

Installation, Operation, and Maintenance Instruction For GPN /BVN /BVA Series Ring Mounted Fan- (300, 380, 450, 610 & 915) mm Sizes.

Industrial Motors

Commercial &
Appliance Motors

Automation

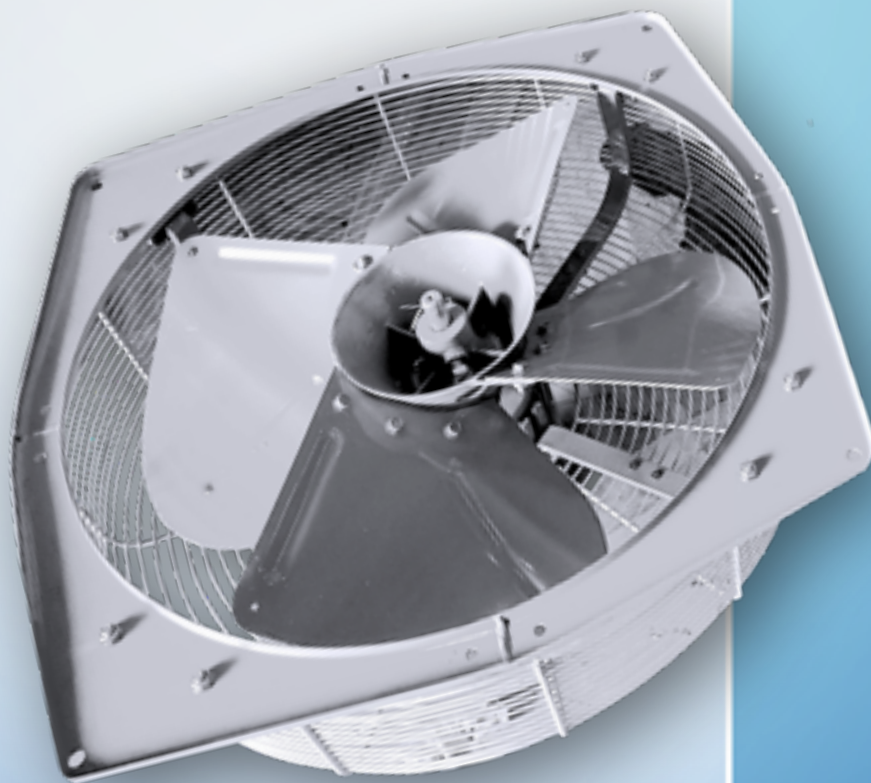
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India





Safety Precaution

This product contains rotating parts and electrical connections which can be a danger and cause injury.

1. Whatever the application, access from either side to the rotating parts must be prevented whilst the fan is operating.
2. The fan must be earthed and no installation maintenance work should be attempted without first switching off and isolating the fan and its controls from the electrical supply and allowing the rotating parts to come to rest.
3. The fan is recommended for free air delivery conditions. If used improperly, or for different purposes without the prior agreement of Marathon Electric Motor (India) Ltd or their agents, then such use would be outside the scope of reasonably foreseeable circumstances and may be unsafe.
4. It is the responsibility of the users to satisfy themselves that the fan is suitable for the conditions of use, and that installation and regular maintenance is carried out by personnel with the appropriate skills and in accordance with these instructions.

INTRODUCTION

GPN / BVN / BVA series ring mounted fans are designed to operate under Free Air Delivery. The flow may be varied by controlling the speed of the motor with a suitable speed regulator. The standard fan is recommended to operate the temperature range between – 20o C to + 50o C. The fan may be used for various cooling and ventilation applications. Consult your local sales agent (Dealer) if in doubt with the application.

MATERIAL RECEIVED

Type of Fan	Item	Description
GPN 300,380,450 (12", 15", 18")	2 No	1. 1 Box contains 1 motor & fasteners kit & 4 Arms. 2. 1 Box contains 1 Impeller & 1 Ring.
BVN610 (24")	3 No	1. 1 Box contains 1 Motor & fasteners kit 2. 1 Box contains 1 Impeller, 4 Arms & 4 clamps. 3. 1 Ring.
BVA915 (36")	4 No	1. 1 Box contains 1 Motor & fasteners kit with 4 clamps. 2. 1 Crate contains Impeller. 3. 1 Packet for 4 Arms 4. 1 Ring.

