

ALL INDUSTRIES

Blower Quick Start

version 01.22

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JOULIN
vacuum handling

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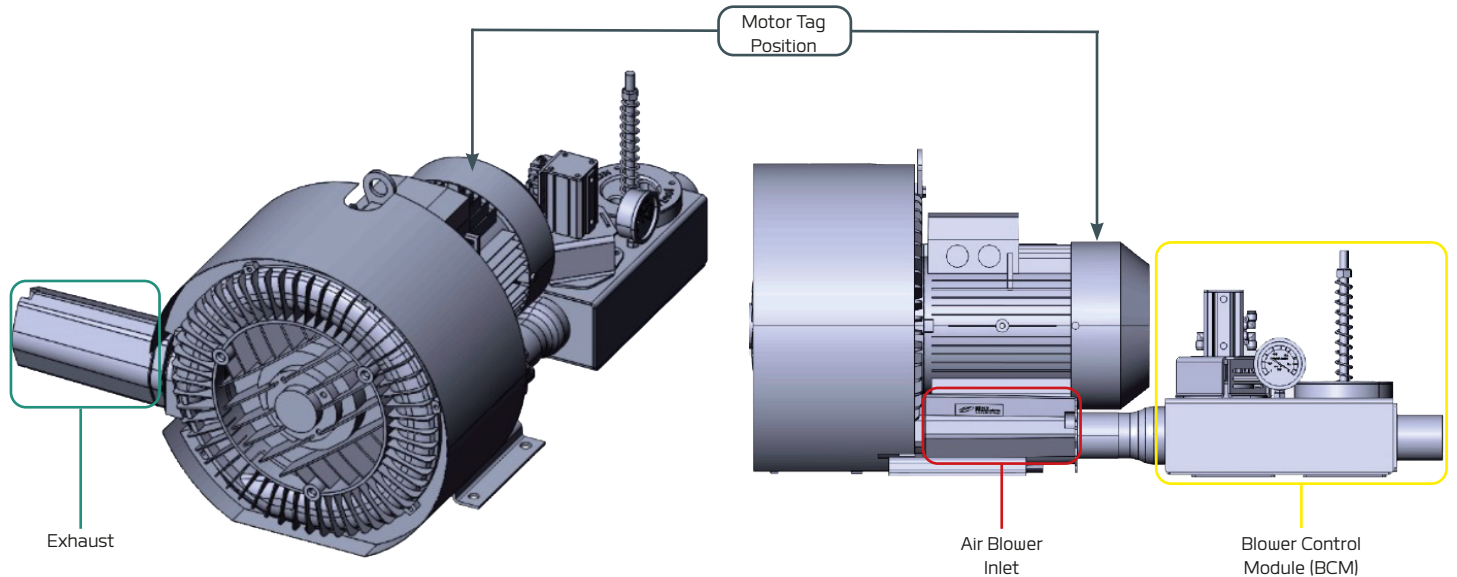
!! CAUTION !!

- ✓ Do not install, remove, or rewire this equipment with power applied.
- ✓ Failure to heed this warning may result in fire, explosion, or serious injury.
- ✓ All installation must be carried out by appropriately trained personnel.
- ✓ For full installation and maintenance instructions refer these instructions or consult us, if in doubt.
- ✓ Do not disconnect any of the motor leads from the motor unless power is removed or the motor is disabled.
- ✓ Opening any one motor lead may destroy the motor.

