# TRACK LEVELING TROLLEY

# LNR 529


☐ **LNR 529 L1**

*Document Ref. : 0529L1MAN#00-AN*

## USER AND MAINTENANCE MANUAL

*Document original*

GEISMAR PROVENCE - Parc d'activité Saint-Antoine, 11 Boulevard Jules SEBASTIANELLI 13011 Marseille, France
Tél : +33 04 91 87 70 30 - E-mail : provence@geismar.com

# TABLE OF CONTENTS.

# EEC DECLARATION OF CONFORMITY

*Original copy*

▪ The manufacturer :

**GEISMAR PROVENCE S.A.S**
Parc d'activité Saint-Antoine, 11 Bd Jules SEBASTIANELLI
13011 Marseille, France
☎ +33 04 91 87 70 30 ✉ provence@geismar.com

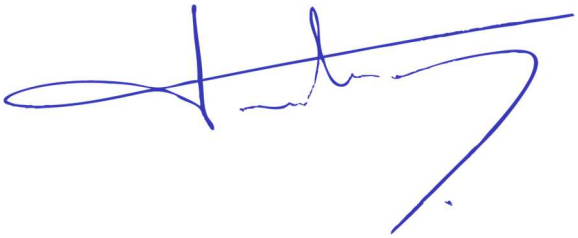
▪ Certify that the following equipment is conform to the EEC council directive for machines 2006/42/CE :

| | |
|---|---|
| **Designation :** | Track leveling trolley |
| **Function :** | Lifting and/or slewing of track or rails (SWL (Safe Working Load) : 15 tons) |
| **Type :** | LNR 529 |
| **Model :** | L1 |
| **Serial number :** | |
| **Mass :** | 1 070 kg |

| | |
|---|---|
| Person in charge of machine technical file : | **GEISMAR PROVENCE S.A.S** |

▪ Place of issue : Marseille, France.
▪ The :

***The Manager***
**O.FONTAINE**



⚠ **Any modification carried without the written approval of the manufacturer will invacoverate the present certificate of conformity.**

# CERTIFICATION OF FITNESS FOR EMPLOYMENT

*Work equipment for lifting loads*

- The manufacturer :

**GEISMAR PROVENCE S.A.S**
Parc d'activité Saint-Antoine, 11 Bd Jules SEBASTIANELLI
13011 Marseille, France
☎ +33 04 91 87 70 30 ✉ provence@geismar.com

- Declares that the lifting machine described below, in accordance with the requirements of Article 4.1.3 of Directive 2006/42 / EC, has passed the tests and checks as defined in Article 4.1.2.3 of the Directive cited above.

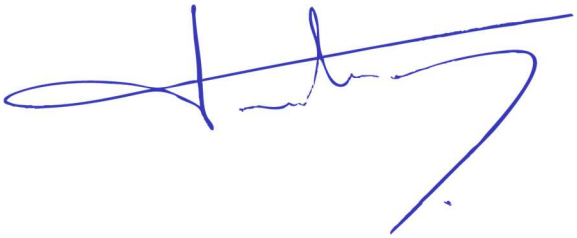
| | |
|---|---|
| **Designation :** | Track leveling trolley |
| **Type :** | LNR 529 |
| **Model :** | L1 |
| **Serial number :** | |
| **Mass :** | 1 070 kg |

- During the tests the following elements were checked :
  - Deformation of the structure.
  - Stability.
  - Load holding.
  - Safety device.

- Place of issue : Marseille, France.
- Date :

***The Manager*.**

**O.FONTAINE**



⚠ **These tests of suitability for use do not in any way remove the machine from checks provided for by the national regulations when it is first put into service.**

⚠ **Any modification of the machine carried without the written approval of the manufacturer will invalidate this declaration.**

# A GENERAL FOREWORD.

## A.1 ABOUT THIS MANUAL.

- This manual is dedicated to users and staff in charge of maintenance. The manual gives a thorough knowledge of the equipment together with safety instructions, necessary to equipment use and maintenance.
- Non-respect of the safety instructions for use and maintenance contained in this manual and its schedules may lead to dangerous consequences. Any user, being the cause of an accident because of a non-respect of these rules, shall be considered liable of said accident.
- The safety rules and instructions listed in the manual and on the engine are not exhaustive.
- This manual shall be kept near the engine, in a place designed for it.
- Some photos or pictures may show details or components which may be inexistent on your engine, depending on possible various options.
- To make pictures clearer, some protections and lids have been removed sometimes.
- Because of equipment current evolution technique, this engine may present some changes which do not appear in this manual.
- If a doubt arises about a building detail of this engine or about a point in this manual, please consult GEISMAR PROVENCE who will forward you the most up-to-date information the company already possesses.

| Along this manual, you'll find the symbols as follows | |
|---|---|
|  | ▪ This symbol shall warn you of a potential danger. |
|  | ▪ This symbol shall warn you of additional information. |

## A.2 ABOUT THE MACHINE.

### Manufacturer plate.

- The manufacturer plate fixed on the machine represents the ID of your machine. Please keep it in good condition, it will allow to identify the machine in various situations.


| Rep. | Information machine |
|---|---|
| 1 | Place of issue |
| 2 | Machine designation |
| 3 | Type |
| 4 | Year of construction |
| 5 | Mass (kg) |
| 6 | Serial number |
| 7 | SWL (Safe Working Load) in kilogrammes (kg) |
| 8 | Rated power (kW) |
| 9 | SNCF approval number |
| 10 | Conform to the EEC machine directive 2006/42/CE |

**ⓘ To situate the location of the manufacturer plate on the machine, consult the spare parts catalogue.**

## Warning plate.

- There are several pictograms on the machine.
- All the pictograms must be clearly readable. Clean them regularly with water and soap only.
- Replace any unreadable, damaged or missing pictogram.
- Identical pictograms can be supplied on request.
- If a part which must be replaced supports a pictogram make sure that the new part has a pictogram as well.

**⚠ The tables hereafter lists all the pictograms. Above all please learn their significance before using the machine. It is dangerous to use the machine if one of the pictograms (listed hereafter) is not present on the machine or is no longer readable.**

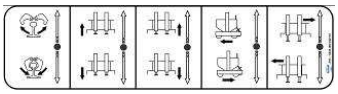
**ⓘ To situate the location of these various pictograms on the machine, consult the spare parts catalogue.**

**⚠ Other warnings are given on the Petrol engine; details can be found in the engine manufacturer's documentation (supplied with the machine).**

## Safety indications and warnings.

| | | |
|---|---|---|
|  |  | Be careful ! Read the instructions and maintenance manual carefully |
| |  | Wear body protections |
| |  | Wear of reflective vest compulsory. |
| |  | Wear body protections |
| |  | Wear sturdy (and no slipping) hand gloves |
| |  | Do not approach the operation area of the machine |
|  | | Machine weight. |
|  | | SWL (Safe Working Load) in kilogrammes (kg) |
|  |  | Hydraulic tank (Content 30 liters) |
| |  | Warning! The temperature in the hydraulic tank rises and risk of burns. |
|  | Lifting point | |
|  | Warning! Electric danger | |

## Indications on control mechanisms.

| | |
|---|---|
|  | ▪ Control motorization of rail wheels (see description page 22) |
|  | ▪ Parking brake control (see description page 23) |
|  | ▪ Remote control connection light (see description page 25). |
|  | ▪ Overload light indicator (see description page 25). |
|  | ▪ Backup hydraulic distributor functions (see description page 30) |

# B SAFETY.

## B.1 GENERAL SAFETY REGULATIONS.

### Foreword.

- Do not use the machine or carry out maintenance operations without first completing the necessary training.
- Training must include explanations of the various machine functions, operating and maintenance instructions and safety regulations to be respected, as well as practical exercises.
- This manual cannot replace training under any circumstances.
- If the company is unable to provide this training adequately for its personnel, contact GEISMAR PROVENCE for advice concerning this training programme.

### General.

- The machine must be properly maintained and users must take the necessary steps to have it checked by an accredited person as often as its work schedule requires, to ensure that all its components are reliable and operational. Doubtful components must be replaced.
- Users must be physically and mentally capable of using the machine safely.
- To prevent any risk of accident or injury when using and maintaining the machine, it is MANDATORY to use the following Individual Protective Equipment (IPE):

  - Wear body protections
  - Wear of reflective vest compulsory.
  - Wear body protections
  - Wear sturdy (and no slipping) hand gloves
  - Any other equipment required by current regulations application in the area in which the machine is used.

**Regarding the ear protections please conform always strictly to the security regulations in force and applicable to the area where the machine is used.**

- Do not wear ample clothing or jewellery which may catch moving parts of the machine.
- Do not smoke around and on the machine.
- It is highly recommended that you have appropriate extinguishers for the types of fire hazards within the proximity of the machine.
- Warning: all the moving parts of the machine present crushing risks.
- Do not touch, directly or indirectly, moving parts as long as the machine is not out of service.
- Warning: After a variable time of use, sometimes very short, all the fluids and some components of the machine shall increase in temperature.
- Warning: all the moving parts of the machine present crushing risks.
- Do not touch, directly or indirectly, moving parts as long as the machine is not out of service.
- The machine shall be cleaned regularly from oil or fuel traces. Oily rags shall be put in a closed container.
- When the machine reaches its end of life, it must be disposed of in such a way that it cannot be used. Respect environmental protection regulations.

## Use.

- Do not start using the machine without knowing all operating and safety instructions.
- When using the machine, operators must respect and conform to current regulations applicable to working areas.
- General site safety regulations provided by the site manager, must be followed scrupulously, particularly if work is taking place without halting traffic.
- Make sure you know the emergency procedures in the event of an accident.
- Know the working area and its particularities; only authorized persons may enter this area.
- Before using the machine, be sure there is nobody in the evolution area or near said area.
- The machine shall not be used within an explosive atmosphere.
- Keep the machine clean (garbage, oily traces, etc).
- Never use the machine for purposes different of those it has been designed for.
- Never use the machine for person transportation.
- Always work in forward motion unless specifically ordered to do otherwise.
- Never disconnect or block safety or limitation equipment.
- The machine shall be parked on a flat area.
- If the engine is not provided with a lighting system, take the necessary measures to light the working area of the engine where there is no natural light source.
- The engine is not equipped with a lightning protection system; please do not use the machine during lightning conditions.

## Maintenance.

- Maintenance operations shall be only conducted by qualified staff, and with the appropriate knowledge of safety rules adapted to the operations to be carried out.
- Anytime it will be possible, carry out all maintenance operation in workshop as follows:
  - Machine parked without any heat source around.
  - The engine shall be off and cold and the main electrical switch OFF.
- As soon as a maintenance operation or a control has been decided, fix a warning sign « Do not use” on the commands until the end of the operation. Warn the personnel of any necessary repair operation.
- Follow the preventive maintenance schedule of your machine as indicated in the maintenance manual.
- Intensive working conditions may require a more frequent maintenance than stipulated in manufacturer specifications. If the machine works within particularly hard conditions, or within a very dusty or a very wet atmosphere, maintenance operations shall be carried out more often.
- Unless contrary instruction, never do adjustments when the machine is moving.
- All maintenance fluids and liquids shall not be ingested. In case of contact with eyes or skin, immediately rinse thoroughly with plenty of water.
- Compressed air may cause physical wounds. For compressed air cleaning, the maximal air pressure for cleaning is 2.5 bars (30 psi).
- A locknut (e.g. Nylstop) must be replaced if removed. It is prohibited to refit a locknut (e.g. Nylstop) which has been removed.
- Any pins removed must be replaced. It is prohibited to refit a pin which has been removed.

## B.2 PARTICULAR SAFETY REGULATIONS.

### Machines equipped with a petrol engine.

- Use only the device provided for the purpose when starting the engine.
- Warning after a variable time of use, sometimes very short, the engine parts rise in temperature (risk of burning). Avoid working positions where the heat engine could touch parts of the body protected or not.
- Avoid working positions in which exhaust fumes may be in contact with parts of the body, protected or not.
- Cell phones must be switched off when filling tanks or handling fuel.
- The engine exhaust gas contains combustion products which can be toxic. Always start or run the engine in a well-ventilated area.
- Do not smoke when filling the fuel tank.
- Fill the fuel tank or servicing liquid containers with the engine switched off and cold, far from any source of heat (flame, welding, chainsaw, etc.). Clean the tank in the event of any overflow.
- All fuels, most servicing liquids and fluids drained off are inflammable. They must be stored in adequate closed containers, properly labelled and out of the reach of unauthorised persons.
- Any fuel sprayed or leaked onto electrical components or hot surfaces can cause fires.
- Unless otherwise indicated, never make adjustments when the Diesel engine is running.
- Engine liquids under pressure can penetrate the skin and cause serious injury.
- Conform to current legislation when removing drained liquids.

### Machines equipped with electric devices.

- Electrical maintenance operations shall be done only by qualified staff with the appropriate knowledge of safety rules adapted to the operations to be carried out.
- Keep electric boxes out of humidity which may cause a short circuit and a fire in particular conditions and, in other cases, cause dangerous malfunctions or damages of electronic components.
- Electrical maintenance operations shall be done only by qualified staff with the appropriate knowledge of safety rules adapted to the operations to be carried out.

### Machines equipped with hydraulic devices.

- Make sure the hydraulic tubing and hoses are not twisted or damaged.
- Replace the twisted or damaged hydraulic hoses, do not re-use them.
- Check carefully the hydraulic couplings. Tighten or replace any leaking element.
- During maintenance, if hydraulic rapid couplers must be disconnected, beware of liquid projections. Liquid projections may cause serious wounds.

## Radio controlled machines.

- L'utilisation de la radiocommande doit se faire avec une parfaite visibilité des organes mis en
- The use of radio control shall be done with a perfect visibility on the devices put into movement.
- Turn off radio control system after use.
- The remote pilot transmitter of equipment: said transmitter shall be put under the responsibility of a staff trained and qualified.
- RC equipment maintenance shall be carried out periodically, according to use duration, please comply with the instructions for use provided with the radio remote control.

## Lifting machines.

- According to ongoing regulations, when put into service and periodically, the machine shall be controlled and tested when under load by qualified staff.
- It is forbidden to lift weights heavier than that indicated on the weight board SWL (out of test conditions).
- It is forbidden to use the machine to lift or transport people.
- The handling of load above people is forbidden.
- Mark and forbid access to the area located under the load.
- Don't walk or park close to a suspended load.
- When lifting a load, check before starting the operation that said operation can be carried out without any risk.
- Check that the load is well hung and take care of inertia effect of a suspended load.
- The machine must be used only in vertical lifting and never in oblique nor pulling situations.
- The load shall always been monitored visually by the driver. If said driver can't monitor it, he shall be assisted by a chief of operations.
- Don't leave a suspended load without attendance.

# C STORAGE AND RECYCLING.

## C.1 GENERAL STORAGE INSTRUCTIONS.

- During periods when the machine is not in use, it must be properly stored in order to preserve its integrity. An improperly stored machine may present a risk of deterioration during commissioning.
- It is important that the personnel responsible for storage operations take the utmost care and scrupulously respect the measures prescribed.
- Arrangements must be made to allow easy access to equipment for maintenance operations.

### Choice of storage conditions.

- The equipment will be stored under shelter (building, closed hangar, open hangar, canopy, tarpaulin…) the type of shelter depends on the expected duration of storage.

### Place of storage.

- In general, the zone intended for the storage of the craft must allow the best possible preservation against

  - dust, exhaust, moisture;
  - direct sunlight;
  - rapid changes in temperature.

### Storage.

- The condition of the machine at the time of its return to service after storage depends on the way it was prepared and protected before it was placed in storage.
- When starting the machine, clean the machine (when cleaning, protect the moving parts with grease) and check that it is working properly.