STORAGE

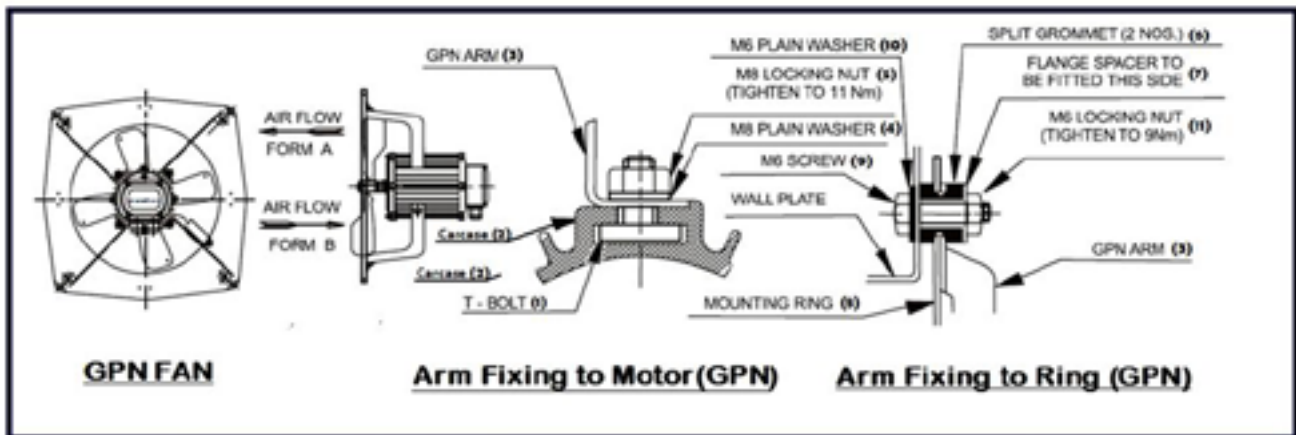
The fans should be stored in a clean and dry location in a vibration free area and following steps are to be taken.

1. Thoroughly check the fan on receipt and lodge complaint for any damage/missing part within 24 hours.
2. Fan Motor should preferably be stored indoors in a clean, dry place.
3. Rotate rotor shaft by few Rotations manually on periodic basis (Once in 2 Weeks) and maintain records.
4. IR (Insulation Resistance) Value using meggar of motor must be checked before erection & commissioning.

5. Ensure no floor vibration at storage place. In case same cannot be avoided, motors shall be placed on soft pads/ Softwood to ensure minimal vibration is transmitted to motor.
6. Ensure that protective anti-rust paint on the shaft extension is retained. Re-apply when necessary after carefully removing rust or moisture.
7. No welding shall be carried out on/ near the machine to avoid risk of fire & damage of bearing.

ASSEMBLY GPN (12"TO 18") SERIES RING MOUNTED FANS

If required, the fan can be supplied for self assembly. Method is as follows in conjunction with pictorial figures.



- a. Insert 'T' bolts (1) into the carcase slot (2) from the terminal box end of the motor and slide along until they reach the position in accordance with reference dimension given in figure.
- b. Place the foot of the mounting arm (3) over the 'T' bolts locating the squared end of the arm against the carcase rail and secure with M8 plain washers (4) and M8 locking nuts (5) tighten to 11 Nm torque. Repeat for all four arms.
- c. Fit the two halves of the split grommet (6) into the arm from either side and insert the flanged spacer (7) into grommet from the terminal box end of the fan in accordance with figure.
- d. Guard when, supplied, is positioned inside the arms and is retained by tighten four M4x10LG screws & nuts supplied with the guard at four holes provided on the ring.
Capacitor is supplied connected with the motor; re-position it outside the guard by bolting the bracket to the holes provided in the nearest arm using the M4 x12 LG screws shake proof washer and nuts.
- e. Bolt the fan to the ring (8) using the four M6x25 LG (9) screws plain washers (10) and locking nuts (11) tighten to 9 Nm torque.
- f. Fit impeller to shaft ensuring the Hex. Hd screw is correctly located and tightened to 6 Nm