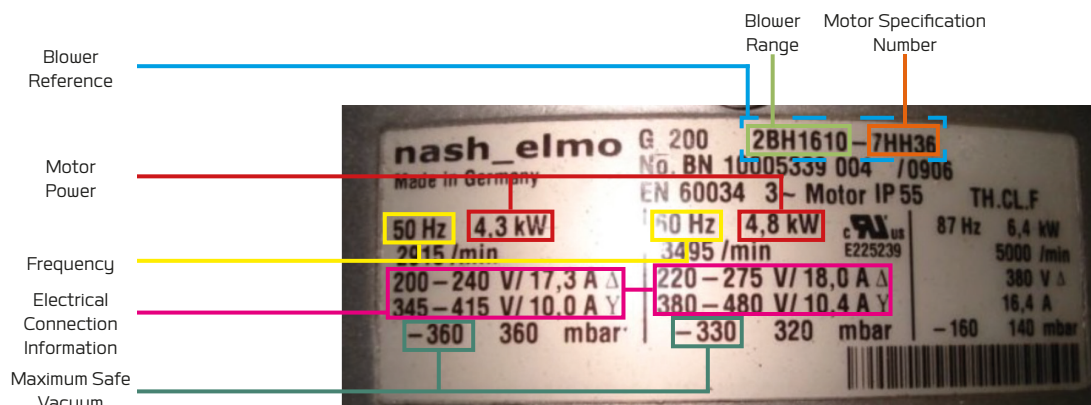
Identify the information on the blower

Motor Tag

Find the Motor Tag



Information on the Motor Tag



Blower Install IE1

Connecting the Motor - 50Hz

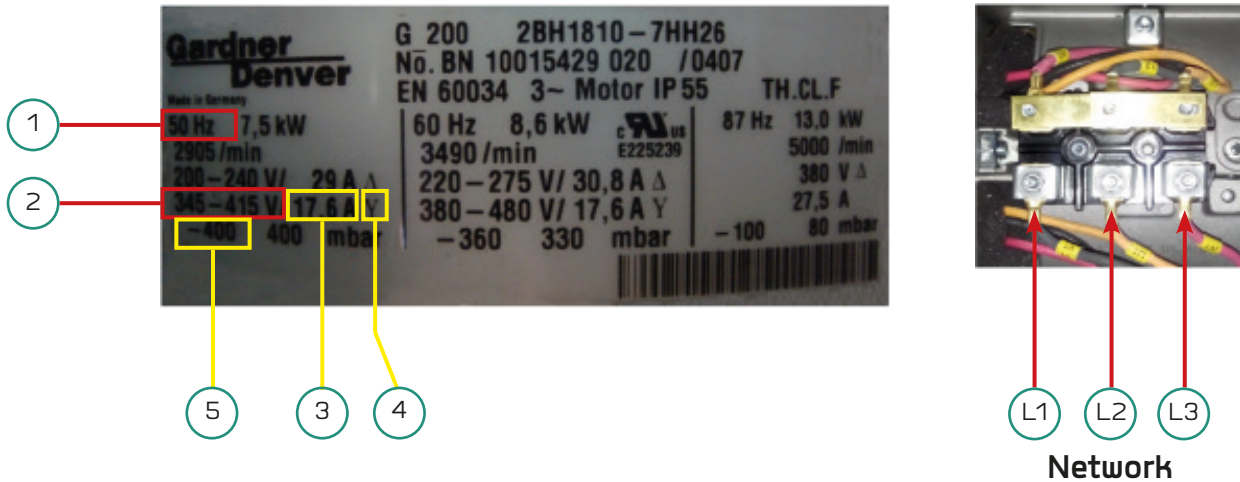
Read the Motor Tag

1. Spot the frequency that matches the network voltage.
2. Spot the voltage range in which the network voltage fits in. Be careful which one you are using as this could burn the motor.

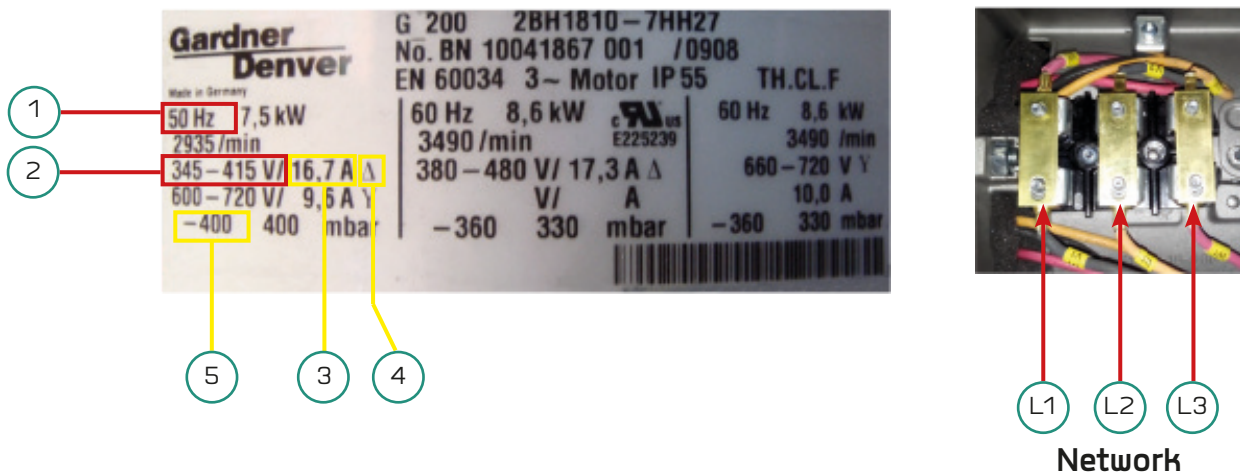
This gives:

3. The nominal current (with a direct start up the inrush current can be up to 15 times the nominal current for 6 to 8 second)
4. The wiring to use on the motor ("Delta" or "Wye"/"Star")
5. The maximum vacuum.

