

EC APPROVAL AND ADEQUATE USE OF THE FAN HP

All fans manufactured and supplied by IOANNINA IMPEX have been manufactured in accordance with the 98/37/CE (MACHINES) safety standard and according to the safety standard for low voltage. The requirements and characteristics of each fan model are always conditioned by the general and local standards and regulations to which every application may be subject. Thus in some cases the selected standard units may not be adequate for certain applications and special characteristics should be incorporated. For example, units that will be installed in surroundings with fire or explosion risks should comply with the ATEX 94/9/CE standard and therefore be equipped with some of the established protection systems.

Units that will be installed ventilation systems for emergency service in case of fire should be homologated according to UNE EN 12101-3/2002 standard and comply with the D.C.89/106 CEE directive. Other characteristics such as elevated work temperature or corrosive surroundings may also require special models in order to guarantee a correct service.

THE FAN LABEL WILL ALWAYS INDICATE THE APPARATUS COMPLIANCE WITH ANY SPECIFIC STANDARD. IN CASE OF DOUBT, PLEASE CONTACT US.

The selected fan model should never be used to convey gas of a different composition or temperature other than the specified by supplier nor should it work in surrounding with different conditions to those indicated.

IN THE ATEX RANGE OF FANS, THE TEMPERATURE REACHED BY ANY OF THE SURFACES HAS BEEN CALCULATED SO THE PRESENCE OF THE SPECIFIED GASES CAN NOT REPRESENT A RISK OF IGNITION. ANY UNSUITABLE USE OR OVERLOAD OF THE FAN CAN REPRESENT A SECURITY RISK.

FAN RECEPTION AND VERIFICATION

Fans are sent duly packed and their delivery is always carried out on the account and risk of the buyer. It is therefore recommended that upon receiving the merchandise, it is carefully examined to check that it has not suffered any damage or subtraction during the transport. Any claim should be immediately made by the buyer to the transport company responsible of the delivery or to the insurance company.

TRANSPORT AND STORING

Transport companies and intermediate suppliers who participated in the transport and the fan storing until its final delivery will be responsible of any damage caused to the apparatus during this period, be it for inadequate transport or storing. They are also responsible of the necessary procedures to attend and solve with the end client those damages not covered by the manufacturer's guarantee.

Careful and adequate manipulation of the fan in accordance with the detailed graphic orientations is recommended. Every fan, depending on its weight and constructive characteristics, will be delivered in individual cardboard boxes or pallets.

QUALITY CONTROL

OPERATION: Before delivery, all fans are submitted to electrical safety and operating tests. Thus if the apparatus has not suffered any damage during transport and it is correctly installed as indicated in this instructions, the device will operate correctly.

BALANCING: The rotating element "propeller or turbine" of the fan has been dynamically balanced with a residual lack of equilibrium to not surpass the tolerances according to the ISO1940-1 and ISO10816-1 standard, quality Q2,5 or Q 6,3 depending on the models.

Still a verification before installation is recommended whereby you should make the element rotate with the hand and check that it does not scrape or present any blow or deformation due to possible damage suffered during transport. Do not install or turn the fan on if you appreciate any damage.

OUR PRODUCTS' GUARANTEE

IOANNINA IMPEX Will always deliver the requested fan and in accordance with the service or installation requirements.

Thus all the components used in the requested model will only be adequate for the flow to be conveyed and the operating conditions indicated by the customer.

IMPORTANT: IOANNINA IMPEX will not be responsible of accidents caused by incorrect manipulation of the fan and omission or non-compliance of any of the recommendations and safety norms exposed in this manual.

WARRANTY PERIOD: Ioannina fans have a 1-year guarantee period as of its purchasing date (always keep the apparatus' invoice). This guarantee excludes any damage or breakdown caused to the fan itself or to third parties affected due to the incorrect or undue use of the apparatus. The obligation assumed through this guarantee is limited to the replacement of parts considered defective after examination by our specialists.

Maintenance, possible adjustment modifications and repairs of the fan should always be carried out by duly trained specialists and by authorized workshops and personnel.

FAN INSTALLATION AND OPERATION

VERIFY: In fans due to be installed directly on a wall or a roof , even though a support system or an additional structure is used, correct horizontal and vertical leveling of the apparatus must be assured. On horizontal bases, these will have to be perfectly plain and leveled and must perfectly set in the case of a concrete base. Adequate supports and with sufficient resistance and rigidity to support the fan weight should also be verified, as well as its inertia during the starting phase. Normal vibrations of the apparatus during its operating depend mainly on the rigidity degree of the structural element where the fan will be installed.

In rigid installations on cement bases or walls which are not correctly aligned, never force the fan structure upon tightening the screws. Before installation, lacking spaces should be completed by using small strips of plates .

ELECTRICAL CONNECTION AND INSTALLATION: each fan's wiring diagrams are available inside the connection box of the motor.

SPECIAL ATTENTION MUST BE PAID TO ALL METAL STRUCTURAL PARTS, WHICH MUST REMAIN CORRECTLY CONNECTED TO GROUND TO PREVENT ANY ELEMENT FROM GETTING ELECTRICALLY LOADED AND TO AVOID ELECTROSTATIC DISCHARGES.

