



USE AND MAINTENANCE MANUAL

TRANSLATION OF THE ORIGINAL INSTRUCTIONS — ENGLISH

LIGHTING KIT

TF KIT
TF CUBE

- Torri Faro
- Lighting Towers
- Tours D'éclairage
- Torres de iluminación
- Lichtmasten
- Torres de iluminação
- По вышкам
- Verlichting Towers

Codice
Code
Code
Codigo
Kodezahl
Código
Код
Code

5A8709003

Edizione
Edition
Édition
Edición
Ausgabe
Edição
Издание
Editie

05.2016



MADE IN ITALY

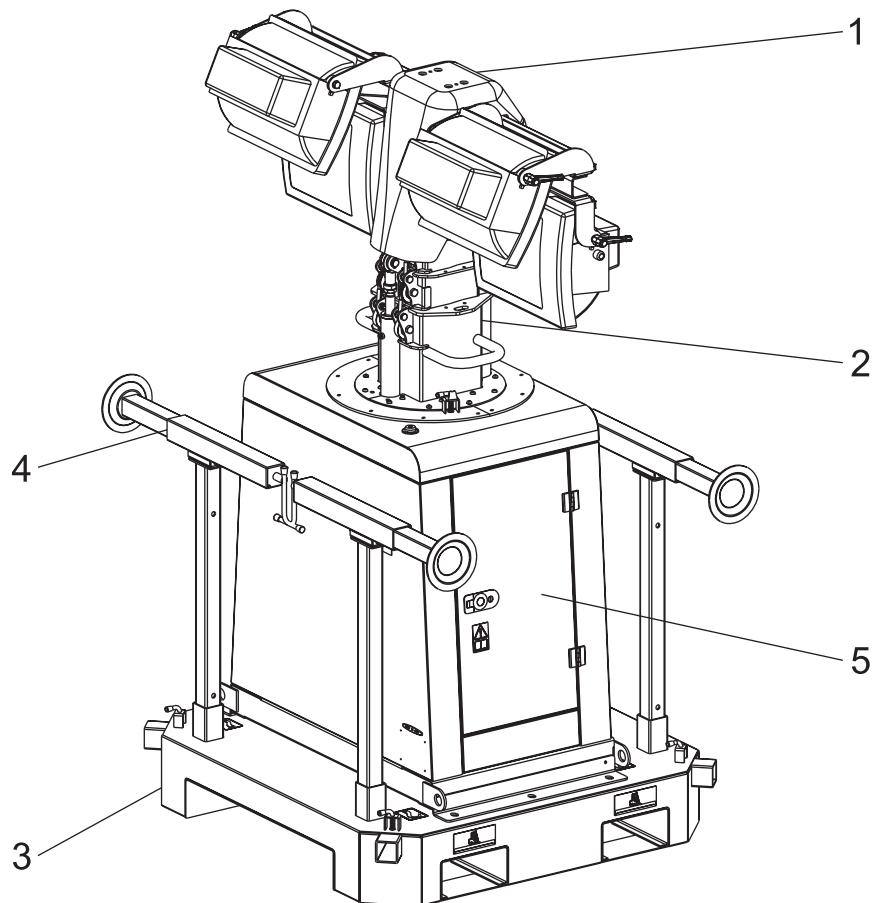


MOSA Light

The lighting towers TF CUBE are units for lighting designed to ensure maximum reliability of operation in all areas even in the heaviest (building sites, ports, airports, etc. ...).

The lighting tower is composed mainly of:

- a frame or base on which the lighting tower is fixed
- 4 outriggers adjustable in height and extensibles, to ensure the stability of the tower on any operation surface.
- a hydraulic telescopic mast, which can be raised up to a maximum height of 9 meters and manually oriented within a range of 340°
- a floodlights assembly that can be composed of 4 or 6 floodlights with lamps of different types and power : metal halide, LED, halogen
- A command and control panel for a simple and safe use of the lighting tower. The control panel is lockable and complete with power cable

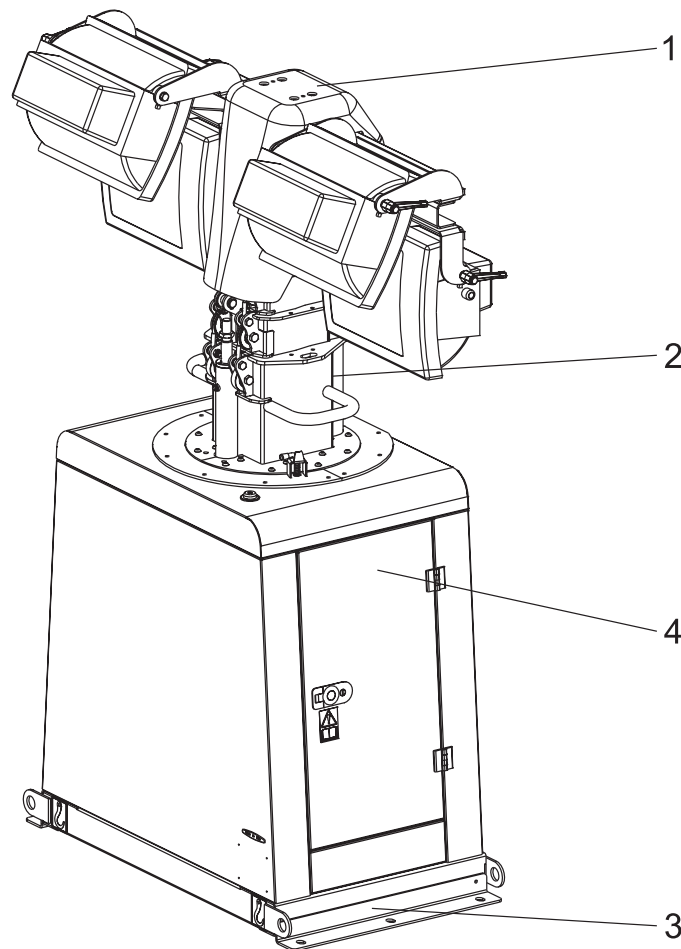


- 1- Floodlights assembly
- 2- Hydraulic telescopic mast
- 3- Base (Frame)
- 4- Outriggers
- 5- Command and control panel

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The lighting tower is composed mainly of:

- a frame or base on which the lighting tower is fixed
- a hydraulic telescopic mast, which can be raised up to a maximum height of 9 meters and manually oriented within a range of 340°
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- 2- Hydraulic telescopic mast
- 3- Base (Frame)
- 4- Command and control panel

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INFORMATION

Dear Customer

We wish to thank you for having bought a high quality product.

Our sections for Technical Service and Spare Parts will work at best to help you if it were necessary.

To this purpose we advise you, for all control and overhaul operations, to turn to the nearest authorized Service Centre, where you will obtain a prompt and specialized intervention.

☞ In case you do not profit on these Services and some parts are replaced, please ask and be sure that are used exclusively original parts; this to guarantee that the performances and the initial safety prescribed by the norms in force are re-established.

☞ *The use of **non original spare parts will cancel immediately any guarantee and Technical Service obligation.***

NOTES ABOUT THE MANUAL

Before actioning the machine please read this manual attentively. Follow the instructions contained in it, in this way you will avoid inconveniences due to negligence, mistakes or incorrect maintenance. The manual is for qualified personnel, who knows the rules: about safety and health, installation and use of sets movable as well as fixed.

You must remember that, in case you have difficulties for use or installation or others, our Technical Service is always at your disposal for explanations or interventions.

The manual for Use Maintenance and Spare Parts is an integrant part of the product. It must be kept with care during all the life of the product.

In case the machine and/or the set should be yielded to another user, this manual must also given to him.

Do not damage it, do not take parts away, do not tear pages and keep it in places protected from dampness and heat.

You must take into account that some figures contained in it want only to identify the described parts and therefore might not correspond to the machine in your possession.

GENERAL INFORMATION

ANY USE OF THIS PRODUCT OTHER THAN THOSE EXPLICITELY INDICATED IN THIS MANUAL RELIEVE THE MANUFACTURER FROM ANY RESPONSIBILITY ABOUT DAMAGES THAT MAY OCCUR TO PERSONS, OR PROPERTY.

☞ **Notice:** *this manual does not engage the manufacturer, who keeps the faculty, apart the essential characteristics of the model here described and illustrated, to bring betterments and modifications to parts and accessories, without putting this manual uptodate immediately.*







Any of our product is labelled with CE marking attesting its conformity to applicable directives and also the fulfillment of safety requirements of the product itself; the list of these directives is part of the declaration of conformity included in any machine standard equipment.

Here below the adopted symbol:



CE marking is clearly readable and unerasable and it can be either part of the data-plate.

