



X-HYBRID

4x150W LED

Lighting Tower

USER MANUAL



Dear customer,

We wish to thank you very much for having purchased our product. With proper handling and maintenance, this product will provide dependable, long-term service. Our customer service is always available, might you need it.

This manual is intended for users of the equipment. This manual is compiled from information available and current at time of approval for printing.

Please consider that this manual may refer to controls and optional equipment that are not present on your particular machine.

*It is important that you know your machine and its equipment and how to operate it properly, so **please read the operating instructions carefully and understand them before operating the machine.***

Machine specifications can be modified at any time without any obligation to update this publications. It is recommended to read this manual thoroughly because incorrect operation may result in the warranty being void.

It is also recommended to use only original factory spare parts

Reproduction of this manual is not permitted, unless written approval is obtained from factory.



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SAFETY RULES

SAFETY PRECAUTIONS TO BE OBSERVED

Read this manual and learn the operating characteristics and limitations of the machine before operating it.

The manufacturer declines all liability for injury to persons and damage to components due to not respecting the safety rules.

Report all malfunctions to a maintenance responsible. If there are any repairs to be done, do not operate the equipment. Normal service and maintenance, if performed as required, can prevent unexpected and unnecessary down time. This manual describes standard inspections, operation and servicing with the normal safety precautions required for normal servicing and operating conditions. Operators and maintenance personnel must be safety conscious and alert to recognize potential operating or servicing safety hazards at all times. They should immediately take the necessary precautions to ensure safe operation and servicing of the machine.



- Be aware of operating risks that may be created by weather changes. Follow the correct procedures in the event of heavy rain or electrical storm.

- Lower tower when not in use, or if high winds or electrical storms are expected in the area.
- Use protective clothing and safety equipment: gloves, safety boots, safety hard hat, goggles, ear protection, and dust masks when necessary.
- Know all side clearances and overhead obstructions for safe operation of the machine.
- ALWAYS** make sure area above the tower is open and clear of any kind of obstruction.
- Position and operate the lighting tower on a firm surface.
- The machine must be levelled and outriggers extended before raising tower.
- Keep area around the machine clear of people while raising and lowering the mast.
- ALWAYS** handle fuels and lubricants carefully, clean up spills to avoid fire and slipping risks.
- NEVER** using the unit if it is in need of repair.
- The area near the exhaust pipe become hot in use. Be careful if you need to work there.
- Check that winch cables are in good condition and are centered on each pulley.
- DO NOT** use the unit if insulation on the electrical cord is cut or worn through.
- DO NOT** permit to untrained personnel to operate the machine.
- NEVER** operate a unit if you are tired, not concentrated or under the influence of drugs or alcohol.
- Keep children and animals away from the machine.

FIRE PRECAUTIONS



- Clean all dirt, oil and other fluids from components to minimize fire risks and aid in spotting loose or leaking components.

- Check the engine for oily rags or other debris that could be potential cause of fire before starting the unit.
- Have a fire extinguisher nearby. Be sure the extinguisher is properly maintained and be familiar with its use.
- In the event of fire, the following extinction means are appropriated: carbonate anhydride (or carbon dioxide), powder, foam, nebulized water. Avoid to use water jets.
- In the event of fire, wear a breathing apparatus if there is heavy smoke.

FLAMMABLE FLUID PRECAUTIONS



- Take due care when working with fuel. Diesel fuel is a health hazard. Be aware that there is also danger of fire and pollution.

- DO NOT** clean the unit components using flammable fluids.
- Check and ensure that all-fluid systems caps, drain, valves, fittings, lines etc., are secure and leak free.
- ALWAYS** shut off engine while refueling and be very cautious if engine is still hot.
- NEVER** smoke while checking or adding fuel or handling fluid containers.
- NEVER** refuel near an open flame
- DO NOT** fill the tank completely.
- DO NOT** refuel in an enclosed area with poor ventilation.
- DO NOT** run engine without the fuel tank cap.
- DO NOT** use the machine in areas with risk of explosion or fire.

SAFETY RULES

ELECTRICAL HAZARD



- DO NOT** smoke or allow open flames or sparks near the batteries.

- Before doing repair works, **ALWAYS** disconnect batteries. Disconnect negative terminal first and reconnect last.
- Before carrying out any welding on the machine, **ALWAYS** make sure to disconnect batteries and alternator leads.
- The tools must **NOT** come into contact with the battery terminals with the risk of creating an electric arc.
- Use jumper cables only. Improper use can result in severe damage and safety risk.
- NEVER** use the machine if insulation on electrical cord is cut or worn through.
- NEVER** operate lights without protective lens cover in place or with a lens cover that is cracked or damaged!

LUBRICATION AND SERVICING



- Only authorized and trained personnel is allowed to perform the machine maintenance. Please read the operator's manual and maintenance manual before using or servicing the machine.

- HIGH VOLTAGE!** This equipment utilizes high voltage circuits. Always exercise extreme caution when trouble shooting or repairing any electrical circuit.
- Only a qualified electrician should troubleshoot or repair electrical problems occurring on the machine.
- Before servicing the lighting tower, ensure that the engine start switch is turned to OFF.
- Disconnect electrical power and turn off engine before removing protective covers on high voltage electrical closures.
- NEVER** perform even routine service (oil/filter changes, cleaning, etc.) if all electrical components aren't shut down.
- NEVER** allow water to accumulate at the base of the machine. If water is present, **DO NOT** service!
- DO NOT** service electrical components if your clothing or skin is wet.
- If the unit is stored outside, check the engine and generator for any moisture. If wet, dry the unit thoroughly before starting.
- Never wash the unit with a high pressure hose or with any kind of power washer.
- Open main circuit breaker before disconnecting battery cables.
- Ensure to always relieve pressure before servicing any pressurized system.
- Be aware of hot exhaust pipes and engine.
- KEEP AWAY** from moving parts on generator and engine. Be aware of the hazard if you wear loose clothing.
- Check and replace all missing and hard-to-read labels.
- Make sure slings, chains, hooks, ramps, jacks, and other types of lifting devices are attached securely and have enough weight-bearing capacity to lift or hold the equipment safely.

TOWING SAFETY

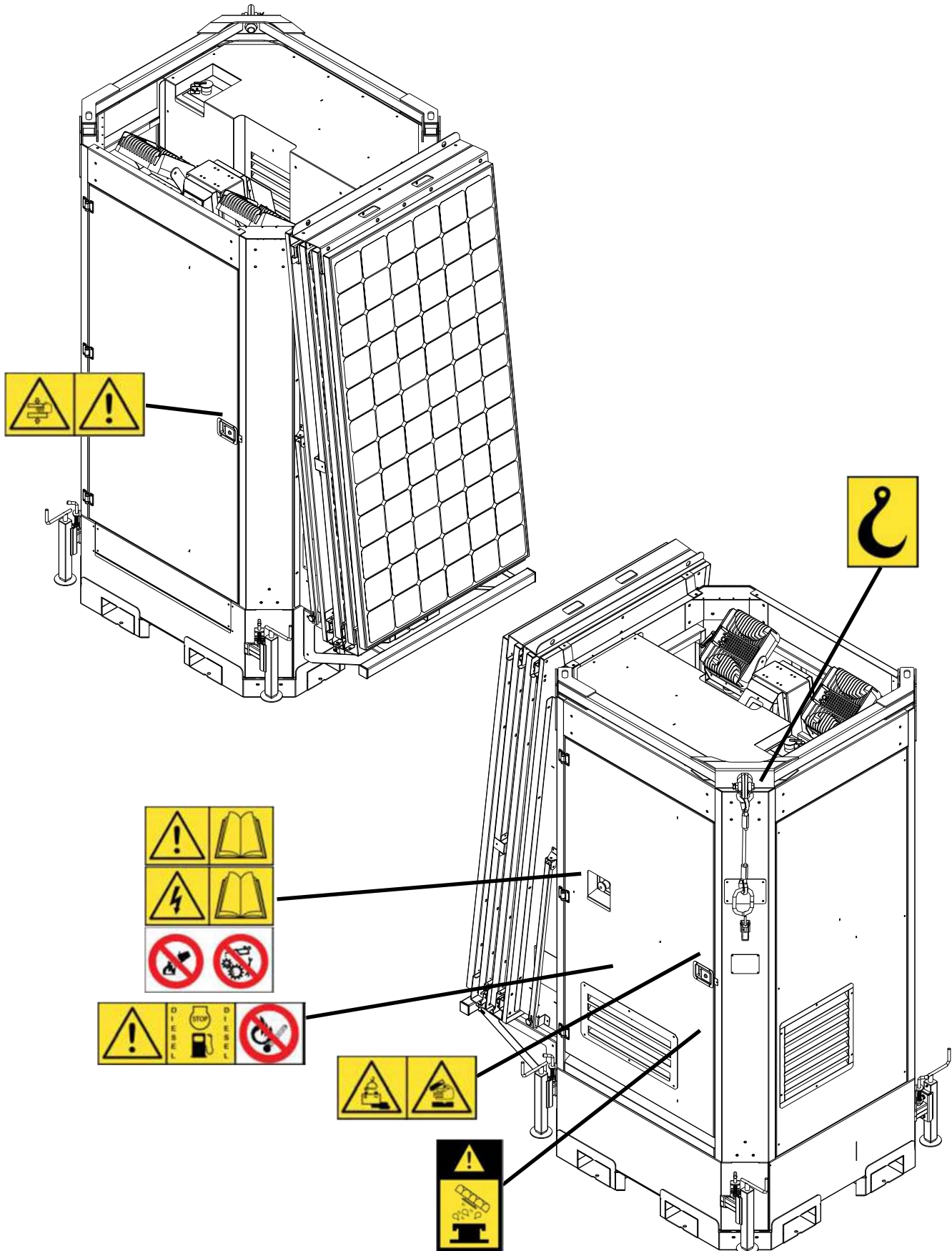


- Be careful while towing a trailer!** Both the trailer and vehicle must be in good condition and securely fastened to each other.

- Check that the hitch and coupling on the towing vehicle are adequately dimensioned and rated to the trailer's "gross vehicle weight rating" (GVWR).
- Do not tow a trailer using defective parts coupling!
- Check the tires of the trailer: tread wear, tire pressure, general conditions.
- Connect breakaway safety line securely to towing vehicle.
- If fitted, connect safety chains in a crossing pattern under the connecting beam.
- Check that wheel nuts are **ALL** tight.
- Check that the road running lights are connected and operating, if applicable.
- Maximum recommended speed for highway towing is 75 km/h. Recommended maximum off-road towing speed is 15 km/h (less on uneven terrain).
- When towing, maintain extra space between vehicles and avoid soft shoulders, curbs and sudden lane changes. If you are not experts in tow, to practice in a far from heavy traffic area.













SAFETY RULES

SAFETY STICKERS GUIDE



SAFETY RULES

SAFETY STICKERS MEANINGS

STICKERS	MEANING
	Attention! Read user's manual before operating the machine.
	Attention, high voltage! Read user's manual before operating the machine.
	Prohibition of extinguishing fires with water; use fire extinguishers containing proper extinguishing agents.
	Prohibition of cleaning, lubricating, repairing or adjusting moving parts.
	Attention! Diesel fuel on board. Stop the engine while refueling.
	Prohibition of using flames or smoking.
	Danger of burns: hot surfaces.
	Attention! Danger of crushing.
	Attention, battery on board. Contains corrosive liquids.
	Danger: do not open when the engine is hot.
	Earthing point. The grounding of the machine always needs to be done paying attention on the section of the cable to be used (never to be less than 10 mm ²).
	Lifting point. Ensure lifting device has enough capacity to handle machine weight.

TECHNICAL SPECIFICATIONS

LIGHTING TOWER IDENTIFICATION

1						
2						
Year of manufacture:		3	Type	4		
5	6		Engine		7	
			Alternator		8	
	KVA	11	Hz	12	V	10
9	COS ϕ		Battery		20	
	RPM	14	I.CL.	15	IP	16
Solar panel			21			
Dimensions L x W x H			17			
Weight			18			
SERIAL N°			19			

1. Manufacturer's logo
2. Manufacturer's address
3. Manufacture year
4. Machine model
5. CE Logo
6. Generator symbol
7. Engine type
8. Alternator type
9. Single phase machine
10. Rated voltage
11. Rated power
12. Frequency
13. Power factor
14. Engine speed
15. Insulation class
16. Degree of protection
17. Machine dimensions
18. Dry weight
19. Machine serial number
20. Battery type
21. Solar panel
(quantity and power)

Information regarding the machine model, code and year of production is on the unit serial number plate. Always quote the machine model and serial number when contacting your dealer, the factory and for any spare parts requests. All of our products comply with CE requirements. They are conform to directives and fulfill all the relevant safety requirements.

