

ASSEMBLY INSTRUCTIONS

HURRICANE SERIES

HUR - 4000 **HUR - 5000** **HUR - 6000**

13'

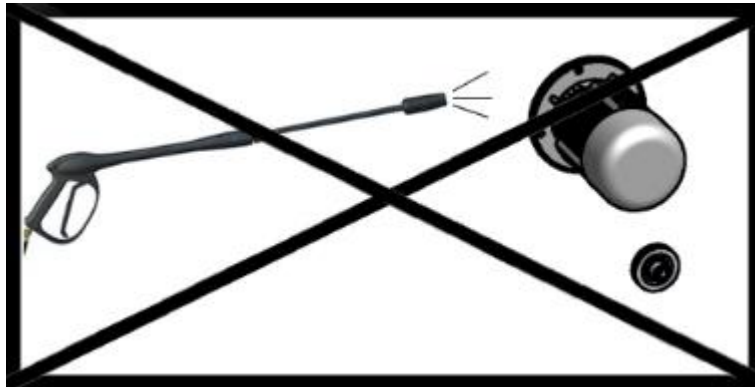
16,5'

20'



MADE IN ITALY

The HURRICANE is resistant to humidity, heat and cold (as better clarified in the operation and maintenance manual). It has been designed specifically to operate in highly corrosive environments or in environments with abrasive substances. The fan is only to be used for the purpose for which it is designed and in compliance with current regulations. The user assumes full responsibility for any improper use. Please refer to the Operation and Maintenance manual for any further clarification.



The use of high-pressure cleaners on the motor area and around the bearings is strictly prohibited

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IMPORTANT INFORMATION
READ CAREFULLY!

Most of the operating problems are due to lack of check of the following operations:

- **Wrong electric connections.**
- **Incorrect torque settings used on screws when installing the Hurricane.**
- **Incorrect data loaded into the board.**

1. Introduction

Thank you for purchasing a HURRICANE manufactured by **GIGOLA & RICCARDI S.p.A** (from here on simply referred to as “**G&R**”). In addition to expressing our gratitude to you for having chosen our product, we are also pleased to inform you that the product you have purchased has been designed in accordance with the provisions contained in the **Machinery Directive 2006/42/EC** and meets all the regulatory and legislative requirements relating to health and safety (**Legislative Decree 9 April 2008, no. 81 – CONSOLIDATED LAW ON HEALTH AND SAFETY AT THE WORKPLACE coordinated with Leg.Decree 3 August 2009, no. 106**). The components which make up the machinery have not only been exclusively produced using high-quality materials, but have also been designed, shaped and manufactured in order to guarantee a long service life.

Prior to beginning to assemble the machine or any of its components, in order to prevent the occurrence of dangerous or potentially harmful situations (for the user, the machinery, and those in close proximity) and to avoid errors in assembly, we **categorically advise that these assembly instructions be read thoroughly**. Should you require further or more detailed information about the machinery, installation operations described here, we advise you to refer to our post-sales technical assistance service [*Ref. Par. 6.K*], consult “our sales catalogue” or visit our website: www.gigolariccardi.com.

Before moving to another topic, we remind you that:

- the information contained in this document is in line with the machine which the manual refers to;
- the instructions, drawings, diagrams, tables, technical data and other details included in this manual are of a specific technical nature and are therefore subject to confidentiality;
- the drawings, diagrams, tables and technical data are up-to-date as of the publication date of this document and exclusively apply to the machinery they refer to;
- the information contained in this document is not to be used for purposes other than those for which the information has been prepared;
- this publication forms an integral and inseparable part of the documentation supplied with the HURRICANE (**STANDARD SUPPLIED KIT**);
- the proper functioning and full performance of the machinery are highly dependent on the correct implementation of all the instructions contained in this manual;
- **the contents of this manual can be altered by G&R without prior notice and without incurring any penalty.**

For all information related to installation, start-up, use, maintenance, cleaning, inspection and de-commissioning, please refer to the operation and maintenance manual of the machinery.

1.A. General warnings

The machine must NOT be commissioned unless all the components are correctly positioned and properly secured in place.

We remind users that, whilst the information included in this document aims to highlight the necessary measures to be taken by those assembling the fan to ensure they do so in a safe manner, it is assumed in this manual that, in areas where the machinery is destined to be assembled:

- the current regulations relating to occupational safety and hygiene be observed;
- personnel responsible for assembling the machinery possess a level of education, instruction and training which enables them to correctly interpret and apply the information provided herein.

1.B. Scope and intent of the assembly instructions

The G&R has produced this document with the specific aim of immediately rendering all the necessary information simple and accessible, so that the personnel responsible for assembly of the HURRICANE can perform all activities related to assembly in a safe manner.

Considering that failure to take heed of all the available information is an effective source of risk and a clear cause of dangerous situations, those who are required to assemble the machinery mentioned in this document during their daily working activities, or even come into contact with it in exceptional circumstances, are required to refer to this document or, if necessary/in case of doubt:

- contact the after-sales technical assistance service G&R [*Ref. Par. 6.K*];
- consult the “sales catalogue”;
- visit our website: www.gigolariccardi.com.

The G&R shall not be held criminally or civilly responsible or liable for damages caused by an incorrect use of this documentation.

DO NOT START ASSEMBLY OF THE MACHINERY UNTIL YOU HAVE READ AND FULLY UNDERSTOOD THE CONTENTS OF PARAGRAPH 6 IN THESE ASSEMBLY INSTRUCTIONS.

2. Warnings and general precautions

Before beginning installation of the machinery, check that the environmental conditions of the locations for assembly are compatible with the physical activities that must be performed (therefore, not too hot/cold, humid/dry, sunny/shady, or light/dark) and that the minimum safety distances for the operational area for the activities, that is the work space for the assembly specialists, are:

- such that the operators are always out of the working range of the machinery and equipment present;
- suitable to guarantee rapid evacuation if needed;
- sufficient to ensure that other operations in the same area are not hindered/blocked.

Recalling that intrinsically safe assemblies do not exist, nor do users who, by respecting the assembly procedures with attention, can always avoid the conversion of potential risk into real risk, we invite the persons who assemble the machinery to **NOT underestimate the risks related to the operations to be performed, nor the risk that derives there from. Specifically, remember that distractions, poor concentration and oversights at work, with regard to either the safety warnings or compliance with the instructions contained in this document, can be (and often are) the cause of fires and/or serious injuries.**

2.A. Accident prevention warnings

In general:

- ALWAYS follow the assembly procedures provided in this document;
- Unless otherwise indicated, NEVER modify the characteristics of the machine components;
- NEVER test the machinery's correct operation prior to the full assembly of all parts (for the safety warnings and information regarding the first start-up, please refer to the information provided in the operation and maintenance manual for the machinery);
- If any of the machinery parts should break during assembly, ALWAYS replace with original spare parts of the G&R; NEVER perform makeshift repairs and/or operations to restore the damaged or faulty parts;
- NEVER place/abandon tools, equipment, materials or other bulky objects on the assembled parts of the machinery, on its auxiliary parts and/or in the vicinity of parts that must be handled.

Specifically:

- Scrupulously follow the accident safety and prevention regulations (therefore, prior to beginning to assemble the machinery, consult the company's H&S Manager);
- NEVER delegate assembly of the machinery to specialists:
 - o less than 18 years old;
 - o with reduced physical capacities;
 - o with reduced sensorial or mental capacities;
 - o with a lack of experience or knowledge;
- ALWAYS wear the recommended P.P.E.

2.B. Notes on the residual risks

The *residual risks* relating to the assembly of a machine are the risks of injury associated with its assembly that remain despite the careful design of the machine components and despite the adoption of procedural/operational prevention and protection measures.

Even though the design stage of the machine that is the subject of this manual was accompanied by an accurate and attentive analysis of the risks to which both users and those who have anything to do with the machinery itself could be exposed (Ref. EN ISO 12100) and, though this analysis rendered the fan safe and reliable, because of factors linked to the type of components and to the operating conditions, risks remain (residual risks) that it is not possible to foresee beforehand and which thus cannot be eliminated completely. In addition to this, there are also residual risks due to incorrect behaviour of the assembly specialists and/or events of force majeure. The following table indicates the most severe residual risks.

Residual risk	Behaviour to eliminate or minimise the risk
Risk of machinery fall after manual lifting	Do not handle individual parts or assemblies with an overall weight greater than 25 [kg].
Risk of impact during manual lifting	Do not handle parts or assemblies if the overall dimensions partially or completely reduce visibility.
Risk of falls for the user and/or machine technical personnel	DO NOT climb onto the machinery and/or hang from it.
Risk of falling and/or overturning parts or assemblies from the assembly seat of the machinery	Check that the place of assembly is sufficiently large, stable, solid and capable of resisting to the static forces induced by the mass of the component during assembly.
Various types of risk related to assembly of the machinery	Carefully read the warnings and warning information provided in this document.
Risk due to incorrect interpretation of the information contained in this document	Contact G&R customer after-sales support
Sudden starting following closure of the electrical control circuit	Do not perform assembly of parts or subsystems of the machinery that are identified as “powered” or “unpowered”.

The end users of the machinery that is the subject of these assembly instructions are required to draft their own safety procedures, envisage appropriate protective measures (having recourse for both, as required, to the content of this manual) and take action to ensure that they are respected.

3. Legal Information

3.A. Glossary and terminology

<u>MACHINE</u> (GENERAL DEFINITION)	A term used in this operation and maintenance manual to refer to the HURRICANE.
<u>MACHINE</u> (DEFINITION ACCORDING TO THE MACHINERY DIRECTIVE 2006/42/EC)	<ul style="list-style-type: none">- An assembly consisting of linked parts or components, at least one of which moves, with the appropriate actuators, control and power circuits, etc., joined together for a specific application, in particular for the processing, treatment, moving or conditioning of materials;- An assembly of machines and devices which, in order to achieve the same end, are arranged and controlled so that they function as an integral whole;- Interchangeable equipment modifying the function of a machine, which is placed on the market for the purpose of being fitted on a machine or a series of different machines or on a tractor by the operator himself in so far as this equipment is not a spare part or a tool.
<u>P.P.E.</u>	Personal Protective Equipment.
<u>C.P.E.</u>	Collective Protective Equipment.
<u>DANGER</u>	The properties or intrinsic qualities of a given factor with the potential to cause harm.
<u>RISK</u>	The probability of reaching the potential damage threshold in the conditions of use and exposure to a given factor or agent or to a combination of them. The risk (R) is a function of the level of damage (D) provoked and of the probability (P) or frequency of occurrence of the damage.
<u>RISK IDENTIFICATION</u>	The process for recognition of the existence of a risk and definition of its characteristics.
<u>RISK ASSESSMENT</u>	Procedure for assessing the possible scale of the damage such as the consequence of the risk for the health and safety of the worker when performing their activities, deriving from the occurrence of a danger in the workplace.
<u>EDUCATION</u>	Educational process through which knowledge and procedures of use for acquiring skills are transferred to workers and other persons involved in the company's prevention and protection system: <ul style="list-style-type: none">- for performing their respective jobs in the company in safety;- for the identification, reduction and management of the risks.
<u>INFORMATION</u>	The totality of the activities intended to provide useful knowledge for the identification, reduction and management of the risks in the work environment.
<u>TRAINING</u>	The totality of the activities aimed at ensuring that workers learn the correct use of the equipment, machines, plants, substances, devices (including personal protective equipment) and work procedures.
<u>ACCIDENT</u>	An event that can give rise to an injury or which has the potential for leading to an injury. An accident which does not give rise to illnesses, injuries, damage or other losses is described as a near miss or near accident. The term accident includes near misses/near accidents.
<u>INJURY</u>	An undesired event that can give rise to death, illnesses, wounds, harm or other losses.
<u>EQUIPMENT</u>	This is intended as any machine, apparatus, tool or plant intended to be used during work.

