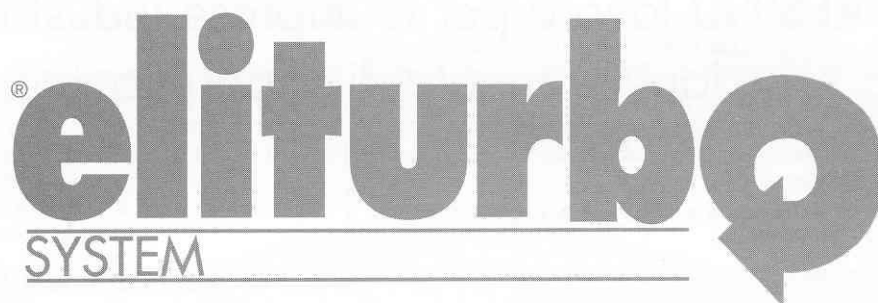


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Air Mixer

User and maintenance guide





ELITURBO SYSTEM

Section 0 – General information



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SECTION 0 – GENERAL INFORMATIONS

INTRODUCTION

Dear Client,

We thank you to have chosen an Impresind Srl product and inform you that:

- The aim of this guide is only informative and can be subject to variations without warning;
- This guide cannot be nor partially nor entirely reproduced, diffused, copied or saved in a storage system in any form or in any media, mechanic, magnetic, optic, chemical or others, without written authorisation by Impresind Srl.
- This guide has to be conserved until the final dismantling of the product, in case of property change the guide has to be delivered to the new owner.
- In case of damage and consequent block of the product, Impresind Srl doesn't refund eventual economical losses due to the forced block of the product and doesn't extend the warranty.

For easy consultation, the guide has been divided into sections, each one is represented by a symbol:



Section 0 → *General information.*



Section 1 → *Technical characteristics, description of the product and its application field, and standard and optional equipments.*



Section 2 → *Packing, logistic and transport.*



Section 3 → *Installation and testing.*



ELITURBO SYSTEM

Section 0 – General information



Section 4 → Protection systems



Section 5 → Product use.



Section 6 → Maintenance.



Section 7 → Dismantling.

Information for users

This guide is an integrant part of the product and has to be accessible easily by the user and maintenance-authorised personnel.

The use and maintenance authorised personnel is obliged to know the contents of this guide's sections before the product is put into function.

In case of loss or damage of the guide a copy of it has to be requested immediately by contacting the Technical Assistance of Impresind Srl, keep handy the identification data of the system printed on the product's data plate and on the cover of the guide.

The product is in accordance with the following community directives:

- **2006/42/CE** ⇒ *Machine Directive*
- **2006/95/CE** ⇒ *Low Voltage Directive*
- **2004/108/CE** ⇒ *Electromagnetic Compatibility Directive*



IT IS ABSOLUTELY FORBIDDEN TO MODIFY THE PRODUCT AND ITS APPLICATION FIELD.



Impresind Srl declines any responsibility for damages that could, directly or indirectly, derive by people or objects, due to improper use of the product or different use from its application field, incorrect installation, not appropriate supply used, modified or different installation environment than the one communicated in the order stage, bad maintenance deficiencies, not authorised interventions and modifications, use of non original spare parts, removal of active and passive protections, non observance of the user instructions carelessness, etc.



SECTION 1 – TECHNICAL CHARACTERISTICS

1.1 Identification data of the product

The main identification data of the product (serial number, model, etc) is stated on the data plate positioned on the product.



Data plate



In case of technical assistance or spare parts request, the products model and serial number have to always be communicated.

1.2 ELITURBO[®] AIR MIXER INTRODUCTION

Eliturbo[®] is an air mixer that is able to horizontally and vertically even the air temperature, to even the humidity inside large environments and to reduce the costs of heating.

Eliturbo[®] uses a special helicentrifugal rotor patented by Impresind Srl that generates air mixing, it does not create currents that bother workers, it is manufactured in accordance with the security norms and the environment's hygiene norms.

