

# Instruction Manual

**4812326321EN**  
**Operation and Maintenance**

**Pneumatic Tire Roller**  
**CP1200 / CP1200W**

**Diesel Engine**  
**Kubota V3307-CR-TE5B (Stage V)**

**Serial number**  
**CP1200W – 10000515xxB007594, xxB007837, xxB007849,**  
**CP1200 – xxB007873, xxB008025, xxB008927**





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## Introduction

### CP1200/CP1200W

Dynapac CP1200 is a 12 tones pneumatic tire roller with 5,774 ft. (1.760 m) width. CP1200 is also available on the wide base version (CP1200W), with larger tires and 6,857 ft (2.090 m) width.

The equipment is designed with five directional wheels at the front and four at the rear, providing enhanced maneuverability. Its flexible ballast system, coupled with a comprehensive range of optional attachments, allows for a variety of configurations to meet diverse operational needs. The CP1200 is frequently utilized in conjunction with other asphalt compactors to ensure optimal surface sealing. Furthermore, it is effective for applications involving base layers, sub-bases, and stabilized soil.

### Warning symbols



***WARNING! Damage to the machine or its parts.***



**CAUTION! Risk of death or injuries.**

### Safety information



***The Safety Manual delivered with the machine shall be read by the operator. Always follows the safety instructions and keep the Manual inside the machine.***



***It is recommended to at least train the operators on daily handling and maintenance of the machine, according to the Instruction Manual. Passengers are not allowed on the machine, and the operator must be on the seat whenever he operates the equipment.***



***Read the entire manual before starting the machine and before performing any maintenance.***



***Request immediately new manuals if the old ones are lost damaged or become illegible.***



***Make sure there is a good vent (air exhaust) when the engine is turned on in closed facilities.***

## **General Information**

This manual contains instructions to operate and perform the maintenance of the machine.

The machine's maintenance shall be performed correctly in order to obtain the maximum performance, and the equipment shall also be kept clean, so leakage, loosen bolts and connections can be found as soon as possible.

Perform a daily inspection of the machine before use to detect possible leakage or other malfunctions.

Check the floor beneath the machine. Leakages are easier to detect on the floor than on the machine itself.

If leaks are detected in hoses or connections, immediately contact the authorized technical assistance to carry out the necessary repairs.



**THINK ABOUT THE ENVIRONMENT! Do not dispose oil, fuel or other hazard substances to the environment. Always dispose correctly used filters, draining oil and fuel residues. Is prohibited dispose of tires in the environment. Dispose of waste tires at authorized collection points.**

This manual contains instructions for periodic maintenance, which are usually performed by the operator.



Other engine instructions can be found at the manufacturer's manual.

## **CE Marking and Statement of Compliance**

### **(APPLIED TO MACHINES SOLD WITHIN THE EUROPEAN COMMUNITY)**

This machine is equipped with a CE Marking, which signifies its compliance with all relevant health and safety directives at the time of delivery, as outlined by the 2006/42/EC Machinery Directive, in addition to adhering to other applicable machinery directives.

Accompanying the machine is a "Statement of Compliance." This document specifies the relevant directives and supplements, along with the harmonized standards and other pertinent regulations that apply.

**Safety - General instructions**

(You must also read the Safety Manual)



1. Read and understand this Manual before starting and operating the machine. The operator must be fully familiar with the equipment before starting it.
2. Observe and follow all instructions in the Maintenance Section.
3. Do not operate the machine if you are unqualified, untrained or do not have experience. **NEVER** allow passengers to be present and **ALWAYS** operate the machine seated on the operator seat.
4. Do not operate the equipment if it requires repair or adjustment.
5. When getting on and off the machine, use the stairs and handrails. **NEVER** go up or down with the machine in motion.
6. The ROPS (Roll Over Protective Structure) should always be used when the machine is operated on unsafe ground. Always use the seat belt when the ROPS is on.
7. On sharp turns, travel at low speed.
8. Avoid moving near of cliffs or with a steep side slope. Operate the machine in Turtle mode and always examine the operation of the brakes.
9. When operating the machine near potholes or by the curb, make sure that at least 2/3 of the tires are over compacted material.
10. Be careful of obstacles above your head. Always look up and down. Make sure there are no obstacles in the direction of travel, either on the ground or in front of and behind the compactor.
11. Pay special attention when operating on uneven floors.
12. Obey all safety rules and use the appropriate protective equipment for the work to be performed.
13. Always keep the compactor clean. Immediately wipe off dirt, oil, and grease present on the operator's platform. Keep all flares, flashlights, headlights, and decals clean and clearly visible and legible.
14. Observe the following safety measures when fueling the machine:
  - Turn off the engine;
  - Do not smoke;
  - Do not allow sparks or flame near the equipment;
  - To avoid sparks, ground the refueling nozzle.
15. Before performing any maintenance operation, ensure that the machine is in a suitable location. Turn off the engine, chock the compactor wheels, apply the emergency/parking brake, and place a warning tag on the instrument panel indicating that maintenance work is in progress. If necessary, isolate the machine's electrical circuit by disconnecting the battery using the master switch.
16. If the noise level of the machine is higher than 85 dB (A), wear suitable ear protectors. The noise level can vary according to the type of work the equipment is subjected to.
17. Do not modify the machine for any reason, as this action may affect personal and equipment safety. Any modification to the machine requires prior written approval from *DYNAPAC*.
18. Operate the equipment in turtle mode until the hydraulic oil reaches normal working temperature. The braking distance can become longer than normal when the oil is cold.

19. For your own protection, always wear:
  - Helmet;
  - Working boots with steel toecaps;
  - Ear protectors;
  - Reflecting clothing;
  - Working gloves.
20. If there is a cab in the machine, operate it always with the doors closed and with the seat belt.

**Safety - When operating**

*Prevent people from entering at the danger area, that is at least 23 ft (7 m) in all the directions from the machine operating. The operator can allow a person to be in the danger area, but in this case, care must be taken and the machine must not be operated unless this person is in a visible place or has clear indication of where he/she is.*



*Avoid driving across a slope. Drive straight up and down sloping ground.*

**Operating transversally on slopes**

*The machine must never be operated from the outside of the cab. The operator shall be seated when operating.*

**Slopes**

This angle was measured on a flat, hard surface and with the machine in a stationary position.

The steering angle is zero, the tires pressure is in a normal range and all the tanks are full.

Always remember that loosen ground, the machine direction, different tire pressures, the operation speed and raising the center of gravity may cause the machine to turn, even on slopes smaller than the ones stated here.

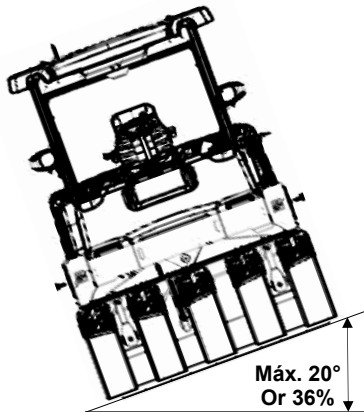


Fig. – Slopes angle



*If you need to leave the cab in emergency situations, take off the hammer at the rear right pillar and break the opening windows that are also on the right.*



*It is only recommended the use of machines equipped with ROPS (Roll Overprotective Structure) when driving transversally on slopes or unsafe ground.*



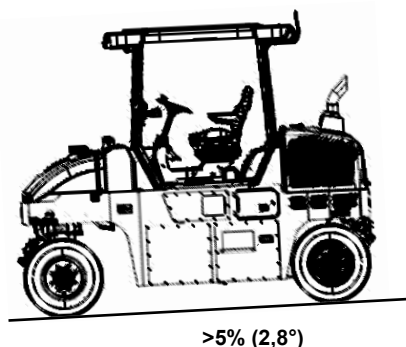
*Whenever possible, avoid drive transversally a slopes. On slopes, drive straight up and down.*



*The speed must always be slow when operating on slopes.*

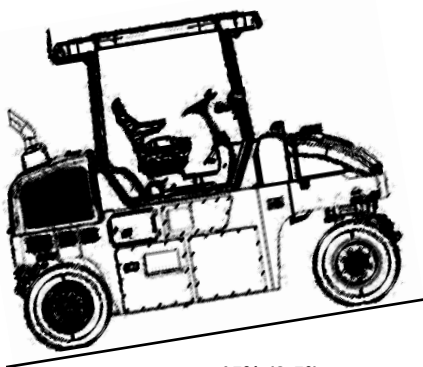


*Always operate the machine with the doors closed and with the seat belt fastened.*



>5% (2,8°)

Fig. – Steep ground  
 $v < \text{max. speed. (9.3 mph or 15 km/h)}$ .



>15% (8,5°)

Fig. – Steep slope  
 Low speed (up to 4.7 mph or 7.5 km/h)

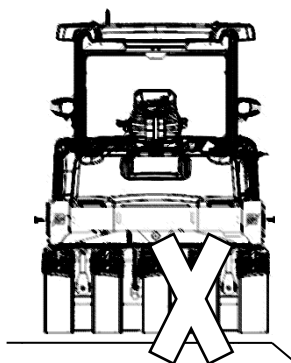


Fig. – Incorrect position of wheel when  
 driving near edges.

### Transport on steep ground

During the transport on steep ground (slope >5%), be careful to not exceed the roller's maximum speed.

Selecting the low speed will increase the engine brake system efficacy and the life of the braking system.

### Operation and transport on steep ground

**Always** drive the machine at slow speed when operating or during transport on steep ground. (>15%).



To drive or stop the machine, the rear wheels shall **always** be towards the slope, that is, the roller shall go up normally and shall go down in reverse.



**Make sure there are no obstacles both at front or behind your work area.**

### Driving near edges



**Never operate with the tires outside the edge, the substrate might not have full bearing strength or the edge is close to a slope.**



**Keep in mind that the machine's center of gravity moves outwards when steering. For example, the center of gravity moves to the right when you steer to the left.**

Avoid operating close to edges and ditches and the like as well as on poor ground conditions that jeopardizes the tires strength and capacity to support the machine. Pay attention to potential obstacles above the machine, such as overhead cables and the branches of trees etc.

Pay particular attention to the stability of the substrate when compacting close to edges and holes. Do not compact with a large overlap from the previous track in order to maintain tires stability.

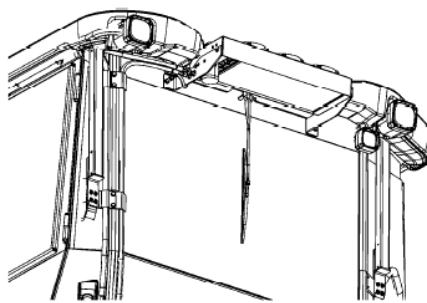
**Safety – Option items****Air conditioning**

*Fig. – Position of air conditioning*



*The system operates with pressurized refrigerant gas. And highlighting the importance of environmental stewards. Consequently, the release of refrigerant into the atmosphere is strictly prohibited to ensure the protection of our environment.*



*The maintenance of the air conditioning system shall be carried out only by trained people and with the proper tools and equipment.*



*The air conditioning system is pressurized. The incorrect handling can result in serious personal injury. Do not loose or disconnect hoses and connections with the system loaded.*



*The system must be refilled with approved coolant when necessary. Refer to the safety decal next to the replacement and filling place.*

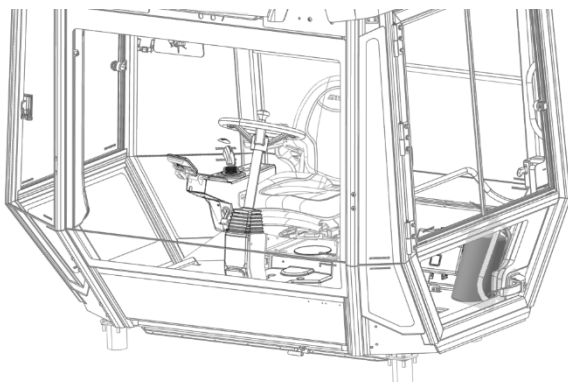
**Fire extinguisher**

*Fig. Fire extinguisher inside the cabin (Optional).*

It is recommended that fire extinguishers be handled only by personnel previously trained in fire extinguishing techniques.

Follow all basic instructions provided on the instruction panels of each extinguisher.

The fire extinguisher is located inside the cabin, to the left of the operator.

For proper use, read the instructions on the extinguisher label.



*Do not test the extinguisher. Even a small discharge may reduce the internal pressure, rendering the extinguisher inoperative.*



*Never discharge a fire extinguisher at a person's face.*



*Never throw a fire extinguisher into a fire or leave it unattended. Increased pressure may cause an explosion, even if the extinguisher is only partially discharged.*



*Fire extinguishers must undergo periodic maintenance immediately after the charge expiration date.*



*After use, leave it at a collection point so that it can be recharged immediately.*

### Environment – General information

#### Operation with low-sulfur diesel fuel

Dynapac machine engines require operation on low-sulfur diesel fuel that does NOT exceed 15 ppm sulfur content by mass.

Fuels must meet the standards as shown in the Table below.

| Norm                                       | Country             |
|--------------------------------------------|---------------------|
| ASTM D975                                  | United States       |
| GB19147 and GB252                          | China               |
| EN590                                      | European Union (EU) |
| IS                                         | India               |
| Australia Fuel Standard Determination 2019 | Australia           |
| JIS K 2204                                 | Japan               |
| CAN/CGSB-3.517 Types A and B ULS           | Canada              |
| ANP Resolution 50/2013 S10                 | Brazil              |

If there are differences, the Table below is considered as a minimum requirement.

| Fuel Properties Required by the Engines Used by Dynapac    |                            |       |                          |                                            |
|------------------------------------------------------------|----------------------------|-------|--------------------------|--------------------------------------------|
| Property                                                   | Units                      | Bound | Method                   | Value                                      |
| Flash Point                                                | °C [°F]                    | Min.  | ASTM D93                 | 38 [100,4]                                 |
|                                                            |                            |       |                          | 52 [125,6]                                 |
| Density                                                    | g/cc [lb/pol3]             | Min.  | ASTM D4052               | 0,816 [ 0,029 ]                            |
|                                                            |                            | Max.  |                          | 0,876 [ 0,032 ]                            |
| Distillation                                               | °C10%<br>[°F10%], %<br>vol | Min.  | ASTM D86                 | 150 [302]                                  |
|                                                            | °C90%<br>[°F90%], %<br>vol | Min.  |                          | 282 [539,6]                                |
|                                                            |                            | Max.  |                          | 338 [640,4]                                |
| <b>Fig. Fire extinguisher inside the cabin (Optional).</b> | -                          | -     | ISO 4406                 | Associate Codes 18/16/13                   |
| Grey                                                       | % mass                     | Max.  | ASTM D482                | 0,01                                       |
| Sulphur                                                    | Ppm                        | Max.  | ASTM D5453<br>ASTM D2622 | Refer to the corresponding Owner's Manual. |

|                     |                |      |                      |                                                    |
|---------------------|----------------|------|----------------------|----------------------------------------------------|
| Copper Strip        | classification | Max. | ASTM D130            | No. 3                                              |
| Cetane Number       | -              | Min. | ASTM D613            | 42                                                 |
| Kinematic Viscosity | Cst            | Min. | ASTM D445            | 1,3                                                |
|                     |                | Max. |                      | 4,1                                                |
| Water               | Ppm            | Max. | ASTM D6304 ISO 12937 | 200                                                |
| FAME Content        | % vol          | Max. | EN 14078             | 20                                                 |
| Fog Point           | °C [°F]        | Max. | ASTM D2500           | Must meet the minimum expected ambient temperature |
| Lubricity (HFRR)    | micron [in.]   | Max. | ASTM D6079           | 520 [0,0205]                                       |
| Sodium Content      | Ppm            | Max. | ASTM D7111           | 0,5                                                |
| Chlorine Content    | Ppm            | Max. | ASTM D4929           | 10                                                 |



***In situations of fuel oil leakage for any reason, immediately contain it with specific materials and dispose of them according to current environmental legislation.***

### **Regarding the use of batteries**

Preferably use batteries from companies with international quality and environmental certifications.

It is recommended to change the battery at vendors authorized by the supplier. If this is not possible, leave the discharged battery at a certified battery recycling center for the proper disposal.



***Batteries with an electrochemical lead-acid system may not have levels of metals of interest, Mercury (Hg) and Cadmium (Cd), above the limits, according to current environmental legislation***

### **Regarding the use of tires**

For damaged tires, it is NOT recommended to be repaired but replaced. After the exchange, leave the used or damaged tires at authorized collection points so that they can be collected and disposed of in accordance with environmental legislation.



***Used or unusable tires: consult the manufacturer's manual.***

### Precautions with the environment when replacing oils

The maintenance intervals for changing the hydraulic and lubrication oils (engine and transmission) must be respected according to the information in this manual.

The replacement must be carried out in a suitable location by trained professionals. In the event of oil leaking, immediate containment is required using suitable material. This material will then be disposed of in accordance with current environmental legislation.

The oils and their respective filters must be separated and classified according to their characteristics and left at the collection points for their final disposal, according to current environmental legislation.



***When changing used or contaminated oil, separate EACH FILTER according to the filtered fluid, correctly identifying them for disposal according to current environmental legislation and updated standards.***



***Correctly identify the hydraulic fluids used in your equipment, as each type of fluid may have specific requirements for disposal, classifying them according to their composition and characteristics, according to current environmental legislation and updated standards.***



***Used or contaminated oil filter with Class I hazardous waste classification.***

### Cab/engine cooling system

Maintenance intervals must be respected for the cabin/engine cooling system, following all the guidelines in this manual or the manufacturer's for changing the engine coolant and A/C coolant.

Care must be observed when changing the HFC - R134A refrigerant. Each region or country establishes technical, environmental and safety criteria so that maintenance must be carried out efficiently and to avoid impacts on the environment.

The replacement of the engine coolant must follow all the procedures contained in this manual and the engine manufacturer, where it must be drained in an appropriate place and separate this liquid so that it can be disposed according to current environmental legislation.

If there is a leak, containment must be immediately with appropriate material and disposed of correctly.



***Its improper disposal and contamination in the environment can result in serious impacts: pollution of water resources, soil contamination, impact on biodiversity and human health problems.***

## Technical Specifications

### Vibrations – Operator station (ISO 2631)

The vibration levels are measured according to the operational cycle described in the EU directive 2000/14/EC on machines equipped for the EU market with the operator's seat in the transport position.

**Stage V** – The measured vibrations on the whole body are below the  $0.5 \text{ m/s}^2$  (aren) and  $9,1 \text{ m/s}^{1,75}$  (VDVR) action value, as specified in the directive 2002/44/CE. The limit is  $1.15 \text{ m/s}^2$  (aren) and  $21 \text{ m/s}^{1,75}$  (VDVR).

The measured vibrations on the hand/arm are also below the  $2.5 \text{ m/s}^2$  (aren) action value, as specified in the same abovementioned directive. The limit is  $5 \text{ m/s}^2$  (aren).

### Noise level

#### CP1200/1200W Stage V

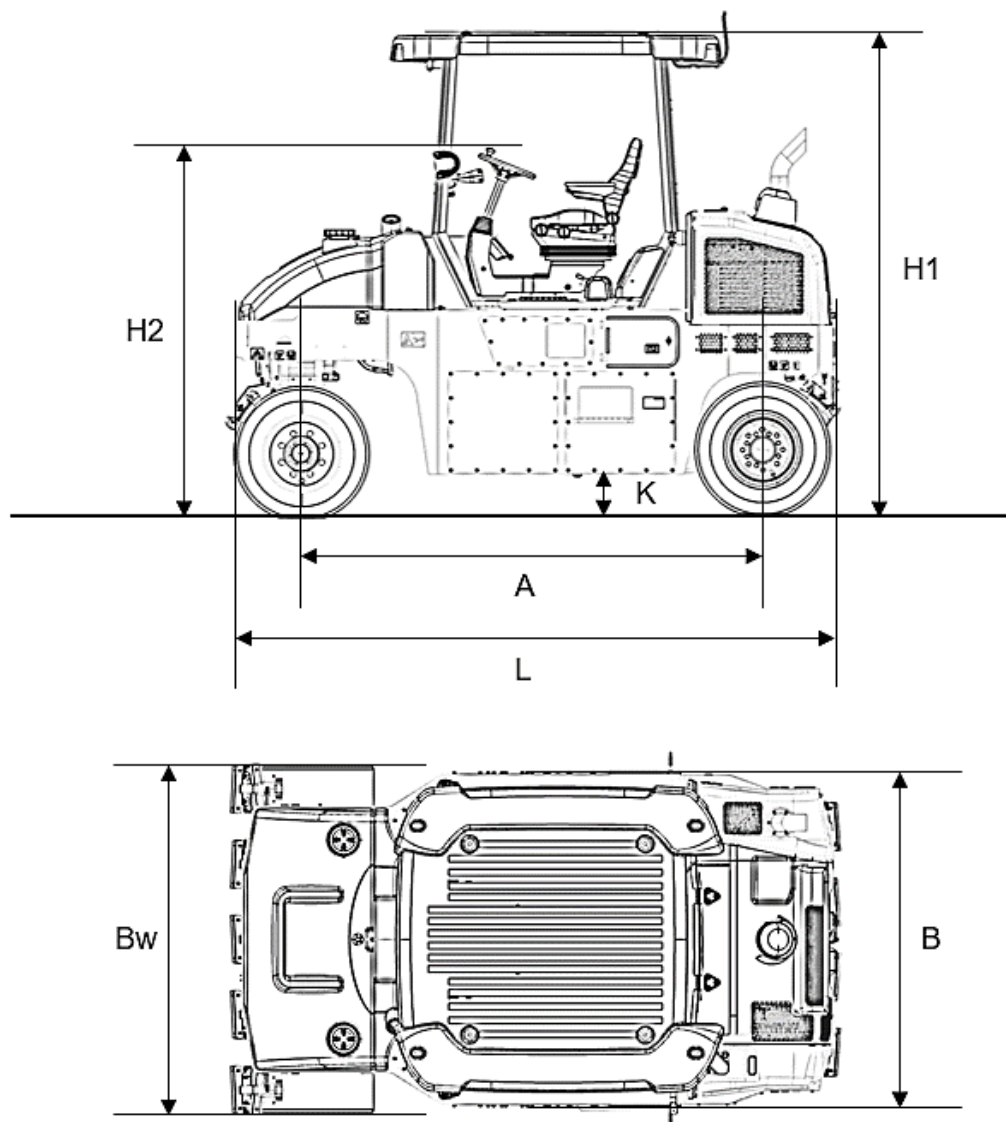
The sound levels are measured according to the operational cycle described in the EU directive 2000/14/EC on machines equipped for the EU market with the operator's seat in the transport position.

|                                                                 |                   |
|-----------------------------------------------------------------|-------------------|
| Guaranteed sound power level, $L_{WA}$                          | 101 dB (A)        |
| Sound pressure level at the operator's ear (platform), $L_{pA}$ | $85 \pm 3$ dB (A) |
| Sound pressure level at the operator's ear (cab), $L_{pA}$      | $80 \pm 3$ dB (A) |

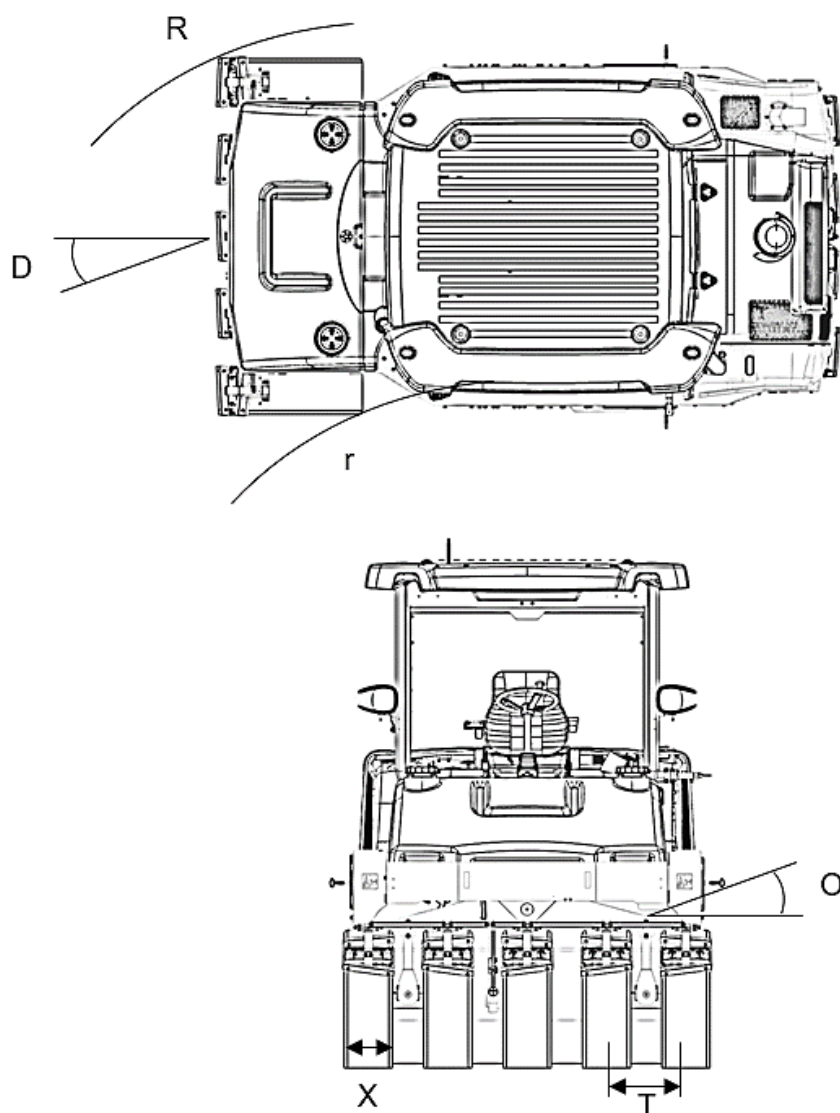
During normal operations, the values abovementioned may differ, depending on the work specific conditions.