Example: with a 400V at 50Hz network (Generic Tag Pictures)



The above **7,5kW** motor should be wired in "Wye", as on the picture on the right. The nominal current is **17,6A**, and the maximum vacuum is **-400mbar**.



The above **7,5kW** motor should be wired in "Delta", as on the picture on the right. The nominal current is **16,7A**, and the maximum vacuum is **-400mbar**.

Blower Install IE1

Connecting the Motor - 60Hz

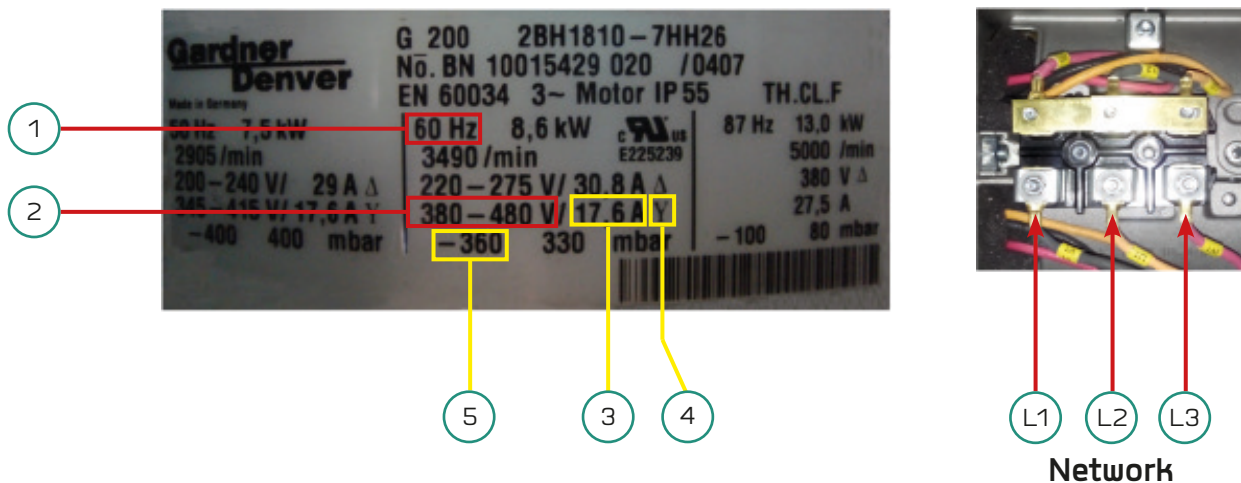
Read the Motor Tag

1. Spot the frequency that matches the network voltage.
2. Spot the voltage range in which the network voltage fits in. Be careful which one you are using as this could burn the motor.

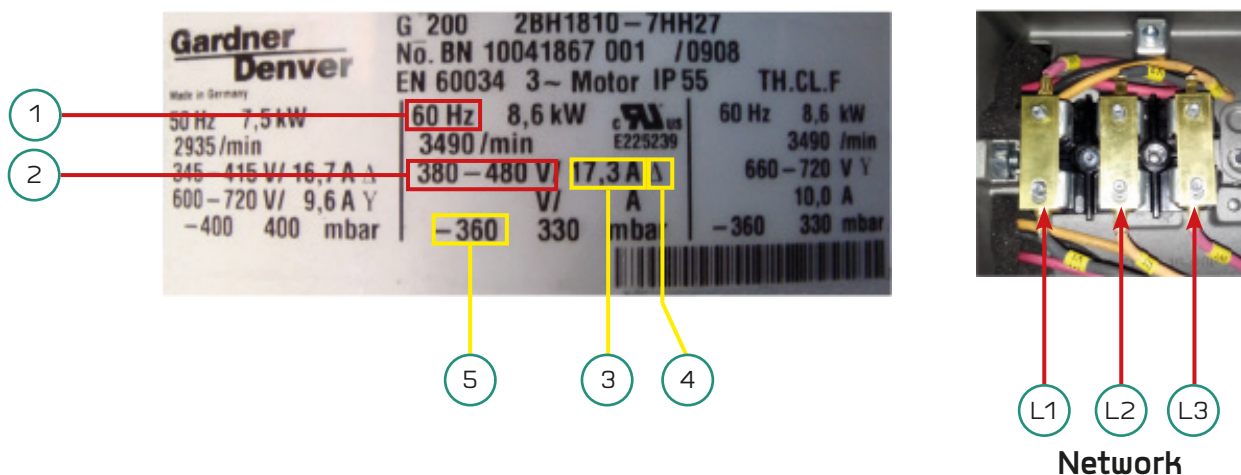
This gives:

