



Manual for fan type:

BG and TMB

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Terms of Use

The fan must only be mounted / operated / maintained by skilled people. They must read the entire manual and it is as a minimum required that the regulations are followed.

The fan must only be used for the purpose stated in the order agreement.

If the fan is used for other proposes than written in the order agreement, if the construction is changed, if the fan is not maintained as required in the check list or if there is used other spare parts than the original one the prerequisites fell for the fans stabile operation and functionality and the guarantee will not be valid. The further use of the fan will be the user's responsibility.

The fan must **not** be mounted in an area there is classified as hazardous.

This manual must be available near the fan in its lifetime.

Warning

Don't do any cleaning, maintenance, repair, opening of bolted inspection openings or dismount of protection screen when the fan is in operation.

All electrical power **must be** turned of on a save way when cleaning.

The fan **must not** be started before all bolted inspection openings and screens are in place. All security devices must be in function before start up.

Attention: When opening the fan you can in some cases open to an atmosphere classified as hazardous.



Marking

The name plate is located on the base frame of the fan. The name plate will tell the producers name, address, technical data, the year the fan is fabricated and the type.



Description of the construction

The fan is fabricated of steel in a heavy construction for use in the industry / agriculture. The fan is made to fulfill a lot of purposes.

The base frame is produced in a welded steel construction with reinforcements to secure against vibrations. If the fan is with direct drive the fan impeller is mounted on the motor shaft. If the fan is with belt drive the motor is located over or besides the fan shaft.

The fan impeller is fabricated in the type of steel required for the terms of use. All impellers have been analyzed in a Finite Element System to prevent against stress related problems.

The shaft fabricated in the type of steel required for the terms of use with tolerances fitted the parts mounted on it.

Mounting

Remember – all necessary safety equipment must be available before mounting.

It is very important to check that the surface the fan should be mounted on is leveled and even and can carry the load from the fan.

When lifting the fan all equipment must be approved for the weight of the fan. Please find the weight of the fan under the section weight.

The electrical connection must not be connected before the mechanical mounting is finished.

Mounting of the fan

The fan ground frame is normally bolted directly to a large concrete block. Make sure that the ground frame is leveled. The height can be adjusted with small steel discs. When aligning the machine, the installation accuracy must be maintained with max. 2 mm/m.

When the machines are permanently set up, the foundations must be correctly made in accordance with DIN 4024, Part 2.

Before connecting the fan inlet and discharge, make sure that no unwanted objects are located in the inlet or discharge channels and the fan itself. The fan is constructed to deliver a discharge pressure above barometric pressure so make sure that the inlet channel can not be blocked.

Make sure that the fan and motor shaft can be rotated without obstruction. This is checked by rotate the shaft by hand.

The bearings must not be relieved.

For belt driven fans:

Make sure that the bearing houses are filled up (to normal level) with oil/grease.

Make sure that the motor is correctly connected to the power supply.

Make sure that the belt drive/coupling is aligned up correctly.

Make sure that the belt tension is right according to the instruction.

Make sure that all bolts for fixing bearings, motor, consoles etc. are tightened.

Make sure that the inspection hatches are closed and tightened.

Make sure that the drains are closed and tighten.

Handling

All fans can be lifted by a forklift. If a forklift is used lifting must take place under the fan. If a crane is used to lift the fan all lifting points must be used. It is not allowed to lift the fan through the motor.

Electrical connection

The electrical connection **must** be done by an authorized electrician under rules in force at the country the fan is mounted.

Potential equalization

There **must** be done potential equalization under rules in force at the country the fan is mounted.



The potential equalization must be done on fans for Zone 20, 21, and 22. The cable must be mounted in the M10 hole under the bearing or the motor.

The potential equalization should also be done from the duct to the fan on both suction- and discharge

Operation

Start-up:

If the fan is connected to a frequency converter slowly increase the frequency from 0 to 50 Hz. If any noise or smoke suddenly develops, shut-down the fan immediately. Find out what caused the noise or smoke, for instance by opening the inspection hatches, or disassembling the fan. Find maximum speed for the fan on the nameplate.

If the fan is connected to the power supply through a soft starter - star/delta or direct start just start it up. If any noise or smoke suddenly develops, shut-down the fan immediately. Find out what caused the noise or smoke, for instance by opening the inspection hatches, or disassembling the fan. Find maximum speed for the fan on the nameplate.

Make sure that the direction of rotation is right. The arrow on the fan indicates the right direction of rotation.

2. Operation instruction

If the fan is driven by a frequency converter:

When the fan speed is increased, the fan needs power to accelerate, besides the power normally used by the fan. If the frequency converter gives a maximum current fault during acceleration, then decrease acceleration to avoid the problem. When the fan is deceleration, the fan uses less power than normally used by the fan.

When the fan is running it should be checked regularly. When checking the fan the following should be observed:

- a) Any unusual noise or smoke.
- b) Fan bearing oil/grease level.
- c) Fan bearing temperature (maximum 80 °C).
- d) Fan vibration level if monitored continuously.
- e) Motor temperature.
- f) Motor vibration level if monitored continuously.

If the vibration level is not monitored continuously this should be checked at least once a month. Any trend for raising vibration level will indicate that the bearings should be changed during a forthcoming scheduled shut-down.

Maintenance

Don't do any cleaning, maintenance, repair, opening of bolted inspection openings or dismount of protection screen when the fan is in operation.

All electrical power **must be** turned off on a safe way when cleaning.

The fan **must not** be started before all bolted inspection openings and screens are in place. All security devices must be in function before start up.



General

The fan has reviewed a thorough assessment of the security. After that a maintenance check list has been done.

The check list has to be completed, signed and saved as documentation for the correct maintenance of the fan.

If the fan is not maintained as required in the check list or if there is used other spare parts than the original one the prerequisites fall for the fans stable operation and functionality and the guarantee will not be valid. The further use of the fan will be the user's responsibility.

Noise

The fan can contribute to the overall noise development.

If the overall noise development exceeds 80 dB(A) ear protection must be used.

Disposal

When the fan is ready for disposal it must be de-mounted and disposed under rules in force at the country the fan is mounted.

Spare parts / parts list

Only original spare parts must be used. The specific spare parts are described on the spare parts list, if any.