### Electrical system

The machines were tested for electromagnetic compatibility (EMC) in accordance with EN 13309:2000: "Construction machinery".

**Technical specifications - Dimensions**
**Dimensions**


| Dimensions                          | mm   | inches |
|-------------------------------------|------|--------|
| A – Between axles                   | 2760 | 108.66 |
| B – Total width (CP1200)            | 2057 | 80.98  |
| B – Total width (CP1200 with cab)   | 2250 | 88.58  |
| Bw – Total width (CP1200W)          | 2083 | 82.01  |
| Bw – Total width (CP1200W with cab) | 2260 | 88.98  |
| H1 – Total height                   | 2935 | 115.55 |
| H2 – Total height (Platform)        | 2208 | 86.93  |
| K – Height from the ground          | 268  | 10.55  |
| L – Total length                    | 3690 | 145.28 |


**CP1200**

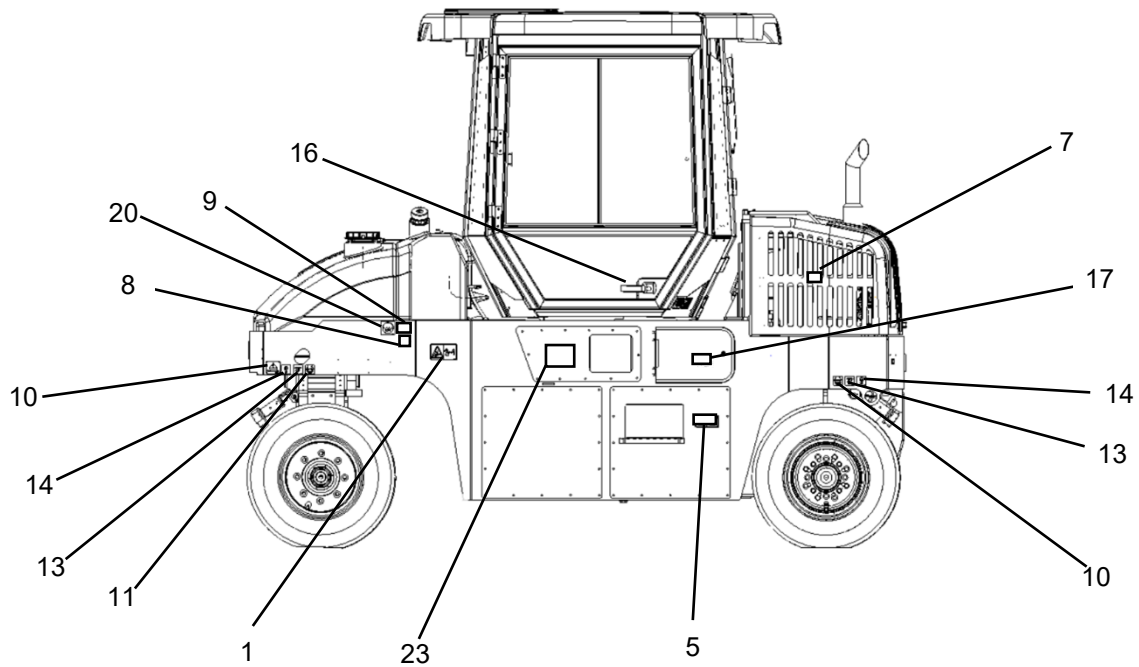
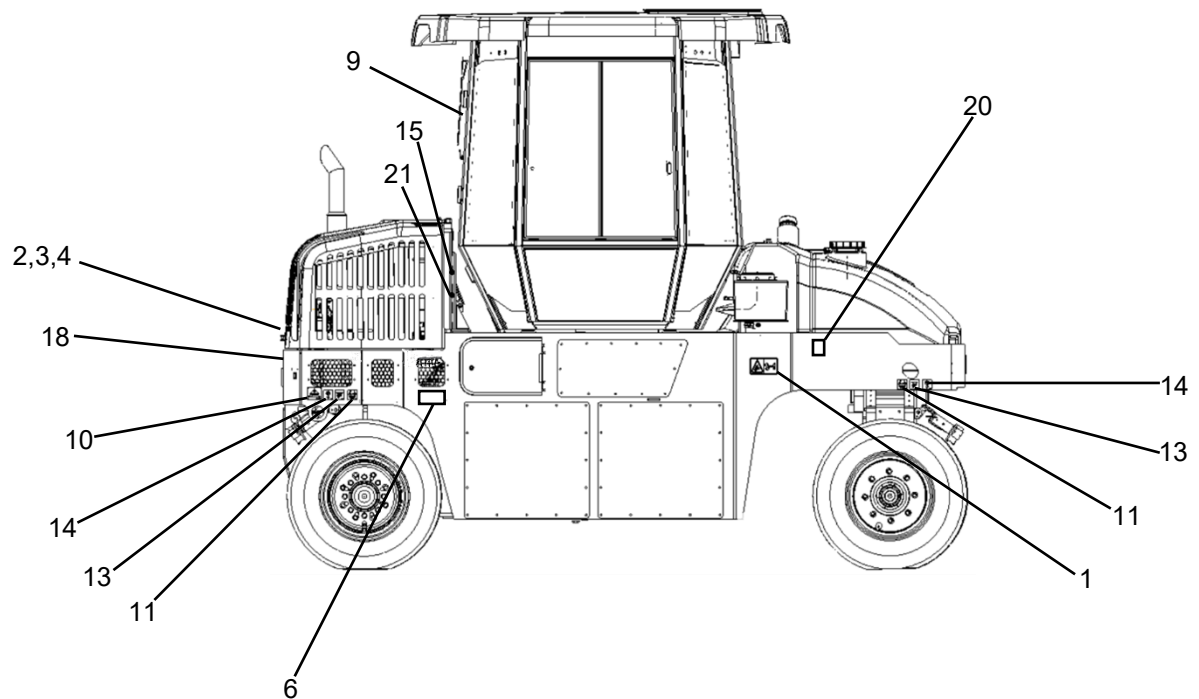
| Dimensions       | mm   | inches |
|------------------|------|--------|
| R – Outer radius | 7090 | 279.13 |
| r – Inner radius | 4390 | 172.83 |
| X – Tire width   | 217  | 8.54   |
| T – Tire overlap | 24   | 0.94   |

**CP1200W**

| Dimensions       | mm   | inches |
|------------------|------|--------|
| R – Outer radius | 7090 | 279.13 |
| r – Inner radius | 4390 | 172.83 |
| X – Tire width   | 275  | 10.83  |
| T – Tire overlap | 50   | 1.97   |

| Dimensions               | Degree |
|--------------------------|--------|
| O – Vertical oscillation | 3,5    |
| D – Direction angle      | 28     |

**Safety decals - Description and location**



### Safety decals - Description and location (cont.)

Always make sure that all the safety decals are completely legible and remove the dirt or request for new ones if they are illegible. Use the part number indicated on each decal.



**WARNING:**  
 Crush zone, wheel.  
 Keep a safe distance from the crush zone.



**WARNING:**  
 Rotating engine components, be careful!  
 Keep your hands off the danger zone.



**WARNING:**  
 Hot surface!  
 Keep your hands off the surface.



**WARNING:**  
 Read carefully the towing chapter before releasing the brakes. Crushing injury danger.



**WARNING:**  
 The operator must read the Safety and Engine Manuals, as well as the Operation and Maintenance instructions.



**WARNING:**  
 High pressure fluid.  
 Make sure to release the pressure from the accumulators before opening the hydraulic system.



**WARNING:**  
 Gas shall not be used to start the machine.



**WARNING:**  
 Ultra low sulfur fuel only.



Diesel oil (Stage V).

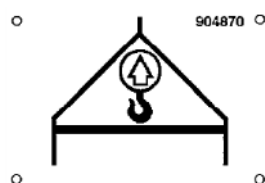
Safety decals - Description and location (cont.)

9



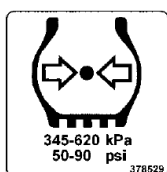
Emergency exit - Cab.

10



Hoisting plate

11



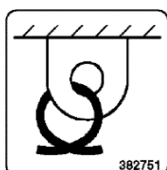
Tire pressure

12



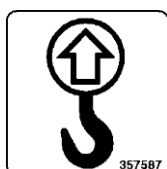
Diesel oil

13



Securing point

14



Lifting point

15



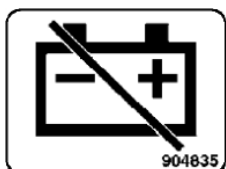
Hydraulic oil

### Safety decals - Description and location (cont.)

16 Handbook compartment



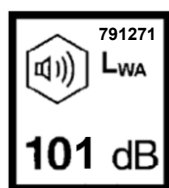
17 Battery switch



18 Battery voltage



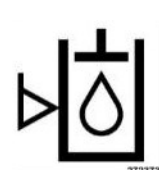
19 Sound power level



20 Water tank



21 Hydraulic oil level



22 Do not spray with water



23 Dyn@Link



## Identification plates

### Machine plate

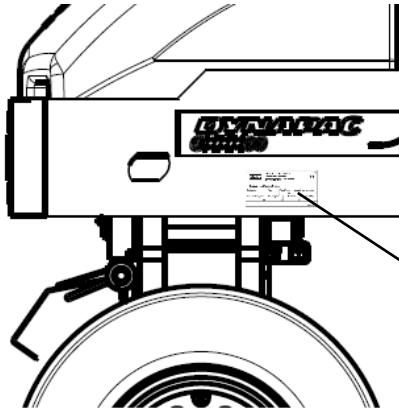


**Fig. – Frame**  
**1. Machine plate**

The machine plate (1) is on the front, on the left side of the operator's platform.

It specifies the manufacturer's name, the type of the machine, the serial number, the service weight, the engine power and the manufacturing year (machines delivered outside EU do not present CE marking and in some cases, they also do not present the manufacturing year).

| Product Identification Number |        | >XXXXXXXXXXXXXXXXXX< |                            |
|-------------------------------|--------|----------------------|----------------------------|
| Designation                   | Type   | Rated Power          | Max axle load front / rear |
| XXXXXX                        | XXXXXX | XXX kW               | XXXX/XXXX kg               |
| Gross machinery mass          |        | Operating mass       | Max ballast                |
| XXXX kg                       |        | XXXX kg              | XXXX kg                    |
|                               |        |                      | Date of Mfg                |
|                               |        |                      | XX/XXXX                    |

**NOTE:** State the machine plate's serial number when ordering spare parts.

### PIN (Product Identification Number) at the frame

The PIN - product identification number (1) is punched on the right side of the right frame. It is the same number of the machine plate (serial number).

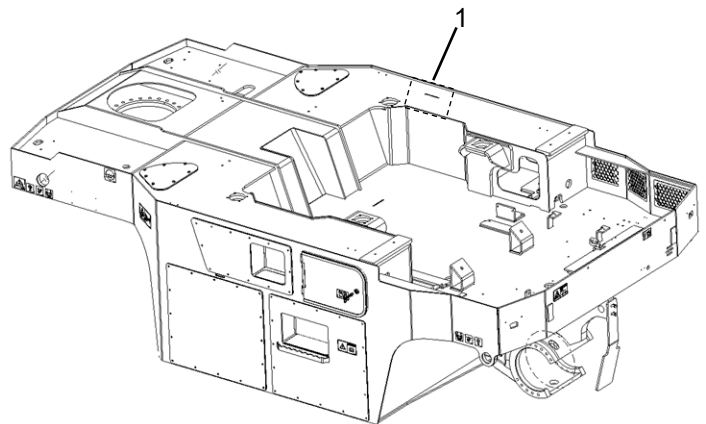


**Fig. – Frame**  
**1. PIN**

|          |          |          |          |          |          |
|----------|----------|----------|----------|----------|----------|
| 100      | 00123    | V        | E        | B        | 123456   |
| <b>A</b> | <b>B</b> | <b>C</b> | <b>D</b> | <b>E</b> | <b>F</b> |

### Explanation of the 17PIN (Product Identification Number)

- A - Manufacturer's code (100 = Dynapac)
- B - Family/model code (00515 = CP1200 Tier III)  
(00520 = CP1200 Stage V)
- C - Check code
- D - Year of manufacturing (E=2014, F=2015...)
- E - Production's unit code (B = Sorocaba, Brazil)
- F - Serial number (de 000001 to 999999)

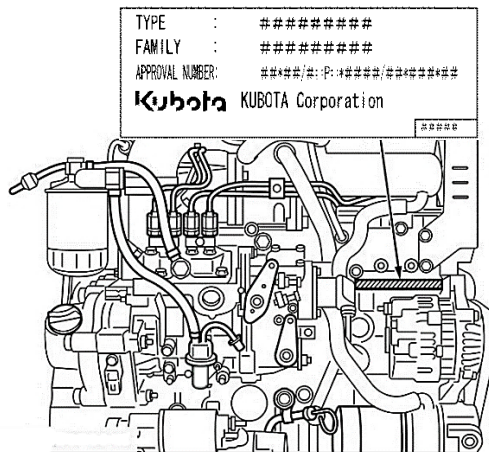


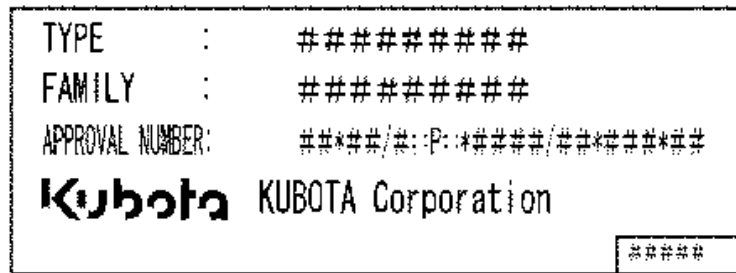
Fig. – Engine  
1. Engine plate

### Engine plate

The engine plate (1) is on the cylinder head cover (1), and it can be accessible when the hood is open.

The plate is also on the top step of the operator's platform.

It contains information like the serial number and the engine specifications.



**NOTE:** State the engine plate's serial number when ordering spare parts.

## Instruments/controls

### Control panel, side panel and command keyboard

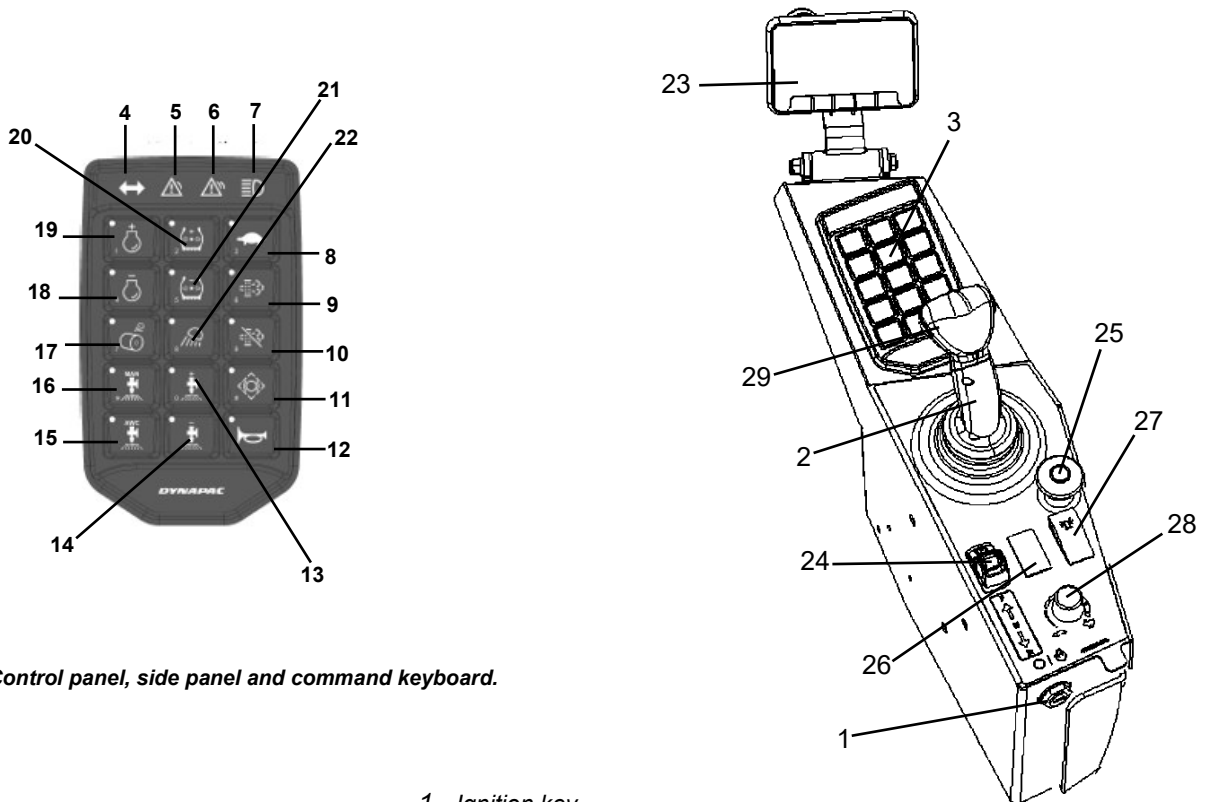


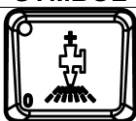
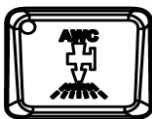
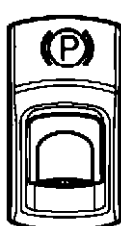
Fig.: Control panel, side panel and command keyboard.