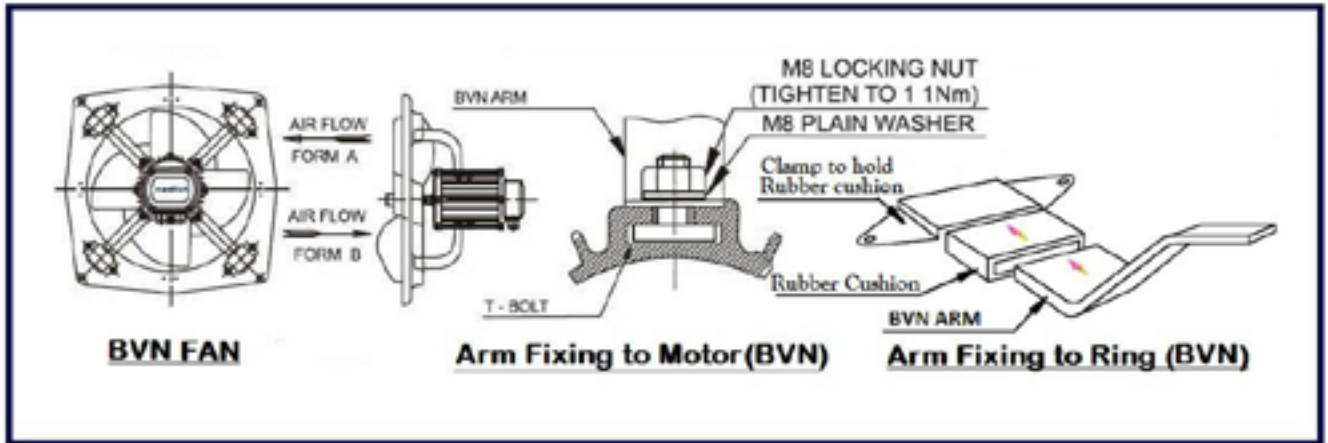
ASSEMBLY OF BVN (24") SERIES RING MOUNTED FANS

Assembly can be done similar to GPN series assembly with a little difference in arm fixing to motor and arm fixing to ring as shown in picture.

In case at fitment of impeller to shaft with setscrew, ensure screw locates in shaft dimple.

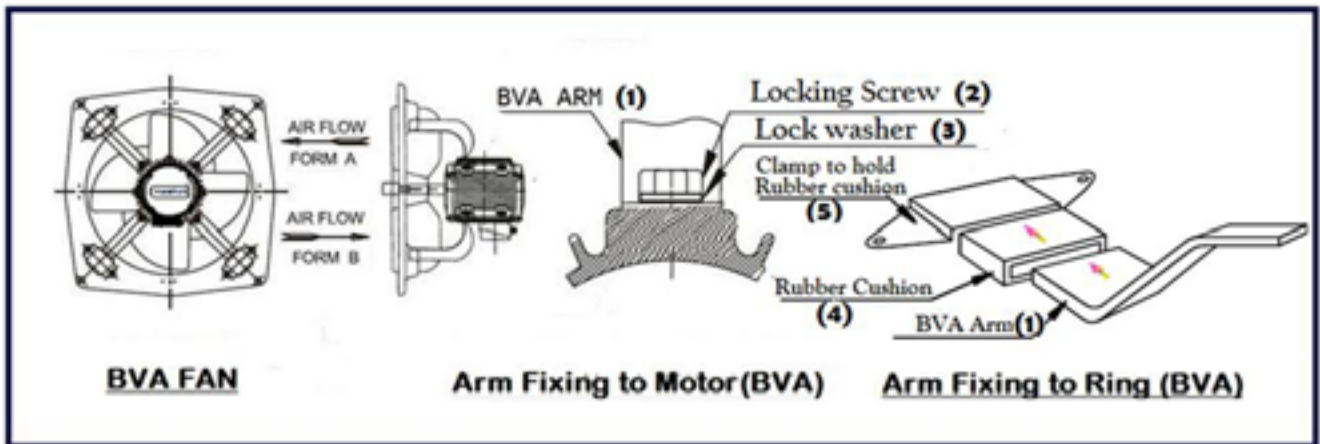
- For FORM A, C & E setscrews should engage in dimple nearest to the end of the shaft impeller fitted with straight edge away from the motor.