The Eliturbo[®] air mixer, differing from the other ceiling ventilators, doesn't direct air fluxes directly down and in concentrated areas, but it distributes the air in a radial way influencing large areas with an imperceptible ventilation.

The air stratification phenomenon and heat accumulation near the ceiling, in large volume heated environments, is very common and is the cause of big heat dispersions and high energetic costs. An Eliturbo[®] air mixer system prevents hot air stratification, reduces the energetic consumptions and the environment comfort.

Eliturbo[®]'s exclusive air mixing improves the environment conditions even during the summer season when, caused by high temperature and high percentage of relative humidity, a micro climate, intolerable by personnel and structures, is generated.

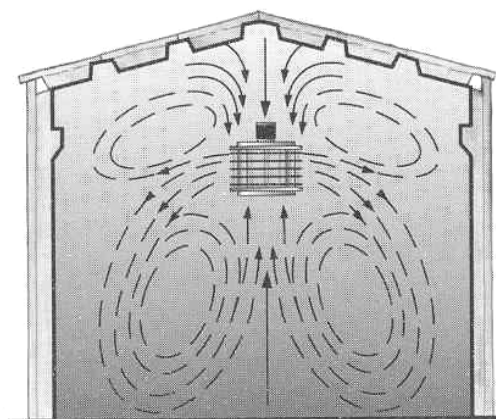


ELITURBO SYSTEM

Section 1 – Technical characteristics



The Eliturbo[®] air mixer creates a constant air exchange through the open windows and other openings, keeping an active ventilation of the environment.



1.3 Technical characteristics

Eliturbo series E.L.C.		2000	2002
Engine type (Size)		71	71
Absorbed power	W	200	300
Frequency	Hz	50	
Tension	V	230/400	
Voltage	A	1,7/1	
Rotor type		helicentrifugal	
Fan type	-	2	
Rotor version	n. blades	2	4
Treated air	m ³ /h	7500	10000
Speed	Rpm	700	
Diameter	mm	680	
Height	mm	570	
Weight	kg	16	18
External finishing		Epoxy powder paint	
Colour		black	

Table 1 – Technical characteristics

1.3 Expected use

Eliturbo[®] can be installed in any environment where it is necessary to have air mixing, for example:

- Production and commercial premises, warehouses
- Zootechnical farms;
- Swimming pools, tennis courts and other sport structures;
- Green houses and floriculture structures;
- Churches, libraries, museums, fair pavilions, etc.



ELITURBO SYSTEM

Section 1 – Technical characteristics



It is not allowed, for any reason, to use the product for a different scope than the one it was studied for, nor to use the product in a different way of the one described in this guide.



During the use of the product do not touch the ventilator – Mechanical danger.

1.6 Switchboards

The switchboards, eventually, supplied by Impresind Srl are realised in specification to the EN 60204/1 norms.



IT IS ABSOLUTELY FORBIDDEN TO MODIFY THE SWITCHBOARD



IT IS ABSOLUTELY FORBIDDEN TO EXTINGUISH FIRES WITH WATER

1.7 Improper use

The unit can't be used for different scopes than the ones stated in the paragraph 1.3 of this guide.



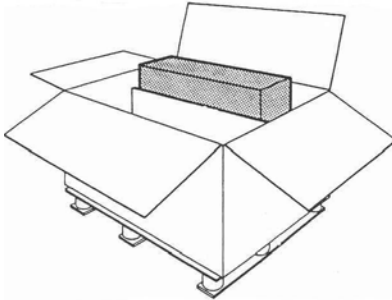
IT IS ABSOLUTELY FORBIDDEN TO INSTALL THE ELITURBO AIR MIXER IN ENVIRONMENTS WITH DANGER OF EXPLOSION AND HIGHLY INFLAMMABLE MATERIALS. IN CLOSED PREMISES, WHERE THERE IS A HIGH CONCENTRATION OF HALOGEN VAPOUR, IT IS SUGGESTED NOT TO INSTALL ELITURBO UNITS. REGARDING THIS SUBJECT IT IS SUGGESTED TO PAY PARTICULAR ATTENTION TO THE ENVIRONMENTS DEDICATED TO: LAUNDRY, DRY CLEANING, TYPOGRAPHY, COIFFURE, COSMETIC SALOON.