TECHNICAL SPECIFICATIONS

TECHNICAL DATA

FLOODLIGHTS & MAST	
Type	LED
Power (each)	150W
Floodlights number	4
IP level	65
Illuminated area	3000 sqm
Lifting method	Hydraulic
Maximum Height	8,5 m
Maximum Wind Speed	110 km/h
Rotation	340°

GENERATOR	
Model	Linz Alumen SB
Rated Output	3,5 kVA
Rated Frequency	50 Hz
Rated Voltage	230 V

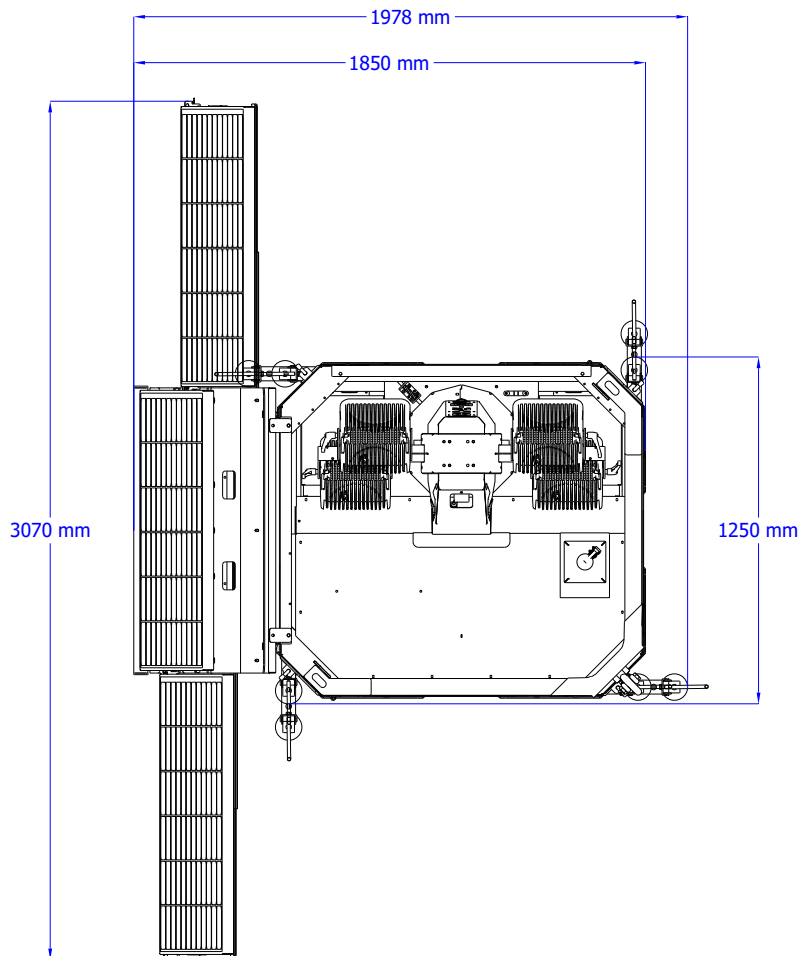
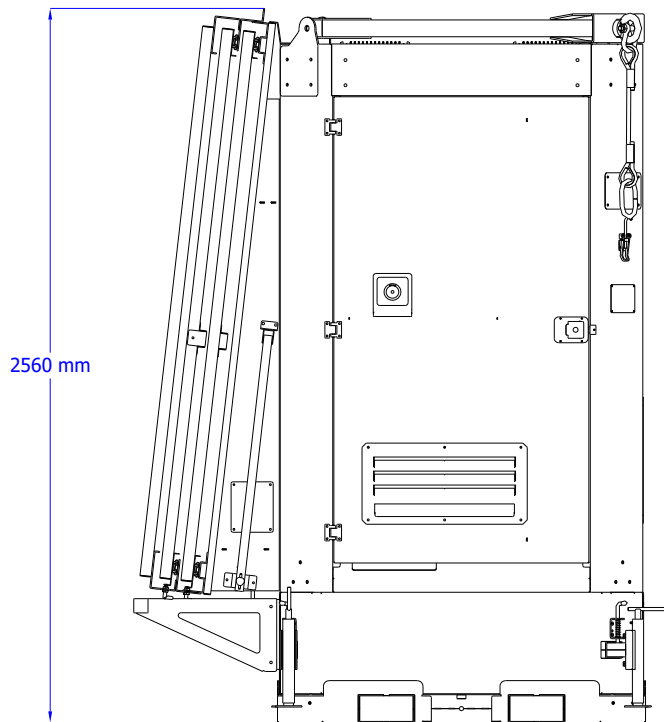
BATTERIES	
Type	AGM ZL 06 130
Number	8
Batteries pack	24Vdc 800 Ah
Expected battery cycle	500
Expected battery life time	26000 h

HYBRID MODE	
Running time	38 h
Charging time	18 h
Charging time with floodlights off	14 h
Complete discharge / charge cycle	52 h
Hybrid mode consumption	0,15 l/h

ENGINE	
Type	Yanmar 2TNV70_Stage V
Governor	Electronic
Number of cylinder	2
Displacement	570 cm ³
Engine speed	1500 rpm
Fuel consumption	0,55 l/h
Running time	790 h
Cooling system	liquid

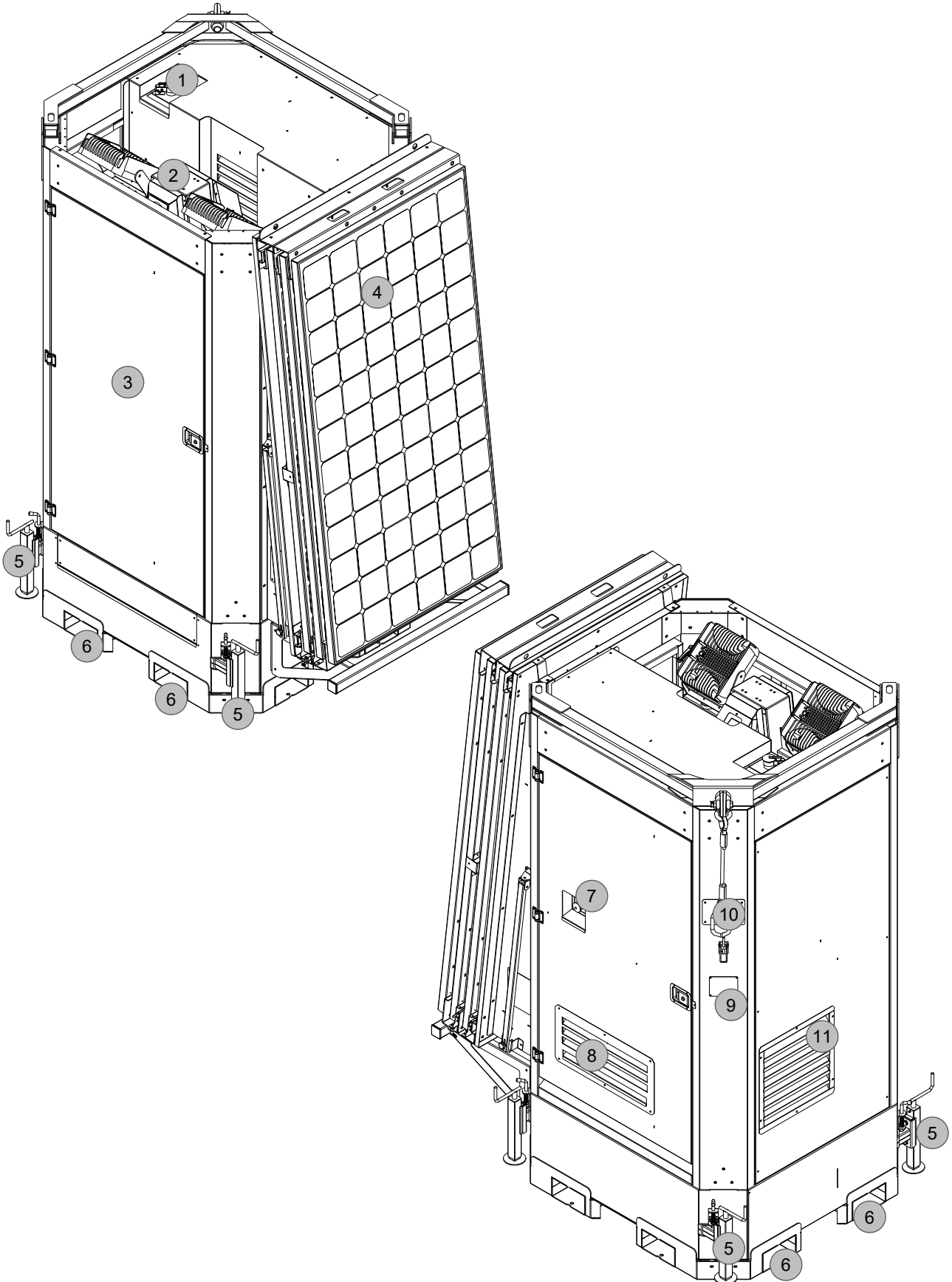
GENERAL	
Engine battery	12 V – 62 Ah
Fuel tank capacity	148 l
Dry Weight	1860 Kg

DIMENSIONS



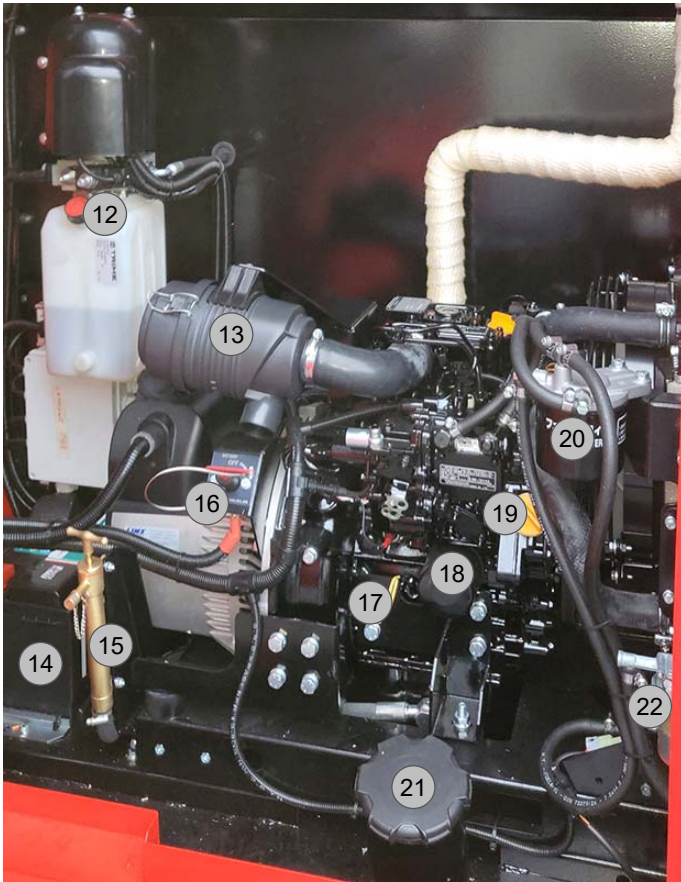
TECHNICAL SPECIFICATIONS

COMPONENT IDENTIFICATION



TECHNICAL SPECIFICATIONS

COMPONENT IDENTIFICATION



- | | |
|--|---|
| <ol style="list-style-type: none"> 1. Exhaust gas outlet 2. Floodlights T-Bar 3. Mast inspection door 4. Solar panels 5. Extractable stabilizers 6. Fork-lift pockets 7. Emergency stop button 8. Air inlet 9. Data plate 10. Lifting hook 11. Air outlet 12. Hydraulic unit filler cap 13. Air filter 14. Engine battery 15. Manual oil drain pump 16. Battery switch 17. Oil level dipstick 18. Oil filter | <ol style="list-style-type: none"> 19. Oil filler cap 20. Fuel filter 21. Fuel filler cap 22. Fuel filter / Water separator 23. DSE 3110 controller 24. Fuel level gauge 25. External power source signal lamp 26. AGM battery monitor 27. Lamps hour 28. DC supply switch 29. Lamps Auto / Manual switch 30. Mast buttons 31. Light sensor element 32. RCD protection 33. Inverter protection 34. Lamp switches 35. Lamps dimming regulator 36. Earthing clamp |
|--|---|

HANDLING AND TRANSPORT

HANDLING AND TRANSPORT WITH CRANE

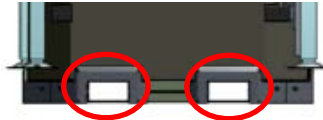


Handling by crane is allowed only if the machine is connected to the crane through the lifting eye.

- Ensure that the lifting capacity of the crane and lifting devices is suited to the weight of the machine to move. The weight is specified in the provided documentation (user's manual) and on the data plate.
- Connect the cable/hook to the lifting eye **(A)** and tension the cable.
- Lift the machine for about 10 cm (4 in.).
- Move slowly and position the machine on the ground or on the vehicle.

HANDLING AND TRANSPORT WITH FORKLIFT

- Ensure that the lifting capacity of the forklift is suited to the weight of the machine to move. The weight is specified in the provided documentation (user's manual) and on the data plate.
- Insert the forks into the forklift pockets **(B)**.
- Lift the machine for about 10 cm (4 in.).
- Move slowly and position the machine where needed.



B



- All lifting operations must be carried out by qualified personnel, such as fork lift operators, crane operators and slingers. The operator should be deemed responsible for using the correct method of slinging and lifting the generator unit.
- Never leave the load insecure.
- When moving and transporting the machine, do not tilt it excessively.
- When lifting and moving the machine, do not stay or walk within its proximity.
- Never leave the machine slung overhead.

LIGHTING TOWER USE

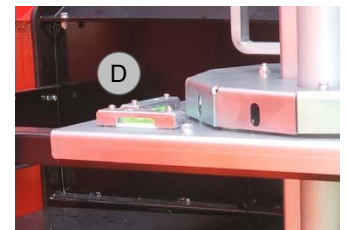
STABILIZING THE UNIT

Jack up the unit as follows. Consider that the stabilizers are extendable **(C)**.

- Hold the stabilizer with one hand and pull the locking pin to release it. Pull the stabilizer outwards until it's fully extended and ensure that the locking pin locked it in place securely in the extended position.
- Jack the unit up by rotating the handle on the top of each stabilizer clockwise.
- Please refer to the bubble levels **(D)** installed on top of the machine (near the mast) in order to have the machine perfectly leveled and stable before rising the tower.



C



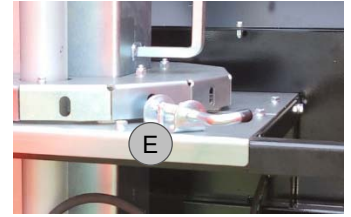
D

LIGHTING TOWER USE

DIRECTING THE FLOODLIGHTS

The tower can be rotated up to **340** degrees in order to direct the light as required.