<u>USER</u>	Any PERSON (entrepreneur/enterprise/sole trader) who uses the machine adequately or who entrusts the use or the operations associated with use to prepared persons.
<u>OPERATOR</u>	Personnel, generally without specific skills, who perform the operations necessary for running the machine as well as cleaning the same and the place in which it is installed; if necessary they are able to perform simple adjustment operations or for restoring machine operation.
<u>ASSEMBLY SPECIALIST</u>	QUALIFIED ENGINEER [<i>Def. Ref. Par. 6.D.</i>] who, in relation to the assignment level, can put operations of a mechanical nature in place in order to assembly a machine. Personnel in charge of fan assembly are usually persons with sufficient experience in the field of aeraulic machines as well as their construction techniques; generally, they are not qualified to perform work on electrical systems either off-line and live.
<u>PERSONNEL IN CHARGE OF ELECTRICAL MAINTENANCE</u>	QUALIFIED TECHNICIAN with PES-PAV-PEI (skilled/trained) license and official assignment by the company proprietor (letter of appointment) who, in relation to the assignment level, is responsible for operations of an electrical nature (adjustment, maintenance and repair) on live and powered off machinery, equipment and/or entire sites.
<u>PERSONNEL ASSIGNED TO HANDLING</u>	QUALIFIED PERSONNEL with fork-lift driver's licence (if the operation requires the use of motorised lifting devices) and official appointment from the company proprietor (letter of appointment) who, in relation to the assignment level, is entrusted with load handling on site, internal logistics management and/or load positioning on the means of transport.
<u>APPARATUS</u>	Apparatuses are intended as the machines, materials, fixed or movable devices, the control components, the instrumentation and measurement and prevention devices which, on their own or combined, are intended for the production, transportation, storage, measurement, adjustment, and energy conversion and/or the transformation of material and which, because of the potential ignition or triggering sources specific to them, risk provoking an explosion.
<u>PLANT</u>	The totality of the equipment and conduits necessary for transporting the "energies" to supply in order to "serve" parts or entire buildings.
<u>PRODUCTION UNIT</u>	Factory or structure intended for the production of goods or services, provided with financial and technical-functional autonomy.
<u>SAFETY COMPONENT</u>	A component, provided that it is not a piece of interchangeable equipment, that the manufacturer, or its established representative in the European Union, markets for the purposes of ensuring a safety function by means of its use, and the poor operation of which jeopardises the health or safety of exposed persons.
<u>HEALTH AND SAFETY SIGNAGE IN THE WORKPLACE</u>	Signage which, with reference to an object, an activity or a given situation, provides an indication or an instruction concerning safety or health in the workplace and that, as the case may be, utilises a sign, a colour, a luminous or acoustic warning, a verbal communication or a gesture.
<u>WORK SAFETY</u>	Conditions and factors that regard the wellbeing of the employees, temporary workers, visitors and every other person in the workplace.
<u>WORKPLACE SAFETY MANAGEMENT SYSTEM</u>	Part of the overall management system that facilitates the management of risks in the work environment associated with the company's business. This includes the organisational structures, the programming activities, responsibilities, practices, procedures, processes and resources for developing, fulfilling, achieving, reviewing and maintaining the company's Work Safety policy.

OVERHAUL The set of operations consisting of replacing mechanical components that reveal signs of wear or of fatigue (cracks) that are such as to have a detrimental effect on machine operation. **An overhaul involves checking all the components of the machinery and is understood to include replacements if damage is found, and an investigation of the causes.**







3.B. Typographical conventions and pictograms used in the manual

This manual was conceived and produced using graphics that permit easy recognition of the level of importance of the contents; In this light:

- the generic information notices (often associated with lists) are shown by means of a list whose profile is:
 - Information 1;
 - Information 2;
 - Information 3;
 -
- the instructions associated with specific operations or complex procedures, whose performance in sequence is mandatory for the safe and proper execution of the operation under examination (for ex. shipping, storage, assembly, disassembly, etc.), are shown through a numbered list (roman numeral system) whose profile is:
 - I. Action 1;
 - II. Action 2;
 - III. Action 3;
 - IV. ...
- the instructions associated with operations whose performance in sequence is not binding, but recommended (e.g. XXXXX) are shown by means of a secondary list whose profile is:
 - ✓ Action 1
 - ✓ Action 2
 - ✓ Action 3
 - ✓ ...
- *italic text* is used for:
 - cross references (e.g. paragraph, figure, table) in which case a number will also appear and the associated specification and name;
 - the specialist technical terms (only the first time they appear in the text);
 - foreign language terms or ones not commonly used (only the first time they appear in the text).
- **bold text** is used for:
 - highlighting phrases of parts of the text of particular importance;
 - highlighting cross references.
- Text **highlighted in red** is used for recommendations or extremely important indications.
- underlined text if:
 - **simple**: used for highlighting the importance of the sentence or part of the text. It is typically associated with danger situations of MEDIUM LEVEL importance, i.e. possibility of injury or acute exposure episode with reversible invalidity;
 - **bold**: used for highlighting the particular importance of the sentence or part of the text. It is typically associated with danger situations of SEVERE LEVEL importance, i.e. possibility of injury or acute exposure episode with reversible invalidity;
 - **highlighted in red** used for highlighting the extreme importance of the sentence or part of the text. It is typically associated with danger situations of EXTREMELY SEVERE LEVEL importance, i.e.: injury or acute exposure episode with lethal effects or total invalidity.
- Explanatory figures are used in the description of the machine, of its components and of all the stages of its life cycle and specific points of interest in them are indicated by number that follow the following convention:
 - number: symbolic depiction of a functional unit;
 - letter: symbolic depiction of a part of the machine.

Finally, in order to make the importance of the message transmitted by some of the pieces of information contained in this manual clearer and more immediate, these are accompanied by warning pictograms (Ref. UNI EN ISO 7010:2021). These are always and entirely the same

signs that can be found during normal working and other activities. However, in order to prevent erroneous interpretations the table below lists the meaning of some of them.

SIGN	INDICATION	MEANING
	GENERIC HAZARD	The operations described in these instructions require the operator to comply scrupulously with their contents in order to ensure their safety, the safety of those in the vicinity and to protect the machinery.
	GENERIC INFORMATION	The operations described in these instructions constitute useful advice for the operations described by the instructions.
	OBLIGATION	The operations described in these instructions require the operator to wear protective devices for the eyes (P.P.E. – Cat. 2).
	OBLIGATION	The operations described in these instructions require the operator to wear protective equipment for the hands (P.P.E. – Cat. 2).
	OBLIGATION	The operations described in these instructions require the operator to wear technical garments or work overalls (P.P.E. – Cat. 1).
	OBLIGATION	The operations described in these instructions require the operator to wear protective footwear (P.P.E. – Cat. 2).

3.C. Intended users of the assembly instructions and safekeeping

These assembly instructions and all of the information contained herein, are intended for use by expert users. The safekeeping of this document must be entrusted to a responsible person who has been specially put in charge of it. The manual must be kept in a suitable place that guarantees both its best possible conservation and easy traceability in case of need.

If the manual gets lost, deteriorates to the point that it is no longer readable (in whole or in part) or is split up or damaged (missing pages or tearing of some of them), replacement documentation must be requested directly from the manufacturer, quoting the name of this manual.

3.D. Qualification of personnel in charge of machinery assembly

Since machinery assembly involves numerous work and organisational processes, the operations must be looked on as a real “system”; in this light, the qualification of personnel, intended as an attribute that comprises a multiplicity of coexisting values that range from organisation and management skills, to the technological and technical knowledge of the machinery on which to work, is a factor that is both mandatory and of fundamental importance.

In the light of the above, the following three qualified professional figures are defined (Rif. UNI EN 15628):

- ASSEMBLY SPECIALIST**
(Level 1)
- A person with the ability to:
- directly follow the assembly operations for which they are responsible, using the personal protective equipment envisaged for the purpose (P.P.E.);
 - perform fine-tuning and adjustment of the instrumentation and work equipment;
 - perform the inspection activity on assets in order to highlight and prevent any degradation phenomena;
 - perform assembly operations checking, when assembly is complete, the functionality of the machinery;
 - define materials, means, and equipment for the work assigned from time to time, and ensure their availability for the execution of the work itself within the established times;
 - perform assembly operations in full compliance with safety regulations;
 - draw up the assembly report on paper or electronic form, in accordance with company procedures.

- ASSEMBLY SPECIALIST**
(Level 2)
- A person with the ability to:
- ensure respect of timing and costs related to the assembly of the machinery for which they are responsible;
 - manage the personnel that make up the assembly teams, ensuring to:
 - o provide the instructions and information necessary for performing the works assigned to them;
 - o respect corporate procedures;
 - o respect the laws and regulations regarding worker health and safety;
 - o respect safety provisions and protect the environment;
 - provide the *Head of the Production Unit* the information necessary to define and plan the operation;
 - inform the Head of the Production Unit about the state of advancement of the works with operation and/or inspection reports;

- ASSEMBLY SPECIALIST**
(Level 3)
- A person with the ability to:
- coordinate the maintenance work performed by company personnel and any third parties, ensuring the effectiveness and efficiency of the interventions and checking the functionality of the machinery along with the Head of the Production Unit when the work is complete;
 - train assembly specialist ensuring they have all skills required;

- ASSEMBLY SPECIALIST**
(Level 3)
- support the Head of Maintenance for the identification of the machine criticalities;
 - update and use the corporate IT system for all the activities for which it is prepared;
 - ensure the assembly team personnel use the corporate IT system properly;
 - propose solutions aimed at optimising the cost and time for assembly operations;
 - guarantee, also with the help of the Health and Safety Manager (H&S Manager), compliance with the legislation and standards in force regarding the protection of workers' health, safety and the protection of the environment, and company procedures (work permit, etc.);
 - optimise the efficiency of the assembly operations, with the appropriate planning both of the activities relating to the

- operations and of the resources;
- supply the plan of requirements for personnel, equipment and tools;
- agree on the maintenance plans, programs and times with the Head of the Production Unit;
- ensure the most appropriate assembly policies and techniques for optimising the technical-economic management of the operation;
- guarantee continuous monitoring of the assembly team;
- guarantee respect for the budget of assembly tasks, checking the results with the use of performance indicators;
- prepare reports for the Head of the Production Unit;
- aid the Head of the Production Unit in the definition of the inspections required to guarantee correct functionality of the machinery;
- aid the Head of the Production Unit in the definition of consumables and technical spare parts to be kept in stock for autonomous maintenance;
- guarantee the reliability of the companies contracted to perform assembly operations;
- manage contracts with companies contracted to perform assembly operations and evaluate the effectiveness and efficiency of the works performed;
- promote and ensure personnel training and instruction;
- guarantee correct and accurate use of the maintenance IT system, with the promotion of the updates and implementations necessary for rendering it consistent with the technical-managerial needs of the service;
- participate actively with their own collaborators in *pre-commissioning* and *commissioning* the new assets;
- analyse the failure data and find the criticalities in them using analytical methodologies (FMECA, RAMS, RCM, etc);

It is the responsibility of the Head of the Production Unit (or the machinery user) to appoint the personnel according to the definitions provided above.

It is also obvious that in order to work, the above-mentioned personnel must:

- have reached the minimum age to be allowed to work (with reference to the regulations in force at the moment of utilisation of the machinery);
- have an adequate level of education and training for the work to be carried out (Ref. UNI EN 15628:2014 – “*Maintenance - Qualification of Maintenance Personnel*”);
- Be familiar with the matters illustrated in this manual;
- Be familiar with the accident-prevention rules in force at the moment of use;
- Be in suitable physical condition for the work to be carried out;
- Possess and use suitable, integral and certified personal protective equipment (P.P.E.).


3.E. Contents of the manual

This document consists of 58 pages and, for ease of reference, has been divided into chapters that make it easy to find the information required to correctly perform each phase of machinery assembly (or its components).

The information it contains refers only to the phases of assembly of the HURRICANE by G&R and is directed to the users so that:

- they can become aware of the structure and the elements that make up the machine;
- they can be aware of the problems that may arise during machinery assembly;
- they can set up specific information, training and instruction courses for those who are responsible for the management and maintenance of the machinery:
 - ✓ the person responsible for the machine installation site;
 - ✓ machine users;
 - ✓ maintenance specialists;
 - ✓ maintenance engineers;
 - ✓ maintenance heads;
 - ✓ persons in charge of installation, disassembly and dismantling.

Given the above it is therefore necessary to read all the chapters of this manual carefully.

	<p>The configuration of some of the machine components as well as the position of the safety devices installed in it - and described or depicted here - may be subject to variations in virtue of the satisfaction of particular completions linked to specific customer needs or safety regulations. In this case:</p> <ul style="list-style-type: none"> - descriptions, references and procedures may be incomplete or inexact and should therefore be understood as being of a “general nature”. - drawings and Picture may differ from the reality and therefore should be taken for reference for easier understanding of the text.
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3.F. Work clothing and personal protective equipment

Before taking any action, personnel in charge of performing the assembly of the machinery must wear:

- suitable and accident prevention clothing, as indicated by the standard **89/686/EEC** as amended;
- P.P.E. in conformity with **Leg. Decree 475/92** et seq., as indicated by **Leg. Decree 81/08** and seq.

It is obvious that at the moment of their use the above must be integral and in good condition and must be replaced immediately if there are clear signs of damage or deterioration.

When necessary, the use of P.P.E. is recalled in this assembly instructions by means of pictograms inside informative boxes.

	<p>Even when the legal P.P.E. are worn, working on or with a machine is never totally risk-free and therefore it is always necessary to work with sufficient visibility both in the work areas and in the surroundings (even when this is not deemed to be immediately dangerous). It is also advisable never to work when tired, ill, injured, or under the influence of alcohol, drugs or medicines that are capable of altering a person’s mental and physical capacities.</p>
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3.G. Standard documentation supplied

This document is an integral part of the “standard document package” of the machine it refers to when the latter is supplied to the final user, disassembled or partially disassembled ([Ref. Par. 1.I] of the operation and maintenance manual for HURRICANE).

Please remember that all the standard documentation for the machinery supplied constitutes an integral and inseparable part of the same (on penalty of termination of the guarantee).

In the case of transfer to third parties, the primary custodian of the machinery is obliged to hand over all the machine standard documentation supplied, integral and in a good state of conservation, (on penalty of the immediate cessation of the guarantee and the immediate exclusion of the manufacturer from all objective and subjective, civil and criminal responsibility with regard to the machinery).

Finally, in the event of transfer to third parties, the primary custodian of the machinery is required and strongly requested to report the G&R the address of the new user so that the manufacturer can send him/her notices and/or updates that are seemed indispensable.