SECTION 2 – PACKING, LOGISTIC AND TRANSPORT

2.1 Equipment receiving

When the package is delivered to the client, the latter is obliged to control the integrity of the product.



Control the package and its contents, in case of damage due to the transport, the client has to tick damage claim box on the transport document, counter signed by the carrier and send a copy via fax to Impresind Srl.

2.2 Logistic and transport



Pay high attention in handling the Elit turbo® units during the phases of: downloading from the carrier, logistics and positioning, to avoid damages to the unit.



IMPRESIND SRL DECLINES ANY RESPONSABILITY FOR DAMAGES DUE TO TRANSPORT, UPLOAD, DOWNLOAD OF THE ELITURBO® UNITS

Move Elit turbo® units with maximum care, avoid to interfere with the ventilator.

2.3 Lifting



***Ensure that the maximum lifting power of the lifter is adequate to the products weight.
The product has to be lifted only by qualified personnel.***



IT IS ABSOLUTELY FORBIDDEN TO STAY UNDER THE HANGING LOADS AND INSIDE THE ACTION AREA OF THE LIFTER



***It is suggested to handle the Elit turbo® air mixer by the top supports avoiding to interfere with the circular deflectors.
Avoid touching with the hands the rotor: deformation danger and consequent unbalanced functioning of the air mixer.***



ELITURBO SYSTEM

Section 2 – Packing, logistic and transport



2.4 Unpacking

Carry the Eliturbo[®] units in the installation area.

Free all the wrapped components from the packaging and collect everything to prevent the potential danger of fire and suffocation of people or animals.



The discharge of the packaging material has to be done in specification to the norms in force in the destination Country of the Eliturbo[®].

2.5 Storage

The temperature during transport and storage has to be between -10 and 50 °C.

Whenever the Eliturbo[®] units are stored, it has to be ensured that the relative humidity in the storage is between 5% and 95%.



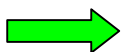
SECTION 3 – INSTALLATION AND TESTING

3.1 General warnings for installation

Before proceeding with the installation of the Elitubo units, it is necessary to check if all the components have been unpacked and their integrity controlled.

The laying and installation of the Elitubo[®] units has to be done by qualified personnel and following the indications of the laws in force in the destination Country of the units.

The air mixers are provided with different direction of rotation, identified by different colour arrows applied on the unit and the packaging.

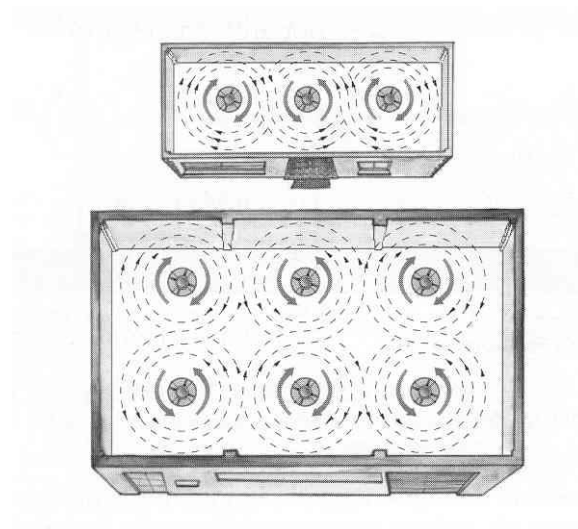


Clockwise rotation



Anti clockwise rotation

When installing, it is important to follow a chess board global positioning of the units, so that two near units have always opposite rotations.



