

INSTALLATION AND COMMISSIONING MANUAL



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In compliance with the current norms, the machine should be installed only by a technical person qualified for this type of work. During installation, ensure that:

- The machine is moved as given in chapter II.1.
- The required personal protection devices are worn so as to avoid injuries caused by electrical and mechanical hazards (injuries by touching panels, sharp edges, etc.)
- Electrical connections are made after the power supply has been shut off, in compliance with the recommendations given in chapter III.
- Grounding is carried out in compliance with current standards.
- The machine is powered on when installation has finished (ducting installed and inspection doors closed).

I. AT DELIVERY

1.1. Checkings at delivery

When the equipment is received, the state of the packaging and the equipment must be checked. In the event of damage, make an accurate note of any problems on the carrier's delivery note.

1.2. Unpacking

When the equipment is unpacked, check the following:

- The total number of packages are present.
- All accessories are present (dampers, roof, electric switchgear, etc.). After unpacking the equipment, the waste must be disposed of in compliance with the current standards. No packaging should be discarded into the environment

1.3. Storage

The equipment must be stored in shade, in a dry place, at a temperature between -20°C and 40°C.

II. INSTALLATION

1.1. Handling

The units must only be moved in their installation position.

If the device is handled using a fork-lift truck, ensure this supports the load-bearing structure and does not touch the panels enclosing the unit.

If the device is moved using a crane, use four cables of identical lengths. These must be at least as long as the greatest distance between two fastening points.

If dimensions $L + W + H > 5m$ then the case must be lifted using a lifting beam.

11.2. *Space required for maintenance*

Generally speaking, it is desirable to provide access space of at least the width of the unit on the access side for maintenance. More specifically for the Pyrostar range, an extra 200 mm free space is needed on the opposite side to service side.

11.3. *Installation*

The unit must be laid on a sufficiently rigid and flat surface (use vibration mounts if necessary).

Install the unit such that bad weather or ambient temperature cannot damage the internal items of the unit during installation as well as when used later (possibly provide a protective cap).

F400-120 fans should be installed outdoor or, when installed indoor, separated from other volumes by a 1 hour fire-resistant wall. The door of the technical room should be ½ hour fire resistant. Ventilation of this technical room should comply with the installed materials.

F400-120 fans should be wired to a converter only in Comfort mode and run at full speed when extracting smoke.

If the motor is equipped with overheat protection, they should be wired to the converter so it can protect the motor during Comfort mode.

