Euromacchine GROUP FORCE

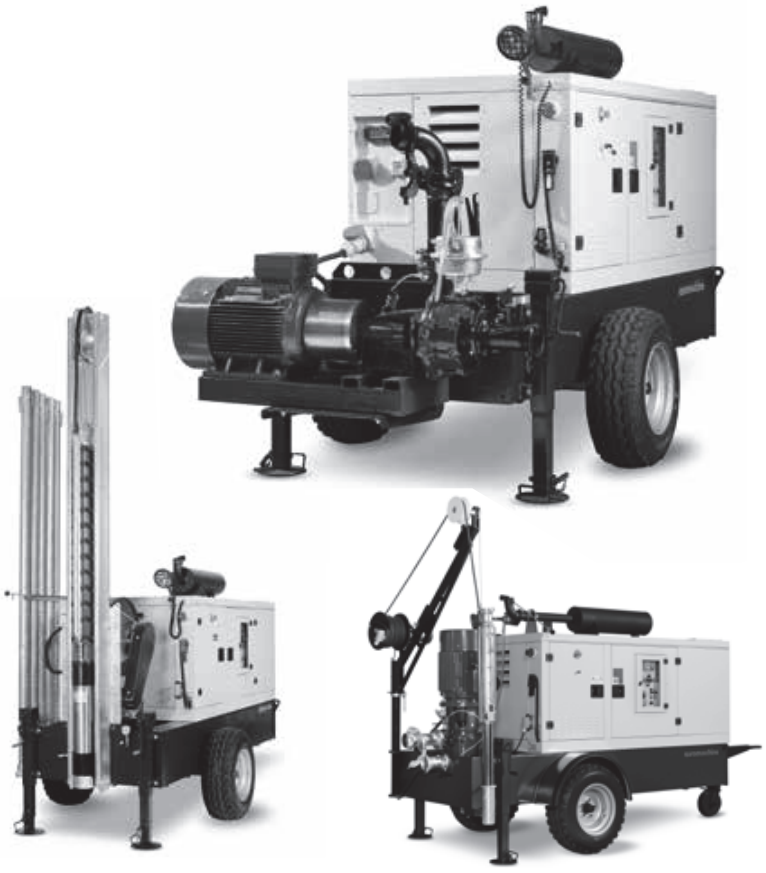
EN

LAMPO GREEN

INSTALLATION, USE AND MAINTENANCE MANUAL AND EC DECLARATION OF CONFORMITY

VERSIONS

- SUBMERSIBILE
- DOUBLE PUMP
- HORIZONTAL



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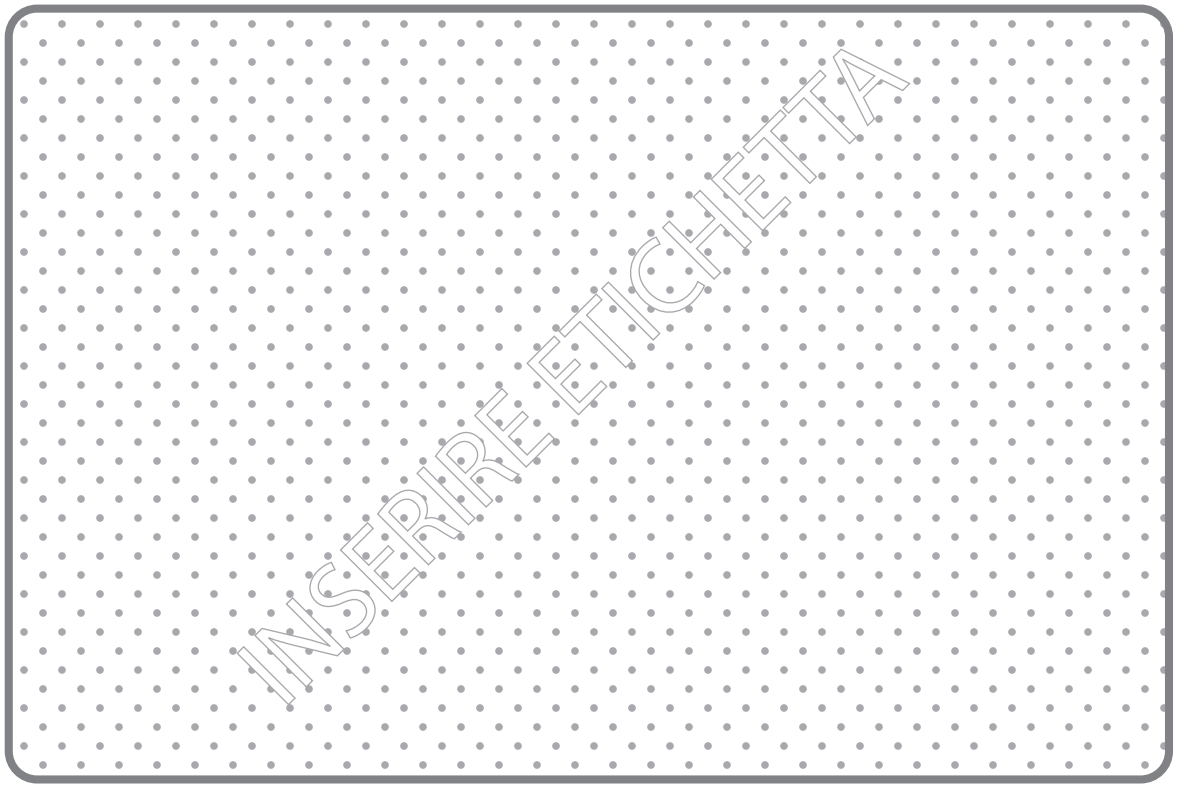
2019

IMPORTANT
THOROUGHLY READ BEFORE USE
KEEP FOR FUTURE REFERENCE

Responsibilities
We are constantly committed to improving accuracy of the information published in each Manual, but inaccuracies may occur.
We accept no liability for any errors and omissions or for any damage resulting from the use of this document.

Rev. 0 10/08/2017



GENERAL INDEX

TECHNICAL SERVICE

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0 INTRODUCTION

This manual has been designed to provide the Final User with an essential instrument for the correct use of the Machine.
It is therefore advisable that the operators responsible for the use of this machine thoroughly read the manual, in order to optimise the machine performance and operate in total safety.

In this way the operator can be aware of the problems related to the machine and the product being processed.

The operator and the qualified technician are obliged to read and understand the content of this manual, which must be kept intact and be an integral part of the machine.

Before making the machine operational, carefully read the technical instructions contained in this document and strictly follow the indications herein. Keep this manual and all the attached documents in a place accessible to and known by all users (operators and maintenance personnel).

This Use and Maintenance Manual is an integral part of the machine and aims at providing all information required for:

Transport and Handling	Handling and moving the machine, packed and unpacked in safe conditions;
Assembly and Installation, Commissioning, Decommissioning	Correct machine installation, commissioning and decommissioning in safe conditions and in compliance with the current regulations that protect the health of workers and the environment;
Setting, Training / Programming	Correct awareness of the operators with respect to the safety issues; specific training of personnel for correct use of the machine;
Operation, Setup, Full operation	In-depth knowledge of its operation and its limits; its correct use in safe conditions;
Cleaning, Maintenance, Troubleshooting	Carry out maintenance operations in a correct and safe manner.

The managers of company departments where this Machine will be installed are obliged, according to the regulations in force, to thoroughly read this Instruction Manual and make it read to operators and maintenance operators in charge, for the parts within their competence, and to verify they have understood such parts. The time spent for this purpose will be widely rewarded by the correct operation of the machine and its use in safe conditions.

This document assumes that in the plants where the machine is installed the current standards on safety and hygiene at work are observed.

Instructions, drawings and documents contained in this Manual are of a confidential technical nature, strictly owned by the Manufacturer and cannot be reproduced in any manner, either in whole or in part.

The Manufacturer reserves the right to update its production, and the applicable use and maintenance manual accordingly, with no obligation to inform the Final User of the amendments occurred.
The Final User is also responsible for making sure that, if this document is amended by the Manufacturer, only the updated versions of the Manual are actually present in the points of use.
The Final User can request from the Manufacturer an update or a new copy of the use and maintenance manual, providing the following information:

- The machine model/type;
- The machine serial number;
- The revision date of the manual.

In case of transfer of the machine to a third party, the Final User is invited to transfer also this Instruction Manual, together with the complete use and maintenance documentation, communicating the name and the address of the new Final User to the Manufacturer. Copyright:
This Instruction Manual is the exclusive property of the Manufacturer and therefore cannot be copied, reproduced, transmitted to third parties, except together with the machine itself, in whole or in part, without the express written authorisation of the owner.

The Final User is informed that any criticisms, remarks or suggestions by the user, aimed at improving this Instruction Manual, will be appreciated by the Manufacturer.

0.1 GUIDELINES FOR INSTRUCTION MANUAL READING

This Manual is divided into independent chapters, each of which is addressed to a specific subject (Ref. Para 0.6) whose skills required to operate the machine in a safe manner are defined.

The sequence of chapters corresponds to the temporal logic of the machine lifecycle.

Terms, abbreviations and pictograms are used to facilitate the immediate understanding of the text.

The cover and/or Par. 1.1 contain the identification data of the machine, such as Machine Type, Model, Serial Number, Manufacturer and Year of Manufacture.
The cover and all the pages contain the date and revision of the Instruction Manual.

ABBREVIATIONS
Sect. = Section
Chap. = Chapter
Par. = Paragraph
Pag. = Page
Fig. = Figure
Tab. = Table

UNITS OF MEASUREMENT
The units of measurement used are those provided for by the International System (IS) in accordance with Directive 80/181/EEC.

Reading the pictograms related to the interested subjects:
The pictograms provided for in Par. 0.6 addressed to the subjects involved in the indications provided are present in the index and at the beginning of each paragraph

PICTOGRAMS RELATED TO THE INSTRUCTION MANUAL

	**HAZARD**	HAZARD: this word indicates a hazard with high level of risk that, if not avoided, results in death or serious injury.
	**WARNING**	WARNING: indicates a hazard with medium level of risk that, if not avoided, could result in death or serious injury
	**ATTENTION**	ATTENTION: indicates a hazard with low level of risk that, if not avoided, could result in minor or moderate injury.
	**IMPORTANT NOTE**	*General notes useful for the correct consultation of the document*

The descriptions preceded by these symbols contain very important information/provisions, in particular with regard to safety. Failure to comply with them may involve:

- Hazards for operator safety;
- Injury even serious to the machine operators (in some cases even death)
- Loss of contractual warranty;
- No liability of the Manufacturer.

0.2 PRESERVATION AND VALIDITY OF THE INSTRUCTION MANUAL

The Instruction Manual must be preserved with care and must accompany the machine in all the changes of ownership of its lifecycle.
Preservation must be facilitated by handling it with care, with clean hands and not placing it on dirty surfaces.
No parts can be removed, torn or arbitrarily amended.
The Instruction Manual must be filed in a place protected against moisture and heat and in the vicinity of the machine to which it refers.
The Manufacturer, at the request of the Final User, can provide further copies of the Instruction Manual of the machine.

Validity of the Instruction Manual: the user is reminded that this Instruction Manual reflects the state of technical and technological knowledge used in the construction of the machine that applies at the moment of its commercialisation, and therefore it cannot be deemed unsuitable and obsolete if it has subsequently been updated according to new expertise.

0.3 INSTRUCTION MANUAL UPDATE METHOD

The Manufacturer reserves the right to amend the project and improve the machine without communication to the Final Users and without updating the Instruction Manual already delivered to the Final User.
However, in case of amendments to the machine installed at the Final User premises, agreed with the Manufacturer and involving the amendment of one or more chapters of the Instruction Manual, the Manufacturer will send the addressees of the Instruction Manual involved the chapters involved in the amendment, with the new global revision model of it.
It is the responsibility of the Final User, following the instructions available together with the updated documentation, replace in all copies owned the old chapters with the new ones, the initial page and the index with those with the new revision level.
The Manufacturer is responsible for the descriptions given in Italian; any translations cannot be checked in full, so if an inconsistency is detected, it is necessary to refer to the Italian version and, if necessary, contact the Manufacturer's technical office, which will make the amendment deemed appropriate.

Should the Instruction Manual become illegible or in any case difficult to consult, the Final User is obliged to request a new copy to the Manufacturer before performing any operation on the machine

It is strictly forbidden to remove or rewrite any part of the Instruction Manual

Instructions, drawings and documents contained in this Instruction Manual are of a confidential nature, strictly owned by the Manufacturer and cannot be reproduced in any manner, either in whole or in part, without the prior authorisation of the manufacturer.

The Final User is required to comply with the instructions contained in this Instruction Manual and in the technical documentation referred to in the contract.

The Manufacturer is not responsible for any inconvenience that may arise as a result of the incorrect use of these recommendations.

0.4 ADDRESSEES OF THE INSTRUCTION MANUAL

This Instruction Manual is intended only for the subjects indicated in Par. 0-6.
Other figures are also mentioned in the various chapters, always referable to the Qualification of the interested subjects of Par. 0.6, such as:

Exposed person - Personnel not in charge
This means any person fully or partly inside an hazardous area.

Operator - Personnel in charge
This means the person(s) in charge of installing, operating, adjusting, cleaning, repairing and moving a machine and carrying out its maintenance.

Qualified personnel or qualified operator
This means the persons who have attended specialisation courses for special tasks (e.g.: electricians) and have experience in relation to the installation, commissioning and maintenance, repair and transport of the machine.

Intended Use of the Machine
The machine is intended for an industrial use, and therefore professional and not generalised, for which its use must be entrusted to qualified personnel, in particular that:

- Have reached the age of majority;
- Are physically and psychically fit to perform work of particular technical difficulty;
- Have been suitably trained to the use and maintenance of the machine;

- Have been judged suitable to carry out the task assigned to them by the employer;
- Are able to understand and interpret the Instruction Manual of the operator and the safety precautions;
- Know the emergency procedures and their implementation;
- Possess the skills to operate the specific type of machine;
- Are familiar with the specific rules;
- Have understood the operating procedures defined by the Manufacturer of the machine.

0.5 GLOSSARY AND PICTOGRAMS

This paragraph lists the uncommon terms or those with meaning different from the common one.
The abbreviations used and the meaning of the pictograms used to indicate the operator qualification and the machine status are explained below. Their use allows providing quickly and univocally the information required for the correct use of the machine in safe conditions.

GLOSSARY (ANNEX I P. 1.1.1 DIR. 2006/42/EC)	
HAZARD	*A potential source of injury or damage to health;*
HAZARDOUS AREA	*Any area inside and/or in the vicinity of a machine in which the presence of a person poses a risk for the safety and health of that person*;
OPERATOR AREA	*Area in the vicinity of the machine where the person in charge of the operation of the machine can operate in the absence of hazards (wearing and complying, in any case, with the provisions of the Regulations in Force on prevention at the workplace)*;
EXPOSED PERSON	*Any person fully or partly inside an hazardous area;*
OPERATOR	*The person(s) in charge of installing, operating, adjusting, cleaning, repairing and moving a machine and carrying out its maintenance;*
RISK	*Combination of likelihood and severity of an injury or damage to health that may arise in an hazardous situation;*
GUARD	*Element of the machine specifically used to ensure protection through a physical barrier;*
PROTECTION DEVICE	*Device (other than a guard) that reduces the risk, alone or associated to a guard*;
INTENDED USE	*Use of the machine in compliance with the information provided in the instructions for use;*
REASONABLY FORESEEABLE MISUSE	*Use of the machine in a manner different from that indicated in the instructions for use, but which may arise from the easily predictable human behaviour;*

OTHER DEFINITIONS	
HUMAN-MACHINE INTERACTION	*Every situation in which an operator is interacting with the machine in one of the operational phases at any moment in its lifecycle*;
QUALIFIED TECHNICIAN	*Specialised person, properly trained and qualified to carry out connection, installation and assembly operations of the machine; use special equipment (lifters, forklifts, etc.); perform ordinary or extraordinary maintenance operations, particularly complicated or potentially hazardous to be carried out by the operator*;
OPERATOR QUALIFICATION	*Minimum level of skills that the operator must have to perform the operation described*;
OPERATOR NUMBER	*Number of operators suitable for optimally perform the operation described and resulting from a careful analysis carried out by the Manufacturer, so that the use of a different number of employees could prevent the expected result or endanger the safety of the personnel involved;*
MACHINE STATUS	*The machine status includes the operating mode, for example automatic running, jogging inching operation, stop, etc., the condition of the safety devices present on the machine such as protectors included, protectors excluded, emergency stop pressed, type of insulation of the sources of energy, etc.*;
RESIDUAL RISK	*Risks that remain despite the integrated protection measures adopted in the machine design and despite the protections and complementary protection measures adopted;*
SAFETY COMPONENT	*Intended to fulfil a safety function;* *The failure and/or malfunction of which endangers the safety of persons.* *(e.g. lifting tool, fixed, mobile, adjustable guard, etc., electrical, electronic, optical, pneumatic, hydraulic device, which interlocks a protector, etc.);*

0.6 PICTOGRAMS RELATED TO THE QUALIFICATIONS OF THE INTERESTED SUBJECTS

SYMBOL	DESCRIPTION
	Generic Labourer: *operator without specific skills, able to perform only simple tasks according to the instructions received by qualified technicians. Material handling help.*
	1st level machine operator: *operator without specific skills, able to perform only simple tasks, i.e. the operation of the machine through the use of the buttons available on the push-button panel, operations for loading and unloading the materials used during processing, with the protections installed and active; s/he is not enabled to use the machine with jogging inching operation and is not enabled to enter the yellow and red areas provided for in the layout.*
	Operator of lifting and handling means: *operator qualified for the use of means for lifting and handling of materials and machines (strictly following the instructions of the Manufacturer), in compliance with the laws in force in the country of the machine Final User.*

SYMBOL	DESCRIPTION
	Mechanical maintenance operator: *qualified technician, able to use the machine in normal conditions, to make it work with protections disabled, to operate on the mechanical components to make the necessary adjustment, maintenance and repair operations. Typically s/he is not enabled to work on live electrical systems.*
	Electrical maintenance operator: *qualified technician, able to use the machine in normal conditions, to make it work with protections disabled, in charge of all the electrical operations for adjustment, maintenance and repair. S/he is able to operate on live electrical cabinets and junction boxes.*
	Manufacturer's Technician: *qualified technician provided by the Manufacturer to carry out operations of a complex nature in particular situations or, in any case, according to the agreements with the Final User. The skills are, as the case may be, of mechanical and/or electrical and/or electronic and/or software type.*

0.7 TERMS AND CONDITIONS OF SALE

Art. 1 - Contract

All commercial relations between EUROMACCHINE SRL (hereinafter referred to as Seller) and the Customer, are regulated by these General Terms and Conditions of Sale.
Every order made by the Customer, also in case of simple execution of the contract by means of conclusive action, implies the acceptance and hence the full application of these general terms and conditions of sale. The Parties may derogate from them only in writing, and also in such case, these general terms and conditions will continue to apply in the not derogated parts.

Any general terms and conditions set by the Customer will not be implemented, not even partially, unless expressly agreed in writing by the Seller.

These General Terms and Conditions of Sale apply also in case of split, divided or continuous sales.
Purchase orders must be made in writing and sent by mail, fax or other notification system.

The contract is concluded when the order is confirmed in writing by the Seller or when the offer is accepted in writing by the Customer. Every order, even if concluded with Agents or representatives of the Seller, can be considered as final only after the sending of the Seller's order confirmation.

Art. 2 – Characteristics of the Products – Modifications.

All technical information, data and prices relevant to the products contained in catalogues, brochures, circular letters, adverts, illustrations and price lists or similar documents shall be binding only insofar as they are expressly referred to in the contract.

The Seller reserves the right to modify the technical data of the products, without any prior notice.

All purchase support information is to be regarded as simple general information material not referring to the real characteristics of every single product.

Performance and power and consumption data supplied by the Seller and/or manufactures, are nominal values with tolerances that refer to ISO-CEI-UNI regulations.

Art. 3 - Delivery

Unless otherwise agreed, the delivery of the Products is Ex Works (EXW) (Incoterms 2010 version), also when the shipment, in whole or part of it, is under the Seller's responsibility.

Unless otherwise agreed, products shall be considered sold and delivered, and the risks related to them transferred, when the goods are entrusted to the first carrier.

The agreed delivery term is approximative and not mandatory for the Seller, and in no case the Customer shall be entitled to make any claim for delays concerning Product delivery, provided that the delay does not exceed the term of 60 days.

Any complaint relevant to the packaging conditions, product quantity, number or external characteristics (evident defects), shall be reported to the Seller by means of registered letter with return receipt or other means ensuring evidence of the date of receipt (fax, special courier, email with return receipt), within 8 days from receipt of the products and in any case, under penalty of forfeiture, no later than 12 (twelve) months from delivery.

In case of force majeure, strikes at the premises of the Seller and/or its suppliers, and/or its carriers, or any other reason outside its control, shall justify a derogation of the set delivery date or, if required, the cancellation, in whole or in part, of the order.

The Seller reserves the right to prevent that the transiting goods (stoppage in transit) reaches the Customer in case of declared or existing insolvency of the Customer.

Art. 4 – Defects and dissimilarities

After the delivery, the Customer shall examine the Products.

Any dispute or order complaint relevant to the execution of the contract or to easily identifiable defects of the supply shall be notified in writing to the Seller's premises within 8 days from the date of receipt of the Product. In any case, any dispute or complaint does not entitle the Customer to suspend or delay the agreed payments.

Art. 5 - Warranty

Any time an order is processed by the Seller, this warranty is fully and automatically accepted by the Customer, with no reservations, also if in opposition with the general or special terms and conditions contained in contracts, contract proposals or order forms prepared by the Customer.

The warranty offered by the Seller concerning new Products depends on whether the components are supplied by the Manufacturer (motors/engines, alternators, batteries): in this case the Manufacturer warranty shall be applied for the duration of one solar year starting from the moment of delivery. Otherwise, the warranty depends on whether the components are supplied by the Seller: in which case this warranty shall apply.

The warranty covers the only replacement of damaged or non-complying Products, excluding any other liability both contractual and non-contractual, for damages, both direct and indirect, to property or people, also third parties, as a consequence of these defects.

Replacement under warranty is under the full responsibility of the Seller. However, the Customer undertakes to notify the Seller - in writing and within 8 days from the date of receipt of the Products - about those Products that may result faulty or non-complying with the order.

Every compensation claim will be excluded.

This warranty, which is granted for the duration of 12 (twelve) solar months starting from the date of delivery of the Products or from any testing, is not valid, and therefore not applicable, in the following cases:

- If the Customer makes changes to the Products on its own initiative;
- If the products are used in conditions other than those stated in the contract;
- If the Customer has not fulfilled obligations relating to agreed payments;
- If defects or faults are caused by malpractice in storage by the Customer, or by an improper use of the Products.
- Failure to comply with the installation rules and any other indication or instruction mentioned in the technical notes supplied with the Products;
- Wrong dimensioning with respect to the use or faults in the installation, i.e. failure to use the required precautions to ensure optimum operation;
- If defects or faults are caused by malpractice in use by the Customer, by overload, wear due to prolonged use over time, or by an improper use of the Products.

- If the handling and storage of the Product are not carried out according to the criteria and instructions set by the safety rules;
- If the Product has not been correctly commissioned and/or serviced and/or lubricated exclusively by specialised personnel of the Seller or other personnel authorised by the latter at the scheduled deadlines indicated in the "Use and Maintenance Manual" supplied with the Product;
- If no maintenance interventions required by the manufacturer of the components (such as motor/engine, alternator, etc.) have been carried out due to excessive use of the machine, to the use of non-original spare parts, to any repair or change performed by personnel not authorised by the Seller.
- If the place of use of the Product is other than the one agreed or is to be changed, is in areas not accessible with standard vehicles, or the Products must be used in dusty places, salty climates, in presence of corrosive substances, high humidity, harsh environmental conditions - low temperatures (lower than 5°C) or high temperatures (higher than +40°C);
- Anomalies or faulty operation due to unsuitable fuel;
- Corrosions, encrustations or breakages due to stray currents, condensate, water harshness or acidity, build-up of muds or limescale;
- Accidental and force majeure causes such as frost, overheating, fire, theft, natural phenomena (hail, whirlwinds, lightening, flooding, earthquakes), acts of vandalism, incidents, etc.;
- Inefficiency of pipes, valves, filters or parts of the system which the Product relies on;
- Unsuitable installation of the grounding system for the machines that require it

Lastly, all those parts that for their nature are subject to normal wear and consumption (engine oil, filters, belts, etc.) are also excluded from the warranty.

Art. 6 – Used products

The warranty provided under previous art. 5) does not apply to used Products supplied by the Seller. These products are sold as seen to the Customer in the state in which they were at the time of delivery.

In exceptional cases, by way of derogation from what stated above, the Seller may grant the warranty to used Products but this shall be expressly indicated in writing in the order confirmation.

In any case, the following components are not covered by any type of warranty: ignition battery, electrical components, instruments and all those parts whose overhaul or replacement fall within the standard and extraordinary maintenance operations (such as fluid leakage, seals and gaskets, calibrations, adjustment, etc.).

Art. 7 – Limitation of Seller's liability.

The warranty referred to in article 5 incorporates and replaces the warranties or responsibilities provided for by the Italian Law and by the law of the Customer's country and excludes any other Seller's liability that may arise from the supplied Products.

Art.8 – Returned products

Products shall be returned only if previously authorised by the Seller.

Art.9 – Prices and payment conditions

Unless otherwise agreed, the prices of the Products shall always be considered as EX-works, in EURO or in the currency indicated in particular conditions, and do not include packaging, shipment and transport expenses, nor VAT or other turnover tax or customs duties.

The prices of the Products shall be considered fixed and invariable if the delivery is carried out within 60 days from the order; for deliveries after this term, the relevant price list will apply.

In case of no or delayed payment of the price at the agreed due dates, the Seller will have the right to suspend any further delivery and/or to cancel any remaining orders.

The payment shall be made within the terms and with the methods agreed and indicated in the order confirmation or proposal.

Unless otherwise agreed between the Parties, any bank fees or charges in relation to the payment shall be borne by the Customer.

In case of payment delay, with respect to the agreed term, the Customer shall pay to the Seller the default interest in accordance with Legislative Decree 231/2002 as amended by the Legislative Decree 192/2012, and following amendments, starting from the date of receipt of the written request.

Art. 10 – Reservation of title

The delivered Products will remain the property of the Seller until the payment of the whole price has been fulfilled; the Customer undertakes to do what necessary to make the reservation of title effective in the most favourable form for the Seller.

The Customer also undertakes to collaborate with the Seller to the extent necessary to protect its right to property.

Art. 11 - *Authorisations*

The Customer will take care of any taxes and charges, both present and future, relevant to the Product, as well as to comply with the requests of authorisation for the sale of Products in the Territory.

Art. 12 – Court of jurisdiction

For any dispute relevant to or, in any case, related to this contract, and also in case of call under warranty and consolidation of actions, the Court of jurisdiction is the Court of Treviso - Italy.

However, in derogation to what stated above, the Seller shall have the right, in any case, to bring the action to the competent court at the Customer's premises.

Art. 13 – Applicable law– authentic text

These General Terms and Conditions of Sale and the rights and obligations contained in them are governed by the Italian law, and as far as applicable and not in conflict with the stipulations provided by this agreement, by the United Nations Convention on Contracts for the International Sale of Goods of Vienna of 1980.

The Italian version of these general terms and conditions of sale, besides being the reference original text, will be the prevailing version in case of versions translated into other languages.

The above-mentioned terms and conditions of sale govern any order supplements.

0.8 PICTOGRAMS RELATED TO THE MACHINE

Most pictograms indicated below are taken from standard UNI EN ISO 7010:2014.

- Pictograms contained in a triangle indicate HAZARD.
- Pictograms contained in a circle impose a PROHIBITION/OBLIGATION.

	Diesel Refuelling operations must be carried out by qualified and authorised personnel only.		Flammable substances In some conditions diesel fuel can be flammable and explosive.
	Harmful fume hazard Do not use the machine indoor.		Electric The operations on electrical equipment must be carried out by qualified and authorised personnel only.
	Noise The system emits more than 80dB. Use the appropriate PPE (hearing protection devices, earplugs, earmuffs).		Crushing Machine levelling operations must be carried out by qualified and authorised personnel only. Pay the utmost attention during hooking / unhooking operations.
	Suspended loads No persons other than the handling operator can stand around the Machine.		Fall of materials Pay the utmost attention that there are no parts of the Machine incorrectly packed or that endanger people and/or things during their handling.

	Safety footwear For protection against a number of materials present near the Machine.		Protective clothing For protection and hygiene at work.
	Gloves For protection against contact with Machine sectors that have cutting parts or sharp edges.		Hearing protection devices For the prevention against noise damage.
	Manual Before starting the operations, it is essential to read the manual.		Cut the voltage Obligation to cut voltage off before maintenance

	Do not touch before having cut voltage off		Do not perform maintenance operations with components in motion
	Do not remove the protections		Do not climb on
	No smoking, no open flames		Access forbidden to unauthorised persons

1 IDENTIFICATION OF THE MACHINE

1.1 GENERAL DESCRIPTION

The LAMPO Multifunction Unit can be used simultaneously as generator set and as motor pump with the possibility of changing the flow rates and pressures through inverter.

The machine consists of an internal combustion diesel engine, coupled with a self-regulating alternator to produce the electricity required for the operation of the submersible centrifugal type electric pump with one or more impellers. The machine is installed on a tank frame provided with helm and wheels that allow transporting it in the vicinity of wells, canals or abstraction areas. The electric pump is associated to the frame by a winch controlled by an electric motor powered by the alternator.

The operation and control of the machine are ensured by an electrical panel provided with a control unit able to protect the engine from issues such as low oil pressure, high temperature of the coolant and a multifunction electronic device for the automated management of the electric pump.

Bounds of feasibility indicated in Par. 6.5.

1.2 INTENDED USE

The machine can be used in all the intended conditions contained or described in this document. Any other condition must be considered as hazardous.

Permitted operations

These are all the operations that by complying with the technical characteristics, operations and processes described in this documentation, do not endanger the safety of personnel in charge and not in charge or cause damage to the machine or to the surrounding environment.

INTENDED PROCESSING

The machine is intended only for use as generator set and for pumping of non-hazardous liquids, a different use, such as the pumping of hazardous and/or flammable liquids, is considered non-compliant with use.

The use of products/materials other than those specified by the Manufacturer, which may cause damage to the machine and hazardous situations for the operator and/or the persons near the machine, is considered incorrect or improper.

All activities not specifically indicated in this manual are forbidden and must be expressly authorised by the Manufacturer.

USE LIMITS

Max. content of solid substances: 20 g/cu.m

Max. sucked fluid temperature: 70°C

Max. operating time with zero flow rate: 2 minutes

CONTRAINDICATIONS FOR USE

The machine must not be used:

- For uses other than those explained in this paragraph, for uses other than or not mentioned in this manual;
- With material other than the one indicated in this paragraph;
- With safety devices disabled or not working;
- In potentially explosive environment;
- Indoor;
- Dry operation;
- A suction pressure lower than the NPSH requested by the relevant pump
- An operating pressure higher than the limits specified in the table of the relevant pump
- A rotation speed higher than the limits specified in the table of the pump
- An operation with safety devices disabled or not working

Misuse of the machine

The type of processing and the technological performance for which this machine has been created impose a series of operations and procedures that cannot be changed unless previously agreed with the Manufacturer. All the procedures permitted are contained in this documentation, any operation not listed and described in this documentation is to be considered not possible and therefore hazardous.

Unintended processing

The only processing procedures permitted are described in the manual, any other processing is to be considered not possible and therefore hazardous.

ENVIRONMENTAL CONDITIONS

The machine has been designed and manufactured to operate in environments that may have the following characteristics:

- Ambient temperature: +5 +40 °C
- Max relative humidity: 50% (at 40°C)
- Altitude: < 2000 m above sea level

Each variation of such characteristics may reduce the average lifecycle of some machine components. Typical examples:

- Ambient temperature = premature deterioration of motors.
- Relative humidity = premature deterioration of gaskets and electronics.
- Altitude = premature deterioration of motors, downgrading of fans.

If the environmental characteristics are significantly different from those listed, it is necessary to contact the Manufacturer's technical service before they become a source of problems.

GENERAL SAFETY

The employer must instruct the personnel on the risks of accident, on the devices available for safety and on the general rules on accident prevention provided for by the Community directives and by the legislation of the country where the machine is installed.

The operator must know the position and operation of all the controls and of the features of the machine.

S/He must also have fully read this manual.

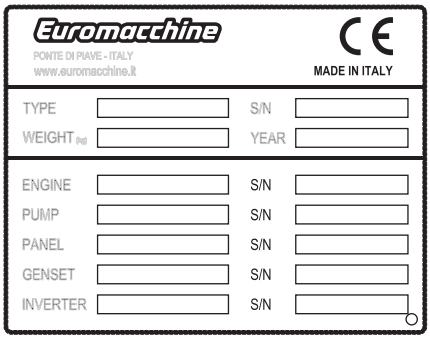
Maintenance operations must be carried out by qualified technicians after the proper machine presetting.

Tampering with or unauthorised replacement of one or more parts of the machine, the adoption of accessories that modify its use, may be the cause of accident risks.

The clothing of those who work or maintain the machine must comply with the essential safety requirements defined by the Community Directives 89/656/EEC and 89/686/EEC and the laws in force in the country.

In order to avoid risks of dragging, entrapment and other, it is recommended not to wear bracelets, watches, rings, necklaces or fluttering clothing

1.3 DATA AND CE MARKING



According to Directive 2006/42/EC the machine must be marked, before commissioning, with the CE marking through which the manufacturer declares, under its own responsibility, that the system is safe for people and things.
The CE plate is fixed to the machine as indicated below.

1.4 TECHNICAL DATA

LA NN XXX

SIZE

VERSION

ICS = Caprari Submersible Pump
IGS = Grundfos Submersible Pump
DPC = Caprari Double Pump
DPG = Grundfos Double Pump
SPB = No Pump
ICH = Caprari Horizontal Pump
IRH = Rovatti Horizontal Pump
ICcH = Corneel Horizontal Pump
ICV = Caprari Vertical Pump
IGV = Grundfos Vertical Pump

The technical data of the machine are indicated in the label placed at the beginning of this manual.

Below is a summary diagram of the main information contained in the machine model code.