The choice of the rotation of the first unit is not important, as long as the following units are installed with alternate rotations; it is not important what is the rotation of the last unit.

3.2 Positioning the Elitubo

Lifting machines for personnel and materials have to be available in the installation area and have adequate lifting power. For information on the security norms to be observed during lifting refer to the paragraph 2.3 of this guide.



ELITURBO SYSTEM

Section 3 – Installation and testing



To lift people the machinery has to be specifically certified and used by qualified personnel.

The personnel that will be working at heights has to be previously trained, wear and use individual protection media to respect the legislation in force, safety shoes, gloves, protection helmet, harness, etc.



Before positioning the unit, verify that it will not interfere with existing machineries as lifters, kranes etc.

Avoid positioning the unit near scaffolding, racks, etc..

In case of accessible scaffolding, verify that the unit is positioned at least 2,5m from the scaffolding.

It is suggested to hang the Eliturbo[®] units from the ceiling or from a beam, at a minimum distance equal to at least 15% of the entire height of the environment, in any case not lower than one meter.

For example:

Ceiling height (meters)	Hanging height (meters)
6	5
8	6,5 ÷ 7
10	8 ÷ 8,5
14	11 ÷ 12



To anchor the unit to the ceiling use steel chains with a minimum diameter of 3.5 mm or use steel cables with minimum diameter of 4.0 mm

For a quick installation it is suggested to use chains.

The anchor points have to be at a sufficient distance to contrast the starting torque; it is suggested to apply the anchoring points in a way that the chains will form an angle of 30° ÷ 40° from the vertical.

The length of the sustaining devices has to be at least a meter, this is to guarantee this distance between the anchor point and the Eliturbo[®]'s engine.

The sustaining devices have to support a weight equivalent to 10 times the weight of the unit distributed on the anchor points (at least 100 Kg for each anchor point: on two anchor points).



The Eliturbo[®] air mixer does not have to be installed at less than 2,5 m from the floor.



ELITURBO SYSTEM

Section 3 – Installation and testing



Ensure that the installation is done respecting a perfect horizontal plane.



3.3 Electric network connection



The electric network connection has to be done by qualified personnel. All the components used for the connection have to be certified. Before operating on the power cables ensure that the network was severed.



Ensure an efficient connection of earthing using the specific terminals.

The foreseen power is:

- | | |
|-------------------|------------------------------------|
| - 230 V ~ 50 Hz | For units with single phase engine |
| - 400 V 3 ~ 50 Hz | For units with three phase engine |

The electric network has to be done in specification to the norms in force.

It is possible to foresee a switchboard of command from which start power cable of each mixer.



ELITURBO SYSTEM

Section 3 – Installation and testing

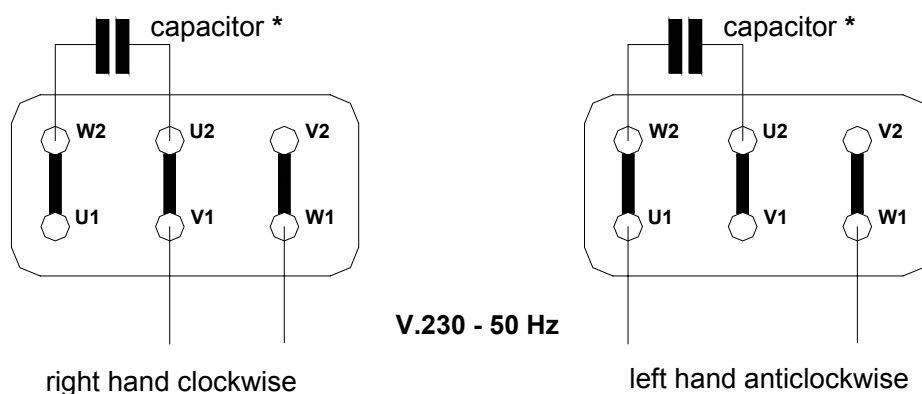


A safety motor switch has to be inserted between each Eliturbo[®] air mixer and the electric network, it has to have a minimum distance between the contacts of at least 3mm for each pole, they have to be inserted in a position easily reachable by the user.