- For FORM B, D & F setscrew should engage in dimple far away from the end of the shaft. Impeller fitted with straight edge towards the motor.



ASSEMBLY OF BVA (36") SERIES RING MOUNTED FANS

If required, the fan can be supplied for self assembly. Method is as follows in conjunction with pictorial figures.



1. Fit the arms (1) to motor using 8 No's M 10 screws (2) and lock washer (3) provided.
2. Fit 4 arms to ring using 4 rubber cushions (4) and metal clamps (5) with 8 No's M 8 screws lock washers and nuts provided.

Note:-

- a. Rubber cushions should be fitted so that flat side will come in contact with the ring.
- b. Lock washers should be fitted under the heads of the screws.

- Fit impeller to shaft with provided KEY. After fitting the impeller slip on the MS washer and screw the castle nut to the shaft.

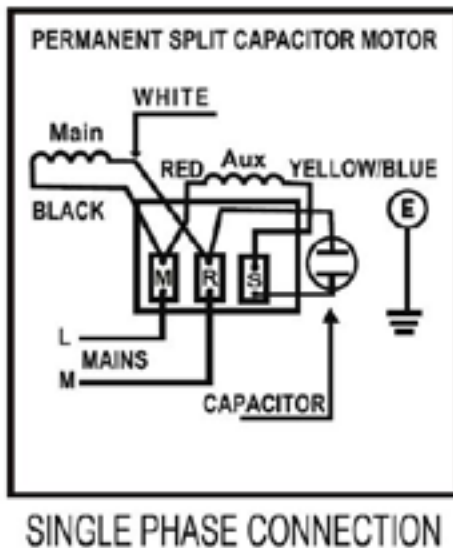
3. After the impeller is fitted, remember to replace the split pin in the end of the shaft.

- * Special fans with weatherproof motors can be supplied if required to handle air containing moisture.
 - * Special protection finish is available and must be provided if the air contains corrosive fumes.
- Installation

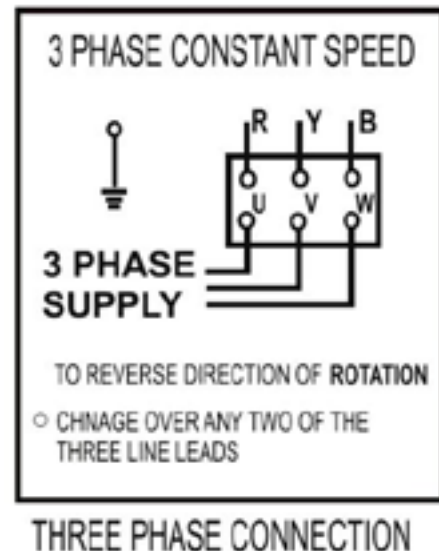
INSTALLATION

Before installation the resistance from terminals to earth should be measured. If it less than one Meg ohm the motor should be dried out before connecting to mains. Supply details must be checked to ensure that the voltage, frequency, power rating and number of phases comply with the details on name plate. The propeller fan is supplied in kit form ready for assembly at site and is tested at factory prior to dispatch. The method of assembly and installation is as illustrated. Ensure split pin is fitted in case of BVN & BVA fans and retaining screw & washer is fitted in case of GPN fans. The motor as dispatched is protected to IP 54 In case of olive green color and IP 55 in case of other color with Epoxy paint. All fans are wired for form 'A' running; the airflow direction is from motor to Impeller. Rotation of impeller is marked in blade. When form 'B' running i.e. air flows from impeller to motor, remove shaft end screw and withdraw impeller. Turn round and refit, tightening screw to 6 Nm. Motor rotation must be reversed by interchanging black and white leads in motor terminal box on single phase supply, and interchanging any two supply leads on three phase supply. A trial connection should be made to check the fan rotation is correct. If incorrect, interchange any two phases of the three phase supply. (Please refer Connection diagram)

SINGLE PHASE DIAGRAM



THREE PHASE DIAGRAM



BEFORE OPERATION MUST CHECK

Impeller is free and rotation is correct with reference to the directional arrow fixed on one of the blades or on aluminum hub.

CONNECTIONS

The wiring must be connected in accordance with the diagram which is in the terminal box. Single phase Fans are dispatched with rotation for form A running. Three phase Fans require a trial connection to the supply. If rotation is incorrect it can be reversed by interchanging any two leads.