	TYPE					
	SERIAL N°		Made in UE-ITALY			
	TYPE/N°					
	VOLTAGE(V)					
	POWER(W)					
	Hz		KVA			
	P.F.		V(V)			
	I.C.L.		I(A)			
LTP POWER IN ACCORDANCE WITH ISO 8528						
	n		RPM	TEMP.	°C	IP
	P _{max}		KW	ALTIT.	m	Kg
<input type="text"/>						



Technical data

J-4x1000

TF CUBE

TF KIT

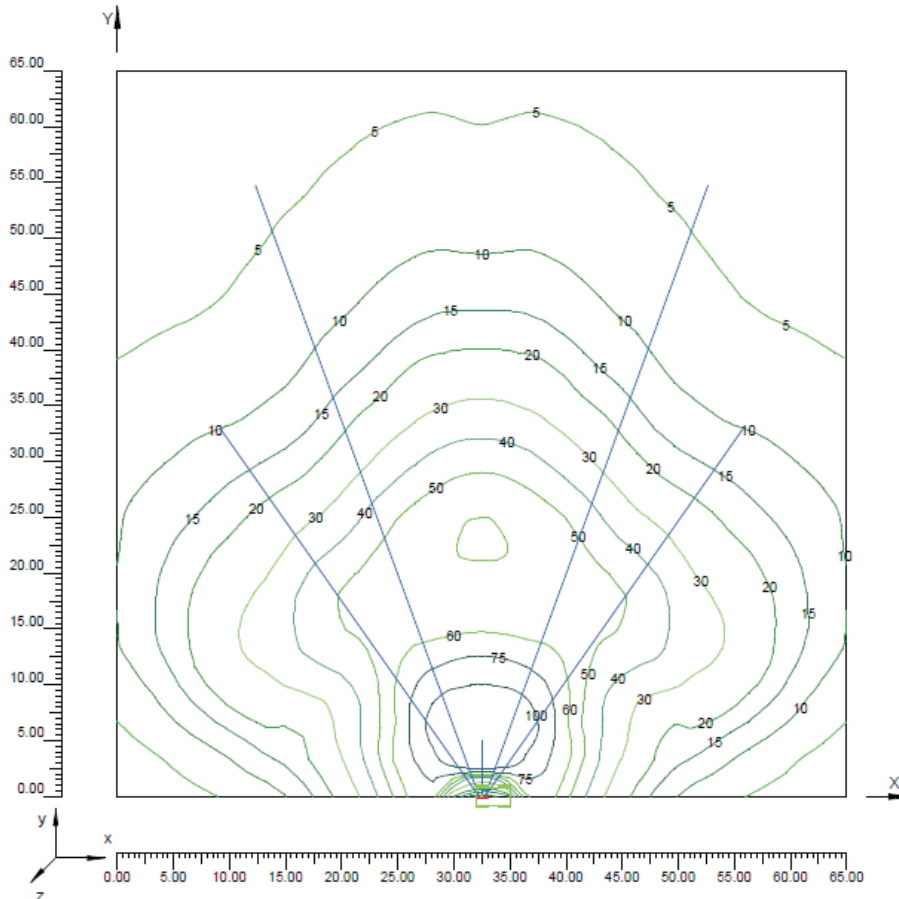
LIGHTS AND MAST	Lamp type	4 x1000 W – METAL HALIDE		
	Mast rotation	340° - MANUAL		
	Mast	TELESCOPIC - 9 m - HYDRAULIC		
GENERAL CHARACTERISTICS	Wind load stability	UP TO 80 km/h (*)		
	IP protection	IP 55		
	Stabilizers (TF CUBE)	4 ADJUSTABLE		
	Dimensions (l x w x h)	Closed tower	1150 x 1100 x 2080	600 x 1070 x 1870
		Open tower	2590 x 2540 x 8700	600 x 1070 x 8600
	Weight (dry)		600 kg	400 kg

(*) The wind load stability for kit i9 is guaranteed only with original trolley MOSA

ILLUMINATION DIAGRAM

Type and n° of lamps	Power	Flux (each lamp)	Temperature	Lamps model	Mounting height
Metal halide N° 4	1000 W	85000 lm	7250 K	Osram HQI-T 1000 W/D	9 m

ISOLUX DIAGRAMS– ILLUMINATED AREA 4200 mq - 21 LUX AVERAGE



I GB F	TECHNICAL DATA	L-4x300	M 1.5.1 REV.0-05/16
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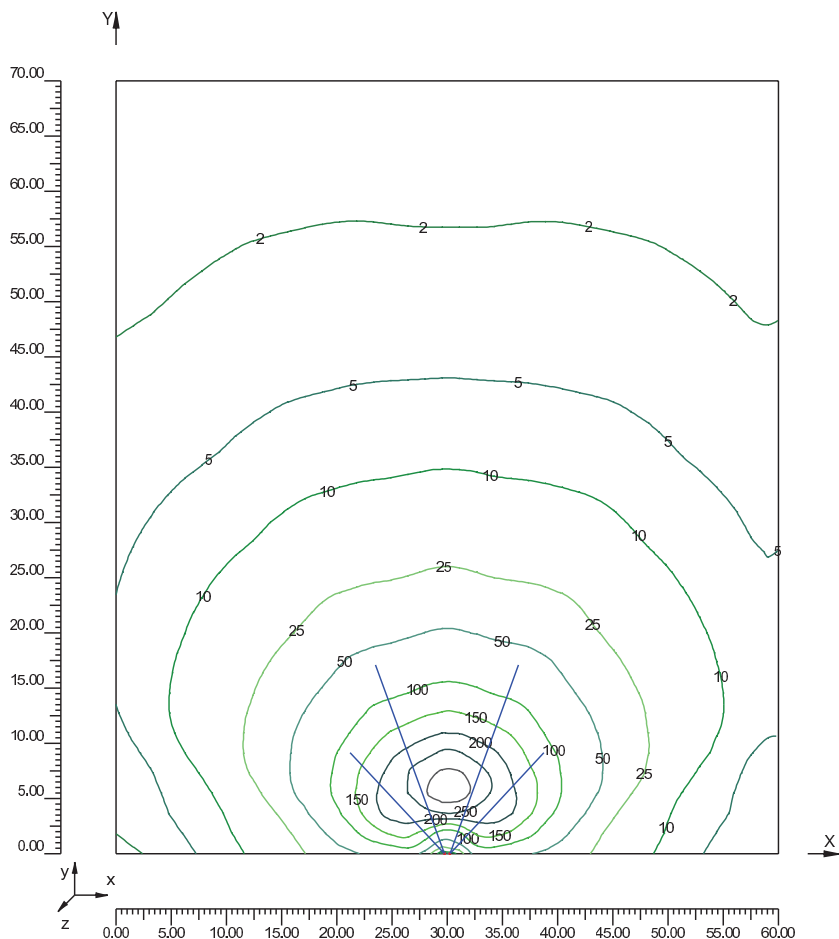
Technical data	L-4x300	TF CUBE	TF KIT
LIGHTS AND MAST	Lamp type Mast rotation Mast	4 x300 W – LED 340° - MANUAL TELESCOPIC - 9 m - HYDRAULIC	
GENERAL CHARACTERISTICS	Wind load stability IP protection Stabilizers (TF CUBE) Dimensions (l x w x h) Weight (dry)	UP TO 80 km/h (*) IP 55 4 ADJUSTABLE Closed tower Open tower	1150 x 1100 x 2080 600 x 1070 x 1870 600 x 1070 x 8600 600 kg 400 kg

(*) The wind load stability for kit i9 is guaranteed only with original trolley MOSA

ILLUMINATION DIAGRAM

Type and n° of lamps	Power	Flux (each lamp)	Temperature	Lamps model	Mounting height
Led N° 4	300 W	32500 lm	7250 K	MAP 24	9 m

CURVE ISOLUX – AREA ILLUMINATA 4200 mq - 21 LUX MEDI



I GB F	TECHNICAL DATA	A-6x1500	M 1.5.2 REV.0-05/16
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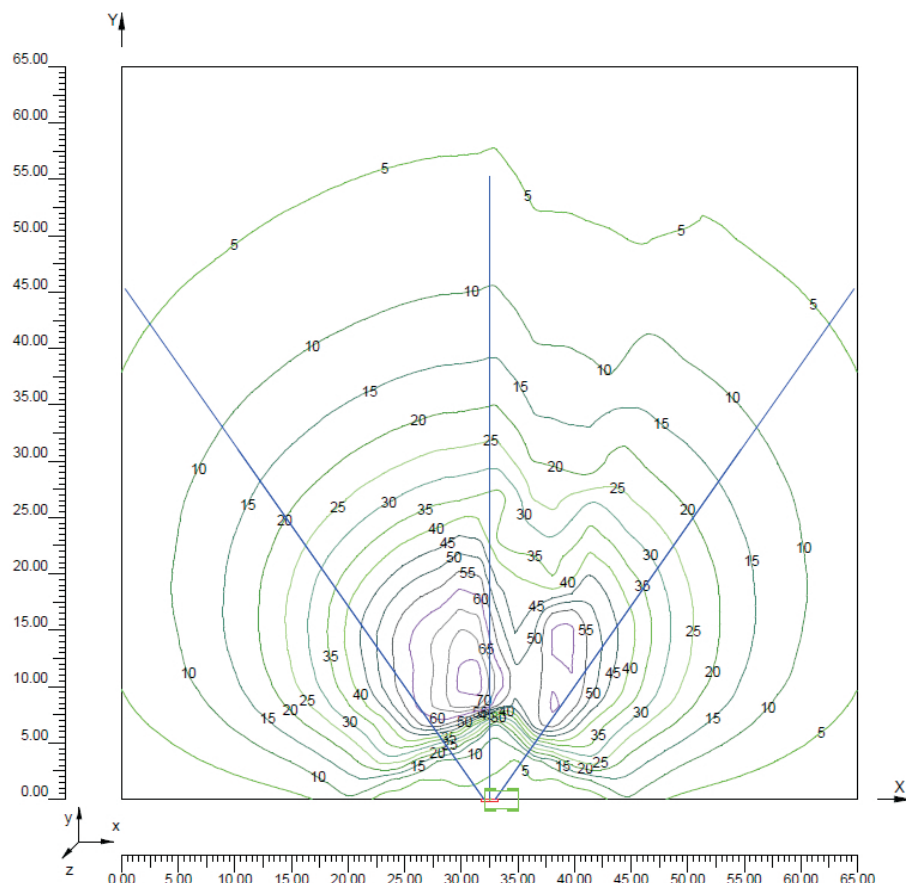
Technical data	A-6x1500	TF CUBE	TF KIT
LIGHTS AND MAST	Lamp type Mast rotation Mast	6 x1500 W – HALOGEN 340° - MANUAL TELESCOPIC - 9 m - HYDRAULIC	
GENERAL CHARACTERISTICS	Wind load stability IP protection Stabilizers (TF CUBE) Dimensions (l x w x h) Weight (dry)	UP TO 80 km/h (*) IP 55 4 ADJUSTABLE Closed tower Open tower	1150 x 1100 x 2080 600 x 1070 x 1870 600 x 1070 x 8600 600 kg 400 kg

(*) The wind load stability for kit i9 is guaranteed only with original trolley MOSA

ILLUMINATION DIAGRAM

Type and n° of lamps	Power	Flux (each lamp)	Temperature	Lamps model	Mounting height
HALOGEN N° 6	1500 W	36000 lm	3000 K	HD 1500	9 m

CURVE ISOLUX – AREA ILLUMINATA 4200 mq - 15 LUX MEDI



SYMBOLS IN THIS MANUAL

- The symbols used in this manual are designed to call your attention to important aspects of the operation of the machine as well as potential hazards and dangers for persons and things.
Moreover, this symbolism intends to draw your attention with the aim to give you indications for a correct use and, as a result, to obtain a good operation of the machine or equipment used.