3.H. Updates of the manual

The machine documentation complies with all the laws, directives and binding rules in force as of 11 January 2021. Its contents reflect the state of the art at the moment of marketing of the HURRICANE, of which it constitutes an integral and inseparable part [Ref. Par. 1.I] of the operation and maintenance manual for HURRICANE.

Any improvements or changes that may be made by the G&R to the aforesaid fan in the future, inspired by:

- new experiences;
- new know-how acquired in the area of “*ventilation techniques and technology*”;
- strategic market decisions;
- any other reasons;

do not oblige the G&R to intervene on any previous supplies of HURRICANE, nor to consider the machinery and/or associated manual to be not accurate or inadequate.

G&R reserves the right to make improvements, modifications and integrations both to the machinery and to this operation and maintenance manual, without notifying those who are already in possession of them, unless the change and/or modification lead to the elimination, or the notable reduction, of one or more immediate and/or grave dangers regarding health and safety) and, above all, without this constituting a justification for claims against G&R.

Any integrations to this document which the manufacturer deems appropriate to send to the users, must be kept along with the assembly instructions already in their possession and handled in the same way as them.

3.I. Important information

If it is necessary to replace deteriorated, faulty parts and/or ones damaged by use, time, lack of care or anything else, **it is compulsory to use original spare parts and accessories because, the use of non-original spares not only causes the termination of the guarantee on the machine, it can also be dangerous and/or shorten the life and reduce the performance of the machine.**

Should the pictograms, labels, or ID plate supplied by the manufacturer (and only by them during production) go missing or be deteriorated/degrade to the point that they are no longer understandable, even for only one of the informative elements they contain, new ones must be obtained by explicitly requesting them from the G&R.

Please remember that all machinery components can be requested directly from the G&R, quoting the data indicated on the label of the machinery or the fan information data in this assembly instructions.

3.J. Manufacturer's responsibility

The contents of these assembly instructions do not in any way replace the legislation governing safety and accident-prevention in the workplace, but they reinforce and, if possible, enrich it.

The G&R cannot be deemed responsible in any way (civilly and/or criminally) in case of:

- non-compliance with the instructions provided in these assembly instructions;
- incorrect observance of the instructions provided in this manual;
- use of this document by uninformed, untrained and/or un instructed personnel;
- company or contractor personal accidents due to:
 - ✓ internal safety shortcomings;
 - ✓ improper use of the equipment and machines required for machinery assembly (or parts thereof);
 - ✓ breaches of procedures for protecting individual and collective safety;
 - ✓ lack of supervision;
 - ✓ “catastrophic events” due to assembly of the machinery and directly caused by a failure to observe the worker health and safety requirements;
 - ✓ “catastrophic events” linked to operations taking place on the site in which the machinery is assembled and not involving the machinery in a direct or indirect manner;
- injury to company personnel who have not read and fully understood this manual contents;
- machinery assembly (or parts or it) performed by unauthorised and/or untrained and/or unsuitable personnel;
- incorrect electric connections or power supply defects;
- unauthorised changes;
- assembly that is partial, incomplete, not-state-of-the-art, or that in any manner does not agree with the information in this document;
- use of non-original and/or non-specific spare parts and application items.

3.K. Customer service and after-sales support

Given that with regard to machinery assembly operations, this manual cannot replace the education, training and experience of the manufacturer's engineers, the G&R's customer and after-sales service is always available for providing assistance and technical support; in particular:

- telephonic support as regards characteristics and the more simple work that can be carried out on the machinery;
- sending documentation;
- planning information, instruction and training actions both for the user and for the latter's technical personnel;
- the execution of feasibility studies relating to the possibility of modifying the machine following changed operating and/or application needs.

The contact details are as follows:

GIGOLA E RICCARDI S.P.A CUSTOMER SERVICE AND AFTER-SALES SUPPORT

*Gigola e Riccardi S.p.A. Via Alessandro Volta, 7 | 25046 Cazzago San Martino (BS) Italy
Tel. (+39) 030 72.53.68 | Fax: (+39) 030.72.55.438 | e-mail: info@gigolariccardi.it*

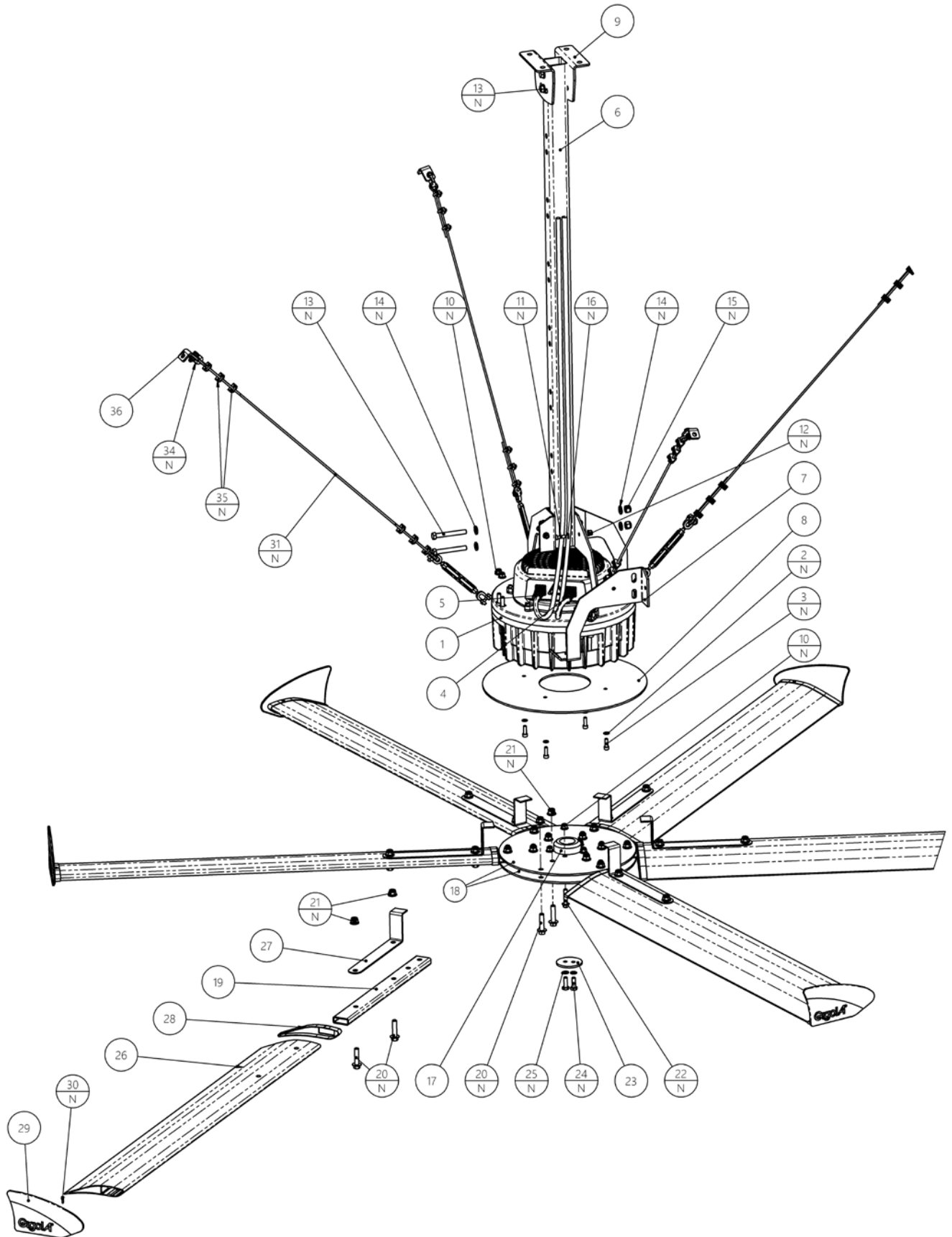
Please remember that for any needs of support regarding the machinery assembly operations, the G&R's customer service requires the name and model of the machine (this information can be found on the ID plate).

3.L. Suggestions and feedback from the user

The G&R has adopted the *Six Sigma* and *T.Q.M. (Total Quality Management)* methods as instruments for company management and the achievement of excellence. Because of this, our technical office is available - through the customer and after-sales support service - for the examination of suggestions, advice and proposals in order to render the manual and the machinery it refers to more adherent to the needs for which both were conceived, designed and produced. **Any personal information and details that you may send us will remain strictly confidential in accordance with our privacy policy.** Do not worry if you prefer to remain anonymous: your advice will still be taken into consideration by us and therefore carefully assessed by our technical staff.

4. General features of the machinery

4.A. List of components



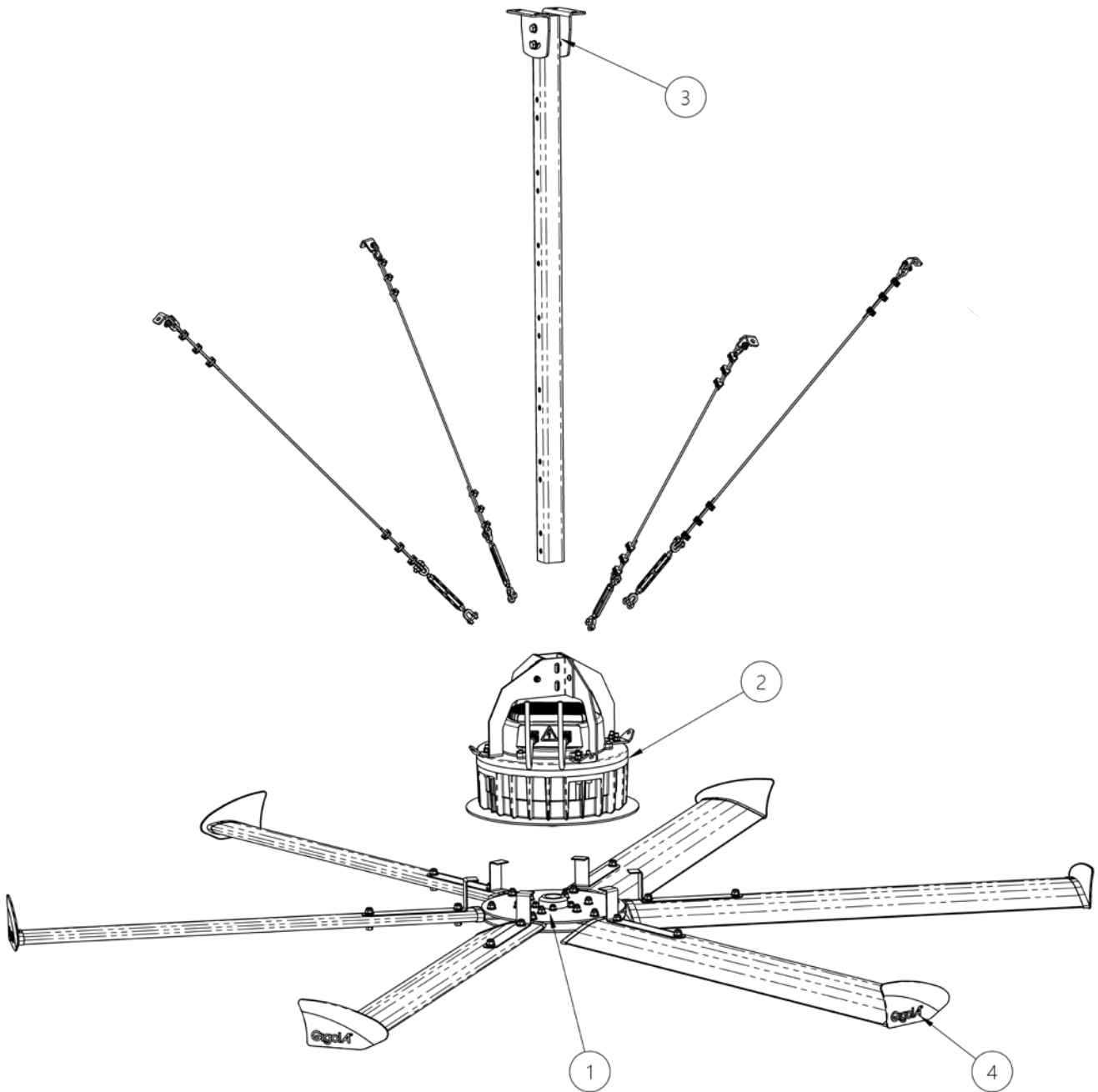
Hurricane series – Assembly instructions

List of Components				
ID	Name	HUR 4000\13'	HUR 5000\16,5'	HUR 6000\20'
1	Motor	1	1	1
2	Spring Washer - A8	4	4	4
3	Hex Socket Screw M8x25	4	4	4
4	Motor Connector 4 poles	1	1	1
5	Motor Connector 7 poles	1	1	1
6	Hanging Arm 1510mm	1	1	1
7	Frame	4	4	4
8	Security Plate	1	1	1
9	Standard Bracket	2	2	2
10	Self locking Nut flanged M10	13	13	13
11	Hex Socket Button Head Screw M8x25	4	4	4
12	Self locking Nut Flanged - M8	4	4	4
13	Hex Screw - M12x95x30	4	4	4
14	Plain Washer - D13	8	8	8
15	Self locking nut M12	4	4	4
16	Plain Washer - D8	4	4	4
17	Main Hub HURRICANE	1	1	1
18	Hub plate HURRICANE 6 blades	2	2	2
19	Fan Arm HURRICANE Tubular	6	6	6
20	Hex Head Bolt With Flange - M12x50	24	24	24
21	Self locking Nut Flanged - M12	24	24	24
22	Hex Head Nut With Flange - M10x45	5	5	5
23	Hub Locking Ring	1	1	1
24	Hex Head Bolt M10x30	2	2	2
25	Spring washer - A10	2	2	2
26	HURRICANE Blade	6	6	6
27	Blade's Security Sector HURRICANE	6	6	6
28	Blade cover	6	6	6
29	Winglet	6	6	6
30	Self Tapping Screw 3.9x19	6	6	6
31	Cable A4 7x7 5mm	4	4	4
32	Redance 5mm	8	8	8
33	Turnbuckles Jaw Jaw 8mm	4	4	4
34	Shakle M8	4	4	4
35	Cable Clamp 5mm	24	24	24
36	Stabilizer's bracket (wall side)	4	4	4