1. Ignition key
2. Forward/reverse lever
3. Command keyboard
4. Direction lights (OPTION)
5. Attention lights
6. Warning lights
7. High beam lights (OPTION)
8. High/low speed
9. Enable the regeneration (Stage V)
10. Disable the regeneration (Stage V)
11. Brake test
12. Horn
13. "+" increase of the sprinkler interval (timer)
14. "-" decrease of the sprinkler interval (timer)
15. "AWC" automatic sprinkler
16. "MAN" manual sprinkler
17. Night working lights (OPTION)
18. Decrease engine rotation
19. Increase engine rotation
20. "+" increase in the tire pressure (OPTION)
21. "-" decrease in the tire pressure (OPTION)
22. Working lights (OPTION)
23. Display
24. Parking brake
25. Emergency stop button
26. Warning light switch
27. Rotate beacon lights
28. Speed limiter
29. Emulsion tank (OPTION)

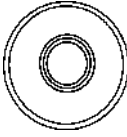
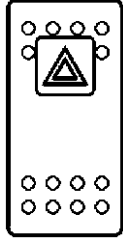
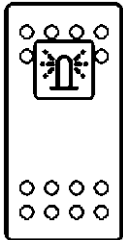
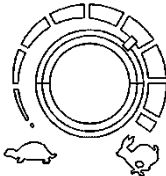
### Instrument/Controls - Description and Function

| Nº | DESIGNATION                        | SYMBOL                                                                              | FUNCTION                                                                                                                                                                                                                                                                                                                                                                                  |
|----|------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1  | Ignition key                       |    | The electric circuit is off.                                                                                                                                                                                                                                                                                                                                                              |
|    |                                    |    | All instruments and electric controls are on.                                                                                                                                                                                                                                                                                                                                             |
|    |                                    |    | The starter is activated.                                                                                                                                                                                                                                                                                                                                                                 |
| 2  | Forward/reverse lever              | -                                                                                   | <p>To turn on the machine, the lever must be in "Neutral ". The direction of travel and the machine speed is regulated with the forward - reverse lever. If is moved forward, the roller moves forward, backward moves back.</p> <p>The roller speed is proportional to the distance between the lever and the neutral position. The further away from neutral, the higher the speed.</p> |
| 3  | Command keyboard                   | -                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                           |
| 4  | Direction lights                   |   | It shows that the direction lights are activated (activation via switch at the steering column).                                                                                                                                                                                                                                                                                          |
| 5  | Attention lights                   |  | Indicates that there are general problems in the machine. See the multifunction screen for the description.                                                                                                                                                                                                                                                                               |
| 6  | Warning lights                     |  | Indicates that there are flaws in the machine. See the multifunction screen for the description.                                                                                                                                                                                                                                                                                          |
| 7  | High beam lights                   |  | It shows that the high beam lights are on                                                                                                                                                                                                                                                                                                                                                 |
| 8  | High/low speed                     |  | <p>The roller starts always in the <b>high speed</b> mode.</p> <p>The <b>low speed</b> mode is obtained when activated.</p>                                                                                                                                                                                                                                                               |
| 9  | Button to enable the regeneration  |  | Press to enable the regeneration (Stage V Engine).                                                                                                                                                                                                                                                                                                                                        |
| 10 | Button to disable the regeneration |  | Press to disable the regeneration (Stage V Engine).                                                                                                                                                                                                                                                                                                                                       |
| 11 | Brake test button                  |  | Press to test the brake drive mechanism.                                                                                                                                                                                                                                                                                                                                                  |
| 12 | Horn                               |  | Press to play an alert sound.                                                                                                                                                                                                                                                                                                                                                             |

## Instrument/controls - Description and Function

| Nº | DESIGNATION                                    | SYMBOL                                                                              | FUNCTION                                                                                                                                                                                                                              |
|----|------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 13 | "+" increase of the sprinkler interval (timer) |    | The sprinkling frequency increases each time the water volume on the wheels is also increased.                                                                                                                                        |
| 14 | "-" decrease of the sprinkler interval (timer) |    | The sprinkling frequency decreases each time the water volume on the wheels is also decreased.                                                                                                                                        |
| 15 | Automatic sprinkler                            |    | When activated, sprinkling is automatically turned on / off when the forward/reverse lever is in the "neutral" position.                                                                                                              |
| 16 | Manual sprinkler                               |    | When activated, the sprinkler is turned on / off.                                                                                                                                                                                     |
| 17 | Night work lights                              |    | Press to turn on/off the night work lights, if equipped.                                                                                                                                                                              |
| 18 | Engine speed reduction (-)                     |   | Press to decrease engine speed ( three stages )                                                                                                                                                                                       |
| 19 | Increase engine speed (+)                      |  | Press to increase the engine speed ( three stages )                                                                                                                                                                                   |
| 20 | "+" increase in the tire pressure              |  | When activated, it increases the tires pressure.                                                                                                                                                                                      |
| 21 | "-" decrease in the tire pressure              |  | When activated, it decreases the tires pressure.                                                                                                                                                                                      |
| 22 | Working lights                                 |  | Press to turn on/off all the working lights.                                                                                                                                                                                          |
| 23 | Display                                        | -                                                                                   | It shows the engine and transmission functions. Refer to the Section: "Before Starting".                                                                                                                                              |
| 24 | Parking brake                                  |  | <p>When it is pressed, the parking brake is activated. To turn it off, slide the red part backwards (towards you) and change the switch position.</p> <p><b>NOTE:</b> to start the machine, the parking brake shall be activated.</p> |

## Instrument/controls - Description and Function

| Nº | DENOMINATION          | SYMBOL                                                                              | FUNCTION                                                                                       |
|----|-----------------------|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|
| 25 | Emergency stop button |    | Press it to turn off the machine and the engine. All the power supply is also turned off.      |
| 26 | Hazard warning lights |    | Press the switch to activate the hazard warning lights.                                        |
| 27 | Rotating beacon       |    | Press the switch to activate the rotating beacon.                                              |
| 28 | Potentiometer         |   | Adjust the potentiometer to limit machine speed to maximum / minimum.                          |
| 29 | Emulsion tank         |  | Keep press the button for activate the secondary sprinkler and spray the agent over the tires. |

### Control panel – General Description



**Fig. – Splash screen**

When the ignition key is in the position "I", the start screen is visible on the display. It remains activated for a few seconds (1.5 seconds) then it switches to the status screen.



**Fig. – Status screen**

The status screen provides information about the fuel level, the sprinkler tank water level, the working hours and the voltage level. The water and fuel levels are specified in percentage (%).

The screen remains visible until the Diesel engine is turned on or if one of the function buttons below the screen is pressed.



**Fig. – Main working screen**

If the engine starts before you choose the screen, it will switch to the main screen.

This screen provides an overview and it remains on during the operation:

- The speed is shown in the middle of the screen.
- The high/low speed mode is shown with a symbol in the middle of the screen.
- The engine rpm, the asphalt temperature (option) and the tires pressure (option) are shown in the upper left corner and in the lower left corner, respectively.

### Control panel – General Description (cont.)



**Fig. – Main working screen with the menu selection buttons**

A menu field is shown by pressing one of the selection buttons. It is visible for a short time, then it fades out if no selection is made. A menu field appears again by pressing one of the selection buttons (1).

#### Example:



|                                                                                                                                                                     |                                                                                                                          |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
|   | Scroll/selection buttons to choose the available functions.                                                              |
|                                                                                  | Alarm log button to show the alarms of the engine and machine.                                                           |
|                                                                                  | Settings/menu selection button, which opens the main menu. Settings can be changed in the main menu.                     |
|                                                                                  | Exit/return button returns 1 step at once. Pressing the button for approximately 2 seconds displays the main menu again. |



**Fig. – Temperature screen**

The temperature screen shows the engine oil (top of the screen) and hydraulic oil temperature (bottom of the screen). The values are shown in Celsius or Fahrenheit, according to the choice of unit system.

### Control panel – Alarms



*Fig. – Error screen*

When an engine motor alarm is activated, it is shown in the screen. The alarm is sent from the engine's ECM, which tracks its functions.

The message displays SPN and FMI codes and can be read via the engine supplier error code list. To erase the message, press "OK".



*Fig. – Warning screen*

When a machine's alarm is activated, it is shown in the screen with a warning text describing it.

To erase the message, press "OK".

### Control panel – Alarms (cont.)

| SYMBOL                                                                              | DESCRIPTION                                | FUNCTION                                                                                                                                                                   |
|-------------------------------------------------------------------------------------|--------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | Warning symbol, hydraulic oil filter.      | If the symbol appears with the engine in maximum rpm, it shall be necessary to replace the hydraulic oil.                                                                  |
|    | Warning symbol, air filter.                | If the symbol appears with the engine in maximum rpm, it shall be necessary to clean or replace the air filter.                                                            |
|    | Warning symbol, battery charging.          | If the symbol appears with the engine running, the alternator is not charging. Stop the engine and find the fault.                                                         |
|    | Warning symbol, engine temperature.        | If this symbol appears, the engine is too hot. Stop immediately the engine and find the fault. Refer also to the engine manual.                                            |
|    | Warning symbol, hydraulic oil temperature. | This symbol appears when the hydraulic oil is too hot. Do not drive the roller, put the engine on idle, wait until the oil cools down and find the fault.                  |
|  | Warning symbol, low fuel level.            | This symbol appears when the fuel level is 10%.                                                                                                                            |
|  | Warning symbol, low sprinkler water level. | This symbol appears when the sprinkler water level is 10% in the main tank.                                                                                                |
|  | Warning symbol, low braking capacity.      | This symbol appears when the pressure for the brakes are low. If this alarm appears and remains with the machine working, stop it immediately and contact <b>DYNAPAC</b> . |

## Instrument/controls - Description and function

### H1-AC Alarm

| DESCRIPTION                      | FUNCTION                                                                                                         | DISPLAYED MESSAGE | LIMITED MODE | SAFE MODE | YELLOW ALARM | RED ALARM | BUZZER |
|----------------------------------|------------------------------------------------------------------------------------------------------------------|-------------------|--------------|-----------|--------------|-----------|--------|
| Engine Overspeed                 | Engine Speed is greater than 3000 RPM                                                                            | Overspeed         | X            |           | X            |           |        |
| CAN J1939 Fault                  | No response from ECM (Tier 4/Stage V) or Actuator (Tier 3) for more than 5 seconds (Communication has been lost) | J1939             | X            |           | X            |           |        |
| Machine Direction                | Machine is moving in the opposite direction of the joystick                                                      | Machine Direction | X            |           | X            |           |        |
| Hydraulic Motor Overspeed        | Speed sensor frequency is greater than 8000 hz                                                                   | Motor RPM         | X            |           | X            |           |        |
| Forward Valve Fault              | Open Circuit, Short Circuit or value out of range                                                                | Forward Valve     | X            |           | X            |           |        |
| Reverse Valve Fault              | Open Circuit, Short Circuit or value out of range                                                                | Reverse Valve     | X            |           | X            |           |        |
| Machine Power Supply             | Main Control Unit power supply is greater than 16V or less than 9V                                               | Power Supply      | X            |           | X            |           |        |
| Machine Power Supply             | Main Control Unit power supply is greater than 18V or less than 4,5V                                             | Power Supply      |              | X         |              | X         | X      |
| Sensor Power Supply Fault        | Sensor Power Supply is out of range (5000mV $\pm$ 125mV)                                                         | Sensor Supply     |              | X         |              | X         | X      |
| Joystick Fault                   | Short Circuit between signals or lost of signal                                                                  | Joystick          |              | X         |              | X         | X      |
| Brake Test Fault                 | Speed is greater than 1km/h during the brake test (Dynamic or Parking Brakes)                                    | Brake Test        |              | X         |              | X         | X      |
| Brake Press Low                  | Dynamic brake pressure is less or equal than 70 bar                                                              | Brakes Low        |              |           | X            |           |        |
| Oil Pressure Low                 | Oil Pressure is less than 69 kPa                                                                                 | Oil Pressure      |              |           | X            |           | X      |
| Water In Fuel                    | Sensor has detected water in fuel                                                                                | Water in Filter   |              |           | X            |           |        |
| Hydraulic Oil Filter Clogged     | Hydraulic Oil Filter has been clogged                                                                            | Hydraulic Filter  |              |           | X            |           |        |
| Air Filter Clogged               | Air Filter has been clogged                                                                                      | Air Filter        |              |           | X            |           |        |
| No Charging                      | Alternator is not charging the battery                                                                           | No Charging       |              |           | X            |           |        |
| Fuel Level Alarm                 | Fuel Level is less than 10%                                                                                      | Low Fuel          |              |           | X            |           |        |
| Water Level Alarm                | Water Level is less than 10%                                                                                     | Low Spr. Water    |              |           | X            |           |        |
| Engine Coolant Temperature Alarm | Engine Coolant Temperature is greater than 103°C.                                                                | Engine Temp       |              |           | X            |           | X      |

## Instrument/controls - Description and function

|                                  |                                                   |                |  |  |   |   |   |
|----------------------------------|---------------------------------------------------|----------------|--|--|---|---|---|
| Engine Coolant Temperature Alarm | Engine Coolant Temperature is greater than 107°C. | Engine Temp    |  |  |   | X | X |
| Hydraulic Oil Temperature        | Hydraulic Oil Temperature is greater than 90°C.   | Hydraulic Temp |  |  | X |   | X |

### LIMITED Mode

Limits the speed to 50%.  
 This mode is active as long as the fault remains.

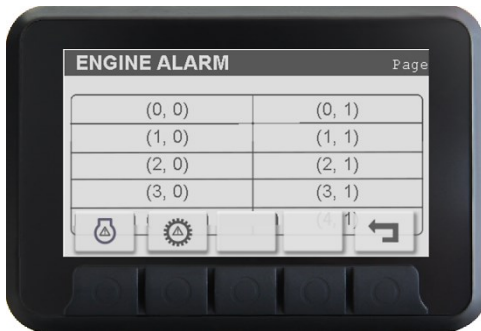
### SAFE Mode

The machine stops and cannot be used before the fault is corrected.

### Control panel – Alarms (cont.)



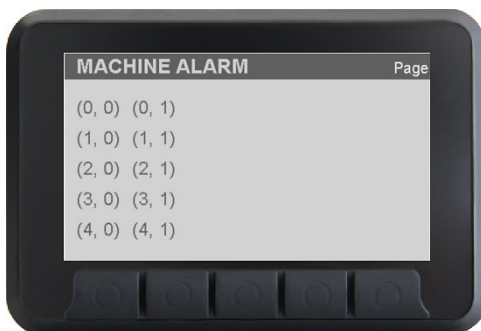
Alarms received are stored/logged and can be seen by selecting Display Alarms .



### “ENGINE ALARM”

Stored/logged engine alarms.

*Fig. – Engine alarm screen*



### “MACHINE ALARM”

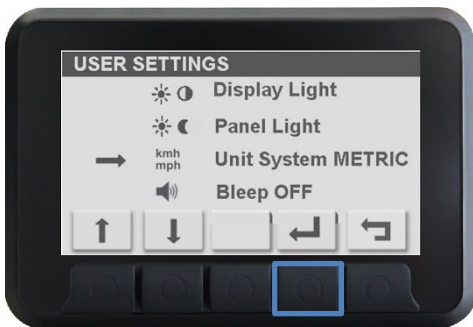
Stored/logged machine alarms. They come from other systems on the machine.

*Fig. – Machine alarm screen*

### “USER SETTINGS”



Users can change lighting settings, choose between Metric or Imperial system and set warning sounds on/off.



Unit system will be changed from METRIC to IMPERIAL, or IMPERIAL to METRIC. All the temperature values in the display should change between degrees Celsius and Fahrenheit, the speed value in the display should change between km/h to mph, and the AOR pressure value in the display should change between kPa and PSI.



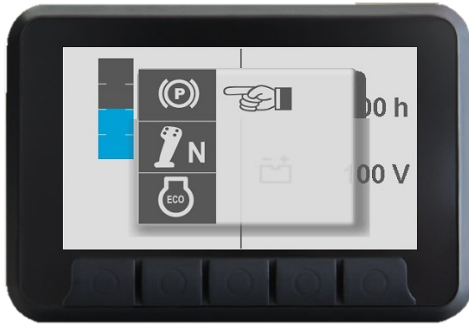
Adjustment of light and contrast settings on the display, including brightness of the panel light.

- The brightness of the display and the bar filled should be lowered if they are not at minimum.



- The brightness of the display and the bar filled should be increased if they are not at maximum.

### Operators help when starting

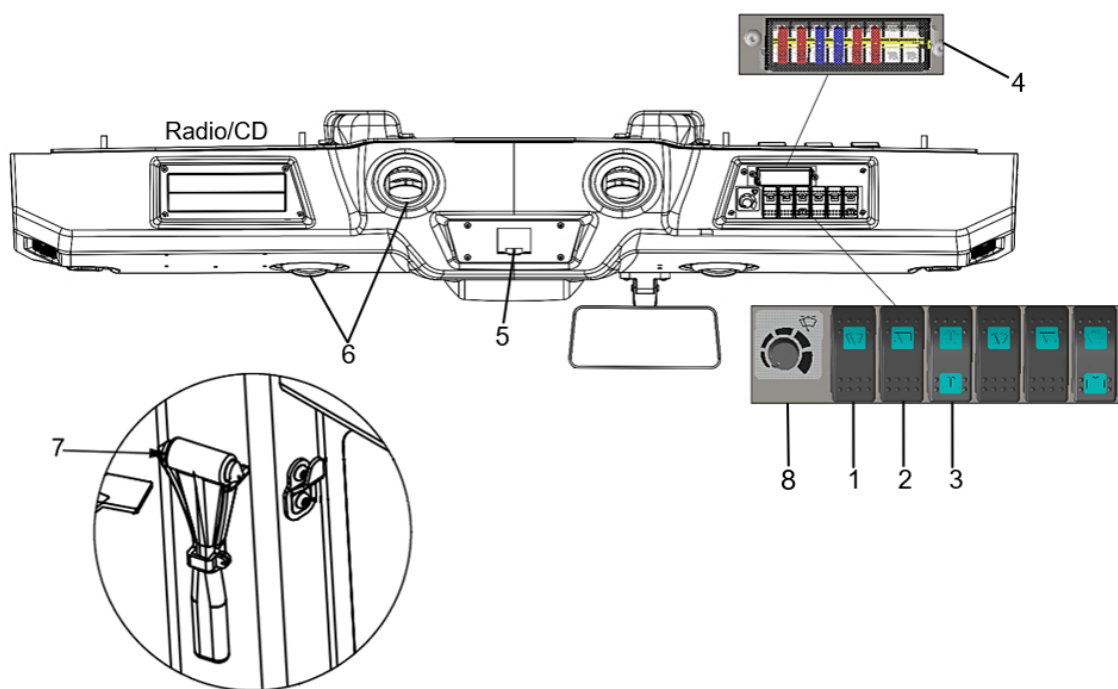


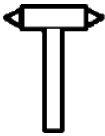
When trying to turn on the machine without having set up to three necessary conditions to do so, the missing ones are shown in the display. The missing conditions must be set before turning on the machine.

Conditions that must be set:

- The parking brake shall be activated.
- The forward/reverse lever shall be in the neutral position.
- The Diesel engine rpm shall be in the low speed (low = slow speed) (not all the models, refer to the manual to know if your model fits in this condition).

### A/C System Operation - Cab



| No. | DESIGNATION                              | SYMBOL                                                                              | FUNCTION                                                                                                      |
|-----|------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|
| 1   | Front wiper switch                       |  | Press to operate the front windshield wiper.                                                                  |
| 2   | Rear wiper switch                        |  | Press to operate the rear windshield wiper.                                                                   |
| 3   | Front and rear windshield washers switch |  | Press the top to activate the front washers. Press the bottom to activate the rear washers.                   |
| 4   | Fuse box                                 |  | Contains fuses from the electric system in the cab.                                                           |
| 5   | Automatic Climate Control                | -                                                                                   | Air conditioning automatic control.                                                                           |
| 6   | Air outlets                              | -                                                                                   | Direct the air outlets to obtain better ventilation.                                                          |
| 7   | Emergency exit hammer                    |  | If it is necessary to leave the cab during an emergency, release the hammer and break the right-side windows. |
| 8   | Potentiometer with knob                  |  | Adjust to operate the front windshield wiper.                                                                 |

## A/C – System operation



### Power/Enter

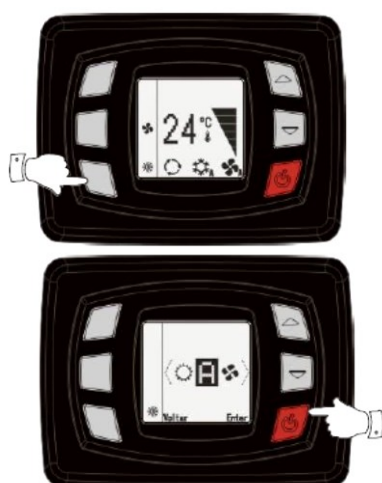
By feeding the panel with 12VDC, the screen will be on, indicating that the product is in standby mode. Press to turn on the A/C, it will show the software version and then the temperature. To return to standby mode you must press the button for 3s.

### Set point Up/Down

Set point is the desired temperature inside the vehicle. To set it up press ▲ or ▼. The set point temperature will flash on the display; press until reaches desired temperature.

### Display

The display shows set point value, bar graph evaporator speed, active function and other information. It also serves to allow the operator to view the coil and return temperature, as well as the parameters. It also serves to alert when there is some system flaws.



### Operation Mode

To change the operation mode, press the button  (operation mode), select the desired mode:

The controller has 4 operation modes that are:

- Only ventilation 
- Only cooling 
- Only heating 
- Automatic mode 

Press the button Power/Enter  to confirm or wait a few seconds to cancel.



### Ventilation

The controller has two ventilation modes: manual and automatic ventilation.

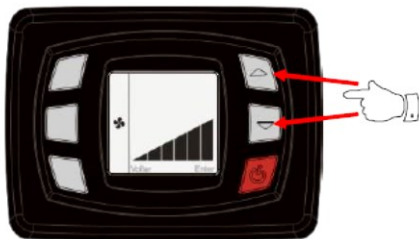
### Manual ventilation

The manual ventilation has three speeds. When some function (cooling, heating or automatic mode) is active, the ventilation function is always on. To change the fan speed, press the key



(Ventilation mode) and after set the desired speed with the

keys  or . After press the key  to confirm or wait a few seconds and the speed will be saved.



## Operation - Before starting

### Daily maintenance



**Before starting your work shift and operating the equipment, make sure the daily maintenance was carried out. For further information, refer to the maintenance section in this manual.**

### Battery switch

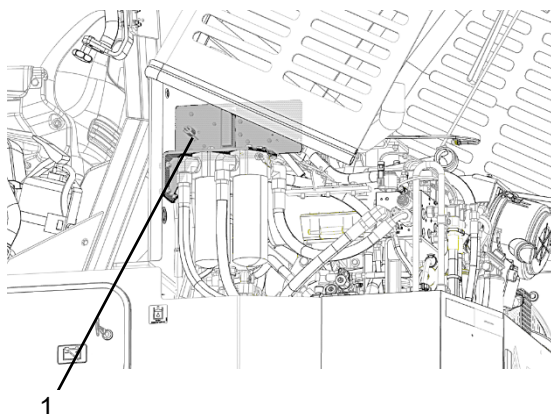


**Fig. – Engine compartment.**  
**1. Battery switch**



After the daily use of the roller, the Battery switch shall be turned off. It prevents the machine to be turned on accidentally and protects the electronic devices.



**If the battery switch is on, the engine hood shall be opened during the operation to make it possible to reach in an emergency.**

### The control and operation unit

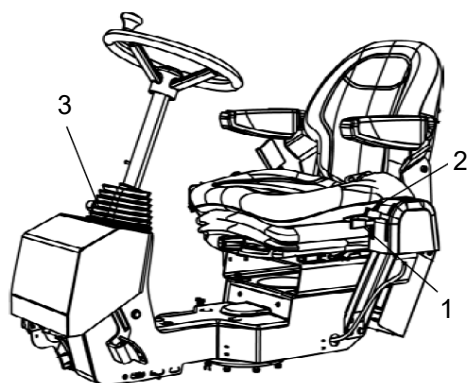


**Fig. – The control and operation unit**  
**1. Locking lever – transverse travel**  
**2. Locking lever – rotation**  
**3. Locking lever – steering column angle**

The control and operation unit has three adjustment options: transverse travel, rotation and steering column angle.

For transverse travel, raise the inner lever (1). The transverse travel brake will be released.

For rotation, raise the outer lever (2). Make sure the control unit is in the correct position before operating the machine.

For steering column angle, release the locking lever (3). Fix it again in the new position.

To adjust the operator's seat, refer to the next section.