SAFETY PRECAUTIONS

 **DANGEROUS**

This heading warns of an immediate danger for persons as well for things. Not following the advice can result in serious injury or death.

 **WARNING**

This heading warns of situations which could result in injury for persons or damage to things.

 **CAUTION**

To this advice can appear a danger for persons as well as for things, for which can appear situations bringing material damage to things.

 **IMPORTANT**

 **NOTE**

 **ATTENTION**

These headings refer to information which will assist you in the correct use of the machine and/or accessories.

SYMBOLS



STOP - Read absolutely and be duly attentive.



Read and pay due attention.



DANGER



GENERIC DANGER - If the advice is not respected damage can happen to persons or things.



HIGH VOLTAGE - Attention High Voltage. There can be parts in voltage, dangerous to touch. The non observance of the advice implies life danger.



FIRE - Danger of flame or fire. If the advice is not respected fires can happen.



HEAT - Hot surfaces. If the advice is not respected burns or damage to things can be caused.



EXPLOSION - Explosive material or danger of explosion. In general. If the advice is not respected there can be explosions.



ACIDS - Danger of corrosion. If the advice is not respected the acids can cause corruptions with damage to persons or things.



PRESSION - Danger of burns caused by the expulsion of hot liquids under pressure.

PROHIBITIONS

It is prohibited to smoke while filling the tank with fuel.



The cigarette can cause fire or explosion. If the advice is not respected fires or explosions can be caused.

It is prohibited to use water to quench fires on the electric machines.



If the advice is not respected fires or damage to persons can be caused.

Use only with non inserted voltage



It is prohibited to make interventions before having disinserted the voltage.



ACCES FORBIDDEN to non authorized people

OBLIGATIONS

Use only with safety clothing



It is compulsory to use the personal protection means given in equipment.



It is compulsory to use tools adapted to the various maintenance works
If the advice is not respected damage can be caused to things and even to persons.

**WARNINGS****M**
2.1

REV.0-10/13



FIRST AID. In case the operator should be sprayed by accident, from corrosive liquids a/o hot toxic gas or whatever event which may cause serious injuries or death, predispose the first aid in accordance with the ruling labour accident standards or of local instructions.

Skin contact	Wash with water and soap
Eyes contact	Irrigate with plenty of water, if the irritation persists contact a specialist
Ingestion	Do not induce vomit as to avoid the intake of vomit into the lungs, send for a doctor
Suction of liquids from lungs	If you suppose that vomit has entered the lungs (as in case of spontaneous vomit) take the subject to the hospital with the utmost urgency
Inhalation	In case of exposure to high concentration of vapours take immediately to a non polluted zone the person involved



FIRE PREVENTION. In case the working zone, for whatsoever cause goes on fire with flames liable to cause severe wounds or death, follow the first aid as described by the ruling norms or local ones.

EXTINCTION MEANS	
Appropriated	Carbonate anhydride (or carbon dioxide) powder, foam, nebulized water
Not to be used	Avoid the use of water jets
Other indications	Cover eventual shedding not on fire with foam or sand, use water jets to cool off the surfaces close to the fire
Particular protection	Wear an autorespiratory mask when heavy smoke is present
Useful warnings	Avoid, by appropriate means to have oil sprays over metallic hot surfaces or over electric contacts (switches, plugs, etc.). In case of oil sprinkling from pressure circuits, keep in mind that the inflammability point is very low.



ATTENTION

(ONLY FOR LIGHTING TOWER WITH GENERATING SET)

The lighting towers is designed to be used with a generating set or with a fixed mass on its base. The weight and positioning of the generating set on the base are essential for the safety of the lighting tower. Failure to comply with this provision causes a serious danger of tipping or instability during operation and during handling with site tow. If necessary, contact the service.

GENERAL SAFETY INSTRUCTIONS

NOTE: the information contained in this manual are subject to change without notice.

The instructions in this manual are intended as indicative only. It is the responsibility of the owner/operator to evaluate risks and potential damages in relation to the use of the product in the specific conditions of application.

Remember that the non observance of the indications of this manual may result in damage to people or things.

In all cases, however, it is understood that the use shall be in compliance with the applicable laws/regulations.

- Before operating the machine, read carefully the safety instructions contained in this manual, on the manual of the generating set and all other manuals supplied.
- All operations, handling, installation, use, maintenance, repair should be carried out by authorized and qualified personnel.
- When operating, wear personal protective equipment (PPE): footwear, gloves, helmet, etc..
- The owner is responsible for maintaining the equipment in safe conditions.

Use only in perfect technical conditions

The machinery or equipment must be used in perfect technical condition. Remove immediately any defects that may affect the safe conditions of use.

- Before starting to use this equipment it is important to take knowledge of all the controls of the machine, all its functions and its correct installation in order to avoid accidents to people and damage to the machine itself. In particular, it is important to know how to stop the equipment quickly in case of emergency.
- Do not allow the use of the machine to people unless previously instructed with all the information for a proper, safe use.
- Forbid the access in the operational area to non authorized personnel, children and pets so as to protect them from possible injury caused by any part of the machine.

SAFETY PRECAUTIONS DURING HANDLING AND TRANSPORTATION

- Lift the machine using only the points allocated for this function.
The lifting eye (or eyes) and the correct positioning of the forks of the forklift are marked with specific adhesives.
- Before moving a lighting tower lower the telescopic mast and block properly all movable parts such as the access doors, the mast, the outriggers, the floodlights.
- Clear the operational area of possible obstacles and all unnecessary personnel.
- Always use lifting equipment properly sized and controlled by enabled bodies.
- Do not submit the machine and the lifting equipment to swinging or shock which may transmit dynamic stress to the structure.
- **(ONLY FOR LIGHTING TOWER WITH GENERATING SET)** - It is forbidden to set on the frame of the equipment objects or accessories that alter weight and center of gravity and cause stresses not foreseen to the lifting points.

Equipments with site tow

- Never drag the machine without trailer (or site tow)
- Check for a correct assembly of the machine to the towing device.
- Always make sure that the hook of the vehicle is suitable for towing of the total mass of the trailer.
- Do not tow the trailer if the coupling devices are worn or damaged.
- Check for proper tire pressure.
- Do not replace the tires with types different from the original ones.
- Check that the brakes and the optical signaling of the trailer are working properly.
- Verify that the bolts of the wheels are in place and well tightened.
- Do not park the machine (on trailer or site tow) on a steep slope.
For the stops, not followed by a work session, always engage the parking brake and / or block the wheels by means of wheel chocks.
- Do not tow the trailer on bumpy roads.
- Do not exceed the maximum permissible speed on public roads of 80 km/h with the trailer, in any case comply with the legislation applicable in the country of use.
- Do not use the site tow on public roads, this is intended for use only in private and delimited areas. The maximum permitted speed is 40 km/h on smooth surfaces (asphalt or concrete), adapt in each case the speed to the type of ground.

**SAFETY PRECAUTIONS DURING INSTALLATION AND USE**

- Always locate the lighting tower on a flat and solid ground, so as to avoid tipping, slipping or falling during operation. Avoid using the lighting tower on slopes greater than 10 degrees.
- Make sure the area immediately surrounding the machine is clean and free from debris.
- Make sure the area above the lighting tower is free from overhead cables or other obstacles. The lighting tower reaches a maximum height of 9 meters.
- Before raising the mast extract the outriggers located at the sides of the machine. Acting on the outriggers level the lighting tower making use of the bubble, so as to bring the equipment in a horizontal position. Make sure that the tower rests securely on the outriggers. If the lighting tower is mounted on road trailer pull the handbrake.
- Do not operate the lighting tower if the wind speed exceeds the safe speed indicated or if it is expected the arrival of storms or thunderstorms in the area.
- Lower the telescopic mast when the tower is not used.
- Always check the good condition of the power cable before connecting the lighting tower to the generating set.
- Do not use the lighting tower with wet or damp hands and / or clothing.
- The machine must always be positioned so that the exhaust gases are dispersed in the air without being inhaled by people or living beings.
- If you use the machine indoors is necessary that the installation is designed and built by skilled technicians in a workmanlike manner.
- During normal operation, keep doors closed. The access to the internal parts should be allowed only for maintenance reasons.
- Do not place objects or obstructions in the vicinity of the air intakes and air outlets, a possible overheating of the generator could cause a fire.
- Keep area near to the muffler free from objects such as rags, paper, cardboard. The high temperature of the muffler could cause the burning of objects and cause fire.
- Do not touch and do not place objects on the lamps during operation or immediately after use. The lamps become very hot.
- Do not turn on the lamps without the protective glass or with the same broken or damaged.
- Immediately stop the machine in case of malfunction.
Do not restart the machine without first having found and fixed the problem.

VERSIONS WITH MANUAL WINCH

- Make sure all the ropes and the manual winch are in perfect condition.
- Place the lighting tower in order to avoid that the winch can receive shocks which may cause damage to the automatic brake.