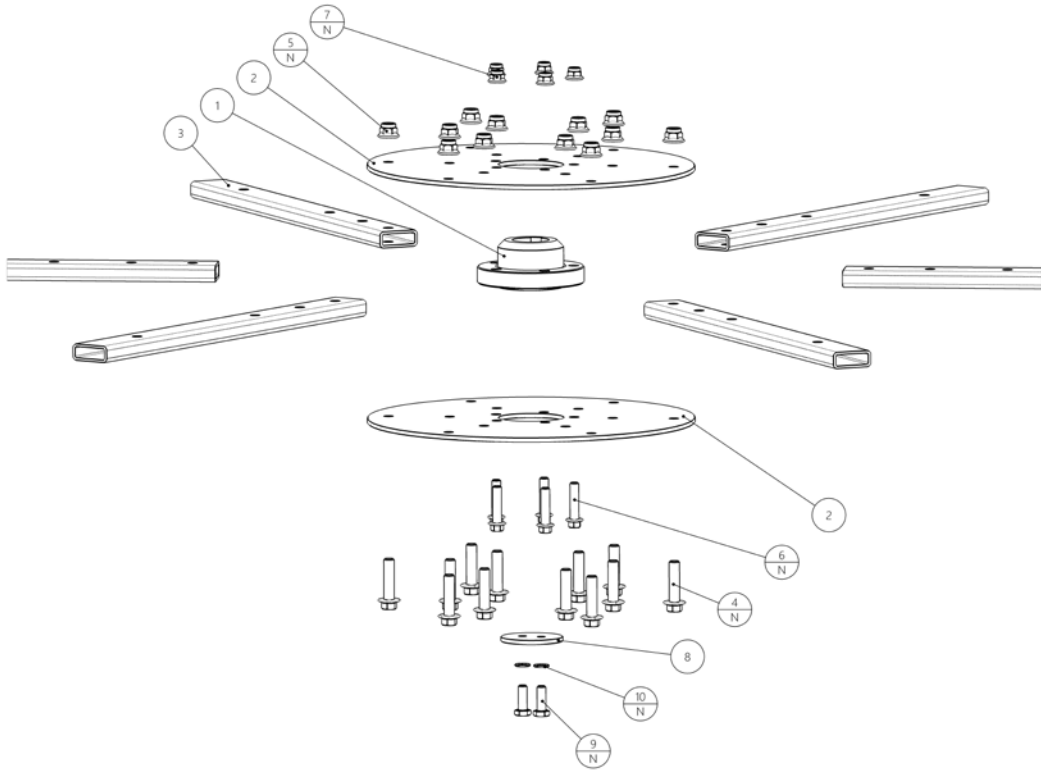
4.B. Description of the machine

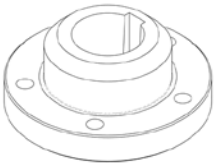
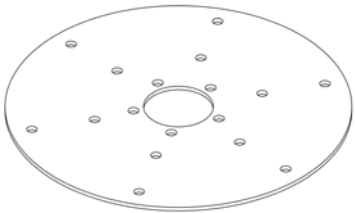

HURRICANE can be divided into the following functional units:

1. Hub assembly;
2. Motor unit;
3. Hanging arm assembly and stabilizer cables;
4. Blade assembly;

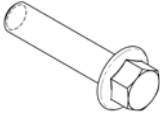

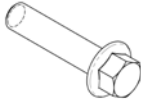

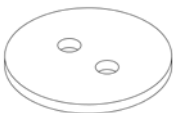
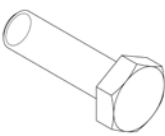


4.C. Hub assembly - List of parts




ID	Picture	Name	HUR 4000	HUR 5000	HUR 6000
			Amount	Amount	Amount
1		Main Hub HURRICANE	1	1	1
2		Hub plate HURRICANE 6 blades	2	2	2
3		Fan Arm HURRICANE Tubular	6	6	6

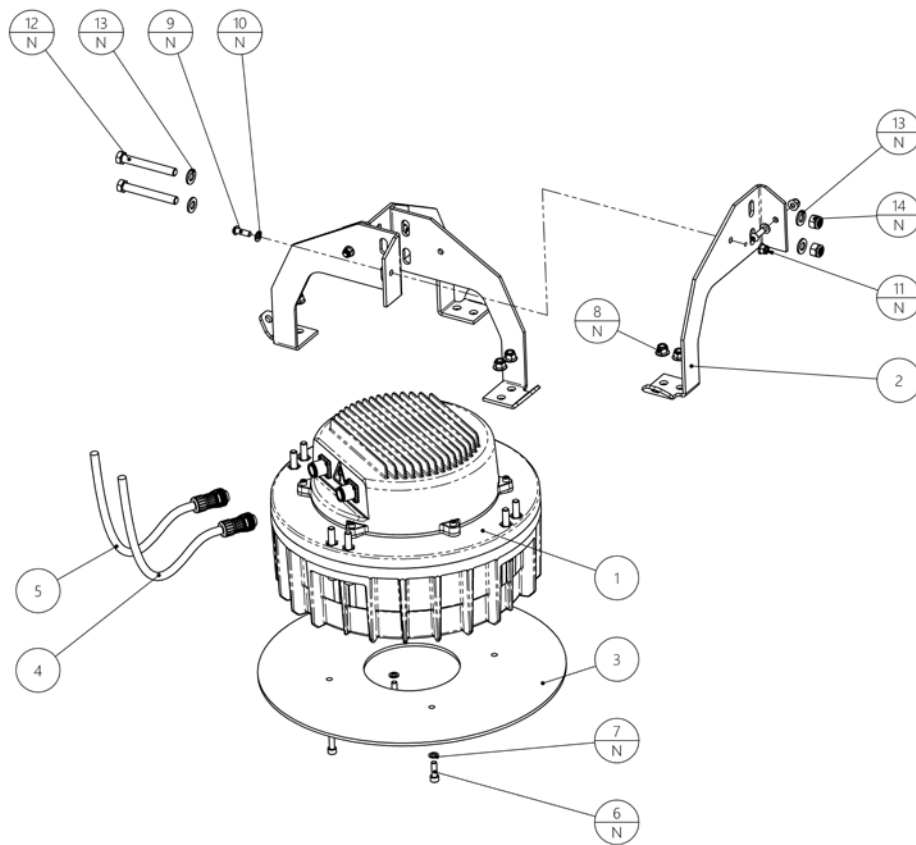
Hurricane series – Assembly instructions

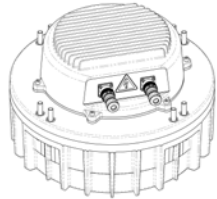
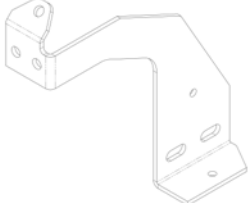
			HUR 4000	HUR 5000	HUR 6000
ID	Picture	Name	Amount	Amount	Amount
4		Hex Head Bolt With Flange - M12x50	12	12	12
5		Flanged Self locking Nut - M12	12	12	12
6		Hex Head Nut With Flange - M10x45	5	5	5
7		Self locking Nut M10	5	5	5
8		Hub Locking Ring	1	1	1
9		Hex Screw M10x30	2	2	2

Hurricane series – Assembly instructions

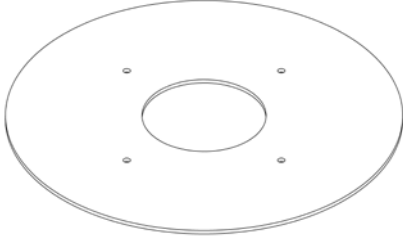
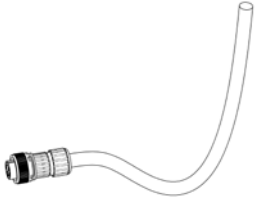
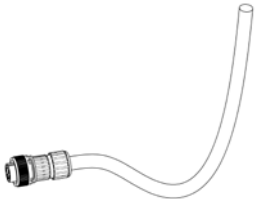
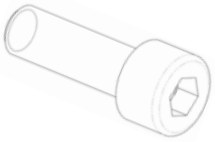


			HUR 4000	HUR 5000	HUR 6000
ID	Picture	Name	Amount	Amount	Amount
10		Spring washer - A10	2	2	2

4.D. Motor unit - List of Parts

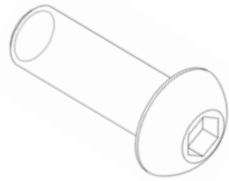


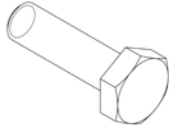




ID	Picture	Name	HUR 4000	HUR 5000	HUR 6000
			Amount	Amount	Amount
1		Motoinverter	1	1	1
2		Frame	4	4	4

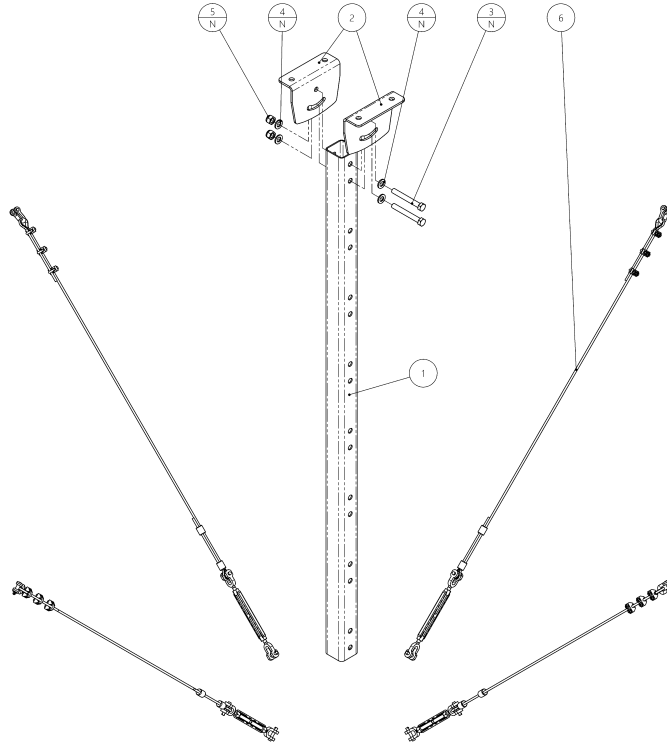
Hurricane series – Assembly instructions


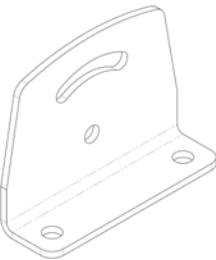
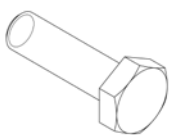
			HUR 4000	HUR 5000	HUR 6000
ID	Picture	Name	Amount	Amount	Amount
4		Security Plate	1	1	1
5		Motor Connector 4 poles with cable	1	1	1
6		Motor Connector 7 poles with cable	1	1	1
7		Hex Socket Screw M8x25	4	4	4
8		Lock Washer - A8	4	4	4
9		Self locking Nut M10	8	8	8

Hurricane series – Assembly instructions


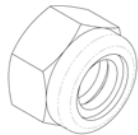

			HUR 4000	HUR 5000	HUR 6000
ID	Picture	Name	Amount	Amount	Amount
10		Hex Socket Button Head Screw - M8x25	4	4	4
11		Plain Washer - D8	4	4	4
12		Flanged Nut - M8	4	4	4
13		Hex Screw - M12x95x30	2	2	2
14		Plain Washer - D13	4	4	4
15		Self locking nut M12	2	2	2