1.5.1 SINGLE PUMP VERSION

1.5.2 VERSION WITHOUT PUMP

1.5.3 DOUBLE PUMP VERSION

1.5.4 VERTICAL / HORIZONTAL PUMP VERSION

POSITION	DESCRIPTION	POSITION	DESCRIPTION
1	Soundproofed generator set	14	Exhaust
2	Engine control unit	15	Service socket panel
3	Control panel	16	Indicator light
4	Inverter compartment	17	Electric pump up/down command
5	Emergency button	18	Vertical electric pump
6	Working light	19	Secondary flag
7	Cable winder	20	Main electric pump delivery valve
8	Electric hoist	21	Secondary electric pump
9	Electric pump	22	Secondary electric pump compartment
10	Flag	23	Horizontal electric pump
11	Stabilising feet	24	Suction joint
12	Helm	25	Delivery joint
13	Engine compartment		

Euromacchine GROUP FORCE

I	DICHIARAZIONE DI CONFORMITA'
UK	DECLARATION OF CONFORMITY
F	DECLARATION DE CONFORMITE
D	KONFORMITÄTSERKLÄRUNG
NL	CONFORMITEIITSSVERKLARING
E	DÉCLARATION DE CONFORMIDAD

CE

EUROMACCHINE S.R.L.
Via delle Industrie, 20 - I - 31047 Ponte di Piave TV

I - Dichiara che il prodotto è conforme alle norme:

UK - Declares that the product complies with the following standards:

F - Déclare que le produit est conforme aux normes:

D - Erklärt daß das Produkt mit den folgenden Vorschriften enstpricht:

NL - Verklaat hierbij dat het product overeenkomt met normen:

E - Declara que el producto es conforme a las normas:

UNI EN ISO 12100:2010 - UNI EN ISO 14120:2015 - UNI EN 809:2009+AC:2010 - UNI EN ISO 8528-13:2016
UNI EN ISO 13850:2015 - CEI EN 60204-1:2016 - CEI EN 61439-2:2012

I - e direttive:

UK - and guidelines:

F - et les lignes directrices:

D - und Richtlinien:

NL - en ritchlijen:

E - y las directrices

2006/42/CE
2014/35/UE - 2014/30/UE - 2000/14/CE

I -Persona autorizzata alla redazione del fascicolo tecnico

UK - Person who is authorised to compile the technical file

F - Personne autorisée à rédiger le dossier technique:

D - Person, die bevollmächtigt ist, die technischen Unterlagen zusammenzustellen:

NL - Geautoriseerde persoon aan het bewerken van het technisch dossier:

E - Persona lícita a la redacción de la documentación técnica

EUROMACCHINE S.r.l. - Via delle industrie, 20 - 31047 Ponte di Piave TV

I UK F	Descrizione Description Description	D NL E	Beschreibung Beschrijving Descripción	
I UK F	Modello Modello Modèle	D NL E	Modell Model Modelo	
I UK F	Matricola S/N Numéro de série	D NL E	Seriennummer Serienummer Número de serie	
I UK F	Anno Year An	D NL E	Jahr Jaar Año	

I UK F	Luogo, Data Place, Date Lieu, Date	D NL E	Ort, Datum Plaats, Datum Lugar, Fecha	I UK F	Legale rappresentate Legal representative Représentant légal	D NL E	Gesetzliche Vertreter Wettelijke vertegenwoordiger Rapresentante legal

2 TRANSPORT, STORAGE AND INSTALLATION

2.1 QUALIFIED OPERATORS INVOLVED IN SECTION

2.2 REQUIRED PPE - RESIDUAL RISKS

2.3 HANDLING THE PACKED MACHINE

Case unloading, transport and handling
Upon arrival, the parts of the machine must be unloaded and handled with the maximum care, carefully following the instructions given on the walls of the cases or those contained in this manual.

It is very important to check that the capacity of the single lifting equipment corresponds at least to the loads to be lifted, increased by the safety margins required by the current regulations.

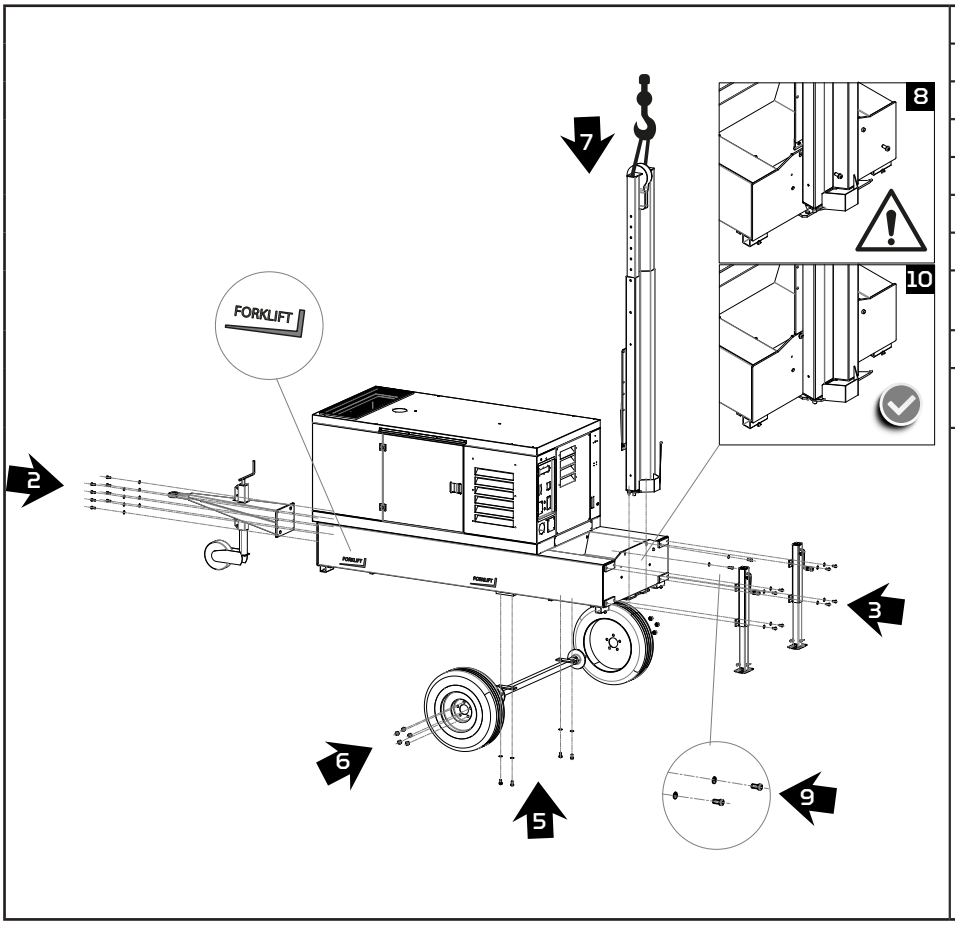
After having unpacked all the components of the machine, verify their status, checking that there are no damaged parts due to the transport.

Otherwise:
- Immediately notify the carrier;
- Inform the MANUFACTURER with registered letter with acknowledgement of receipt or by certified e-mail, sent to the address indicated in the introductory section of this manual.

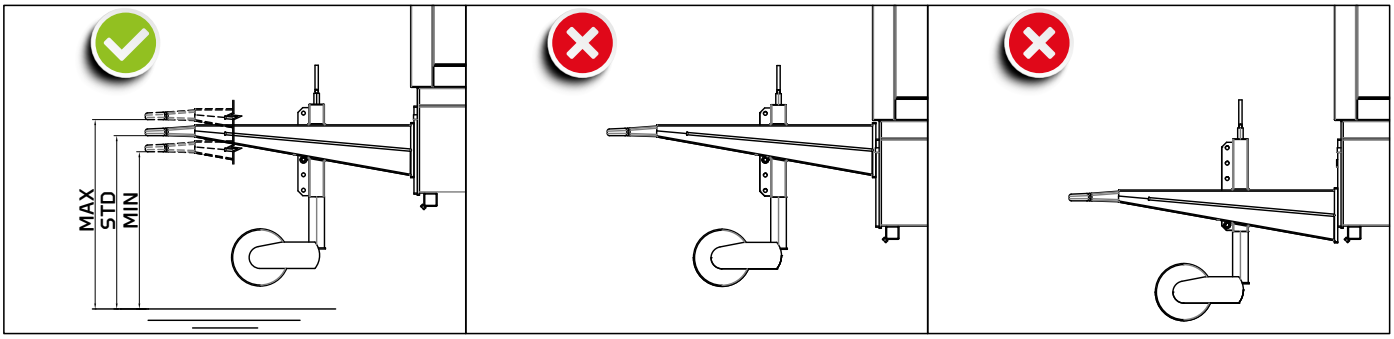
The communication of any damage and/or anomaly must be timely and in any case must be received within 15 days from the date of delivery.

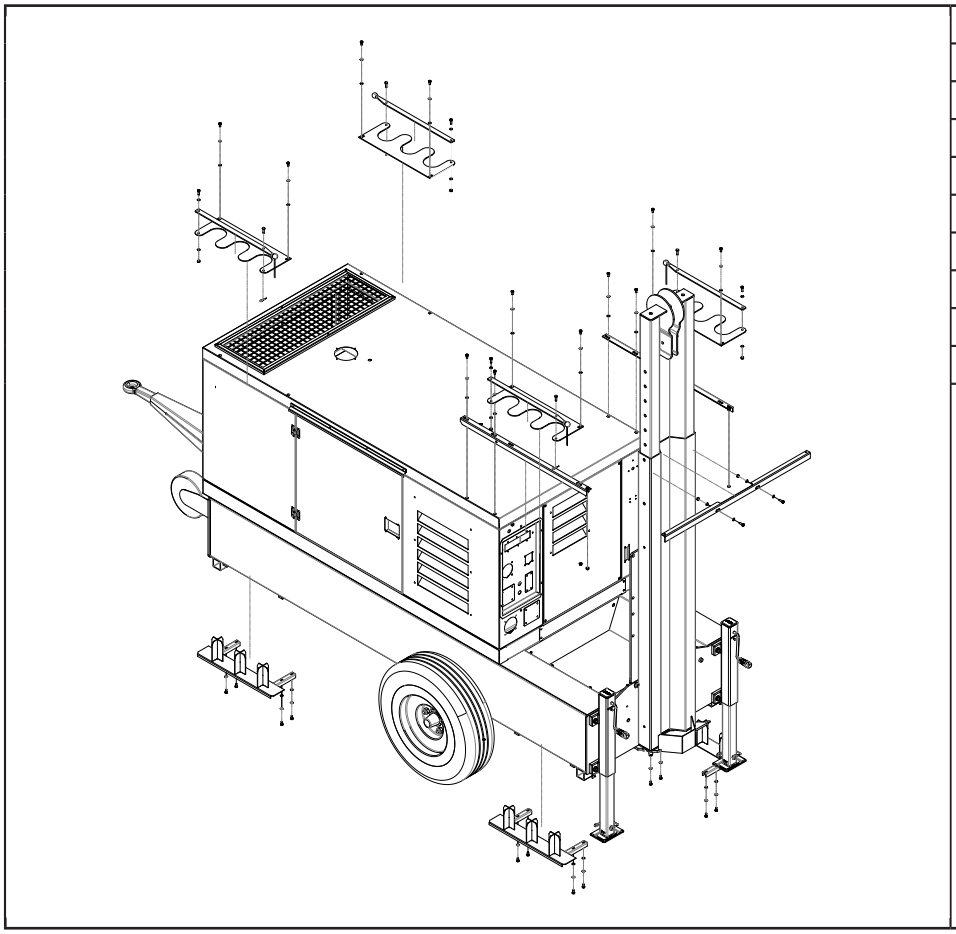
Package disposal
After stacking them separately (wood, cardboard, PP, PE, etc.), it is necessary to dispose of these materials according to the regulations in force and, where possible, to recycle them.

2.4 ASSEMBLY



1 - Lift the Lampo with suitable forklift
2 - Install the helm.
3 - Install the rear stabilisers
4 - Place the machine on the ground
5 - Install the axle
6 - Install the wheels and mudguards, if any
7 - Hook the flag with suitable ropes or chains
8 - Position the flag paying attention to the rear seat and to the lower pins
9 - Fasten the flag to the machine
10 - Check the correct installation of the flag and release it from ropes or chains





2.5 HANDLING THE MACHINE

Unloading, transport and handling
Upon arrival, the parts of the machine, protected only by weather cover, must be handled with the maximum care, carefully following any indications given on them or those contained in this Instruction Manual.

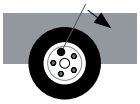
If during lifting the slings come into contact with parts of the machine, it is necessary to intervene, interposing protective materials between the parts, to avoid damage to the machine and the wearing of the sling (highly dangerous). For machine lifting and handling, pay attention to anchor the lifting means at the points indicated by these symbols

Excessive or inappropriate speed
The carriage could swerve and cause the machine overturning.
Respect the speed regulations of your country.

Worn tyres / Unsuitable tyre pressure
Tyres could burst when driving and cause instability. The braking distance is longer. The carriage might be unstable and detach when driving.

- Check the tyres on a regular basis
- Periodically check pressure, depth of the profile and condition of the tyres (see point 5.5.1)

Loss of bolts
The carriage could swerve and detach from the vehicle.
Tighten the wheel nuts again after the first 50 km and after each wheel replacement.
Check that wheel nuts are properly secured (see maintenance table).



Use on the road
Check in point 1.1 of this manual if the carriage is approved for use on the road

2.5.1 HOOKING SYSTEM

The Lampo Green can be equipped with various types of towing eyes according to the customer needs.

2.5.1.1 FIXED TOWING EYES

There are two types of configurations of "fixed" towing eyes, i.e intact with helm.

2.5.1.2 MOBILE TOWING EYES

The system of "mobile" or "removable" towing eyes consists of a support integral to the helm, to which, in addition to the two types of "fixed" eyes, a further model can be applied through a coupling plate.
With the mobile towing eye system it is possible to limit the displacement of the Lampo Green machine.

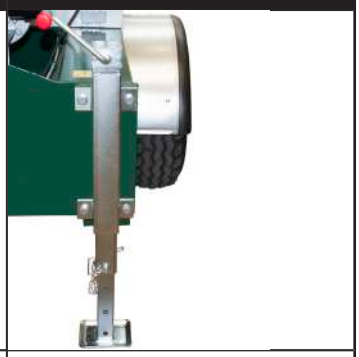
"GERMANY" TYPE - DIN 74054	"ITALY" TYPE - "CUNA"	"MOBILE HOOKS" SUPPORT	"FRANCE" TYPE
			

2.5.1.3 HOOKING

1	2	3
		
Adjust the hook height using the knob	Move the tractor near and hook the Motor Pump, making sure that the hook is firmly fixed.	Lift the rotating wheel and bend it

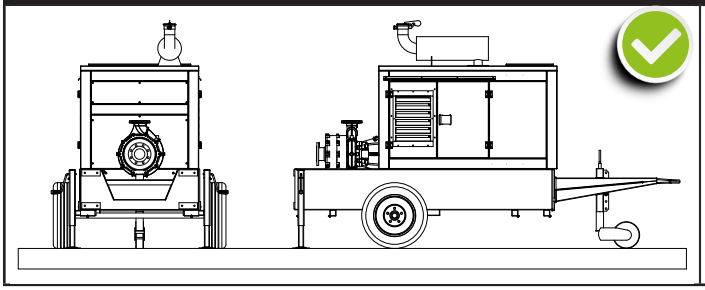
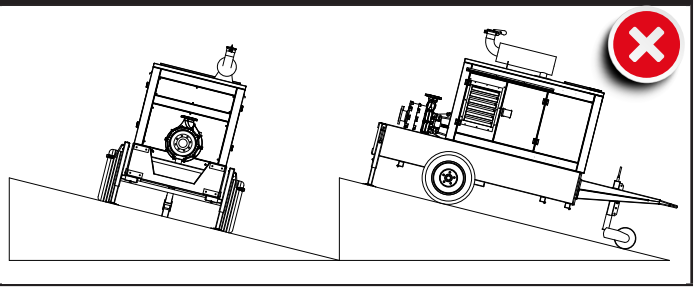
Risk of crushing / impact during trailer connection!
You can be hit / crushed near the coupling when manoeuvring or connecting the trailer.
Activate the towing vehicle very carefully up to the trailer.
Make sure there are no persons near the trailer coupling.
It may be useful to agree the signs with a support person.

2.6 LEVELLING

1	2	3	4
			
Once the working position has been reached, turn the rotating wheel and screw the front stabiliser until the carriage is flat to allow the tractor to be extracted.	Unhook the stabiliser pin, if any.	Insert the stabiliser pin, if any, so as to keep the gap between the base and the ground to a minimum	Turn the handle until the machine is stable

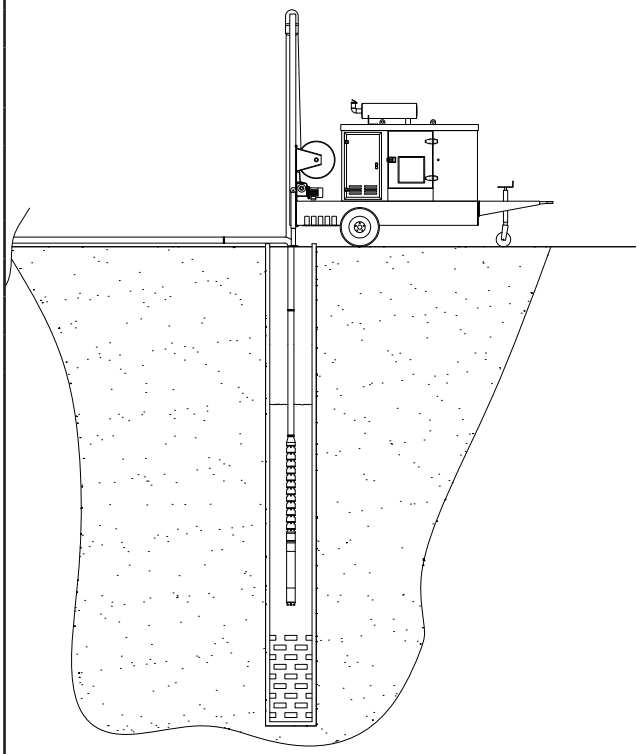
Dips, holes, gravel, mud or any other material not compact must be avoided; soft or uneven surfaces must be avoided as well.

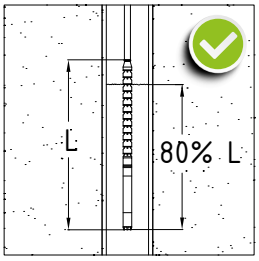
For no reason the machine can be used with stabilisers not resting on the ground.
For no reason the machine can be used on sloping terrain.

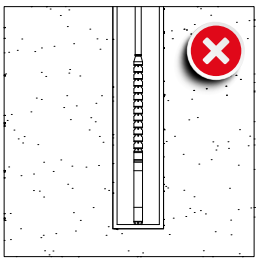
CORRECT INSTALLATION	INCORRECT INSTALLATION
	

Make sure that the machine is always in a horizontal position, both during operation and during transport. If the machine is tilted, fuel leaks may occur.
Do not lift the machine excessively with the stabilisers.

2.7 SUBMERSIBLE ELECTRIC PUMP







During the operation, the operator must ensure that 80% of the electric pump is submersed and that the water quantity in the well is enough to ensure the correct cooling of the electric motor.

The electric pump MUST NEVER be placed on the bottom of the well

3 COMMISSIONING

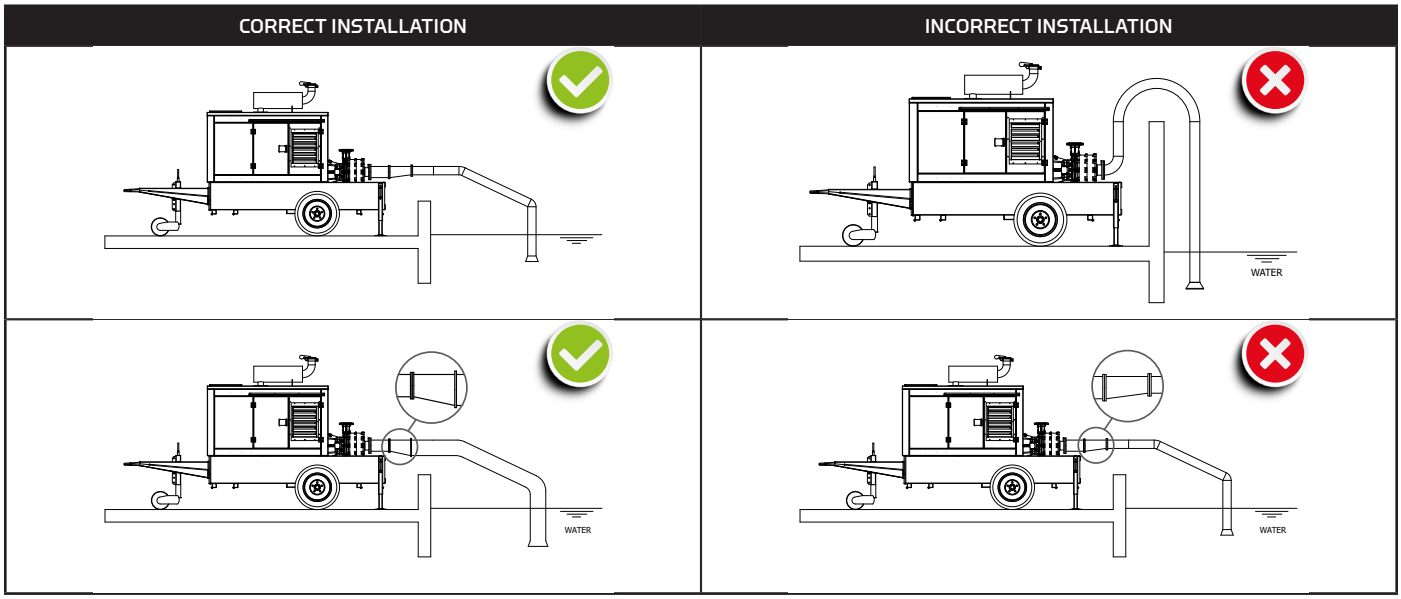
3.1 QUALIFIED OPERATORS INVOLVED IN SECTION

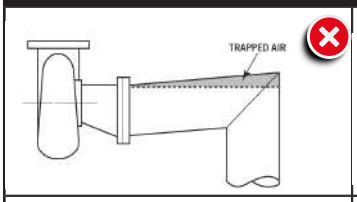
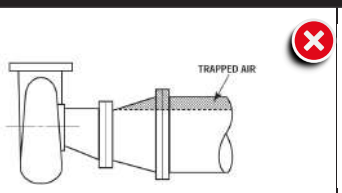
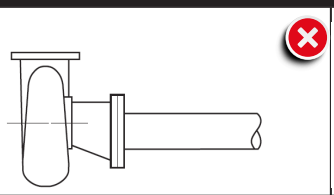
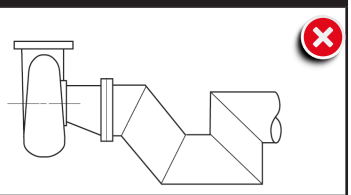
3.2 REQUIRED PPE - RESIDUAL RISKS

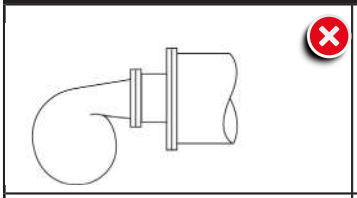
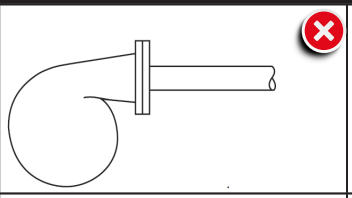
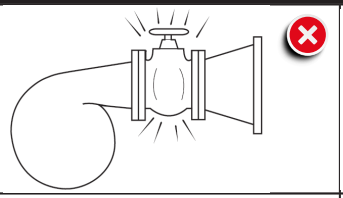
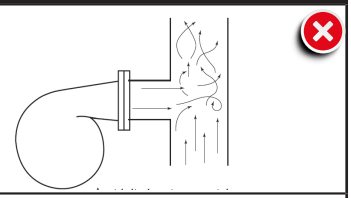
3.3 PRELIMINARY TESTS

Before machine commissioning, it is necessary to carry out a series of checks in order to prevent errors or accidents during its use:

- Check that the machine has not been damaged during assembly/transport phase
- Check the integrity of electrical panels, control panels, electrical cables and pipes
- Check the free movement and the free rotation of all moving parts
- Check all the safety systems
- Check the protections
- Check the signals
- Check the electrical indicators
- Check and if necessary restore the levels of technical fluids (fuel, engine oil and coolant)
- Make sure that the gas exhaust system is correctly installed and that the suction air filter is not obstructed or jammed
- Make sure that the batteries used for the ignition are efficient and their terminals correctly connected
- Check the fuel filter/water separator
- Make sure that the support surface of the machine is stable, even and that the load-bearing capacity is suitable to the weight indicated on the nameplate
- Check that the chemical/physical characteristics of the fluid to move correspond to those specified and that the flow rate and head of the pump correspond to the requested characteristics
- Check that the pump has been filled with water. The motor pump has not been designed for dry operation
- Check that the minimum dynamic level of water is such to avoid the formation of a vortex
- On the suction duct:
  - » check that the NPSH available on the suction line is approx. one metre higher than the NPSH requested by the pump. It is good practice to keep the pressure drops originating from the pipe, elbows, bottom valve and filter within the value of one metre.
  - » Make sure that the pipe does not allow the formation of any air pockets
  - » Use a pipe whose diameter higher than that of the pump suction inlet. This pipe, in the horizontal section, must be positioned in ascending line towards the pump with inclination higher than 2%
  - » Check the perfect seal to make sure that there is no air infiltration
  - » Arrange suitable supports and retainers to avoid stresses and breakages on the suction flange
  - » Avoid tight radius curves and sudden section variations
  - » Place the bottom valve vertically, making sure that the filtering grid section is suitable to the pump flow rate and is protected against possible obstructions (free area of the filter minimum twice the area of the suction pipe)
- On the delivery duct:
  - » Position a quick-closing non-return valve, to protect the pump from water hammers
  - » Install a gate valve to adjust the operation flow rate
  - » There should be a pressure gauge
  - » Use a pipe with suitable size, in order to limit the pressure drops, and with thickness sufficient to support the maximum operating pressure
  - » Avoid tight radius curves and sudden section variations
  - » Arrange suitable supports and retainers to avoid stresses and breakages on the delivery flange.
  - » Use a pipe whose diameter higher than that of the pump suction inlet.
- The unit must be installed so that it can be easily inspected;
- The pump and ducts must be frost-protected in case of low temperatures, otherwise fully drain them from the water.



SUCTION			
			
Do not tilt the pipes towards the pump	Do not use concentric reduction units	Do not choke water flow	Do not use too many fittings

DELIVERY			
			
Avoid sudden changes in the pipe diameter	Do not use small pipes, drain valves or fittings	Do not design a system to operate with the drain valve partially closed	Avoid using “T-shaped” branches in delivery

3.4 SUPPLY

The machine is supplied with DIESEL fuel
Diesel fuel must comply with the specifications below. The table lists several specifications for diesel fuel worldwide.

Country	USA	EU	International	United Kingdom	Japan	Korea	China
Diesel Specification	No. 2-D, No. 1-D, ASTM D975-94	EN590:2017	ISO 8217 DMX	BS 2869-A1 or A2	JIS K2204 Grade No. 2	KSM-2610	GB252

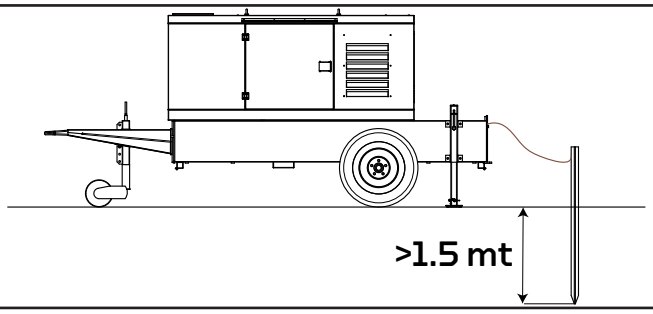
In some conditions diesel fuel can be flammable and explosive.
Fill the fuel tank with diesel fuel only. Filling the tank with petrol can cause fire and damage the engine.
For no reason it is allowed to smoke and/or use open flames near the machine during refuelling.
Clean all fuel leaks immediately.
Never overfill the fuel tank.
Refuelling operations must be carried out only with machine off
Keep all containers containing fuel in a well ventilated area, away from any fuels or sources of ignition.

Failure to comply with these instructions can result in death or serious injury.

Avoid refuelling if fuel leaks are present.

The use of diesel with a high percentage of Bio-Diesel may seriously damage the engine.
The prolonged stop and sudden temperature changes may affect the characteristics of the diesel and/or give rise to the formation of condensate inside the tanks.
The use of a bactericidal additive helps prevent the formation of bacteria, fungi and moulds, stabilises the diesel and prevents its oxidation.
Euromacchine recommends the constant use of a bactericidal additive in the machine and in the Diesel stocking tanks to prevent malfunctions and/or breakages.
To this end, Euromacchine suggests the product “SINTOFLON - BACTERICIDE”

3.5 GROUND CONNECTION



Fasten the ground plate as shown in the figure.

Signal the presence of the ground plate with proper signs.

With ground resistivity equal to 50 Ohm, the plate must be fixed at a depth of 1.5 metres, thus ensuring the maximum safety.

For no reason the machine can be used without plate installed in the ground.
The incorrect grounding may lead to malfunctions of the machine electronic components and make it potentially dangerous.

4 OPERATION

4.1 QUALIFIED OPERATORS INVOLVED IN SECTION

4.2 RESIDUAL RISKS FOR THE OPERATOR IN CHARGE OF THE OPERATION

Although many accident prevention devices have been used on the machine in order to eliminate the possible risks of use for the operator, it has some areas defined “RESIDUAL RISK AREAS”.
These zones refer to moving parts of the machine that may pose an hazard to the operator, if s/he makes incorrect use or makes an assessment or deactivation error, eluding the provisions contained in this manual. The machine is also provided with appropriate warnings placed on the areas with residual risk that must be strictly observed.
The pictograms indicated below comply with standard UNI EN ISO 7010:2014.
During Machine operation, it is necessary to pay attention to the following residual risks, which are present when using the machine and which cannot be eliminated:

4.3 MACHINE PERFORMANCE

The machine performance refers to the maximum engine power and to the maximum electric pump power, shown in the table in point 1.5

4.4 USES NOT PERMITTED

The only permitted processing operations are described in the manual. Any other processing is to be considered FORBIDDEN and thus HAZARDOUS.

4.5 SAFETY FUNCTIONS

Periodically check the correct operation of all the safety devices.

THE MANUFACTURER allows the use of the machine to the Final User, during the work cycle, only under the condition that all the protections are active, working and exactly in the same situation as provided for in the initial project, while only the qualified personnel is allowed to use the machine with partially disabled safety devices for maintenance, checks and calibration (the term "partially" indicates the possibility to exclude locally and temporarily, by qualified personnel, the single protection that prevents a special type of maintenance, control or calibration. All the protections that do not prevent the work of qualified personnel must remain active).

Personnel with qualification other than (table Par. 0.6) must use the machine with fixed, mobile and electric protections fully active, enabled and efficient as provided for by the original project.

The machine must be used and maintained by qualified operators authorised by the Final User who took part in the training provided by the MANUFACTURER technicians.

The operators are obliged to report any deficiencies and/or potential dangerous situations that may occur to their direct managers.

The Final User has the duty to promptly inform the MANUFACTURER if s/he finds defects and/or malfunctions of the accident prevention systems as well as any dangerous situation s/he becomes aware of.

It is strictly forbidden for the Final User and/or third parties (except for the duly authorised personnel of the MANUFACTURER) to make changes of any kind and entity to the machine and its functions, as well as to this technical document.

In order to quickly identify the position of the safety systems present in the machine, their position is shown below. Emergency buttons

EMERGENCY MUSHROOM BUTTON: red mushroom button with yellow plate. It must be activated only for the purpose of securing the system and the people who operate it, i.e. if the operator perceives a hazard arising from the machine. The activation of the emergency button during the normal operation of the machine causes its immediate stop. This button acts on a safety control unit that electrically intercepts all the machine utilities.

EMERGENCY RESET: Following the emergency release, it is necessary to reactivate the auxiliary devices by turning the selector to OFF and then to ON

4.6 EMISSIONS

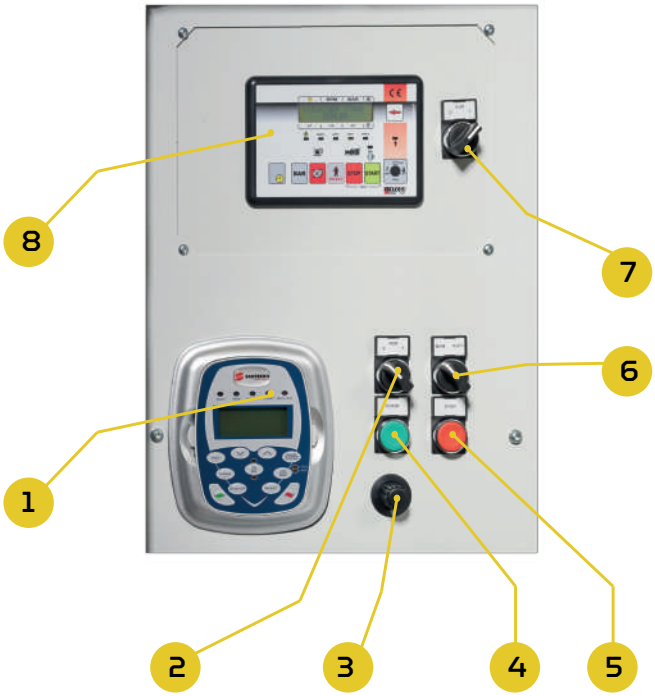
During normal operation, the machine does not emit significant noise emissions (< 80dB), therefore the personal protective equipment for hearing protection ARE NOT MANDATORY.
Exception is made for use with open doors during maintenance or setup of the machine, where the machine emits significant sound emissions (> 80 dB), therefore the personal protective equipment IS MANDATORY.

The machine emits combustion fumes, therefore it is not suitable for indoor use.