SAFETY PRECAUTIONS DURING MAINTENANCE

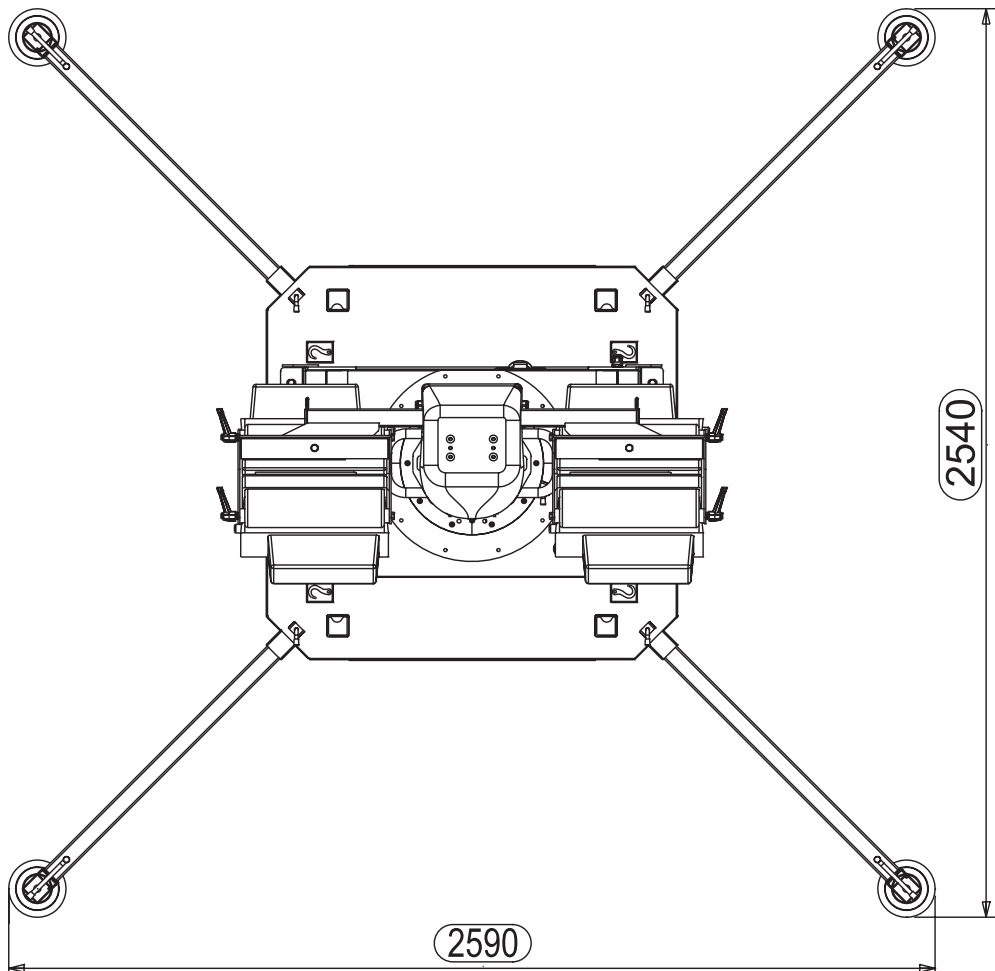
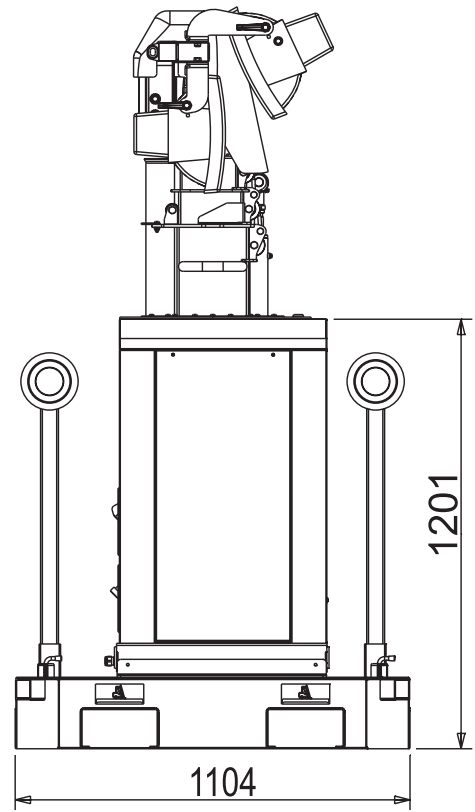
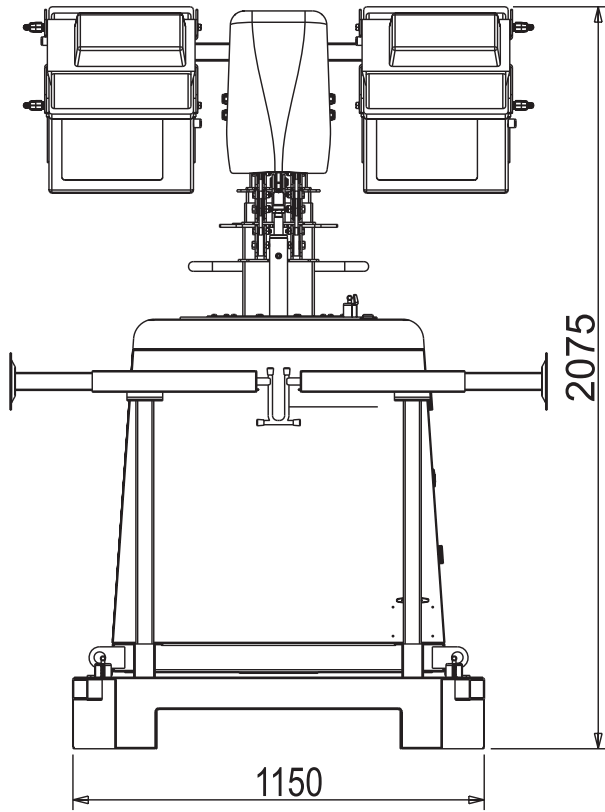
- Make use of **qualified** personnel to carry out maintenance and troubleshooting.
- Always use protective devices and suitable equipment.
- Turn off the generating set or unplug the power cable before carrying out any type of maintenance on the lighting tower.
- Always cut off power to the lamps and wait for their cooling before performing any maintenance or replacement.
- Do not remove the protections and the safety devices unless absolutely necessary, restore them after completion of the maintenance or repair.
- Before carrying out any type of maintenance or repairs on the generating set refer to the manual of the generating set and the other manuals supplied.

Ⓘ Dimensioni
ⒼⒹ Dimensions
ⒻⒽ Dimensions

Ⓓ Abmessungen
Ⓔ Dimensiones
Ⓟ

TF CUBE I9

M
2.7.1
REV.0-05/16

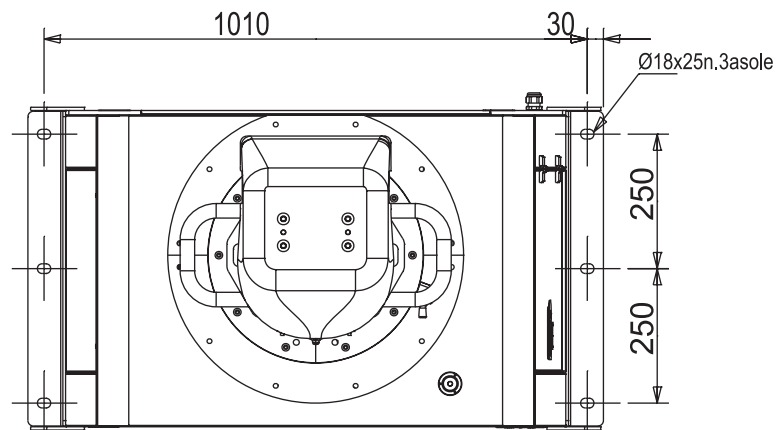
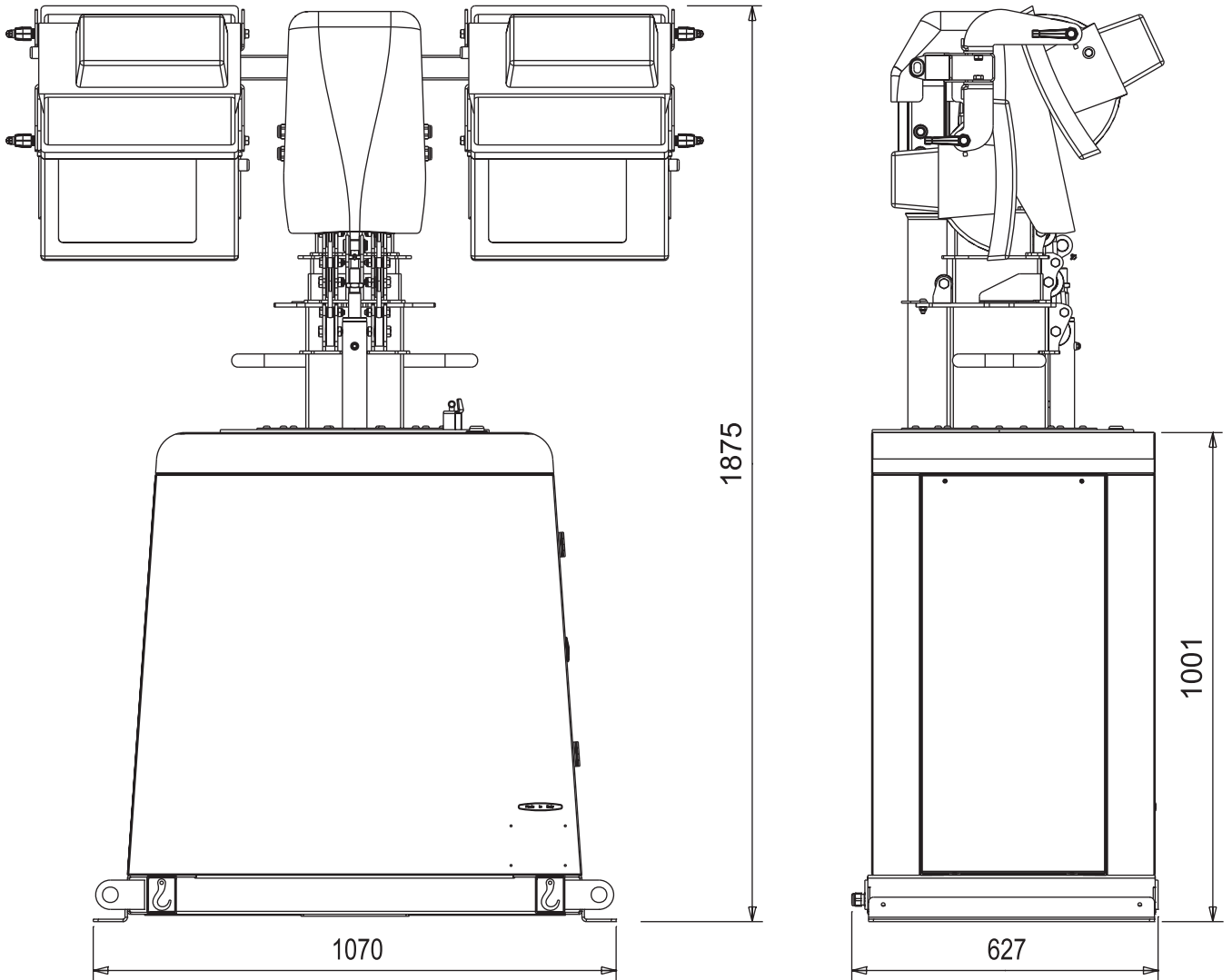