**Perform all the control and operation unit adjustments when the machine is stationary.**



**Before starting your work shift and operating the machine, make sure the seat and the steering column are locked and never release the side travel if you are on a slope.**

### Standard operator's seat

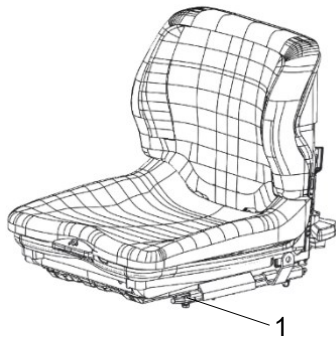


**Fig. Operator's seat**  
**1. Longitudinal adjustment**

### Operator's seat (standard) - Adjustment

Adjust the operator's seat so that the position is comfortable and so that the controls are within easy reach.

There is a scale (50-130 Kg) that can be changed according to the weight of the operator. The seat can be adjusted longitudinally (1) only from top to bottom, to return to the initial position, just move the selector until the end of the weight scale.

### Comfort operator's seat (option) - Adjustment

Adjust the operator's seat so all the controls are within easy reach and the machine operation is comfortable.

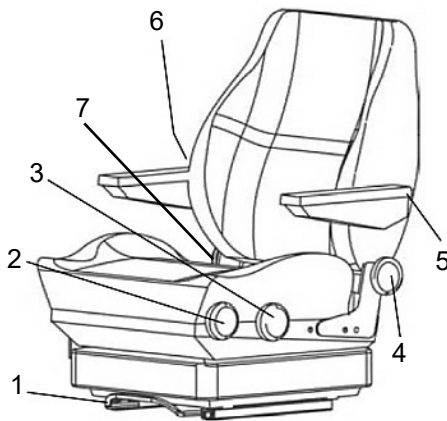


**Fig. – Operator's seat (option adjustment)**

- (1) Length adjustment.
- (2) Height adjustment.
- (3) Seat-cushion inclination.
- (4) Back support inclination.
- (5) Armrest inclination.
- (6) Lumbar support adjustment.
- (7) Seat belt.

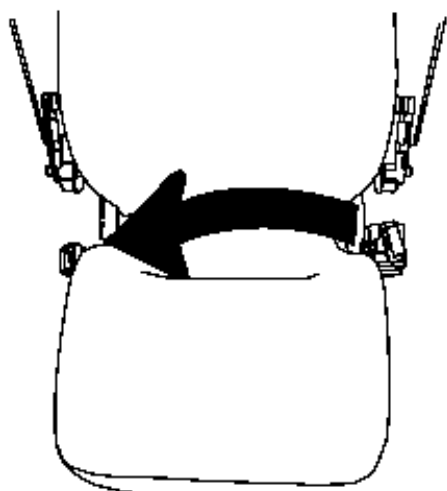


**Fig. – Sub-abdominal seat belt**

### Sub-abdominal seat belt

If the machine is enabled with cab, the operator should use the seat belt.

To adjust the seat belt, pull the retraction mechanism in a uniform way, taking the necessary cautions so it can adjust comfortably around the waist. The seat belt will jam if pulled sharply, or if the machine is parked on a slope or very stepped bank.



**Introduce the buckle until you hear a "click". In any other way the seat belt will not be locked.**

To release the seat belt, press the red button. Afterwards, allow the seat belt to be completely retracted.

### View

Before starting the machine, make sure that the view forwards and backwards is unobstructed.

All cab windows should be clean and the rear view mirrors should be correctly adjusted.

### Operator position

If a ROPS (2) (Roll Overprotective Structure) or a cab is fitted to the roller, always wear the seat belt (1) provided and wear a protective helmet.

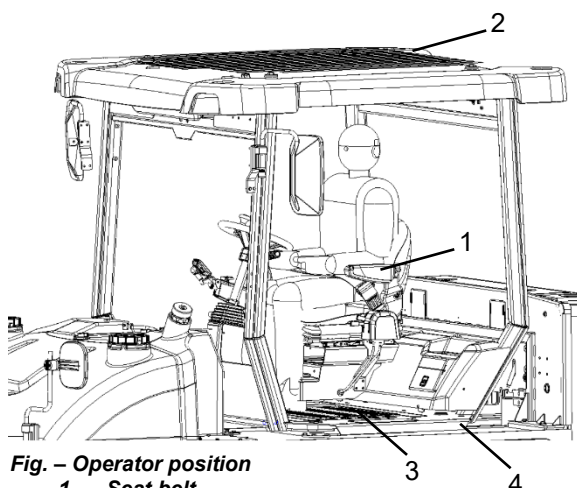


Fig. – Operator position

1. Seat belt
2. Rops
3. Rubber element
4. Anti-slip protections



**Replace the seat belt (1) if it shows signs of wear or has been subjected to high levels of tension.**



**Check if the rubber elements (3) on the platform are in good condition. Worn elements will impair the comfort.**



**Make sure that the anti-slip protections (4) on the platform are in good condition. Replace where anti-slip friction is poor.**



**If the machine is fitted with a cab, make sure that the door is closed.**

### Interlock

The roller is equipped with an interlocking system.

The engine switches off from 4 to 7 seconds after the operator rises from the seat with the forward/reserve lever still engaged (not in the neutral position).

The engine does not switch off when the parking brake is engaged.



**Always keep seated for all operations!**

## Starting

### Screen - Control

To initiate the operation of the machine, please verify that the emergency button (1) is in the off position (upper position).

Next, insert the key into the ignition and turn it to position I (2). At this stage, the home screen will be displayed on the monitor.

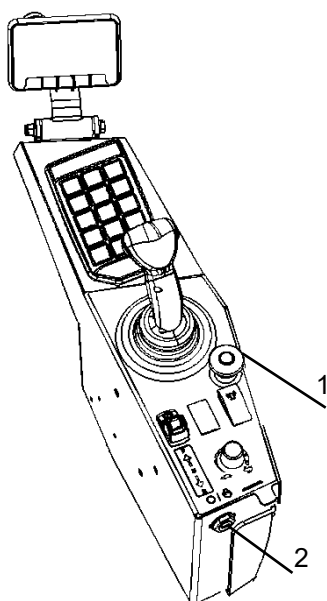


Fig.- Side panel

1. Emergency button
2. Ignition switch



***The operations should only be conducted when the operator is properly seated with the seat belt fastened, and all adjustments to the rear-view mirrors have been made.***

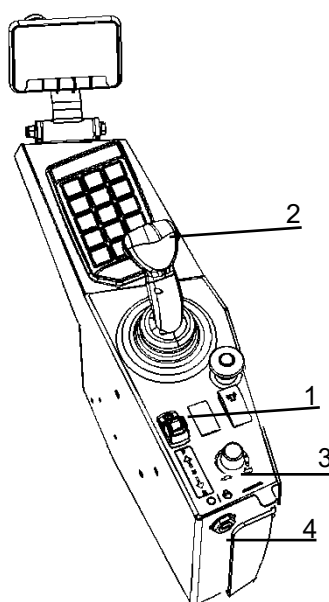


Fig. – Control panel

1. Parking brake button
2. Emergency stop button
3. Speed potentiometer
4. Switch ignition

### Starting the engine

Before initiating the engine start, please ensure that all steps outlined in the previous section have been completed.



***After turning the ignition key to start the machine, wait at least 15 seconds to rev up the diesel engine. The controller's software programming prevents a speed change in less than 15 seconds.***

Check the parking brake button (1), it must be activated. Check the movement lever (2) must be in the N position and the potentiometer (3) in the turtle position (lowest speed).

To start the Diesel engine, turn the ignition key to the position II (4) to the right (the first position I). Release the switch as soon as the engine starts.



***Do not try to run the start engine for too long (max. 30 seconds). If it does not work, wait 60 seconds to try again.***

Let the engine idle for a few minutes or more if the environment temperature is below 50 F (10° C).



***When the engine is running indoors, make sure if there is proper ventilation to extract the exhaust gases.***

## Display and button set

After starting the engine, the control screen will activate and display its startup screen, as shown in the accompanying image.

The icons on the sides and bottom of the screen represent the equipment that is activated at the time of departure and .



= The parking brake symbol is shown when the parking brake is activated.



= Automatic water control (AWC). The sprinkling is activated when the forward/backward lever is in the neutral position.



= Tire pressure displayed in position 3.



= Displayed in position 4.



= High/low speed mode (in the center of the screen).

## Operating the Roller

The operation and maneuvering of the Dynapac CP 1200/1200W equipment should be executed through the coordinated use of the movement joystick, the combustion engine RPM selector, and the speed potentiometer. This approach ensures optimal functionality and efficiency.



***Under no circumstances the machine shall be operated away from the ground. The operator shall be seated inside the machine during the operation.***



***Make sure the areas at the front and behind the machine are free.***



1

2

3

**Fig. – RPM Selection**

1. Idle - 800 RPM
2. Low - 1900 RPM
3. High - 2200 RPM

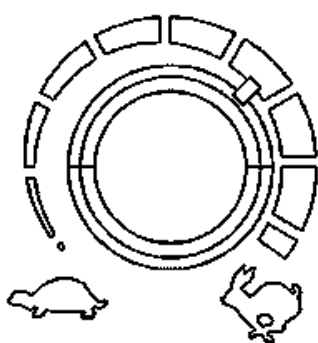
To initiate the operation of the machine, please select the appropriate engine RPM based on the specific task at hand. The engine RPM can be adjusted using the buttons located on the machine's membrane panel, as illustrated in the accompanying image.

Once the engine is ignited, it maintains an idle speed (800 RPM). When the speed increment button is pressed, the engine revs up to a low speed (1900 RPM) (2). If the button is pressed again, the engine will operate at maximum speed (2200 RPM) (3) work mode.



***Auto idling is a function that reduces engine RPM when the joystick is in the neutral position for 10 seconds.***

***This feature is designed to decrease fuel consumption and noise. When you change the joystick position, the engine will automatically return to the previously selected RPM.***



The speed of the machine can be selected and controlled using the potentiometer. The closer the dial is to the rabbit symbol, the faster the machine will move.



***Release the parking brake button (7) by sliding the red lock on the button backwards and changing the lever position. Remember that the machine can roll if you are on a slope.***



***When the parking brake is released, the machine may move slightly. Always check for people and objects nearby.***

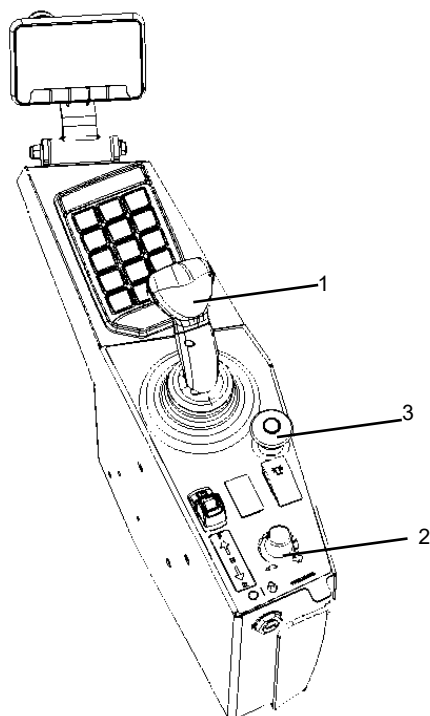


**Fig. – Side panel**  
**1. Forward/reverse Joystick**  
**2. Potentiometer**  
**3. Emergency button**

### **Moving and setting the machine to the correct speed.**

Select the machine RPM.  
Set the potentiometer to the turtle position.  
Move the joystick to the forward or reverse position.  
Start moving the machine by turning the potentiometer to achieve the desired speed.

### **Reverse the direction of the machine.**

To reverse the direction, move the joystick fully and smoothly from the selected position to the opposite direction.

### **Stop the machine.**

To stop the machine smoothly (hydrostatic), move the joystick slowly to the neutral position.

### **Emergency brake (dynamic brake).**

Move the joystick fully to the reverse position, then immediately return it to the neutral position to activate the dynamic brake.

### **Emergency stop button.**

Push the red button to turn-off the engine and activate all brakes of the machine.



***In emergency situations where a sudden stop is required, return the movement lever to the Neutral (N) position or activate the emergency button immediately.***



***In asphalt paving operations, it is important to note that abrupt halts can lead to the formation of marks and imperfections on the finished surface. Careful management of stopping procedures is essential to maintain the quality and integrity of the asphalt.***

## Selecting the maximum Speed.



The Dynapac CP 1200 and CP 1200W equipment are capable of reaching maximum speed when ECO/turtle mode is disabled.

To make your selection, press the button with the turtle symbol on the membrane panel. When you select this button, the image on the main panel will change, as illustrated in the accompanying image



***When using the CP 1200 / 1200 W, be aware that selecting the maximum speed can potentially damage your application. It is essential to verify whether high speeds are recommended for your specific needs before proceeding.***



Maximum speed: 9 km/h / 5.6 mph



Maximum speed: 18 km/h / 11.2 mph

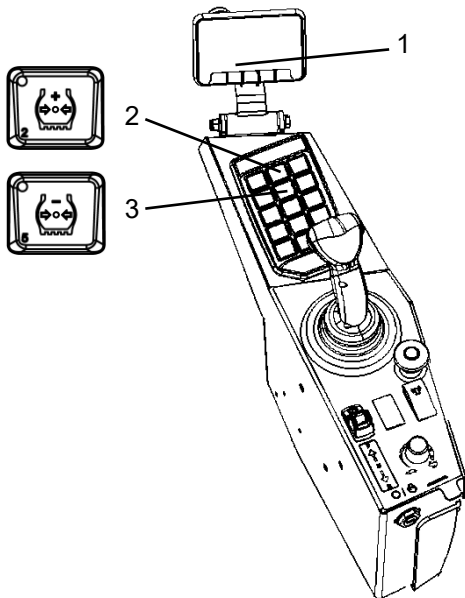


**Fig. – Side panel**

1. Display
2. Increase in the tire pressure
3. Decrease in the tire pressure

## Tire pressure adjustment (option)

The operator can vary the pressure during the operation with the tire air pressure control. It can be variable adjusted with the keys (2) and (3) on the keypad, within the interval from 240 kPa to 620 kPa (35 to 90 PSI) and can be reduced with the key (3). The tire pressure level is shown in the lower left corner, on the Display (1).



When the tire pressure is at the maximum level (620 kPa) or at the minimum level (240 kPa), it will not be possible to increase/decrease the pressure.

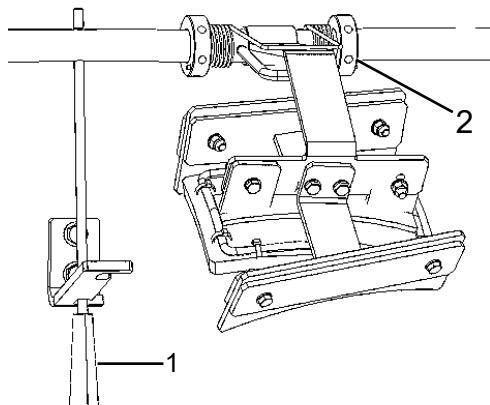


**Fig. – Scrapers adjustment**

1. Handle
2. Snap ring

## Scrapers Adjustment

There are two models of scrapers, with and without cocoa mat. The adjustment of the scrapers on the wheels is done by the handle (1) of the support of the scrapers. There are two positions: of work and rest.

Adjust the snap rings (2) of the scrapers to control the pressure applied to the wheels.

## Rotating Beacon Light (Optional)

The rotating beacon must always be lowered before transport where the total height of the trailer is less than three meters.



Before starting work, make sure that the rotating beacon light is undamaged and in good working conditions. Otherwise, replace immediately.



**Use a portable ladder to access the cabin work lights and the rotating warning beacon.**

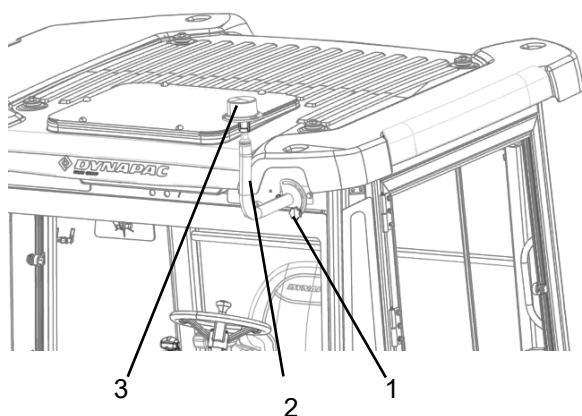


**Fig. - Rotating beacon**

- 1. Handle
- 2. Lamp holder
- 3. Warning light (Giroflex)

Release the handle (1) and fold the lamp holder (2) downwards.

Unscrew and remove the warning light (8) from the lamp holder.

To raise the rotating beacon lamp, follow the procedure described above in reverse sequence.

## Backup alarm check

Before operating the machine, perform a backup alarm check.

Turn the key to activate the electrical system.

With the parking brake engaged, move the lever backward and check whether the device emits an audible alarm.

If no audible alarm is detected, shut down the machine and contact technical assistance to perform the necessary repairs.

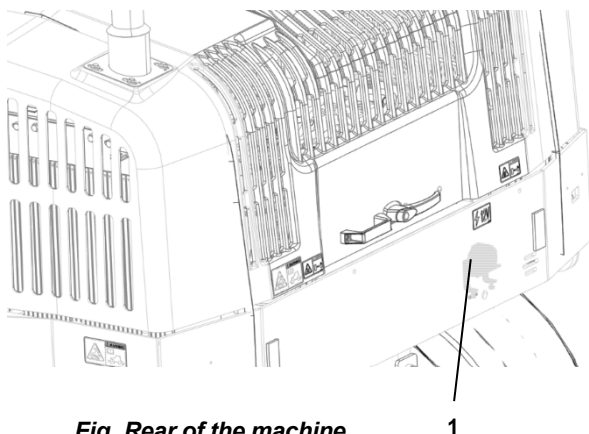


**Fig. Rear of the machine**  
 1. Backup alarm

## Ballast box

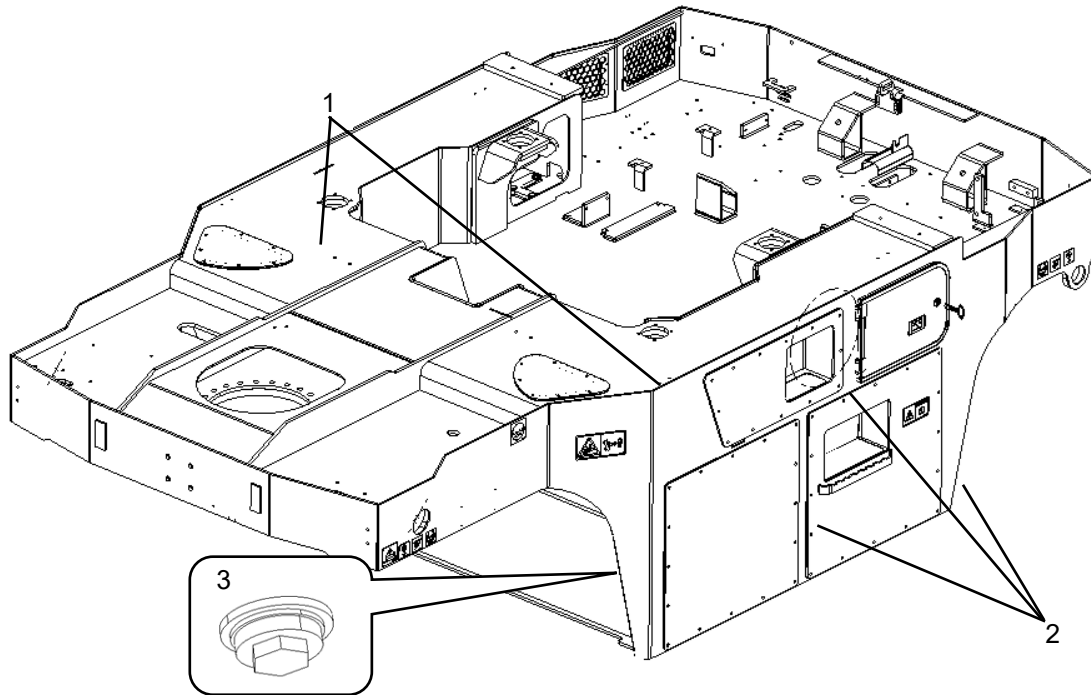


**Fig. – Ballast box cover**

1. **Top forward covers**
2. **Side covers**
3. **Draining plugs**

## Water and wet sand ballast

Remove the top covers (1) and fill with water and sand through this opening.

Keep the side covers (2) closed during the water filling.

Do not remove the draining plugs (3) because the water may leak when the ballast is filled with it.

Fill the ballast box, when necessary, with gravel, sand and steel.

The water shall be added when it is filled with sand, so it can fill all the spaces between the ballast.



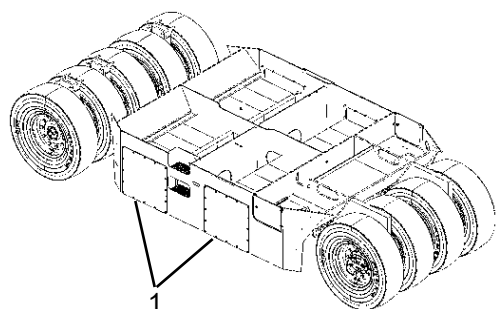
When using the roller with mixed ballast, start using the steel objects available, and then add the requisite amount of sand and water



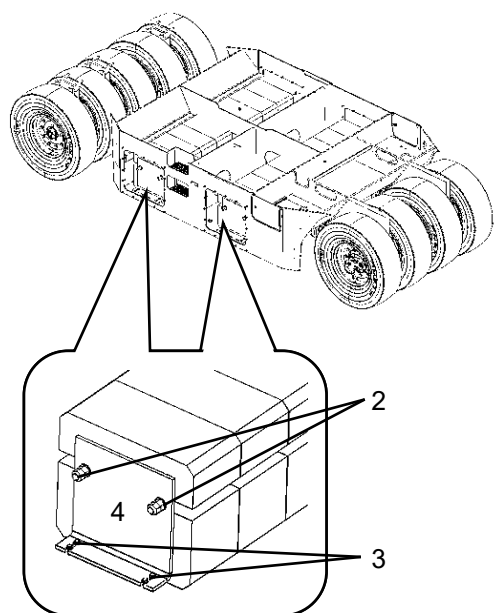
Distribute the ballast evenly.

## Removable steel ballasts

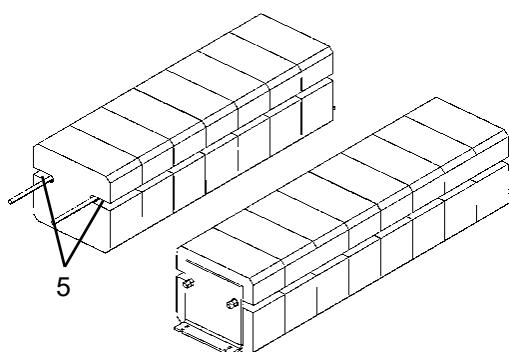
The CP1200 roller uses an innovative and patented system of steel ballasts, which can be removed and installed easily and quickly:



1. With the ballast box drained (without water and/or sand), remove four side covers (1) from the ballast box.



2. Unscrew the nuts and countersuits (2) and four lower bolts (3) of the bedplate in the steel ballasts. Remove the bedplate (4) off the ballasts assembly.