4.7 OPERATOR PANEL

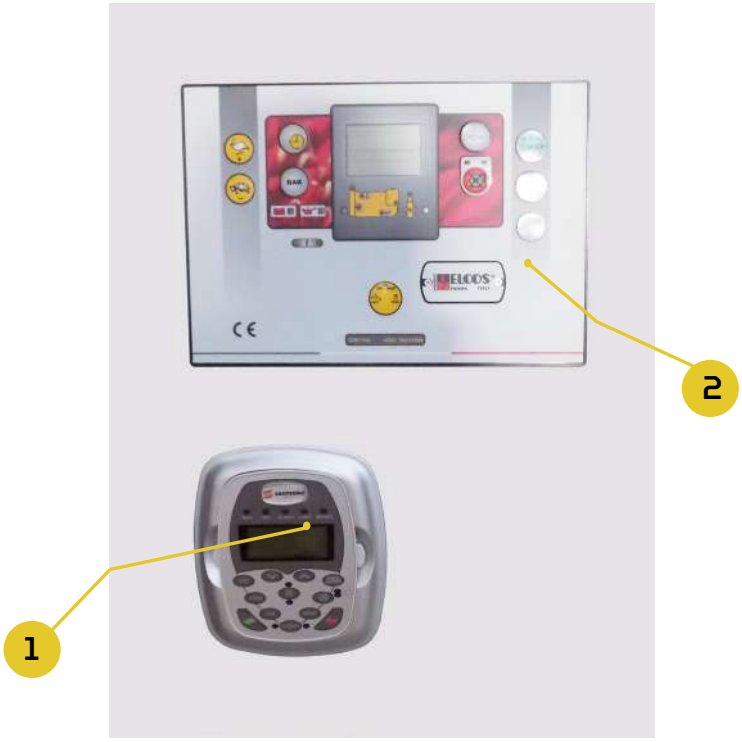
4.7.1 CONTROL UNIT

4.7.1.1 VERSION WITH CEM 120 CONTROL UNIT



POSITION	DESCRIPTION
1	Inverter remote control
2	Auxiliary device activation
3	Potentiometer
4	Start
5	Stop
6	Manual/Automatic selector
7	Control unit start-up
8	Engine control unit

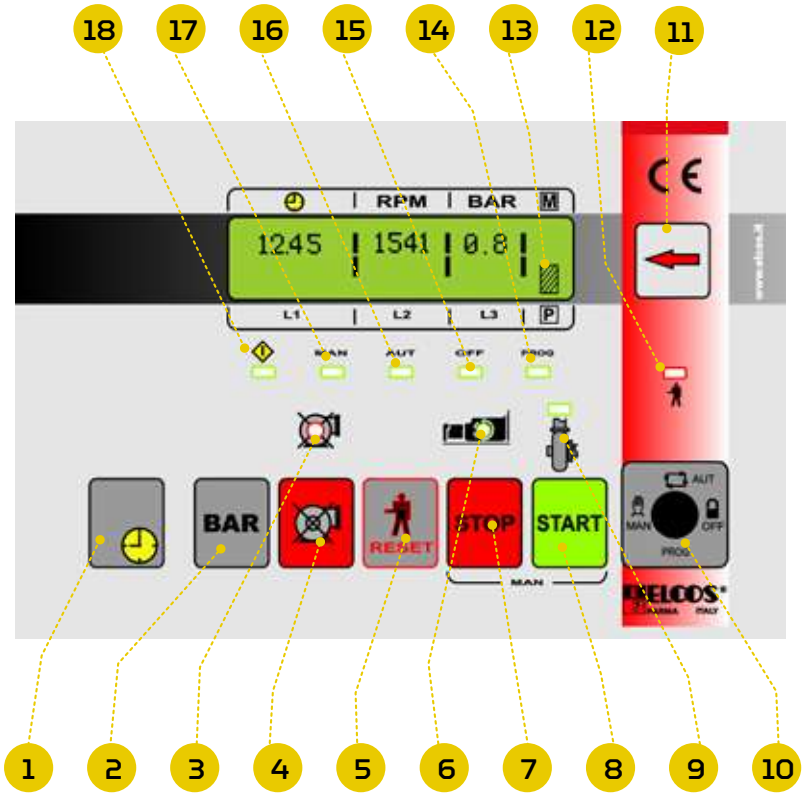
4.7.1.2 VERSION WITH CIM 136 CONTROL UNIT



POSITION	DESCRIPTION
1	Inverter remote control
2	Engine control unit

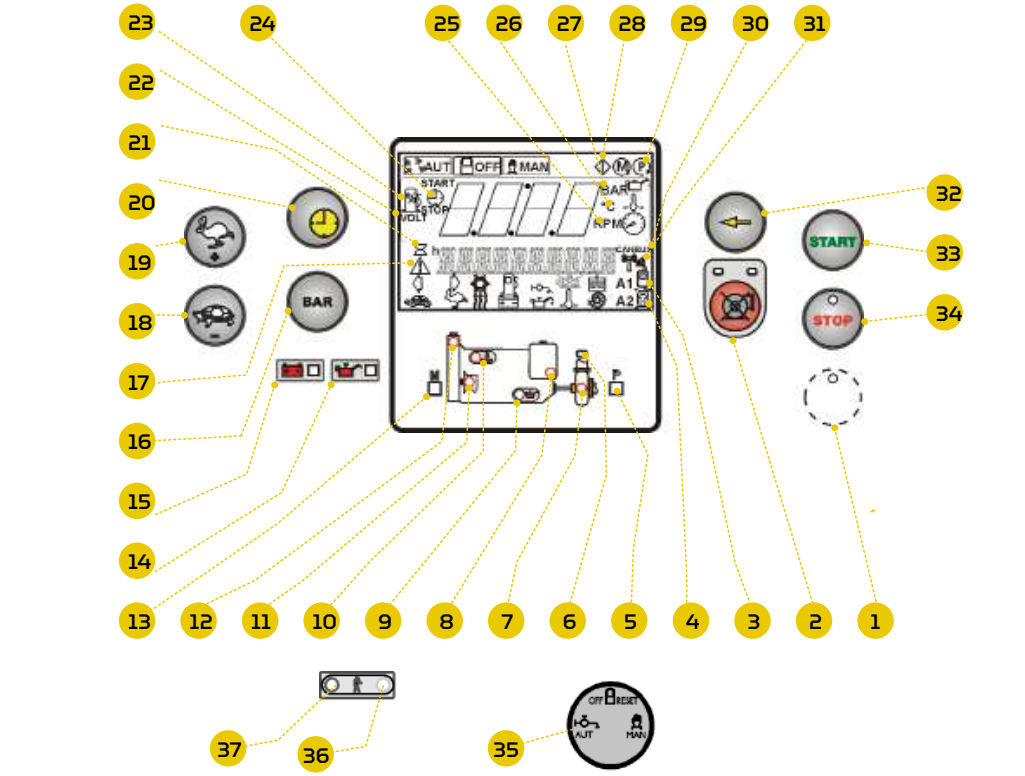
4.7.2 ENGINE CONTROL UNIT

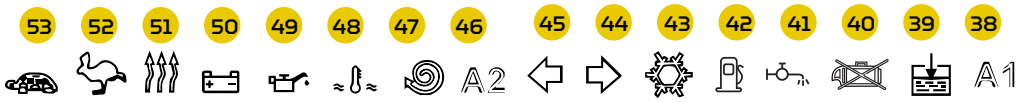
4.7.2.1 CEM 120 VERSION



ID	DESCRIPTION	TYPE	ID	DESCRIPTION	TYPE
1	Processing time setting	Button	10	Operation selector	Button
2	Electronic pressure switch adjustment	Button	11	Show instruments / Alarm silencing	Button
3	Disabled pump protection indicator	Warning light	12	Control unit running	Warning light
4	Pump protection disabling / enabling	Button	13	Active pump protection	Warning light
5	Control unit reset	Button	14	Programming mode	Warning light
6	Engine running	Warning light	15	Control unit OFF	Warning light
7	Engine stop	Button	16	Automatic mode	Warning light
8	Engine start	Button	17	Manual mode	Warning light
9	Water pressure OK	Warning light	18	Call closed	Warning light

4.7.2.2 CIM 136 VERSION



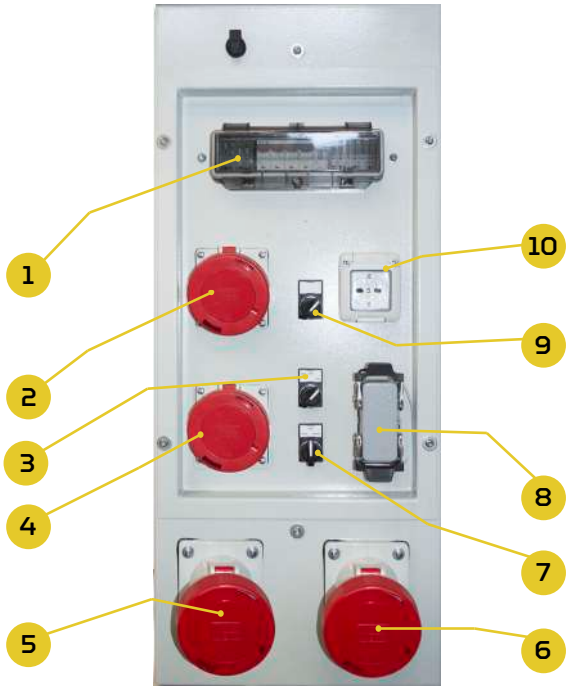


ID	DESCRIPTION	TYPE	ID	DESCRIPTION	TYPE
1	Programming	Button	28	Call present	Warning light
2	Pump protection disabling / enabling	Button	29	pump priming (missing if flashing)	Warning light
3	SMS receiving /sending activity	Warning light	30	Can/bus parameters	Warning light
4	System error - No SIM card	Warning light	31	Field signal	Warning light
5	Active pump protection	Warning light	32	Alarm displaying / silencing selector	Button
6	Working pressure OK	Warning light	33	Motor pump start	Button
7	Stop for pressure error	Warning light	34	Motor pump stop	Button
8	Stop for low fuel level	Warning light	35	Operation selector	Button
9	Stop for insufficient oil pressure	Warning light	36	Cumulative alarm - no stop	Warning light
10	Stop for engine overtemperature	Warning light	37	Cumulative alarm - with stop	Warning light
11	Stop for no battery charge	Warning light	38	Anomaly A1 triggered	Indicators
12	Stop for low coolant level	Warning light	39	Stop for low coolant level	Indicators
13	Active engine protections	Warning light	40	Stop for no start	Indicators
14	Insufficient oil pressure	Warning light	41	Stop for water pressure error	Indicators
15	Battery recharge is not occurring	Warning light	42	Reserve alarm / No fuel stop	Indicators
16	Pump water electronic pressure switch adjustment	Button	43	Cooling in progress	Indicators
17	Emergency stop	Warning light	44	Clutch engaged	Indicators
18	Slow pump down	Button	45	Underspeed	Indicators
19	Accelerate pump	Button	46	Anomaly A2 triggered	Indicators
20	Processing time setting	Button	47	Engine overspeed / underspeed anomaly	Indicators
21	accumulated hours viewer	Warning light	48	Stop for engine overtemperature	Indicators
22	battery voltmeter viewer	Warning light	49	Stop for insufficient oil pressure	Indicators
23	fuel level viewer	Warning light	50	Stop for no battery recharge	Indicators
24	Clock	Warning light	51	Engine heating in progress	Indicators
25	motor pump speed viewer	Warning light	52	Acceleration in progress	Indicators
26	engine water or oil temperature viewer	Warning light	53	Deceleration in progress	Indicators
27	engine oil pressure viewer	Warning light			

4.7.3 ELECTRIC PUMP PUSH-BUTTON PANEL

ID	DESCRIPTION
1	Downstroke
2	Occupied hands command
3	Upstroke
4	Operation light

4.7.4 SERVICE SOCKET PANEL

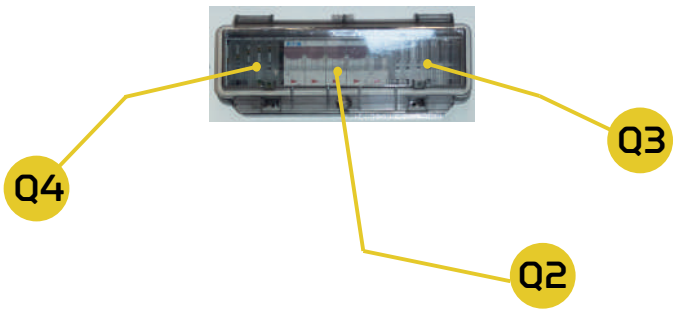


ID	DESCRIPTION
1	Circuit breaker
2	Service socket - Three-phase 32A
3	Submersible pump disabling / enabling (*)
4	Three-phase 63A service socket (optional)
5	Pump socket
6	Submersible pump start / stop (*)
7	Submersible pump start / stop (*)
8	Secondary flag socket (*)
9	E-Vacuum Start / Stop / E-Self pump start selector (**)
10	Schuko service socket - Single-phase

(*) On double pump Lampo only

(**) Optional on double pump Lampo and vertical / horizontal pump Lampo

4.7.5 SERVICE SOCKET PANEL



ID	DESCRIPTION
Q2	32A 3P+N+E 400 V service socket protection
Q3	1P+N+E 230 V service socket protection
Q4	Service socket protection (Optional)

4.8 START-UP

With machine stationary and stable, placed near the water basin, with stabilising feet on the ground and installed ground connection, follow the instructions below:

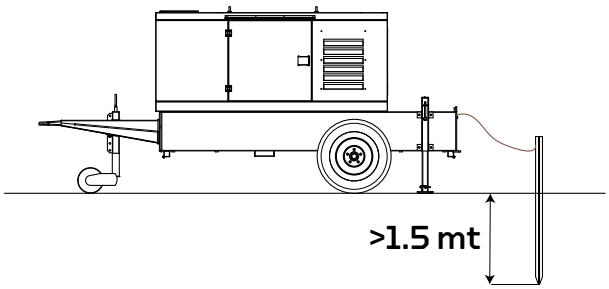
Before engine start-up, check that the service sockets are free and the circuit breakers are lowered to prevent sudden starts.

Never cover the machine during its operation.

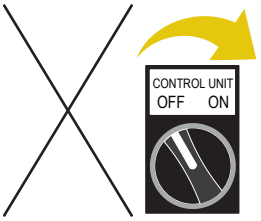
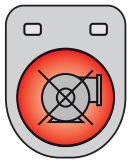
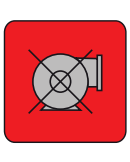
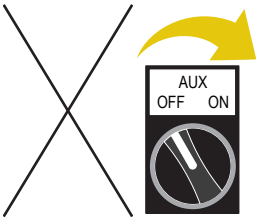
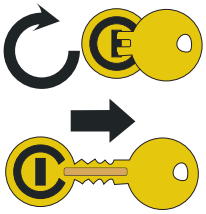
Never place flammable materials (fuel, solvents, paper, etc.) near the machine

With ground resistivity equal to 50, the plate must be fixed at a depth of 1.5 metres, thus ensuring the maximum safety.

For no reason the machine can be used without plate installed in the ground. The incorrect grounding may lead to malfunctions of the machine electronic components and make it potentially dangerous.



4.8.1 LAMPO VERSION - WITHOUT PUMP

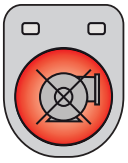
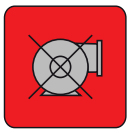
DESCRIPTION	CIM-136	CEM-120	DESCRIPTION	CIM-136	CEM-120
1. Make sure of machine stability and its ground connection, turn the control unit on using the "Control Unit OFF-ON" selector (**for version with CEM 120 only**).			2. Press "Function" key to select the manual operation mode (MAN)		
3. Press "Start" button to start the engine			4. Press "Pump protection disabling/ enabling" button to disable control unit intervention for anomalies on working pressure.		
5. Enable the auxiliary circuits from the LAMPO command and control unit (Fig. 5.12) (**for version with CEM 120 only**).			6. Close the control panel door and remove the key, to prevent access of unauthorised personnel.		

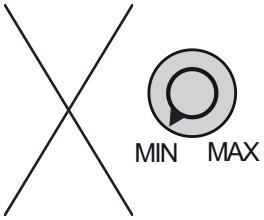
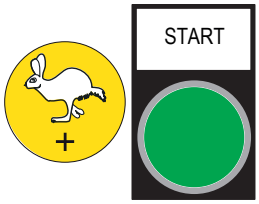
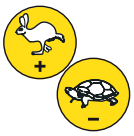
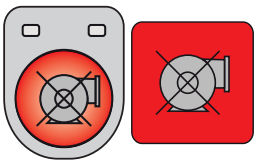
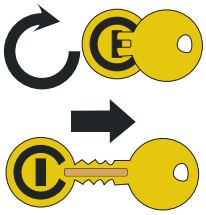
4.8.2 LAMPO VERSION - SUBMERSIBLE PUMP

The pump must never operate resting on the bottom of the well
During the operation, the operator must ensure that 80% of the electric pump is submersed and that the water quantity in the well is enough to ensure the correct cooling of the electric motor.

Euromacchine s.r.l. accepts no liability for well inadequacy or for any falls.

Always check the correct connection of the blue spiral wound hose to the machine pressure switch.

DESCRIPTION	CIM-136	CEM-120	DESCRIPTION	CIM-136	CEM-120
1. Make sure of machine stability and its ground connection, turn the control unit on using the "Control Unit OFF-ON" selector (**for version with CEM 120 only**).			2. Press "Function" key to select the manual operation mode		
3. Press "Start" button to start the engine			4. Press "Pump protection disabling/ enabling" button to disable control unit intervention for anomalies on working pressure.		
5. Enable the auxiliary circuits from the LAMPO command and control unit (Fig. 5.12) (**for version with CEM 120 only**).			6. Release the electric pump locking belt		
7. Using the remote control, lift the electric pump by a few centimetres. It is necessary to press and hold the dead man's switch to enable the movement			8. Fully release the electric pump		
9. Using the remote control, lower the electric pump. It is necessary to press and hold the dead man's switch to enable the movement			10. Alternate the pipe hooking to the downstroke until the desired depth has been reached		
11. Once the desired depth has been reached, hook the hosepipe to the pipe end.			12. Connect one end of the blue spiral wound hose to the hosepipe connection and the other end to the pressure gauge		

DESCRIPTION	CIM-136	CEM-120	DESCRIPTION	CIM-136	CEM-120
13. Remove the electric pump plug from the cable winder and connect it to the socket on the panel.			14. Before starting the pump, check that the potentiometer is at minimum. (**for version with CEM 120 only**).		
15. Start the pump using the key: • CIM 136: "HARE" key on the control unit • CEM 120: "START" key on the control panel It is recommended to start the pump with potentiometer at minimum.			16. Set the machine with the desired working pressure. • CIM 136: using "HARE" and "TURTLE" keys. • CEM 120: acting on the potentiometer		
17. Act on the pump protection enabling/ disabling key, until the LEDs above the key stop flashing.			18. It is possible to select the automatic mode (AUT), so that the control unit keeps the pressure constant. (**for version with CIM 136 only**)		
19. Close the control panel door and remove the key, to prevent access of unauthorised personnel.					

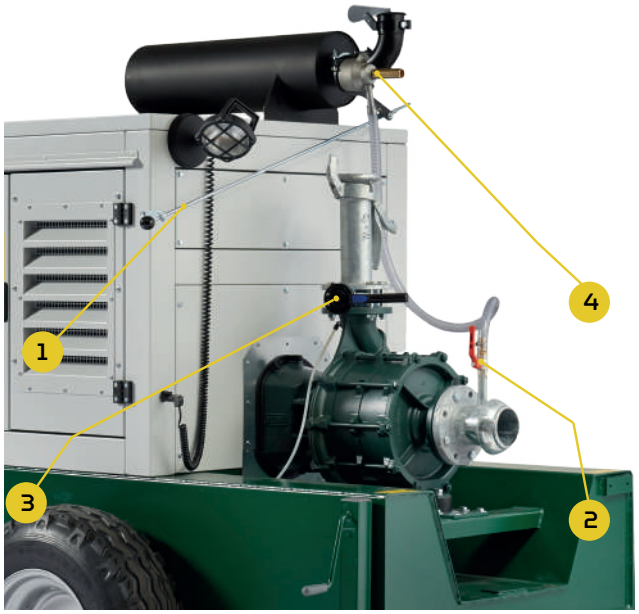
4.8.3 LAMPO VERSION - VERTICAL/HORIZONTAL PUMP

To start the vertical/horizontal pump, it is necessary to proceed with pump priming, that can be carried out in 3 modes depending on the system installed on the machine.

Before proceeding with the operations, check which priming system is present on the machine.

"Double pump Lampo" can be used without submersible pump in the same way as the vertical/horizontal pump version, by disabling the submersible pump and positioning the switch on service socket panel on "VP" (see 4.7.4 control position **3**) before proceeding with the instructions below.

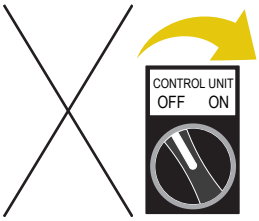
4.8.3.1 E-PLUTO PUMP PRIMING



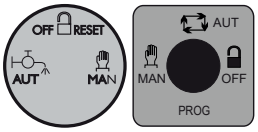
POSITION	DESCRIPTION
1	Pluto lever
2	Pluto connection valve
3	Delivery valve
4	Pluto exhaust

DESCRIPTION	CIM-136	CEM-120	DESCRIPTION	CIM-136	CEM-120

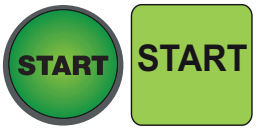
1. Make sure of machine stability and its ground connection, turn the control unit on using the "Control Unit OFF-ON" selector (**for version with CEM 120 only**).



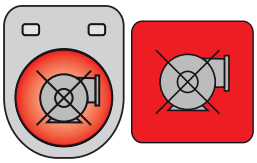
2. Press "Function" key to select the manual operation mode



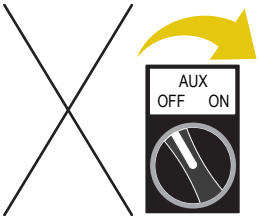
3. Press "Start" button to start the engine



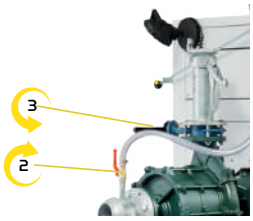
4. Press "Pump protection disabling/ enabling" button to disable control unit intervention for anomalies on working pressure.



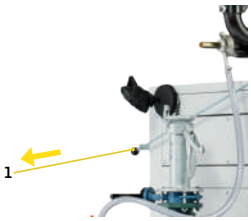
5. Enable the auxiliary circuits from the LAMPO command and control unit (Fig. 5.12) (**for version with CEM 120 only**).



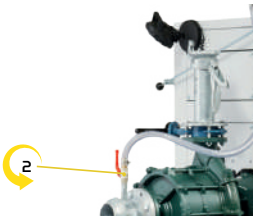
6. Close the pump delivery valve (**3**) and open PLUTO cock (**2**)



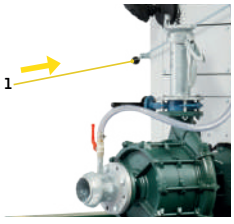
7. Pull the lever (**1**) to activate PLUTO priming system.



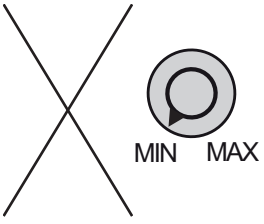
8. Wait until water starts coming out of vent (**4**) and close the cock connecting PLUTO (**2**) to the pump.



9. Reposition the silencer exhaust through the lever (**1**)



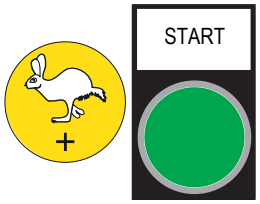
10. Before starting the pump, check that the potentiometer is at minimum. (**for version with CEM 120 only**).



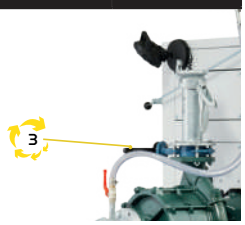
DESCRIPTION	CIM-136	CEM-120	DESCRIPTION	CIM-136	CEM-120

11. Start the pump using the key:
- CIM 136: "HARE" key on the control unit
- CEM 120: "START" key on the control panel

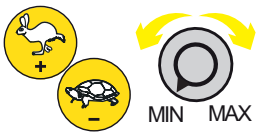
It is recommended to start the pump with potentiometer at minimum.



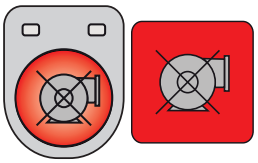
12. Gradually open the pump delivery valve (**3**)



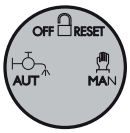
13. Set the machine with the desired working pressure.
- CIM 136: using "HARE" and "TURTLE" keys
- CEM 120: acting on the potentiometer



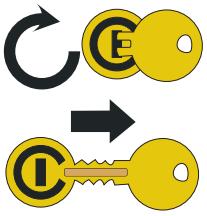
14. Act on the machine protection enabling/ disabling key, until the LEDs above the key stop flashing.



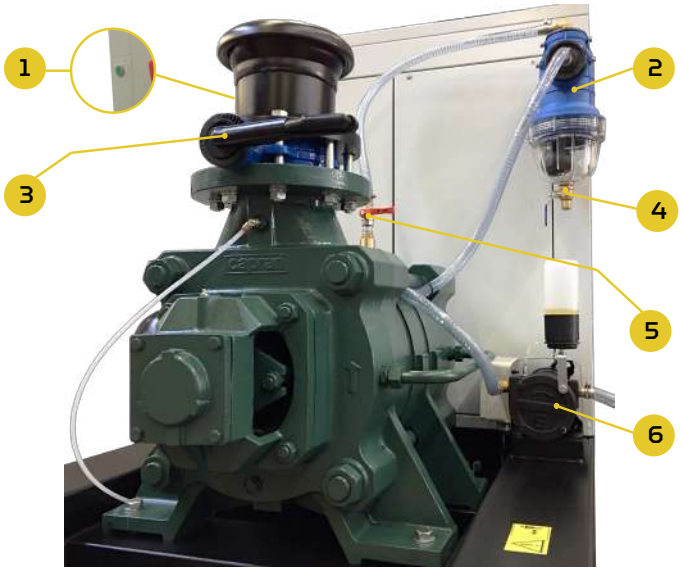
15. It is possible to select the automatic mode (AUT), so that the control unit keeps the pressure constant.
(**for version with CIM 136 only**)



16. Close the control panel door and remove the key, to prevent access of unauthorised personnel.



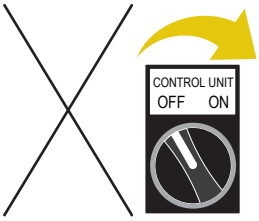
4.8.3.2 PUMP PRIMING - E-VACUUM



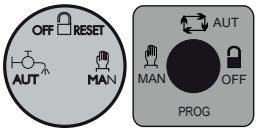
POSITION	DESCRIPTION
1	Start / Stop
2	Siphon
3	Delivery valve
4	Siphon drainage
5	Filling cock
6	Vacuum pump

DESCRIPTION	CIM-136	CEM-120	DESCRIPTION	CIM-136	CEM-120

1. Make sure of machine stability and its ground connection, turn the control unit on using the "Control Unit OFF-ON" selector
(**for version with CEM 120 only**).

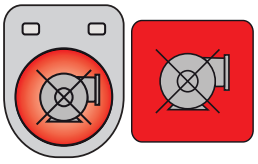


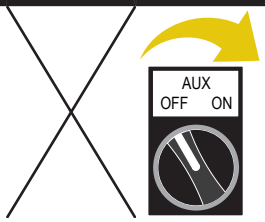
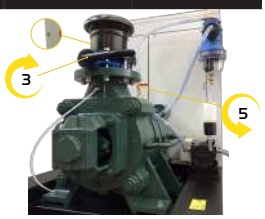
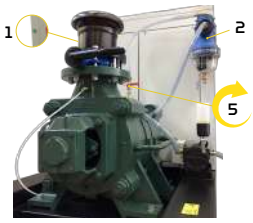
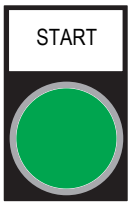
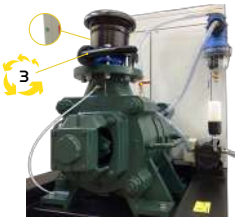
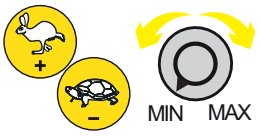
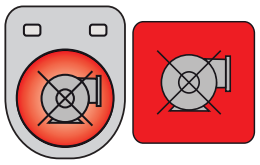
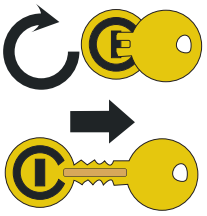
2. Press "Function" key to select the manual operation mode



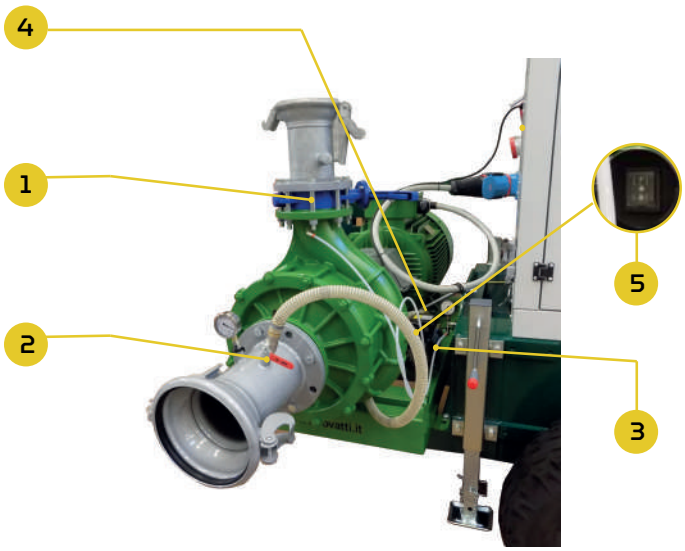
3. Press "Start" button to start the engine

4. Press "Pump protection disabling/ enabling" button to disable control unit intervention for anomalies on working pressure.

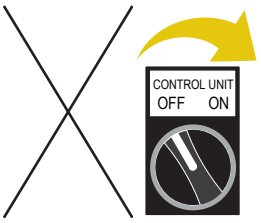
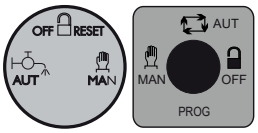
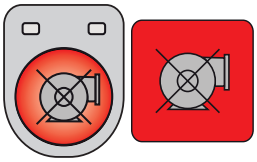
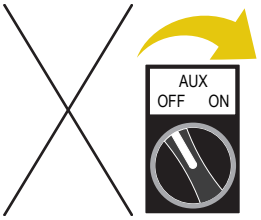
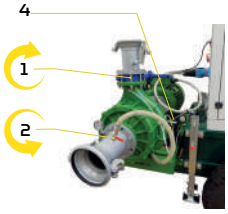
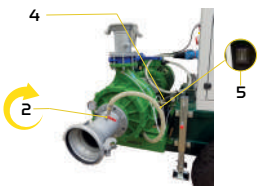
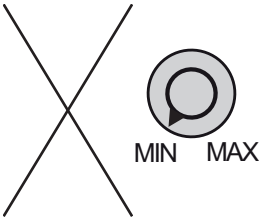


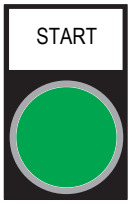
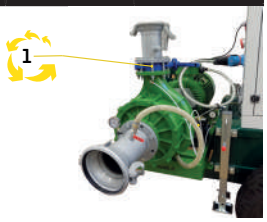
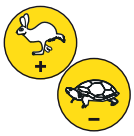
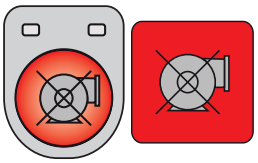
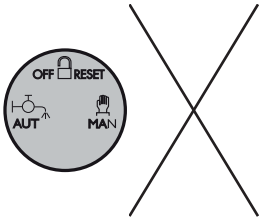
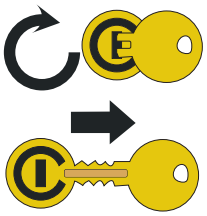
DESCRIPTION	CIM-136	CEM-120	DESCRIPTION	CIM-136	CEM-120
5. Enable the auxiliary circuits from the LAMPO command and control unit (Fig. 5.12) (**for version with CEM 120 only**).			6. Close the pump delivery valve (**3**) 7. Open E-Vacuum vacuum system cock (**5**)		
8. Start the E-vacuum vacuum system by pressing and holding button (**1**) until you see water in the siphon (**2**) 9. Close E-Vacuum vacuum system cock (**5**)			10. Before starting the pump, check that the potentiometer is at minimum. (**for version with CEM 120 only**).		
11. Start the pump using the key: • CIM 136: "HARE" key on the control unit • CEM 120: "START" key on the control panel It is recommended to start the pump with potentiometer at minimum.			12. Gradually open the delivery valve (**3**)		
13. Drain the remaining water inside the E-Vacuum (**4**)			14. Set the machine with the desired working pressure. • CIM 136: using "HARE" and "TURTLE" keys • CEM 120: acting on the potentiometer		
15. Act on the machine protection enabling/ disabling key, until the LEDs above the key stop flashing.			16. It is possible to select the automatic mode (AUT), so that the control unit keeps the pressure constant. (**for version with CIM 136 only**)		
17. Close the control panel door and remove the key, to prevent access of unauthorised personnel.					