## C.2 DISASSEMBLY - DISPOSAL.

- When the machine is in a state of obsolescence likely to cause risks, there is a requirement for the user to ensure the disposal of this equipment, namely: put out of operation.
- Decommissioning or disposal requires the removal of used fluids for delivery to the appropriate department.
- In the event of a definitive cessation of use, dispose of the machine in conditions prohibiting its use. Respect the regulations on the protection of the environment.

**IMPORTANT: For the disposal of the machine, all precautions and measures prescribed by the regulations and laws in force must be taken in addition in the instructions, in particular to avoid any risk during dismantling and transport and minimize the environmental consequences of the products or elements contained therein.**

**The equipment must be recycled by an approved organization that meets the standards for waste development.**

# D GENERAL DESCRIPTION OF THE UNIT.

## D.1 GENERAL PRESENTATION.

- The track leveling trolley type LNR 529 is intended for use on a railway site.
- It was designed to be used on track sites for any works requiring lifting and/or slewing of track or rails.

⚠ **In no case the LNR 529 may be used for the handling of other loads!**

- All the functions of the machine are radio remote controlled:
  - displacement of the machine on the track in both working directions.
  - fastening of the load.
  - slewing of the track.
  - lifting of the load

ⓘ **The lifting functions are equipped with 2 speeds (fast and slow) which allow a precise positioning of the load.**

- The machine is equipped with emergency hand levers which allow in case of a defect of the remote control to steer the machine and to remove it from the track anyway.

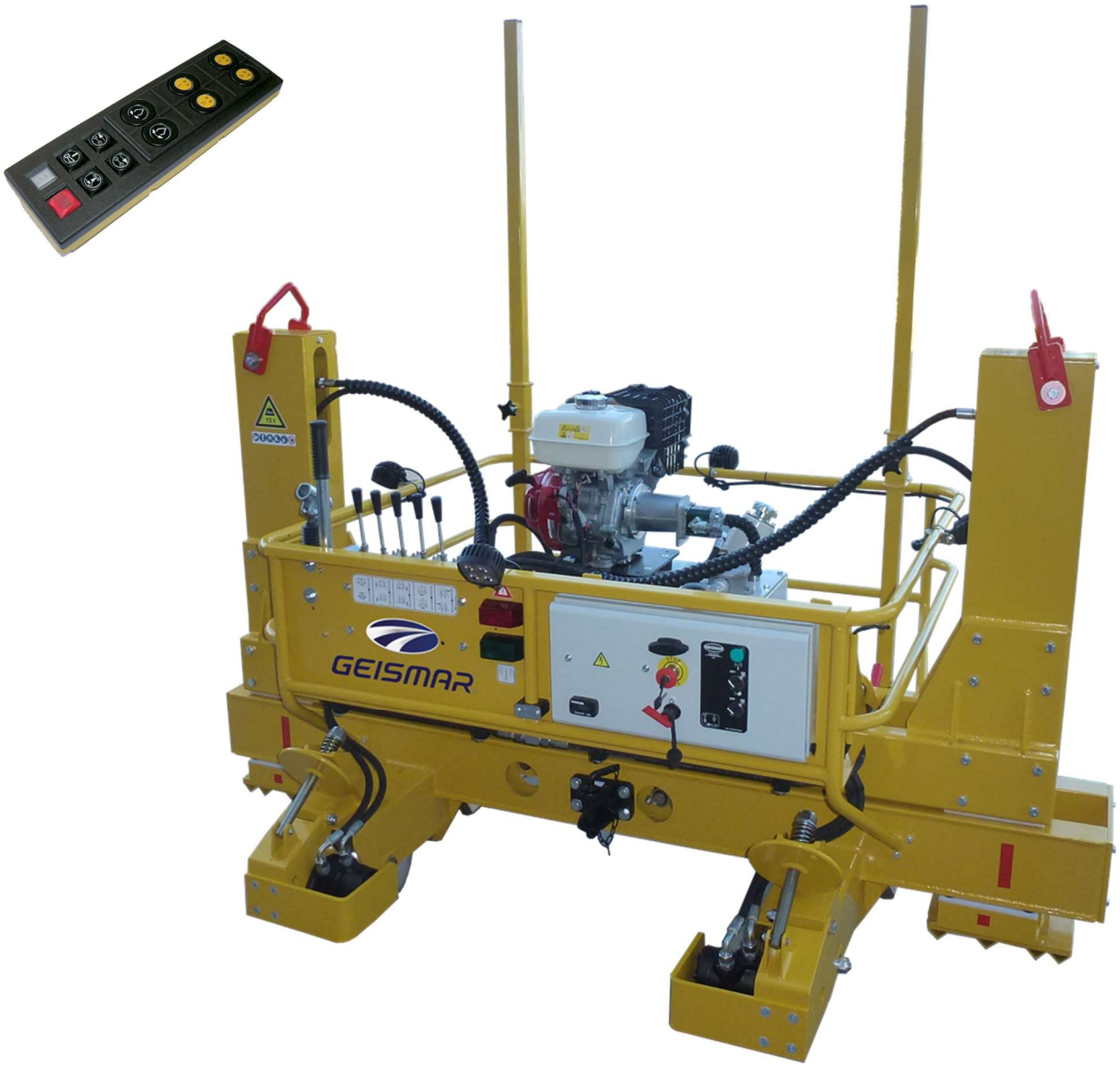
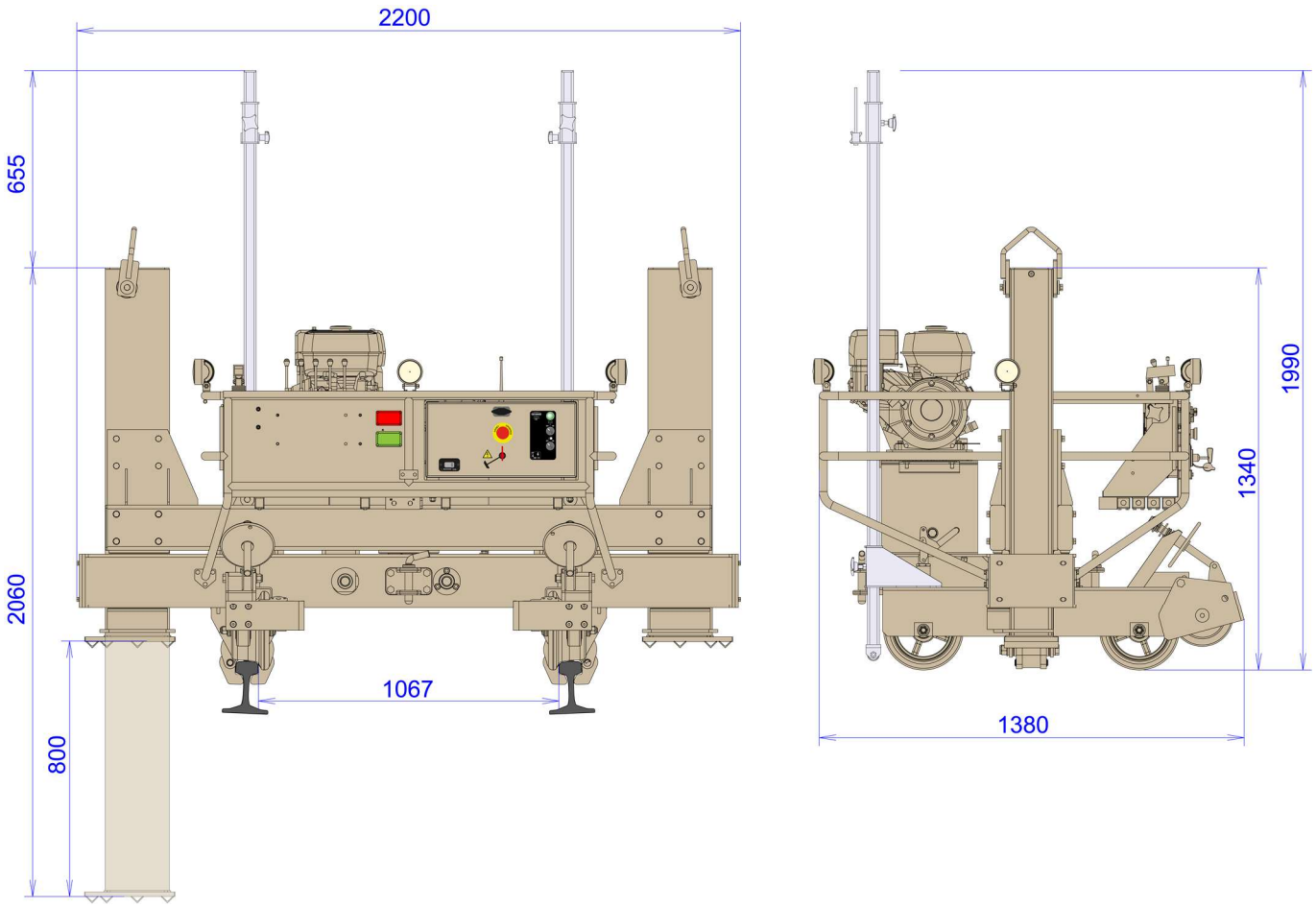



**Figure 1**

## D.2 TECHNICAL CHARACTERISTICS.

| | | | | |
|---|---|---|---|---|
| **Performance** | Lifting | SWL (Safe Working Load) | | 15 tons |
| | | Stroke | | 800 mm |
| | Slewing | Total stroke | | 100 mm |
| | Traveling speed | | 5 Km/h (3 Mph) | |
| **Noise levels** | Noise power level | | 105 LwA | |
| | Noise pressure level | | 80 dB(A) | |
| **Petrol engine** | Designation | | HONDA GX 270 | |
| | Type | | 4 stroke monocylinder petrol engine (UT2) | |
| | Capacity | | 270 cm3 | |
| | Power | | 6.3 kW (8.4 HP) @ 3 600 rpm | |
| | Fuel | | Gasoline | |
| | Fuel tank | | 5,3 liters | |
| | Autonomy | | 2 hours 10 mn (@ 3 600 rpm) | |
| | Tank engine oil | | 1,1 liter | |
| **Battery** | 12 Volts / 12 Ah | | | |
| **Hydraulic unit** | Service pressure | | 160 bars | |
| | Hydraulic pump | | Capacity | 5.5 cm3. |
| | | | Flow | 20 l/min à 3600 t/min |
| | Hydraulic tank | | 30 liters | |
| | Hydraulic distributors with hand controls (5 elements) | | | |
| **Hydraulic motors on rail wheels** | Friction driving | | | |
| | Hydraulic engine | | Capacity | 50 cm3 |
| **Rail wheels** | Track gauge | | 1000 mm | |
| | Diameter | | 250 mm | |
| | Profil | | UIC | |
| **Various safety devices** | Emergency stop | | | |
| | Anti return security valves on the cylinders of the clamps | | | |
| | Rail wheels parking brake | | | |
| **Various equipments** | Lifting eyes | | | |
| | Front and rear towing shackles | | | |
| | Hour meter | | | |
| | Overload red light indicator | | | |
| **Radio remote control** | Frequency Range | | 433,100 - 434,750 Mhz | |
| | Transmitter | | Autonomy | 40 hours |
| | | | Range | 100 meters |
| | | | Mass | 205 grams |
| **Option** | Lighting | | 4 Projectors | 12 watts |
| | Sight supports | | | |
| **Mass** | 1070 kg | | | |

## General dimensions (In mm).



## D.3 DESCRIPTION.

### Load fastening device.

- The fastening of the load is done with 2 clamps (Figure 2 below).
- The clamps are controlled in normal use from the transmitter of the remote control and in emergency use from the hand controls of the hydraulic distributor (Rep.1 Figure 15 page 30).

ⓘ **The rail clamps are operated simultaneously.**

⚠ **The rail clamps are equipped with security valves preventing any movements in case of a defect in the hydraulic circuit or a defect of the thermic engine.**

### Lifting and slewing devices.

- The lifting and slewing of the load is done with the combination of the 2 sliding frames, one carrying the load which must be moved and the other the lifting feet.
- The lifting feet are operated in normal use from the transmitter of the radio remote control and in emergency use from the hand controls (Rep.2 et 3 Figure 15 page 30).

ⓘ **The lifting feet are operated independently.**

- The slewing operations of the load are operated in normal use from the transmitter of the radio control and in emergency use from the hand controls (Rep.5 Figure 15 page 30).

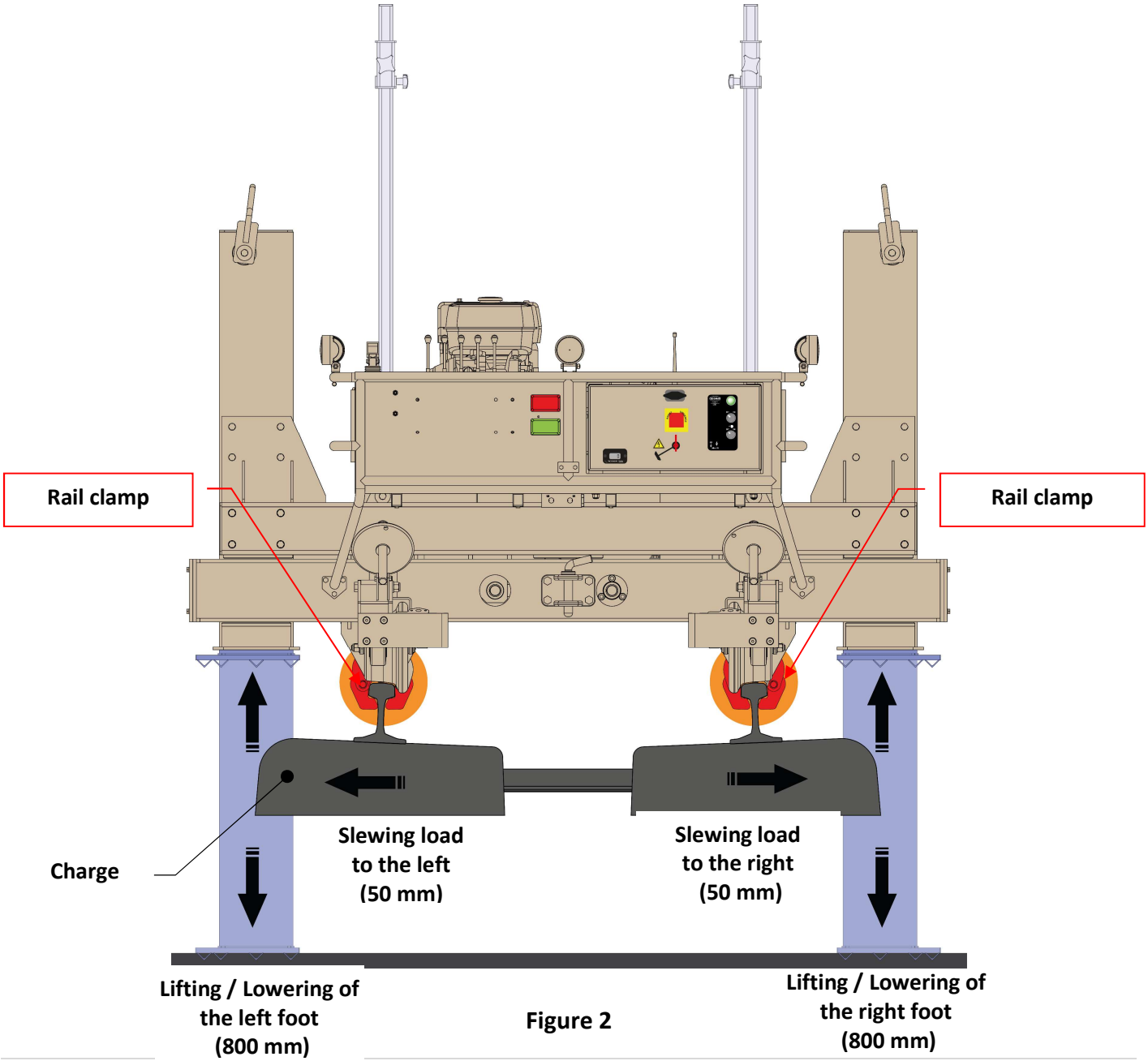



Figure 2

## Centering of the lifting feet.

- A device with marks allows to make visible the centering of the lifting feet in relation to the frame of the machine.