Any engine has to be protected with a correct protector calibrated at a voltage of $1,1 \div 1,15$ times the voltage indicated on the data plate.

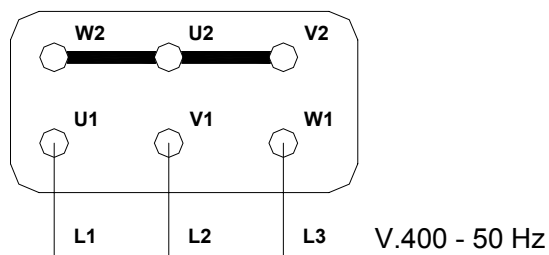
If the switchboard has a speed adjuster just follow the switchboard's instructions.

CONNECTION WHIT ELECTRICAL SUPPLY SINGLE PHASE : V.230 - 50 Hz.



* CAPACITOR: CHECK VALUE ON PLATE LABEL ON ENGINE

CONNECTION WHIT ELECTRICAL SUPPLY THREE PHASE : V.400- 50 Hz.



TO REVERS THE ROTATION: EXCHANGE PHASES (L1 ÷ L2)

3.4 Functioning test

Before starting the ventilator verify that the hanging systems (chains, fischers, etc.) are properly fixed, the product is perpendicularly , and that the electrical power cables don't interfere with the movement of the rotor.

Start the ventilator and verify that:

- the direction of rotation is correct (see the sense indicated by the arrow on the product)
- that the product does not do strange noises: in this case stop immediately the engine by cutting off the electric power that supplies the product and search for the cause of the noise



ELITURBO SYSTEM

Section 3 – Installation and testing



- the product does not have an excessive vibration due to the unbalance of the girante: in this case stop immediately the engine by cutting off the electric power that supplies the product and refer to the Technical Assistance of Impresind Srl
- do not start the product if it shows any of the anomalies stated above

To invert the direction of rotation of the engine, after cutting off the electric power that supplies the product, follow the steps below:

Single phase engine⇒ connect the motor terminals by following the instructions stated in the electric scheme

Three phase engine⇒ exchange the position of the two phase (example. R – S).



SECTION 4 –PROTECTION SYSTEMS

4.1 Protection devices

To comply with the dispositions of the Community Directives applicable to the unit that this guide is referred to, Impresind Srl has predisposed on the unit the security systems requested by the existing legislation.

4.2 Clothing

As the product cannot be installed at normal working height and is not reachable by the users during normal activities, there is not any particular clothing prescription for the personnel.

The maintenance personnel are obliged to wear specific clothing and to use personal protection devices.

4.3 Residual risks



Pay attention to the movement of the ventilator. Do not introduce limbs – Mechanical danger



Use of water to clean is forbidden –Electrocution danger

4.4 Emergency situations



In case of emergency:

- ***Stop immediately the engine and open the electric circuit with the main switch***
- ***Identify and eliminate the problem controlling the original causes***
- ***Contact the Technical Assistance of Impresind Srl***



**IT IS ABSOLUTELY FORBIDDEN TO USE WATER TO EXTINGUISH FIRES
ONLY USE POWDER OR CARBON DIOXIDE FIRE EXTINGUISHERS**



SECTION 5 – PRODUCT USE

5.1 Switching on/off the product

Switch on/off the products with the switch or the switchboard, the client can arrange the installation of a clock switch that automatically will switch on and off the product in the established hours.

5.2 Recommendations for the user

Start the Eliturbo 15/30 minutes before the heating system.

Switch off the Eliturbo 30 minutes after the heating system; eventually anticipate the closure of the heating system.