4.8.3.3 PUMP PRIMING - E-SELF



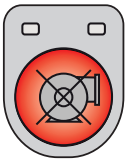
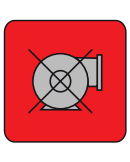
POSITION	DESCRIPTION
1	Delivery valve
2	Filling cock
3	E-Self
4	E-Self Suction
5	Start / Stop
6	Vent

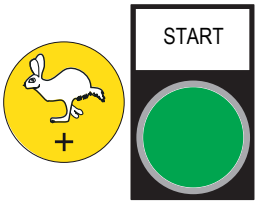
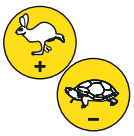
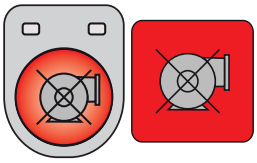
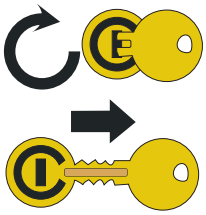
DESCRIPTION	CIM-136	CEM-120	DESCRIPTION	CIM-136	CEM-120
1. Make sure of machine stability and its ground connection, turn the control unit on using the "Control Unit OFF-ON" selector (**for version with CEM 120 only**).			2. Press "Function" key to select the manual operation mode		
3. Press "Start" button to start the engine			4. Press "Pump protection disabling/ enabling" button to disable control unit intervention for anomalies on working pressure.		
5. Enable the auxiliary circuits from the LAMPO command and control unit (Fig. 5.12) (**for version with CEM 120 only**).			6. Connect the E-Self pump plug to the single-phase service socket (pos. **10** fig. **4.7.4**)		
7. Activate the protection of the socket by lifting the switch **Q3** (see **4.7.5**)			8. Remove the connection of the suction pipe (**4**) and fill the E-Self pump with water 9. Close the pump delivery valve (**1**) 10. Open the filling cock (**2**)		
11. Connect the suction pipe (**4**) and immerse it in water 12. Start the E-Self pump (**5**) until water comes out from the delivery line 13. Stop the E-Self pump (**5**), close the filling cock (**2**)			14. Before starting the pump, check that the potentiometer is at minimum. (**for version with CEM 120 only**).		

DESCRIPTION	CIM-136	CEM-120	DESCRIPTION	CIM-136	CEM-120
15. Start the pump using the key: • CIM 136: "HARE" key on the control unit • CEM 120: "START" key on the control panel It is recommended to start the pump with potentiometer at minimum.			16. Gradually open the delivery valve (**1**)		
17. Set the machine with the desired working pressure. • CIM 136: using "HARE" and "TURTLE" keys • CEM 120: acting on the potentiometer			18. Act on the machine protection enabling/ disabling key, until the LEDs above the key stop flashing.		
19. It is possible to select the automatic mode (AUT), so that the control unit keeps the pressure constant. (**for version with CIM 136 only**)			20. Close the control panel door and remove the key, to prevent access of unauthorised personnel.		

4.8.4 LAMPO VERSION - DOUBLE PUMP

Before starting the operations described in the points below, make sure that the electric pump is enabled by positioning the switch on the service socket panel on “SUB+VP” (see 6.8.5 control position **6**).

DESCRIPTION	CIM-136	CEM-120	DESCRIPTION	CIM-136	CEM-120
1. Make sure of machine stability and its ground connection, turn the control unit on using the “Control Unit OFF-ON” selector (**for version with CEM 120 only**).			2. Press “Function” key to select the manual operation mode		
3. Press “Start” button to start the motor			4. Press “Pump protection disabling/ enabling” button to disable control unit intervention for anomalies on working pressure.		
5. Enable the auxiliary circuits from the LAMPO command and control unit (Fig. 5.12) (**for version with CEM 120 only**).			6. Using the remote control, lift the electric pump until removing it from its seat. It is necessary to press and hold the dead man’s switch to enable the movement		
7. Remove the locking pin from the electric pump support shaft and place the pump in the desired position.			8. Restore the locking pin on the electric pump support shaft and lower the pump using the remote control. It is necessary to press and hold the dead man’s switch to enable the movement.		
9. Alternate the pipe hooking to the downstroke until the desired depth has been reached			10. Once the desired depth has been reached, hook the hosepipe to the pipe end.		
11. Hook the other end of the hosepipe to the vertical pump suction joint			12. Remove the submersible electric pump pin from the cable winder and connect it to the proper area in the Service socket panel.		

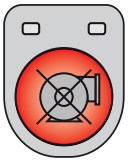
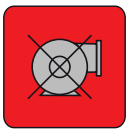
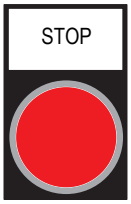
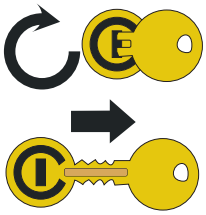
DESCRIPTION	CIM-136	CEM-120	DESCRIPTION	CIM-136	CEM-120
13. Start the submersible electric pump by position the selector present on the Service socket panel to START (see 4.7.4 selector position **6**) (**for version with CEM 120 only**).			14. Before starting the pump, check that the potentiometer is at minimum. (**for version with CEM 120 only**).		
15. Start the pump using the key: • CIM 136: "HARE" key on the control unit • CEM 120: "START" key on the control panel It is recommended to start the pump with potentiometer at minimum.			16. Set the machine with the desired working pressure. • CIM 136: using "HARE" and "TURTLE" keys • CEM 120: acting on the potentiometer		
17. Act on the machine protection enabling/ disabling key, until the LEDs above the key stop flashing.			18. It is possible to select the automatic mode (AUT), so that the control unit keeps the pressure constant. (**for version with CIM 136 only**)		
19. Close the control panel door and remove the key, to prevent access of unauthorised personnel.					

4.9 SERVICE UTILITIES

- Before connecting any device to the service sockets, make sure that the circuit breakers are lowered
- Always disconnect the devices and lower the circuit breakers after use.
- In case of sudden machine stop, disconnect the devices from the service sockets and lower the circuit breakers before restarting the machine.
- Before connecting any device to the service sockets, check the integrity of plugs and cables
- Do not use cascade electric adapters

4.10 MACHINE STOP

Before switching the machine off, check that the service sockets are free and the circuit breakers are lowered to prevent sudden starts upon the following machine start-up.

DESCRIPTION	CIM-136	CEM-120	DESCRIPTION	CIM-136	CEM-120
1. Press “Pump protection disabling/ enabling” button to disable control unit intervention for anomalies on working pressure.			2. Set the potentiometer to minimum (**for version with CEM 120 only**).		
3. Press “Stop” button • CIM 136 the control unit automatically stops the machine by first decelerating the inverter and then starting engine cooling and stop • CEM 120 Press “STOP” red button on control panel			4. Check the display • CIM 136 The display turns off after 30 seconds and remains in standby for start from panel or mobile phone • CIM 120 Wait that on the inverter display the electric pump frequency is “0”		
5. Disable the auxiliary circuits from the LAMPO command and control unit (**for version with CEM 120 only**).			6. Stop the control unit (**for version with CEM 120 only**). Press STOP on the control unit		
7. Turn the control unit off using the “OFF” mode button			8. Cut the voltage to the control unit (**for version with CEM 120 only**). Cut the voltage to the control unit using the selector “Control Unit OFF-ON”		
9. Close the control panel door and remove the key, to prevent access of unauthorised personnel.					

5 MAINTENANCE AND CLEANING

5.1 QUALIFIED OPERATORS INVOLVED IN SECTION

Maintenance operations, such as inspection, adjustment or repair, must be carried out by qualified personnel only.

5.2 REQUIRED PPE - RESIDUAL RISKS

5.3 SAFETY PRECAUTIONS

Before carrying out any type of Maintenance or Repair, it is necessary to insulate the machine from power supply.
During Maintenance or Repair works it is advisable to apply the following recommendations:

- Before starting the operations, display a "MACHINE MAINTENANCE" sign in a clearly visible position;
- Do not use solvents and flammable materials;
- Pay attention not to disperse cutting fluids in the environment;
- To access the highest parts of the machine, use the means suitable for the operations to be carried out;
- Do not climb on the machine parts as they are not designed to support people;
- At the end of the operations, correctly restore and fasten all the protections and guards removed or open.

The Manufacturer will not be held responsible for failure to comply with the listed recommendations and for any other use different from or not mentioned in these instructions.

Safety, precautions and maintenance status
Before carrying out maintenance, the following operations must be performed:
1) Cut off machine voltage by removing the (**BLACK**) connector from battery negative pole
2) Prepare a clearly visible "MACHINE MAINTENANCE" sign and at the same time place some barriers around the unit.
3) Operate on hot parts only after they have cooled down.

5.4 OPERATION MODE WITH "SAFETY DEVICES DISABLED"

The machine can operate with "safety devices disabled".

The activation of the operation mode with "safety devices disabled" is carried out by pulling the yellow lever of the limit switch present inside the machine inverter compartment towards you.
The mode interruption is carried out by pressing the yellow handle of the same switch or by closing the door.

Maintenance operations, such as inspection, adjustment or repair, with "safety devices disabled" can be carried out by qualified and authorised personnel only.

5.5 PERIODIC MAINTENANCE

Preventive ordinary maintenance
Ordinary maintenance means all the periodic operations that must be carried out to ensure the maintenance of the machine in optimal operating conditions.
Ordinary maintenance operations to be carried out are basically:

- Lubrication and greasing;
- Replacement of worn or defective gaskets;
- Check of transmission parts and possible replacements;
- Check of safety and emergency devices;
- Check of warning and signalling devices.

During normal maintenance phases, the operator is directly in contact with the machine, therefore we remind you that the machine battery must be disconnected before carrying out any operation.
The various operations to be performed on the machine, in relation to the working hours, are to be considered as a normal maintenance time, which if carried out with great care, will always allow the machine to be in excellent working condition. Such maintenance times refer to normal areas of use. If the weather conditions are more aggressive, it is advisable to carry out maintenance operations at intervals shorter than the times mentioned below. More aggressive weather conditions means the presence of marine, sulphurous, calcareous waters.

No maintenance operation can be carried out if the machine is operating.

Nature and frequency of periodic maintenance operations.
To ensure the correct operation of the machine, it is useful and appropriate to schedule a general maintenance at least once a year. This operation has the purpose of preventing extraordinary maintenance operations with consequent machine downtime during the period of use. All mechanical, electrical, pneumatic and hydraulic components must be checked. During the check all the parts that have defects or that may require short-term intervention must be replaced. It is advisable to carry out a thorough cleaning of mechanical parts, motors and electrical panels.

Tampering/unauthorised replacement of one or more parts of the machine, the use of accessories, tools, consumables other than those recommended by the Manufacturer, may represent a risk of injury and relieve the Manufacturer from civil and criminal liability.

The clothing of those who work or maintain the machine must comply with the essential safety requirements in force in your country, as defined by Directives 89/656/EEC and 89/686/EEC concerning the use of personal protective equipment.

Attention should also be paid to bracelets, rings or necklaces that must not dangle or hinder the movements of the operator: in this regard, it is appropriate not to wear such accessories in order to reach the highest possible level of safety.

5.5.1 CARRIAGE SECTION

Component	after the first 50 km	500 km or once a month	2000 km or every 3 months	5000 km or every 6 months	
Tyre pressure	X		X		• Check of tyre pressure
Tightening screws	X	X			• Check the tightness of wheel nuts, tighten if required.
Tyre wear, wheels				X	• Ageing status of tyres (e.g. cracks, porous areas). • Measure the tyre profile depth at the centre of tyres. • Check the rims for visible damage (concentricity, coupling), invert the wheels per axle / in pair or repair them.
Support wheel, supporting feet				X	• Check operation and stability. • Lubricate the moving parts.
Fixing screws				X	• Check all the fixing screws for a constant connection (see tightening torque table). • Carefully check the screw connection in the frame area. • Tighten immediately the loose connections. • Replace screw connections when they are worn / corroded.

5.5.1.1 SCREW TIGHTENING VALUES

Dimensions	Class		Dimensions	Class	
	8.8	10.9		8.8	10.9
	Tightening torque (Nm)			Tightening torque (Nm)	
M 5	5.5	8.1	M 20	425	610
M 6	9.6	14	M 20 X1.5	475	980
M 8	23	34	M 22	580	820
M 8X1	25	37	M 22 X1.5	630	900
M 10	46	67	M 24	730	1050
M 10X1.25	49	71	M 24X2	800	1150
M 12	79	115	M 27	1100	1550
M 12X1.5	83	120	M 27X2	1150	1650
M 14	125	185	M 30	1400	2000
M 14X1.5	135	200	M 30X2	1500	2150
M 16	195	290	M 36	2450	3500
M 16X1.5	210	310	M 36X2	2650	3780
M 18	300	430	M 42	3930	5600

Use torque wrenches to secure screw connectors

Set the maximum tightening torque of the torque wrench

Use self-locking nuts only once, as the tightening force of the plastic ring is reduced if reused

Replace the self-locking nuts once the screw connection has been opened

5.5.1.2 TYRE PRESSURE

TYRE	10.0/75-15.3 PR10	11.5_80-15.3 PR12
PRESSURE (bar)	5.1	5.3

5.5.2 ENGINE SECTION

○ Check ● Replace ■ Contact the supplier ▲ Replace - Operations for new machine and after a long machine downtime.

Part	Checks	Daily	After 20 hours	Every 50 hours	Every 250 hours	Every 500 hours	Every 1000 hours	Every 2000 hours
Cooling System (2)	Check and fill with engine coolant	○						
	Check and clean radiator tabs				○			
	Check and adjust the cooling fan belt			○ 1st time	○ 2nd and following			
	Drain, wash and fill the cooling system with new coolant						● or at least once a year	
Head	Adjust the valve suction / drain level						■	
	Seats of suction / drain valve							■
Electric parts	Check the indicators	○						
	Check the battery			○				
Engine Oil (1)	Check engine oil level	○						
	Replace engine oil				● 1st time	● 2nd and following times		
	Replace oil filter							
Fuel	Check fuel level and fill the tank	○						
	Drain the fuel tank				○			
	Drain fuel filter / water separation filter			○				
	Check fuel filter / water separation filter	○						
	Replace fuel filter		▲	▲		●		
Pipes	Replace supply system and cooling system pipes							■ or every 2 years
Suction and drain	Clean or replace the air cleaning element				○	●		
Engine	General visual check	○						

(1) See engine manual for oil characteristics
(2) Recommended coolant

ART BLUE Code 171Z or similar CUNA NC 956-16, ASTM D 3306 Type 1, ASTM D 6210 Type 1-FF

5.6 EXTRAORDINARY MAINTENANCE

Extraordinary maintenance refers to all the operations that must be carried out because of breakages of electrical, pneumatic, hydraulic or mechanical components.

NOTE Repair or replacement of essential parts of the equipment involves temporary machine downtime.

Replacement of broken or malfunctioning components can be carried out:

- Directly by the Final User, if the component can be found and purchased on the market (e.g. bearings, valves, relays, fuses, etc.);
- By directly requesting the MANUFACTURER or the AUTHORISED DEALER to send the component needed, specifying:
  a) the machine serial number;
  b) the reference code of the component requested (if indicated in the spare parts section);
  c) the desired quantity;
  d) all the information useful for its identification.

5.7 CAUSES AND REMEDIES

In case of malfunction or failure, the machine signals several alarms to the operator via control panel. Below is the complete list

CONTROL UNIT		
INCONVENIENCE	**POSSIBLE CAUSES**	**SOLUTIONS**
The control unit does not turn on	Low battery	Charge/change the battery
	Battery isolator set to “OFF”	Set to “ON”
	Blown control unit fuses	Replace faulty fuses
	Disconnected connectors	Reconnect connectors
The control unit does not detect the system pressure	Control unit/pump reading pipe obstructed or broken	Replace reading pipe
	Control unit/pump reading pipe disconnected	Reconnect reading pipe
The control unit does not read the fuel level correctly	Faulty level indicator	Replace level indicator
The CIM-13x control unit controls only the start and stop of the generator set	Control unit set to “MAN” mode	Set the control unit to “AUT” mode
The CIM-13x control unit stops the engine after starting the electric pump	Faulty frequency generator FC1	Replace frequency generator FC1
	Faulty resistor R2	Replace resistor R2

ENGINE		
INCONVENIENCE	**POSSIBLE CAUSES**	**SOLUTIONS**
The engine does not start	Emergency button pressed	Reset the emergency button
	Inverter panel door emergency on	If necessary, act on the adjustment screw and/or correctly close the inverter panel door
	Tank empty	Refuel
	Low battery	Replace the battery (do not use booster to recharge the battery to avoid damaging the control unit)
	Air presence inside the fuel supply system	Check the pipes of the fuel supply circuit
	Anomaly active	Check to what it refers on the Elcos instruction manual
	Battery terminals not closed	Fasten the terminals of the battery
The engine overheats	Low coolant level	Restore coolant level according to what described in the engine manual
	Damaged cooling fan	Replace the cooling fan
	Air intakes clogged	Remove any obstructions from air intakes
	Dirty radiator	Clean the radiator
	Cooling fan belt slacken	Tension cooling belt
The engine oscillates	The injection pump does not react correctly	Contact the technical service
The engine turns off	Triggering of pump protection device after 10’ (no CIM-13x)	Correctly perform the priming procedure
	Fuel low pressure alarm A2 (CIm-13x) or “STOP” alarm (CEM-120)	Check and replace the engine diesel filter. If after replacing the filter the alarm is triggered again, check for the presence of air bubbles inside the fuel circuit and/or the correct assembly of the fuel filter
	Flow switch connected and enabled through selector S6 (CEM-120)	During the start-up phase of the machine prevent the flow switch from stopping it by means of selector “MAN/AUT”, setting it to “MAN”

ALTERNATOR		
INCONVENIENCE	**POSSIBLE CAUSES**	**SOLUTIONS**
The alternator does not supply power	Blown electronic board AVR fuse	Replace the faulty fuse on the electronic board AVR inside the alternator
	Faulty electronic board AVR	Replace the faulty electronic board AVR inside the alternator
	Demagnetised alternator (after a long downtime)	Perform the magnetisation procedure described in the alternator manual
	Main switch Q1 not enabled	Restore the main switch Q1 closure

INVERTER		
INCONVENIENCE	**POSSIBLE CAUSES**	**SOLUTIONS**
The inverter does not turn on	The generator set does not supply power	Check the item "The alternator does not supply power" for possible causes
	Main switch Q1 not enabled	Restore the main switch Q1 closure
	Inverter faulty	Contact the technical service
The inverter does not turn on	"AUX" selector set to "OFF"	Turn the "AUX" selector to "ON"
	Blown Q6 fuse	Replace the faulty fuse
	Electric pump plug disconnected	Connect the electric pump plug into the relevant socket
	Secondary electric pump plug disconnected and selector S12 set to "SUB+VP" (Lampo double pump)	Connect the secondary electric pump plug
	Secondary electric pump plug disconnected and selector S12 set to "SUB+VP" (Lampo double pump)	If you need to use only the primary electric pump, turn the selector S12 to "VP"
	Inverter keypad set to "LOC/REM"	Press and hold the key "LOC/REM" until the corresponding LED turns off
The inverter starts but it does not reach the minimum speed	Electric pump blocked	Unlock electric pump
The inverter starts but it stops upon releasing the "START" button	Flow switch activated	Select the "MAN" mode using the "MAN/AUT" selector and activate the flow switch with electric pump started
The inverter does not change operating speed	Inverter keypad set to "LOC/REM"	Press and hold the key "LOC/REM" until the corresponding LED turns off
	Faulty potentiometer	Replace potentiometer
The secondary electric pump does not turn on	Blown Q7 fuses	Replace faulty fuses
	Blown Q8 fuse	Replace the faulty fuse
	Secondary electric pump plug disconnected	Connect the secondary electric pump plug into the relevant socket
	Thermal cutout F2 triggered	Check the motor of the secondary electric pump and reset the thermal cutout F2
The submersible electric pump does not move up and/or down	"AUX" selector set to "OFF"	Turn the "AUX" selector to "ON"
	Blown Q6 fuse	Replace the faulty fuse
	The generator set does not supply power	Check the item "The alternator does not supply power" for possible causes
	Electric pump push-button panel not working	Replace the electric pump push-button panel
	Thermal switch Q12 triggered	Reset the thermal switch Q12
	Up/down motor brake blocked	Unlock up/down motor brake
	Up/down motor not working	Replace up/down motor
	Submersible electric pump plug connected	Disconnect the submersible electric pump plug
	Secondary electric pump plug disconnected and selector S12 set to "VP" (Lampo double pump)	If you need to use both pumps, turn the selector S12 to "SUB+VP"
The service panel does not supply power	The generator set does not supply power	Check the item "The alternator does not supply power" for possible causes
	Faulty dedicated magnetothermal switch	Replace the concerned magnetothermal switch

MOST COMMON INVERTER ALARMS		
INCONVENIENCE	**POSSIBLE CAUSES**	**SOLUTIONS**
A041 (Side A IGBT Fault)	Strong conducted or irradiated electromagnetic interferences	Reset the inverter
	Overcurrent; IGBT Overtemperature; IGBT Breakage	
A044 (SW overcurrent)	Sudden load variations	Check inverter and motor nameplate data
	Output short-circuit or short-circuit to the ground	Check for the presence of inverter output short-circuits
	Strong conducted or irradiated electromagnetic interferences	Check for the presence of interferences in the control signals
	Acceleration ramp too short	Increase the acceleration time
	Deceleration ramp too short	Increase the deceleration time

MOST COMMON INVERTER ALARMS		
INCONVENIENCE	**POSSIBLE CAUSES**	**SOLUTIONS**
A045 (Bypass Fault)	Breakage of relay or pre-charge contactor	Reset the inverter
		If the contactor is broken, replace it inside the inverter
A046 (Bypass Connector Fault)	Breakage of relay or pre-charge contactor	Reset the inverter
		If the contactor is broken, replace it inside the inverter
A047 (Undervoltage)	The generator set does not supply power	Check the item "The alternator does not supply power" for possible causes
	Fault in the voltage measurement circuit of the DC BUS	Contact the technical service
A048 (Overvoltage)	Generator set overvoltage	Check the correct operation of the AVR electronic board inside the alternator acting on the "VOLT" and STAB" potentiometers
	Deceleration ramp too short	Increase the deceleration time
	Stop of the inverter with load and without deceleration ramp	Reset the inverter
A050 (A IGBT Fault)	Strong conducted or irradiated electromagnetic interferences	Reset the inverter
	Overcurrent; IGBT Overtemperature; IGBT Breakage	
A051 (Side A Hardware overcurrent)	Sudden load variations	Check inverter and motor nameplate data
	Output short-circuit or short-circuit to the ground	Check for the presence of inverter output short-circuits
	Strong conducted or irradiated electromagnetic interferences	Check for the presence of interferences in the control signals
	Acceleration ramp too short	Increase the acceleration time
	Deceleration ramp too short	Increase the deceleration time
A064 (No power mains)	The generator set does not supply power	Check the item "The alternator does not supply power" for possible causes
A067 (Current input < 4mA)	Faulty pressure transducer	Replace the pressure transducer
	Pressure transducer not connected	Connect the pressure transducer
	Missing pressure transducer and "MAN/AUT" selector set to "AUT"	Set the "MAN/AUT" selector to "MAN"
A074 (Overload)	Electric pump blocked	Check the electric pump and unlock it, if necessary
	Electric pump overload	Check whether the electric pump operation falls within the standard operating conditions
A075 (Overheated motor)	Electric pump blocked	Check the electric pump and unlock it, if necessary
	Electric pump overload	Check whether the electric pump operation falls within the standard operating conditions
A093 (Pre-charge: Open Bypass)	Fault on the piloting circuit of the relay or pre-charge contactor	Reset the inverter
		If the contactor is broken, replace it inside the inverter
A094 (Heat sink overtemperature)	Inverter ambient temperature too high	Check the correct operation of the cooling fans installed on the inverter heat sink
		Clean the air filter on the inverter panel door
	Motor current too high	Check the electric pump motor current
A096 (Fans Fault)	Overheating of the power heat sink with fan blocked or disconnected or faulty	Replace the faulty fan
A103 (Current input > 20mA)	Faulty pressure transducer	Replace the pressure transducer
A109 (Ambient overtemperature)	Inverter ambient temperature too high	Clean the air filter on the inverter panel door

ELECTRIC PUMP		
INCONVENIENCE	**POSSIBLE CAUSES**	**SOLUTIONS**
The electric pump does not turn	Motor/pump coupling in wrong position	Restore the correct coupling position and lock it
	Motor/pump coupling broken	Replace the coupling
	Pump shaft broken	Restore the pump
	The electric pump is blocked due to the presence of foreign bodies/rust	Remove the foreign bodies/rust from the pump body
	The electric pump is blocked due to the absence of water in the body	Fill pump body
Insufficient flow rate	Unsuitable electric pump or pipes	Contact the installer of the pumping unit
	Electric pump or pipes filled inadequately or with residual air pockets (cavitation risk)	Eliminate the air from the pump or pipes
	Excessive suction height (cavitation risk)	Contact the installer of the pumping unit
	Excessive wear of the hydraulic components	Contact the technical service
	Fluid not compatible with specifications	Stop the pump and contact the technical service
	Air is coming in from the suction inlet of the submersible electric pump (cavitation risk)	Immerse the submersible electric pump deeper
	The electric pump motor rotates in the opposite direction	Invert two of the three power supply phases
The electric pump does not supply water	Gland too slacken or worn out with consistent water leakage	Check the gland packing conditions and the tightening of the gland (refer to the electric pump manual)
	Damaged mechanical seal	Contact the technical service for replacement
	Gland packing made of wrong material	Contact the technical service for replacement
	Excessive wear of the hydraulic components	Contact the technical service
	Deprimed electric pump due to insufficient suction head (cavitation risk)	Immerse the submersible electric pump deeper
The electric pump leaks water from the seals/ gaskets	Worn or damaged seals/gaskets	Contact the technical service for replacement
The electric pump leaks water from the shaft seal	Gland too slacken or worn out with consistent water leakage	Check the gland packing conditions and the tightening of the gland (refer to the electric pump manual)
	Damaged mechanical seal	Contact the technical service for replacement
	Gland packing made of wrong material	Contact the technical service for replacement
Noise or vibrations during electric pump operation	Electric pump or pipes filled inadequately or with residual air pockets (cavitation risk)	Eliminate the air from the pump or pipes
	Excessive suction height (cavitation risk)	Contact the installer of the pumping unit
	Excessive wear of the hydraulic components	Contact the technical service
	Misaligned or wrongly coupled pump and motor	Contact the installer of the pumping unit
	Vibrations caused by resonances in the pipes	Contact the installer of the pumping unit
	No bearing lubrication	Check oil level and top up, if necessary
	Unbalanced rotor	Contact the technical service
	Faulty or worn out bearings	Contact the technical service for replacement
	Water with high gas content	Immerse the submersible electric pump deeper
	Wear of shaft and guide bearing of the submersible electric pump	Contact the technical service
The electric pump overheats	Gland too tightened	Loosen the gland
	Insufficient flow rate	Open the delivery valve to increase water flow rate
Bearing overheating	Excessive wear of the hydraulic components	Contact the technical service
	Misaligned or wrongly coupled pump and motor	Contact the installer of the pumping unit
	Insufficient/excessive bearing lubrication	Check oil level and top up, if necessary
The oil level lowers rapidly	Damaged bearing or sealing ring	Contact the technical service

PRIMING SYSTEMS		
INCONVENIENCE	**POSSIBLE CAUSES**	**SOLUTIONS**
The E-Self electric pump does not prime	No water inside the E-Self electric pump	Add water to the E-Self electric pump
	Pipe inverted	Connect the pipes correctly
	Air infiltrations during E-Self electric pump suction	Check the suction pipe of the E-Self electric pump;
The “Pluto” priming tool does not work	Delivery gate valve open	Close the electric pump delivery gate valve
	Damaged “Pluto” suction pipe	Replace suction pipe
	Air infiltrations during Lampo electric pump suction	Check the suction pipe of the Lampo electric pump; check the packings of the Lampo electric pump
	Closed filling valve	Open the valve on the electric pump
The E-Vacuum system does not work	Faulty fuse	Check for any short-circuits and replace the fuse
	Excessive wear of the pump packings	Replace the packing
	Air infiltrations during Lampo electric pump suction	Check the suction pipe of the Lampo electric pump; check the packings of the Lampo electric pump

GSM MODULE		
INCONVENIENCE	**POSSIBLE CAUSES**	**SOLUTIONS**
The control unit does not send SMS	Poor operator signal	Check the operator signal and change operator if necessary
	Incorrect phone number	Check the entered phone number paying attention to the dialling code: before inserting the SIM card in the control unit check the correct dialling code and telephone number with mobile phones
	PIN entered	Disable the PIN before inserting the SIM card in the control unit
	Insufficient credit	Top up the SIM card
	Antenna disconnected	Reconnect the antenna

5.8 MAINTENANCE LOGBOOK BY THE DISTRIBUTOR'S CUSTOMER

An accurate compilation of the maintenance and repair logbook allows the personnel in charge to monitor the operations performed on the system, making subsequent interventions more effective.
The evidence of (preventive, corrective, ordinary and extraordinary) maintenance operations must be kept and made available for control bodies for a minimum of 3 years. (Art. 71 of Italian Legislative Decree no. 81/2008).

Machine:
Model:
Serial number:
Year of manufacture:

Date	Operation performed	Notes	Signature of the operator

It is advisable to photocopy this page before its compilation for future maintenance operations.

6 MACHINE INACTIVITY

Short period of machine inactivity.
Short period of machine inactivity.
“Short” means a period not exceeding 15 days. . During this period it is necessary to continue the normal preventive and ordinary maintenance provided for in the specific Section 5 Maintenance.

Long period of machine inactivity
“Long” means a period exceeding 30 days. .

Before facing this period, it is necessary to operate on the machine so as to limit possible problems due to the static nature of units designed and manufactured to be continuously in motion. Upon accumulation of dust, penetration of moisture in electrical components, atmospheric discharges, possible risk of freezing of some parts, possible foreseeable and unforeseeable external causes, etc.


The machine must be stocked in a covered and dry location

In this case the operations to be carried out are:

1. Set the battery isolator to OFF (if any), so that the machine and the equipment are no longer supplied.
2. Cut off power supply by disconnecting battery connectors, first the negative pole (**BLACK**) and then the positive pole (**RED**)
3. Check the battery status.
4. Empty and clean the diesel tank
5. Replace diesel filter
6. Fill the tank completely with diesel and add **BACTERICIDAL ADDITIVE**
7. Turn the machine on for 5 min.
8. Protect all the equipment that might be affected by moisture.
9. Completely empty the water inside the pump body and priming system, if necessary
10. Clean the pump with water and dry it internally with a jet of compressed air
11. Check coolant level and characteristics
12. Refer to the engine instruction manual for long downtime periods higher than 2 months

In addition to these logical precautions, there are many others of minor importance that can be useful, but not essential.


Every 3 weeks turn the machine on for 5 minutes


It is strictly forbidden to clean the pump using products made from hydrocarbons

Reactivation after a long period of inactivity
Before reactivating the machine after a long period of inactivity, it is necessary to go back over the list, bringing the machine back to the situation before the period of inactivity. Pay special attention to the battery connection step: first connect the positive pole (**RED**), then the negative pole (**BLACK**). Now, it is essential to proceed according to the standard procedure, to check if all the functions of the machine and above all the safety devices are still efficient. Before carrying out any type of handling, it in necessary to make all the checks required for commissioning.


THE MANUFACTURER is not responsible for injuries or damage caused by behaviour other than the one indicated in this manual for cases of short or long periods of inactivity of the machine.

7 LIST OF SPARE PARTS

7.1 QUALIFIED OPERATORS INVOLVED IN SECTION

For any spare part, contact the Manufacturer.
ALWAYS USE ORIGINAL SPARE PARTS.
The manufacturer is not responsible for breakages, malfunctions or damage to persons or property resulting from the use of non-original parts.

For spare parts management, the Manufacturer provides the module below that allows a quick identification of the part to be requested. The use of non-original spare parts is not recommended and, if this occurs, the Warranty conditions (if still in force) and the Manufacturer's Responsibility in the use of the machine and for any damage resulting to persons and/or property become inapplicable. To request spare parts, fill in the attached form, taking care to follow the instructions it contains.
It is advisable to faithfully reproduce this form (also by photocopying it) in order to avoid any kind of error. Fill in the table references to be sent to the Manufacturer with the utmost accuracy.

7.2 MACHINE LAYOUT

7.2.1 SINGLE PUMP VERSION

7.2.2 DOUBLE PUMP VERSION

7.2.3 VERTICAL / HORIZONTAL PUMP VERSION

POSITION	DESCRIPTION	POSITION	DESCRIPTION
1	Engine	11	Cable winder
2	Control unit	12	Tyre
3	Alternator	13	Rim
4	Inverter	14	Helm
5	Exhaust	15	E-Vacuum
6	Working light	16	Vertical pump
7	Remote control	17	Secondary flag motor
8	Hoist motor	18	Secondary electric pump
9	Electric pump	19	Horizontal electric pump
10	Stabilisers		

8 MACHINE DECOMMISSIONING

8.1 QUALIFIED OPERATORS INVOLVED IN SECTION

8.2 INFORMATION FOR DECOMMISSIONING

At the end of the machine lifecycle, provide for its demolition and disposal by relying on specialised and authorised companies, according to the regulations in force. The dismantling operations must be entrusted to qualified personnel and be carried out in a safe manner.
The machine is made of non-biodegradable materials.

9 MACHINE DISPOSAL

9.1 QUALIFIED OPERATORS INVOLVED IN SECTION

9.2 INFORMATION FOR DISPOSAL

For European Union and European Economic Area only.
This symbol indicates that the product cannot be disposed of with the household waste, in accordance with the WEEE Directive (2012/19/EC), the Batteries Directive (2006/66/EC) and/or the national laws implementing these Directives.
The product must be delivered to the designated collection centre, for example the retailer in case of purchase of a new similar product or an authorised collection centre for the recycling of waste electrical and electronic equipment (WEEE), as well as batteries and accumulators. Improper treatment of this type of waste can have negative consequences for the environment and human health due to the potentially harmful substances usually contained in such waste.
The user cooperation for the correct disposal of this product will contribute to an effective use of natural resources and will avoid incurring administrative sanctions pursuant to art. 38 and following of Italian Legislative Decree no. 49/2014.
For further information about recycling of this product, contact local authorities, the waste collection body, an authorised dealer or the household waste collection service.

10 WIRING DIAGRAMS

10.1 QUALIFIED OPERATORS INVOLVED IN SECTION

10.2 DOCUMENTS RELATED TO THE ELECTRIC PART

Maintenance operations, such as inspection, adjustment or repair, must be carried out by qualified personnel only.