3. The nominal current (with a direct start up the inrush current can be up to 15 times the nominal current for 6 to 8 second)
4. The wiring to use on the motor ("Delta" or "Wye"/"Star")
5. The maximum vacuum.

Example: with a 480V at 60Hz network (Generic Tag Pictures)



The above **8.6kW** motor should be wired in "Wye", as on the picture on the right. The nominal current is **17.6A**, and the maximum vacuum is **-360mbar**.



The above **8.6kW** motor should be wired in "Delta", as on the picture on the right. The nominal current is **17.3A**, and the maximum vacuum is **-360mbar**.

Blower Install IE3

Connecting the Motor - IE3

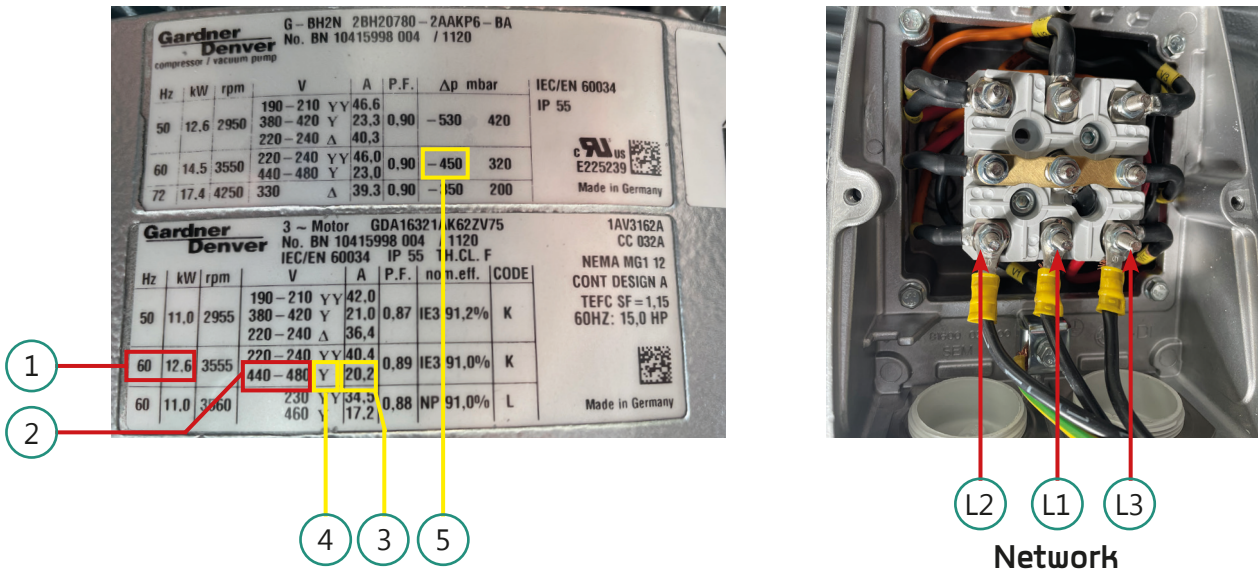
Read the Motor Tag

1. Spot the frequency that matches the network voltage.
2. Spot the voltage range in which the network voltage fits in. Be careful which one you are using as this could burn the motor.