- Release the rotation locking pin (**E**) and turn the tower using the rotation handle on the mast in order to direct the lights as needed. Don't forget to lock the rotation afterwards.



ENGINE OIL DRAIN

The lighting tower is fitted with a manual pump as standard, to facilitate the operator in the engine oil drain. Proceed as follows:

- Put under the cap (**G**) a container.
- Remove the cap (**G**).
- Operate the pump by acting to the handle (**H**).
- Emptied all the oil replace the cap (**G**).



Dispose of the oil according to local regulations.

PRELIMINARY CHECK & STARTING

Before starting and operating the unit, we suggest making the following routine checks for improved safety, better efficiency, longer product life and in order to avoid work disruptions.

- Check that the machine is leveled correctly and stabilized firmly.
- Check that all the lamp lenses are clean and undamaged.
- After adjusting the lights, prepare to raise the tower by:
 - Inspecting the cable and replacing it, if damaged.
 - Checking mounting hardware for proper tightness and re-torquing if necessary.
- Check fuel, engine oil and coolant level. Top them if necessary.
- Ensure that the fuel lines are undamaged and correctly connected.
- Ensure that all the electrical cables are undamaged and correctly connected.
- Check that the main switch and the circuit breakers are in the OFF position.
- Ensure that all the light switches are turned off in order not to start the engine under load.
- Drive the earth picket into the ground (earth) following any risk assessment. (*)
- Check that the grounding cable is securely attached to the unit.
- Check that the emergency stop button is not pressed. If necessary, rotate the button clockwise to release it.
- Open the frontal door to access the control panel.

For operators' safety, the grounding of the machine always needs to be done paying attention on the section of the cable to be used (never to be less than 10 mm²). For the connection of the grounding cable, please always use the clip located on the control panel, on the right side of the machine. Always perform grounding operations in compliance with local/international regulations.

LIGHTING TOWER USE

DSE 3110 MODULE: DESCRIPTION OF CONTROLS



STOP/RESET

This button places the module into its **Stop/Reset** mode. This will clear any alarm conditions for which the triggering criteria have been removed. If the engine is running and the module is in Stop mode, the module will automatically instruct the changeover device to unload the generator (“**Close Generator**” becomes inactive (is used)). The fuel supply de-energises and the engine comes to a standstill. Should a **remote start signal** be present while operating in this mode, a remote start will not occur.



AUTO

This button places the module into its **Automatic** mode. This mode allows the module to control the function of the generator automatically. The module will monitor the remote start input and once a start request is made, the set will be automatically started and placed on load.

Upon removal of the starting signal, the module will automatically transfer the load from the generator and shut the set down observing the stop delay timer and cooling timer as necessary. The module will then await the next start event.



START

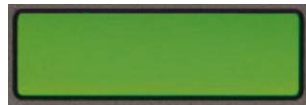
Pressing this button in auto mode will start the engine and run off load.

Pressing this button in Stop/Reset mode will turn on the CAN engine ECU (when correctly configured and fitted to a compatible engine ECU)



PAGE

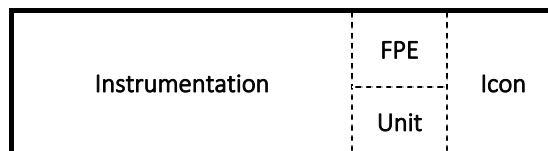
Pressing this button scroll the display to show the various instruments.



DISPLAY

A 32x132 pixel LCD is available for the display of generator instrumentation and alarm conditions. The display is segmented into areas for instrumentation, unit, alarm icons and for Front Panel Editor (FPE) use.

When not in the Front Panel Editor (FPE) mode the FPE area of the display is used to display the currently active configuration. The letter ‘M’ is displayed for main configuration active, the letter ‘A’ for alternative configuration active.



DSE 3110 MODULE: PROTECTIONS

When an alarm is present, the Common alarm LED if configured will illuminate. The LCD display will show an icon to indicate the failure.

Warnings

Warnings are non-critical alarm conditions and do not affect the operation of the generator system, they serve to draw the operators attention to an undesirable condition. Warning alarms are self-resetting when the fault condition is removed. The icon will appear steady in the display.

Shutdowns




















Shutdowns are critical alarm conditions that stop the engine and draw the operator’s attention to an undesirable condition. Shutdown alarms are latching.

The fault must be removed and the button 

pressed to reset the module. The icon will appear flashing in the display.

LIGHTING TOWER USE


DSE 3110 MODULE: ICONS

Description		
	Timer Icon	When the module is controlling the engine (starting and stopping) an animated timer icon will be displayed in the icon area to indicate that a timer is active, for example cranking time, crank rest etc.
	Stop mode - Stopped Icon	When there are no alarms present, an icon will be displayed to indicate the engine is stopped and what mode the unit is in. The hand is only displayed when the 'arming options' is enabled, otherwise the engine starts when entering the manual mode.
	Auto mode - Stopped Icon	
	Manual mode - Stopped Icon	
	Running Icon	When there are no alarms present, this animated icon is displayed to indicate the engine is running
	Usb Icon	When a USB connection is made to the module this icon is displayed
	Memory Corruption	If either the config. file or engine file becomes corrupted the unit will display this icon.
	Fail to start	The engine has not fired after the preset number of start attempts
	Fail to stop	The module has detected a condition that indicates that the engine is running when it has been instructed to stop. NOTE: 'Fail to Stop' could indicate a faulty oil pressure sensor - If engine is at rest check oil sensor wiring and configuration.
	Low oil pressure	The module detects that the engine oil pressure has fallen below the low oil pressure pre-alarm setting level after the <i>Safety On</i> timer has expired.
	Engine high temperature	The module detects that the engine coolant temperature has exceeded the high engine temperature pre-alarm setting level after the <i>Safety On</i> timer has expired.
	Charge failure	The auxiliary charge alternator voltage is low as measured from the W/L terminal.
	Low fuel level	The level detected by the fuel level sensor is below the low fuel level setting.
	Generator under voltage	The generator output voltage has fallen below the pre-set pre-alarm setting after the <i>Safety On</i> timer has expired.
	Generator over voltage	The generator output voltage has risen above the pre-set pre-alarm setting.
	Generator under frequency	The generator output frequency has fallen below the pre-set pre-alarm setting after the <i>Safety On</i> timer has expired.
	Generator over frequency	The generator output frequency has risen above the pre-set pre-alarm setting.
	Emergency stop	Pressing the emergency stop button, the machine automatically stops. NOTE:- The Emergency Stop Positive signal must be present otherwise the unit will shutdown.
	Internal memory error	Either the configuration file or engine file memory is corrupted. Contact your supplier for assistance.

LIGHTING TOWER USE

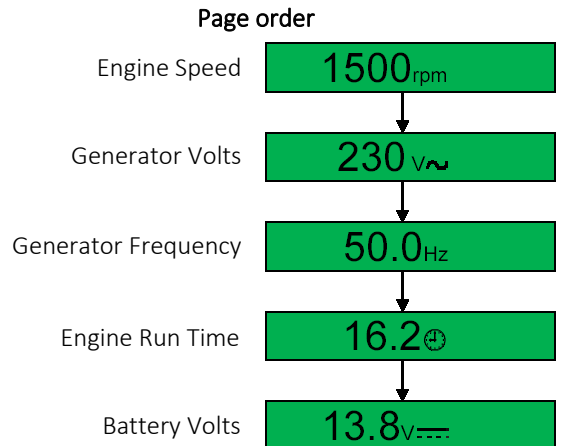
DSE 3110 MODULE: VIEWING THE INSTRUMENTS

It is possible to scroll to display the different pages of

information by repeatedly operating the scroll button: 

Once selected, the page will remain on the LCD display until the user selects a different page or after an extended period of inactivity, the module will revert to the status display.

When scrolling manually, the display will automatically return to the Status page if no buttons are pressed for the duration of the configurable LCD Page Timer. If an alarm becomes active while viewing the status page, the display shows the Alarms page to draw the operator's attention to the alarm condition.




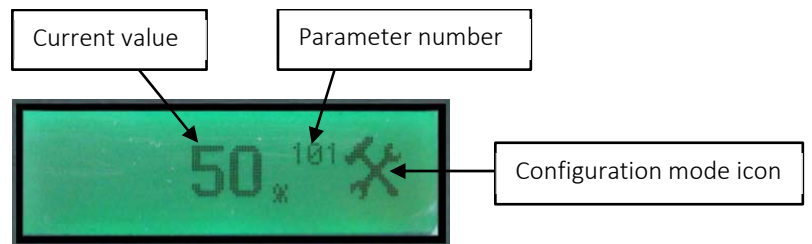
DSE 3110 MODULE: CONFIGURATION

This configuration mode allows the operator limited customizing of the way the module operates. Use the module's navigation buttons to traverse the menu and make value changes to the parameters.

Accessing The Front Panel Editor (FPE)

Press  and  buttons simultaneously.



The display shows the configuration icon: 
The first parameter is also displayed.






Editing a parameter


Enter the editor as described before.



Press  to select the required 'page' as detailed below:

Press  (+) to select the next parameter or  (-) to select the previous parameter within the current page.

When viewing the parameter to be changed, press the  button. The value begins to flash.

Press  (+) or  (-) to adjust the value to the required setting.

Press  to save the current value, the value ceases flashing.

Press  and hold the button to exit the editor, the configuration icon  is removed from the display.

NOTE: Values representing pressure will be displayed in Bar. Values representing temperature are displayed in degrees Celsius.

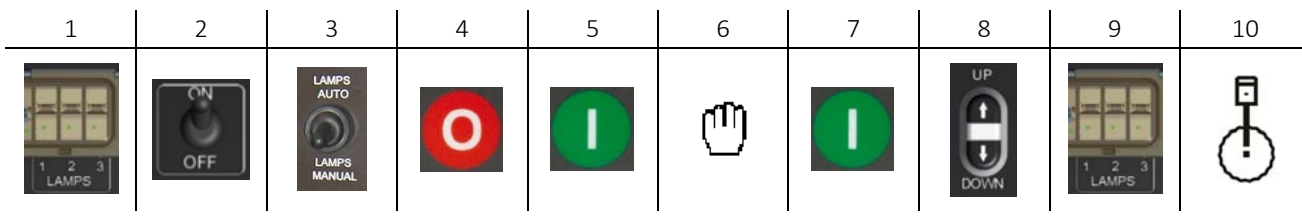
NOTE: When adjusting values in the FPE a press and hold of the increment button will cover the full range of the item being adjusted (min to max) in under 20 seconds.

NOTE: When the editor is visible, it is exited after 5 minutes of inactivity to ensure security.

LIGHTING TOWER USE

MANUAL MODE

1. Ensure that all the lamp switches are in OFF position.
2. Put the ON/OFF selector in ON position.
3. Put the LAMPS switch in "LAMPS MANUAL" position.
4. Manual mode allows the operator to start and stop the set manually, and if required change the state of the load switching devices. Module mode is active when the STOP button is pressed.
5. To begin the starting sequence, press the START button. If 'protected start' is disabled, the start sequence begins immediately.
6. If the display shows the manual mode icon and the corresponding LED flashes, It means that "protected start" is enabled.
7. The START button must be pressed once more to begin the start sequence.
8. Adjust the mast height using the UP/DOWN buttons.
9. Switch on the floodlights.
10. **Note: the mast can be raised and the lights can be turned on only if the running icon appears on the display.**



NOTE: There is no start delay in this mode of operation.
The fuel relay is energized and the engine is cranked.

NOTE: If the unit has been configured for CAN, compatible ECU's will receive the start command via CAN.

If the engine fails to fire during this cranking attempt then the starter motor is disengaged for the crank rest duration after which the next start attempt is made. Should this sequence continue beyond the set number of attempts, the start sequence will be terminated and the display shows



When the engine fires, the starter motor is disengaged. Speed detection is factory configured to be derived from the main alternator output frequency but can additionally be measured from a Magnetic Pickup mounted on the flywheel. Additionally, rising oil pressure can be used to disconnect the starter motor (but cannot detect underspeed or overspeed).

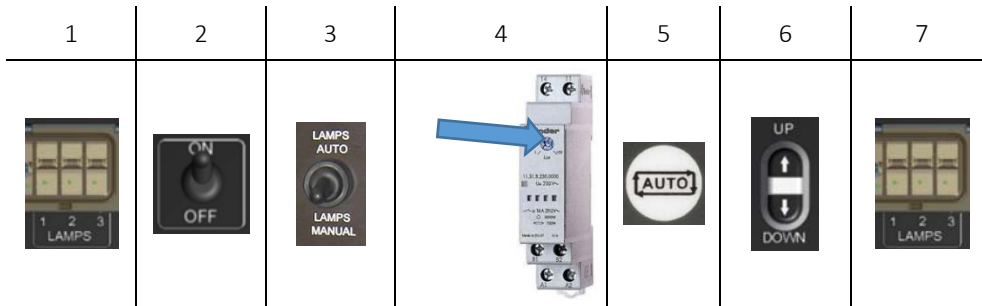
NOTE: If the unit has been configured for CAN, speed sensing is via CAN.

After the starter motor has disengaged, the Safety On timer activates, allowing Oil Pressure, High Engine Temperature, Under-speed, Charge Fail and any delayed Auxiliary fault inputs to stabilize without triggering the fault.

LIGHTING TOWER USE

LIGHT SENSOR MODE

1. Ensure that all the lamp switches are in OFF position.
2. Put the ON/OFF selector in ON position.
3. Put the LAMPS switch in "LAMPS AUTO" position.
4. If needed, set the light sensor sensitivity through the trimmer on the light sensor.
5. Press the AUTO button.
6. Adjust the mast height using the UP/DOWN buttons.
7. Switch on the floodlights.