4.E. Hanging arm assembly- List of parts

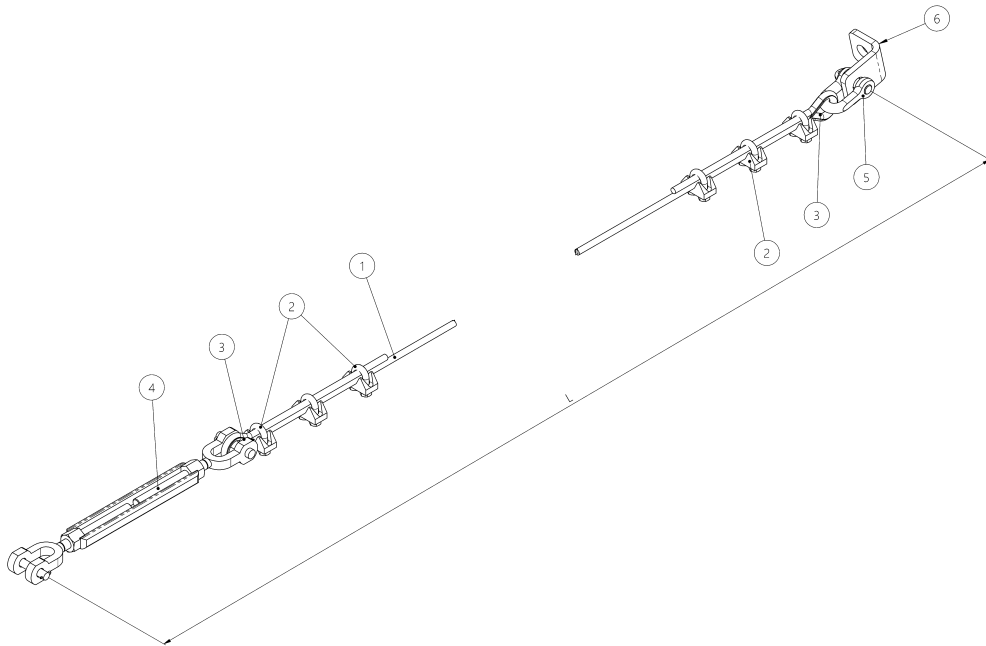


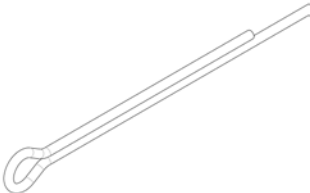

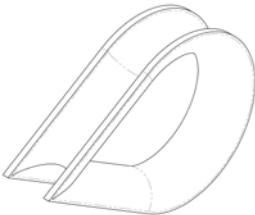
ID	Picture	Name	HUR 4000	HUR 5000	HUR 6000
			Amount	Amount	Amount
1		Hanging Arm 1510mm	1	1	1
2		Standard Bracket	2	2	2
3		Hex Screw - M12x95x30	2	2	2

Hurricane series – Assembly instructions

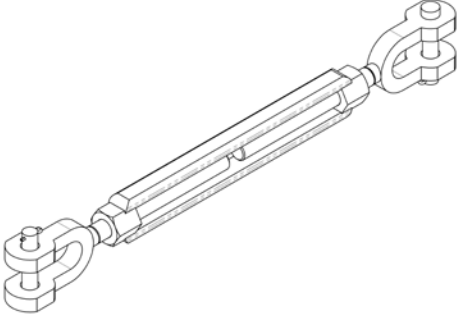

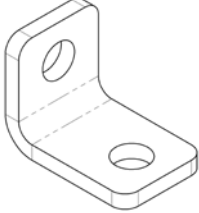
			HUR 4000	HUR 5000	HUR 6000
ID	Picture	Name	Amount	Amount	Amount
4		Plain Washer - D13	4	4	4
5		Self locking nut M12	2	2	2
6		Stabilizer	4	4	4

4.F. Stabilizer - List of parts

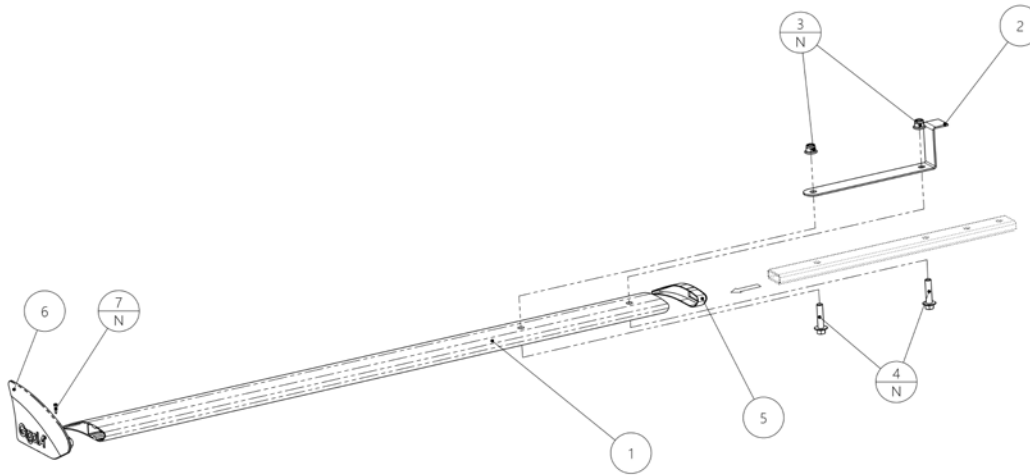


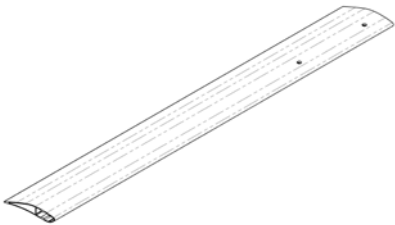
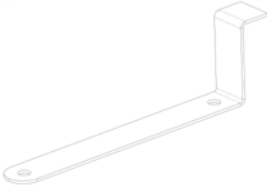

ID	Picture	Name	HUR 4000	HUR 5000	HUR 6000
			Amount	Amount	Amount
1		Cable A4 7x7 5mm	1	1	1
2		Cable Clamp 5mm	3	3	3
3		Redance 5mm	2	2	2

Hurricane series – Assembly instructions

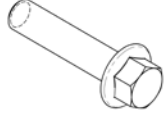
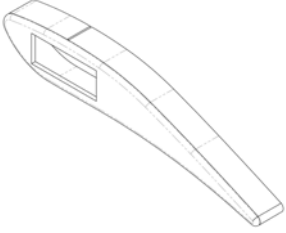

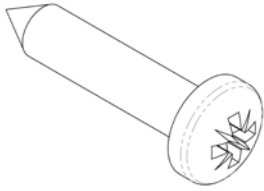
			HUR 4000	HUR 5000	HUR 6000
ID	Picture	Name	Amount	Amount	Amount
4		Turnbuckles Jaw Jaw 8mm	1	1	1
5		Shakle M8	1	1	1
6		Stabilizer bracket			

4.G. Blade assembly - List of parts










			HUR 4000	HUR 5000	HUR 6000
ID	Picture	Name	Amount	Amount	Amount
1		HURRICANE Blade	1	1	1*
2		Blade's Security Sector HURRICANE	1	1	1
3		Flanged Self locking Nut - M12	2	2	2








Hurricane series – Assembly instructions

			HUR 4000	HUR 5000	HUR 6000
ID	Picture	Name	Amount	Amount	Amount
4		Hex Head Bolt With Flange - M12x50	2	2	2
5		Blade cover	1	1	1
6		Winglet	1	1	1
7		Self Tapping Screw 3.9x19	1	1	1







5. Tools required for machinery assembly

ORDINARY TOOLS AND EQUIPMENT			
ID	Picture	Description	Amount
U01		Rubber coated hammer <i>(500 / 800 g)</i>	1
U02		Slip joint pliers	1
U03		Allen key <i>(5mm)</i>	1
U04		Allen key <i>(6mm)</i>	1
U05		Hex socket 8 mm	1
U06		Hex socket 13 mm	1
U07		Hex socket 15 mm	1





Hurricane series – Assembly instructions

ORDINARY TOOLS AND EQUIPMENT			
ID	Picture	Description	Amount
U08		Hex socket 16 mm	1
U09		Hex socket 17 mm	1
U10		Hex socket 18 mm	1
U11		Hex socket 19 mm	1
U12		Combination wrench (8 mm)	1
U13		Combination wrench (13 mm)	1
U14		Combination wrench (15 mm)	1


Hurricane series – Assembly instructions

ORDINARY TOOLS AND EQUIPMENT			
ID	Picture	Description	Amount
U15		Combination wrench <i>(16 mm)</i>	1
U16		Combination wrench <i>(17 mm)</i>	1
U17		Combination wrench <i>(18 mm)</i>	1
U18		Combination wrench <i>(19 mm)</i>	1
U19		Reversible ratchet 1/2'	1
U20		Thread locker <i>(Medium force)</i>	1





Hurricane series – Assembly instructions

SPECIAL TOOLS AND EQUIPMENT			
ID	Picture	Description	Amount
U21		Star-shaped screwdriver	1
U22		Clamp ammeter	1
U23		Torque wrench - 20 to 150 Nm	1
U24		Drill (drill bit type and dimensions accordingly to the surface you are working on)	1


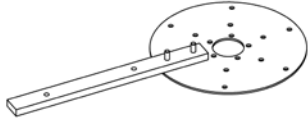
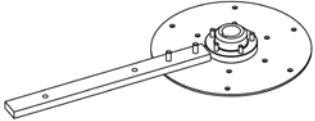
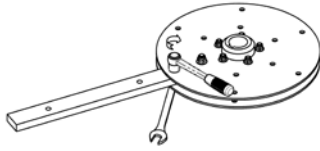
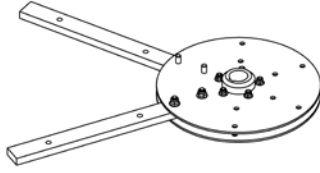
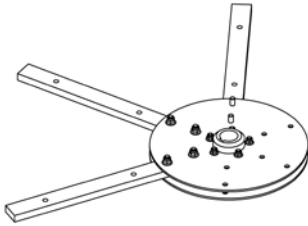
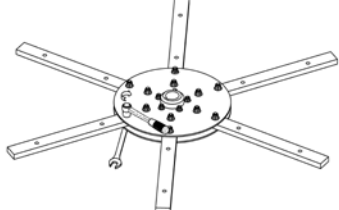
6. Machinery Assembly

	<p>In order to consider the Hurricane unit to have been assembled correctly, it is not sufficient for every part to be positioned properly and fixed there correctly. This is because every element not only requires correct assembly, but also a check that the final assembly is correct. FOR THIS REASON IT IS RECOMMENDED THAT YOU NEVER START THE HURRICANE BEFORE HAVING CARRIED OUT THE AFORESAID CHECKS. In case of necessity, contact G&R after-sales service. The manufacturer does not assume any responsibility for poor machine operation following INCORRECT assembly by the customer/users.</p>
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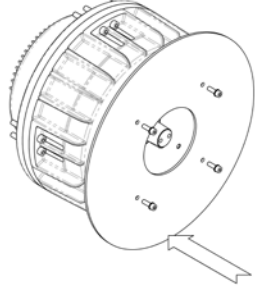
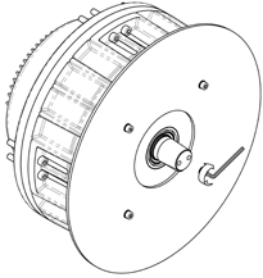
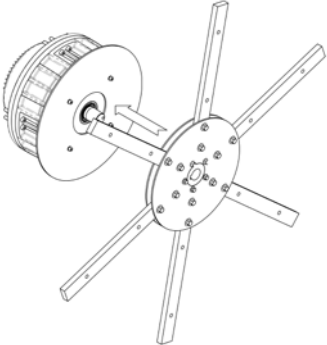
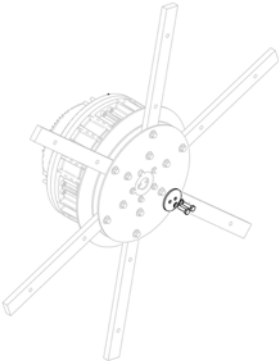
6.A. Completely disassembled machinery

	<p>The operations described in these instructions require the operator to wear protective devices for the eyes (P.P.E. – Cat. 2).</p>
	<p>The operations described in this paragraph require the assembly specialist to wear protection for the hands (P.P.E. - Cat. 2).</p>
	<p>The operations described in this paragraph require the assembly specialist to wear technical garments or overalls (P.P.E. - Cat. 1).</p>
	<p>The operations described in this paragraph require the assembly specialist to wear protective footwear (P.P.E. - Cat. 2).</p>

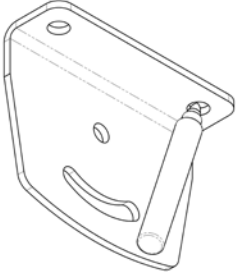

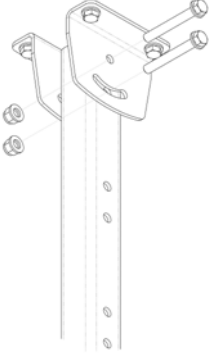
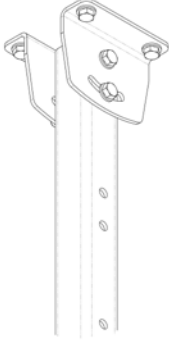
6.B. STEP 1 – HUB Assembly

Stage	Picture	Description
		<p align="center">Information</p> <p>The Hurricane hub is composed of one main hub, six arms fixed to two plates</p>
01		<p>Place one arm on the lower plate. Insert two screws in the arm's holes which align with the lower plate holes.</p>
02		<p>Place the main hub on the hub plate. Insert five hex screws in the hub holes from below.</p>
03		<p>Place the upper hub plate on the main hub and arm. Insert lock nuts. Slightly tighten the lock nuts momentarily. The four parts should have play between them</p>
04		<p>Repeat the operations described in Stage 02 for the next arm. Slightly tighten the lock nuts momentarily. The five parts should have play between them</p>
05		<p>Continue to add the remaining arms to the assembly.</p>
06		<p>Once all the arms have been added to the hub, tighten all the bolt using a criss-cross pattern to ensure perfect alignment of all the parts. Tighten the M12 screws to 95 N/m</p>