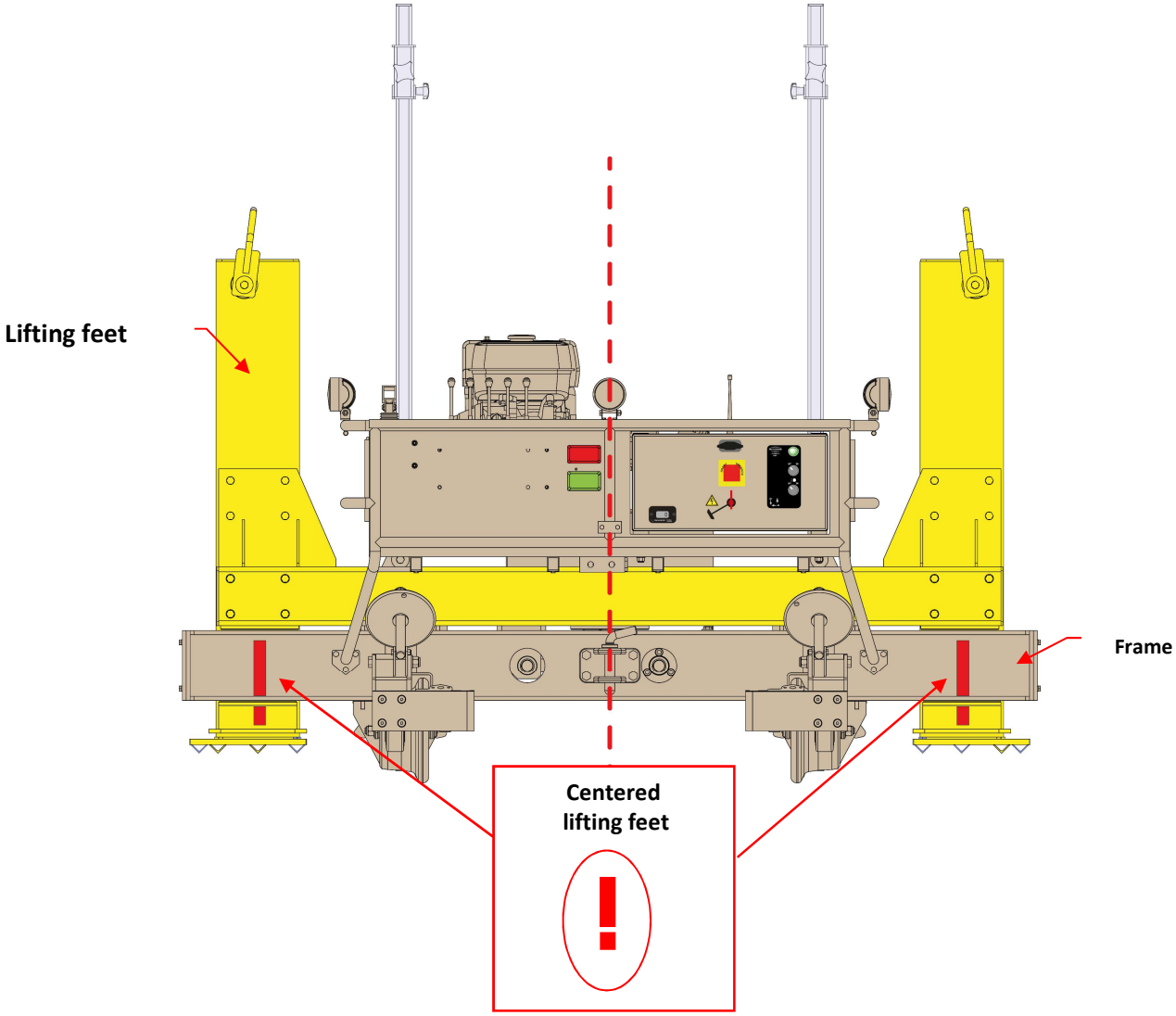



**Figure 3**

## Displacement device of the machine.

- The machine can be displaced on track in both directions (forwards and backwards).
- The control of the displacement is obtained in normal use from the transmitter of the remote control and in emergency use from the hand controls of the hydraulic distributor (Rep.4 Figure 15 page 30).

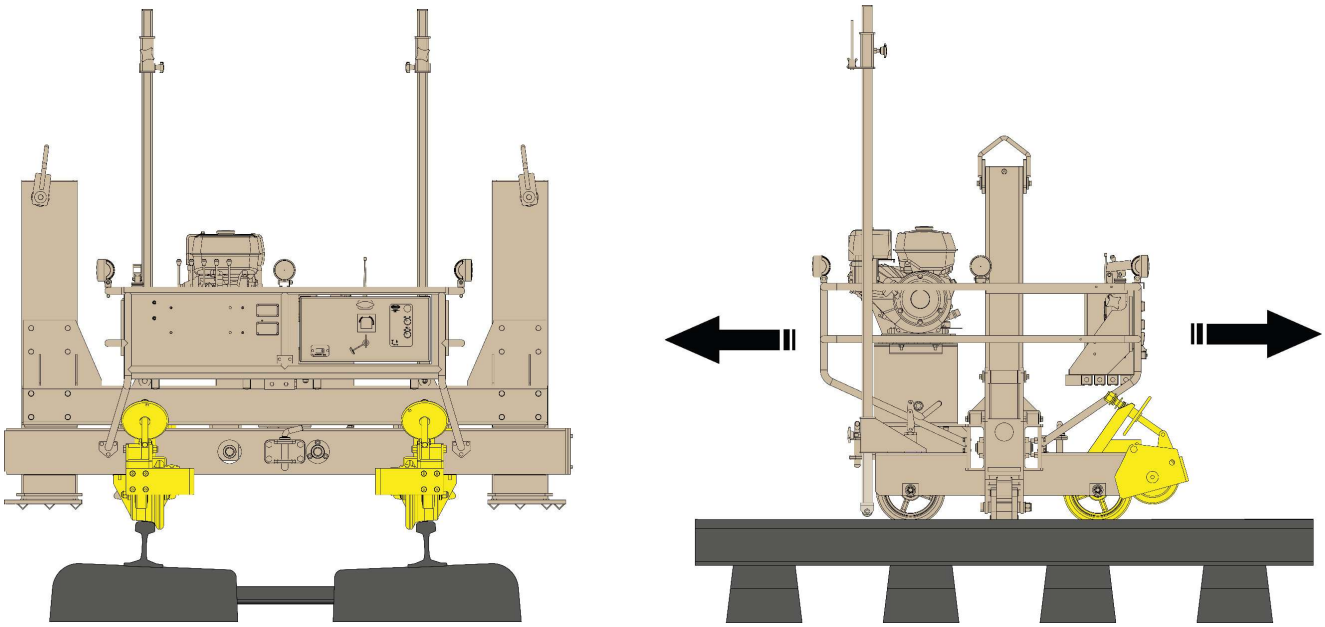


Figure 4

- Each of the rear rail wheels is motorized with a friction driving device.
  This device in composed of a hydraulic engine coupled to a rubber wheel, the whole mounted on a spil and put in contact or not with the rail wheel by means of a hand operated hand wheel (Figure 5).

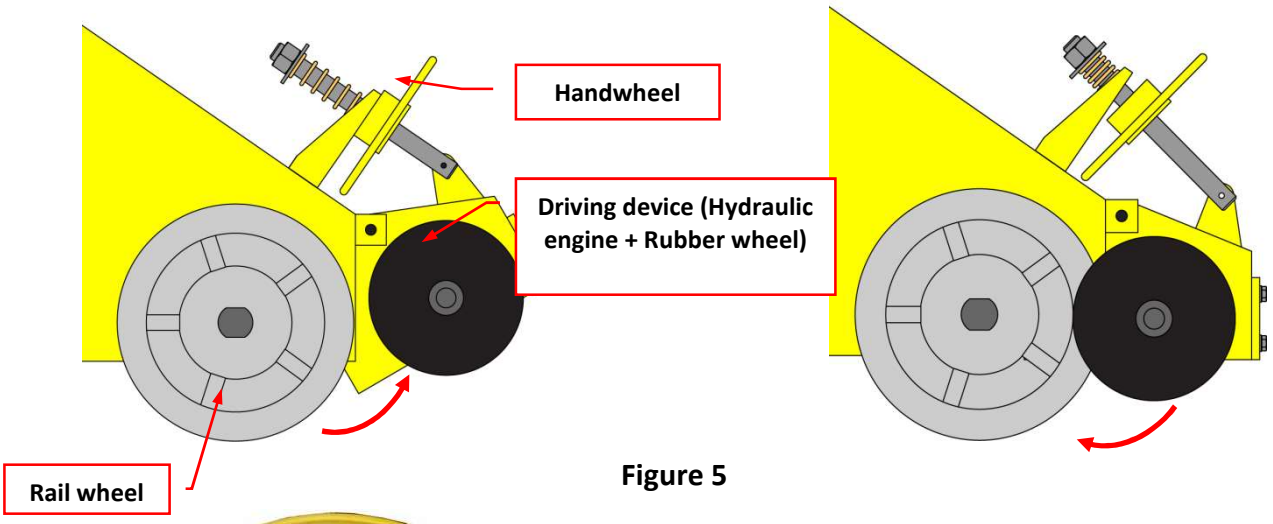
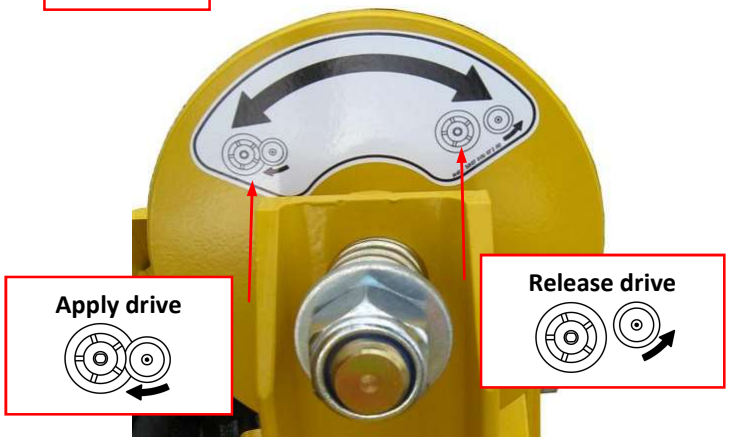



Figure 5




➲ *To bring the device in contact tighten both handwheels to a maximum.*

➲ *To release the device untighten both handwheels to a maximum*

⚠ **It is imperative that both hydraulic engines are in the same position (free or motorized according to what should be done).**

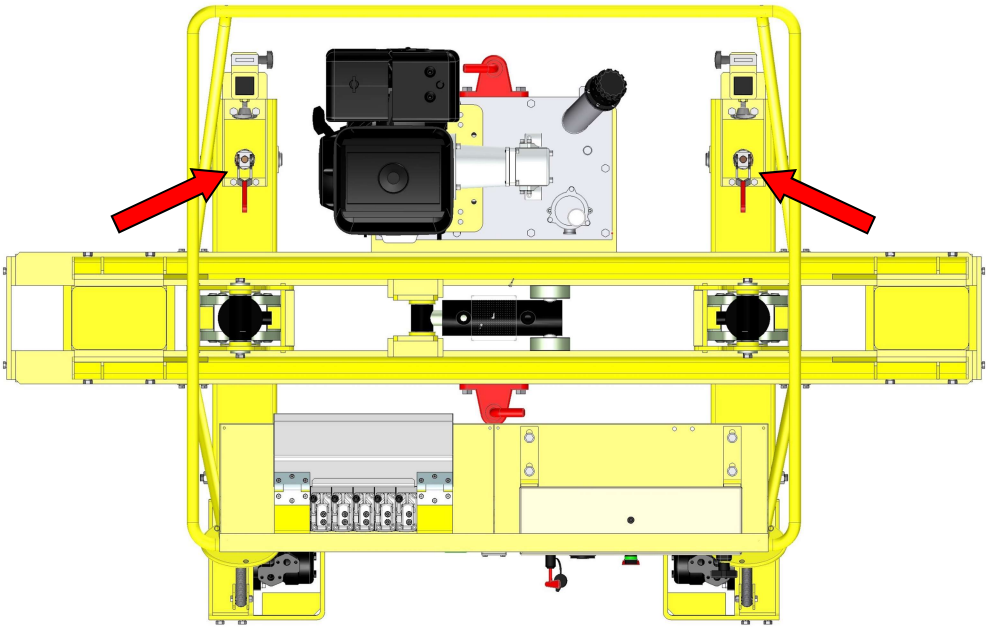
⚠ **When towing the machine, it is imperative to unscrew the wheels to dissociate the engines from the rail wheels.**

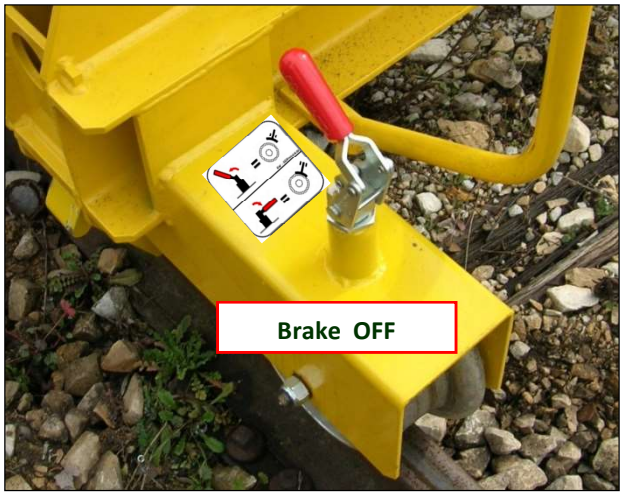
Figure 6

## Parking brake.

- The immobilization of the machine on track is ensured by means of lateral parking brakes (Figure 7).

**When parking the machine imperatively activate the 2 parking brakes.**





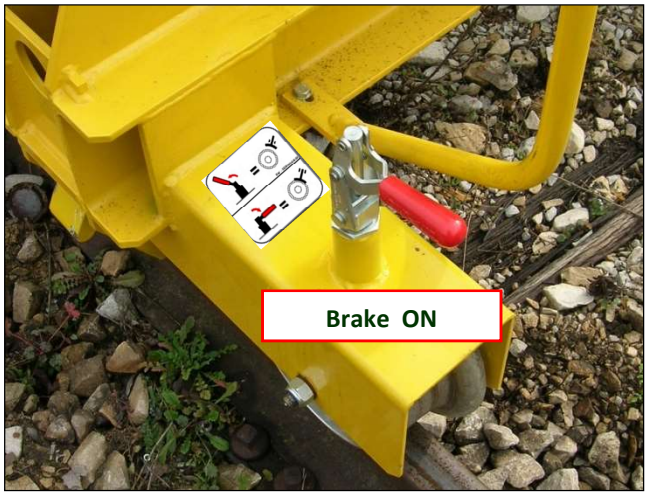
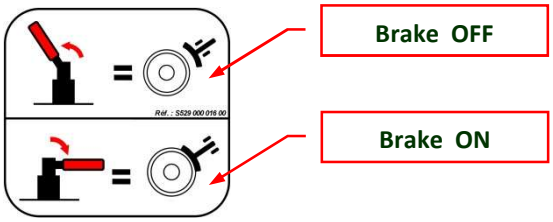




**Figure 7**




**Releasing the machine brake neutralizes all braking systems on the rail wheels. This manoeuvre must only be undertaken after ensuring that no risk is involved.**

**The machine with no brakes on must not be left without surveillance. The rail wheels must be chocked safely and effectively if necessary.**

**When parking the machine imperatively activate the parking brakes.**

## Towing shackles.

- Two towing shackles (Figure 8) are used to hitch the LNR to a traction engine, using a drawbar.