The machine is now ready to start based on the lights sensor signal.

On the light sensor there is a red LED light:

- if it flashes slowly, there is power, but the sensor is off
- if it flashes quickly, the timing procedure is ongoing
- permanent light means that the power is on, the sensor is on, the machine starts and, after the engine has reached the operational temperature, the lamps will be turned on.

When the ambient light is strong enough, the machine will automatically turn off and put itself in stand-by.

ROUTINE MAINTENANCE

Poorly maintained equipment can become a safety hazard. In order, for the equipment, to operate safely and properly over a long period of time, periodic maintenance and occasional repairs are necessary.

Any kind of maintenance work on the lighting tower must be carried out by Authorized and trained personnel. It should be done in a safe working environment and with the machine well stabilized. The engine must be turned off and let cool down sufficiently before starting to work on it.

- While performing maintenance work, please use suitable tools and clothes.
- If you need to work while the engine is running, pay attention to all moving parts, hot parts and electrical parts which may be unprotected while the machine is open.**
- DO NOT modify any component if not authorized.

The repairs cannot be considered among the routine maintenance activities. E.g. the replacement of parts that are subject to occasional damage and the replacement of electric and mechanic components that wear with use. This kind of work is not –in fact– covered by warranty.

The periodic maintenance should be performed according to the documentation provided by the engine and alternator manufacturers. Please refer to the relevant manual supplied with the machine and to the hour meter on the machine in order to determine when service is needed.

DISPOSAL AND DECOMMISSIONING

This machine is made of parts that, if not disposed of correctly, can damage the environment and create ecological hazards. The following parts and materials need to be brought to authorized waste treatment sites:

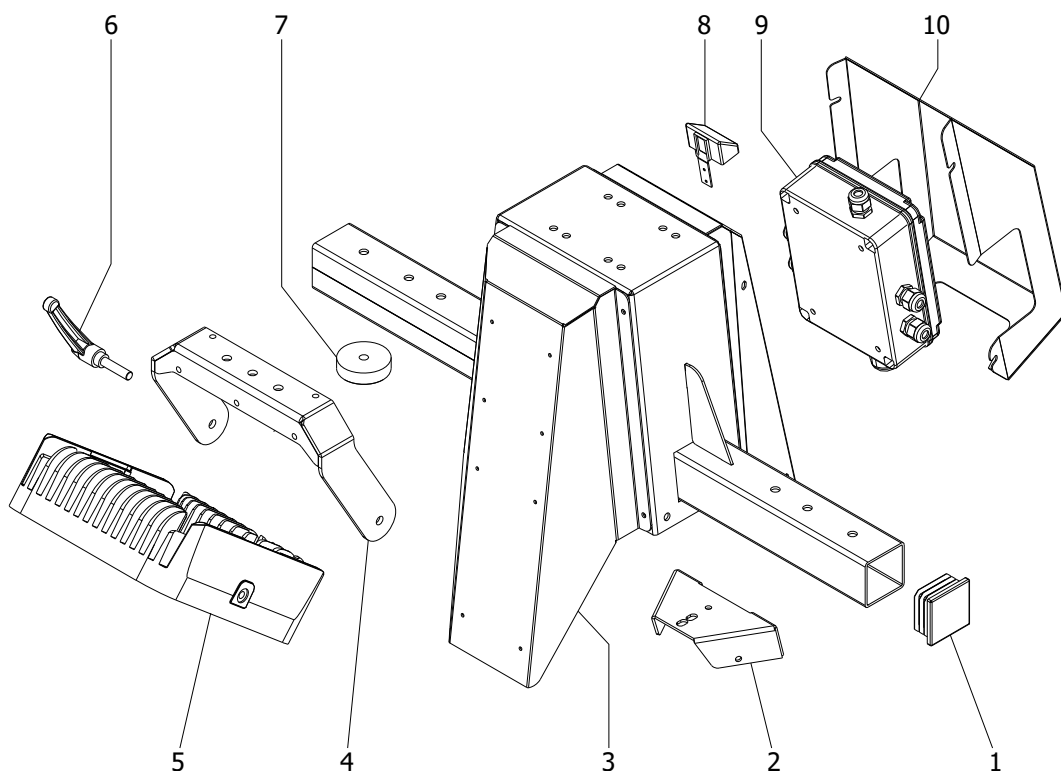
- Metallic structure;
- Batteries;
- Engine and hydraulic oils;
- Cooling liquid;
- Filters;
- Cables.

These components have to be disposed of accordingly to local laws and dispositions. Have qualified personnel disassemble the machine and dispose of parts.

The machine owner is responsible for dismantling and disposal of the machine and its components at the end of its working life.

SPARE PARTS

FLOODLIGHTS T-BAR

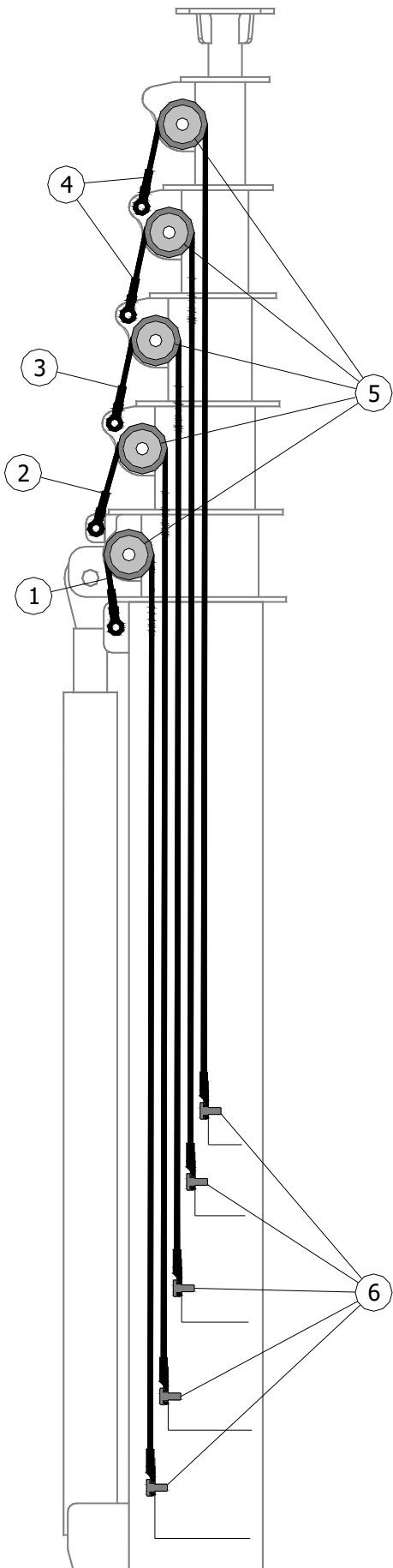


N.	CODE	DESCRIPTION
1	AC000_P037_005	CAP
2	PFM08_C000_038	CENTERING SUPPORT
3	LED04_C000_186	T-BAR
4	LED04_C000_101ZN	FLOODLIGHT SUPPORT
5	AC000_E026_087	FLOODLIGHT
6	AC000_M000_076	HANDLE
7	AS000_M023_001	SPACER
8	AC000_E016_005	LIGHT SENSOR ELEMENT
9	AS000_E006_029	JUNCTION BOX
10	PFM08_C000_045	JUNCTION BOX COVER

SPARE PARTS

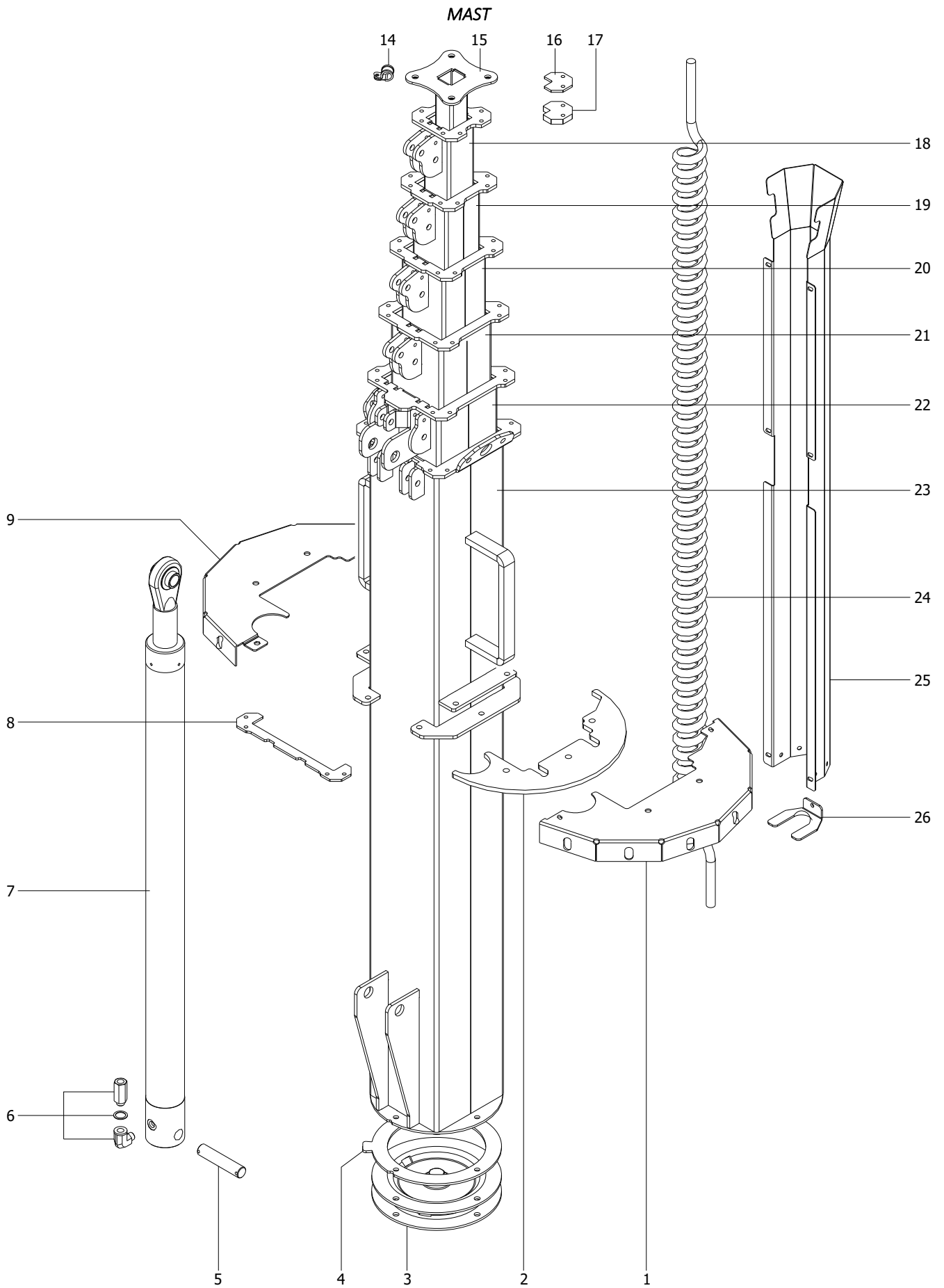
STEEL ROPES AND PULLEYS

N.	CODE	DESCRIPTION
1	AC000_M021_034	STEEL ROPE L.1290mm (quantity 2)
2	AC000_M021_034	STEEL ROPE L.1290mm
3	AC000_M021_035	STEEL ROPE L.1300mm
4	AC000_M021_036	STEEL ROPE L.1310mm
5 (*)	AC000_M021_002	PULLEY D.60
	AC000_M021_003	PULLEY D.62
	AC000_M021_008	PULLEY D.63
6	AS000_M000_029	SCREW