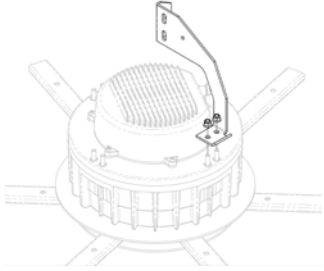
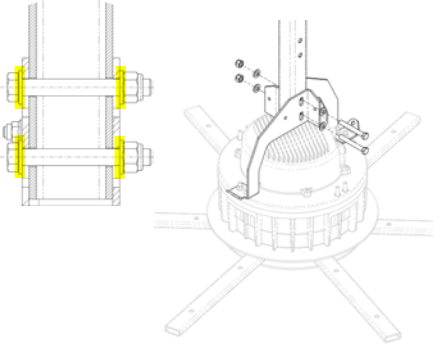
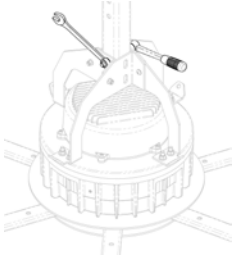
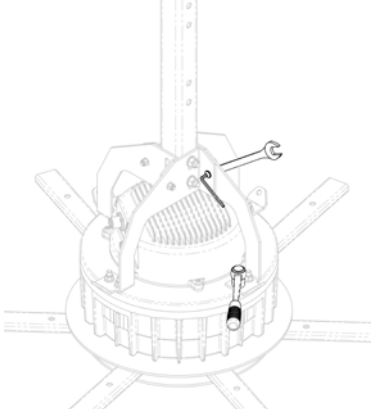
6.C. STEP 2 – HUB assembly on motor

Stage	Picture	Description
1		<p>Turn the motor upside down and place it on a stable support; use a hoist for the turning operation.</p> <p>Place the safety plate on the lower part of the motor. Align the four holes of the plate with the motor ones.</p>
2		<p>Remember to add x4 washers before tightening the screws; tighten the x4 M8 screws to 28 N/m;</p>
3		<p>Retrieve the assembled hub; insert the hub on the motor shaft while being careful to align the key on the shaft with its groove in the hub.</p>
4		<p>Place the hub locking ring on the bottom of the hub; apply medium strength thread locker on the two M10 screws; add two washers before tightening the screws;</p> <p>tighten the two M10 hex screws at 55 N/m.</p>


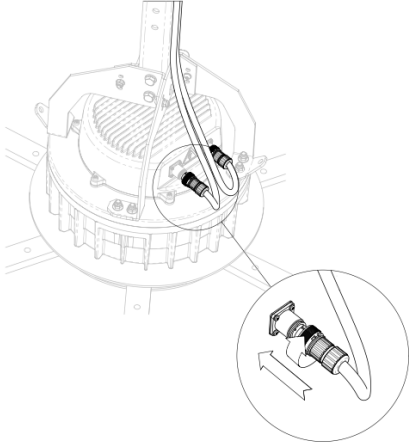

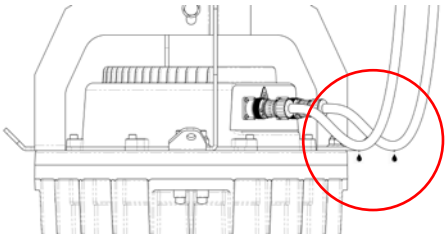
6.D. STEP 3 – Hanging arm assembly

Stage	Picture	Description
1		<p>If you plan to install the HLVS without the optional fixture kit, use the following steps as a general guidance for the installation.</p> <p>Mark the position of the Hanging arm brackets on the surface you want to affix them;</p>
		<p><u>Use a suitable method of affixion for the material of the support you have chosen.</u></p> <p><u>Please verify the structure with a construction engineer before installing the Hurricane;</u></p>
2		<p>Remember to add x4 washers before tightening the brackets' screws; tighten the x4 M12 screws to 95 N/m; insert the hanging arm between the two brackets; insert two M12 screws and two washers.</p>
3		<p>Insert two M12 nuts and two washers on the other side of the hex screws.</p> <p>Check the correct angle of the hanging arm before installing the HURRICANE structure;</p>

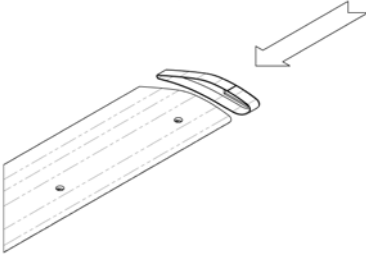
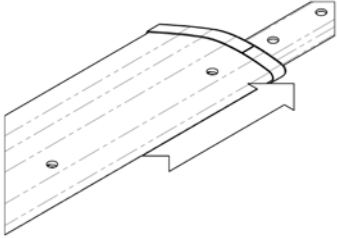

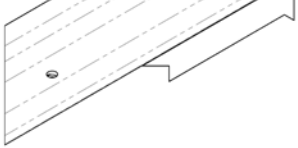
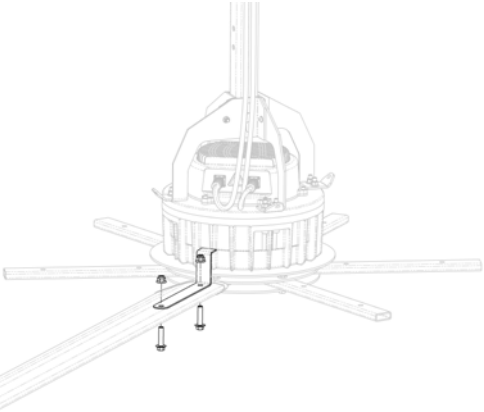
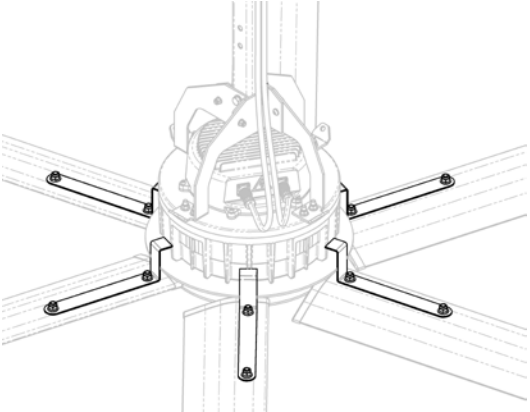

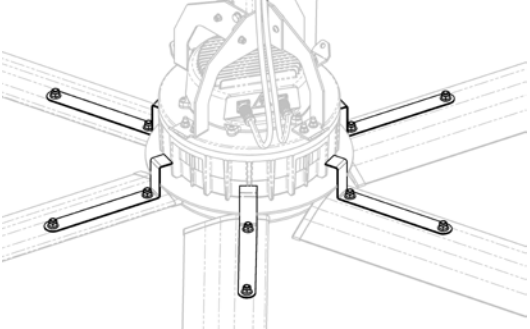
6.E. STEP 4 – Frame assembly

Stage	Picture	Name
01		<p>Place the partially assembled motor on a support (for example a euro pallet).</p> <p>On the top of the motor, start by placing one frame module; slightly tighten the hex nuts.</p>
02		<p>Bring the partially assembled motor close to the hanging arm (use for example a scissor lift)</p> <p>Install the opposite frame module on the motor; insert the two hex bolts for the 60x60 hanging arm.</p> <p>Remember to insert the four washers when fitting the two bolts.</p>
03		<p>Tighten the two hanging arm's M12 hex bolts at 95 N/m;</p> <p>install the two remaining frame modules;</p>
04		<p>Tighten the frame modules M10 nuts (x2 per module) at 55 N/m; finally tighten the frame M8 hex bolts (x1 per module) at 28 N/m.</p>


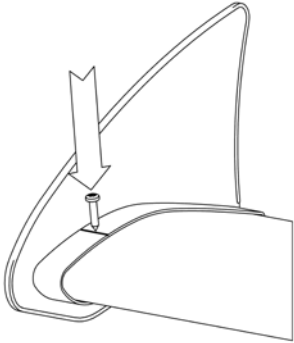
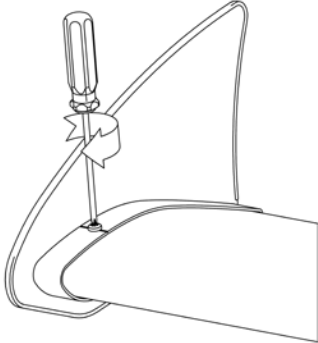

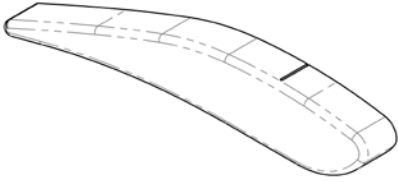
Hurricane series – Assembly instructions

Stage	Picture	Name
		<p><u>Attention:</u></p> <p>Disconnect the cable from all the sources of power supply; Connect the Modbus terminal on the motor unit; Connect the power terminal on the motor unit; Reconnect the power supply cable.</p>
		<p><u>Information</u></p> <p>When connecting the terminals, you should leave a slight bend on the cables in order to avoid water/moisture to come in contact with the terminals</p>

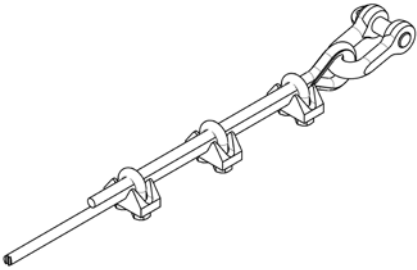
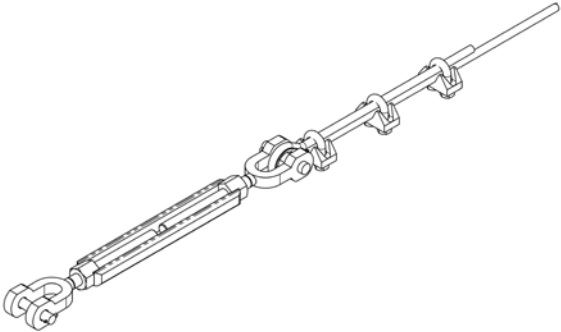
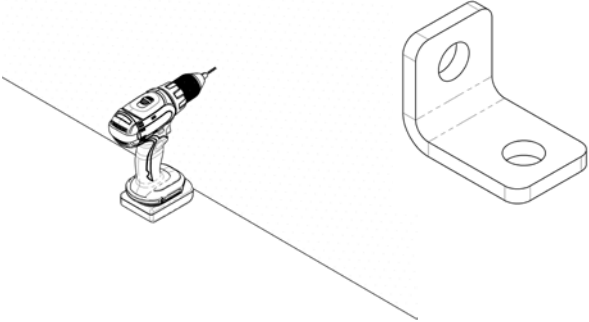
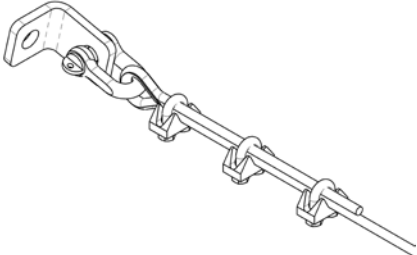
6.F. STEP 5 – Blade installation

Stage	Picture	Name
01		<p>Retrieve the blade covers. Slide one blade cover on a blade's hub end (the side with two holes)</p>
02		<p>Slide the assembled blade on a 50x20 arm of the hub; push the blade all the way against the hub assembly; check the alignment of the holes of the two parts.</p>
		<p>Be careful when sliding the blade on the arm not to throw the HURRICANE assembly out of balance (the load is not equally distributed with a single blade installed)</p>
03		<p>Install one blade security sector; align the holes with the ones on the blade; Insert two M12 hex screws from below the blade; tighten the nuts at 95 N/m.</p>
04		<p>Repeat step 01-02-03 for the remaining five blades.</p>
		<p>For a better weight distribution during assembly, install the opposite blade of the one just installed. Failing to do so could make the Hurricane assembly unbalanced / make it lean on one side.</p>

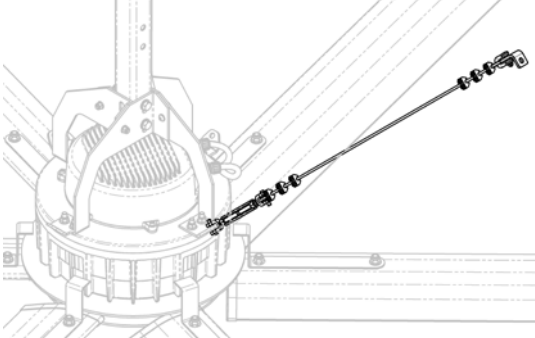
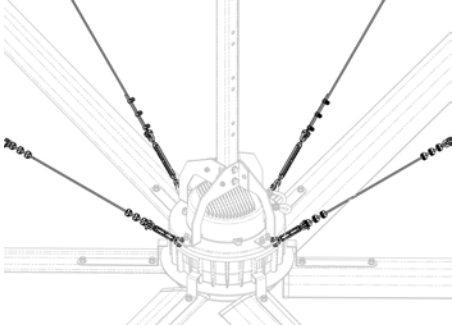

