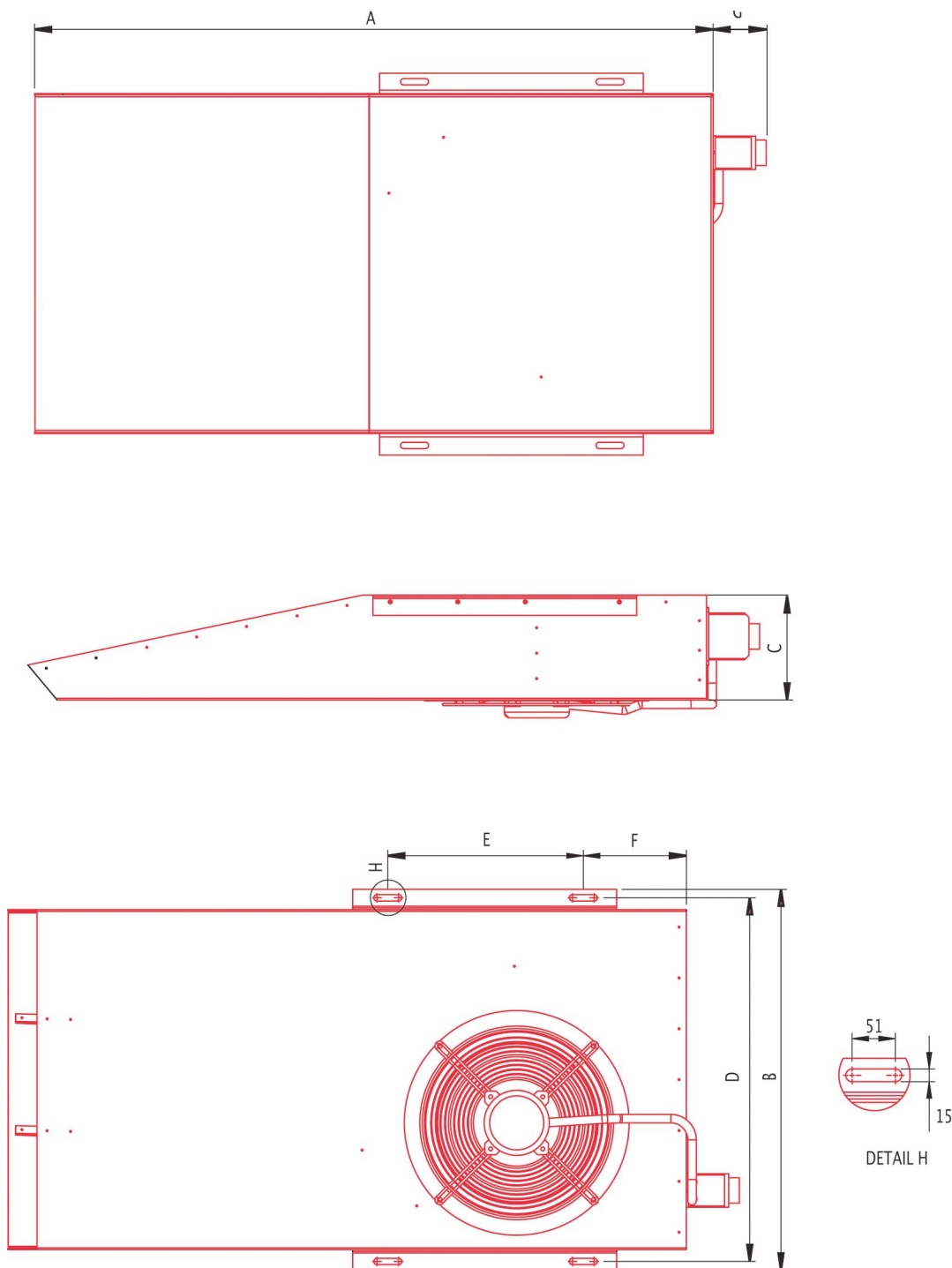
Code	Speed - r/min	Motor Power kW	FLC - Amps	SC - Amps
JIV-CPMF-50N	1375	1.50	4.30	15.50

## PERFORMANCE AND SOUND DATA

Code	Thrust Newtons	Flow rate m <sup>3</sup> /sec	Velocity m/sec	dBA at 1 m
JIV-CPMF-50N	50	1.50	21.00	69