3. Install or remove the ballasts, according to the necessity, using the forks from a standard forklift. The ballasts grooves (5) were projected so the forklift forks fit perfectly and to easy their removal, installation and transport.

**Fig. - Removable steel ballasts**

1. Side covers
2. Nut and countersuit
3. Bolts
4. Bedplate
5. Ballast grooves

4. After installing or removing the ballasts in the box, mount the bedplate, performing the reversal steps used to remove them.



Distribute the steel ballast evenly in the box.

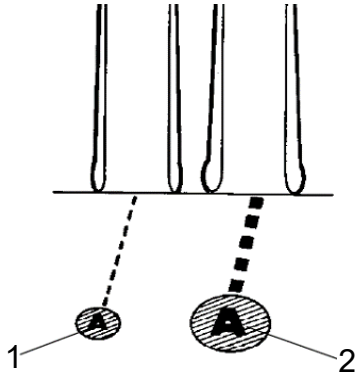


**Fig. – Ground contact surface**

1. **Contact surface with the tire (high pressure)**
2. **Contact surface with the tire (low pressure)**

### Ground pressure (Driving)

The tire contact surface can be changed by means of tire pressure.

The high pressure on the tires provides a smaller contact surface (1) and the low pressure on the tire provides a larger contact surface (2).

The contact surface with the ground is very important for the compaction result. The total weight divided by the quantity of tires provides the correct pressure for the wheel, according to the following table:



**Fig. Low ground pressure, larger area**

### Low tire pressure - 350 kPa (50.7 psi).

The lower the tire pressure, the lower the pressure on the contact surface due to larger contact surface.  
Is used on lots of loose material



**Fig. Normal ground pressure**

### Normal tire pressure - 480 kPa (69.6 psi)

Used for degradation session



**Fig. High ground pressure, smaller area**

### High tire pressure - 620 kPa (90 psi).

The higher the tire pressure, the greater the pressure on the contact surface due to smaller contact surface.  
Used for thick layers and finishing sessions

**Ground pressure**
**CP1200**

| 7.50-15         | Tire Inflation Pressure (kPa) |     |     |
|-----------------|-------------------------------|-----|-----|
|                 | 350                           | 480 | 620 |
| Wheel load (kg) | Ground Contact Pressure (kPa) |     |     |
| 450             | 330                           | 360 | 410 |
| 905             | 380                           | 410 | 420 |
| 1130            | 400                           | 440 | 460 |
| 1360            | 430                           | 460 | 480 |

| 7.50-15         | Tire Inflation Pressure (psi) |    |    |
|-----------------|-------------------------------|----|----|
|                 | 50                            | 70 | 90 |
| Wheel load (kg) | Ground Contact Pressure (kPa) |    |    |
| 450             | 48                            | 52 | 59 |
| 905             | 55                            | 59 | 61 |
| 1130            | 58                            | 64 | 67 |
| 1360            | 62                            | 67 | 70 |

**CP1200W**

| 10.5/80-16      | Tire Inflation Pressure (kPa) |     |     |
|-----------------|-------------------------------|-----|-----|
|                 | 350                           | 480 | 620 |
| Wheel load (kg) | Ground Contact Pressure (kPa) |     |     |
| 600             | 286                           | 325 | 366 |
| 750             | 301                           | 342 | 388 |
| 900             | 320                           | 363 | 407 |
| 1000            | 327                           | 372 | 422 |
| 1150            | 342                           | 378 | 438 |
| 1300            | 346                           | 404 | 454 |

| 10.5/80-16      | Tire Inflation Pressure (psi) |    |    |
|-----------------|-------------------------------|----|----|
|                 | 50                            | 70 | 90 |
| Wheel load (kg) | Ground Contact Pressure (psi) |    |    |
| 600             | 41                            | 47 | 53 |
| 750             | 44                            | 50 | 56 |
| 900             | 46                            | 53 | 59 |
| 1000            | 47                            | 54 | 61 |
| 1150            | 50                            | 55 | 64 |
| 1300            | 50                            | 59 | 66 |

## Interlock/Emergency Stop/Parking Brake



*The interlock, emergency stop and parking brake shall be checked daily before starting the machine. To check if the emergency stop and interlock are working correctly, it is necessary to turn on and off the machine.*



*To check if the Interlock works correctly, the operator shall rise from the seat with the roller moving forwards and backwards (perform the test in both ways). The operator must hold the steering wheel firmly and be ready for a sudden stop. The alarm will be activated and after 4 seconds the engine will turn off and the brakes will be activated.*



*To check if the emergency stop works correctly, the operator shall press the corresponding button with the roller moving forwards and backwards (perform the test in both ways). Next, the operator must hold the steering wheel firmly and be ready for a sudden stop. The engine will be turned off and the brakes will be activated.*



*To check if the parking brake works correctly, it shall be activated with the roller moving forwards and backwards (perform the test in both ways). The operator shall hold the steering wheel and be ready for a sudden stop when it is activated. The engine does not turn off.*

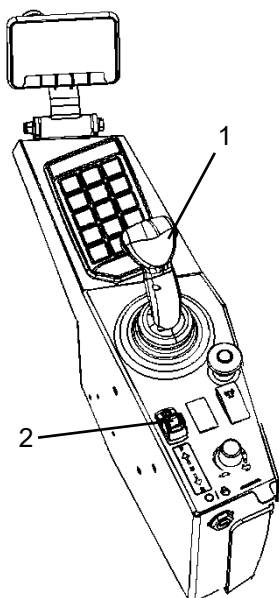


**Fig. – Braking**

1. Forward and reverse control
2. Parking brake

## Normal braking

Stop de compactor, putting the forward and reverse control (1) in neutral.

Always enable the parking brake (2), before leaving the operator platform.



*When starting a cold engine and drive, which implies cold hydraulic oil; braking distances are greater than when the oil has reached its normal working temperature.*

When the forward and reverse control is pushed rapidly to neutral, or away from it, the system goes into rapid braking mode, and the machine stops.

Activate the normal mode by placing the forward and reverse control in neutral.

## Emergency braking



***For emergency braking, press the emergency stop button (1), hold the steering wheel and be ready for a sudden stop. The engine stops.***

The diesel engine is turned off and must be turned on again if necessary.

When starting the engine after an emergency stop, the forward/backward lever shall be in the neutral position and the parking brake shall be on.

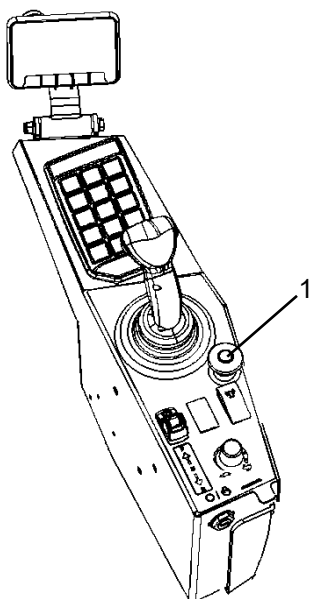


**Fig. – Side panel**  
**1. Emergency stop**

## Turning off the engine

Allow the engine to cool down in low idle for a few minutes.

Check if the Display (1) shows any indication of faults. Turn off all the lights and other electric functions.

Press the parking brake switch (3).

Turn the ignition key (2) to the left to turn it off.

Fit and fix the cover of the instruments panel over the screen and the upper part of the control box (on rollers without cab).

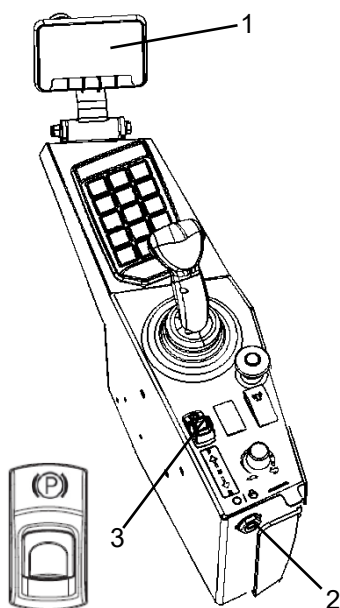


**Fig. – Side panel**  
**1. Display**  
**2. Ignition key**  
**3. Parking brake**

## Dynamic Brake Test

The dynamic brake test must be done with parking brake switch button (3) released. Press the brake test button (2) the accumulators will start to fill and a sound effect will activate on the machine and the test button light will begin to flash (the sound effect and flash in test button occurs until the accumulator reaches 90 bars - 1305 Psi). After that, the led from the test button will stay on and the alarm will stop. Move the joystick (4) slowly to the maximum position forward or reverse. The engine goes to maximum rpm by itself.

During the test, the system automatically will change to transport mode. See in Display (1).

After the test, enable the parking brake or press again the brake test button to end the Dynamic Brake test mode. When the test ends, the system will reduce engine rpm automatically and change to previous selected mode (work or transport).

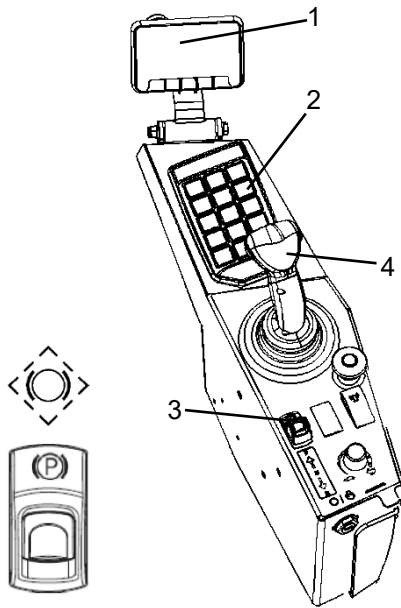


**Fig. – Side panel**

1. Display
2. Brake test button
3. Parking brake
4. Forward and reverse control



**NOTE:** Make sure to perform the test in an open place away from physical barriers, as in case of any unforeseen event and the machine move, no accident will occur.



In case the machine speed goes higher than 1km/h within 3 seconds while executing the dynamic or parking brake test, the roller will automatically enter "Safe Mode".



The machine should be stopped and the representative must be called immediately.

## Parking Brake Test

1-) The parking brake test must be done with the parking brake switch button (1) engaged.  
 2-) Increase the engine to maximum rpm manually (2);  
 3-) Press and hold the Brake Test Button (3) and move the joystick slowly to the maximum position forward or reverse and verify if the equipment moves.

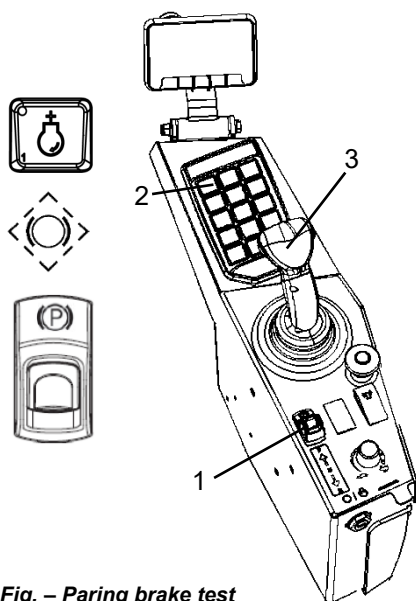


Fig. – Paring brake test

1. Parking brake
2. Engine speed button
3. Forward and reverse control



**In case the machine speed goes higher than 1km/h within 3 seconds while executing the dynamic or parking brake test, the roller will automatically enter “Safe Mode”**



**The machine should be stopped and the representative must be called immediately.**

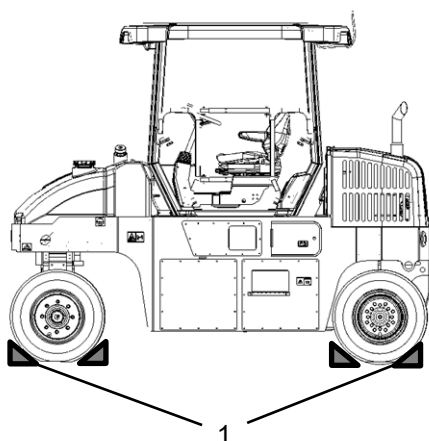


Fig. – Choking the wheels

1. Chocks

## Hocking the wheels



**Never leave the roller and let it with the engine running unless the parking brake is activated.**



**Make sure the machine is parked in a safe area, without traffic. Chock the wheels when parking on slopes.**



**In extremely cold weather, some components may freeze. Drain the water tanks and pipings.**

## Battery switch

At the end of the working shift, turn off the battery switch (1) and remove the handle.

This will prevent the battery discharging and will also make it difficult to start and drive the machine if unauthorized people try to use it. Close and lock the maintenance covers and doors.

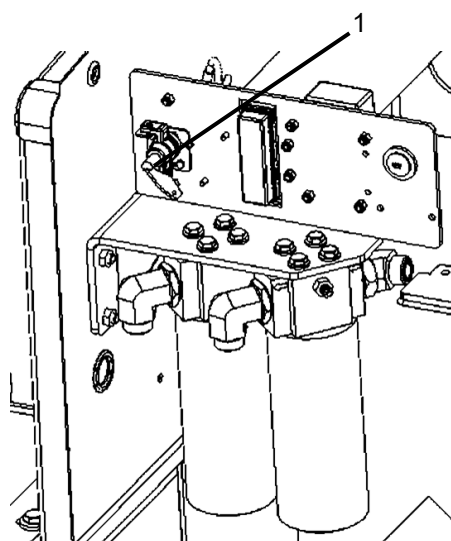


Fig. – Engine compartment

1. Battery switch

## Long-term Storage



For long-term storage (more than a month) follow the instructions below:

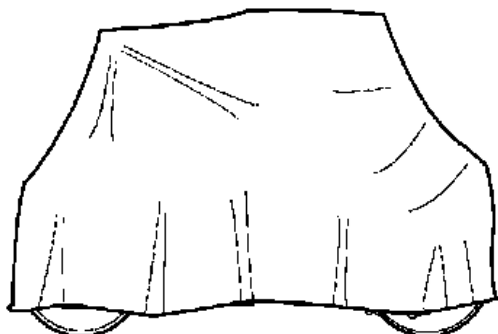


*Fig. – Roller weather protection*

These measures are valid for storage for a period of up to 6 months.

Before starting the machine again, the points stated below shall be performed before parking and store the roller.

Wash the machine and touch up the painting finishing to prevent rusting. Use anti-rust agents on the exposed parts and lubricate carefully the machine, besides applying grease to unpainted surfaces.

### Engine

Refer to the manufacturer information in the engine instruction manual supplied with the roller.

### Battery

Remove the batteries from the roller, clean their outside parts and recharge them once a month.

### Air cleaner, exhaust pipe

Close the air tube or the respective intake opening with plastic or tape. Also cover the exhaust pipe opening with sealing material to avoid moisture entering in the engine.

### Water distribution system

Drain all the water in the water tank and all the hoses. Also drain the filter housing and the water pump and remove all the sprinkler nozzles.

Refer to the Maintenance section to obtain further information about water draining.

### Fuel tank

Fill the fuel tank completely to prevent condensation.

### Hydraulic oil reservoir

Fill the hydraulic reservoir until the uppermost level.

### Tires

Make sure the tires pressure is at least 345kPa (50 PSI).

Jack up the frame, so that the tires do not take any load.

### Steering cylinder, hinges, etc.

Grease the steering cylinder plunger spindle to preserve it.

Also lubricate the hinges on the engine compartment and cab doors.

### Hoods, tarpaulin

Lower the instruments hood/covering over the instrument panel.

Cover the entire roller with a tarpaulin. It shall have a gap between it and the ground.

If possible, store the machine indoors and preferably in a place with regular temperature.

When stopping and parking the equipment, always apply the parking brake.

As a precaution measure, chock the roller tires when parking on slopes and turn off the engine.



***To prevent accidents, when parking on slopes, stop transversally to the road towards the slope.***



***Never leave the roller with the engine running. Before leaving it, apply the emergency/parking brake.***



***Make sure the roller is parked in a safe place and that it is not obstructing the traffic.***

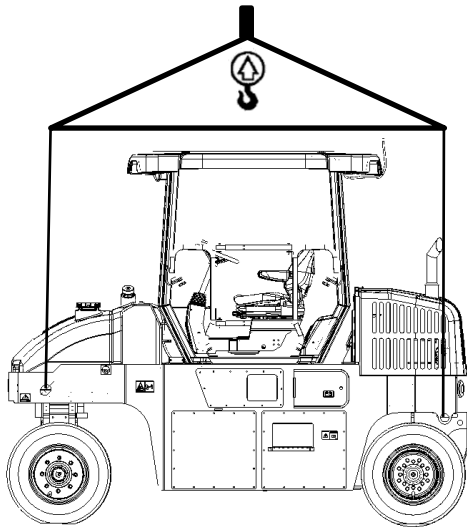


Fig. – Roller prepared for lifting

## Lifting

### Lifting the roller

Make sure the front wheels are parallel with the frame before lifting the roller.



***Make sure the hooks are safely placed in the lifting eyes. The equipment shall only be lifted by the proper lifting eyes.***



Always use cables and steel chains according to the safety norms and make sure there are no worn components and that parts are not damaged during the lifting.



***The machine's gross weight is specified in the hoisting plate (1). Refer also to the Technical Specifications.***



***Do not go under or next to the machine when it is being lifted.***

Make sure the lifting hooks are safely connected to the machine. Check the machine gross weight and the compatibility of the lifting equipment.

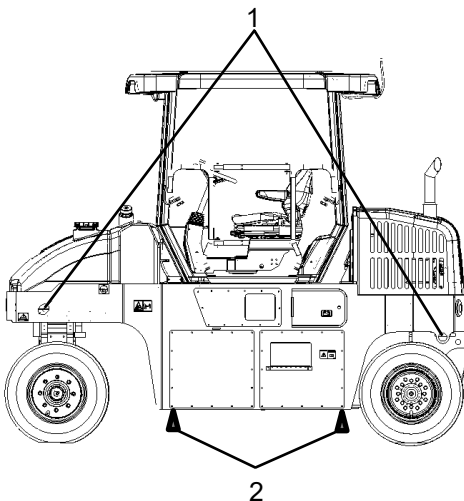


Fig. – Roller lifted with the jack  
 1. Hoisting plate  
 2. Jack

### Lifting the roller with a jack



***The machine's gross weight is specified in the hoisting plate (1). Refer also to the Technical Specifications.***



Lifting devices such as a jack (2) or equivalents must be dimensioned according to the safety regulations for lifting devices.



***Do not go under or next to the machine when it is being lifted. Also check if the lifting device is fixed and secure in its position, and at a steady level and surface.***

The roller shall only be lifted with a jack or similar if it is correctly fitted in the lifting eyes. The frame is reinforced in these points to support the tension. Lifting at any other place can result in damage to the machine or personal injury to the operator.

## Towing

### Short distance towing with the engine running

The roller can be moved up to 984 feet (300 meters), according to the following instructions:

To tow the machine, use the same lifting points.

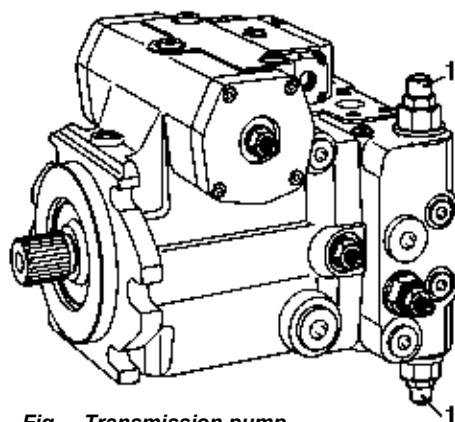


**Fig. – Transmission pump**  
**1. By-pass valves**

1. Park the roller on a flat and safe place. If necessary, chock the tires.
2. Open the hood and check if the propulsion pump is accessible.
3. On the pump, there are two by-pass valves (1) (allen 5) which should be turned two turns anticlockwise to put the whole system in the by-pass mode, which means that the A and B sides of the pump are freely connected to the pressure side. This function allows the machine to be moved without the drive shaft rotating.
4. Start the Diesel engine and run it in idle.
5. Move the forward/backward lever in one of the two positions. If it is in a neutral position, the hydraulic engine brakes are activated.
6. The roller can be towed and even steered now, if the steering system is working.
7. To leave the by-pass mode, turn both valves (1) two times to the right.



The machine must not be moved in a speed higher than 5 km/h and over 984 feet (300 meters). If it happens, there are risks of damage in the transmission system. Make sure the towing valves are reseted (turning them two times to the right) after the towing.

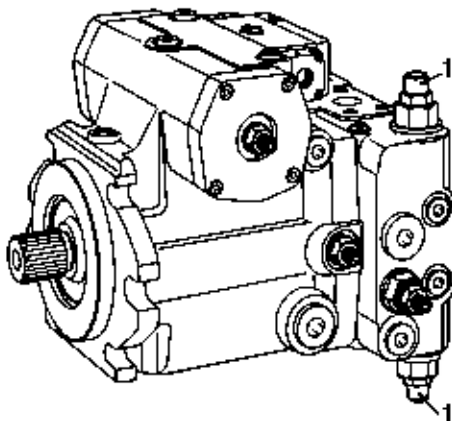


**Fig. – Transmission pump**  
**1. By-pass valves**

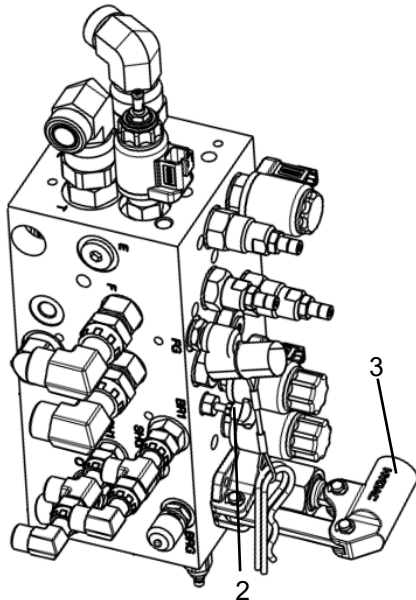


**Fig. – Brake release valve**  
**2. Valve**  
**3. Pump arm**

## Short distance towing with the engine inoperative



**As a safety measure, chock the wheels to prevent the machine to move when the brakes are hydraulically disengaged.**

The roller can be moved up to 984 feet (300 meters), according to the following instructions:

1. Park the roller on a flat and safe place.
  2. Open the hood and check if the propulsion pump is accessible.
  3. On the pump, there are two by-pass valves (1) (allen 5) which should be turned two turns anticlockwise to put the whole system in the by-pass mode, which means that the A and B sides of the pump are freely connected to the pressure side. This function allows the machine to be moved without the drive shaft rotating.
  4. The brake release pump is at the right side of the engine compartment.
  5. Close the valve (2) by tightening clockwise with the knob to enable the manual brake release.
- 

After towing release the knob anticlockwise, to enable machine control.
6. Pump with the arm (3) until the brakes are released.
- 

The pump arm is located in a bracket attached to the frame in front of the block.
7. So the brake release pressure is quickly drained, turn on the start engine for a few seconds.
  8. To disconnect the by-pass mode, loose the hexagon bolts turning them two times to the right.
  9. This way the roller can be towed.