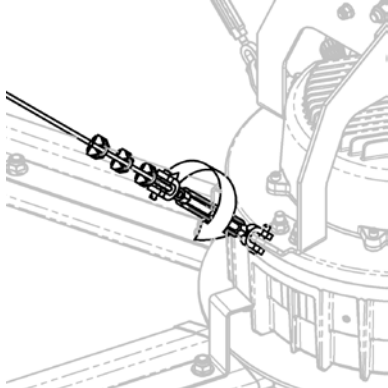
6.G. STEP 6 - Installation of the optional winglet

Stage	Picture	Name
01		<p>Slide the winglet on the blade</p>
02		<p>Position the self-tapping screw on the reference mark on the winglet.</p>
03		<p>Using a screwdriver or an electric screwdriver, secure the self-tapping screw</p>
		<p>Information This procedure is also used for the type 2 winglet.</p>

6.H. STEP 7 - Stabilizer cables

Stage	Picture	Name
01		<p>Start to bend one end of the cable; insert one redance in the loop of the cable; while keeping the redance in place, add the three equally spaced wire clamps oriented like in the picture on the left; finally insert one shackle in the loop.</p>
02		<p>Repeat the 01 stage for the other side of the cable Add one turnbuckle on the terminal of the cable.</p>
03		<p>Mark the position of the hole on the surface you want to affix the bracket for the stabilizer cable; Use a suitable method of affixion for the material of the support you have chosen; also choose the screw accordingly to the support; Try to position the bracket so that the stabilizer is as close as possible at an angle of 45°</p>
04		<p>Insert the shackle on the bracket</p>

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Stage	Picture	Name
05		<p>Install the turnbuckle side of the cable on the Hurricane's frame.</p> <p>Adjust the length of the cable by untightening the three shackles previously installed.</p> <p>You can cut the cable excess (if present) once all four cables are installed and adjusted.</p>
06		<p>Repeat step 01-02-03-04-05 for the remaining 3 cables.</p>
		<p>Adjust the tension of the cable by turning the turnbuckle.</p> <p>The Hurricane should be level once the stabilizer's cables are adjusted.</p> <p>Now you can cut the cables excess (if present).</p>

6.1. Electrical connection

The motoinverter is provided internally cabled and with the latest firmware installed. During the installation phase, the operator only needs to connect the motoinverter to the control panel.

All the procedures included in this phase must be done accordingly to the following norms:

- IEC EN 60204-1
- IEC 60364

All electric lines must be done using cables of adequate section, which should be chosen accordingly to the power of the motoinverter. The cables also need to be earthed in order to have protection from overloads or short circuits.

The operator also needs to double check the color of the cables (ground cable included) connected to the motoinverter.





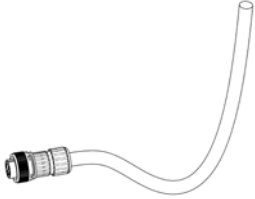
DOUBLE CHECK

- Cables protection and their correct connection
- Do not turn on power supply before checking earthing
- Check that power supply's voltage and frequency are compatible with the motoinverter

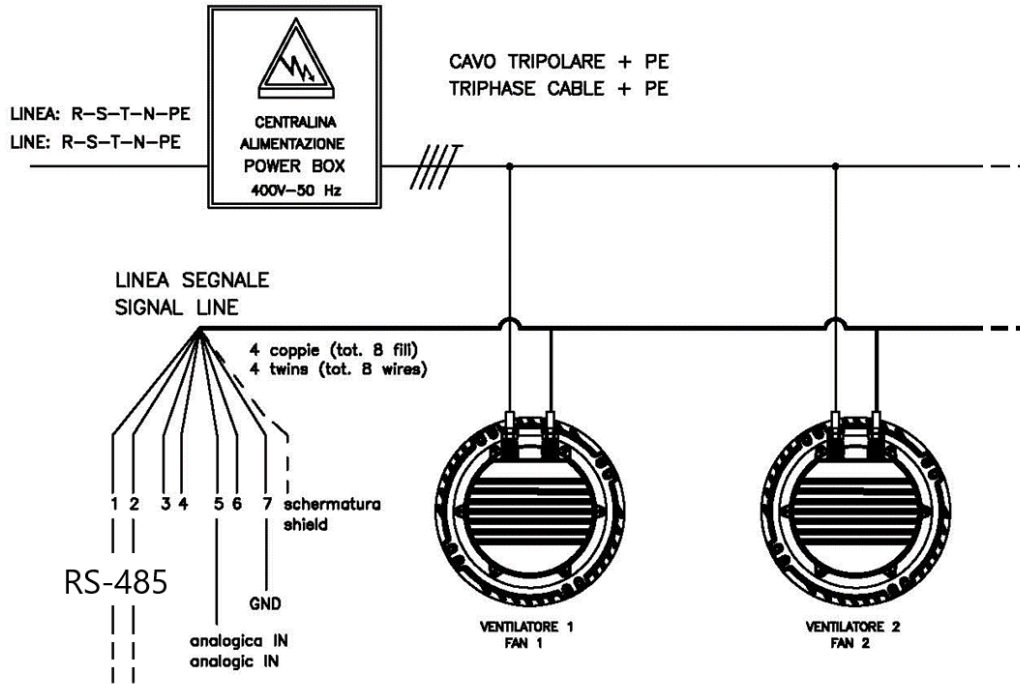


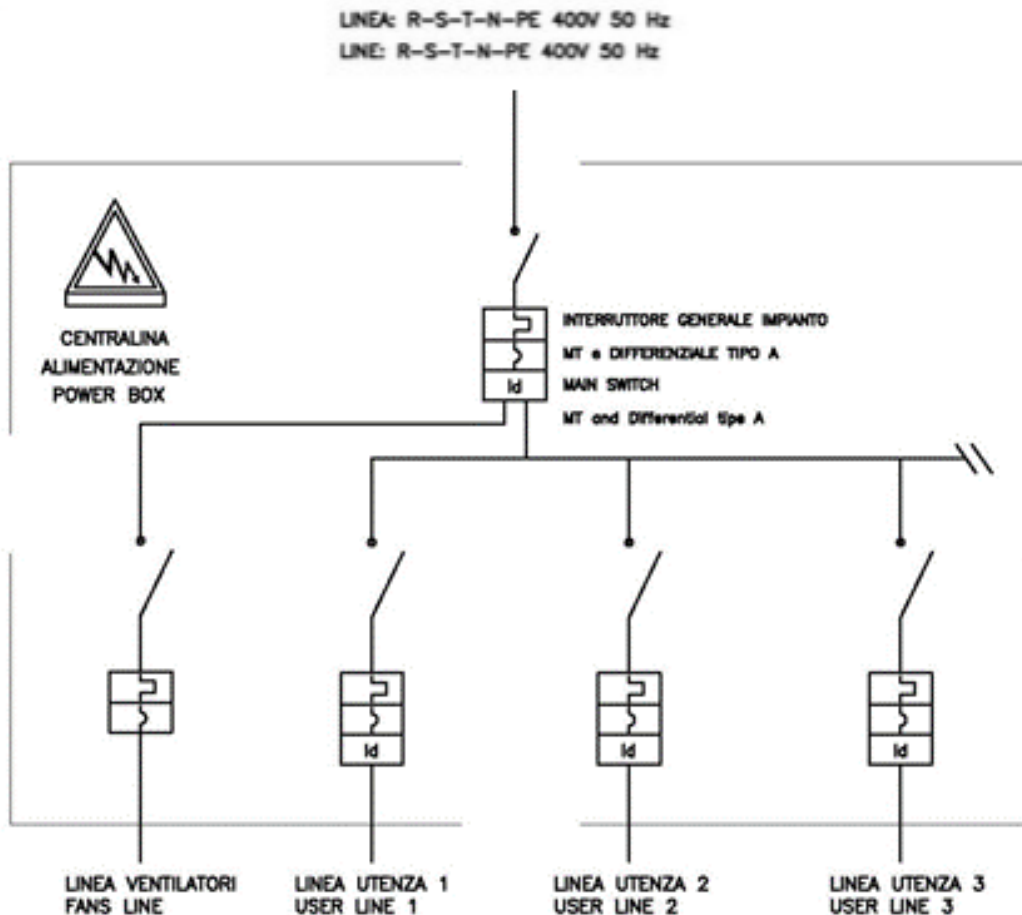
DO NOT TURN ON POWER SUPPLY DURING INSTALLATION

6.J. Check of OPERATING FUNCTIONS

Stage	Picture	Description
01		<p>At first startup, use the clamp ammeter, to check that the operating current does not exceed the motor's rated value by more than 10%.</p>
		<p>ATTENTION <u>The amperage must be checked by a specialised qualified electrical maintenance technician.</u></p>
02		<p>ATTENTION <u>Check for correct Modbus' cable connection and HURRICANE's correct operation</u></p>

6.K. Wiring diagrams





Linea dedicata protetta opportunamente con interruttore magneto-termico e Differenziale di Classe A con sensibilità di almeno 300 mA.

La linea deve essere presa a valle dell'interruttore generale dell'impianto ed essere indipendente dalle altre linee che alimentano i carichi già esistenti.

L'impiantista valuterà se tenere o eliminare il differenziale a monte della distribuzione dei carichi. Esso potrebbe creare problemi nel caso in cui la corrente di dispersione verso terra è di valore consistente.

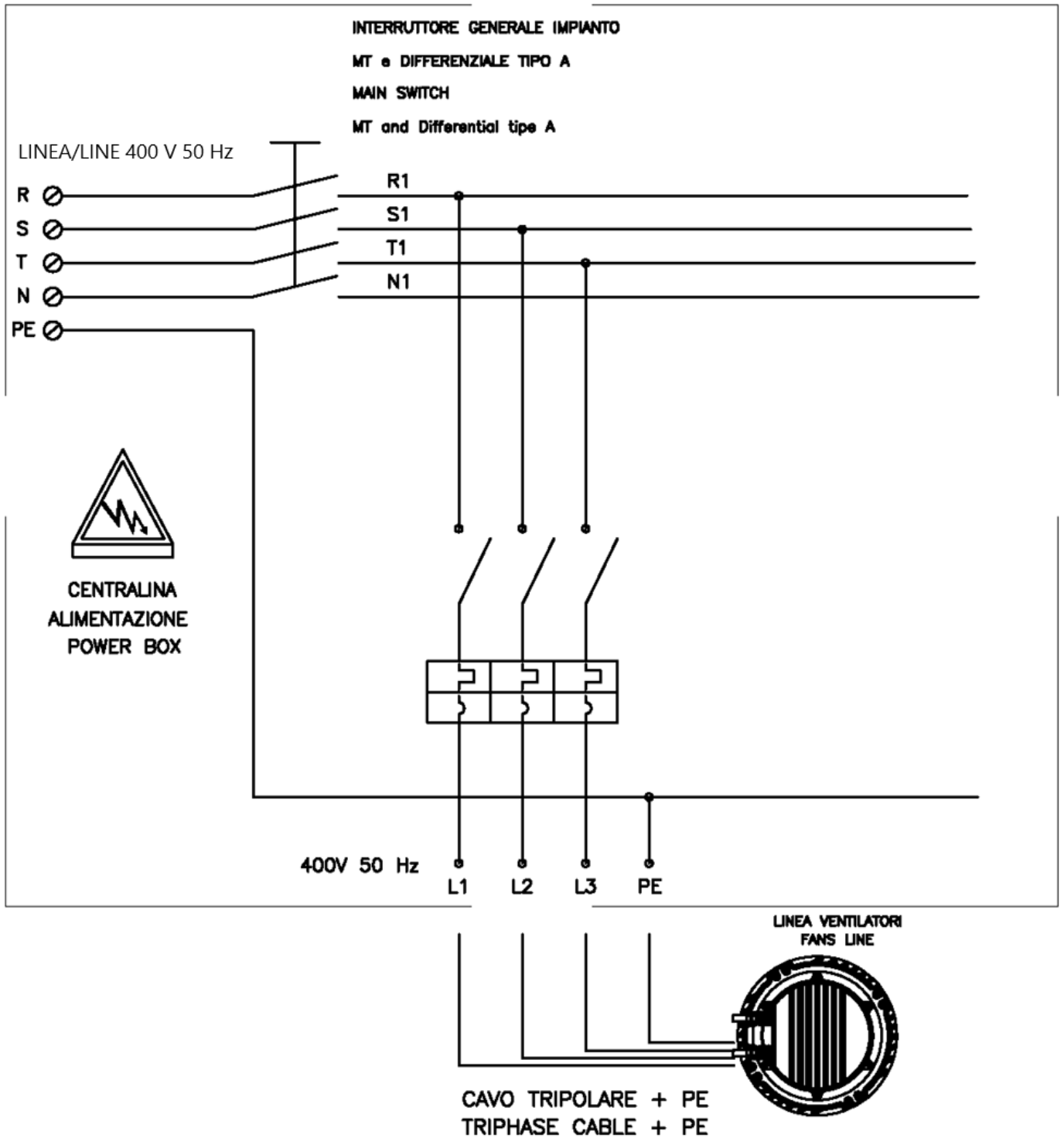
Ogni destratificatore ha una corrente di dispersione di 2 mA.