**The machine's maximum towing speed is 15 Km/h maximum.**

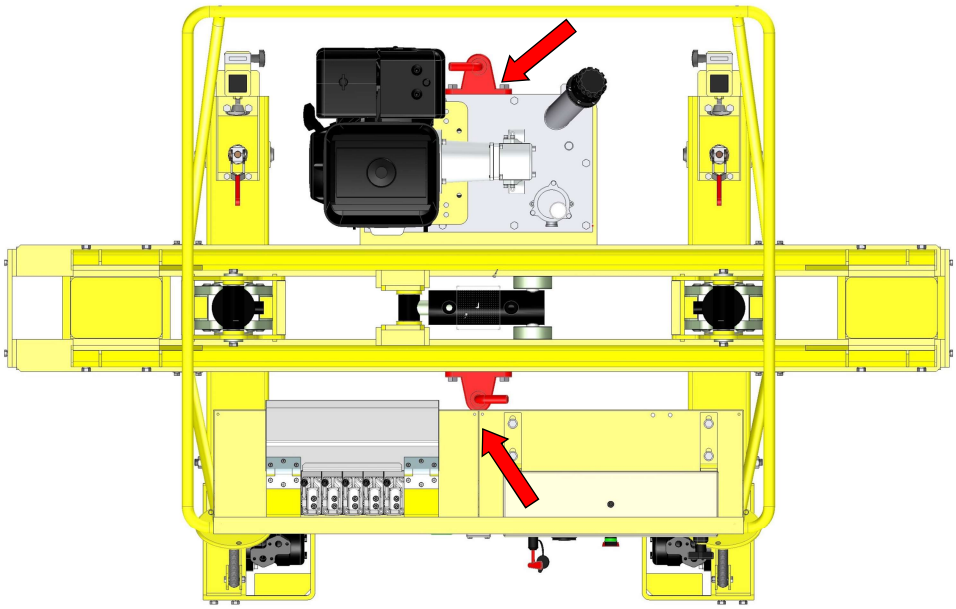


**Figure 8**

See page 37.

## Lifting rings.

- The machine is equipped with 2 lifting rings (Figure 9).

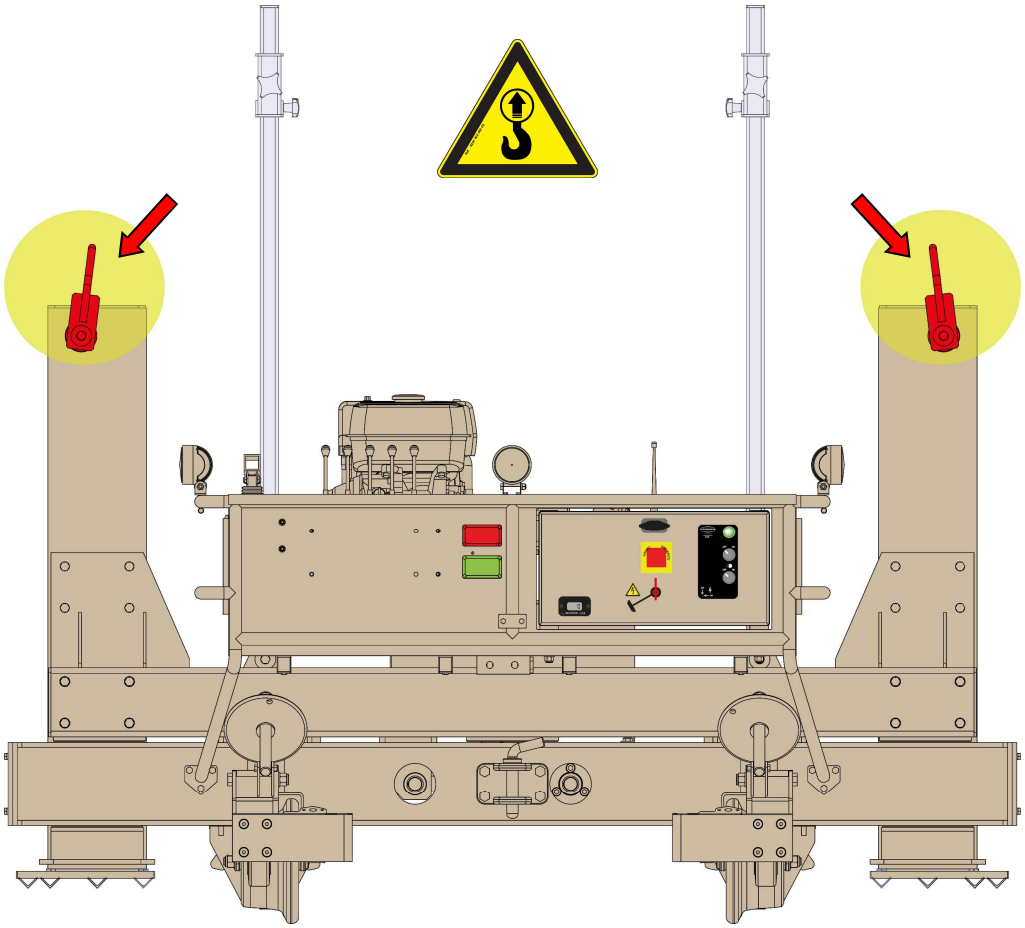


**Figure 9**

## D.4 DEFINITION OF THE MACHINE CONTROLS.

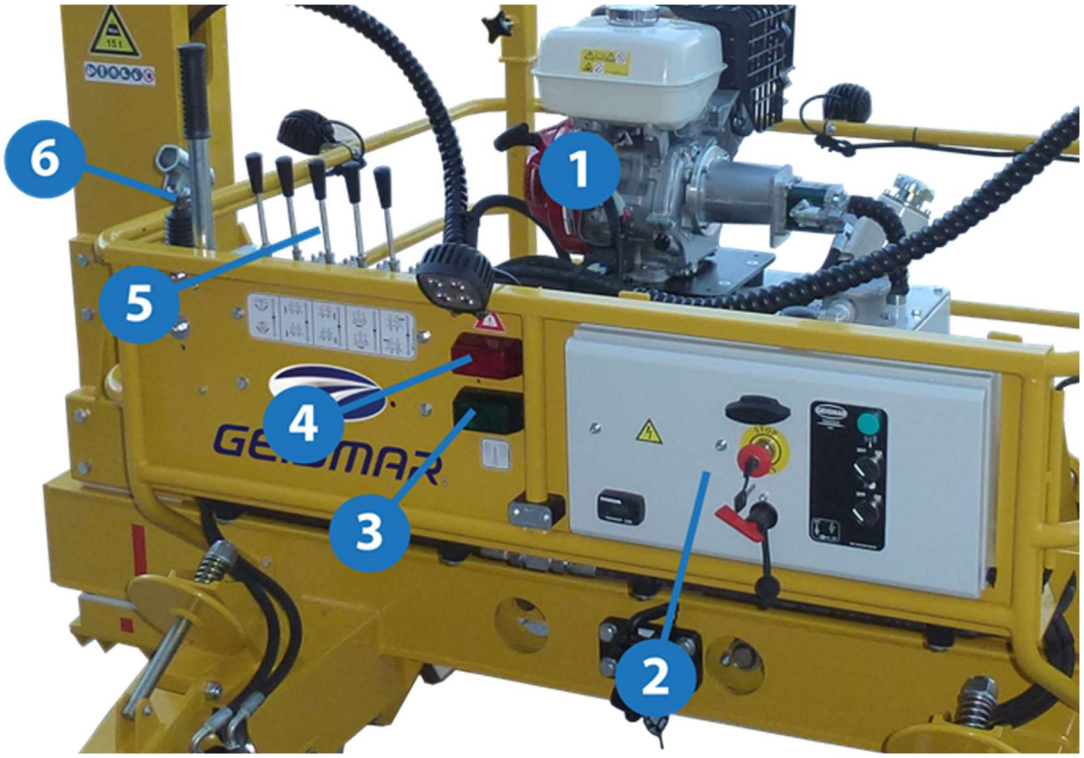



**Figure 10**

| Rep. | Function | | | |
|---|---|---|---|---|
| **1** | Control of the engine | | **See page 26.** | |
| **2** | Dashboard | | **See page 27** | |
| **3** |  | Control (green light: Shows the radio reception status<br>**This light allows to check from distance the selection of the machine with the transmitter of the radio remote control.** | Light off | No radio reception |
| | | | Light on | Radio reception OK |
| **4** |  | Overload (red) light indicator | Light off | Ok |
| | | | Light on | ⚠ **Useful load of machine has been exceeded !** |
| **5** | Backup controls | | **See page 30** | |
| **6** | Hydraulic emergency handpump | | **See page 31** | |

## Control of the engine HONDA GX 270

⚠ **The prescriptions about the checking of the engine in this table are only informative. It is imperative to read carefully the checking prescriptions given in the HONDA manufacturer's manual. (See enclosed the operation manual provided by manufacturer of the engine)**

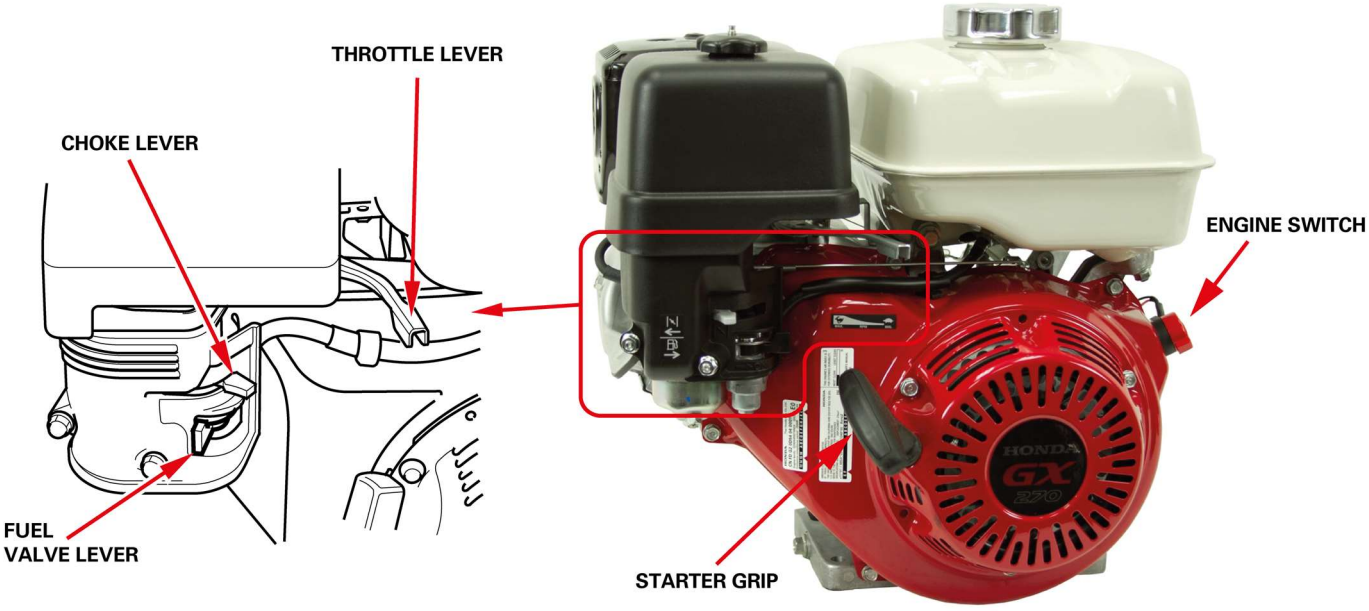



**Figure 11**

## Dashboard.

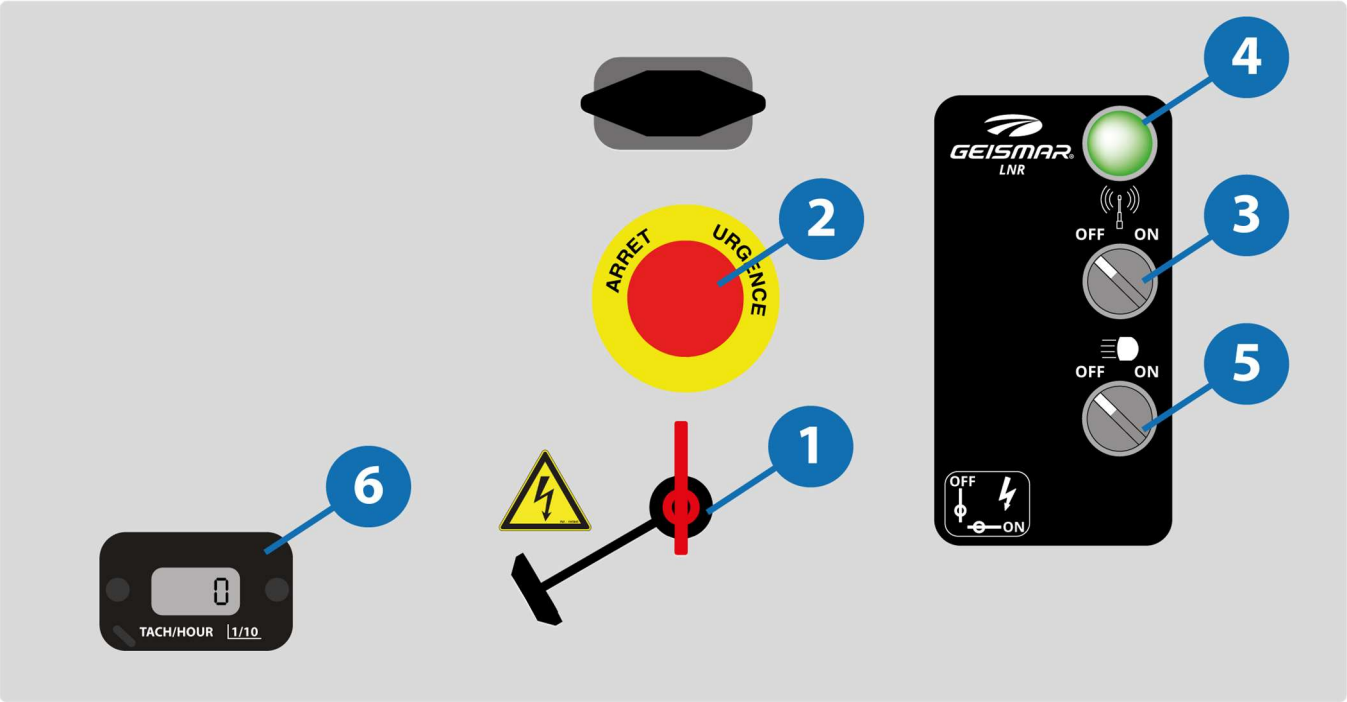



**Figure 12**

| Rep. | Function | | |
|---|---|---|---|
| **1** | Battery main switch ON/OFF. | ⚠ **Do not leave the circuit-breaker ON after using the machine, to avoid discharging the battery.** | |
| **2** | Emergency stop : Turns petrol engine off | | |
| **3** | Radio remote control receiver switch | OFF | Receiver OFF |
| | | ON | Receiver ON |
| **4** | (Green) light indicating the state of the radio remote control | Light off | Receiver OFF |
| | | Light on | Receiver ON |
| **5** | Lighting control (optional see page 33) | | |
| **6** | Tachometer / Hour meter. | Engine OFF = Indicates the number of engine running hours | |
| | | Engine ON = Indicates the engine speed | |

## Radio remote control.

- The radio remote control is composed of two main parts, one portable transmitter (Figure 14) and one receiver mounted on the machine (Rep.1 Figure 29 on page 50).