Ⓘ Dimensi
ⒼⒹ Dimensions
Ⓕ Dimensions



Ⓓ Abmessungen
Ⓔ Dimensiones
Ⓟ

TF KIT I9

M
2.7.2
REV.0-05/16



General precaution when handling the machine

	ATTENTION	
<p>During handling of the lighting tower is essential to pay close attention. All handling operations must be performed by qualified personnel. For the characteristics of weight and size, an error during the handling of the machine may result in serious damage to the surrounding people and to the machine itself.</p>		

In order to minimize the dangers involved in moving the equipment it is important to follow carefully the requirements below:

- The transport must always be done with the engine off, with electrical cables and starting battery disconnected, fuel tank empty.
- Clear the moving zone of all possible obstacles and from all unnecessary personnel.
- Use properly sized lifting equipment regularly submitted to major overhaul by an authorized organisation.
It is prohibited to fasten objects or accessories on the lighting tower baseframe that may modify weight and center of gravity and may cause movements unforeseen by the lifting eyes.
- Do not subject the **lighting tower** and lifting equipment to abrupt or undulating movements that pass on stress dynamics to the structure.
- Do not lift the equipment at heights greater than those strictly necessary.
- To access the attachment points on the roof of the machine, use approved ladders only. Climb the ladder being supported by a second operator and wear special non-slip shoes.

Moving the generating set via forklift

When lifting with a forklift it is necessary to:

- insert the forks of the forklift into the specific pockets located sideways on the baseframe, as indicated in the figures.
- Fully insert the forks so that they stick out from the opposite side and be careful to keep the equipment in horizontal position.

Stickers on the base indicate where to place the lifter forks.

Moving the generating set via cables or chains

When lifting the genset with the aid of cables or chains it is necessary to use equipment periodically checked by a licensed organisation. Hook the cables only on to the points provided for this use and shown via the appropriate stickers.

Moving by site trolley / trailer



CAUTION

the trailer can be driven only after you have done the following:

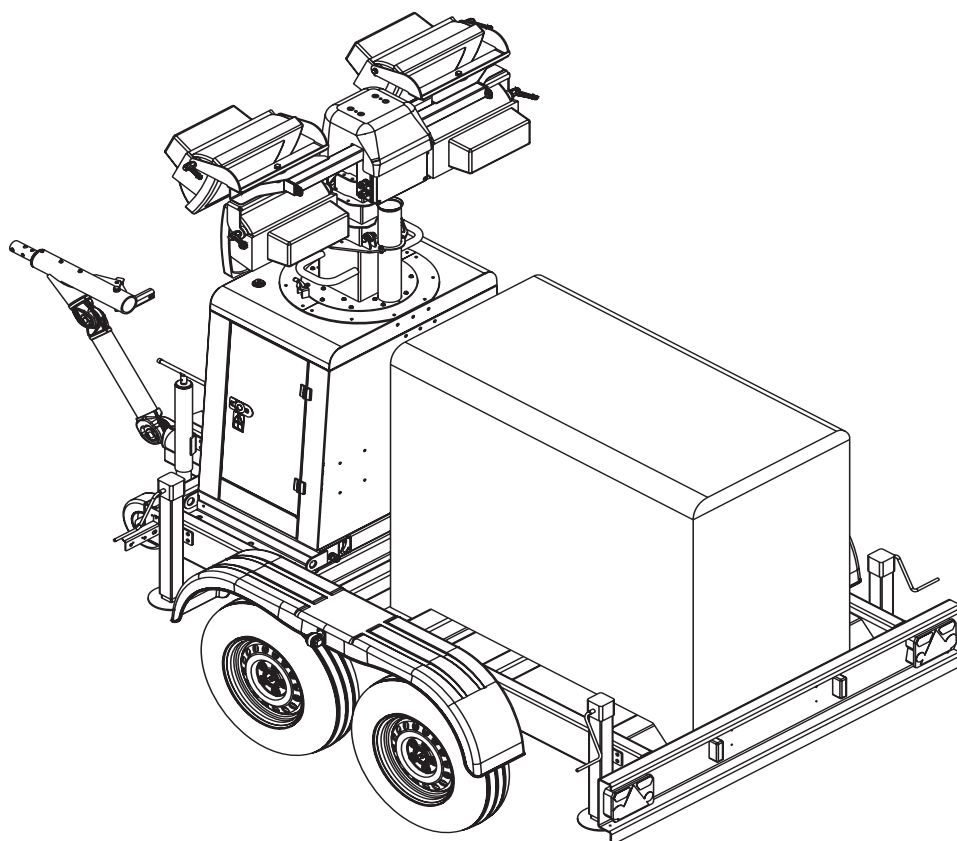
- complete lowering of the mast
- engine shutdown
- positioning of the floodlights for the transportation.

Before starting to tow do the following:

- Fully raise the outriggers and the parking stand of the trolley and lock the crank with its clamp
- Fully retract the outriggers up to snap the locking pins
- Make sure that all the doors are locked
- Check for proper tire inflation of the trailer

Machine transportation by a motor vehicle

During the transportation with a motor vehicle it is important to use appropriate belts/straps to stabilise the unit, thus avoiding that unexpected jumps or jolts can cause damage to the baseframe and to the engine or even worse the loss or the overturning of the load. It is the carriers responsibility to always respect the Highway Code in force.



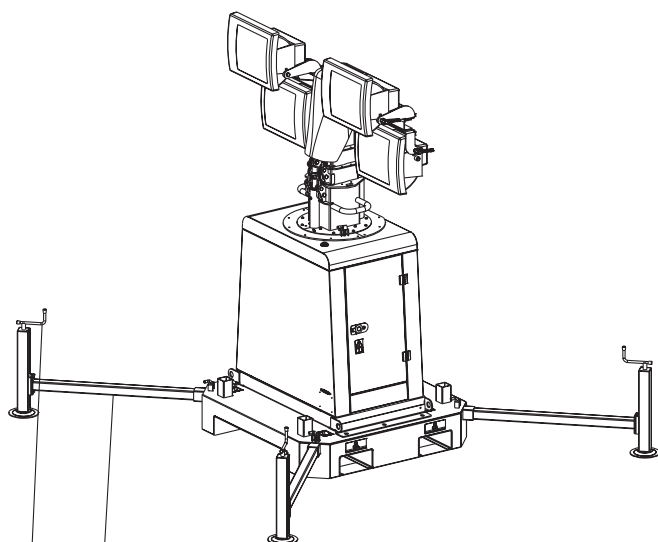


ATTENTION

Before operating the lighting tower make sure that all safety regulations concerning installation and use are satisfied.

In particular, be sure that:

- the surface on which the lighting tower is placed is flat and free of obstacles
- the wind speed does not exceed the safe speed indicated
- there are no obstacles or overhead power lines above the lighting tower
- the status of the lighting tower is adequate, in general
- the lifting ropes of the mast are in perfect condition.



A B
A. Leveling handle
B. Outriggers

POSITIONING OF THE OUTRIGGERS AND LEVELLING OF THE TOWER

- Make sure that the pins lock the arms of outriggers in their working position.
- Lower the outriggers and adjust the lighting tower position by acting on their handles, looking at the bubble level on the machine, until the horizontal position is reached.

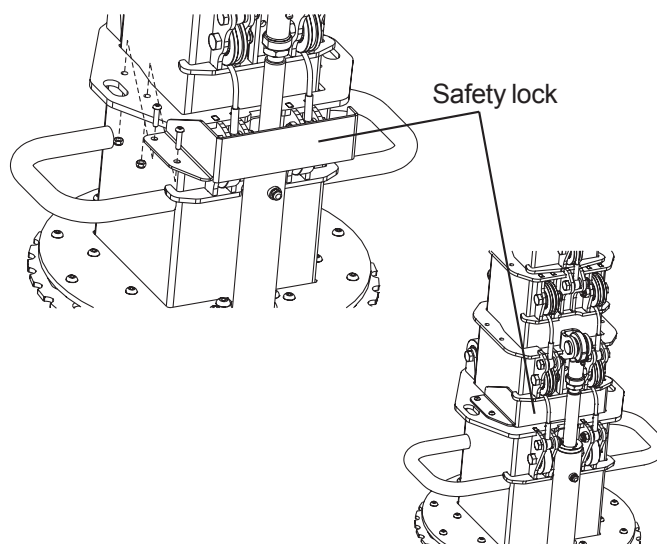
SAFETY LOCK



ATTENTION

Check the safety lock on the telescopic mast. The safety lock may be removed to facilitate shipping operations.

Before operating the lighting tower put the safety lock in its position as shown in the figure.



The safety lock stops the lowering of the mast at a safe height. This avoids the risk of operator injuries in the event of sudden failure of the telescopic mast ropes or the hydraulic lifting system.