VOLTAGE AND FREQUENCY: The motor power supply should be made in accordance with the voltage and frequency indicated on the fan plate. Variations of $\pm 5\%$ in the electrical network with regard to the nominal voltage indicated are permitted. If the connection used can not support this level, there exist a danger of burning out the motor. Thus make sure the selected disposition in the motor corresponds to the network voltage and frequency through a tester.

CONSUMPTION: Once the fan is installed in the foreseen working conditions that do not surpass those indicated on the plate, control the consumption in (A). The fan's capacity and the installation load should be correctly adjusted

(SEE THE OPERATING SECTION). In case of non compliance, consult the manufacturer.

GROUNDING: Since the fan is a Class I machine according to the current standard, it is obligatory to correctly carry out the connection of the grounding through the socket, which can be found inside the motor or the fan's terminal casing. Once this connection has been carried out, it is recommended that the resistance between the exterior conductor and the fan casing should not be superior to 0,1 %.

ROTATION DIRECTION: Same as indicated by the arrow situated on the fan's casing. To invert the three-phase rotation of a one or two velocity motor, interchange the two phases among themselves. In mono-phase motors, this can be changed only by some of the models. Consult the diagrams in each case.

CONNECTION TO DUCT INSTALLATIONS: In cases where the fan is connected to a duct network for air distribution, the suction and impulsion ducts should be connected to the corresponding fan nozzle using the adaptation flanges recommended by the manufacturer.

SOUND LEVEL: Depending on the fan model , its voltage , size and revolutions, this may oscillate between 37 and 100 Db(A). If the requested fan does not comply with the allowed limitations of maximum noise level, other alternative solutions should be considered in order to reduce this sound level through the applications of silencers, barriers or soundproofing cases.

PROTECTION AGAINST INVOLUNTARY ACCIDENTS: are available protection for the rotating body(propeller or turbine) for every fan model. The installer or the final user should request and install the necessary protection elements in order to protect accesses to the inside part of the fan that remains open and accessible because it is not connected to a duct.

START UP : Once all previous verifications have been done, the start up of the fan can be carried out. Before proceeding with the first start up, it is recommended to make sure once more , either directly or through inspection registrations of the apparatus, that there is no friction on any of the rotating elements, because some installation element might have forced or deformed the fan. Also check that neither foreign bodies nor material proceeding from the installation of the fan are present in the ducts.

The first start-up should be of a short duration only to verify that the rotating direction is correct according to the indication , and in order to check whether any strange or friction noise are present in the inside part. In case of an incorrect rotation , you should carry out the connection changes according to what is previously indicated. During the second start-up the fan should be allowed to reach its nominal velocity completely once the controlled start-up is finished.

IMPORTANT : AT THIS MOMENT A STRICT REAL CONSUPTION CONTROL OF THE APPARATUS SHOULD BE CARRIED OUT THROUGH THE AMPEROMETRIC CLIP AND BY MAKING SURE THE USED NOMINAL CONSUPTION “In” DOES NOT EXCEED THAT INDICATED ON THE VOLTAGE PLATE . IN CASE OF EXCEEDING THIS CONSUPTION STOP THE APPARATUS IMMEDIATELY.

FAN MAINTENANCE. GENERAL CARE

A complete revision of the fan and its installation after the first 24h of operation is recommended. Disconnect it from electrical network to avoid any possible accident. Make sure no element has come loose, completely retightening all of the elements, motor supports and axles, etc. Verify also the motor or transmission bearings condition by turning the propeller or the turbine with your hands. Should any abnormality or noise be noticed, consult the manufacturer. In installations where the fan is generally switched off, carry out inspections at least every 6 months. An inspection of the fan's components condition will maintain its correct initial state, as long as no signs of bearings sticking or making noise are noticed. It is also recommended to carry out a complete start-up, allowing the fan to operate for one hour.

Never manipulate the apparatus before disconnecting it from the electrical network In three-phase models, this protection activates the maneuver circuit on an electrical installation contactor.

CONSIDERATIONS DURING THE REVISION: Points to be taken into account during the revision in order to guarantee a correct operation of the fan:

- 1.- The operation of the fan has to be gentle and free of vibrations.
- 2.- Consumption in amperes $I_a(A)$ measured through an ammeter or a multimeter should never exceed the nominal consumption specified on the motor plate.
- 3.- Make sure all of the elements joined through screws are not untightened.
- 4.- In applications where fans convey gases with a high content of dust or grease, these may become adhered to the propellers leading to a lack of equilibrium of the turbine or propeller with the consequent deterioration of the bearings. **AVOID THE ACCUMULATION OF DUST ON THE MOTOR SURFACE TO AVOID UNADEQUATE REFRIGERATION AND OPERATION .** Thus frequent cleaning of the rotating body should be done when the installation pauses take place, and every time the fan presents light vibration signs and incorrect operating. Never leave loose dust inside the fan.
- 5.- In other applications with abrasive dust accumulations there may exist a wear of the propeller, as well as in centrifugal fans used for material transport. These should be replaced in case of lack of equilibrium due to the wear.
- 6.- In fans which have been switched off or stored for two or more years, a complete revision of the ball bearings is recommended. Before starting up the fan, the replacement of the ball bearings should take place if you notice that they have been affected by oxidation or by dried out grease in a bad condition.

CLEANING: Attention, maintenance and correct cleaning of all the installation's components will be carried out periodically by the personnel responsible of the installation. Whenever possible, the accumulation of dirt, dust, grease.