CAUTION

Caution In case of IP-55 fans used in outdoor application, after termination, the back-cover is to be tightened properly with liquid sealant (Like: Silastic-Silicon Sealant or equivalent). Proper gripping of lead wire by rubber bush in the gland and is to be ensured. In case of very heavy rain (Protection required beyond IP-55), it is recommended to cover the fan motor with a canopy.

MAINTENANCE

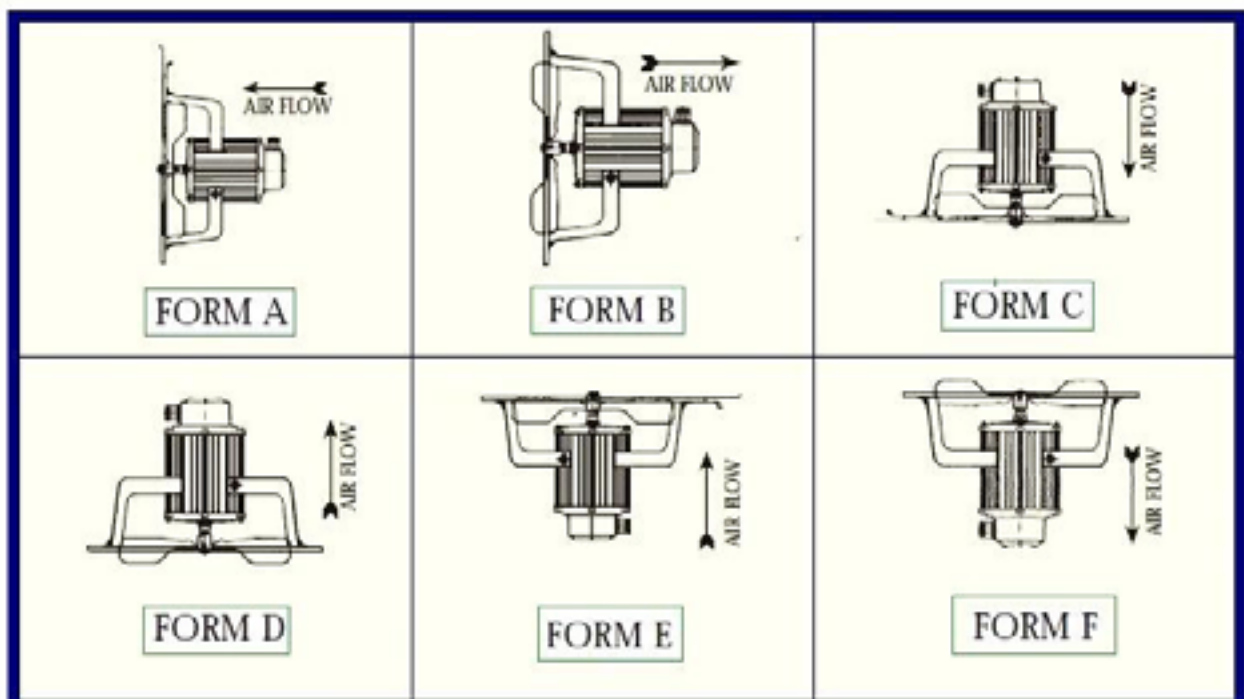
No installation or maintenance work should be carried out without isolating the fan and its controls from the electrical supply and allowing the impeller to come to rest. All items below should be carried out on a regular basis (Once in every 3 months).

1. Check motor fans and remove any build up of material.
2. Clean impeller. Check if assembly and mounting screws are tight.
3. Check that all ancillary fittings are tight.
4. Ensure that guards are correctly replaced after maintenance work. Bearings are supplied sealed for life and should not normally require attention. Lubrication of bearings by customer is not recommended.

COMMUNICATIONS

Any queries regarding operation problems accompanied by the details shown on the motor nameplates should be referred to your local sales agent (dealer) or Marathon Electric branch office. Where a failure occurs, whilst the product is under guarantee, the Marathon Electric Sales offices should be contacted before any repair work is undertaken.

AVAILABLE MOUNTING OPTIONS



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is not limited to products and solutions
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The values shown are subject to change without prior notice.
The information contained is reference values.