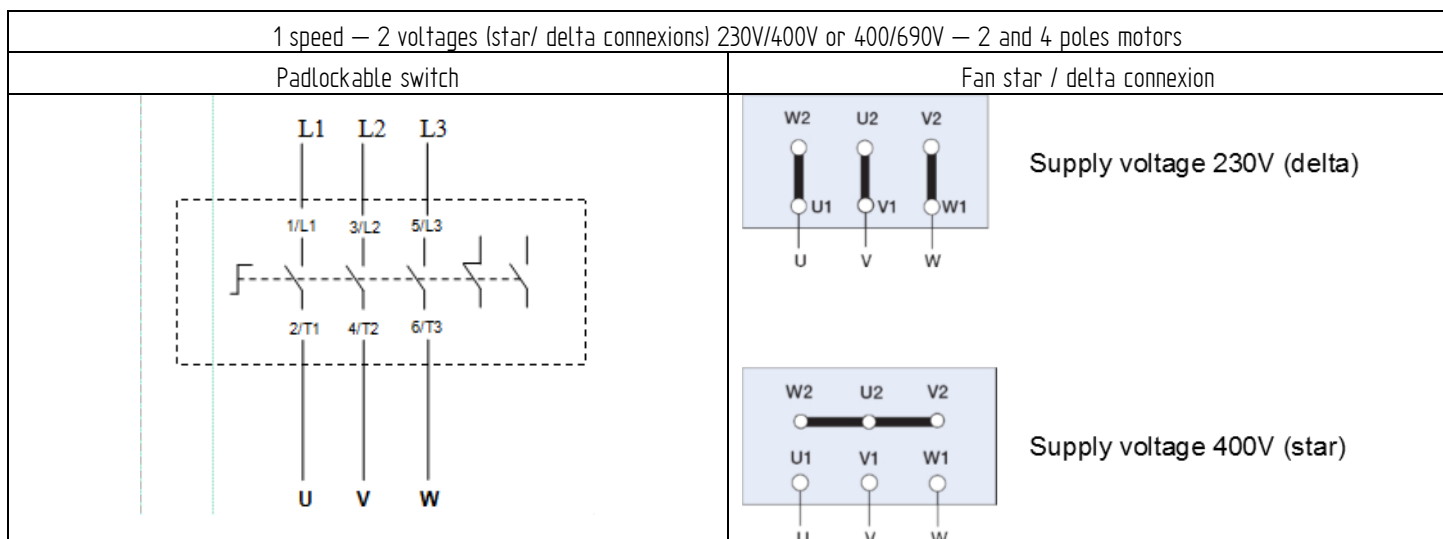
III. ELECTRICAL WIRING

11.1. *Wiring*

Wiring should be done according to local laws and specific site recommendations.

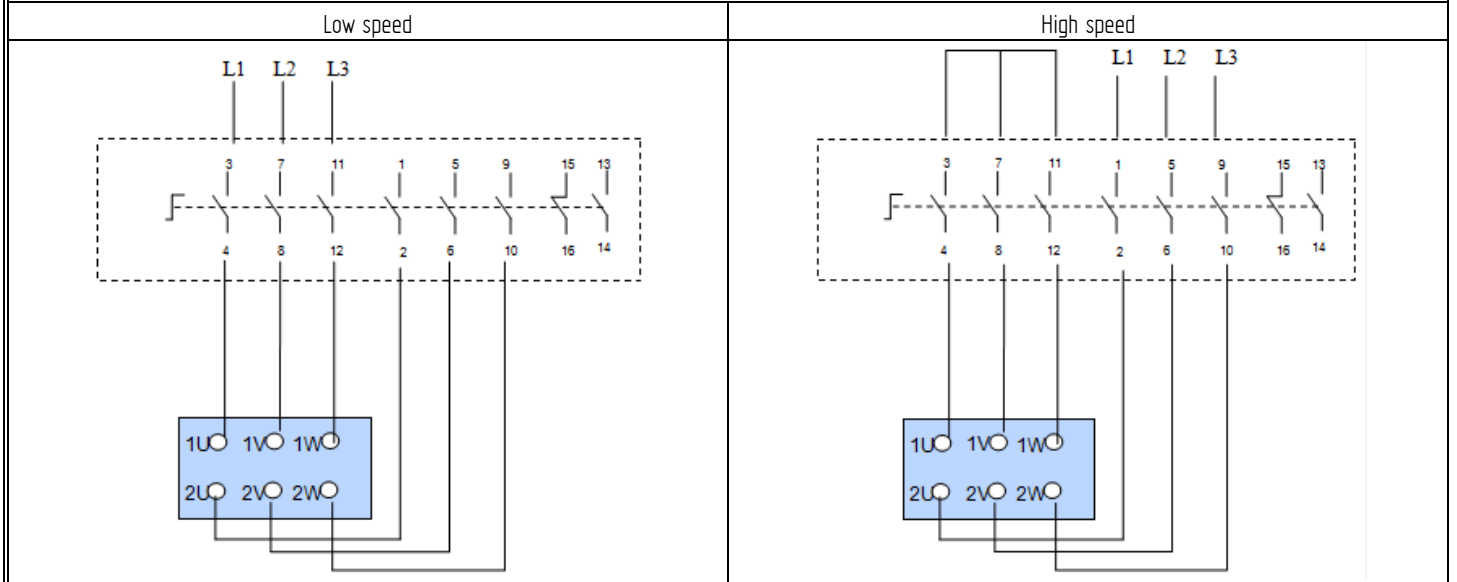
Depending on the boxfan's construction, it should be done on the padlockable switch or on the optional control box factory mounted on the casing.