## DIMENSIONAL DATA

Code	A	B	C	D	E	F	G	Weight kg
JIVCPMF-50N	1600	898	247	858	461	243	125	81



## 1.0 GENERAL

- 1.1 It is **important** these Installation and Maintenance Instructions are fully adhered to.
- 1.2 Full details of the unit supplied are shown on the product nameplate.
- 1.3 All electrical installation must be carried out by suitably qualified and competent personnel in accordance with all current statutory requirements.
- 1.4 These instructions cover only the Elta Fans Ltd product and do not include the supply or installation of any safety equipment that may be required e.g. adequate guarding or protection from rotating parts and proper electrical isolation.
- 1.5 Any declarations made by Elta Fans Ltd about product installation and safety, are dependant on the fan equipment being used within installations which themselves meet the requirements of the relevant Standards and Directives appropriate to the site.
- 1.6 The fan / motor assembly is designed for use in an ambient temperature of  $-20^{\circ}\text{C}$  up to  $+70^{\circ}\text{C}$  and 95% Relative Humidity (RH).
- 1.7 **The fan is not suitable for corrosive or explosive atmospheres.**
- 1.8 The installer should provide easy access to the fan to facilitate future maintenance.

- 1.9 The installer should ensure the fan is adequately and well supported by the use of tested and certified accessories and materials.
- 1.10 This product is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the product by a person responsible for their safety. Children should be supervised to ensure that they do not play with the product.

## 2.0 MATERIAL DELIVERY

- 2.1 Upon delivery of materials all materials should be checked as follows:
  - a) Inspect fully all items delivered for transit damage or loss or lack or omissions and
  - b) Hand rotate the impellers for free rotation.
- 2.2 Should any problems be present upon inspection, then immediately notify Elta (or their Agent) in writing complete with photographic evidence also providing consignment details / contract number / etc.

## 3.0 STORAGE

- 3.1 If the fan is not to be used immediately then it should be stored in a clean, dry, vibration free and lockable location.
- 3.2 The impeller must be spun by hand (ensuring that it does not come to rest in the same position) on a monthly basis to prevent hardening of the grease and possible damage to the bearings.
- 3.3 All items to be stored on pallets that afford adequate protection from damage, dust and high humidity.
- 3.4 If storage periods of longer than 1 month are anticipated then Elta (or their Agent) should be contacted prior to storage taking place, to ensure the storage area provisions will not be detrimental to the well being of Elta products.

## 4.0 INSTALLATION

**WARNING – The fan must be isolated from the essential power supply during installation and maintenance. The fan must be earthed in accordance with the local regulations.**

- 4.1 Upon receipt, the fan assembly should be visually and carefully inspected to check for any damage.
- 4.2 Ensure that the impeller is free to rotate.
- 4.3 If there are any queries concerning the fan equipment, Elta Fans Ltd should be contacted immediately (prior to the installation commencing).
- 4.4 The fan must be securely mounted in the desired position to suit the application. The fan can be mounted in horizontal installations only.
- 4.5 In order to protect the fan from any adverse vibrations, or to avoid any transmission from the fan to the surroundings, it is recommended that full unit vibration isolation is utilized.
- 4.6 Check the details on the motor rating plate to ensure that the correct power supply (voltage, frequency and phase) is available.

**An incorrect power supply will lead to permanent damage to the fan motor.**

- 4.7 Refer to the appropriate wiring diagram. Ensure that all earth connections are made.
- 4.8 Suitably rated flexible conduit should be used for connection to the fan isolator.

**Note: The flexible conduit should not be used as an earth conductor.**

- 4.9 Means for electrical disconnection must be incorporated in the wiring installation in accordance with the relevant wiring and electrical regulations.
- 4.10 Where inverters are to be used to control the modulation of the frequency for speed control, then suitable inverter wiring details must be used before installing. A check with Elta must be made before the use of inverters with any fans.
- 4.11 Ensure that the fan / motor unit is **NOT** subjected to unspecified forces that may “deform” or “load up” the unit in such a way that it may affect safe operation or limit unit life.