**ⓘ For detailed information on the radio remote control, confer to the enclosed NBB manufacturer manual**

### Receiver.

- Le récepteur est intégré dans le coffret électrique (Figure 13).

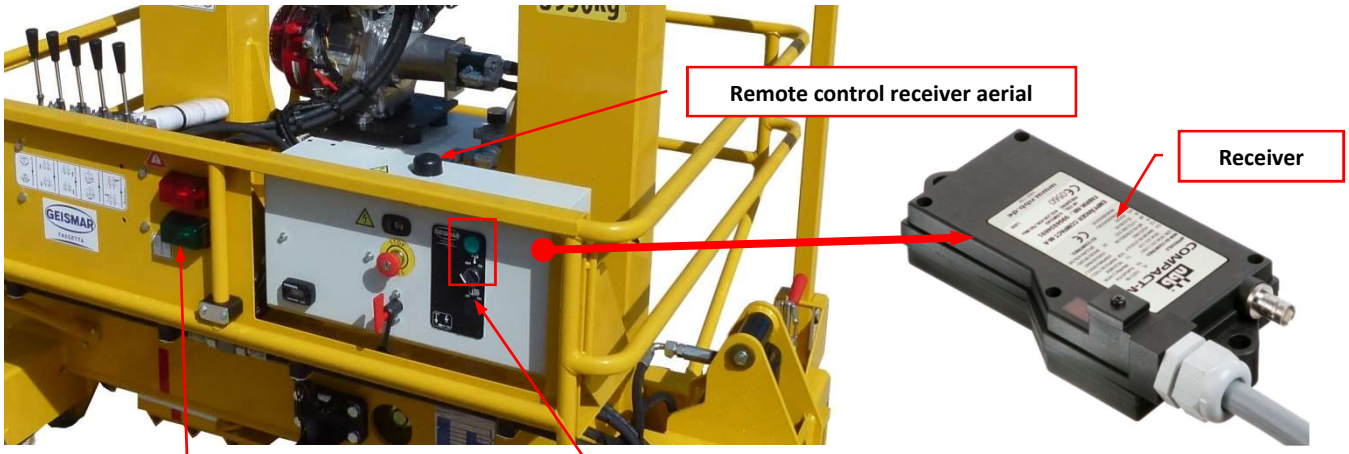



**Figure 13**

**Receiver Control**
*(See Rep 3 and 4 Figure 12 page 27)*

**Remote control connection light**

*(See Rep 3 Figure 10 page 25)*

### Transmitter.

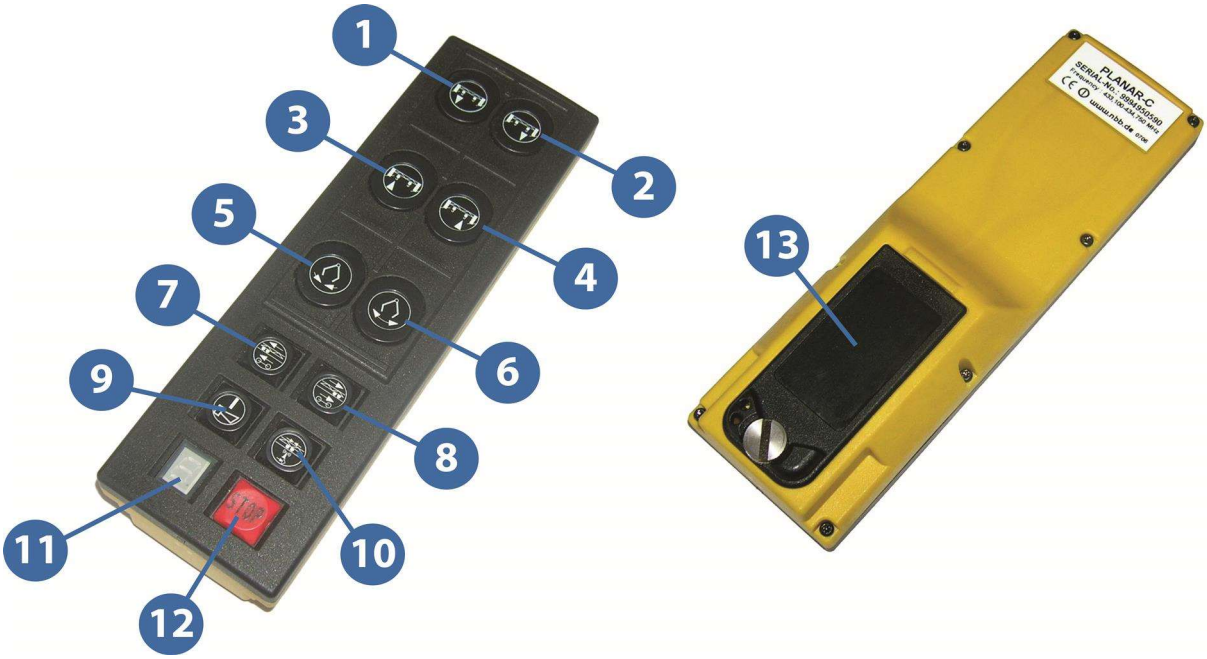



**Figure 14**

<table>
<tr><th>Rep.</th><th colspan="3">Function</th></tr>
<tr><td>1</td><td rowspan="2">Lowering track</td><td>Left</td><td rowspan="4">ⓘ 2 positions :<br>- First impulsion : Slow speed.<br>- Second impulsion : Fast speed.</td></tr>
<tr><td>2</td><td>Right</td></tr>
<tr><td>3</td><td rowspan="2">Lifting track</td><td>Left</td></tr>
<tr><td>4</td><td>Right</td></tr>
<tr><td>5</td><td rowspan="2">Rail clamps.<br>(Left + Right).</td><td colspan="2">Closing</td></tr>
<tr><td>6</td><td colspan="2">Opening</td></tr>
<tr><td>7</td><td rowspan="2">Machine travel</td><td colspan="2">Rear</td></tr>
<tr><td>8</td><td colspan="2">Front</td></tr>
<tr><td rowspan="2">9</td><td colspan="3">« Start » Initialization of the remote control</td></tr>
<tr><td colspan="3">Horn</td></tr>
<tr><td rowspan="2">10</td><td colspan="3">Slewing of track selection</td></tr>
<tr><td colspan="3">Browsing frequencies.<br>ⓘ To browse frequencies, keep the « Start » (9) button pushed while pressing the « Browse » button(10).</td></tr>
<tr><td>10+7</td><td rowspan="2">Slewing of track</td><td colspan="2">Left</td></tr>
<tr><td>10+8</td><td colspan="2">Right</td></tr>
<tr><td>11</td><td colspan="3">Reception Witness</td></tr>
<tr><td>12</td><td colspan="3">Emergency stop (turns the radio transmission OFF)</td></tr>
<tr><td>13</td><td colspan="3">Battery housing</td></tr>
</table>

## D.5 BACKUP EQUIPMENT.

### Backup controls.

**These hand controls are intended to be used only in case of emergency when the radio remote control is not working correctly or out of order. They must not be used when using the machine normally in work.**

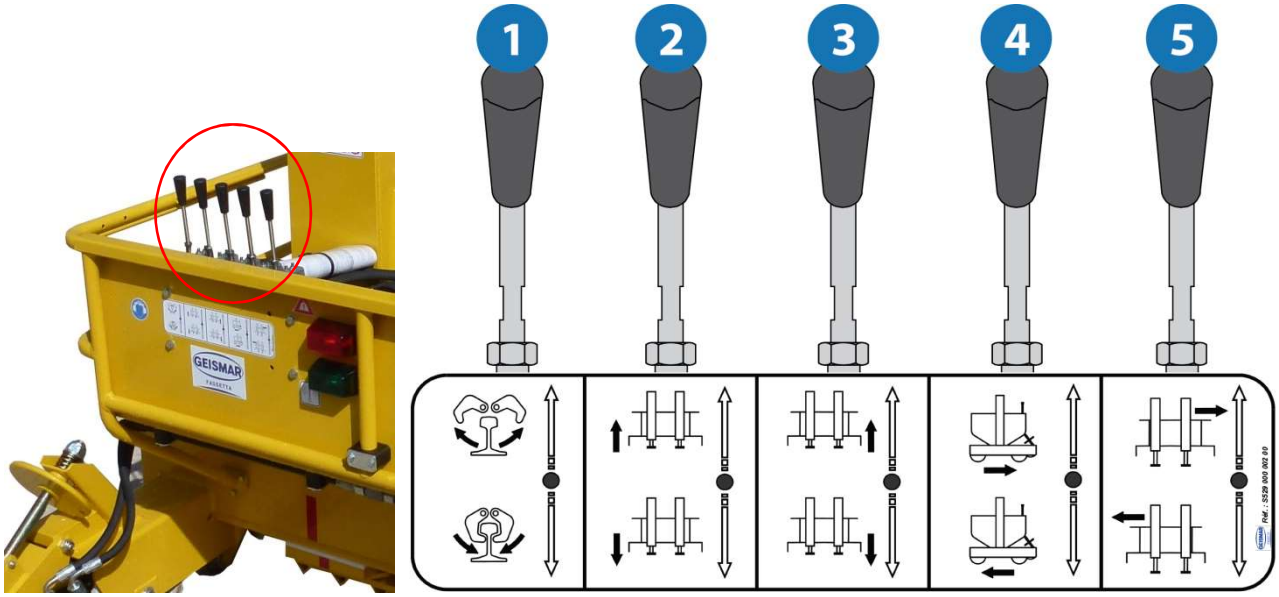



**Figure 15**

| Rep. | Control | Function | | |
|---|---|---|---|---|
| 1 | Rail clamps. (Left and Right) | ⬆ | | Opening |
| | | ⬇ | | Closing |
| 2 | Left load | ⬆ | | Up |
| | | ⬇ | | Down |
| 3 | Right load | ⬆ | | Up |
| | | ⬇ | | Down |
| 4 | Travel | ⬆ | | Front |
| | | ⬇ | | Rear |
| 5 | Slewing of track | ⬆ | | Right |
| | | ⬇ | | Left |

## Hydraulic emergency handpump (hydraulic cylinders).

- The hydraulic emergency handpump allows together with the hand distributors to realize the various functions of the machine in case of an engine or hydraulic breakdown (see page 36).

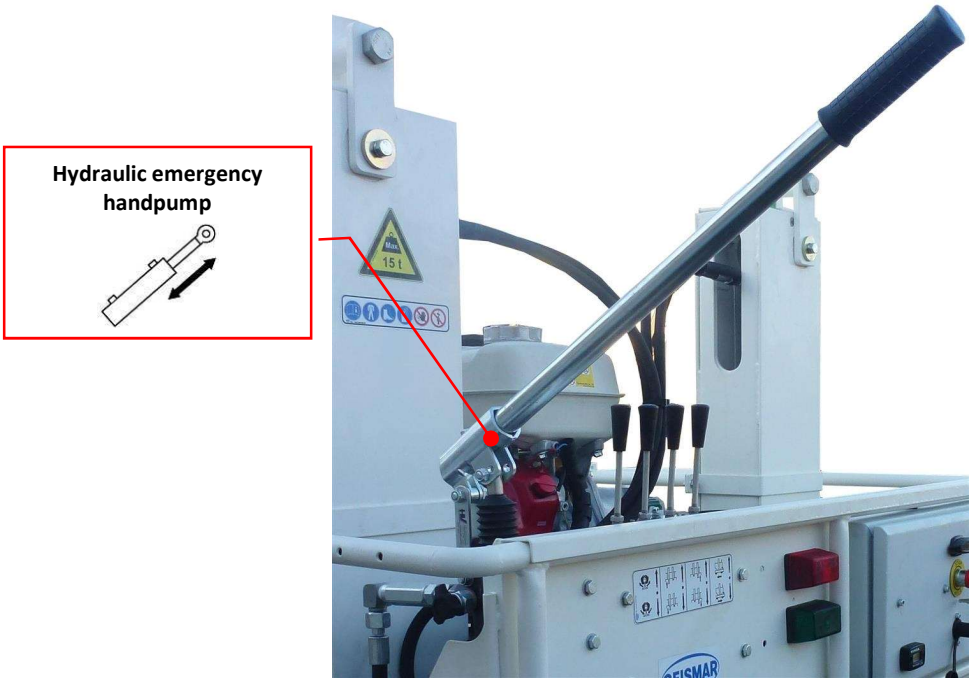



**Figure 16**

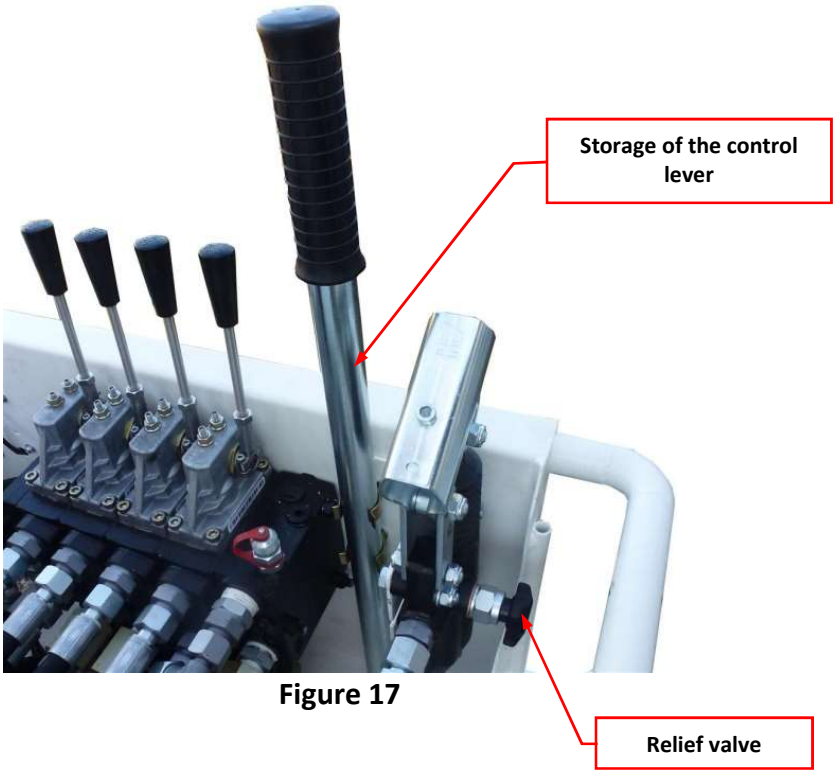



**Figure 17**

## D.6 OPTIONAL FEATURES.

### Sight supports.


| Rep. | Function |
|---|---|
| 1 | Setting of sight support |
| 2 | Mast position adjustment |
| 3 | Tightening of sight |

**Figure 18**

## Lighting.

- The machine can be equipped with lights operated from the dashboard (Rep.5 Figure 19 page 33).