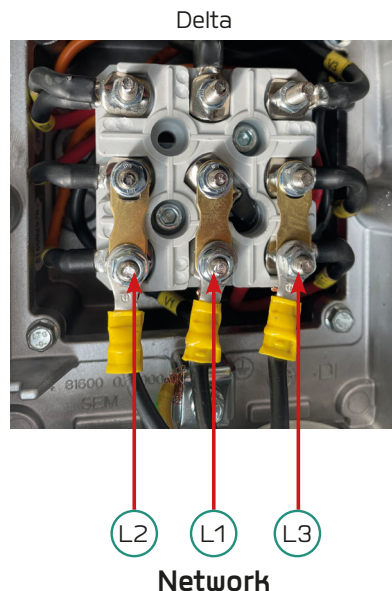
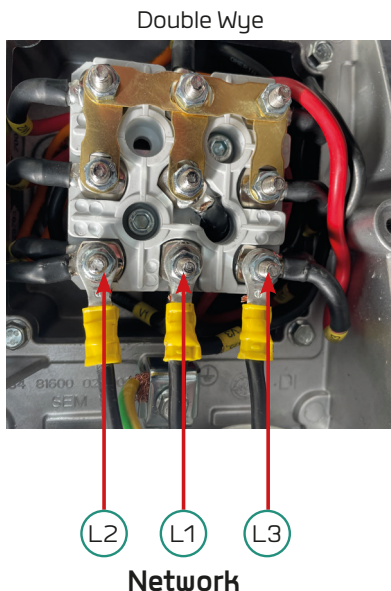
This gives:

3. The nominal current (with a direct start up the inrush current can be up to 15 times the nominal current for 6 to 8 second)
4. The wiring to use on the motor ("Delta" or "Wye"/"Star")
5. The maximum vacuum.

Example: with a 480V at 60Hz network (Generic Tag Pictures)



The above **12.6kW** motor should be wired in "Wye", as on the picture on the right. The nominal current is **20.2A**, and the maximum vacuum is **-450mbar**. Other Wirings depending vacuum blowers:



Line Protection

The fuse should be rated accordingly to the nominal current and be a **time delay type** (it allows a higher current for a short time when the motor starts). The wire should be sized accordingly with the current going to the motor.

Motor Protection

Specific motor protection should be added.

Starting

- For motor under 7,5kW: a direct start may be used
- For motor over 7,5kW: a soft starter is advised, type Danfoss VLT® Compact Starter MCD 200.

When starting the blower, it's better to have the release atmosphere opened on the turbine control module (see next section).

Using the Turbine Control Module

The main use of the blower control module is to increase the blower life, that is why it's critical to use it correctly. It is generally composed of:

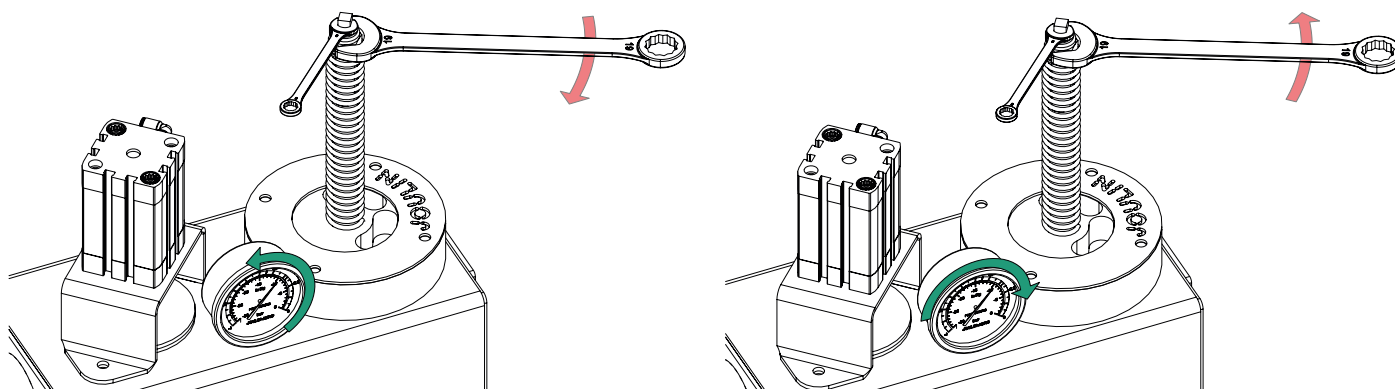
1. One or more release atmosphere (Fresh air vent) actuated by a cylinder and a valve.
2. One vacuum gauge to make sure that the vacuum at the turbine is always under the maximum vacuum rating of the turbine.
3. One or more spring valves, to adjust in order to stay under the maximum vacuum rating of the blower.
4. One or more hose connections to bring the vacuum to the tool.