**Note! The fan / motor unit should not carry more than its own weight.**

## 5.0 JETVENT - INSTALLATION

- 5.1 The Jet Vent units are each to be moved around site on pallets due to the weight of the units and the fact that the unit weight is not evenly distributed making lifting dangerous if not carried out with care.
- 5.2 The position of each of the units is first marked out below the slab, using lasers to accurately position in the required place.
- 5.3 The anchor fixing bolts (sized to suit the depth from the slab and the unit weight) are positioned in the drilled holes made in the underside of the slab, ensuring they fit tightly and correctly into the drilled holes. (This is not an issue as it does not affect structural stability of the slab).
- 5.4 AV pads are secured around the anchors once they are in position.
- 5.5 The Jet Vent unit is carefully lifted into place from below to the anchor bolt fixing points. Each unit is carefully lifted into the desired position, on a support pallet, by forklift or other suitable lifting method.
- 5.6 Once in position, the fixing brackets of the unit are placed over the bolts and the fixing washers and nuts tightened into place. The units will then have final adjustment (before fully tightening) in order to point each Jet Vent unit in the desired design direction to ensure flow is towards the exhaust position previously determined. Note! Any hangers must be of suitable size and strength to carry the unit weight under operational mode.
- 5.7 Following final positioning, the previously tested wiring connections are made into the external isolator.
- 5.8 Pre – start checks as previously advised are begun prior to commissioning of the unit and system.
- 5.9 Exhaustive checks and tests are made to ensure that the unit is operating effectively and efficiently and in line with the designed application.

## 6.0 ACCESSORY INSTALLATION

**Note: Only certified and tested accessories should be used. The use of non-certified accessories may invalidate the fan certification.**

- 6.1 DAMPERS – Damper blades should be moved through their full range to ensure smooth operation. If the damper is not supplied fitted to the fan unit, the orientation and operation of the dampers should be checked carefully upon installation to the adjacent fan/ductwork items.
- 6.2 FLEXIBLE CONNECTORS – Ensure that the ductwork is correctly aligned and the connectors are not over taut yet not too slack.
- 6.3 ANTI-VIBRATION MOUNTINGS – These will be of spring type in compression and will be fitted (or provided for fitting) under the fan mounting feet.

## 7.0 START-UP

- 7.1 Ensure that all electrical circuits are complete, tested and recorded and acceptable.
- 7.2 Ensure that the local isolator is turned on and that there are no obstructions or debris within the duct or fan casing to damage the impeller.
- 7.3 Initially switch on the unit briefly to check the rotation and airflow is as required.
- 7.4 Check the motor amperage draw does not exceed the nameplate ratings.
- 7.5 Ensure that there is no impeller /inlet cone contact - if there is immediately stop the unit and recentre cone to the impeller to the clearances specified on the fan assembly drawing.
- 7.6 If no adverse problems occur during the checking of items (a) to (e) above. Then continue to run unit for further 30 minutes to ensure smooth and trouble free operation under the stipulated control modes.
- 7.7 If the entire system runs for the 30 minute duration and no problems are apparent, then the unit may be considered to be satisfactory.
- 7.8 Once all units pass the above schedule then a full system test in accordance to control methodology can be carried out and system is considered acceptable.

## 8.0 FAN MAINTENANCE

- 8.1 It is imperative that a project specific program for regular maintenance should be offered indicating a scope of work against a specified period of time that complies with the requirement for other similar elements of the building.
- 8.3 Provide a typical spares requirement for the period following Warranty for client assessment.
- 8.4 Following isolation of the local isolator, supplied with the product, all electrical connections, interfaces to be checked and repaired as required, then retested for effectiveness.

- 8.5 Ensure that the current / voltage / frequency / speed / temperature parameters are all as those indicated on the nameplate.
- 8.6 Ensure no debris or dirt is attached to the fan assembly that may obstruct the effectiveness of the unit and a suitable method is available for the removal of any debris found inside.
- 8.7 Ensure the impeller is at rest before making any checks on the assembly.
- 8.8 Ensure that the local isolator is locked before working on the fan / motor assembly. Ensure that all drives, inlet and outlet points are complete with necessary guards.
- 8.9 Check direction of airflow and change polarity, if the fan is running in the wrong direction.
- 8.10 Bearings are of the 'sealed for life' type and will not need a detailed inspection.
- 8.11 Fan accessories should be checked, cleaned and replaced as necessary.