WIRING DIAGRAM LAMPO GREEN

REV.	DESCRIPTION OF THE MODIFY	DATE	DRAW	CHECKED	
4					
3					
2					
1					
0	EMISSION	October 2015	F.D.	S.S.	

ORDER:
1617

PROJECT:
WIRING DIAGRAM LAMPO GREEN

FILE:
1617 QE_LAMPO

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DATE:
2015

TABLE
LAMPO GREEN

SHEETS LEGEND

Sheets list (drawing)					
SHEET	FILE	PROJECT	TOTAL SHEETS	NEXT	CUSTOMER
2	1617	ELECTRICAL SYSTEM LAMPO GREEN	42	3	EUROMACCHINE
3	1617	ELECTRICAL SYSTEM LAMPO GREEN	42	4	EUROMACCHINE
4	1617	ELECTRICAL SYSTEM LAMPO GREEN	42	5	EUROMACCHINE
5	1617	ELECTRICAL SYSTEM LAMPO GREEN	42	5A	EUROMACCHINE
5A	1617	ELECTRICAL SYSTEM LAMPO GREEN	42	6	EUROMACCHINE
6	1617	ELECTRICAL SYSTEM LAMPO GREEN	42	7	EUROMACCHINE
7	1617	ELECTRICAL SYSTEM LAMPO GREEN	42	20	EUROMACCHINE
20	1617	ELECTRICAL SYSTEM LAMPO GREEN	42	21A	EUROMACCHINE
21A	1617	ELECTRICAL SYSTEM LAMPO GREEN	42	21B	EUROMACCHINE
21B	1617	ELECTRICAL SYSTEM LAMPO GREEN	42	21C	EUROMACCHINE
21C	1617	ELECTRICAL SYSTEM LAMPO GREEN	42	22	EUROMACCHINE
22	1617	ELECTRICAL SYSTEM LAMPO GREEN	42	23	EUROMACCHINE
23	1617	ELECTRICAL SYSTEM LAMPO GREEN	42	23A	EUROMACCHINE
23A	1617	ELECTRICAL SYSTEM LAMPO GREEN	42	24	EUROMACCHINE
24	1617	ELECTRICAL SYSTEM LAMPO GREEN	42	25	EUROMACCHINE
25	1617	ELECTRICAL SYSTEM LAMPO GREEN	42	150	EUROMACCHINE
150	1617	ELECTRICAL SYSTEM LAMPO GREEN	42	151	EUROMACCHINE
151	1617	ELECTRICAL SYSTEM LAMPO GREEN	42	152	EUROMACCHINE
152	1617	ELECTRICAL SYSTEM LAMPO GREEN	42	152A	EUROMACCHINE
152A	1617	ELECTRICAL SYSTEM LAMPO GREEN	42	152B	EUROMACCHINE
152B	1617	ELECTRICAL SYSTEM LAMPO GREEN	42	152C	EUROMACCHINE
152C	1617	ELECTRICAL SYSTEM LAMPO GREEN	42	153	EUROMACCHINE
153	1617	ELECTRICAL SYSTEM LAMPO GREEN	42	154	EUROMACCHINE
154	1617	ELECTRICAL SYSTEM LAMPO GREEN	42	155	EUROMACCHINE
155	1617	ELECTRICAL SYSTEM LAMPO GREEN	42	155A	EUROMACCHINE
155A	1617	ELECTRICAL SYSTEM LAMPO GREEN	42	160	EUROMACCHINE
160	1617	ELECTRICAL SYSTEM LAMPO GREEN	42	161	EUROMACCHINE
161	1617	ELECTRICAL SYSTEM LAMPO GREEN	42	170	EUROMACCHINE
170	1617	ELECTRICAL SYSTEM LAMPO GREEN	42	171	EUROMACCHINE
171	1617	ELECTRICAL SYSTEM LAMPO GREEN	42	172	EUROMACCHINE
172	1617	ELECTRICAL SYSTEM LAMPO GREEN	42	180	EUROMACCHINE
180	1617	ELECTRICAL SYSTEM LAMPO GREEN	42	181	EUROMACCHINE
181	1617	ELECTRICAL SYSTEM LAMPO GREEN	42	200	EUROMACCHINE
200	1617	ELECTRICAL SYSTEM LAMPO GREEN	42	201	EUROMACCHINE
201	1617	ELECTRICAL SYSTEM LAMPO GREEN	42	202	EUROMACCHINE
202	1617	ELECTRICAL SYSTEM LAMPO GREEN	42	300	EUROMACCHINE
300	1617	ELECTRICAL SYSTEM LAMPO GREEN	42	301	EUROMACCHINE
301	1617	ELECTRICAL SYSTEM LAMPO GREEN	42	302	EUROMACCHINE
302	1617	ELECTRICAL SYSTEM LAMPO GREEN	42	400	EUROMACCHINE
400	1617	ELECTRICAL SYSTEM LAMPO GREEN	42	401	EUROMACCHINE
401	1617	ELECTRICAL SYSTEM LAMPO GREEN	42		EUROMACCHINE

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CUSTOMER: EUROMACCHINE | ORDER: 1617
PROJECT: ELECTRICAL SYSTEM LAMPO GREEN | FILE: 1617 QE_LAMPO
LAYOUT: WIRING DIAGRAM LAMPO GREEN | EMISSION: November 2014

REV.	DESCRIPTION OF THE MODIFY	DATE	DRAW

TABLE no. LAMPO GREEN
SHEET 2 of 42
NEXT 3

INTERNAL VIEW OF ELECTRIC PANEL
AND DISPOSAL OF EQUIPMENT

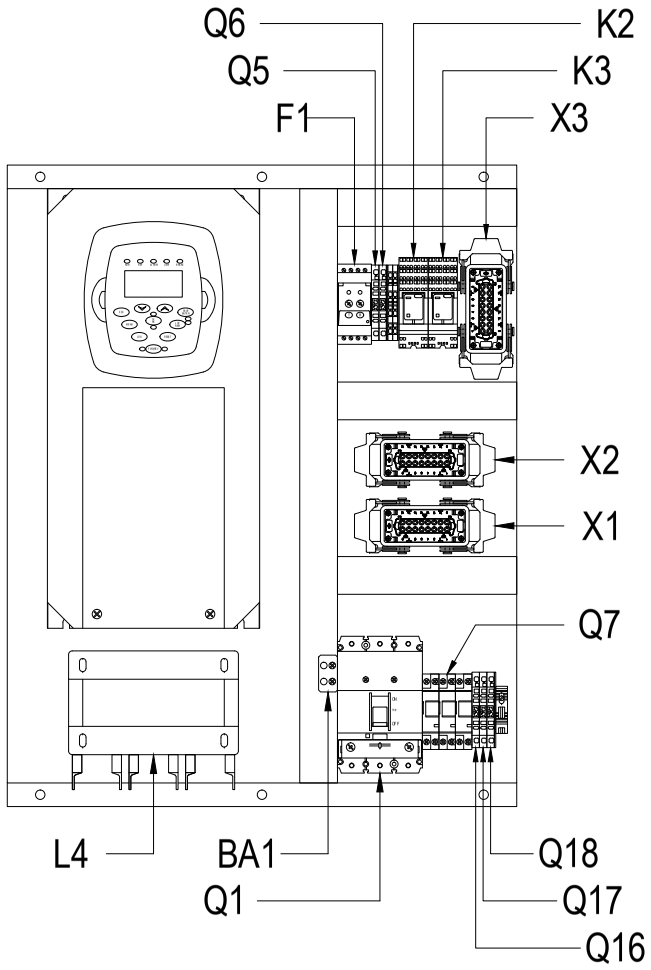

PLATE IDENTIFICATION EXAMPLE

CEI EN 60439-1 (CEI 17-13/1)
MANUFACTURER:
IDENTIFICATION no.
Ue ___ V F ___ Hz Ui ___ V
In ___ A Icc ___ KA IP ___

ALL THE ACTIVE PARTS INSIDE THE ELECTRIC PANEL THAT REMAIN LIVE WITH THE THE ELECTRIC PANEL DOOR OPEN ARE INSULATED AND/OR INAPPED TO THE TEST DIA WITH IP2X PROTECTION DEGREE

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CUSTOMER:	EUROMACCHINE	ORDER:	1617
PROJECT:	ELECTRICAL SYSTEM LAMPO GREEN	FILE:	1617 QE_LAMPO
LAYOUT:	WIRING DIAGRAM LAMPO GREEN	EMISSION:	November 2014

REV.	DESCRIPTION OF THE MODIFY	DATE	DRAW

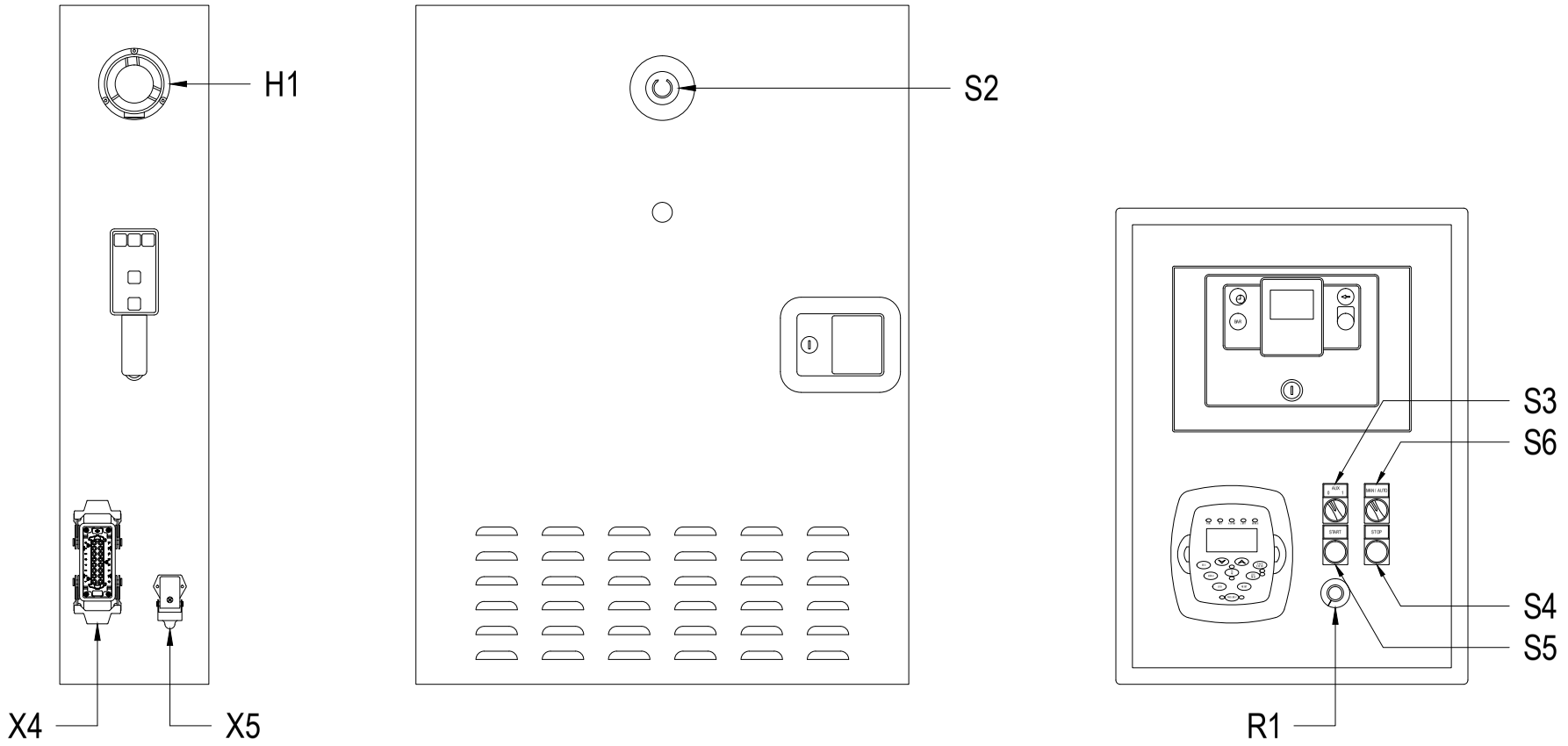
TABLE no. LAMPO GREEN
SHEET 3 of 42
NEXT 4

EXTERNAL VIEW OF LAMPO GREEN AND DISPOSAL OF EQUIPMENT

CONTROL PUSH–BUTTON

INVERTER ELECTRIC PANEL DOOR

CONTROL UNIT PANEL CEM–120 / CIM–25x



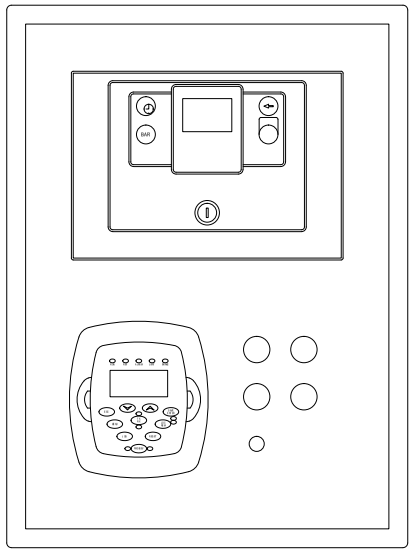
Euromacchine	via delle Industrie, 20 31047 Ponte di Piave (TV) T: +39 0422 853200 - F: +39 0422 853461	CUSTOMER: EUROMACCHINE	ORDER: 1617
		PROJECT: ELECTRICAL SYSTEM LAMPO GREEN	FILE: 1617 QE_LAMPO
		LAYOUT: WIRING DIAGRAM LAMPO GREEN	EMISSION: November 2014

REV.	DESCRIPTION OF THE MODIFY	DATE	DRAW

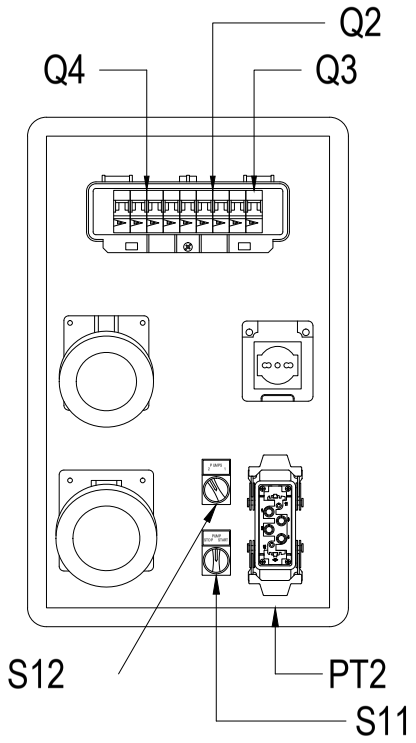
TABLE no. LAMPO GREEN
SHEET 4 of 42
NEXT 5

EXTERNAL VIEW OF LAMPO GREEN AND DISPOSAL OF EQUIPMENT

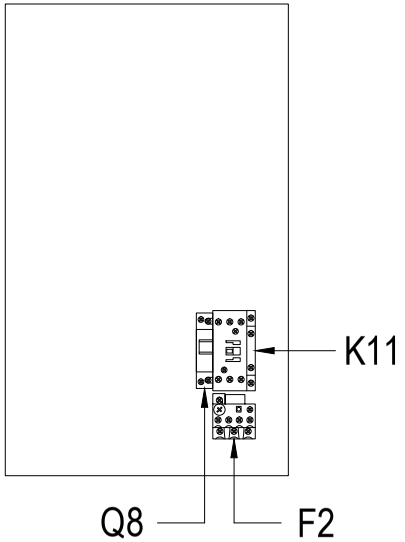
CONTROL UNIT PANEL
CIM–13x



SERVICES PANEL
DOUBLE PUMP



INTERNAL VIEW SERVICES PANEL
SUBMERSIBLE PUMP COMMAND



Euromacchine	CUSTOMER: EUROMACCHINE	ORDER: 1617	TABLE no. LAMPO GREEN
via delle Industrie, 20 31047 Ponte di Piave (TV) T: +39 0422 853200 - F: +39 0422 853461	PROJECT: ELECTRICAL SYSTEM LAMPO GREEN	FILE: 1617 QE_LAMPO	SHEET 5 of 42
	LAYOUT: WIRING DIAGRAM LAMPO GREEN	EMISSION: November 2014	NEXT 5A

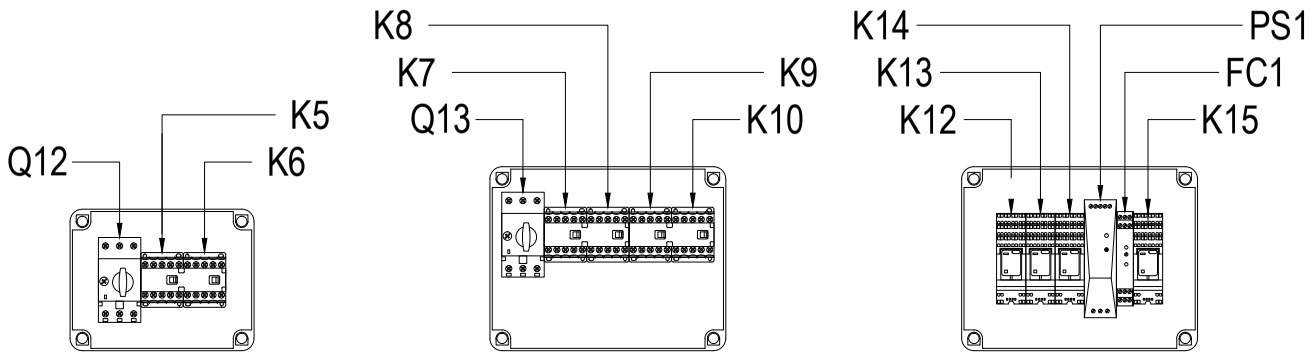
REV.	DESCRIPTION OF THE MODIFY	DATE	DRAW

EXTERNAL VIEW OF LAMPO GREEN
AND DISPOSAL OF EQUIPMENT

INTERNAL VIEW ELECTRIC PANEL
2 MOVEMENTS UP/DOWN
SUBMERSIBLE PUMP

INTERNAL VIEW ELECTRIC PANEL
4 MOVEMENTS UP/DOWN
SUBMERSIBLE PUMP

INTERNAL VIEW ELECTRIC PANEL
CIM–13x CONTROL

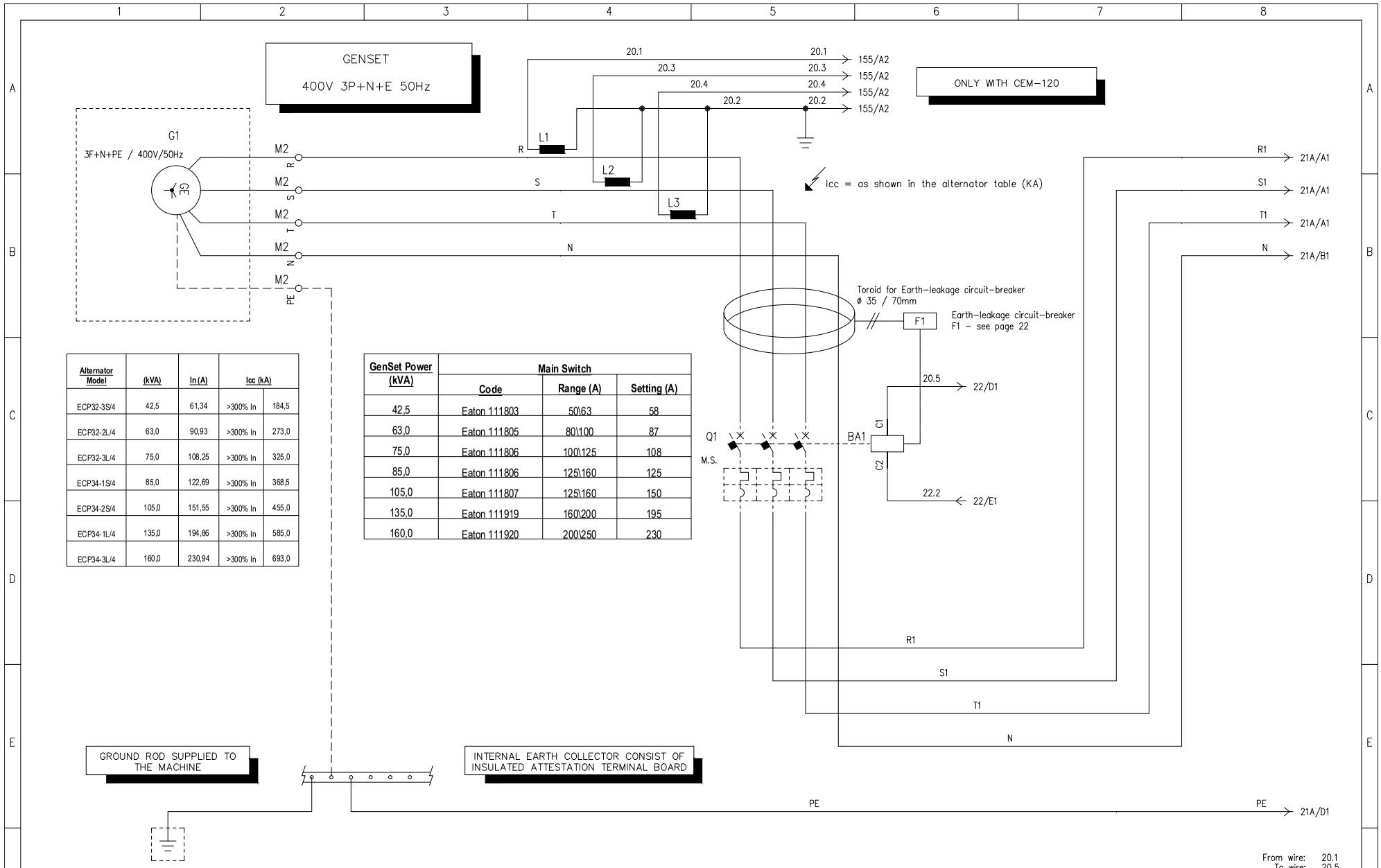


Euromacchine
via delle Industrie, 20
31047 Ponte di Piave (TV)
T: +39 0422 853200 - F: +39 0422 853461

CUSTOMER:	EUROMACCHINE	ORDER:	1617
PROJECT:	ELECTRICAL SYSTEM LAMPO GREEN	FILE:	1617 QE_LAMPO
LAYOUT:	WIRING DIAGRAM LAMPO GREEN	EMISSION:	November 2014

REV.	DESCRIPTION OF THE MODIFY	DATE	DRAW

TABLE no. LAMPO GREEN
SHEET 5A of 42
NEXT 6



Alternator Model	(kVA)	In (A)	Icc (kA)	
ECP32-3S/4	42,5	61,34	>300% In	184,5
ECP32-2L/4	63,0	90,93	>300% In	273,0
ECP32-3L/4	75,0	108,25	>300% In	325,0
ECP34-1S/4	85,0	122,69	>300% In	368,5
ECP34-2S/4	105,0	151,55	>300% In	455,0
ECP34-1L/4	135,0	194,86	>300% In	585,0
ECP34-3L/4	160,0	230,94	>300% In	693,0

GenSet Power (kVA)	Main Switch		
	Code	Range (A)	Setting (A)
42,5	Eaton 111803	50\63	58
63,0	Eaton 111805	80\100	87
75,0	Eaton 111806	100\125	108
85,0	Eaton 111806	125\160	125
105,0	Eaton 111807	125\160	150
135,0	Eaton 111919	160\200	195
160,0	Eaton 111920	200\250	230

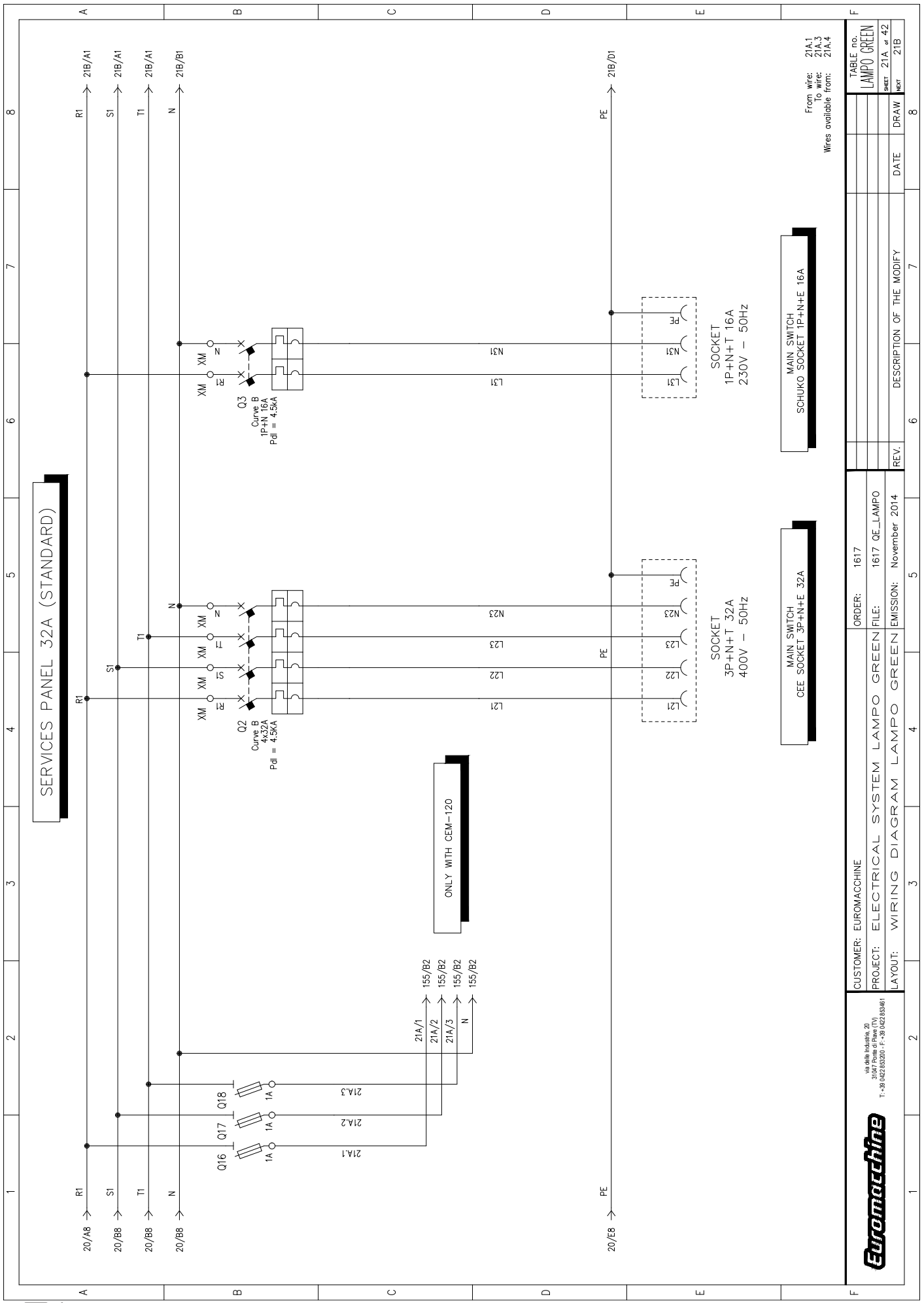
From wire: 20.1
To wire: 20.5
Wires available from: 20.6

Euromacchine
via delle Industrie, 20
31047 Ponte di Piave (TV)
T: +39 0422 853200 - F: +39 0422 853461

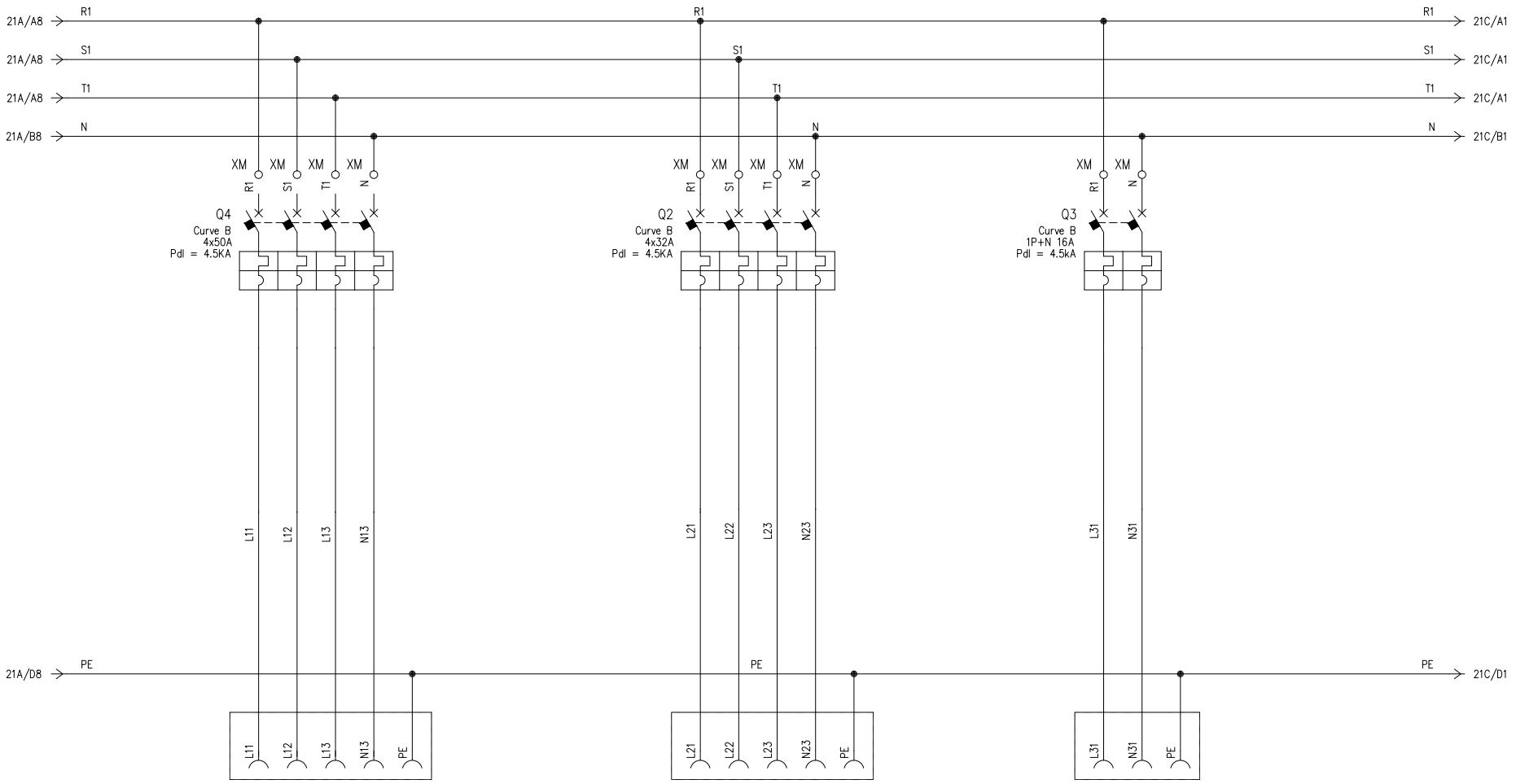
CUSTOMER:	EUROMACCHINE	ORDER:	1617
PROJECT:	ELECTRICAL SYSTEM LAMPO GREEN	FILE:	1617 QE_LAMPO
LAYOUT:	WIRING DIAGRAM LAMPO GREEN	EMISSION:	November 2014

REV.	DESCRIPTION OF THE MODIFY	DATE	DRAW

TABLE no.
LAMPO GREEN
SHEET 20 of 42
NEXT 21A


SERVICES PANEL 32A (STANDARD)
MAIN SWITCH
CEE SOCKET 3P+N+E 32A
SOCKET
3P+N+T 32A
400V ~ 50Hz
MAIN SWITCH
SCHUKO SOCKET 1P+N+E 16A
SOCKET
1P+N+T 16A
230V ~ 50Hz
ONLY WITH CEM-120
Q2
Curve B
4x32A
Pdl = 4.5KA
Q3
Curve B
1P+N 16A
Pdl = 4.5kA
Q16
Q17
Q18
1A
21A.1
21A.2
21A.3
21A/1
21A/2
21A/3
155/B2
20/A8
20/B8
20/E8
21B/A1
21B/B1
21B/D1
From wire: 21A.1
To wire: 21A.3
Wires ovgilable from: 21A.4
CUSTOMER: EUROMACCHINE
ORDER: 1617
PROJECT: ELECTRICAL SYSTEM LAMPO GREEN
FILE: 1617 QE_LAMPO
LAYOUT: WIRING DIAGRAM LAMPO GREEN
EMISSION: November 2014
REV.
DESCRIPTION OF THE MODIFY
DATE
DRAW
TABLE no.
LAMPO GREEN
SHEET 21A of 42
NEXT 21B
Euromacchine
via delle Industrie, 20
31047 Ponte di Piave (TV)
T. +39 0422 853200 - F. +39 0422 853461

SERVICES PANEL 50A (OPTIONAL)