11.2. *1 speed motors*



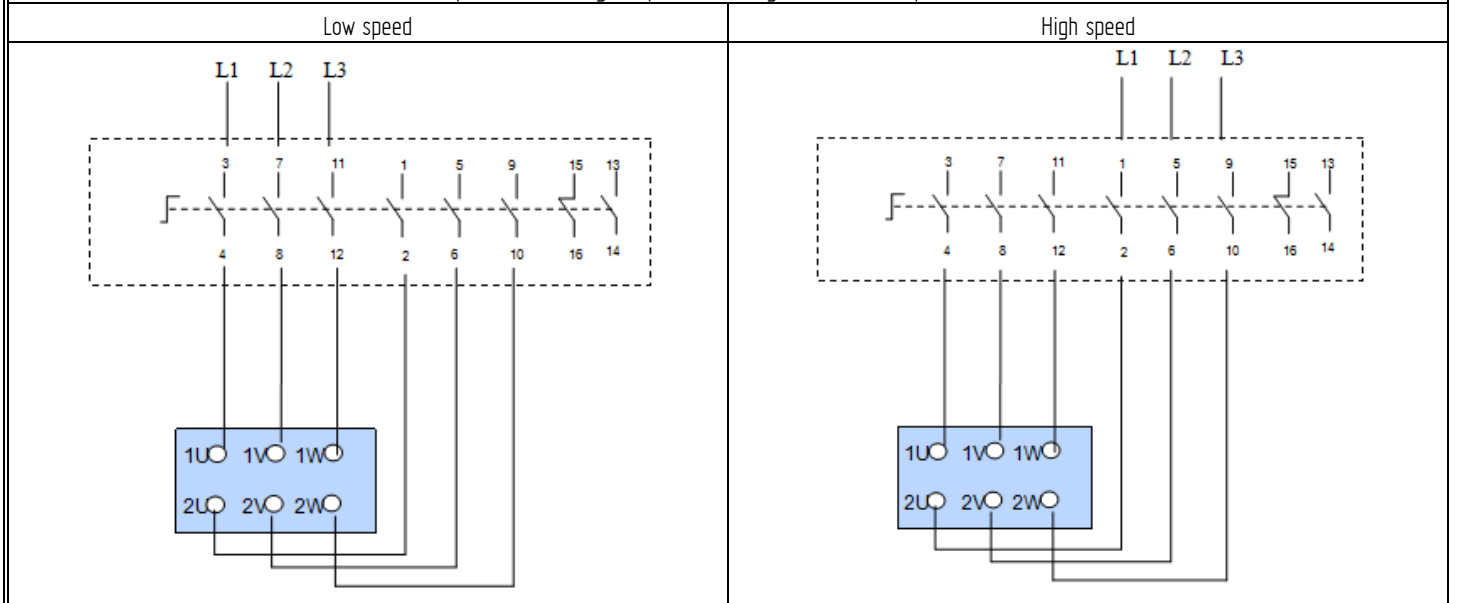
III.3. III.3.2 speeds motors

2 speeds – 1 voltage (Dhalander wiring) 400 V – 2/4 or 4/8 poles motors



III.4. III.4.2 speeds motors (separate windings)

2 speeds – 1 voltage (separate windings) 400 V – 4/6 poles motors

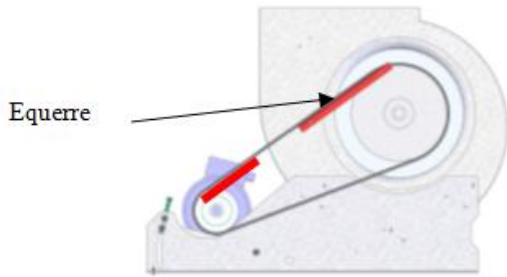


Once wiring is done, check if the impeller is turning in the right direction. If not, reverse two phases and check again.