(*)	PLEASE AT THE TIME OF THE ORDER MEASURE THE DIAMETER
-----	---

SPARE PARTS

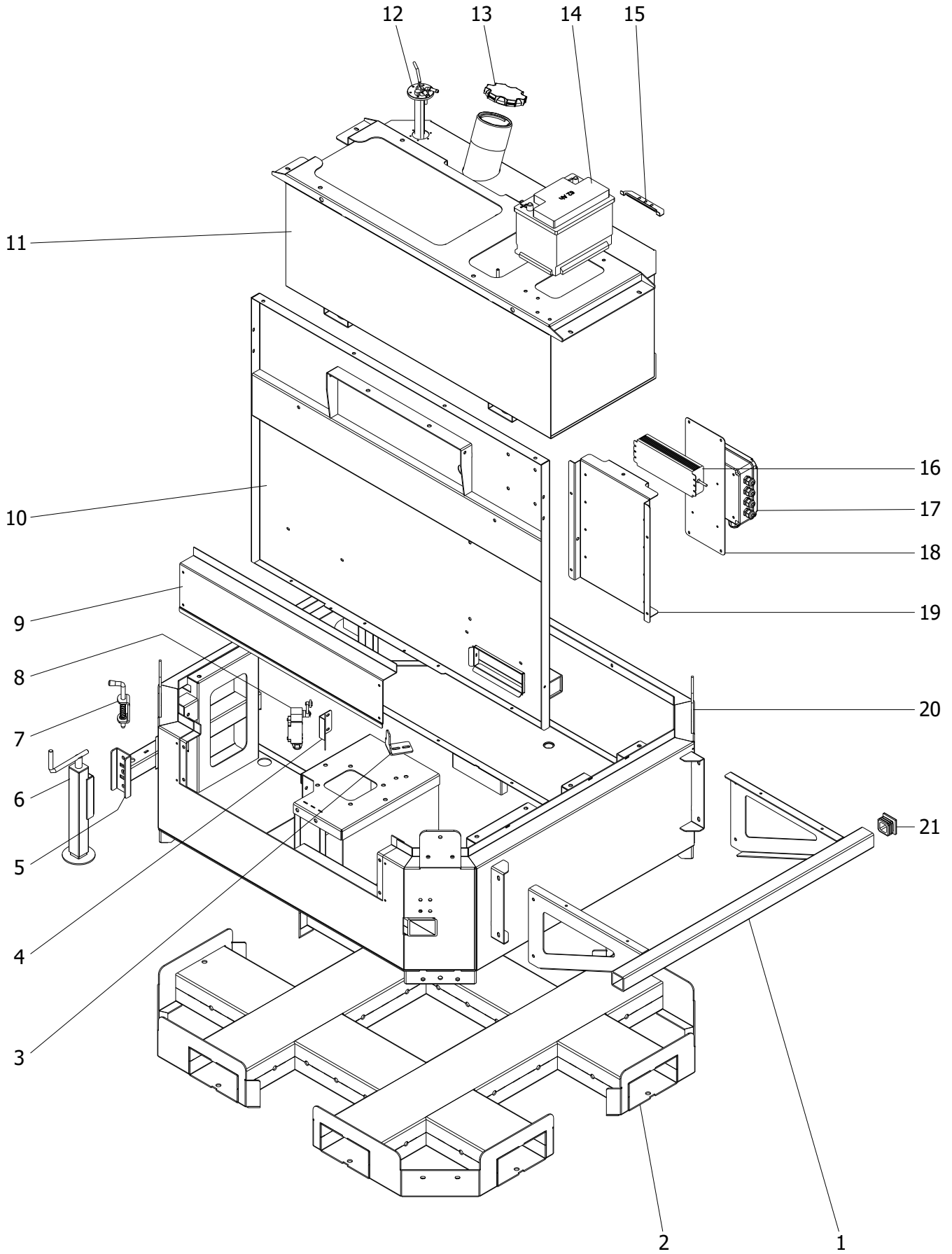


SPARE PARTS

N.	CODE	DESCRIPTION
1	PFI08S_C031_010ZN	MAST POSITIONING PLATE, RIGHT
2	PFI08S_C031_009	DRAG FLANGE
3	PFM08_C031_092	MAST ROTATING SUPPORT
4	PFM08_C000_094	MAST ROTATING SUPPORT FRAME
5	AS000_M023_026ZN	HYDRAULIC CYLINDER PIN
6	AC000_G025_001	HYDRAULIC CYLINDER KIT
7	AS000_I025_001	HYDRAULIC CYLINDER
8	PFI08_C031_024ZN	SPACER
9	PFI08S_C031_011ZN	MAST POSITIONING PLATE, LEFT
14	AC000_M038_007	CLAMP WITH RUBBER
15	PFI08S_C031_007ZN	7° SECTION MAST
16	PFI08_C031_012ZN	MAST ANGLE GUIDE REINFORCEMENT
17	AS000_M000_005	MAST ANGLE GUIDE
18	PFI08S_C031_006ZN	6° SECTION MAST
19	PFI08S_C031_005ZN	5° SECTION MAST
20	PFI08S_C031_004ZN	4° SECTION MAST
21	PFI08S_C031_003ZN	3° SECTION MAST
22	PFI08S_C031_002ZN	2° SECTION MAST
23	PFI08S_C031_015ZN	1° SECTION MAST
24	AC000_E006_016	COILED CABLE
25	PFI08S_C031_016ZN	COILED CABLE PROTECTION
26	PFM08_C000_047	COILED CABLE STOP

SPARE PARTS

BASE STRUCTURE

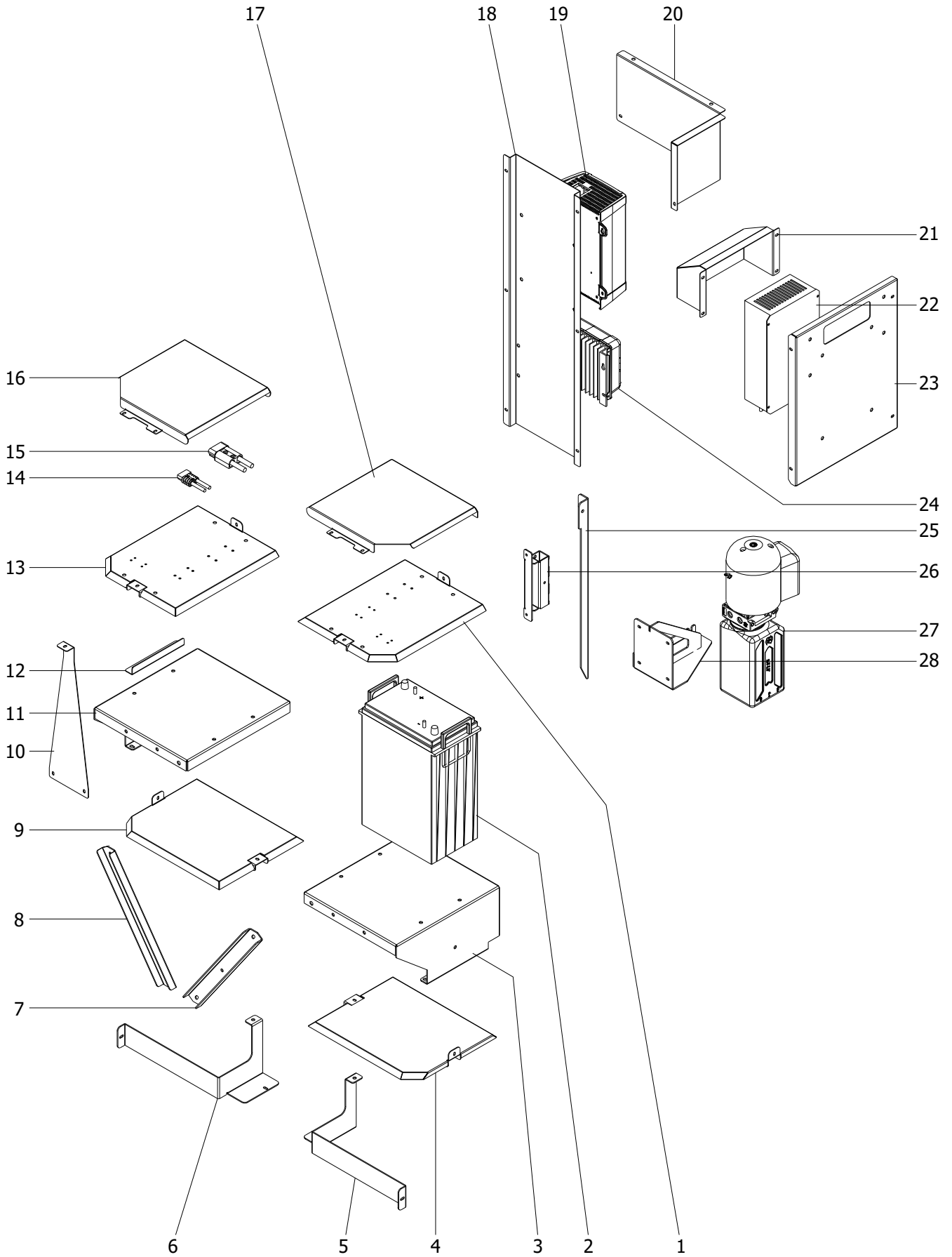


SPARE PARTS

N.	CODE	DESCRIPTION
1	XBHS_C004_084	SOLAR PANELS SUPPORT
2	XBHS_C004_002ZN	FORK-LIFT POCKETS STRUCTURE
3	XSTART_C004_040	MAST ROTATION LOCKING PLATE
4	XBHS_C004_020	SENSOR SUPPORT
5	XBHS_C000_079ZN	STABILIZER TUBULAR
6	XBHS_C000_080ZN	STABILIZER
7	AC000_M000_086	STABILIZER LOCKING PIN
8	AC000_E016_003	SENSOR
9	XBHS_C004_005	BASE STRUCTURE COVER
10	XBHS_C007_004	INFERIOR SEPARATOR
11	XBHS_C005_003	FUEL TANK
12	AC000_E006_025	FUEL LEVEL TRANSMITTER
13	AC000_M000_028	FUEL FILLER CAP
14	AC000_E000_027	ENGINE BATTERY
15	TF8K1_C000_0014	ENGINE BATTERY LOCKING PLATE
16	AC000_E026_088	POWER SUPPLY
17	AS000_E006_088	JUNCTION BOX
18	XBHS_C006_098	JUNCTION BOX SUPPORT
19	XBHS_C006_097	POWER SUPPLY SUPPORT
20	XBHS_C004_001	BASE STRUCTURE
21	AC000_P037_010	CAP

SPARE PARTS

ELECTRICAL DEVICES

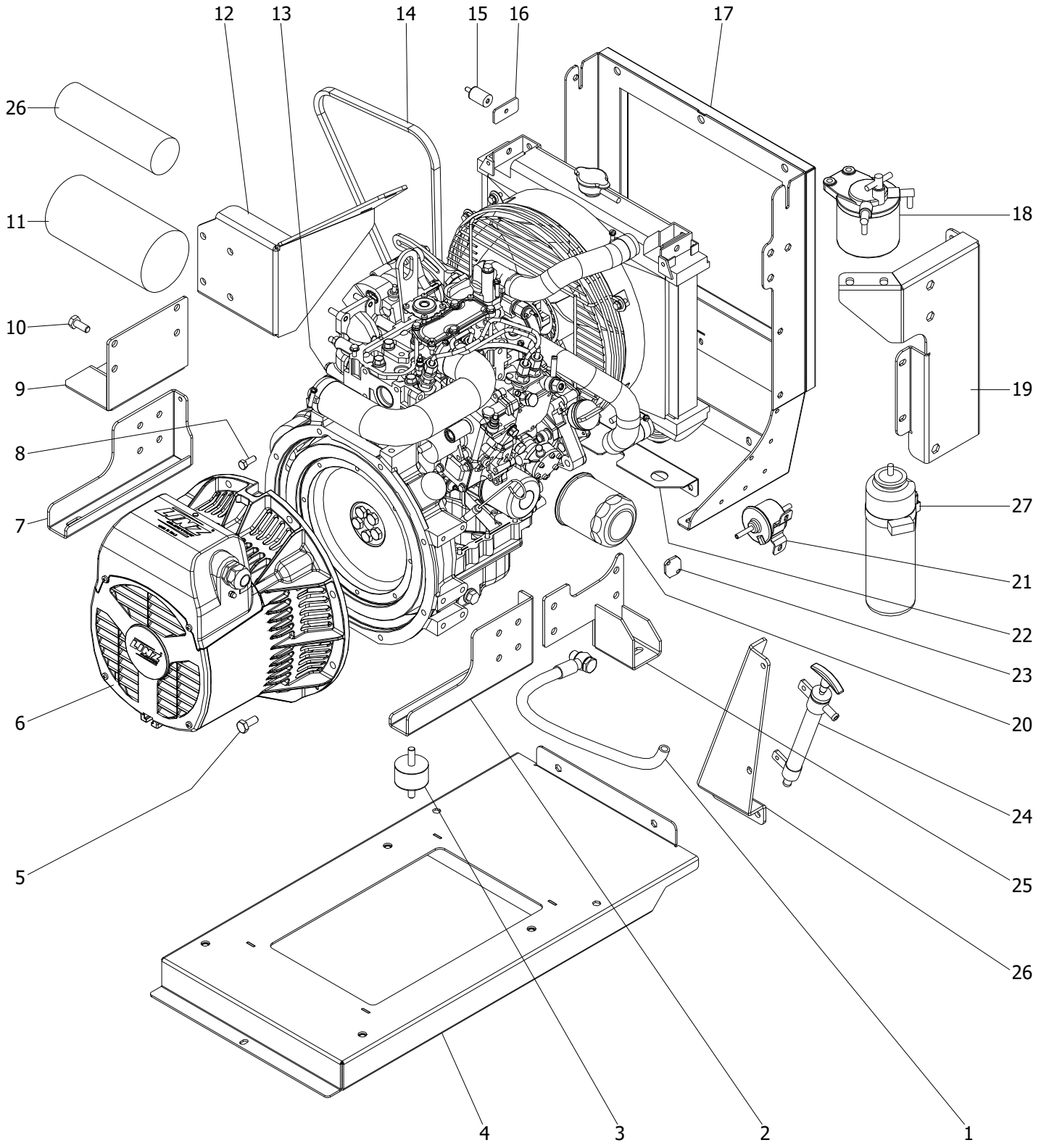


SPARE PARTS

N.	CODE	DESCRIPTION
1	XBHS_C006_014	AGM BATTERY CONNECTORS SUPPORT
2	AC000_E000_021	AGM BATTERY
3	XBHS_C006_006	AGM BATTERY SUPPORT
4	XBHS_C006_012	AGM BATTERY CONNECTORS COVER
5	XBHS_C006_008	AGM BATTERY RIGHT LOCKING PLATE
6	XBHS_C006_009	AGM BATTERY LEFT LOCKING PLATE
7	XBHS_C006_010	RIGHT REINFORCEMENT PLATE
8	XBHS_C006_011	LEFT REINFORCEMENT PLATE
9	XBHS_C006_013	AGM BATTERY CONNECTORS COVER
10	XBHS_C006_016	REINFORCEMENT PLATE
11	XBHS_C006_007	AGM BATTERY SUPPORT
12	XBHS_C006_017	AGM BATTERY LOCKING PLATE
13	XBHS_C006_015	AGM BATTERY CONNECTORS SUPPORT
14	AC000_E011_019	AGM BATTERY CONNECTOR
15	AC000_E011_015	AGM BATTERY CONNECTOR
16	XBHS_C006_019	AGM BATTERY CONNECTORS COVER
17	XBHS_C006_018	AGM BATTERY CONNECTORS COVER
18	XBHS_C007_074	SOLAR PANEL DEVICES SUPPORT
19	AC000_E000_252	INVERTER
20	XBHS_C007_075	INVERTER COVER
21	XBHS_C007_073	BATTERY CHARGER COVER
22	AC000_E000_023A	BATTERY CHARGER
23	XBHS_C007_072	BATTERY CHARGER SUPPORT
24	AC000_E000_191	MPPT150/60 REGULATOR
25	XECOK2_C000_267ZN	EARTHING PIN
26	XBOX_C000_204ZN	EARTHING PIN HOUSING
27	AS000_I000_029	HYDRAULIC UNIT
28	XBHS_C000_036	HYDRAULIC UNIT SUPPORT