Dedicated line suitably protected with Magnetic-Thermal Switch and Differential Class A with a sensitivity of 300 mA.

The line must be taken downstream of the main switch of the system and be independent of other lines that feed the existing loads.

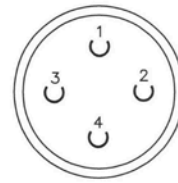
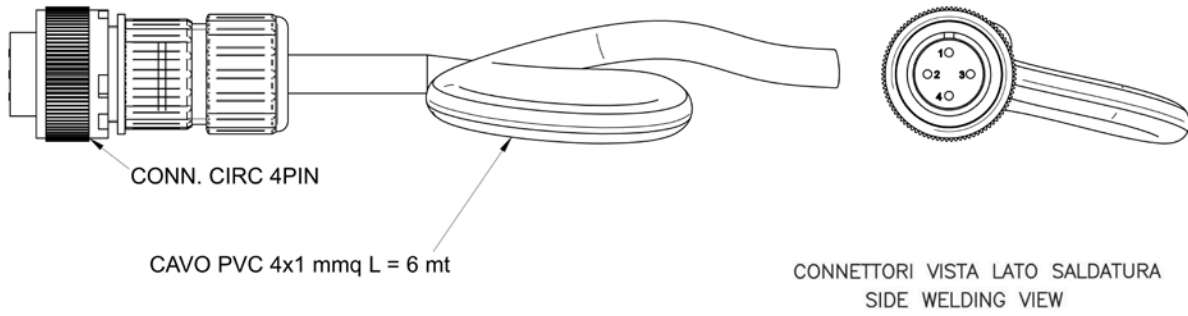
The operator will consider whether to keep or eliminate the Differential upstream of the load distribution. It could create problems in the case where the leakage current to ground is a substantial value.

Each HVLS has a leakage current of 2 mA.



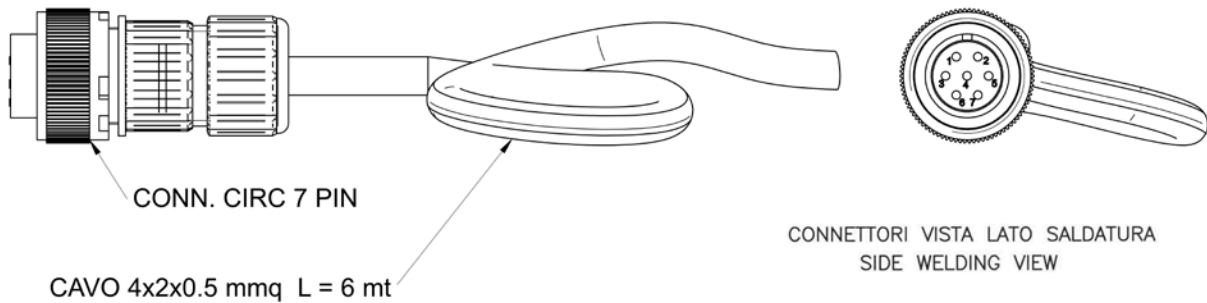
Hurricane series – Assembly instructions

CONNETTORE ALIMENTAZIONE / SUPPLY CONNECTOR



- PIN
- 1 : L3 Nero - Black
 - 2 : L2 Marrone - Brown
 - 3 : L1 Grigio - Gray
 - 4 : PE Giallo/Verde - Yellow/Green

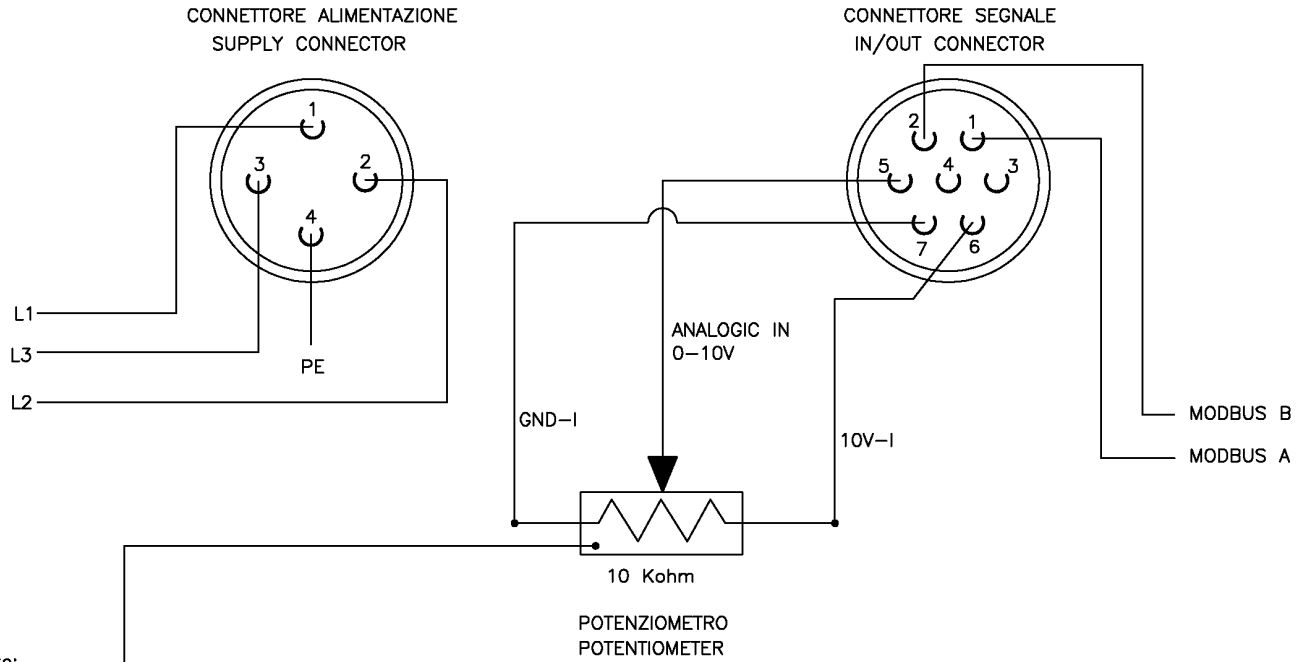
CONNETTORE SEGNALE / IN/OUT CONNECTOR



- PIN
- 1 : MODBUS A -----Giallo - Yellow
 - 2 : MODBUS B -----Verde - Green
 - 3 : REVERSE -----Rosa - Pink
 - 4 : START -----Blu - Blue
 - 5 : ANALOGIC IN (0-10V)-----Marrone - Brown
 - 6 : +10V-I -----Grigio - Gray
 - 7 : GND -----Bianco - White

POTENZIOMETRO / POTENTIOMETER

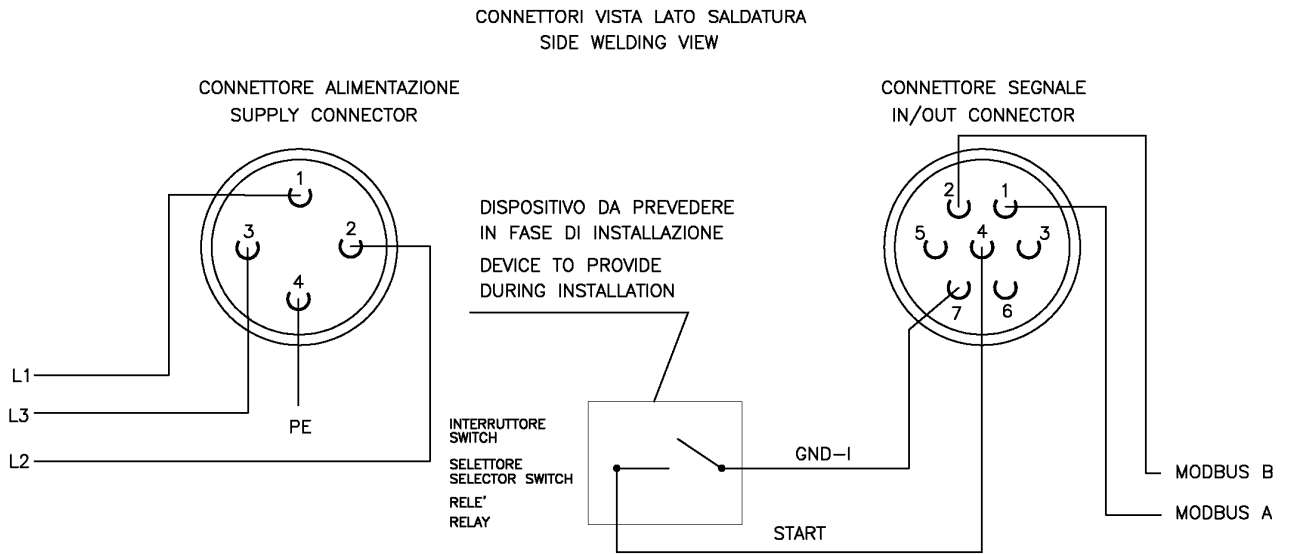
CONNETTORI VISTA LATO SALDATURA
SIDE WELDING VIEW



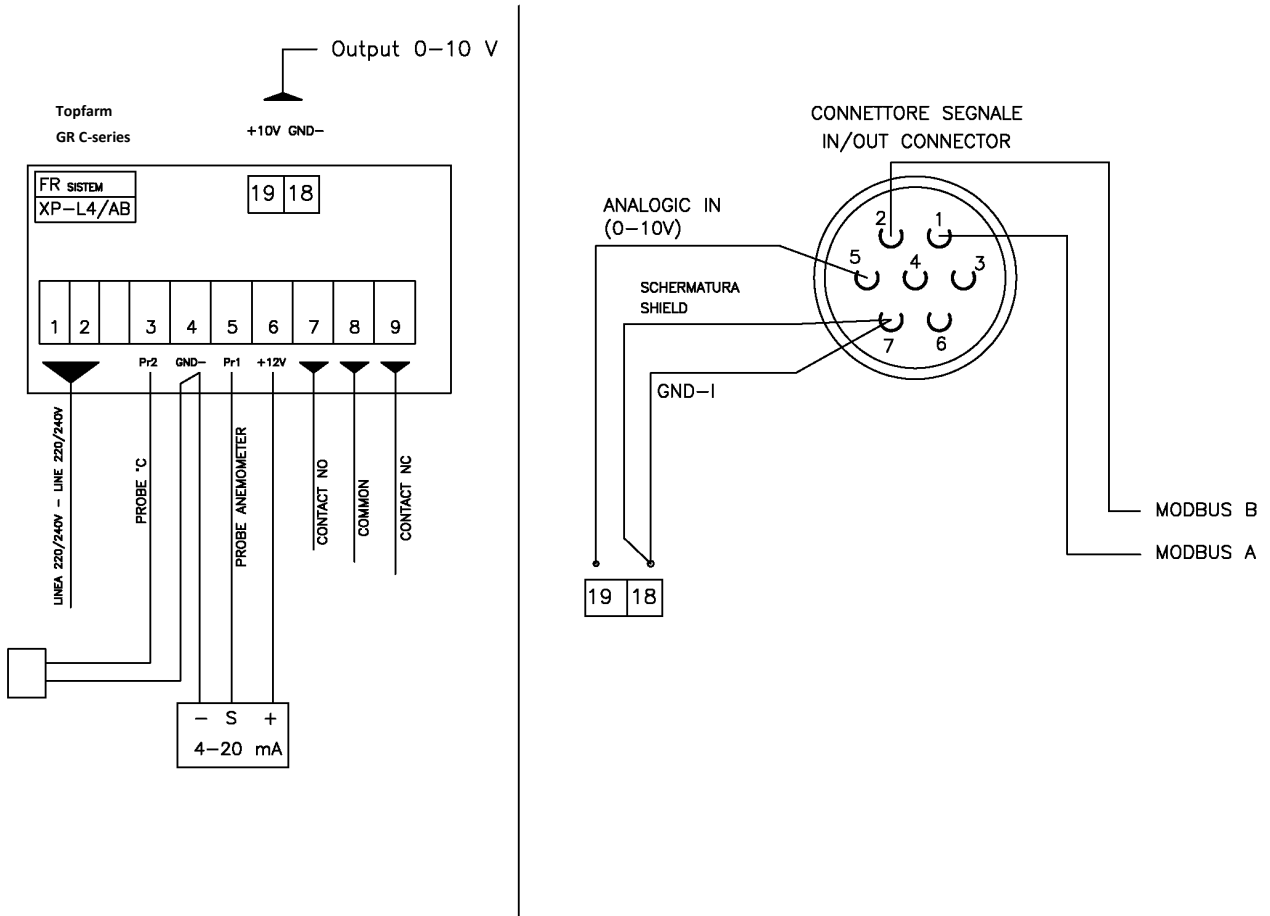
Note:


- 0 Volt to 0.5 Volt : Motor in Stop
- 0.5 Volt to 9.5 Volt : Motor run Low to Max speed
- 9.5 Volt to 10 Volt : Motor run at Top speed

SWITCH



TOPFARM CONTROL UNIT CONNECTION / TOPFARM CONNESSIONE CENTRALINA



	<p><u>Per la connessione alle centraline Topfarm richiedere la documentazione specifica</u></p> <p><u>Please ask for the specific documentation when connecting the Topfarm control unit</u></p>
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8. Annexes

The QR code on the right contains all the information regarding this manual and Gigola & Riccardi S.p.A.