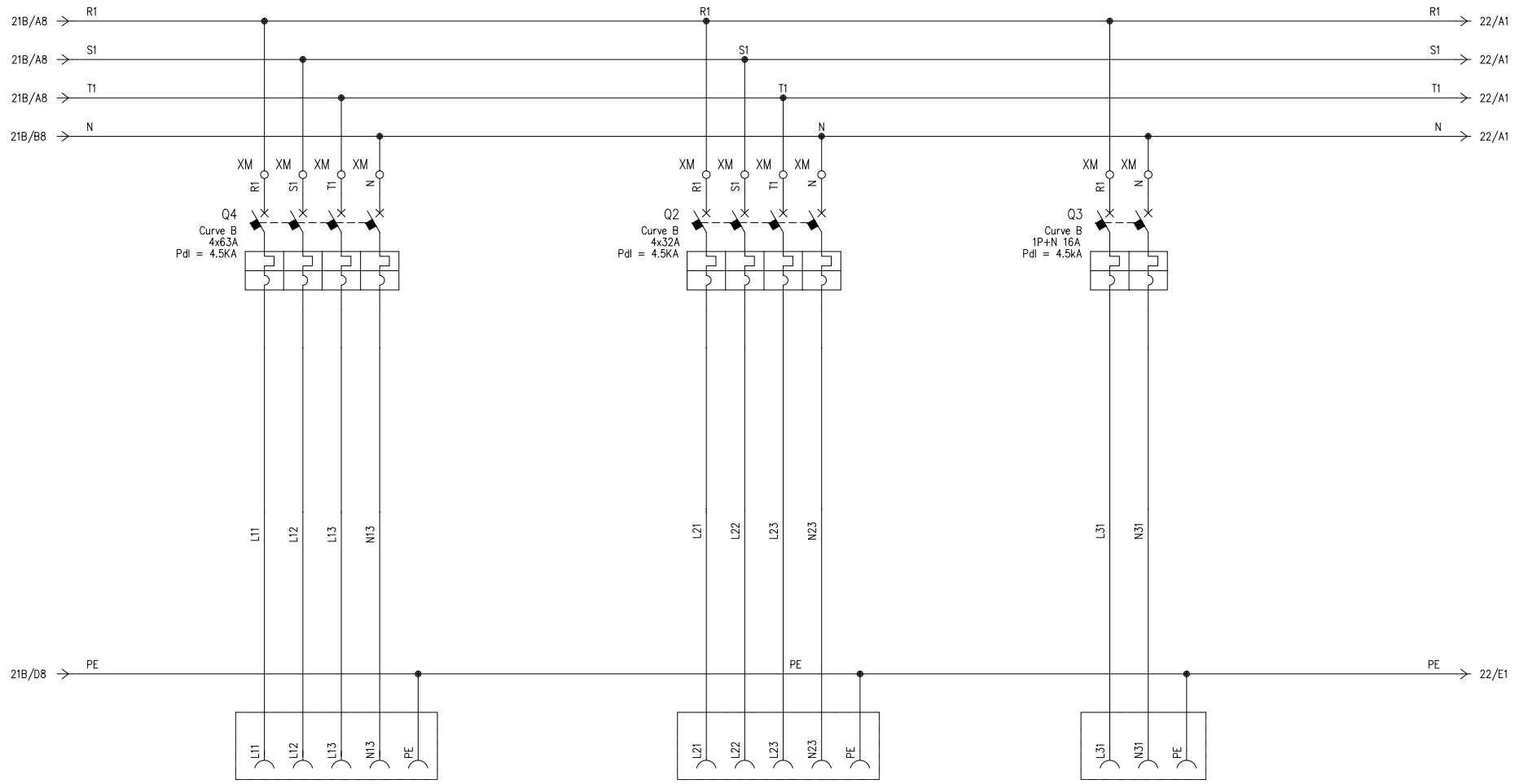
Euromacchine
via delle Industrie, 20
31047 Ponte di Piave (TV)
T: +39 0422 853200 - F: +39 0422 853461

CUSTOMER:	EUROMACCHINE	ORDER:	1617
PROJECT:	ELECTRICAL SYSTEM LAMPO GREEN	FILE:	1617 QE_LAMPO
LAYOUT:	WIRING DIAGRAM LAMPO GREEN	EMISSION:	November 2014

REV.	DESCRIPTION OF THE MODIFY	DATE	DRAW

TABLE no. LAMPO GREEN
SHEET 21B of 42
NEXT 21C

SERVICES PANEL 63A (OPTIONAL)



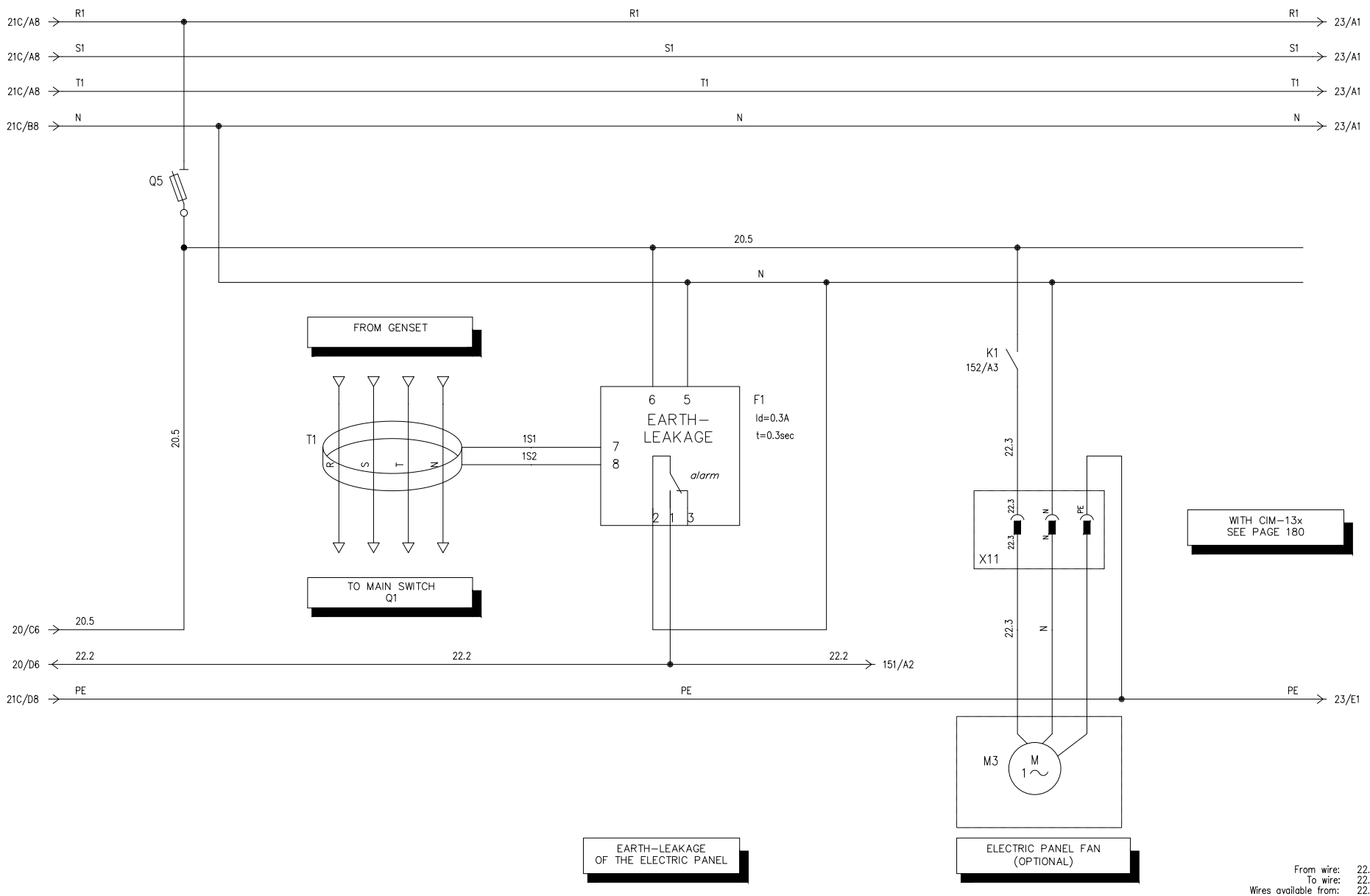
From wire: \
To wire: \
Wires available from: 21C.1

Euromacchine
via delle Industrie, 20
31047 Ponte di Piave (TV)
T: +39 0422 853200 - F: +39 0422 853461

CUSTOMER:	EUROMACCHINE	ORDER:	1617
PROJECT:	ELECTRICAL SYSTEM LAMPO GREEN	FILE:	1617 QE_LAMPO
LAYOUT:	WIRING DIAGRAM LAMPO GREEN	EMISSION:	November 2014

REV.	DESCRIPTION OF THE MODIFY	DATE	DRAW

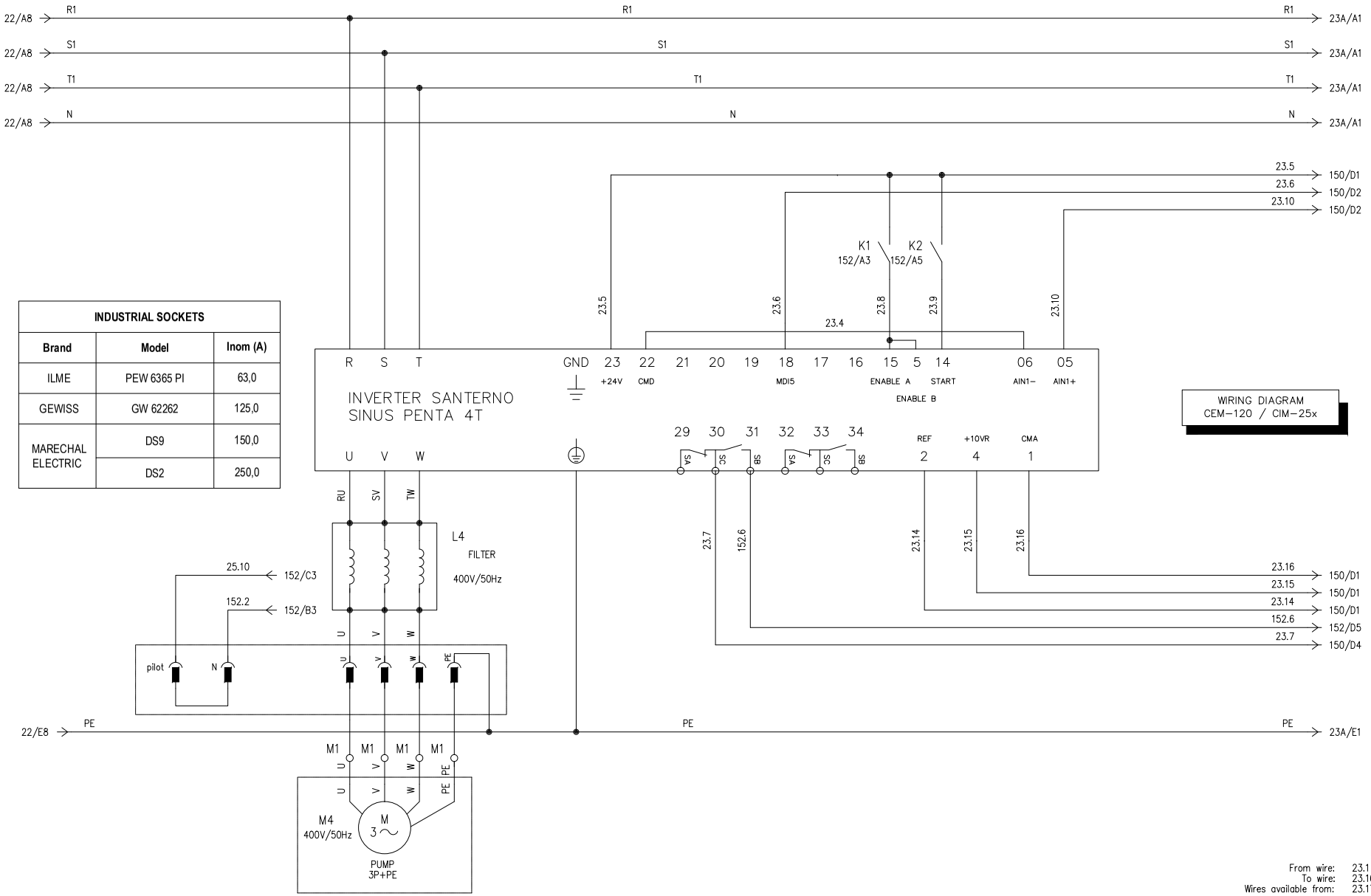
TABLE no. LAMPO GREEN
SHEET 21C of 42
NEXT 22



Euromacchine	via delle Industrie, 20 31047 Ponte di Piave (TV) T: +39 0422 853200 - F: +39 0422 853461	CUSTOMER: EUROMACCHINE	ORDER: 1617
		PROJECT: ELECTRICAL SYSTEM LAMPO GREEN	FILE: 1617 QE_LAMPO
		LAYOUT: WIRING DIAGRAM LAMPO GREEN	EMISSION: November 2014

REV.	DESCRIPTION OF THE MODIFY	DATE	DRAW

TABLE no. LAMPO GREEN
SHEET 22 of 42
NEXT 23



INDUSTRIAL SOCKETS		
Brand	**Model**	**Inom (A)**
ILME	PEW 6365 PI	63,0
GEWISS	GW 62262	125,0
MARECHAL ELECTRIC	DS9	150,0
	DS2	250,0

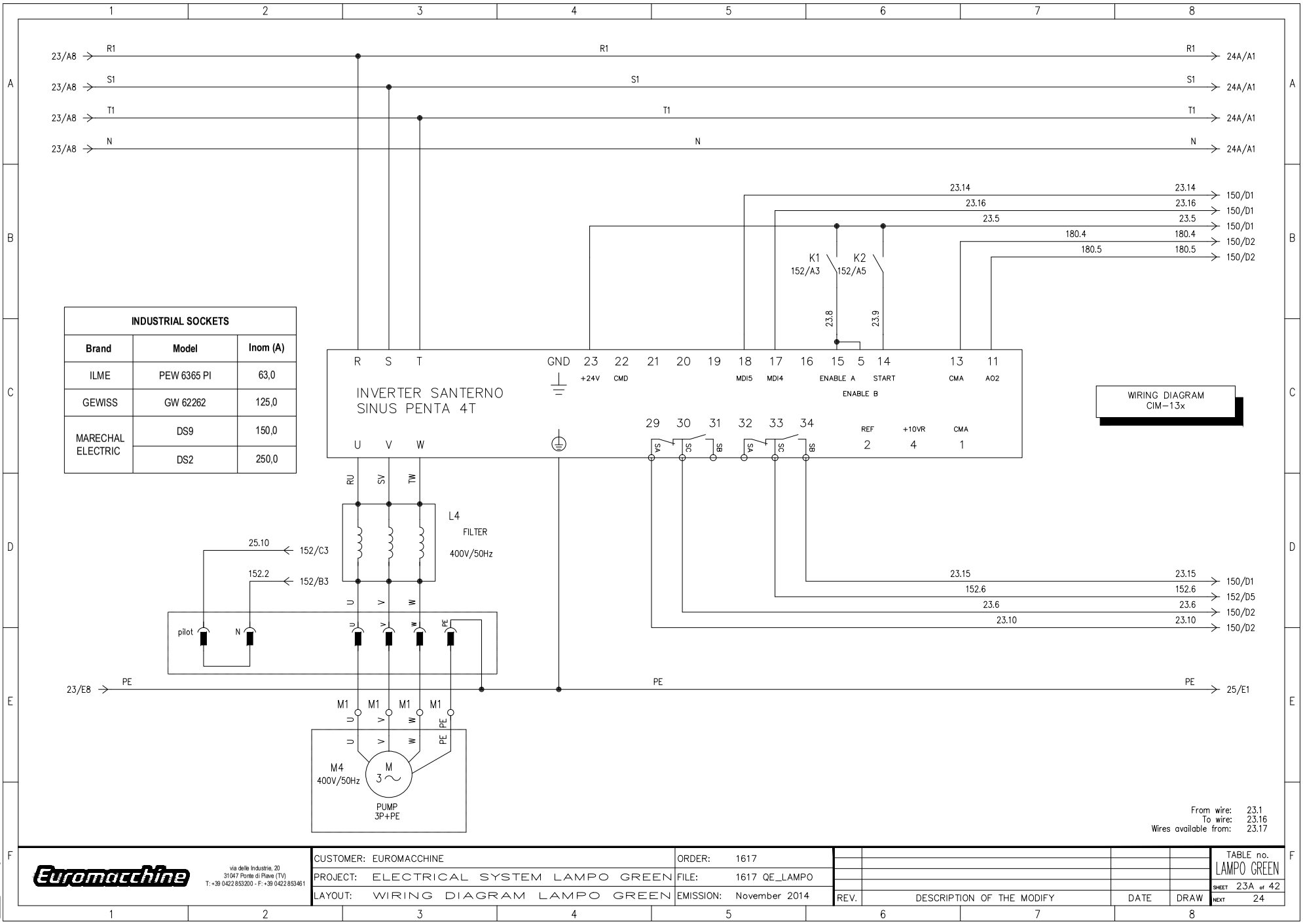
From wire: 23.1
To wire: 23.16
Wires available from: 23.17

Euromacchine
via delle Industrie, 20
31047 Ponte di Piave (TV)
T: +39 0422 853200 - F: +39 0422 853461

CUSTOMER:	EUROMACCHINE	ORDER:	1617
PROJECT:	ELECTRICAL SYSTEM LAMPO GREEN	FILE:	1617 QE_LAMPO
LAYOUT:	WIRING DIAGRAM LAMPO GREEN	EMISSION:	November 2014

REV.	DESCRIPTION OF THE MODIFY	DATE	DRAW

TABLE no. LAMPO GREEN
SHEET 23 of 42
NEXT 23A



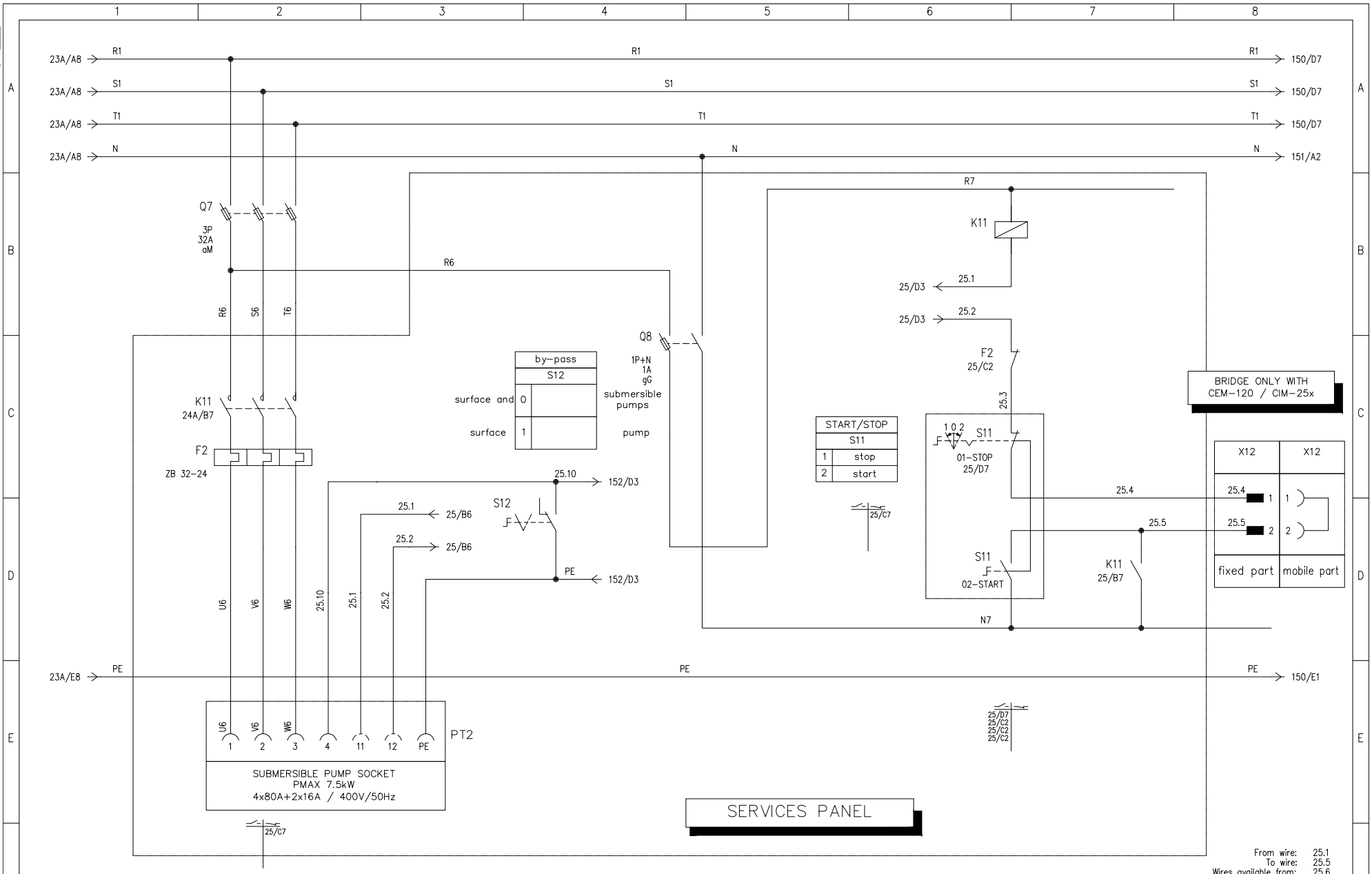
INDUSTRIAL SOCKETS		
Brand	**Model**	**Inom (A)**
ILME	PEW 6365 PI	63,0
GEWISS	GW 62262	125,0
MARECHAL ELECTRIC	DS9	150,0
	DS2	250,0

Euromacchine
via delle Industrie, 20
31047 Ponte di Piave (TV)
T: +39 0422 853200 - F: +39 0422 853461

CUSTOMER:	EUROMACCHINE	ORDER:	1617
PROJECT:	ELECTRICAL SYSTEM LAMPO GREEN	FILE:	1617 QE_LAMPO
LAYOUT:	WIRING DIAGRAM LAMPO GREEN	EMISSION:	November 2014

REV.	DESCRIPTION OF THE MODIFY	DATE	DRAW

TABLE no. LAMPO GREEN
SHEET 23A of 42
NEXT 24

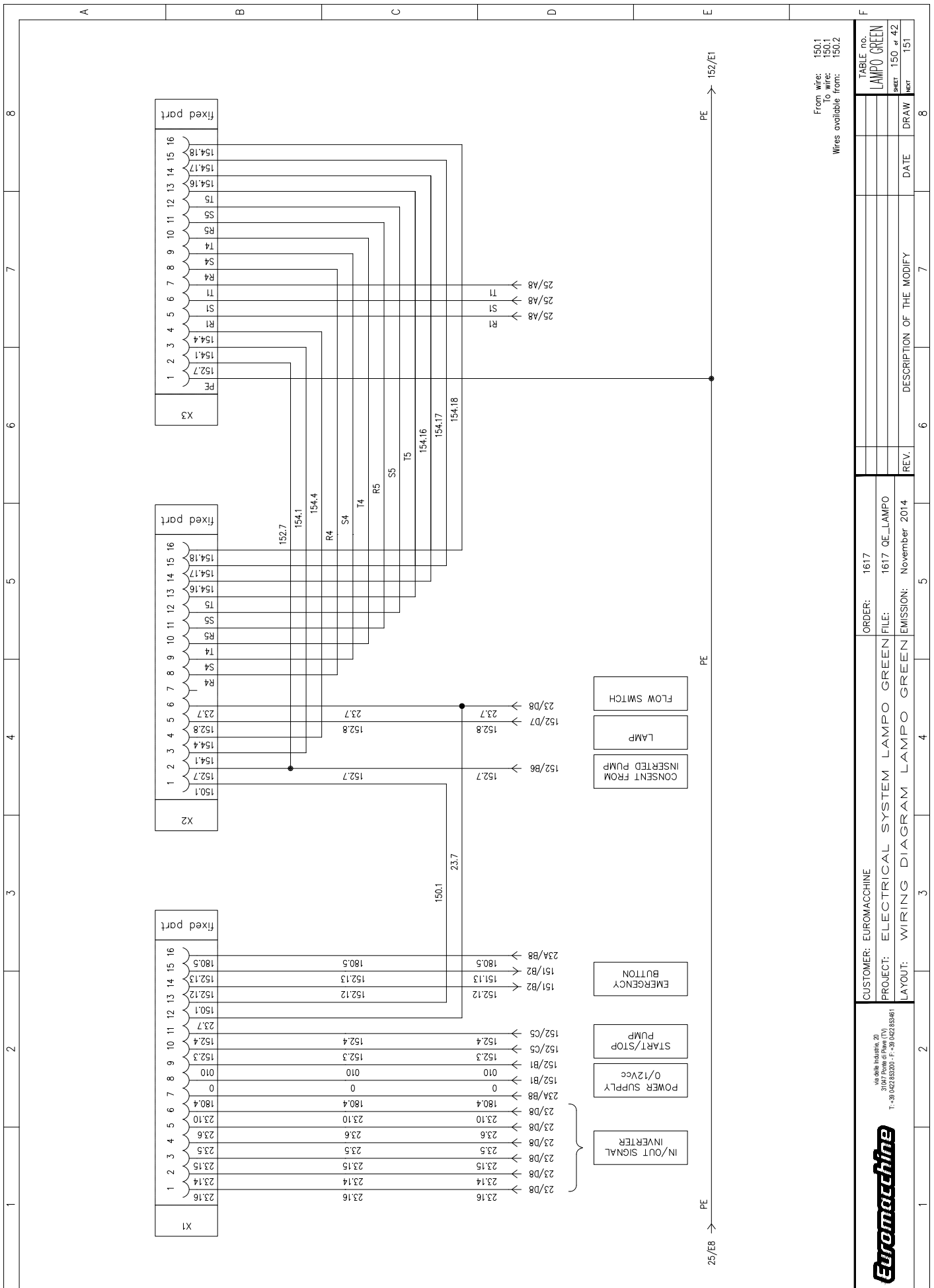


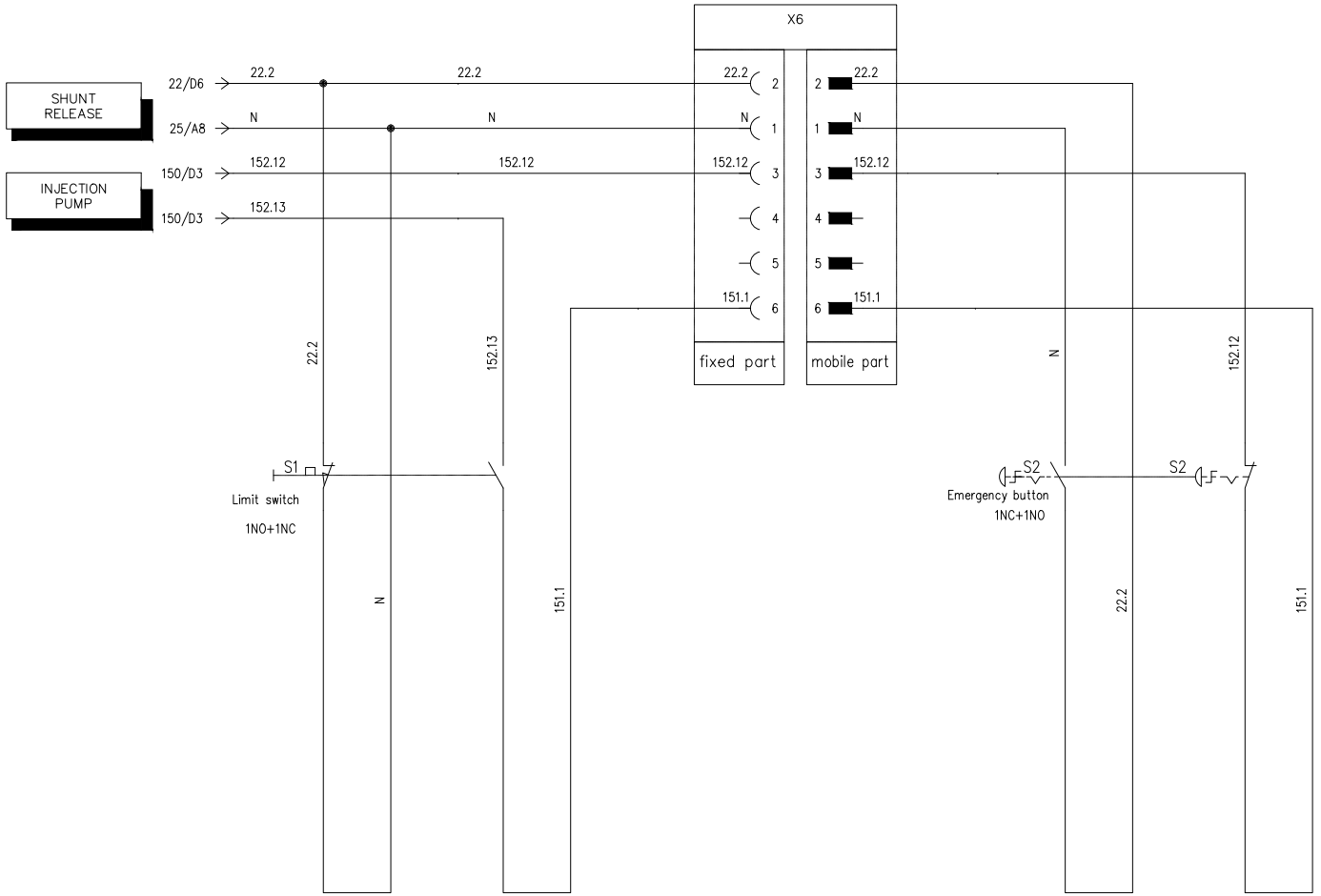
Euromacchine
via delle Industrie, 20
31047 Ponte di Piave (TV)
T: +39 0422 853200 - F: +39 0422 853461

CUSTOMER: EUROMACCHINE		ORDER:	1617
PROJECT: ELECTRICAL SYSTEM LAMPO GREEN		FILE:	1617 QE_LAMPO
LAYOUT: WIRING DIAGRAM LAMPO GREEN		EMISSION:	November 2014

REV.	DESCRIPTION OF THE MODIFY	DATE	DRAW

TABLE no. LAMPO GREEN
SHEET 25 of 42
NEXT 150


Euromacchine
via delle Industrie, 20
31047 Ponte di Piave (TV)
T: +39 0422 853200 - F: +39 0422 853461
CUSTOMER: EUROMACCHINE
PROJECT: ELECTRICAL SYSTEM LAMPO GREEN
LAYOUT: WIRING DIAGRAM LAMPO GREEN
ORDER: 1617
FILE: 1617 QE_LAMPO
EMISSION: November 2014
REV.
DESCRIPTION OF THE MODIFY
DATE
DRAW
TABLE no.
LAMPO GREEN
SHEET 150 of 42
NEXT 151
From wire: 150.1
To wire: 150.1
Wires available from: 150.2
X1
X2
X3
fixed part
CONSENT FROM INSERTED PUMP
LAMP
FLOW SWITCH
EMERGENCY BUTTON
START/STOP PUMP
POWER SUPPLY 0/12Vcc
IN/OUT SIGNAL INVERTER
PE
152/E1
25/E8
150.1
23.7
152.7
154.1
154.4
R4
S4
T4
R5
S5
T5
154.16
154.17
154.18
25/A8
T1
S1
R1
23/D8
152/D7
152/B6
151/B2
234/B8
152/C5
152/B1
010
0
180.4
23.10
23.6
23.5
23.15
23.14
23.16
23.7
152.8
152.4
152.3
152.13
152.12
151.13
180.5

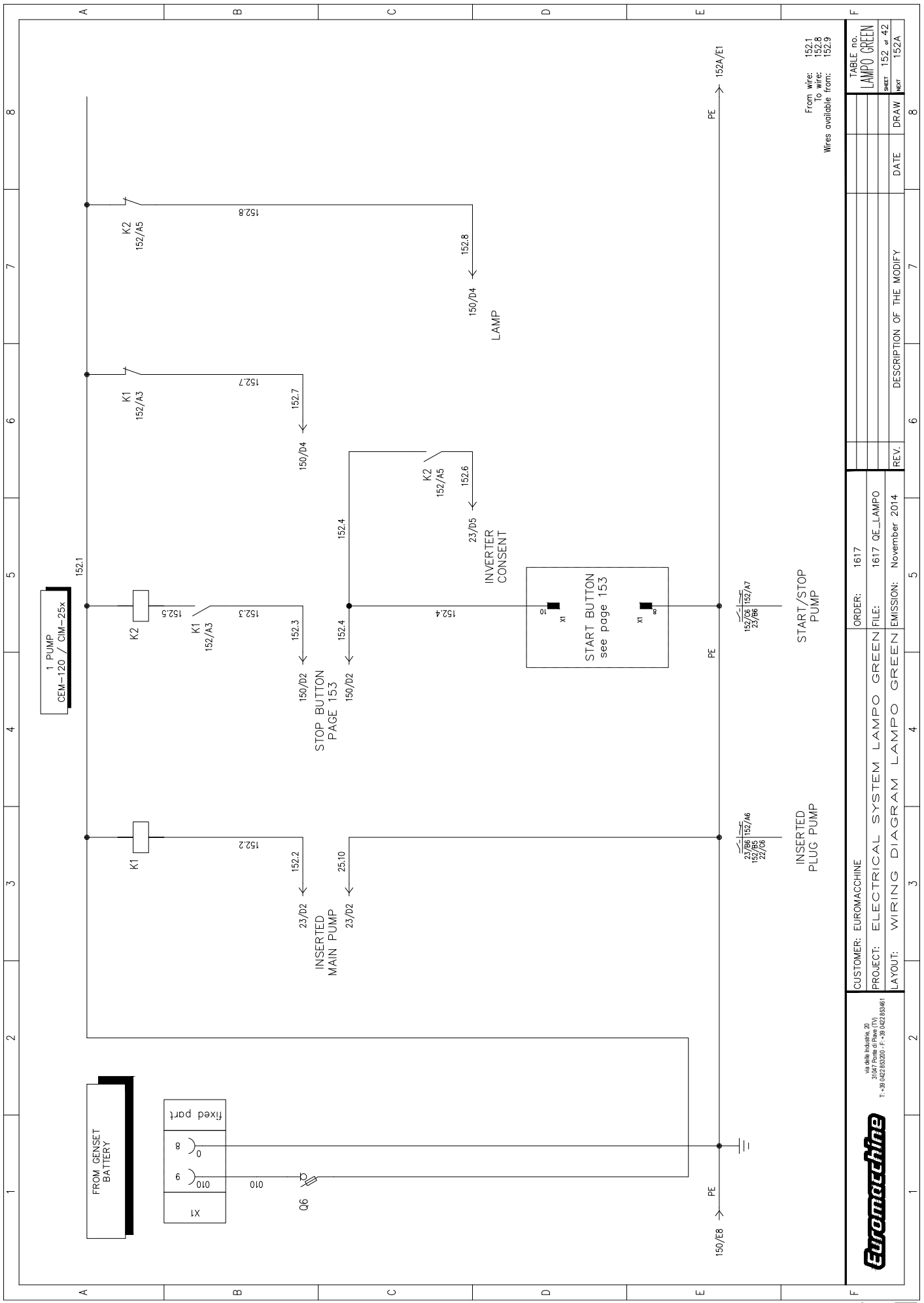


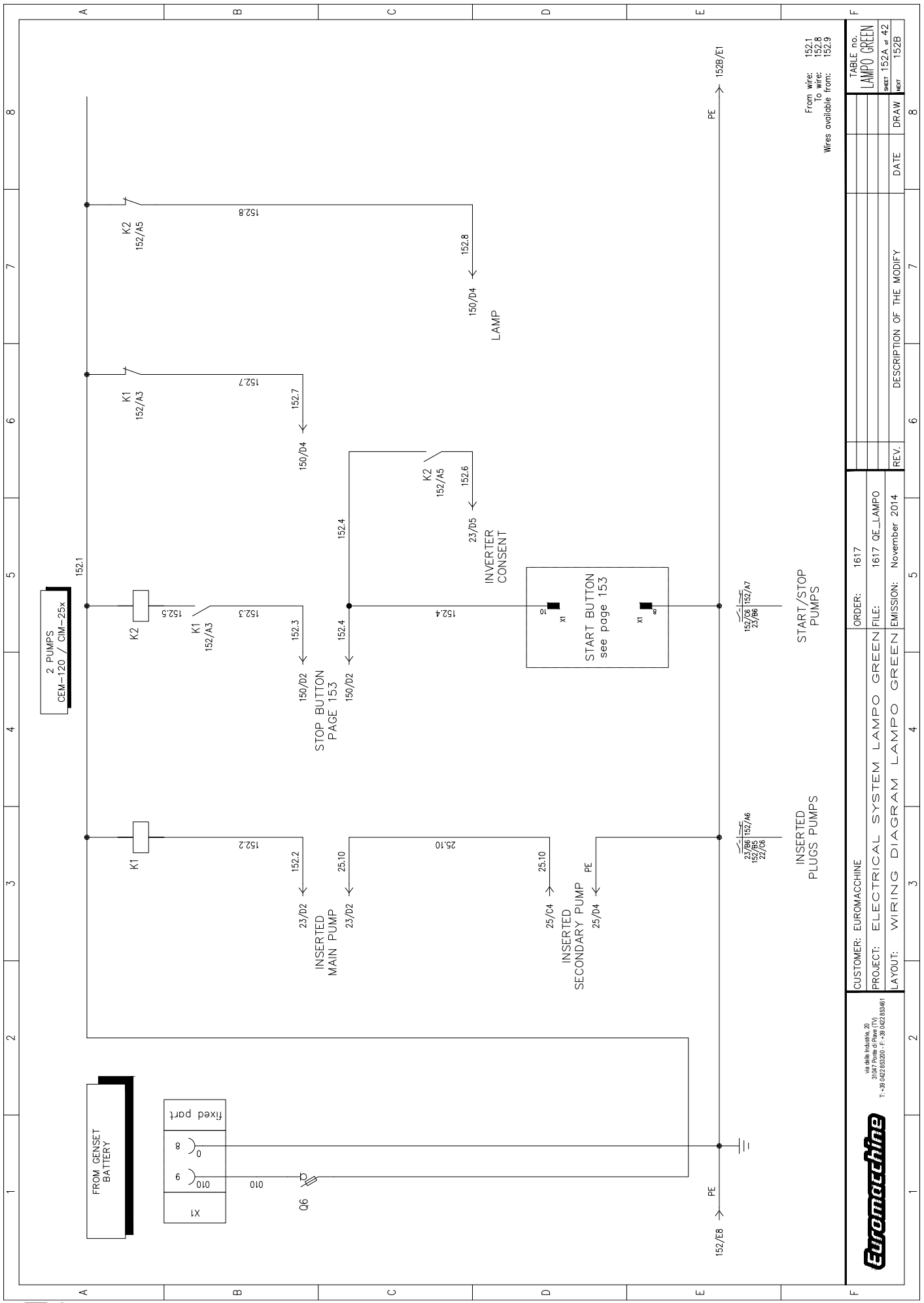
From wire: 151.1
To wire: 151.1
Wires available from: 151.2