SPARE PARTS

ENGINE

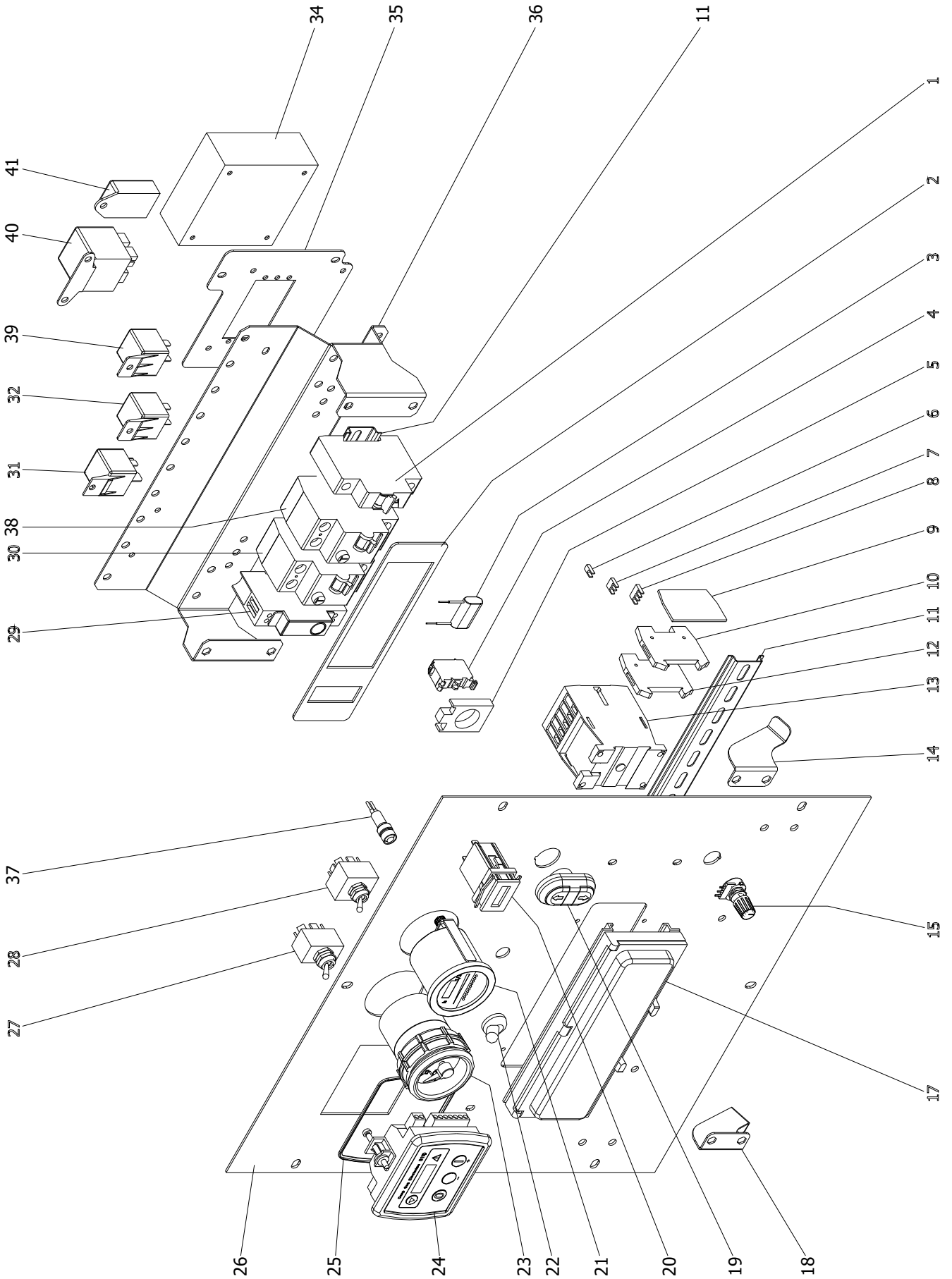


SPARE PARTS

N.	CODE	DESCRIPTION
1	AC000_G001_003	OIL DRAIN PIPE
2	XECOK2_C001_469	ENGINE RIGHT FRONT SUPPORT
3	AC000_M024_054	SCHOCK ABSORBER
4	XHY_C001_101	ENGINE / ALTERNATOR PLATFORM
5	AC000_M038_013	ALTERNATOR FIXING SCREW
6	AC000_E034_023	ALTERNATOR
7	XECOK2_C001_473	ENGINE LEFT FRONT SUPPORT
8	AC000_M038_014	ENGINE FIXING SCREW
9	XECOK2_C001_468	ENGINE LEFT REAR SUPPORT
10	AC000_M038_015	ENGINE SUPPORTS FIXING SCREW
11	Y-11965512560E	AIR FILTER PRIMARY ELEMENT
12	XBHY_C001_100	AIR FILTER SUPPORT
13	AC000_M033_031	ENGINE
14	Y-25152003550	BELT
15	AC000_M024_091	SCHOCK ABSORBER
16	XECOK2_C001_466	SCHOCK ABSORBER PLATE
17	XBHY_C001_102	RADIATOR FRAME
18	Y-11980255810	FUEL FILTER
19	XBHY_C001_103	FUEL FILTER SUPPORT
20	Y-11930535170	OIL FILTER
21	Y-11922552102	AC PUMP
22	XECOK2_C001_467	RADIATOR INFERIOR SUPPORT
23	XECOK2_C001_477	PLATE
24	AS000_M000_060	OIL DRAIN PUMP
25	XECOK2_C001_470	ENGINE RIGHT REAR SUPPORT
26	Y-11923312700E	AIR FILTER SECONDARY ELEMENT
27	Y-12445044510	RADIATOR RECOVERY TANK
28	XBOX_C001_099	OIL DRAIN PUMP SUPPORT

SPARE PARTS

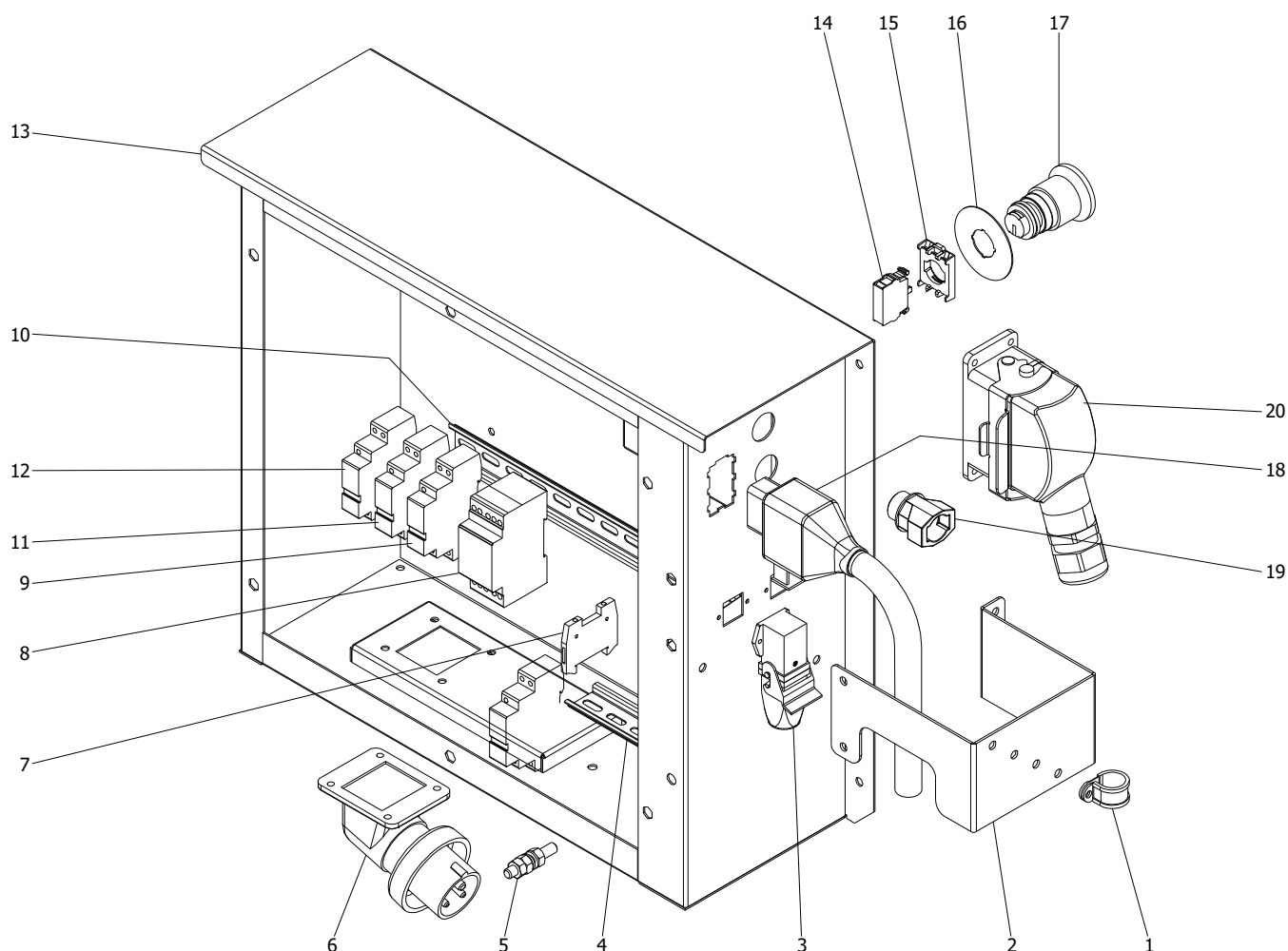
CONTROL PANELS



SPARE PARTS

N.	CODE	DESCRIPTION
1	AC000_E012_027	LAMP SWITCH
2	XBOX_C006_298	CIRCUIT BREAKER FRAME
3	AC000_E000_070	LIGHT SENSOR CAPACITOR
4	AC000_E006_042	MAST BUTTONS CONTACT
5	AC000_E006_043	CONTACTS SUPPORT
6	AC000_E006_023	2 PIN BRIDGE
7	AC000_E006_062	3 PIN BRIDGE
8	AC000_E006_063	4 PIN BRIDGE
9	AC000_E006_024	CLAMP TERMINAL
10	AC000_E006_022	FINAL CLAMP
11	AC000_M038_037	L200 DIN BAR
12	AC000_E006_021	CLAMP
13	AC000_E006_054	CONTACTOR SWITCH
14	XECOK2_C019_232	RIGHT STOP
15	AC000_E006_276	POTENTIOMETER
17	AC000_E000_020	CIRCUIT BREAKERS COVER
18	XECOK2_C019_233	LEFT STOP
19	AC000_E006_044	MAST BUTTONS
20	AC000_E015_009	HOUR METER
21	AC000_E006_076	AGM BETTERIES CHARGE INDICATOR
22	AC000_E000_019	SWITCH COVER
23	AC000_E015_005	FUEL LEVEL GAUGE
24	AC000_E014_001	DSE 3110 CONTROLLER
25	AC000_E006_001	DSE 3110 CONTROLLER GASKET
26	XBHS_S010_077B	INSTRUMENTS PLATE
27	AC000_E000_016	2 POLES SWITCH
28	AC000_E000_017	3 POLES SWITCH
29	AC000_E016_005	LIGHT SENSOR
30	AC000_E012_028	RCBO 13A
31	AC000_E000_041	12V 70A RELAY
32	AC000_E000_040	12V 40A RELAY
34	AC000_E006_125	VOLTMETRIC RELAY
35	XHY_C006_161	VOLTMETRIC RELAY SUPPORT
36	XBHY_C006_108	CIRCUIT BREAKERS SUPPORT
37	AC000_E015_026	GREEN LAMP
38	AC000_E012_123	RCBO 4A
39	AC000_E000_052	24V 70A RELAY
40	Y-11965077911	YANMAR RELAY SOLENOID
41	Y-11965077920	YANMAR TIMER RELAY