ELECTRICAL CONNECTION



Grounding

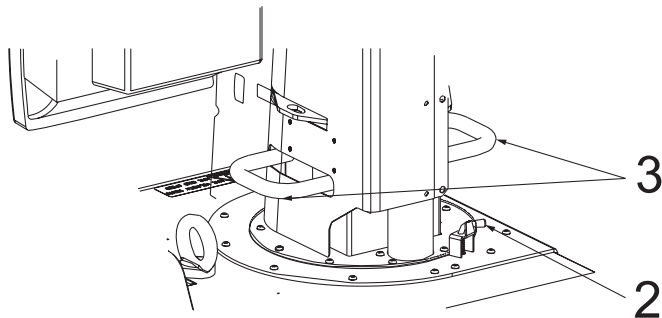
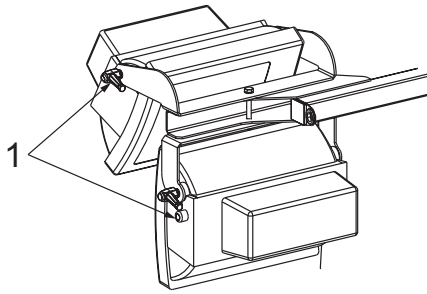
Follow the instructions on the manual of the generating set.

The grounding is not necessary, even if requested by the manual of the generating set, if the following conditions are satisfied:

- 1) the lighting tower is the only device powered by generating set
 - 2) the generating set is placed on the lighting tower frame
 - 3) the two devices must be connected to a bonding connection
- Make sure that the electrical power supply system (generating set) matches the electrical characteristic of the lighting tower (power, voltage, frequency).
 - Make sure the power cable is always in good condition and is placed so as to it can not be damaged.



ORIENTATION OF FLOODLIGHTS AND MAST



The floodlights beam can be oriented, according to the needs, by acting in the following two ways:

- by adjusting the inclination of each floodlight
- by rotating the mast in the desired direction.

To adjust the angle of the floodlights loosen the clamping lever or the screws (1), turn the floodlight to the desired position and lock again.

To rotate the mast lift the pin (2) and turn it in such a way as to keep it extracted. Direct the mast in the desired direction by acting on the handles (3). Unlock the pin (2) and slightly rotate the mast until the pin gets into a hole, thereby locking of the rotation of the mast.

RAISING AND LOWERING OF THE MAST



ATTENTION

Before powering the lighting tower make sure that switches of the lamps on the front panel are all in OFF position.

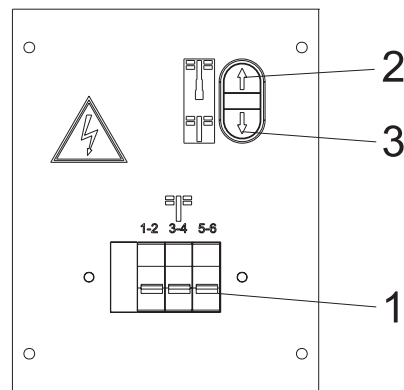
Start the generating set following the instructions of the manual.

Activate the raise of the mast through the relevant button on the control panel (2) until the mast is fully extended.

Turn on the lamps by means of the circuit breakers (1) on the front panel.

After use, turn off the lamps before actuating the lowering of the mast.

Lower the mast by pressing the appropriate button (3) on the control panel.



EMERGENCY LOWERING OF THE MAST

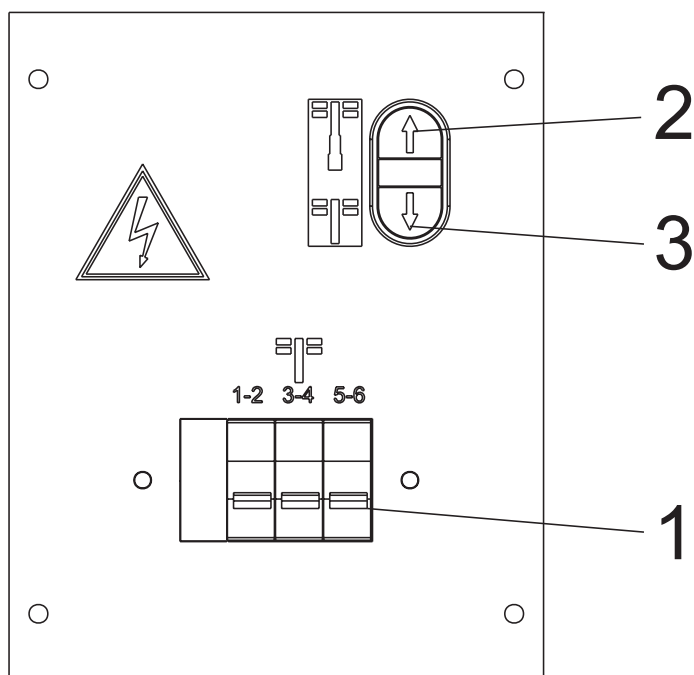
In case of emergency due to engine failure, or due to failure of the hydraulic or the electrical system, use the bypass tap of the solenoid valve to lower the mast. When the mast is completely down, close the tap again.



ATTENTION

After switch off, the metal halide lamps require a cooling time of about 15 minutes before subsequent switch on.





POS.	DESCRIZIONE	DESCRIPTION	BESCHREIBUNG
1	Interruttori magnetotermici lampade	Lamps switchs - circuit breaker	Leistungsschalter der Lampen
2	Pulsante salita palo	Mast-up button	Taste zum Hochfahren des Mast
3	Pulsante discesa palo	Mast-down button	Taste zum Herunterfahren des Mast



ATTENTION

Any maintenance or troubleshooting must be carried out in compliance with the requirements given in section: SAFETY PRECAUTIONS DURING MAINTENANCE.

NOTE

By maintenance at care of the utilizer we intend all the operatios concerning the verification of mechanical parts, electrical parts and of the fluids subject to use or consumption during the normal operation of the machine.

For what concerns the fluids we must consider as maintenance even the periodical change and or the refills eventually necessary.

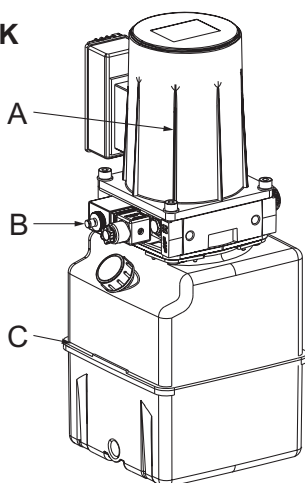
Maintenance operations also include machine cleaning operations when carried out on a periodic basis outside of the normal work cycle.

The repairs **cannot be considered** among the maintenance activities, i.e. the replacement of parts subject to occasional damages and the replacement of electric and mechanic components consumed in normal use. The replacement of tires (for machines equipped with trolleys) must be considered as repair since it is not delivered as standard equipment any lifting system.

The periodic maintenance should be performed according to the schedule shown in the engine manual. An optional hour counter (M) is available to simplify the determination of the working hours.

HYDRAULIC POWER PACK

- A. Electric Motor
- B. Bypass tap for manual lowering of the mast
- C. Hydraulic fluid tank



- Check the level and condition of the hydraulic fluid. Carry out the check with the mast down and cool fluid.
- It is recommended a first fluid change after the first 10 hours. Do the following oil changes within 3000 hours or once a year.
- The hydraulic power pack is supplied from factory with hydraulic oil type: **AGIP OSO 46**
- When topping up, it is important not to mix hydraulic fluids of different manufacturers, or different types, which may cause the formation of sludge and sedi-

ments that could affect the proper operation of the power pack.

- Each time you change the hydraulic fluid, replace (or wash and clean) the inlet filter and do an internal cleaning of the tank.
- For the oil replacement, use oils with a high viscosity index and temperature range appropriate to the conditions of use.

WIRE ROPES

Periodically check that the steel ropes of the mast are in perfect conditions. If there is evidence of wear, abrasion, broken wires or loose connection do not use the lighting tower and plan immediately the cables replacement .

CAUTION: When replacing use ropes of the same type of the originals. For this purpose, it is highly advisable to use original spare parts.

PULLEYS

Periodically check the regular rotation of the pulleys and the correct position of the ropes on the pulleys. Periodically lubricate with lithium multifunctional grease.

TELESCOPIC MAST

Check the regular movement of the mast during the raise and the lowering. Periodically grease the mast with anti-corrosion waterproof spray lubricant.

LAMPS

In case of need of replacement, do not directly touch the lamps with your fingers, use a cloth or use cotton gloves. Pay attention to the high temperature that the lamps reach during operation: wait them to cool down before replacing.

TIRES

On the trailer/site-tow versions periodically verify the proper tire pressure (2.2 bar).

GENERATING SET

Refer to the manual of the generating set and the other manuals supplied.



IMPORTANT



In the maintenance operations avoid that polluting substances, liquids, exhausted oils, etc. bring damage to people or things or can cause negative effects to surroundings, health or safety respecting completely the laws and/or dispositions in force in the place.



STORAGE

In case the machine should not be used for more than 30 days, make sure that the room in which it is stored presents a suitable shelter from heat sources, weather changes or anything which can cause rust, corrosion or damages to the machine.

Protect the machine with a plastic hood.

CUST OFF

Have **qualified** personnel disassemble the machine and dispose of the parts, including the oil, fuel, etc., in a correct manner when it is to be taken out of service.

As cust off we intend all operations to be made, at utilizer's care, at the end of the use of the machine. This comprises the dismantling of the machine, the subdivision of the several components for a further reutilization or for getting rid of them, the eventual packing and transportation of the eliminated parts up to their delivery to the store, or to the bureau encharged to the cust off or to the storage office, etc.

The several operations concerning the cust off, involve the manipulation of fluids potentially dangerous such as: lubricating oil and battery electrolyte.

The dismantling of metallic parts liable to cause injuries or wounds, must be made wearing heavy gloves and using suitable tools.

The getting rid of the various components of the machine must be made accordingly to rules in force of law a/o local rules.

Particular attention must be paid when getting rid of:

lubricating oils, battery electrolyte, and inflamable liquids such as fuel, cooling liquid.