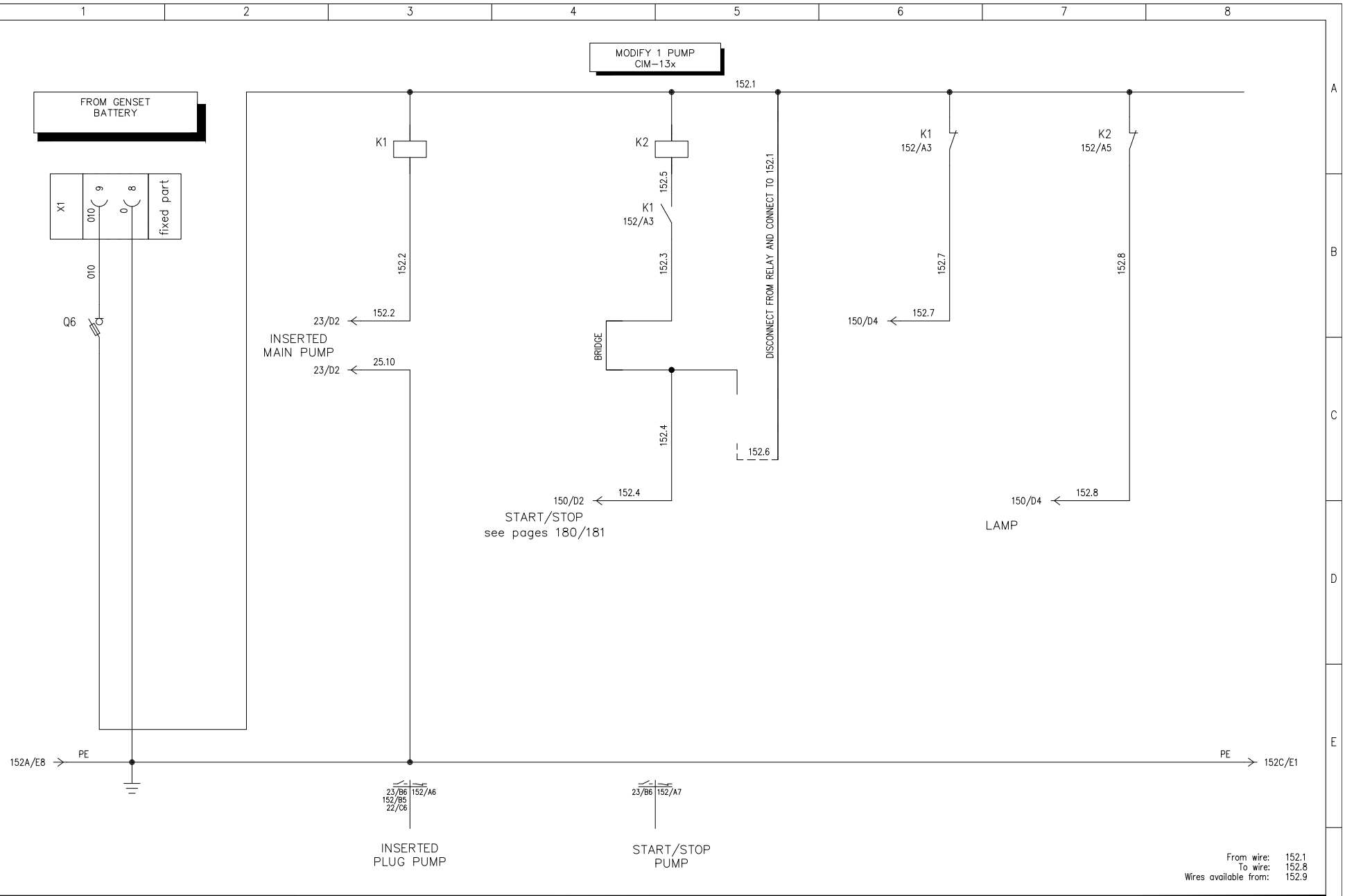
Euromacchine
via delle Industrie, 20
31047 Ponte di Piave (TV)
T: +39 0422 853200 - F: +39 0422 853461

CUSTOMER: EUROMACCHINE	ORDER: 1617	TABLE no. LAMPO GREEN	
PROJECT: ELECTRICAL SYSTEM LAMPO GREEN	FILE: 1617 QE_LAMPO	SHEET 151 of 42	
LAYOUT: WIRING DIAGRAM LAMPO GREEN	EMISSION: November 2014	NEXT 152	

REV.	DESCRIPTION OF THE MODIFY	DATE	DRAW


1 PUMP
CEM-120 / CIM-25x
152.1
K1
152/A3
152.3
152.2
K2
152/A5
152.5
152.8
152.7
152.6
152.4
K1
152/A3
K2
152/A5
K1
152/A3
150/D2
STOP BUTTON
PAGE 153
150/D2
23/D2
INSERTED
MAIN PUMP
23/D2
25.10
150/D4
152.8
LAMP
150/D4
152.7
23/D5
INVERTER
CONSENT
152.4
START BUTTON
see page 153
X1
10
X1
8
152/A7
152/06
23/86
START/STOP
PUMP
PE
152A/E1
PE
PE
150/E8
23/86
152/85
22/06
152/A6
INSERTED
PLUG PUMP
FROM GENSET
BATTERY
X1
fixed part
8
0
9
010
010
Q6
From wire: 152.1
To wire: 152.8
Wires available from: 152.9
REV.
DESCRIPTION OF THE MODIFY
DATE
DRAW
TABLE no.
LAMPO GREEN
SHEET 152 of 42
NEXT 152A
CUSTOMER: EUROMACCHINE
ORDER: 1617
PROJECT: ELECTRICAL SYSTEM LAMPO GREEN
FILE: 1617 QE_LAMPO
LAYOUT: WIRING DIAGRAM LAMPO GREEN
EMISSION: November 2014
Euromacchine
via delle Industrie, 20
31047 Ponte di Piave (TV)
T: +39 0422 853200 - F: +39 0422 853461


2 PUMPS
CEM-120 / CIM-25x
152.1
K2
152/A5
152.8
150/D4
LAMP
K1
152/A3
152.7
150/D4
K2
152/A5
152.6
23/D5
INVERTER
CONSENT
K2
152.5
K1
152/A3
152.3
150/D2
STOP BUTTON
PAGE 153
152.4
150/D2
152.4
START BUTTON
see page 153
152/C6
23/B6
152/A7
START/STOP
PUMPS
K1
152.2
23/D2
INSERTED
MAIN PUMP
25.10
23/D2
25.10
25/C4
INSERTED
SECONDARY PUMP
PE
25/D4
23/B6
152/B5
22/C6
152/A6
INSERTED
PLUGS PUMPS
PE
152B/E1
PE
152/E8
FROM GENSET
BATTERY
X1
fixed part
010
Q6
From wire: 152.1
To wire: 152.8
Wires available from: 152.9
CUSTOMER: EUROMACCHINE
ORDER: 1617
PROJECT: ELECTRICAL SYSTEM LAMPO GREEN
FILE: 1617 QE_LAMPO
LAYOUT: WIRING DIAGRAM LAMPO GREEN
EMISSION: November 2014
REV.
DESCRIPTION OF THE MODIFY
DATE
DRAW
TABLE no.
LAMPO GREEN
SHEET 152A of 42
NEXT 152B
Euromacchine
via delle Industrie, 20
31047 Ponte di Piave (TV)
T: +39 0422 853200 - F: +39 0422 853461

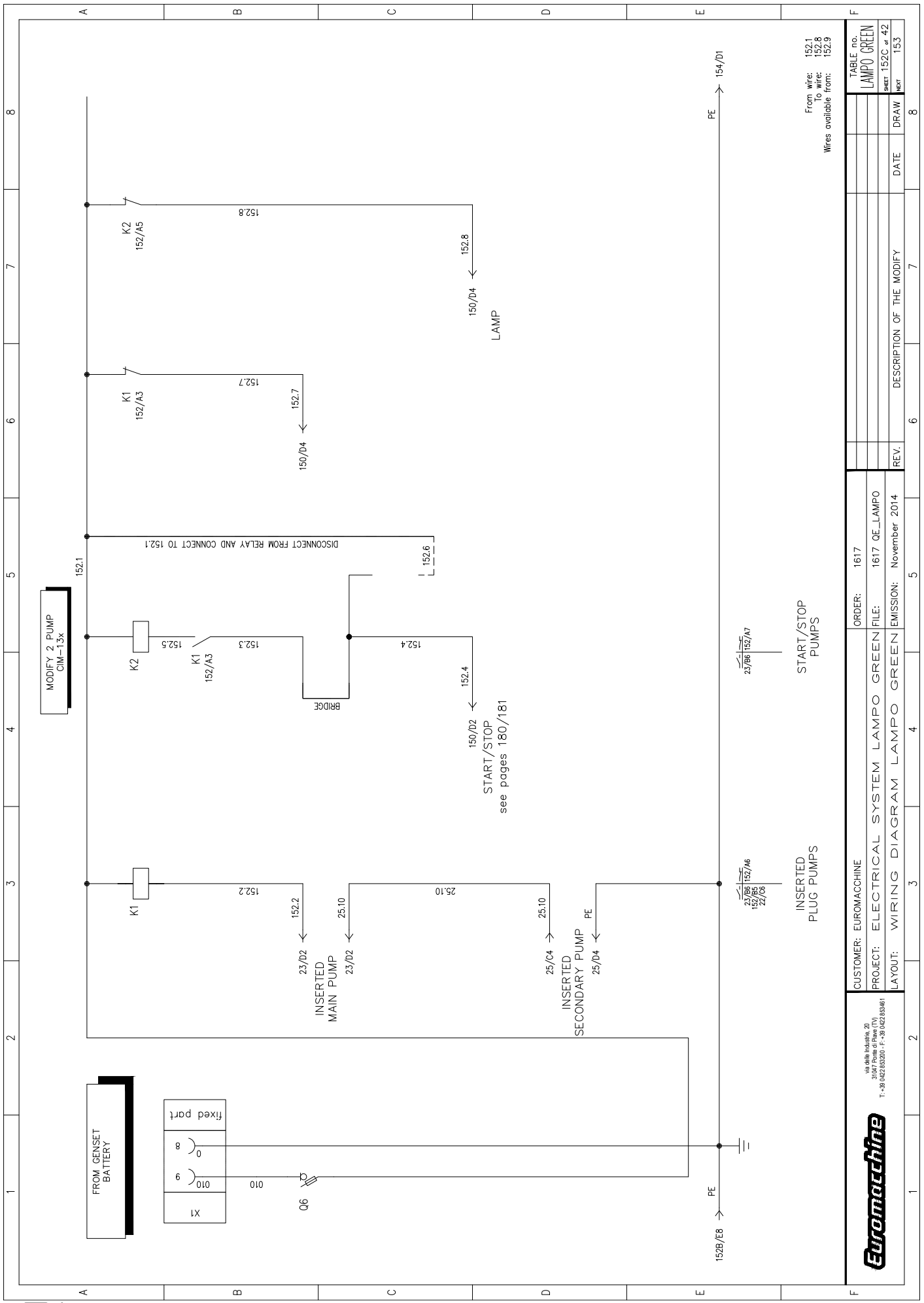


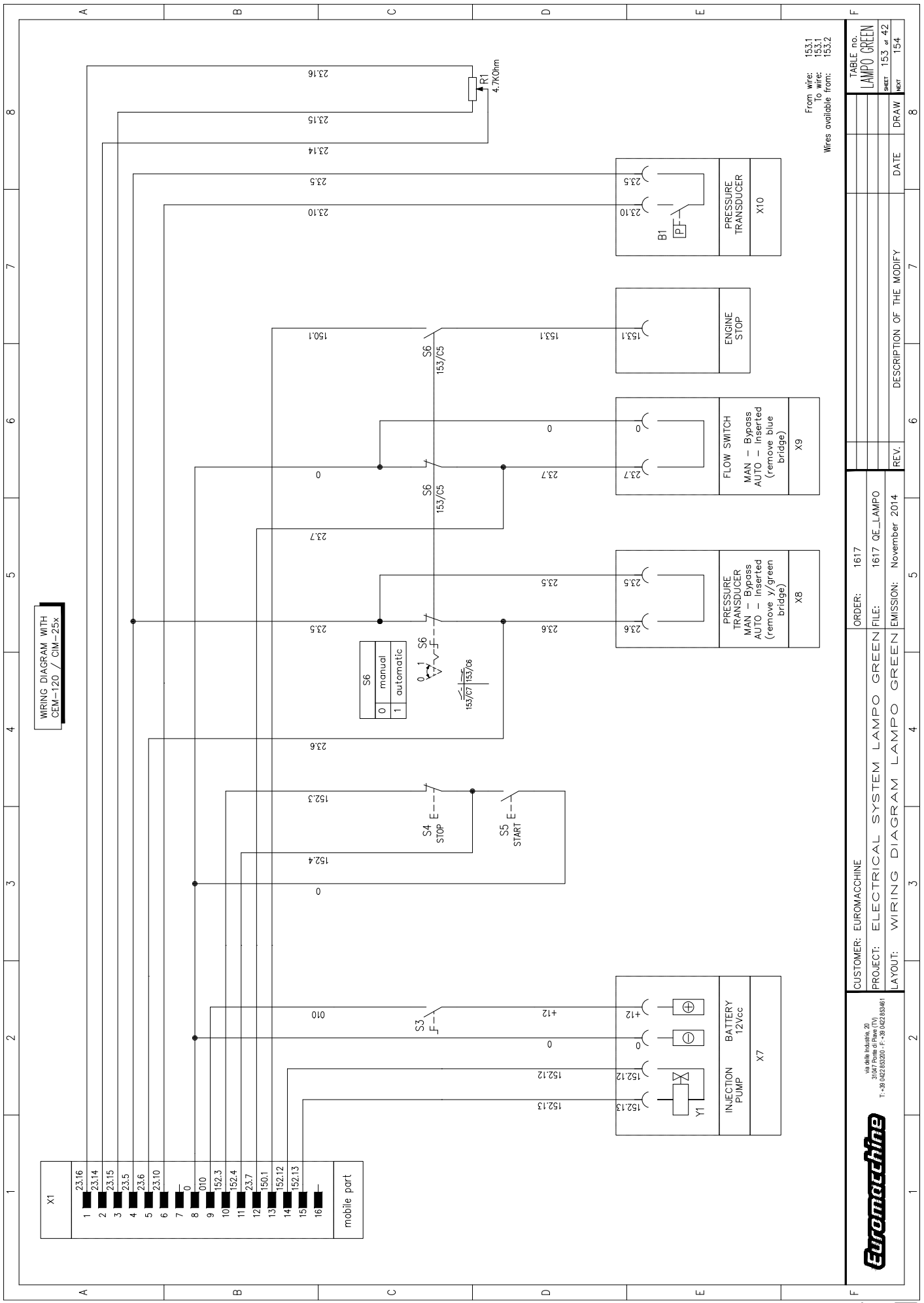
Euromacchine
via delle Industrie, 20
31047 Ponte di Piave (TV)
T: +39 0422 853200 - F: +39 0422 853461

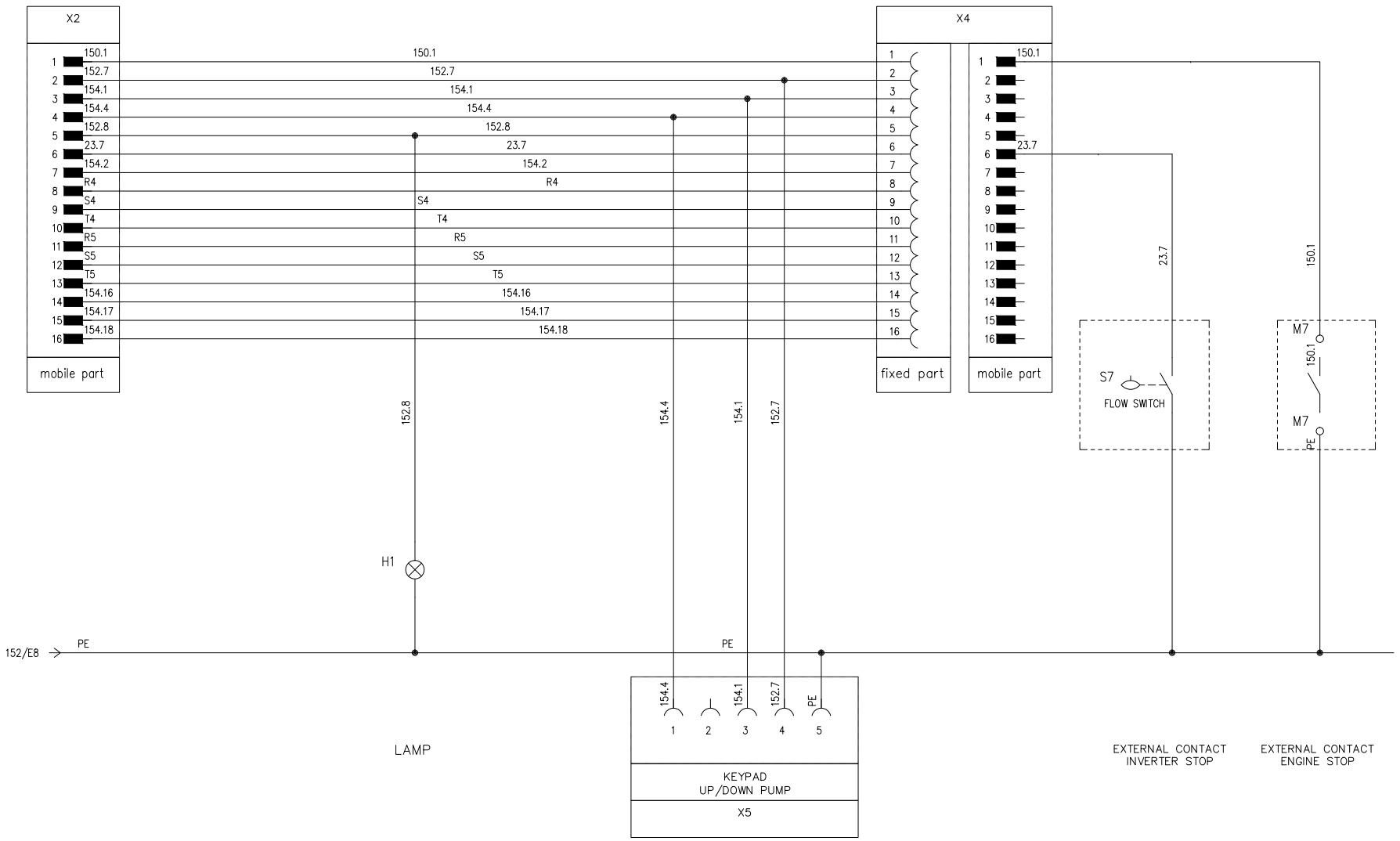
CUSTOMER:	EUROMACCHINE	ORDER:	1617
PROJECT:	ELECTRICAL SYSTEM LAMPO GREEN	FILE:	1617 QE_LAMPO
LAYOUT:	WIRING DIAGRAM LAMPO GREEN	EMISSION:	November 2014

REV.	DESCRIPTION OF THE MODIFY	DATE	DRAW

TABLE no. LAMPO GREEN
SHEET 152B of 42
NEXT 152C


FROM GENSET BATTERY
MODIFY 2 PUMP CIM-13x
152.1
DISCONNECT FROM RELAY AND CONNECT TO 152.1
K2
152.5
K1
152/A3
152.3
BRIDGE
152.6
152.4
150/D2
START/STOP
see pages 180/181
K1
152.2
23/D2
INSERTED
MAIN PUMP
25.10
23/D2
25.10
25/C4
INSERTED
SECONDARY PUMP
PE
25/D4
23/86 152/A6
152/B5
22/C6
INSERTED
PLUG PUMPS
23/86 152/A7
START/STOP
PUMPS
K2
152/A5
152.8
150/D4
LAMP
152.8
K1
152/A3
152.7
152.7
150/D4
PE
154/D1
From wire: 152.1
To wire: 152.8
Wires available from: 152.9
X1
fixed part
010
Q6
PE
152B/E8
Euromacchine
via delle Industrie, 20
31047 Ponte di Piave (TV)
T: +39 0422 853200 - F: +39 0422 853461
CUSTOMER: EUROMACCHINE
ORDER: 1617
PROJECT: ELECTRICAL SYSTEM LAMPO GREEN
FILE: 1617 QE_LAMPO
LAYOUT: WIRING DIAGRAM LAMPO GREEN
EMISSION: November 2014
REV.
DESCRIPTION OF THE MODIFY
DATE
DRAW
TABLE no.
LAMPO GREEN
SHEET 152C of 42
NEXT 153


WIRING DIAGRAM WITH CEM-120 / CIM-25x
X1
mobile part
R1 4.7KOhm
B1
PRESSURE TRANSDUCER
X10
ENGINE STOP
FLOW SWITCH
MAN – Bypass
AUTO – Inserted
(remove blue bridge)
X9
PRESSURE TRANSDUCER
MAN – Bypass
AUTO – Inserted
(remove y/green bridge)
X8
S6
0 manual
1 automatic
S4 STOP
S5 START
S3
INJECTION PUMP
Y1
BATTERY 12Vcc
X7
From wire: 153.1
To wire: 153.1
Wires avaliable from: 153.2
CUSTOMER: EUROMACCHINE
ORDER: 1617
PROJECT: ELECTRICAL SYSTEM LAMPO GREEN
FILE: 1617 QE_LAMPO
LAYOUT: WIRING DIAGRAM LAMPO GREEN
EMISSION: November 2014
REV.
DESCRIPTION OF THE MODIFY
DATE
DRAW
TABLE no. LAMPO GREEN
SHEET 153 of 42
NEXT 154
Euromacchine
via delle Industrie, 20
31047 Ponte di Piave (TV)
T: +39 0422 853200 - F: +39 0422 853461



From wire: 154.1
To wire: 154.18
Wires available from: 154.19

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CUSTOMER:	EUROMACCHINE	ORDER:	1617
PROJECT:	ELECTRICAL SYSTEM LAMPO GREEN	FILE:	1617 QE_LAMPO
LAYOUT:	WIRING DIAGRAM LAMPO GREEN	EMISSION:	November 2014

REV.	DESCRIPTION OF THE MODIFY	DATE	DRAW

TABLE no.
LAMPO GREEN
SHEET 154 of 42
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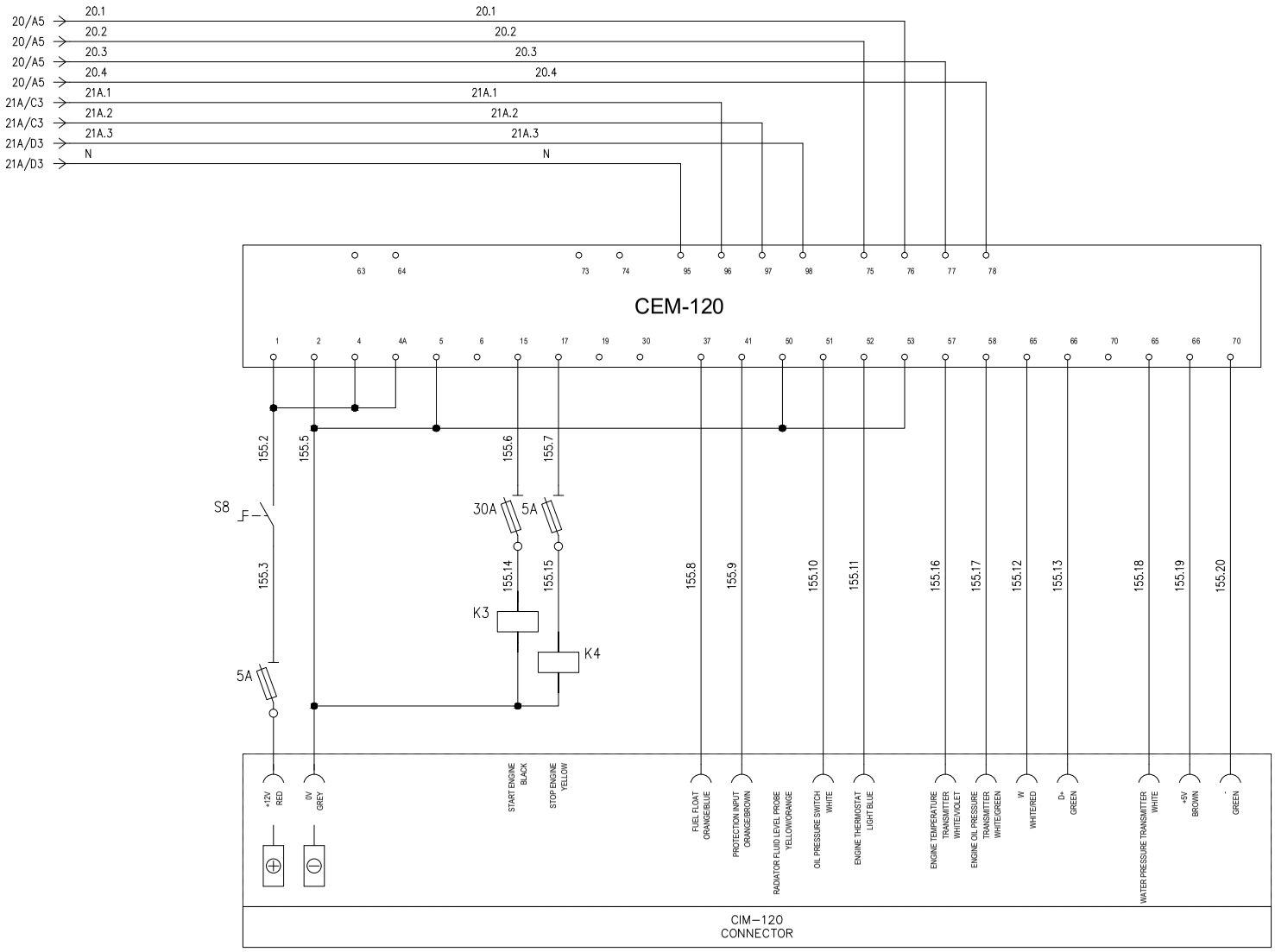
WIRING DIAGRAM CONTROL UNIT
CEM–120



From wire: 155.1
To wire: 155.20
Wires available from: 155.21

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CUSTOMER:	EUROMACCHINE	ORDER:	1617
PROJECT:	ELECTRICAL SYSTEM LAMPO GREEN	FILE:	1617 QE_LAMPO
LAYOUT:	WIRING DIAGRAM LAMPO GREEN	EMISSION:	November 2014

REV.	DESCRIPTION OF THE MODIFY	DATE	DRAW

TABLE no.
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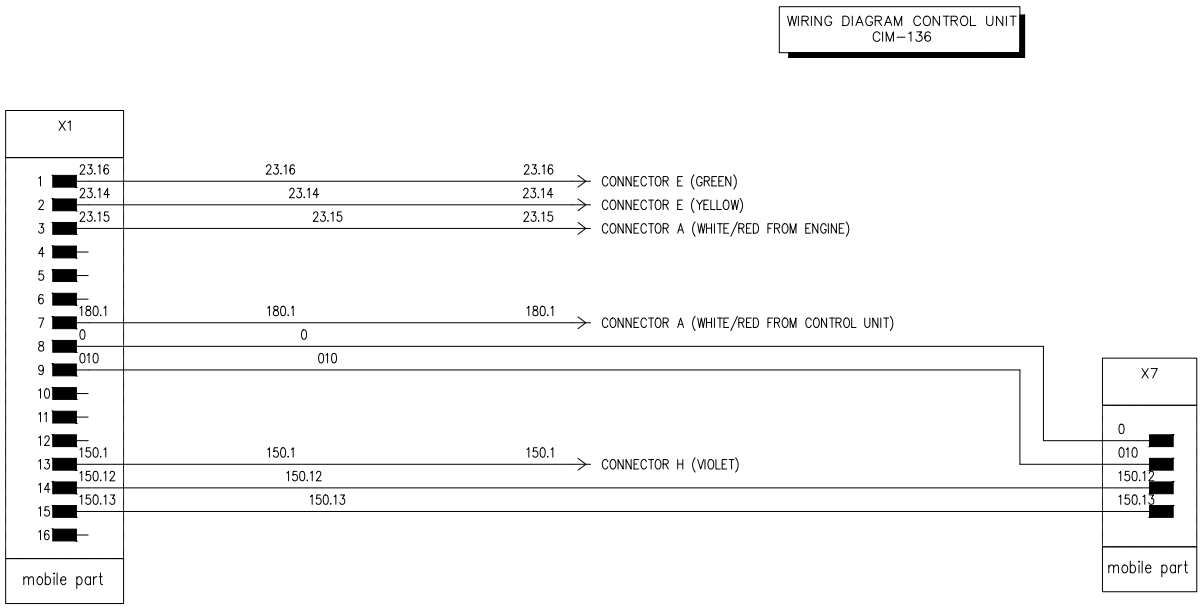