Do not, for any reason, apply an environment thermostat to the commands of the Eliturbo[®] air mixer. The Eliturbo[®] air mixer has to work constantly to contrast the natural elevation of hot air to the ceiling.

For a better management of the system and to achieve energetic savings it is necessary that the heating system has an environment thermostat positioned at 1,5 meters of height.

5.3 Stop of the system at the end of the season

At the end of the use period, the system can be stopped by cutting off the electric tension with the general switch.

5.4 Functioning anomalies

In case of function anomalies:

- switch off the system;
- sever the electric supply;
- contact the Technical Assistance of Impresind Srl, the installer or a qualified technician.

5.5 Signs applied on the product



Electric organs with voltage ⇒ indicates danger due to electric parts with voltage

Mechanical organs ⇒ indicates danger due to mechanical part in movement



SECTION 6 – MAINTENANCE

6.1 Maintenance security norms



***Maintenance personnel have to be qualified.
Before applying any maintenance operation, carefully read this section of the guide. For any necessity contact the Technical Assistance of Impresind Srl.
Impresind Srl declines any responsibility for any damage or dysfunction if due to lack of application of the indications in this section of the guide***

Maintenance personnel doesn't have to wear clothes with large sleeves, laces or belts that could cause danger; furthermore, they have to use the personal protection devices in specification to the legislations in force.

Before the beginning of the heating season it is necessary to verify that the product works properly, so that in case of malfunctioning there is time to do eventual maintenance/repairs.

Check once a year:

- The electric system's security, absorption, dissipation;
- that the hanging devices are well anchored;
- stability and balance of the helicentrifugal rotor (no big vibrations have to be detected);
- cleanness of the rotor's blades (in dusty or humid environments incrustation can form, this will the rotor heavier obliging the engine to do excessive work);
- generic cleanness of the air mixer.



The producer declines any responsibility for damages due to non-observance of the prescription, to an incorrect installation and in case of improper use of the product by the user.

During maintenance, expose the “work in progress” signs in a way that they are visible by all access areas.

Record on a register all the maintenance carried out, making sure to sign: date, hour, type of maintenance and name of the personnel that carried out the maintenance.

The eventual use of cleaning solvents has to be done without touching the electric cables.



The maintenance personnel that use cleaning solvents have to use the personal protection devices (security goggles, filter mask, gloves) for the contact with the solvent. During the use of solvents, it is forbidden to smoke and use free flames. When finished cleaning air properly the premise to discharge the remaining vapours.



ELITURBO SYSTEM

Section 6 – Maintenance



IT IS FORBIDDEN TO:

- **DEPOSIT COMBUSTION MATERIALS NEAR THE SWITCHBOARDS**
- **OPERATE ON THE ELECTRIC PARTS WITHOUT HAVING PREVIOUSLY SELECTED THE ELECTRIC SUPPLY LINE**
- **OPERATE ON ANY PART OF THE UNIT WITHOUT HAVING SWITCHED OFF THE SYSTEM**
- **OPERATE WITH THE SECURITY SYSTEMS DEACTIVATED OR DISCONNECTED**
- **DEACTIVATE OR TRICK THE ALARM SIGNALS APPLIED ON THE PRODUCT**
- **USE THE PRODUCT WITH THE METALLIC PROTECTIONS REMOVED.**
- **IGNORE THE WARNINGS AND SIGNS APPLIED ON THE UNIT**

Once finished the maintenance, before restoring the electric supply and switch on the system, accurately control that no equipment and/or various materials have been forgotten near or inside the unit and especially near moving organs.



SECTION 7 – DISMANTLING

7.1 Dismantling



***The dismantling of the system has to be done by specialised personnel with correct instruments and personal protection devices.
Do not smoke and not use free flames***

In case of dismantling or alienation of the system, it is necessary to recover all the materials and send them to the respective collection centres, possibly referring to specialised companies.