The machine user is responsible for the observance of the norms concerning the environment conditions with regard to the elimination of the machine being cust off and of all its components.

In case the machine should be cust off without any previous disassembly it is however compulsory to remove:

- tank fuel
- engine lubricating oil
- cooling liquid from the engine
- battery

IMPORTANT

In the cust-off operations avoid that polluting substances, liquids, exhausted oils, etc. bring damage to people or things or can cause negative effects to surroundings, health or safety respecting completely the laws and/or dispositions in force in the place.

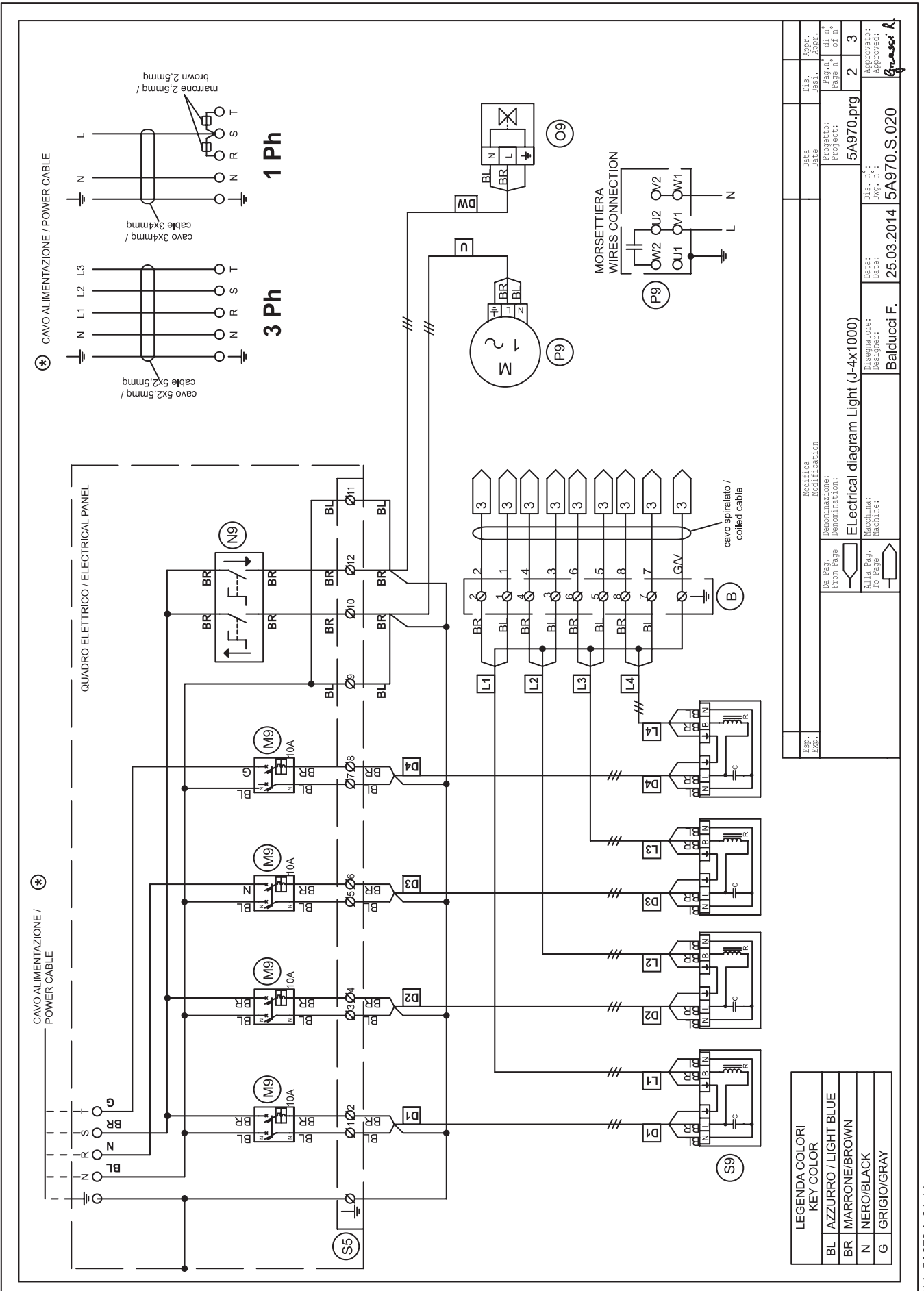


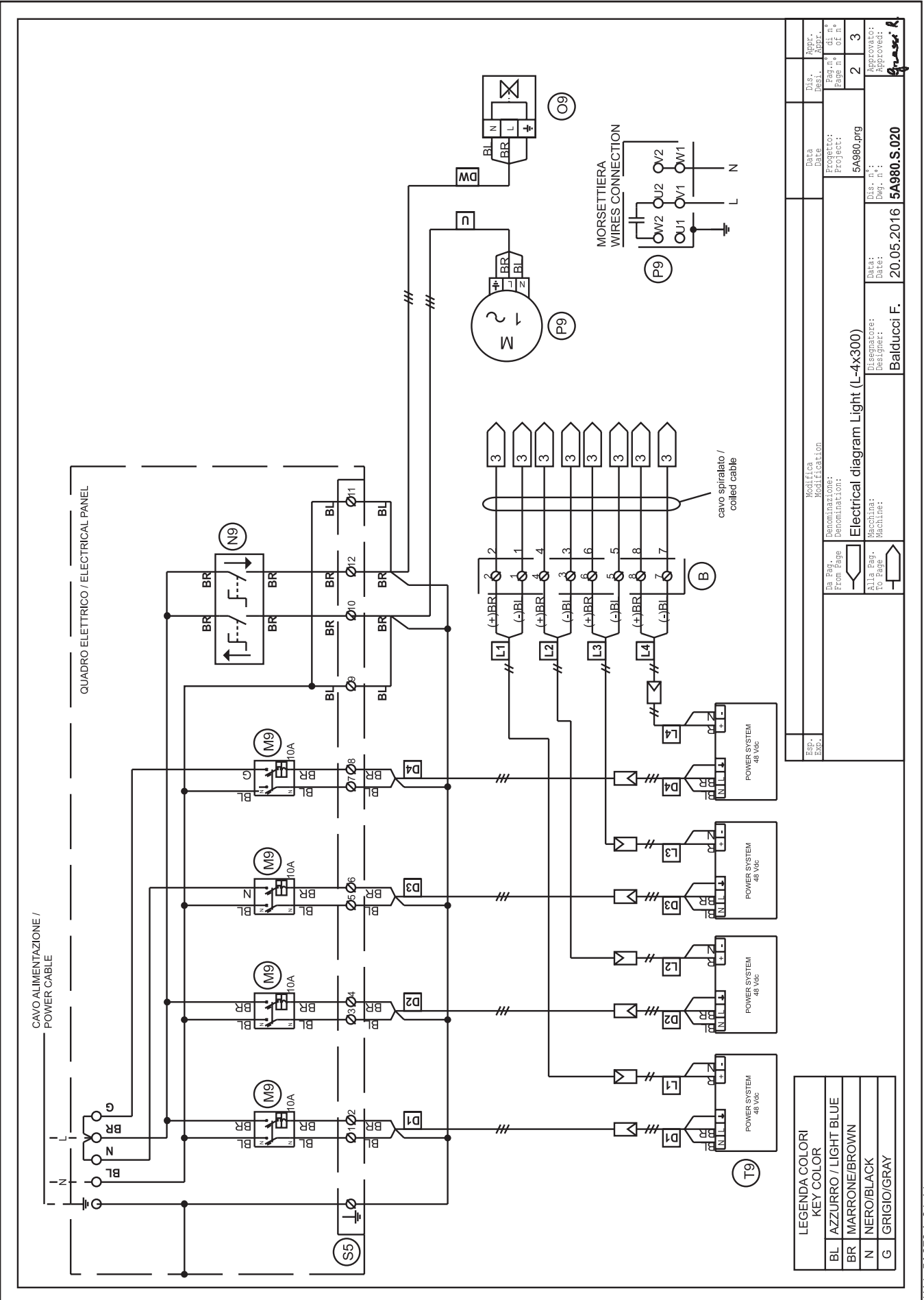
ELECTRICAL SYSTEM LEGENDE

M
60

REV.11-06/14

A : Alternator	E3 : Open circuit voltage switch	I6 : Start Local/Remote selector	N9 : UP/DOWN button mast
B : Wire connection unit	F3 : Stop push-button	L6 : Choke button	O9 : Hydraulic unit solenoid valve
C : Capacitor	G3 : Ignition coil	M6 : Switch CC/CV	P9 : Hydraulic unit engine
D : G.F.I.	H3 : Spark plug	N6 : Connector – wire feeder	Q9 : Ignitor
E : Welding PCB transformer	I3 : Range switch	O6 : 420V/110V 3-phase transformer	R9 : Lamp
F : Fuse	L3 : Oil shut-down button	P6 : Switch IDLE/RUN	S9 : Power system
G : 400V 3-phase socket	M3 : Battery charge diode	Q6 : Hz/V/A analogic instrument	T9 : 48Vdc power system
H : 230V 1phase socket	N3 : Relay	R6 : EMC filter	U9 : LED projector
I : 110V 1-phase socket	O3 : Resistor	S6 : Wire feeder supply switch	V9 : 125/250V 1phase socket
L : Socket warning light	P3 : Sparkler reactor	T6 : Wire feeder socket	Z9 :
M : Hour-counter	Q3 : Output power unit	U6 : DSP chopper PCB	W9 :
N : Voltmeter	R3 : Electric siren	V6 : Power chopper supply PCB	X9 :
P : Welding arc regulator	S3 : E.P.4 engine protection	Z6 : Switch and leds PCB	Y9 :
Q : 230V 3-phase socket	T3 : Engine control PCB	W6 : Hall sensor	
R : Welding control PCB	U3 : R.P.M. electronic regulator	X6 : Water heater indicator	
S : Welding current ammeter	V3 : PTO HI control PCB	Y6 : Battery charge indicator	
T : Welding current regulator	Z3 : PTO HI 20 l/min push-button	A7 : Transfer pump selector AUT-0-MAN	
U : Current transformer	W3 : PTO HI 30 l/min push-button	B7 : Fuel transfer pump	
V : Welding voltage voltmeter	X3 : PTO HI reset push-button	C7 : "GECO" generating set test	
Z : Welding sockets	Y3 : PTO HI 20 l/min indicator	D7 : Flooting with level switches	
X : Shunt	A4 : PTO HI 30 l/min indicator	E7 : Voltmeter regulator	
W : D.C. inductor	B4 : PTO HI reset indicator	F7 : WELD/AUX switch	
Y : Welding diode bridge	C4 : PTO HI 20 l/min solenoid valve	G7 : Reactor, 3-phase	
A1 : Arc striking resistor	D4 : PTO HI 30 l/min solenoid valve	H7 : Switch disconnecter	
B1 : Arc striking circuit	E4 : Hydraulic oil pressure switch	I7 : Solenoid stop timer	
C1 : 110V D.C./48V D.C. diode bridge	F4 : Hydraulic oil level gauge	L7 : "VODIA" connector	
D1 : E.P.1 engine protection	G4 : Preheating glow plugs	M7 : "F" EDC4 connector	
E1 : Engine stop solenoid	H4 : Preheating gearbox	N7 : OFF-ON-DIAGN. selector	
F1 : Acceleration solenoid	I4 : Preheating indicator	O7 : DIAGNOSTIC push-button	
G1 : Fuel level transmitter	L4 : R.C. filter	P7 : DIAGNOSTIC indicator	
H1 : Oil or water thermostat	M4 : Heater with thermostat	Q7 : Welding selector mode	
I1 : 48V D.C. socket	N4 : Choke solenoid	R7 : VRD load	
L1 : Oil pressure switch	O4 : Step relay	S7 : 230V 1-phase plug	
M1 : Fuel warning light	P4 : Circuit breaker	T7 : V/Hz analogic instrument	
N1 : Battery charge warning light	Q4 : Battery charge sockets	U7 : Engine protection EP6	