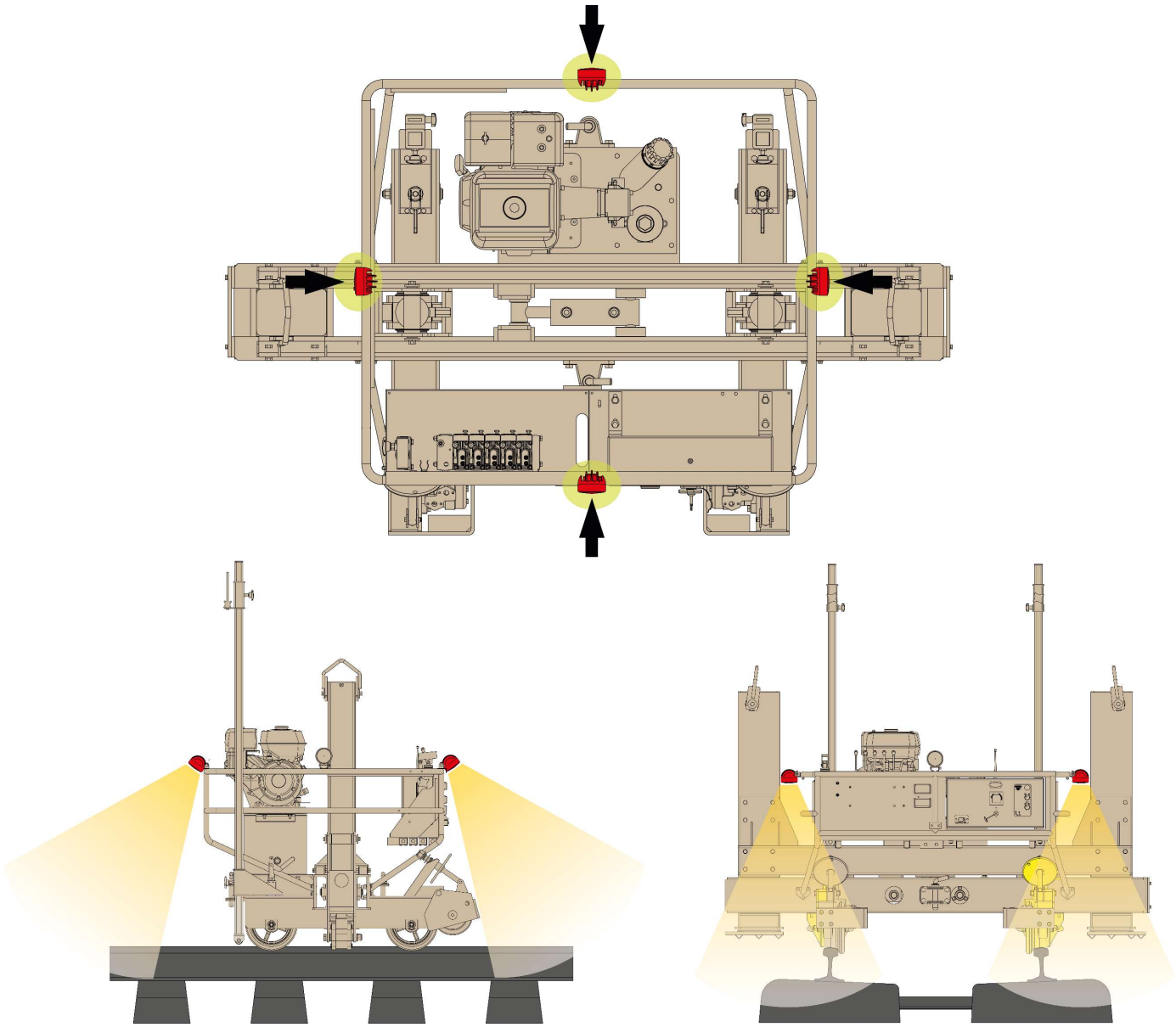


**Figure 19**

# E WORKING INSTRUCTIONS.

## E.1 HANDLING OF THE MACHINE.

**The machine must be handled only with :**

- the engine OFF.
- the rail clamps fully opened.
- the parking brakes are on.
- the lifting feet are centered (see page 21).
- the lifting cylinders in retracted position.

**If the engine is equipped with the optional feature “sight supports (page 32)’’, check that the masts are locked in max high position.**


**The handling of the LNR 529 can be done with any lifting equipment that has a minimum lifting capacity of 1070 kg (10 700 N).**

- The handling of the machine is done thanks to lifting rings located on the lifting feet with use of a sling (Figure 9 page 24).

## E.2 CHECKS TO PERFORM BEFORE USING THE MACHINE.

**Proceed to the checks “Before use” of the machine as described in the maintenance chart see page 38 before use the machine. These operations must be done each time before using the machine. They allow to make sure that the machine is conform to be used on the track without risks.**

**The checks must be made outside the danger zones. The machine must be immobilized be placed on a horizontal stable surface. In case of a defect or damage do not use the machine and return it to the workshop for maintenance.**

## E.3 STARTING THE MACHINE.

**The machine must be used by authorized agents.**

**The most delicate part of the positioning operation of the machine is the fastening of the load. This operation must be carried out with great care and only by authorized and trained persons.**

- Place the machine on the track according to the handling instructions (see page 34).

**L’engin doit être placé avec précaution sur la voie, ne pas faire subir de choc au roues rails.**

- Always make sure the machine brakes are on (see page 22 ) before setting it on the track
- Activate the parking brakes (Figure 7 on page 23).
- Position the main battery switch to ‘’ON’’ (Rep.A Figure 20).
- Unlock the emergency stop button with the key (Rep.B Figure 20).

**Remove the key from the emergency stop.**

- Start the engine and let it heat up for a moment.
- Increase the diesel engine speed.

**For the management of the engine, refer to the instructions in the manufacturer's manual according to the model fitted (supplied with the machine).**

- Set the radio control switch on the dashboard to ON (Rep.C Figure 20), the green light must come on (Rep.D Figure 20).
- Start the transmitter by pushing the “start” button ‘START’ (Rep.E Figure 20).
- Establish the connection between the transmitter and the receiver by pushing a second time on the ‘START’ button (Rep.E Figure 20) (see manufacturer's manual). The radio control selection light (Rep.F Figure 20), must switch on to confirm that the transmitter and the receiver are connected.

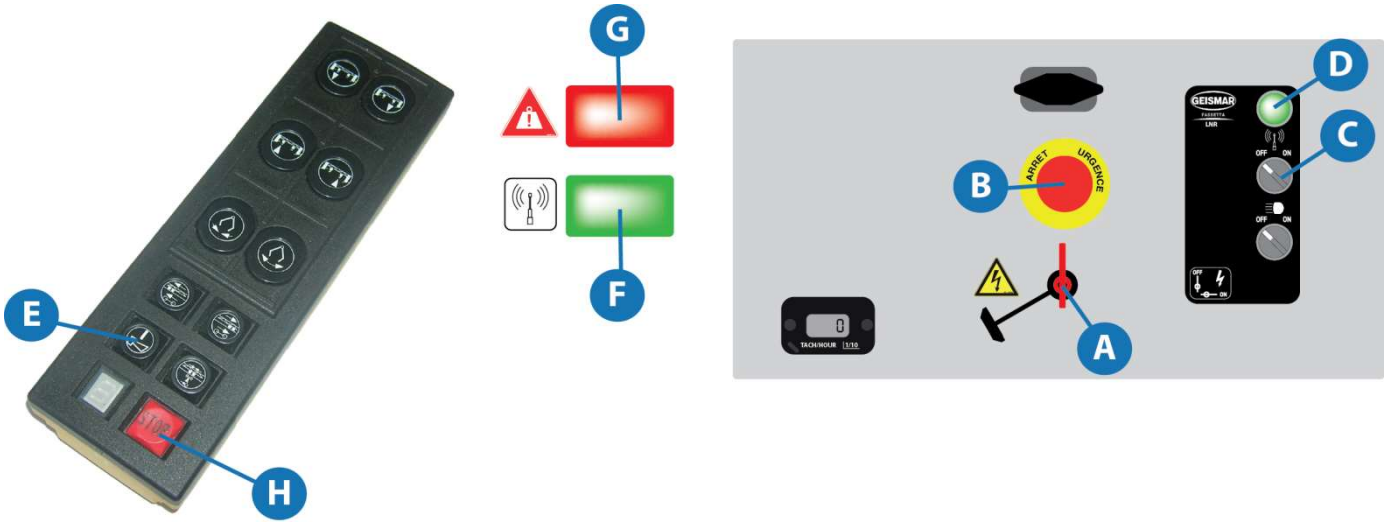



**Figure 20**

- Disconnect the parking brakes (Figure 7 page 43).

➲ ***The machine is now ready to operate.***

⚠ **Before using the machine the operator must check that nobody, included himself, is in the working area of the machine or the load which should be handled.**

⚠ **Do not lift the machine if the clamps are not fixed on the rails (the machine might balance).**

⚠ **When the machine is stopped (beside the handling operations) even though the hydraulic motorization brakes the machine, it is advisable to always tighten the parking brakes.**

⚠ **When during the use of the machine the overload (red) light indicator (Rep.G Figure 20) is activated, it indicates that the useful load of the machine has been exceeded.**

## E.4 TO STOP THE MACHINE.

- Activate the parking brakes (Figure 7 on page 23).
- Retract the lifting cylinders.
- Open the rail clamps.
- Turn off the transmitter by pushing the 'STOP' button (Rep.G Figure 20).
- Turn off the receiver with the ON / OFF switch (Rep.C Figure 20), the green LED (Rep.D Figure 20) should be off.
- Stop the engine.

⚠ **For the management of the engine, refer to the instructions in the manufacturer's manual according to the model fitted (supplied with the machine)..**

- Lock the emergency stop by pushing it (Rep.B Figure 20).
- Turn OFF the main battery switch (Rep.A Figure 20).

⚠ **Do not leave the main battery switch on to avoid the discharging of the battery.**

## E.5 OPERATIONS TO MAKE AFTER USING THE MACHINE.

⚠ **All these operations are performed outside danger zones.**

- Visually check the condition of the machine.
- Check that the different elements have not been damaged.
- Check the absence of oil traces on the petrol engine.

⚠ **It is imperative to report any fault or damage which might have occured.**

# F BACKUP MANOEUVRES.

## F.1 BREAKDOWNS OCCURING IN USE.

### In case of a remote control breakdown.

#### To realize the functions of lifting, shifting and rail clamps.

- Turn off the receiver of the remote control on the general operation box (Rep.3 Figure 12 page 27).
- Increase the engine speed manually.
- Use the manual hydraulic controls (Rep.1 à 3 Figure 15 page 30).

#### To move the machine on rail wheels.

- Turn off the receiver of the remote control on the general operation box (Rep.3 Figure 12 page 27).
- Put the motorization of the rail wheels in contact (see page 22).
- Release the machine brakes (Figure 7 on page 23).

**ⓘ The operator in charge of the displacement, stands in front of the distributor control handles.**

- Increase the engine speed manually.
- Use the drive manual hydraulic controls of the displacement (Rep.4 Figure 15 page 30).
- To slow down release the lever and the machine will stop under the action of the engine braking.

**⚠ The operator must foresee a sufficient braking distance especially if the conditions are bad (gradients, wet rails or others…).**

### In case of a breakdown of the hydraulic unit or an electric breakdown.

#### To realize the functions of lifting, shifting and rail clamps.

- Set the control lever in position on the manual hydraulic pump (see page 31).

**⚠ Before using the hand pump, make sure that the discharge valve is screwed in as far as possible..**

- Use the manual hydraulic pump while simultaneously manipulating the manual distributor control required (Figure 15 page 30).

#### To move the machine on rail wheels.

- Tow the machine (see page 37).

## F.2 TOWING OF THE MACHINE.

**⚠ Before any towing on the track, in order to avoid any risk of engagement of the low obstacle gauge, the operator will make sure that :**

- the lifting cylinders are in retracted position.
- the rails clamps are completely open.
- no objects are stored on the machine before travelling on the track, as they might fall off and cause an accident

**⚠ If the machine is equipped with the optional feature ''Sight supports (page 32)'', check that the masts are locked in high position (their wheel must not touch the rail).**

- Attach a towing bar between the towing machine and the leveling trolley.

**⚠ Prior to setting the machine in towing configuration, it must be connected to the towing vehicle in order to prevent any risk of movement when unbraking.**

- Free the hydraulic motorization with use of the wheels (see page 22).
- One must be able to move the hydraulic engines by hand.

**⚠ The driving wheels must be free from the rail wheels.**

- Untighten the parking brakes (Figure 7 on page 23) after having checked that the machine cannot brake away.

➲ ***The LNR 529 is now ready to be towed.***

# G MAINTENANCE.

## G.1 PREVENTIVE MAINTENANCE SCHEDULE.

- Proceed in accordance with the operations listed in the maintenance table at the required frequencies. The description of these operations are developed in the next chapter.

⚠ **When carrying out a new maintenance interval the maintenance operations of the previous intervals must be carried out as well. For example : The maintenance of the 500 hours includes the before use, the 50, 250 et 500 hours operations.**

| LEGEND OF MAINTENANCE SCHEDULES | | | | |
|---|---|---|---|---|
| : Check | : Greasing | : Draining | : Replacement | : Cleaning |
| [P.XX ] : see page | **Operations to perform during the service inspection the first 50 hours** | | | |

| ELEMENTS | PERIODICITY (intervals operations) | | | | |
|---|---|---|---|---|---|
| | Before use | 10 hours or Every weaks | 50 hours or Every month | 250 hours or Every 6 month | 500 hours or Every year |
| Fuel | [P.41] | | | | |
| Machine-welded assemblies | [P.41] | | | | |
| Rail wheels | [P. 41] | | | | |
| Emergency devices | [P.41] | | | | |
| Towing flanges | [P.42] | | | | |
| Markings | [P.42] | | | | |
| Lifting rings | [P.42] | | | | |
| Elect wirings / connexions | [P. 42] | | | | |
| Emergency stops | [P.44] | | | | |
| Hydraulic oil | [P.43] | | | | [P.49] |
| Radio remote control | [P.44] | | | | |
| Hydraulic circuit | [P.44] | | | | |
| Hydraulic filter cartridge | | | | [P.46] | |
| Lighting | [P.44] | | | | |
| Circuit pressure. | | | | [P. 47] | |
| Motorization devices of the rail wheels | | | [P.45] | | |
| Petrol engine | See table page 39+ *HONDA owner's manual* | | | | |

⚠ **All maintenance and control operations prescribed in this table must be carried out in their entirety once a year.**

## Petrol engine HONDA GX270 standard maintenance schedule.

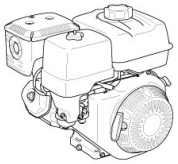
**The prescriptions about the checking of the engine in this table are only informative. It is imperative to read carefully the checking prescriptions given in the HONDA manufacturer's manual. (See enclosed the operation manual provided by manufacturer of the engine).**

| REGULAR SERVICE PERIOD (3) Perform at every indicated month or operating hour interval, whichever comes first. / ITEM | | Each Use | First Month or 20 Hrs | Every 3 Months or 50 Hrs | Every 6 Months or 100 Hrs | Every Year or 300 Hrs |
|---|---|---|---|---|---|---|
| Engine oil | Check level | ○ | | | | |
| | Change | | ○ | | ○ | |
| Reduction case oil (applicable types) | Check level | ○ | | | | |
| | Change | | ○ | | ○ | |
| Air cleaner | Check | ○ | | | | |
| | Clean | | | ○(1) | ○*(1) | |
| | Replace | | | | | ○** |
| Sediment cup | Clean | | | | ○ | |
| Spark plug | Check-adjust | | | | ○ | |
| | Replace | | | | | ○ |
| Spark arrester (applicable types) | Clean | | | | ○(4) | |
| Idle speed | Check-adjust | | | | | ○(2) |
| Valve clearance | Check-adjust | | | | | ○(2) |
| Combustion chamber | Clean | After every 1000 Hrs. (2) | | | | |
| Fuel tank & filter | Clean | | | | ○(2) | |
| Fuel tube | Check | Every 2 years (Replace if necessary) (2) | | | | |

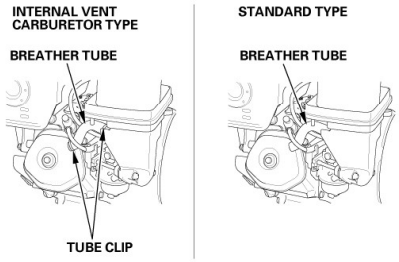
HONDA

OWNER'S MANUAL

GX270



* • Internal vent carburetor with dual element type only.
• Cyclone type every 6 months or 150 hours.