The machine must not be moved in a speed higher than 5 km/h and over 984 feet (300 meters). If it happens, there are risks of damage in the transmission system. Make sure the towing valves are reseted (turning them two times to the right) after the towing.

## Towing

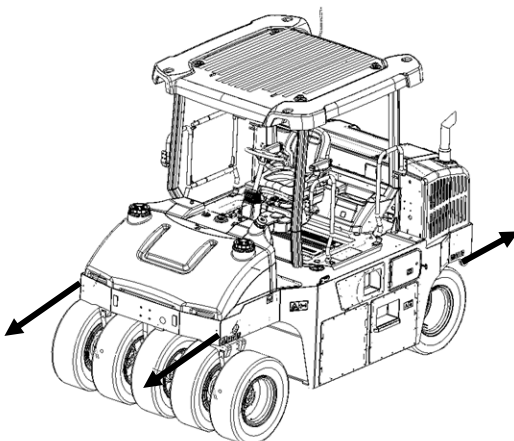


Fig. – Towing direction



**When towing, the roller shall be braked by the towing vehicle. Always use a towing bar, because the machine cannot brake.**



The roller must be towed slowly and must not be moved in a speed higher than 5 km/h and over 984 feet (300 meters).

During the roller towing, its devices shall be connected in both lifting holes.

The pulling forces shall act to the machine's longitudinal axis, as illustrated in the figure. Refer to the table below to know the maximum pulling force allowed for this machine model:

| MODEL  | kN  | Lbf    |
|--------|-----|--------|
| CP1200 | 180 | 40.465 |

## Transport

### Preparing the roller for transport

First, ensure that the entire contact area of the machine is free from any slippery material (oil, ice, snow, etc.). If present, remove it to allow safer transportation of the machine.

Apply the parking brake and make sure the machine is in the neutral position, that is, that the tires are pointing forwards.

Chock (1) the tires in an angle of 37° and at a minimum height of 9,9 inches (25 cm). They should be chocked both forwards and backwards.

Chock under the frame (2) to ensure that the chains remain tensioned if the air goes out of the tires. Block up the machine according to the figure.

Secure the roller with chains in all four corners. The attachment points are shown in the safety decals. Put the chains in symmetrical pairs, crossing each other.



Make sure the chains, supports and attachments of the transport vehicle are approved and have the proper tension to perform the fitting and locking. Check regularly if the chains are not slack.

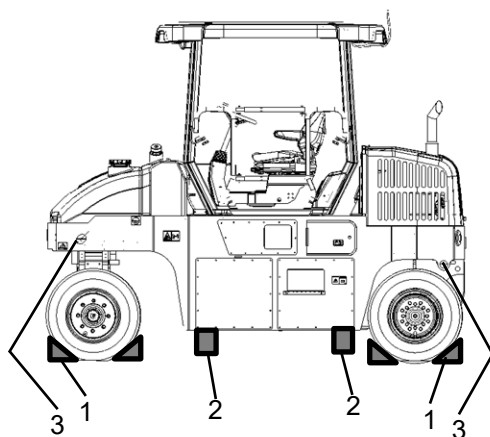


Fig. –Positioning  
1. Chocks  
2. Supports  
3. Straps

### Operation instructions - Overview



***Follow the safety instructions specified in the Safety Manual.***

- Make sure all the MAINTENANCE INSTRUCTIONS were carried out. For further information, refer to the Maintenance section in this manual.
- Turn on the battery switch.
- Move the forward/reverse lever to the neutral position.
- Apply the parking brake. The roller will always start in the Low speed.
- Keep the ignition key in the "I" position.
- Start the engine and warm it.



***Always check the brakes. Before starting the working shift, carry out a test in the system, and remember that if the hydraulic oil is cold, the brake distance will be longer.***



***When operating the roller, use carefully the forward/backward lever.***

- Make sure the tires are well sprinkled, when necessary.



***In an emergency, apply the emergency stop, hold well the steering wheel and be ready for a sudden stop.***

- When parking: stop the engine, apply the parking brake and chock the roller tires.
- When towing: refer to the towing instructions in this manual.
- When lifting: refer to the lifting instructions in this manual.
- When transporting: refer to the transport instructions in this manual.

## **Preventive Maintenance**

### **Introduction**

It is necessary to carry out a complete maintenance so the machine can work satisfactorily and at the lowest possible costs.

The Maintenance section includes the periodic maintenance that shall be carried out on the machine.

The recommended maintenance intervals assume that the machine is being used in a normal environment and working conditions.

### **Delivery**

The machine is tested and adjusted before leaving the plant.

The inspection shall happen in the moment it arrives to the client, following the list in the warranty document.

Any transport damage shall be immediately reported to the carrier company.

### **Warranty**

The warranty is only valid if the inspections were carried out at the time of the delivery, as well as the maintenance inspections according to the warranty.

The warranty is not valid if there are damages due improper assistance, misuse of the machine, use of lubricants and hydraulic oils not specified in the manual or if other adjustments were made without the proper authorization.

### **Warning symbols**



***WARNING! Damage to the machine or its parts.***



**CAUTION! Risk of death or injuries.**

### Preventive maintenance - Symbols and lubricants



Always use high quality lubricants and in the amounts required.

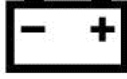
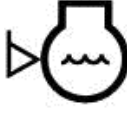
Too much grease or lubricant oil can cause overheating and premature wear.

|                                                                                                                   |                                                                                                                                                                   |                                                                             |                                                           |
|-------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|-----------------------------------------------------------|
|  <b>ENGINE OIL</b>               | Air temperature -15°C +50°C (5°F-122°F)                                                                                                                           | <b>Dynapac Engine oil 200</b>                                               | P/N <b>4812161855</b> (5L)<br>P/N <b>4812161856</b> (20L) |
|  <b>HYDRAULIC OIL</b>            | Air temperature -15°C +40°C (5°F-104°F)<br><br>Temperature ambient over than +40°C (104°F)                                                                        | <b>Dynapac Hydraulic 300</b><br><br><b>Shell Tellus T68 ou equivalente.</b> | P/N <b>4812161867</b> (5L)<br>P/N <b>4812161868</b> (20L) |
|  <b>BYOLOGICAL HYDRAULIC OIL</b> | When leaving the plant, the machine may be filled with biologically degradable oil. When replacing or filling with oil, use the same type of oil used previously. | <b>PANOLIN HLO Synth 46</b><br><b>(www.panolin.com)</b>                     |                                                           |
|  <b>GREASE</b>                 |                                                                                                                                                                   | <b>Dynagrease</b>                                                           | P/N <b>4812030096</b><br>(0.4Kg)                          |
|  <b>FUEL</b>                   | Refer to the engine manual instructions.                                                                                                                          |                                                                             |                                                           |
|  <b>COOLANT</b>                | Antifreeze protection effective down to -37°C (-34.6 F).<br>50/50 mixed (clean water coolant additive).                                                           | <b>Dynapac Collant 100</b>                                                  | P/N <b>4812161854</b> (20L)                               |



For room temperatures extremely high or low, other lubricants shall be applied.

Refer to the chapter "Special Instructions" or contact **DYNAPAC**.

|                                                                                     |                         |
|-------------------------------------------------------------------------------------|-------------------------|
|    | Engine, oil level       |
|    | Engine, oil filter      |
|    | Hydraulic fluid, level  |
|    | Air filter              |
|    | Hydraulic fluid, filter |
|   | Fuel filter             |
|  | Battery                 |
|  | Coolant level           |

|                                                                                     |                 |
|-------------------------------------------------------------------------------------|-----------------|
|    | Lubricating oil |
|    | Air pressure    |
|    | Sprinkler       |
|    | Sprinkler water |
|  | Recycling       |

**Specifications**

| <b>WEIGHTS</b>                | <b>Cab</b> |           | <b>ROPS</b> |           |
|-------------------------------|------------|-----------|-------------|-----------|
| Shipping Mass                 | 5535 kg    | 12203 lbs | 5265 kg     | 11607 lbs |
| Operating: Empty              | 5825 kg    | 12842 lbs | 5555 kg     | 12247 lbs |
| Operating: 8 ballasts         | 9395 kg    | 20712 lbs | 9125 kg     | 20117 lbs |
| Operating: 8 ballasts + Water | 10905 kg   | 24041 lbs | 10635 kg    | 23446 lbs |
| Operating: 8 ballasts + Sand  | 12205 kg   | 26907 lbs | 11935 kg    | 26312 lbs |
| Operating: 12 ballasts        | 11275 kg   | 24857 lbs | 11005 kg    | 24262 lbs |
| Operating: Wet Sand           | 9405 kg    | 20734 lbs | 9135 kg     | 20139 lbs |
| Operating: Water              | 7805 kg    | 17207 lbs | 7535 kg     | 16612 lbs |

| <b>FILLING VOLUMES</b>            |                     |
|-----------------------------------|---------------------|
| Hydraulic oil reservoir           | 70 L (18.49 gal.)   |
| Hydraulic oil system              | 30 L (7.92 gal.)    |
| Diesel engine lubricating oil     | 11,2 L (2.96 gal.)  |
| Diesel engine coolant without cab | 18 L (4,76 gal.)    |
| Diesel engine coolant with cab    | 19 L (5 gal.)       |
| Fuel tank                         | 130 L (34,34 gal.)  |
| Water tank                        | 350 L (92,46 gal.)  |
| Sand ballast box volume (total)   | 2,24 m <sup>3</sup> |

| <b>ELECTRICAL SYSTEM</b> |                                                     |
|--------------------------|-----------------------------------------------------|
| Battery                  | 1 x 12 V / 95 Ah                                    |
| Alternator               | Stage V - 12 V 60A                                  |
| Fuses                    | Refer to "Fuses" in the "Electrical System" section |

| <b>COMPACTION DATA</b>         |         |
|--------------------------------|---------|
| Load on the tires:             |         |
| - Without ballast              | 459 kg  |
| - With wet sand ballast        | 991 kg  |
| - With steel ballast.          | 1216 kg |
| - With the ballast at its max. | 1333 kg |

## Torque

Torque for oiled bolts tightened with a torque wrench.

| METRIC<br>COARSE<br>SCREW<br>THREAD,<br>BRIGHT<br>GALVANIZE<br>D (fzb) | STRENGTH CLASS             |                            |                                 |                                 |                                 |                                |
|------------------------------------------------------------------------|----------------------------|----------------------------|---------------------------------|---------------------------------|---------------------------------|--------------------------------|
|                                                                        | 8.8, oiled                 | 8.8<br>dry                 | 10.9, oiled                     | 10.9<br>dry                     | 12.9, oiled                     | 12.9<br>dry                    |
| M6                                                                     | 8.4 N.m<br>(6.2 lb.ft)     | 9.4 N.m<br>(6.9 lb.ft)     | 12 N.m<br>(8.8 lb.ft)           | 13.4 N.m<br>(9.9 lb.ft)         | 14.6 N.m<br>(10.7 lb.ft)        | 16.3 N.m<br>(12.02lb.ft)       |
| M8                                                                     | 21 N.m<br>(15.5 lb.ft)     | 23 N.m<br>(16.9 lb.ft)     | 28 N.m<br>(20.6 lb.ft)          | 32 N.m<br>(23.6 lb.ft)          | 34 N.m<br>(25.07 lb.ft)         | 38 N.m<br>(28.02lb.ft)         |
| M10                                                                    | 40 N.m<br>(29.5 lb.ft)     | 45 N.m<br>(33.1 lb.ft)     | 56 N.m<br>(41.3 lb.ft)          | 62 N.m<br>(45.7 lb.ft)          | 68 N.m<br>(50.1 lb.ft)          | 76 N.m<br>(56.05 lb.ft)        |
| M12                                                                    | 70 N.m<br>(51.6 lb.ft)     | 78 N.m<br>(57.5 lb.ft)     | 98 N.m<br>(72.2 lb.ft)          | 110 N.m<br>(81.1 lb.ft)         | 117 N.m<br>(86.3 lb.ft)         | 131 N.m<br>(96.6 lb.ft)        |
| M14                                                                    | 110 N.m<br>(81.1 lb.ft)    | 123 N.m<br>(90.7 lb.ft)    | 156 N.m<br>(115 lb.ft)          | 174 N.m<br>(128.3 lb.ft)        | 187 N.m<br>(138 lb.ft)          | 208 N.m<br>(153.4 lb.ft)       |
| M16                                                                    | 169 N.m<br>(124.6 lb.ft)   | 190 N.m<br>(140.1 lb.ft)   | 240 N.m<br>(177 lb.ft)          | 270 N.m<br>(200 lb.ft)          | 290 N.m<br>(213.9 lb.ft)        | 320 N.m<br>(236.01<br>lb.ft)   |
| M20                                                                    | 330 N.m<br>(243.4 lb.ft)   | 370 N.m<br>(272.9 lb.ft)   | 470 N.m<br>(346.6 lb.ft)        | 520 N.m<br>(383.5 lb.ft)        | 560 N.m<br>(413.03 lb.ft)       | 620 N.m<br>(457.28<br>lb.ft)   |
| M22                                                                    | 446 N.m<br>(329 lb.ft)     | 497 N.m<br>(366.5 lb.ft)   | 626 N.m<br>(461.7 lb.ft)        | 699 N.m<br>(515.5 lb.ft)        | 752 N.m<br>(554.6 lb.ft)        | 839 N.m<br>(618.8 lb.ft)       |
| M24                                                                    | 570 N.m<br>(420.4 lb.ft)   | 640 N.m<br>(472 lb.ft)     | 800 N.m<br>(590 lb.ft)          | 900 N.m<br>(663.8 lb.ft)        | 960 N.m<br>(708.05 lb.ft)       | 1,080 N.m<br>(796.5 lb.ft)     |
| M30                                                                    | 1,130 N.m<br>(833.5 lb.ft) | 1,260 N.m<br>(929.3 lb.ft) | 1,580 N.m<br>(1,165.3<br>lb.ft) | 1,770 N.m<br>(1,305.5<br>lb.ft) | 1,900 N.m<br>(1,401.3<br>lb.ft) | 2,100 N.m<br>(1548.8<br>lb.ft) |

**Torque (cont.)**

| METRIC COARSE<br>THREAD, ZINC-<br>TREATED<br>(Dacromet/GEOMET) | STRENGTH CLASS               |                               |                              |                              |
|----------------------------------------------------------------|------------------------------|-------------------------------|------------------------------|------------------------------|
|                                                                | 10.9<br>oiled                | 10.9<br>dry                   | 12.9<br>oiled                | 12.9<br>dry                  |
| M6                                                             | 12 N.m<br>(8.8 lb.ft)        | 15 N.m<br>(11.06 lb.ft)       | 14.6 N.m<br>(10.7 lb.ft)     | 18.3 N.m<br>(13.4 lb.ft)     |
| M8                                                             | 28 N.m<br>(20.6 lb.ft)       | 36 N.m<br>(26.5 lb.ft)        | 34 N.m<br>(25.07 lb.ft)      | 43 N.m<br>(31.7 lb.ft)       |
| M10                                                            | 56 N.m<br>(41.3 lb.ft)       | 70 N.m<br>(51.6 lb.ft)        | 68 N.m<br>(50.1 lb.ft)       | 86 N.m<br>(63.4 lb.ft)       |
| M12                                                            | 98 N.m<br>(72.2 lb.ft)       | 124 N.m<br>(91.4 lb.ft)       | 117 N.m<br>(86.3 lb.ft)      | 147 N.m<br>(108.4 lb.ft)     |
| M14                                                            | 156 N.m<br>(115 lb.ft)       | 196 N.m<br>(144.5 lb.ft)      | 187 N.m<br>(138 lb.ft)       | 234 N.m<br>(172.5 lb.ft)     |
| M16                                                            | 240 N.m<br>(177 lb.ft)       | 304 N.m<br>(224.2 lb.ft)      | 290 N.m<br>(213.9 lb.ft)     | 360 N.m<br>(265.5 lb.ft)     |
| M20                                                            | 470 N.m<br>(346.6 lb.ft)     | 585 N.m<br>(431.4 lb.ft)      | 560 N.m<br>(413.03 lb.ft)    | 698 N.m<br>(514.8 lb.ft)     |
| M22                                                            | 626 N.m<br>(461.7 lb.ft)     | 786 N.m<br>(579.7 lb.ft)      | 752 N.m<br>(554.6 lb.ft)     | 944 N.m<br>(696.2 lb.ft)     |
| M24                                                            | 800 N.m<br>(590 lb.ft)       | 1,010 N.m<br>(744.9 lb.ft)    | 960 N.m<br>(708.05 lb.ft)    | 1,215 N.m<br>(896.1 lb.ft)   |
| M30                                                            | 1,580 N.m<br>(1,165.3 lb.ft) | 1,990 N.m<br>(1,467, 7 lb.ft) | 1,900 N.m<br>(1,401.3 lb.ft) | 2,360 N.m<br>(1,740.6 lb.ft) |

**Wheel bolts**

|                 |                              |
|-----------------|------------------------------|
| Bolt dimensions | M20 (PN 4700792683)          |
| Strength class  | 10.9                         |
| Torque          | Oiled: 494 N.m (364.5 lb.ft) |
|                 | Dry: 620 N.m (457.2 lb.ft)   |

**Hydraulic system**

| OPENING PRESSURE    |         |           |
|---------------------|---------|-----------|
| Steering system     | 170 BAR | 2.466 PSI |
| Transmission system | 375 BAR | 6.237 PSI |
| Brake release       | 25 BAR  | 363 PSI   |

**Specifications (cont.)****Air conditioning (option)**

The system described in this manual is the ACC (Automatic Climate Control), that is, a system which maintains the set temperature in the cab provided that all the windows and doors are kept closed.

Coolant designation: HFC-R134:A

Coolant weight when full: 1,000 g.

**Engines**

| <b>ENGINE</b>          |                              |
|------------------------|------------------------------|
| Manufacturer and model | Kubota V3307 STAGE V         |
| Power (SAE J1995)      | 74.3 hp (55.4 kW) @ 2200 rpm |



### Maintenance and Lubrication points

Read carefully this manual section before carrying out any maintenance or lubrication on the machine.

Always check the areas around and under the equipment. It is an easy way to detect earlier leakages and possible damages.

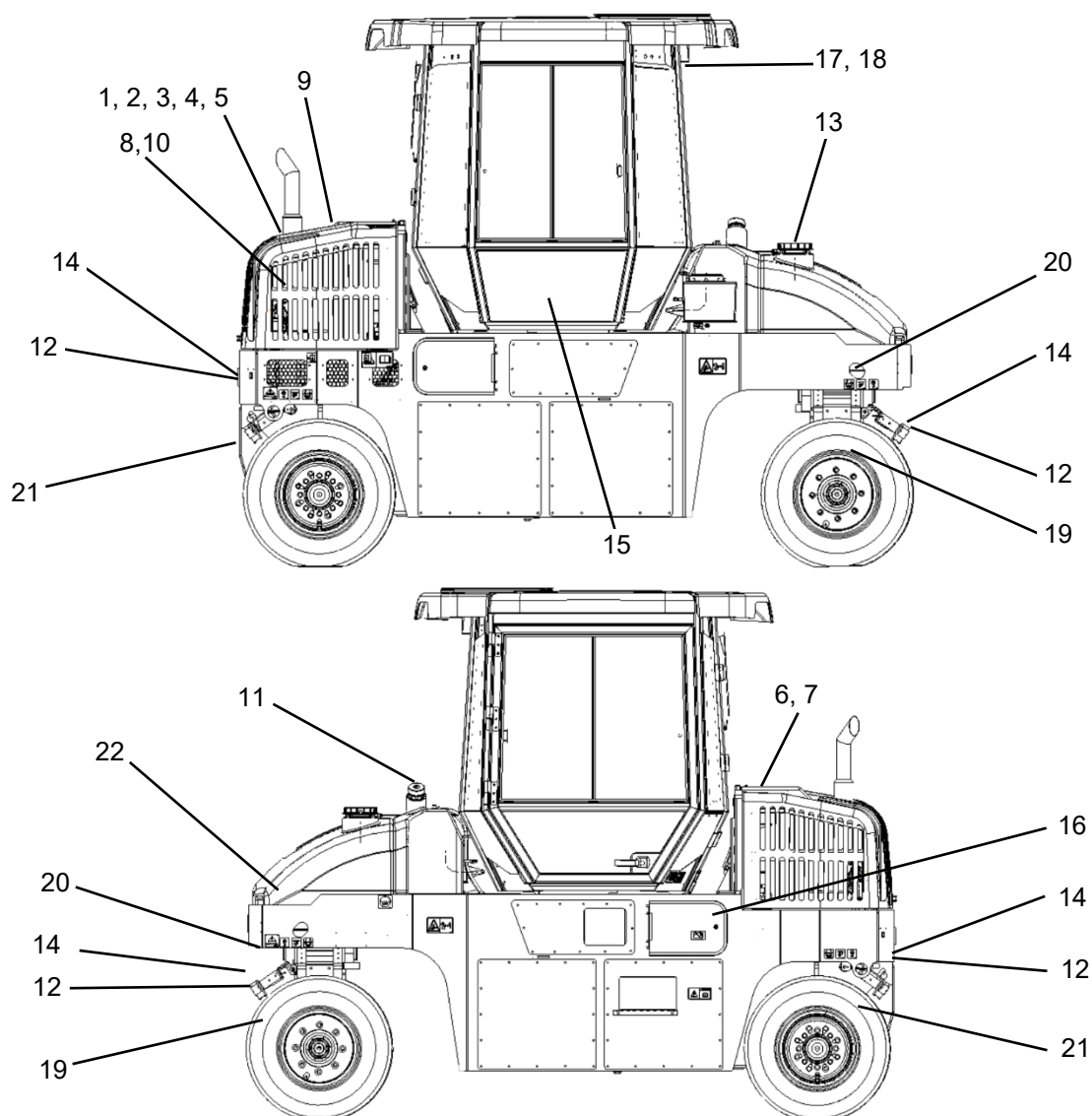


**Fig.: Service and lubrication points.**

1. Engine oil
2. Oil filter
3. Fuel filter
4. Hydraulic oil filter
5. Hydraulic oil level
6. Hydraulic oil supply
7. Hydraulic oil reservoir
8. Radiator

9. Coolant
10. Engine air filter
11. Fuel supply
12. Scrapers
13. Water supply system
14. Sprinkling system
15. Seat bearing
16. Battery

17. Cab air filter
18. Cab air conditioning
19. Lower pivot bearing
20. Upper pivot bearing
21. Hydraulic motor

### Scheduled maintenance and lubrication

The maintenance and lubrication shall be carried out first based on the working hours. When they cannot be considered, use the periods, like daily, weekly, etc.