O1 : Oil pressure warning light	R4 : Sensor, cooling liquid temperature	V7 : G.F.I. relay supply switch	
P1 : Fuse	S4 : Sensor, air filter clogging	Z7 : Radio remote control receiver	
Q1 : Starter key	T4 : Warning light, air filter clogging	W7 : Radio remote control transmitter	
R1 : Starter motor	U4 : Polarity inverter remote control	X7 : Isometer test push-button	
S1 : Battery	V4 : Polarity inverter switch	Y7 : Remote start socket	
T1 : Battery charge alternator	Z4 : Transformer 230/48V	A8 : Transfer fuel pump control	
U1 : Battery charge voltage regulator	W4 : Diode bridge, polarity change	B8 : Ammeter selector switch	
V1 : Solenoid valve control PCB	X4 : Base current diode bridge	C8 : 400V/230V/115V commutator	
Z1 : Solenoid valve	Y4 : PCB control unit, polarity inverter	D8 : 50/60 Hz switch	
W1 : Remote control switch	A5 : Base current switch	E8 : Cold start advance with temp. switch	
X1 : Remote control and/or wire feeder socket	B5 : Auxiliary push-button ON/OFF	F8 : START/STOP switch	
Y1 : Remote control plug	C5 : Accelerator electronic control	G8 : Polarity inverter two way switch	
A2 : Remote control welding regulator	D5 : Actuator	H8 : Engine protection EP7	
B2 : E.P.2 engine protection	E5 : Pick-up	I8 : AUTOIDLE switch	
C2 : Fuel level gauge	F5 : Warning light, high temperature	L8 : AUTOIDLE PCB	
D2 : Ammeter	G5 : Commutator auxiliary power	M8 : A4E2 ECM engine PCB	
E2 : Frequency meter	H5 : 24V diode bridge	N8 : Remote emergency stop connector	
F2 : Battery charge transformer	I5 : Y/▲ commutator	O8 : V/A digital instruments and led VRD PCB	
G2 : Battery charge PCB	L5 : Emergency stop button	P8 : Water in fuel	
H2 : Voltage selector switch	M5 : Engine protection EP5	Q8 : Battery disconnect switch	
I2 : 48V a.c. socket	N5 : Pre-heat push-button	R8 : Inverter	
L2 : Thermal relay	O5 : Accelerator solenoid PCB	S8 : Overload led	
M2 : Contactor	P5 : Oil pressure switch	T8 : Main IT/TN selector	
N2 : G.F.I. and circuit breaker	Q5 : Water temperature switch	U8 : NATO socket 12V	
O2 : 42V EEC socket	R5 : Water heater	V8 : Diesel pressure switch	
P2 : G.F.I. resistor	S5 : Engine connector 24 poles	Z8 : Remote control PCB	
Q2 : T.E.P. engine protection	T5 : Electronic GFI relais	W8 : Pressure turbo protection	
R2 : Solenoid control PCB	U5 : Release coil, circuit breaker	X8 : Water in fuel sender	
S2 : Oil level transmitter	V5 : Oil pressure indicator	Y8 : EDC7-UC31 engine PCB	
T2 : Engine stop push-button T.C.1	Z5 : Water temperature indicator	A9 : Low water level sender	
U2 : Engine start push-button T.C.1	W5 : Battery voltmeter	B9 : Interface card	
V2 : 24V c.a. socket	X5 : Contactor, polarity change	C9 : Limit switch	
Z2 : Thermal magnetic circuit breaker	Y5 : Commutator/switch, series/parallel	D9 : Starter timing card	
W2 : S.C.R. protection unit	A6 : Commutator/switch	E9 : Luquid pouring level float	
X2 : Remote control socket	B6 : Key switch, on/off	F9 : Under voltage coil	
Y2 : Remote control plug	C6 : QEA control unit	G9 : Low water level warning light	
A3 : Insulation moiting	D6 : Connector, PAC	H9 : Chopper driver PCB	
B3 : E.A.S. connector	E6 : Frequency rpm regulator	I9 : Fuel filter heater	
C3 : E.A.S. PCB	F6 : Arc-Force selector	L9 : Air heater	
D3 : Booster socket	G6 : Device starting motor	M9 : ON/OFF switch lamp	
	H6 : Fuel electro pump 12V c.c.		

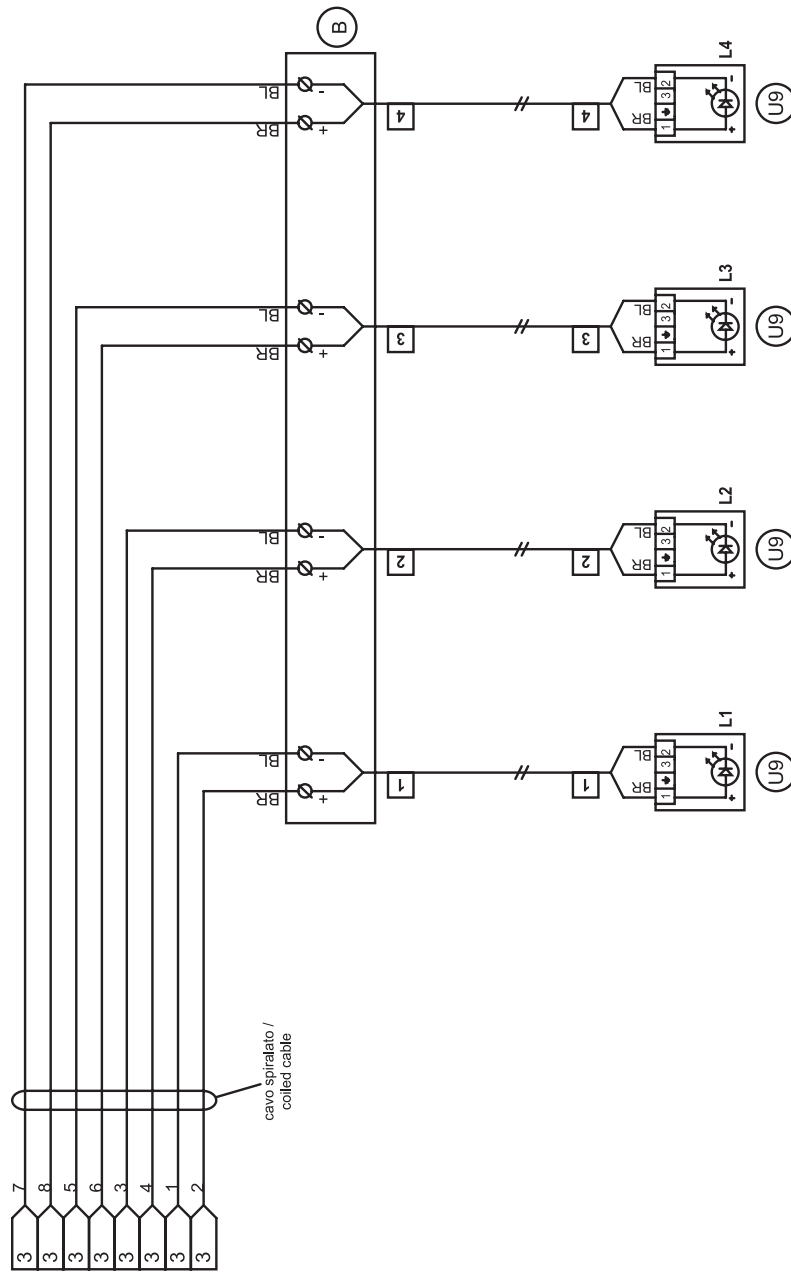




LEGENDA COLORI
KEY COLOR

BL	AZZURRO / LIGHT BLUE
BR	MARRONE/BROWN
N	NERO/BLACK
G	GRIGIO/GRAY

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		20.05.2016		



LEGENDA COLORI KEY COLOR	
BL	AZZURRO / LIGHT BLUE
BR	MARRONE/BROWN

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