** • Replace paper element type only.
• Cyclone type every 2 years or 600 hours.

(1) Service more frequently when used in dusty areas.

(2) These items should be serviced by your servicing dealer, unless you have the proper tools and are mechanically proficient. Refer to the Honda shop manual for service procedures.

(3) For commercial use, log hours of operation to determine proper maintenance intervals.

(4) In Europe and other countrieswhere the machinery directive 2006/42/EC is enforced, this cleaning should be done by your servicing dealer.

Failure to follow this maintenance schedule could result in nonwarrantable failures.

## G.2 PERIODIC MAINTENANCE CHECKS.

**⚠ This section does not cover the periodic maintenance of the HONDA engine; see the manufacturer's instructions and follow them (See enclosed the operation manual provided by the HONDA engine manufacturer).**

**⚠ It is imperative to read and to conform to the maintenance prescriptions described in the HONDA engine manual enclosed.**

### Foreword.

- Depending on the check to be made, inspection will take place under certain conditions listed in the following table and noted in the following sections by pictograms.

**⚠ The operation conditions are indicated in the following sections with use of the following pictograms.**

| Operation conditions | Pictograms |
|---|---|
| Hydraulic cylinders retracted. |  |
| Electricity switched off |  |
| Electricity switched on. |  |
| Diesel engine switched off and cold. |  |
| Diesel engine on. |  |

**ⓘ For more information on certain components (radio remote control, thermal engines or hydraulic pump, etc.), please refer to the manufacturer's maintenance manuals.**

**⚠ If any discrepancies are found during one of the checks and periodic maintenance operations, repair or replace the deteriorated, defective or missing items.**

**⚠ Do not use the machine if one of its components is defective, damaged or missing.**

### Checking the mechanical assemblies and the attachments.

**Operation conditions :** 

**(see page 40).**

- Visually check that there are no external fault, deformation, superficial crack, area of wear or corrosion mark.
- Inspect the condition of welds, check there are no crack.
- Check the attachments (bolts, screws), retighten if necessary.
- If necessary, lubricate the moving parts of the machinery (see page 45).

### Checking the displacement wheels.

**Operation conditions :** 

**(see page 40).**

- Visually check that there are no external defect nor distortion.
- Control the correct rotation of the wheels.
- Control visually the state of the bearings, tighten if necessary.
- Check the fastening elements (nuts, screws).

### Checking fuel.

**Operation conditions :** 

**(see page 40).**

**Read the instructions for filling the fuel in the manufacturer's manual of the engine.**

- Check the fuel level.
- Top up if necessary and if there is overflow while filling, clean the tank.

**Warning! Fuel is inflammable.**

**Fill the fuel tank with engine stopped and cold.**

**Fill the fuel tank away from any source of heat (flame, welding, chainsaw).**

### Checking the equipment necessary for backup operations.

**Operation conditions :** 

**(see page 40).**

- Check there is:

  - the control lever for the backup manual pump (see page 31),
  - each manual handle of the hydraulic distributors (Figure 15 page 30),

**In case something is missing please get hold of these elements required for emergency operations.**

### Checking the towing flanges.

**Operation conditions :**     **(see page 40).**

- Check the tightness of its fixation screw, if necessary tighten again.
- Make sure they are no external faults, deformations, superficial cracks, areas of wear or corrosion marks

**In case of fault proceed to the replacement of the damaged ring (contact a specialized workshop for this operation).**

### Checking the lifting rings.

**Operation conditions :**     **(see page 40).**

- Check visually the presence of the two lifting rings.
- On each ring:

  - Check on each part of the ring that there are no external faults, deformation, superficial cracks, areas of wear or corrosion marks.

  - Check the state of the welded parts check there are no cracks (mini holes, mini grooves).

  - Check the general condition of two front and rear towing flanges.

  - Check the articulation of the ring on the screwed part and clean if necessary with a non-corrosive product.

**In case of fault proceed to the replacement of the damaged ring (contact a specialized workshop for this operation).**

### Checking of cables and electrical connections.

**Operation conditions :**     **(see page 40).**

- Visually check the state of the electrical circuit, especially the connections.
- Visually check the attachment of the battery terminals and tighten if necessary.
- Check to ensure that the connections are dry, rust free and well attached. If necessary, vaporize these connections with a water repellent aerosol.

### Checking the markings.

**Operation conditions :**     **(see page 40).**

- All the markings must be present and clearly readable. Clean them with water if necessary (with water and soap only) (refer to the spare parts manual S/E  Markings).
- Check in particular that the markings are present on the control and emergency equipment's (hydraulic valves, distributor controls, emergency hydraulic handpump).

**Replace any markings that are illegible, damaged or missing.**

## Checking Hydraulic oil level.

**Operation conditions :** 

 **(see page 40).**

**Hydraulic oil level inspections must be carried on a flat surface.**

- Check the hydraulic oil level using the level indicator on the hydraulic tank (Figure 21).

**ⓘ The level must be between the min. and max. marks.**


**ⓘ Hydraulic tank Content : 30 liters.**

- Top up if necessary and if there is overflow while filling, clean the tank.

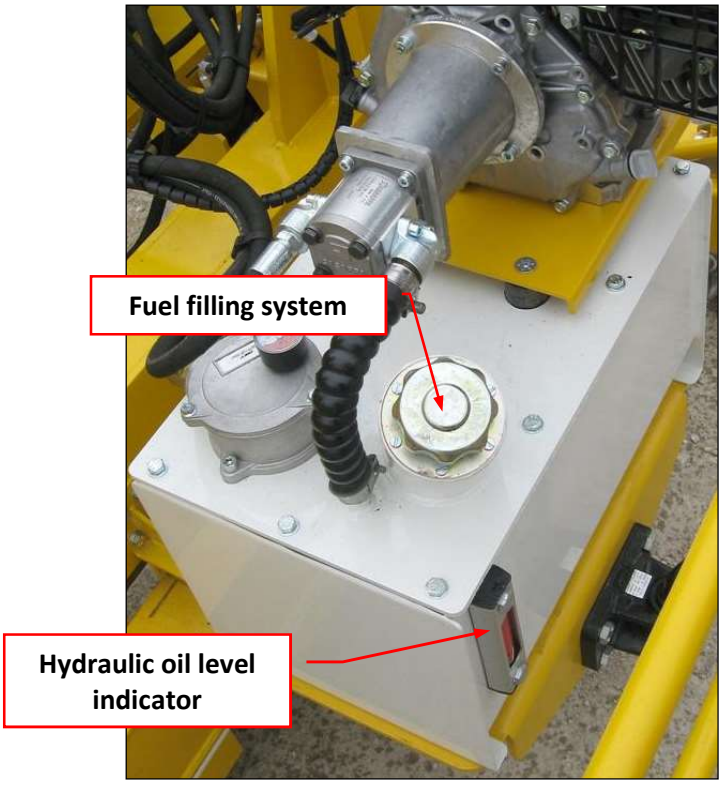



**Figure 21**

**Warning: after a variable time of machine operation, sometimes very short, the hydraulic tank starts to heat up. To prevent any risk of burning, avoid working in positions where the hydraulic tank can touch body parts, whether protected or not.**

**Make sure the filling equipment is perfectly clean. If foreign bodies get into the hydraulic circuit this can lead to rapid deterioration of the vital units of each component.**

**ⓘ The reference of the hydraulic oil used is: IGOL MATIC ZN S 46 ISO- L-HV or équivalent (see page 48).**

### Checking the remote control.

**Operation conditions :**     **(see page 40).**

- Check visually the good state of the transmitter .
- Check if the battery of the transmitter is full.
- Initialize the remote control with the machine and make a test with different functions of the remote control (see page 34).

### Checking the emergency stop.

**Operation conditions :**     **(see page 40).**

- Check on the emergency stop of the machine if (Rep.2 Figure 12 page 27) :

  - Start the petrol engine.

  - Push on the emergency stop and check that the thermic engine is switched off (do not forget to free it after the test).

### Checking the lightings.

**Operation conditions :**     **(see page 40).**

- Start the petrol engine.
- Check the correct working of the lightings of the machine (see page 33).

### Checking the hydraulic circuit.

**Operation conditions :**     **(see page 40).**

- Start the petrol engine.
- Let the engine run for a few minutes, so the system can warm up.
- Listen for unusual noises.
- Visually inspect leaks in the hydraulic system, especially around couplings, and check the status of hoses, which should not show any signs of wear or any cuts.
- Visually check the clogging gauge of the hydraulic filter (Figure 23 on page 46).

**If the clogging control is in the red zone, the filter must imperatively be changed before working (Figure 23 on page 46).**

## Greasing the threads of the motorization units.

**Operation conditions :** 

**(see page 40).**

- On each thread of the rail wheels motorization device (Figure 22) :
  - Remove the worn grease by using a grease-remover and clean rags.
  - Lubricate with a brush.
  - Wipe the excess of grease by using clean rags.

**Figure 22**

ⓘ **Type of grease : IGOL Perfect Multifonction or equivalent (see page 48).**

## Replacement of the hydraulic filter cartridge.

**Operation conditions :** OFF STOP **(see page 40).**

- Remove the screws from the cover (Figure 23), remove the cover then the spring which holds the cartridge in place.
- Replace a used cartridge with a new one, refit the spring then the cover with its screw fittings.

**ⓘ Tighten it but not excessively.**

- Check the hydraulic oil level and top up if necessary (see page 43).

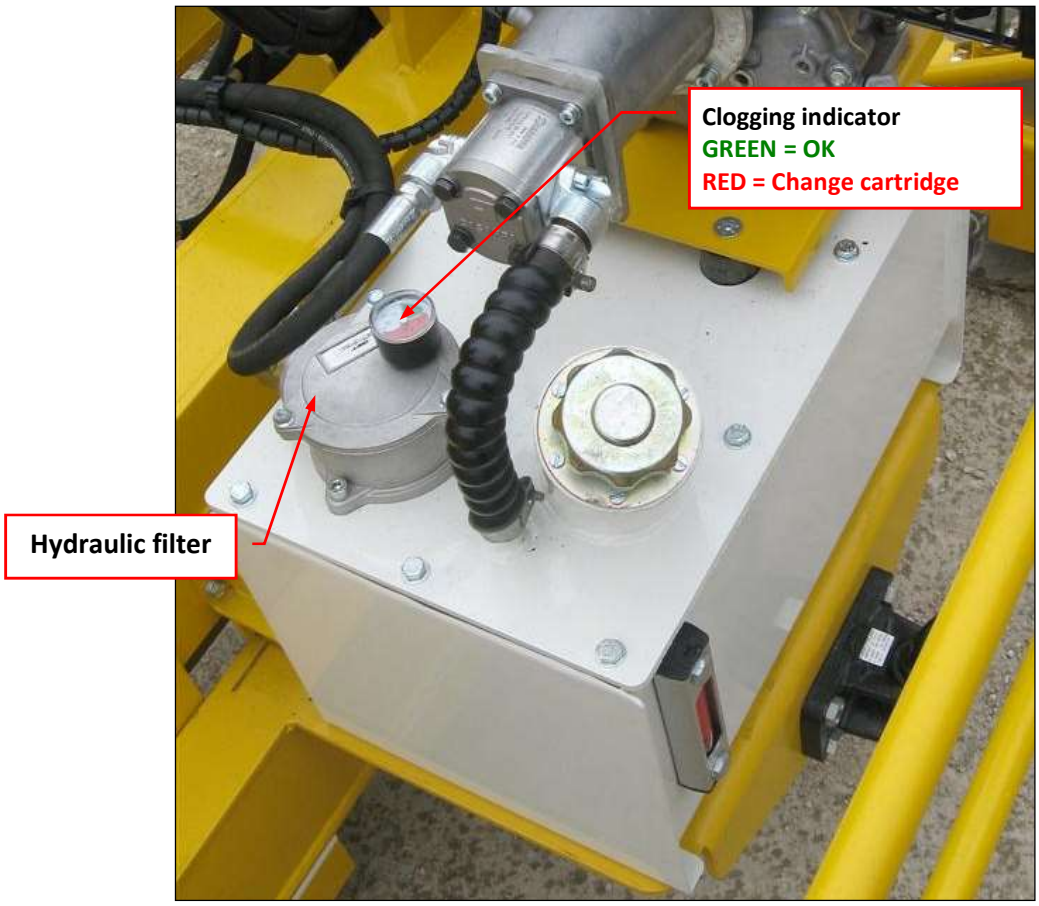
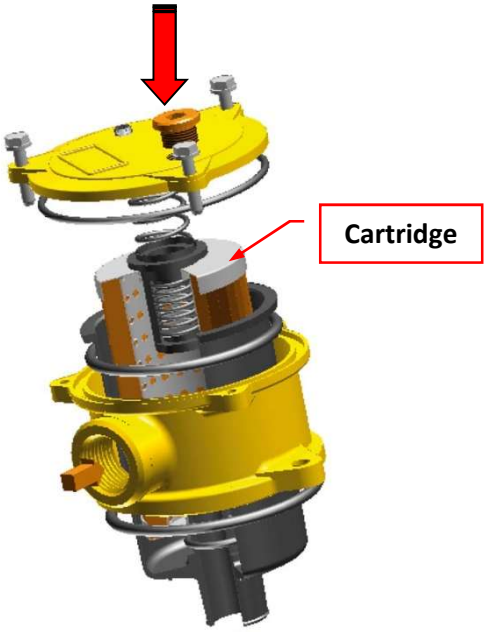



**Figure 23**



## Check hydraulic pressure.

**Operation conditions :** ON ON **(see page 40).**

- Plug the pressure gauge 0-250 bars (0-4000 psi) at pressure port PPS on the regulator block (Figure ci-dessous).

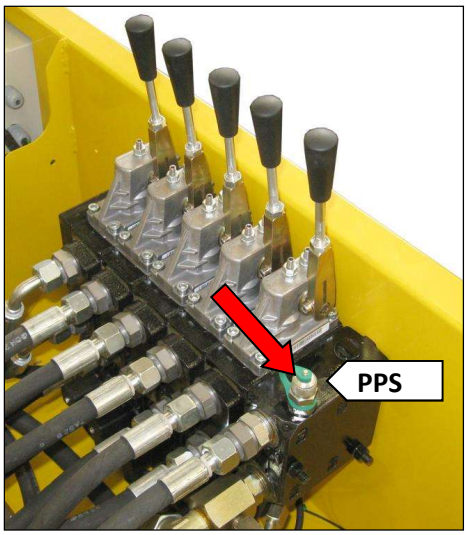



**Figure 24**

- Start the diesel engine and pull the throttle to speed it up.
- Activate one of the manual levers on the distributor (Figure 15 on page 30).
- The service pressure must be :**160 bars** (2320 psi).

**If the pressure is not contained between 140 and 150 bars, set the hydraulic pressure as described hereafter.**

### Setting procedure of the service pressure.

**After this intervention, the machine must be controlled and tested by duly authorized personal.**

- Plug a pressure gauge 0-250 bars (0-4000 psi) at pressure port (Figure 24 page 47).
- Remove the plastic plug (Rep.1Figure 25).
- Put the circuit under pressure by pushing a hand lever in maximum position (in one direction or the other).
- Adjust the service pressure at **160 bars** (2320 psi). with use of a hexagonal key of 6 mm (Rep.2 Figure 25).
- Reinstall the plastic plug (Rep.1Figure 25).