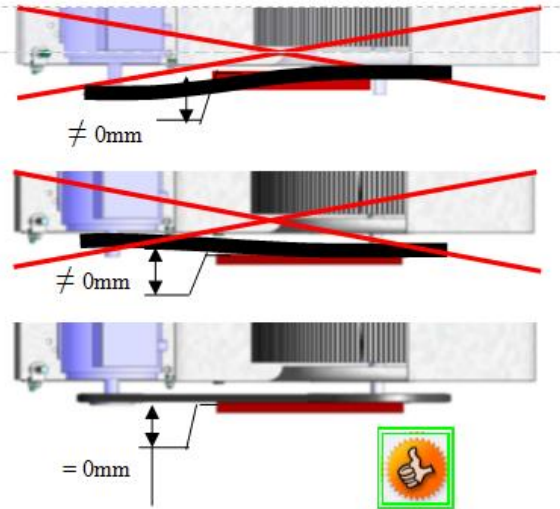
Please note that a fan running in the wrong direction doesn't drive air in the opposite direction, but only provide lower airflow than expected.

IV. IV BELT DRIVE

IV.1 *IV.1 Belt correct alignment*



At commissioning, check pulleys' alignment (both motor and impeller pulleys !) along with belt tension.



IV.2 *IV.2 Belt tension*

Please refer to the following table for belt's tension.

I = pulleys axle spacing

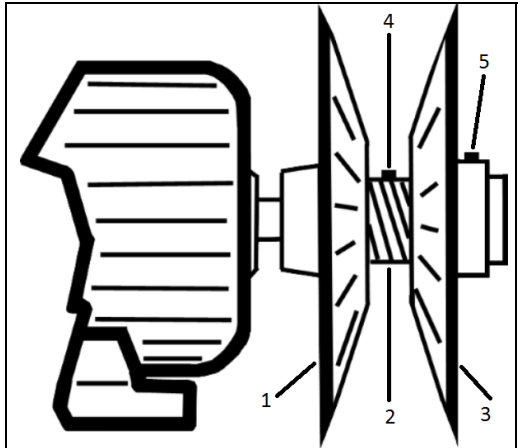
F = belt deflection

P = force applied at I/2 (P = 40 N).

Pulleys axle spacing (mm)	Belt deflection (mm)
350	5
400	6
450	7
500	8
550	8
600	9
700	10
800	12
900	14
1000	15

IV.3. IV.3 Variable pulley settings

The variable pulley allows to set airflow.

	<p>1 = fixed flange 2 = threaded sleeve 3 = variable flange 4 = pulley locking screw 5 = flange locking screw</p>	<p>The variable flange can move on the threaded sleeve. To move the flange, first unscrew the flange locking screw, then turn the flange. Screwing the flange will expand pulley's diameter, ie higher airflow. Unscrewing the flange will reduce pulley's diameter, ie lower airflow.</p> <p>After settings, make sure both locking screws are secured and the the pulleys alignment is fine.</p>
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V. Troubleshooting

Problem	Main reasons	How to solve
Fan not running	Main power off Thermal motor protection on Wrong wiring Broken belt	Turn power on Check wirings Check / replace belt (one spare belt delivered)
Boxfan abnormal vibrations	Dirty impeller Tool left in casing Casing not fixed properly	Clean impeller Check inner casing
Belt short lifetime	Bad belt tension Pulleys not aligned properly	Check belt Check pulleys
Wrong airflow	Closed ducts Dirty filters Impeller turning the wrong way Wrong pressure drops calculation	Check duct system Change filters if any Reverse two phases on main power