Always clean around the covers, plugs, grease nipples or hoods before open or apply grease to them.



Respect and follow the engine manufacturer instructions. For further information, refer to the Engine Manual.



***Park the roller on a level surface.***



***When checking and adjusting the machine, always turn off the engine and make sure the forward/backward lever is in the neutral position.***



***When the engine is on in enclosed places, make sure there is a good ventilation, to prevent carbon monoxide poisoning.***

## Scheduled Maintenance

|  |                                                 |      |                  |                |                   |           |                       |                         |            |                     |            |                                                                | Notes |
|-----------------------------------------------------------------------------------|-------------------------------------------------|------|------------------|----------------|-------------------|-----------|-----------------------|-------------------------|------------|---------------------|------------|----------------------------------------------------------------|-------|
| Scheduled maintenance                                                             |                                                 |      |                  |                |                   |           |                       |                         |            |                     |            |                                                                |       |
| ○ Check    ■ Replace                                                              |                                                 |      |                  |                |                   |           |                       |                         |            |                     |            |                                                                |       |
| Pos.                                                                              | Action                                          | Pag. | 10 hours (Daily) | First 50 hours | 50 hours (Weekly) | 250 hours | 500 hours (quarterly) | 1000 hours (Semiannual) | 1500 hours | 2000 Hours (Annual) | 3000 hours |                                                                |       |
| -                                                                                 | Check the operation of the emergency brake      | 73   | ○                |                |                   |           |                       |                         |            |                     |            |                                                                |       |
| 1                                                                                 | Check the engine oil level                      | 73   | ○                |                |                   |           |                       |                         |            |                     |            | Refer to the engine manual                                     |       |
| 9                                                                                 | Check the level of engine coolant               | 73   | ○                |                |                   |           |                       |                         |            |                     |            |                                                                |       |
| 5                                                                                 | Check the hydraulic oil level                   | 74   | ○                |                |                   |           |                       |                         |            |                     |            |                                                                |       |
| 13                                                                                | Fill the water tanks                            | 74   | ○                |                |                   |           |                       |                         |            |                     |            |                                                                |       |
| 14                                                                                | Check the sprinkler system                      | 74   | ○                |                |                   |           |                       |                         |            |                     |            |                                                                |       |
| 12                                                                                | Check the scraper adjustmaents                  | 75   | ○                |                |                   |           |                       |                         |            |                     |            |                                                                |       |
| 11                                                                                | Fill the fuel tank                              | 76   |                  |                |                   |           | ■                     |                         | ■          | ■                   |            |                                                                |       |
| -                                                                                 | Replace the separator filter                    | 75   |                  |                |                   | ■         | ■                     | ■                       | ■          |                     |            | Refer to the engine manual                                     |       |
| -                                                                                 | Replace the hydraulic oil                       | -    |                  |                |                   |           |                       |                         | ■          |                     |            |                                                                |       |
| -                                                                                 | Clean the dust ejection valve                   | 76   | ○                |                |                   |           |                       |                         |            |                     |            |                                                                |       |
| -                                                                                 | Replace the hydraulic oil filters               | 77   |                  | ■              |                   |           | ■                     |                         | ■          | ■                   |            |                                                                |       |
| -                                                                                 | Check the air pressure of the tires             | 77   |                  |                | ○                 |           |                       |                         |            |                     |            |                                                                |       |
| -                                                                                 | Check the tightness of the wheel nuts           | 78   |                  |                | ○                 |           |                       |                         |            |                     |            |                                                                |       |
| 10                                                                                | Check and clean the engine air filter elements  | 78   |                  |                |                   | ○         | ○                     |                         |            |                     |            | Refer to the engine manual                                     |       |
| 19,20                                                                             | Grease the upper and lower articulated bearings | 79   |                  |                | ○                 |           |                       |                         |            |                     |            |                                                                |       |
| 8                                                                                 | Check and clean the radiator                    | 79   |                  |                |                   | ○         |                       |                         |            |                     |            |                                                                |       |
| 1,2                                                                               | Replace the oil and filter of the engine        | 79   |                  |                |                   |           | ■                     | ■                       | ■          | ■                   |            | Refer to the engine manual                                     |       |
| 3                                                                                 | Check and clean the fuel filter                 | 75   |                  |                |                   |           | ○                     | ○                       | ○          | ○                   |            | Refer to the engine manual                                     |       |
| 3                                                                                 | Replace the fuel filter and prefilter           | 80   |                  |                |                   |           | ■                     | ■                       | ■          | ■                   |            | Refer to the engine manual                                     |       |
| 6                                                                                 | Check the hydraulic oil tank cover              | 81   |                  | ○              |                   |           | ○                     | ○                       | ○          | ○                   |            |                                                                |       |
| 15                                                                                | Lubricate the bearing seat                      | 81   |                  |                |                   |           | ○                     | ○                       | ○          | ○                   |            |                                                                |       |
| 17                                                                                | Replace the cabin air filter                    | 82   |                  |                |                   |           |                       | ■                       |            | ■                   | ■          |                                                                |       |
| -                                                                                 | Check the alternator belt                       | 82   |                  |                |                   |           |                       | ○                       | ○          | ○                   | ○          |                                                                |       |
| -                                                                                 | Replace the air filter element                  | 78   |                  |                |                   |           |                       |                         |            | ■                   |            | After 6 hours of cleaning (see engine manual)                  |       |
| -                                                                                 | Replace the alternator belt                     | 82   |                  |                |                   |           | ■                     | ■                       | ■          | ■                   |            | Refer to the engine manual                                     |       |
| 9                                                                                 | Change the engine coolant                       | 82   |                  |                |                   |           |                       |                         |            | ■                   |            | Refer to the engine manual                                     |       |
| 11                                                                                | Empty and clean the fuel tank                   | 83   |                  |                |                   |           |                       |                         |            | ○                   |            |                                                                |       |
| 13                                                                                | Empty and clean the water tank                  | 84   |                  |                |                   |           |                       |                         |            | ○                   |            |                                                                |       |
| 1                                                                                 | Replace the engine oil                          | 79   |                  | ■              |                   |           | ■                     | ■                       | ■          | ■                   |            | 500 hours or 1 year, whichever comes first (see engine manual) |       |
| -                                                                                 | Check the radiator hoses and clamps bands       | 84   |                  |                |                   |           | ○                     | ○                       |            |                     |            | Refer to the engine manual                                     |       |
| -                                                                                 | Check of intake air line                        | 84   |                  |                |                   |           | ○                     | ○                       |            |                     |            | Replacement every 2 years (refer to engine manual)             |       |
| -                                                                                 | Check the turbo charger                         | -    |                  |                |                   |           |                       |                         |            |                     | ○          | Refer to the engine manual                                     |       |
| -                                                                                 | Check the injection pump                        | 84   |                  |                |                   |           |                       |                         |            |                     | ○          | Refer to the engine manual                                     |       |



Refer to the hour meter to determine which type of maintenance required.

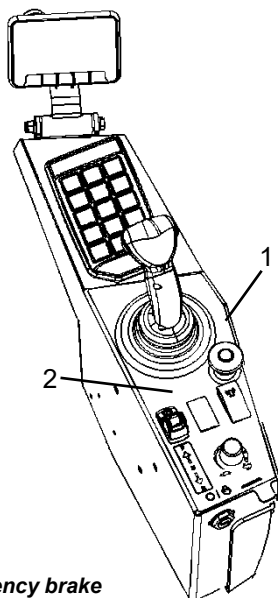


**Fig. – Emergency brake**  
 1. Emergency brake  
 2. Parking brake

### Check operation of the emergency brake

Make the machine move slowly. Hold the steering wheel and brace yourself for a sudden stop.

Press the emergency brake button (1). The roller will stop abruptly, and the engine will shut down.

After testing the brakes, put the lever forward / reverse to neutral and activate the parking brake (2).

Pull the emergency brake button out. Start the engine

The roller is now ready to work.

### Check the engine oil level

Remove the oil level gauge, wipe it clean and reinstall it. Take the oil level gauge out again, and check the oil level (1). If the oil level is too low, remove the oil filler plug, and add new oil to the prescribed level (2).

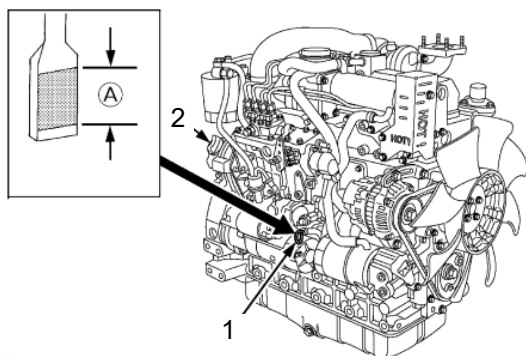


**Fig. – Engine oil level**



**Never operate the machine with the oil level below the L mark and above the mark H. Low performance or engine damage may occur.**

Place the machine on a flat surface, wait at least 15 minutes after switching off the machine, and make sure the level is within the range proper (A).

### Check the level of engine coolant

The expansion tank is located in the upper right corner of the engine access.

Make sure the cooling liquid level is between the FULL and LOW marks the expansion tank. If necessary, remove the tank lid and complete the level. Be sure to close the radiator cap securely.



**NEVER open the lid of the expansion tank when the engine is hot and always wear gloves and goggles.**

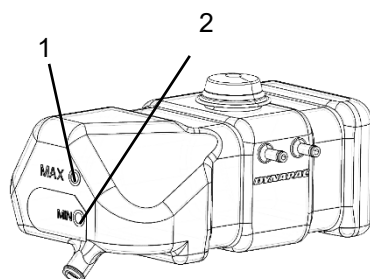


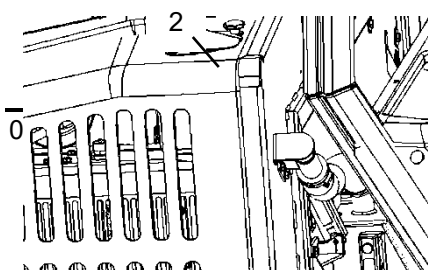
**Fig. – Expansion tank**  
 1. Maximum  
 2. Minimum

When filling the cooling liquid, always use a compound with 50% water and 50% additive. See the specifications of lubricants in this manual.

When the coolant level drops due to evaporation, add water only up to the full level.



### Check the hydraulic oil level



1. Park the roller on a level ground and turn off the engine
2. Check the hydraulic oil reservoir sight glass (1) located on the right side of the machine.
3. If the oil level is 2 cm below the glass upper line, fill with the recommended hydraulic oil.



Use only hydraulic oil recommended by **DYNAPAC**.

1

**Fig. – Hydraulic oil reservoir**

1. Oil sight glass
2. Filling plug

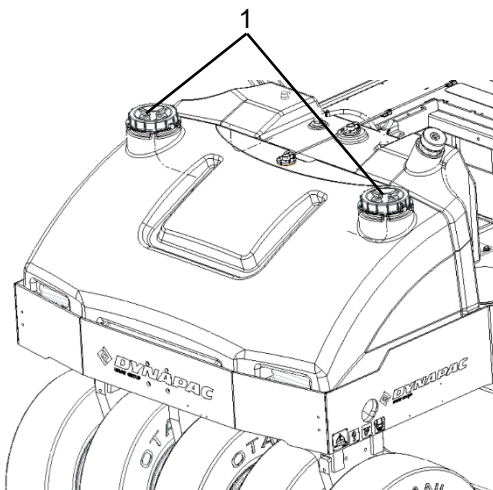


**Fig. – Water tank**

1. Filling caps

### Fill the water tanks

There are two filling caps above the water tank (1).



Loosen and remove the tank lid and fill with a mixture of water and non-stick in the ratio 9: 1. Do not remove the filter.

Fill the reservoir with a capacity of 410 liters.



**Use as nonstick tire DYNA GUARD. In addition to protecting the tire is biodegradable.**

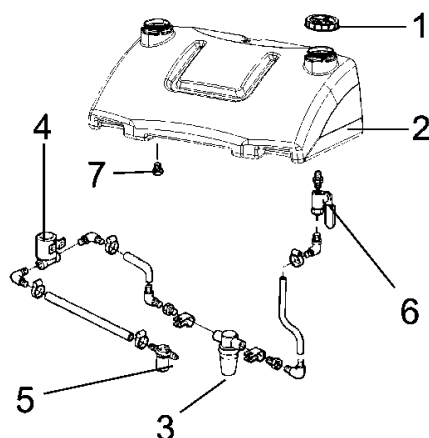


**Fig. – Sprinkler system**

1. Nozzle cap/filter
2. Tank
3. Filter
4. Pump
5. Magnetic valve
6. Cutting valve
7. Drain plug

### Check the sprinkler system

Make sure the sprinkler system runs smoothly. The solenoid valves (5) shall issue a noise to show they are working.

Operate the system and check for clogged nozzles. If necessary, clean them.

To clean the filter (3) empty the tank (2) and remove the strainer. Empty the strainer and rinse with water.

Check that the pump (4) is running, listening to their voice or touching a hand on her.

If there is shut-off valve (6) you will not have to empty the tank to clean the filter.

### Nozzle - Disassembly / Cleaning

Remove manually the clogged nozzle.

Apply the nozzle (2) and fine filter (4) a compressed air jet. Alternatively, install replacement parts and clean the clogged later.

After checking and cleaning possible, turn on the system and check its operation.

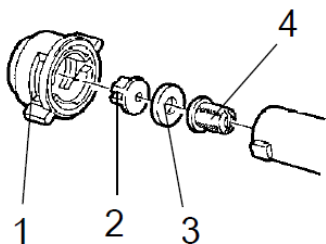


**Fig. -Nozzle**

1. Sleeve
2. Nozzle
3. Union
4. Fine filter



***Wear protective goggles when working with compressed air.***

### Check the scrapers adjustments

Adjustment of the scrapers on the wheels is done by the handle (1) supporting the scraper.

There are two positions: of work and rest.

Adjust the snap rings (2) of the scrapers to control the pressure applied on wheels.

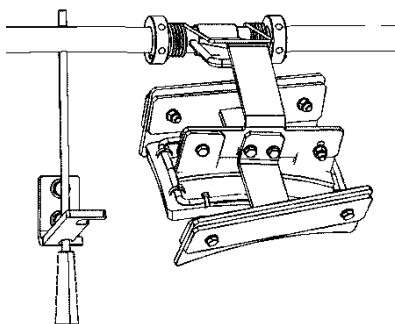


**Fig. - Adjustment of scrapers**

1. Handle
2. Pressure ring

### Replace water separator filter

1. Remove the old water separator filter with a filter wrench.

2. Apply a film of oil to the gasket for the new water separator filter.

3. Screw in the water separator filter by hand. Because, if you tighten the water separator filter with a wrench, it will be tightened too much.

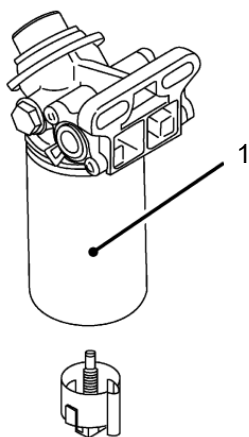


**Fig. - Separator Filter**

1. Water separator filter



Replace the water separator filter periodically to prevent wear of the supply pump or the injector, due to dirt in the fuel.



### Fill the fuel tank



**Never fill the engine when it is working. Do not smoke and avoid spilling fuel.**

The supply nozzle and the reservoir cap are located in front of the operator platform on the left side of the machine.

Check the fuel tank every day before starting work or fill the tank when the work is completed.

Loosen and remove the fuel cap (1) and make the check to the oil fill.

The tank has a capacity of 215 liters of fuel. For more information about the quality of fuel, see engine manual.



**When refueling, stop the machine on a level and secure, turn off the engine and ground the supply nozzle placing it in contact with the chassis not isolated spot, before the start filling.**



**While refueling, hold the pump nozzle in contact with the oil fill tube. Always fill with fuel recommended by Dynapac.**



The use of adulterated fuel, contaminated, dirty or poor quality, damages the components of the injection and engine system. Repairs under this condition are NOT covered under warranty.

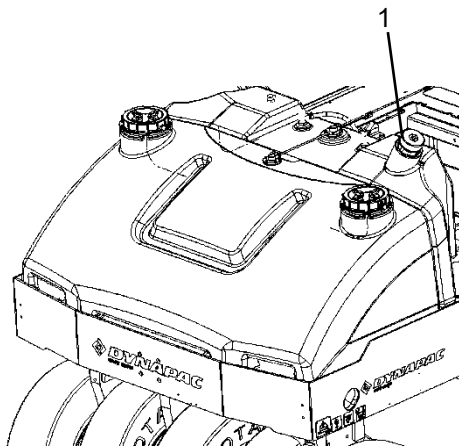


**Fig. – Fuel tank**  
1. Tank cover  
2. Filling pipe

### Clean the dust ejection valve

Clean the valve eject dust filter air daily after working hours, pressing the valve and letting the dust out while open.

After leaving all the dust, release the valve.



Refer to the Engine Operation Manual and maintenance for more information.

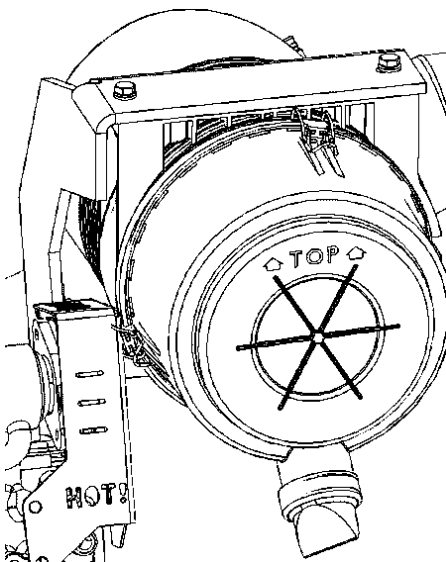


**Fig. – Dust ejection valve**

### Replace the hydraulic oil filters

Hydraulic filters are located on the right side of the engine compartment.

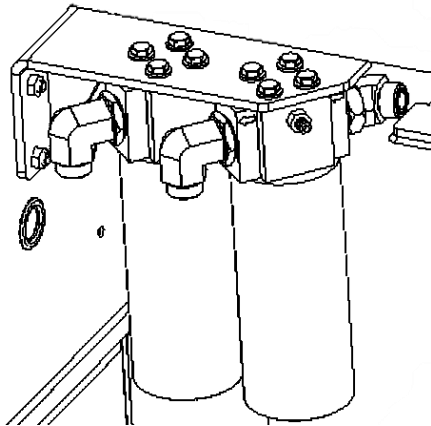


Fig. – Filters



**TAKE CARE OF THE ENVIRONMENT:** All the used oil shall be properly stored for subsequent disposal. Do not dispose of oil on the ground, sewage system or other place which can harm the environment. The filter is disposable and cannot be cleaned.

1. Open the hydraulic oil tank cap.
2. Clean carefully the sealed surface on the filter holder.
3. Apply a thin layer of clean hydraulic oil on the rubber gasket of the new filter.
4. Fit manually the filter, first until the filter gasket manages to reach the holder. Next, tighten it with one more turn.
5. Check the hydraulic oil level on the sight glass (2) and adjust, if necessary.
6. Turn on the engine and check if the filter is well sealed.

### Check the tires air pressure

To check the pressure, use an air pressure gauge. The pressure in all the tires must be the same.

To know the recommended pressure values, refer to the "Technical Specifications" section.

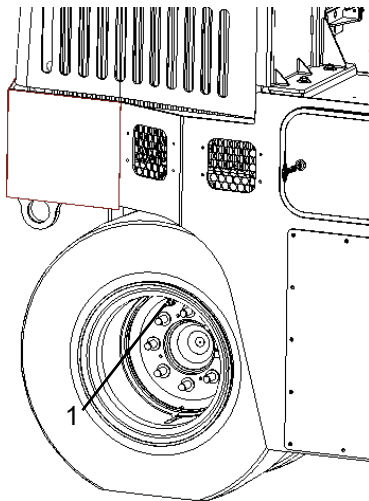


Fig. – Wheel  
1. Air valve



When replacing the tires, it is important that all of them have the same original diameter and width; otherwise they can slide into the wheel or make their installation impossible.



The machine can be equipped optionally with the tire pressure adjustment system (Air on the Run).

**NOTE:** For machines with the Air on The Run system, the tires should be emptied at the end of the operation for 3 - 5 seconds, so that an auxiliary blow-off of the dryer filter is carried out.

### Check the tightness of the wheel nuts

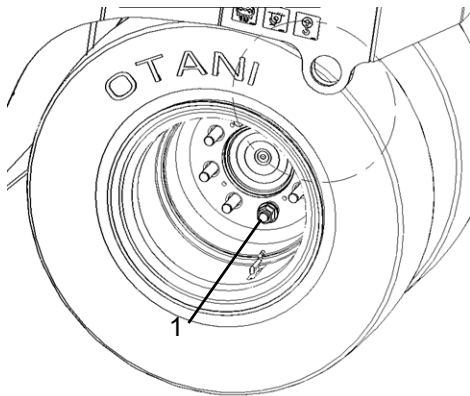


**Fig. – Wheel**  
1. Nuts

Confirm the tightening torque of the REAR wheel nuts (1) with 770 Nm (78kpm) / 550 Nm (56 kpm) and FRONT wheel with 494 Nm (50 kpm):

| Rear wheel                    |        |
|-------------------------------|--------|
| Hydraulic motor without brake | 770 Nm |
| Hydraulic motor with brake    | 550 Nm |
| Front wheel                   |        |
|                               | 494 Nm |

Check all wheels and all nuts (this information is valid only for new machines or newly installed wheels).

### Check and clean the engine air filter elements



Replace the main filter element when the corresponding warning light is illuminated on the instrument panel when the engine is at full speed.

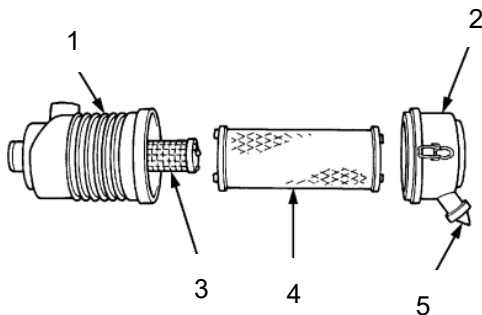


**Fig. – Air filter**

1. Air cleaner body
2. Cover
3. Secondary element
4. Primary element
5. Evacuator valve

1. Open the evacuator valve once a week under ordinary conditions - or daily when used in a dusty place. This will get rid of large particles of dust and dirt.
2. Wipe the inside air cleaner clean with cloth if it is dirty or wet.
3. Avoid touching the primary element except when cleaning.
4. When dry dust adheres to the element, blow compressed air from the inside turning the element. Pressure of compressed air must be under 205kPa (2.1kgf/cm<sup>2</sup>, 30psi).
5. Replace the primary element every year or every 6 cleanings. If the primary element is stained heavily, replace it soon. At this time, replace the secondary element too.
6. The secondary element should be removed only if it is to be replaced.
7. To protect the engine, do not remove the secondary element in servicing the primary element.