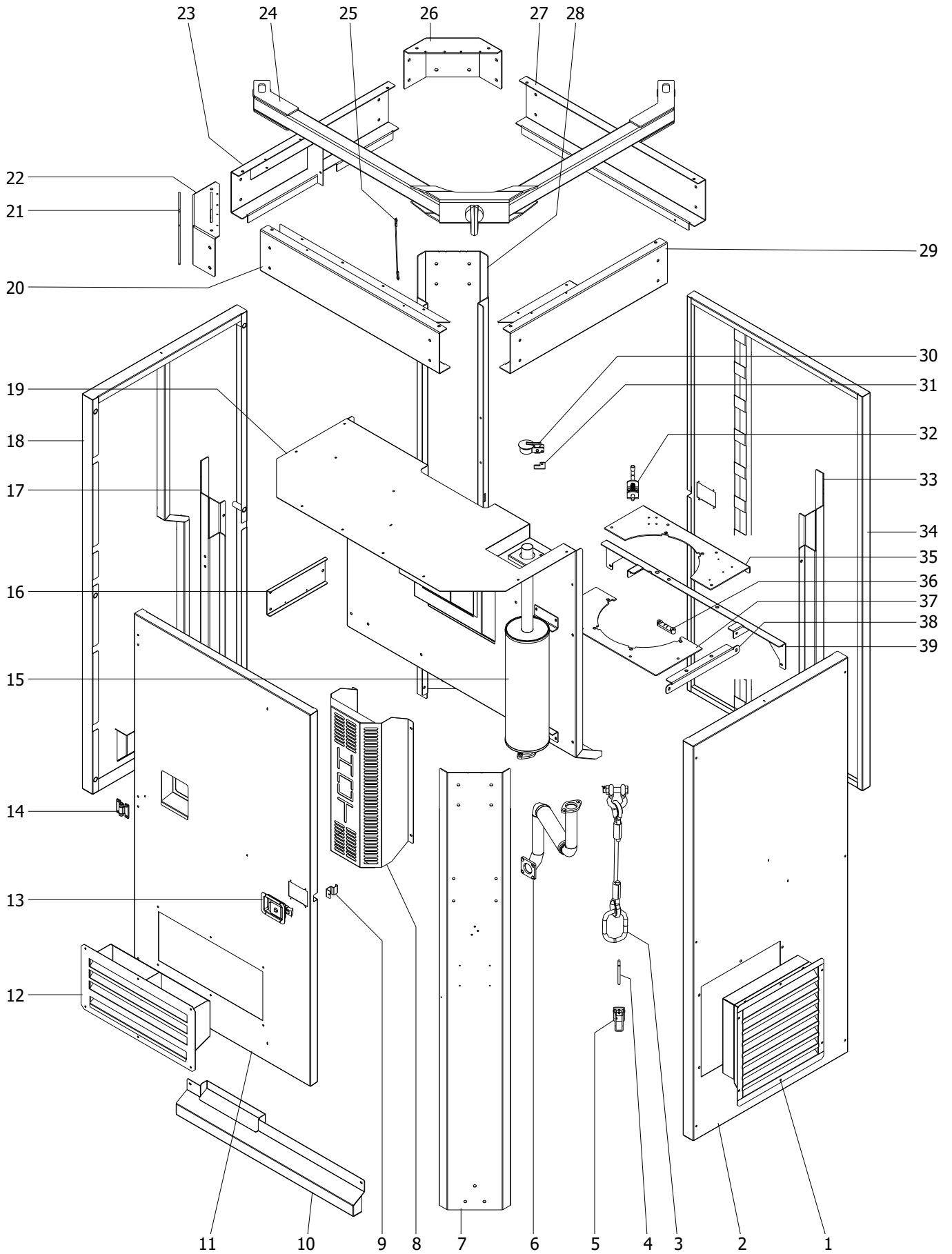
SPARE PARTS



N.	CODE	DESCRIPTION
1	AC000_M038_007	RUBBERED CLAMP
2	XBHY_C006_025	CABLES SUPPORT
3	AC000_E000_071	5 POLES CONNECTOR
4	AC000_M038_057	L150 DIN BAR
5	AC000_M038_035	EARTHING TERMINAL
6	AC000_E011_010	INLET SOCKET 230V 16A
7	AC000_E012_052	CLAMP
8	AC000_E006_198	2NO-2NC 230V CONTACTOR
9	AC000_E006_248	25A 230V CONTACTOR
10	AC000_M038_036	L300 DIN BAR
11	AC000_E006_189	230V 50/60hz CONTACTOR
12	AC000_E006_084	12-240Vac-Vdc RELAY
13	XBHS_C019_082	CONTROL PANEL BOX
14	AC000_E006_052	STOP BUTTON CONTACT
15	AC000_E006_043	CONTACTS SUPPORT
16	AC000_E006_053	STOP BUTTON RATING PLATE
17	AC000_E006_051	STOP BUTTON
18	AC000_G006_003	ENGINE CONNECTOR
19	AC000_E018_019	CONNECTOR
20	AC000_G006_004	10 POLES CONNECTOR

SPARE PARTS

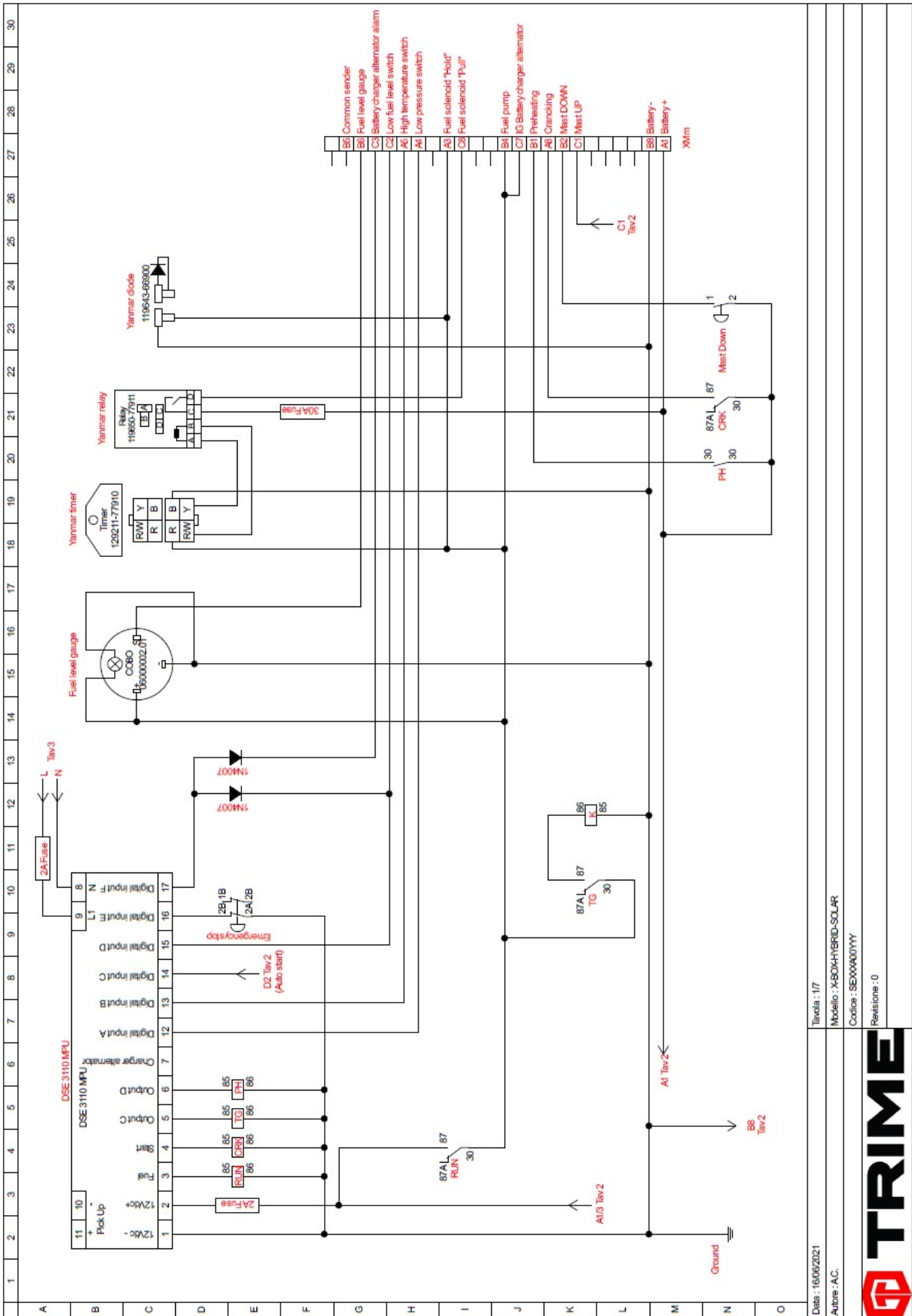
FAIRING



SPARE PARTS

N.	CODE	DESCRIPTION
1	XBHS_C008_051	GRID
2	XBHS_C008_050	RIGHT PANEL
3	AC000_M000_088	LIFTING HOOK
4	B-BO_C000_087ZN	HOOK
5	AC000_M000_091	FIXING HOOK WITH LEVER
6	XBHS_C035_047	MUFFLER EXTENSION
7	XBHS_C007_028	RIGHT FRONT ANGLE
8	XBHS_C035_049	SILENCER PROTECTION
9	XRENT_C000_040	LOCK WITH HANDLE PLATE
10	XBHS_C007_052	CABLE PASSAGE PLATE
11	XBHS_C008_055	CONTROL PANEL INSPECTION DOOR
12	XBHS_C008_058	GRID
13	AC000_M000_017	LOCK WITH HANDLE
14	AC000_M000_009	HINGE
15	XBHS_C035_048	MUFFLER
16	XBHS_C007_030	PLATE
17	XBHS_C007_029	LEFT FRONT ANGLE
18	XBHS_C008_053	LEFT PANEL
19	XBHS_C007_046	UPPER SEPARATOR
20	XBHS_C007_040	UPPER FRONT CROSSBAR
21	XBHS_C007_044ZN	LIFTING PLATE
22	XBHS_C007_038	UPPER FRONT LEFT / REAR RIGHT ANGLE
23	XBHS_C007_042	UPPER LEFT CROSSBAR
24	XBHS_C007_045ZN	LIFTING STRUCTURE
25	AS000_M031_081	RETENTION ROPE
26	XBHS_C007_039	UPPER FRONT RIGHT / REAR LEFT ANGLE
27	XBHS_C007_041	UPPER REAR CROSSBAR
28	XBHS_C007_026	LEFT REAR ANGLE
29	XBHS_C007_043	UPPER RIGHT CROSSBAR
30	AC000_M035_058	RAIN COVER
31	B-BO_C007_091	RAIN COVER PLATE
32	AC000_M000_003	MAST LOCKING PIN
33	XBHS_C007_027	RIGHT REAR ANGLE
34	XBHS_C008_057	MAST INSPECTION DOOR
35	XBHS_C031_024ZN	MAST PLATE
36	AC000_M016_002	BUBBLE LEVEL
37	XBHS_C031_025ZN	MAST PLATE
38	XBHS_C007_023ZN	MAST PLATE REINFORCEMENT
39	XBHS_C007_022	MAST PLATE REINFORCEMENT

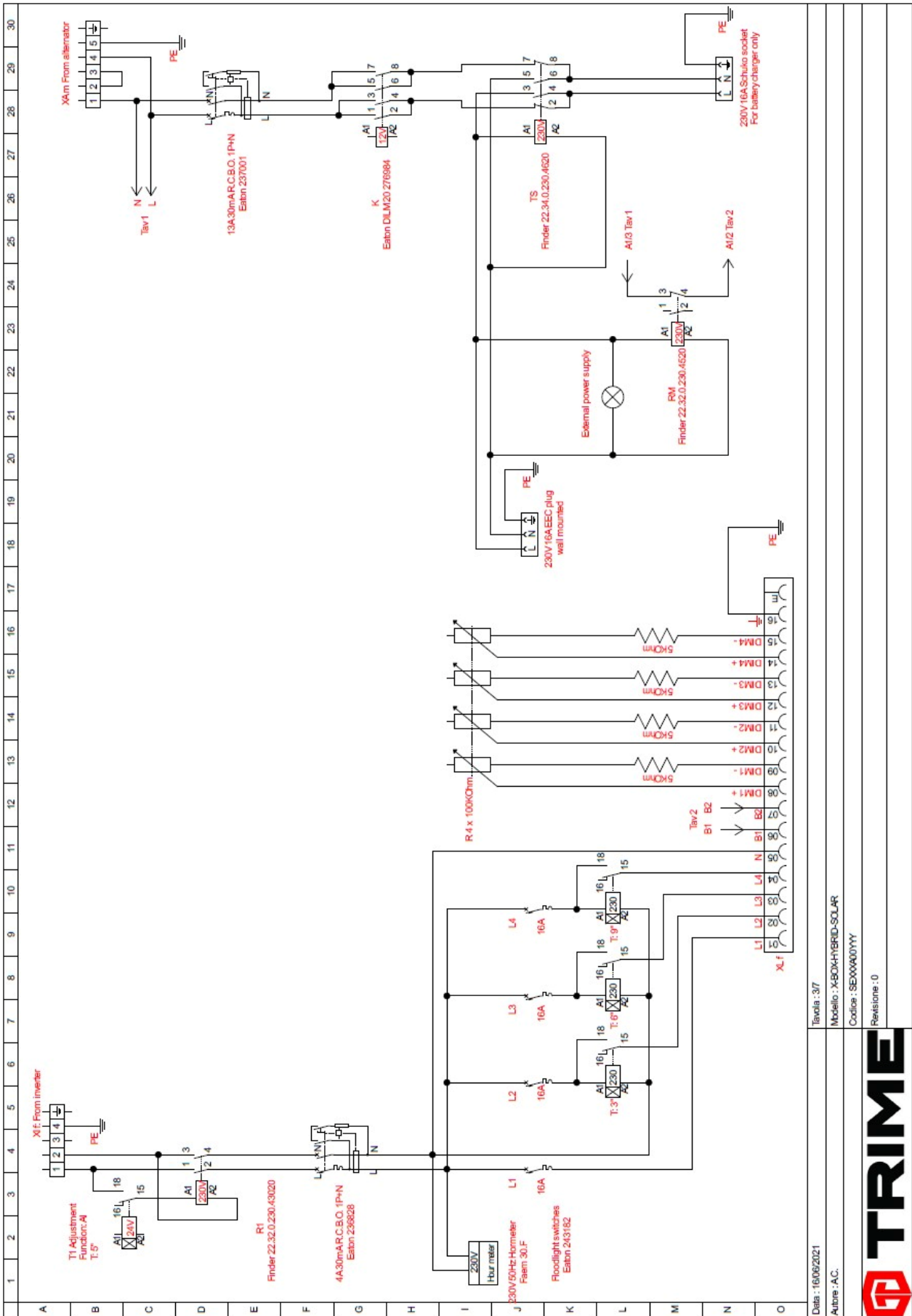
ELECTRICAL DIAGRAM



Data : 16/09/2021
 Autore : A.C.
 Modello : X-BOX-HYBRID-SOLAR
 Codice : SEXXXX00YY
 Revisione : 0



ELECTRICAL DIAGRAM



Data : 16/09/2021

Autre : AC.