From wire: 155.1
To wire: 155.20
Wires available from: 155.21

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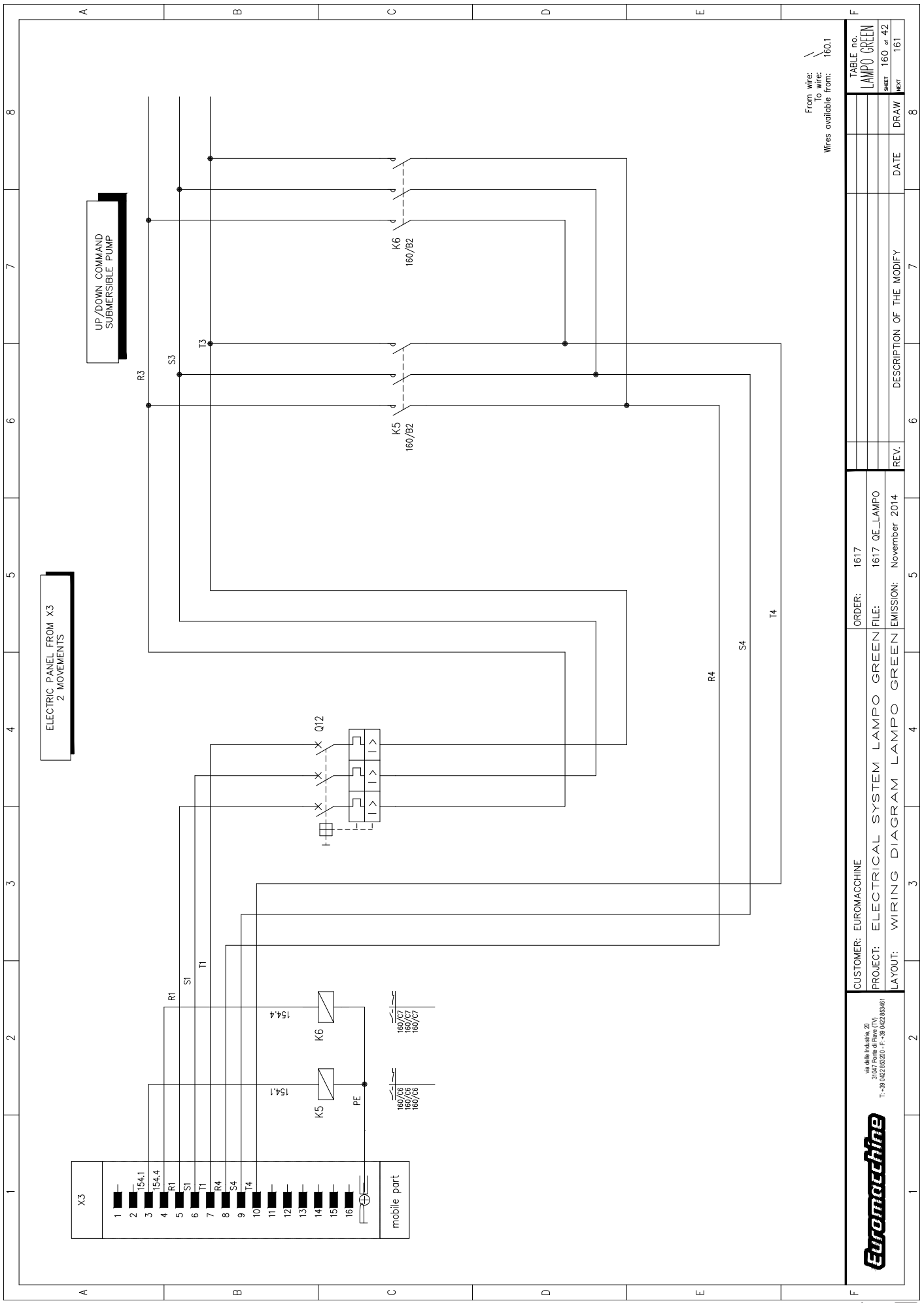
CUSTOMER: EUROMACCHINE		ORDER: 1617	
PROJECT: ELECTRICAL SYSTEM LAMPO GREEN		FILE: 1617 QE_LAMPO	
LAYOUT: WIRING DIAGRAM LAMPO GREEN		EMISSION: November 2014	

REV.	DESCRIPTION OF THE MODIFY	DATE	DRAW

TABLE no. LAMPO GREEN
SHEET 155A of 42
NEXT 160


UP/DOWN COMMAND
SUBMERSIBLE PUMP
ELECTRIC PANEL FROM X3
2 MOVEMENTS
From wire:
To wire:
Wires available from: 160.1
K6
160/B2
K5
160/B2
R3
S3
T3
R4
S4
T4
Q12
R1
S1
T1
154.4
K6
154.1
K5
PE
160/C7
160/C7
160/C7
160/C6
160/C6
160/C6
X3
154.1
154.4
mobile part
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via delle Industrie, 20
31047 Ponte di Piave (TV)
T: +39 0422 853200 - F: +39 0422 853461
CUSTOMER: EUROMACCHINE
ORDER: 1617
PROJECT: ELECTRICAL SYSTEM LAMPO GREEN
FILE: 1617 QE_LAMPO
LAYOUT: WIRING DIAGRAM LAMPO GREEN
EMISSION: November 2014
REV.
DESCRIPTION OF THE MODIFY
DATE
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TABLE no.
LAMPO GREEN
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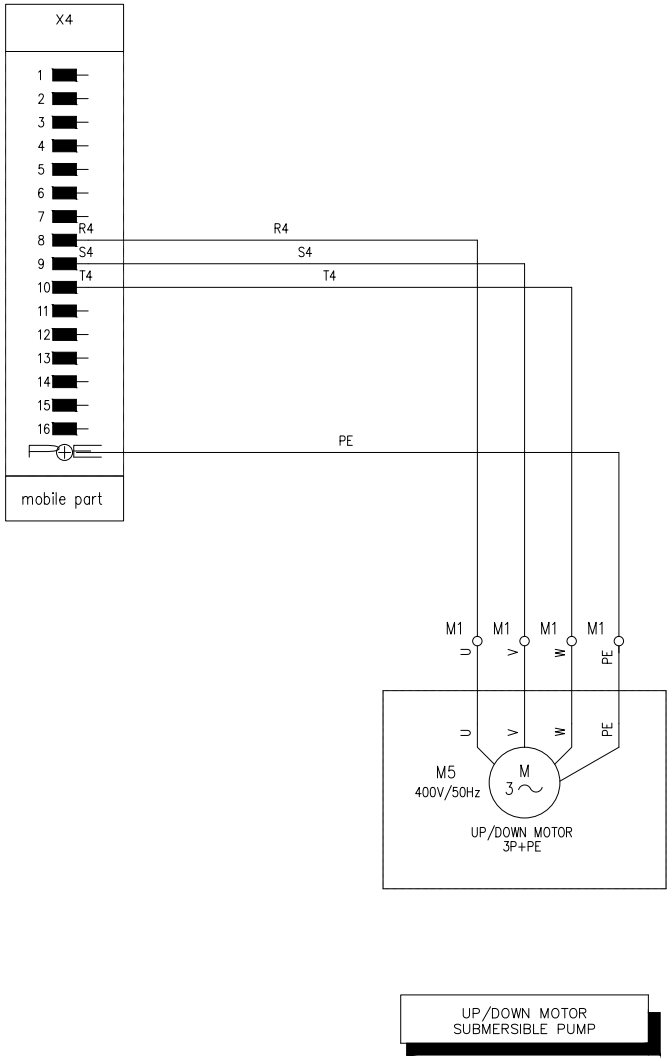
NEXT 161

MOTOR CONNECTION FROM X4
2 MOVEMENTS



UP/DOWN MOTOR
SUBMERSIBLE PUMP

From wire: \
To wire: \
Wires available from: 161.1

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CUSTOMER: EUROMACCHINE		ORDER:	1617
PROJECT:	ELECTRICAL SYSTEM LAMPO GREEN	FILE:	1617 QE_LAMPO
LAYOUT:	WIRING DIAGRAM LAMPO GREEN	EMISSION:	November 2014

REV.	DESCRIPTION OF THE MODIFY	DATE	DRAW

TABLE no.
LAMPO GREEN
SHEET 161 of 42
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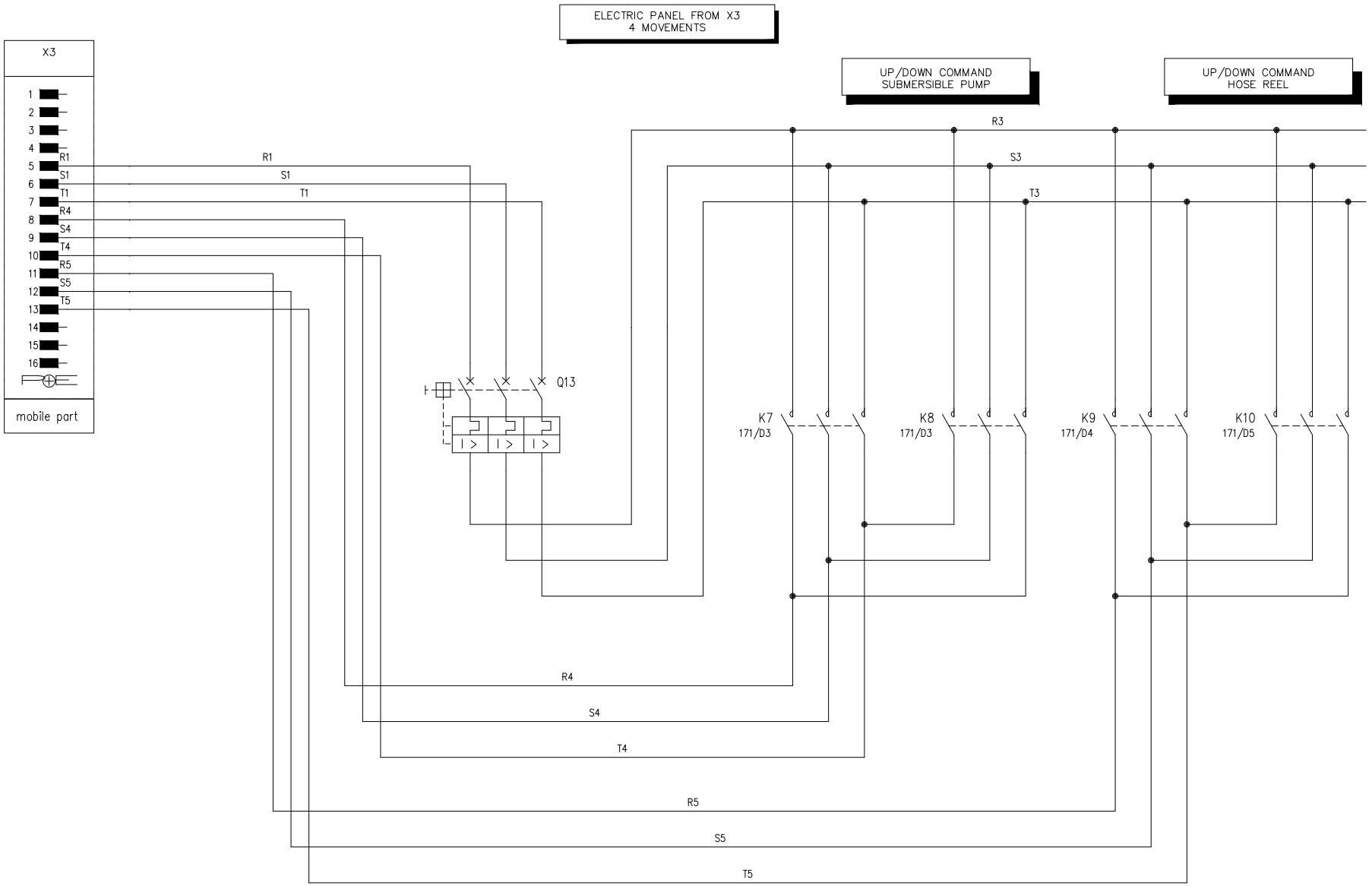

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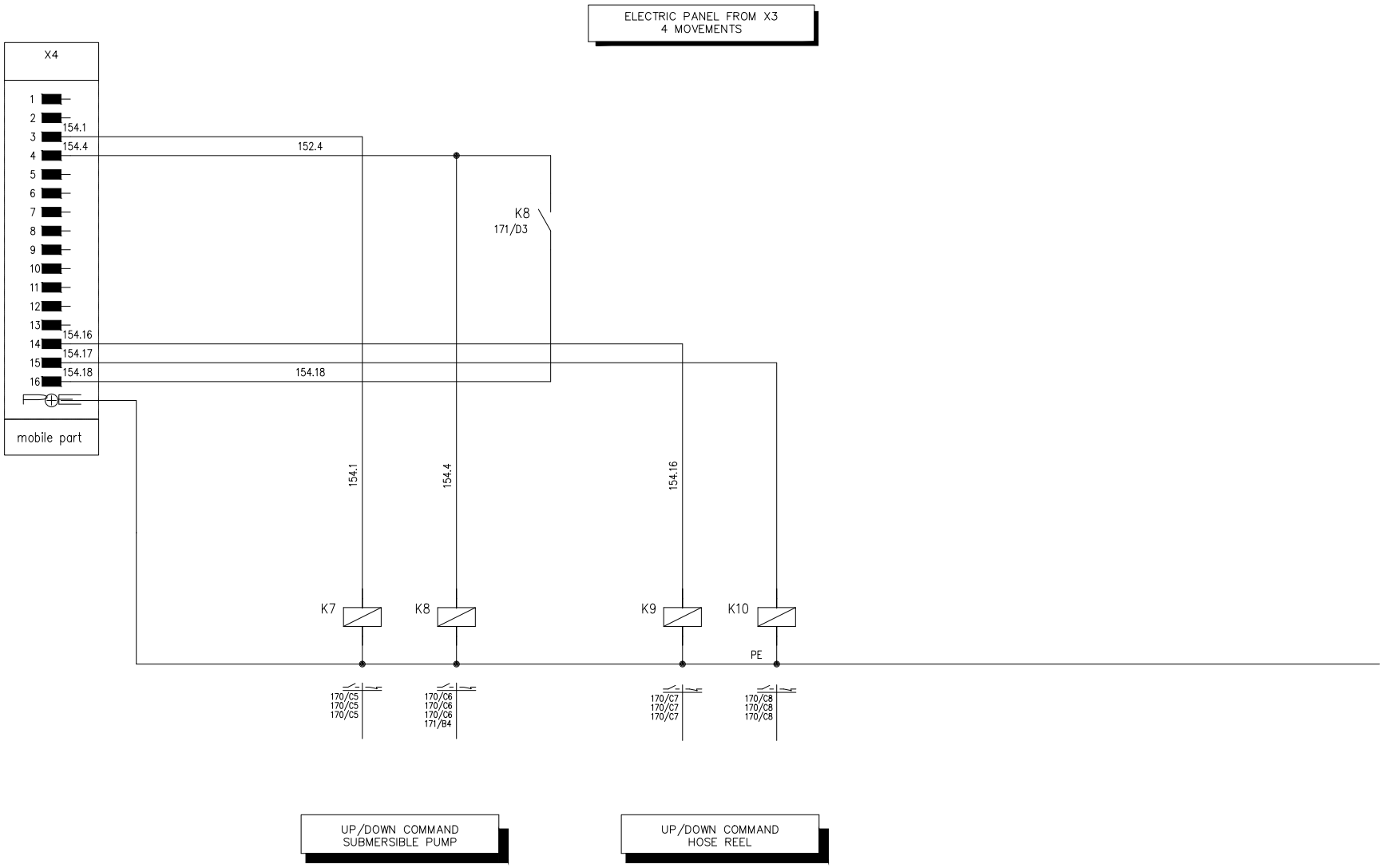
CUSTOMER:	EUROMACCHINE	ORDER:	1617
PROJECT:	ELECTRICAL SYSTEM LAMPO GREEN	FILE:	1617 QE_LAMPO
LAYOUT:	WIRING DIAGRAM LAMPO GREEN	EMISSION:	November 2014

REV.	DESCRIPTION OF THE MODIFY	DATE	DRAW

TABLE no. LAMPO GREEN
SHEET 170 of 42
NEXT 171



From wire: \
To wire: \
Wires available from: 171.1

Euromacchine
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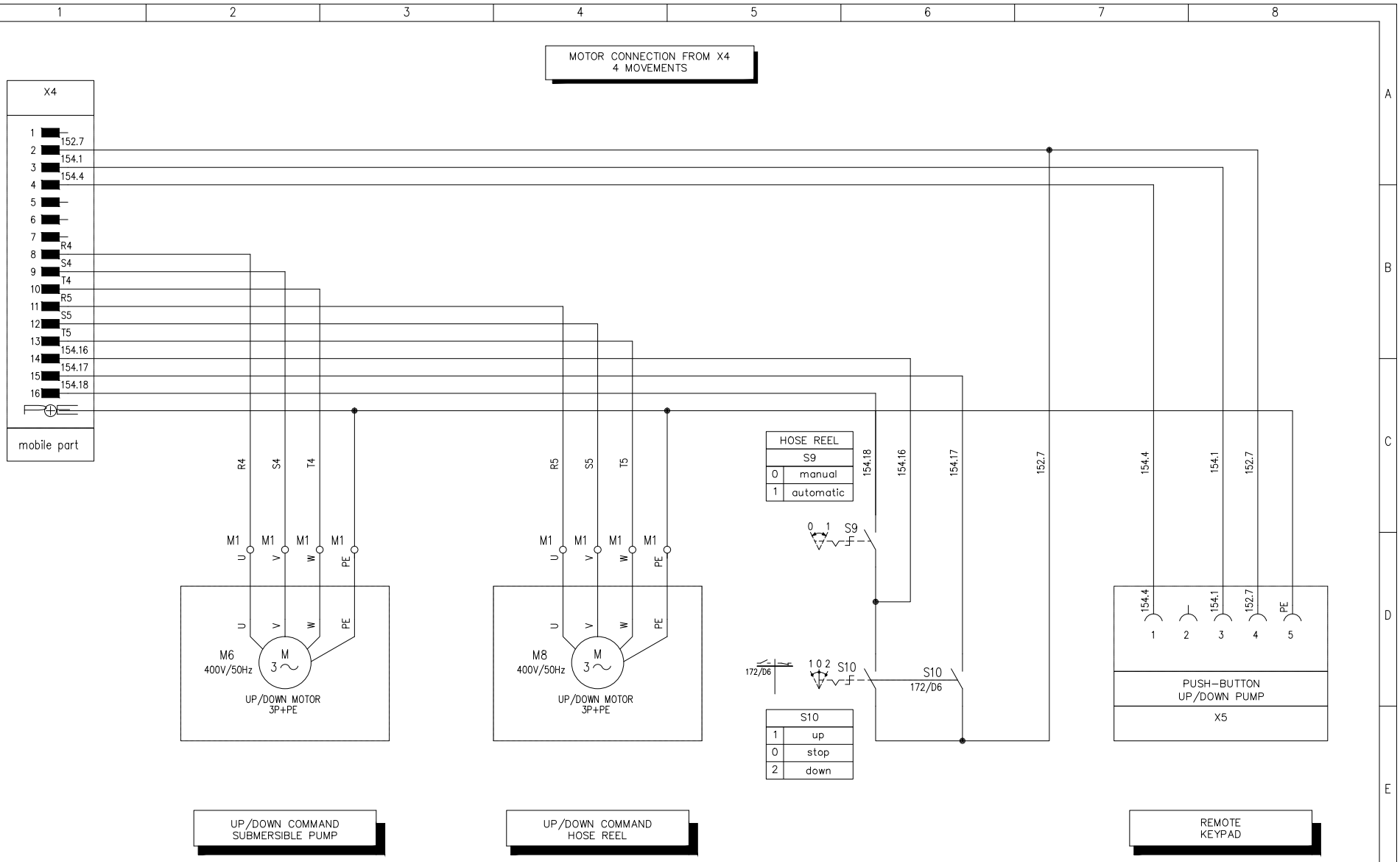
31047 Ponte di Piave (TV)
T: +39 0422 853200 - F: +39 0422 853461

CUSTOMER: EUROMACCHINE		ORDER: 1617	
PROJECT: ELECTRICAL SYSTEM LAMPO GREEN		FILE: 1617 QE_LAMPO	
LAYOUT: WIRING DIAGRAM LAMPO GREEN		EMISSION: November 2014	

REV.	DESCRIPTION OF THE MODIFY	DATE	DRAW

TABLE no.
LAMPO GREEN
SHEET 171 of 42
NEXT 172



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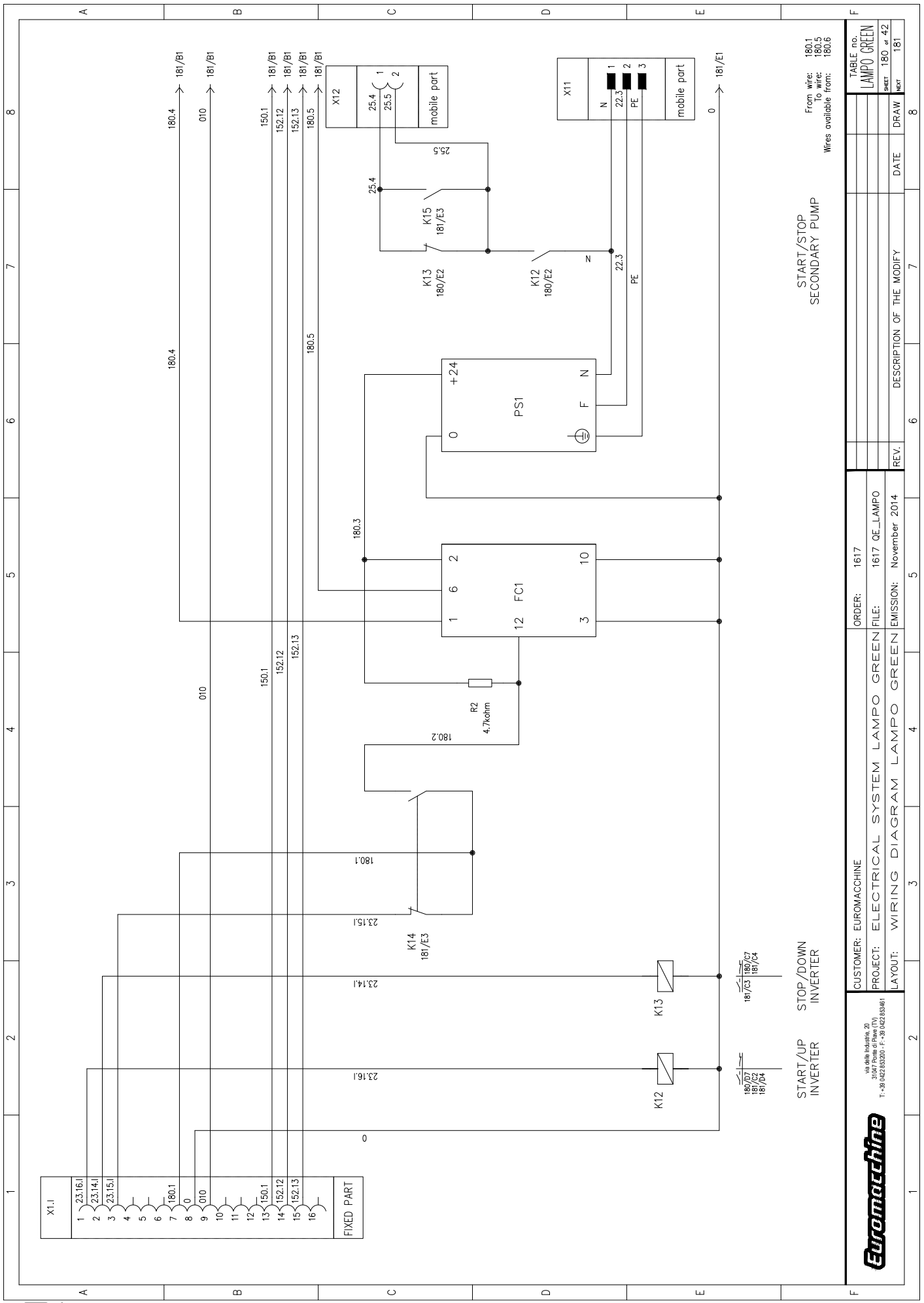
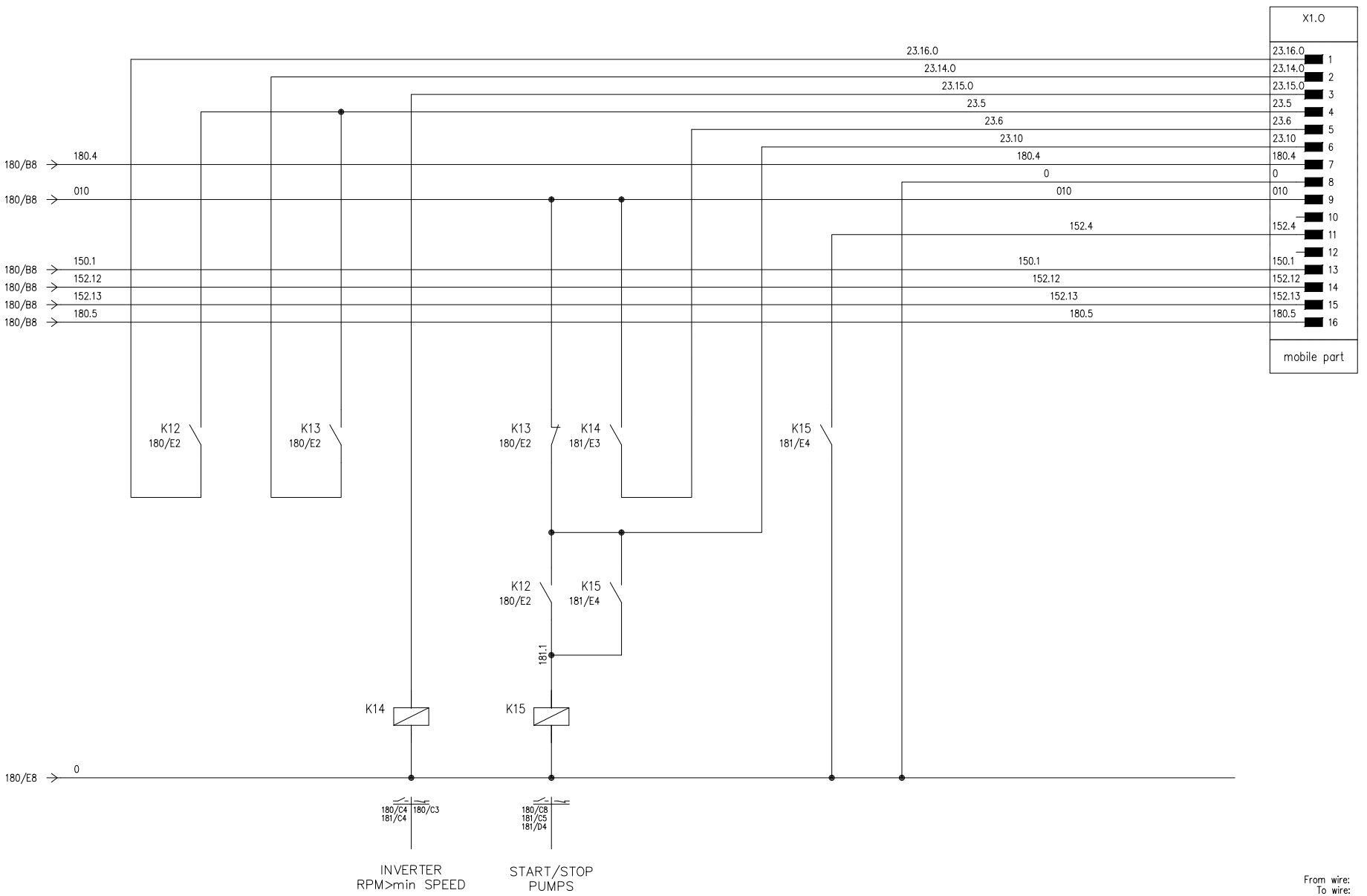
CUSTOMER:	EUROMACCHINE	ORDER:	1617
PROJECT:	ELECTRICAL SYSTEM LAMPO GREEN	FILE:	1617 QE_LAMPO
LAYOUT:	WIRING DIAGRAM LAMPO GREEN	EMISSION:	November 2014

REV.	DESCRIPTION OF THE MODIFY	DATE	DRAW

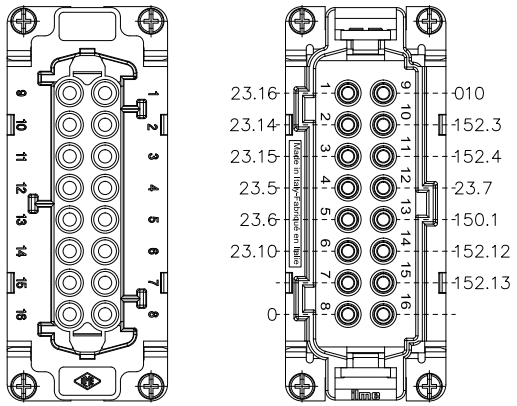
TABLE no.
LAMPO GREEN
SHEET 172 of 42
NEXT 180


START/STOP
SECONDARY PUMP
START/UP
INVERTER
STOP/DOWN
INVERTER
FIXED PART
mobile part
mobile part
PS1
FC1
K12
K13
K14
K15
R2
4.7kohm
CUSTOMER: EUROMACCHINE
PROJECT: ELECTRICAL SYSTEM LAMPO GREEN
LAYOUT: WIRING DIAGRAM LAMPO GREEN
ORDER: 1617
FILE: 1617 QE_LAMPO
EMISSION: November 2014
TABLE no. LAMPO GREEN
SHEET 180 of 42
NEXT 181
DESCRIPTION OF THE MODIFY
DATE
DRAW
REV.
Euromacchine
via delle Industrie, 20
31047 Ponte di Piave (TV)
T: +39 0422 853200 - F: +39 0422 853461

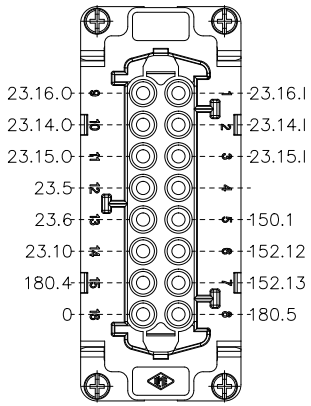


Euromacchine	via delle Industrie, 20 31047 Ponte di Piave (TV) T: +39 0422 853200 - F: +39 0422 853461	CUSTOMER: EUROMACCHINE		ORDER: 1617		TABLE no. LAMPO GREEN	
		PROJECT: ELECTRICAL SYSTEM LAMPO GREEN		FILE: 1617 QE_LAMPO		SHEET 181 of 42	
		LAYOUT: WIRING DIAGRAM LAMPO GREEN		EMISSION: November 2014		NEXT 200	
		REV.	DESCRIPTION OF THE MODIFY	DATE	DRAW		

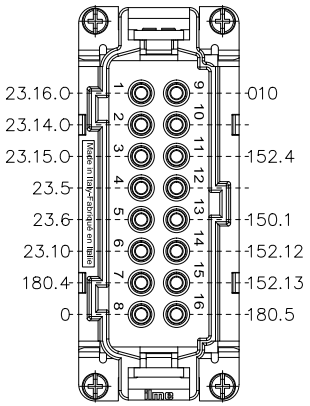
X1



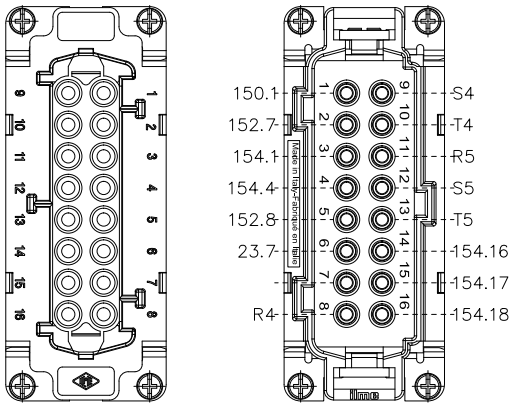
X1.I



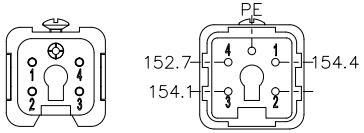
X1.O



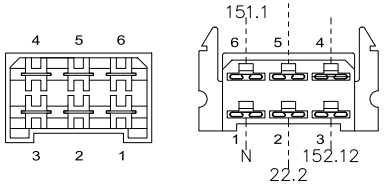
X2
X4



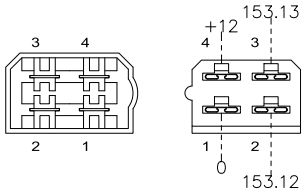
X5



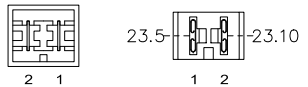
X6



X7



X8



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31047 Ponte di Piave (TV)
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CUSTOMER:	EUROMACCHINE	ORDER:	1617
PROJECT:	ELECTRICAL SYSTEM LAMPO GREEN	FILE:	1617 QE_LAMPO
LAYOUT:	WIRING DIAGRAM LAMPO GREEN	EMISSION:	November 2014

REV.	DESCRIPTION OF THE MODIFY	DATE	DRAW

TABLE no.
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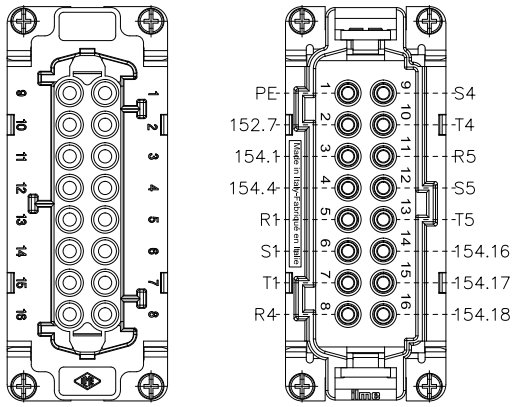
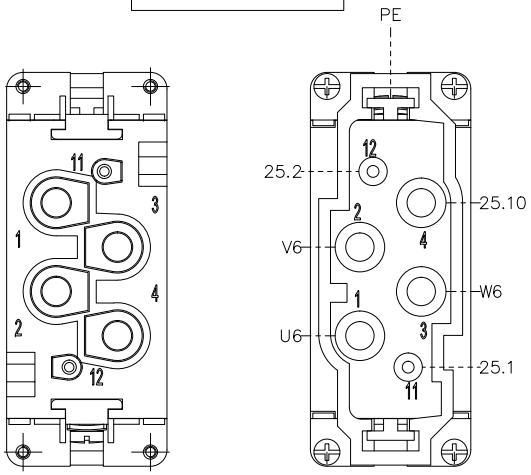
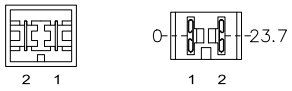
X3



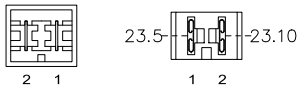
PT2



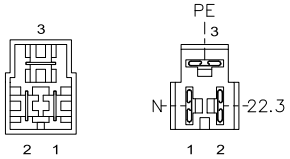
X9



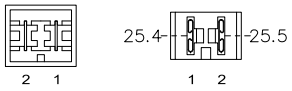
X10



X11



X12



Euromacchine
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31047 Ponte di Piave (TV)
T: +39 0422 853200 - F: +39 0422 853461

CUSTOMER:	EUROMACCHINE	ORDER:	1617
PROJECT:	ELECTRICAL SYSTEM LAMPO GREEN	FILE:	1617 QE_LAMPO
LAYOUT:	WIRING DIAGRAM LAMPO GREEN	EMISSION:	November 2014

REV.	DESCRIPTION OF THE MODIFY	DATE	DRAW

TABLE no.
LAMPO GREEN
SHEET 201 of 42
NEXT 202

Euromacchine GROUP FORCE

EN

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Via delle Industrie, 20
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2019