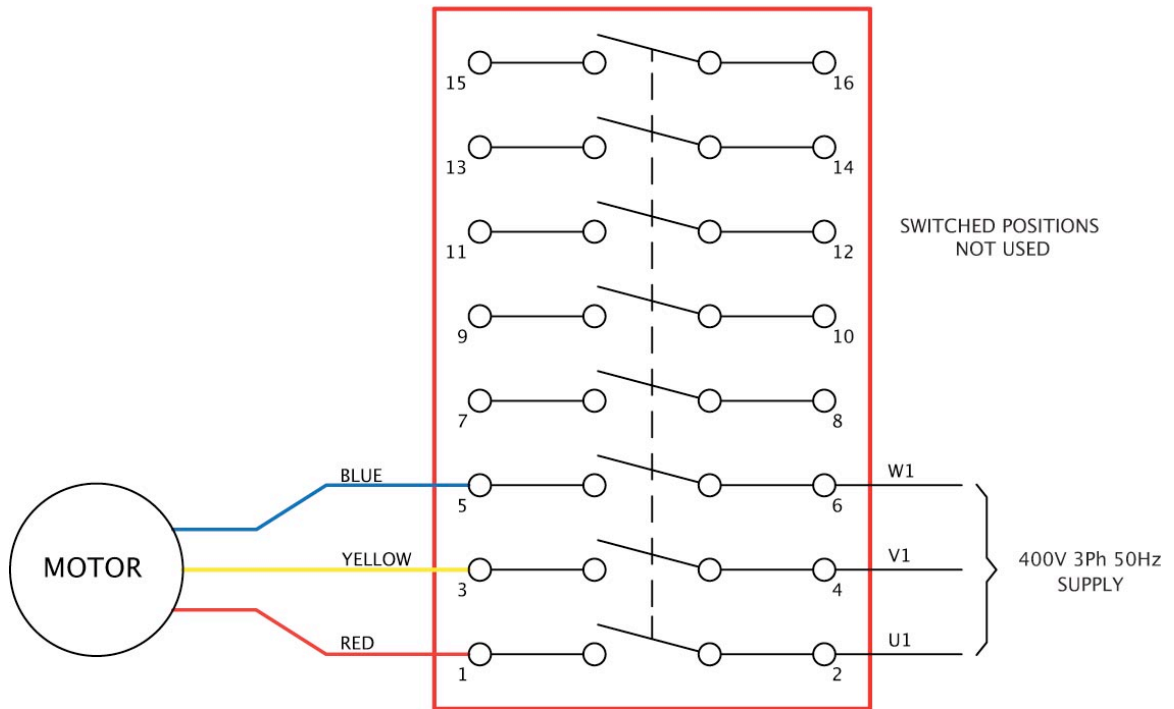
**WARNING – Fuses/circuit breakers are used to provide short circuit protection only. A starter panel with overload protection should be used to protect the motor. All motor protection devices must be automatically by-passed and/or deactivated in the event of a fire. Only a suitably qualified and competent person should carry out maintenance only after the electrical supply has been isolated.**

## **9.0 JETVENT MIXED FLOW INDUCTION FAN SPECIFICATION.**

- 9.1 The Jet Vent Mixed Flow Induction fan range comprises a 50N thrust type, suitable for ambient temperatures up to 70°C.
- 9.2 The control panel for this fan is to be rated to IP55 and shall be provided by others.
- 9.3 The all metal fan casing provides a long lasting and robust construction.
- 9.3 The integral mounting feet on the casing allow the unit to be mounted easily to the structural slab.
- 9.4 All casing parts are manufactured from pre – galvanised sheet steel epoxy powder coated as standard.
- 9.5 Adjustable pitch mixed flow impellers (with the blade angles set to meet the required thrust) are used to ensure high level of aerodynamic efficiency is achieved.
- 9.6 Impellers are manufactured from aluminium spinnings and pressings in natural finish with steel hub assemblies, suitably zinc plated.
- 9.7 Impeller/motor assemblies are dynamically balanced to Grade G6.3.
- 9.8 Motors are highly efficient induction type protected to IP55, with “sealed for life bearings” and finished with industrial standard paint.
- 9.9 Each motor is matched to the aerodynamic performance of the impeller.
- 9.10 Motors are Class F insulation to EN 60034 – 5 for normal continuous duty to a temperature of 70°C.
- 9.11 The unit is supplied with a fitted pad lockable external Isolator switch, protected to IP65.
- 9.12 Units are designed and manufactured with procedures as defined in BS EN ISO 9001: 2000 and to BS 848 Pt 2: 1985 for noise.

# WIRING DIAGRAM

## ELTA 50N INDUCTION FAN DOL ISOLATOR



## GUARANTEE

Elta Fans Ltd will, free of charge, within a period of 1 year from the date of despatch (from their works), repair or at its option replace any goods which are proved to have defects as a result of defective materials or workmanship. The goods **MUST** be returned to Elta Fans Ltd carriage paid for examination, before any decision is made on repairs or replacement.

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