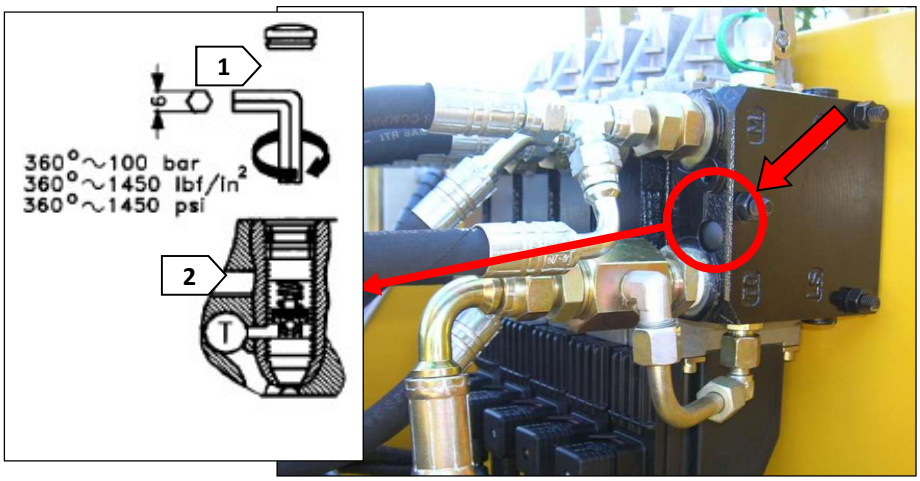



**Figure 25**

## ▸▸ Adjusting moving mechanism movement speeds (hydraulic flow rates).

ⓘ **The flow rate of each moving mechanism in each direction can be set via the two adjustable stops located close to the manual control lever.**

⚠ **We give these manipulations for information, it is strictly prohibited to alter these settings without written agreement from GEISMAR PROVENCE. Modifying these settings may damage the equipment and have consequential effects on the user's safety.**

- Start the diesel engine and pull the throttle to speed it up.
- Put in pressure the hydraulic element which must be set by activating its hand control on one of the two distributors.
- To adjust it, you must (Figure 26) :
  - loosen the locknut with an open end wrench with a 10 mm fork.
  - tighten or loosen to reduce or increase flow rate.
  - work the lever so as to set the stop to the new setting;
  - check, then tighten the locknut.
  -

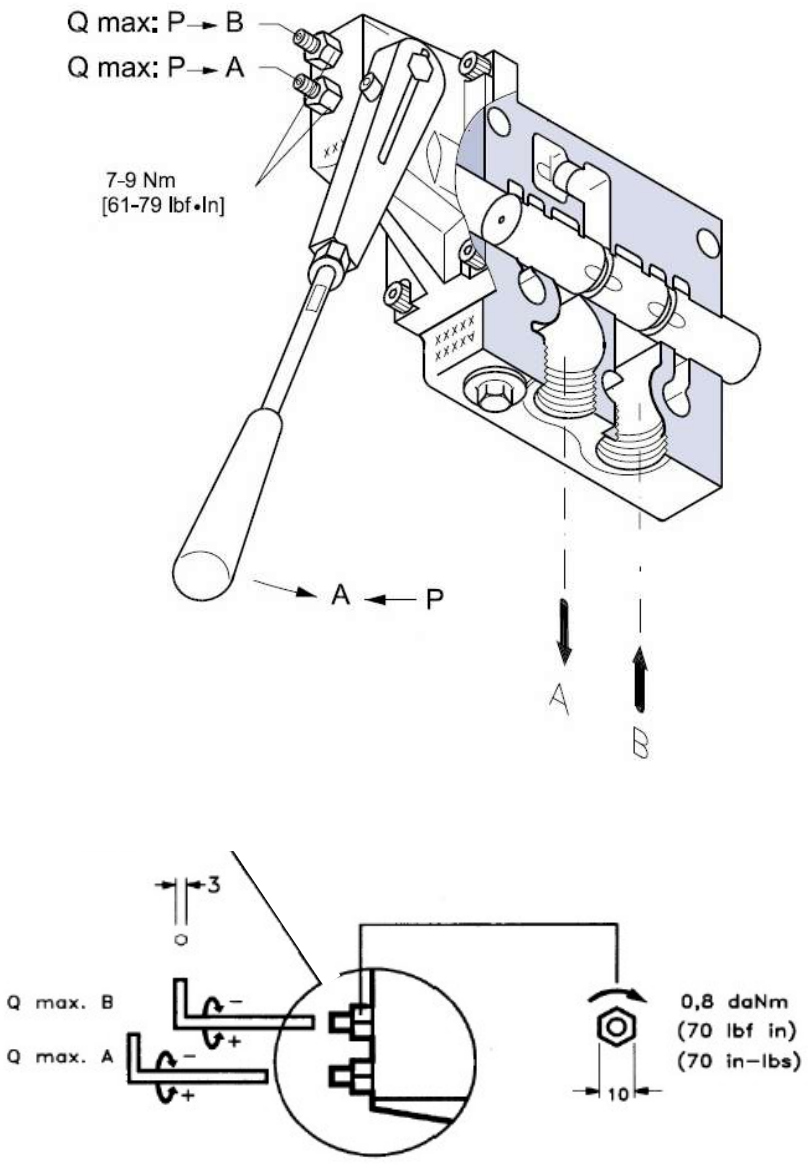



**Figure 26**

## Drain hydraulic oil.

⚠ **Operation conditions :** 

 **(See page 40).**

⚠ **Draining the hydraulic oil means changing the cartridge of the hydraulic filter.**

ⓘ **To ensure that the hydraulic oil change is performed correctly, set the hydraulic circuit to working temperature and make sure that all the cylinders are retracted.**

- Place the receptacle for the drained oil under the hydraulic tank drain cap (Figure 27).
- Remove the oil drain cap
- Let the oil drain out fully.
- Once the oil has completely drained out, refit the cap with its seal.
- Fill up with oil (see page 43).


**Figure 27**

## G.3 ELECTRICAL BOX IMPLANTATION.

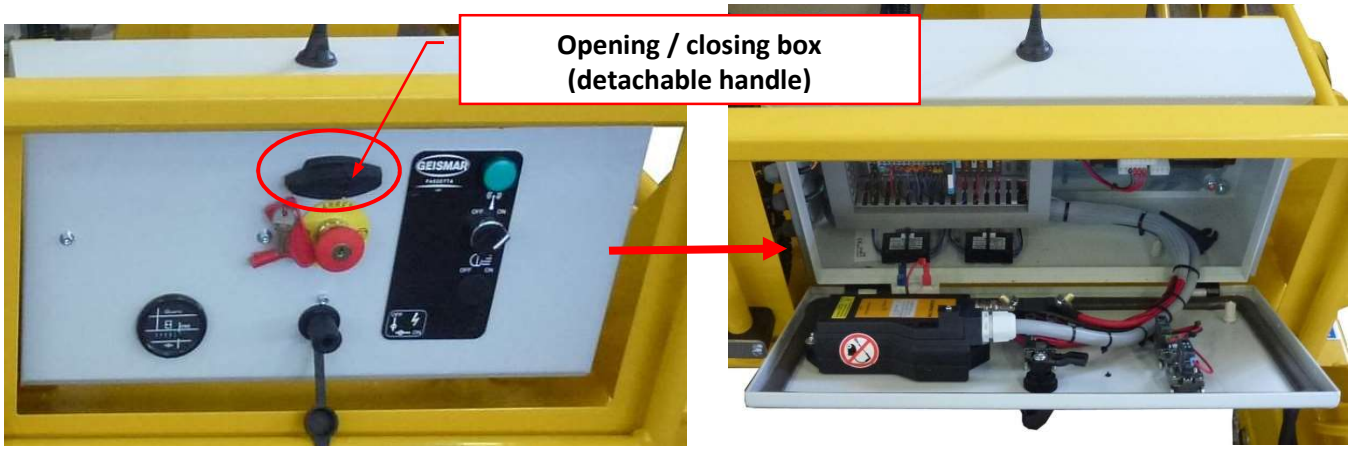



**Figure 28**

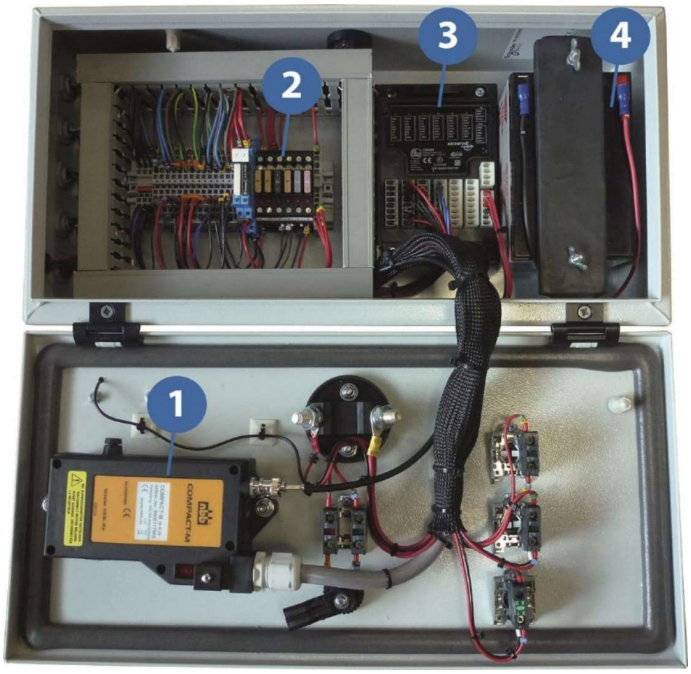
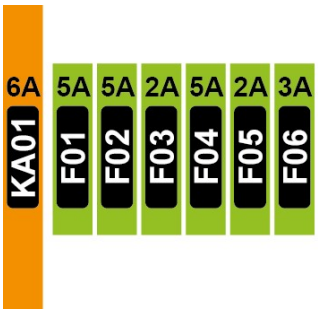
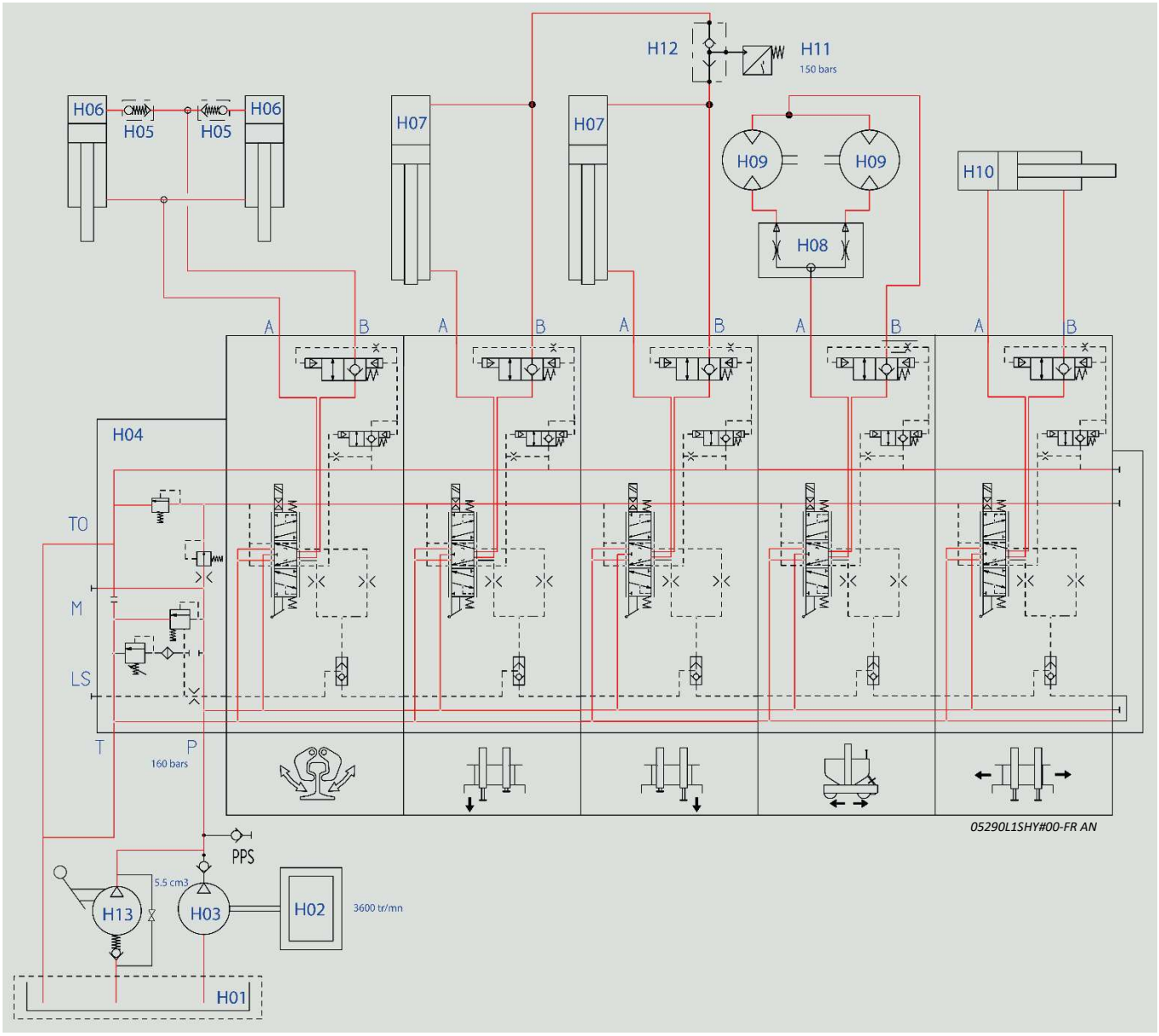



**Figure 29**

| Rep. | Designation | | | |
|---|---|---|---|---|
| 1 | Radio control receiver | | | |
| 2 | Relay | KA01 | Radio reception Green light |  |
| | Fuses | F01 | Radio control receiver | |
| | | | Emergency stop | |
| | | F02 | PLC | |
| | | | Up/ Down left load | |
| | | | Up/ Down Right load | |
| | | F03 | Up/ Down left load | |
| | | | Up/ Down Right load | |
| | | | Radio reception Green light | |
| | | F04 | Overload red light indicator. | |
| | | | Main hydraulic pressure switch | |
| | | F05 | Slewing | |
| | | | Travel | |
| | | | Opening /Closing Rail clamps | |
| | | F06 | Lighting (option) | |
| 3 | PLC | | | |
| 4 | Battery – 12 Volts - 12 Amper / hour | | | |

## G.4 HYDRAULIC DIAGRAM.




| Rep. | Designation | Qty. |
|---|---|---|
| **H00** | Hydraulic tank | 1 |
| **H01** | Hydraulic filter | 1 |
| **H02** | Petrol engine | 1 |
| **H03** | Hydraulic pump | 1 |
| **H04** | Distributors PVG32 / 5 elements | 1 |
| **H05** | Security valve | 2 |
| **H06** | Clamps cylinders | 2 |
| **H07** | Lifting cylinders | 2 |
| **H08** | Flow divider | 1 |
| **H09** | Hydraulic engine OMR 50 | 2 |
| **H10** | Feet slewing cylinders | 1 |
| **H11** | Pressostat | 1 |
| **H12** | Valve | 1 |
| **H13** | Hydraulic hand pompe | 1 |

## G.5 OIL AND GREASE EQUIVALENCES.

| Oil / Grease | Used | Equivalent |
|---|---|---|
| **Petrol engine HONDA GX 270** | **IGOL SYMBOL CERAMIC SAE 5W40 ACEA A3/B3/B4 API SL/SJ/CF** | **For the lubrication of the engine, follow the instructions given in the engine manufacturer's Honda maintenance manual (supplied with the machine).** |
| **Hydraulic oil** | **IGOL MATIC ZN S 46 ISO-L-HV** | TOTAL Esquivais ZS 46 |
| | | SHELL Tellus T 46 |
| | | CONDAT Hydrolub S46 |
| **Grease** | **IGOL Perfect Multifonction** | TOTAL Multis EP.2 |
| | | SHELL Retinax EP.2 |
| | | CONDAT Extra stabil EP.2 |