**NOTE:** Air cleaner should be cleaned more often in dusty conditions than in normal conditions.



Replace the secondary air filter every five main air filter uses.

To carry out the air filter cleaning, follow the instructions below:

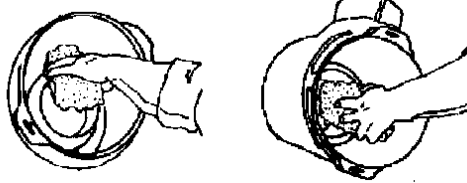


**Fig.**  
**Inside of the**  
**Outlet tube**

**Outside of the**  
**Outlet tube**

1. Clean the inside of the cover and filter housing.
2. Also clean the surfaces of the outlet tube, as shown in the picture.



Check that the hose clamps between the filter housing and the intake hose are tight and that the hoses are intact. Check all hoses system until the engine.

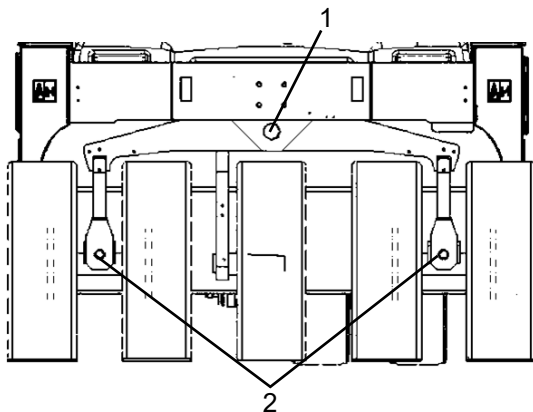


**Fig. – Articulated bearings**

1. Upper pivot bearing grease
2. Lower pivot bearing grease

### Grease the lower and upper articulated bearings

1. Lubricate the fitting of the upper pivot bearing (1) and the lower pivot bearing (2) with five applications of the manual pump.
2. Use the grease in accordance with the recommended lubricant specifications for Dynapac.

### Check and clean the radiators

Make sure that the air flow is passing freely through the radiators without obstruction. If the hives are dirty, wash them under running water (the engine is cold) and clean them with compressed air jets.



When using compressed air, use safety glasses.



**Where possible, clean the hives in the opposite direction to the fan airflow. Every time you flush the hive, cover the electrical and electronic components.**

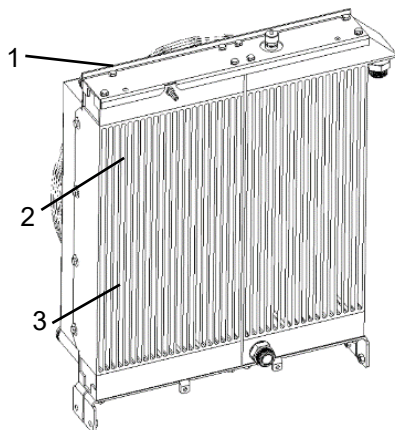


**Fig. – Radiators**

1. Hydraulic oil cooler
2. Charge air cooler
3. Water cooler

### Change the diesel engine oil

The engine oil drain plug is located at the rear of the machine on the left side. The hose is near the radiators. Perform the drainage of the oil while the engine is still warm, place a container with a minimum capacity of 14 liters below the plug.



**Have full caution when performing the oil drain. Wear gloves and goggles, as hot oil can cause burns if in contact with skin.**

Loosen the hex nut, pull the hose out and release the oil drain plug.

1. Let all the oil drain into the container and finish the operation attach the drain plug back and attach the hose.
2. Then tighten the hex nut.



Fig. – Engine compartment



**TAKE CARE OF THE ENVIRONMENT: All the used oil shall be properly stored for subsequent disposal. Do not dispose of oil on the ground, sewage system or other place which can harm the environment.**

Always fill with new oil. For correct grade oil information, refer to the Lubricant specifications or the Engine Manual Instructions. Fill according to the oil volume necessary to the engine. Check the dipstick to know if the volume is correct and before carrying out the operation, let the engine in idle for a few minutes and turn it off.

### Change the engine oil filter Diesel

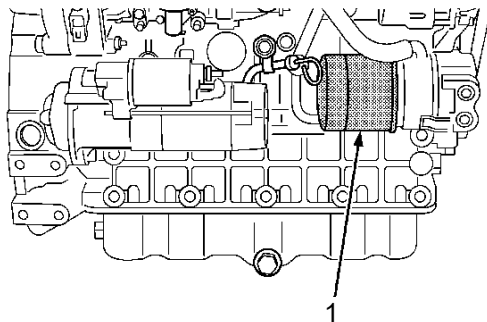


Fig. – Engine compartment  
1. Oil filter



Never perform any maintenance work under the machine while the engine is still operating. Always park the roller on a flat and safe place and chock the tires.

The oil filter (1) is located close to the radiators.

Refer to the Engine Instructions Manual to obtain information about the oil filter replacement.

### Replace the filter and pre fuel filter

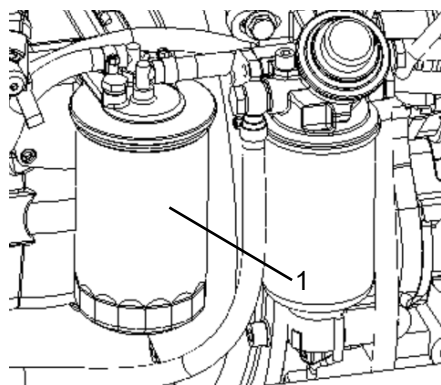


Fig. – Engine compartment  
1. Fuel filter



Never perform any maintenance work under the machine while the engine is still operating. Always park the roller on a flat and safe place and chock the tires.

The fuel filter (1) is located right side of the engine.

Refer to the engine manual for information on replacement fuel filters.

### Check the hydraulic oil tank cover

To check the hydraulic oil tank cap:

1. Unscrew the tank cap and check if it's obstructed. The air must flow freely throughout the cap in both ways.
2. If one way is obstructed, wash the filter with a small portion of Diesel oil and use compressed air until the obstruction is eliminated or replace the cap for a new one.



**Always use protective goggles when working with compressed air.**

### Lubricate the seat bearing



Keep in mind that the chain is a vital part of the steering mechanism.

To lubricate the seat bearing:

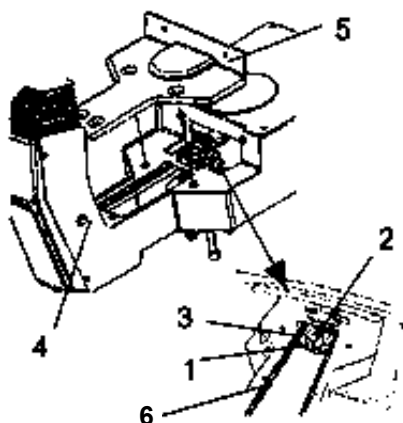


**Fig. – Seat bearing**

1. Grease fitting
2. Sprocket wheel
3. Steering column chain
4. Adjusting bolt
5. Cover
6. Marking

1. Remove the cap (5) to access the grease fitting (1). Lubricate the operator's seat rotation bearing with three strokes of a hand-operated grease gun.
2. Clean and lubricate the chain (3) with grease, between the seat and the steering column.
3. If the chain gap is next to the sprocket wheel (2), loose the bolts (4) and move the steering column forward. Tighten the bolts and check if the chain is with the proper gap.
4. Do not tension the chain too tightly. It should be possible to move the chain about 0.4 inches (10 mm) to the side with a forefinger/thumb at the marking (7) in the seat frame. Fit the chain lock at the bottom.



If it is hard to move the seat, lubricate it more frequently than the instructions specified in this manual.

### Replace the cab air filter

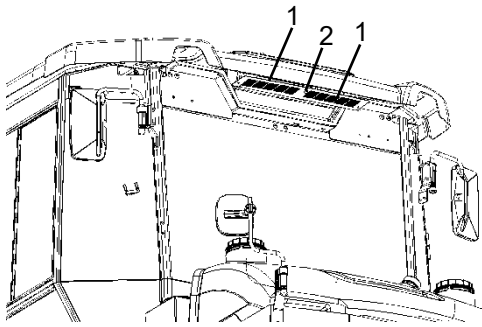


Fig. – Cab

1. Filters (2x)
2. Bolts (3x)



**Use a step ladder to reach the filter (1). The filter can also be accessed by the window at the right side of the cab.**

The filter is located at the front of the cab. Remove three bolts and the protective plastic. Remove the filters and replace them with new ones. It may be necessary to replace them more frequently if the machine is working in a dusty environment.

### Check the alternator belt

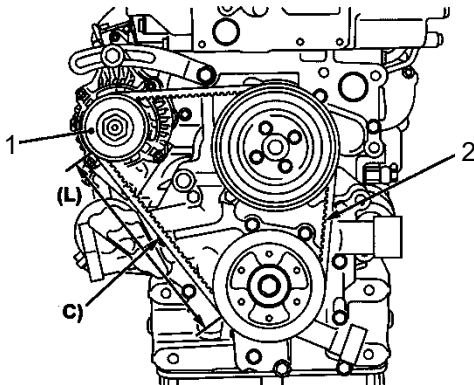


Fig. – Alternator belt

1. Alternator
2. Fan belt

With the machine stopped, check for cracks in the belt tensioner arm.

Check the belt on the pulley location, it must be centered.

Inspect the belt daily, search for cracks, if any, replace it immediately.



For more detailed information on inspection and replacement belts refer to the engine manual.

### Change the engine coolant



**Caution! Risk of severe burns!**  
**Wait until the engine temperature cools down to 122 F (50°C) before removing the coolant tank cap or draining the coolant system.**

1. Open the expansion tank cap.



**NEVER open the coolant tank cap when the engine is hot.**

2. Drain the engine coolant system through the cooler valve drain.
3. Use a proper container to collect the coolant (with 3.69 gal or 14 liters of capacity).



Be careful when draining the product. Use gloves and protective goggles.

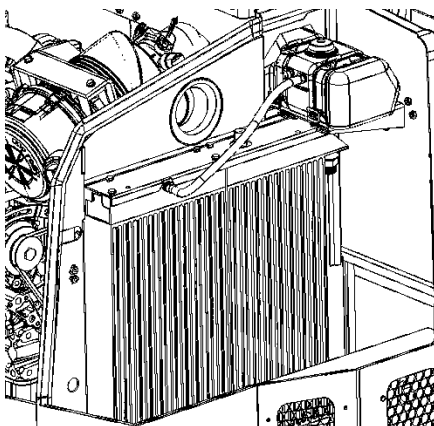


Fig. – Expansion tank



**TAKE CARE OF THE ENVIRONMENT:** All used coolant shall be properly collected and store for subsequent recycling. Do not dispose of the coolant on the ground, sewage system or other place which can harm the environment.

4. Unscrew the hexagon nut, remove the hose and unscrew the drain plug. Drain all the fluid to the container.
5. After the replacement, tighten the drain plug and fit back the hose and the hexagon nut.

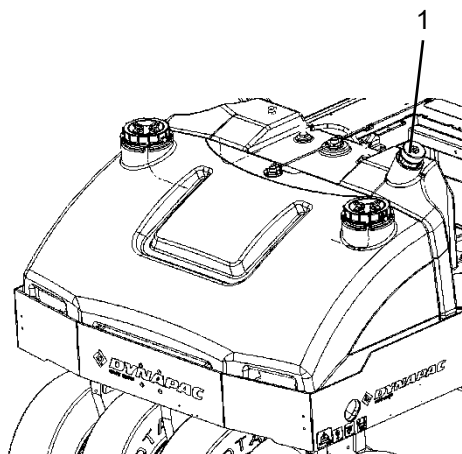


Fig. – Fuel tank  
1. Filling cap

### Empty and clean the fuel tank



NEVER perform maintenance work under the machine when the engine is working. Always park the roller on a flat and safe place and chock the tires.

The fastest and simple way to clean the tank is when it is empty:

1. Open the filling cap (1) of fuel tank.
2. Place two proper containers under the drain plug of the fuel tank (2).



The drain plug of the fuel tank is on the right side of the machine, in a proper compartment.

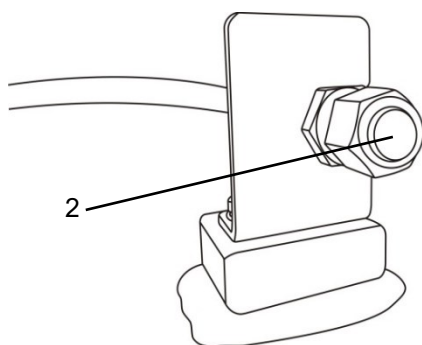


Fig. – Fuel tank draining  
2. Plug

3. Unscrew the drain plug (2) and drain the remaining fuel inside the tank.
4. Refit the drain plug and tighten it.



Using adulterated, contaminated, dirty or bad quality fuel damages the injection system and engine components. The repairs due the conditions above are NOT covered by the warranty.



**TAKE CARE OF THE ENVIRONMENT:** All the used waste shall be properly stored for subsequent recycling. Do not dispose of any waste on the ground, sewage system or other place which can harm the environment.



**Be extremely careful when handling fuel. There is risk of fire.**

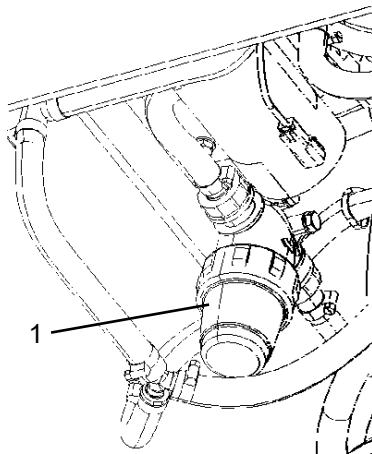


Fig. – Water tank  
1. Water filter

### Empty and clean the water tank

Wash the water tank adding a small quantity of a suitable detergent for plastic surfaces.

Remove the water filter to empty the tank.



*The water tank is made of plastic (polyethylene) and can be recycled.*

### Check radiator hoses and clamp bands

1. If any one of the hose clamps is loose or coolant leaks, tighten the hose clamp securely.
2. Replace the hoses and tighten the hose clamps securely, if the radiator hoses are swollen, hardened or cracked.



Replace the hoses and the hose clamps every 2 years or earlier, if checked and found that the hoses are swollen, hardened or cracked.



***Be sure to check radiator hoses and clamp bands periodically. If radiator hose is damaged or coolant leaks, overheats or severe burns could occur.***

### Check of intake air line

1. Visually check for cracks, gas leak and anything else unusual.
2. Check to see if the lock bolts and nuts are tight enough.

### Check injection pump



Replace the fuel filter cartridge periodically to prevent wear of the fuel injection pump plunger or the injection nozzle, due to dirt in the fuel.

### Electrical system

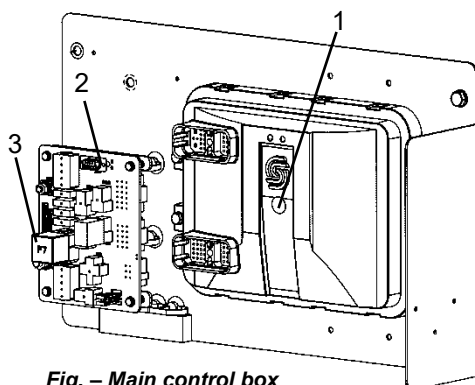


Fig. – Main control box

- 1. ECU unit
- 2. Fuses
- 3. Main relay

The machine's main control box (1) is located on the rear of the operator platform. There is a plastic cap over it and the fuses.

A 12V jack is available in the plastic cap.

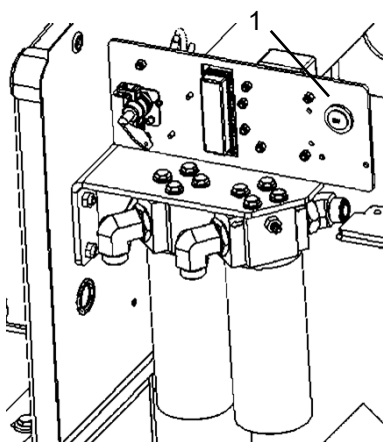


Fig. – Battery compartment

- 1. Main fuses panel

The fuses inside the engine compartment is located alongside the Battery switch.

The roller is equipped with a 12V electrical system, supplied by an AC alternator.



**Connect the batteries to the correct polarities (negative posts to the mass). NEVER disconnect the cable between the battery and the alternator when the engine is operating.**

### Fuses

#### Fuse box

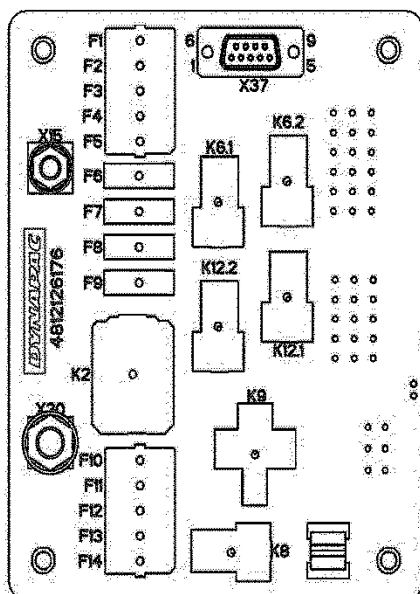


Fig. – F1 fuse box

| Fuse | Current | Function                                                                                                   |
|------|---------|------------------------------------------------------------------------------------------------------------|
| 1    | 5A      | MASTER ECU - PWR CPU, SWITCH PANEL, DISPLAY UNIT, I/O CONTROL UNIT                                         |
| 2    | 10A     | MASTER ECU - PWR 1+, ASPHALT TEMP. METER                                                                   |
| 3    | 10A     | MASTER ECU - PWR 2+, SPEED SENSOR                                                                          |
| 4    | 10A     | MASTER ECU - PWR 3+, AOR PRESSURE SENSOR                                                                   |
| 5    | 5A      | DYNALINK, SEAT SWITCH, JOYSTICK, PARKING BRAKE VALVE SWITCH, ROTATING BEACON SWITCH, INTERIOR LIGHTING CAB |
| 6    | 10A     | MASTER ECU - PWR 4+                                                                                        |
| 7    | 5A      | WATER IN FUEL SENSOR, FUEL PUMP                                                                            |
| 8    | 7,5A    | SPRINKLER PUMP, RADIO                                                                                      |
| 9    | 15A     | EMULSION SPRINKLER PUMP, 12V POWER OUTLET                                                                  |
| 10   | -       | -                                                                                                          |
| 11   | 5A      | ASPHALT TEMP. SENSOR                                                                                       |
| 12   | 5A      | IGNITION SWITCH                                                                                            |
| 13   | 5A      | DRIVING LIGHTS                                                                                             |
| 14   | 15A     | DRIVING LIGHTS                                                                                             |

### Cab fuse box

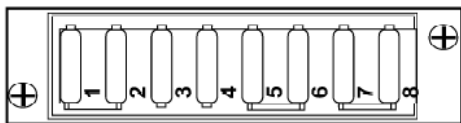
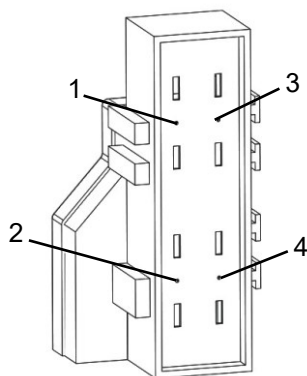


Fig. – Cab fuse box

| Fuse | Current | Function              |
|------|---------|-----------------------|
| 1    | 10A     | INTERNAL LAMPS        |
| 2    | 10A     | WINDSHIELD WIPER      |
| 3    | 15A     | AC                    |
| 4    | 15A     | CAB MAIN              |
| 5    | 10A     | WINDSHIELD WASHER     |
| 6    | 10A     | WINDSHIELD WIPER SIDE |
| 7    | -       | -                     |
| 8    | -       | -                     |

### Main fuse box



| Fuse | Current | Function      |
|------|---------|---------------|
| 1    | 50A     | ECU FUSE BOX  |
| 2    | 50A     | MAIN CAB      |
| 3    | 30A     | -             |
| 4    | 40A     | STARTER MOTOR |

Fig. – Main fuse box

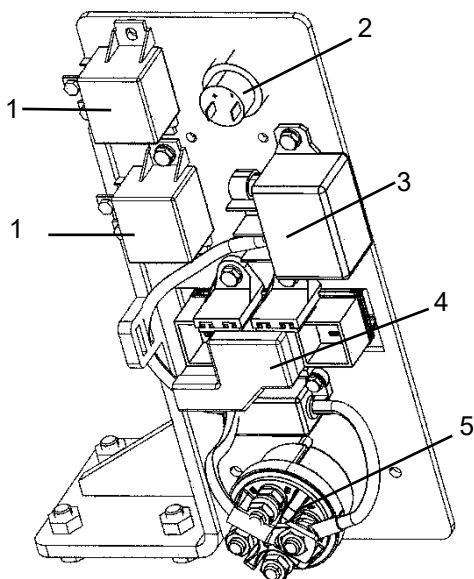


Fig. – Main fuses panel

### Main fuses panel

The main fuses panel is near the radiators, on the left side of the machine.

1. Pre-heating relay (75A x2)
2. 12V socket
3. Starting relay (150A)
4. Main fuses
5. Main switch

### Revision

| DATE       | VERSION | MODIFICATION                                                                                                                                                                                                       |
|------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 01-24-2023 | 0       | General.                                                                                                                                                                                                           |
| 05-09-2023 | 1       | Added serial number range and new operator's seat in Operation – Starting section.                                                                                                                                 |
| 01-07-2025 | 2       | Editing in the Operation section - Before starting, pages 34–35; Modification of the figure “engine compartment”, page 75; Addition of the Dyn@Link decal in the section Safety decals - Location and description. |
| 03-05-2025 | 3       | Changed recommendation to Shell Tellus T68 hydraulic oil or equivalent. Section “Maintenance - Symbols and lubricants”.                                                                                            |
| 07-18-2025 | 4       | General revision and addition of section “Environment – General information”.                                                                                                                                      |
| 04-09-2025 | 5       | Adjustment made to the transmission system's opening pressure setting, with the addition of maximum speed specifications for Turtle and Rabbit modes.                                                              |



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