Modello : X-50X-HYBRID-SOLAR

Code : SEP00000YY

Revisione : 0



Tavola : 3/7

Modello : X-50X-HYBRID-SOLAR

Code : SEP00000YY

Revisione : 0

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Tavola : 3/7

Modello : X-50X-HYBRID-SOLAR

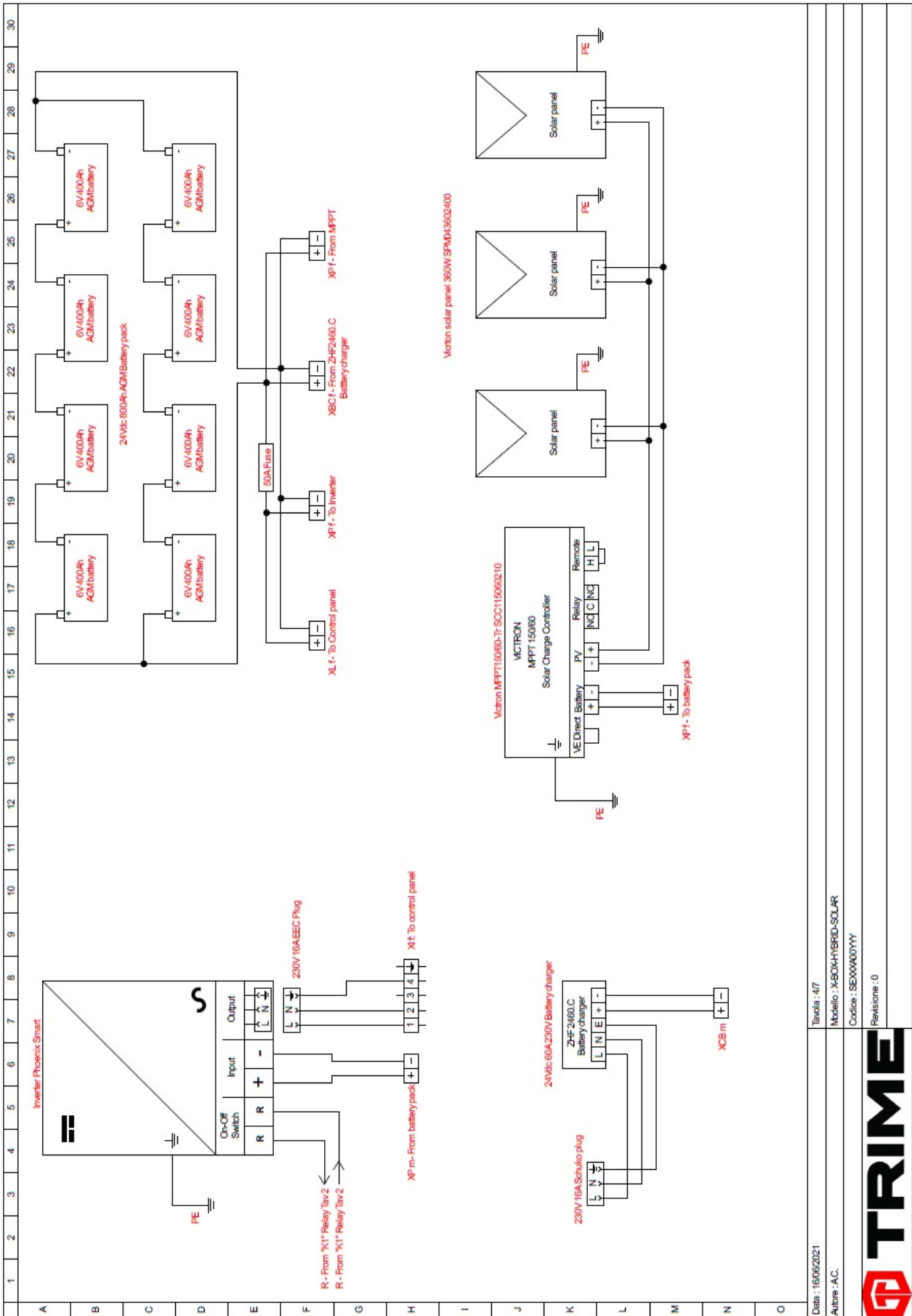
Code : SEP00000YY

Revisione : 0

Data : 16/09/2021

Autre : AC.

ELECTRICAL DIAGRAM



Data : 16/09/2021

Autore : A.C.

Modello : X-80X-HYBRID-SOLAR

Codice : SEXXXX00YY

Revisione : 0

Tavola : 4/7

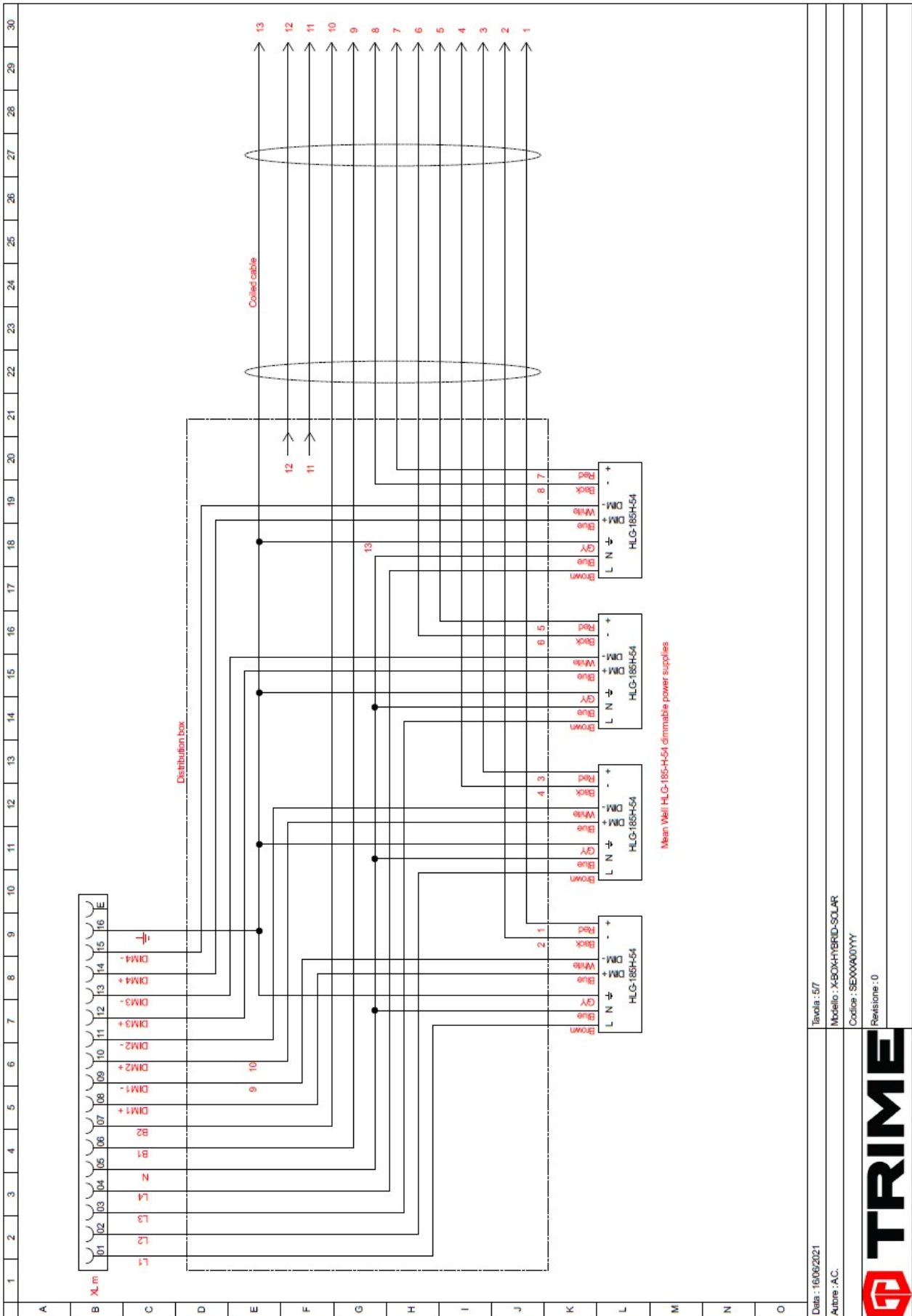
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Codice : SEXXXX00YY

Revisione : 0



ELECTRICAL DIAGRAM



Data : 16/09/2021

Autore : A.C.

Tavola : 5/7

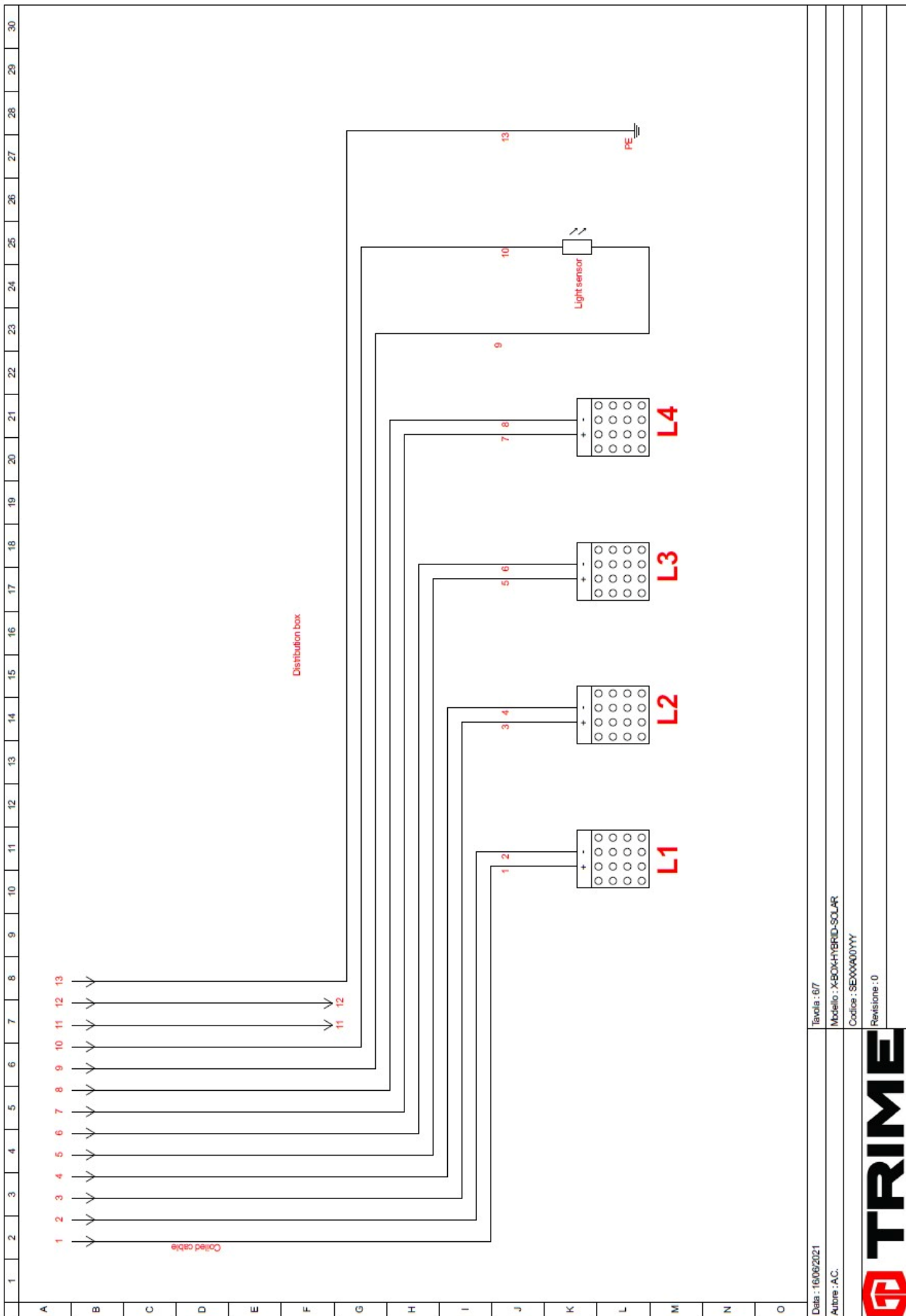
Modello : X-BOX-HYBRID-SOLAR

Codice : SEP000000YY

Revisione : 0



ELECTRICAL DIAGRAM



Data : 16/09/2021

Autore : A.C.

Tavola : 017

Modello : X-BOX-HYBRID-SOLAR

Codice : SEP000000YY

Revisione : 0



WARRANTY

The warranty period starts on the delivery date to the first purchaser.

The machine is covered by warranty for one year from the above mentioned date.

Only genuine parts should be used to carry out repairs.

Failure to use only genuine parts may invalidate the manufacturer's warranty.

We reserve the right to request the warranty replaced parts back for analysis.

All engine warranty issues must be directed to the engine manufacturer, or the manufacturer's approved engine dealer.

We will not be held responsible if:

- the machine has been used to perform tasks that it has not been designed for;
- the machine has undergone modifications not approved by us;
 - conditions of use have been abnormal;
- normal maintenance, compliant to requirements as set out by the manufacturer, have not been adhered to.

No payment or expenses refund should be pretended from us for normal maintenance or servicing nor any materials used to carry out routine servicing. The warranty is intended to cover diagnosis, repair or replacement of the defective part, and actuating the repair, should a problem