Adjust the Maximum Vacuum

1. Before starting blower, confirm vacuum gauge registers "0". If gauge registers vacuum, clip the top tit of the rubber grommet to relieve any residual vacuum in the gauge.
2. Start the blower and confirm correct rotation.
3. Block inlet port(s) of blower control module (BCM) and confirm vacuum pressure is within safe maximum level listed on the data tag on the motor.
4. Vacuum level is controlled by the Spring Valve on the Vacuum control module (blower intake manifold)
5. If vacuum level needs to be adjusted, hold the top of the threaded rod (with a 9mm wrench) and tighten the lock nut (with a 19mm wrench) to increase pressure or loosen the lock nut to decrease pressure. Do not rotate the threaded rod. Note: If there is a seal on the threaded rod, the spring valve has been already adjusted. Please contact Joulin.
6. After adjusting, remove wrenches and depress the spring by hand a few times, then verify vacuum level.

Note: It is recommended, when setting, to set slightly less than maximum for a safety margin. Increasing the vacuum pressure will not make the gripper stronger but will over work the blower.



Command the Release Atmosphere

The cylinder on the control module is here to let fresh air come inside the blower so that it doesn't overheat by creating vacuum when there is no need for it (ex., when waiting for new products to pick up). The valve on the blower control module commands this release atmosphere.

The release atmosphere is also the solution to use when the system is in stand-by for a few minutes. The blower should be left running and it should not be switched "off and on" too often (less than 3-5 times per hour in normal use).

When starting the blower, the release atmosphere (Fresh air vent) should be open to reduce the load on the motor. This is done normally by supplying 24VDC to the valve.

When a pick-release module is used on the tool, the release atmosphere on the blower control module should be closed a few seconds before picking to build up vacuum inside the hose.

Periodical Maintenance

Interval	Maintenance Procedure
Weekly	Remove dust deposits from unit.
Weekly	Remove the dust from exhaust by blowing air inside
Every 2 years, or in accordance with Lubrication service life/ re-greasing interval below.	Replace enclosed ball bearings units. AND Re-grease open ball bearings. -Clean used grease and dirt from ball bearings and adjacent grease cups. - Fill half the space in the bearing casement and 65% of the adjacent grease cups with grease. Grease type: UNIREX N3, or in accordance with DIN 51825-K3N
Every 2 years, or in accordance with Lubrication service life/ re-greasing interval below.	Replace shaft sealing rings.

Lubrication Service Life/re-greasing interval in Operating Hour				
Type	Vacuum Operation at		Compressor Operation at	
	50Hz	60Hz	50Hz	60Hz
2BH151.7H.4	15000	14000	18000	18000
2BH161.-7H.5	16000	14500		
2BH190.-7..3	13000	12000		
All other 2BH1	18000	18000		

Repair / Troubleshooting

Fault	Cause	Solution	Carried out by
Motor will not start. No Humming from motor	At least two power supply leads interrupted.	Check fuses, terminals or power supply cables for power on all three terminals.	Electrician
Motor will not start Humming noise.	One power supply lead interrupted.	Check fuses, terminals or power supply cables.	Electrician
	Impeller is jammed.	Open vacuum pump/compressor cover, Remove foreign body, clean.	Service
		Check or correct impeller gap setting if necessary.	Service
	Impeller defective.	Replace impeller	Service
	Rolling bearing on drive motor side or vacuum pump/compressor side defective	Replace motor bearing or vacuum pump/compressor bearing.	Service
Protective motor switch trips when motor is switched on. Power consumption too high.	Motor short-circuit.	Have winding checked.	Electrician
	Motor overloaded does not match specification on rating plate.	Circuit incorrect amp load	Service
		Clean filters, mufflers and connection pipes if necessary.	Service
	Compressor is jammed.	See fault: "Motor does not start; humming noise" with cause: "Impeller is jammed.".	Service
Blower unit does not generate any or insufficient vacuum.	Leak in system	Seal leak in the system	Operator
	Wrong direction of rotation.	Reverse two electrical connecting leads	Electrician
	Incorrect frequency (on pump-motor units with frequency converter).	Correct frequency.	Electrician
	Shaft seal defective.	Replace shaft seal.	Service
	Different density of pumped gas.	Take conversion of pressure values into account. Inquire with Service Department.	Service
	Change in blade profile due to soiling.	Clean impeller, check for wear and replace if necessary.	Service
Abnormal flow noises.	Flow speed too high.	Clean pipes. Use larger pipe if necessary.	Operator
	Muffler is full of dust.	Clean muffler inserts, check condition and replace if necessary.	Service
Abnormal running noise.	Ball bearing lacking grease or defective.	Regrease or replace ball bearing.	Service



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